Post-Byzantine Church Architecture in Cyprus, 1191 - 1571

Volume I

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by

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To my children,

Polycletos and Marialena

ABSTRACT

Post-Byzantine Church Architecture in Cyprus during the period 1191-1571 is crucial in the history of the island's architecture. It was influenced by two different traditions: the eastern Byzantine and the western medieval Gothic-Renaissance. This architecture has been undervalued and only briefly discussed by scholars and historians, whereas the frescoes in the monuments have been thoroughly studied.

This thesis seeks to establish how *Post-Byzantine* Church Architecture developed under the influence of the historic circumstances of that time. It deals with *Post-Byzantine* architectural styles, *Byzantine* and *Franco-Byzantine*, the churches' typology, and the construction technology employed throughout the island.

The research method has pursued two lines: extensive recording by visits to the churches and a review of the relevant literature. The intention of this research was to consider and study all the *Post-Byzantine* churches (around 301 churches) that were built or altered in the period 1191-1571, and which have retained their original characteristics until the present day. Extensive visits were only possible to 206 of them; the others were studied through the literature, earlier photos, drawings, engravings and historical maps. An additional valuable source of information has been the fresco-icons that illustrate models of the churches.

The method of analysis was based on the classification of the churches according to their architectural style, types and their chronology. The thesis is divided into three parts (seven chapters). The first part traces historical information from the survey of the literature and analyses the author's observations after an assessment of the structural condition of the churches. The second, and main part describes the historical value of the churches and examines the development of the churches' architectural styles and types, their characteristics and architectural details. It also looks at construction materials, methods and techniques, and examines the geophysical characteristics of the island. The third part sets out the conclusions.

The indigenous churches' architectural styles that were developed within the island-scape in the period 1191-1571, are significant not only as part of local architectural history but also as a historical example of how the influences from two diverse traditions (in this case, the eastern Byzantine and the western Medieval Gothic and Renaissance) were adopted and interpreted by local builders, using local materials and their own knowledge and skills. However, external influences have not always affected the architecture throughout the island. In these instances, new architectural church styles, types and construction technologies, were introduced that derived from local initiative and are found nowhere else.

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CONTENTS

PART I Background

CHAPTER ONE Introduction

The author's title '*Post-Byzantine* Church Architecture in Cyprus 1191-1571', highlights the aims and objectives of this thesis. The term Post-Byzantine is used by the author to emphasize that the Architecture of this period has its roots in the eastern Byzantine tradition but has evolved and developed under the influences of other cultures: the western Medieval Gothic and the Renaissance traditions. The term '*post*' also implies that this architectural style continued to develop throughout the period 1191-1571 and then declined. Some scholars, however, such as Papageorgiou, have named this *period 'Middle Byzantine period'* in order to differentiate it from the early Byzantine and Byzantine eras.

The *Post-Byzantine* Church Architecture of Cyprus has developed into a number of indigenous architectural styles that were created by the local people and are found nowhere else. These styles were created out of the religious needs of the inhabitants and were defined by the formidable constraints, such as the natural environment, climate, the availability of construction materials, and historical, financial and political circumstances.

The scope of this thesis is to trace the various steps in the development of *Post-Byzantine* Architecture, its styles, building types and construction technology. The reason for selecting this topic is that *Post-Byzantine* Architecture is a crucial period in the architectural history of the island and has not been thoroughly studied. The interest lies in the churches' architectural styles, which combine architectural details from two traditions (Byzantine and medieval Gothic), and the diversity of construction technology that was employed in various regions of the island.

The purpose of this study is to identify the interacting influences between the two styles, which co-existed and developed during this period under interesting historical and political circumstances. This thesis also aims at studying how the influences from the

eastern Byzantine and western medieval traditions were adopted, combined and interpreted by local builders, who still used local materials and their own knowledge and skills.

The main concern of the thesis has been to study all the monuments that were built or altered in the period 1191-1571, and that have preserved their original fabric, characteristics and authenticity until the present time. Research into the relevant literature has revealed that 434 monuments (301 are Post-Byzantine) originate in this period. A list[1] of those monuments (Appendix 2: Table 1) was prepared, which provides information on their geographical location and chronology.

The study methodology classifies the monuments into the various architectural types and styles in chronological order. These have been presented in maps and tables, in order to identify where, when and how the architectural styles, types, and construction technology, were developed. The research methodology consists of three approaches: documentary study, extensive visits and evaluation of the data.

Extensive visits covered 206 out of 301 Post-Byzantine monuments. The aim of the visits was to record the architectural details, the construction technology, as well as the type, size, scale, and structural condition of the monuments. Three survey methods were used: photographic survey and record of the buildings' structural and decorative features; sketches and drawings (where possible); a descriptive record of the monuments' visible alterations and present structural condition. In addition, some of the frescoes that decorate the monuments were photographed, because they provide valuable information related to the aims of this study. In eight Post-Byzantine churches, the interior frescoes illustrate models of the churches just after their construction was completed. These frescoes are accompanied by inscriptions, which give us the date of construction and/or of the decoration of the churches, the donors' names and their portraits. In another thirteen churches there are only inscriptions - with or without the

[1]The list of monuments was based on the List of Monuments Grade I &II, from the Department of Antiquities (1998, revised 2000), the visits to the monuments and the literature.

donors' portraits - which give the dates of the construction and/or decoration of the churches.

Documentary study of the relevant literature on the history of the monuments and the historical sources, such as medieval maps, journals and engravings from travellers of the 18th-20th centuries, earlier photos and drawings from the archives of the Department of Antiquities, have all highlighted the monuments' historical value, and have provided valuable information that would otherwise have been lost. The guidance of archaeologists, architects and technicians, government officials who were involved in restoring the monuments, and caretakers of the monuments, has been invaluable.

The thesis is divided into three parts (seven chapters): a) background information (introduction, information review and method); b) the analysis of the development of the architectural styles and church types, and the construction technology (the construction materials, methods and techniques, the geology); and finally, c) the conclusions.

Chapter One, the introduction, sets out the aims of the thesis, delineates the methodology used for the research and describes briefly the aim of each chapter. It analyses the title of the thesis and explains the reasons for selecting this topic.

Chapter Two, the information review, is divided into two parts: the first part is the documentary survey, the review of the relevant literature, the publications and conference papers, the travellers' journals and engravings, the historical maps, and the photos and drawings from the Department of Antiquities. That information is evaluated and discussed in order to provide a coherent, solid background for the purposes of this study. The literature survey became a sole source of information in cases where other sources were eliminated due to historic and political circumstances. The second part is an assessment of the structural condition of the monuments and how that has affected the outcome of the author's research.

Chapter Three, the method, outlines the methodology used for this research. The

methodology is based on the hypothesis that was initially put forward: how Post-Byzantine Architecture developed in the period 1191-1571. The method utilises the literature review and the extensive visits as the main sources of information and classifies the churches according to their architectural styles, types and chronology.

Chapter Four, the architectural styles, assesses the historical value of the monuments and examines the development of *Post-Byzantine* styles, *Byzantine* and *Frankish-Byzantine*, their characteristics and architectural details. The study of the architectural styles aims to explain how the introduction of new styles in certain areas was influenced by the circumstances at the time (financial, political, social, and geographical). The churches' and their architectural styles are presented in maps (Maps 4.1-4.7) and tables (Appendix 3: Table2)..

Chapter Five, church typologies, focuses on the study of the development of the church-types. These types are presented in tables[2] (Appendix 3). That enables the author to establish how, where and when those various church types were developed, and to justify the introduction of new types in some areas that are not found elsewhere.

Chapter Six, geophysical characteristics, studies briefly the geology of the island, the building materials, and their use in the construction of the churches in the period 1191-1571.

Chapter Seven, construction methods and materials - masons and builders, examines to what extent the available technical resources, natural and human, have determined the development of *Post-Byzantine* architectural styles and types. This chapter deals with the parameters that affect the development and use of various construction technologies in certain areas in the island; the geographical location, the climate, geology, the available materials, the technical knowledge and skills of the builders and masons. In addition, it outlines the importance of the role of sponsors and patrons. The development of indigenous Post-Byzantine and Frankish-Byzantine styles was based on

[2] Even though, the author was initially intended to present the church-types on maps, due to the large number of types and categories it was not possible to include such presentation.

the perceptions of the local builders, and their creative skills. This chapter refers to the materials and the methods of construction of the structural parts of the monuments: walls, timber roofs, domes, barrel and ribbed vaults and arches.

The third part, Conclusions, is a summary of the author's observations and discussions, the arguments that underpin the thesis, and the author's proposals for the work that needs to be done in the next stage.

The thesis is accompanied by a bibliography and a series of eight appendices, which give additional useful information. The bibliography contains mainly Greek publications (whose titles are also given in English). The appendices are: 1) Earthquake impact, 2) Table 1: List of Monuments, 3) Table 2: List of churches according to their architectural styles and types; 4) Glossary; 5) List of churches with interior frescoes; 6) List of photos from the Archives of the Department of Antiquities;7) List of drawings that were prepared by the author.

The research has concluded that Post-Byzantine churches have retained their historical value despite suffering under several circumstances (political, historical, natural and man-made causes of decay) through the centuries. They provide a scholar with tremendous historical information on aspects of the local history of the architecture and local construction technology. They contain the essence of an indigenous architecture with eastern Byzantine and western medieval architectural influences. The architectural styles, types, and the construction technology were developed under the historical and political influences utilising local material and skills. A few indigenous church types, such as timber-roofed and double-roofed churches, used construction methods and techniques that were developed only in specific areas of this island due to the local geological and geographical circumstances and are far removed from any other historical influences, and are as a type found nowhere else.

This research provides the opportunity to broaden the knowledge of the development of the Church Architecture of Cyprus in the period 1191-1571, to initiate a discussion on

some technical and practical aspects of the development of indigenous architectural styles of this specific place (as a case study), utilising a methodology that may be applicable to other studies. It also suggests areas as future work - such as a further investigation, which could involve comparison with the architecture of this period in countries neighbouring to Cyprus. In conclusion, this thesis aims to enlighten the perception for conserving those significant and unique churches which are an important part of the Architectural Heritage of the island, and preserve them for the future generation.

CHAPTER TWO Information Review

2.1. Literature Review

Introduction

The significant *Post-Byzantine* churches of Cyprus have been described, discussed and reported by several travellers and scholars throughout the centuries. The most informative studies encountered include: maps, literature, journals, engravings, reports, drawings made for recording purposes and photographs. Studies of these have provided information on the history and the significant interior frescoes of the churches (though not all of them) which originate in the period 1191-1571.

Maps

The first map showing Cyprus, though not a detailed one, is a *tabula,* an atlas of Asia, that was drawn by Claudius Ptolemaeus and published by Johann Huttich in Strasbourg in 1525 (Figure 2.1). The first, most up to date and detailed cartographic information on Cyprus until the very end of the Venetian period was Camocio's map, printed in 1566 (Figure 2.2). Subsequently, the most accurate maps of this period were produced by Ortelius and published in 1573 (Figure 2.3-2.5) (information Byzantine and Medieval Cyprus, 1998:296,300, 302). Both Camocio's and Ortelius's maps, were drawn before the Ottoman period. They give reliable information concerning the correct location of many churches that existed at that time. Later, in 1885, an important and very accurate map was drawn by Kitchener. All three maps - those of Camocio, Ortelius and Kitchener - are the earliest significant sources of 'visual' information (together with the engravings, and fresco-icons), for the study of Post-Byzantine monuments.

The series of maps by Ortelius (in *Milliaria Italia*) are based on Camocio's map, but they are the most accurate and updated cartographic information of the period before 1571. These maps provide the location of the Byzantine and medieval villages of their time. Tiny sketches on the maps, instead of names, indicate the existence of many Byzantine and medieval, religious and military monuments. These maps confirm the existence of some village churches and monasteries during the period

under consideration (1191-1571). For example, some names of the monuments given are: a) *S. Ilario* for the Byzantine Castle of Agios Ilarion, which was built in the 12th century; b) *Sipi* for the Monastery of Sinti, built in 1541; c) *De Chico* for Kykkos Monastery; d) *Trodisi* for Trooditissa Monastery and e) *Alomano* for Alamanos Monastery. The last three monasteries (Kykkou, Trooditissa and Alamanos) were built in the Byzantine period, but they were completely rebuilt in the Ottoman period. No original buildings have survived, and therefore are not included in the list of monuments under consideration. Other cartographers of the medieval period who followed Ortelius have also produced very important maps (Figure 2.6), but for the purpose of this study they provide no additional information to the Ortelius map.

Geographical surveys and maps with extensive details were produced from the late 19th century onwards, (while the island was a British Colony, 1878-1960). The nineteenth century survey that was carried out by Lord Kitchener is quite detailed and informative, and was used as a base for geographical maps in the later years. Kitchener's map[1] gives the location and the names of the important monasteries and churches that were in use at that time, and also those of the castles. The village churches are indicated on the map, with a cross (use +) sign. This map is very helpful for the study of the history of the monasteries and castles. The great Byzantine and medieval monasteries that are shown on the map flourished during the Ottoman Period[2]. They have survived until the present day, but most of them have been reconstructed[3]. Other smaller monasteries fell in decline, were demolished, left to decay, or were destroyed by fires and earthquakes. Some monasteries included on the map are now in ruins, such as those of Agios Mamas in Gialia and Agios Savvas in Karonas (partly in ruins). This map also confirms the location of a few monasteries in places where only the church buildings have survived to the present day. Some of these are: Podithou in Galata and Ayioi Anargyroi in Foini, etc. In other monasteries, the buildings (but not always the churches) were completely

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[1]The map was printed in London, on the 8th of April 1885 *(scale 1:316,800, 5 English miles to 1 Inch)*.

[2]The heavy property taxes that the Ottomans enforced the Greek landowners to pay, resulted in the donation of their land to the Monasteries (Hein, Jacovljevic& Kleidt, 1997:24).

[3]The reconstructed monasteries that have not retained any of their original buildings are not part of this thesis, because any useful historical information of these monuments has been destroyed during the reconstruction.

reconstructed upon the foundations of earlier constructions. Some examples are Ioannis Prodromos in Mesapotamos, Agios Minas in Vavla, etc.

Recent tourist maps and guide books, published by individuals (amateur or professional geographers, local or not) or the Government, give accurate and useful information concerning the most significant Byzantine and Medieval Monuments of the period 1191-1571. The topic of this thesis, however, requires the production of chronological maps which are accompanied tables, in order to study and discuss the development of *Post-Byzantine* architecture throughout the island: i.e. to observe when, where and how the architectural styles and church-types of that period were developed.

All the place-names and church-names used in this thesis are according to the recent 'Complete Gazetteer of Cyprus' which was published by the Cyprus Research Centre and Department of Lands and Surveys of Cyprus in 1987.

Drawings (engravings, drawings and photos) and early descriptions

Engravings

The earliest presentation of the monuments in the literature that has survived is seen in journals and sketches-engravings by many travellers[4] or official visitors (government officers etc) who visited the island during the Ottoman Period (1571-1878) and the British Period (1878-1960).

'The artists' perceptions were influenced by their backgrounds'. 'The British travellers, or these who had British patrons were mostly interested in the classical antiquities and the landscape'. 'The French on the other hand ...concentrated on preparing picturesque illustrations... In Cyprus they could admire their own culture in all its grandeur'. The artists *'.finished or worked up their pictures later at home from sketches made on the spot. Most illustrations were intended for future publications and very little was done just for pleasure. The representations are for*

[4]Severi gives a brief account of these engravings in her book: Severi, R. (2000). 'Travelling artists in Cyprus: 1700-1960'

the most part accurate and the little deviations that may occur were deliberate in order to include especially picturesque elements or to convey a message discreetly' (Severis, 2000:76-77).

The travellers' engravings have been informative but not always reliable. Often, we have discovered that the information they provide us with is either amateurish or intentionally incorrect. However, they are considered in this study, discussed and assessed, since they can be useful in some aspects.

Most of the travelling artists' sketches provide evidence of the various alterations carried out on the monuments through the years. Obviously, most of these are artistic rather than architectural. They present the outline of the buildings in their surroundings, the scale of the buildings and their structural condition (inhabited monument or in ruins). Some more detailed sketches and drawings provide us with architectural details, such as the forms and types of the buildings, the masonry and even some details of sculpture.

Bruyn's and Barsky's engravings

The most important are these of Bruyn and Barsky. These travellers' sketches are the only available source of visual information concerning the buildings' original layout, when these were partly or completely reconstructed long after they were built. The Monastery of Agios Chrysostomos in Koutsoventis is one of many examples. The monastery was originally built in the 11th-12th centuries, but the octagonal dome-hall church was reconstructed in 1891 (Stylianou 1957: 48). The engravings that have survived and which show this monastery are: Van de Bruyn's in 1683 (Figure 2.7); Barsky in 1735 (Figure 2.8); Ferrau in 1800 (Figure 2.9) and Otton von Richter in 1816 (Figure 2.10); (Severis, 2000: 22, 20, 86 and cover). These give us information on the monastery's layout and the type of its church's domes.

The very first engravings of the monuments we considered were drawn by Corneille Le Bruyn (1624-1719), a Dutch traveller in Cyprus, who visited Larnaka in 1683. His work was published in the book 'Voyage au Levant' (1683-1693), in Delft in 1700. His visits included Bellapais Abbey and Agios Chrysostomos in Koutsoventis,

and Famagusta. He recorded that he was not allowed by the Ottomans to visit Famagusta. However, he drew the first engraving of the city in 1683 (Figure 2.11) (Papanikola-Bakirtzis & Iacovou, 1998:278).

Bruyn's engraving presents the churches of Agios Georgios of the Greeks and the Latin Cathedral of Agios Nikolaos, from a distance. He shows Agios Georgios with a Byzantine dome above its central aisle. It is doubtful whether this is an accurate presentation, for three reasons. First, Enlart suggests that the churches had been abandoned in a ruined condition after being bombarded by the Ottomans in 1571 (Enlart/Hunt, 1987: 254). Secondly, Bruyn had only a brief look at the city from a distance. Thirdly, he may have drawn the dome on the church in his effort to express that this was a Greek Orthodox church and as such it must have a dome; or, he may have drawn the dome to emphasize the fact that the Greek Orthodox and Latin symbols were situated side by side in the city of Famagusta.

The most important series of engravings of Byzantine and Medieval monuments were produced by the Russian monk Basil Gregorovitch Barsky in the 18th century (Onou, 1934). The task of his life was to visit and describe churches and monasteries of the Eastern Orthodox World (Severis, 2000:14). Barsky visited Cyprus three times: 1726, 1727, and from 1734 to 1736 (der Parthog, 1995:251). In his journeys throughout the island he encountered more than sixty or seventy inhabited monasteries. He visited fifty of them and drew at least twenty or twenty four[5]. According to Barsky, more than sixty other monasteries used to exist, but they were deserted or destroyed (Stylianou, 1957: 45-6). Some of his drawings are from the following monasteries: Panagia Araka in Lagoudera (Figure 2.12), Stavrovouni in Pyrga (Figure 2.13), Trikoukkia in Prodromos (Figure 2.14), Archangel in Lakatameia (Figure 2.15), Agios Mamas in Morfou (Figure 2.16), Agios Neofytos in Tala (Figure 2.17) and Agios Georgios Regatos in Kyra (Figure 2.18).

Barsky's naive but acute observations provide the scholars of monastery architecture with descriptions, reliable information on the history and the treasures of the

[5]In his descriptions, Barsky, initially, said that he made sketches for twenty monuments, but in the end, he said he drew twenty four monuments. Only, thirteen of his drawings, however, have survived.

monasteries, as well as the circumstances (financial, religious spirit, events such as earthquakes etc) at the time. In his amateurish drawings (engravings) we can observe the type, style, scale and state of the churches at the time that he visited them.

Barsky provided useful historical information on the destructive effect on the buildings of earthquakes (i.e. in 1735) and historical information, where possible, concerning the founding of every monastery he visited. He sometimes provided information on the date of the buildings' construction (i.e. Agios Neofytos in Tala was under construction in 1571), and the patrons of many monasteries (i.e. Holy Cross in Arminou). He often described the construction materials of the walls of the churches (i.e. Agios Chrysostomos in Koutsoventis, Agios Neofytos in Tala, Archangelos in Lakatameia, Agia Napa etc) and the type of roofing (i.e. Trikoukkia in Prodromos, Agios Mamas in Morfou, Lampadistis in Kalopanagiotis, Agios Filippos in Arsos etc). Barsky assumed that the use of timber roofs in the Troodos Mountains (either for new buildings or to protect domed or vaulted churches) was due to the heavy snowfall and frost in the winter.

Barsky described a few monasteries and churches that were later destroyed (after the 19th century). For example: a) Panagia Zalakion[6] in Paphos, a monastery in a cave, which was destroyed in the 19th century; b) Agios Georgios Regatos which was demolished after 1974; c) Agios Filippos in Arsos, a domed church with a second timber roof above, which was destroyed and a new building was erected above its ruins. He also described monasteries whose churches only have survived today. For example: Holy Cross in Arminou, Holy Cross in Kouka (initially a parish church), Agia Mavri in Koilani, Agios Georgios Komanon in Mesana, Agioi Anargyroi in Foini, Trikoukkia in Prodromos.

Drawings

A few scholars made the first accurate survey drawings of the *Post-Byzantine* and medieval churches in the 19th-20th century. In the late 19th and early 20th century, Camille Enlart and George Jeffery produced many architectural and artistic drawings

[6] The monastery was destroyed in the early 19th century (Stylianou, 1957: 73). It is shown on Kitchener's map, dated 1885, as 'Panagia Zalakion' and not as a Monastery, which means that probably the church still existed until then.

of medieval (Enlart mainly) and *Post-Byzantine* monuments. All are very informative. Subsequently, from the middle to the end of the 20th century, some more scholars studied these monuments: George Sotiriou, A.H.S. Megaw, Andreas and Judith Stylianou, and Athanasios Papageorgiou.

The drawings of the 19th-20th centuries are important for the study of the scale, size, style and plan of monuments (at that time); their architectural details and sometimes the date, type and scale of any alteration. On the drawings of the churches, the alterations can be identified by observing the varying thickness of the walls.

In the last three decades, the Department of Antiquities has produced detailed, surveyed drawings of many churches for recording purposes (scales 1:20 and 1:50). They describe the structural condition of the monuments before any restoration or conservation work was carried out. At least fifty *Post-Byzantine* monuments were recorded, and the Department up to the year 1999-2000 produced detailed drawings.

Photographs

Photographs from the photographic archives of the Department of Antiquities (Appendix 6), the earliest are dated 1915, provide us with valuable information on the 'before and after' structural condition of any restoration of the monuments, and the materials and techniques used. Some photographs were taken while restoration work was in progress. In these photographs, the several stages of the conservation or restoration work can be observed.

They are a good source for detailed information on: a) the original fabric of the monument before any restoration work; b) the original plan, size and scale of the monument; c) the original construction technology (where possible) of parts of the monument i.e. domes, vaults, walls, (mainly when these were in a ruined condition); d) the effects of several destructions: i.e. earthquakes, landslides, fire): e) the architectural decorative features and details before they were disfigured and replaced by new ones: f) the wall construction techniques, the size and shapes of the stones or mudbricks before the walls were covered with plaster; g) the tools and techniques that were used for the conservation/restoration of the monuments.

A few representative examples are the photographs of Agios Filonas in Rizokarpaso, taken in 1946 (Figure 2.19), Archangel in Galata, taken in the 1950's (Figure 2.20) and Panagia Achiropoiitos in Keryneia, taken in 1953 (Figure 2.21). A small number of churches that are presented in these photographs have not been visited, either because they are inaccessible to the author or had already been destroyed. These churches could only be studied from photographs. All the examples and the information that they provide will be assessed in the appropriate chapters.

In the 1960s-1970s, many aerial photos of the villages and towns were produced for civil or military purposes. These aerial photos are now useful in order to verify the existence of monuments (or ruins) in remote areas which are inaccessible by other means of transport. However, they do not provide sufficient information, merely the specific location of the churches.

The churches in the Turkish occupied area that were inaccessible[7] to the author due to the political situation, were studied through recently published picture-books containing photographic material of the most recent condition of some monuments. Almost all the publications are records of the results of vandalism to the monuments by religious fanatics and are less informative concerning the actual structural condition of the monuments in detail.

Literature (including descriptions-drawings)

The study of the literature provides information in three areas: a) the style and typology of the churches: b) comparisons with other churches in neighbouring countries, i.e. Greece, Constantinople etc. and c) the chronology of the churches from inscriptions on their frescoes that have been studied by various historians. However, the chronology of the monuments according to inscriptions on the frescoes does involve the assumption that these frescoes were completed not long after the construction of the monuments.

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[7]Until April 2003, access was not allowed to the Turkish occupied area to the Greek Cypriots, including the author. However, the new political situation does not guarantee a safe access to the monuments. In addition, most of the monuments are currently in ruinous or bad structural condition, apart from a few that are in excellent condition.

As mentioned above, in the 19th and 20th centuries many scholars studied, described and recorded many churches: historians (Count L. de Mas Latrie, R. Gunnis, Sir George Hill, Camille Enlart), architects and archaeologists (G. Jeffery, A.H.S.Megaw). In the 20th and 21st centuries a few detailed studies have focused on specific monuments (emphasising the architecture and their frescoes) and were carried out by historians, archaeologists or architects (mainly officials in the Department of Antiquities): George Sotiriou, A. H. S. Megaw, Andreas and Judith Stylianou, Athanasios Papageorgiou, etc.

Camille Enlart

Enlart studied 'Gothic Art and the Renaissance in Cyprus' (1899) and focused on medieval monuments in order to identify the French and Italian influences on the medieval architecture of Cyprus; to observe the development of the Gothic and Renaissance styles and to record some architectural details and construction techniques of the buildings. Coldstream said that: *'the information he* (Enlart) *collected will remain of the utmost value. It was he who identified the church buildings, he who planned and recorded them'.* (Coldstream, N. Introduction in Enlart's translated book, 1899/1987: 10).

Enlart was the first historian who listed, described and thoroughly studied the medieval and Byzantine monuments of the period 1191-1571. He compared the imposing medieval monuments with the *'miserable Byzantine erections in the various villages'*. However, he was complimentary about the '*finest*' Byzantine churches and emphasized that Cyprus '*is extremely rich in medieval frescoes'* and mosaics. He admired the 14th century Byzantine frescoes (Enlart/Hunt 1987: 27-9). He had a deep and accurate background knowledge and love of medieval, Gothic and Renaissance art and architecture, as Coldstream implies in the Introduction to Enlart's book. Enlart's lack of knowledge and education in Byzantine and Vernacular architecture made him reluctant to acknowledge the smaller, humble, countryside Byzantine and *Post-Byzantine* churches. Despite the fact that he overlooked (but nevertheless briefly mentioned) the *Byzantine* and *Post-Byzantine* Monuments, his work led to more extensive subsequent studies.

Enlart's knowledge of the workmanship of masons and sculptors enables us to explain the existence of Gothic and medieval architectural details in *Post-Byzantine* monuments. The Gothic and Renaissance styles had already been out of date in the west when they were applied in Cyprus. The master masons and sculptors who built the monuments had been trained in the West during the period when these styles were flourishing. Subsequently, they were invited to Cyprus by the patrons who financially supported the construction of the monuments (Enlart/Hunt, 1987: 6-7).

Based on Enlart's information, we can assume that the medieval master masons and sculptors (from France and Italy) employed local builders for the construction of the medieval monuments. This assumption is based on the fact that the Gothic and Renaissance monuments were large in scale and size and required many builders and apprentices, as well as a considerable length of time (sometimes more than a few decades). These local builders learnt their skills on the medieval monuments, and then a few years (or decades) later applied these skills and knowledge to the construction of *Post-Byzantine*, and mainly *Franco-Byzantine*, buildings. They either worked as builders on these monuments or as master masons that inspected the projects.

The builders did not actually change their style within their lifetime but applied their skills to the construction of less complicated, less decorated buildings of a smaller scale. In addition, a number of builders of a different background, training and practical experience may also have been active. This assumption is based on observations of the visited monuments, particularly *Franco-Byzantine*, where Byzantine and medieval architectural details co-exist.

George Jeffery

Jeffery was an architect and an archaeologist who served as a Curator of Ancient Monuments in Cyprus. He studied, recorded and extensively surveyed numerous historical monuments on the island. He produced various drawings and used colour in some of them (Figure 2.22-2.23). In his many papers and publications, he provided us with valuable descriptions and drawings. His book '*A Description of the Historical Monuments of Cyprus*' (1918) provides us with historical and

architectural details, including drawings of the monuments and descriptions of the towns and villages existing in his time.

His wide knowledge of the historical monuments (ancient, medieval, Byzantine), and his background as a trained architect, enabled him to study in depth various aspects of the construction technology of the churches. Although his assumptions are not always accurate, at least he provides us with good information for further study. For example, he was convinced that *'the archaic roof-construction'* of the timber-roofed Troodos churches was a remarkable development of the Doric style of architecture, the roof of the Parthenon! (Jeffery, 1928: 45-59). Comparing the two roofs, however, the only resemblance that strikes one is the shape and the two-part roof, and not the construction technology, the architectural details or the reasons that resulted in the creation of the double-roof structure of Troodos churches (Figure 2.24-2.25). He based his assumptions on the fact *'that styles and methods of construction seem to have continued in use through long ages, without any evidences of development such as are customary in European countries'*. In this, he regards Cyprus as a remote island (Jeffery, 1928: 45). Moreover, contemporary scholars agreed with his assumptions! (Jeffery, 1928: 59)

It can be accepted that some vernacular construction materials and techniques have been continuously used through the centuries; for example, mudbricks were used in Neolithic settlements dating to 6000 BC and are also found in the vernacular houses of the 18th century. But in fact, the continuous use of these construction materials and techniques over the centuries has facilitated their development. Through the centuries, builders have continuously experimented on the use of materials and have been influenced by other cultures. Besides, one of the tasks of this thesis is to identify the influences of the western tradition on local Cypriot Byzantine architecture in the 12^{th} -16^{th} centuries.

In the particular case of roof construction, the knowledge and the skills passed on from one generation to the next have actually facilitated the development of a new roof construction. The carpenters realised that they had to invent a new roof construction strong enough to bear the weight of the snow, and designed and

constructed well enough to provide thermal and humidity insulation and which would be light enough for the supporting wall construction (mudbricks or rubble stone walls). Their experiment was successful, since these roofs survived under the peculiar local conditions: the climate with heavy snowfall in winter, the earthquake impact and financial restrictions. The materials used for the construction of the roof and the walls were always local.

It is believed that the earliest church that has survived and which actually had this roof-construction originally is Panagia Church in Moutoulla, which dates to 1280. No evidence or documents have survived to describe the original module of this roof type. The roofs' lack of maintenance through the centuries has resulted in their very frequent replacement since their original construction. The earliest reliable evidence we have is the date of 1718 on the tie beams of some timber-roofed churches in Korakou (i.e. Agia Varvara).

A recent doctoral thesis, which was undertaken by Charis Fereos at the National University of Athens in 2000, has suggested that this roof was created by local builders and was influenced by the Western European timber-framed traditional buildings. Fereos has produced a list of 102 buildings dating from 1280 (the date of Panagia Church in Moutoulla) up to the 19th century. He suggests that in the 13th-14th centuries Cypriot builders were used as a labour force by the crusaders in the construction of military structures. Subsequently, these builders travelled and worked in the West on the building sites of timber-roofed constructions. They then returned to Cyprus eventually and built the timber-roofed churches. He actually bases his assumptions on the similarities he observed in a few construction details of some western timber buildings with those in Cyprus. Since no Gothic building in Cyprus had a timber roof, he assumed that the Cypriot builders had definitely travelled in the West. However, his assumptions are not quite convincing.

Despite the fact that this roof type has been studied, discussed and compared to other contemporary examples, whether earlier, Greek, in neighbouring or European countries, no actual convincing resemblance has yet been documented. No research has resulted in accurate and well documented results, only assumptions. A few

scholars (particularly geologists, who have studied the geology of the Troodos Forest) have tried to compare this roof construction with contemporary ship building. They believed that the construction of the roof is similar to that of a ship. Marine architecture was prevalent on the island at the time this roof construction appeared. Timber from the Troodos mountains was used for both ship and roof constructions (Geological Survey, 1997). Their assumptions imply that the builders of the area of Troodos consulted ship-builders on their plans to improve roof construction! Further discussion on the matter will take place in the relevant chapter.

George Sotiriou

Sotiriou, an architect from Athens, was invited in the 1930s by Archbishop Kyrillos III to study the Byzantine monuments of Cyprus: the Early Byzantine 7th-9th centuries, the *Byzantine* 10th-12th centuries, and the *Franco-Byzantine* 13th-19th centuries (Sotiriou, 1932: z). He recorded the important *Byzantine* churches, their frescoes and icons. Sotiriou provided drawings and photos of many churches. He highlighted the importance of the *Franco-Byzantine* style, dating to the 13th-19th centuries, in the Cypriot History of Architecture (Sotiriou, 1932:2). This architectural style was, however, disregarded by the historian Hill:

'It is customary to speak of the Franco-Byzantine style of architecture, and the term may be retained for convenience sake: but it is not so much a harmony as a wavering mixture of tendencies' (Hill, v. iii, 1948: 1118).

'*Franco-Byzantine* style' is a term that is used to characterise monuments whose architectural design combines Frankish and Byzantine details. The combination of the two styles was not always harmonious; however, further observations of these monuments allow the division of this style into sub-categories.

First, at least two sub-categories of the Franco-Byzantine style can be distinguished:
a) Byzantine churches which have been influenced in their scale and architectural details by Frankish buildings (i.e. Agios Mamas in Morfou and Agia Aikaterini in Kritou Terra),
b) Greek Orthodox churches that were built in a Frankish style-type-construction

with Byzantine architectural details (i.e. Agios Georgios of the Greeks in Famagusta, etc).

Secondly, based on Sotiriou's chronological order of *Franco-Byzantine* monuments and on Stylianou's descriptions (see review below), a scholar can trace a development of the *Franco-Byzantine* style through the years, especially from the 13th-16th centuries. This development happened in certain areas. The main purpose of this thesis includes the study of the development of this style, as well as the investigation and discussion of the reasons and the circumstances under which this particular development took place.

Sotiriou and Stylianou used the general term *Franco-Byzantine* to name the churches that combine Byzantine and Frankish details. The purpose of our study is to study these churches in detail and discuss any common architectural details they share. In addition, these are classified into sub-categories according to the way they use the architectural details from each style. Several ways were identified: a) the details from the two styles may be put side by side; b) the details from the Byzantine style dominate these of the Frankish; c) the details from the Frankish dominate these of the Byzantine, and d) the combination of the two styles has produced a new style.

A.H.S. Megaw

Megaw is an archaeologist who excavated sites (in the middle 20th century) of Byzantine basilicas and studied the monuments with their architecture and their decoration: frescoes, mosaic floors and sculptured marble decorative features. His publications provide us with information on early Byzantine architecture; for example, how the Byzantine style originated and developed in Cyprus. Megaw strongly believes that the Byzantine churches of the late 10th and early 11th centuries have been influenced in style, type, decoration and construction by the Byzantine churches in Greece. He says: *'The appearance of these large-domed churches and the introduction of brick construction attest the arrival in the island of master builders trained in the central Byzantine tradition'* (Megaw, 1974: 83).

The few new church types, such as the octagonal-domed church and the cruciform

type with a small dome on four columns, the inscribed-cross church with four piers, which were introduced into Cyprus in the early 11th century, the brickwork and the cloisonné stonework that is used on some of these churches, all resemble contemporary churches in Greece. Megaw also believes that the influences from Constantinople and the close ties between Constantinople and Cyprus in the 10th-11th centuries due to the political situation, continued even after the island was acquired by the Latins. He says: *'Cyprus still retained close ties with Constantinople, ties which left an imprint on Cypriot church building and decoration that was long to endure under Latin rule'* (Megaw, 1974:88).

Megaw's information is useful for the purposes of this thesis, since it provide us with a thorough study and conclusions concerning Byzantine architecture in Cyprus in 3rd-10th centuries, just before the period with which this thesis is pre-occupied.

Andreas and Judith Stylianou

Stylianou A& J, were two archaeologists who studied Byzantine and medieval monuments for nearly 40 years and produced numerous publications, books and guidebooks. They contributed to present knowledge by gathering important information on Byzantine church Architecture and frescoes, and the medieval Cartography of Cyprus. They made an effort to analyse the development of *'Byzantine Art'* (mainly frescoes) and discuss *'Byzantine Architecture'* in Cyprus of the period 1191-1571. They studied, reviewed, and translated documents that they are found in libraries abroad, among them 'The Travels of Barsky in Cyprus'.

In their study on *'Byzantine Architecture'* 1191-1571 (*Post-Byzantine* Architecture as it is named in this thesis), A. and J. Stylianou described the most representative church-types and tried to trace their development within this period. Their studies showed that some church types continued from the earlier Byzantine period to the 12th-16th centuries with only minor changes (Stylianou, 1996:1230). They said that the *octagonal plan* was discontinued in the 12th century, the last example being Antifonitis Church in Kalogrea. They believed that the *inscribed cross in square with dome* type is the most common type in this period (12th -16th centuries).

They discovered that the earlier *simple cross plan with dome* is sometimes altered into the *inscribed cross in square* type with the addition of four compartments in the four corners of the cross. For example, Chryseleousa in Emba was originally a *simple cross-domed* church that was altered in the 13th and the 15th centuries, and was eventually converted into *a cross-in-square with dome* church. The *simple cross-domed* type was continued only in the Paphos area, however, where two examples are found: Panagia in Chloraka and Agios Theodosios in Achelia (Stylianou, 1996: 1230-1232).

In the 12th century particularly, the most common type throughout the island was the *dome-hall type*, a simplified inscribed cross in square type, which has three 'blind' arches on each side wall with the dome in the centre (Stylianou, 1996:1233). In the 15th -16th centuries, the *single- aisled vaulted* church was widespread on the island. This type was common in *Post-Byzantine* and Latin small churches and chapels (Stylianou, 1996: 1235).

In the meantime, on the Troodos mountains a peculiar type appeared: the *timber-roofed church*. It is not known when this type was first introduced, but the earliest example found dates to 1280. This church type was initially a *single-aisled* church, while a narthex was added later to the west and side aisles. Sometimes the side aisles are enclosed areas in the form of a covered veranda (Araka, Platanistassa), or are passages that are enclosed on both sides by masonry walls (Podithou) (Stylianou, 1996:1236-7). This roof type was also used to protect the roofs, vaults and domes of some earlier churches, for example, Agios Nikolaos tis Stegis in Kakopetria (11th century), Panagia in Araka (1191), and Panagia in Asinou (1099). Information gained from archaeological excavations of other churches indicates that this type existed before the 13th century (Stylianou, 1996:1239).

In the 13th-14th centuries, the Latins summoned their masons and architects and erected a number of medieval Gothic and Renaissance Cathedrals and churches. In the 14th century, the *Franco-Byzantine* style made its appearance. The masons and builders copied construction and morphological details from the medieval monuments and used them on Byzantine church buildings (Stylianou, 1996:1241).

Even the size and the scale of the monuments were affected. The important *Post-Byzantine* churches were larger in scale than in earlier periods and were built with ashlar masonry. The village churches, however, continued to be built smaller with stone rubble. According to Stylianou, the Greeks were always reluctant to re-use Latin churches. During the Ottoman period, all the medieval churches were either converted into mosques or used as quarries, while none was re-used as an Orthodox church! (Stylianou, 1996:1246). At the present time, visits by the author to the churches indicate that many are now in use by the Greeks.

Andreas and Judith Stylianou carried out very informative and well documented research on the type of church monuments found in the period 1191-1571, studying representative examples of these types. However, in the monuments visited by the author, other types and sub-types have also been found. In addition, many other monuments can not be classified into particular types, due to their unique character. The author has agreed on many aspects that were discussed by Stylianou; in a few others, however, she disagrees. All these will be discussed in Chapters 4 and 5.

Athanasios Papageorgiou

Papageorgiou is an archaeologist, who worked at the Department of Antiquities and the Research Centre of Cyprus Archbishopric. He served as Director of the Department for a few years in the 1990's. He studied and restored many Byzantine monuments, and published most of his research on *Post-Byzantine* Architecture and Art in the ARDAC (Annual Reports of the Department of Antiquities, Cyprus), contributing Conference papers and other publications (i.e. Dumbarton Oaks Papers, the Holy Archbishopric of Cyprus publications) on Byzantine Architecture. His contribution to this field focuses on his observations and recordings of some Byzantine churches. For example, he traced the development of the timber-roofed churches of the Troodos area from the 12th to the 20th century, and recorded the cave-chapels all over the island. In many of his conclusions concerning Byzantine churches, he compares some Cypriot Byzantine church types with their contemporary types in Greece and Constantinople.

For the purposes of this study, the most useful information from Papageorgiou's

work is his recordings of the above-mentioned group of buildings (timber-roofed churches and cave-chapels), and scattered descriptions of other *Byzantine* and *Post-Byzantine* churches. He provides historical information (dates of frescoes, type of the plan, sketches and drawings); however, other scholars disagree with his conclusions (Filotheou, 2001: 388).

He undertook restoration work on many Byzantine churches, in which he replaced much of the original fabric with new. In the *timber-roofed* churches, he replaced almost all the existing roofs with new ones, resulting in the loss of many of the original construction details.

Other scholars

Gothic and Venetian political and architectural history has been studied recently by several scholars, including Nicola Coldstream, Gianni Perbellini and Peter Edbury. Coldstream was mainly interested in the Latin Architecture of Nicosia and Famagusta, whereas Perbellini mainly focused on the Venetian fortifications of the two cities. Edbury has provided us with information on the political history of the island during the crusades, and the Lusignan period up to the arrival of the Genoese (1191-1374).

The Annual Reports of the Department of Antiquities

The Annual Reports of the Department of Antiquities[8] are an important source of information for the purposes of this thesis, and provide the following:

a) Photos and drawings of the monuments before and after any restoration work was carried out.

b) Reports on the work that was carried out, and/or details of the material used.

c) The various phases of restoration.

d) Reports (dated before 1974) on monuments that are now inaccessible to us, being either located in the occupied area in the Northern Cyprus, in other remote areas, or in a state of ruin.

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[8] In 1874, the Ottoman Government issued a set of regulations in order to protect the archaeological sites and the important monuments. In 1883, the British founded the Cyprus Museum under the patronage of the High commissioner in Cyprus. Later, in 1890, the British Government issued a new set of improved regulations in order to control any destruction of the monuments. The Department of Antiquities was officially founded in 1935 (MKE, v.1, pg. 346-347).

The most important publication by the Department of Antiquities (for this thesis) was the Listed Monuments (Grades I & II), dated 1999 and recently revised in 2000. The publications of the above scholars, and the Great Cypriot Encyclopaedia (MKE), made it possible to identify which of these Listed Monuments originate in the period 1191-1571.

Dumbarton Oaks, Centre for Byzantine Studies

An important professional organisation that has ever contributed to the knowledge of Byzantine, Post-Byzantine and Medieval Architecture in the Eastern Mediterranean region, is the Dumbarton Oaks Centre for Byzantine Studies (Trustees for Harvard University, Washington, District of Columbia). This Centre organises conferences and publishes articles on Byzantine Art and Architecture in all the areas that were under the influence of the Byzantine Empire: Cyprus, Greece, Turkey, Armenia etc. Its publications on Cypriot Byzantine Art provide information on the frescoes of some of the *Post-Byzantine* monuments, facilitating the dating of these monuments.

Many other studies, articles and conference papers that deal with Cypriot Byzantine and Medieval History and Art have also assisted the chronology of the monuments. Historical events, mainly disasters like battles or earthquakes, may have been connected with the destruction and reconstruction of some monuments. No written documentation is available concerning the construction of any monument.

Interior frescoes in the churches

The interior frescoes in many of the 59 decorated churches (Appendix 5), have proved to be the most valuable and reliable source of information for the author. These provided us with inscriptions, dates and drawings. Twenty one churches had inscriptions that gave us the date of the erection and/or decoration of the church. Seventeen of these have been preserved. In ten of these churches, the donors for the erection of the churches or their decoration are represented on the frescoes.

In eight of these churches, the donors and a model of the original church is presented on the frescoes (Appendix 5). These are: Panagia in Asinou, built 1099-1105 and decorated 1105-6 (Figure 2.26); Panagia in Moutoulla, built 1280 (Figure 2.27);

Agios Dimitrianos in Dali, restored or reconstructed in 1317 (Figure 2.28); Archangel in Pedoula, built and decorated in 1474 (Figure 2.29); Holy Cross Agiasmati in Platanistassa, decorated around 1494 (Figure 2.30); Podithou in Galata, built in 1502 (Figure 2.31); Archangel in Galata, which was decorated in 1513 (Figure 2.32); Chrysokourdaliotissa in Kourdali, dating to the 16th century (Figure 2.33). In Moutoulla and Kourdali, the icons of the church presentations have not been preserved in good condition, and are hardly readable.

The most significant information provided by these fresco-icons is the plan and style of the churches[9]. Very important information that has otherwise been lost is provided by these icons. This information concerns the plan, size and scale of the church, its roofing type, its windows' and doors' decoration, the use of plasters and mortars on the walls and the type of construction material. For example, on the fresco-icon, which presents the Church of Agiasmati (Figure 2.30), we realised that the west gable was originally built as a timber-framed structure, which had later been replaced with masonry wall. This detail proves that the timber frame structure which was created in the western European countries in the medieval period was known in Cyprus at least since 1494.

In addition, on a few inscriptions we gained information concerning the names of the painters, and the names and professions of the donors for the erection and decoration of the churches. The inscriptions may also specify the date of the erection and the date of the completion of the decoration. Most of these frescoes, apart from a few, are preserved in excellent condition. It is not known yet, however, whether these presentations of churches existed in other painted churches as well, and have either been destroyed or are still hidden behind a layer of plaster or layers of later frescoes.

In cases where the dates of the construction and decoration are not known, the style of the frescoes is the *terminus post quem* for dating the monument. We can only assume that the frescoes have been done not long after the monument was built, as in some churches of the 14th-16th centuries.

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[9] The presentation of the churches on their interior frescoes is an important topic that has not been studied in detail yet. These frescoes are only mentioned briefly by Stylianou in the book: 'Painted churches of Cyprus'.

Conclusions

Historians and scholars of Byzantine Architecture always classify the monuments into types according to their plan and roof form. They have as prototypes the Byzantine types of the churches in Constantinople and Greece, and they refer to them when they study Byzantine churches in other Byzantine provinces. However, the Byzantine churches in Cyprus, as observed during the author's visits, have an indigenous style, found nowhere else. That style may indeed in many examples resemble the style and types of their contemporary churches elsewhere, but the Cypriot churches follow the basic typology rules in a different way, and there are also considerable variations from one church to another. There are of course, some exceptions to this trend. The parameters that are considered in classifying the Cypriot churches into categories are based on the plan, roof-type and roof construction, scale, size, the architectural details and wall construction.

This thesis, among its other aims, intends to identify and understand the rules that define the church types of the *Post-Byzantine* monuments in Cyprus, their variations, and their development in the period 1191-1571. The knowledge we gain from the above sources of information enables us to date the monuments, understand and acknowledge the standard church types: *dome-hall*, *single-aisled vaulted*, *inscribed cross-in-square with a dome*, *simple cross plan with a dome*, *timber-roofed* church and *three-aisled basilica*. This knowledge is useful in order to answer a series of questions that were raised after visiting the monuments (see Chapters 3, 4, 5).

Nearly one third of all *Post-Byzantine* monuments have not been visited, mainly because they are inaccessible to the author. The study of these monuments has been based on the descriptions of scholars and on the photographs mentioned earlier. A number of monuments, around five per cent, have been either demolished, destroyed or are in a crumbling, ruined state. These monuments were also studied through the literature and earlier photographs, when these were available. A very small number of important (for the purposes of this study) historical monuments that have not been visited, could only be studied from the above-mentioned written documentation.

2.2. Information review derived from the visits to the monuments; their structural condition and accessibility.

Introduction

Fieldwork has revealed that the structural condition of some monuments has been an obstacle, which has partly affected the results of this research. Historical and political circumstances, natural disasters and man-made destruction have caused damage to the fabric or the structure of a few churches. A number of them have been altered, disfigured, ruined or demolished. Their original fabric has been destroyed or left to deteriorate.

Accessibility was another obstacle in the study of 95 *Post-Byzantine* churches. Their location in remote areas and other difficulties, such as political circumstances or unexpected events, have prevented access to them. Access to 23 churches in the south of Cyprus was restricted, due to various reasons, whereas, in northern Cyprus, 72 churches were not visited due to the political situation prevailing (during the fieldwork period). Consequently, the literature, engravings from journals, old photos and drawings from the archives of the Department of Antiquities were utilised as the sole source of information for the inaccessible churches. However, the reliability of those sources will be assessed for the purposes of this thesis in the chapters that follow.

The effects on the structural condition of the churches by historical and political circumstances, natural disasters and man-made destruction, are analysed in a sequence of steps. The first deals with the circumstances under which the original fabric of the churches has been damaged. It gives a brief historical reference to the circumstances and defines the regions of the island that have been affected. The second step outlines how destructive the effect of man-made and natural disasters on the churches was, and assesses the existing structural condition of the churches recorded during the author's visits. The third step sets out the results: what historical information the visits to the churches have provided for the purposes of this research.

Historical circumstances; natural and man-made causes of decay and disasters

The circumstances that have defined the current structural condition of the churches are classified into two categories, natural and man-made. The natural causes of decay and disasters are earthquakes, extreme climatic conditions in certain areas (very low and very high temperatures), heavy rainfall, strong winds, and biological or botanical causes. The man-made causes of decay and disasters are desertion, neglect and lack of maintenance, vandalism, accidental fires, deleterious conversions of the churches, or misuse.

Natural causes of decay and disasters

The natural causes of decay and disasters are defined by location and climate. Earthquakes, extreme climatic conditions, heavy rainfall and strong winds are often experienced in specific parts of the island.

Earthquakes

Earthquakes (Appendix 1) are the result of the existence of the Cyprus Tectonic Arc, 20-25 kilometres south of the island, which has a series of gaps with north-eastern and south-western directions. This seismic zone affects the south, south-west and south-east districts of the island: Paphos, Limassol and Larnaka. The island is located in the Earth's second most important seismic zone[1]. Its seismicity is a result of the tectonic activity of the interaction and movement of the African and Eurasian lithosphere plates.

The earthquakes are the main enemy of the buildings' structural stability[2], in Cyprus. It is important for the purposes of this study to have a brief historical retrospect of the most catastrophic earthquakes that have caused damage to the churches in the

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[1]This seismic zone extends from the Atlantic Ocean lengthwise to the Mediterranean basin through Italy, Greece, Turkey, Persia, India and the Pacific Ocean. Historical references and excavations give evidence of the destructive effect of earthquakes in Cyprus through the centuries. Thirty severe earthquakes occurred between 1500-1900 (Geological Survey Department, Krambis,1997 :128).

[2]The earthquakes generate acceleration movements that create external forces, causing cracks to the buildings and disturbance to the geological balance of the site.

period 1191-1571. Documentary study provides information for a few churches that were damaged or destroyed by earthquakes and those that were restored, altered or reconstructed after the earthquakes.

In the Byzantine period (the early 12th century) a series of destructive earthquakes struck the Paphos district and destroyed many Byzantine churches: in 1157 (Jakovlevic, 1997:18), in 1159 the Basilica of Panagia Limeniotissa in Paphos was destroyed (der Parthog, 1995:39); in 1183 some fifteen churches in the Paphos area collapsed (MKE, v.12, Pg.172). Some of those damaged churches[3] were later reconstructed using the existing ruins, or *'spolia'*, as building material.

In the medieval period[4], 1191-1571, a series of destructive earthquakes in 1222, 1491, 1567, and in 1577, caused damage to the churches in the coastal areas of Paphos and Limassol and also in the Nicosia area. In 1222, significant churches in Limassol and Paphos[5] were affected. In 1491, an earthquake caused the collapse of a few churches in Nicosia (including the Agia Sofia Cathedral), while in 1567 the whole island was affected (MKE, v.12, Pg. 172, 174, 176). There is no information on specific churches that were damaged at that time.

In the period 1571-1900, the most catastrophic earthquakes affected Limassol, Famagusta, Nicosia, and Paphos. In 1577, many churches and houses in the Limassol area collapsed, as mentioned by the medieval historian Machairas[6] (MKE, v.12, Pg 176). In 1718, a number of churches were damaged, in Nicosia, and in 1735, in Famagusta, collapsed (Stylianou, 1957: 45). In 1896, an earthquake struck

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[3]The basilica of Panagia Limeniotissa was destroyed in the 1159 earthquake and was rebuilt in 1200. That monument was completely destroyed in the earthquake of 1222.

[4] Article written by A. Panagiotou in MKE, v. 12, Pg 172. The original source is: Galanopoulos A.G. and Delimbasis N.D. (1965), The seismic effect in the area of Cyprus (in Greek). Athens Academy, Athens.

5 The Fort, 'Saranta Kolones' Castle, the Cathedral and the Port in Paphos, all suffered destructive damage that was compounded by the huge seismic waves that followed.

[6] The first original source is the 'Chronicle' of Leontios Machairas that can be found in the Library in Venice. In the Filokypros publications 1989, Pg 160, note no.5, there is a translation in Greek of the written document by the traveller G. Boustronios.

in Episkopi, Akrotiri and Limassol town. In 1900, an earthquake affected the whole island, and in particular Nicosia.

In 1941, an earthquake measuring 6.5 degrees on the Richter scale, destroyed houses in the Famagusta and Nicosia districts and also affected Egypt, Lebanon, Israel and Turkey. In 1953, another 6.5 degrees earthquake struck in Paphos, causing the abandonment of many villages (Yioutani, 1995: 124) and damage to many churches (Panagia Chorteni Pelathousa, Figure 2.34). In the recent visits to the churches[7] in the Paphos district, the author recorded a number of those affected by that earthquake. Representative examples are the churches in the village of Choulou: Agios Georgios, Panagia, and Agios Theodoros. In the first, the walls lean to one side (they are losing their stability). In the second, the altar was completely destroyed. In the third, the upper parts of the exterior walls and roof collapsed. The first two churches were partially reconstructed, while the latter church was left in ruins. In 1961, an earthquake measuring 6.0 degrees on the Richter scale struck Famagusta and Larnaka (MKE, v.12, Pg 172)[8].

The most recent destructive earthquakes were in 1995, 5.6 degrees on the Richter scale (Yioutani, 1995: 124), and in 1997-8. Both caused serious damage to churches in the Paphos area. The Department of Antiquities recorded and carried out restoration (Panagia in Akourdalia) or reconstruction schemes (Panagia Chorteni in Pelathousa) on those churches.

Climate

The island's climate is characterized by extreme climatic conditions, with temperatures that range from very high in the summer (up to 40-45 degrees Celsius) to quite low (down to -10 degrees Celsius in the mountains) in winter, and these seasonal changes in the temperature have a destructive effect on the structures.

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[7]The local villagers provided historical information for the structural condition after the earthquakes, before any restoration work took place.

[8]The original source for the earthquakes from 1900-1961, is G. Neofytou, 1977. No more details are given in the MKE for that particular source.

'All the materials expand when heated and contract again when cooled...called thermal movement which is a major cause of decay in buildings' (Feilden, 1995:94).

Building materials expand and contract in a different way. Thermal expansion causes irreversible damage, destructive for the whole structure, which is increased when the building materials are incompatible. Classic examples have been observed in even some recently restored churches: the cement mortar used for pointing or rendering the walls has fallen apart and the masonry walls suffer erosion after the first summer-winter cycle. Frost has caused cracks on the masonry walls, saturation of the mortars and fractures of the less frost-resistant stones. The most vulnerable churches are located in the mountainous areas of Troodos (i.e. Agios Ioannis Prodromos in Mesapotamos, Figure 2.35).

Frost and snow have, also, caused erosion problems and disintegration of the traditional porous building materials which have a very low resistance to water penetration, such as porous stone and mudbrick. The most vulnerable churches are those that were built with 'pouropetra' stone, soft and porous sandstone extracted from quarries around Nicosia. This stone was widely used in the Nicosia area but also elsewhere.

'The presence of water in any form causes or accelerates the decay of most building materials' (Feilden, 1995:98).

Similar results, erosion and disintegration of the building material, are caused by the moisture and rising humidity from the foundations of the structure, particularly after heavy rainfalls. Incompatible materials react differently to the moisture effect. The following damage was observed on churches throughout the island: a) the stones of the foundations have eroded but the cement pointing has been preserved in a good condition; b) the crystallization of ground salts has disintegrated the plaster and eroded the masonry.

Heavy rainfalls caused saturation and erosion of exposed timber structures such as the perimetrical panel of the covered veranda and the timber gables of the roof in Panagia Araka Church in Lagoudera. The most extreme and destructive effect of heavy rainfall[9], however, is landslip, landslide and subsidence. The results are serious cracks in the structures (Panagia Asprovouniotissa in Frenaros, Figures 2.36), as well as erosion from water penetration.

Sea water carried by strong winds has caused saturation and erosion to the building material of the churches in coastal areas (Agia Varvara Church in Sotira, Figure 2.37). The mortar used for pointing is washed away and the masonry walls are eroded. Strong winds have also caused erosion to the walls (masonry or mudbricks) of churches located in exposed areas, such as Agia Paraskevi Church in Kato Akourdalia, which is located above a gorge. The wind, in combination with the rainwater, has also caused extensive damage to the porous material of exposed churches, for example in Akaki Tower (Figure 2.38), where the upper wall has already badly disintegrated.

Biological and botanical causes

Biological and botanical causes were observed in neglected churches all over the island. Vegetation, plants (Agios Ilarion in Episkopi, Figure 2.39) and trees (Agios Georgios Koili, Figure 2.40) have grown on the exterior masonry walls of many ruined churches and fungi and moulds on the interior walls where there is not enough ventilation (most chapels have very few windows, which in any event are tiny).

The long-term abandonment of the churches has caused extensive and irreversible damage to their fabric. The erosion from vegetation, fungi and water (in its various forms), diminishes the resistance of the structures to any natural disaster, such as earthquakes and heavy rainfall, making them more vulnerable to vandalism.

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[9] In January 1969 and recently 2000-2001, the heavy rainfalls proved very catastrophic for churches in certain areas, Limassol, Larnaka and Famagusta.

Man-made causes of destruction and decay

Man-made causes of destruction and decay are mainly abandonment, neglect, lack of maintenance, accidental fires, vandalism, deleterious conversions of the churches, or their misuse.

The abandonment, neglect and lack of maintenance or preventive measures have caused irreversible damage. They prolong the decay that was caused by natural causes (vegetation growth, erosions from thermal expansion and water penetration, etc) and weaken the strength and resistance of the building materials. They make the structure vulnerable to more destructive effects, such as earthquakes, heavy rainfalls and vandalism.

The most vulnerable structures are the cave-chapels and churches in ruins. The lack of regular maintenance and simply of ventilation of the cave-chapels (Agios Antonios in Sotira and Agios Eftychios in Dali) caused damp in their interior walls and ceilings. The neglect of ruined churches (Agia Marina in Kantou, Figure 2.41), Archangel in Prastio Avdimou, Agios Mnason in Potamia[10], Agios Athanasios in Agios Theodoros, Agios Eftychios in Mathiatis and many more) has increased the danger of their collapse. In some cases, neglected churches have collapsed after a minor catastrophic event.

Accidental fires

Fires, often caused by candles, have burnt down a number of roofs among the timber-roofed churches in the Troodos area[11], and destroyed the interior frescoes and furniture. An accidental fire destroyed the roof and parts of the walls of the Church of Panagia tou Kampou in Akapnou (Figures 2.42) in 1973, just after restoration

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[10]The upper part of the church of Agios Mnason is currently falling apart, whereas the catacomb below has survived in excellent condition.

[11]Some monasteries, such as Kykkos and Machairas were originally built in the 11-12th centuries. They were completely destroyed a few times by destructive fires and later, they were reconstructed and altered several times causing the loss of any historical evidence of their original plan. Therefore, they are not included in the list of churches of this thesis.

work had been completed. The destroyed parts were later reconstructed based on the drawings prepared for recording purposes during the first restoration work. Another fire burnt down the roof and nave of Agioi Anargyroi Church in Foini. The altar and the altar apse (Figure 2.43) have survived, and the nave was later reconstructed.

Vandalism

Vandalism, caused by religious fanatics, has destroyed the historical fabric and decoration of a great number of churches. The fanatics often caused damage to the frescoes and furniture of the churches (i.e. the Cave of Agios Neofytos in Kouklia, Agia Marina in Mirminkofou).

Vandalism in its extreme form has occurred particularly - but not exclusively - in many religious churches in Northern Cyprus[12] after the Turkish invasion of 1974. The historical churches that are located in that part of the island have been vandalized, plundered, destroyed or demolished.

Historical frescoes were stolen from, or destroyed in, the churches of Panagia Ypati in Agios Amvrosios in Keryneia, Antifonitis Monastery in Kalogrea, Agios Georgios in Rizokarpaso, Agios Iakovos in Trikomo (Demosthenous, 2000:150, 124-149, 214, 270). Historical mosaics of the 6th century B.C. were removed from the Church of the Monastery of Panagia Kanakaria in Lythrangomi[13]. The stolen historical pieces of art were stolen so as to be smuggled and resold abroad.

Two significant monasteries that were completely demolished are those of Panagia in Avgasida (Demosthenous, 2000:280) and Agios Georgios Regatos in Kyra. The churches were used as quarries and their building material, timber and stone, were re-used elsewhere.

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[12]In 1976, UNESCO's representative Dalibard visited officially Northern Cyprus and reported the damages and the missing treasures from the churches and museums. Several articles in Turkish newspapers also confirmed that on 11.3.1979, 1.4.1980, 23.5.1980,16.10.1980, 24.7.1981, and 21.5.1982 (MKE, V.1, Pg.344).

[13]After long legal battles those were returned to the Church of Cyprus. No information is given for a series of mosaics, also dated in the 6th century BC, of the abandoned church of Panagia Kyra in Livadia of Famagusta (Demosthenous, 2000:41, 228).

Destructive conversions and misuse

Destructive conversions and misuse have occurred in many churches: a) Agios Eulalios and the Monastery of Panagia Achiropoiitos, both in Karavas, are used as warehouses for the army; b) Panagia Trapeza in Acheritou and Panagia Eleousa in Rizokarpaso are currently used as stables (Demosthenous, 2000: 176, 222, 232). A few churches have been converted into mosques. Many churches were abandoned and are gradually decaying (Agios Evlalios Karavas).

The only churches that have been preserved in good condition are the monasteries of Panagia Tochniou in Mandres and Agios Varnavas, both in Famagusta, and Agios Mamas in Morfou (Demosthenous, 2000: 208, 296-300, 266-268). The last two are used as museums. Two churches that are located in the United Nations zone have been recently restored by the Department of Antiquities; Agios Neofytos in Troulloi, Agia Marina in Deryneia.

Conversions

All Greek Orthodox churches and medieval Cathedrals[14] in the Muslim territories within the towns, as well as in a few villages, have been converted into mosques. Examples of Orthodox churches in towns are: Holy Cross Misirikou Nicosia (Djami Arablar), Agia Sofia in Paphos (Figure 2.44) (Djami Kebir). Examples in villages are: Agia Aikaterini Pelathousa, Agios Georgios in Episkopi, Agios Andronikos in Polis, Agia Sofia in Timi, Agia Aikaterini in Klaudia.

The conversions into mosques[15] have rarely caused irreversible alterations to the structure of the churches, apart from the addition of the minarets. However, extensive alterations in a few cases have resulted in the loss of their historical value

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14 Examples of medieval Cathedrals in towns are: Agia Sofia Cathedral and Omerye Djami (St. Mary of Augustian) in Nicosia, Djami Kebir (Holy Cross) and Temeno Tousla (former medieval church) in Larnaka, Djami Kebir Agia Sofia Mosque (Agios Nikolaos) in Famagusta, Djami Kebir in Limassol, etc.

15 The Department of Antiquities, is carried out restoration work on s number of churches in order to reverse some alterations and interventions (i.e. uncover frescoes) . Some examples are; Agios Andronikos in Polis Chrysochou, Agia Sofa in Timi.

and the original churches are no longer recognisable[16]. In addition, their historical frescoes have been plastered[17] over. The process of plastering required the preparation of a rough underlay surface. The Muslim builders have destroyed parts of the frescoes, knocking them out with a hammer (Agios Georgios Episkopi, Agios Andronikos Polis, Figure 2.45).

Assessment of the churches' structural condition derived from the visits

The visits to the churches enabled the author to assess the structural condition of the churches and to observe the damage brought about by natural and man-made decay and destruction. The main concern was to gather enough historical information about the original architectural style, type and construction technology of the churches.

The issues for discussion that the visits to the churches have raised, regarding the structural condition of the churches, are diverse. Firstly, it has been observed that in some cases the structural condition of the churches was excellent but the historical information was completely eliminated; the continuous restorations and reconstructions (after a series of historical circumstances) have altered the authenticity of the churches.

Secondly, it was noticed that the construction material in some churches, or the location of the churches on the site, made them vulnerable to natural elements of decay. Representative examples are the cave-chapels, which are vulnerable to water penetration through their roof, and the churches that were built of porous material (*pouropetra*, mud bricks) and are exposed to extreme climatic conditions (frost, strong winds, sea water).

Thirdly, it was observed that the use of vulnerable construction materials (i.e. those left unprotected) and careless use of technique (either initially when the monument

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16 Those are: Omerye Djami in Nicosia, Djami Kebir in Larnaka, and Djami Kebir in Limassol.

17 It was observed in many churches in the Southern Cyprus.

was built or later, during restoration work) caused the failure of the structures due to natural elements of decay. For example: a) vertical cracks and fractures were caused where consecutive vertical joints existed on the masonry walls; b) cracks and fractures appeared (due to the thermal expansion of the materials) where incompatible and inflexible materials (like concrete) co-existed with traditional materials (stone and mud bricks); c) erosion and discolouring of the mortars was caused, due to lack of appropriate drainage systems and d) erosion, cracking and water penetration resulted in vaults and domes that were protected with a cementitious lime mortar called *'kourousani'*, due to faults during its construction or due to lack of maintenance (i.e. Panagia Amirou in Apsiou). Bad construction techniques have affected parts of the structures of the churches, which have deteriorated and whose fabric has been destroyed. Consequently, any historical evidence has disappeared.

Fourthly, destructive restoration schemes carried out on churches have been recorded during the author's visits. The most common are: a) use of irreversible techniques (concrete plasters and mortars); b) reconstruction of large parts of the churches with materials not similar to the original (Agios Georgios in Petridia, Figures 2.46); c) reconstruction of ruined structures based on assumptions and not upon documentation (the roof of Agia Paraskevi or Christina in Germasogeia[18]) and d) reproduction *in situ* of the collapsed structure, utilising at random the pile of ruined materials as *'spolia'*[19] (Chrysolakorna in Steni, Figures 2.47).

Fifthly, it has been concluded that the current structural condition of the churches could be classified into three categories: ruined, restored and re-used churches. The condition of the ruined churches varies and can be classified as: stable (Holy Cross

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[18]The new flat roof that was recently added by the Department of Antiquities does, however, resembles similar roofs of the village but it is unlikely that the original roof of the monument when was built was like flat (it is extremely rare in an Orthodox Church to have a flat roof). It is possible, though, when the original roof was destroyed, the locals have replaced it with a flat roof destroying any evidence of how that original one was constructed.

[19]*Spolia* are reused stones (sometimes with decorative features) that were extracted from earlier churches which had been demolished. The builders of the Early Byzantine churches in Greece, had often taken pieces of stones (spolia) from churches of the Classical Era and reused them as decorative or construction material on churches.

in Tochni, etc); in need of urgent repairs or at risk (Kyparissiotissa in Kolossi, Agios Theodoros in Choulou, Agios Mnason in Potamiou, Agia Marina in Kantou, etc); churches that were never completed (Agios Mamas in Agios Sozomenos); churches not recognisable[20](Panagia Arka in Milikouri[21], Chrysanagiotissa in Episkopi) and finally excavated churches (Panagia Elikon in Tsakistra[22], Agios Georgios Manganon and Lusignan Palace in Nicosia[23]).

A small number of churches, not in ruins but at risk (in need of urgent repairs before probable collapse), were located in remote areas and are rarely used by the public. These are Panagia Asprovouniotissa, Agios Antonios in Sotira (Figures 2.48), Panagia Kyra in Livadia.

Restored or reconstructed churches

Nearly half of the churches visited have been restored or reconstructed. Traditional materials and techniques, similar to existing ones, were applied in a few cases (Panagia Sinti in Pentalia, Agia Paraskevi in Kritou Terra). But elsewhere, the lack of similar materials and knowledgeable builders proved to be a great obstacle (Panagia Kyra in Louvaras, Agios Mamas in Kofinou, Agios Efstathios in Kolossi, etc). In these cases, the existing traditional materials and techniques have been combined with irreversible techniques and inflexible materials (concrete), resulting in the decay of the original structures.

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[20] Those churches were included as Listed Churches by the Department of Antiquities in 1998, but at present in their place there is a pile of building material.

[21]The monument is located in an inaccessible area and it was not visited, however, information for its structural condition was provided by the village authorities.

[22]This timber roof church was recently excavated in 1999-2000. The excavations indented to reveal information on the construction technology and materials of the Troodos timber roof churches. The excavations will continue.

[23]Both churches were accidentally discovered during construction works on the sites. The first monument was discovered in 2000 in the outskirts of Nicosia. The monastery of Agios Georgios Manganon was built by Helena Paleologina after 1453, to accommodate monks, artists and builders from Constantinople after its captured by the Ottomans. The location of the monastery was unknown, but the excavations have not yet confirmed the archaeologists assumptions. The second monument was discovered in 2002 in the centre of the old town of Nicosia. The archaeologists believe they have discovered the Lusignan Palace that was demolished in 1373 by Genovese. Its location had been described by historians but it could not be easily excavated since this part of Nicosia is densely populated. Both excavations are at the early stages.

The visits to the churches recorded restored churches that have preserved their pristine authenticity. Among them are: the nine timber-roofed churches[24] in the Troodos area, Panagia Sinti in Pentalia[25], Agia Paraskevi Kritou Terra, Holy Cross in Anogyra, Chrysopolitissa in Paphos, and many more.

Partial or complete reconstruction has often resulted in additions (extension of the eastern part of the nave of Panagia in Choulou), reconstruction which altered the size and scale of the churches (Holy Cross in Paliomylos, Agia Marina in Psematismenos, Figure 2.49) and interventions as in Agios Georgios in Petridia (Figure 2.46) and Ambelikiotissa in Kapileio, where the roofs were replaced with new reinforced concrete roofs. Reconstruction upon reconstruction has been recorded in churches (Sotiros in Sotira) after excavations revealed floors and layers of frescoes from earlier periods.

Reuse of a number of churches has been recorded during the visits. Most of them are used as originally intended. Few alterations and interventions took place for the adoption of new uses.

'The best way to preserve buildings ...is to keep them in use' (Feilden,1994: 10). The original use has always been *'the best for conservation of the fabric, as it means fewer changes'* (Feilden, 1994:10).

The new uses are: as museums of ecclesiastical objects (Holy Cross in Kyperounta, Panagia in Sinti), and as conference or cultural centres[26] for exhibitions, theatrical and musical events. The major benefits from re-use are to educate the users as to the

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[24]UNESCO listed these churches as World Heritage Churches in 1986 (der Parthog, 1995:275). The churches are: Panagia Asinou, Agios Nikolaos Steyis in Kakopetria, Podithou in Galata, Lampadistis in Kalopanagiotis, Panagia Moutoulla, Archangel Pedoula, Holy Cross Pelendri, Panagia Araka Lagoudera, Holy Cross Agiasmati Platanistassa.

[25]The conservation work was completed in 1995-6 and it was awarded the Europa Nostra Award.

26 Many medieval monuments were reused as cultural centres. For example: Famagusta Gate, Limassol Castle, Castelliotissa in Nicosia, Kolossi Castle in Limassol.

historical value of the churches, and make the occupant acquire the habit of maintaining them regularly.

Sixth, it was noticed from the visits to the churches that despite their structural condition nearly all of them (apart from the inaccessible ones) are regularly used by the public. This increased the dangers to the vulnerable churches, particularly those in ruins and at risk from ignorant people. However, the churches in sound structural condition and in use are well looked after by local authorities.

Seventh, it was concluded that the best source of information for studying the original material and techniques used were the churches in ruins. The most representative example is the ruined Church of Agios Theodoros in Sotira; the calotte type dome (Figures 2.50) of its narthex provides important information concerning the techniques used, which are found nowhere else on the island. However, the ruined churches' long abandonment has indeed left its mark: often, the construction materials have decayed and lost their resistance to any natural causes of decay.

Historical information acquired from visits to the churches on their architectural styles, church-types and construction technology

The historical information that has been gathered from the visits (or other sources[27]) focused on the architectural style, type and construction of the churches. It is important, at this stage, to discuss the information from the visits to the churches with respect to these three aspects that this thesis focuses on; architectural styles, church-types and construction technology.

Architectural style

The amount and quality of information on the architectural style of the churches depends on their structural condition: ruined, restored, reconstructed and re-used. In

[27]The structural condition of the inaccessible churches was studied (where possible) from photos and drawings from the archives of the Department of Antiquities.

the ruined churches that information is relevant to the state of their structural integrity (excavated, never completed, stable, ruins at risk, in need of urgent repairs, not recognisable[28] or demolished[29]). The amount of information depends on how much of the original fabric has survived. It was concluded from the visits that archaeological documentation can reveal information on the churches' architectural style even if only the foundations and the floors have survived (i.e. in excavated churches).

The quality of information depends on whether significant architectural details have been preserved in order to draw the correct conclusions for the architectural style of the church. The church's poor or ruined state is therefore irrelevant. In many of them the fabric is deteriorating and the church is falling apart, but it is still possible to reveal considerable and good quality information concerning their architectural style! Sometimes, one third (Agios Mnason in Potamiou, Figure 2.51), half (Panagia Chamakiotissa in Kapileio, Figure 2.52 and Agia Marina in Mari, Figure 2.53) or even the whole church has survived in a ruined condition (Panagia Kyra in Livadia), and it is still possible to identify some important architectural details.

The best example for study is the survived 'not completed monument' of Agios Mamas in Agios Sozomenos[30] (Figure 2.54) which has preserved important information to enable us to identify its architectural style. Many other ruined churches have retained so little of the original fabric that only other sources of information, such as archaeological documentation (literature, excavation) can provide rational conclusions concerning the churches' style. These churches were either ruins in a 'stable' structural condition (Lampadiotissa in Mitsero), at 'risk' or

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[28]The 'not recognisable churches', at the time of the visits, were a pile of building materials or the scattered stones providing no valuable information for the architectural style, type. However, the remains of some fabric (few stones) provided us information of the building material that was used.

[29]The demolished churches (Agios Georgios Regatos and Panagia Avgasida) have been completely destroyed (no information is yet known whether new constructions have been erected on their sites, destroying the possibility of an archaeological investigation in the future).

[30]Three quarters of its structure has survived, with many architectural and construction details.

in 'need of repairs' like for example: Agios Epifanios in Letymbou, Agia Marina in Kantou (Figure 2.41), Archangel Prastio in Avdimou (Figure 2.55).

The restored and conserved churches have retained their original architectural styles, which the several restoration and conservation schemes through the centuries have successfully managed to preserve. The information that is provided depends on the techniques and materials that have been preserved and the structural condition of the architectural elements (the walls, floors and roofs). In a number of cases, the original details that had decayed have been replaced with reproductions.

The only 'exceptions' are the restored churches that have suffered additions (Panagia in Kivisili[31]), alterations (Holy Cross in Paliomylos[32]) or interventions (Panagia in Choulou[33]). The circumstances, and the reasons that those alterations were carried out, are: the need for more space, in combination with restoration measures after a disaster in some cases.

The reconstructions, partial or complete, have often altered the original architectural style of the monument. The only monument that was partly rebuilt while retaining its original style was Panagia Church in Akapnou. The reconstruction was *'based upon documentation and evidence'*[34] since there was adequate information collected just before the fire damaged the church.

Most of the reconstructed churches were enlarged to a great extent, and some architectural elements of their original structures were replaced, or reconstructed. The churches' original architectural styles were destroyed and, in many cases, no visible evidence has survived.

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[31] In Panagia Kivisili the addition of two more aisles (in different periods) in the north have changed the style and type of the monument.

[32] The '*...two arbitrary rebuilding in 1881 and 1940 ... greatly altered its architectural form and destroyed the wall paintings on the south and west walls..*'(The A.G.Leventis, 1998: 92).

[33] The monument was enlarged in length.

[34] The quotation from Feilden on the guidelines how to conserve the historical buildings (Feilden,1994: 12),.

The 'enlarged churches' are scattered all over the island and locals have arbitrarily rebuilt them, mainly in the 19th-20th centuries. The interventions have altered their original plan, scale, size and style. In most cases, (Agia Marina in Psematismenos) the altar and some parts of the nave have survived from the original churches, but the architectural style is not recognisable.

In some other churches, only parts of original architectural elements have been replaced. There, the reconstruction has not altered the size and scale of the churches (Agios Sergios in Kissousa, Agios Timotheos in Kato Lefkara, Agios Georgios Chortakia in Sotira, Agios Georgios in Alektora), but it has destroyed original architectural details. The architectural style is recognisable but the extensive repairs (Agios Georgios Chortakia in Sotira, Figure 2.56) and reconstructions have left doubts concerning the original style and size of some parts of the churches (i.e. domes). The most extreme example is the replacement of the roof in some churches (Ambelikiotissa in Kapileio, Agios Georgios in Petridia, Figure 2.46) with reinforced concrete flat roofs or vaults, resulting in the loss of their original architectural details.

Reconstruction upon reconstruction has been a very common occurrence in historical churches (Sotiros in Sotira, Panagia in Emba, Limeniotissa in Kato Paphos). Several layers of construction are discovered during archaeological excavations. It is not always possible to reveal the architectural style of each construction (unless 'destructive' excavations are carried out).

Church-types

The church type was identified in most of those churches where accurate and adequate information, such as the church's layout (plan) and the type of its roof, was provided. This means that, unless the whole monument has survived, it is difficult to draw accurate conclusions. Other sources of information, such as archaeological documentation, are not always available, unless evidence from unburied elements of

the churches can confirm their layout and roof type, while documentation from historical resources is also not available for many churches.

The quality of information concerning the architectural type does not depend on the structural condition of the monument. It actually depends entirely on whether the amount of the surviving structure enables us to identify the church's type. The majority of ruined churches have not preserved their roofs and major parts of their walls. However, even the few surviving parts (Agia Marina in Kantou, Agios Mnason in Potamia, etc) have provided adequate information on their type. In some cases, as in the ruined Church of Agios Athanasios in Agios Theodoros (Figure 2.57), the style and type of the church could not be identified.

The restored and conserved churches have retained their architectural types, with few exceptions. These restoration schemes, which have altered the architectural type of a small number of churches, happened only after a disaster occurred. In these cases no accurate documentation was available concerning the churches' type before the disaster. In addition, amateur builders destroying any evidence of historical value carried out a few arbitrary restoration schemes.

Reconstructed churches have not preserved evidence of their original type, with a few exceptions. These are the churches that were rebuilt after a disaster based upon accurate documentation (i.e. Panagia Akapnou). Any other reconstruction has involved alterations, additions and interventions to a great extent. The most extreme examples are the 'enlarged' churches that have only preserved parts of their original layout (altar or nave). The least destructive reconstructions are the repeated side additions to the churches (second and third aisles) that have not altered the original architectural type (Panagia in Prastio in Avdimou, Panagia in Kivisili) but the layout of the monument.

Partial reconstruction of some elements of the churches, such as on the roofs or walls, does not prevent the identification of the original type of the monument, however (Agios Georgios Chortakia in Sotira); reconstruction upon reconstruction,

on the other hand, has in most cases prevented (unless archaeological excavations bring to light crucial evidence) any accurate conclusions.

Construction technology

Construction technology, the original construction materials and techniques, were not easily identified in most of the churches. As mentioned earlier, the continuous restorations, reconstructions and alterations that have been carried out on the churches through the centuries, have destroyed any evidence of their original construction technology. No documentation is available concerning these structures, since earlier scholars have not studied in depth the construction technology of any monument. The only exceptions are the brief descriptions of Jeffrey and Papageorgiou on the construction of the timber roofs of the Troodos churches, and their efforts to establish the origins of that particular construction.

Archaeological documentation, mainly excavations, has provided (or hopes to provide soon, since a few sites are being excavated, i.e. Panagia Elikon) adequate information based on evidence from beneath the ground. It was noticed during the author's visits that the best sources of information on construction technology are those churches in a ruined structural condition, stable, at risk or in need of urgent repairs, that have not been consolidated or preserved. The wall materials and the techniques used for their construction are visible and recognisable. However, the monument's long abandonment has caused the deterioration of the fabric and the loss of the materials' strength and resistance to any natural causes of decay. In addition, the churches are more vulnerable to vandalism and accidents when no preventive measures were taken.

It was observed that in some ruined churches that have not been reinforced, the weak parts of the structures have collapsed, but the well-constructed ones have survived, a representative example of which is Agios Theodoros in Sotira (Figure 2.50). The monument has collapsed but the dome of the narthex and its supporting walls have survived, in good condition. The techniques and the materials are visible and despite

the fact that no preventive measures against damage from natural causes have been taken, the fabric has not shown any signs of deterioration.

Many ruined churches have retained a large amount of their original fabric, and their construction techniques are recognisable. These are: a) the ruined churches at risk such Agios Mnason in Potamia (Figure 2.51), Archangel in Prastio Avdimou (Figure 2.55) Panagia in Livadia, Agios Athanasios in Episkopi (Figure 2.58) and others; b) in need of repairs such as Agios Theodoros in Choulou, Agia Marina in Mari, Agia Marina Nata (Figure 2.59) etc; and c) the uncompleted monument of Agios Mamas in Sozomenos (Figure 2.54). In the last example, the effective technique of the grouting and consolidating that was used to protect the unfinished walls increases the possibility that the theory that the monument was left intentionally uncompleted was correct (the reasons and the circumstances are unknown, probably financial).

The ruined churches that have provided little or no information about their construction technology are those that are not recognisable; they have been demolished or have collapsed, and the only evidence for their existence is a mere pile of building material (Panagia Chrysanagiotissa in Episkopi, Agios Silas in Ypsonas).

The information that is provided by restored and conserved churches varies. In the conservation schemes that have respected the authentic construction technology of the churches, utilising similar materials and techniques to the original ones, a great amount of information has survived. Some examples are: Agios Nikolaos Orounta (Figure 2.60), Agia Aikaterina in Pyrga (Figure 2.61), Sinti in Pentalia[35] (Figure 2.62), Agia Paraskevi in Kritou Terra (Figure 2.63), Panagia Kampou in Choirokoitia, Agios Georgios in Akrotiri, Agios Georgios in Vasa, etc.

In the restoration of the timber-roofed churches of Troodos, the original fabric and techniques were replaced with reproductions-copies, using similar materials and

[35] In the Sinti Monastery in Pentalia, the additions with new materials was differentiated from the existing with a line of pieces of tiles and small pebbles (or shingles) in mortar of the pointing.

techniques. The decayed timber of the roofs has been replaced for 'safety reasons'. Many original little details have disappeared. For example, in the original roofs the builders had used wooden pegs to join the timber members of the structure, while later builders used nails. The earliest roof that was recorded was in Agia Barbara in Korakou and was dated to the 18th century.

Incompatible techniques and inflexible materials (concrete) were used in combination with traditional ones in many restoration schemes (Agios Nikolaos in Tsakistra, Figure 2.64), resulting not only in the loss of a great amount of the original fabric, but also in the exposure of the structure to more danger. The structure becomes vulnerable to moisture, rising damp, rainwater, frost and earthquakes. These restorations have proved destructive since the combined incompatible materials (cement and stone, or mudbrick and stone) react differently to the several natural causes of decay.

In the majority of restored or conserved churches, the only materials that have been preserved are some parts of the masonry walls and roofs. The mortars and plasters have been repeatedly replaced. The restoration schemes (19th-20th centuries), always aimed at 'increasing' the stability of the whole structure, and cement was considered to be the appropriate material for that purpose. Cement was widely used to 'strengthen' the mortars in the walls and roofs and the mudbrick material. Its effect was catastrophic to the traditional materials; not only were these lost, but they were also gradually eroded and deteriorated (we mentioned earlier the co-existence of incompatible materials).

The lack of knowledge of the original materials and techniques that were used on the churches has resulted in the destruction of any evidence concerning the restored churches. In the last decade in Cyprus, experimental research[36] has been carried out using mortar and plaster samples obtained from archaeological sites dating to the

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[36] G. Papadouris and M. Ioannou utilising samples that have just been unburied in excavation sites carried out the experiments. Those experiments are expensive and time-consuming. The experimental research was based on a module that has been used in the last decade by archaeologists in Israel.

Palaeolithic and chalcolithic era, in order to identify the materials and their components. It is obvious that research method is not applicable to the churches we considered, unless they are subjected to destructive testing.

The utilisation of appropriate materials (similar to the ones used when the churches were built), traditional skills and a comprehensible presentation of the church were considered in quite a few conservation projects carried out by the Department of Antiquities and funded by the Government of Cyprus and the A. G. Leventis Foundation. Some recently well conserved churches are: Agia Aikaterina in Pyrga (Figure 2.61), Agios Georgios in Akrotiri (Figure 2.65), Chrysopolitissa in Paphos (Figure 2.66), Holy Cross in Anogyra (Figure 2.67), Panagia Kampou in Choirokoitia (Figure 2.68), Agios Ioannis in Erimi (Figure 2.69), Agios Theodosios in Achelia (Figure 2.70), Agia Aikaterina in Kritou Terra (Figure 2.71), and Agios Georgios in Vasa.

In many reconstructed churches, despite their size and scale, valuable historical information has also been lost. The exceptions are the reconstructions (additions) that have not affected original parts of the monument, which were preserved in good structural condition.

The information that has been gathered on construction technology during the visits to the churches have included, apart from the external structural elements of the churches, construction details such as those on interior floors, the windows and doors, and the frescoes (in many occasions they provide valuable information).

The interior floors have been often replaced or covered. In a few restored churches (mainly timber-roofed churches in Troodos), the original hand-made ceramic tiles (with decorative features) have survived in good condition such as in Agiasmati in Platanistassa, Agios Georgios Perachoritis in Kakopetria (Figure 2.72), Holy Cross (Figure 2.73) and Panagia Katholiki (Figure 2.74) in Pelendri. The main damage that was recorded is the roughness in their surface which was caused by frequent use and rising damp.

In the ruined churches, some parts of the original flooring have also survived. These floors are eroded since they have been exposed to weather conditions (rapid daily changes in temperature), atmospheric pollution and dust. A representative example is the Byzantine rectilinear marble 'opus sectile' flooring in Limeniotissa Church in Kato Paphos (Figure 2.75).

The original windows and doors have also been replaced, some having been recently removed and transferred to museums (for example, 'Archbishop Makarios III' Gallery in Nicosia). Exceptions are some interior doors that were seen during the visits to the churches: Panagia in Moutoulla (Figure 2.76), Agioi Varnavas and Ilarionas in Peristerona (Figure 2.77), Lampadistis in Kalopanagiotis, Agios Nikolaos tis Stegis in Kakopetria (Figure 2.78) and in Panagia Araka in Lagoudera (Figure 2.79).

Conclusions

Circumstances, but also the quality of the original construction technology of the historical churches, have determined the current structural condition of the churches. The quality of their original construction techniques and the qualities of resistance and strength in their original materials have been tested through the centuries.

The result was observed in the visits to these historical churches and in the various structural conditions of their structural integrity. These are classified into the following categories: a) ruined churches at risk, in need of urgent repairs, in stable condition, not completed, not recognisable or demolished; b) preserved, conserved or restored churches; c) reconstructed churches; d) re-used or misused churches; e) destructively converted churches.

The structural condition has prevented the collection of accurate historical information on their architectural style, type and construction technology, in some churches. The state of the structural integrity of the churches (ruins at risk or in need of repairs, restored or conserved churches), however, was not always an obstacle to

this research. The best source of information on the architectural styles was the churches, which have preserved unspoiled an adequate amount of their original fabric and architectural details. On the other hand, as regards the architectural types, the restored and conserved churches that have retained their authentic type, size scale, layout and type of roof are the best source. Construction technology was best studied on churches in a ruined condition that have not been consolidated or restored.

The information review from the visits and the literature review aim to provide the maximum historical information possible for the purpose of this thesis. The literature review, in some cases, has filled in the gaps left by the structural condition of the churches. However, a considerable amount of historical information remains unknown, which has left questions unanswered. These questions could be answered, in some cases, with archaeological documentation (excavation). Therefore, future investigation is required.

CHAPTER THREE Methodology

Introduction

Post-Byzantine church architecture in Cyprus of the period 1191-1571 has been little studied and discussed in depth by scholars, despite it forming a crucial historical period in the architectural history of the island.

This architecture has borrowed characteristics from two traditions: the eastern Byzantine and western Medieval traditions. The first had already existed on the island for more than a millennium when the second was introduced in the late 12th century. The result of this 'marriage' was the creation of two different indigenous architectural styles: *Post-Byzantine Byzantine* and *Franco-Byzantine*. Each of these styles has its own variations, which are based on different regional circumstances or on other parameters.

Several scholars have studied this architecture very briefly. They have looked only at a small number of churches, which represent some main church-types. They have focused on the historical and artistic value of their interior frescoes. The scholars considered the frescoes as the *terminus ad quem* for dating the churches and for comparative purposes with frescoes of an unknown date in other churches. They did not, however, consider the significant information that several frescoes provide for the architecture of the original church; such as the fresco-icons that illustrate church models in eight churches. The scholars, Sotiriou and Stylianou, have recorded some of those churches and established a good background for discussion of their architectural value.

The main aim of this thesis is to study all[1] the churches that were built or rebuilt in the period 1191-1571. The main question that this thesis aims to address is how the *Post-Byzantine* architecture in Cyprus developed under various historical, political, environmental (geology-climate) and financial circumstances.

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[1]Except those that were destroyed or later reconstructed completely, and no information has survived for their original structures.

The methodology

The methodology that was used for this study was based on the question and the objectives that this thesis has initially established. The main objectives are: a) to understand and explain the development of *Post-Byzantine* Church Architecture (1191-1571), and influences on it from the newly-introduced Medieval-Gothic tradition from the West; b) to observe the process of the creation of a new style, the *Franco-Byzantine*, that is, the result of the combination of Byzantine and Frankish architectural details and c) to observe the development of the construction technology used in that particular period.

The object of interest is the churches all over the island that date to the period 1191-1571 and which have retained their authenticity until the present time. Around 434 monuments have been considered, which were built or altered in this historical period. The 'List of Monuments' [2] (Appendix 2; Table) that was prepared (based on the Catalogue of the Listed Monuments Grade I, II of the Department of Antiquities, Cyprus, dated 1998 and 2000) and the studied literature, were the initial guides before visiting the monuments. The List provides brief information on the history, architectural style and construction technology for each monument. This List has also included[3] monuments that have not yet been included in the official 'List of Historical Monuments' by the Department of Antiquities.

Extensive visits were made to 242 of the 434 monuments (206 of the 301 *Post-Byzantine* churches). From the remaining 192, 108 are located in the Turkish occupied area[4] and 28 were otherwise inaccessible to the author. The monuments that have not been visited were studied only from the literature available. Some 42 of the 192 (23 of them in the occupied area) have been studied, where possible, from old photos in the archives of the Department of Antiquities. An effort to find drawings for all the

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[2]A small number of monuments, mainly monasteries, are excluded from this List, even though they are dated in that historical period, because these were completely rebuilt after a disaster occurred; fire or earthquake.

[3]Those monuments are; Agios Eftychios Mathiatis, Stavros in Arakapa, Agios Mnason Potamiou and the Tower in Akaki.

[4] During most of the time over which the visits were carried out, the Turkish occupied area was inaccessible to the author. This situation changed very recently, during the writing up stages of this work, by which time visits to further churches would have delayed the submission of this work beyond the time limits allowed.

monuments was successful for 79 of them from literature and for another 70 from the archives of the Department of Antiquities[5].

The material that was used in this thesis has originated from two sources: the literature review and the visits to the monuments. The literature includes publications (books, papers, journals, reports), historical maps, drawings, engravings and photos. The visits enabled the photographic recording, observation and evaluation of the monuments' architectural details, and construction technology.

The method that was used in this thesis followed a sequence of steps, in order to collect and analyse the data in a rational way. The first step was the study of the literature on the architectural and political history of the period 1191-1571. This study focused on the monuments that were built or dated[6] (altered or rebuilt) in that period. The 'List of Monuments' that was prepared (Appendix 2) was a useful guide for the next step.

The second step was the extensive visits to the monuments. The scope of the visits was to observe the monuments' architectural style and type, size, scale, architectural and construction details. During the visits, notes of the above observations were taken and photographic recordings of the buildings were carried out. The structural condition of some monuments (demolished monuments, deteriorating fabric due to natural or man-made causes, monuments that have been continuously restored, altered and disfigured and the original fabric was destroyed or covered by recent additions) and the fact that some monuments were inaccessible to the author became an obstacle to the purposes of the research.

The third step was intended to overcome a main obstacle; to find information concerning the monuments that were not visited by the author. Therefore, a search for earlier photos, drawings, engravings, and descriptions from travellers was undertaken, in

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[5]Copies of the drawings were not allowed, therefore some notes have been taken and drawings were prepared for the purposes of this thesis.

[6]Historical information in order to date the churches was provided by the literature review. In many cases, though, the inscriptions on the interior frescoes of the churches were the only historical evidence. Therefore, we assumed that those frescoes were made not longer after the church was built.

order to identify the original architectural style, type and construction technology of the non-visited monuments.

The fourth step concentrated on establishing a mechanism for the methodology of the analysis of the data and the assessment of the historical value of the monuments. The monuments were classified according to their architectural style, type and chronology onto tables and maps. The tables and maps provide information such as how, when and where the several types and styles were distributed all over the island, and what materials were used in different parts of the island at the same historical period.

The fifth step was an assessment of the results. The literature review and the visits to the monuments have given rise to a series of unanswered questions, to which answers are important. These questions that have arisen have determined the subsequent direction of the research. They have proved to be of equal importance to the 'main question' that was originally posed. The questions concern three themes in *Post-Byzantine* Architecture: a) the development of the church-types b) that of the architectural styles, and c) the development of the construction technology.

The structure of the thesis; the methodology of analysis of the data and chapters

The thesis is divided into three parts, and seven chapters (as described in Chapter 1).

Part One

The first part, which is divided into three chapters (introduction, information review and methodology) aims to present the background information. The introduction summarises the scope of the thesis, and the methodology describes the analysis of the data. The information review concentrates on the thesis's main sources of information: the literature review and the review arising from the inspection of the monuments.

In this part, the author has: a) assessed the information that is provided by scholars and historians, and is relevant to this thesis; b) evaluated the effect of the structural condition of the monuments to the outcome of the research; c) evaluated the effect of the natural causes of decay and the man-made interventions to the authentic character of the

monuments, and d) assessed the effect of the several restorations of the monuments on their historical value and authenticity.

Part Two

The second part describes the results and conclusions from the study of the development of Post-Byzantine Architecture styles and church-types and analyses the observations on the development of the construction technology. This part is set out in four chapters: a) the development of the architectural styles, their characteristics and architectural details; b) the development and use of the various church-types; c) geology; and d) the construction materials and techniques, masons and builders.

The author intends to identify: a) how the two architectural styles, the *Post-Byzantine Byzantine* and the *Franco-Byzantine*, evolved and developed, and b) the main characteristics that enable us to distinguish one from the other.

The author also investigates: a) the use and development of earlier Byzantine church-types in the period 1191-1571; b) the reasons for the wide use of certain types throughout the island; c) the influences of the western tradition, which was introduced to the island in this period, on the development of certain church types and d) the influences of the geological, geographical, financial or other parameters (political, lack of resources; materials and skills) on the creation and use of specific types.

Comparative study between the architectural styles and church-types in Cyprus with those of their contemporary churches in Cyprus's neighbouring countries is a topic for further investigation. This investigation should include also any similarities of influences from these countries to *Post-Byzantine* architecture in Cyprus, and vice versa.

Subsequently, the author studies three main subjects. The first subject discusses the geophysical characteristics of the island (geology, geographical location, climatic conditions) which have determined the use of specific construction materials and techniques. The second subject discusses the trade of knowledge within the island, and investigates whether the masons' and builders' knowledge and skills were widespread

throughout the island, or whether in certain areas the builders developed specific skills (as did the carpenters who created the Troodos' timber-roof, mudbrick builders etc). The third subject discusses the influence of the sponsors and patrons of the churches in the construction technology used, and possibly the introduction of new skills.

In addition, some technical details are discussed. For example: a) the metrical system that was used in the period 1191-1571 and the transition from the Byzantine metrical system to the one that is currently in use; b) the builders' methods when setting the layout on the site and the starting point for building the churches (the eastern apse, the edge or the centre of the eastern wall?); and c) discuss the reasons that determined the use of various materials in different parts of some structures (i.e. different materials may have been used in the base, the upper wall, the roof, the domes).

Part Three

The third part presents the Conclusions of the research and the analysis of the data. These focused on the development of *Post-Byzantine* Architecture as it is defined by the sudden interruption of the to date flourishing 'Byzantine era' (with Constantinopolitan influences) by the 'invasion' of the western tradition. It is interesting to study the ways in which the 'newly' introduced Gothic-Renaissance tradition was adopted and interpreted by local builders.

Post-Byzantine Architecture in Cyprus was earlier regarded by several scholars (i.e. Enlart), as 'provisional', and of no particular interest. The historians of recent years (i.e. Megaw, Sotiriou and others) go against earlier perceptions by suggesting that the local architecture may in some aspects resemble their contemporaries in other areas of the Byzantine Empire, but it is an indigenous style that was created in Cyprus and which contains important aspects for the history of architecture in this part of the Mediterranean region.

This thesis aims to prove that the two indigenous styles, *Post-Byzantine* and *Franco-Byzantine*, which developed in the period 1191-1571 within the island-scape, are significant not only as part of the local history of architecture, but as a historical

example of how the influences from two traditions can be adopted and interpreted by local builders, using local materials and their own knowledge and skills. At the same time, in parts of the island, new church- types and construction techniques were introduced (timber roofed churches) which are not found anywhere else.

PART II *Post-Byzantine* Architecture

CHAPTER FOUR *Post-Byzantine* Architectural Styles

Introduction

This chapter studies the *Post-Byzantine* styles that developed in the period 1191-1571. The main architectural styles that were flourishing in Cyprus in this period were: the *Byzantine*, the Medieval and the *Franco-Byzantine*. The *Byzantine* and *Franco-Byzantine* styles are here called *'Post-Byzantine styles'* and are the main subject of this research.

These *Post-Byzantine* styles are two styles which are indigenous and of significance in the island's architectural history. They had deep roots in the Byzantine style, which had been widespread throughout the Byzantine world for a thousand years, and which developed significantly in this eastern Mediterranean region. The development of *Post-Byzantine* styles in Cyprus was the result of historical circumstances pertaining to that particular time. First, the Franks, and later the Venetians, who captured the island, introduced the western European medieval styles to the island, something which had an influence on the local architecture.

The medieval styles appeared on the island as provincial styles, copies of the contemporary Gothic and Renaissance styles in Western European countries. In the Frankish period, the influences were introduced by the styles originating mainly from southern France; then, in the Venetian period, those influences came from north Italy, from Venice herself. Architectural details and construction techniques from those styles were adapted and interpreted by the local builders in the construction of *Post-Byzantine* monuments.

In this research, the study of the development of *Post-Byzantine* architectural styles, in the island (Maps 4.1-4.7), has been based on historical information gathered from visits to the monuments (1998-2001), the relevant literature, historical medieval maps, engravings from medieval travellers and archival photos (dated from the 1920's onwards) from the Department of Antiquities. Evidently, the visits facilitated valuable comparative observations of the architectural details that represent each of

the architectural styles and provided historical information concerning their origins and their development through these four centuries (1191-1571).

It was obvious from the visits that some monuments' structural condition has caused the loss of valuable and accurate historical information concerning their architectural style. The author visited 27 monuments that were in a ruined condition, another 100 that had been extensively restored or altered, and 115 monuments that had been partially or completely reconstructed. Of the 242 monuments (out of 434) visited, 16% (38 out of 242) have not preserved any architectural details that would enable the style to be identified. Those were: 1/3 of the ruined monuments (10 out of 27); 10% of the restored/altered monuments (10 out of 100); and 1/6 of the reconstructed monuments (18 out of 115). Based on the literature, it was possible to recover the lost historical information for 31 out of 38 monuments (except for 3 reconstructed and 4 ruined monuments).

The author studied 434 monuments that had been built, rebuilt or extensively altered in the period 1191-1571. Those monuments represent three architectural styles: *Byzantine*, Medieval, *Franco-Byzantine*. Of those monuments, 301 (70 %) represent the *Post-Byzantine* style, and 88 are medieval monuments. Of the remaining 45 monuments, which of the above styles they represent is uncertain. No adequate historical information has been provided to enable their accurate classification.

The 301 *Post-Byzantine* style monuments are classified as follows: 169 monuments (56.5%) are characterised as Byzantine, 112 (36.8%) as Franco-Byzantine; 11 monuments (3.7%) combine Byzantine and Medieval constructions and the remaining 9 (3%) are Vernacular structures (i.e. bridges, watermills, etc) which do not belong to any of the above categories.

A number of unknown monuments must have existed in that period, but have not survived. Some were briefly mentioned by travellers (i.e. Barsky) or are shown on Medieval historical maps (i.e. by Ortelius). No further information, however, has yet been found and those are not taken into consideration for the purpose of this study[1].

[1]Further research is needed to reveal historical information for those monuments.

Another 21 monuments (7% of the 301) were completely reconstructed and have not preserved any original architectural details or other historical evidence that originate from the period. Therefore, those are not taken into consideration for the purpose of this study. In contrast, some other 41 monuments (13.6% of the 301) that have suffered alterations, additions and conversions have at least preserved some valuable historical information. A number of monuments were completely demolished just after 1974[2] (Avgasida in Milia, Agios Georgios Regatos in Kyra, Agia Marina in Louroukina, Melandryna in Kalogrea?). A few others were demolished in an unknown time, such as Agios Silas in Ypsonas, Panagia Chrysanagiotissa in Episkopi, Panagia in Marki (this was demolished before 1950). Photos, engravings and drawings have provided us with a little useful, but not detailed, information concerning the architectural style of two of those demolished.

The review of the literature and the visits to the monuments have enabled the author to gather adequate and accurate historical information on the *Post-Byzantine* monuments' style and architectural details only in the case of 201 monuments (67% of the 301), despite their present structural condition. That historical information is valuable for the analysis of the development of *Post-Byzantine* styles.

Post-Byzantine Architectural styles[3].

The monuments of the *Post-Byzantine* style (301), for the analysis of this study, are classified into three main style-groups: the *Byzantine*, the *Franco-Byzantine* and the *Vernacular*. Each style-group is subdivided into sub-styles, which are variations of each style.

Byzantine style

The architectural details of monuments in the *Byzantine style* (169+11=180) originated, in their entirety, from the Byzantine tradition. Major interventions were carried out on only 11 of those monuments (6% of the 180), when medieval constructions were added. As a result, the authentic architectural style of those monuments was altered but still, even the few Byzantine architectural details that

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[2]Muslim Fanatics demolished the two monuments (Agios Georgios Regatos and Panagia Avgasida Monasteries).

[3]The styles and sub-styles are named by the author in order to assist the analysis of this research.

have survived provide adequate historical information, enabling the style to be identified.

Monuments in a *Byzantine style* are scattered all over the island and differ geographically and chronologically. The study of all of them has revealed that climatic conditions in certain areas have determined the roofing style. For example, from the 13th century onwards, the Byzantine monuments in the Troodos Mountains have timber double-sloped roofs instead of domes and vaults. At the same time, the earlier monuments with domes (Agios Nikolaos tis Stegis, Panagia Araka, Holy Cross of Pelendri, Lampadistis in Kalopanagiotis, Agia Mavri in Koilani) and vaults (Asinou, Amasgou) are protected by a second, timber double-sloped roof.

For the purposes of this research, the 169 Byzantine monuments are divided into three sub-categories[4]: a) *timber-roofed* Byzantine monuments (50) that date from the 12th to the 16th centuries (the earliest surviving example is dated 1280, Panagia Moutoulla); b) the *double-roofed* monuments[5] (7), which originated in the 12th century but in most of them the second roof was placed from the 13th century onwards, and c) the *simple* Byzantine monuments (115), which date from between the 12th -16th centuries. The two first sub-categories are found in the Troodos area only, but the third is found all over the island.

Franco-Byzantine Style

The Franco-Byzantine style (112 monuments) is an interbred style that was created from two traditions: the Byzantine and the Medieval Gothic. The author has concluded that there are three variations of this style, based on the amount and quality of the architectural details they borrowed from each of the two traditions. Those sub-styles[6] are: Byzantine monuments with medieval architectural details *(Byzantine Franco-Byzantine)*; medieval monuments with Byzantine architectural details (*Medieval Franco-Byzantine*); and monuments that have equally adopted

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[4]The author names the sub-categories for the purposes of this study.

[5] Three of those 7 *double-roofed* monuments are included in the 11 'Byzantine style monuments with the Medieval additions' because they have additional medieval structures.

[6]The author defines the sub-styles for the purposes of this study.

architectural details from both styles and interpreted them with a completely new perception (*new Franco-Byzantine*).

The *Byzantine Franco-Byzantine* monuments (59) are mainly churches that have been built earlier or around the 11th -12th centuries and were reconstructed during the period 1191-1571. Those monuments are scattered all over the island. The *Medieval Franco-Byzantine* monuments (10) are mainly monuments that were built around the 14th-16th centuries in the Famagusta, Nicosia, Larnaka, Limassol and Paphos districts. The centre of their original creation is Famagusta town. The *new Franco-Byzantine* monuments (43) developed between the late 14th to the late 16th centuries; however, a few monuments already existed before the 14th century and were later converted into that style, between the 14th to 16th centuries.

Stylianou noted that the *Franco-Byzantine style* was created originally in Famagusta in the 14th century by the Greek wealthy class (Stylianou, 1996:1241). The first *Franco-Byzantine* monument ever constructed is the pioneer *Medieval Franco-Byzantine* church of St Georgios of the Greeks, which was built between 1360-70.

In the 14th-16th centuries the *Franco-Byzantine style* was widespread all over the island, in Famagusta (31) Nicosia (18), Larnaka (10) and in Paphos (31) towns and countryside, in Limassol (17) and in Keryneia (5). Stylianou believes that cross-breeding between these two traditions was intended to indicate artistic differentiation and for show (Stylianou, 1996: 1241).

Vernacular Style

The *Vernacular* style is represented by (9) monuments of the island's landscape, like towers, watermills and bridges. The bridges are mainly scattered around the Troodos Mountains. Accurate chronology of those is difficult unless further archaeological investigation is carried out. Scholars have dated some of them to around the 16th century, by making some assumptions. Their style is simple, and no decorative features have been observed. The only *Post-Byzantine* architectural element is the detail of the pointed arch. Their construction technology follows that of their contemporaries, the Byzantine churches of the Troodos Mountains.

Architectural characteristics of the *Post-Byzantine* style and its development

The analysis of the three *Post-Byzantine* styles requires a brief description of their architectural details, decorative features and forms as they developed and altered through the years. This description should serve as a guide to the understanding of the several stages of the styles' development.

Historical, geographical, and financial circumstances have influenced the creation and use of specific architectural forms, elements, and construction in each architectural style. In the descriptions that follow, the historical periods are divided according to the historical landmarks of that period. This historical account begins with a brief retrospection of the periods concerning the 4-7th, 7-10th, and 10th - 12th centuries. Then, it focuses on the period 1191-1571, dividing it into three parts: 12th–14th, 14th–15th, 15th–16th centuries. After a brief look at the historical background of each period, the focus will be on the description of the characteristics of each style.

Analysis of the architectural characteristics of *Post-Byzantine* styles is based on specific parameters. These parameters concern the scale, the structure and the decoration of the monument. The scale relates to the size, the dimensions and the proportions of the monument and its several structural elements. The structure relates to the type, forms and shapes of each structural element (roof, wall, windows, doors, and floors), the use and the workmanship of the construction material (type of material: stone or mudbrick, its shape and size) that is used.

The decoration is concerned with the architectural details that decorate the interior and exterior walls, the roofs, the floors, and the window-door frames. The frescoes are not part of this research, but are taken into consideration as the *terminus ante quem* for dating the monuments, or the several alterations to the monuments. Occasionally, there is a presentation on the frescoes of the model of the church as it was originally built. Such presentations provide valuable historical information concerning the monuments style, type and construction.

The structural condition of some monuments (ruined, reconstructed, restored and altered) has prevented the analysis of many of the above-mentioned features. In these cases, identification of the style (and possibly the chronology) of the monuments was only possible based on a few architectural elements, structural or decorative, that survived.

Architectural characteristics of the *Byzantine* styles in the 4th-12th centuries

The 4th-7th centuries

In the 4th to the 7th centuries the Byzantine style produced the large, impressive and elegant timber-roofed basilicas. Almost all of them were unfortunately destroyed in the Arab raids during the years 649-965.

The 7th-10th centuries

The new architectural style

Because of fear of destructive raids[7] in the 7th-10th centuries, the 'basilica' was abandoned and a new architectural Byzantine style and type was introduced. That style produced solid buildings, smaller in size and low, with rather squat proportions. The new style intentionally created humble churches. Simple, square and rectangular shapes and forms characterise the church outline and the various structural elements.

Timber roofs were no longer practical or safe, and a new roofing system was therefore introduced: that of barrel vaults and domes. The domes have a calotte shape and are based on low, cylindrical drums and barrel vaults. It was common to have one, three or five domes[8]. The calotte domes ended at the top with the 'key stone', a cylindrical vertical stone, which was used as the base for the cross[9].

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[7]Evidence, shows that in the 7th century, after the first Arab raids, monks used large caves as hermitages (Papageorgiou, 1999a: 9).

[8] Agios Antonios Kellia had one dome (which was replaced later with a barrel vault), Agios Lazaros in Larnaka had three domes, and Agia Paraskevi in Geroskipou had five domes (a sixth dome covers the south apse, but it is not part of the roofing system of the whole church).

[9]The domes are covered either with frescoes or plaster and it is difficult to confirm that this 'key stone' was actually a structural detail and not just decorative. This 'key stone' was also used in the churches of the 12th century (Archangel Sotira), and 15th century (Panagia in Kampyli). A photo (Figure 4.25) from the archives of Museum (1956) has shown that this cylindrical stone may have been a part of the dome structure.

The interior of the churches was dark, the only openings being the 2-4 loophole windows on the dome-drums and a single window on the altar apse wall. The western main entrance was usually the only door of the church. The thick walls were built of heavy rubble masonry and local limestone. No decoration was applied, apart from the interior frescoes.

Surviving churches

All above-mentioned characteristics have survived unaltered to the present day, and can be studied in the church of Agia Paraskevi in Geroskipou (Figure 4.1), which originated in the late 9th century. It is the *cross-in-square* type, [10] with five domes. Despite several alterations, the church's original style, type and construction, have not been affected, unlike the *cross-in-square* church of Agios Antonios in Kellia (Figure 4.2), which also originates in the 9th century. The many alterations to this church (11th, 15th, 16th centuries) have destroyed evidence of the original building. Only some parts of the heavy masonry in the foundation of the altar apses have survived.

Another significant church of this period is Panagia Kanakaria in Lythrangomi (Figure 4.3). The present church is the result of many alterations. It was originally built in 500 AD as a *three-aisled basilica* (with columns), with apsidal east ends and with a narthex at the west end, but was reconstructed in 700 AD as a three-aisled timber-roofed pier basilica. In the 12th century it was remodelled as a three-domed church. In the 13th century, its south wall and aisle were reconstructed and a south entrance with a drumless dome was added. The central dome was reconstructed in 1500. The church's fabric and features date from different historical periods: from 500, 700, 1160, the 13th century and 1500, and they are easily recognisable.

From the 10th century until the end of the 12th century

Historical background

The historical circumstances of the 10th-12th centuries influenced the development of the Byzantine style in a different way than before. After 965 AD, the island reverted to the Byzantine Empire's protection and so its links with Constantinople became

[10]The church-types will be analysed and described in detail in the next chapter.

closer. From the end of the 11th century, the island was developed as a military base for the Byzantines, due to the imminent threat of the crusades and since they had lost Asia Minor in 1071. The Byzantines built churches and monasteries[11]. It was then that they fortified the island, building castles on the Keryneia range of mountains, the castle in Keryneia itself, Limassol and Nicosia. In addition, several towers along the coasts and the main road leading to Nicosia were constructed as observation posts.

Surviving churches

During this period, the construction of churches and monasteries flourished. At least 58 monuments[12] were encountered. Construction activity reached its peak between the 11th century and the end of the 12th century. The most representative examples, that have been preserved intact[13] are: the church of Agia Marina in Deryneia (Figures 4.4) which dates from the 12th century (but additions were made in the 14th century at the south end); b) the monastery church of Antifonitis in Keryneia which originates at the end of the 12th century, Panagia Araka in Lagoudera (Figure 4.5) which was built in 1191, Panagia in Asinou (Figure 4.6) which was built around 1100, Agios Nikolaos tis Stegis (Figure 4.7), which dates to the 11th century, and Lampadistis in Kalopanagiotis (Figure 4.8), which also dates from the 11th century.

The most extraordinary example of all is the hermitage-cave of Agios Neofytos, a cell and a church, which was 'constructed' between September 1159 and September 1160. According to Papageorgiou, the cave was decorated with frescoes in 1197 (Papageorgiou, 1999a: 28, 36).

The Byzantine church of Kanakaria (Figure 4.3, 4.9), which was built earlier, was remodelled in 1160 as a vaulted basilica with three domes. The domes are in a line: a drumless dome over the *bema* (eastern), a dome over the central aisle, which was

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[11]The monasteries of Kykkos and Machairas (and others) were built at the end of the 11th and at the middle of the 12th century , with the generous financial support from the Byzantine Emperors. Both were built on strategic locations, to be used for military purposes on certain occasions (MKE, v. 10, Pg 105). They were altered and reconstructed several times since then, and have not preserved any of their original structures that belong in the period 1191-1571. Therefore, are not considered for the purposes of this study.

[12]At least 30 of them were partly reconstructed or suffered from later additions.

[13]The sequence of the monuments (that are mentioned) starts from the least unaffected.

reconstructed in 1500, and a dome above the narthex (western). Two of the domes (western and eastern) and the vaults have preserved their 12th century characteristics up to the present day.

According to Papageorgiou, the Achiropoiitos Church (Figure 4.10) was built as a five-aisled basilica in the 5th century, but rebuilt in the 11th (or early 12th) century as a *three-aisled basilica*, (Papageorgiou, 1984 v.3: 96). Remnants of the altar apse from the original churches became part of the re-built church. For example, the early Christian semi-dome of the altar apse is taller than the later three-aisled church, and therefore it was blocked with a triangular gable. In the 12th century, a narthex was added in the west. In 1500, an external narthex, or open stoa (called 'exo-narthex'), was added at the western end. The church has preserved all the additions and reconstructions, which are representative examples of their period.

Another significant 12th century church is Holy Cross in Arakapa. Despite its ruinous condition, its original style and type are recongnisable (Figure 4.11).

The main characteristics of the new architectural style of this period and influences from Constantinople

Proportions, size and scale of the churches

Papageorgiou says that the 'Middle Byzantine Architecture of the 10th-12th centuries' in Cyprus was developed under the influence of Constantinople. A new Byzantine style and a few new architectural types were introduced and spread throughout the island. This new style produced churches that were larger in size and in scale, which have slender rather than squat proportions, compared with the earlier ones (Papageorgiou, 1981:469). The churches are no longer humble but very impressive, their main characteristics being axial symmetry and geometry.

Roofing system

The roofing structure is clearly indicated and enhanced. The outline of the barrel vault is clearly expressed on the facades of the churches with arched gables, unlike before. Simple barrel vaults and domes on drums are widely used, but differ from

those of the earlier period in shape, size and scale. Towards the end of the 12th century, the barrel vaults and the arches became slightly pointed[14] (Asinou, Figure 4.6b). This architectural detail is often a guide in dating a Byzantine monument.

In the interior, a cymatium-shaped cornice separates the walls from the roofing system, a detail that originates from early Byzantine basilicas. This architectural detail, however, was used throughout the period that this doctoral thesis is concerned with (1191-1571), in all *Byzantine* and *Franco-Byzantine* churches.

Domes

The domes have a hemispherical shape and are based on tall, cylindrical drums. In some cases, the dome has a calotte shape: that of Agios Irakleidios in Lampadistis (Figure 4.8), Holy Cross in Pelendri and Agia Anastasia in Polemidia (the 12th century western dome), Panagia Kyra in Livadia (Figure 4.12). Drumless domes were observed by the author above the nave of the churches: Agia Mavri in Koilani and Agioi Apostoloi in Pera Chorio Nisou (Figure 4.13). Drumless domes with a calotte shape were also commonly used in the 12th century above the narthexes, such as in the churches of Agios Nikolaos tis Stegis, Asinou, Agios Theodoros Sotira (Figure 4.14) and Agios Georgios Sakka in Gialousa[15].

The diameter of the drums differs according to the roofing type of the church. In the *dome-hall*, *cross-in-square,* and *simple cruciform* domed types, the drums are slender (Panagia Pergaminiotissa in Akanthou, Figure 4.15) and the diameter is between 2.35- 3.5m. In the *octagonal* and *hexagonal* domed types the maximum diameter is between 7.35 and 7.85m [Antifonitis (Figure 4.16) and Agios Ilarionas (Figure 4.17), respectively], and the drums are large and rather squat. The height of the drums also varies between 1.5 and 3m. The drum and the dome commonly have irregular dimensions. For example, the 12th century dome in Agia Anastasia in Polemidia has an east-west side of 3,22m and a north-south side of 2,70m.

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[14]The slightly pointed arch was used in Asinou before 1192 (Stylianou, 1996: 1231). The pointed arch is also found in Araka, which is dated around 1191-2 (Boyd, 1974:285).

[15]Papageorgiou described the church of Agios Georgios Sakka in Gialousa in his latest publication, as a monument in ruins (Papageorgiou, 1982:446 and 1984 v.4: 54). It is located in the Turkish occupied area and it is not known whether this monument still exists.

Constantinopolitan influences

The Byzantine forms and shapes of the structural elements and the construction details of the churches in this period have not entirely followed Constantinopolitan prototypes. This can be seen by observing some details, for example, the shape of the apse. The apse has always a semi-circular, stilted shape internally and a semi-circular apse externally, instead of the polygonal, three-sided, shaped one which was commonly used in Constantinople. The only exception is the upper part of the 11th century altar apse of Agios Nikolaos tis Stegis (Figure 4.7b). Elsewhere, even in churches where the Constantinipolitan influences are strong (i.e. Agia Trias Koutsoventis) the apse remains circular in shape, as in the earlier churches of the island (Papageorgiou, 1998:213).

Construction of the walls

In this period, the masonry walls do not look as heavy as in earlier periods. The materials used vary. Roughly squared limestone of different sizes is used in the plains, where the material is available, while raw material collected from nearby river beds, such as large pebbles and hard stone pillow lava-gabbro is used in the mountainous areas.

Introduction of bricks

The most important innovation in construction technology was the introduction of the brick at the end of the 11th century, and its use until the 12th century (Papageorgiou, 1981:472), which is clearly an influence from Constantinople. As Papageorgiou indicates:

'The influences from Constantinople are more evident in some details of the masonry and the external face of the walls and domes. These details are the use of brick in the construction of walls, piers, arches and vaults, the alternation of bricks and stones, the ceramic decorations and the breaking of the external surface of the walls and the creation of blind arches and niches. These elements were introduced in the 11th century and were short-lived' (Papageorgiou, 1981:473).

For 20-30 years, bricks were used for the construction of walls, arches and vaults.

Alternation of brick and stone was used for the construction of the walls. The best representative example is in the church of Agios Ilarion in Agios Ilarion Castle. The walls of this church were constructed of roughly cut limestone in combination with bricks. The stone parts of the walls were plastered with mortar, imitating dressed stones so as to give the false impression[16] of a mixed wall construction: ashlar stones in combination with bricks. Bricks were also used for the construction of columns, engaged piers, arches and vaults. The second important example with extensive use of bricks on the walls is Agia Trias Chapel[17] in Koutsoventis (Figure 4.18). The apse and the north wall of the chapel were built of local limestone, whereas the west wall arches and vaults were built with bricks. The drum of the dome was built with dressed stones and bricks, which was very common in Greece at that time.

Those two churches are the only examples with an extensive use of bricks in their construction, and they are both located in the Keryneia district. Keryneia is the part of the island closest to Turkey (Constantinople), and therefore it is possible that masons, builders and brickmakers/bricklayers may have travelled from Constantinople and worked in Keryneia for a short period of time and then left. In addition, this area, and especially the nearby village of Lapithos, was particularly famous for its pottery in the medieval period. This means that the area was able to provide excellent material for the manufacture of bricks. It is possible that both the location (nearer Constantinople), and the availability of local material, enabled the introduction and extensive use of bricks in that area.

Elsewhere in the island, bricks were only used on arched window frames in the churches of the 11th-12th centuries. Some of those churches are: Asinou in Nikitari, Araka in Lagoudera, Agios Nikolaos tis Stegis in Kakopetria, Agioi Apostoloi in Pera Orinis, Agios Georgios Makris in Larnaka, Holy Cross in Pelendri (Figure 4.20). The Department of Antiquities has recently restored all of them and their original bricks replaced with new ones.

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[16] A similar detail was seen by the author on the wall of the altar apse in Asinou; the rubble stone masonry is plastered with mortar imitating ashlar masonry walls.

[17]The monument was restored and partly reconstructed in 1960's by the Department of Antiquities.

Windows

In this period, the number and size of windows are increased, allowing more light into the interior of the churches. The number of windows on the wall of the altar apse varies: from one (Chortakiotissa), to two (Kofinou), or three (Asinou, Figure 4.19a, Amasgou, Agioi Apostoloi). A single window was also placed on the western gable. The best evidence is the round-headed window on the western wall of the 12th century church of Asinou[18] (Figure 4.19b). This window has a cross-pattern created by two circular (up-down) and two drop-shaped (right-left) glazing pieces, in a gypsum (plaster) partition. This window is very important, because it confirms the use of glazing[19] in the 12th century, and also the use of gypsum (plaster) partitions.

The number of the windows on the dome-drum is often four. However, eight windows have been seen on the dome-drum of Agios Georgios church (dated between 10th-12th centuries) in Keryneia Castle[20] and in Panagia Araka Church in Lagoudera (1191). Twelve windows have been seen on the dome-drums of Antifonitis Church in Kalograia (late 12th century), in Panagia Ypati[21] (dated to the 12th century) which is near Antifonitis, and in Agia Trias in Koutsoventis[22] (Figure 4.18). Occasionally, some of the windows on the drums were blocked; or, instead of windows, blind niches are introduced, as in the church of Kanakaria. The 12th century dome, which is over the narthex, has three windows and five blind niches (instead of eight windows).

In the multi-domed churches, whose domes were built at different times, the number of windows on the dome-drums differs. For example, in Agia Marina church in Deryneia the 12th century dome above the nave has four windows, but the late 12th century dome above the narthex has only one window in the south. The size of the

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[18]This window has preserved its original characteristics because it was protected by the addition of the narthex in the west, later in the 12th century.

[19]According to Papageorgiou, another glazing window has survived in Panagia in Trikomo (oral information).

[20]The monument was not visited but was seen on a photo of the MKE, v.7, pg. 63.

[21] Text and photo by A. Papageorgiou in MKE (Papageorgiou, 1984 v.12: 209).

[22]The number, size, proportions, and decoration of the windows in Agia Trias in Koutsoventis have changed in the 1960's restoration. It is not certain whether the new windows are similar to the original ones.

windows is mostly the same in each church, but this varies from one church to another.

Windows were introduced at the side and western gables of the churches, which are the same size, or shorter. Occasionally, one (Agioi Apostoloi, Agios Andronikos Frenaros, Chortakiotissa), two windows on the west side (Kofinou, Agios Georgios Chortakia) and one on the side gables (Chortakiotissa, Agioi Apostoloi, Agios Andronikos Frenaros, Figure 4.21), or two (Kanakaria[23]).

All the windows are arched with slender proportions. Their width is between 20-50cm and height 50-100cm, except in Agia Trias (width around 60cm, and height around 150cm). The only gable window with squat proportions is found in the north wall (which used to be a gable) of Agios Nikolaos tis Stegis in Kakopetria (Figure 4.7). On the same side of the wall, there is another, larger window (around 50x80 cm) with a recessed, arched frame and next to it a blind niche of the same shape, with also a recessed arched frame. This technique of the recessed arched frame is found on the drum windows in Antifonitis Church (Figure 4.22).

Introduction of tracery-windows

Another innovation of this period was the introduction of semi-circular shaped windows (fanlight)[24] above the entrance doorways. The way those are jointed with the doorway-frame depends on the construction material of the walls and the construction of the doorway frame. In rubble, or roughly cut limestone masonry, the window is placed above the timber lintel of the door (Asinou, Figure 4.6, and Agioi Apostoloi, Figure 4.13), slightly higher than the timber lintel (Agios Nikolaos Stegis, Figure 4.7). Occasionally, those windows have an arched lintel, which is constructed with radial placed bricks (Asinou, Agios Nicholas). In the roughly squared limestone masonry wall, the window is positioned as part of the doorway frame (Agios Andronikos, Figure 4.21).

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[23] It is not certain whether the two windows on the south gable in the Kanakaria church belong to the 12th century. According to Stylianou the south wall was reconstructed in 1500. (Stylianou, 1985:43).

[24]No detailed research has studied yet the introduction of glass on the windows of the churches except the 12th century window in the western wall in Asinou, and in Panagia in Trikomo. However, the production of glass-ware was known in Cyprus since the Roman period (many examples are been exhibited in the Cypriot Museums).

The best evidence that confirms the existence of this type of window, from the early 12th century, has survived in Asinou (Figure 2.26). On the frescoes of the south walls, dated to 1105-6, there is a presentation of the model of the church that shows the two southern doorways of the church (north and west) with those semi-circular windows. They are shown as tracery-windows, with circular geometrical patterns. Similar partitions with geometrical features decorate the window of the altar apses (Asinou), the drum-windows (Antifonitis) and the side wall windows (Agios Nikolaos tis Stegis).

The tracery partitions of the windows were made of gypsum (plaster). Those partitions were found in various geometrical patterns: circular, semi-circular, rhomboid and triangular. Those patterns are filled with small pieces of glass. The hand-made pieces of glass, which are more often circular, have a maximum size of up to 15cm in diameter. The most elaborate examples are the small window in the north wall of Agios Nikolaos tis Stegis, and the windows on the dome-drum of Antifonitis Church (Figure 4.22). The smallest window (with three circular and three triangular pieces of glass) is found in the hermitage of Agios Neofytos in Tala (Figure 4.23). In the *Trapeza*[25], a north-east chamber, there is another interesting fanlight-window with a recessed semi-circular partition, which has small circular pieces of glass of various sizes.

The tracery partition is probably another influence from the Constantinopolitan or Greek Byzantine tradition. According to Orlandos, partitions with geometrical patterns had already been used in early Christian churches in Greece. He says that those partitions were made mainly of marble and rarely of metal (Orlandos, 1952: 434). In Cyprus, the lack of good quality marble and the availability of gypsum, led to the wide use of the latter instead.

Decoration on churches and use of plaster on exterior facades

Window partitions, with patterns and bricks on the arched window, are the only decorative features of the churches' exterior facades, while the interior of the

[25] Plan of the cave, descriptions and dating of the frescoes are given from Papageorgiou, and other scholars; C. Mango and E.J.Hawkins (Papageorgiou, 1999a: 37).

churches was beautifully decorated with frescoes[26]. It is not certain whether the exterior facades were plastered, either with a thin or thick layer of mortar. The only evidence is the traces of mortar on the wall of the apse in Asinou (Figure 4.24). There the mortar imitates ashlar masonry. The use of plaster on the facades is confirmed on the 12th century frescoes on which is represented a 'model' of the church, mentioned above. This icon shows that the external walls were plastered with a plain white-yellowish colour (Figure 2.26). It also shows a decorative frieze that decorated the base of the hemispherical dome of the apse.

Plaster was occasionally used on the external facades of the walls of the Byzantine churches elsewhere in the Byzantine world, but those walls have been more usually left plain (Mango, 1976: 22). Mango gives a description of the technique that was used in the churches facades by the Byzantines: *'The joints between the courses of brick and stone were pointed up with a thin layer of fine mortar, which was pressed with a blunt implement so as to form a slight groove. Often incised lines were added. Ornamental patterns of brick are quite exceptional before the tenth century'* (Mango, 1976: 22).

Protective measures for the roofs; cementitious lime-mortar or tiles

There is no information as to whether the roofs of the churches were protected with tiles or a layer of cementitious lime mortar. No surviving example has been identified, since all the monuments have been repeatedly restored. On the earliest photographs from the archives of the Department of Antiquities (dated 1920-1960), the roofs of the monuments appear without any tiles. According to some archaeologists (Department of Antiquities), the roofs were instead lined with a thick layer of protective lime-mortar such as in Panagia Kampyli (Figure 4.25) Agia Marina Deryneia (Figure 4.4).

The only evidence[27] of the use of tiles on the roofs is the icon on the frescoes on the

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[26]The frescoes have been thoroughly studied by art historians and they are not part of our study. They are only used as the *terminus post quem* for dating the churches, and for historical information that is relevant to the construction of the churches.

[27]According to Stylianou, the 12th century frescoes above the south entrance of the church of Asinou presents a scene of the donor of the church, Nicephoros Magestros, offering a model of the church to Virgin and ChriAgios (Stylianou,1985: 115)

south wall of Asinou church. This presentation shows that the church had two roofs: a barrel vault, protected with a double-sloped timber roof. The second roof was covered with tiles. This suggests that this timber-type of roofing with tiles was indigenous to this area before the Latin occupation of the island in 1191, since Asinou church was built before 1105/6. However, these tiles are shown slightly curved (which resembles the 'Byzantine-tiles') and not flat, like the hooked tiles in the *timber-roofed* churches. This needs further investigation.

Asinou is the first example ever of a church with a *double-roof* style (of the 7 churches), one that has been built with two roofs. The other *double-roof* church of this period is Panagia Amasgou. According to Boyd, the church was probably built as *timber-roofed* in the 12th century. The church collapsed from an unknown cause and was then re-roofed at the end of the 13th century with a double roof - a vault with a timber roof above it (Boyd, 1974: 285).

The Byzantine roofing types of the period 10th -12th centuries

This brings us to the discussion of the differences between the three Byzantine styles in this particular period (10th -12th centuries). The *timber-roof* style originates in the 12th century but none have survived from that early period. All the churches, like Panagia Kykkou and Amasgou, were reconstructed at a later period (Stylianou, 1996:1239). The earliest surviving example is Panagia Moutoulla, which was built in 1280 (Figure 4.26).

Out of a number of 55[28] *Byzantine-style* monuments that originate in this period, 7 are *double-roof* and 48 *simple Byzantine-style* monuments. The 6 *double-roof* style monuments (apart from Asinou, mentioned above) were built in the 11-12th century and later (end of the 12th century or in the 13th century) they were altered and protected by a timber roof. Those represent four church-types according to their plan: Agios Nikolaos tis Stegis, Agios Irakleidios in the Lampadistis complex, (*cross-in-square with dome* type[29]), Araka and Agia Mavri in Koilani (*dome-hall*

[28]Papageorgiou says 'More than seventy churches, which on principle can be dated to the Middle Byzantine Period (10-12th centuries), survive in Cyprus (Papageorgiou: 1982: 437). In his list he includes churches of the earlier period that were reconstructed in this period.

[29]A cross-in-square with dome was initially Agia Anastasia in Polemidia, which was built in the 12th century.

type), Holy Cross of Pelendri (*single-aisled domed* type), and Asinou, Amasgou (*vaulted type)*.

The main difference among the various Byzantine types is the construction technology used, which depends entirely on the geographical location of the churches. The *timber* and the *double-roof* style churches are located in the Troodos Mountains (that was the reason they needed extra protection from the snow, with a second roof). Their masonry is built of pebbles of different sizes collected from nearby rivers, and hard stone like pillow lava-gabbro (Troodos geology), joined with mortar[30]. The masonry of the *simple Byzantine style* churches is built of limestone (local material), roughly cut or roughly squared in different sizes.

The re-introduction of the narthex, 12th century

At the beginning of the 12th century, the narthex was re-introduced[31] into local church architecture as another influence from Constantinople. Papageorgiou says that the re-introduction of the narthex was probably the result of the deep changes in liturgical customs[32] that had already happened earlier, between the 7th and 10th centuries (Papageorgiou, 1982: 439).

The 12th-14th centuries

Historical background

In the mid 12th century, the economy of the island suffered due to repeated raids, which prevented the construction of the buildings, while at the end of the century many important buildings were erected. In 1191[33], Richard I, the Lionheart, King of

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The church has preserved the original irregular shape dome, semi-circular apses and the north side of the cross. In the 14th century, another cross-in-square type church was attached in the eastern side of the original church, which has pointed arches and a hemispherical dome.

[30]A close observation on the masonry of the monuments that have not been restored recently, where the material is still loose, has shown that the mortar is similar to the one which is used for the construction of the mudbricks.

[31]All the Early Byzantine basilicas in Cyprus (4-7th centuries), had a narthex. Its construction and use was then stopped until the 11-12th centuries.

[32]These liturgical customs is part of the monastery life. The narthex was used for prayers by the monks in the early morning liturgy (orthros =matins). Every monastery unit in Cyprus had its own rules for the monks daily routine, and the use of narthex.

[33]In the 1191, the King of France and Richard the Lionheart of England led the third crusade. Richard had not

England, captured the island in an attempt to punish Isaac Comnenus, the Byzantine governor of the island, over a personal dispute. Subsequently, in the spring of 1192, Richard sold the island to Guy de Lusignan, an ousted King of Jerusalem. The Lusignans established a strong Catholic Frankish Latin Kingdom.

Latin rule

The western Gothic style was introduced in 1200, lasting until the 15th century, and it is mostly seen today in churches with their decorative features (Coldstream, 1998:51). The royal palaces, both in Nicosia[34] and in Famagusta, as well as their fortifications, have not survived, whereas archaeological excavations have confirmed the existence of other Lusignan military or industrial monuments.

A brief reference to historical circumstances and the buildings in the Gothic style is essential to the purposes of this study. It will assist us in understanding the influences on the local (up to that time) Byzantine tradition, the creation and development of Franco-Byzantine and *Post-Byzantine* styles.

The architectural activities of the Latins

Guy de Lusignan populated the island with western settlers[35], craftsmen and artists capable of constructing and decorating castles, palaces and churches. The Lusignans inherited three mountain-top castles in Keryneia from the Byzantines: Agios Ilarion, Buffavento and Kantara, which they enlarged (Edbury, 1998:38). They also built new castles (Kolossi, Saranta Kolones in Paphos) and new churches, sometimes replacing Byzantine ones. For example, Nicosia Byzantine Cathedral was demolished and in its place the Gothic Cathedral of Agios Sofia was erected. The Lusignans also constructed small industrial units for the refining of sugar in the late

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intentions to invade the island, but he was insulted by Comnenus's (the local official representative of the

Byzantine Emperor) attempt to mistreat Richard's fiancé Berengaria and his sister who took refuge in Limassol port after a storm. Richard responded with force and eventually captured the island.

[34]A recent excavation, in 2001-2 in the centre of the old town of Nicosia, within the Walls, is believed to have revealed the ruins of the Lusignan Palace. The site is still under investigation.

[35]Information from Enlart (Enlart, 1889/Hunt 1987: 33), original source Mas Latrie, 1861-2, Histore de Chypre, v. 1, pg.9)

12th century. The oldest[36] surviving sugar mills date to 1222, at Saranta Kolones Castle in Paphos (Ieronymidou-Solomonidou, 1997:68-9).

At the end of the 13th century, the island's Latin community[37] benefited from the flood of rich refugees after the fall of Acre in 1291, and the development of the trade between the Genoese, Venetians, Pisans and Arabs. Then, the towns (Nicosia, Famagusta, and Bellapais) were decorated with elaborate Gothic buildings. From France, the Franks brought architects, engineers and French-trained masons to the island[38] to build churches, palaces, monasteries, and fortifications around the cities, and to revive the Byzantine castles. They also brought new designs from France. The Gothic buildings in Cyprus always had a flat roof, unlike their contemporary Gothic buildings with pitched timber roofs prevalent in northern Europe.

Enlart gave his own account of all the Gothic buildings, religious, residential and military. He classified them into several chronological periods (Enlart 1899/Hunt 1987: 33-48). Enlart believed that all the Gothic buildings of the 13th century and also those at the beginning of the 14th century were in a style that did not lag behind its French models. The buildings, particularly the churches, were *'drawing their inspiration from models in Champagne and to some extent in the south in France'* (Enlart/Hunt, 1987: 34). Enlart mentioned that the buildings' proportions are good but rather squat, and until 1350 *'the ornamentation is applied soberly but in a grand style'* (Enlart/Hunt, 1987: 35).

In the late 14th century, from 1360 onwards, imitation of earlier buildings is noticed in the island. As Enlart[39] indicated, the buildings '*represent the respectable*

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[36]Later, the sugar mill in Stavros -Kouklia and in Kolossi was built in the 13th century, and in Seragia-Episkopi in the 14th century (Ieronymidou-Solomonidou, 1997:68-9).

[37]The Latin different religious orders are; the Benedictines (Nicosia and Larnaka), Cistercians who arrived in the 13th century (Nicosia), Augustans (Famagusta, Nicosia, Limassol, Paphos), Carmelites (Nicosia, Famagusta, Limassol, Keryneia), Dominicans (Nicosia, Famagusta, Limassol), Premonstratensians (Bellapais, Nicosia).

[38]The Lusignans divided the island into 12 districts; Nicosia, Famagusta, Paphos, Limassol, Keryneia, Salines (Larnaka), Mesaoria, Karpas Peninsula, Mazoto, Avdimou, Chrysochou, Pentagia.

[39]The churches of this period, that Enlart referred to, are; St Georgios of Greeks, SS Paul and Peter, St Anne and Nestorian, all in Famagusta, Holy Cross in Tochni, Stazousa in Larnaka, St Nicholas in Nicosia, and the Franciscan church in Paphos.

beginnings of this period, a great inferior to its predecessor'. Ponderousness and monotony, simplified construction but good proportions of the buildings and the art of masons are the characteristics of this period (Enlart/Hunt, 1987: 34). Enlart's remarks were applied to Gothic buildings of that time, but also to the first examples of the newly created *Franco-Byzantine* style, in 1370 (i.e. Agios Georgios of the Greeks).

The effect of Latin rule on Byzantine architectural activity

Cyprus enjoyed considerable economic prosperity (Edbury, 1997:37) which, '*only those who were already rich anyway were really able to enjoy. The indigenous Greeks lived in poverty*' (Hein, Jacovljevic & Kleidt, 1997: 21). The Latin Church was imposed on the island. Greek-Orthodox bishops were reduced to four and expelled to remote villages, and their land was confiscated (Stylianou, 1985:18). The bishops were closer to their flock than ever, and that later influenced the development of religious rural architecture (Stylianou, 1996:1230). The indigenous population was reduced to poverty.

The island's close bond with Byzantium was loosened with the fall of Constantinople during the fourth crusade in 1204. The island's relations with Byzantium remained limited even after the re-conquest of Constantinople in 1261 by the Byzantines. For the first time in the island, two different architectural styles coexisted: the Byzantine and the Medieval Gothic.

For 100 years, the island was deeply involved with the crusades[40]. In between the crusades, a severe earthquake in May 1222 (MKE, 1984, v.12: 172) destroyed the cities of Limassol and Paphos and Paphos Castle (Hill, 1948/1972, v.2: 87).

The decline in architectural activity in the Byzantine style up to the late 13th century

The construction of Byzantine-style churches declined from the middle of the 13th

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[40]Hugh I participated in the fifth crusade along with Emperor Frederick II who later in the sixth crusade (1228-1229) he unsuccessfully tried to trigger a civil war in the island. The seventh crusade (1248-1254) by Louis IX, was assembled in Cyprus (Jakovlevic, 1997:20).

century to its end (around 1220's-1291). In fact, in an effort to identify churches[41] from that particular period, it was realised that a few reconstructions and additions to earlier churches took place. The churches of Amasgou in Monagri and Holy Cross in Pelendri (both in Limassol), Chryseleousa in Empa in Paphos and others, according respectively to Boyd (Boyd, 1974:285), Papageorgiou (Papageorgiou, 1984 v.12: 318), and Stylianou (Stylianou, 1996:1232), collapsed due to an unknown cause, and were partly reconstructed in the 13th century. That historical coincidence may suggest that the unknown destructive cause was the earthquake (mentioned earlier) that shook the island in 1222.

According to Papageorgiou[42], medieval documents have confirmed that all the Byzantine monasteries of this period had already been established before the arrival of the Latins (1191) and by the 14th century had been left to decline. It is not unreasonable to assume that, in similar fashion, Latin hostility towards the Greek-Orthodox population reduced to a minimum any construction of Byzantine churches, both in villages and cities.

The Byzantine style revived through the *timber-roofed* style, late 13th century

The construction of Orthodox churches was revived at the end of the 13th century with the *timber-roofed* style, on the mountains of Troodos. This revival became possible with the generous donations of a wealthy local couple. The custom of donating churches by wealthy people was very common in the island and especially in this area[43]. It is obvious that the Orthodox Church and the village peasants could not afford to contribute financially to the construction of the churches.

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[41]We encountered at least 59 monuments that have structures that originate from the period 12-14th century. The 43 of those are *Byzantine style* monuments and the 16 are classified as *Franco-Byzantine* style monuments. The *Franco-Byzantine* style monuments are either built at the end of the 14th century, or were converted from the Byzantine style to the Franco-Byzantine in the late 14th until the 16th centuries.

[42] The Latins in 1220 and 1222, have decided not only to reduced the Orthodox churches' income to the minimum by offering them to the Roman Catholics but also to impose rules that would almost prohibit any establishment of new monasteries (Papageorgiou, 1990:189, original information from I. Hakket-C. Papaioannou, 1923:114-8).

[43]Asinou church was donated by a noble man and his wife in 1099 (Stylianou, 1985:117). This habit is more common later, in the 15-16th century (Pedoula, Platanistassa, Galata, and Kakopetria). Presentation of a model of the church on the frescoes we have, also, seen on the *timber-roof* church of Archangel in Pedoulas (photo 196, Stylianou, 1985:332) which is dated in 1474.

The first *timber-roof* style church for which we have evidence, erected in the 13th century, is the *timber-roofed* church of Panagia Moutoulla (Figure 4.26). An inscription on the church's frescoes gives the names of the donors and the date 6788, which corresponds to 1280 AD (Stylianou, 1985:323). There is also an elementary presentation of the model of the church, which is held by the two donors (Figure 2.27). This icon is not in a good condition. The only readable detail is a doorway with a semi-circular frame. The doorway is wider than its arched lintel, a detail that has not yet been found anywhere else. It is not clear, however, on which side of the church this door belongs, probably the north, but also possibly the west. The roofing type of the church is also uncertain.

The church is characterised by'reductionist' simplicity: least is best. It has a simple rectangular plan, (3.76 x 6.85m internal dimensions) and low height (the height of the church is 5.8m and the height of the wall is 2.84m), with rather squat proportions. It has a double-sloped steep-pitched roof and looks like a local house[44]. Its timber roof has two parts: one set of beams support the structure, and the other provides the base for the hooked-tiles. The masonry of the church is built of local raw material: gabbro and diabase hard stone from the Troodos mountains. No decorative feature is exposed, apart from the elaborate, decorated door-shutters (panels) and the frescoes in the interior.

In an effort to explain how this church was the first to be built, and why it is the first in the *timber-roofed* style, one can posit the following two scenarios: the first assumes that the wealthy donor had a good relationship with the Latins and asked their permission to build this church. The second scenario assumes that the church was built with a steeply-pitched timber roof not only due to the climatic conditions, but also so as not to attract the attention of the Latin rulers i.e. to make it not look like a church. Perhaps that was the main reason that forced the addition of a second roof, a timber roof, above the existing vault or domed roof of some earlier monastery churches of this region (Stegis, Lampadistis, Pelendri, Araka) in the 13th century, and

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[44]In the village of Fikardou, a medieval house of the 16-17th century that has survived, 'Katsinioros house' had a timber-roof of the same construction technique (Egoumenidou, F.-Floridou, A., 1987 :10), and similar layout.

not earlier[45], since the *double-roof* type was known at least before the Latins. A good example is the Church of Asinou, which was built around 1100 (as mentioned above, it is not certain whether the type of tiles was hooked or Byzantine). Then it was used for the second time, probably in the 13th century, in Agios Nicolas tis Stegis in Kakopetria.

Asinou Church is located at the edge of the Troodos Mountains at an altitude 200-400m. It seems that Asinou was probably the prototype model for the monastery churches, which are located in the highest regions of the Troodos Mountains, at an altitude of between 1000-1600m.

Origins of timber-roof construction technology

The theory that the technique of this exceptional timber-roof was introduced by the Latins, and was brought from Eastern European countries (Papageorgiou, Fereos[46]), is naive for at least two reasons. First, all buildings of the Gothic style[47] that were built in Cyprus had only flat roofs; none with a timber roof. Therefore, it is unlikely that the local builders, who worked as apprentices in Gothic sites, would have become familiar with the techniques used in European Gothic timber roofs of that period. Secondly, the French architects and masons could not have worked on the construction of these Byzantine-style churches, given the hostile feelings of the Latins towards the local Greek-Orthodox inhabitants.

The author, however, believes that the Cypriot builders who had worked as apprentices on Gothic sites may have discussed some aspects of timber frame structures with their French colleagues or master masons. The masons were aware that the Troodos area was a source of good timber and they may have suggested its use to the local builders on the local churches there, so as to protect them from the

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[45]The practical use of the protective steeply-pitched roof in the Troodos area had already been found in Asinou from the 1099, 1105/6.

[46]Fereos believes that Cypriot builders worked on military sites during the crusades in the neighbouring eastern Mediterranean countries. Then, they travelled in the western European countries along with the crusaders and learnt the timber frame tradition (Fereos oral interview, and his PhD, 1999).

[47]The western Gothic style that was introduced in 1200 and lasted until the 15th century and it is mostly seen in churches, with their decorative features (Coldstream, 1998:51). The royal palaces (Nicosia and Famagusta) have not survived.

extreme winter weather conditions. It is possible that they may have also made some suggestions on how to construct the roofs, but it is unlikely that they actually worked there.

Some scholars have suggested that this double-roof construction resembles ship construction (Department of Geology Report No.10, 1997:4). They based their assumptions on the fact that the island was well known in the Mediterranean region for the use of its timber in ship-building during the medieval period (and earlier in the pre-historical period). It is not known, however, whether carpenters from this region worked as apprentices in ship-building sites[48] where Troodos timber was used, or had observed medieval timber structures for military[49] purposes in the island's interior, which had not survived.

It is difficult to compare ship-construction techniques with those used in timber-roof construction unless we have historical evidence, and unless we study carefully the techniques in both structures. A brief look at Byzantine and medieval ship-constructions has concluded that there are some similarities, but do not suggest any resemblance (Figure 4.27 from Unger, 1980: 44).

Timber Double-roof construction (Figure 4.28).

The fact is that the construction in both structures starts from the ridge beam, or the keel. The method that is used in the roofs is as follows: the ridge beam is based on the vertex of the two triangular gables, east and west. At the same time, two sets of four wall plates are placed at the top of the side walls. The four wall plates support the tie-beams. Then, the principal rafters are added, which are supported on the ridge beam and on the internal wall plates. Afterwards, wooden boards cover the gaps between the rafters. Then, the second part of the roof is added. Initially, a purlin is placed above the wooden boards at least 40cm below the upper edge of the roof. Next, the secondary rafters are placed, supported on this purlin and the external wall

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[48]According to Papageorgiou, the crusaders built their fleet in Limassol in the 12th century (oral information). Also, medieval historians and geologist confirmed that timber was extracted from Troodos Mountains to be used for the ship-construction in the prehistorical and the Medieval period ('The Geology of Cyprus, Bulletin 10, pg.4.Department of Geology, Cyprus).

[49]According to Enlart, none of the Gothic medieval churches in Cyprus, ever had a timber roof (Enlart, 1899:?). Therefore, it is not possible that the Cypriot carpenters copied the medieval Gothic roofs.

plates. The rafters are extended at least 40cm in order to create the eave for the roof. Above the rafters, small wooden horizontal purlins are placed to support the hooked tiles.

The roof-carpenters probably combined two construction techniques: the one they had already used since the 11th century and the other they had seen sometime in the 12th or 13th century. The development of this double timber-roof was the result of the combination of two construction techniques, and it was not brought from anywhere else (i.e. Western Europe). It is most likely that the timber-roof carpenters of the Troodos region experimented for years until they reached the optimum solution. However, not a single roof from these churches has survived completely intact, due to several restoration schemes. Only parts of them have survived.

Surviving evidence of timber-roofs

In fact, the author has her doubts whether this construction technology of the timber roof can actually be dated to 1280, and not later, since no evidence confirms when it was first introduced. Detailed research on all *timber-roofed* churches has concluded that it is possible that the earliest remnants of the medieval timber roof have survived in the Agia Marina[50] Church in Pedoulas. According to Papageorgiou, the church dates to the 13th century. Those remnants are: a Latin motif of a 'coat of arms' on the 'keel' (the central beam of the ceiling), another on one of the ridge beams, and an icon of the 13th century. These Latin details and the icon are not actually evidence for dating the church, since they could have been brought here from elsewhere. Unfortunately, no frescoes have survived on the walls.

A comparative study of the plan and dimensions of the Church of Agia Marina in Pedoula (3, 2 x 8,35m) with a few timber-roofed churches of the 13th to 16th century, has concluded that the size of the churches does not necessarily vary according to

[50]The author has not visited the church, but tried to investigate its chronology. No evidence or other accurate information has confirmed that the church was built in that period. Fereos dated this church in the 18th-19th century (Fereos,2000: plate Ab9). Papageorgiou dated this church in the 13th century. He based his conclusions on the Latin motifs that decorate a board which is attached on the apex beam of the ceiling and an icon that is dedicated to Agia Marina, both dated in the 13th century (Papageorgiou, 1984 v.9: 320). Fereos, actually, has presented a photo of a tie-beam with a coat of arms. This coat of arms has five cross. The author saw a similar pattern in Agia Aikaterini in Pyrga. Fereos insisted that the coat of arm was actually attached to the beam, which means it was brought from elsewhere, and is probably dated after the Archangel church of Pedoulas, 1474 (oral communication).

their chronology. Comparisons were made with the following churches: a) Panagia Moutoulla (3,8 x 6,85m), dated 1280; b) Agios Mamas in Louvaras (2,73 x 6,28m), dated 1455; c) Archangel in Pedoulas (3,32 x 7,16m), dated 1474; d) Agiasmati (3,6x9,5m), dated 1494. Small churches of similar dimensions were also built in the Ottoman period.

However, the semi-circular stilted shape of the altar apse of Agia Marina is very similar to that of other church-types of the 12th to early 13th century throughout the island. For example: Asinou, Ypati in Keryneia, a church in Agios Ilarionas Castle, Antifonitis in Keryneia and Chryseleousa in Paphos. It is also similar to those in the *timber-roofed* churches: Panagia Moutoulla (1280), and Archangel Church in Pedoulas (1474). Another ten *timber-roofed* churches that are actually dated to the 16th century have the same type of altar apse. These are: a) Panagia; b) Agios Vasileios; and c) Agios Ermolaos, all in Kaminaria; d) Archangel, Agia Paraskevi, Agios Nikolaos, Agios Sozomenos, all in Galata; e) Holy Cross in Agia Irene; f) Archangel in Vyzakia; e) Chrysokourdaliotissa in Kourdali.

These observations suggest that the Church of Agia Marina in Pedoulas is likely to date from the 13th century, but a further investigation is needed to prove this assumption. If the assumptions are correct, then this church has preserved the earliest surviving parts of the medieval timber roof.

Evidence has shown, until now, that the earliest surviving parts of a medieval *timber-roofed* construction have survived in Agia Anna Church in Kaliana (Figure 4.29). In this church, the central beam of the ceiling has preserved some decoration with Latin motifs, that of a 'coat of arms' which actually dates to the 15th, and not to the 14th century as Stylianou[51] says (Stylianou, 1985:109). This could be the earliest

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[51]Stylianou must have made a typographical mistake in page 109 of his book 'Painted churches of Cyprus' published in 1985, when he dates the Latin 'coat of arms' in the 14th century. He describes the motifs saying that *'the idea was probably borrowed by the local artists from the western rulers of the period (see, the Royal Chapel of* Agios *Catherine's, Pyrga), and were used here and elsewhere as decorative motifs, or in the honour of the rulers who may had contributed towards the re-erection of the church*' and in page 428, he says that the chapel of Pyrga was erected in 1421, according to an inscription. Therefore, the original motifs in Pyrga church were made after 1421and the motifs in Kaliana church probably towards the middle or end of the 15th century, maybe around the same time that the templon in Pedoulas church was made. The Pedoulas church was built, according to an inscription in 1474. Stylianou in pg 305, dates the templon in Agios Irakleidios church in Lampadistis Kalopanagiotis, which has heraldic devices in the 14th century (Stylianou, 1985:304-5), when this wood-carved

medieval timber-roof structure (apart from that in Agia Marina) that has survived and which can prove the existence of the double timber-roof construction from the 14th or 15th century.

The *Byzantine* style 13th - 14th centuries

The construction activity of Byzantine churches declined during this period. Medieval documents and other scholars referred circumstantially only to the alterations that had been carried out in the 13th -14th centuries on many Byzantine-style churches[52] built before 1191. Most of those were re-decorated with frescoes in the 13th century. The frescoes' style is used here as the *terminus post quem* for dating the alterations.

Important evidence is the presentation on the frescoes in Agios Dimitrianos Church[53] in Dali (Figure 2.28), which shows the two donors offering a model of this single-aisled dome church. The inscription says that it was renovated and decorated in 1317 (Byzantine year 6825) by the donor's family.

The church's proportions (Figure 4.30) do not differ from those of the earlier churches of the same *single-aisle with dome* type. The church masonry is carefully constructed from well-squared local sandstone called 'pouropetra' of similar sizes (the height of the stone is around 20cm but the length varies between 10-50cm). This means that the courses of the masonry have the same thickness, unlike the similar 12th century dome-type churches[54] we are familiar with, which may even have been constructed with the same material in the same area (i.e. Agios Georgios Makris in Larnaka, Figure 4.31). The masonry technique that was used imitated its

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iconostasis type was introduced. Those motifs though differ from the 'coat of arms' that are mentioned above. They are more naive, and they probably dated in the 14th century.

[52]Some of those are; Panagia Kampou in Choirokoitia, Amasgou in Monagri, Hoy Cross in Pelendri, Holy Cross in Pareklissia, Agia Marina Rizokarpaso, Agios Savvas Karonas, Kirikou and Ioulitis Letymbou, Kanakaria in Lythrangomi, Agios Themonianos Lysi, etc.

[53]The frescoes of this church, have western rather than Byzantine influences, according to Papageorgiou (Papageorgiou, 1984 v.4: 225). They are the only dated frescoes of the 14th century, and are used by scholars for comparative studies of other medieval frescoes, of unknown date.

[54] Some of those are; Panagia Kampou in Choirokoitia, Archangels Kato Lefkara, Agios Georgios Chortakion in Sotira, Panagia Kofinou, Agios Georgios Makris Larnaka, Agios Andronikos Sotira, Agioi Apostoloi Pera Chorio Nisou, etc.

contemporary ashlar masonry in the Latin Gothic churches. This observation suggests that it is possible that the church was extensively reconstructed in 1317, and not merely renovated. If this theory[55] is correct, then this church is the first *Byzantine-style* church that was 'built' after the Moutoulla church (1280). It was built not in a remote area but outside the main towns, between Nicosia and Larnaka. Some changes have been made during earlier and recent restorations (1943, 1945, and 1967) carried out on the Agios Dimitrianos church. Those differences can be identified by comparing the representation of the church on the 14th century frescoes and the present condition of the monument. The dome has 4 windows today, while on the frescoes it appears with 8 windows. The window-partitions appear rhomboid on the icon and not circular, as they are now. The dome and the roofs are now covered with tiles and the masonry is not rendered, while the frescoes represent a church without tiles and with rendered external facades. The south doorway is represented on the frescoes as the main entrance with a tall door, framed with a recessed, decorative frame and a low, arched lintel. Today, the two entrance doors, south and west, are equal in size and type. They both have pointed-arch lintels.

This church is the only *Byzantine style* church for which historical evidence exists from the period 1280-1317. It is difficult to confirm[56] that the reconstruction of this church followed the erection of the *timber-roof* church of Moutoulla in 1280. No other evidence has survived concerning the construction of any other Orthodox church[57].

Introduction of the *Franco-Byzantine style* after stagnation during 13th-14th centuries

Perhaps the beginning[58] of Byzantine architectural activity after a century of

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[55]Detailed investigation is necessary to support our theory, which goes beyond the main scope of this study.

[56]Many unknown monuments may have been erected at that time and may have been destroyed. Besides, medieval documents are not very informative for the construction of any Byzantine churches anywhere in the island.

[57]The churches that Papageorgiou said that were built in the 13th century (which he dated according to the style of their frescoes) for example Panagia Paralimni, Panagia Tochniou, Agios Themonianos Lysi, (Papageorgiou, 1984 v.2: 68) and many more, must be earlier monuments of the 12th century.

[58]According to Papageorgiou (Papageorgiou, 1984 v.2: 68), Agios Symeon, which is dated in the 13th century, is the oldest Byzantine monument in the Famagusta town. The church, which was originally the Byzantine Cathedral, became part of the south aisle of the church of St Georgios of the Greeks, when the latter was built in

stagnation was the *Franco-Byzantine* style church of Agios Georgios of the Greeks in Famagusta (Figure 4.32 a-d). Bouras says that it is '*an Orthodox church built in a purely Gothic style around 1370*' (Bouras, 2001:255).

The *Franco-Byzantine style* was created in the 14th century. It matured and reached its peak around the 14th-15th centuries. Towards the end of the 15th century, especially after the annexation of the island in 1489 by the Venetians, the proportions and decoration of buildings in the *Franco-Byzantine style* became simpler (except the *medieval Franco-Byzantine* style churches). In the late 16th century, this style started to decline, especially under Ottoman rule, as from 1571.

At the same time, a parallel revival of the *Byzantine style*, which led to the development of the *Post-Byzantine style,* can be observed between the 14th and 16th centuries. Historical circumstances also influenced the development of this style. Buildings before and after the Venetian period differ in scale, size and in their proportions. Therefore, both styles are examined in two historical periods: a) from the 14th century (1360) until the 15th (1489) and then b) from the 15th (1489) until the 16th century (1571).

The 14th -15th centuries

The creation of the *Franco-Byzantine* style

In the late 14th century, Greek nobles were allowed to build Orthodox churches in towns. It was a significant period, especially for Famagusta, due to the city's commercial importance. There, the Greek wealthy class built the first *Franco-Byzantine style* monument, the *medieval Franco-Byzantine* Church of Agios Georgios of the Greeks, around 1370-4. This church was built near the impressive Medieval-Gothic Cathedral of Agios Nicholas of the Latins.

Agios Georgios of the Greeks (Figure 4.32 a-d) is a two-style church which has a

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the 14th century. Any medieval documents or historical evidence does, not confirm the date 13th century. If that church is the same as the unidentified monastery of Agios Symeon that is mentioned by Enlart (Enlart, 1899:217), then, it is not certain whether is dated in the 13th century. The earliest medieval document that refers to it is dated in 1335.

Gothic-Byzantine structure combining: a) a *three-aisled basilica* with a Byzantine dome and three semi-circular altar apses (ending in pointed conches) and b) a medieval construction technology, ashlar stones (like those of the Gothic buildings) and ribbed vaults that roof the aisles. A new local style, with Gothic influences in art and architecture that later influenced the Byzantine tradition throughout the island, started to appear: the *Franco-Byzantine style* (Stylianou, 1986:37).

Enlart said that Agios Georgios of the Greeks Church, which faces the Latin Cathedral of Agios Nicholas, is a '*plainer and slightly shorter copy*' of the latter (Enlart/Hunt, 1987: 253). He also mentioned that Agios Georgios is '*almost identical*' to SS Peter and Paul Latin Church, also near Agios Georgios's, which had been built a few years earlier. The Gothic Cathedral of Agios Nikolas was built between 1300-8 in a style with French influences, and the Gothic church of SS Peter and Paul was built with Norman influences around 1360-70.

The author believes that Agios Georgios church differs from the two others. This church combines harmoniously the elegant, slender proportions of the Gothic and the beautiful simplicity of Byzantine churches, with no heavy decorative features. Its masonry construction, however, is similar to the above churches: fine, dressed limestone, bright yellow in colour and very well worked. Its Gothic details, such as the trilobed-shaped apices of the windows, the ribbed vaults, and the lateral doorways, are also plain copies from the above churches. It is possible that the same masons and builders who worked on SS Peter and Paul Church may have worked on Agios Georgios Church afterwards.

Agios Georgios Church was built next to an earlier Byzantine church[59]. This church was rebuilt at the time of the construction of Agios Georgios Church. Its central dome had an octagonal drum with mitred windows. According to Enlart, it recalls some lanterns in the Toulouse region (Enlart/Hunt, 1987: 257).

Observing most of the domed *Franco-Byzantine*-style churches of this period, it may

[59]According to Papageorgiou this is the former Byzantine Cathedral of Agios Symeon, but Enlart could not identify this church and assumed that it was possibly dedicated to Agios Georgios and Agios Epifanios (Enlart, 1899:257). Sotiriou named this church as Archangel (Sotiriou, 1932: plate 51).

be concluded that the drums of the domes were cylindrical, unlike those of the late 15th and 16th centuries onwards, which had an octagonal external shape. This means that the octagon-shaped drum was a Renaissance stylistic feature introduced by the Venetians. Therefore, the dome of this Byzantine church (Agios Symeon), which is described by Enlart, must have been a later addition and not contemporary to Agios Georgios date of construction.

Agios Georgios is classified as a *medieval Franco-Byzantine style* monument because it is the first and only impressive *Franco-Byzantine style* church to follow the proportions, size, and scale and elaborate decorative architectural details of the Gothic style. According to Enlart, the monuments of Agios Georgios and Agios Symeon were in a ruined condition and had been abandoned since 1571 (Enlart/Hunt, 1987: 254). Enlart includes a plan of the church of Agios Georgios of the Greeks with three aisles divided into five equal bays and roofed with ribbed vaults (Figure 4.32 b).

A plan of the church from the archives of the Department of Antiquities, a drawing that Sotiriou made as a record and published in 1932, shows that the central bay is wider than the other four (two on each side) and had a dome in the central aisle (Figure 4.32a). The department's reconstruction drawing, however, does not show any more details concerning the external shape of the dome's drum. This drawing was possibly based on Corneille Le Bruyn's [60] engraving.

Bruyn's engraving (Figure 2.11) presents the church of Agios Georgios of the Greeks with a Byzantine-style dome, in the central bay of its central aisle. The dome has a cylindrical drum, with four windows. This drawing contradicts Enlart's assumptions that the church had been in ruins since the Ottoman invasion in 1571. No other information confirms Enlart's assumptions, nor whether Bruyn's drawing was actually correct[61].

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[60]Corneille Le Bruyn 'Voyage au Levant' (1683-1693), Adelf 1700, photo from Georgios Sotiriou, plate 60, Athens 1932.

[61]Scholars are aware that travellers' engravings are not always accurate. Sometimes they presented on the drawings what they wanted to see rather than what they actually saw. The author believes that Bruyn knew that this church was a Greek Orthodox church. He also knew that most Greek Orthodox churches had Byzantine domes. He possibly saw this church in ruins and thought that it was possible that it had, originally, a dome. In

Enlart says that Bruyn had only seen the building from a distance since he had been refused admittance to the city (Enlart, 1899: 254). The author believes that if Bruyn had actually seen a dome from a distance, that dome should have belonged to the Church of Agios Symeon or Archangel, as it is called by Sotiriou (Sotiriou, 1932: plate 51). The latter was attached to the south facade of Agios Georgios Church.

Stylianou also mentions that Agios Georgios of the Greeks had a Byzantine dome (Stylianou, 1997:1241). He does not, however, give any details or base his assumptions on any evidence. He must certainly have seen Bruyn's engraving. However, the only reliable way to verify one or the other theory (whether the building was or was not roofed with a dome) is to see an accurate visual record of the existing ruins (not accessible to the author at the time of the field-work).

The characteristics of the *Franco-Byzantine* style churches do not necessarily follow those of the prototype *Franco-Byzantine* Church of Agios Georgios of the Greeks, but as we have observed, there are several variations of the style. At least 35 *Franco-Byzantine* style monuments (38% of all the monuments of that style) originate in the period 14th -15th centuries. During the visits, 21 *Byzantine Franco-Byzantine*, 4 *medieval Franco-Byzantine*, and 9 *new Franco-Byzantine* style monuments were encountered.

The *Byzantine Franco-Byzantine* style churches of the period 14th-15th centuries

The *Byzantine Franco-Byzantine* style churches, of the period 14th-15th centuries, are divided into two groups. The first group consists of the monuments (10) that had already been built as *Byzantine*-style churches before the 14th century and converted[62] into *Franco-Byzantine* style churches during this period. The alterations and additions had affected the original church but the structures of different periods are clearly distinguished, and are harmoniously combined. Many *Franco-Byzantine* architectural details are also added to the original Byzantine structures, transforming

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addition, this church is located next to the Latin Cathedral of St Nicholas, so it is possible that Bruyn wanted to emphasise the coexistence of two churches of different rite in Famagusta.

[62]In most cases the alterations are just extensions in order to increase the interior space. The orthodox were allowed by the Latins to practice their religious duties freely in this period.

the churches from the *simple* Byzantine to a *Franco-Byzantine* style. The additional structures on existing Byzantine monuments, submitted to the scale, size and proportions of those already in place (Agios Filonas Agridia).

Some of those examples are: Agios Efstathios in Kolossi (Figure 4.33) (the addition of the Frankish style narthex), Panagia Chryseleousa in Empa (side compartments and the western extension), Panagia in Trikomo (Figure 4.34) (addition of the south aisle and narthex), Agios Archangel in Gialousa (Figure 4.35) (western extension? and addition of a new church in the north), Agios Filonas in Agridia in the Rizokarpaso (addition of a south aisle and a narthex), etc. A few churches have been reconstructed in that period above the foundations of an earlier church (Agia Solomoni in Koma tou Gialou).

The church of Agios Georgios in Frenaros (Figure 4.36) is an exception. The church was built and altered in the same period. The church was possibly built in the 14th century. Its dating is based on its architectural details: pointed arches, proportions of the church and the drum of the dome and well-squared masonry wall construction. A vaulted Latin chapel was added in the south, in the 14th or 15th century. This chapel was demolished at a later unknown date. Only the foundations and a part of the spring of the rib and the spring of the vault have survived to confirm its earlier existence.

The second group of monuments (11) are those that were built in this period in a Byzantine manner, but with architectural details in the Gothic style. The *Byzantine Franco-Byzantine* style churches that were built in this period are small in scale and size, and have rather square proportions. The building types, the layout and the roofing system all follow those of the Byzantine monuments of this period: *domed hall*, *single-aisled domed* and *vaulted* (all those types will be examined in the next chapter).

The churches that were built in this period (14th -15th centuries) are taller, wider and longer than those of the earlier periods (12th century). The most important shape-forms and elements that are introduced in this period are: the tall, pointed arched

vaults (Agios Filonas Agridia, Figure 2.19), the multi cross-vaults (Agios Efstathios Kolossi), the apse with the semi-circular shape, which is roofed with conical semi-domes (like the apse in Agios Georgios of the Greeks) and the tall cylindrical drums in the domed churches as in Agios Themonianos in Lysi (Figure 4.37), Agios Epifanios in Louroukina and Agia Marina in Louroukina, and Holy Cross in Anogyra.

The proportions of the drums are less slender than the earlier period[63], and the diameter of the drum is larger (i.e. d=4.10m, the drum in Chryseleousa in Empa, Figure 4.38). Towards the end of the 15th century, the drum externally has an octagonal shape, with an internal diameter around 4m (the octagonal dome-drum in the western extension of Chyseleousa in Empa and in Chrysopolitissa Paphos, Figure 2.68).

There are always four windows on the drums (no exception has yet been seen) that are slightly wider than before. Those are arched or rectangular, tall windows. Similar or smaller windows are found on the side or western gables, mainly above the entrance doorways (Agios Georgios in Frenaros).

The main doorway, or doorways, is on the western and south sides of the churches. Their lintels and frames imitate those of the Gothic monuments, but they are simpler and plainer, and with no elaborate decoration. Two types of doorways may be observed: a) the doorway frame with a pointed-arch shape (Agios Georgios Akamas, Figure 4.39) and b) the doorway with the pointed, arched frame with a recessed tympanum above a rectangular one-piece heavy stone lintel (Agios Georgios Frenaros, Figure 4.36). The door-frame jambs have a simple cymatium shape, which resembles the colonnettes and their capitals in the Gothic doorways.

The masonry construction imitates the dressed stones of the Gothic churches, but not entirely. In the churches, the stones are well squared but of unequal sizes. Heavier stones are used in the lower parts of the walls and lighter ones in the upper parts. In

[63] Adding the height of the drum to that of the dome, it measures 3/4 of the diameter of the drum, whereas in the earlier period (i.e. 12th century) those proportions were 2/3.

most churches, the builders used the technique of building the walls in horizontal courses with the minimum pointing (Agios Epifanios Louroukina, Figure 4.40).

Occasionally, those courses are equal between them; the stones have the same height but not width. In remote areas, the masonry is constructed with roughly cut stone of various shapes and sizes or rubble stones (Agios Eftychios in Mathiatis, in a ruined condition, Figure 4.41). Even in these cases, efforts were made by the builders to build the walls in horizontal courses, using smaller stones for the pointing (Archangel in Agios Nikolaos in Paphos). The doorways' frames are always constructed with well-squared stones, and sometimes are *spolia* (pieces from earlier buildings) that may even have decorative features.

The pointed arches that support the drum of the dome are expressed in the facades with triangular-shaped gables. This architectural detail was introduced in the 15th century, in the following churches: Agios Georgios in Frenaros and Agios Themonianos in Lysi, Agia Marina in Louroukina, Agios Epifanios in Louroukina, Panagia Paralimni. In the Church of the Holy Cross in Anogyra, the shape of the pointed arches is visible on the facades (Figure 4.42).

This architectural detail was actually borrowed from the French Gothic monuments of this period. In these buildings the ribbed vaults are expressed on the facade with triangular gables. According to Enlart, this is a common scheme for churches in the south of France at the end of the Middle Ages (Enlart/Hunt, 1987: 173). It was also observed on the *new Franco-Byzantine* style churches: Agios Andronikos in Liopetri (Figure 4.43), Agia Zoni in Famagusta (Figure 4.44).

The *medieval Franco-Byzantine* style churches of the period 14th -15th centuries

Town churches

The *medieval Franco-Byzantine* style churches are different, but with a common characteristic: the genuine Gothic architectural details, either in the building type, or the masonry and decoration. These churches are either of the Latin or Greek Orthodox rites. The earliest example is the unique church of Agios Georgios of the

Greeks in Famagusta, which has the proportions, size, scale, construction technology of a Gothic Cathedral, but with plainer decoration and a dome instead of ribbed vaults. It is the only example of the 14-15th centuries in towns that has survived.

Countryside chapels

In the countryside, two chapels with similar construction style were seen: Agia Aikaterini in Pyrga (Figure 4.45) and Holy Cross in Tochni (Figure 4.46). Both are Latin chapels, but their characteristics allow us to consider them as Franco-Byzantine style monuments. They are built of roughly cut rubble stone. The crude way their masonry was constructed and the techniques that were used are similar to those of their contemporaries, or to earlier Byzantine style churches instead of the Gothic.

Enlart described the masonry in the Pyrga church: *'hard, dark-brown stone is coarsely cut into large cubes which are separated by courses of stone chips; the frames of the openings are in limestone, coarse-grained for the windows and doors and the belfry but on the gables dead white in colour'* (Enlart/Hunt, 1987: 327).

The layout of the churches also resembles that of the Byzantine churches: both are single-aisled in type. They differ in the roofing type and the type of the altar. The church in Pyrga is roofed with a pointed-arch vault *'strengthened by transverse ribs with flattened ridges and springing from quadrant brackets'* (Enlart/Hunt, 1987: 327), and has no altar apse. The church in Tochni, on the other hand, is roofed partly with a pointed barrel vault and partly with a ribbed vault, which form a Greek cross, and has a semi-circular apse with a conical semi-dome (like the central apse of Agios Georgios of the Greeks).

The church in Tochni[64], according to Enlart, was attached to a Byzantine church. Enlart assumes that the compromise between the Byzantine and Gothic architectural

[64]Enlart compares this church with the Carmelites church in Polemidia, and classified them both in as *'specimen of that imperfectly Gothic architectural style which was predominant in Cyprus after the decline which began in the fourteenth century'* (Enlart, 1899:327). The Carmelite church differs in proportions, scale, size, and construction. It is a Gothic building, with all its architectural details, therefore it is not classified as a Franco-Byzantine style monument. However, Enlart's comments on its architectural style are correct; it is an example of the declined Gothic style of the 14th period.

forms in that church and the crude way in which it is constructed *'favour ascribing it to a period not earlier than the fourteenth century'*. Based on some historical events he mentioned, it is dated possibly 1318-1360, or in 1340 (Enlart/Hunt, 1987: 339). If Enlart's theory is correct, and then this could be the first *medieval Franco-Byzantine* style church, one built even earlier than St Georgios of the Greeks. No accurate information has yet confirmed the date of the construction of either church. The church in Pyrga dates to 1421, according to medieval documents and inscriptions.

The doorways and the arches are constructed with well-squared stone of the same type as their masonry walls (Tochni) or different type (Pyrga). The doorways on both churches, two doorways in Pyrga and one in Tochni, have rectangular heavy lintels of single stone, with pointed relieving arches, above them. The doorway frame, however, in the interior, ends in a triangular shape (Figure 4.46).

Monastery churches

The church of Agios Nikolaos of the Cats in Limassol, according to Enlart, may be dated not earlier than the late 14th century, and it was probably reconstructed after the earthquakes that struck Limassol in 1567 and 1568. The church is a single-aisled one, roofed with a pointed barrel vault. Its main features of interest are two Gothic details above the main doorway: a) a *'pointed hood-mould with a finial at the apex'*, that ends on carved brackets like '*cricketed capitals on which are worked two small figures of St Peter and St Paul, coarsely and clumsily carved*', and b) its white marble lintel with five coats of arms (Figure 4.47). The walls are built of coursed masonry with stones of various lengths. The small size of the church, its scale and proportions, and the lack of many decorative features (apart from those mentioned above), recall Byzantine churches, while its construction technology, the doorway and the pointed vault, are all Gothic (Enlart/Hunt, 1987: 349-50).

The church of the Holy Cross in Kouka (Figure 4.48) was originally built in the 12th century. Its dating is based on the semi-circular blind arches and the remnants of the frescoes (Papageorgiou, 1984 v.12: 315), and it was reconstructed in the 14th-15th centuries. The church has a Byzantine simple cross plan. The whole church is roofed with pointed arches and its original dome was replaced with a ribbed vault.

Externally, it appears to have a low, square drum. The altar apse has a polygonal, three-sided shape. The apse's squat proportions and heavy masonry suggest that it was probably built in the Ottoman period (Figure 4.48a). The masonry is of local rubble stone. Ashlar stone is used for the ribs of the vaults and the doorway frames. The main south doorway has a pointed arched frame and a Gothic *hood-mould* in a semi-circular shape. The church is unique, since it combines its original Byzantine plan with medieval Gothic roofing similar to that of the medieval buildings of the 14th-15th centuries (i.e. Stazousa).

The church of Agios Georgios Regatos in Kyra[65] (Figure 4.49), which was built between the 10th and 11th centuries, was partly reconstructed in the 15th and altered in the 17th -18th centuries. According to Barsky's engraving and descriptions of the 18th century, there were two attached churches: a cross in square and a vaulted church. Papageorgiou described the monument before 1974 as a *two-aisled* church roofed with cross-vaults and barrel vaults. He also identified some parts of the original churches (Papageorgiou, 1984 v.4: 54).

The photos from the archives of the Department of Antiquities (dated 1946) show that Gothic details dominate the facades. They also confirm the 15th century Gothic and Byzantine architectural details, which appear on Barsky's sketch (Figure 2.18). Those details are: a) the Gothic large size, scale and height of the church; b) the Gothic rectangular proportions; c) the Gothic evenly coursed masonry of dressed stones, the carved gargoyles, the round window of the west gable of the north aisle; d) the Byzantine semi-circular shaped steps of the main west entrance and the Byzantine barrel vaults. The proportions of the facades, the masonry and the vaults (but not the Gothic details) resemble the church of Archangel in Lakatameia (Figure 4.52), which originates from the same period. That church is classified as the *new Franco-Byzantine style.*

The *new Franco-Byzantine* style and its churches, 14th -15th centuries

The *new Franco-Byzantine style* churches have a common characteristic: the new architectural details and forms which combine Byzantine and Frankish details, and

[65]Muslim fanatics demolished it after 1974.

structural elements. Local builders who had knowledge of both traditions created this new style. These builders interpreted freely their knowledge of medieval and Byzantine style by using simplified forms from both styles, without submitting strictly to any norms of either one. The layout of the buildings does not necessarily follow the Byzantine or Frankish types. Occasionally, the result of the mixed interpretation of the two styles is aesthetically in harmony, but sometimes not.

Proportions, size and scale

The proportions, size and scale of the churches vary. Some churches are tall, occasionally as tall as their contemporary Gothic monuments. The majority has squat proportions, with oblong, rectangular or square plans. They are big in size and scale. For example: Chrysopolitissa Paphos (Figure 2.68) has internal dimensions around 12 x 30m and a height of around 12m and Avgasida church (Figure 4.50) is around 8 x 16m.

The two churches of Agios Andronikos in Liopetri (Figure 4.43) and Agia Zoni in Famagusta (Figure 4.44) are the only buildings whose proportions look 'out of scale'. Both buildings are quite tall and have a rather square plan. Their domes (octagonal the first and the second cylindrical), are too large for the entire church. The height of the drum plus the dome is equal to 2/3 of the height of the side walls.

Church and roofing types

The church-types observed are: *vaulted*, *single-aisled domed*, *two-aisled domed*, *three-aisled domed*, and *cross-in-square* or *three-aisled*. The vaults are pointed, apart from those in Panagia Trapeza (Figure 4.51), Archangel in Lakatameia (Figure 4.52) and in Melandrina Kalograia (Figure 4.53). Those vaults are slightly pointed or rather barrel. The domes have a cylindrical-shaped drum (Lakatameia, Avgasida), until those of the late 15th century. Later, the octagonal external shape was introduced, as in the churches of Agia Sofia Paphos (Figure 4.54), Panagia Lysos (Figure 4.55), Panagia Trapeza Acheritou (Figure 4.51), Chrysopolitissa, Agios Andronikos in Liopetri.

The triangular-shaped gables, an innovation of the 15th century, as mentioned above,

were used to express the roofing type and style of the churches. They were used on two occasions: a) to show that pointed arches support the domes (Agios Andronikos Liopetri, Agia Zoni Famagusta) and b) to emphasise the existence of pointed arched vaults. It was already noticed in the *Byzantine Franco-Byzantine* churches of Agios Efstathios at Kolossi, and Holy Cross in Anogyra. Semi-circular shaped gables were seen on churches with barrel vaults: Acheritou Panagia Trapeza, Archangels Lakatameia and Melandrina Kalograia.

Walls

The masonry wall is built of ashlar stone (Archangels Lakatameia, Panagia Acheritou, St Sofia and Chrysopolitissa Paphos) that imitates Gothic monuments, apart from the sizes. Occasionally, in the earlier examples, the masonry is built with squared stones of various sizes in uneven horizontal courses.

Windows

The interior of the churches of the *new Franco-Byzantine* style is as large as that of the Gothic monuments but darker, because of the fewer and smaller windows. The light mainly comes through the windows of the drum, which are always four, except in the case of the octagonal drum of Agia Sofia in Paphos, which has eight. Only a few churches have side windows, and those were opened later, after their original date of construction (Lakatameia). The side windows are on the southern, northern, eastern or western walls or gables (Agia Zoni in Famagusta). Their shape is either similar to those of the drums, smaller (Chysopolitissa), or larger (Lakatameia). Occasionally, round windows are seen on the side gables (Agia Sofia Paphos), in the western (Agios Savvas Karonas) or in the eastern gables (Avgasida). The central and the side altar apses always have at least one window each.

Doorways

Doorways always have an arched pointed frame, which is found in several variations: a) a relieving pointed arch above the single stone lintel with a hood-mould (Panagia Trapeza Acheritou, Lakatameia): b) a simple relieving pointed arch (Holy Cross Anogyra), c) a pointed-arch doorframe (Melandrina Kalograia), d) a recessed rectangular doorframe inscribed in a pointed-arch frame (Agios Andronikos

Liopetri), and e) a relieving pointed-arch window above the doorway with a projecting, pointed arch (Chrysopolitissa, Figure 4.56). The doorways with a horizontal lintel always have jambs with cymatium-shaped brackets on either side.

Byzantine styles in the 14th -15th centuries

In the 14th -15th centuries, we observe a considerable revival of the *Byzantine* styles, one that was brought about by historical circumstances. Architectural development was particularly influenced by political circumstances from the middle to the end of the 15th century.

In 1426, the Egyptian Sultan invaded the island and plundered Nicosia. The Mamelukes defeated King Janus of Cyprus at Choirokoitia in 7 July 1426, and the island became a vassal to the Sultan. According to historians, many churches (Orthodox and Latin) were vandalised by the Mamelukes. Janus's son John II finally inherited the throne successfully, and a new era began for the island.

In 1442, the Catholic Cypriot King John II married Helena Paleologina, daughter of the Despot of Morea[66] and Duke of Sparta from the Paleologina dynasty of Constantinople. Helena, during the years of her reign (1442-1458) ensured better conditions for the Greek Orthodox Church and the Greek population. She accommodated the refugees, artists and builders from Constantinople after its fall in 1453 to the Ottomans. Among her most important projects were the restoration of Panagia Chrysaliniotissa in Nicosia (around 1450), and the construction of the Monastery of Agios Georgios of Manganon[67] in Nicosia (which was later demolished by the Venetians) for the refugee monks from Constantinople.

The fall of Constantinople in 1453 had actually drawn Europe into defensive action against the Ottomans. In Cyprus, the Lusignans took defensive measures by strengthening Keryneia Castle and building new walls around Nicosia, a project that

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[66]The Despotate of Morea in Mystra was very close to the Byzantine throne and Mystra became an important cultural and political centre since 1348 (Rodley, 1994:277).

[67]An archaeological excavation is in process at a site outside the Nicosia Walls which is believed to have found this monastery's foundations. The search has not yet been completed.

had started from the mid-14th century (Coldstream, 1993:10).

Churches in the *Post-Byzantine* style dated between the 14th and 15th centuries are divided into four groups[68]: a) those Byzantine churches with medieval or later additions (6); b) the *timber-roofed* (7) Byzantine churches; c) the *double-roofed* (4) Byzantine churches; and d) the *simple Byzantine* (41) churches.

Byzantine monuments with medieval or later additions, 14th -15th centuries

Byzantine monuments with medieval additions were originally built as Byzantine churches and subsequently medieval-Gothic or later structures were attached to them. The existence of Latin chapels in Greek Orthodox churches 'is a sign of 'intercultural symbiosis'. According to Benjamin Arbel, this was the result of the union between the Greek and Roman Churches that was promulgated in Florence in 1439, and from which all the Greek colonies benefited[69], as they were allowed to practice their religion freely.

Byzantine churches with medieval additions are characterised by the juxtaposition of two styles. In contrast, in churches of the *Byzantine Franco-Byzantine* style, there is a fusion resulting from the coexistence of the two styles, Byzantine and medieval. Enlart had noticed and discussed the intentions of the architects to combine two styles in Apsithiotissa Church (Figure 4.57) (Enlart/Hunt, 1987: 206). The existing parts of the Byzantine structure were left unattached in most cases and the proportions of the additional medieval structures followed those of the Byzantine.

The Churches

A representative example is the Angeloktisti in Kiti church (Figure 4.58). In the 14th century, a Gothic chapel was added to the south of the original Byzantine church (Enlart/Hunt, 1987: 344). A second example is Panagia in Prastio Avdimou (Figure 4.59), where there are two Byzantine chapels, a square one to the south (12th century) and a round one in the north, dated to around the 14th century. The additional

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[68]The following were encountered; 14 in Nicosia, 18 in Larnaka, 9 in Limassol, 4 in Paphos, 5 in Famagusta, 7 in Keryneia.

[69] Benjamin Arbel, 'Cyprus under Venice: Continuity and change', Byzantine Medieval Cyprus, 1998: 161-175.

medieval (or later) structure was built between the two chapels.

The third example is the Church of Antifonitis in Kalograia (Figure 4.16, 4.22). There, a medieval stoa was added south and west of the church. The church was left unattached, apart from the addition of a narthex in the west, and the introduction of new frames on some openings (south door). The fourth example is Chrysaliniotissa in Nicosia. The Byzantine church was enlarged to the south and west, and was decorated with medieval features (Figure 4.60).

The fifth example is Panagia Apsithiotissa in Sichari (Figure 4.57). The church was originally built in the 12th century, and was damaged for an unknown reason at a later period. According to Enlart, a French architect restored the church in the 14th-15th century. '*Piers and revetments were added at various points inside and out*'. The architect used ribbed vaults to replace the barrel vaults and the dome. To support those, he used polygonal pillars or columns of different heights against the walls (Enlart/Hunt, 1987: 206).

It is of significance to mention the descriptions by Enlart of the Holy Cross chapel at Tochni. He says that the church was originally built attached to the north side of a Byzantine church, probably in the 14th century, between 1318-1360. According to him, the Byzantine church was destroyed by the Mamelukes in 1426, '*who were responsible for setting fire to it when they were marching on Nicosia after having sacked Larnaka*' (Enlart/Hunt, 1987: 338). If Enlart's evidence for this church and others mentioned above (Kiti, Absithiotisssa etc) is correct, it means that the co-existence of Latin and Greek Orthodox churches side by side actually started in the second half of the 14th century, which means long before the Union of Florence mentioned by Arbel (Arbel, 1998:165).

Arbel probably based his conclusions on Stylianou's assumptions when he described the Latin chapel in Lampadistis church in Kalopanagiotis. Stylianou says: *'it is evident that this Greek church was one of the few that came under Latin domination, following the ecclesiastical developments that resulted from the Council of Florence in 1439*' (Stylianou, 1985: 307). This Latin chapel has a rectangular shape plan. Its

main medieval characteristics are: the slightly pointed barrel vault, the pointed arched apse-niche in the east and the Italo-Byzantine style paintings. The chapel was built and decorated at the end of the 15th century.

Characteristics

The architectural details of the medieval Gothic structures that were added to the Byzantine monuments were less elaborately decorated, simpler and plainer, than those in the Gothic buildings. The scale, size and proportions, on the other hand, are typical of the existing Byzantine structures. However, their construction technology followed the Gothic prototypes: ashlar stones (Antifonitis), pointed archades (Antifonitis) and pointed arched vaults, crossed vaults (Prastio Avdimou) and ribbed vaults (Angeloktisti, Apsithiotissa).

Decoration

The architectural details on the medieval parts (chapels or aisles) attached to the Byzantine churches follow the rules of Gothic architecture, and are mainly Frankish. The decoration is only applied to the window and door-frames. The doorways have the same relieving pointed arches (Antifonitis) as in *Franco-Byzantine* monuments. The only exception encountered is the elaborate decoration of the pointed arched frame of a doorway in Chrysaliniotissa with zigzag and cymatium mouldings. The same church also has pieces of sculpture attached to the walls. Those decorations do not match the rest of the structure either in scale or type, which means they were probably brought from earlier Gothic monuments (Figure 4.60).

An innovation to those medieval structures is the introduction of the round windows, with decorative traceries on the eastern and western gables (Kiti), as in Gothic buildings. Those are also seen occasionally on some *medieval Franco-Byzantine* monuments (Regatos) of the same period.

Churches of the *timber-roofed* style of the 14th -15th centuries

The *timber-roofed* churches (7) of the 14th -15th centuries are significant. They have preserved valuable historical information as to the construction technology, type and style of that particular period. Surprisingly, each of the churches is important for

different reasons. Dating of the churches was based on the inscriptions[70] on the frescoes, or the style of the frescoes.

The earliest example of this period is Agios Mamas church in Louvaras (Figure 4.61). According to an inscription,[71] it was erected in 1455 and decorated in 1495 by Philip Goul. It is a single-aisled *timber-roofed* church with interior dimensions 2.73 x 6.28m (smaller than the 13th century church of Panagia Moutoulla, which is 3.76 x 6.85m). The small narthex in the west was added later.

The original size and scale of the church is similar but slightly smaller than the Moutoulla church of the 13th century. The construction technology is influenced by the local availability of materials and knowledge: various sizes of rubble stone joined together with small stones and pieces of tile[72]. There were only two doors: the entrance door in the south and the western door, now leading to the narthex, and one window in the altar apse. Therefore, the interior was intended to be dark, unlike its contemporary *Franco-Byzantine* style churches. The only decorations in the church are the frescoes and the painted iconostasis in the interior, both very significant.

The second monument is the Archangel church in Pedoulas (Figure 4.62), which was built in 1474, according to an inscription[73] on the frescoes, above a presentation of the model of the church and the family of the donor (wife and daughters). The model of the church on the frescoes has provided us with very important information: a) the church was originally built as a single-aisled one with a timber roof, and this is the first evidence we have for the existence of the timber-roof type of the double timber

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[70]In some churches the inscriptions on the frescoes provide information for the construction of the church and the completion of the frescoes. In cases that only the completion of the frescoes is given, then the scholars assume that the church was not built long before that date.

[71]The inscription says that the church was built in 6963 (=1455 AD), by a priest called Konstantinos and decorated, in 1495, with the expenses of two couples; John and Irene Kromides, and Georgios and Helen Pelekanos, both men were councillors in the village (Stylianou, 1985:246).

[72]The monument has recently (the last decade) been restored and the external facade of the wall seemed to have been reconstructed extensively.

[73]The church was built in 6983 (=1474) with the expense and great labour of the priest Basil Chamades (Stylianou, 1985:331), and painted by a local from Myrianthousa (Marathasa region).

construction in the Troodos area[74]; b) the church had two doors at least, west and south; c) the south doorway had a semi-circular window above it, similar to that in Asinou; d) the western doorway was simply rectangular; e) there was a small arched window on the western gable, which was later enlarged[75]; f) the wooden doorway panels are made of boards placed diagonally, and e) the external wall of the church was initially plastered. The information that this icon has provided enables us to understand many architectural details[76].

The builders (and the painters of the frescoes) were acquainted with Gothic construction technology. Evidence of that is visible in another fresco-presentation (the Annunciation) where the buildings in the background have Gothic architectural details, such as round windows with elaborate traceries (Stylianou, 1985:333). Those details were also used on some Byzantine buildings in this period.

The third important church is Agiasmati in Platanistasa (Figure 4.63), which was built - according to inscriptions - with the donations of the priest Peter Peratis and his wife, and decorated in 1494 by Philip Goul, just like the church of Agios Mamas in Louvaras (Stylianou, 1985:186-7). According to Stylianou, *'The donors are portrayed on the outside of the south wall, presenting a model of the church to Christ'. 'The model of the church is pictured from the south-west; the central part of the outer south wall is shown with lattice work'* (Figure 2.30) (Stylianou, 1985:188).

The church measures around 3.6 x 9.5m, which means it was larger than the other two mentioned above. The church has a rectangular plan, with a perimetrical stoa around it. Based on some evidence, it can be concluded that the original plan of the church has not been altered, considerably. The evidence includes the following: all the frescoes, interior and exterior (that decorate the western and southern external facades of the church) were drawn by the same artist (Goul). Goul has also drawn a model of the church on the south wall, which is similar to the church in its present

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[74]The model of Asinou church on the frescoes has actually shown a *double-roofed* style church and not a *timber-roofed* church with double construction.

[75]Earlier photos of the 1950's (Fereos) show that the window was used as a belfry.

[76]The study of the architecture through the frescoes, is a topic for research that requires further investigation.

plan. It is not known, however, whether the width of the perimetrical stoa, which runs around the church, was the present.

The fresco-icon, which presents the church, provides important information (Figure 2.30). The church is shown as a rectangular-shaped building, roofed with a double-sloped roof covered with flat tiles. The icon confirms that the church was originally built with a perimetrical stoa, or at least that stoa existed before the church's decoration with frescoes. The double-sloped roof was intentionally extended to cover the stoa. The lattice-work on the central part of the south wall and the window of the western wall is a decorative feature[77] that was widely used later during the Ottoman period (1571). This is the only evidence that we have for its use on the buildings, at least a century before that period. This suggests that the wooden lattice-work was well known on the island before the Ottomans.

The most important information that this fresco-icon presents is the timber frame panel on the western gable (Figure 2.30), which has not been seen anywhere else on the island. The timber frame panel has a grid of around 12 vertical wooden posts. Those posts are interrupted in the middle of the gable with a square-shaped window and lower down with a horizontal tie-beam. This beam ties together the two sets of the four wall-plates that support the roof construction. This construction detail of the western gable not only confirms the existence of the indigenous double-timber roof in this church, but also provides evidence that the 15th century western gable may have been built with a timber frame construction. This construction resembles in some ways its contemporary constructions in the western European countries (i.e. vertical posts, a central window, horizontal tie-beam), but does not necessarily show any evidence that confirms any relationship with those (because it is not divided into square or vertical grids). This local timber frame gable was possibly a creation of a local builder who may have seen some western examples and eventually interpreted the idea of a timber frame gable in his own way.

The author believes that the builders of this church may have been advised by their

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[77] The wooden lattice work was widely used in the traditional houses of the Ottoman Period in Cyprus. The historians believe that it was an influence from the Ottomans, which was brought to Cyprus after 1571.

colleagues - the builders in Gothic building sites – concerning the use of timber frame panels. This assumption is based on the fact that this panel does resemble those in Western Europe (France, England, etc), but it is actually different. It is not based on a grid of similar square or rectangular shapes. Therefore, it can only be assumed that either the builder may have seen some drawings brought to Cyprus by masons to be used on the Gothic buildings, but were not eventually used; or, the Frankish builders may have given advice to their Cypriot colleagues. Their advice was based on their knowledge and experience from their own countries. The other option is that the artist has not interpreted the western gable accurately. This is a topic that needs further investigation.

More questions arise from the timber-frame panel. First, why are the wall-plates which support the roof extended up to the west gable? The only similar observation recorded during the visits was the projecting wall-plates at the western part of the churches Panagia Podythou (Figure 4.64) and Agios Sozomenos (Figure 4.65), both in Galata. These wall-plates are extended to support the extended eastern part of the roof, which protects the altar apse in Agios Sozomenos Galata (Figure 4.66). They are supported by the extension of the side-walls or by posts.

Secondly, there is no information on the materials that were used to fill in the timber frame construction. The icon shows that all the masonry walls and the panels of the western gable were plastered[78]. This timber frame gable was replaced (not known when) with a masonry wall similar to those of the sidewalls. Today, the gables of all the timber-roofed churches are built of masonry wall. Therefore, no other evidence has survived of the gables' original construction, apart from this example in Agiasmati church.

The single-aisled timber-roofed church of Panagia Skouriotissa (Figure 4.67) is also dated[79] to around the 14th -15th century. The church's dimensions, width and length (3.68 x 10.82m) and wall height (3.44m), have demonstrated that the churches were

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[78] The external walls of the churches are presented plastered on the frescoes-icons models in all the churches (Panagia Asinou, Panagia Moutoulla, Agios Dimitrianos Dali, Archangel Pedoula, Podythou Galata, Archangel Galata, and Panagia Kourdali).

[79]According to the style of the frescoes that have survived in the south wall.

gradually increasing in length and height. Restoration schemes that were carried out in the church during the last decade by the Department of Antiquities have destroyed valuable evidence of the construction details of the original timber roof.

Another timber roof church is Panagia Arka, in Mylikouri. According to medieval documents, the church has been in existence since the 10th -12th century but it was still functioning in the 15th century (Kokkinoftas-Morfou, 2000:187). Now it lies in a ruined condition, with only parts of an external wall having survived. This masonry wall is built of large rubble stones. The gaps in the masonry walls are filled with smaller stones and mud-mortar.

The single aisled *timber-roofed* church of Agios Ioannis Prodromos in Mesapotamos existed in 1468, but was partly reconstructed, both in the 16th and 18th centuries and recently, and no original detail has survived.

The church of Agia Anna in Kaliana (Figure 4.68) was originally built in the 12th century. It was reconstructed in the 15th century and converted into a two-aisled *timber-roofed* church. It is the earliest two-aisled church known to scholars. It is a very important monument because it preserves parts of its original 15th century timber roof construction, which have not survived anywhere else. This unique indigenous timber roof structure, which was created and developed in the Troodos area, has a double timber roof with two sets of beams. The 15th century timber part of the roof surviving in this church is the apex beam of the ceiling, which is placed below the central top join of the principal rafters. This is divided into square-shaped coffers that are decorated with the Lusignan coats of arms (Figure 4.29).

The *timber-roofed* churches of this period are mainly single-aisled. The church of Agiasmati is a unique example of a single-aisled church, which was built with a perimetrical stoa. Another perimetrical stoa is found in church of Panagia Araka in Lagoudera (Figure 4.5), which is located not far (4-5miles) from Agiasmati church. The Araka church was built in 1191, and is a dome-hall type. A perimetrical stoa and a second timber roof were added to the church in the 14th-15th centuries (Papageorgiou, 1984 v.2: 271). Possibly, these two stoas, were built in the same

period and by the same builders.

All these churches were constructed with local hard stone of various sizes, mainly large pebbles, which were collected from the nearby rivers, gabbro and diabase. The rubble masonry wall is filed with smaller pebbles or with pieces of tiles (Agia Anna Kaliana).

Double-roofed Byzantine churches of the 14th-15th centuries

The *double-roofed Byzantine* churches are monuments located in the Troodos region and built in the 11-12th centuries mainly as *domed-hall* churches. A second timber roof was added above their original roofing (in the 13th to 15th centuries) in order to protect the churches from the heavy winter rain and snow that are quite common in the area. Four of those monuments were re-roofed in this period, in the 14-15th centuries.

The Church of Panagia Araka in Lagoudera (Figure 4.5), as mentioned above, was built as a *dome-hall* church in 1191 and a second timber roof was added in the 14th-15th century to protect the church and create a perimetrical stoa. Barsky drew the church in 1734-5 (Figure 2.12), with its timber roof and stoa.

Agios Ioannis Lampadistis[80] Monastery (Figure 4.69) was originally built in the 11th century and was dedicated to Agios Irakleidios. A barrel-vaulted, chapel dedicated to Agios Ioannis Lampadistis was built, attached to the north of the original church, possibly in the 14th century (according to drawings from the Department of Antiquities). Stylianou believes that it was built in the middle of the 15th century (Stylianou, 1985: 292), whereas Papageorgiou states that it was built initially in the 12th century[81].

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[80]This church was originally a Byzantine church and two vaulted chapels were added later (both on the north side). It could be classified as a *Byzantine style church with medieval additions*, as well, because at least the latest additions have Medieval Gothic architectural details. Those are; a) the pointed arched vault, b) the polygonal shape of the altar apse of the 14th century chapel and c) the lack of altar for the Latin chapel. The author believes that this church was converted into the above mentioned style-group in the 15th century.

[81]According to Papageorgiou, this chapel was built in the 12th century. It was collapsed, later (unknown when), and was reconstructed possibly in the Ottoman period (Papageorgiou, 2000:68).

In the 15th century, a Latin chapel was added to the north side of the Lampadistis chapel. This was roofed with a low, pointed arched vault. At the same time, a second timber roof was added to protect all the three chapels. The roof was replaced several times since then.

The Church of the Holy Cross in Pelendri[82] (Figure 4.70) was originally built as a *dome-hall* church in 1178, like Araka. In the 14th century, a vaulted aisle was added in the north, which may have been used as a Latin chapel (de Parthog, 1994:144). Later, probably in the 16th century, a vaulted aisle was added in the south. The second roof was added, initially, in the 15th century (Stylianou, 1985: 223).

The *dome-hall* church of Agia Mavri (Figure 4.71) was built as a monastery church in the 12th century and decorated with frescoes in the 12th, 15th and 16th centuries. The 12th century dome is drumless and decorated with frescoes. A second timber roof was added to protect the church from the extreme winter weather (heavy rainfall and snow) and humidity, possibly in the 15th century, before Barsky's visit in 1734. The second timber roof existed until 1920-30 (Papageorgiou, 1984 v.9: 354). It has been reconstructed recently by the Department of Antiquities.

Local materials were used in these churches, various sizes of pebbles, gabbro and diabase. The gaps in the masonry walls were filled with smaller stones and pieces of tiles. The masonry walls were similar to those in the *timber-roofed* buildings, since these churches are located in the Troodos region. On the masonry wall of Pelendri church, an extensive use of tiles on the arched frames of the window-doors and the blind arches was observed.

Simple Byzantine style churches of the 14th-15th centuries

Around 41 *Byzantine*-style churches were built (25), altered (15) or reconstructed (1) in the 14th to 15th centuries: 7 in Nicosia, 16 in Larnaka, 5 in Limassol, 4 in Paphos, 5 in Famagusta and 4 in Keryneia.

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[82]Also this church can be classified as a *Byzantine style church with medieval additions*. Its Latin characteristic, however, is the pointed arched vault.

The architectural style and the church typology (which will be discussed in detail in the next chapter) continued from the previous centuries. The *Byzantine* style developed certain peculiar characteristics, which gradually made their appearance during these two centuries. The size and scale of the 14th century churches continue the same as before. For example, the 14th century church of Galoktisti in Kato Pyrgos (Figure 4.72) resembles the humble churches of the earlier periods.

By the end of the 15th century churches had increased in size and scale. They were larger in length, width and height, compared to the earlier examples. The largest church of this period is the reconstructed church of Agios Lazaros in Larnaka (Figure 4.73). The windows and the doors were also enlarged (Agios Antonios in Paphos, Ambelikiotissa in Kapileio, Agia Marina in Pyrga (Figure 4.74), Agios Georgios in Avgorou), and sometimes were increased in number as well. The interior of the churches was lighter than before.

During this period, masonry wall construction imitated a 'rustic style' or medieval construction technology in the use of ashlar stone, wherever workable material was available. The stones were cut and squared, but often were roughly squared in various sizes such as in Agios Georgios in Dali (Figure 4.75) and Agia Anastasia in Polemidia (Figure 4.76) - the eastern 14th century part. They were built in equal courses (Agios Dimitrianos in Dali, Panagia Chortakiotissa in Sotira, Archangel in Frenaros) or unequal courses (Agios Georgios Makris in Larnaka).

The most common construction method of the masonry walls is the use of coursed masonry with large stones at the lower part of the wall and smaller stones in the upper part (Panagia Kampou at Choirokoitia, Agia Marina in Deryneia, etc). Sometimes, large well-squared stones were used in some facades and smaller in others. For example, in Agios Georgios village church of Avgorou, large heavy stones (up to 50 x 70 cm), carefully cut and squared (Figure 4.77), were used for the construction of the altar apse and smaller ones in the side walls of the church. This probably indicates that the construction of the church was started from the altar and then the builders decided to build the sidewalls with smaller stones.

Inspection of the churches showed that only local materials were used for the construction of the churches during this period. Therefore, a considerable number of churches were built from roughly cut and squared stones or rubble masonry, the only available materials in their region. Representative examples are: Ambelikiotissa in Kapileio (Figure 4.78), Agios Thomas in Lefkara, Agios Sergios in Kissousa, Agios Athanasios in Menogia (Figure 4.79), Agia Marina in Pyrga (Figure 4.74), Prophitis Elias in Lythrodontas, Panagia in Arediou (Figure 4.80) etc. The doors, window frames and the quoins of walls in these churches were in some cases built with well squared stones: Ambelikiotissa, Agia Marina in Pyrga, etc.

The churches were roofed with pointed arched vaults and domes. The vaulted churches were at least 10% larger in size (length and width) than those of the previous period. The domed churches were either of a similar size, or larger than the earliest churches. The diameter of the domes ranges between 2.2-3.5m. The smallest diameter was around 2.0-2.2m (the dome in the narthex of Agia Marina in Deryneia) and the largest domes were around 4.4m in diameter (Agios Lazaros in Larnaka). The domes in these two churches were additions to, or a reconstruction of, earlier churches.

Multiple domed churches may have different size domes, which they date from different periods. Two representative examples were found. The first church is Agia Anastasia in Polemidia (Figure 4.76). The 14th century dome in the nave of the church has a diameter of 2,1m, whereas the 12th century dome in the narthex has an irregular shape, which ranges between 2,7-3,22m. Both drums have the same height. The second church is Archangels in Frenaros (Figure 4.81). The 12th century dome of the nave is larger in diameter (around 3.5m) than the 14th century dome of the first narthex (around 2.5m), but both drums have the same height. The drum of the domes is tall, 1.8-2,2m, and in most cases has four windows, east-west and north-south. Drumless domes have been reported in two churches, Agios Georgios Angonos in Ormideia (Figure 4.82) (around 3m in diameter) and Galoktisti in Pyrgos (around 2m in diameter). Both domes are located in the narthex of the vaulted churches. The churches differ in dimensions, size scale, and construction technology. They are located in two different districts.

The octagonal shape of the drum that was seen in the 14th century church of Panagia in Arediou (Figure 4.80) was introduced later, possibly in the 15th-16th centuries when the church was extended in the west or in the Ottoman period. This drum is low (around 1-1.5m) with squat proportions, unlike the drums in the other 14th century churches. Also, the pointed arches in this church are low and slightly pointed, and the transverse ribs in the narthex are based on limestone colonnettes attached to the sidewalls. Those are built with dressed limestone and their capitals have carved geometrical patterns that originate from the 17-18th centuries. The author believes that the upper part of the church and the narthex may have been partly reconstructed in the Ottoman period.

The facades in the two dome-hall churches that date to the 15th century, Agios Georgios in Choulou (Figure 4.83) (1480) and Agios Georgios in Vasa (Figure 4.84), were reconstructed later. They resemble *Franco-Byzantine* churches of the 15th -16th century, which have no north-south gables. The base of the dome drum is actually part of the north and south walls. This architectural detail is also seen in Byzantine dome churches in the 15th -16th centuries.

The roofs in several churches at the time of the visits[83] were not covered with tiles, but were protected with a cementitious lime mortar called 'kourousani'. According to Filotheou (oral information), byzantine tiles were used on the churches possibly from the 12th until the 16th century. The use of tiles was not affordable in the Ottoman period. Instead, the builders used the 'kourousani' in order to protect the domes from the weather conditions. This technique was used on the domes of the Turkish baths.

Byzantine style churches of the 14-15th centuries follow the architectural style and church-types (see next chapter) of the earlier centuries, particularly 12th century church architecture. The main differences in the churches are the increased size and scale of the churches and the construction technology that was used. This

[83] The churches with no tiles were; Agios Thomas in Lefkara and Agios Georgios Avgorou (both vaulted churches) and Agios Antonios in Paphos, Agia Anastasia in Polemidia, Agios Efstathios in Kolossi, Archangel in Frenaros, Agios Georgios Angonos in Avgorou, Agia Marina in Deryneia, Chortakiotissa in Sotira (all churches with domes).

construction technology developed under the influences of the techniques that were used on their contemporary medieval buildings. Those techniques were interpreted in the case of the *Byzantine* churches by the local builders in a manner native to them. The only exceptions to the rule are the churches in the Troodos region, whose construction has not followed medieval prototypes.

The 15th and 16th centuries (1489-1571)

Historical background

The *'Byzantine revival'* observed during Helena Paleologina's reign did not last for long. The Lusignan era started to decline when the illegitimate son of John II, James II, married the Venetian noble Aikaterini Cornaro in 1472. James's death in 1473 left Cyprus in the hands of Venice. The Venetians officially annexed the island in 1489. Their concern was to extract money from the island. They tried to safeguard its military strategic use in order to withstand the Ottoman advance. They exploited the rural population through forced labour so as to strengthen the fortresses in Keryneia and rebuild the walls in Nicosia[84] and Famagusta[85] according to their military designs. The Venetians held the island until the Ottomans conquered it in 1571.

The construction of the Nicosia walls had caused the destruction of many monuments, among them the destruction of the Monastery of Agios Georgios of Manganon that was built by Helena Paleologina after 1453. Medieval documents confirmed that all the buildings outside the perimeter of the new fortifications and 40% of the Lusignan capital were demolished to make the glacis, to use their building material, and to prevent them from being occupied by the enemy. Etienne Lusignan had recorded at least 250 churches[86] during the Lusignan period

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[84] The Nicosia Walls were rebuilt between 1567-1570, based on Giulio Savorgnano's designs. Savorgnano reduced the perimeter and fortified it with 11 bastions. The bastions were not covered with stone on top, but grass turf. The Ottomans completed the stone after conquering the town (Perbellini, 1994:10).

[85] The Famagusta Walls are based on the drawings of Giovanni Girolamo Sanmichele (nephew of the famous engineer Michele Sanmichele), but they preserved parts of the works created during the long-drawn occupation of the town by Genoese (1373-1464). Famagusta was converted into a nautical base for the Venetian fleet and immediately after the official annexation of Cyprus to them, they started the reinforcing works (i.e. the Martinengo bastion was constructed between 1557-8) (Iacovou in 'Byzantine and Medieval Cyprus', 1998: 176-9).

[86] The churches that have disappeared are not part of this PhD, since no accurate and reliable information for those is available to us for study. However, is an interesting topic for further investigation.

(Coldstream 1993: 7, original source; Cobham, 1908:120). In Nicosia within the Walls, only seven churches have survived up to the present time, and just one of them is *Byzantine,* Panagia Chrysaliniotissa. One of them is *Franco-Byzantine*, the Bedestan or Panagia Odigitria, and the other five are Gothic Medieval churches.

The historical circumstances have influenced the construction of *Byzantine* and *Franco-Byzantine* churches in the rural areas instead of the towns. The author encountered 168 churches that were built (130? churches), altered or reconstructed (35? churches) in this particular period (1489-1571). Some 93 of those churches are of the *Byzantine* style and some 75 are of *Franco-Byzantine* style. The *Byzantine* style churches are classified into four sub-categories: the *timber-roofed* (41), the *double-roofed* (2), the *simple Byzantine* (45), and *Byzantine* churches with later medieval additions (5). The *Franco-Byzantine* style churches are classified into three sub-categories: the *Byzantine Franco-Byzantine* (33), the *medieval Franco-Byzantine* style (4), and the *new Franco-Byzantine* style (38). Five *vernacular* style monuments (bridges, watermills, and towers) that were built in this period are considered separately, since they are not part of this research.

The *Franco-Byzantine* styles in the 15th -16th centuries

The *Franco-Byzantine* churches within each category (*Byzantine Franco-Byzantine, medieval Franco-Byzantine*, *new Franco-Byzantine*) may differ in their typology, size and scale, but they have similar architectural and construction details.

Byzantine Franco-Byzantine style in the 15th-16th centuries

The majority of the churches that were built or altered in this period have pointed arched vaults, and only 5 of them have domes. The size of the churches increased gradually during these two centuries. The 16th century, churches are larger than those of the early 15th century. In remote areas, however, monuments of a small size continued to be built into the 16th century, as for example Agios Nikolaos in Galataria (Figure 4.85), built in 1550. On the other hand, two large churches were built in the 15th century: Kyparissiotissa in Kolossi (Figure 4.86) and Agia Marina in Mari (Figure 4.87), which are similar in size and construction (built of rubble

masonry). Both are in a ruined state, which makes it difficult to study them in detail.

All the churches have a single-aisled plan, either with a pointed vault or a dome. Most of the domed (6) churches are monuments of an earlier period, which were altered at this time. The domed churches are: Panagia Katholiki Kouklia (Figure 4.88), Panagia Liopetri (Figure 4.89), Agios Irakleidios Politiko (Figure 4.90), Parekklisia Holy Cross (Figure 4.91), Sotiros Sotira, Agios Sergios and Vachos in Agios Sergios.

Proportions of the churches and their architectural details

The proportions of churches and architectural details are common throughout the island, with very few significant variations. The churches, small or large, have slender proportions[87], a characteristic borrowed from Medieval Gothic monuments. The interiors of the churches are higher than the earlier ones. In the vaulted churches, the height of the pointed arched vaults is often equal to that of the sidewalls, increasing the total internal height of the church two times. Similarly, in the domed churches the walls and the drums have also increased considerably during this period. Also, the diameters of the domes are larger.

The architectural details of these churches are simplified forms and plainer copies of the medieval architectural details on their contemporary Gothic monuments. They have less or no elaborate decoration. The most important architectural details are the pointed arched vaults, the pointed arched door-window frames, the pointed blind arches and niches. These details are simple imitations of the medieval pointed arched shapes.

The proportions of the pointed, arched vaults are 3 to 5 or 4 to 6 (height of the vault to the width of the vault). This means that the vaults may have a slightly sharp, pointed form. Some representative examples were seen in the churches: Agios Andronikos and Athanasia Kolossi (Figure 4.92), Panagia in Pyrgos Limassol (Figure 4.93), Panagia in Choulou Paphos (Figure 4.94), and Agia Marina in Frenaros. The proportions of the pointed arches were similar to those of the same

[87]The only church with squat proportions is Panagia in Liopetri.

period in Crete (Figure 4.95, from Karpodini, 1995: 20). As mentioned above, the height of the vault is often half of the height of the church. In the Ottoman period, the pointed arched vaults became lower, wider and blunted.

The blind arches on the sidewalls of the churches and the niches are sometimes wider and lower in shape than those of the vaults in the 15th -16th centuries (i.e. Archangels in Prastio Avdimou, Agia Marina in Frenaros). Their most common proportions are 2 to 3 (height to width). Their height is equal to the height of the side walls (Agios Andronikos Polis Chrysochou, Figure 4.96).

The door-window frames are important decorative features in the churches. Three variations were observed: a) pointed arched frames with or without decoration; b) rectangular frame with or without decoration; c) combination of a rectangular frame with a pointed, recessed arched frame or with a projecting pointed arch above it. In most churches[88] the use of two of the three types of frames, or even all three of them, was observed. In many churches the south door has a pointed arched frame and the west door has a rectangular frame (Agios Andronikos and Athanasia in Tersefanou, Figure 4.97) or vice versa. The pointed arched door does often indicate that it is the main entrance to the church. Often all doors have a pointed arched frame (Agios Nikolaos Galataria).

The pointed arched frame in doorways is carefully constructed with ashlar or squared stone which may differ to the masonry wall in colour (Agios Nikolaos Galataria, Figure 4.85) and construction technique (Byzantine church in Klaudia, Figure 4.98). This frame is sometimes built at the same level as the wall and is plastered, as is the wall itself (Agia Varvara Peristerona, Figure 4.99) or is recessed slightly (Agios Andronikos Tersefanou). Two horizontal stones with or without decoration occasionally project from the spring of the pointed arched frame (Aimatousa Aradippou, Agios Andronikos Tersefanou). In other cases, the door-frame projects slightly from the wall and is decorated with mouldings, flora and geometric patterns (Agia Paraskevi in Mathiatis, Figure 4.100).

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[88] The only church that has no arched door or window frames is Panagia in Liopetri. The windows and the doors of this church were enlarged and altered in shape in the19th century. At that period stoa was also added in the south.

The rectangular door-frame is built with ashlar, or roughly squared stones. The lintel is often a solid heavy stone 0.45-0.50m high and 1.2-1.5m long. Sometimes, this lintel is built with three stones, two large ones at the two sides and a trapezium-shaped stone in the middle, the key-stone (Byzantine church in Klaudia). Rarely, the rectangular door-frame has moulding decoration (Agios Amvrosios in Agios Amvrosios of Limassol); an architectural detail which was more common in the Ottoman period.

Two cymatium-shaped corbels (or brackets) often decorate the two upper corners of the rectangular door-frames. This architectural detail is a simplified version of the colonnettes and their capitals on the door-jambs of Medieval Gothic churches. These door-jambs had colonnettes with decorated folia capitals supporting the above pointed arched lintels of the doorways. Many architectural details from medieval buildings are included in Enlart's book. The brackets with more elaborate decoration are often seen in *new Franco-Byzantine* style churches, as for example in Agios Mamas in Agios Sozomenos (Figure 4.101 drawings from Enlart/Hunt, 1987: 171).

The combination of the rectangular frame, with a pointed recessed arch above was seen on a few churches (Panagia Pallouriotissa in Potamia, Agios Amvrosios in Agios Amvrosios Limassol). The rectangular frame is simple, or has corbels (similar to those mentioned above). The doorway frame was built with ashlar, or roughly squared stones, and the horizontal lintel with a solid, heavy rectangular stone. In the Byzantine church of Klavdia (Figure 4.98), the western doorway was built with a rectangular frame with a projecting, pointed arch above it. This pointed arch surrounds the doorway tympanum, which is decorated with a fresco painting. The pointed arch ends with two corbels decorated with folia pattern (the left edge) and patterns imitating robe (the right edge), Figure 4.102. The combination of these two morphological details must have been common to other areas of the Mediterranean region. For example, similar examples but with more elaborate decoration are also found built in Crete in the 15th -16th centuries (Figure 4.103, from Karpodini-Demetriade, 1995: 20).

The origins of the above details of the doorway frames (such as the recessed pointed

arched frame, corbels in the rectangular door-frames) belong to the Frankish period. We have already examined similar details on the buildings of the early 15th century of the Latin Agia Aikaterini Chapel in Pyrga and the Holy Cross church in Tochni (Figure 4.46 & 4.104).

The window frames are simpler than the door-frames. Windows were only placed in the apse of the nave and often on the western gables. Sometimes, small windows were placed either on the eastern gable, which were similar to those of the altar apse (Agia Marina Frenaros, Agia Varvara Peristerona, Figure 4.105), or the side gables (Agioi Sergios and Vachos in Agios Sergios). All these windows were small, rectangular, with dimensions of around 20-25cm in width and 40-60 cm in height. These small windows very often have a semi-circular arched lintel. This is formed either with a piece of stone in an arched shape (Tersefanou), or with a rectangular piece of stone carved on one side in a semi-circular shape.

In the Byzantine church of Klaudia, there is a small round window in the western gable (Figure 4.98) with elegant tracery, the only example that has survived. It is an exceptional piece of art and it is not known for certain whether it was created in this period or later, during the Ottoman period. However, all the large windows that were seen on the sidewalls of all the churches belong to the Ottoman period.

Another exception is the Church of the Holy Cross in Parekklisia[89]. The masonry walls of this church are decorated with windows of several shapes and sizes. For example, in the south gable there is a small rhomboid-shaped window, while in the altar apse there are: two-sided loophole windows of a rectangular shape and a central double window with semi-circular apses (Figure 4.106). The loophole windows have splayed sides, whereas the central window resembles Byzantine and Romanesque windows.

The windows on the drums[90] of the domed-hall churches are often either four

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[89]The exterior walls of the church are decorated with small pieces of sculptures that are not found anywhere else. It seems that local builders added them, possibly in the Ottoman period.

[90] The only dome-hall church with no windows on the drum is Panagia in Liopetri.

(Katholiki Kouklia, Holy Cross of Parekklisia), or eight (Agios Sergios) in number. The drum-windows are similar in shape and style to the other windows on the churches' walls, but they are larger. Occasionally, they have frames with mouldings.

The drums of the domes have a cylindrical shape with slender proportions, except in the Famagusta area. There, the drums of the *Franco-Byzantine* style churches have an octagonal shape (externally), as for example in Sotiros church in Sotira. The drum-height increased in this period, up to 1.5-2.5m. The diameters of the domes also increased significantly (around 3.5-4m in diameter). The largest dome was seen in Panagia Liopetri (Figure 4.89) (around 4m in diameter). Therefore, the interior of the churches is higher than that of churches built in the earlier period.

The altar apse often has a polygonal three-sided shape externally (Panagia Liopetri, Agia Varvara Peristerona). Even though the polygonal altar is a characteristic of 12th century Greek-style churches, it only appeared in Cyprus in the 15th -16th centuries, which means it is a late Frankish or Venetian influence[91].

A decorative cymatium, a cornice, often appeared on the top perimeter of the walls and the gables on the exterior facades of some churches in the 16th century. This was noticed in Panagia in Potamia, Holy Cross in Parekklisia (Figure 4.106) and in Agia Varvara in Peristerona (Figure 4.105). In the latter church, the edge of the wall is formed with a double cymatium, an architectural detail borrowed from medieval monuments (Figure 4.107, the Armenian church in Famagusta from Enlart, 1899: 286). This architectural detail was common, as we will discuss later in the *new Franco-Byzantine* style churches.

The masonry walls of the churches were constructed with rubble stones (Amirou in Apsiou, Agios Eftychios in Mathiatis) in various sizes, or with roughly squared stones (Agios Andronikos Kolossi, Agios Sergios), always with local materials. The exterior walls of many churches are currently completely (Agia Paraskevi Mathiatis, Panagia Choulou, Holy Cross Parekklisia, Agios Georgios Monagri etc) or partly

[91] The use of polygonal shapes in the altar apse and the drums of the dome-hall churches of the 15th-16th century in Cyprus are a topic which seeks further investigation, in the future.

covered with plaster. It is not known whether the walls of the churches were originally intended to be plastered.

In Agia Marina Frenaros, the eastern walls, the quoins (the corners of the side walls) and the arched, pointed vault were built of squared stone, whereas the side and western walls were built of rubble masonry (Figure 4.108). Those walls are currently partly covered with plaster. It is possible that the rubble masonry walls were originally covered with plaster. Stones with decorative features (east south quoin) and coats of arms (above the western doorway lintel) were seen on the walls. This is an architectural detail commonly used in *Franco-Byzantine* churches in Famagusta region.

Six *Byzantine Franco-Byzantine* style churches in a ruined state

The author believes that six of the ruined churches that were observed during the visits, and which have not yet been studied by scholars, are probably monuments in the *Byzantine Franco-Byzantine* style. These are: Archangel in Prastio Avdimou (Figure 2.55), Agia Marina in Mari (Figure 4.87), Panagia Kyparissiotissa (Figure 4.86), Agios Mnason in Potamiou (Figure 2.51), Agios Athanasios Pentaschinitis (Figure 2.57), and Agios Eftychios in Mathiatis (Figure 4.41). The structural condition of the churches Archangel, Agia Marina and Panagia, has indicated that those were roofed with a pointed arched vault. Both are large, with similarities in their size and plan.

The other three monuments have not preserved any construction details that can verify their roofing type. Some of their characteristics, however, suggest that these are also churches of this style. Those characteristics are: a) their masonry construction, with large roughly-cut stone built in horizontal courses: b) their size and plan, which resemble other churches of this style in this period, and c) the surviving parts of their pointed arches or pointed blind arches, which are built of ashlar stone. In Agios Mnason, a buttress (Figure 4.109), probably a later addition, has survived in the north-east corner, resembling those in Venetian buildings. Also, in the same church, a catacomb-channel (Figure 4.110) has survived under the

church floor. No detailed study has confirmed yet the date and use[92] of this rare catacomb-type (whether it was used for religious purposes, as the tomb of the saint, or another explanation).

Medieval Franco-Byzantine style in the 15th-16th centuries

The churches of *medieval Franco-Byzantine* style are Greek Orthodox churches whose construction and architectural details are medieval. All these churches are medieval in plan: *three-aisled Gothic basilica, single-aisled,* with pointed or ribbed vaults. They appear as simple as Byzantine churches, but they are characterised by a combination of medieval architectural details, Frankish and Venetian, together with Byzantine features. The medieval styles dominate the architectural details of Byzantine style. Four[93] churches were found: Bedestan in Nicosia, Agios Nikolaos of the Cats in Akrotiri, Agios Mamas in Dali and Agios Georgios in Potami. Apart from the last two churches, the other churches were monuments that were built earlier and modified during this period. It is important to examine each church separately.

Bedestan, or Panagia Odigitria, or the church of Agios Nikolaos, was the Greek Orthodox metropolis during the Venetian period (Figure 4.111). According to Enlart, the church was probably built in the 14th century and altered in the 15th -16th centuries. He described the church as a '*remarkable patchwork*' of medieval styles (Enlart/Hunt, 1987:136-141). Professor Michael Willis[94], however, has proved that the church has foundations dating back to the 5th century. The architectural details in the building belong to different architectural styles and periods. Some details - for example, the main doorway – date to the 14th century and belong to the late Gothic Cypriot style (which was characterised by squat proportions). Whereas, other details,

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[92] The locals are convinced that Agios Mnason body was buried under there.

[93] A fifth church, Agios Georgios in Paphos can also be classified as a *medieval -Franco-Byzantine* style monument, but we have no information whether it was built in the period 15th-16th century. However, the broad pointed arched shape of its vault lead us to date the church into the Ottoman period, since this was an architectural detail that was used extensively in that period. The Franco-Byzantine monuments were continued to be built in the Ottoman period, anyway, but with squat proportions, like Archangel Tripiotis in Nicosia which was built in 1690 (Enlart/ Hunt, 1987: 80).

[94] M.Willis: 'Byzantine beginnings of the Bedestan', Deltion Etairias Kypriakon Spoudon, Nicosia 1987. Pg 185-92 (Coldstream, 1993: 5).

such '*as the octagonal half-pillars without capitals along the south wall which support the springs of the vaults*' date back to the 15th or early 16th century (Enlart/Hunt, 1987: 139).

The plan of the church is not symmetrical. It has four aisles: the central one in the north and two in the south, and four bays. Above the bay of the central aisle, which is the nearest to the altar, there is a dome with an octagonal external shape. This dome is an important *Franco-Byzantine* architectural detail. Enlart suggested that this dome had possibly been built in the 15th or late 14th, without supporting his conclusions (Enlart/Hunt, 1987: 145). If this is correct, this is probably the first octagonal-shaped dome of the *Franco-Byzantine* style. Otherwise, if this dome was built in the Venetian period, like all the others that we encountered (which will be mentioned later), then it seems that the octagonal shape is a common characteristic of this particular period.

It is worthy of mention that the external polygonal shape, the octagonal shape of the drum of the dome and the half-hexagonal shape of the altar apse, were all characteristics of the churches of the Athenian-Greek church style in the 12th century in Greece (Bouras, 1984: 115). However, the Athenian-style drums were small (2-3m diameter), with slender proportions. The window frames of the drums were decorated with radial-placed bricks and the eight corners of the drums with slender colonnettes. The polygonal shape of the drums and altar apse did not appear in Cyprus until the 15th -16th centuries. The octagonal drums in Cyprus, unlike the Greek examples, appeared larger in size (3-4m diameter), simple and plain, without any decoration but with squat proportions. This means that the polygonal shape was not actually an influence from 12th century Greek church architecture, but an influence most probably from Venetian architecture. The origin of this architectural detail is an interesting topic that should be investigated further in the future.

The monastery of Agios Nikolaos of the Cats in Akrotiri was mentioned earlier (Figure 4.47). It was damaged by the 1567-8 earthquakes and restored some time after 1570. According to Enlart, the church belongs to the 14th century, whereas the cloisters (Figure 4.112) belong to the 15th-16th centuries (Enlart/Hunt, 1987: 349-

350). The monastery was in ruins when Enlart visited it in the 19th century. It was restored extensively a few years ago. Apart from the church, only the parts of the Gothic medieval style arcade of the cloisters' stoa have been preserved, and have pointed arches supported by cylindrical columns. The masonry is well-squared local limestone.

The church of Agios Mamas in Dali was built in the 15th-16th centuries, and has preserved most of its original medieval architectural details and ashlar masonry (Figure 4.113a-b). It is a single-aisled church (8,25 x 6,14m) and is roofed with cross-vaults (Papageorgiou, 1984 v.9: 286). The most significant of all its architectural details is the doorway in the south main entrance (Figure 4.113b). This doorway has a rectangular-shaped frame with cymatium corbels in its two corners and a recessed pointed arched tympanum above it, with a hood-mould frame. The doorway frame and the arch have elegant decorative mouldings. Another important detail is the round tracery window of the eastern gable (similar to that in the Klavdia church). The altar apse has an external semi-octagonal shape (five sides). Massive rectangular buttresses were built at the west ends of the south and north walls.

The ashlar masonry of the church is constructed with well-squared yellowish limestone from the Nicosia district. The lower parts of the walls are built with larger, heavier stones than those at the top of the wall. The shape of the vaulting is expressed on the outside on the facades with triangular gables: one in the west, one in the east, and twin gables in the north and south. According to Enlart, this is a common architectural detail on the buildings of South France at the end of the Middle Ages (Enlart, 1899:172). A stone-cornice with mouldings runs along the line of the gables. Stone prism-shaped gargoyles are placed at the lower parts of those gables. All the medieval architectural details in the church have simple and plain forms, and the decoration does not aim to impress.

In contrast, elaborate decorative architectural medieval details were used in Agios Georgios Church in Potami (Figure 4.114a-b). This church dates to the 16th century. It is a large and tall church that is roofed, with a pointed arch vault. It was built with ashlar yellowish limestone from Nicosia district. The stones are cut and well-

squared, similarly to the masonry construction of medieval Gothic churches. The main architectural details in the church are: a) the north main entrance with the pointed arched doorway frame; b) the pointed arched hood-mould frame of the east window, and c) the elaborate decorated cornice at the top of the walls on the exterior facades. The main doorway at the north entrance has two frames: the pointed arched frame with mouldings surrounds a second rectangular frame, also with mouldings, and two cymatium- shaped corbels in the corners. The tympanum above the doorway is shorter than the one in Agios Mamas, because the springs of the pointed arched frame start at the lower level of the horizontal lintel of the door. Whereas in Agios Mamas, the springs of the hood-mould start at the upper level of the horizontal lintel of the door.

The altar apse has externally a polygonal, three-sided shape. In the central side there is a large window with a hood-mould, a pointed arched frame with mouldings, and a sill also with mouldings. It is the largest window (around 1,2-1,5 m in height, 0.6-0.7m in width) we have encountered so far in the churches of this style and period. In the eastern and western gables there are round windows with splayed frames, which differ in size and style to those in Agios Mamas Church.

The cornice that runs on the top of the wall is also more elaborate than the one in Agios Mamas. It has a Greek style cymatium and dentil at the top and a series of spirals at the bottom. Stone carved gargoyles appear on the side walls, lion carved faces in the middle of the walls, and human carved faces (in Romanesque style) in the corners of the cornice, which runs on three sides (north, east and south) and stops with no apparent reason at the two corners of the west side. Another strange detail is the use of a double cornice in the two corners of the eastern facade. The decoration on this church's facades is actually a patchwork of medieval geometrical, Romanesque and classical Greek architectural details. The builders or masons wanted used those decorative details only because it was fashionable at the time, and not because they had any particular interest in the aesthetic value of the facades.

In the 15th-16th centuries, the architectural details of the churches of the *medieval Franco-Byzantine* style are not as elegant as those of the church of Agios Georgios

of the Greeks in Famagusta (Figure 4.32), from the earlier period. The ashlar stone masonry construction, however, is widely used during this period.

New Franco-Byzantine style in the 15th-16th centuries

The *new Franco-Byzantine* style churches (38) are characterised by a fusion of Byzantine style and medieval architectural details. They have a Byzantine plan that varies according to the size, scale and type of roofing. The most common are: *three-aisled domed* church, *single-aisled vaulted* church, and *dome-hall* church. Each of those types appears in variations. These variations are according not only to the size and scale of the church and but often according to local tradition. A representative example is the area of Famagusta, where a specific architectural type of churches, the dome-hall type, has an indigenous character that is found nowhere else. Therefore, it is essential to study and discuss the development of this style in two ways: a) within each region and b) each church type taken separately. It is important to start from the Famagusta (10) area and then proceed to Nicosia (6) area, Keryneia (1), Paphos (18) and Limassol (3). In the meantime, comparative discussions will be undertaken concerning buildings of different regions.

Famagusta district

Famagusta was in Genoese hands from 1373 until 1464, by which time the city had declined. King James the Bastard, who re-conquered it, lived there and restored the city to some extent. Aikaterini Cornaro was forced by the Venetians to live in Famagusta, but after the death of her son James III, she moved to Nicosia. The Venetians tried to restore the city and pay some attention to defence (Enlart, 1899:212).

The Venetians converted the city into a naval base for their fleet. Therefore, immediately after its official annexation to them, the Venetians started reinforcing the ineffective and derelict Genoese fortifications around the town (Perbellini, 1994:8). Famagusta was far more important to the Venetians than the capital of the island Nicosia, due to its harbour and strategic position. Therefore, the major fortification project in Famagusta was completed by the end of the 15th century (around 1495) long before the Nicosia Venetian Walls, which were built in three

years, between 1567 and 1570[95] (Coldstream & Iacovou, 1998: 177-8).

The wealth and fame that characterised the town of Famagusta influenced the development of the architectural activity in the surrounding area as well. In an area which is located southwest of Famagusta, near the borders with Larnaka district, we encountered a small group of churches sharing similar architectural and construction details. Those buildings were built or altered in this period, possibly by the same masons and builders. On their masonry walls, particularly on the doorway lintels (i.e. Agia Varvara Sotira) and the altar apse, we observed similar decorative features: coat of arms with a Gothic cross, simple (Agios Georgios Teratsiotis) or double (Agios Mamas in Sotira, Agia Napa, Agia Varvara in Sotira). These buildings are divided into two groups according to their roofing type: domed and vaulted. The domed churches are: Agios Nikolaos in Famagusta (Figure 4.115), Panagia Trapeza Acheritou[96] (Figure 4.51, 4.116), Agios Georgios Teratsiotis in Avgorou (Figure 4.117), Agios Mamas in Sotira (Figure 4.118) and Agios Iakovos in Trikomo (Figure 4.119). The vaulted churches[97] are: Agia Varvara in Sotira (Figure 4.120), Agia Napa in Agia Napa (Figure 4.121).

The types of the domed churches are: *dome-hall* type (Agios Georgios, Agios Mamas, and Agios Iakovos), *two-aisled* with a narthex (Agios Nikolaos) or *three-aisled* with a narthex and two domes (Panagia Acheritou). They all differ in plan, but they are similar in size, scale and slender proportions. The height of the sidewalls is around 4.5 - 5.5 m. The diameter of the dome is around 3.5 - 4m. The height of the drum of the domes is around 2.5-3m. The drum has an octagonal shape externally (except in Agios Iakovos). The octagonal-shaped drum and the polygonal shape of the altar apse (as mentioned above) are an innovation of the 15th-16th century, and

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[95]According to Nichola Coldstream, the Venetian Walls in Nicosia were 'hardly completed in July 1570 when the Turkish forces landed on the island' (Coldstream, 1998:175).

[96] Panagia Trapeza in Acheritou was originally built in the 14th-15th century as a single aisled church and was altered in 1566 as a three aisled church.

[97]Agia Marina in Frenaros, has preserved some architectural details (coat of arms, flora decoration) that could classify the monument as a new Franco-Byzantine style. But its rubble stone masonry and the shape of the church suggested that it has more common characteristics with the *Byzantine-Franco-Byzantine* style churches and was classified as such.

probably a Venetian influence[98].

The vaulted churches have also a similar scale and height (maximum height 4.5m), but differ in plan. Agia Napa has an irregular plan, because is partly roofed with a barrel vault and is partly hewn out of the rock of a hill. Agia Varvara, on the other hand, has a rectangular plan and is roofed with a pointed arched vault.

The domed and vaulted churches have very similar architectural and construction details. The first characteristic that attracts the visitor's attention is the proportions and the axial geometry of the churches' shape. The churches appear as geometrical shapes, cubic or rectangular. We observed a development in the expression of the construction of the dome and the vaults on the external facades. For example, in the domed churches, there is a development in the relation between the drum of the dome and the sidewalls of the churches, and the relation between the vaults and the facades.

In the earlier churches that had copied the Byzantine prototypes (Agios Iakovos), the dome drum is based on a square base. The pointed arches that support the dome are expressed on facades with triangular pointed gables (Agios Iakovos). In the cases of two and three-aisled churches, the arches of the side aisles are also expressed on the facades with either semi-circular (for arched vaults, as in Acheritou) or triangular (for pointed arched vaults, as in Agios Nikolaos Orounta) gables.

Later, the drum of the dome became part of the sidewalls (Agios Mamas in Sotira). The whole church appeared to support the dome. The sidewalls are reinforced with two heavy buttresses just below the edge of the dome. Finally, the building and its dome became two independent parts: the dome projecting in the centre of a rectangular geometrical shape (Agios Georgios Teratsiotis). Buttresses continued to be used and strengthened the arches that carry the weight of the domes.

A cornice[99] runs along the top of the walls of the facades in most churches (Agios

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[98] The origin of the polygonal shapes in the Venetian period in Cyprus is a subject that seeks further investigation.

Iakovos, Agios Georgios, Agia Varvara, and Agios Nikolaos). The same cornice appears at the edge of the drum of the dome. The pointed vaults are expressed on the facades with triangular-shaped gables and the barrel vaults with semi-circular shaped gables (Agia Napa).

The masonry walls of all the churches were built of ashlar stone; well-squared, yellowish limestone. It was observed that the size of the stones differs according to the time of their construction. The stones are larger and heavier in the churches that were built in the 15th century. In the churches of the 16th century, however, the stones are smaller and of similar size. Therefore, the masonry construction could provide information about the date or sequence of alterations.

The number of windows is the same as in the previous period. Four or eight windows were opened on the dome's drums, three windows in the altar apse, and single windows may appear above the doorways in the side (Agios Iakovos, Agios Georgios, and Agios Nikolaos) the eastern (Agios Georgios) or western facades (Agia Varvara). The size of the windows, particularly that of the dome drums, has significantly increased. They had doubled or tripled in size compared with those of the previous period.

The windows in the 15th century churches had a semi-circular arched (Panagia Trapeza Acheritou) or pointed arched (Agios Iakovos Trikomo) shaped lintel, whereas those of the 16th century had a triangular- shaped lintel (Agios Mamas Sotira, Agios Georgios Teratsiotis). Often, we observed a combination of the last two types of windows. Rose-windows were also found. Examples are the small window in the form of six-spiked wheel in the tympanum of the doorway of Agia Napa and the window in the east gable of Agios Georgios.

The doorway frames are seen in three types. The first type is the simple rectangular frame with a heavy rectangular stone lintel and two decorative corbels below (Agia Varvara north door, Agios Mamas south door). In the second type, above this simple doorway, an arched frame projects, creating a tympanum (Agios Georgios south and

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[99] The only churches without a cornice were Agios Mamas in Sotira and Acheritou.

west doorways, Agios Mamas west doorway, Agios Nikolaos, Agios Iakovos). The arched frame ends with two decorative brackets. A variation of this type was found in Agia Varvara: the pointed arched frame is decorated with mouldings and is formed on the same level as the wall, whereas the rectangular frame and the tympanum is recessed 15cm to the rear. Another, more elaborate decorated doorway frame was seen in Panagia Eleousa Rizokarpasso[100]. This doorway is decorated with Gothic style mouldings and colonnettes jambs (Demosthenous, 2000: 239). The third type was seen in Agia Napa, and has obvious influences from the Gothic tradition. The doorway has a pointed arched frame. Above that a second pointed arched frame projects, with mouldings. The upper part of the tympanum is formed with a tracery window and the lower part is formed as a horizontal lintel with a moulding frame. In the middle it has a coat of arms with a double cross. It is quite common, in the lintel doorways of all the *Franco-Byzantine* churches of Famagusta, to have one or two carved coats of arms with a single or a double cross, or simply a single or double cross carved on the lintel stone without a coat of arms (as in Agios Mamas Sotira).

Nicosia district

In Nicosia, the churches of *new Franco-Byzantine* style are: Agios Mamas in Morfou (Figure 4.122a-c), Archangel in Lakatameia (Figure 4.52, 4.123), Agios Nikolaos of Orounta (Figure 4.124), Agios Mamas in Agios Sozomenos (Figure 2.54, 4.125a-c), Holy Cross Misirikou (Figure 4.126), Agia Thekla in Marko (Figure 4.127). All are domed churches of different plan, apart from the latter which is a pointed-arched vaulted church. They differ also in their interpretation of the Byzantine and Gothic styles, but all of them are characterised by a fusion of the two styles.

The proportions of the churches were differentiated during this period. The buildings of the 15th to the early 16th century have elegant and slim proportions, whereas those of the late 16th and onwards (especially during the Ottoman period) have squat proportions. In addition, the earlier churches are based on a symmetrical plan and are built based on a specific design (Agios Nikolaos Orounta, Agios Mamas Morfou, Agios Mamas Agios Sozomenos, and Agia Thekla Marko). They are characterised

[100] According to Enlart the church has two aisles each are divided with an arcade. The arcade is built with pointed arches with Gothic mouldings (Enlart/Hunt, 1987: 313). This is a representative example of the Franco-Byzantine style churches, which combines Byzantine plan and Gothic details.

by a consistency in their design and their construction. The differentiation in church proportions from the 15th to the 16th century may suggest that the earlier buildings may have been built by masons and builders who had been trained in the Gothic and Venetian building sites, or that these churches had been designed by architects. The buildings of the later period, on the other hand, were built by several builders and with no original design.

The churches of the late 16th century churches (Misirikou, Lakatameia) give the following impression to the visitor: a) that these churches have been altered several times in that period; b) that many different builders worked on the site, leaving behind various architectural and construction details and c) that their structural parts have been made overlarge - the churches look out of scale. In addition, large, solid and heavy buttresses reinforce the sidewalls of those churches, and are not actually needed.

All the churches of the *new Franco-Byzantine* style were constructed with dressed stone (limestone), well-cut and squared. The length of the stones varies from 30-50cm but their height is similar (around 25-30cm). The masonry walls were built in equal courses. The height of the courses and the size of the stones on the masonry walls of the churches were not differentiated, unlike those in earlier churches[101].

The pointed arched vaults were expressed on the facades with triangular-shaped gables (Marko), arch-shaped gables (Morfou) or both triangular and arched (Orounta, Misirikou). The upper part of the walls and the upper part of the drums were decorated with a cornice in the shape of a simple cymatium (Morfou, Marko, Orounta) or with decorative patterns like spirals and dentils (Misirikou). In the church of Misirikou we observed decorative patterns of the cornice on the western and northern gables that are similar to those in the church of Agios Georgios in Potamia[102]. The stone gargoyles on both churches are also similar.

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[101] The height of the masonry courses in the earlier centuries was differentiated from the base to the top of the walls; larger stones were used for the base of the wall and smaller in the upper part of the walls.

[102] The decoration in Misirikou church and in Potami differs in only one aspect; the series in which the patterns are placed. In Misirikou, the spiral is placed at the top, then the dentils and then the cymatium. Whereas in Potami church the cymatium is at the top, then the dentils and the spirals are lower. This similarity may suggest that the same builders may have probably worked on both churches. Presumably, this is correct, then the two

The domes have slender proportions and large dimensions (diameter around 4-5m and height around 3-4m). The drums in the churches of the earlier years have a cylindrical shape, 15th to early 16th (Morfou, Orounta) and octagonal external shape in the churches of the late 16th century[103] (Misirikou). The windows on the cylindrical drums are round-headed with slender proportions, with dimensions of around 0.40m in width and 1.2m in height. The windows of the sidewalls are often different to those of the dome-drums. They have squat proportions, and they are longer and wider. In Agios Mamas in Morfou, we observed a variety of windows, which are all, however, round-headed: five windows on the side walls, a single window in the altar apse and a trilobate window in the western gable. The latter is a Byzantine architectural detail that has not been used elsewhere. In other churches (Orounta, Marko), the western gable often has a round window.

The doorway frames are in three types. First, there is the rectangular frame with corbels, which was used sometimes on the doors of the sidewalls (Orounta). Second, there is the arched frame with mouldings (Orounta). Third, there is combination of a rectangular frame with an arched frame above it, which forms a tympanum. The latter is found in several variations. An extra ordinary example is Agios Mamas in Agios Sozomenos (Figure 4.125), where there are three doorways of the third type, with different decoration. The west doorway has '*a moulded arch and hood-mould with a complicated profile, both of which rest on colonnettes with elongated circular capitals carved with foliage, which was possibly intended for oak-leaves*' (Enlart/Hunt, 1987: 172). Above this doorway there is a carved Latin cross. The north and south doorways (Figure 4.125c) have a plain bead moulding on the arch and no carving, except on the corbels that support the lintels. The south doorway has a foliage profile corbel and the north doorway cymatium profile corbels.

The Church of Agios Mamas in Morfou has four doors (three in the west facade, one in the south), of two designs. The central doorway of the west has a pointed arched

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churches were constructed around the same period (late 16th century).

[103] The drum of the dome of the Archangel church in Lakatameia has a cylindrical shape, which means that it was either built earlier, probably in the early 14th century, or in the late 16th century (during the Ottoman period).

frame with mouldings, which is supported by colonnettes (Figure 4.122). Those colonnettes support the rectangular lintel and the low-arched recessed tympanum. The three other doors have rectangular frames with corbels and a recessed pointed-arch tympanum above. They are plain, with no other decoration. The church of Agios Mamas (Figure 4.122) is the earliest church of the *new Franco-Byzantine* style, which dates to the early 16th century. It combines a symmetrical design and construction, well-cut and square dressed stone, Gothic-style decoration of the doorways. It is characterised by simplicity in design, elegant and slender proportions. It provides a well-balanced combination of Byzantine plan and features (arcade with semi-circular arches, Byzantine dome, trilobate window, cylindrical altar apse), and Gothic construction and architectural details (Gothic doorways, ashlar stone). In the interior the cylidrical columns have octagonal shape capitals which have flora decoration and human faces, in a Romanesque style (Figure 4.122c). The only 'out of proportion' architectural detail is the tall and slender drum of the dome when it is compared with height of the whole church. Another church of similar plan and design is Agios Neofytos in Paphos.

The church of Agios Nikolaos in Orounta (Figure 4.124) also dates to the early 16th century. It combines elegant and slender proportions, a Byzantine plan, Gothic-style doorways and pointed arches, and Gothic ashlar stone masonry. It is smaller in size than the Morfou church, but is also characterised by a balanced combination of Byzantine and Gothic styles.

In both Morfou and Orounta churches, elegant buttresses reinforce the pointed arches of the pointed arched vaults. In Morfou, the buttresses end at the eave of the roof, whereas in Orounta they end lower on the wall of the facades, with a triangular-shaped edge.

The church of Agios Mamas in Agios Sozomenos (Figure 4.101, 4.125), is an unfinished church, in ruined condition. Its dressed stone masonry walls, its pointed arcades, its Gothic-style doorways and its Byzantine plan, are combined to provide an extraordinarily elegant and well-proportioned monument. No information has confirmed the date of this church's erection, but its construction and architectural

details suggest its dating to be in the early 16th century as well.

The pointed vaulted church of Agia Thekla in Marko (Figure 4.127) has slender proportions. Its masonry walls are built of well-squared stones, large in size (25-40cm in width, and 40-60 in length) and in unequal courses. The doorways are simple and plain and no decoration is observed elsewhere on the walls. Its simplicity in decoration and its masonry construction may suggest that the church was probably built in the 15th century.

The Holy Cross of Misirikou in Nicosia (Figure 4.126) was probably built in the late 16th century, and not early 16th century as Papageorgiou suggests (Papageorgiou, 1984 v.10: 82). It has squat proportions and a rectangular plan, which does not relate to the Byzantine plan of the other churches for two reasons. First, there is no symmetrical location of the dome in the centre of the church, but on the western side. Secondly, the longest sides are the east and west, and not the north and south as in Byzantine churches (the width of the church is larger than its length!). This three-aisled domed church was either left uncompleted, or was intentionally designed as such[104].

The church is built with dressed stones. Its large dome (around 4.5m in diameter) has an octagonal-shaped drum, externally. The octagonal-shaped drum is an innovation of the 15th-16th centuries, as mentioned earlier. However, this drum is low with squat proportions. These proportions characterise the drums of the Ottoman period (note a similar drum in Tripiotis church). The altar apse has also a polygonal shape (three sides). Solid, heavy buttresses reinforce the pointed arches, which support the dome. The buttresses have a wider base and end at the edge of the roof. A decorative cornice, which is interrupted occasionally, runs at the top of the walls and the buttresses.

The Archangel Church in Lakatameia (Figure 4.123) was probably built in the 14th-15th centuries[105], was altered in the 16th and reconstructed in 1636. Its squat

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[104]The church or Tripiotis in Nicosia, which was built in the Ottoman period, has a similar rectangular plan.

[105]According to Papageorgiou, the church was probably built in the 14th century, since some architectural details

proportions, its masonry walls with dressed stone, the heavy buttresses that reinforce the walls, the pointed-arched vaults, the barrel vaults, the Gothic mouldings of the pointed-arch frames, are architectural details that belong to *Franco-Byzantine* styles of the 14th to the 17th century.

The church's heavy proportions do not match the Gothic-style details. The architectural details were used as decorative features to impress, and do not relate to the architectural style of the church. The author believes that the church was reconstructed in the early years of the Ottoman period. Other churches with similar squat proportions, size and scale are: Archangels Tripiotis in Nicosia, Agios Georgios Arperas in Tersefanou etc.

The Misirikou and Lakatameia churches are the last examples of the *new Franco-Byzantine* style churches in Nicosia of the 15th -16th centuries. Their architectural details, with their squat proportions and design, suggest that this style has gradually declined in the period that followed (the Ottoman period).

Keryneia district

In Keryneia district the only monument[106] that was built in this period is Agios Evlalios (Figure 4.128). According to Papageorgiou, the church was built in the early 16th century on the foundations of an early Byzantine basilica (Papageorgiou, 1984 v.5: 203). It has slender proportions, but it is small in size and scale. It is an unusual *single-aisled domed* church: four columns (two in each side) are attached on the sidewalls and support pointed arches which in turn support the pointed-arch vault. The dome is based on a square base (as in Agios Mamas in Sotira and Agios Georgios Teratsiotis). The dome drum has a cylindrical shape. The only windows on the church are: the four rounded-headed windows of the drum of the dome, the single round-headed window of the altar apse and the two circular windows on the eastern and western gables.

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are dated in that time (Papageorgiou, 1984 v.2: 343), or at least before the beginning of the 16th century. Jeffery on the contrary, believed that the church was built in 1663, according to an inscription that he saw in the narthex (Jeffery 1918: 300).

[106] Achiropoiitos monastery church, which is located nearby Agios Evlalios, was also partly reconstructed in this period. Large parts of the original monument have, however, been preserved. Therefore the church was classified as a Byzantine church with medieval additions.

The masonry walls were built of ashlar stone. In the interior, the masonry wall is built in equal courses, with stones of similar sizes (width 25-30cm, length 30-50). The solid marble columns in the interior possibly belonged to the earlier church. Parts of the masonry walls of the sidewalls (south and north) must have been reconstructed, possibly during the Ottoman period, with roughly cut stones.

The architectural details (round-headed windows, slender proportions, and cylindrical dome) of this church bring to mind the church of Agios Mamas in Morfou. Both churches were built on the ruins of early Byzantine monuments and have a Byzantine plan; Agios Mamas is a *three-aisled* church and Agios Evlalios is a *dome-hall* church.

Paphos district

In addition to the 13 churches in the Paphos district that were built in the 15th -16th centuries, 5 others were rebuilt during the same period. A significant variety could be observed in the churches' typology, plan, size, scale and construction. The building materials, however, were always local. This variety in church-types may suggest that local builders, and builders from other areas, worked in this district on the construction of churches. It may also suggest that the churches' various reconstruction schemes had affected the development of the church-types. Those church-types will be studied in chronological order.

The construction of the *dome-hall* churches of Agia Sofia in Paphos (Figure 4.54), Chyseleousa in Lysos (Figure 4.55) and the reconstruction of the *simple-cross domed* church of Chrysopolitissa in Paphos (Figure 2.66) must have taken place in the late half of the 15th century. These three churches have common characteristics. They are large in size and have rather squat proportions. They were constructed of well-squared local limestone. Their domes are large (around 4m in diameter). All these domes are based on octagonal[107] drums, which have four rectangular windows. The tall pointed arches and vaults of the interior are expressed on the facades of the

[107] The octagonal external shape of the dome-drums is not only a morphological invention, which makes the construction of the drum easier and quicker. It may have been used also for reinforcing the walls of the drum, which support a very large dome (around 4m diameter).

churches with semi-circular arched gables[108]. Their similarities suggest that probably by the same group of builders worked for the construction or reconstruction of these three churches.

In the beginning of the 16th century (around 1520), Agios Neofytos Church (Figure 4.129 a-c) was built in Tala. This church resembles in many ways the church of Agios Mamas in Morfou (Figure 4.122), which was built around 1500. Both are *three-aisled domed* churches (Figure 4.129c, 4.130a) with semi-circular arcades, two rows of columns (six columns in Agios Mamas and five in Agios Neofytos). The decoration in the interior of the Agios Neofytos church has Classical Greek influences; for example the cylindrical columns have Corinthian style capitals. The two churches' original dimensions were also similar. Agios Mamas has internal dimensions of 18,4m x 12m. Agios Neofytos Church, on the other hand, has internal dimensions of 20,7 x 11m (including the 4m extension of the narthex).

In both churches the domes (Figures 4.129d & 4.130b) are located above two set of arcades, which are equal to the width of the central aisle. This detail was probably introduced into Cyprus from Greece and Constantinople. A representative example is the 14th century Katholikon church of Odigitria, in Brontochiou Monastery in Mystra. There also, the dome is based on two sets of arcades (Figure 4.131 from Bouras, 1984: fig. 138). The drums of the domes, in both Agios Mamas and Agios Neofytos, are cylindrical and have four windows. Both churches are constructed with ashlar masonry walls, like the Gothic buildings. They also have Gothic pointed-arch moulding frames on their doorways.

The author believes two scenarios are possible for the construction of these two churches. The first is that the same group of builders, or at least a few builders, worked on the construction of both churches. Agios Neofytos seems more elegant in design than Agios Mamas, which may suggest that the builders built Agios Mamas first and then moved to Paphos. The second scenario is that these churches date to

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[108] This form of the facades, semi-circular arches that end in horizontal lines, indicates the underneath construction; the width of the side walls that support the arches is at least around 1-1.2m, whereas the thickness of the arch is not more than 40-50cm. The side walls thickness suggests that the whole walls played the role of the buttresses as well as supporting walls.

the late 15th or early 16th century. This scenario is based on the following facts: a) both were monastery churches; b) both have a Byzantine plan and architectural details that resemble those in Greece and Constantinople in the 14th -15th century; c) we know that Elena Palaiologina invited monks from Constantinople after 1453 and she had relations with Mystra. Therefore, the author believes that the refugee monks, among whom were builders, brought the design for these two churches from Constantinople or builders came in Cyprus from Mystra (Greece). The local builders in Cyprus may have interpreted the design according to the local knowledge at that time. They used ashlar stone and techniques similar to those used in the Gothic monuments. It is possible that builders from the Gothic sites may have been called to work on the construction of the masonry walls and the doorways. Those builders, who possibly worked first in Agios Mamas, then in Agios Neofytos, may have trained local builders. We base this assumption on the fact that another three churches are also based on a Byzantine plan and principles but are artless in work, with very few decorative features. They appear as the builder's technique declined. All three have rather squat proportions, a rather square plan, and similar cylindrical dome-drums (even the four windows of the drums are similar to those of Agios Neofytos). These three churches were completely built of roughly cut local stone. They differ, however, in size.

The first is Agia Aikaterini in Tala (Figure 4.132), near Agios Neofytos, a single aisled *dome-hall* church with a large dome (4-5m in diameter). The large cylindrical drum of the dome is based on a square base. The north and south sides of this dome-base are parts of the sidewalls (like Agios Mamas in Sotira). The second church is Agia Aikaterini in Kritou Terra (Figure 4.133), a *three-aisled* church with a central dome which is based on two low pointed-arch arcades, with rectangular pillars. Three more domes roofed the open stoa-narthex in the west. The third church is that of Agia Paraskevi, also in Kritou Terra (Figure 4.134). It is a small *dome-hall* church, rather square in plan, with two rectangular doorways with moulding frames. According to Papageorgiou, this church has Armenian influences (Papageorgiou, 1984 v.11: 109). Papageorgiou also states that these three churches dated to the 15th century, before Agios Mamas in Morfou and Agios Neofytos in Tala - which he dated to the early 16th century (Papageorgiou, 1984 v.9: 287, and v.10: 213). He

based his assumptions on the fact that these three churches were constructed with rubble masonry walls, with squat proportions. The author believes that this rubble masonry construction technique had been used for many centuries all over the island, and particularly in many churches in the Paphos district in the 15th and the 16th centuries. The squat proportions, on the other hand, characterise churches that are located mainly in remote areas, and dated to the 14th, 15th and late 16th centuries.

In the second half of the 16th century, most of the churches in the Paphos district were built as *single-aisled vaulted* churches, except the significant monastery church of Panagia Sinti in Pentalia (Figure 4.135a-b). This elegant church was probably built in 1542, according to an inscription that is carved on a stone in the spring of the eastern arch. The church is of the dome-hall type, with dimensions 12,6 x 5,5m. The altar apse has a shallow circular shape (not semi-circular), which is rare[109] in *Post-Byzantine* churches. This indicates that the altar apse was built intentionally with a polygonal (three-sided) shape.

The church has slender and fine proportions, with its length actually equal to its height, which means that the facades to the north and south are inscribed geometrically in a square. The internal maximum height of the walls is twice the height of the drum plus the dome. In its proportions[110] (not plan), this church resembles the churches in Greece and Constantinople in the 12th century (Figure 4.136-7 from Bouras, 1984: fig. 85, 91). The structural elements (i.e. buttresses, dome-drum, dome, and arches) and the thickness of the walls (around 60-70cm) are elegant and their dimensions are not overlong, as in many other churches we examined. It is obvious that this church was definitely the result of a careful design.

Sinti church combines a Byzantine plan and proportions which resembles Byzantine churches, with Gothic architectural details. Those details are: slightly pointed-arch vaults, buttresses which reinforce the arches that support the domes, rectangular

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[109] Some other *Post-Byzantine* churches (not Franco-Byzantine) with a shallow circular apse, that are dated in the 14th-16th centuries are; Agia Marina in Deryneia, Agios Nikolaos Klonari and Sotiros in Famagusta.

[110] We have to consider that the proportions of the St Georgios of the Greeks are different, the width of the church is equal to its height. This means that the west and eastern facades are inscribed in a square, and not the south-north as in Sinti.

framed doorways with a pointed-arch tympanum and frame with mouldings, large pointed-arch headed window (Figure 4.139) in the altar apse (like the side windows in Agios Neofytos, Agia Marina in Potamia), octagonal-shaped dome drum and polygonal (three-sided shape) external shape of the altar apse.

The church is constructed with rubble masonry walls. Ashlar stones were used in the quoins, the window and door frames and the cornice at the top of the drum. In the interior, well-cut and squared stone is used to form the shape of the arches. The drum of the dome is based on a square base, which is part of the sidewalls, as in Agia Aikaterini in Tala. In Sinti church, (drawings[111], Figure 4.135) the thickness of the base of the drum is less than the thickness of the sidewalls below. This detail was probably intended to reduce the weight from the dome and drum to the sidewalls and the buttresses, creating a lighter upper structure.

The buttresses, which reinforce the sidewalls, were built during the construction of the church, as in Agios Nikolaos in Orounta (Figure 4.124). In both churches, the buttresses have slender proportions and a triangular ending (unlike those in Misirikou and Agios Mamas in Dali). The buttresses are similar to those of the 14th century St Anne's church in Famagusta (Figure 4.138, from Enlart/Hunt, 1987: 277).

The author believes that Sinti Church and the churches of Agios Mamas of Morfou and Agios Neofytos are three pioneer monuments in Cypriot architecture, and the most impressive in the *Franco-Byzantine* style. They were designed and constructed very carefully. Sinti Church, particularly, was so well designed and constructed that for nearly five centuries it has been preserved almost unaffected (only minor dislocation of a few stones, and repairable cracks) by the many earthquakes that have afflicted this district since its construction.

We encountered around ten churches in the Paphos district, which are roofed with pointed vaults, and date to the end of the 15th or the 16th century. Three of them, all

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[111] The monastery of Snide was restored in the years 1994-1197 by a team of Architects-conservators. (Reprint from the publication from the conference 'The Holy Monastery of Kykkos in Byzantine and *Post-Byzantine* Archaeology and Art', article 'Conservation and Restoration of the Panagia Sinti Monastery' Eleni Petropoulou &Maria Philokyprou, Nicosia 2001, Published by the Museum of Holy Monastery of Kykkos).

monastery churches, are: Agios Savvas Karonas (Figure 4.140), Holy Cross Mithis (Figure 4.141) and Agios Eftychios in Iera Moni (Figure 4.142). All three were reconstructed during the Ottoman period and only few details of their original plan or architecture have been preserved.

Another church, Chrysolakorna in Steni (Figure 4.143, 2.47) which was originally built in the 12th century and reconstructed in the 14th and 16th centuries, has been recently (1982-3) reconstructed completely after an earthquake, on the initiative of local people, and with no professional advice. This reconstruction has covered over any valuable information concerning the church's plan and construction in the earlier centuries.

The first example of the pointed-arch vaulted churches are Panagia (Figure 4.144a-b) and Archangels (4.145a-b) in Choli, which are located 50m from each other, and are date to the end of the 15th century and beginning of the 16th century (Papageorgiou, 1984 v.3: 341 and v.11: 59). They were originally built of a similar size (width around 3.5-4m, length around 9.5-10m and height around 3.5- 4m) and construction. Both were built of rubble masonry walls with well-squared stones in the quoins and the arches. Archangels church was extended in the west with a tall narthex and a stoa was added in the north. Both the churches had been partly reconstructed after damaged by earthquakes in 1953. Some of their original architectural details have been preserved, such as the pointed arches and the cymatium cornice that runs around the top edge of the walls.

Three more vaulted churches in ruined or deserted condition are: Agia Marina in Nata (Figure 4.146, 2.59) near Sinti, Agios Georgios in Melandra (Figure 4.147) and Archangels Gabriel in Prastio. The latter two are small in size, whereas Agia Marina is taller and longer. It has preserved the western gable of its original slightly pointed arched vault, the springs of the transverse ribs and the external heavy buttresses that strengthen the thick walls, at the point of the ribs. Its size, its squat proportions and the shape of the arches and buttresses, suggest the dating of the church to the late 16th century. The other two churches had no buttresses because they were narrower and had thicker external walls. These can also be dated to the 16th century, because

of the pointed-arch vaults, their simple Byzantine plan, size and proportions. They resemble the churches in Choli, mentioned above.

The largest 16th century vaulted church is Agios Georgios in Komanon (Figure 4.148); around 5,3 x 12,8m internal dimensions, and 6m in height. Its masonry walls seemed to have been increased in height (at least 1.5m) during a reconstruction scheme. Its original masonry walls were constructed with rubble local stones. The pointed-arch vault, the polygonal (three-sided) external shape of the altar apse and the remains of the Gothic-style decorated pointed-arch and rectangular frames (west doorway), all probably date the church to the late 16th century. The style and plan resemble the church of Agia Elisavet in Agios Amvrosios in Limassol (Figure 4.149). However, they differ in size and the fact that the walls in the latter were reinforced with buttresses.

Limassol district

In the Limassol district we encountered three churches: Agios Georgios Akrotiri, Agia Elisavet in Agios Amvrosios and Agia Marina in Potamiou. All three are different in their plan, construction and architectural details, their size, scale and proportions, even though they dated to the same period, between the early to the middle of the 16th century. They have influences from other monuments in other areas.

Agios Georgios in Akrotiri (Figure 4.150a-b) is a *single-aisled* church with a pointed-arch vault. According to Papageorgiou, remains of frescoes that have survived above the south doorway dated to the 16th century (Papageorgiou, 1984 v.4: 47). The church's proportions, type and masonry walls resemble the church of Agios Nikolaos of the Cats (reconstructed in the 14th and 16th centuries) which is located in the same area. Agios Georgios church, however, is wider and slightly taller. The masonry walls were constructed with rubble and well-squared local stone. Then, later asymmetrical buttresses reinforced the walls. This suggests that the church may have been reconstructed several times.

The window of the altar apse is pointed arched headed, in Gothic style. It has a

trilobate loophole shape and a monolithic lintel (Figure 4.150b). The simplicity of this detail, the lack of elaborate decoration, and the forms and shapes, resemble Gothic monuments of the 14th -15th centuries, instead of the 16th century. The author believes that this church was probably built earlier and was reconstructed after the catastrophic earthquakes during the years 1567-8 that caused damage in the Limassol area.

Agia Elisavet in Agios Amvrosios (Figure 4.149, 4.151), is also a *single-aisled* church, roofed with a pointed arched vault. It is similar in dimensions to Agios Georgios, mentioned above, but it is different in style and construction. The church has slender proportions, and its walls are strengthened by three symmetrical buttresses on each side. It is constructed with rubble masonry local stones. Its only entrance doorway has a simple pointed-arch frame. The remains from a recessed pointed-arch tympanum above the doorway suggest that the door was a later reconstruction. This church is very similar in style and construction to Agios Georgios Komanon in Mesana, in Paphos.

Agia Marina Church dates to 1551 (Figure 4.152a-b), according to an inscription above the south doorway. The church has preserved many Gothic-style architectural details: a) a single large pointed-arch window above the south doorway; b) a double pointed-arch window above the west doorway; b) the west doorway has a rectangular doorway frame with cymatium corbels and above it an arched, pointed frame with mouldings above a pointed tympanum; c) the south doorway is also of the same type, but differs in decoration: instead of mouldings the arched, pointed frame has a zigzag decoration on the internal side (a similar decoration was seen in Bellapais Abbey) and flora-acanthus decorations on the external side.

It is a *three-aisled dome* church. It is roofed with tall pointed vaults reinforced by transverse ribs, the latter ending in Gothic-style brackets. The drum of the dome has an octagonal external shape and four windows (rather small for the height of the drum). There is only one apse in the altar, and that has a polygonal shape (three sides). The south wall, which is quite tall (5.5-6.5m), is reinforced by four buttresses. Even though the church's architectural details are all Gothic, the construction of its

masonry walls are in the local style. The walls are built of roughly cut local limestone and rubble stone. Ashlar stone is only used for the construction of the window-door frames and the quoins. The church was plastered inside and outside.

All the three churches of the Limassol area, despite their differences in size, scale, proportions and plan, have similar construction details. All were built with local rubble masonry walls in a traditional technique observed in this particular area in many churches of earlier and later periods. This definitely suggests that local builders worked on the church. It also suggests that the architectural details with Gothic influences that we observed were either constructed by locals who practised their skills in the Gothic sites in Famagusta, Nicosia or Paphos, or were constructed by builders who came temporarily to work in Limassol. The author believes the second to be more likely because those architectural details are of good quality and are very few in number.

The author has considered a third scenario for Agia Marina Church in Potamiou: it is possible that a few architectural elements (brackets, pointed arched frames, window pointed arched frames) might have been made elsewhere and later taken to this church; or, that those elements were 'spolia' from a demolished or collapsed Gothic building and were re-assembled and re-used in this church. This scenario has been suggested because the architectural details are of excellent quality in workmanship (something that does not apply to the construction details in the rest of the monument) and the stone that was used differs from the local stone, both in quality and type.

Conclusions concerning *Franco-Byzantine* styles of the 15th -16th centuries

In the 15th-16th centuries (specifically early 16th century), we observed two 'architectural schools' or two teams of builders that worked on the island. The churches that were built by the builders of the first school (Nicosia-Paphos school) are characterised by the following architectural details: a cylindrical drum of the domes, large-scale churches mainly *three-aisled* or *single-aisled*, round-headed windows, ashlar masonry, semi-circular gables). Some examples are: in Nicosia, (Agios Mamas in Agios Sozomenos, Agios Mamas in Morfou 1500, Agios Nikolaos

Orounta), in Keryneia, (Agios Evlalios), in Paphos, (Agios Neofytos and Agia Aikaterini in Tala, Agia Aikaterini in Kritou Terra and Agia Paraskevi). In this school, the shapes and the forms of the structural elements have influences from the Byzantine tradition.

The second school was probably based in the Famagusta area, since their style (the shapes and the forms of the structural elements) and construction technology (use of dressed stone) was very much influenced by the Gothic and Renaissance styles of medieval buildings. The main architectural details that characterised this school (Famagusta school) are: ashlar masonry (as in the Gothic buildings), octagonal shape on the drum of the domes, pointed-arch vaults and pointed-arch headed windows, elaborate decorative features on the arched, pointed doorway frames, round windows, use of carved cross symbols on the masonry walls, etc. Examples of this architectural school were found in the Famagusta south-west district (Agios Mamas, Agios Georgios Teratsiotis), in Nicosia town (Bedestan), and Paphos (Sinti, 1541, Agia Sofia in Kato Paphos and Panagia in Lysos, Chrysopolitissa), Limassol (Agia Marina in Potamiou[112] 1551).

The author believes that the 'Nicosia-Paphos school' may have been established during the first years of the Venetian period (around 1500), therefore some architectural details were inherited from the previous periods. The 'Famagusta school', on the other hand, was established during the middle to last years of the Venetian period (around 1540-1550), and the churches were influenced by the new Venetian constructions. A number of churches in Paphos (Lysos in the 15th and 16th centuries, Chrysopolitissa in 1500 and during the 15th, Agia Sofia in Paphos 14th-15th, and Panagia in Lysos), have some characteristics which belong to the 'Famagusta school' (i.e. octagonal-shaped drum and pointed-arch vaults and pointed-arch doorway frames, Gothic architectural details, ashlar masonry), but also have several characteristics which belong to the second school, 'Nicosia-Paphos school' (i.e. round-headed windows, semi-circular gables).

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[112] The masonry walls of this church were constructed with rubble stones, apart from the quoins and pointed arches, the upper parts of the buttresses and the cornice, which were constructed with ashlar stone. It is the only church of this type that was not built completely with dressed stone. The author believes that the builder used local material which was available for a quicker and less expensive structure. The large size of the building would mean that they had to carry large quantities of material from elsewhere.

The author believes that these churches were built by the builders of the first school or local builders in the first years of the Venetian period, or even earlier (14-15th), and were partly reconstructed at a later date. The octagonal drums and the polygonal-shaped altar apse, were later additions or reconstructions. The builders who built them may have seen this technique elsewhere and used it here. The construction of the dome-churches has changed since the 14th century. The dome-drums were supported by pointed arches, which were taller and wider than the others[113]. The drums, cylindrical or octagonal, were inscribed on a square base. The octagonal shape of the drum proved to be easier and quicker in construction, due to its form and shape. Very often, in the *dome-hall* churches, the two sides of the octagonal drums (the south and north) are constructed as parts of the sidewalls (Agios Mamas in Sotira). Therefore, in the late 15th and early 16th century, the builders had realised the benefits from the construction of the octagonal-shaped dome and used it widely on the construction of the domed churches, as well as for the reconstruction of the drums in earlier churches.

The main characteristics of the *Franco-Byzantine* style churches are: the octagonal shape of the drum of the dome, the polygonal-shaped of the altar apse, the pointed arches, the pointed-arch vaults and their transverse ribs, the pointed-arch doorway frames with the tympanum, and the rectangular frames with the mouldings and the decorated corbels. The use of ashlar and dressed stone was restricted to large and particularly significant churches (Agios Neofytos, Agios Mamas Teratsiotis), or in churches within the towns (Chrysopolitissa). All these architectural details characterise this particular style. Those details were also used, sparingly, in the *Byzantine* style churches. These churches, however, were always built of rubble masonry or roughly cut stone.

The *Post-Byzantine Byzantine* styles in the 15th -16th centuries

We encountered 93 churches of *Post-Byzantine* style that were built, altered or partly reconstructed in the period 1489-1571. Those were classified into four groups

[113] In the church of Agios Mamas in Agios Sozomenos, the central pointed arches are wider and tall than the others are, whereas in Agios Mamas in Morfou the dome is based on two pointed arches on each side.

according to their construction typology: roofing and plan typology, and architectural details. The four groups are: the *Byzantine churches with medieval additions* (5), the *double-roofed* (3), the *timber- roofed* (43) and the *simple Byzantine* churches (42).

The 92 (out of 93) churches are located in the countryside. The remaining one is Panagia Chrysaliniotissa, which is located in the centre of the old town of Nicosia (within the walls). The historical circumstances, the Ottoman threat and the political situation, resulted in the flourishing of construction activity, mainly outside the towns. As mentioned earlier, the Venetians had demolished a great number of churches within Nicosia Town in order to reconstruct Nicosia's fortifications.

The *Byzantine churches with medieval additions* in the 15th -16th centuries

The *Byzantine churches with medieval additions* were originally built in the earlier periods (12th-15th centuries) as *Byzantine* style churches. Medieval Gothic style structures were attached to them in the period 15th -16th centuries. The sequence that we followed in their study was dictated by their chronology.

The Achiropoiitos Church in Lambousa in Keryneia (Figure 2.21, 4.10), which was originally built in the 5th century, and rebuilt in the 11th and 12th centuries, was extended in 1500. An external Gothic-Renaissance style open narthex (or stoa) was added in the west, with ribbed vaults, pointed arches with mouldings and heavy round-shaped pillars. A decorative cymatium cornice decorated the upper part of its walls, and two animal-headed stone carved gargoyles are placed on the pillars. The pillars have a wider base and play the role of buttresses, as well: they counteract the outward thrust of the ribbed vaults. The whole structure was built using dressed limestone, with fine pointing as in contemporary Gothic churches.

The Church of Sergios and Vachos (Figure 4.153, 4.60) in Famagusta District was originally built in the 12th -13th centuries. According to Papageorgiou, it was extended south and west in the 15th-16th centuries (Papageorgiou, 1984 v.12: 189). The medieval Gothic details that were added in that period are: pointed-arch vaults, pointed-arch frames with mouldings, heavy buttresses (attached to the wall, or

'flying buttresses'), stone-built gargoyles, a decorative cornice that runs along the walls. Roughly cut heavy local stones were used for the construction of these structures.

The Church of Panagia in Kivisili in Larnaka (Figure 4.154) was originally a dome hall church, possibly of the 12th century. The masonry walls, with the roughly cut large stones and its plan, resemble that of Panagia in Choirokoitia. In the north a Medieval Gothic style chapel[114] was added, possibly in the 15th century. It has preserved very few architectural details of the Gothic style: a pointed-arch vault slightly low, transverse ribs with simple carved brackets and pointed arches and doorway frames. Later alterations, in the 18th and 20th century have covered much of the original fabric.

The Church of Agios Antonios in Kellia (Figure 4.2) was originally built in the 9th century, rebuilt in the 11th, destroyed in 1425 by the Mamelukes and reconstructed in 1500. Then it was converted from the *cross-in-square with a dome* into the *cross-in-square with a vault* (stavrepistegos). Tall pointed vaults, well-cut stone built walls, simple arched pointed door frames, and a Gothic coat of arms are the most important medieval architectural details.

Chrysaliniotissa in Nicosia (Figure 4.155) was built possibly in the middle of the 15th century by Elena Paleologina. It is the only Byzantine church that had survived in Nicosia, since all were demolished for the construction of the walls. It was originally a *dome-hall* church, but was enlarged in the 15th-16th centuries. An aisle in the north, three chapels in the south (the first with an apse) and two narthexes in the west (the second with a dome) were added. The Gothic-style architectural details are: the pointed vaults of the chapels and the narthex, the polygonal three-sided altar apse of the 15th century chapel, the dome above the narthex and the ashlar masonry. The elaborately decorated pointed-arch doorway of the south chapel, the frame of the rectangular window above it, and some other Gothic sculptures that are attached on

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[114] Papageorgiou says that the chapel was possibly built in the 14th century (Papageorgiou, 1984 v.11: 56). The author believes that its simplicity in design and construction and the shape of its arched pointed vaults suggest that it was possibly built in the middle 15th century and rebuilt in 18th century. Most of the 14th century chapels we know had ribbed vaults (Kiti, Tochni).

the walls, are '*spolia*' (re-used pieces of art) from an earlier Gothic church, which possibly was demolished during the early years of the Venetian period (Figure 4.60).

Churches in the *Byzantine style with medieval additions* or/and *double-roofed* style, in the 15th -16th centuries

The *double-roofed* style churches (3) are all located in the Troodos area. They were originally built as vaulted or domed churches in earlier periods and were protected from the extreme wintry weather conditions by a second, double-sloped roof. Initially, the timber roof was inserted between the 12th and the 14th centuries, when either vaulted chapels (Lampadistis) and side aisles (Pelendri) were added to them, or when the church was rebuilt (Amasgou). In the 15th-16th centuries,[115] medieval-style structures were added to these churches, and their timber roofs were reconstructed or enlarged. Therefore, they can be classified as churches of the *double-roofed* style as well as *Byzantine-style churches with medieval* additions. These churches are: Agios Ioannis Lampadistis (Figure 4.69), Holy Cross in Pelendri (Figure 4.70) and Panagia Amasgou in Monagri.

The katholikon church of Lampadistis in Kalopanagiotis (dedicated to Agios Irakleidios) was built in the 11th century as a *cross-in-square* church with a dome. The vaulted chapel of Lampadistis, as mentioned above, was added at the north side (between the 12-15th centuries, and possibly re-built during the Ottoman period). In the late 15th century, a Latin chapel was added at the north side of Lampadistis Chapel. The church-complex was protected above by a second double-sloped tiled roof. The main architectural details of the Latin chapel are: the pointed-arch vault and transverse ribs, the altar pointed-arch niche (instead of altar apse) and the frescoes decoration dated to the Venetian period.

Similarly, the Holy Cross in Pelendri was built as a *dome-hall* church in 1178. A slightly pointed barrel vault aisle, with an altar apse, was added at the south side in the 13th-14th centuries. Subsequently, a medieval pointed-arch vaulted aisle, with no apse, was added at the north, during the 15th -16th centuries. It is not known whether

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[115] The double-roof style, as seen above, appeared for the first time in the 12th century. The first, known, church with two roofs is Asinou.

one or both aisles were used as Latin chapels. Apart from the Gothic-style shape of the north aisle, doorways with pointed-arch frames were inserted in the north and west walls.

Panagia Amasgou Church in Monagri (Figure 4.156a-b) was built as a vaulted church in the 12th century, and partly reconstructed in the 13th and 16th centuries, using the same plan. In the latest reconstruction, medieval-style details were added: transverse ribs, a pointed-arch vault and doorways with pointed-arch frames.

The timber roofs that were added to those three buildings were constructed in a similar manner. Their construction frame consists of a ridge-beam, two sets of two wall plates on the sidewalls, purlins, and principal rafters. This construction frame supports the weight of the hooked tiles, which sit on secondary purlins (horizontal thin boards). This construction frame was also used as a protective, external roof in the *timber-roofed* churches of Troodos.

The *timber-roofed* style in the 15th -16th centuries

All *timber-roofed*[116] style churches (43) are located in the Troodos area. They were built, or altered, during this period. These churches have three main characteristics, the first being their indigenous timber roof structure, a *double timber structure* (Figure 4.28) which provides protection from the wintry weather, heavy rainfall and snow. The second is their rubble masonry construction, using local stones and pebbles, or their construction with a combination of rubble masonry and mud bricks. The third is their simple rectangular plan: *single-aisled*, *two-aisled*, or *three-aisled*.

A study of the *timber-roofed* churches' typology, of the 15th -16th centuries (1489-1571), has concluded that most of these churches were initially built as *single-aisled*. Fifteen churches were enlarged[117], either later in this period, or much later. Often,

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[116] A few scholars believe that this style originates in the 13th century, and that the earliest church that has survived is Panagia in Moutoulla, dated in 1280. However, no other evidence has confirmed the scholars' assumptions, apart from the survived parts in the timber roof of Agia Anna Kaliana, which is dated in the 14th or 15th century. As mentioned earlier, Agia Marina in Pedoulas has also preserved some medieval parts, possibly of the 13th century, but no research has concluded whether those belong to this church or not.

[117] The typologies of *timber-roofed* churches of the period 14th-15th century and those that had been reconstructed and enlarged, are mentioned above. For example; a) Agia Anna in Kaliana was rebuilt and a second aisle was inserted in the south in the 14th-15th century, b) Agiasmati was built with a perimetrical stoa and c)

one (in 2 churches) or two (in 6 churches) aisles were inserted on either side of the original aisle. The author noticed that in three chruches, the additional aisle is shorter in length than the original. In other cases, a side stoa (a side aisle with narthex was seen in 2 churches) or a perimetrical stoa (two side aisles with narthex was seen in 2 churches) was inserted. Two churches, Agia Paraskevi in Galata (Figure 4.158) and Agios Kyriakos in Evrychou (Figure 4.157), were built as *single-aisled* churches with a small side-extension in the north. Very often, the west side of the churches was extended, through the addition of a narthex. The various typologies and their characteristics will be examined in the next chapter.

The additional structures to these *timber-roofed* churches conform in their construction material and techniques to the original structures. The additional walls were built of rubble masonry as were the existing ones, and the timber roofs were extended or reconstructed also, following the same techniques.

***Three-aisled timber-roofed* churches**

The three-aisled church of Panagia Katholiki in Pelendri, is believed to have been initially built with three aisles, which were separated by timber structures (Figure 4.159a-b). Frescoes have survived on the west wall of the side aisles, dated to the 16th century. This church has a large apse with a polygonal (five-sided) shape externally[118]. No information, historical or structural, and no evidence during the visits has confirmed that the church had been enlarged to its present plan-type.

According to Papageorgiou, Panagia Kourdaliotissa (Figure 4.160a-b) was also built originally as a *three-aisled* church because parts of the 16th century frescoes have survived in the eastern wall of the side aisles, and are similar to those in the rest of the walls (oral communication). The three aisles are separated by a timber structure. The author believes that the church was originally built as a single-aisled church, for two reasons: a) it is shown as a single-aisled church on the fresco-icon on the right side of the western doorway and b) the iconostasis is only in front of the central

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Agios Mamas Louvaras was extended along the west side, probably in the 16th period.

[118]An interesting detail is the use of pieces of tiles in the construction of the masonry walls. Particularly, the four corners of the altar apse are built with tiles instead of stones, obviously because the local stones are hard and is difficult to form sharp corners.

aisle. The church was probably enlarged very shortly after the fresco-icon was drawn, and the rest of the frescoes subsequently followed. Therefore, the frescoes belong to the same period.

The *three-aisled* church of Panagia in Palaichori (Figure 4.161a-b), also dates to the 16th century. Papageorgiou believes that this church was initially built as a *three-aisled* church, with its aisles separated by arcades, which have pointed arches based on large piers (which are larger than the base where the arches join). He bases his assumptions on the fact that these arcades are entirely decorated with frescoes that date to the 16th century. His theory is probably correct, because the author could not find any other evidence to prove otherwise.

The *three-aisled* church of Prodromos in Askas (Figure 4.162a-b) also dates to the 15th -16th centuries. An inscription on a wooden panel gives the date as 1560 for starting the decoration of the frescoes. The church is divided into three aisles by arcades consisting of pointed arches. On those, 16th century frescoes have survived, as for example, on an arch left of the altar (Figure 4.162a). It is not yet certain whether the church was built as a *three-aisled* one, or was converted in the 16th century.

The *three-aisled* church of the Holy Cross in the same village is believed to have been founded in the 16th century, but the arcades were built later, probably in the 18th century. The arcades are based on pillars and columns, which have wooden carved capitals (Figure 4.163), probably dating to the 17th-18th centuries. According to Papageorgiou, similar carved capitals have survived in Agia Marina in Kyperounta, an 18th century church (oral information).

The *three-aisled* church in Arakapa (Figure 4.164a-e), as mentioned above, was originally a *single-aisled* church. Its present type was created around 1500, when the U shape arcade was inserted (north, west, and south). The arcade has pointed arches that are based on columns with Doric-style capitals. These arcades are entirely covered with frescoes. The floor is covered with medieval hand-made clay tiles, which have decorative geometrical patterns (Figure 4.164).

Timber-roofed **churches with perimetrical stoa.**

As mentioned earlier, the Holy Cross of Agiasmati in Platanistasa (Figure 4.165), dated around 1494, was originally built with a perimetrical stoa, as is confirmed by the fresco-icon (Figure 2.30) in the external facade of the south wall (above the door). It was also noticed that the western gable was shown to have a timber frame panel.

Two more churches are known to have been built in the 16th century: Panagia Podythou in Galata (Figure 4.166a-b) (1502) and Agios Sozomenos in Galata (Figure 4.167, 4.65-6) (1513). Both churches have a perimetrical stoa on the south, west, and north sides. In Podythou, the stoa is enclosed in the east by a masonry wall (Figure 4.166), while in Agios Sozomenos the eastern side was left open (Figure 4.66). Both churches have 16th century frescoes on the external parts of their interior walls (the walls of the single-aisled church which is protected by a perimetrical stoa). Podythou is shown on a fresco-icon (western gable) as a *single-aisled* church (Figure 2.31).

The west wall of the perimetrical stoa in both churches (Figure 4.64-5) has a large opening above the tie-beam, which is currently closed by partitions. In Agios Sozomenos, there are another two triangular partitions (left and right). This detail suggests that the original partitions were probably built as timber-framed structures, as in the case of the fresco-icon in the Agiasmati Church.

Timber roofs of the 16th century

Most of the timber-roofs were restored several times and replaced with new ones, many during the last 30 years. Evidence for a restored roof was seen in Agia Varvara in Korakou, with an inscription 1718 written on the wooden ceiling.

Medieval parts from timber roofs that date to the 15th -16th centuries have survived in five churches: Agiasmati Platanistasa, Agios Sozomenos Galata, Sotiros Palaichori, Palaiomylos, and Akapnou[119]. Very significant are the two ridge beams that have

[119] The church had preserved its original roof until 1972, when a fire destroyed it. The Department of Antiquities however, photographically recorded it.

survived in Agiasmati church (Figure 4.168a-b) and date to the end of the 15th, beginning of the 16th century. These are decorated with icons of saints, of a similar style to the frescoes that decorated parts of the walls. Ridge beams that are decorated with foliage and geometrical patterns have survived in Agios Sozomenos and Sotiros.

In Palaiomylos, a great part of the timber roof of the *single-aisled* church (later extended in the west and south) survives, but it is not certain whether this is the original roof of the *single-aisled* structure. The icon of Christ (Figure 4.169) that has survived on the ceiling was noticed by Stylianou as '*an attempt to emulate the decoration of the domed churches*' (Stylianou, 1985: 344).

Observations made on *timber-roofed* churches

The dimensions[120] of churches that were originally *single-aisled* range from 2.78 x 5.51m, plan, and 2.22m in the height of the side walls for the smallest church[121] (Panagia Kaminaria, which dates from the 16th century), to 4.34 x 18.92m, plan and 3.57m in the height of the side walls, for the largest church (Panagia in Agios Theodoros in Agrou, which dates to the end of the 15th century).

The churches with the maximum height in their side walls are: a) 4,48m in Panagia Katholiki in Pelendri, a three-aisled church and b) 4,49m in Podythou in Galata, a single-aisled church with a perimetrical stoa, with two side aisles and a narthex.

The roofing type of the altar apse in the churches was seen in the following variations: a) 'the covered apse', an apse which is protected by an extension of the main roof along the east side; b) 'the apse with the new roof', a new roof, vertical to the main roof, covers the altar apse (Katholiki Pelendri); c) 'the inscribed apse', an apse which is inscribed in the eastern wall but whose roof is visible (Panagia Agios Theodoros in Agrou), and d) 'the enclosed apse', an apse which is inscribed and built in the eastern wall (Agios Nikolaos in Pera Pedi).

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[120] Information for the churches dimensions was taken from Papageorgiou and Fereos.

[121] The smallest church of the period 14th-15th centuries was 2,73x6,28m, plan, and 3,40m height, Agios Mamas in Louvaras.

The extended roof of the 'covered apse' is based on one of the following constructions: a) on two timber posts (Agios Sozomenos in Galata, Figure 4.66 and Amasgou, Figure 4.156); b) on two timber posts that are based on a low extension of the side walls (Archangels Vyzakia, Figure 4.170); c) on the extension of the side walls (Archangel Galata, Figure 4.171); d) on two pairs of parallel diagonal timber beams that penetrate into the wall thickness (Agia Christina in Askas, Figure 4.172); or e) on the wall of the altar apse (Panagia Kakopetria, Figure 4.173). In Podythou in Galata, the altar apse is partly inscribed and partly covered with the extended roof (Figure 4.166).

Three shapes of altar apse were observed: semi-circular (majority), semi-circular stilted (nine churches[122]), polygonal (Holy Cross Kyperounta, Figure 4.174), irregular shape, rather semi-circular (Agios Nikolaos in Tsakistra) and conical shape (Archangel and Agios Nikolaos in Galata). The altar apses of a conical shape were built with mud bricks (in both churches). The external shape of the apses was mainly semi-circular, except in Panagia Katholiki and the Holy Cross in Kyperounta, both having a polygonal shape. The similar altar apses that were observed in the churches of the 16th century, of the same neighbouring villages, suggest that those were built by the same group of builders, for example, the churches in and near Galata, and those in Kaminaria.

The slope[123] of the roof ranges from 44 degrees (Prodromos Sina Oros) to 57 degrees (Agios Nikolaos in Klonari) for *single-aisled* churches, and 49 degrees (Katholiki Pelendri) to 58 degrees in Chrysokourdaliotissa in Kourdali.

The height of the side walls, the roofing type of the altar apses, the external shape of the altar apses and the slope of the roofs, all these details may have been altered through the years. Today it is not possible to find the shape, size and form of the original structures, so the observations are based on the dimensions and shapes

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[122] Those are; Holy Cross in Agia Irene, Archangel in Vyzakia, Chrysokourdaliotissa in Kourdali, Agia Paraskevi, Agios Sozomenos and Agios Georgios all three in Galata, Panagia, Agios Vasileios, Agios Ermolaos, all three in Kaminaria.

[123] Information for the roof-slopes was taken from Fereos.

existing at the time of the visits.

Evidence for the original roofing type of altar apse was found on the presentation of the Church of Chrysokourdaliotissa in Kourdali, on a fresco-icon (Figure 2.33). There, the apse is not covered with tiles, or an extended roof. Three round-headed windows were opened in the altar apse wall, but today only one has been preserved; the other two have been blocked. In the south wall, there was a large double-shuttered door with a pointed-arch frame. The church is presented as a *single-aisled* church.

The windows and doors of the churches were plain rectangular in shape (when the author visited the churches). One or rarely three windows (Agia Varvara in Korakou, Agiasmati) existed in the altar apse. The altar windows have either a loophole, or a rectangular shape, maximum 20 x 60cm. Similar to the altar windows, or wider, were the windows on the eastern and western gables. Later, in the Ottoman period, some windows were enlarged. Also, in some cases, windows on the sidewalls were opened.

The doorways were simple, rectangular in shape, timber-framed, with two shutters. In some cases, the doorway has a pointed-arch frame, as the western door in Podythou. The southern door in Panagia in Agios Theodoros has also a pointed-arch frame (not sure whether it was built later, because it resembles those of the Ottoman period). In some other cases, the doorway has a rectangular frame with cymatium corbels in the corners (Agios Nikolaos in Pera Pedi). Very often there were two doors, a southern and a western door.

In the interior, handmade brick-tiles covered the floors. In Agios Georgios in Perachoritis in Kakopetria, the tiles have designs with haloed faces of saints (Figure 4.176). In other churches, as such as in Arakapa (Figure 4.164), Agiasmati, Katholiki and Holy Cross of Pelendri (Figure 2.73), the tiles have several decorative patterns. In Agios Kyriakos church in Evrychou, the tiles are plain, with no decoration.

Six three-aisled churches were recorded belonging to the 16th century: Katholiki in

Pelendri, Chrysokourdaliotissa in Kourdali, Panagia Chrysopantanassa in Palaichori, Panagia in Arakapa, Holy Cross in Askas, Prodromos in Askas. In these churches, the three aisles are sometimes separated by timber posts (Chrysokourdaliotissa, Katholiki in Pelendri), sometimes by arcades with pillars (Panagia in Palaichori, Prodromos in Askas), and sometimes by arcades with columns (Arakapa) and a combination of pillars and columns (Holy Cross in Askas). In the Holy Cross in Askas, the capital of the pillars is timber-carved with decoration, probably belonging to the Ottoman Period, as mentioned above (Figure 4.163). However, in Arakapa (1500), the capitals are of the Doric style (Figure 4.164).

According to Papageorgiou, the arcades in the *three-aisled* churches, Chrysokourdaliotissa, Chrysopantanassa and Prodromos, are decorated with frescoes of the late 16th century, or early 17th century. He also dated the church of Holy cross to the Ottoman Period (Papageorgiou, 1966: 59). On the other hand, the pointed arcades on columns in Arakapa are decorated with 16th century frescoes, probably of around 1500. This suggests that the church must have been converted into a *three-aisled* one in this period. No more information has been found concerning the construction or conversion of any other *three-aisled* church.

The rubble masonry construction of the walls was built of pebbles and gabbro, local hard stone. In a few cases, bricks or pieces of tiles were used in the construction of the walls as a filling material (Katholiki in Pelendri, Figure 4.159). Mudbricks were used in construction for the upper part of the walls in three churches: Archangel in Galata (Figure 2.20) and Agios Nikolaos in Galata, Archangel in Vyzakia (Figure 4.170). In Archangel in Galata, the thickness of the south wall is increased towards the level of the ground. The lower masonry wall plays the role of buttress[124] as well. Photos from the archives of the Department of Antiquities, taken during restoration projects (Figure 2.20), have shown that the church was completely built of mud bricks, apart from the rubble masonry base (around 50cm). The buttresses were built later (at an unknown date) with rubble stones and bricks (baked).

[124] Buttresses were only seen in Agios Nikolaos Tsakistra, but they were added later, probably in the Ottoman period.

A fresco-icon (Figure 2.32) that presents the church does not show this particular detail. The church is shown with two doors, west and south. The second door was blocked later. The external walls are shown plastered on this fresco-icon. All three fresco-icons show the facades plastered. This may suggest that the timber-roofed churches of Troodos were all rendered or plastered. The author believes that the external facades of the rubble masonry walls had always been plastered, otherwise they would have been extremely vulnerable to the wintery weather conditions of the Troodos area, and they would not have survived (neither the walls nor the interior frescoes).

Simple Byzantine style of the 15th -16th centuries

Churches in the *simple Byzantine* style (42) are divided into two groups[125]: churches that were partly reconstructed (18), and churches that were built (24) in this period. The majority of those churches were built, or rebuilt, in the districts of Paphos (11), Larnaka (11) and Limassol (10). Fewer churches were built, or rebuilt, in the districts of Famagusta (7) and Keryneia (3). None was either built or re-built in the Nicosia district. The location of these churches suggests that the Byzantine tradition was flourishing at that particular period only in remote (not mountainous) areas, and not near the towns.

For at least 11 churches, it was difficult to extract accurate conclusions because they were later reconstructed (3), are currently in a ruined condition (4), are located in an inaccessible area to the author (4), or were altered significantly by converting them into mosques (1).

Around 23 churches were roofed with pointed-arch vaults, one with a flat roof[126] (Agia Christina in Germasogeia, Figure 4.177) and around 15 were domed

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[125]The church of Panagia in Kampyli, Keryneia, was not possible to identify whether it was built or rebuilt in this period. The author did not visit it. Two photographs of the church, dated in 1956, from the Department of Antiquities, show a gothic arch in the south wall, and a Byzantine dome, which resembles those of the 12th century churches. It is not clear whether the vault that roofed the church was pointed or barrel. The church was built of rubble masonry of local stones, which is partly rendered. Therefore, this monument needs further investigation.

[126] The flat roof in this church was an addition of the recent years, by the Department of Antiquities. No other orthodox church of this period (or any other period) was seen with a flat roof in Cyprus.

churches[127]. Of the domed churches, 12 originated in the 5th-13th centuries. All these churches that were either built, or had parts that were reconstructed in this particular period, have squat proportions. They are of a smaller size, plainer in decoration, and simpler in design than those built earlier.

This suggests that the builders with traditional Byzantine skills either gradually decreased in number, or that the Byzantine skills were no longer in fashion. It is possible that the builders' profession was no longer profitable in these remote areas, and they probably sought jobs in larger and more important projects, like the construction of the Franco-Byzantine churches.

A study of the (18) churches that were reconstructed or altered in this period has shown that those were either repaired after a disaster or were extended. Architectural and construction details differed from the original structure. Few examples were seen: a) Byzantine rectangular doorways were converted into doorways with pointed-arch frames as in Chortakiotissa in Sotira, Panagia in Kofinou, Panagia in Kampou (Figure 4.178a-b); b) low pointed-arch vaults were used for the extensions (Angonos, Agios Thomas in Lefkara); c) ashlar masonry instead of rubble masonry was used for the reconstructed parts (Panagia Kampou in Choirokoitia); d) the height of the reconstructed drums of the domes was enlarged (Panagia in Kofinou); and b) the windows of the drums were pointed-arched headed (Kanakaria) like those of the *Franco-Byzantine* churches (Agios Mamas Sotira).

The *simple Byzantine style* churches that were built in this period (24) are of similar size, height and dimensions. It was noticed that a group of vaulted churches in the area of Famagusta-Larnaka were very similar. Those were: Agios Vasileios in Xylotymvou (Figure 4.179), Agia Marina in Xylotymvou (Figure 4.180), Panagia in Astakion in Agios Theodoros Larnaka (Figure 4.181) and Agios Ioannis in Flamoudi. Another group of vaulted churches of similar size to the above was seen in Limassol-Paphos: Ambelikiotissa in Kapileio, Agios Sergios in Kissousa, Agia Marina Erimi, Agia Marina Mirminkofou (Figure 4.182), Agia Aikaterini in

[127] It was not possible to find information for the other three churches; the two are in ruined condition and the third is in the occupied area of Famagusta.

Pelathousa.

The smallest vaulted church was found in a remote area in Agios Epifanios in Limnatis (Figure 4.183a-b). It is built on the side of a gorge. The interior frescoes in the altar apse date to the 16th century. The Department of Antiquities a few decades ago reconstructed the church's pointed-vault roof. The church has only a door with a rectangular frame in the west, and a round-headed window on the altar apse wall. Ruins on the south suggest that this church may have had an extension on this side. However, no apse and no sign of the type of the roofing of this extension were seen. The masonry walls of the church and the ruins were constructed of rubble stone.

An unusual vaulted church is Agios Antonios in Sotira (Figure 2.48), whose northern side was built as part of a rock. Its irregular, rectangular-shaped plan and its rubble heavy masonry construction of the walls resembles churches of the 12th century, whereas its slightly pointed-arch vault with transerved ribs, and pointed-arch altar apse, are architectural details that belong to the 16th century. The church was probably built in the 16th century by amateur builders, and is unlikely to have originated earlier, and was reconstructed at a later period.

The windows and doors in all the vaulted churches are very few. The only openings are: two doors, west and south, and one window in the altar apse. In most cases, the main entrance has a simple pointed-arch frame and the other door has a rectangular frame. The altar window is either round-headed or arched.

Agios Ioannis Theologos church in Erimi (Figure 4.184), which was of the *dome-hall* type and was actually built in this period. Its plan and facades resemble the 15th century church of Agios Georgios in Vasa (Figure 4.84). Agia Napa in Kantou (Figure 4.185) and Agios Georgios in Choulou (Figure 4.83) (1480) were built in the 12th century and altered during this period. Their triangular gables in the north and south facades were later removed and their facades resemble those in the dome-hall *Franco-Byzantine* churches of the 16th century (Agios Mamas in Sotira, Agia Aikaterini in Tala, etc). This more evidence of the mutual influence in the architectural types and construction details between the *Byzantine* and *Franco-*

Byzantine styles.

The masonry construction in both churches is rubble local stone. In Agia Napa Church the rubble masonry is built of heavy, roughly-cut stone of various sizes and shapes, whereas in Agios Ioannis church, the rubble masonry is built of small rubble stones. Large, roughly-cut stones were used in the quoins and doorway frames.

Conclusions concerning the *Byzantine* styles of the 15th -16th centuries

A comparative study among the three Byzantine styles has shown that the *timber-roofed* style flourished in this particular period. This style was the centre of attention for the Byzantine builders and fresco artists at this time. Orthodox or Latin patrons and donors financed their construction and decoration, and this style was in fashion during this period.

Conversely, a decline in the construction activity of churches in the *simple Byzantine* style was observed to have taken place in this period. Those were much simpler and plainer and smaller than the earlier Byzantine churches of this style, whereas medieval additions to Byzantine churches were very rare.

It was noticed that plainer and simpler copies of the Gothic architectural details that existed in the *Franco-Byzantine* churches were used in many Byzantine-style churches. In the majority, those details are characterised by a lack of elaborate decoration.

The *Vernacular* style in the 15th -16th centuries (not churches)

In the 15th -16th centuries, some eighteen small-scale landscape structures[128] were built with construction techniques that were used on their contemporary medieval or *Post-Byzantine* churches. These are: watermills, watch-towers and bridges. Five[129] of these structures belong to the medieval Gothic style, and two[130] were reconstructed

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[128] The Forts, the Castles, the sugarcane mills, and the medieval baths are not studied in this PhD, for two reasons; a) they are large-scale monuments with specific construction techniques, and design and b) many of them have already been studied thoroughly.

[129] Some of those are; Pyla watch tower, Pervolia watermill, Drousia watch tower, Agia Napa aqueduct.

[130] Those are; Trimiklini bridge, Arison bridge in Germasogeia.

in the Ottoman period.

The eleven structures that belong to the *'vernacular style'* are: eight bridges[131], two watermills[132], and two watch towers[133]. Only nine of those have preserved their original characteristics and are considered in this study. The bridges have one or two pointed arches. The largest single-arched bridge is 'Kelefos' (Figure 4.186) in Agios Nikolaos; around 5-6m. The width of the passage in the bridges ranges from 2 to 3m. Nearly all the passages follow a curved slope with the higher point in the middle. The maximum slope was seen in 'Kelefos' Bridge (because it has a single, large pointed arch).

The bridges were constructed with rubble masonry, with large pebbles that were gathered from the river banks. Their masonry resembles the construction of the masonry walls in the *timber-roofed* churches. The pointed arches are built of well-cut and squared limestone. In the case of 'Kelefos' Bridge, the internal side of the arch is built with baked bricks.

The majority of the watermills are built with rubble masonry (Akaki, Figure 2.38); pebbles from the river banks and roughly-cut limestone. In a few cases, (in Kritou Terra), the watermills were built with squared, dressed limestone.

The watch towers have either a square (Alaminos) or round plan (Akaki). The Alaminos tower (Figure 4.187), which is dated 1464-1468, is built of roughly cut rectangular-shaped local stone (like the nearby church of Panagia Kofinou). The Akaki tower masonry walls, on the other hand, were built with roughly cut limestone, in the lower part of the wall, and pebbles from the river in the upper part. Its masonry construction resembles that of the nearby watermill.

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[131] The bridges are; Kalopanagiotis bridge, 'Elias' bridge in Fini, 'Eliomylos' bridge in Potamiou, Akapnou bridge, Pelendri bridge, Bishop bridge, 'Roudia' bridge in Agios Ioannis Paphos, 'Kelefos' bridge in Agios Nikolaos Paphos.

[132] The watermills are in Akaki and Kritou Terra.

[133] The towers are in Akaki and Alaminos.

Conclusions concerning the 15th -16th centuries

It was obvious from the study of all the architectural styles of the 15th-16th centuries that they were flourishing all over the island in remote areas and not in the towns. A significant architectural activity was observed in churches of the *Byzantine Franco-Byzantine*, the *new Franco-Byzantine*, and the *timber-roofed Byzantine* styles. Those styles produced impressive monuments with significant architectural value, architectural details and construction techniques. On the other hand, the *simple-Byzantine* style actually started to show signs of decline in this particular period.

The architectural activity of this period was the result of its historical, political and economical circumstances, but was also influenced by the location of the churches. Similarly, the development of the various architectural types, in each of those architectural styles, was the result of the same circumstances. The architectural typology of the *Franco-Byzantine* and *Byzantine* churches of this period differed from that of the previous periods. This architectural typology will follow in the next chapter.

CHAPTER FIVE Architectural typology of the Churches

Introduction

This chapter studies the church typology that has been used and developed in the period 1191-1571. The main object is to identify the origins of each church-type and its development throughout this particular period. This architectural typology is connected with architectural styles and therefore it will be examined in the same chronological order. However, the architectural typologies do not follow the architectural styles, neither in chronological order nor in style. For example: a certain type that was used in a *Byzantine Post-Byzantine* church of the earlier years (Frankish period) may have been used again in a *Franco-Byzantine* church of the later years (Venetian period). Therefore, it is essential to examine the church typology in the following steps: a) a brief reference to the church-type, and its origin; b) a brief study of the common alterations that may have taken place in the types throughout this period and the circumstances; and c) a chronological order of the development of the types in each style (*Byzantine* and *Franco-Byzantine*).

The changes in the proportion, scale, size and plan of these church-types will also be considered. A comparison will be carried out between the churches with the same type of the same period that belong to different architectural styles, as well as from one period to another.

It was noticed that the dimensions of the church-types 'suffered' several alterations and changes throughout this period (for example, smaller churches were enlarged). In addition, the dimensions of the church-types have gradually changed throughout the period and in the various architectural styles; smaller churches were built in a specific period and style, and larger ones in a later period and in another style.

Certain important details, such as the shape and size of the altar apse and the number of windows in the altar apse, will be investigated further. The importance of this detailed

investigation lies in the fact that it can provide us with valuable information for dating the churches. For example, the semicircular stilted shape in the altar apse was commonly used in the churches of the 12th-13th centuries.

The regularity in the shape of the plan will also be investigated, because it can provide information on the procedure for setting out the layout of the plan on the ground by the builders. For example, the plan of the churches of the 11th-12th centuries is very irregular (Agios Nikolaos tis Stegis, Figure 5.1), and it looks more like a trapezium than a square or rectangle. Certain factors will be discussed: a) where the builders started to build from (probably the altar apse[1]); and b) their possible use or not of geometrical methods. This regularity of plan is mainly an issue to discuss in the *Post-Byzantine Byzantine* style churches of the Frankish period in particular, since the majority of the *Franco-Byzantine* style churches seem to have been carefully designed and constructed by skilled masons and builders.

The dimensions of the churches, the thickness of the walls and the dimensions of the structural (domes, drums, arches) and non-structural elements (windows, doors) are also considered. This could enable us to identify the use of the *'Byzantine pous'*[2] (equal to one foot) as a module for the construction of the churches[3].

It was impossible for the author to record in detail, using accurate dimensions, or to produce drawings for all the 301 monuments. Drawings and dimensions of the churches were borrowed from the literature and from the archives of the Department of Antiquities. These are not always accurate, but at least are useful for comparative purposes in this research.

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1 Few relics of saints are put in the sanctuary, the *Agia Trapeza*, of the Byzantine churches at the day of their consecration. Occasionally the *Agia Trapeza* is the burial tomb of a saint (i.e. Agios Georgios Petridia, Agios Neofytos cave in Tala).

[2]This topic needs further investigation, and it can not be studied in depth in this thesis.

[3]The meter was created by G. Mouton in France in 1670. It was accepted in 1790 as a unit for measuring length and was used for the first time in 1795 (France). In Greece was used for the first time in 1836 (Great Greek Encyclopedia, vol. 16, pg.107).

The *Franco-Byzantine* types that derived from the *Post-Byzantine* types are classified into two groups, the vaulted and the domed, which are divided into sub-types. The vaulted are: the large *single-aisled vaulted* and the *two-aisled vaulted*. The domed are: the *dome-hall*, the *cross-in- square with dome* and the *simple cross with vault* (*or simple cruciform vaulted type*). A complex type that combines, vaulted and domed, is the two-aisled with dome and vault.

The *Franco-Byzantine* types that derived from the Medieval Gothic types are classified into four groups according to the number of their aisles: the *single-aisled*, the *two-aisled*, the *three-aisled*, and the *four-aisled*. Those groups are divided further into sub-types according to their roofing type. The *single-aisled* type church is roofed with a ribbed vault (Agios Mamas in Dali). The *two-aisled* type church has the two aisles: a domed-hall and a ribbed vaulted (Archangelos in Lakatameia). The *three-aisled* church types are the following two: a) the *three-aisled domed basilica with vaults* (Agios Mamas in Morfou, Agios Neofytos) and/or ribbed vaults (Agios Mamas in Agios Sozomenos, Agia Marina in Potami); and b) the *three-aisled ribbed vaulted-domed* (Agios Georgios of the Greeks). Finally, the *four-aisled* church type is the *four-aisled domed with ribbed vaults basilica* (Bedestan). Almost all the above types appear in an oblong, rectangular shape which is oriented east-west, except for the *three-aisled domed* type in Misirikou Church, whose oblong shape is oriented north-south.

Alterations to the church-types

Alterations to both the *Byzantine* and *Franco-Byzantine* types have been observed. These occurred under various circumstances, which are discussed in each group-type separately. The circumstances that imposed changes on the *Byzantine*-type churches are related to reconstructions upon earlier foundations and additions that were intended to increase the interior space. From the 14th century onwards, changes in *Byzantine* types occurred, in some cases, with the addition of chapels of the *Franco-Byzantine* type side by side with Byzantine-type churches. This suggests that Greek Orthodox and Latin people were practising their religion side by side.

The changes-additions-alterations to the *Byzantine* types happened in five ways. The

Post-Byzantine church types; *Byzantine* and *Franco-Byzantine*

Post-Byzantine church-types are divided (and named) for the purpose of this study, like the styles, into two groups, the *Byzantine* and the *Franco-Byzantine*. The *Post-Byzantine Byzantine* church types that were developed in the period 1191-1571 originated, clearly, in the Byzantine types of the Early and Middle Byzantine period (4th-12th centuries). The *Franco-Byzantine* (14th-16th centuries) types, on the other hand, have roots mainly in the *Post-Byzantine* types of the 12th-14th centuries, and rarely in the Medieval Gothic church-types.

The *Post-Byzantine Byzantine* types are classified into four groups: the vaulted, the domed, the timber-roofed and the complex types. Those type-groups are sometimes divided into sub-types. The vaulted-type is the *single-aisled vaulted*. The domed-types are: *the simple cross with dome* (or *simple cruciform domed* type), the *cross-in-square with a dome*, the multiple-domed, *dome-hall*, the *octagonal domed-hall*, *the hexagonal domed hall*. The timber-roofed types are: the *single-aisled timber-roofed*, the *two-aisled timber-roofed*, the *three-aisled timber-roofed*, the *single-aisled timber-roofed with the perimetrical stoa*, the *single-aisled timber-roofed with side aisles*, and *the double-roofed* type (complex type). This *double-roofed* type is divided into the following sub-types: *double roofed with vault*, *double roofed with cross-in square with dome*, and *double-roofed with cross-in-square with dome and vaults*. A narthex, vaulted or domed, in various shapes and sizes (that will be examined later) was added on the west side of some *Post-Byzantine* churches, after the 12th century.

Certain exceptions to the above church types were noticed: a) the *dome-hall* type, which was seen in a few churches (3) appears with twin-conch in the altar apse such as Agios Georgios Choulou, (Figure 5.2a-b) and Agios Georgios Afentrika Rizokarpaso (Figure 5.3); b) the *single-aisled vaulted* type with a tri-conch altar apse (the altar was probably a tomb of a saint and the vaulted church was added later, such as in Agios Georgios Petridia in Empa, Figure 5.4a-b); and c) the cave-type which often has an irregular shape.

first way is when a *Byzantine*-type church was built on the foundations of an *Early Byzantine* basilica or a *Middle Byzantine* church. Some examples are: Panagia Kanakaria (Figure 5.5), Agios Lazaros in Larnaka (Figure 5.6), Achiropoiitos in Karavas (Figure 5.7), and Agios Georgios Petridia in Empa. The second way is when one type was converted to another, such as the *simple cruciform domed* type is converted into a *cross-in-square* type with the enclosure of the four sides (Ayioi Kyrikos & Ioulitis in Letymbou). The third way is when a narthex was added to the west side of the various church-types (domed, vaulted, *dome-hall*, *three-aisled*, *cross-in square with dome*), as in Agios Georgios Chortakia in Sotira, or the east side as in Agia Anastasia in Polemidia (Figure 5.8). The fourth way is when *Franco-Byzantine* type aisles were added side by side to *Byzantine* type churches, as in Holy Cross in Pelendri, Lampadistis in Kalopanagiotis (Figure 5.9), Chrysaliniotissa in Nicosia (Figure 5.10). Finally, the fifth way is when *Byzantine* type side aisles were added in *dome-hall*, *single-aisled vaulted* or *single-aisled timber roofed* type churches.

Occasionally, *single-aisled timber-roofed* churches were converted into *two-aisled* or *three-aisled* ones. In a few cases, a perimetrical arcade is added (Panagia Iamatiki in Arakapa). An exceptional *timber-roofed* type is that of the *double-roofed* type. A second timber roof was placed above a *cross-in-square domed*, a *dome-hall*, vaulted and complex type-church that consisted of a domed (*cross-in-square* or *dome-hall*) and vaulted chapels side by side (Pelendri, Lampadistis).

Burial tombs of saints, built or rock-cut, of the early Christian period, were occasionally converted into chapels in the Byzantine period and later. The most interesting representative example is Agios Georgios Petridia in Empa (Figure 5.4). The altar apse of this church was built in early Christian times as a burial tomb. It has three sides with four semicircular apses: a northern, a southern and two eastern. The domed 'foyer' was probably built in the early Middle Byzantine period and the vaulted nave in the Frankish period (Papageorgiou, 1984 v.4: 50-1).

The additions and alterations to the *Franco-Byzantine* types are classified into four ways. The first way is when a *Franco-Byzantine* type church was built on the

foundations of an *Early Byzantine* type church, as in the Holy Cross in Anogyra, Agios Evlalios in Karavas. The second way is when a *Franco-Byzantine* type church was attached side by side to a *Byzantine* type church as in Holy Cross in Tochni, Panagia in Kivisili (Figure 5.11) and Panagia in Prastio Avdimou (Figure 5.12), or side by side with a *Franco-Byzantine* church as in Agios Georgios in Frenaros (Figure 5.13). The third way is when *Byzantine* type churches were converted into *Franco-Byzantine* type churches, as for example, a conversion from *simple cross with dome* into *cross-in-square with dome* with the addition of the four compartments in the four corners of the cross and addition of the narthex. Some examples are: Chryseleousa in Empa (Figure 5.14), Chysopolitissa in Kato Paphos (Figure 5.15), and Agios Efstathios Kolossi. The fourth way is when a the *Byzantine* type church was converted into a *Franco-Byzantine* type one after its walls and its roof were reconstructed, as for example the church of Holy Cross in Kouka (Figure 5.16).

Retrospect in the development of the Byzantine types

Early Byzantine period, 4th-7th centuries

In the 4th -7th centuries the most common church types in Cyprus were the *timber-roofed* basilicas, single, three or five-aisled, which were destroyed during the Arab raids (649-965). No Early Byzantine church has survived[4]. Many destroyed basilicas were reconstructed at a later period as *Byzantine Franco-Byzantine* type churches. Among the most important are: the Basilica of Agios Epifanios in Constantia in Salamina (Figure 5.17a-b), Holy Cross in Stavrovouni[5] (Figure 5.18).The foundations were, sometimes, used as the construction sites but the plan was not necessarily followed for these new churches.

Byzantine period, 7th-10th centuries

In the 7th-10th centuries (the period of the Arab raids), new architectural types were

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[4]The only source of information for the plan and the size of the churches of this type are the excavated archaeological sites.

[5]The monastery church of Stavrovouni has a triconch altar, which is unusual in Cyprus church architecture of its period. The church is not considered for this PhD, but remains an interesting topic for further investigation.

introduced. The first type was the *vaulted basilica* type with a dark interior and no windows (except a small window on the altar apse), such as Panagia Afentrika in Karpasia (Figure 5.19) and Asomaton Afentrika in Karpasia (Figure 5.20). This type replaced some earlier timber roofed basilicas as well.

The second type was the *vaulted basilica with a dome* type, such as the *three-aisled vaulted basilica* of Agios Antonios in Kellia (the dome was replaced later by a vault) of the 9th century (Figure 5.21). The third type was the *cross-in-square with multiple-domes,* such as the three-domed[6] church of Agios Lazaros in Larnaka built in 900 (Figure 5.6), and the five-domed church of Agia Paraskevi Geroskipou of the 9th century (Figure 5.22). The fourth type was the small *single-aisled vaulted* type such as Agia Solomoni in Koma tou Gialou (Figure 5.23), which dates to the 9th century.

Middle Byzantine period, 10th-12th centuries

According to Papageorgiou, as mentioned earlier (Chapter 4), the *Middle Byzantine* Architecture in Cyprus in the 10th-12th centuries was '*developed under the influence of Constantinople'* (Papageorgiou, 1981: 469). In 965 Cyprus reverted to the Byzantine Empire's protection and so its links with Constantinople became closer. From the end of the 11th century, Cyprus was developed as an important military base for the Byzantines (due to the imminent threat of the crusades, and because they had lost Asia Minor in 1071). The Byzantines fortified the island and built churches and monasteries.

In the middle of the 12th century, the island suffered financially from the repeated raids, which prevented the construction of buildings. Therefore, construction activity flourished on the island from the end of the 11th century to the beginning of the 12th century, and then at the end of the 12th century. Some new church-types with Constantinopolitan influences were introduced into the island by the early 12th century, while at the end of the same century the narthex was re-introduced in Cyprus churches in various types, also with Constantinopolitan influences. The majority of the narthexes were added to the churches that were built in earlier part of this century.

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[6]The monastery church of Apostle Varnavas in Famagusta has also three domes. This church is not included for study in this PhD because it was reconstructed and altered later than the period this study considers.

The church-types of the Byzantine periods

Papageorgiou gives us his account of three new types that were introduced to the island in this period, and were influenced by Constantinople: the *cross-in square with dome* type, the *dome-hall* type and the *dome-hall octagonal* type. Four new church-types were introduced into the island at the end of the 11th century and which were influenced by Constantinople: the *simple-cross* with *dome* (or *simple cruciform domed)* type, the *dome-hall polygonal* type, the *cross-in square with a dome* and the *dome-hall* type. Another type, which was common to the 10th-12th centuries, is the *single-aisled vaulted* type, which originates from an earlier period.

The *simple-cross with dome* type

Only a few churches of the *simple-cross with dome* built in the 12th century have survived, with either their original plan or alterations. Three sizes of churches of this type were encountered. The smallest churches are: Panagia Kyra in Livadia (Figure 5.24), which was built on the ruins of an earlier Byzantine church dating to the 6th or 7th century, and Agios Nikolaos[7] in Chloraka (Figure 5.25a-b). The middle size churches are Agios Efstathios in Kolossi (Figure 5.26) and Agios Theodosios in Achelia (Figure 5.27). The largest churches are Panagia Katholiki in Kouklia (Figure 5.28), Chryseleousa in Empa (Figure 5.14) and Chrysopolitissa in Paphos (Figure 5.15). The *simple-cross with dome* church of Agios Georgios in Koili which is currently in ruins, was not visited, and its size is not known to the author (Figure 2.40, 5.29).

The three small churches, Panagia Kyra, Agios Efstathios and Agios Nikolaos, are roofed with barrel vaults and a central dome with calotte shape. The churches Katholiki and Agios Theodosios are also roofed with barrel vaults but with a semicircular dome (probably later reconstructions), whereas the large churches, Chryseleousa and Chysopolitissa, are roofed with slightly pointed-arch vaults and semicircular domes. Some of the above churches later converted into the *cross-in-square* type are: Agios Efstathios, Chryseleousa and Chrysopolitissa, the latter being also rebuilt in the 14th and

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[7]Papageorgiou classified this church as a *dome-hall* type but the author believes that it should be classified as a *simple cross* type since it has a cross-plan and no blind arches in the side walls as it was common in the *dome-hall* churches (plan). However, the church north and south sides are not longer than one metre, and therefore its plan resembles that of the *dome-hall* type.

16th century. In the 16th century, Panagia Katholiki was extended in the west.

Despite their size, the north and south sides of the cross were equal in all the churches, while the east and west sides vary. Agios Efstathios church, is an exception; the eastern side of the cross was not built and the altar apse was built attached to the nave. Whereas, Katholiki and Chrysopolitissa have very long eastern sides, 5.5-7.5 m. The largest western sides were seen in Agios Efstathios (5.5.m), Chryseleousa (9.8m) and Chrysopolitissa (13m). In Katholiki (9.6m), the western part was reconstructed in the 16th century, and its original remains unknown.

The *polygonal dome-hall* type

The *polygonal dome-hall* type was created and used only in the Keryneia area, and only in the late 11th to the early 12th century. Five churches were encountered. This type originates in the *hexagonal*-type church of Nea Moni of Chios (Figure 5.30), which originated in the 11th century. The only hexagonal church ever built was Panagia Apsithiotissa in Sichari (Figure 5.31), originally built in 1100 and partly reconstructed in the 14th-15th century.

The earliest dated *polygonal*-type church, however, is the *octagonal dome-hall* Katholikon church of Agios Chrysostomos in Koutsoventis (Figure 5.32), which dates to 1090, but was demolished in the last century. The next octagonal-type church was Agios Ilarion Church (Figure 5.33) in Agios Ilarion Castle, built at the end of the 11th, beginning of the 12th century. Another two *octagonal*-type churches were built at the end of the 12th century: the Katholikon Church of Antifonitis (Figure 5.34) in Kalograia, and Panagia in Marki, which was demolished in the 1950's (Figure 5.35).

The *octagonal dome-hall* type in Agios Ilarion and Antifonitis were '*covered with a large dome supported on eight pendentives, with two detached columns and six wall shafts forming the eight points of the support*' (Jeffery, 1931: 3). In the octagonal church in Marki (Figure 5.35), the dome was supported on piers that are attached to the side walls, with two pillars in the west and on the eastern wall. Similarly, in the hexagonal church in Apsithiotissa (Figure 5.31), the dome was supported on the three sides by one

semi-pillar attached to each side, in the south and north walls, and by two pillars in the west. In the east, the dome was supported, as in Agios Ilarion and Antifonitis, by two detached posts.

In all these churches, it was noticed that the builders used bricks in the construction of the walls, either as a decorative material on masonry walls, or as a building material, such as in Agios Ilarion Church. In this church, the bricks were used for the construction of columns, engaged piers, arches and vaults. The extensive use of bricks for the construction of piers and arches was also observed at the Church of Panagia Apsithiotissa in Sichari. The use of bricks was definitely an influence from Constantinople.

The dimensions of the plan of the octagonal type churches were quite similar[8]: the internal width of the nave was around 7.5-7.9 m and the length around 9.50-9.90m, whereas the hexagonal Church of Apsithiotissa was 8.7m long and 7.5m wide. The author believes that the fact that this type was used in this specific place, with these materials, and for the short time of half a century, suggests that this type was created by a group of builders who probably arrived from Constantinople or Greece. They probably stayed in this area for a few decades and then left.

The *cross-in-square with dome* type

The third type, the *cross-in-square with dome*, is actually a variation of the *cross-in square with multiple domes* which was introduced in the 9th-10th centuries. The *cross-in-square with dome* type was particularly used in the 11th- 12th century. Representative examples of the 11th century are: Agios Filonas in Karpasia, Agios Nikolaos tis Stegis in Kakopetria (Figure 5.1), Agios Irakleidios in Lampadistis Church in Kalopanagiotis (Figure 5.9) etc. Representative examples of the 12th century are: Agios Georgios Chortakion in Sotira (Figure 5.36), Angeloktisti in Kiti (Figure 5.37), Achiropoiitos in Karavas (Figure 5.7), Agios Antipas in Pyroi, Agioi Kyrikos and Ioulitis in Letymvou etc. The only *multi-domed cross-in- square* church of this period is Agioi Varnavas &

[8]The internal dimensions of the nave of Agios Ilarion church are: 9.9m x7.55m, whereas those of Antifonitis church are: 7.85mx9.50m.

Ilarion in Peristerona (Figure 5.38), which was built around 1100.

The internal dimensions of the *cross-in-square* type churches vary from church to church and are from around 7 to 8m. Their plan may have a rather irregular 'square' shape and the sides of the 'square' may differ from 50cm to 1.5m.

Papageorgiou says that '*unlike the churches of Constantinople, the four compartments at the four angles of the cross are not covered with domes or cross vaults but of simple barrel vaults'. 'The many large and elongated windows of the churches of Constantinople are missing from the churches of Cyprus'* except for the church of Agios Lazaros in Larnaka (Figure 5.6), (Papageorgiou, 1981:471).

According to Papageorgiou, an element that was introduced into the churches of this period, also originating in Constantinople, is that of recessed or blind arcades on the side walls of the churches. He encountered these blind arcades in the churches of the *cross-in square* dome type of Agios Filonas and Agios Synesios in Karpasia (Rizokarpaso), Agios Georgios Chortakia in Sotira (Figure 5.36). Similarly, in the *dome-hall* church of Archangelos in Frenaros (Figure 5.39a-b), blind arches are formed in the south and north sides below the central dome. He mentioned that *'the spandrels of the north and south arms of the cross are sunken, thus forming blind arches'* (Papageorgiou, 1981: 475).

The *dome-hall* type

The fourth type was the *dome-hall* type. The earliest example is Agia Trias in Koutsoventis church (Figure 4.18, 5.40a-c), which was originally built in 1100, attached to the Katholikon church of Agios Chrysostomos Koutsoventis. Limestone was used for the construction of this church, but also '*extensive use of bricks was made for the construction of its west wall, the arches and the vaults'. 'The dome of this chapel was built with dressed stones and bricks in the cloisonné system, so usual in Greece in that period'* (Papageorgiou, 1981:472).

In the 12th century, the *dome-hall* type became very fashionable. Some examples are: Agios Fotios in Gialousa (Figure 5.41), Panagia of Kofinou (Figure 5.42a-b), Panagia of

Kampou in Choirokoitia (Figure 5.43a-b, 4.178), Panagia Chortakiotissa[9] in Sotira (Figure 5.44a-b), Panagia Ypati in Keryneia (Figure 5.45), Panagia Araka in Lagoudera (Figure 5.46), Archangelos in Kato Lefkara (Figure 5.47a-d), Agios Andronikos in Frenaros, Panagia of Trikomo (Figure 5.48), Panagia of Koma tou Gialou, Agios Georgios Afentrika in Rizokarpaso (Figure 5.3, 5.49), Archangelos in Gialousa (Figure 4.35, 5.50), Holy Cross of Pelendri (1178), Agia Napa in Kantou, Agios Georgios in Choulou (Figure 5.2), Agios Georgios in Koutsoventis (Figure 5.51), Agioi Apostoloi in Pera Orinis (Figure 4.13, 5.52), Agia Mavri in Koilani, etc.

Recessed or blind arches were seen in the *dome-hall* churches of this period, a detail which has probably originated from the earlier *three-aisled vaulted basilicas* and the *cross-in square with* dome. In the *dome-hall* churches, the central arches, north and south, are raised up to the spring of the drum of the dome, and are equal to the arches of the vaults in the west and east. The arches are based on piers; however, in some churches such as in Lampadou in Mitsero, Panagia of Trikomo and Panagia Tochniou in Mandres (Figure 5.53), instead of piers, there are columns attached to the walls, as in the octagonal churches.

The plan of the *dome-hall* type has a cross-shaped internal space. The drum of the dome is based on crossed vaults, as in the *simple-cross type* churches. The domes were based on cylindrical drums, which had 4, 8 or even 12 windows (Araka). Two churches have a drumless dome in a calotte shape: Agioi Apostoloi in Pera Chorio Nisou (Figure 4.13, 5.52) which was built in 1160, and Agia Mavri in Koilani (Figure 4.71).

The arches and the vaults have a slightly pointed-arch shape and are expressed in the facades with triangular gables. In Agia Trias in Koutsoventis (Figure 5.40), the gables have a semicircular shape, probably a Constantinopolitan influence, whereas in Choirokoitia (Figure 2.68, 5.43) the gables have a low arched shape. In Agia Napa in Kantou (Figure 4.185) and in Agios Georgios in Choulou (Figure 4.83), no gables

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[9]Papageorgiou dated this church in the 12th century, probably because is near the 12th century churches of Agios Theodoros and Agios Georgios Chortakion, whereas Stylianou dated it in the 14th century. The author shares Papageorgiou views, but the matter needs further investigation.

appear because the walls were reconstructed in the 14th century, while the gables in Araka church were reshaped in the 14th century in order to support the timber posts of the timber roof inserted above the church (Papageorgiou, 1990:190-3).

The dimensions of the *dome-hall* type churches vary between approximately 8m in length and 5-5.5m in width, the only exception being the church of Kofinou (Figure 5.42), with 3m in width and 15m in length. The height of the side walls is approximately 5m, and the maximum height of the church 8m. This suggests that the facades are inscribed in a square shape.

The *dome-hall* type *with the twin-apse*

An unusual shape in the altar apse was noticed in the *dome-hall* church of Agios Georgios Afentrika in Rizokarpaso (Figure 5.3, 5.49), dating to between the 10th and 11th centuries. The altar has two semicircular apses: the *twin-apse type* (Sotiriou plan). Another church in Cyprus of the *twin-apse* type is Agios Georgios in Choulou (Figure 5.2), which originates in the 12th century and was rebuilt in 1480. This type of altar apse was also known in the Greek islands during the Byzantine and medieval periods, in many variations and in various indigenous Byzantine church-types: *dome-hall*, *simple-cross domed*, *simple-cross vaulted*, *single-aisled cross-in-square* etc (Demetrokalli, 1976:361). Demetrokallis has suggested that this *twin-conch* type in the *dome-hall* or *single-aisled* churches originates from the eastern Mediterranean region, and that Agios Georgios Afentrika in Karpasia is the earliest example he encountered (Demetrokalli, 1976:379).

The author believes that in this particular period, church-types in Cyprus had not only been influenced by Constantinople, as Papageorgiou suggested, but were also very much related to the indigenous Byzantine architectural types of the church architecture of the neighbouring islands of the Aegean. This topic is important and requires further investigation, possibly another doctoral thesis.

Reconstructed churches with domes on the ruins of early Christian period *basilicas*

In the 11th-12th centuries, Achiropoiitos Church in Karavas (Figure 5.7) and Angeloktisti

in Kiti (Figure 5.37) were reconstructed as *cross-in square with dome* type churches. Both churches suffered continued additions and alterations in the Frankish period, including the addition of Gothic structures.

In the 12th century, the monastery church of Kanakaria in Lythrangomi (Figure 5.5) was reconstructed as a *three-aisled vaulted basilica with three domes*: a drumless dome with a calotte shape above the *bema*, and two domes on cylindrical drums (with 4 windows) above the nave and the narthex.

The *single-aisled vaulted* type

Another type originating in earlier periods also became widespread during the Middle Byzantine period (10th-12th centuries), the small *single-aisled vaulted* type. Some examples of this type are: Asinou in Nikitari (Figure 5.54), Amasgou in Monagri (Figure 5.55), both had a second timber-roof, Agia Marina in Gialousa (Figure 5.56), Agios Georgios Sakkas in Gialousa, Agios Filonas in Agridia (Figure 2.19, 5.57) etc. Two important elements of the single-aisled vaulted churches are: the blind arches in the side-walls and transverse arches which are based on piers attached to the walls. The internal dimensions of this type are sometimes similar to those in the *dome-hall* type, around 5m x 8m. However, smaller churches, around 3.5m x 6m (Agios Filonas in Agridia) were also built.

In the 12th century, the *single-aisled vaulted* chapel of Lampadistis (Figure 5.58) was built attached to the north side of the *cross-in-square church* of Agios Irakleidios in Kalopanagiotis. At the same time, a timber roof was inserted above the two churches. This protection scheme was already known as from the early 12th century in the Troodos area.

***Secondary timber roofs* protected monastery churches of Troodos**

A second roof, a double-sloped steep timber roof, was added above the *single-aisled vaulted* churches of Asinou (1105) and Amasgou (12th century) in the early to middle 12th century. Then, in the late 12th century, it was inserted above the two churches Lampadistis of Agios Irakleidios in Kalopanagiotis. In the same period, a timber roof

covered the *cross-in-square* church of Agios Nikolaos tis Stegis in Kakopetria (Figure 5.1), just after the domed narthex was inserted.

A timber roof was inserted to cover the *dome-hall* church of Holy Cross of Pelendri (dating to around 1178) just after the northern vaulted chapel was inserted, possibly in the 14th century. Similarly, in the same period, the *dome-hall* church of Panagia Araka in Lagoudera[10] was given a timber roof (Figure 5.59).

Common characteristics of the churches 10th -12th centuries

In the churches of this period, the windows are small in size and fewer in number than their Constantinopolitan prototypes, due to the blindingly bright light and warm climate of the island, with the exception of a few churches in the mountains, such as Panagia Araka in Lagoudera, and others that were very much influenced by the churches in Constantinople. These are: Agia Trias in Koutsoventis, Panagia of Trikomo, Panagia Apsithiotissa in Sichari, Antifonitis Kalograia and Agios Varnavas in Famagusta etc.

The most common characteristics observed in the churches of this period (10th-12th centuries) are: a) semicircular stilted, or simply semicircular, shape of the altar apse, which often had one or three small round-headed windows[11]; b) the calotte shape of the domes (in the domed churches) which was either drumless or was based on a cylindrical drum with four round-headed windows, and c) the irregular plan (Agios Nikolaos tis Stegis).

In the majority of the churches of this period and of these types, the layout of the eastern wall had been carefully set and constructed with squared stones.[12] The rest of the plan was constructed less carefully and has an irregular shape. Some representative examples

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[10]Papageorgiou indicates that the timber roof above the original church was probably added in the 14th century (Papageorgiou, 1990:192).

[11]Unusual exceptions are the windows in the altar apse of Panagia Marki (Figure 5.36). The apse has a central trilobe window and two side windows, total five windows. In Agios Ilarion (Figure 5.34) church the altar apse has only a trilobe window.

[12]It was noticed that in the churches that have been damaged or destroyed by natural causes (earthquakes or other), the altar apse was often the only part that survived.

are: Agios Nikolaos tis Stegis (Figure 5.1) in Kakopetria, Archangelos in Kato Lefkara (Figure 5.47) etc. The author believes that these observations suggest that the builders must have started the construction of the churches of these types from the eastern wall of the altar apse.

In addition, in the churches that were built on the ruins of early Christian churches, the reconstruction scheme had included the original altar apse, which means that the new layout was definitely started from the eastern wall, such as in Panagia Kyra in Livadia (Figure 5.60). In this same church, it was noticed that the walls of the reconstructed *simple-cross* type are thicker (at least 1-1.5m thickness) than those of the earlier church. The thickness of the walls in most churches of this period is approximately 80 -100cm. However, in some churches the thickness is 65-70cm. The thickness of the walls does not always depend on the construction material.

The re-introduction of the narthex, a 12th century innovation

The narthex was re-introduced[13] into local church architecture at the beginning of the 12th century, before the island came under Latin rule in 1191. Papageorgiou says that this was another influence from Constantinople.

The narthex was inserted into monastery churches and was used in certain services, as indicated by the surviving monastery ordinances. Papageorgiou says that the introduction of the narthex was probably the result of the deep changes in liturgical customs that had already occurred earlier, between the 7th and 10th centuries. The narthex was sometimes used for the gathering of the monks after the orthros (matins), for greeting the Abbot, and for the service of the 'early morning hours' (Horae). In each monastery, the monastery ordinances may have differed; however, not all have survived (Papageorgiou, 1982: 439, 417).

Evidence has shown that a narthex was added to at least 25 churches of the 11th-12th centuries. Several of the narthexes have survived in a ruined condition and it is difficult

[13]All the Early Byzantine basilicas in Cyprus (4-7th centuries) had a narthex. Its construction and use was then stopped until the 11-12th centuries.

to identify their roofing type. The only church that was originally built in the 12th century with a narthex is the *octagonal dome-hall* church of Panagia Marki (Figure 5.35) which was destroyed last century.

Papageorgiou gave his own account of eight narthex-types, which date from the early 12th century until the 14th. These are: the *quadrangular-shaped* type, the *simple rectangular*, the *rectangular chamber which is larger than the main church*, the *timber-roofed rectangular* type, the *vaulted rectangular* type, the *narthex with apsidal ends*, the *rectangular type usually with a calotte dome*, and the *narthex which repeats the plan of the church, but on a smaller scale* (Papageorgiou, 1982: 441-6).

It is important to refer to some significant examples from each narthex-type and to a few more types that were introduced into 12th century churches. The *quadrangular shape* (square or rectangular) narthex type was added in the churches Afentrika in Koutsoventis (Figure 5.51) and Agia Mavri in Rizokarpaso, and the *simple quadrangular chamber* was seen in Agios Ilarion Church in Agios Ilarion Castle (Figure 5.33). All three narthexes were in a ruined state.

The *rectangular chamber*, which is larger than the main church, and was roofed mainly with a pointed barrel vault, was added in the churches of Agios Filonas in Agridia (Figure 5.57), Agia Marina in Gialousa (Figure 5.56) (in ruins) and in Agios Irakleidios Lampadistis in Kalopanagiotis (Figure 5.9). The latter was altered in the 15th century and is currently roofed with a timber roof; its original roofing type is unknown. The *vaulted rectangular type* narthex was added in Agios Georgios in Choulou (Figure 5.2).

The *rectangular narthex with a calotte dome* was added in Agios Nikolaos tis Stegis in Kakopetria (Figure5.1), Agios Georgios Sakka in Gialousa, and in Agios Theodoros Church in Sotira; the latter church is in ruins, but the narthex has survived (Figure 2.50). The *rectangular narthex with dome* was added in Achiropoiitos (Figure 5.7) and in Kanakaria (Figure 5.5) churches. All the above were added to early 12th century churches, possibly around the end of the 12th century.

The *narthex with apsidal ends*[14] was added in the churches of Agios George Afentrika in Rizokarpaso (Figure 5.49), Iera Moni in Statos and Agios Pavlos in Lapithos, all in ruins (Papageorgiou, 1982: 442). The *narthex with apsidal ends with a calotte dome* was added in the 12th century in Asinou (Figure 5.54).

The *cross-in-square domed type*[15] narthex was added at the end of the 12th century in Agios Georgios Chortakia Church in Sotira (Figure 5.36), which was built earlier in that century. The narthex repeated the plan of the church but is smaller. A *dome-hall* narthex was inserted in the 12th century *dome-hall* church of Archangel in Gialousa (Figure 5.50). Papageorgiou dated the narthex to the 12th century, despite the *Franco-Byzantine* architectural details that decorate the western and north wall (blind windows, pointed-arch doorway) (Papageorgiou, 1984, v.2: 338-9).

Narthex types added in the Post-Byzantine period (14th-16th centuries) to 12th century churches

Narthexes were added in the 14th-16th centuries to churches dating to the 12th century, or earlier. Some additions were made together with transformations of the original church from one type to another. For example, Chryseleousa in Empa (Figure 5.14) of the *simple cross type* was turned into *cross-in-square* type through the addition of four compartments at the angles of the cross, at the same time when the *domed cross-type narthex* was added in the 14th-15th centuries. The most common narthex types of this period are similar to those of the earlier period, but differ in their roofing type.

The *timber-roofed rectangular* type in Agios Antonios in Kellia (Figure 5.21) probably dates to the 15th century. The *vaulted rectangular type* with the pointed vault was added in Antifonitis church (Figure 5.34) in the 14th century and in Agios Evlalios in Karavas (Figure 5.61) in the 16th century. A *narthex with apsidal ends* with Gothic cross-vaults

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[14]According to Papageorgiou, the narthex with the apsidal ends was known in Cyprus since the early Byzantine period (basilica of Agios Epifanios Salamina and basilica in Campanopetra). However, it re-appeared in the 11th-12th centuries, as an influence from Constantinople (Papageorgiou, 1982:444).

[15]The cross-in-square narthex that is seen today in Agia Anastasia in Polemidia is actually the original church. This church was extended in the east in the 14th century, and a second cross-in-square type was added. Both east and west parts have lost their south sides, at a later unknown date.

was built in the Katholikon Church of Agios Chrysostomos in Koutsoventis (Figure 5.32) and together with a ribbed vault was also added to the church of Apsithiotissa (Figure 5.31), both in the 14th-15th centuries.

The *dome-hall type narthex with a calotte drumless dome* was added in Agios Georgios Angonos Church in Ormideia (Figure 4.82), also in the 14th -15th centuries. The *dome-hall type narthex with a dome on a drum or drumless* was usually added in the *cross-in-square with dome*, *dome-hall*, vaulted basilicas or *simple-cross domed* type churches between the 14th-15th centuries, such as in the churches of Agia Marina in Deryneia, Panagia Kanakaria (Figure 5.5), Achiropoiitos (Figure 5.7), Chryseleousa in Empa (Figure 5.14), Archangel in Frenaros (Figure 5.39).

In 1500, an external narthex was built in the Achiropoiitos Church in Karavas (Figure 5.62); a unique example of its kind. It was built in medieval Gothic and Renaissance styles with ashlar stones and ribbed vaults. In the period 14th -16th centuries and later, narthexes were added to *Post-Byzantine* churches. These were simple narthexes that extended the church to its western side. Sometimes, arcades or stoas (two sided or perimetrical) that were added to the churches had included a narthex.

Rock-cut type chapels

Papageorgiou provides us with a detailed account of all the caves that were used as hermitages by monks and later as chapels. These were sometimes burial tombs that originated in the early Byzantine or Middle Byzantine periods. The frescoes that decorate most of those caves are the *terminus ante quem* to identify the date[16] of the use of the caves as chapels.

Papageorgiou also gives us his own account of the hewn hermitages and monasteries in Cyprus. Among the many cave hermitages, the *cave chapels,* that date to the 7th-12th centuries are: Agia Mavri Chrysokava in Keryneia which was dated by Sotiriou[17] to the

[16]A number of those caves were natural caves which were used as burial tombs or hermitages for monks, whereas some of them were hewed on the rock to be used for military purposes, as tunnels, or religious purposes, as chapels, and hermitages, or for burials.

[17]G. Sotiriou 'The Byzantine monuments of Cyprus', 1935, Athens, pg 62. Reference from Papageorgiou, in his

7th century (Figure 5.63); Agios Eftychios in Dali (Figure 5.64a-b); Agios Sozomenos in Agios Sozomenos village which is probably dating from the 10th or 12th centuries (Figure 5.65); Galaterousa in Karavas which is dated between 11th-12th centuries (Figure 5.66); and Agios Neofytos hermitage in Tala (Figure 5.67), which was hewn between 1159-60 and decorated in 1197. The only cave chapel that Papageorgiou dated to the 14th-15th centuries (according to its frescoes) is the Chrysaliniotissa cave chapel in Deftera.

The most significant of all the caves is the hermitage of Agios Neofytos in Tala. This hermitage was hewn as a small monastery unit with a chapel, a cell and a *trapeza* (refectory or synod hall). The chapel has an altar, nave and narthex. The cell contains the burial tomb of the saint. All the caved rooms are decorated with frescoes. As mentioned in Chapter 4, a few Byzantine architectural details have survived in this cave as representative examples of this period.

Two rock-cut caves, with no fresco decoration, that probably originate in the Roman or early Byzantine period but were used in the Middle Byzantine and *Post-Byzantine* periods are: Agia Thekla in Agia Napa and Agios Eftychios in Dali (Figure 5.64). The first is a natural cave used as a chapel close to the sea, and the second is a rock-cut chapel that was shaped as a vaulted roofed type.

Retrospect of the development of Post-Byzantine types

Early Frankish period; 12th-14th centuries (1191-1373)

In 1191, the island was conquered by Richard I, King of England, who sold it to the Templars; after which it was re-sold to Guy de Lusignan in 1192. The Frankish period began, which was to last until 1489 when the island passed into Venetian hands. The Latin Church confiscated the Orthodox Church's property and restricted the establishment of Orthodox monasteries and churches. The Orthodox bishops were exiled from the cities to the countryside.

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article 'Recently discovered wall paintings in the 10th-11th century churches of Cyprus, 1976, pg. 412.

In the meantime, Constantinople was captured by the Frankish crusaders in 1204 and remained thus until 1261, when the Palaeologian Dynasty re-captured it. Constantinople's last period of prosperity lasted until 1453, when the Ottomans took it. During Constantinople's period of revival, Cyprus was invaded by the Genoese in 1370. They captured Famagusta in 1373 and controlled it until 1464.

Historical circumstances, the enmity of the Latins towards the Greek Orthodox population, and the several severe earthquakes that struck the island in this period, all contributed to the decline of construction activity in the Byzantine churches in the island, from the middle to the end of the 13th century. Conversely, Gothic medieval buildings began to flourish, and builders and masons were brought to the island from France.

Post-Byzantine Byzantine church types (12th-14th centuries)

The monuments that represent the Byzantine church types of the late 12th century are: a) the *dome-hall* of Panagia Araka (1191), (Figure 5.49, 5.61); b) the *octagonal* church of Antifonitis (Figure 5.4), c) the *cross-in square domed* churches of Agioi Kirikou and Ioulitis in Letymbou (Figure 5.68) and Agios Georgios in Agios Georgios Soleas (Figure 5.69a-b), and d) the *simple cross domed* churches of Agios Theodosios in Achelia (Figure 5.27) and Panagia in Chloraka (Figure 5.70).

Immediately after 1191, the intrusion of the Latins interrupted the construction activity of Byzantine-type churches. The Greek Orthodox native population then concentrated on the re-construction, alteration, extension and decoration with frescoes[18] of some earlier churches that mainly date to the 12th century. The re-construction schemes were probably necessary, either for expansion purposes or as a result of the destructive earthquake of 1222.

The *simple cross-dome* type converted into a *cross-in-square* type

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[18]Papageorgiou and Stylianou dated the frescoes in many churches in the 13th century and consequently the churches as well. However, the type and style of these is similar to the late 12th century churches. The author believes that those were constructed in the 12th and decorated in the 13th century.

Stylianou[19] gives his own account of the *simple cross dome* type churches of the 12th century that were converted in the 13th-14th centuries and later into *cross-in square* with a dome, with the addition of four compartments on the four sides of the cross. The first conversion was made in the 13th century at the Churches of Ayioi Kyrikou and Ioulitis in Letymbou (Figure 5.68) and Chryseleousa in Empa (Figure 5.14, 5.71a-c). Further additions to the church in Empa were the *simple-cross type domed* narthex, in the 13th-14th centuries, and the octagonal dome above the narthex in the 15th century (Stylianou, 1997:1230-46). Then, two more conversions took place: to Agios Efstathios Kolossi (Figure 5.26, 5.72a-b) in the 15th century, and Chrysopolitissa Paphos (Figure 5.15, 5.73), in the early 16th century.

The *dome-hall type*

The *dome-hall type* that originated in the 12th century was widespread on the island in this period. We encountered at least 19 *simple Byzantine* style *dome-hall* churches that were built, altered or re-constructed during this period, particularly in the 14th century. This church type derives from the *cross-in square domed* type, with the removal of the side aisles. The arcades in the latter type correspond to the blind arches in the *dome-hall* type, whereas the dome in both types is supported, similarly, on four pendentives created by four equal arches in a cross-shape. The arches are slightly pointed and are expressed in the facades as triangular gables. The domes are based on cylindrical drums with four round-headed windows.

The masonry walls were constructed with squared limestone in some churches: Panagia in Paralimni (Figure 5.74), Agios Dimitrianos in Dali (Figure 4.30), Panagia Kriniotissa in Vasilia. These churches were located in areas where good quality limestone and builders who knew the appropriate techniques were available. Elsewhere, the masonry walls were constructed in even courses with roughly cut and squared stone, such as in the churches of Agia Marina in Pyrga (Figure 4.74) and Agios Georgios in Dali[20]

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[19]Stylianou mentioned that the *simple-cross type* churches of Agios Theodosios Achelia and Panagia Chloraka were built in the 13th century, whereas Papageorgiou dated the first in the 12th and the latter in the 12th-13th century. The author shares Papageorgiou views on this specific matter, because the churches are built with roughly squared large local limestone, similarly with those of the 12th century.

[20]Agios Dimitrianos and Agios Georgios are located less than 500 yards from each other. Both were dated by the style of their frescoes; the first early 14th and the second later in the same century. They have similar plan and type, but the

(Figure 4.75).

The dimensions of the *dome-hall* type churches are slightly larger than those of the 12th century, but with similar proportions. However, exceptions were noticed. For example, the *dome-hall* Church of Panagia Galoktisti in Pyrgos (Figure 4.72) is different, as it has a narrow rectangular plan and is roofed with a calotte drumless dome. Ieronimidou dated this church to the 14th century, according to the style of its frescoes (Ieronimidou-Solomidou, 2000: 203.). This church may have been built earlier, probably in the 10th-12th centuries, and decorated in the 14th century; or, amateur builders built it in the 14th century. These assumptions are based on observations by the author concerning the dome-type, the rubble masonry walls and the irregular plan.

The *single-aisled vaulted* type

The *single-aisled vaulted* type churches of this period (12th-14th century) have wide pointed-arch vaults with squat proportions. Few churches have survived, and the majority of them have been partly re-constructed in the 14th-16th centuries. Therefore, it is difficult to identify the original typological characteristics of this type. Some examples are: Profitis Ilias in Lythrodontas (Figure 5.75), Agios Minas and Agios Nikolaos in the Akamas. This type was less fashionable than before for *Byzantine* style churches in this period.

***Multiple-type*[21] monastery churches of Troodos, protected with secondary timber-roofs**

In the late 12th century, a *single-aisled vaulted* chapel dedicated to Agios Ioannis Lampadistis in Kalopanagiotis (Figure 5.9, 5.58) was built attached to the northern side of the *cross-in-square* Agios Irakleidios chapel. Later, in the same period, these two chapels were covered with a secondary timber roof. In the 15th century, a Gothic style chapel was built attached to Lampadistis chapel and the timber roof was re-constructed

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first (5,42x9m) is larger than the second (4,28x7,40m). Their masonry construction of the walls differ; the first was built with squared and the second with roughly squared large limestone. The construction of the first was possibly sponsored by the donor who is represented on the frescoes, while the second was possibly built by locals, with less financial support.

[21] The *multiple* (or *complex)-type* monastery churches; the churches with two to three different chapels in a row, is an important topic which needs further investigation.

to cover all the three chapels.

In the 14th century, the *dome-hall* church of Panagia Araka in Lagoudera (Figure 5.46, 5.59) was protected with a timber roof. The eaves of that roof were extended on all four sides to provide a perimetrical arcade around the church.

In the same period, a *single-aisled vaulted* chapel was built in the north side of the *dome-hall* church of Holy Cross Pelendri church (Figure 5.76a-c), originally built in 1178, and a timber roof was added above them. This roof was reconstructed in the 16th century, in order to include the southern single-aisled vaulted chapel which was built at the time.

The *timber-roofed* type

In the late 13th century, a new church-type was created in the Troodos area, the *timber-roofed* type. Initially, churches in the 13th century had a single-aisled plan: Panagia Moutoulla (Figure 4. 26), Agia Marina in Pedoula (Figure 5.77). Later, in the 14th-15th centuries, *two-aisled timber-roofed* churches appeared, such as the Church of Agia Anna in Kaliana (Figure 5.78). In the 15th-16th centuries three more variations of the type were added, namely: the *three-aisled* type, the *single-aisled with the perimetrical stoa*, and the *single-aisled with a side aisle (or stoa) and a narthex*.

A comparative study of the dimensions of the *single-aisled vaulted* and the *single-aisled timber-roofed* types of the 12th-14th centuries has shown that the width is quite similar but the length of the vaulted types is greater. For example, the dimensions of the vaulted church in Agios Minas in the Akamas are 3,35 x 10,5m, whereas the timber-roofed church of Panagia in Moutoulla measures 3,76 x 6,85m, and Agia Marina in Pedoula 3,20 x 8,35m.

***Post-Byzantine Franco-Byzantine* church types (12th-14th centuries)**

The *Post-Byzantine Franco-Byzantine* style churches possibly started to appear between the 13th and early 14th centuries. Earlier Byzantine style churches were also transformed

into *Franco-Byzantine* style churches in this particular period. The types of the *Franco-Byzantine* style churches are: the *dome-hall*, the *single-aisled* vaulted, the *simple-cross* types, and the *Gothic domed* type with *three* or *four-aisles*. The *Medieval Franco-Byzantine* style churches have mainly adopted the *three or four-aisled basilica* church types. The *New* and the *Byzantine Franco-Byzantine* style churches adopted few features of the *Byzantine* style churches (mentioned above) - not entirely, however, since certain alterations were made.

The main characteristics of the *Franco-Byzantine* style churches of all types in this period (see Chapter 4), and particularly in the 14th century, are: the tall pointed arches and vaults in the interior, the pointed-arch frames in the doorways and the slender proportions of the architectural elements in the churches, their arches, vaults, drums, domes and windows.

It was noticed that, from this period onwards, the plan in most churches tends to become more regular than irregular, and the altar apse has a rather semicircular shape.

The *dome-hall* type

The *dome-hall* type churches of the *Byzantine Franco-Byzantine* style have a similar plan and dimensions to the *Byzantine* style churches, which are approximately 3,5-4m in width and 6,5- 7,5m in length. Some representative examples are the churches of Agia Marina (Figure 5.79) and Agios Epifanios (Figure 5.80), both in Louroukina, Agios Themonianos in Lysi (Figure 5.81) and Agios Georgios in Deryneia (Figure 5.82).

The author, basing herself on the following observations, believes the first three churches were built by a group of builders. Firstly, the first two churches are in the same village and the third is only five miles away. Secondly, all three have almost the same dimensions, width, length and height. Thirdly, they have similar architectural details: domes, drums, windows, tall pointed arches etc. Fourthly, their masonry walls are built of roughly squared limestone, of similar sizes, type and shape. Lastly, their style with the tall interior and slender proportions recalls the proportions of Frankish buildings, which is why the author has classified them as *Franco-Byzantine* style churches.

Stylianou believes that the two *single-aisled* churches of Panagia and Agios Georgios Afentrika in Koutsoventis (Figure 5.51) were built between the 12th-13th centuries and were of the dome-hall type. Both were in a ruined condition before 1974 (current condition is unknown). He dated the churches according to the style of the frescoes in their interior. The earliest of the two is the northern one, Panagia Afentrika (Figure 5.83a-c), (Stylianou 1985:463-7). If Stylianou's assumptions are correct, then these are the first churches of this type and style ever built.

The *single-aisled vaulted* type

In this particular period, the *single-aisled vaulted* type was not particularly popular; or, at least, churches of this type have not survived. The churches of this type date to the 14th and the 15th-16th centuries. The representative churches encountered are: Asprovouniotissa in Frenaros (Figure 5.84), Agios Georgios in Xylofagou (Figure 5.85a-c), Agios Savvas in Karonas (Figure 4.140) and Agios Nikolaos of the Cats.

Asprovouniotissa (14th century) is simple and with few Gothic style influences. Agios Georgios (15th century) and Agios Nikolaos churches have many Gothic style architectural details: rectangular doorways with cymatium-shaped corbels (Figure 5.85), slender proportions in the interior, etc. Agios Savvas was first built in 1120, but it was re-constructed and altered several times in the 13th century, in 1501 and again in 1742. Therefore, it has preserved only few architectural details of the 12th-14th centuries. The common characteristics observed in these churches are: the dimensions (average 4,5 x 10-12m), slender proportions in the interior, the wide pointed-arch vaults or slightly pointed barrel vaults, which are supported by transverse ribs. The ribs end on both sides on brackets, occasionally in a semicircular shape (Asprovouniotissa). This architectural detail was also seen in the vaulted churches of the Byzantine style.

The masonry walls are mainly built of roughly cut and squared stones (Agios Nikolaos Akrotiri, Figure 5.86), with dressed stones for the window-door frames, the decorative features of the wall cornice, the ribs and the quoins. The pointed-arch vaults are expressed as gables with slightly pointed semicircular arches on the eastern and western facades.

The *simple-cross* type

The only church, which has a simple-cross type, is that of the Holy Cross in Kouka (Figure 5.87a-b, 4.48). This church was rebuilt in the 14th century in a *Medieval Franco-Byzantine* style on the foundations of an earlier 12th century Byzantine style monastery church. The church was re-roofed with Gothic style ribbed vaults and cross-vaults, which have replaced the barrel vaults and the dome of the earlier church. The central cross-vault is expressed in the facade as a calotte dome on a square drum.

The *cross-in square with a dome* type

This type was not used during this period in this style for the construction of new churches, apart from re-constructions and conversions. The churches of Chryseleousa in Empa (Figure 5.14, 5.76-5.78) and Chysopolitissa (Figure 5.15) in Paphos were converted, as mentioned above, from the *simple cross* type of Byzantine style into a *cross-in square with a dome,* in Chryseleousa in the 13th -14th centuries, and in Chrysopolitissa in the 14th, and later in the 16th century.

In both churches, compartments were added to the sides of the cross to increase the interior space, but in a different plan. In Empa, three compartments were added (the east-south was not added), and a narthex in a *cross-in-square type with a dome* (the octagonal drum was a 15th century re-construction). In Chrysopolitissa, four compartments were added, but the two western ones are shorter than the western side of the cross.

***Three-aisled* or *four-aisled* types**

Two *Medieval Franco-Byzantine* style churches were built (or re-built) in the 14th century in the Gothic style type, in the centre of two important towns. The first was the Church of Agios Georgios of the Greeks (Figure 4.32, 5.88), which was built around 1360-1370 in Famagusta as a *three-aisled Gothic style basilica*, roofed with ribbed vaults, and possibly having a central dome.

The second was Agios Nikolaos (or Odigitria or Bedestan) in Nicosia (Figure 2.23, 4.111, 5.89), which has a *four-aisled Gothic style* basilica with a large central aisle, a

slightly smaller north aisle and two twin small aisles in the south. These southern twin aisles were built in the 13th century, whereas the central and north aisles were built in the 14th-15th centuries. All the aisles were roofed with ribbed vaults. In the central aisle, in the bay in front of the bema, there is a dome with a cylindrical drum internally and of an octagonal shape externally.

These churches were well designed and carefully constructed with ashlar stones. Their plan followed Gothic designs and principles, and they were designed and constructed with geometrical accuracy. They have copied the proportions and decoration from their contemporary neighbouring Gothic style cathedrals. This may suggest that builders and masons who worked in those cathedrals were afterwards employed in the construction of these two Orthodox churches.

Two more churches, Archangel in Lakatameia (Figure 4.52 4.123) and Panagia Trapeza in Acheritou (Figure 4.51, 4.116), were originally built as dome-hall churches in the 14th century but converted later in the 15th or 16th centuries into two-aisled (Archangel) and three-aisled (Trapeza) churches. Those two, however, had complex plans: a combination of dome-hall Byzantine type plan and ribbed vaulted single-aisled Gothic-type plan.

Frankish period, 14th -15th centuries (1373-1489)

In the 14th -15th centuries, the island suffered from the Genoese occupation, which lasted until 1464. Therefore, construction activity on the island, and particularly in Famagusta, started to decline. In the meantime, the island became a tributary vassal to the Egyptian Sultan when it was invaded and plundered by Mamelukes in 1426. He plundered the Nicosia and Larnaka areas and imprisoned the Cypriot King, Janus.

King Janus's son John II finally inherited the throne and married Helena Paleologina, the daughter of the Despot of Morea[22] and Duke of Sparta in 1442. During the years of her reign (1442-1458), Helena ensured better conditions for the Orthodox Church and the Greek population. She accommodated refugees, artists and builders from

[22]The Despotate of Morea in Mystra since 1348 was very close to the Byzantine throne, and Mystra became an important cultural and political centre (Rodley, 1994: 277).

Constantinople.

The Lusignan era started its decline when the illegitimate son of John II, James II, married the Venetian noble Aikaterini Cornaro in 1472. James's death in 1473 left the island in the hands of Venice. The Venetians officially annexed the island in 1489.

Post-Byzantine Byzantine church-types (14th -15th centuries)

The *dome-hall*, the *single-aisled vaulted* and the *single-aisled timber-roofed* were the most commonly used types in the island in this particular period, while the *cross-in square domed* type was created from the conversion of the *simple-cross domed* type (as mentioned above, with the addition of four compartments on the four sides of the cross). Moreover, a new innovation appeared in this period, the *complex* type. This type was created with the addition of one or more *single-aisled vaulted* chapels, of the Gothic or Byzantine styles, attached to the earlier Byzantine style church. The original church dates mainly to the 12th century and has a *cross-in-square* type, either *dome-hall* or *single-aisled*.

The majority of the churches from this period onwards have a regular, rectangular plan and the altar apse is of a semicircular shape. This suggests that the builders have probably learnt techniques to design the layout on the site.

The *dome-hall* type

The *dome-hall* type was widespread on the island, with around 19 *dome-hall* type churches altogether. Byzantine style churches were built or altered (5 of the 19) during the 14th -15th centuries. Their average dimensions, 4,5 x 7.5m, are slightly larger than in the earlier period. Some representative examples are: Agios Dimitrianos (Figure 4.30) and Agios Georgios in Dali (Figure 4.75), Agios Vasileios in Petra, Agios Georgios Makris in Larnaka (Figure 5.90), Agioi Athanasios and Kyrillos in Menogia (Figure 4.79, 5.91), Agia Marina in Pyrga (Figure 4.62), Agios Georgios in Vasa (Figure 4.84), Agia Anastasia in Polemidia (Figure 4.76, 5.8, 5.92), Agios Antonios in Kato Paphos (Figure 5.93), Agios Georgios in Milia and Kriniotissa in Vasilia.

Their common characteristics are: pointed-arch vaults and arches which are expressed on the facades as triangular or semicircular gables, semicircular domes on cylindrical drums that have four round-headed windows, the masonry walls were built of roughly squared or squared stones. A few exceptions were seen. In Agios Georgios in Vasa, the north and south facades have no gables. These were removed and the walls were reconstructed (as mentioned above). According to Papageorgiou, the same happened in Panagia Kantou (Figure 4.185) and Agios Georgios in Choulou (Figure 5.2) (Papageorgiou: 1990:192).

Panagia Galoktisti in Pomos has preserved 14th century frescoes, and was dated to that period (Ieronimidou, 2000: 203); however, its style resembles that of 12th century churches. If this church indeed dates to the 14th century, then it is a unique example; it has a calotte dome, a narrow, irregular rectangular plan and rubble masonry wall (Figure 4.72, 5.94).

The *single-aisled vaulted* type

This type was widely used for monastery and parish churches, and chapels all over the island. Around 9 single-aisled vaulted type churches have survived which were built in this period. However, some (5) were later partly re-constructed and their vault was replaced. Their dimensions vary between small churches, (Agios Sergios in Kissousa) and large churches (Agios Minas in Vavla). Some examples are: Profitis Elias in Lythrodontas, Agios Minas in Vavla, Agios Thomas in Lefkara (Figure 5.95), Agios Minas in Neo Chorio, Agios Georgios Angonos in Ormideia (Figure 4.82), Ambelikiotissa in Kapileio (Figure 4.78), Agios Sergios in Kisoussa (Figure 5.96).

Their common characteristics are the tall pointed-arch vaults, their slender interior proportions, the transverse ribs, which start from the spring of the vault and are based on brackets, and the roughly squared (or rubble) masonry.

The *single-aisled timber-roofed* type of Troodos

The *single-aisled timber-roofed* churches (6) of this period mainly date from the middle to the end of the 15th century. Some of them are: Panagia Skouriotissa (Figure 4.67,

5.97), Archangel in Pedoula (Figure 2.29, 4.62, 5.98), Agios Mamas in Louvaras (Figure 4.61, 5.99), and Holy Cross in Agiasmati (Figure 4.63, 4.168, 5.100). The Holy Cross in Agiasmati was built as a single-aisled church with a perimetrical, covered arcade, as the presentation of the 15th century frescoes show. In the Pedoula church, a side southern external arcade was added at a later date.

The Agia Anna church in Kaliana (Figure 5.78) was originally built in the 12th century, but was converted into a *two-aisled timber-roofed* church in the 14th-15th century. This was probably the first attempt to create a second aisle through the addition of timber posts, which gradually led to the creation in the 16th century of the *three-aisled timber-roofed* church.

The *double-roofed* churches of Troodos

In the 14th-15th centuries, two *dome-hall* monastery churches of Troodos were protected with a second, timber roof, Araka in Lagoudera (Figure 2.79, 4.5, 5.46, 5.59) (dome on a drum) and Agia Mavri in Koilani (Figure 4.71, 5.101) (calotte drumless dome). Two other monastery churches of Troodos were extended through the addition of pointed-arch vaulted chapels, and subsequently protected with a timber roof. These are: Lampadistis in Kalopanagiotis (Figure 5.9, 5.58) and Holy Cross of Pelendri (Figure 5.76). In Kalopanagiotis, the vaulted chapels were added in the 12th and 15th centuries, both on the northern side, whereas in Holy Cross the chapels were probably added, in the north in the 14th and the south in the 16th centuries.

The *cross-in-square* domed type

The only *cross-in-square* type that was actually built in this period is the eastern part of Agia Anastasia Church in Polemidia (Figure 5.8, 5.92). The original church, which dates to the 12th century, was *a cross-in-square with a dome* type Byzantine church with tall semicircular arches. In the 14th century, another *cross-in square with dome* type nave was built in the east, above the 12th century altar apse, with pointed-arch vaults. The original church was re-used as a narthex. At a later date, the southern part of the whole church was destroyed, and only the central and the northern aisles have survived.

The *complex* type[23]

This type refers to the churches that have been altered after side chapels were added by being attached to them. This 'innovation' was fashionable in the 14th century, although, it was introduced earlier. The first examples we encountered are the two sets of the twin churches, Panagia and Agios Georgios Afentrika (Figure 5.3), and Katholikon and Agia Trias (Figure 5.32, 5.40), both in Koutsoventis, which originate in the 12th-13th centuries. However, the Afentrika churches were used as separate chapels; they do not have an internal door between them.

The second example is the Church of Kalopanagiotis, in which the first additional chapel was added in the 12th century, and the second in the 15th century. Then, in Holy Cross of Pelendri, the first chapel was added in the 14th and the second in the 16th century. Both these *complex*-type churches were protected later with a timber roof. All the above four examples were additional *Byzantine* style chapels with pointed-arch vaults, except the *Gothic* style Latin chapel in Kalopanagiotis.

Latin chapels were also added to *Byzantine* style churches from the 14th century onwards. The first example is the Gothic ribbed vaulted chapel of Holy Cross in Tochni (Figure 4.46, 4.104). According to Enlart, this chapel, which was built attached to a Byzantine church possibly around 1360-70, was demolished before Enlart visited it in the 19th century (Enlart, 1889: 340).

In the visits to the churches the author recorded another Gothic style vaulted chapel, which was built attached to the dome-hall church of Agios Georgios in Frenaros (Figure 5.13, 5.102). The *Franco-Byzantine* style church has survived, but the chapel was destroyed at a later date.

In Angeloktisti Church in Kiti a Gothic chapel with ribbed vaults (Figure 4.58, 5.37 5.103) was added on the south side around 1400, whereas in Chrysaliniotissa in Nicosia (Figure 5.10, 5.104) two south side chapels and a narthex were added in the 15th and 16th centuries.

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[23]The complex type is an interesting topic for further investigation.

The most interesting of all is Panagia in Prastio Avdimou, a church that needs further study and investigation. The church has: a) a tiny single-aisled rectangular domed chapel in the south, dating to the 12th century (Figure 4.59, 5.12, 5.105a), b) a round-plan domed chapel in the north (like a baptistirium) dating to the 14th century (Figure 5.105b), and c) a single-aisled large cross-vaulted church in the centre which was probably built in the 18th (or partly in the 16th and partly in the 18th centuries). The church has 18th-19th century architectural details in the central church and in the doorway entrance of the south chapel.

The Cave type

The cave chapels of Agios Sozomenos (Figure 5.65) in Agios Sozomenos village and Chrysaliniotissa cave in Deftera have 14th century frescoes in their interior. Both have an irregular plan and are hewn in the rock.

Narthex of the 14th-15th centuries

In this period, as mentioned above, a narthex was added to many 12th century churches: a *dome-hall* narthex (Agia Marina in Deryneia, Kanakaria, Figure 5.5) a *dome-hall narthex with a drumless calotte dome* (Agios Georgios Angonos in Ormideia), and a *cross-type narthex with a dome* (Chryseleousa in Empa).

In the polygonal *dome-hall* churches, Apsithiotissa (hexagonal) in Antifonitis (octagonal), Frankish Gothic style vaulted narthexes were added in the Frankish period, in the 14th-15th centuries. Both narthexes have a rectangular shape; in Apsithiotissa the narthex[24] (Figure 5.31) has apsidal ends and ribbed-vaults, whereas the narthex in Antifonitis (Figure 5.34) is roofed with a tall Gothic pointed-arch vault, with transverse ribs. According to Williams'[25] plan, the cathedral church of Agios Chrysostomos in Koutsoventis (Figure 5.32) had also a rectangular plan with apsidal ends and cross-vault roofing, which suggest that it was built in the Frankish period of 14th -15th centuries.

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[24]According to Papageorgiou this narthex was reconstructed on the ruins of the 12th century narthex (Papageorgiou, 1988:443).

[25]The plan was published by Jeffery in 1932. He explained that W. William who was a District Engineer had drawn the plan of the church before its demolition in 1900 (Jeffery, 1932: 5).

In Agia Anastasia in Polemidia (Figure 5.8, 5.92), the *cross-in-square with dome* original church, which was built in the 12th century, whereas the *cross-in-square with dome* eastern part of the church was built in the 14th century, as an extension to the church.

Archangel Church in Frenaros (Figure 5.39) was originally built as a *dome-hall* church in the 12th century. A *dom-hall narthex* was added in the 14th century. A second narthex with a calotte dome and squat proportions was added later, possibly in the 18th century.

Post-Byzantine Franco-Byzantine church types (14th-15th centuries)

The most common types of *Franco-Byzantine* style churches were the *dome-hall* and the *single-aisled vaulted* ones. Other types are the *cross-in square*, which was the result of a converted *simple-cross domed* type, the *two-aisled* type, the *three-aisled* type, and the *simple cross-domed* type.

It was observed that the *dome-hall* and the *single-aisled vaulted* types of the three *Franco-Byzantine* styles, the *Byzantine*, *Medieval* and the *New*, sometimes have different characteristics. In addition, a development was observed in the construction of the *dome-hall* churches from the 14th to the 15th centuries, which was expressed on the facades. The characteristics and the innovations will be studied and discussed in the process.

The *dome-hall* type

The *dome-hall* type churches of the *Byzantine Franco-Byzantine* style have a plan similar to those of the *Byzantine* style, and slightly larger dimensions. Their proportions, however, are slender and they are characterised by many architectural details of the *Franco-Byzantine* style, such as pointed-arch vaults and arches, and pointed-arch doorway frames. In the churches of the 14th century, the pointed-arch vaults are expressed in the facades with pointed gables, such as in the churches: Agios Epifanios and Agia Marina in Louroukina (Figure 5.78-9), Agios Georgios in Frenaros, (Figure

5.102). In the 15th century churches, the pointed arches are sometimes visible on the facades, as mentioned above (Holy Cross in Anogyra, Figure 5.106).

In a few *dome-hall* churches, it was noticed that later interventions had altered the original facades. For example, in Holy Cross in Anogyra, the north and south facades (Figure 4.42) were transformed into a rectangular oblong shape which has a central pointed-arch gable expressing the pointed arches, whereas in Agios Georgios in Deryneia (Figure 5.82), the facades have an oblong rectangular shape, the drum of the dome has a square base, and the altar apse has a polygonal external shape. These construction details imitated the *single-aisled domed* type churches that were introduced in the next period, in the 15th-16th centuries. The author believes Agios Georgios was transformed into a *Byzantine Franco-Byzantine* style church in this later period.

Two *New Franco-Byzantine* style churches of the *dome-hall* type, Agios Andronikos in Liopetri (Figure 4.43, 5.107) and Agia Zoni in Famagusta (Figure 4.44), differ from the other *dome-hall* churches of this period. These two have rather squat proportions, large and tall drums, triangular-shaped gables in the three sides, and a rather square plan. They also differ, however, in the type of drum: Agios Andronikos has an octagonal[26] dome- drum with eight windows, and Agia Zoni has a cylindrical drum with four windows.

The *single-aisled vaulted* type

The *Franco-Byzantine* style *single-aisled vaulted* churches of the 14th century have dimensions similar to the *Byzantine* style churches; however, they differ in their characteristics. The *Franco-Byzantine* style churches have Gothic style architectural details: pointed-arch vaults, pointed-arch doorways, and often the masonry walls were built of squared stone (roughly or well cut). Some representative examples are: Agios Georgios in Archimandrita, Agios Nakos in Rizokarpaso, Agios Mnason in Potamiou.

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[26]The external octagonal shape of the drum is an architectural detail which was introduced in the Franco-Byzantine style churches in the late 14th or 15th century onwards. Its origins have not been investigated yet. The octagonal shape had already been used in Greece in the Athenian style in the 12th century. In Cyprus, the octagonal shape appeared in the 15th century. In Cyprus, the first example is probably Agios Nikolaos of Bedestan in Nicosia.

Towards the end of the 15th century the churches became larger[27], longer, wider and taller. Representative examples are the churches of Agia Marina in Mari (Figure 2.53, 4.87) and Panagia Melandrina in Kalograia (Figure 4.53). Agia Marina is a *Byzantine Franco-Byzantine* style church and was built of roughly squared stones. It is currently in a ruined state. Melandrina is a large church of squat proportions. It had a large pointed-arch vault supported by large flying buttresses in the south and north walls. It was built of roughly squared and dressed stone.

The *Medieval Franco-Byzantine* style Latin chapel of Agia Aikaterini in Pyrga (Figure 2.61, 4.45) is small in size. It was built with rubble masonry walls and ashlar stone in the doorway frames, the transverse ribs and quoins. Unlike the other churches, this has rather slender proportions and its plan resembles the vaulted churches of the Byzantine style. This church, however, has no altar apse. It has three large pointed-arch frame windows in the east (the central one is placed higher than the side windows), instead.

The *single-aisled with ribbed/ groined vaults* type

The *Medieval Franco-Byzantine* style Latin chapel of Holy Cross in Tochni (Figure 4.46, 4.104) has a single-aisled plan and was roofed with ribbed or groined vaults. Its masonry walls were constructed with rubble stone, as in Pyrga Church, and the frames with dressed stone.

The *cross-in-square domed* type as a result of a converted *simple-cross domed* type

Two Byzantine style churches of earlier periods were converted from their *simple-cross domed* type into *cross-in square* type with the addition of four compartments on the four sides of the cross. The additional structures and the alterations also caused the transition of these churches from the *Byzantine* style to the *Franco-Byzantine* style.

The first is the Church of Agios Efstathios in Kolossi (Figure 5.26, 5.72), which was originally built in the 12th century. In the 15th century, four pointed-arch vaulted compartments were added on the four sides of the cross. The vaults were expressed in

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[27]The comparative study of the size was approximate, since accurate dimensions are not available. The author believes that the 14th century churches have average dimensions 5x7m and 6m height, and the 15th century churches have dimensions 6x12m and 9m height.

the west facade with triangular gables. The second is Chrysopolitissa in Kato Paphos (Figure 5.15, 5.73). As mentioned earlier, it was altered several times until its later re-construction and conversion in 1500. The third, Chyseleousa in Empa (Figure 5.14, 5.71), was transformed into a *cross-in square* type, and a domed narthex was also added.

The *two-aisled* type

Six churches were built or converted in this period into *two-aisled* type churches, and each one will be studied separately. First, the *two-aisled* churches with a dome-hall and a vaulted aisle will be described.

Panagia in Trikomo (Figure 5.48, 4.34) was initially built in the 12th century as a Byzantine style *dome-hall* type church. A slightly pointed barrel vaulted aisle was inserted in the 15th century in the north side. The church was transformed into one of the *Byzantine Franco-Byzantine* style.

Agios Georgios Regatos (Figure 2.18, 4.49) was initially built as a Byzantine style *dome-hall* church in the 10th-11th centuries. In the 15th century, a vaulted aisle was added in the north and in the 17th-18th centuries the church was again altered. Barsky has recorded the church's condition in the 18th century in his engraving (Figure 2.18). Muslim fanatics demolished the church in 1974.

Archangel in Lakatameia (Figure 2.15, 4.52, 4.123), as mentioned earlier, was also gradually transformed into the *two-aisled* type from the 14th to the 17th centuries, with a *dome-hall* aisle, a vaulted aisle and a narthex.

Panagia Avgasida in Milia (Figure 5.108, 4.50) was built in the 14th-15th centuries as a two-aisled church with a *single-aisle with dome* in the south, and a pointed-arch vaulted aisle in the north. The two aisles were divided by a Gothic style arcade. Two altar apses were built in the east; the southern has a semicircular shape, whereas the northern has a semicircular stilted shape. The church was built of roughly squared limestone. The dome was based on a cylindrical drum with four windows. This drum has squat proportions and it resembles those in the Church of Agia Paraskevi in Geroskipou. Muslim fanatics

demolished this unique and interesting church in 1974.

The two monastery churches, Archangel and Avgasida, were classified as *New Franco-Byzantine* style churches, because of their Gothic style architectural details, whereas Agios Georgios was classified as *Medieval Franco-Byzantine* style church.

Agios Filonas Church in Agridia (Figure 5.57) was originally built between the 6th-8th centuries as a *single-aisled vaulted* church (6,2 x 6,8m). It was reconstructed in the 12th century as a barrel vaulted church with two transverse ribs supported by piers attached on the side walls. In the 15th century, a second vaulted chapel, of similar dimensions but with no transverse ribs, was added in the south and a vaulted narthex in the west. The church was classified as being of *the New Franco-Byzantine* style because it has Gothic style architectural details: pointed-arch vaults and squared stone for the masonry.

Agios Nikolaos in Syngrasi was a *two-aisled* type church with Gothic architectural details, and was classified as a *New Franco-Byzantine* style church. It was in a ruined state in 1974, and its original plan and roofing type is unknown.

The *three-aisled* type and the *simple-cross* type

The *three-aisled* type was only represented by the *Medieval Franco-Byzantine* style Church of Agios Georgios of the Greeks in Famagusta (Figure 5.88). Similarly, the only *simple-cross* type church is Holy Cross in Kouka (Figure 5.16, 5.87), which was roofed with a cross and ribbed vaults in the 15th century. Both churches were described above.

The Church of Panagia Acheritou in Trapeza[28] (Figure 4.61, 4.116), which was classified as *a New Franco-Byzantine* style, was originally built in the *dome-hall* type in the 14th century and altered in the 15th or 16th century as a *three-aisled type with two domes*. The church has three naves, and each one has three bays. Their western bays are roofed with barrel vaults. The central aisle ends in a semicircular apse in the east which has a polygonal external shape. The central nave has two semicircular domes on

[28]Panagia Trapeza is an extraordinary church which contains all the characteristics of the Franco-Byzantine style. Unfortunately, it was not visited by the author, since it is located in the Turkish occupied area. The church should be investigated further in the future.

octagonal shape drums; the eastern is taller than the western. The southern nave is roofed with groined vaults. The masonry walls were constructed of large squared limestone in the naves and smaller squared limestone for the drums. According to Enlart, the interior is decorated with French Gothic style architectural details: 14th century French style toruses and grooves on the arcades and pillars, cruciform pillars, pointed-arch doorways with hood-mouldings and jambs with mouldings, rectangular frames with corbels, etc. He also observed masons' marks on the stone-work. Enlart believes that the church '*was partially rebuilt on successive occasions some time in the 15th century by masons who had been trained in Famagusta in the practices of French Gothic art*' (Enlart, 1899: 316-7).

The *four-aisled* type

Agios Nikolaos or Bedestan Church in Nicosia (Figure 5.89) was extended from a *two-aisled* Gothic basilica to a *four-aisled* Gothic basilica in the 14th-15th centuries, with the addition of the central and north aisles. A dome was built in the central aisle which has a drum with an octagonal external shape. According to Enlart, the church was used by Latins and Orthodox; it may have been also built by Orthodox and Latin builders, since it contains a '*remarkable patchwork*', a blend of Byzantine and Gothic architecture (Enlart, 1899: 139).

The most common characteristics of the 14th-15th centuries

The main characteristics of the *Franco-Byzantine* style churches in the 14th-15th centuries are: the tall pointed-arch vaults and arches, the tall interiors with the slender proportions and the wide use of squared and dressed stones. The dimensions of the churches are larger than those of the earlier period.

Venetian Period, 15th-16th centuries (1489-1571)

The Venetians' main concern, after they took possession of Cyprus, was to extract wealth from the island. They tried to safeguard its military strategic use, in order to face the Ottoman threat. They exploited the rural population through the use of forced labour so as to strengthen the fortresses of Keryneia and rebuild the walls of Nicosia and

Famagusta, according to their military designs. They held the island until the Ottomans conquered it in 1571.

Post-Byzantine Byzantine church-types (15th-16th centuries)

In the 15th-16th centuries, the same church-types were adopted as in the previous period, but with different characteristics and significant innovations. There was a considerable development in the *timber-roofed* churches with the introduction of the *three-aisled timber- roofed* type, and the perimetrical stoa in some *single-aisled timber- roofed* churches.

The *single-aisled timber-roofed* type

During this period, at least 40 churches of the *single-aisled timber-roofed* type were built. A number of those were later partially altered: a narthex was added in the west, a side arcade was added north or south, a perimetrical arcade, a two-sided or a three-sided arcade. In other cases, the original *single-aisled* plan was transformed into a *three-aisled* plan. Those alterations aimed at the enlargement of the interior space of the churches and took place either immediately after the church was built, or within a few decades, in the 15th-16th centuries or later in the Ottoman period (1571-1878). It was observed on the visits to the churches, that several timber roofs were re-constructed around 1718 (Agia Varvara in Korakou) at the same time that other timber-roofed churches were built in the same area (Agios Mamas in Korakou dating to the 18th century). Reconstructions of the churches have been undertaken after disasters (fires) took place in recent years in some churches such as in Panagia Akapnou (Figure 2.42), Agioi Anargyroi in Foini (Figure 2.43), and Holy Cross in Paliomylos.

The dimensions of the *single-aisled timber-roofed* churches vary. The smallest church, Panagia in Kaminaria (Figure 5.109), measures 2,78 x 5,51m (width-length) and 2,22m in height at the side walls. The largest church, Agios Epifanios in Doros (Figure 5.110), measures 420 x 21,05m and 2,75m height at the side walls. All the churches were built of rubble masonry. Two churches were built of mudbricks on a rubble masonry base, Archangel Vyzakia (Figure 4.170, 5.111) and Archangel in Galata (Figure 4.171, 5.112).

A third church, Agios Nikolaos in Galata (Figure 5.113) was built of mudbricks and rubble-masonry. The walls were rendered with clay-mortar.

Their timber roof has a two-part double structure. The internal part is the main structure, and is built with a central ridge-beam, four wall plates on each side, tie-beams, rafters, and boards above the rafters. The external part supports the hook-tiles, and is supported by the main structure through the introduction of secondary rafters and secondary purlins where the hook-tiles are based.

Debate over a recently excavated *single-aisled timber-roofed* church

The recently excavated (2000) single-aisled Church of Panagia in Elikon in Tsakistra (Figure 5.114) dates to the 16th century. According to Filotheou, the church had a timber roof, since hooked-tiles and nails lay unburied on the site. Papageorgiou, however, believes that the church had a vaulted roof (Filotheou, 2000: 388).

The church measures 4,2 x 8,6m (width, length) and has two sets of piers on the north-south sides, as in the vaulted churches. Filotheou pointed out that the two eastern piers may have been used to support the iconostasis, as in the Church of Panagia Moutoulla (Figure 4.26), and the western piers probably indicate the existence of a narthex. Another detail that he mentioned is the remnants of frescoes on the external western wall (Filotheou, 2000: 388-9). In his plan, however, it is obvious that the two piers had equal dimensions (width, depth), and from his photographs it can be seen that the church floor was entirely covered with handmade ceramic tiles, and there is no indication on the floor that the two western piers were part of a narthex wall. He does not however, mention any joint on the external facades of the side walls, which may support his assumption concerning the additional narthex.

The author (of this thesis) has compared the dimensions and the plan of Elikon Church with the churches of Asinou in Nikitari, Panagia Moutoulla, Agios Mamas in Louvaras, Araka in Lagoudera. The original church of Asinou, before the narthex was added, had exactly the same dimensions as Elikon Church; 4,2 x 8,5m. Moutoulla Church measures 3,80 x 6,85m and Louvaras Church measures 2,73 x 6,28m, before the narthex was

added. The author has sketched a scenario for this church. She believes that both scholars are correct, and that Elikon Church was probably built originally as a vaulted church, like Asinou[29]. At a later date, an external, two-sided arcade was added on the north and west sides (where the frescoes were unburied). Probably, at the same time, a second timber roof was added to protect the church and the arcade. Therefore, this church may have been a double-roofed church. However, her assumptions are only based on the descriptions, photos and plans of the above scholars, and further investigation is needed.

Single-aisled, timber-roofed **churches with extended narthex, perimetrical stoa, side-aisle**

A narthex was added in a number of *single-aisled timber-roofed* churches (around 15), after they were built some in the same century and some much later. The narthex had two types, either in the form of an extension on the western side or as an additional room on the western side. The first type was seen in the churches of Agia Christina in Askas (Figure 5.115), Agioi Anargyroi in Palaichori, Agios Konstantinos in Saranti (Figure 5.116), Panagia in Agios Theodoros Agrou (Figure 5.117), Agios Nikolaos in Pera Pedi (Figure 5.118) etc. In the last two churches, Panagia and Agios Nikolaos, above the narthex, a *gynaiconitis* (a space only for women and children) was created. The second type was seen in the churches of Agios Mamas in Louvaras (Figure 5.99), Agios Andronikos in Kalopanagiotis, Agios Vasileios in Kaminaria (Figure 5.119), Agios Georgios in Galata (Figure 5.120), etc.

A side arcade including a narthex was seen in the churches of Agios Theodoros in Lemithou (Figure 5.121), Sotiros in Palaichori (Figure 5.122) and Archangel in Pedoula. A perimetrical external arcade on three sides was seen in Agios Sozomenos in Galata (Figure 5.123), and Holy Cross Agiasmati in Platanistassa (Figure 5.100). A perimetrical arcade, enclosed on three sides, was seen in Podythou (Figure 5.124).

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[29]The author also noticed that the four piers, in Elikon and Asinou churches, were positioned to form a square; a construction detail which is only seen in the dome-hall churches (i.e. Araka Lagoudera). It is possible that these piers supported a central dome. In Asinou, we definitely know that this was not the case, since we have evidence from the presentations of the church on the frescoes. However, the transverse arches that support the vault and the frescoes of the vault are dated in the 14th-15th centuries. In Elikon, it is difficult to find out because the walls have survived only up to one metre height.

A side-aisle was added in some churches, as in Agios Mamas in Moutoulla. A side - aisle, which is smaller than the church, was built in the churches of Agios Kyriakos in Evrychou and Agia Paraskevi in Galata (Figure 5.125). A side-aisle, smaller than that of the original, was added in the church of Holy Cross in Kyperounta (Figure 5.126). A side-aisle and a narthex were added in the churches of Agioi Anargyroi in Palaichori (Figure 5.127) and Holy Cross Church in Paliomylos. In the last church, the main structure of the western part of the timber roof was reconstructed and altered in the 18th century.

Single-aisled churches were converted into three-aisled churches: Prodromos and Holy Cross, both churches in Askas, Iamatiki in Arakapa, and Chrysokourdaliotissa[30]in Kourdali (Figure 5.128). Iamatiki Church was converted in 1500, and Chrysokourdaliotissa, probably shortly after the original church was constructed.

The *three-aisled timber- roofed* type

Panagia Katholiki Church in Pelendri (Figure 4.159, 5.129) was built originally as a *three-aisled* church. Timber posts separate the three aisles. Chrysopantanassa Church in Palaichori (Figure 4.161) is also a *three-aisled* church, and was probably built as such. The aisles are separated by pointed arcades on large piers. Panagia Iamatiki in Arakapa Church (Figure 4.164) was reshaped in 1500 as a *three-aisled* church, with the addition of a U-shaped arcade with pointed arches on columns, with Doric style capitals. All the above *three-aisled timber-roofed* churches were built or re-built in the 16th century.

The altar- apse types in *timber-roofed* churches

All the *timber-roofed* churches, despite the number of their aisles, have only one altar-apse (unlike the churches of other types which may have one altar apse per aisle[31]). The author encountered seven different types of shapes in the altar-apses of timber-roofed

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[30]Papageorgiou believes that this church was originally built as a three -aisled church. The author believes differently, for two reasons; a) this church is presented on the frescoes in the interior as a single-aisled church and b) the iconostasis is not extended to include the altar in the side aisles as in the church of Katholiki in Pelendri.

[31]For example, Agios Nikolaos or Bedestan church in Nicosia has four aisles and four altar apses; two altar apse for the central and northern aisles and two smaller apses (in the type of a conch) in the two southern aisles.

churches[32]; the semicircular[33] apse, the semicircular stilted[34] apse, the semicircular stilted apse of irregular shape[35], asymmetrical semicircular[36] shape of the apse, the semicircular shape with broadened edges[37], the polygonal altar apse[38], and the calotte[39]-shaped altar apse.

It was observed that almost all the types of altar apses were built throughout the 13th-16th centuries, except the calotte-shaped one, which was observed in a few churches in Galata. Those churches date to around 1513-4 and to the 16th century and are mainly built of mudbricks. This topic needs further investigation because not all the plans of the *timber-roofed* churches were considered for the purposes of this study; several churches were not visited or their apses were not recorded during the visits.

The *double-roofed* churches

The *double-roofed* churches of the previous period were again altered in this one. In Lampadistis Church in Kalopanagiotis (Figure 5.9), Latin Gothic style chapel was added in the north side in the 15th century. A Latin chapel was also added on the south side of the Church of the Holy Cross in Pelendri (Figure 5.76). Additions were also made in Agia Mavri in Koilani (narthex) and in Panagia Amasgou (reconstructed vault, Figure 4.156, 5.55), and their timber roofs were reconstructed.

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[32]Some of the plans of these churches were borrowed by Fereos' unpublished PhD.

[33] The semicircular altar apse was seen in the churches; Agios Georgios Kakopetria, Agia Barbara Korakou, Panagia Akapnou, Agia Christina Askas, Panagia Kakopetria, Agios Constantinos Saranti, Agios Mamas Moutoulla, Agios Theodoros Lemithou, Panagia Podythou Galata, Agios Kyriakos Evrychou, and in Trikoukkia.

[34]The semicircular stilted altar apse was seen in the churches; Agia Marina Pedoula, Panagia Moutoulla (1280), Archangel Pedoula, Sotiros Palaichori, Agios Ermolaos and Agios Vasileios both in Kaminaria, Holy Cross Agiasmati Platanistassa, Holy Cross Agia Irene, Agios Nikolaos Klonari, Archangel Vyzakia and Panagia in Agios Theodoros Agrou. In the last church the apse has a slightly horseshoe shape.

[35]This type was seen in Panagia Kaminaria.

[36]The asymmetrical semicircular shape was in the churches; Panagia Skouriotissa, Agios Mamas Louvaras and Agioi Anargyroi Palaichori.

[37]This type was seen in the churches; Agios Nikolaos Tsakistra and Agia Anna Kaliana. The apse in Agia Anna belongs to a 12th century church.

[38]The only church with a polygonal, actually pentagonal, altar apse is Holy Cross in Kyperounta.

[39]The altar apse with calotte shape was seen in the churches in Galata; Agios Georgios (16th), Agia Paraskevi (1513), Agios Nikolaos (16th), Archangel (1514), and in the church of Archangel in Pedoula (1474).

The *complex*-type churches

In the 16th century, structures in the Gothic style were added in *Byzantine* style churches, converting their types. The most common was the addition of a pointed-arch vaulted chapel attached to a *dome-hall* church such as in Panagia in Kivisili (Figure 4.154, 5.11). A vaulted chapel and a narthex were added in the Church Agios Sergios and Vachos in Agios Sergios and Vachos village (Figure 4.153). A narthex and two vaulted aisles were added in Chrysaliniotissa Church in Nicosia (Figure 5.10, 5.104). An external Gothic style narthex was inserted in Achiropoiitos Church in Karavas (Figure 5.7, 5.62).

The *single-aisled* vaulted type

The *single-aisled* vaulted type was commonly used in this period. At least 22 churches of this type, which were built or rebuilt in this period, have survived. The average dimensions of these churches were 4 x 6m and 5 x 7m. Three plan-types were found: the first was the small rectangular plan with blind arcades on the side walls and sometimes with no transverse ribs, which originates in the 12th century. This type was mainly seen in churches of this earlier period that were reconstructed in the 15th-16th centuries. A representative example is Agios Konstantinos in Kouklia (Figure 5.130). The second type of church, dating to the 16th century, had pointed blind arches and transverse ribs, such as Chryseleousa in Akourdalia (Figure 5.131), and Agia Marina Mirminkofou (Figure 4.182). The third type of church has no blind arches, but has at least two transverse ribs, such as the churches of Agios Vasileios (Figure 5.132) and Agia Marina in Xylotymvou (Figure 5.133). All these churches were built mainly of roughly squared stone for the masonry walls, and squared stones in the ribs and the simple pointed-arch frames. The vault has a wide tall pointed-arch shape. The transverse ribs are based on brackets of cymatium shape.

The *dome-hall* type

Three *dome-hall* churches of the Byzantine style built in this period have survived: Agios Mamas in Alaminos, Agios Ioannis Theologos in Erimi (Figure 2.69, 4.184), and

Agios Georgios in Vasa (Figure 4.84). Another five churches of this type were built in an earlier period and were altered at that time: Agios Kyrillos in Menogia (Figure 5.91), Panagia in Kofinou (Figure 5.42), Panagia in Choirokoitia (Figure 5.43), Agia Napa in Kantou (Figure 4.185), and Chortakiotissa in Sotira (Figure 5.44). The Church of Panagia in Kampyli[40] (Figure 4.25) has a 12th century dome and 16th century pointed arches; its original date has not yet been ascertained.

The Byzantine style *dome-hall* type churches of this period have an average size (width, length) 5,5 x 7m (i.e. Agios Mamas in Alaminos) and are approximately 8m in height, which does not differ considerably from that of the churches of the previous period; 4,5 x 7,5 m (i.e. Agios Kyrillos in Menogia). The churches' plan and construction details are also similar, with blind arches on the side walls, and support of the drum on pendentives in the four corners.

The *Cross-in-square with dome* and the *simple-cross with dome* types

Those two types were not popular in this period. However, earlier churches of these types were partly reconstructed during this period. Further reconstructions took place on the side walls in Agios Antonios Church in Kellia (Figure 4.2, 5.21). In addition, the dome of this *cross-in-square type* church was replaced with a barrel vault creating the only *cross-in square with vault* type church in Cyprus, a type which was adopted in Greece in the period 1204-1453 (Bouras, 1984: 237).

According to Stylianou, the upper structure of the *cross-in-square with dome* Church of Agioi Kirikou and Ioulitis in Letymvou (Figure 5.68, 5.134) was reconstructed in the 16th century. At the same time, the central dome[41] was transformed: a calotte dome internally and a tall drum externally (Stylianou, 1977: 1231). The ruined church of Panagia in Letymvou, which dates to the 16th century, has currently a *simple-cross* plan. However, unless a detailed investigation is carried out, it is difficult to identify its original type.

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[40]The church is located in the Turkish occupied area. According to Papageorgiou, it was inaccessible to the Greeks since 1963, since it is located in a Turkish territory.

[41]This dome was reconstructed after it was damaged by the 1950's destructive earthquakes.

The *simple-cross with dome* type church of Chryseleousa in Chloraka (Figure 5.70) was dated by Stylianou to the 13th century, who based himself on the type of its masonry, which is large, roughly cut limestone (Stylianou, 1997: 1232). The church has 16th century architectural Gothic features: the doorway mouldings on the north doorway, which was later blocked and the pointed shape on the windows of the dome-drum, a feature which was also seen in 16th century domes in Kanakaria and in domes of the *Franco-Byzantine* churches Teratsiotis in Avgorou and Agios Mamas in Sotira. The squat proportions and the wide, slightly pointed arched vaults are characteristics that are found in 14th century churches. The author believes that this church was probably constructed in the 14th century and some architectural features were added in the 16th century; however, we can not exclude the possibility that it may have been constructed in the 16th century by local builders, until further investigation proves otherwise.

Post-Byzantine Franco-Byzantine church types (15th-16th centuries)

The majority of *Franco-Byzantine* style churches were built in the 15th-16th centuries and considerable developments and innovations took place in the church-types, particularly of the *New Franco-Byzantine* style churches. Two new types were introduced: *single-aisled with dome* and *three-aisled with dome.*

The *single-aisled with dome* type is a variation of the *dome-hall* type. This new type has a rectangular plan with no blind arches on the side walls and an improved construction method for supporting the central dome. The *three-aisled with dome* type was also a variation of two earlier types: the *three-aisled vaulted basilica* or the *cross-in square with a dome*. This type had also been influenced by the churches of Agios Georgios of the Greeks in Famagusta (Figure 5.88) and Agios Nikolaos (Bedestan) in Nicosia (Figure 5.89).

The *dome-hall* type

It was noticed that most of the *dome-hall* churches that were built or altered in this period have similar characteristics, such as squat proportions, semicircular gables, octagonal external shape of the drum of the dome with 4 or 8 windows, and squared

stone for the masonry walls. Representative churches are Sotiros in Sotira (Figure 5.135), Panagia Chryseleousa in Lysos (Figure 4.55), Agia Sofia in Paphos (Figure 4.54) and Chysopolitissa in Paphos (Figure 4.56, 5.15, 5.73). A few churches differ, however, such as the Church of Panagia in Liopetri (Figure 4.89), which has triangular gables and its cylindrical drum of the dome, with no windows. Agios Andronikos church in Liopetri (Figure 5.107) has pointed triangular gables, and *Franco-Byzantine* style architectural details: windows and doorways with pointed-arch frames etc.

All these churches, despite the differences in their architectural details and their dimensions, have a similar plan. The drum of the dome is supported through the pendentives on four arches. Those arches are based on four piers, which are attached to the side walls. This central part of the church has a square shape. The whole church however, may have an oblong, rectangular plan, which is extended either on the west (Liopetri), or the east, or on both sides (Sotiros).

The *single-aisled with dome* type

A new dome-hall type was introduced in this period, which the author has named *the single-aisled with dome* type. This innovation concerns the structural support of the dome. The arches that were created to support the drum and the dome were built, in this period, within the thickness of the side walls, north and south. Therefore, the side piers were no longer needed, and the arches start from the same point with the spring of the pointed-arch vaults, east and west. Again four pendentives in the corners support the drum. This new structural innovation was expressed in the south and north facades. The facades have a rectangular shape with no gables. The drum of the dome is based on a square. This square is based on the side walls, north and south, and on the vaults, east and west. Representative churches are: Panagia Sinti in Pentalia (Figure 5.136), Agios Evlalios in Karavas (Figure 5.137), Agios Mamas in Sotira (Figure 5.138). The churches have their own individual construction details. In Agios Evlalios, the internal side walls are based on blind arcades with three pointed arches supported on marble columns, whereas in Sinti, the side walls are supported by external buttresses (Figure 4.135). Their domes also differ. In Sinti, the drum has an octagonal shape and in Agios Evlalios the drum has a cylindrical shape.

The facades of some *dome-hall* churches, of this period, are also formed in an interesting way. For example, in Agios Nikolaos in Orounta (Figure 2.60), the north and south facades, low semicircular gables indicate the existence of the supportive arches in side walls. Behind the gables, the square base supports the large cylindrical drum of the dome. Similarly, in Agios Irakleidios in Politiko (Figure 4.90), the side facades have also low, semicircular gables, except that in this church the dome has an octagonal external shape, fewer decorative features and fewer windows on the walls.

Another interesting type of facade was seen in the small Church of Agia Paraskevi in Kritou Terra (Figure 2.63-5, 4.134). The church has a rectangular-cubical shape with a low square base in the middle supporting the cylindrical drum of the small dome. In the interior, single arches are formed in the north and south walls. These arches, together with the shallow vaults east and west, form four pendentives which support the dome-drum. A similar solution was seen in Agios Georgios Teratsiotis (Figure 4.117) Church in Avgorou: the external facades have a rectangular shape with no gables. The dome however, in this church, has an octagonal external shape.

The facades in Agios Mamas in Sotira (Figure 4.118, 5.138) are formed differently, with the large octagonal dome-drum being based on the side walls, north and south. The square base of the drum becomes part of the side walls. The external facades in the two *dome-hall* churches, Holy Cross in Pareklissia (Figure 4.91, 4.106) and Agia Aikaterini in Tala (Figure 4.132) imitate the single-aisled domed churches. The north and south arches are not expressed in the facades in Agia Aikaterini. The cylindrical dome-drum has a square base which starts from the side walls, whereas in Holy Cross Church, the side arches are expressed in the facades as shallow semicircular arches attached to the large square base of the cylindrical drum.

The built-in arches on the side, north and south walls, and the square base of the dome-drum are seen also in the *three-aisled* churches with dome of this period.

The *three-aisled with dome* type

A new *three-aisled with dome* type was introduced in the early 16th century, and five

churches of this type were encountered. This type has combined Byzantine and Gothic characteristics in its plan, construction and architectural details. It originates in the *Byzantine three-aisled vaulted basilica* and the *Gothic three-aisled basilica.* The author believes that this new type has as its prototypes the *Medieval Franco-Byzantine* style churches of Agios Georgios of the Greeks in Famagusta and Agios Nikolaos Bedestan in Nicosia.

The three-aisled churches are classified into two groups, according to the number of altar apses: a) three-aisled with a central apse and b) three-aisle with three apses. A third church, Stavros Misirikou, was studied separately, because even though it is a *three-aisled with dome* church, its plan and construction do not follow the principles of the others.

The *three-aisled with dome* with a central apse churches are Agios Mamas in Morfou (1500), Agios Neofytos in Tala (before 1512) (Figure 4.129-4.130) and Agia Marina in Potamiou (1551) (Figure 5.139). The first two were built in the early, and the third in the middle, part of the 16th century. Agios Mamas (12 x 18.4m) and Agios Neofytos (11x 20,70m, which before the extension was 11 x 16m) have similar dimensions and plan. They both have a pair of semicircular arcades that are based on columns and a semicircular dome on a cylindrical drum, with four windows. The domes are based on a square, which is based on the two arcades on each side (as mentioned in Chapter 4, this architectural detail was seen in churches of Mystra, in Greece, during this period). Both churches were built of ashlar limestone. It is possible that these two churches were designed and built by the same group of builders with local material, or by builders with the same background knowledge.

Agia Marina in Potamia has different characteristics. It has two pairs of arcades, with three pointed arches on columns. The dome is located in front of the bema and is based on two large pointed arches (north and south) and two pointed-arch vaults (east-west). The dome is based on a large drum, cylindrical inside and octagonal outside. This church was built with roughly cut local stones, by another group of builders. As mentioned earlier (Chapter 4), the church has Gothic architectural details (transverse

ribs with gothic style brackets, pointed-arch windows and door frames with mouldings), which were possibly made by a different group of builders, or were brought ready prepared from another site.

The *three-aisled* churches with three apses and a dome are Agia Aikaterini in Kritou Terra (Figure 5.140) and Agios Mamas in Agios Sozomenos (Figure 4.125). Both have a rectangular rather than square shape with internal dimensions of approximately 10,50 x 11,20m (length, width) in Agia Aikaterini and 10,88 x 9,20 (length, width) in Agios Mamas. Agios Mamas Church was left uncompleted. It was built of large dressed limestone. Its plan has two pairs of arcades with three pointed arches. The central one is taller than the others, and was intended to support the drum of the dome. In Agia Aikaterini Church, the three aisles are divided by two masonry walls, which have three pointed arches on each one of them. The dome is located in the centre of the church.

In all the above churches the support of the dome and its drum is similar to that in the *single-aisled with dome* churches. Blind arches, north and south, are built above the arcades, and form four pendentives in the corners. The only exception is Agios Mamas Church. In this church, instead of blind arches, the central arches of the arcades are raised up to the level of the drum.

The *three-aisled with dome* Church of Stavros Misirikou (Figure 4.126, 5.141) differs from the others. It has squat proportions and a rectangular plan (12,20 x 7,30m) with the largest sides west and east, instead of north and south. In the interior, there are two bays: a small one near the *bema* and a large (double the size of the other) one in the west. Its odd plan indicates that this church was left uncompleted in the west. However, the external western facade has a more elaborate decoration than the others.

The *two-aisled* and *three-aisled* churches of the *complex* type

The two *New Franco-Byzantine* style churches of Agios Nikolaos in Famagusta (Figure 4.115) and Panagia Trapeza in Acheritou (Figure 4.51, 4.116) were originally built as *dome-hall Franco-Byzantine* churches in the late 14th century. Vaulted aisles were inserted in the 15th -16th centuries, one in the first church and two in the second. These

additions have converted the churches into the *two-aisled* and *three-aisled complex* type. Both churches are large and impressive, with rather squat proportions, large octagonal dome-drums, and ashlar dressed masonry.

They differ, however, not only in their plan and but also in their architectural details. In Trapeza, the walls were built with large squared limestone, and the drums with small squared limestone, whereas in Agios Nikolaos, small dressed stone was used for the whole structure. Fine Gothic and Renaissance style architectural details were observed in Agios Nikolaos, such as pointed triangular gables, and sharp pointed hood-moulding. On the contrary, in Trapeza, the architectural details are rather squat: semicircular gables and low pointed-arch frames.

Archangel in Lakatameia (Figure 4.52, 4.123) was also transformed from its *dome-hall* type (14th-15th centuries) into a *two-aisled complex* type. A vaulted aisle with cross-vaults was added on the north side in the 16th century, and later a vaulted narthex in the south (1660-3).

The *simple- cross with dome* type altered or converted *into a cross-in-square* type
The *simple cross with dome* Church of Panagia Katholiki in Kouklia (Figure 4.88, 5.28) was altered and partly reconstructed in the 16th century. The western side of the cross was rebuilt with a pointed-arch vault and in the northeast corner of the cross, a small room was added. The window-door frames were decorated with architectural details in the *Franco-Byzantine* style. In the same period, a loggia[42] was built in the south and west sides of the church (Figure 5.142).

Around 1500, the Church of Chrysopolitissa in Paphos (Figure 2.66, 4.56, 5.15, 5.73) was converted from its *original simple-cross with a dome* type into a *cross-in-square with a dome* type, and from its original *Byzantine* style into a *Byzantine Franco-Byzantine* style church. Four compartments were added on the four sides of the cross, and the two western compartments are shorter than the western side of the cross. In the meantime, Gothic style architectural details were inserted: pointed-arch vaults, an

[42]Loggias with Franco-Byzantine style arcades were added in the Frankish period in the south in the Antifonitis

octagonal dome-drum, and pointed-arch framed doorways. The church has also several layers of reconstruction, dating to the 11th, 12th and 14th centuries.

The *single-aisled vaulted* type

The *single-aisled vaulted* type was widespread throughout the island in the 15th-16th centuries. At least 42 *Franco-Byzantine* style churches or chapels built in the period have survived. This type was adopted for monastery churches (Agios Minas in Vavla, and Agios Nikolaos of the Cats in Akrotiri), for chapels, small (Agios Andronikos in Tersefanou) and large (Agios Georgios in Akrotiri) and for parish-village churches (Agia Marina in Mari).

The size and the dimensions vary considerably; however, three main sub-types were observed, according to the type of their vault:

a) The narrow single-aisled church, average width 3m, length between 6-9m and height 4m. The size and the dimensions sometimes resemble the churches of this type from the previous period. This narrow church has a sharp pointed-arch vaulted roof, occasionally very sharply pointed, as in the churches of Panagia (Figure 4.144, 5.143) (3x9m) and Archangel in Choli (Figure 4. 145, 5.144). It has one or two doorways (south and west) and one transverse arch in the middle, or none, as in Agia Marina in Potamia (Figure 5.145). Some small single-aisled vaulted churches are those of Pallouriotissa in Potamia (Figure 5.146), Agia Solomoni, Agios Andronikos in Tersefanou (Figure 4.97) and Agia Elisavet in Agios Amvrosios (3 x 6m) (Figure 4.149, 4.151, 5.147).

b) The middle size of the *single-aisled* church has an average width of 4m, length 9m and height 5m. This type of church has a tall pointed-arch vault, two or three transverse ribs and sometimes three doorways, one on each side. In the interior, wide, low, sharp pointed-arch niches are built on one or both side walls. Representative examples are: Agios Andronikos in Polis Chrysochou (4 x 9m) (Figure 2.45, 4.96 5.148), Panagia in Pyrgos in Limassol (Figure 4.93, 5.149), Agia Marina in Nata (Figure 2.59, 4.146), Agios Georgios Petridia in Empa (Figure 2.46, 5.4, 5.150), Agios Georgios in Akrotiri

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church in Kalograia and in the 16th century in the Achiropoiitos church in Keryneia.

(Figure 2.65, 4.150, 5.151), etc.

c) The wide, single-aisled vaulted church has an average width of 5-6m, length 12-15m and height 7m. It has a tall (sometimes wide) pointed-arch vault. Representative examples are: Agia Thekla in Marko (Figure 4.127), Agios Georgios Komanon in Mesana (Figure 4.148, 5.152), Panagia Amirou in Apsiou (Figure 5.153), Agios Georgios in Potami (Figure 4.114), and Agia Paraskevi in Mathiatis (Figure 5.154).

These churches have a few common characteristics. The transverse ribs are based on brackets of cymatium shape, and not on piers. On the side walls there are two-three low pointed blind arches. The masonry walls are built of roughly cut stone and dressed stone for the arches and the doorway frames, or a combination of roughly cut rubble and dressed stone, as in Agios Nikolaos Church in Galataria (Figure 4.85). *Franco-Byzantine* style architectural details decorate the doorways. Occasionally, the altar apse has a polygonal shape, particularly in the large *single-aisled vaulted* churches of the Medieval and the *New Franco-Byzantine* styles, as in Agios Georgios in Potami, Agios Georgios Komanon in Mesana, and Agia Varvara in Peristerona.

The *single-aisled ribbed vaulted* type

Agios Mamas in Dali (Figure 4.113, 5.155) is the only *Franco-Byzantine* style church of the 16th century that was originally built with ribbed vaults. It measures 6,14 x 8,25m and has a polygonal altar apse. It was classified as a *Medieval Franco-Byzantine* style church because it is decorated with many *Franco-Byzantine* and *Gothic* style architectural details: ribbed vaults, pointed gables, pointed-arch doorway frames, etc.

Size, scale, location (village or town) of the churches and their use (Monastery or Parish churches, chapels)

The type and the style of the churches are not relevant to their use; that is, whether those were monasteries or parish churches or chapels. The most common types were: *dome-hall* and *single-aisled with vault* in the plain and *timber-roofed* in the Troodos mountains. The size and scale of the churches, however, does depend on the use and

location of the churches. For example, the largest churches, Agios Georgios of the Greeks in Famagusta and Agios Nikolaos-Bedestan in Nicosia, are located in the towns. The smallest are chapels in remote areas, such as Agios Epifanios in Limnatis (Figure 4.183).

Monastery churches were occasionally built along with other chapels. Two representative examples are: a) Podythou and Archangel in Galata, b) Katholikon in Koutsoventis and Panagia Afentrika-Agios Georgios in Koutsoventis. More than one of the parish churches was built in large villages, particularly in the Troodos area, such as in Galata, Kakopetria, Kalopanagiotis and Moutoulla. In villages, a small number of chapels and churches were built on the outskirts of the villages, as in Sotira. Three churches were built to form a triangle, at a distance of 200m, one from the other: Panagia Chortakiotissa (east), Agios Theodoros (west) and Agios Georgios Chortakia (north). The chapels, however, were sometimes built in remote areas, as in the case of Agios Epifanios in Limnatis, which was built above a gorge.

Monastery or Parish churches were occasionally enlarged, altered into a different type and style, and chapels were added to them during several periods. Some Byzantine style churches are: Lampadistis in Kalopanagiotis, Holy Cross in Pedoula, Chrysaliniotissa, Panagia Kivisili, Panagia Prastio in Avdimou, and Angeloktisti in Kiti. The monastery *Franco-Byzantine* churches that were altered always have two aisles, a *dome-hall* or *single-aisle* with dome and a vaulted aisle. These are: Panagia in Trikomo, Archangel in Lakatameia, and Panagia Avgasida in Milia. The only *three-aisled* church was Panagia Trapeza in Acheritou.

The location of the monasteries and the chapels outside towns or villages do not follow any principles. In the 12th century, however, monasteries were located in strategic positions as outposts; for example, Panagia in Kykkou, Panagia in Monagri, etc. In the 14th -15th centuries, monasteries were built near rivers in the valleys: Podythou, Agios Minas in Vavla, or in the forests, as in the case of Profitis Elias in Lythrodontas.

Very few monasteries have preserved parts of their original monastery secondary

structures, since many were reconstructed and enlarged several times or have been demolished. The most interesting monastery unit that has been preserved - at least its original layout - is Panagia Sinti in Pentalia. The church is located at the southern end of the monastery, unlike most of the other monastery units, such as Agios Savvas in Karonas, Agia Napa in Agia Napa etc. The south entrance of the church was probably intended to be used by the locals from neighbouring villages. The main entrance of the monastery is located in the north, through an arched vaulted porch.

CHAPTER SIX Geophysical characteristics

Geography, climate, topography

Cyprus's location in the eastern Mediterranean region not only benefits from its potential strategic and military uses, but also enjoys mild and pleasant climatic conditions (hot and dry), with long periods of spring and summer (up to eight months). The island is divided into four geo-technical zones: the Pentadactylos range in Keryneia district (north), the Troodos range (south), the Mesaoria plain (middle) and the south west coastline (Panagiotou, 1984 v.4: 14).

At 1951 metres, the Troodos mountain range has the highest peak in the island. Heavy rainfall, the development of forests and its agricultural production are the three important features of this area. Five rivers arise from the Troodos mountain range, which water the Mesaoria plain. In ancient and medieval times great quantities of timber were extracted for the construction of merchant and military ships (Constantinou, 1997: 3) and for the melting of copper and silver (Gass, 1960: 87). Medieval populations used the fertile soil to grow plantations of sugar and cotton, as well as olive and citrus fruit trees.

Geology

The island rose up from the sea 90 million years ago when the floor of the eastern Mediterranean broke under volcanic pressure. The Troodos and Keryneia ranges were formed from masses of molten rock and erupted lava, at the same time as the formation of the Alps, Carpathian, Himalaya and Atlas Mountains (Gass, 1960: 82-3).

The sequence of land formation that followed the eruption created an interesting geological prototype that has aroused the interest of many geologists and scientists in the last two centuries. The interest has been focused mainly on the Ophiolite massif of Troodos, due to its great variety of igneous rocks. It is also full of precious minerals: copper, pyrites, asbestos and gold, which through the centuries have constituted the

wealth of Cyprus. The island's wealth in rocks and mineral resources has been well known since ancient times.

The island is divided into a number of separate morphological areas (Map 6.1: Geological Map of Cyprus). The most important are: the central massif volcanic rocks of Troodos (pillow lavas, gabbro, diabase, pyroxenite, wehrite, dunite, harzburgite, serpentinite, etc.), the Keryneia range (limestone flanked, chalks), the Karpass peninsula (limestone, sandstone), the Mesaoria central lowlands (alluvium, colluvium, sand, silts, clays and gravels) and the chalky southern plateaux.

Building materials

The geology of the island has determined the construction materials in use. Since the prehistoric period, the materials have been quarried or collected for use. They were more important for their variety than their good structural qualities or workability. The availability and use of the most common construction materials (stone, clay and timber) differ locally. Other complementary construction materials, such as lime (asbestos), gypsum and pigments were also available in some places for extraction and use.

Stone

Stone was the most common construction material for centuries. The type of stone used depended on local availability. In remote rural areas, stone was mainly collected from river beds or extracted from nearby quarries and roughly shaped. In more wealthy societies (towns), the construction material was transferred from distant quarries by land or sea. It was formed carefully, shaped into a square. Sometimes material from earlier (*spolia*) buildings was re-used.

In the Troodos villages, which are strung out along the river courses, ophiolite rocks were used, such as gabbro, diabase, pillow lavas, harzburgite etc. In other villages in the lowlands, limestone and fragmental limestone was used. Fragmental limestone was extensively used for fortresses, castles, churches, public and impressive private buildings (Panagides, 1997:76). In Nicosia, fragmental limestone was extracted from

quarries in the Nicosia-Athalassa area. This rock, known as 'Nicosia sandstone or pouropetra', is a porous yellowish material, easy to quarry and dress, and hardens considerably on exposure (Gass, 1960: 103, 4). The fragmental limestone, found in the formations of Athalassa in Nicosia, consists of fragments of shells, grains of cretides, limestone and other minerals in smaller proportions.

In Pachna, south of Troodos, sandy limestone flags and marls are available. In the Pentadactylos range, the ample quantities of limestone are surrounded with marls. In the Keryneia area (Lapithos) and in the Dali area (to the west of Nicosia), flaggy chalks provided good building stone for dwellings. '*Bellamy has distinguished a number of localities in the north of Troodos, massive outcrops of a porous magnesian limestone, for which the name Koronia Limestone was suggested*' (Wilson and Ingham, 1959/1971: 12).

Many local stone quarries have continuously provided construction materials for centuries. Although it is not possible to have evidence to date the several quarries found in the island, it is possible to identify the materials by observing the structures.

Post-Byzantine and medieval buildings were mainly built with materials from local quarries or re-used material, *spolia*, from earlier buildings. For example, the Venetian walls of Nicosia were built with re-used material from buildings that were demolished around the walls to improve the town's defences. Many Gothic and *Post-Byzantine* churches (i.e. St Sophia Cathedral in Nicosia), were built on the ruins of earlier churches. Reconstruction over the ruins also happened in the early Christian years, when Byzantine churches were built upon the sites of ancient temples (i.e. Stavrovouni).

Clay

In the Mesaoria plateau, the alluvium-colluvium formations, with their sands, silts, clays and gravels, provided good soil for the construction of mudbricks (Gass, 1960: 47). Mudbricks had been used from the prehistoric era, and this use continued until the nineteenth century. During the Post-Byzantine and medieval eras, mudbricks were used

for chapels in rural remote areas (Archangel in Vyzakia, Archangel in Galata).

Fired bricks and earthenware were made of specific types of silts and clays that are present in the flatter portions of river beds which are usually situated in diabase. They have a reddish brown colour. Bricks were later (18th-19th century) made in kilns in Kato Platres, Evrychou, Galata and Kalopanagiotis (Wilson & Ingham, 1959/1971: 173-4). The clay that is used for bricks and pottery (called illites) does not distend with the addition of water, and becomes plastic after grinding and fermentation (Panagides, 1997: 72).

Timber

Most of the forests endemic to the island are coniferous: a) Troodos pine (pinus larico), b) the Cyprian Oak (Quercus Lusitanica) in the west, c) the evergreen Golden Oak (Qumus alnifolia), and d) Cyprus Cedar (Cedrus libanotica, subsp brevifolia) which has almost disappeared (Gass, 1960: 86-7).

Wilson and Ingham indicate that *'the golden oak (quercus alniforia) becomes plentiful and at over 3000 feet the pine forest has a dense undergrowth of golden oak and arbutus. Golden oak is frequently on the steeper and rockier parts of the mountains. Pine is confined to outcrops of hard rock or colluvium, while scree slopes are covered with pure golden oak thickets'* (Wilson & Ingham, 1959/1971: 19).

The timber roof churches of the Troodos area were built of pine from the Troodos forest. According to locals, the timber was traditionally cut in October *'when the juices have stopped, by the time the moon was born from the west, in a period of dryness'*. Resinous pinewood was chosen in order to last longer (oral information from Hasapopoulos).

The forest area was wider than the present 670 square miles. It had many different species of trees. These were either destroyed by fires, cut down for the melting of copper and silver, for construction, and for domestic fuel in the mountain villages.

In the lowlands below the pine forest zone there are fig trees, olive trees (olea europea), cypress, carob trees (ceatonia siliqua) and the eucalyptus of Australia, and near the coast, citrus groves.

Lime or 'Asbestos'

Asbestos appears to have been mined in Cyprus in the Classical period. Asbestos traces are found in the Troodos massif, in the Pano Amiandos area and south of the Pentadactylos near Kythrea and Dikomo (Wilson & Ingham, 1959/1971: 158). It was also used in masonry walls, for rendering. Lime (CaO) for construction use was produced after the burning of limestone in kilns less than 1000-1300 degrees Celsius. Good quality limestone for burning contains only a little magnesium carbonate (i.e. limestone of Ambelikou contains: moisture 4.4 %, $CaCO_3$ 94.28% and $MgCO_3$ 0.98%) (Grass, 1960: 172-3).

Gypsum

Gypsum is found in Cyprus in four types: a) the sugary type, which is composed of middle to large grains in thick slab layers, b) selenite, which is a transparent crystalline gypsum, c) marmara, which is easily formed into tiles and d) alabaster, which is solid white and semi-transparent (Panagides, 1997: 70).

Gypsum ($CaSO_4.2H_2O$) was traditionally used as plaster after it is calcined and crushed, and as tiles (usually 18 inches square by one inch thick) for flooring, or larger slabs for window sills, stairs and shelves. Gypsum deposits are easily recognisable, as they are masses of a coarsely crystalline selenite crop. The selenite usually extends to a depth of 15 feet (Gass, 1960: 103). Quarries known today are in Kotsiatis near Nicosia, Dali, Lefka and Ambelikou (Wilson& Ingham, 1959/1971: 172).

Pigments

Cyprus has been known, since the prehistoric era, for its pigment earths, particularly umbers. In that period, the pigments were used for decorating pottery, and the colours show no trace of fading even today. Umber (*terra umbra*), yellow ochre and *terre verte*

are all found in the island.

Umber varies from yellow-brown to black-brown, depending on the proportion of iron and manganese oxides present. Umber was used for the production of pigments, after being crushed-pulverised, both raw and calcined. It can be found, even today, in Skouriotissa, Trimiklini (in both cases resting on Upper Pillow Lavas) Mavrovouni, Ambelikou, and Lymbia (structureless, soft and earthy).

Ochre is rare. It is only found in Skouriotissa, near Agios Georgios. Yellow and red are found together. Yellow ochre has a maximum of six feet, between chalky marls, grey clay and sulphurous deposits. It is composed of ferrous oxide and hydroxide.

Terre Verte has a composition similar to celadonite. It is widely distributed and found in a few quarries near Lower Pillow Lava. Jeffery suggested that the village Kritou Terra in Paphos sounds like an Italian name, which may indicate that it is there that *terra d'ombra* may have been extracted (Jeffery, 1918: 409)!

CHAPTER SEVEN Construction materials and techniques - Masons and Builders

Introduction

The construction materials and techniques used in the *Post-Byzantine* churches were studied during the author's visits. The only written evidence surviving from the considered period, 1191-1571, is the masons' marks on the stone-walls and the circumstantial descriptions of the travellers in the medieval period. Very few scholars have studied the construction technology of *Post-Byzantine* churches. On the other hand, a few geologists have furnished us with valuable information on the island's petrology and shed light upon some aspects of the construction materials used (Chapter 6).

Construction materials and techniques

The mild climatic conditions on the island allowed the use of stone and mudbricks, or a combination of the two, as construction materials. The warm and dry climate facilitated the production, use and preservation of mudbrick structures. For many centuries, the basic construction materials were stone, in its several types and shapes, clay in the form of mudbricks and bricks, and timber. In the Neolithic era the most common materials gathered were cobbles and pebbles, mudbricks or pise (compressed earth), and clay mortar. In the Chalcolithic period, squared stones were used in public buildings and raw material for private dwellings. In the Hellenistic era, use of limestone and re-used materials from earlier buildings was very common. Use of mortar and plaster to cover the stone masonry was common in Roman times. The main material that was widely used was 'porolithos', i.e. calcareous sandstone or calcarenites (Hadjisavvas, 1998: 81-5). In the Byzantine period, roughly cut and squared stones and a combination of bricks and stones were used. Stylianou says:

'*The Byzantine churches are characterized by simplicity and small dimensions. They were usually built with stone, and in the plains and coastal areas their roofs were coated with lime mortar, a feature characteristic of the Greek islands. In the central*

parts of the Troodos Mountains, where local undressed stones were used in the main construction, bricks and dressed porous stones were provided for the vaults and the domes, which were roofed with tiles. In these rainy parts, these domed buildings were later supplied with a second steeply pitched wooden roof with flat hooked tiles: St Nicholas tis Stegis, Panagia Araka, St. Heraklidius-St. John Lampadistis. Some vaulted churches were supplied with this protection at the outset: Panagia Asinou, Panagia Amasgou. In the 12th century extensive use of brick was made in the general construction of some churches, through the influence of Constantinople: St. Chrysostomos's monastery in Koutsoventis' (Stylianou, 1985: 35).

Enlart noticed that Cyprus has an excellent limestone but no marble, and that its shores are lined with free stone and gypsum at its finest and most copious. The limestone is found in thick and regular beds and provide magnificent ashlar blocks, and is a natural ordinary building stone (Enlart/Hunt, 1987:19).

In the period 1191-1571, there was variety in the use of construction materials. *Post-Byzantine* churches, *Byzantine* and *Franco-Byzantine*, and Medieval Gothic churches were constructed with different materials, and different techniques were used. It is important to discuss separately the use of the materials in each of these styles.

Construction materials in Medieval and Post-Byzantine churches

Medieval Gothic-style buildings[1]

The Medieval Gothic and Renaissance churches were built principally with ashlar and dressed limestone. Particularly in the cities, calcareous sandstone was mainly used. Rarely, volcanic stone roughly cut in combination with dressed stone was used, in rural areas in particular, whereas re-used material was also used in structures. For example, in the Venetian period, the city walls of Nicosia were built in 1567 with re-used material from earlier demolished buildings. Gunnis says that '*even the*

[1]The Medieval Gothic buildings are not included in this PhD, but they are considered only for comparative purposes.

monastery and the royal castle of St. Domenico were destroyed for that purpose' (Gunnis, 1947: 38).

Post-Byzantine style churches

For the construction of the *Post-Byzantine* churches in the period 1191-1571, an interesting variety of materials and techniques were used. The use of these materials and techniques basically depended on certain parameters: the location of the churches, their chronology, and financial circumstances. In remote areas, especially in the Troodos Mountains, the materials used were pebbles and cobbles collected from nearby rivers and rough-cut hard volcanic rocks (Figure 7.1). In the Troodos area, timber was used in the construction of the timber roofs in the *timber-roofed* and *double-roofed* churches.

Occasionally, mudbricks were used for the walls, especially in some 16th century churches in the area of Galata-Kakopetria-Vyzakia. Bricks were only used for a short period of time, in the 11^{th}-12^{th} centuries, either as a construction material in combination with stone or for decorative purposes in the frames of windows.

Elsewhere, roughly squared and squared limestone was used from the 12^{th} until the 16^{th} centuries. However, ashlar and dressed stone was used from the 14^{th} century onwards, particularly in the *Franco-Byzantine* style churches that were built in towns, and in areas close to the towns.

Post-Byzantine Byzantine style churches

The *Post-Byzantine Byzantine* churches of the 12^{th}-14^{th} centuries in different areas were built with different materials. In the coastal areas and in the plains, the churches were built of roughly cut and squared stone in various sizes (Figure 7.2). In areas, where good quality mortar was not available, small pieces of stones were used for the pointing in the masonry walls (Figure 7.3) or pieces of tiles (Figure 7.1). In the early 12^{th} century bricks were used in combination with roughly cut stone in the construction of a few churches in the coastal area of Keryneia (Chapter 4).

As mentioned above, in the mountains areas, and especially Troodos, the masonry walls in the churches were built of rubble stone, their roofs were built with pine, which was extracted from the Troodos area, and the majority of their floors with handmade clay-tiles (Figure 7.4). In a few churches of the 11th-12th centuries, bricks were used as decorative material for window frames (Chapter 4).

In the 14th-16th centuries, roughly squared, squared and ashlar stone was used for the construction of *Post-Byzantine Byzantine* style churches. In the towns, and particularly in Nicosia, no *Post-Byzantine style* church has survived from this early period. All were demolished in the early years of the Venetian Period.

***Post-Byzantine Franco-Byzantine* style churches**

In the 14th centuries, the *Franco-Byzantine* style churches were built of roughly squared stone. In the 14th-15th centuries, an increasing number of churches were built of ashlar and dressed stone as well. On rare occasions, however, in rural areas and in small chapels, roughly cut stone was used for the masonry walls (Figure 7.5) and dressed stones for the window and door-frames, the arches and the quoins, as in Agia Aikaterina Church in Pyrga (Figure 2.61, 4.45).

In the towns, particularly in churches that were built near medieval Gothic buildings, ashlar limestone was used. The materials and techniques in the construction of churches imitate these of the Gothic medieval churches. In the 15th-16th centuries, most of the *Franco-Byzantine* style churches were constructed of squared (Figure 7.6) and ashlar stone.

Availability of material and use

The most common building materials in some parts of the island were these that were immediately available. In every village the material used reflects the geology of the place. In the Troodos area the (pyrigeni) plutonic sequence was available; in the semi-mountainous areas, chalks and cherts with the volcanic sequence of Troodos were used; in the plains, a combination of pebbles and cobbles collected from rivers for the foundations, and mudbricks for the upper part of the wall, was used.

On the Limassol coast, calcarenites of Pachna, and in the Limassol wine villages a combination of calcarenites, chalks and cherts was common. In Limassol, calcarenite stone had been widely used in buildings since the Chalcolithic period. Representative examples of the medieval period are Kolossi Castle and Limassol Castle (Constantinou, 1998: 47). A few *Post-Byzantine* churches in the villages, Vasa and Potamiou, were also built with the same type of stone (Figure 4.84, 2.51, 4.152). This stone has very good structural qualities (Constantinou 1998:48). In Nicosia, limestone, biocalcarenites and sandstone (common local name '*porolithos*'or *'pouropetra'*) was widely used in buildings.

Sometimes the type of the material may have been defined by the function of the structure; for example, the building techniques used in fortifications differ to the ones used for public or private buildings.

It was a common feature on the island: the more primitive the circumstances, the more durable was the building material used (Hadjisavvas, 1998:83); but the techniques were not more durable, naturally. For example, the raw material that was used by poor communities or where trained builders were not available lasted longer than the materials in other areas.

Through the years, construction techniques have improved, as has construction technology. This development and improvement in building techniques was rapid during the period 1191-1571. This development was definitely the result of the introduction of the medieval Gothic and Renaissance traditional techniques into the island.

It is essential to study the different uses of each type of building material throughout the considered period, 12^{th}-16^{th} centuries, and to classify these materials regionally and chronologically.

The visited buildings have not always maintained their original fabric, since they have undergone repeated restoration and alteration through the years. Most of them

have also been recently restored, either by conservationists or amateur builders. The best source of information concerning the original materials is that of monuments in a ruined condition, which have preserved some of their original fabric.

Early *Post-Byzantine* period (12th-14th centuries)

Stone

Mango says that '*in the Byzantine period, building techniques remained remarkably stable on a regional basis, according to the local availability of building materials and on certain established workshop traditions that often persisted regardless of such upheavals as foreign occupation*' (Mango, 1986:9).

Stone was quarried from nearby quarries, or transported from nearby sites. In remote and almost inaccessible sites, as for example in Buffavento Castle, as Gunnis says '*the walls were built of stone quarried on the spot, cemented with lime. Several corners are of bricks, and the jambs of the doors and windows are of marble composed entirely of fossil shells'*. He pointed out that the stone was quarried on the '*spot*' but bricks, lime and marble were probably transported from nearby places such as the Kantara limestone sequence and the Keryneia coast (Gunnis, 1947: 301). Enlart's says for the inaccessible Buffavento Castle, which is located at the summit of steep hills, that coarse limestone was used instead of cretaceous limestone which forms the bed-rock of the castle (Enlart/Hunt, 1987:19).

In the 12th to 13th centuries, most of the *Byzantine* churches were built of roughly cut local limestone (i.e. Antifonitis Monastery in Keryneia, Agioi Kyrikos & Ioulitis in Letymbou in Paphos, Chryseleousa in Chloraka), or volcanic rocks (Panagia in Kofinou, Timios Stavros in Pelendri). They continued to be built in a similar way throughout the 14th century, as in the case of the churches of Agios Themonianos in Lysi, Agia Marina in Pyrga, and Panagia Chortakiotissa in Sotira, which were built of local roughly cut white stone or limestone.

After the introduction of the *Franco-Byzantine* style (14th century) most churches were built of dressed stone like their contemporary Latin Gothic churches. Some examples are Agios Iakovos in Trikomo, Agios Mamas in Sotira and Agios Evlalios in Lambousa (squared limestone, very carefully built). Some others were built of a combination of roughly cut stones in the masonry walls and a well-cut stone for the door window frames i.e. the Church of the Holy Cross in Anogyra (Stylianou, 1996:1230-1236).

In the meantime, the local builders who were trained in Gothic sites started to imitate medieval Gothic morphological and construction details from the Western Gothic tradition, such as pointed arches and vaults and layered window mouldings etc (Agios Mamas in Sotira, Agios Iacovos in Trikomo and Agios Andronicos in Liopetri) (Stylianou, 1996: 1234).

Stone in masonry walls

According to Mango, in the early years of the Byzantine period, two building techniques were most popular. The first was ashlar masonry, typical of Syria-Palestine, Asia Minor, Armenia and Georgia. The second was the combination of brick and rubble stone, typical of Constantinople, the western coast of Asia Minor, the Balkans and Italy. The normal ways to build the wall were to put up its two faces consisting of squared, oblong stones, course by course, and then fill the core with rubble stones using a great quantity of mortar. Subsequently, after a few feet in height, there followed a band of brick that went right through the wall, from one side to the other. This continued until the 14th century, when all-rubble construction appeared because brick was not available (Mango, 1986:9-10).

In Greece, as early as the 13th century, the churches were built of brick and stone, making use of the '*cloisonné*' technique, where bricks were used in decorative patterns, such as in Kato Panagia church in Arta (Rodley, 1994:271).

Initially, the *Post-Byzantine* domed churches of the first two centuries in Cyprus (12th-14th) were humble, with squat proportions. They were built smaller, simpler

and with raw materials - unlike their 'ancestors', the impressive basilicas of the 6th century. Rodley says that Cypriot church construction techniques may have been influenced by Syrian Byzantine architecture, where instead of a brick and stone combination, ashlar or cut stone was used (Rodley, 1994:23).

In the Byzantine period, it was common to use *spolia* (re-used material) from earlier buildings, ancient Greek temples or Roman, particularly in the early years of the Byzantine era, and less later on. Agios Evlalios is the only *Franco-Byzantine* church where *spolia* from an earlier Byzantine church were re-used; monolithic marble columns were used, attached on the side walls, to support the blind arcades (Figure 5.137).

Stone for roofing

In the Byzantine period, stone was used all over the island as a roofing material for the construction of domes and vaults. Bricks were only used for roofing[2] in a few churches of the 12th century in Keryneia district. From the 14th century onwards, vaults and domes were mainly built of squared or ashlar limestone. '*Byzantine* tiles' protected the roofs, during the Byzantine periods. As from the *Post-Byzantine*[3] periods and later (in the Ottoman period), the domes and vaults were sometimes rendered instead with lime-mortar (*kourousani*).

Stone for Flooring

Marble was used in flooring in the Middle Byzantine period. These floors have ornamental stonework, called opus sectile, which is inlay work using tiles of coloured marble and other stone cut into a variety of shapes (Rodley, 1994:215). Parts of this type of flooring have survived in Limeniotissa in Paphos (Figure 2.75).

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[2]Bricks for roofing is actually a tradition that derives from the Roman period.

[3]All the Gothic and Renaissance churches and Cathedrals that were built in Cyprus had a flat roof which was protected with lime-mortar, none with timber roof or tiles. This may suggest that the renders that were used to protect the roofs in the Post-Byzantine churches were probably similar to these that were used in the medieval buildings.

Bricks on walls and domes

According to Mango, the Byzantines had inherited a repertory of Romans forms but lacked the technical means of translating them into practice. Instead of cementitious monolithic and homogeneous pozzuolana mortar, they used mortar of lime and sand containing crushed brick or pebbles, and the mortar joints were thicker than these of the Romans, so as to economize on bricks (Mango, 1986: 9-10).

He also mentioned that Byzantine vaulting - barrel vault, domical vault and cross-groined vault – was mainly built with bricks in the Byzantine period. The barrel vault consisted of building on four walls with the use of a fast-drying mortar. The domical and cross-groined vaults were built over spaces delimited by four arches. The dome and domical vaults rested on pendentives. The dead spaces above the springing of vaults were filled with earthenware jars so as to reduce the load (Mango, 1986: 11).

In the 12^{th}-13^{th} centuries or earlier in Constantinople, during the Palaeologian period, the use of the 'recessed brick' technique on the walls was developed, in which alternate layers of brick are inset and then covered with mortar, giving a coarsely striped finish to the wall. In places, bricks are arranged in a meander and other patterns, as in the churches of Christ Pantepontes dating to before 1087, and Pantocrator Monastery dating to 1118-36, both in Constantinople. Also in Greece, churches of the 11^{th}-12^{th} centuries are similarly built, such as Panagia Chalkeon in Thessaloniki and Nea Moni in Nauplion. In the latter, the church is faced with stone, with thin bricks bordering each block (the method termed *cloissonné*), and string courses of brick meander and dog-tooth patterns form bands across the exterior walls (Rodley, 1994: 200-3).

Brick had been known in Cyprus since the Roman period, but was introduced into the Byzantine churches only in the 11^{th}-12^{th} centuries. The introduction of brick was an influence from Constantinople and was expressed through the use of bricks in combination with stone for the construction of the walls, piers, arches, vaults and domes. Bricks were used as construction material in a few churches (or at least these

Use of bricks was also noticed in the churches of Agios Nikolaos at Sychari, and Agios Savvas near Apsithiotissa Monastery (close to the important monuments mentioned above). Bricks were also used in the piers of the ruined church of Lampadou in Mitsero, and on blind arches of the south wall in Panagia in Trikomo.

Alternation of brick and stone was used in the north wall, the adjacent blind arch and on the window-frames of the dome in Agios Nicholas tis Stegis Church. Bricks were used for decoration purposes in the window frames of many churches of the 12th century throughout the island: Panagia Araka, Agios Georgios Makris in Larnaka, Agioi Apostoloi in Pera Orinis (Chapter 4).

In the visits to the monuments, use of bricks as a filling material on the rubble masonry walls was also observed in a few churches that date to the 16th century: a) in Pelendri, Holy Cross (12th-16th centuries) (Figure 4.20, 4.70) and Panagia Katholiki (16th century) and b) the Holy Cross Church in Kyperounta (Figure 5.126). In Panagia Katholiki, it was observed that bricks were also used for the construction of the corners of the polygonal altar apse (Figure 4.159).

Mudbricks and the use of clay

A few rural churches, dating to the 16th century, were built of mudbricks: Archangel of Panagia and Agios Nikolaos in Galata, and Archangel Church in Vyzakia (Figure 2.20). Both are timber-roofed churches situated at the foot of the Troodos Mountains. The villages nearby have many traditional buildings built in a similar way.

Red clay was used for Byzantine and medieval lead-glazed earthenware of the 12th century. Examples were found in excavations in a workshop in Kato Paphos, in Lemba. In the 14th century, another two workshops existed in Famagusta and near Soloi. Later, probably in the 15th century, the workshop in Paphos started to decline and a new one opened in Lapithos. Many elaborately decorated pieces of the 15th century were found in excavations there (Bakirtzi, 1998:129,132).

Earthenware, plates and jars were built within the thickness of the walls of the churches for acoustic purposes. It was very common in medieval Gothic churches (Enlart, 1899: 36). In the visits to the churches, medieval plates were seen in Agia Paraskevi Church in Mathiatis, and acoustic jars in Agios Georgios in Episkopi.

Clay had been used in the construction of roof-tiles since the Byzantine period. The '*Byzantine tiles*' had been known in Cyprus since the early Byzantine period, since they were used in the roofs of the basilicas. In the 12th century, roof-tiles were used for the second roofs that protected the double-roofed churches of Troodos. The best evidence we have is the fresco-icon in Asinou, dated in 1105-9, which shows curved roof-tiles (Figure 2.26). It is not certain, however, whether these tiles were '*Byzantine tiles*' or hooked tiles (further investigation is needed).

Timber in wall structure and for roofing

Cyprus in the *Byzantine* era was known as a heavily wooded area, such as Lebanon and Syria, and it seems that timber was also used for roofing. Cypriot cedar was used in the restoration of the roof of Anastasis in Jerusalem in 807-20 (Mango, 1986: 12).

From the 13th century onwards, in the central areas of Troodos, a simple type of church architecture began to develop, which was defined by weather conditions, poverty and practical necessities. In this type, the four walls support a steep-pitched timber roof covered with flat, hooked tiles.

There has been a debate for many years concerning the origins of this roof-type, by many scholars (Chapter 4). Stylianou says that recent discoveries have suggested that this type originated in the basilicas and was not a Latin influence, as some scholars had suggested. The earliest example is Panagia Moutoulla, dated in 1280. It was a suitable type for small communities, for monastic establishments, cemetery chapels and family chapels of western nobles in these mountainous areas (Stylianou, 1985: 39).

that have survived) in the area of Keryneia, that date to the end of the 11th and the beginning of the 12th centuries. This extensive use of bricks only lasted for 20-30 years (see Chapter4). Extensive use of bricks was particularly noticeable in Agios Ilarion Church in the homonymous castle. Small details in Agios Ilarion shows the intention to use bricks as a decorative material; the south wall of the church which was built with rough limestone and bricks, was plastered with mortar, imitating dressed stones so as to give the false impression of a wall built in alternating dressed stones and bricks (Papageorgiou, 1981: 473-4).

In the hexagonal Church of Apsithiotissa Monastery in Sychari, dating to 1100, bricks were used for the construction of the piers and the arches. Also, in the dome-hall church of Agia Trias in St. Chrysostomos Monastery in Koutsoventis, dating to around 1100, limestone was used for the construction of the apse and the north wall, and bricks for the west wall, arches and vaults. In this church, the dome was built with dressed stones and bricks in the *cloisonné* system, which was a popular technique in that period in Greece (Papageorgiou, 1981: 472).

Papageorgiou says that the '*walls of Cypriot octagonal churches does not seem greatly influenced by the Constantinopolitan style. The only case with decorative brickwork is the small chapel of Agia Trias, attached to the octagonal Katholikon of the monastery of Chrysostomos Koutsoventis, but it is restricted in the dome. The masonry of this chapel uses a profusion of baked bricks*' (Papageorgiou, 1998:97).

Jeffery described the church at Panagia in Koutsoventis as *'built entirely in tile-bricks and has a central dome*'. He also mentioned that a small chapel in the south of that church was built in tile-brick, and that both have been painted in a superior style (Jeffery, 1918: 273). Jeffery probably referred to the extensive use of bricks in the walls in the ruined church of Afentrika near Koutsoventis.

Gunnis reported that at Buffavento Castle in Keryneia remnants of Byzantine brickwork were found (Gunnis, 1947: 297).

These *Byzantine timber-roofed* churches of Troodos were built of local rubble masonry and clay mortar, or of mudbricks on a stone built base. The wall construction is strengthened with wooden tights at the door-lintels level and at the top of the wall. Four wall plates support the horizontal truss of the timber roof.

The timber roof (Figure 4.28a-d) is constructed with a double structure and it has a slope of 40-50 degrees. Its construction follows a sequence of steps. First, the central ridge-beam is placed on top of the triangular-pointed gables of the eastern and western walls. Subsequently, four wall plates are placed on the top of the side walls. Then, a pair of rafters is placed on the ridge beam and on the wall-plates, which are located on the internal side of the walls. Wooden boards are nailed on top of the rafters, and are visible from inside. These were occasionally decorated with floral or geometrical patterns (Paliomylos, Figure 4.169).

Another pair of external rafters is based on the ridge beam and on the wall plates of the external side of the wall. These rafters are extended at least 40 to 60cm, in order to provide the eave of the roof. The rafters, external and internal, are placed at a distance of approximately 30-40 cm from each other. The roof-structure is tied together with horizontal tie-beams, which are placed every 2–3 metres. These sometimes have decorative painted or sculpture patterns (Sotiros Church in Palaichori, Holy Cross in Agiasmati, Figure 4.168).

The roof was protected externally with hooked tiles. These are based on secondary thin purlins, which are placed parallel to the wall plates and nailed on top of the external rafters at a distance of 10cm from each other. The date of the construction of the roof is sometimes inscribed on the internal face of the boards, or on the tie-beams (Agia Varvara in Korakou).

The *timber-roofed* churches were occasionally divided into two (14^{th}-15^{th} centuries) and three aisles (16^{th} century onwards) with stone-built or timber arcades. The stone-built arcades are supported on monolithic columns, or stone-built pillars. The timber arcades are supported by timber posts. The construction of the timber arcades is as

follows: the timber posts support the arcade plates, and their joint is strengthened by the introduction of two braces between the post and plate.

Around 130 timber-roofed churches have been recorded (by Papageorgiou and Fereos), that date from the 13th to 20th centuries, and 45 of them date from the 13th-16th centuries. Seven churches were originally built as vaulted or/and domed churches (11th-12th centuries) and had a second timber roof added after the 13th century as a protective measure in view of the extreme weather conditions. The roof in these churches was only the external part[4] of the *timber-roofed* churches, protected by the hooked tiles. The structural members of that roof are the external wall plates, the external rafters, the ridge beam which is placed on the gables or on timber posts (Kalopanagiotis), the secondary purlins and the hooked tiles. These churches are: a) domed: Panagia Araka in Lagoudera, Asinou Nikitari, Agios Nikolaos tis Stegis in Kakopetria, Agia Mavri in Kilani; b) vaulted: Panagia Amasgou in Monagri; c) domed and vaulted: Lampadistis in Kalopanagiotis, and Holy Cross of Pelendri.

The *timber-roofed* churches were the result of the environmental and financial circumstances in that area: the availability of timber, the remote location and inaccessible area. These circumstances have defined the use of the nearest available hard volcanic rocks for an inexpensive wall construction, whereas a very sophisticated timber roof structure by skilled builders protected the churches. Almost all these churches were internally decorated with unique frescoes of historic value.

Timber was used later in the Ottoman period for the construction of the wooden capitals of the arcades in the Holy Cross Church in Askas (Figure 4.163). Similar capitals (mentioned in Chapters 4-6) were constructed in Agia Marina Church in Kyperounta, which also date to the Ottoman period (oral information from Papageorgiou).

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[4]The author, as mentioned earlier (Chapter 4), believes that this external part of the timber roof preceded the double roof.

Mortars, plasters, renders

Based on evidence from the presentation of models of churches in their interior frescoes (Appendix 5), it was concluded that the external walls of the churches were plastered or rendered. These frescoes were seen in the following churches: Asinou Nikitari (1105-6), Panagia Moutoulla (1280), Agios Dimitrianos in Dali (1317), Archangel in Pedoula (1474), Holy Cross in Agiasmati (1494), Podithou in Galata (1502), Archangel in Galata (1513), Chrysokourdaliotissa in Kourdali (16th century).

Specimens of original mortars-renders have survived in at least two churches, at least, as far as these are known to the author. The first are on the eastern wall of the altar apse of the Church of Asinou (Figure 4.24). The mortar imitates a marble effect. The second has survived in Agios Ilarion in Agios Ilarion Castle. The mortar imitates a wall construction with the alternation of limestone and bricks. The interior in most churches was decorated with frescoes, while in the rest it was plastered.

According to Papadouris, the masonry walls in the *Franco-Byzantine* churches were built with clay-mortar. However, he pointed out that lime mortar was used in the Byzantine churches for the rendering of walls and domes. In a few *Post-Byzantine* churches in Paphos, milk was added to the lime mortar. These churches are: Panagia Galoktisti in Pyrgos, Agia Aikaterini in Kritou Terra and Agios Andronikos in Polis Chrysochou (Papadouris, 2001: 199, 203-4).

Tiles were used to protect the roofs of the churches until the 15th-16th centuries. From the 16th century onwards, puzzuolanic mortars were introduced for the protection of vaulted roofs and domes instead of tiles. A representative example is Agioi Athanasios and Kyrillos Church in Menogia (Papadouris, 2001: 225).

It is not possible to study the use of mortars for the protection of flat roofs in Gothic and Renaissance churches, since most of these mortars were covered with puzzuolanic mortars in the Ottoman period.

Frankish period, Latin and Greek Orthodox (Byzantine and Franco-Byzantine), 14th-15th centuries

The architecture of the Lusignans in Cyprus is distinctive, even today. Unfortunately, most buildings were lost, or others, such as churches, were converted into mosques. Famagusta was mainly built in the Lusignan period (Coldstream, 1998:51).

Latin buildings[5]

Use of Stone

Coldstream says that the Latin *'castles and churches were built in fine creamy ashlar masonry, typical of Cyprus. This stone was used for other secular buildings'. 'We can still see the quality of stone and construction'* (Coldstream, 1998: 51).

'All the Latin buildings of Cyprus are built of stone. The great majority are very well built. The fine free-stone used is a coarse-grained limestone of a fairly warm tint; at Nicosia Cathedral it is dull and gloomy but at Bellapais a beautiful yellow; at Famagusta, ... it has a *wonderful light golden tone'. 'White or grey marble was often used for sculpture; these were all imported and most of them were taken from ancient buildings, especially Salamis'* (Enlart/Hunt, 1987: 45).

'St Nicholas Cathedral in Famagusta was built of fine limestone, bright yellow in colour and very well worked. A few masons' marks are observed. The building never had a pitched roof. The ribbed vaults, well built to a very elegant design, are covered by a flat concrete surface' (Enlart/Hunt, 1987: 229).

Many influences in techniques originate in the south of France during the Frankish period, and in Spain and Italy during the Renaissance period. *'The masonry of Latin edifices was consistently careful even in times of the greatest decadence and makes a*

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[5]Information from Enlart and Coldstream.

striking contrast with the work of the Byzantine masons in Cyprus' (Enlart/Hunt, 1987: 45).

'St Sophia was constructed in limestone from Keryneia; coarse-grained like that of the Ile-de France, but pinker. The blocks are of moderate size and perfectly squared; many masons' marks are to be seen'. Evidence shows that some parts were re-used fragments from earlier buildings (Enlart/Hunt, 1987: 90-1). Paphos Cathedral was carefully built of ashlar stone by skilled masons, who left their marks on the dressed stones (Enlart/Hunt, 1987: 356).

The Latin buildings were built completely with dressed ashlar limestone extracted from nearby quarries. Ashlar stone was used in religious or industrial buildings. In castles and fortresses, the materials and techniques that were used, were strong enough to withstand assaults.

Coarse stone was rarely used, and only when ashlar stone was not available. Enlart says that the only use of coarse limestone was in Buffavento Castle (mentioned above), due to its inaccessible position and difficulties in its construction. The limestone was collected from the coast and the core of the walls is rubble stone collected from the mountain, and the masonry casing is in very small blocks. Only the quoins, the frames of the openings and the transverse vaults are in dressed limestone. The masonry work is good, given that it must have been difficult to transport up there the workmen and material needed ((Enlart/Hunt, 1987: 440, 443).

Enlart also gives his own account for the construction of a few more military buildings. He says that the first walls of Nicosia were built around 1372 with earth and dry-stone masonry. Later, they were demolished by the Venetians. The tower of Pyla (15^{th}-16^{th} centuries) is coarsely constructed of rubble masonry with ashlar blocks at the corners, and limestone which crumbles very easily ((Enlart/Hunt, 1987: 389, 482). Kiti Tower was built, at the end of the 15^{th} century, of ashlar stone. Alaminos Tower is built in clumsy and irregular masonry of small stones, some of which appear to have been scarcely worked at all. It had a flat roof. Kolossi Castle is

carefully constructed in ashlar masonry blocks of medium-size. Bridges, towers, aqueducts and cisterns were also built of dressed stone, some with carefully worked masonry (Enlart/Hunt, 1987: 378, 382-3, 485, 497).

Roofing

The medieval churches were roofed with barrel vaults, ribbed vaults or rarely with dome vaults, and always had flat roofs, in contrast with their contemporaries in southern France and northern Europe. Flat roofing was also used at that time in Barcelona in Spain. A rainwater channel is pierced through the upper parts of the buttresses, discharging through large animal-shaped gargoyles ((Enlart/Hunt, 1987: 153). Domestic and military buildings also had barrel vaults for roofing in this period.

Gothic buildings had stone-built flat roofs (St Sophia cathedral in Nicosia, and Bellapais Abbey), unlike the buildings in northern Europe, which had pitched roofs (Coldstream, 1998: 52). The ribbed vaults were very much in fashion, and the barrel vaults were forgotten for a few centuries, until they reappeared at the end of the 14th century, as in the case of the vaults in Kolossi (Enlart/Hunt, 1987: 500).

The use of vaults gradually changed; in the 13th century Keryneia Castle had groined vaults or barrel vaults. In 1310, Famagusta Castle had ribbed vaults, whereas 14th century Bellapais Abbey had rooms with barrel vaults. Buffavento and Kantara castles had groined and barrel vaults. Some churches, such as St. Sophia in Nicosia, had flying buttresses which carried the thrust from the vaults. In the 13^{th}-14^{th} centuries, at the precise point of the thrust, a conduit was constructed on top of a lattice work. Afterwards, the 14th century flying buttress is no longer in use, except in buildings damaged by earthquakes ((Enlart/Hunt, 1987: 37-9).

Coldstream has discussed the roof construction of Gothic churches and the use of buttresses. She says that '*The stone built cathedrals are stable providing there is no external interference such as an earthquake. The lines of thrust must be carried safely to the ground. The thrusts are absorbed by buttresses. An arched flying*

buttress is necessary for an aisled building, where the thrust has to be taken out over the aisle to the pier-buttress at the perimeter' (Coldstream, 1991: 56, 58).

She also adds that '*The upper wall beneath the stone vault is extremely vulnerable; barrel vaults exert pressure evenly over their whole length, and it can be dangerous to cut windows in the walls, while the groin vault and rib vault are more versatile, they collect and transmit thrusts at only four points. The rib is convenient for construction; the thrusts are carried down the transverse arches and creases behind the ribs are absorbed into the wall just above the springing. The webs at first were made of mortared rubble and later of jointed masonry. From the early 13th century the development of tas-de-charge, a set of through stones in squared masonry that formed the lowest sections of the ribs and transverse arches and extended back into the wall itself*' (Coldstream, 1991: 59).

'*The weight of the vaults could be reduced by using light materials such as tufa (Canterbury), or brick (Beverley Minster). The English masons persisted for over two centuries with the Anglo-Norman thick wall structure, where a mortared rubble fill is encased in ashlar*' (Coldstream, 1991: 60).

In Stazousa Monastery the buildings are well constructed of rubble masonry with cut stone for the corners and frames. The stone is a good, fine-grained limestone, light yellow in colour. The roof of the church was formed of a paving of flat stone slabs laid directly on the back of the vaults ((Enlart/Hunt, 1987: 324).

The Latin chapel of St Catherine's in Pyrga is an exception since it is built with Byzantine stonework; hard dark-brown stone is coarsely cut into large cubes which are separated by courses of stone chips. The frames of the openings are in limestone, coarse-grained for the windows and doors and the belfry and on the gables, white in colour and crumbling into sand at the slightest touch ((Enlart/Hunt, 1987: 327).

The Carmelite Monastery near Limassol is well built in roughly cut blocks of varying sizes, finely dressed masonry being reserved for the arches, corners, frames

and buttresses. In the Monastery of Agios Nikolaos in Akrotiri, fragments from ruins of ancient buildings were used in many parts ((Enlart/Hunt, 1987: 345, 351).

In St Anne's Church in Famagusta and the nearby chapel, the construction method on the vaults - which are built of tas-de-charge formed of horizontal corbelled courses - reduces the thrust and gives greater stability, useful in earthquakes. In the Nestorian church in Famagusta, red and white limestone is used alternately to give a decorative pattern, and the vaults are built of excellently dressed white limestone ((Enlart/Hunt, 1987: 280-3).

Jeffery says that, in the Palazzo del Provveditore in Famagusta, which disappeared before the Venetian period, inserted jars in the vault's construction were used for acoustic purposes (Jeffery, 1983/1918: 160). Perhaps the acoustic jars inserted in the walls of Byzantine churches later for acoustic purposes - for example Agios Mamas Korakou - were seen in the Gothic churches; however, jars were used in Byzantine churches elsewhere in the Byzantine Empire.

Enlart says that in the second period of Gothic architecture (14th century), the tas-de-charge system was used, which made the buildings resistant to earthquakes. There was also the use of earthenware for different functions. Some, with the opening set in the curves of the vault, are acoustic jars. These can be seen in the Church of Stazousa and in the Carmelite Church in Famagusta. Acoustic vases are used in the tas-de-charge of the vaults of an unidentified church in Famagusta situated between the Carmelite and St Anne churches (Enlart/Hunt, 1987: 256, 301).

Steep roofs on Latin buildings were rare, and were only found in Agios Ilarion Castle. Enlart says that the steeply pitched roof was needed on a summit so much exposed to rain and snow ((Enlart/Hunt, 1987: 437). Timber roofing was only used in the Byzantine *timber-roofed* churches of Troodos.

Greek Orthodox churches

Byzantine architecture was influenced by the Gothic style introduced by the Frankish conquerors; however, the architectural types of the previous period continued to be in use. From the 13th century, the churches tend to be smaller, but with pointed arches, careful masonry made of ashlar limestone, and door frames that are simple at first and later more complex. Some examples were seen in the churches: Agios Dimitrianos & Agios Georgios in Dali, Agios Iakovos in Trikomo, St Nicholas of the Greeks and Agia Zoni in Famagusta, Panagia Trapeza in Acheritou, Agios Themonianos in Lysi (see Chapters 4, 5).

Then, in the 14th century, the *Franco-Byzantine* style was created, as a combination of a Gothic basilica and the Byzantine dome: the Greek Orthodox Cathedral of St George of the Greeks in Famagusta and Panagia Odigitria in Nicosia (Papageorgiou, 1998:99). The *Franco-Byzantine* churches were built on a similar scale and size with similar materials and ribbed or barrel vaults and domes. In the coast and the plains, the domes were covered with lime mortar.

Agios Georgios of the Greeks in Famagusta was built of ashlar stone. Between the vaulting and the flat roof that covers it, some huge jars are embedded in the masonry; they make a light filling and must also have been intended to improve the acoustics (like those used in France in the 12th-16th centuries) (Enlart/ Hunt, 1987: 36, 301).

Agios Mamas Church in Morfou and Agios Neofytos in Tala, were built with dressed, beautifully regular stone masonry in the *Franco-Byzantine* style in the 16th century. The Byzantine architect(s) who built the churches were inspired by Gothic buildings in their decoration and construction, or had the assistance of masons and a sculptor who were either French, or followed French models. Both the churches were larger, more spacious and better built than most of the other Byzantine buildings in Cyprus. They borrowed their lucid simplicity, elegance and slim lines from Gothic buildings. The Church of Agios Mamas in Agios Sozomenos village, in the same style, was also built of dressed stones.

Venetian Period, 1489-1571

Stone in Venetian buildings

The Venetians inherited the castles of Keryneia, Agios Ilarion, Kantara and Buffavento, which they repaired and re-used, taking advantage of the natural escarpment. Their original masonry was poor but strong. The Castle of Keryneia was extensively remodelled and strengthened in the 16th century in a massive masonry shell designed to resist cannonade and provide a platform for the defenders' artillery (Edbury, 1998: 38). The Venetians did a lot of rebuilding in fine ashlar masonry taken from older parts that they had demolished ((Enlart/Hunt, 1987: 427).

Ashlar, or dressed stone, was mainly used in the construction of Venetian buildings. The Venetians rebuilt and strengthened the Famagusta walls (designed by Giangirolamo Sanmichele) with additional masonry and earthworks, and demolished and rebuilt the Nicosia walls (Giulio Savorgano). Their bastions were part of the '*Venetian experiments in fortifications that were taking place over both the stato di terra and their sea empire*' (Coldstream, 1998:175). The fortifications in Famagusta and Nicosia were built in three layers: mudbricks underneath (in the upper part of the wall), rubble stones built with mortar and the final facade in ashlar limestone. Jeffery provides us with some sketches that were designed by the Florentine engineer Lorini (1690) and present the tools and the techniques that were used in the construction of the Nicosia Fortress in the 16th century (Figure 7.7a-b from Jeffery, 1907: 51, 54).

Metal

Metal was used to reinforce stone, and we know it was used by the Venetians (Enlart/Hunt, 1987: 447). In Europe it had probably been used since the 13th century, but it was definitely imported from Spain in the 15th (Erlande, 1997: 118). In Cyprus, the Venetians imported timber and metal to restore the Famagusta Walls.

Clay

Use of clay for pottery was reduced and glazed pottery began to decline in the 15th century (Bakirtzi, 1998: 257). Clay was used for the production of hand-made floor-tiles, and the earliest examples that have survived date to the 15th century. These were seen in the Church of the Holy Cross Agiasmati in Platanistassa. The tiles have square and rectangular shapes, sometimes with simple geometrical patterns.

Floor-tiles have also survived from a few 16th century churches: Agios Georgios Perachoritis in Kakopetria, Panagia Katholiki in Pelendri, Holy Cross in Pelendri and Panagia Iamatiki in Arakapa (Chapters 2, 4, 5). These have geometrical or other patterns. The most unusual patterns were seen in Agios Georgios Perachoritis, where the tiles have portraits of Christ surrounded by a halo (Figure 2.72).

Mortar

In European Gothic Cathedrals, the quality of the construction was judged by the mortar as much as by the stone. The mortar consisting of 2 parts sand and 1 part lime, was mixed near the site (Erlande-Brandenburg, 1997: 109).

Information from medieval sources, on the construction methods and techniques

In Cyprus there is no written source of information[6] concerning the construction methods and techniques for the Byzantine, *Post-Byzantine* and medieval buildings. In Europe, manuscript illuminations and medieval building records relating to medieval construction methods and techniques have survived, even from as far back as the 11th century. The latter have also provided detailed information, such as that on mixing mortars, measuring and cutting stone, hoisting stones, etc (Coldstream, 1991: 5-9).

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[6]The only written information for the construction of Medieval buildings in Cyprus, is referred to the construction the fortifications in Nicosia in the Venetian period.

In addition, the site in European Gothic buildings was well organised by the architect and the patron. Scaffolding was very much in use and the technique of suspending it from the wall rather than resting it on the ground was re-discovered. Access to upper working levels was made easier by spiral staircases within the masonry, which the architect built first so as to enable the workers to climb more easily.

Carving work was not usual in situ, and those who worked on the scaffolding in Milan Cathedral (1485) were paid more than those who worked on the ground. The stone was cut with saws, axes, chisels and drills, all of which needed constant sharpening. Individual stones often carry incised symbols, masons' marks. Marks were also used for positioning the stones, and as a guide for the cutting masons. The masons' setters mortared the stones in with trowels. Vertical lines were tested with plumb lines or squares, along with compasses and a straightedge. The timber roof over the vaults had been set up truss by truss before the stone vaults were built. In the winter, thatching the walls afforded some protection, at least temporarily The putlog holes for the scaffolding are occasionally still to be seen in some examples (Coldstream, 1991: 44, 47, 51).

Masons and Builders

Medieval Europe

In the second half of the 11th century in Europe, once the architect was directed by the patron, he designed and supervised the construction of the cathedrals (Erlande-Brandenburg, 1997: 51). In the Ile-de-France, where the Gothic architecture began, the architect was also responsible for the payment of the workmen, and the patron for the provision of stone, sand, lime and water (Erlande-Brandenburg, 1997: 57). In the 13th century, with the introduction of the rayonnant style (an example is Famagusta Cathedral) the administrative authorities took more responsibility for the cathedrals' construction, reducing the responsibilities shouldered by the architect (Erlande-Brandenburg, 1997: 60-4).

In Europe, the master mason acted as a contractor, engineer and designer. The earliest masons' guilds date from the 14th century in large cities like London. Most masons seem to have been trained on the site, while some cutting skills were learned in the quarry and more delicate skills were taught in the lodge. They practised their craft for several years at different building sites. A master had to have many years of building experience as a journeyman. Master masons could be invited to other countries; successive Germans and French were invited to Milan for consultancy (Coldstream, 1991: 5, 11, 15, 17).

From the beginning of the 11th century, the stonecutters were determined to put their personal mark on the cornerstones. The construction result was very much dependent on the stonecutter's initial training, the way he made his own tools and the choice of building material. The material was local, quarried from nearby sites or sometimes was salvage stone that originated from existing late imperial structures. Once flat-bottom barges were invented, transportation was more practical and cheaper by water than by land. The cost of transport was a heavy burden on top of the cost of the building works (Erlande-Brandenburg, 1997: 98-9, 104,107).

By the end of the 15th century, the era of European building tradition was over. '*The Gothic building techniques spread through highly skilled French architects and technicians called to distant building sites. The organization of craftsmen in guilds was carefully regulated. In Rhodes the Grand Master of the Hospitallers solemnly received them when the town was besieged by the Turks in 1480*' (Erlande-Brandenburg, 1997:89-90).

Building was a seasonal activity from 29 September until Easter, in practice from November 1st until the 2nd of February. During the winter months they designed and cut the stones (Coldstream, 1991: 18). The foundations were dug down to bedrock if possible. The plan was set out on the ground with poles, ropes, cord and lime to mark the edges and lines of the interior. The material was normally chosen carefully. The choice of stone depended on the region. Ideally, the patron or the administration owned the quarries. Sometimes, to reduce expense, they re-used material from earlier

buildings. '*Buildings were constructed either as ashlars - high quality dressed blocks of limestone, sandstone, granite or marble-or of rubble, which was also used for packing and filling. Brick is found in parts of the buildings such as vaults where they wanted to use a lighter material; most common in the Netherlands, East Anglia, where there was little good stone*' (Coldstream, 1991: 40-41).

Byzantine Empire

In the Early Byzantine period, the architect-engineer was responsible for designing and supervising the buildings since he also had mathematical knowledge (like Anthemius and Isidoros, architects of Agia Sophia in Constantinople). But the majority of the structures were built by the skilled master builders or the craftsmen, who belonged to guilds (collegia) (Mango, 1986: 14-15).

The architect or master builder did not appear as the originator of the plan, but merely as the executor, who worked on the basis of fairly sketched drawings. The labourers might be provided voluntarily by the Christian community, or hired. That explains the uniformity of the architecture. Most rural churches were erected with remarkable speed by voluntary labour and with the help of contributions in kind made by the faithful (Mango, 1986:18).

In Greek provinces, prosperous towns could well support master-builders of quality in the Byzantine era, and that is why many excellent examples are found in these areas (Rodley, 1994: 205). In various Orthodox monasteries, we sometimes identify details from other traditions. Some migrant builders-masons were possibly involved in their construction, which was the case in Constantinople in Agia Sophia in 989 A.D. (Rodley, 1994:348).

We suspect that this also happened in Cyprus. For example, some scholars (i.e. Papageorgiou) have suggested that Sinti Monastery resembles churches in Armenia, while we have already mentioned that the plans for the *Franco-Byzantine* churches of Agios Mamas and Ayios Neofytos may have been brought from Greece (or Constantinople).

***Post-Byzantine* and Medieval Cyprus**

In Cyprus during the Frankish period, in the 13th -14th centuries, the Latins brought their own masons and builders from their own countries in order to restore existing palaces, and castles, and to build their churches, cathedrals and monasteries. From that flowering of well organised construction there arose a Cypriot labour force of stonecutters, masons, builders and sculptors. These who worked on the Latins' monuments used their knowledge and practised their skills (the technology and the decorative details they learnt) on the new Byzantine churches that they themselves built. It is in this manner that the new style called the *Franco-Byzantine* was created.

However, Jeffery believes that it is unlikely that the mason-guilds of Europe left their countries during the zenith of medieval art to visit a Levantine colony such as Cyprus (Jeffery, 1918:88). If we compare the style of the Latin architecture in Cyprus and its contemporary European prototypes (French and Italian), we can see that the Cypriot style follows far behind its original prototypes, with a few decades or even centuries of delay, which probably suggests that masons trained in the west did indeed move to the island to practice their skills.

What is more unlikely is that builders from the island learnt their skills in the west. In addition, some very well executed construction details and the presence of masons' marks on the several buildings could suggest that the buildings were built by professionals who knew their skills, and not by mere students. Masons' marks were found on many Gothic buildings such as Agia Sophia Cathedral in Nicosia (Enlart/ Hunt, 1987: 90).

Enlart indicates that '*it was the masons and sculptors who built the churches and who advised their patrons on the most fashionable and suitable models*'. In Cyprus, as well as the Holy Land, there was a ' *tendency to build in styles that were already out of date in the west'. 'The age and availability of masons may be the explanation*' (Enlart/Hunt, 1987: 6-7).

During the Venetian period, documents make it certain that the architects and engineers were called to Cyprus from abroad. In the Venetian period, specialized architect-engineers were summoned from Venice for the military structures, such as the walls of Famagusta and Nicosia. The Venetian engineers first gave their opinions and suggestions and then they were ordered to design and supervise the construction. Italian builders may have built a few loggias in Famagusta in good ashlar masonry in fine Renaissance style after James II (1460-1473), who was King, recaptured Famagusta (Enlart/Hunt, 1987: 454). Most houses disappeared since the Turks traded the building materials for reuse ((Enlart/Hunt, 1987: 458).

The donors for the construction and decoration of the churches

In the Byzantine era, the responsibility for finance lay with the empire and the bishops (Mango, 1986:15-6). It was extremely important who financed and owned the structures and their purpose. The constructions funded by Kings and the wealthy class are more carefully built, elegant and of durable materials, regardless of their scale. The material used was mainly ashlar made of soft limestone, whereas many sculptured decorations were applied on the facades, or painted decoration in the interior.

The structures that were built in rural areas by local people were humble. These were only built with materials that were available, which sometimes were hard to cut and sculpt. Their only decorative features were the interior decoration of frescoes and the decoration of timber parts of the roof, the iconostasis and the furniture.

In the middle Byzantine period, the wealthy class built monastic buildings and other churches. As Rodley stated: '*The 'personal' monastery founded by an individual or family was very much common*' (Rodley, 1994:144).

In Cyprus, many chapels in the plains and *timber-roofed* churches in the area of the Troodos mountains, dating to the 13th-16th centuries (Appendix 5), were built and decorated by donors: governors (Asinou), by groups of local people and by local

priests (Archangel Michael in Pedoula), or donated by the owners of the fiefs (Archangel in Galata).

The architectural phenomena of multiple churches built side by side, is explained by the intention of satisfying the wishes of the donors (as in Galata); or, that of emphasizing the coexistence of two strong different dogmas in one place. For example, Latin and Greek churches have coexisted in Famagusta since the 14th century, whereas elsewhere on the island, Latin chapels were built attached to Byzantine churches (Holy Cross in Tochni, Lampadistis Monastery in Kalopanagiotis, Holy Cross of Pelendri).

Some of the important monasteries of the early years of the 11th-12th centuries were built either at the expense of Constantinopolitan emperors or Cypriot governors or Kings. The Gothic town cathedrals, churches, and monasteries were built by the Kings (Bellapais Abbey) or Queens, the bishops, or group of a certain religion or order. Different Christian orders built several monasteries on the island, i.e. Carmelites, Templars, Armenians, Orthodox etc.

Groups of wealthy people built their own churches, as Agios Georgios of the Greeks was built in Famagusta by the wealthy class of Greeks. Individuals or aristocratic families also founded churches or monasteries; for example, the grandmother of Stephen de Lusignan, Isabella Perez Fabricius, founded Antifonitis Monastery in Keryneia in the 12th century (Enlart/Hunt, 1987: 207). The patrons of the Latin cathedrals were mainly bishops and kings.

Gunnis points out that in the 15th century Nicosia had 250 churches and 50,000 inhabitants, '*a mixed crowd of Latins, chiefly Italians and French, Greeks, Maronites, Armenians, Copts, Nestorians, Jacobites, Abyssinians and Georgians, while the city extended for 7 miles, so scattered were its buildings also so numerous its gardens and squares*' (Gunnis, 1936: 29). This shows how active the several religious communities were.

Military structures were always the responsibility of the government. In the early *Post-Byzantine* years, fearing the crusaders and Ottomans, the Constantinopolitan emperors gave instructions for, and financially supported, the construction of fortresses on the island. The Venetians in the 16th century subsequently rebuilt the fortresses, mainly in Famagusta and Nicosia.

Sometimes the importance of the monument forced the builders to even import the appropriate material from abroad, transporting them mainly by sea. Enlart said that when the Venetians started to rebuild the city, the castles and the walls of Famagusta (1492), the ruined state of the city could not even provide timber and metal fittings for reconstruction work, so Venice sent supplies which were sold to the citizens at cost price. Another request that she was only too willing to grant was to send out a good military engineer and workmen skilled in making lime and cutting ditches in solid rock (Enlart/Hunt, 1987: 447).

This happened in other Venetian colonies as well. In Crete in the 16th century, the Venetians imported timber and steel in special ships from Venice for the construction of the fortifications (Karpodini-Demetriade, 1995:50).

Conclusion

During the *Post-Byzantine* period a lot of influences from Constantinople were introduced into the island, both in architecture and art. The construction of bricks was in use in some parts of the island, and in others local stone was collected, or quarried from nearby sites, and even mudbricks were common. The churches were mainly humble, small in size and scale in the rural areas; in the towns they must have been similar (since almost none have survived, we are not certain), with simple and even primitive construction technology sometimes.

The Latin intervention was very decisive, with impressive large Gothic buildings with elaborately sculptured decoration in the exterior and the interior of the buildings. These were built of ashlar stone, dressed stone quarried from good quarries, or re-used material from earlier buildings.

During the Latin presence, the Byzantine tradition borrowed the Gothic stylistic approach of the impressive large church built with ashlar stone. The *Franco-Byzantine* style was subsequently created in the 14th century and declined in the early years of the Ottoman period (end of the 16th century). The Venetians brought their own 'new, advanced' technology, which was mainly applied in their military structures. Ashlar or coarse stone was widely used for the *Post-Byzantine* in the towns and the outskirts, whereas roughly cut stone or rubble masonry was very common in the remote areas and the Troodos region.

PART III Conclusions

CONCLUSIONS

Introduction

Post-Byzantine Church Architecture in Cyprus in 1191-1571 was the result of the interaction of two traditions (styles); the eastern Byzantine and the western Medieval. The first was nearly in its nadir (it started to decline in use, due to the historical circumstances that affected the Byzantine Empire; mainly the crusades) and the second in its zenith, in the countries of their origin in the period concerned. The interaction happened in a province of the Byzantine Empire, an isolate, but not remote island, with an important geographical location that was the crossing of the eastern and western World at that time.

Information review; literature review and author's visits

Churches no longer survive in their original condition. Some have fallen into dereliction, some have been altered or extensively reconstructed, and some have been restored a number of times. Therefore, as well as recording the present condition of the buildings, a range of sources were also consulted. The author visited 206 churches (of the 301 Post-Byzantine churches). The literature and other sources of information (maps, engravings, fresco-icons, archival photos, drawings etc,) assisted in providing historical information on all the *Post-Byzantine* churches, and were particularly valuable for the inaccessible churches.

The significant aspects of the *Post-Byzantine* churches in Cyprus were: the architectural styles, the church-types and the construction technology (materials and techniques used). All these, were developed (in the period under consideration) and preserved significant indigenous characteristics not found elsewhere.

District maps were prepared to present the location of the churches, identifying their styles. The maps are accompanied by tables which provide information for their chronology, the church-types, the construction materials and the structural condition of these churches.

Architectural styles

The study and analysis of the churches' architecture has resulted in the identification of two main *Post-Byzantine* styles, the *Byzantine* and the *Franco-Byzantine*, and their variations.

The *Byzantine* style churches preserved their Byzantine characteristics and were developed, in this period, with either none or very few significant influences from the medieval tradition. These churches were built by local builders who practiced their traditional Byzantine skills. The *Byzantine* style churches have been classified into the following sub-styles: the *timber-roofed*, the *double-roofed*, the *simple Byzantine* and the *Byzantine with medieval additions*. The first two styles originated in the 12^{th} -13^{th} centuries and were developed in a specific area, the Troodos Mountains, due to climatic, geological and social (mainly financial restrictions) circumstances. The other two styles are scattered throughout the island.

The *Franco-Byzantine* style is characterised as a fusion of two traditions, the Byzantine and the Gothic-Renaissance. The *Franco-Byzantine* style churches have been classified into the following sub-styles: *Byzantine Franco-Byzantine*, *Medieval Franco-Byzantine* and *New Franco-Byzantine*. These sub-style names reflect whether the Byzantine or medieval-Gothic characteristics are dominant in these church-styles, or whether both are combined together in a harmonious way.

The *Franco-Byzantine* style was created in Famagusta in the late 14^{th} century with the financial support of the local wealthy Greek class. The first ever built *Franco-Byzantine* church is Agios Georgios of the Greeks in Famagusta (1360-70). Masons and builders (or their apprentices) who had been employed earlier in the construction sites of the medieval Gothic cathedrals in this Town, most possibly designed and built the *Franco-Byzantine* churches in the early years (14^{th}-15^{th} centuries).

The author has identified two 'schools' (groups) of builders who operated in the island in the 15^{th} and 16^{th} centuries; one was probably based in Famagusta region and the other in Nicosia, the most prosperous and wealthy places in the island. Those builders

occasionally travelled to other areas, such as in Paphos, Morfou, Limassol and Keryneia. A few churches, such as Agios Neofytos in Tala and Agios Mamas in Morfou, do not conform to their style and type entirely, to the others (of the two 'school'). Therefore, we can assume that designs and builders (master masons or architects) were brought in from elsewhere, probably Greece.

The author has proposed a chronological sequence for each of the styles and its sub-styles, which is accompanied with church-examples. The sequence then enables the origins of each style, its main characteristics and its development throughout the island in the period of 12th-16th centuries, to be understood. The author has concluded that historical and geographical circumstances have resulted in the creation and development of some styles in specific areas and at a specific time. Examples include the *Byzantine timber-roofed* (from the 13th century onwards) and *double-roofed* (12th-13th centuries) style churches in Troodos, the *New Franco-Byzantine* style churches in the Famagusta area (15th-16th), and a few isolated churches in Keryneia, Morfou and Paphos (16th century).

Church-types

Critical to the analysis of the church-architecture is the development of church-typology; their layout, roofing type, and their scale and size. A review of the Byzantine period (4th-12th centuries) has revealed that only a few types continued to be used from the early Post-Byzantine period onwards, such as the *simple-cross with dome, the dome-hall, the polygonal dome-hall, single-aisled vaulted, the cross-in square with dome.* Certain types were later discontinued, replaced or converted into other types, such as the *simple-cross with dome* which was converted into *the cross-in square with dome.*

In the transition period between the Byzantine and the early years of the *Post-Byzantine* period (12th century) certain Constantinopolitan influences continued to happen in the church-architecture of the island, such as the use of bricks and the re-introduction of the narthex to the churches. Bricks were used as a secondary construction material, mainly in some churches of the Keryneia area, for 20-30 years. The author believes that brick-builders were brought to and worked in this region for a specific period of time. This

happened because this region is the nearest to Constantinople (Asia Minor) and second, because of the good quality clay that was available in the area (Lapithos), which was traditionally used for medieval earthenware. Further research, beyond the scope of this thesis, is needed to clarify the reasons for the extensive use of bricks for a few decades in this particular area and not elsewhere. What was so important there at that time, why was it used for a few decades and not longer? Why has it not spread? Was it because of transportation costs or other reason?

The re-introduction of the narthex was the result of the changes that took place in the earlier years in the ordinances in the Greek Orthodox monasteries in Greece and Constantinople. The narthex in Cyprus continued was used mainly in the monastery churches, but it was also seen in the village-churches. A representative example is the narthex that was added in the 14th-15th century to Chyseleousa Church in Emba. Various narthex-types have been identified. The narthex-type, which repeats the plan of the original church, is particularly interesting. Representative examples are: *the cross-in-square with dome* narthex in *the cross-in square with dome* church in Agios Georgios Chortakia in Sotira (12th century church, late 12th century narthex) and in Agia Anastasia in Polemidia (12th c. narthex, 14th c. main church).

A *complex* church-type was introduced from the 12th century onwards in the monastery churches, when second and third vaulted chapels were built attached to earlier *dome-hall* or *cross-in-square with dome* types. In the Troodos area the churches of this *complex* type were protected with *secondary timber roofs*. Later, from the 14th century onwards, the *complex* type was used in two ways. First, medieval structures were added next to *Byzantine* style churches; Latin chapels were added next to Greek Orthodox churches (Panagia in Prastio Avdimou, Panagia in Kivisili, Angeloktisti in Kiti). Second, *Franco-Byzantine* style churches were enlarged with the addition of one or two aisles and a narthex (Panagia Trapeza in Acheritou, Archangel in Lakatameia).

Reconstruction of *Post-Byzantine* churches upon the ruins of earlier churches was quite common throughout this period. The new churches were built upon the foundation of the earlier ones, and '*spolia*' from early Byzantine churches were re-used as construction

material, such as in Agios Evlalios in Karavas.

The creation of the *Franco-Byzantine* style resulted in the introduction of new church-types and the alteration of the earlier ones from the 14th century onwards. For example, the *single-aisled vaulted* type was increased in size, and the *simple-cross with dome* was converted into a *cross-in-square with dome*. Also, the *three-aisled domed* type was introduced to be used in the large *new Franco-Byzantine* style churches (Agios Georgios of the Greeks, Agios Mamas Morfou, and Agios Neofytos). More importantly, a new version of the *dome-hall* type, the *single-aisled with dome* type, appeared in the 16th century. A representative example is Panagia in Sinti. This important innovation involves the construction of the side walls of the dome-drum (which has an octagonal shape externally) as part of the side-walls and the construction of the side-arches that supported the dome within the thickness of the walls (as blind arches). This resulted in a construction that was structurally more efficient and was easier to build as the distribution of the weight of the drum-dome was distributed half on the side walls and half through the pendentives on the vaults. Probably this is why the Sinti church has survived several destructive earthquakes over five centuries and other churches in the area have not. The construction technology and the origins of this type are an interesting subject for further research, beyond the scope of this thesis, which would probably shed some light on whether or not this type originated in Cyprus. If not, we then need to trace its country or region of origin and explain how the idea got to Cyprus.

Apart from the new church-types that were introduced, the earlier *Byzantine* types were also used and developed in this period. For example in the Troodos region, from the 15th-16th century onwards, the *three-aisled timber-roofed* type was created, as was the *single-aisled with perimetrical stoa.* Elsewhere in the island, the earlier types continued to be used, but successive churches were larger in size and scale, than those built previously. The most widely used types until the end of the examined period were: the *dome-hall* and the *single-aisled vaulted.*

Construction technology in relation to the church styles and types

The author has observed that considerable developments took place in the construction

techniques during the period concerned. These were the result of influences from the techniques that were used in the construction sites of medieval Gothic cathedrals.

Walls

In the early Post-Byzantine years (12th century) the masonry walls of the churches were constructed with roughly cut and coarse local stone. In the Troodos mountains in particular, rubble masonry was widely used throughout the 12th-16th centuries, whereas in the Keryneia area, as mentioned above, bricks were used for 20-30 years as a secondary building material. In the 12th-14th centuries, roughly squared and coarse stone in uneven sizes was used for the construction of the masonry walls in horizontal courses. Larger stones were used for the lower parts of the walls and sometimes for the altar apse (which was probably built first). Smaller stones were used for the upper parts.

In the 14th-15th centuries, squared and roughly squared stone in even courses was used for the walls. The same technique was used until the 16th century in many regions, and particularly in the *Byzantine* style churches. However, occasionally rubble masonry or roughly cut/square stone was used for the walls and ashlar stones for the arches, frames and quoins.

In the 15th-16th century, the majority of the churches were built of squared stone. Apart from a few exceptions (i.e. Agia Marina in Potamiou), the *Franco-Byzantine* churches were built of ashlar stone throughout the island. In the *Byzantine timber- roofed* churches in Troodos, rubble masonry and sometimes mudbricks on rubble masonry foundations were used for the construction of the walls.

Roofing types: timber roofs, domes, vaults

The roofing type of the churches was determined by regional circumstances. In the Troodos Mountains the *timber-roofed* type was widely used since its introduction in the 13th century. Even the domed churches of the earlier periods of this region were protected with a secondary timber roof for further protection from the extreme weather conditions.

In other areas domed and vaulted roofing types were used in various sizes and shapes. The domes in the earlier years of this period were constructed with squared stones and had a cylidrical shaped drum with (4-12) windows of various small sizes. From the 15th century onwards the dome-drum in the *Franco-Byzantine* churches has an octagonal external shape. It is not clear whether this form of the dome-drum developed for decorative or structural reasons. The author has observed the use of polygonal shapes in the dome-drums, the altar-apses and the columns (Bedestan in Nicosia), in a number of Post-Byzantine churches. Further research should be carried out to investigate the origins and the development of this architectural characteristic.

The vaulted type was widely used, particularly in the later years of this period. Vaulted churches were built all over the island. *Byzantine* style vaulted churches were, however, considerably smaller than the *Franco-Byzantine* style ones.

Shape of the arches and vaults, window and door-frames

The arches and frames were built of squared stone in the earlier years and ashlar stone in the later years of the *Post-Byzantine* period. The shape of the arches and vaults changed significantly. In the early 12th century the arches had a semi-circular shape which later on was slightly pointed. In the 12th-14th century the arches and vaults are wider and pointed. In the 14th-15th the arches and vaults are taller, wider and pointed, whereas in the 15th-16th century, these became sharply pointed. The only exceptions are the semi-circular (or slightly pointed) arches in the 16th century churches, Agios Neofytos Tala and Agios Mamas Morfou, which were probably designed and built, as mentioned above, by Greek masons.

The window and door-frames were also altered considerably during this period. The simple frames of the earlier years, which in the Byzantine churches were decorated with bricks in a radial pattern, were superseded later by pointed arched frames of various types. The most elaborate decorated frames were seen in the *Franco-Byzantine* churches of the 15th-16th century in particular.

Organisation of the site and setting the layout of the church

The irregularity of the plan of the churches of the early years of the *Post-Byzantine* period (12th century) suggests that there was no standard technique used for setting out the layout of the church by the builders apart from the fact that their construction was probably started from the altar apse (which is the only symmetrical part of the churches). In the years after the introduction of *the Franco-Byzantine* style (14th century) most churches have a regular plan, which suggests that improved techniques were introduced, probably similar to those used in the Gothic sites. Those medieval techniques (in Gothic buildings) have not been documented (except in a few surviving drawings of the construction of the Venetian Fortifications of Nicosia). A further detailed study of the medieval structures might verify that the accurate measuring methods and techniques that were used in Gothic sites in Cyprus, originated in the western European countries (France, Italy etc) in that particular period.

Further work for research in the future

Conservation of the *Post-Byzantine* churches

This analysis of the *Post-Byzantine* churches in Cyprus in 1191-1571, indicates that these buildings have architectural value and significant indigenous characteristics, and that they deserve to be enhanced, preserved and conserved in a better way in the future. The author believes that apart from the present analysis of the '*Post-Byzantine* Church Architecture', further research must be carried out in order to investigate whether the valuable historical information on the churches construction technology that was destroyed by the several reconstruction and alteration schemes can be studied on the non-religious buildings of the 12th-16th centuries, which were outside the scope of this thesis. The investigation should include a detailed analysis of the construction materials and techniques that were widely used, but have not survived in the studied churches. Those techniques can be used to ensure improved conservation schemes for those churches in the future.

The majority of the churches in use that were visited by the author have been recently

restored by the Department of Antiquities of Cyprus and are looked after by the local people who use them. However, those in ruins and at risk have not yet been conserved and their fabric is gradually decaying. The author believes that these buildings are the best source of information for the study of the construction materials and techniques of this period, because restoration has not destroyed evidence, and it is an opportunity for the Department of Antiquities to use them as case studies prior to any conservation or restoration schemes are carried out.

More importantly, the recent political situation in the island, which allows visits to the Turkish occupied area (Northern Cyprus) is an opportunity to establish a conservation policy for the churches that are located in this area and have been abandoned for the last 30 years. The churches of this area that have not been demolished, converted or misused, and are left intact, may have been decaying or are at risk, but they have at least been preserved, in many cases in their original construction materials and techniques. Those techniques should be studied and the churches recorded in detail, and be conserved. The next step could be to establish a policy for their preservation, and regular maintenance in the future. This thesis can be useful for the future conservators of these churches, as a guide to the *Post-Byzantine* churches.

Post-Byzantine Architecture in the neighbouring countries

The findings of this thesis also raise questions about the development of architecture beyond the shores of this island. This research has opened a 'window' on the general topic 'Post-Byzantine Architecture of the Mediterranean region and external influences'. An interesting topic for further investigation would be the study of the '*Post-Byzantine* Architecture' of the countries neighbouring Cyprus, in order to establish whether the '*Post-Byzantine* churches in Cyprus' are indeed unique to the island or might relate to other buildings in the region. The author foresees that a comparative study between the *Post-Byzantine* Church Architecture in Cyprus and those in the other countries would enhance the historical value of the *Post-Byzantine* Churches of Cyprus and demonstrate their unique qualities. The reason is that Cyprus and its neighbouring countries have different historical circumstances and influences. Conquerors from various western European medieval countries have invaded the islands and countries of this

Mediterranean region at different historical periods, and remained there for different periods of time. Nevertheless, study and comparison of the historical influences on the architecture of this period in the islands of Crete and Rhodes in particular, which have been conquered, like Cyprus, by the Crusaders and the Venetians, is important.

The comparative study of other countries should consider the investigation of issues that have been addressed by the author in the main chapters of this thesis (Chapters 4, 5). These issues have included the hypothesis about the construction of individual churches. For example, whether designs and builders were brought from Greece or elsewhere for the construction of churches (as in Tala and Morfou) in the 16th century. Another issue raised by the author is whether the *single-aisled domed* type and its dome-drum with the octagonal external shape are also found in other countries and if so, how they relate to those in Cyprus. In this case, the research should consider not only the neighbouring countries but other Byzantine regions in order to investigate whether this church-type has similarities with those in north-east Byzantine countries (like Armenia as Papageorgiou mentioned).

The thesis's contribution to knowledge

The issues that this thesis has raised relate to the analysis of the *Post-Byzantine* Church Architecture of Cyprus in 1191-1571, and contribute to knowledge in three ways. The first concerns the methodology that was used, as it was based on the study of all the monuments of a certain building-type (churches) in a small island, during a specific period of its history. This methodology can be applied in other studies which focus on external influences on local architecture. The second concerns the information that this thesis has included, on the chronology, style, type and construction technology of these churches, which can be used as a basis for scholars in the future to conduct further research. The third concerns the new directions that this thesis has suggested to improve the preservation and conservation of the churches and in supporting further comparative study in other countries.

The practical benefit from this study is the framework that this thesis has endeavoured to establish for improving the practical conservation of the *Post-Byzantine* churches. The

knowledge that this thesis has presented can be used in three ways. First, it can be useful as a basis for the study of the unidentified churches and monuments of this period. For example, in ruined churches or in excavation sites the study of architectural details (shape of the pointed arches, the size-shape of the window and door-frames, decorative features), the layout of the site and the construction material and techniques (ashlar or rubble masonry) can enable scholars to identify the chronology, the style and type of the monument. It can also be of assistance to distinguish the layers of reconstructions in the monuments that have been continuously altered through the years. Second, this knowledge can assist the conservation work that is carried out on these churches, the correct restoration (or partial reconstruction) of the buildings that have been destroyed by earthquakes or other causes of destruction and to do so while avoiding arbitrary reconstructions. Third, this thesis gives practical directions in the conservation of these churches. For example, it suggests the type of the stone and workmanship of the masonry walls that should be used in the conservation of the churches of each period, in the different regions: 12^{th}-14^{th} century (rubble masonry in Troodos area, roughly cut stone elsewhere), 14^{th}-15^{th} century (roughly squared stone in even courses in the plain, rubble masonry in Troodos), 15^{th}-16^{th} centuries (rubble masonry or mudbricks in Troodos, rarely roughly square stone and mainly ashlar masonry elsewhere).

The *Post-Byzantine* churches in Cyprus in 1191-1571 have architectural, historical, archaeological and cultural values, which must be protected, conserved and preserved as an important part of the architectural heritage of the island and of the influences upon it. The identification and documentation of these values, identified in this research, is expected to lead to a wider recognition of the importance of the *Post-Byzantine* churches, throughout the island (both south and north) and to secure their conservation in the future.