Pilot Operation

Urban landscape rehabilitation in Lefkara, Cyprus

The recuperation of a modern past

Department of antiquities
Ministry of Communications and Works
Cyprus
Pilot Operation
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The recuperation of a modern past
Consortium Rehabimed

Project Manager
Xavier CASANOVAS

Members
Ministry of Communications and Works
Department of Antiquities of Cyprus
Person in charge: Evi FIOURI

Bureau Culturel de l’Ambassade de la République Arabe d’Egypte en France Supreme Council of Antiquities, Égypte
Persons in charge: Mahmoud ISMAÏL and Wahid Mohamed EL-BARBARY

Col·legi d’Aparelladors i Arquitectes Tècnics de Barcelona, Spain
Person in charge: Xavier CASANOVAS

Ecole d’Avignon, France
Person in charge: Patrice MOROT-SIR

Centre Méditerranéen de l’Environnement Marrakech, Maroc
Person in charge: Moulay Abdeslam SAMRAKANDI

Institut National du Patrimoine, Tunisie
Person in charge: Mourad RAMMAH

Director
Xavier CASANOVAS

Texts
Evi FIOURI, Lena PISSARIDOU, Department of Antiquities
Irene HADJISAVVA, Department of Town Planning and Housing
Vasili SIERIDIS, David CASTRILLO of Vassilis Ierides Associates

Edition
Evi FIOURI and Irene HADJISAVVA

Photos and images
RehabiMed team

Rehabimed project’s Scientific Commitee
Brigitte COULIN: UNESCO
Josep GIRALT: Institut Europeu de la Mediterrània (IEMed)
Paul OLIVER: Oxford Brookes University

French translation
ADDENDA

Spanish translation
Anna CAMPENY

Greek translation
Eleni A. SKOUFARI

Graphic design
AD Lluís MESTRES. Graphic Design Jordi RUIZ, Marta VILCHES

Website
www.rehabimed.net

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Bon Pastor, 5 – 08021 Barcelona, Spain
rehabimed@apabcn.cat

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It was a great pleasure to be in Lefkara on the 20th of February for the inauguration of the Pilot Operation Project ‘Rehabilitation of the Urban Landscape’, which forms part of the RehabiMed project (Euromed Heritage III). It is now a pleasure to write an introduction for the edition on this interesting experience.

The objective of RehabiMed is the preservation and rehabilitation of the architectural heritage and its promotion as a factor of sustainable development, an objective shared by the Department of Antiquities. Moreover, RehabiMed has given Cypriot professionals the opportunity to share experiences with other experts and professionals from 15 Mediterranean countries.

It is a widely accepted fact that traditional architecture is gaining an increasingly important role in the field of Cultural Heritage and is considered as a significant factor for sustainable development. In this context, the government encourages and finances works which combine rehabilitation with social, tourist and cultural development and has set up mechanisms to help individuals and communities to benefit fully from the various funds. It is obvious that the preservation, the enhancement and the proper administration of our architectural heritage can contribute greatly to the revitalisation of the countryside and of the downgraded old city centres; it can ameliorate the economic situation of those settlements and areas that have few resources besides a considerable cultural heritage.

The Rehabilitation of the Urban Landscape in Lefkara is the practical application of the theoretical side of the RehabiMed Project: The RehabiMed Method in Rehabilitation, a step-by-step process based on the multidisciplinary research
and analysis of a site or a building, was applied in the Pilot Operation in Lefkara. The task set was to apply this method in order to search for and restore the important traditional elements of the urban landscape under study and to deliver a friendlier ambience to the local community. Furthermore, the Pilot Operation strives to serve as a model for future rehabilitation and enhancement of the urban landscape. Hopefully, the Method will also be applied to other projects that will soon be carried out in Cyprus.

One of the main reasons for the success of the Pilot Operation in Lefkara was the participation of the public and the local authorities in the project since its very beginning an important part of the RehabiMed philosophy for the rehabilitation of traditional architecture. Public involvement is a crucial factor for the success of projects of this kind.

I believe that the RehabiMed Method will not be limited to the Pilot Operation in Lefkara. It is within the power of the relevant authorities and departments to introduce it to the rehabilitation sector so that it will gradually become a useful tool at the disposal of all rehabilitation professionals, a way of thinking and a way of acting in rehabilitation, for the benefit of our architectural heritage.

Dr Pavlos Flourentzos
Director of the Department of Antiquities,
Ministry of Communication and Works

Lefkosia, 15th June 2007
The Lefkara Municipality embraced this project from its early stages and seeing the results we feel very happy for participating in this project. Not only are the inhabitants content, but visitors congratulate us for this work and express the wish that it continues to other parts of the town. From our point of view, the rehabilitation of the urban landscape should expand to all the main streets of Lefkara, and I am not talking just of the façades. Lefkara houses are built amphitheatrically due to the morphology of the ground, and what is beyond the façade is sometimes visible from a higher level and if the rest of the building is a mess the beautiful image is spoiled. But this is something we are working on, because the traditional architecture is one of our best assets. The Lefkara Municipality wishes to promote the rehabilitation of the urban landscape and we shall definitely try to attract private funding to achieve this purpose. For the moment, we would like to see the project completed with the redesign of the square in front of the church. We have started to work in this direction, with preliminary contacts with the church authorities, since we need their agreement for the reconstruction of the old building which was their property and an alternative solution for the parking place.

As a conclusion, I would like to say that the Pilot Operation in Lefkara has set the example for the rehabilitation of the urban landscape and the Municipality of Lefkara will continue the efforts to cover all the main streets.

Andreas Shoshilos
Mayor of Lefkara

Lefkara, 25th June 2007
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1.1 The urban landscape: values and opportunities

Settlements are complex systems of built and empty spaces, where generations of human beings share their lives, aspirations and experiences through time. Although individual buildings are settled material manifestations, rather permanent in character, they are brought to life due to the endless flow of people through them. They are thus altered or replaced in order to accommodate the changing needs and aspirations of their residents. In this way, urban landscapes evolve over time reflecting the broader changes that affect the settlement. People sustain the settlements with their culture, social relations and economic activity within the boundaries of the area but also through their connections (physical or virtual) with different localities or networks, whether cultural, economic or religious.

The urban landscape forms part of the historic environment of a settlement. As such, it is not only a mere collection of historic buildings, monuments, landmarks and open spaces, but encompasses a set of different values inherent in the urban fabric. These values can be found more condensed in historic centres, since they are their oldest parts, the initial cores from which settlements have expanded. Their built environments bear the traces and testimonies of all periods of their
development and of all cultures that have passed through them.

One of these values is the evidential or historical value. The urban landscape reflects, through the architecture of its buildings, the geographical characteristics of an area: the stone used traces the geology, the mud-bricks, the quality of the soil, the timber used, the vegetation species of the area. It also bears evidence of the building skills and traditions, the technological know-how of the constructors and craftsmen. The typology witnesses the way of life, the world-view or the occupations of the residents and even the specific climate conditions of the locality. The morphology reflects the aesthetic values and artistic expression of the society. The relationship of the built with the natural environment bears witness to the dependency of the economy with the land. Similarly, the open public spaces and buildings to the social relations between people.

Since the historic environment was formed and evolved over centuries, it also bears signs of the socio-economic and technological evolution. Change in the typology often means an economic restructuring, a new way of life, customs and traditions influenced by other localities. New materials and know-how are often a result of these new relationships.

Thus, all changes of the socio-economic circumstances of the inhabitants as well as the external influences on the settlement are reflected in the physical appearance of the urban landscape.

Besides the evidential or historical values, the urban landscape has symbolic values. It embodies the collective memory of the society that appropriates the cultural heritage inherent in the city. Spiritual values can also be attached to a place and have a considerable impact in people’s perception of space. As different cultures might have co-existed in a particular area, the historic environment would have different meanings, associations and values for each group of people.

The current socio-economic and demographic situation of an area is also reflected on a site. Thus, the urban landscape bears evidence of prosperity or regression. This is evident in the built environment, such as the ageing and neglect of buildings, lack of public space, insufficient accessibility, scarcity of public transport, physical segregation with respect to the rest of the urban area or lack of basic public facilities. It is also evident at the social level, such as high concentration of marginalized, unemployed people or immigrants, loss or excessive density of population, ageing of population, demographic change or loss of community feeling. Finally, at the economic level, there
might be decreased investment, lack of employment opportunities or lack of commercial activity.

The historic urban landscape is now considered not only as a cultural and historical asset but also as an economic asset. Culture-led regeneration is linked with an increasing appreciation of the historic environment and the architectural heritage in particular. The historic environment and the traditional architecture have been used by cities all over the globe as a strategy for attracting inward investment, especially in the tourism sector. Cities started to invest in the cultural capital that their historic environment embodied. The growth of Cultural Heritage Tourism was a significant driving force for both the preservation of buildings and also for the revival of traditional arts and crafts.

The aesthetic or picturesque quality of the urban landscape is often used to contribute in “place marketing” through image enhancement that would encourage inward investment and urban economic recovery. Thus, its image-building function leads to the need for high-profile “prestige” or “flagship” projects that are oriented towards people with higher incomes. Thus, social polarization might occur excluding the original residents of the area, a process known as “gentrification”. Often, both public and private funds are orientated towards prestige cultural projects, ignoring the deprived areas that are in urgent need for regeneration and improvement of the quality of life. As witnessed in the failure of many culture-led regeneration projects, overdependence on the cultural sector could not be sustainable on the long term as it makes the economy vulnerable to instability and creates social polarization.

The urban landscape needs, therefore, a set of policies and actions that would address its problems in a holistic way. Sustainable conservation should integrate the physical conservation and rehabilitation of the building stock, with social policies that would allow for social equilibrium and cohesion. Economic activity should address the needs of residents and users while not putting too much development pressure on the historic environment. Leisure and tourism should be proportionate and not dominant to the general economic activity of the area.

Finally, an urban landscape is part of a wider area. Thus, considerations should be made for the economic, social and environmental impact of the actions taken on a specific site to the wider area where it is situated or it is connected with.

1.2 Urban landscape rehabilitation In Cyprus

In Cyprus, the rehabilitation of the historic environment is concentrated mainly on the individual building. The policies and incentives are applied in the territories of the island that are controlled by the Cypriot government, without area specific priorities. Thus, the urban landscape is mostly rehabilitated in a scattered way.

The rehabilitation of traditional architecture depends mainly on the private initiative and is supported by the central government through financial incentives. Two types of classifications are included in two different laws. The ancient monuments are managed by the Department of Antiquities and the listed buildings are managed by the Department of Town Planning and Housing. Financial incentives provided to owners for a complete preservation/ restoration of their listed properties include a direct Grant-in-aid, transfer of plot ration and tax deductions.

In recent years, attention has been given to a more complete rehabilitation of the urban landscape through regulatory plans, area schemes, master plans, etc. In the case of the walled city centre of Nicosia, during the last fifteen years a series of bi-communal projects have...
been implemented in selected areas with funding from the government’s budget, the United States Agency for International Development and the European Union through UNDP. The most important project was the Chrysaliniothessa housing rehabilitation programmes. This included the restoration of 27 vacant traditional houses and the construction of 15 new houses on empty building plots, as well as the provision of community services and the enhancement of public open space.

Other projects concerning the urban landscape include the rehabilitation of the façades of several streets. The first areas to be rehabilitated through façadism were in Nicosia through the Nicosia Master Plan. With the Cyprus accession to the European Union, more projects of this type in other historic areas of Nicosia were initiated through the Structural Funds.

Great interest was expressed by rural communities for the rehabilitation of the urban landscape. However, the Pilot Operation of the Rehabimed project in Lefkara was the first of its kind, executed outside the big urban centres, in a rural community. Up to this point, local communities often undertook the redesign of their villages’ squares with governmental funding. Thus, the RehabiMed Pilot Operation gave a new breath to the rehabilitation process in the rural communities. On the one hand, the works related not only to the horizontal dimension (i.e. pavement, square) as was the usual practice up to now, but also to the vertical dimension of the street (i.e. the façades). On the other hand, the Authorities responsible for the rehabilitation process at the governmental level collaborated with the local players – the local authority and the local community as well as with the private sector in order to deliver a “best practice” example through the RehabiMed methodology.
2. The RehabiMed Project

2.1 RehabiMed’s objectives

The RehabiMed project forms part of the Euromed Heritage programme of the European Commission. It is a cultural programme that came into being after the 1995 Barcelona Euro-Mediterranean Conference, with the aim of creating a space of collaboration and peace in the Mediterranean basin. Within this ambitious international framework, the objective that RehabiMed has set for its actions is to further rehabilitation work in all Mediterranean countries as a factor in sustainable development. Our departure point is thorough knowledge, gained through the preceding project, CORPUS, of the value of traditional architectural heritage and the problems it faces.

Furthering rehabilitation work is particularly significant because it is a subsector with great economic potential and a clear indicator of development. We cannot forget that, in Europe, investment in building rehabilitation and maintenance represents 50% of the activity in the construction sector, whereas in southern and eastern Mediterranean countries it is less than 10%.

These actions have a twofold value: improving the living conditions of inhabitants and helping to preserve the historical and cultural identity of traditional architectural heritage, which is increasing in value every day. It is living heritage, because it provides shelter for millions of families and stands at the centre, at the very heart, of today’s towns and cities.

RehabiMed’s objective is, then, to find a way and to establish a method that strikes a balance between improving the living conditions of occupants and preserving heritage, on the basis of the three pillars of sustainability (economic, social and environmental). This approach must take into account all the agents involved in rehabilitation and their participation (politicians and decision-makers, all the professionals involved and the occupants).

The Method proposed by RehabiMed addresses the rehabilitation of traditional architecture resituated in the framework of a process of revitalization and regeneration of the territory. Its intervention affects both the physical environment and the
2. The RehabiMed Project

population for which it provides shelter, by guaranteeing its coherent adaptation to the needs of contemporary life. Rehabilitation has to be a slow, planned process of transformation, with medium- and long-term objectives. From a more technical point of view, the RehabiMed Method proposes to order and systematize the stages of the rehabilitation process (orientation, diagnosis, strategy, action and follow-up). This involves identifying the tools and instruments to be taken into account (technical, administrative and legal) in order to manage and develop them and, at the same time, providing criteria to assist in reflection on the problems and strategies to be implemented to guarantee the success of the process.

2.2 The town of Lefkara

Pano Lefkara is situated 580m above sea level on the hills of Larnaka region. It is one of the most important historic settlements of Cyprus, owing to its rich cultural and architectural heritage, which remains almost intact.

The medieval centre of the town has a particularly dense and continuous building pattern and a large number of narrow, labyrinthine and often dead-end streets, shaped on the basis of the sharp inclinations of the terrain. With the Ottoman conquest of the island the settlement began to expand towards the northeast. The introversion that characterized the medieval settlement, and which stemmed mainly from the need for security, continued to exist due to the way of life in the Ottoman world.

During the first decades of the 20th century, under British Colonial Rule, the settlement expanded to the north. This period was the golden age of Lefkara as the export of lace brought economic and social prosperity to the town. The urbanization brought with it the neoclassical style and led to a great change in the general aspect of the villagescape. Public buildings were constructed and many shops were concentrated in the core of the settlement contributing to the organization of the trade activities.
The central streets were transformed from a simple means of access to the buildings, to places of commercial activity and social interaction, forming the main commercial axes of the settlement. The economic decline after the World War II resulted in the emigration of a large part of the population. The Turkish invasion in 1974 and the following urbanization have further worsened the depopulation, leaving large parts of the historic cores deserted and in material decline.

Today Lefkara seeks to recover some of its past glory. The new socio-economic reality has changed customs, attitudes and activities. Lefkara depends very much on tourism attracted by the crafts of lace and silver that made Lefkara well known in Cyprus and abroad and by the traditional architecture. Nevertheless its architectural quality is threatened by a series of factors, like abandonment, neglect, and development pressure largely due to tourism. On the other hand, there was neither real valorisation nor promotion of the architectural or natural heritage that the settlement presented; the shops in the commercial part of the town were the focal point for tourism, neglecting the more interesting parts of the town and its surroundings. Even though these factors affect the urban landscape, Lefkara still has a significant development potential based on its architectural heritage.

2.3 The choice of the Pilot Operation site

In this context the specific location of the Pilot Operation Site was made, following several criteria:

Visibility and accessibility: The site selected is easily accessible to all, either on foot or by car, and is highly frequented: it is a place that can be seen by many people, both locals and tourists. It is a part of the main artery relaying the two squares of the town and combines commercial activity and residential use. Moreover, this artery ends up at an important focal point, which is the main church of the town, a Monument with high frequentation.

Feasibility: The street and the buildings situated in the selected site are in relatively good condition and most of the interventions on the urban landscape are reversible. Thus, the Pilot Operation can be carried out without major difficulties or expenses overwhelming the budget of the project.

Obvious results: The proposed rehabilitation works would improve the character of the buildings and the neighbourhood in a spectacular and exemplary way; this would have a positive impact on the population and hopefully it would trigger similar initiatives, both private and communal.

Architectural values: The urban landscape of the site preserves the values of the traditional architecture, even if it bears alterations and interventions of a later date. It is a place where different typologies and styles exist, which makes it interesting from the architectural point of view. As a principle, the traditional character of the buildings is the basic element to recover and enhance.

The site selected for the Pilot Operation covers the last 60 metres of Timios Stavros street and the Church square. Aligned on both sides of the street and on the two sides of the square are 27 buildings of various uses: two churches, one hotel, residences and shops.

2.4 Preliminary actions

The methodology for the rehabilitation of the urban landscape as elaborated by the RehabiMed project includes as one of its key factors the involvement of the local community. In this context, the Pilot Operation sought the participation of the local people from its early stages. Personal contacts and discussions took place with the Mayor and members of the Municipal Council; the Project and the future actions of the Pilot Operation were explained to the local authorities and were soon met with interest and acceptance, in spite of
an anticipated hesitation in the beginning. Contact with Lefkara people was equally important. The RehabiMed local partners sought the occasion to talk about the Project with the inhabitants of the town and the owners of the houses in the Pilot Operation site, in order to brief them on the project and get information about the evolution of the façades. Simultaneously to these personal contacts, other activities related to the Project were carried out in Lefkara, such as the two workshops on the architectural heritage and its potentials.

Training actions

In 2005 the Oxford Brookes University carried out a workshop on the traditional architecture and its contribution to the development of the town of Lefkara. The study was oriented to the social aspect. The students identified the strong and weak points of Lefkara according to the inhabitants' views and their own observations and came up with several conclusions about the problems and potentials of the settlement. In addition, a practical exercise was organised in Lefkara, in the context of the RehabiMed Seminar on the “Rehabilitation and Urban Landscape” held in Cyprus prior to the Pilot Operation, during which the participants made some preliminary studies on the urban landscape of the pilot site. Based on this, some suggestions were made on how to promote the advantages and deal with the problems that the settlement presents.

Participation workshop

An important action during the elaboration of the project was the Workshop on Cultural Heritage organized by the Department of Antiquities in Lefkara, on February 2006. The objective of the workshop was the exchange of ideas and the discussion of matters related to the settlement and its cultural heritage. About 40 representatives of Lefkara, coming from a wide range of the population including the Municipal Council attended the Workshop, which comprised two distinct sessions with separate aims:

- SWOT Analysis - The purpose of the first session was to get the overall impression of the people of Lefkara on its perceived Strengths, Weaknesses, Opportunities and Threats for the growth and development of Lefkara.
- Brainstorming - The Brainstorming session focused on generating their ideas as to the Growth and Development of Lefkara in relation to the Cultural Heritage.

At the conclusion of the Workshop, it was apparent that the participants were aware of the value of their cultural heritage,
both tangible and intangible. They made suggestions about the improvement of their local ambience as well as for the opportunities offered by cultural heritage for the economic development (including tourism) of the settlement. Moreover, they expressed their contentment about the fact that their ideas and opinions were given a venue to be expressed and discussed. The Workshop contributed in the process of generating ideas and promoted the spirit of collaboration with the RehabiMed project team.
The project was carried out following the guidelines of the RehabiMed Method for the Rehabilitation of traditional buildings. Following the preliminary actions on involvement of the local authorities and population, the multidisciplinary diagnosis started. Archaeological, historical, social, economical, environmental and physical aspects were analyzed.

3.1 The traditional architecture of Lefkara

The traditional architecture of Lefkara reflects the available materials and climate conditions as well as the specific socio-economic circumstances during which a building was constructed. In terms of classification it can be distinguished in two phases, the vernacular style, and the urban, neo-classical style. However, it is not always easy to distinguish the two styles as buildings of the first period were converted in a lesser or greater extent to the new style.

Buildings in the vernacular architectural style

The buildings are set in unbroken units, thus creating a continuous and uniform front of stone masonry. A typical ground plan of the houses consisted of ground floor rooms and often a two-storey wing, set around an internal courtyard. Entry to the house was usually achieved through a semi-outdoor iliakos (portico) with an arched opening towards the yard or through a gate in the wall of the yard and more rarely directly into the building itself. The yard played an important role, offering access to the different parts of the building, while at the same time providing space for the various activities of the occupants. The two-storey wing, when there was one, was usually placed at the back or at the side of the plot, and in rare instances, a small part of it was set directly onto the street. Access to the upper floor was effected by way of an outdoor stone staircase, starting from the yard. The dichoro or palati, a large double room divided by an arch in the centre, was the main interior space of the...
and the influences from the western world, society became urbanized and modernized. Neo-classicism was grafted onto the local architecture, creating a new typological and morphological type of building. The existing vernacular buildings were transformed into the new style with the addition of new floors, wings or morphological features, and the new buildings were constructed on the basis of urban prototypes. The houses were organized in a symmetrical manner and a three-part layout both in the ground plan and in the façade. The central axis, which in the floor plan forms the iliakos, was the “heart” of the house, the main reception area, while the staircase was moved from the courtyard to the back of the iliakos. The internal yard now lost its dominant role in the function of the building. On the façades of the buildings, emphasis was given to the central section where the outer doors were decorated with carved stone frames, wrought-iron work on the clerestory windows, and elaborate wooden structures. The upper floor was characterized by longitudinal balconies of wood and later concrete; these were supported on stone, wooden or metal modillions and elaborate wrought-iron railings. The openings onto the street increased in number and size and acquired stone frames.

In the central commercial axes a new type of mixed-use building developed, in which the ground floor housed the economic-commercial activity of the occupants and the upper floor formed their home. Large shop doors led directly from the street into the shops, workshops or coffee-houses, while the outer door opened onto a stairwell that led to the upper floor.

Building materials and construction manner

The traditional architecture of Lefkara, like traditional architecture in general, is characterised by the use of locally available and easy-to-use materials, suitable for building, and by its direct relationship with the topography, the climate and the social and economic conditions. The Lefkara area is rich in limestone but poor in earth and timber. Thus, the hard and difficult-to-work Lefkara stone became the main building material for the construction of buildings and the main feature of the settlement. The stone walls were built with the use of earth mortar and were plastered with white loam or whitewash internally, while externally they were simply whitewashed (usually with ultramarine blue). With the introduction of gypsum plaster, the interior of the buildings as well as the exterior of buildings with neo-classical influences began to be plastered and

**Buildings with urban neo-classical influences**

With the end of Ottoman rule, and the new socio-economic circumstances

house. The sospito, an inside room usually without openings, was used as a cellar to store the large earthen jars (pitharia) containing wine, oil, and other foodstuffs. The traditional dwelling included rooms in which the inhabitants spent the day or slept, as well as spaces essential to the domestic economy, rural occupations and, later on, commercial activities.

At the centre of the core, buildings can also be seen in unbroken array organised in a lengthwise configuration without yards. These were mainly used for commercial purposes (shops) or as small workshops.

The houses of this first phase were typical vernacular buildings, similar to those encountered in many other Cypriot villages. The stone masonry of the external façades rose onto the street and was characterized by the small number of tall and narrow small openings. The outer doors, with simple frames, interrupted the uniform “fortress” type front. In contrast with the austere external layout of the buildings, in the internal courtyard the dominant morphological features were the arches of the iliakos.

**3. Diagnosis**
Painted in bold colours, giving a new look to the settlement. The interior dividing walls, mainly on the upper floors, were often constructed of dolmades, (light wood-frame walls filled with a variety of materials such as stones, etc and plastered with gypsum). Timber was scarce in the region and was therefore used exclusively for the construction of roof beams, doors and windows. The arch proved to be an effective means of support and replaced the pole-supported central beam. The floors were usually made of gypsum-marble, stone or earth, and in the later buildings with neo-classical influences, coloured decorative cement tiles were used in the reception areas. The roofs were wooden, initially with flat earth terraces and later inclined and tiled. In the early decades of the 20th century the ‘new’ materials appeared, such as concrete and iron. These replaced the earth roofs and wooden balconies.

**Colour in the architecture of Lefkara**

Colour was extremely important in the architectural expression of the people of Lefkara. Before the introduction of gypsum plaster, the austere stone masonry was brought to life with the use of loulaki dye (a bright blue inorganic pigment), which housewives would dissolve in limewash and use to coat their homes every Easter. The various shades of blue loulaki were the prominent colours in Lefkara, such that a Greek author called it “the blue village” in her travel chronicle written in the 1950’s, but blue was not the only colour. The plastered masonry of the neo-classical and other buildings of the early 20th century were painted in bright colours, usually ochre, ultramarine blue, terracotta or green, giving the settlement a characteristic look. Inside the houses, as well as in the internal yards, colour was once more at the forefront. Here the range of colours was richer and included red, brown, green, etc. The reception rooms of certain buildings were given an elegant look with the use of paintings. Geometric panels with decorative standardised stencilled motifs adorned the central part of the wall, while in the lower part, panels were painted to
look like marble. In the upper part, the frame was decorated with ornate paintings from the plant or animal kingdoms, with repeated geometric motifs or with simple friezes in a variety of colours.

3.2 Situation of the site before the intervention

The buildings are mostly two-storied, with inclined tiled roofs. They belong to the late 19th or the early 20th century and they bear the characteristics of the architectural trends of those periods. Most of the façades were in fairly good condition, but had undergone various interventions which affected the openings, the balconies, the renderings, and of course the colours; the latter two had suffered the most in the last decades as the preference for new materials had led the people in the neighbourhood (and in Lefkara in general) to replace gypsum renderings with ‘more solid’ cement ones. Furthermore, the new conception of the ‘traditional’ which prevailed since the early 80’s induced the owners to remove the gypsum plaster from the façades, in order to reveal the stone masonry considered as the authentic feature of the local architecture. Pointing of the stone masonry with cement had further altered the original aspect of the façades. The new fashion and the preference for maintenance-free modern materials resulted in changes regarding the sizes, forms and materials of the openings. In many cases the wooden doors and windows were replaced with iron or aluminium ones.

Timios Stavros street is asphalted and maintenance consists of adding a new layer of premix every couple of years. This has affected the doorsteps of the entrances of the houses, many of which are now below the street level. The original stone pavement lies under several layers of premix, but it has been greatly destroyed by frequent excavations made to accommodate modern town infrastructure. The square was paved with stone in 1997.

The electricity network is an old-fashioned installation dating to the late 1950’s and has worsened ever since: electrical and telephone wires are hanging on the walls in an array made more untidy by new installations added along the years. Street lamps are of an old model, which is acceptable from an aesthetic point of view, but many of them are broken or not functioning.

The existing urban furnishing and signage are of very poor quality, neglected and in need of upgrading. There is no regulated parking space in the area. The Church square is permanently used as a parking area, as well as other parts and recesses of the street.

Points of interest:

The church of the Holy Cross is the main church of the town, a large building of Franco-Byzantine style, dated to the 18th century. The church is dedicated to the Holy Cross, a piece of which is reverently kept in the beautifully carved and gilded icon screen (iconostasis). The church is a monument of Schedule B, and is visited by tourists as the main point of interest of the settlement and locals for mass and other religious events. Twice a year feasts are organised in the surrounding area of the church for the celebration of the Holy Cross. The chapel dedicated to Saint Mamas is a Byzantine-style small church with an arched portico running along its northern façade.

The Hotel adjacent to the chapel of Saint Mamas is a large two-storied building that has been an inn since the early 20th century. The main feature of the building is an arched portico running along its façade. The hotel and the adjacent church of Agios Mamas are church property: their façades are united by the same arched portico, forming the most imposing architectural feature of the street.

The buildings located in the area are of mainly two distinctive typologies: 19th century vernacular style and early 20th century mixed type with urban influences.
3.3 Construction characteristics and pathologies

One of the most important steps towards the project was the research and analysis of the existing structures of the Pilot Site. In situ research, observation, photographic documentation and oral information were employed in this stage of the project.

Masonries

Masonries are constructed with two faces of local limestone, laid with earth mortar. The gaps between the stones are filled with fragments of the same stone and earth mortar tightly placed. The thickness of the bearing wall is usually 50-55cm.

The main problem that occurs with stone masonry is the loss of the earth mortar pointing due to weather conditions. This often causes the loss of infill stone, the displacement, decay and fragmentation of the masonry. Humidity, both ascending and descending because of the bad condition of the roofs, is the main reason for masonry problems. Human interventions and alterations have also been observed, such as the cement renderings, a material incompatible with the limestone of the masonry.

Renderings

The trend of the last three decades in Lefkara was that the apparent stone walls were the most authentic feature of the local architecture. A careful research based on in situ observations and on photographic and oral evidence proved that this was solely a perception, at least for a certain category of buildings.

Limewash: The older type of rendering was the limewash applied directly on the bare stone walls. This type of rendering can be seen in the houses of the older style. Limewash is usually found in several layers due to the annual maintenance owners used to carry out.

Gypsum plaster: From the very beginning of the 20th century, gypsum renderings covering the stone walls were introduced.
to the town and are still apparent on houses of this style and date that have not undergone any later interventions. It is sometimes encountered over limewash, a proof of the evolution that occurred in the use of renderings.

Humidity and lack of maintenance were the main reasons for the deterioration of the renderings, but it was noted that human action (removal of renderings or application of cement renderings) was the main factor for the disappearance of this element.

**Colours**

Due to the diversity of traditional colours that can be found in Lefkara, a more specific study on this important field was needed. Not only were the colours of the walls considered but also colours of other elements such as doors, windows and balconies.

Colours of walls: Various colours have been detected in houses that have not undergone any interventions. In addition to the general colour study, specific colour research was conducted for each façade and its elements. Information on colours was obtained either by observation of the façades or by interviewing the owners themselves. Most of them remembered helping their parents in the annual repainting or limewashing when they were children. Blue (loulaki), white, ochre, reddish, pink and green were detected at the Pilot Site, witnessing the variety in colours and shades that prevailed in Lefkara not long ago.

Colours of openings: Regarding the colour of the openings, the research showed that the main types of painted doors and windows were the following: Timber board doors and windows were usually not painted (sometimes in grey in the case of shop doors); Panelled doors and windows were always painted, often in two colours (usually brown, grey or green combined with off-white). Persian-type windows were always painted (usually in brown, green or deep reddish colours).

**Doors and windows**

The traditional openings of the buildings in Lefkara present a variety of types. The timber used was usually Cypriot pine. According to the data collected during the research in situ, the main types were the following: Timber board doors and windows are encountered mostly in 19th century houses of the older vernacular style and the shop doors of the 20th century mixed use buildings; paneled doors and windows are encountered mostly in early 20th century houses of the new style with urban influences; and the persian-type windows definitely the latest type are encountered in early 20th century houses of an urban style. All these elements, exposed to humidity, rainwater and sun, without any maintenance to preserve the surface, were severely damaged. In addition, the recent refurbishments resulted in conceptual changes in the openings concerning dimensions and materials.

**Balconies**

Balconies are one of the characteristic features of the Pilot Site façades. Originally

3. Diagnosis
several of them were wooden balconies that were replaced by new ones made of concrete after 1950. Houses of the early 20th century are doted with slim, elegant balconies made of concrete, supported by iron beams, which form part of a particular morphology of buildings and are quite different from the heavy concrete balconies of later date.

Their long exposure to weather conditions has created problems to the structure of the balconies: water penetration causes corrosion of the iron and consequently the concrete cracks, its edges break and crumble.

Iron work

Iron work is encountered on balconies, on panelled doors and on the horizontal openings above doors. It was made by the local ironmongers after elaborate models, often copied from urban houses. The main pathology of the iron elements is rust, due to lack of maintenance.

Pavements

In Lefkara streets were paved with stone. From old photographs it could be asserted that the Timios Stavros street had preserved its stone pavement until the late 1950’s. The original pavements have been covered under several layers of premix. It is doubtful whether the stone pavement had been preserved, because of the repeated excavations carried out for the installation of the infrastructure and services during the last decades. The research for the technique and material used for the old stone pavement was directed to other areas of the town, where remnants of the original pavements were still in sight. They are made with local stone, tightly packed on a perpendicular axis presenting their narrow side on the surface and do not follow a particular pattern.

3.4 Drawing of the existing situation

The collection of the above information went hand-in-hand with the preparation of the plans, assigned to a team of private architects. In the first place, detailed drawings with description of materials, colours and other elements of the façades were made.

The drawings completed for the diagnosis of the project are divided into:
3. Diagnosis

A. General plans based on satellite views and cadastral plans, plans of the area (roof plans, floor plans and land use plans) and drawings in 1:200 scale of the square (plans and elevations).

B. Elevations in 1/100 scale of various parts of the street, including several façades, in order to get a general image of the area. Elevations in 1/50 scale of each façade, with definition of all apparent elements.

C. Detailed drawings in a 1/20 scale of doors, windows, ironwork and balconies.
4. The Project

4.1. Reflections and criteria

With the completion of the diagnosis of the site, an in-depth description and analysis of the current situation was available. At this point, the reflections on the project began. However it was necessary to identify the objectives in relation with the target groups of the project, who were the Local Authorities and the local community of Lefkara, the owners of traditional buildings and the owners of the particular dwellings of the pilot site, as well as the visitors.

In this framework, the objectives of the Pilot Operation were set: The project was to serve as a ‘best practice’ example for future projects of the same type and to help the local community understand and appreciate the wealth and quality of traditional architecture. It also aimed at helping the local community visualize how a building can be transformed with the proper rehabilitation. Moreover, the project aimed at more than a simple beautification of the urban landscape. The intention was to give the craftsmen working with rehabilitation practical examples, to help investigate traditional techniques and know-how and, something judged as particularly important, to study and consider different cases and approaches on the different elements and interventions.

Secondly, the theoretical approach had to be considered. The level of intervention, the phases to be restored and the classification of the elements by their significance, had to be decided. In order to decide on the level of intervention to be undertaken, the previous alterations on the façades were classified:

- Serious alterations included the significant change of façades and demolition of parts of the building in relation to their original morphology.
- Minor alterations were those that could be easily recovered: renderings, colours, change of doors and windows, etc, without intervening in the overall structure of the building.

The diagnosis had already shown that the pilot site was an urban tissue which had not been static through time: The various changes on the facades of the
buildings reflected an evolution based on social, economical and esthetical reasons, which should be respected as a part of the history of the site in particular and of the town in general. Based on this, it was decided that the aim of the pilot operation was not to recover a single phase of the urban landscape, but to preserve the variety of elements deriving from its evolution. On the other side, it was judged necessary to ensure the homogeneity of the urban landscape - and this was proposed to be achieved in two ways: by removing the elements that were completely alien to the character of the local architecture and by restoring those that had been a significant part of it and for which there was solid evidence deriving from the multidisciplinary research carried out previously. In this spirit, the recovery of lost elements, such as the colour palette and traditional pavement was an important objective. The particular character, the texture and colour of surfaces, both horizontal and vertical, needed to be presented to the public in order to reconstruct the traditional ambience and provide an example for other parts of the town.

The materials judged as alien and inadequate were mostly those applied during the refurbishments made in the last 30 years. Accordingly, cement renderings and pseudo-traditional stone cladding recently added to the surface of the facades had to be removed. Alterations on openings made without any consideration on rehabilitation principles had to be reconditioned in terms of dimensions and type. Important elements of the traditional architecture such as renderings and colours had to be reintroduced to the buildings, using traditional materials and techniques. It was also necessary
to proceed to the improvement of the electrical installations. Finally, since the rehabilitation of the urban landscape was more than the restoration of the facades, it was obvious that other elements such as signage and urban furniture should be improved considerably, in order to ameliorate the local ambiance and create some pleasant spots for resting and socializing. It was agreed that modern features (such as urban furniture, signs or a/c covers) were to be designed and constructed with contemporary look and materials.

4.2 Project documents

Based on the data collected and on the reflections and criteria explained above, a project proposal for the rehabilitation of the urban landscape of all the area was developed. The plans prepared comprised the following:
A. - Elevations 1/100 scale of various parts of the street, including several façades in colour. Elevations in 1/50 scale of every façade with definition of the proposed interventions.

B. - Drawings of the street with definition of the various interventions: pavements, water drainage.

C. - Detailed drawings in 1:20 scale of doors and windows, balconies and ironwork.

D. - Drawings in 1:200 scale of the Church square including plans, elevations and views.
5. The implementation of the Project. Results and impacts

5.1 The team and the actions

The implementation of the project needed the constant collaboration of all the implicated parties. Like the previous actions, this was a collective and multidisciplinary work; subsequently it was decided that the people who had worked together for the preliminary actions and research would continue their collaboration during the rehabilitation works. The members of this team came from the Department of Antiquities, which is the coordinator of RehabiMed in Cyprus, the collaborating Department of Town Planning and Housing and the private architects who undertook the preparation of the project.

The next step towards the implication of the project was the assignment of a building contractor who would carry out the works. It was important to find someone with experience in the traditional building methods of the area. The winning tender was from a local private contractor who met with the above requirements, having undertaken the rehabilitation of several listed buildings in the district.

The project took in mind the whole area of the pilot site and for this reason it proposed the rehabilitation of all the facades, a special infrastructure for the evacuation of rainwater, the reconstruction of the pavement, the urban furniture and the redesign of the Church square comprising the reconstruction of some demolished buildings, the re-orientation of the circulation of vehicles and the creation of a covered sitting area. It was very important to give to the Municipality a project with a global vision in order to place at its disposal a coherent proposal, a tool to encourage and promote further development of this area with public and private initiatives. However, the available funds for this Pilot Operation were not enough for the full implementation of the project. They allowed the rehabilitation of 19 facades, the infrastructure for future implementation of the underground electrical network, the improvement of the present external electrical network, the repair and reconstruction of a small surface of pavements and the placement of some urban furniture and signs.
5.2 Works of rehabilitation of the urban landscape

The pilot operation started on July 2007. Based on the diagnosis made previously, it focused on elements with problems and alterations due to physical deterioration and human action, such as the masonry, the renderings, the colours, the openings, the thresholds, the balconies, the ironwork and the roof overhangs. It also comprised preventive actions against humidity like the installation of rain gutters and pipes. The works were also oriented towards the improvement of the streetscape with pavements, urban furniture and commercial signs. Finally, it was judged necessary to inform people about the Pilot Operation by the means of a panel placed in a spot of the site frequented by visitors and local people.

Masonry – Cleaning and general repairs

The masonry was cleaned out of elements such as dirt and vegetation. Severely damaged renderings, cement renderings or other unsuitable materials such as imported decorative stone cladding were also removed. The parts of the walls that were destroyed or disorganized were removed. The masonry was then rebuilt or completed where needed using the local stone and lime mortar. The same type of mortar was used for pointing.

In some cases, new elements concerning the openings were revealed after the removal of renderings; it was then found out that doors and windows had been walled up partially, thus becoming smaller than originally. Each case was discussed separately and solutions were given according to the possibility of change. In this way some openings were restored to their original width.

Renderings

Most of the original gypsum renderings had either been removed, or replaced with cement renderings, or were badly deteriorated. In these cases new lime renderings were applied, without the use...
5. The implementation of the Project. 
Results and impacts

Removed plaster from façade

New plaster on the façade

Façades before works

Choosing from colour samples

Façades after works
of level guides, following the traditional technique. Whenever this was possible, the original rendering was preserved and repaired where necessary.

Previous experience on rehabilitation of traditional buildings had proved that the industrial gypsum currently available in the local market is not of such a good quality as of old. It is extremely hydrophilic and attracts dampness, which creates problems such as peeling and discolouring. The lime renderings, though industrial as well are less prone to peeling and are more and more used in the rehabilitation of old buildings, especially on the outer surfaces which are more exposed to humidity - and this was a reason for preferring lime to gypsum plaster.

**Wall painting – Colour samples**

The most pre-eminent colour in the site was the blue loulaki, but ochre, white, deep red and pink were also applied, according to the information gathered during the preliminary studies and the evidence found in situ. Colour samples in several tones were prepared for each façade, according to the analysis made previously. The colour pigments were diluted in water and lime, according to the traditional technique of painting. Colours were applied either on the rendered surface or directly on the apparent stone masonry, depending on the architectural style of each façade.

**Doors and windows**

After a thorough examination of all the existing doors and windows, it was decided which ones needed conservation or replacement. Special care was taken concerning the preservation of the original doors and windows that were still in place. They were carefully repaired and maintained, since it was important to preserve the original elements of the facades. The rotten parts and foreign parts from previous interventions (steel, plates, wooden parches, etc) were removed and mended with wooden wedges and modern paints were removed using chemical paint removers. A wood treatment followed, using wood oil and insecticide. The repaired doors and windows were reinstalled using the original ironmongery, treated previously with anti rust product.

Old wooden doors and windows deteriorated beyond repair were replaced with new ones made in the same style and dimensions by the local carpenters. Aluminum doors and windows were also replaced by new ones made of pinewood, according to the architectural style of each façade. New wooden and metal...
parts of the openings such as iron hinges, bolts and locks were made according to the traditional ones. They were meant to be a functional part of every door or window and not just decorative elements. Doors and windows were painted with semi mat or mat oil paints. The colours were determined according to the research on the traditional colour palette of the openings. In some cases, the rehabilitation of the original openings was made possible by the means of old photographs.

**Thresholds**

The condition of the thresholds was studied separately in order to decide whether they should be repaired or remade. When the original threshold could be preserved it was maintained and repaired where necessary. Where the damage of the original doorstep was beyond repair, or wherever it was impossible to reach its level (the street had been considerably elevated due to several asphalt layers), a new doorstep of stone was made and placed a little higher than the street level in order to prevent rainwater from pouring into the house.

**Balconies**

Where restoration was needed the reinforced concrete constructions of the balconies were repaired. Crumbled parts were removed and cut, the iron reinforcement was coated with epoxy paint and new polymeric rendering was applied to protect the reinforcement. When the existing balcony could not be repaired, because of excessive damage, it was replaced by a new one of the same dimensions and shape.
Iron work

The original ironwork of balconies and doors was brushed with a metal brush and then with sandpaper to remove the rust. Then it was painted using coatings suitable for metal surfaces.

Roof overhangs

The roof overhangs made of wood (Karkani) had suffered severe damage because of the lack of maintenance for many years. The rotten wooden parts of the eaves were replaced with new wooden boards and the tiles were put back in place carefully. The wooden part was painted to the original colour.

Rain pipes and drains

Securing the proper drainage of rain water from roofs and façades was of vital importance for the preservation of the façades New metal (galvanized steel) horizontal drains and vertical rain pipes were placed in every building.
5. The implementation of the Project. Results and impacts
Pavements

At two points of the Timios Stavros street part of the old stone-paved street was revealed under a thick layer of asphalt. It was quite disturbed, but it was decided that it should be preserved. However, the discovery of the original pavement some 20 cm below the existing street level made the planned construction of new pavements a very difficult affair: everybody, including the mayor who visited the spot, agreed that the best thing would be to lower the street level to the original point and try to recover as much of the old pavement as possible. Unfortunately this was for the moment impossible from a technical aspect but nobody wanted to construct new pavements on the higher street level. Finally the team opted for an intermediary solution: the old pavement revealed would be preserved and repaired and the missing parts would be completed with new pavement made according to the traditional techniques. The Municipality would take care of the street level problem in due course, in the context of a general project on street pavements.

Signage and urban furniture

The old commercial signs were replaced by new more discreet ones designed in a way to remind of the most known local product, the traditional lace. Urban furniture placed in a recess of the street until then used as a parking place turned it into a pleasant point of rest and socialising. Metallic rods were placed in front of the recess to inhibit car parking. In order to inform the visitors on the Pilot Operation a large panel with photos and texts explaining the project was placed in the Church square.

Works supervision and documentation

During all the works, the team kept a good dossier of photographs, recording the evolution and the methods adopted in every intervention. The collaboration with the interested parties during the works was very important. In this context, scheduled
meetings between the contractor and the architect were held every week. During most of these meetings the project team was also present to inspect the work progress and the quality of the work carried out, to discuss and solve problems that occurred during the works. Moreover, meetings with the residents/owners had also taken place when necessary. These meetings allowed the owners to express their opinions and to be involved in the project. Meetings with the local authorities were also held in order to brief the mayor and the municipal counselors on the project and on the progress of the works and to exchange views about unexpected matters.
5.3 Results and impacts

The objectives set at the beginning of the project have been achieved. Namely, the works carried out at the Pilot Site literally transformed that part of Lefkara, whose unique architecture suffered defacement through time and from human intervention. Traditional elements in danger of disappearing like renderings and colours were restored to their eminent position in the local architecture.

The involvement of the public was the second objective set and achieved: the project was widely accepted by the people of the town and visitors; the constant dialogue established with the local authorities, the stakeholders and the broader public from the very beginning had definitively contributed to this.

The third objective was to present a project that would serve as a model for urban landscape rehabilitation. In this subject it can be said that the impacts of the Pilot Operation have already began to appear in several cases of rehabilitation in Lefkara and elsewhere. In Lefkara, the recovery of the renderings and colours applied on a large scale in the Pilot Operation Site has launched another project aiming at the recovery of traditional architectural elements. One of the largest and more representative houses of the town,
Patsalos house (now the local museum of traditional embroidery and silversmithing), had been stripped of its renderings during the restoration works carried out two decades ago. By this time, the renderings have been restored on the façades of the building and the works continue with the recovery of the original colour of the openings. The characteristic blue colour will also be applied on the façade. In the same context, the relevant authorities encourage architects undertaking rehabilitation projects to follow the guidelines applied for the Pilot Operation Project and especially the research on lost elements and their recovery.

Projects concerning the rehabilitation of the urban landscape are about to be implemented in other communities, taking into account the RehabiMed Method, using historical research, oral information, documentation from archives, careful observation of the local architecture and detailed plans. In this way the rehabilitation of the façades will be based on documented evidence, in order to achieve the recovery and preservation of the local traditional architectural elements.

The RehabiMed Pilot Operation in Lefkara has shown the advantages and possibilities resulting from the application of the RehabiMed Methodology in the rehabilitation of the urban landscape. It has proved that documentation, research, good plans, careful supervision of works and dialogue with the local authorities and stakeholders are essential elements for a successful rehabilitation.
5.4 Two examples
5. The implementation of the Project. Results and impacts
5.5 Inauguration of the pilot Project

The Pilot Operation was inaugurated on the 10th of February 2007, at an event organised by the Department of Antiquities. It was attended by the Minister of Communications and Works, the Minister of Justice (who was mayor of Lefkara when the project started), local deputies, ambassadors, the representative of the European Union Delegation in Cyprus, various officials, the Municipal Council and the Mayor of Lefkara, as well as a large number of people. Speaking at the inauguration ceremony, the Minister of Communications and Works Mr. Haris Thrassou stressed the benefits of the participation of Cyprus in Euromed Heritage Projects such as CORPUS and RehabiMed, and noted the importance of the traditional architecture as a factor of sustainable development. In his speech, the mayor praised the work carried out in Lefkara and assured that the aim of the Municipality was to revive the tradition in Lefkara, by means of a more dynamic valorisation of the town's rich architectural heritage.

The press commented on the project with titles such as “Lefkara is recovering its traditional face”, “European Union funds rehabilitation works in Lefkara”, “The RehabiMed Project contributes to the rehabilitation of traditional architecture”, and “Rescue operation of old architecture”, reflecting the general spirit of approval regarding the project.
The idea for a project made by the school children on the RehabiMed Pilot Action was born when members of the Rehabimed team made two presentations of the Project to the children of the last two grades and then showed them around the site. The interest of the pupils and the teachers for the works led to the decision of involving the children in a project in which they would present the traditional architecture of Lefkara and the Pilot Operation. The teachers organized the work of the children with photographs and paintings of façades, and interviews from the inhabitants and the Mayor of Lefkara. Here are some extracts of the interviews:

Have you made any interventions on your house?
The ceilings had collapsed; we fixed them, like the arches and the floors. I have changed the xoporti (the main entrance)

What is your opinion about the works done in the church street?
I like them, it’s very nice down there now...I would wish that they embellished the small square in my neighbourhood. Some benches and plants in pots would make it very agreeable.

Ms Athanasia Kortari, age 65
Have you made any changes in the house since you moved in?
Certainly, a lot of refurbishment because old houses were made to accommodate animals as well, but we didn’t need stables any more. We needed more rooms, something that would be more functional.

What is your opinion on the works done in the church street?
Well, very nice from the esthetic point of view. This European project did a good restoration work, the houses look a lot better now, the street is tidied up.

Do you like the works on the Timios Stavros street?
Indeed I do! They removed those doors and windows and made better ones of wood and things like that. Now it looks like in the 1910’s, the traditional architecture.

What is the opinion of the Municipality on this effort for the valorization of the town?
It is an important project and for us it’s the beginning of a work that must extend to all the main streets of the town.

What are your plans for the future?
Yes certainly, this project has shown that works like that are important and people make very positive comments about it. For me the redesign of the church square is a priority.
### Project data

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<tr>
<td><strong>1. Project</strong></td>
<td>LEFKARA PILOT PROJECT: REHABILITATION OF THE URBAN LANDSCAPE</td>
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<tr>
<td><strong>2. Employer</strong></td>
<td>Department of Antiquities, Ministry of Communications and Works</td>
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<td></td>
<td>Collaborator: Department of Town Planning and Housing, Ministry of Interior</td>
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<td><strong>3. Location</strong></td>
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<td><strong>4. Budget</strong></td>
<td>145,000 (co-funded by the European Union in the framework of the Euromed Heritage Program, Spanish Cooperation (AECI) and the Republic of Cyprus)</td>
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<td><strong>5. Contractor</strong></td>
<td>MELFICA CONSTRUCTION CO. LTD.</td>
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<td>Carpenters: George Roussos &amp; Savvas Ptochos, Pano Lefkara</td>
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<td><strong>6. Duration</strong></td>
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<td>Project Completion date: 01/2007</td>
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<td><strong>7. Project Team</strong></td>
<td>Department of Antiquities</td>
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<td>Department of Town Planning and Housing</td>
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<td>Vassilis Ierides Associates</td>
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The manual of intervention in the urban landscape
The destroyed or disturbed parts of masonry are repaired using the same material and following the traditional techniques. To begin, the mason has to have the necessary material ready: stones of various sizes, fragments of stone for infill, lime mortar and his tools.

The masonry is brushed and cleaned with a light water jet. The right size stones are chosen and a small amount of lime mortar is placed deep into the cavity.

Then the stone is adjusted and tapped into the cavity. The gaps around the new stone are filled with small fragments placed tightly.

Any excess of mortar is brushed with a hard brush when it dries. A narrow pointed iron is a useful tool for cleaning and for placing mortar into narrow cavities.
The masonry is pointed wherever needed, with lime mortar, taking care to keep the original aspect of the walls.

The first step is to clean the masonry and remove the loose stones. Cavities are cleaned with a pointed iron tool. Small filling stones of various shapes must be at hand. Large stones can be fragmented to give infill of the desired size.

Using a narrow iron, a small amount of mortar is placed in the cavity which is afterwards filled with small stones placed tightly together to avoid gaps between them.

The infill is tapped into the cavity and the remaining of the gap is filled with mortar. Protruding mortar is brushed away when it dries.
The next day the rendering is humidified and a second, thinner layer of lime rendering is applied. The surface is finally smoothed using a float with a sponge surface. The plaster must be kept humid during the next 30 days.

The lime rendering powder is mixed with clear water. The wall must be well humidified prior to the application of the rendering.

A first layer of lime plaster is applied on the wall surface with a trowel or a float.

The lime rendering is available in powder form or in paste. Prior to the application the masonry has to be cleaned of dust. It is advised to avoid applying renderings by a very hot and dry weather, because the renderings cannot keep the necessary humidity and will not adhere well onto the surface.
The traditional technique for colour application on rendered surfaces or directly on the masonry is the dilution of the colour (usually an inorganic pigment in powder form) into a solution of water and lime. Loulaki, natural ochre and iron oxides can be used in this technique. For optimum results apply the colour on humid surface and in cool weather.

In the case of simple whitewash lime is dissolved in clear water. Alum salt added to the mixture acts as a color fixative. The usual proportion for limewash is 3 parts water - 3 parts lime - 1/6 part salt.

If we want a colored limewash a pigment has to be added, the volume of the pigment may vary according to the shade required. Around 1/6 volume of pigment would be enough.

Before application, the surface must humidified. Masonry must be cleaned with a hard brush prior to the application. Limewash is applied using a large clean brush. The second layer is applied after the first one is dried.
The original doors and windows are an important part of a building. They must be carefully repaired and maintained, since it is best to conserve the original elements.

Rotten parts and foreign parts from previous interventions (steel plates, wooden patches, etc) must be removed and mended with wooden wedges.

The original accessories of the old openings must be treated with antirust products and preserved. The colours must be determined according to a previous colour study.

To remove modern paint, a chemical paint remover can be applied on the wood, left to act for about 5 minutes and scraped off using iron scrapers. Remains are removed using a hard brush. Rust on ironwork is removed with a hard brush and sandpaper. A coating suitable for metal surfaces is finally applied.
1. Pavement construction with use of mortar

The original stone pavement in traditional settlements is often hidden under layers of asphalt or cement. For this reason a preliminary investigation is recommended in order to check this out. Missing parts of the original pavement can be replaced with a new pavement of the same style. Pavements can be constructed using mortar or dry soil.

The asphalt must be removed carefully. The original pavement discovered is repaired: missing stones are replaced with new ones of the same type and the gaps are filled with lime mortar.

In the case of new pavement, the stones and their placement must be similar to those of the original pavement. The ground is cleaned and levelled and the stones are placed vertically on a layer of sand and lime mortar. Bigger stones are used for the steps.

The gaps are filled with lime mortar which is left to set and then the surface is rubbed clean using metal brushes.
2. Pavement construction with dry soil (traditional technique)

Within the settlements the first stones to be laid are placed in a row with the help of a fuse, thus forming frames to be filled with stones. In the outskirts of settlements where there are no flanking walls, borders are formed by placing bigger stones in a row at the edges of the road or path.

The ground to be paved is cleaned, leveled and tampered with a wooden tamper. In stone paving, the stones are placed vertically in a dense formation. Dry, sieved soil is poured on the pavement and pushed into the gaps using a broom and a stick. The pavement is then sprinkled with water. In slab paving stones are set horizontally.

Within settlements, pavements are constructed with a slight incline towards the center to allow the discharge of rainwater. A channel with bigger stones is formed lengthwise in the centre of the street for this purpose. Steps are constructed with large stones placed vertically on the ground.