



THE UNIVERSITY OF THE ALGARVE
The Faculty of Sciences and Technology

SYNERGY OF ARCHITECTURE AND LANDSCAPE ARCHITECTURE
Inventive Modes of Interdisciplinary Practice

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The work is performed after the coordination of:
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**SYNERGY OF ARCHITECTURE AND LANDSCAPE ARCHITECTURE.
Inventive Modes of Interdisciplinary Practice**

Declaration of Authorship of the Thesis

Declare to be the author of this work, which is original and unpublished. Authors and works consulted are properly cited in the text and listed in the list of references included.

Olga Moroz

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Abstract

This work is the result of investigation and curricular internship in the architectural firm SMS Arquitectos, Lda which has been done under the final stage of the Master Course in Landscape Architecture in the University of the Algarve. Thus the principal aim of the work is to research the relationships between architecture and landscape architecture and apply it during the practice.

The first part is the theoretical research of the relationship between architecture and landscape architecture. This study was based on existing frameworks of interconnection of two disciplines and on the analysis of most characteristic examples. After the search and analysis the framework for professional architectural practice which contributes to merge architecture with landscape architecture was proposed.

In the second part the works involved during the curricular internship are presented. Firstly the firm of the internship is described with brief analysis of finished works. Then the projects in which I participated are described and analysed on the base of developed in the first part theoretical framework of the Synergy of Architecture and Landscape Architecture. This second part is called the practical research.

The separation of practice of architecture and landscape architecture in Europe has its own advantages and disadvantages. During this work it is intended to analyse it and propose solutions both for architects and landscape architects, how to collaborate in one project resolving ecological, aesthetic and social aspects of design.

In the conclusion the analysis of effectiveness of proposed framework and recommendations for future firm's development were made.

The supervisor from the University of the Algarve is the Professor Desidério Sares Batista. The coordinator is Sergio Marcelo Santos, the Senior Architect from the SMS Arquitectos Lda.

Keywords: Internship, Project, Architectural Firm, Architecture, Landscape

Resumo

Este relatório é o resultado de investigação e de trabalho desenvolvido durante o estágio curricular do Mestrado em Arquitectura Paisagista da Universidade do Algarve. O estágio teve a duração de 6 meses e realizou-se no atelier SMS Architectos, Lda, localizado em Loulé.

O principal objectivo deste trabalho foi a investigação da relação entre a arquitectura e a arquitectura paisagista, através do desenvolvimento da teoria da Sinergia da Arquitectura e da Arquitectura Paisagista, e a sua aplicação na prática durante o estágio curricular num atelier de arquitectura.

Na primeira parte do trabalho foi feita uma investigação sobre as relações existentes entre a arquitectura e a arquitectura paisagista. Esta investigação iniciou-se com uma pesquisa histórica sobre estas duas disciplinas de forma a perceber as razões e as consequências da sua separação. Em seguida iniciou-se o estudo da interconexão entre a arquitectura e a arquitectura paisagista. Este estudo foi baseado na análise das diferentes teorias sobre as interligações entre as duas disciplinas e na análise de exemplos característicos. As diferentes teorias foram encontradas através de pesquisa bibliográfica, e os exemplos escolhidos são de projectos realizados em Portugal, onde a interconexão entre a Arquitectura e a Arquitectura Paisagista existiu. Após pesquisa e análise foi proposta a teoria que mais contribui para unir a arquitectura com a arquitectura da paisagem na prática profissional.

A segunda parte deste relatório, investigação prática, é constituída pela apresentação dos trabalhos desenvolvidos durante o estágio curricular. A apresentação da empresa, onde se realizou o estágio, é feita através de uma breve análise às obras concluídas. A interconexão entre a Arquitectura e a Arquitectura Paisagista foi o factor mais importante para a escolha dos projectos apresentados neste relatório de prática de atelier. Após a análise dos projectos mais relevantes desenvolvidos pela empresa, são apresentados os projectos que desenvolvi, os quais são analisados e descritos tendo como base a teoria da Sinergia da Arquitectura e da Arquitectura Paisagista, teoria desenvolvida na primeira parte da investigação teórica. Para este relatório escolhi dez projectos desenvolvidos no atelier durante o estágio curricular: um hotel, um edifício de apartamentos e oito moradias.

A separação da prática da Arquitectura e da Arquitectura Paisagista na Europa, actualmente, tem as suas vantagens e desvantagens. Ao longo do desenvolvimento deste trabalho pretende-se analisar e propor soluções, tanto para arquitectos como para paisagistas, para futuras colaborações na elaboração de projectos que englobem aspectos ecológicos, estéticos e sociais.

Como conclusão deste relatório foi feita uma análise da eficácia da teoria da Sinergia na Arquitectura e na Arquitectura Paisagista. Através das conclusões alcançadas foram apresentadas recomendações importantes para o futuro desenvolvimento da empresa.

Este estágio curricular teve como orientadores o Professor Doutor Arquitecto Paisagista Desidério Sares Batista, pela Universidade do Algarve e o Arquitecto Sérgio Marcelo Santos, pela empresa SMS Arquitectos, Lda.

Palavras-Chave: Estágio, Projeto, Atelier de Arquitetura, Arquitetura, Paisagem

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1 Introduction

This work is the research about relationship between architecture and landscape architecture, which was done both theoretically and practically. Firstly, I would like to present briefly my personal professional history to explain the choice of the theme, why I crossed in the thesis these two disciplines.

During the five-year course of architecture in Minsk in Belarusian National Technical University I have got a lot of theoretical and practical disciplines from the field of landscape architecture. In Belarus architects are prepared as professionals who could do the work of architect as well as the work of landscape architect normally in collaboration with landscape engineers. So it was nothing strange for me when on the second year of my professional practice in the architectural firm AR-DE (Minsk, Belarus) where I have been working as a junior architect it was a need to do exterior design by an architects and I was asked to do it. At the same time I continued to work on architecture and was responsible for exterior design (figure 1). From this moment my deeper acquaintance with practice of landscape architecture has started. Thanks to that all my works became designed according to its surround because I started every project from the analysis and design of it. This way from the second year of my career I was involved in two disciplines simultaneously.



Figure 1. Projects developed during the work in AR-DE, Minsk. Source: AR-DE

After the seven years of experience as an architect in Belarus I decided to study landscape architecture because I sincerely wish to fill the gap of knowledge about plants and soils, about land planning and urbanism, about ecology and sustainability. Thus I chose the Master Course of Landscape Architecture in the University of Algarve.

During the study at this course my projects always were considered by professors and colleagues as architectonic. But with the disciplines related to sustainability I started to think more how to link my architectonic solutions with landscape. I have been designing a

lot of mixed structures with vegetation, and synergy of architecture and landscape architecture practice became a main characteristic in my academic projects (figure 2).



Figure 2. Projects developed during the study in The University of the Algarve

Thus as the main task of the last semester where student can choose the theme of thesis or project I decided to research the area between the boundaries of architecture and landscape architecture both in theory and in practice, calling it “The Synergy of Architecture and Landscape Architecture”. The term Synergy comes from the Greek word “synergia” [συνέργεια] which means "working together". So in my case in this work I will study how to design using knowledge from both disciplines, architecture and landscape architecture, creating this way design with mixture of architecture and landscape architecture linked to its surround.

On the base of and during my professional experience as an architect, course of architecture and master course of landscape architecture I have repaired the conflict between architecture and landscape architecture. When an architect finish the course of landscape architecture like no other understand the importance of visual and technical balance between building and its surrounding. Nowadays the rate of building is very high. And with the growing of the green building movement, landscape architecture will likely become even more critical to the building process. This fact one more time contributed me to research more relationship between these disciplines. So during the last semester, during five months of the internship in Portugal as a landscape architects in architectural firm I worked, studied and analysed the solutions how to resolve this conflict in practice. So in this work I will talk about methods which were determined and applied both in architecture and landscape architecture in the projects in which I participated, about tactics which help to link architecture and landscape architecture in one work.

In this work I will try to answer to the question: ”How all these methods work in area between the boundaries of architecture and landscape?”, continuing to think beyond the confines of just-architecture or just-landscape. Other questions which I raised at the beginning of this work: How to apply knowledge received in the Master Course of

Landscape Architecture in architectural practice? How my architectural experience influences to landscape architectural project?

2 Objectives

The objectives of this work were divided into two principal parts (figure 3). The first part is related to the study about the connection of architecture and landscape architecture, about how to achieve in one project the synergy these two disciplines. The second group of objectives was established due to the fact that an internship is an opportunity to get hands-on experience with the employer in architecture and landscape architecture field. As well during the practice the investigation and examination of interaction of architecture and landscape architecture is continued to be one of the principal target.

The objectives from the first group are:

- To research relationship between architecture and landscape architecture, to study the history of their division;
- To study existing frameworks of interconnection of architecture and landscape architecture;
- To analyse some examples of landscape/architectural practice in Portugal where architecture is closely connected to landscape;
- On the base of theoretical research create a Framework of Synergy of Architecture and Landscape Architecture.

The achievement of described in the first group objectives prepares a theoretic base for working on the second group of objectives. This second group of objectives group defines what is expected to be taken away from the professional experience:

- To study the SMS Arquitectos, Lda Studio, its history and present, its organization, which types of projects are designed there, to define at the end of this analysis some trends; To understand the place of the studio in the architecture and landscape architecture of the region and country;
- To learn about the architectural business in Portugal by practice, how it functions on both a large scale and on a day-to-day basis and become familiar with the project planning process, learn how to conduct initial client interviews, participating in the professional life of the studio, interact with colleagues creating

this way own professional network. To see how it is to work in team in reality and collaborate with specialists from related professions;

- To receive new professional knowledge and skills and to practice and apply already received at the university professional skills like sketching, drawing and modelling, familiarizing myself with the most frequently used software programs in the field of architecture and landscape architecture;
- To understand relationships between architecture and landscape architecture in practice, how a landscape architect could collaborate within architectural studio.
- To apply proposed in the first part framework;
- To make analysis in particular of relationship architecture and landscape architecture during the internship by taking comments, suggestions, recommendations and critiques;
- To propose solutions for future development of the firm.

OBJECTIVES

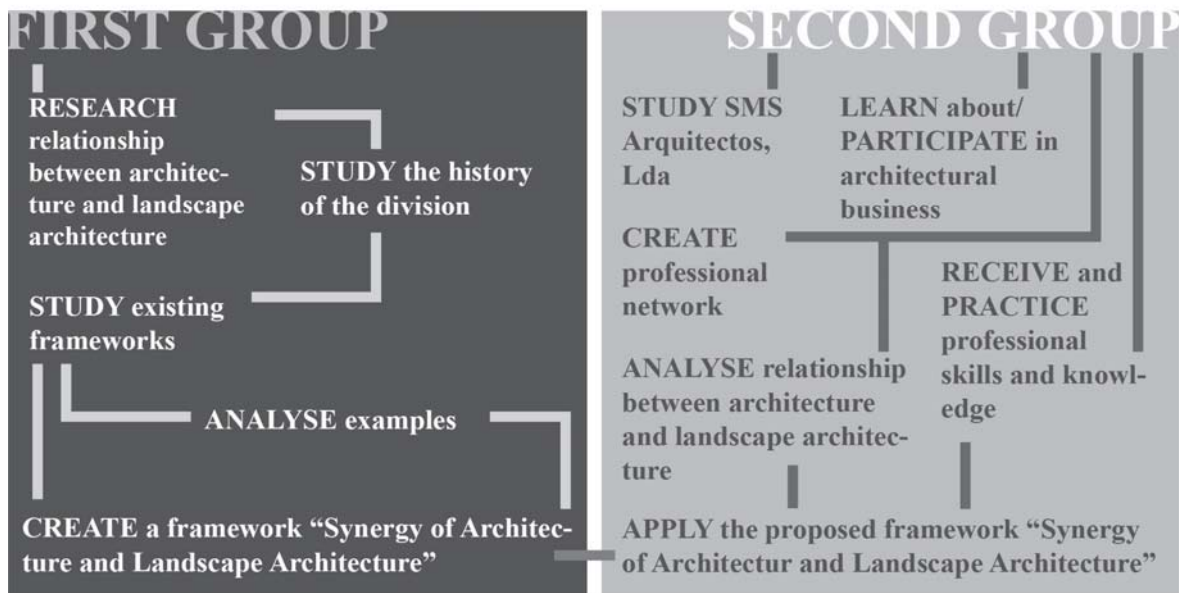


Figure 3. The objectives

The successful achievement of the determined objectives will help start professional career in future with understanding of the importance to unify of architecture and landscape architecture.

3 Methodology

The methodology applied in this work is divided into two phases due to the division of the objectives into two principal groups: first and second phases (figure 4).

The first phase which is related to theoretical investigation part is presented by descriptive case study methodology as a dominant one. The principal tactics of this methodology are: bibliographic research, search and analysis of examples of projects and frameworks where architecture is interconnected with landscape architecture and observation of architecture in real life. Also was applied the sub-dominant called historical investigation methodology to study the history of division between architecture and landscape architecture and this method also involves the bibliographic research.

The second phase is about practical research, about internship, so it includes the methodology of the SMS Arquitectos firm. Almost all the projects are started from meeting where the senior architect assessing the needs of his clients clarifies all the conditions of a site. Information discussed often includes a building's layout, construction materials and price. Then in the circle of colleagues the first ideas are talked over and tasks are divided among the architects. With analysis, sketches, drawing and more meeting with clients passes the process of design of a project till preparation of drawings, documents and images for the delivery them to a City Council. This can involve working of senior architect one-on-one with team members or leading meetings. After an inspection in City Council and often, as it is necessary by the opinion of architects from a City Council with some corrections, a project is approved. Then a construction starts a senior architects or other architect oversees the entire building process from beginning till it ends. This involves continually communicating with construction supervisors to ensure that everything goes according to plan. Consequently, a senior architect is often required to travel to a construction site and provide guidance. If problems arise during construction, he may need to improvise and make the necessary changes.

The next scheme illustrates better the possible tactics and their relationship of the methodology which is used in the SMS Arquitectos firm (figure 4).

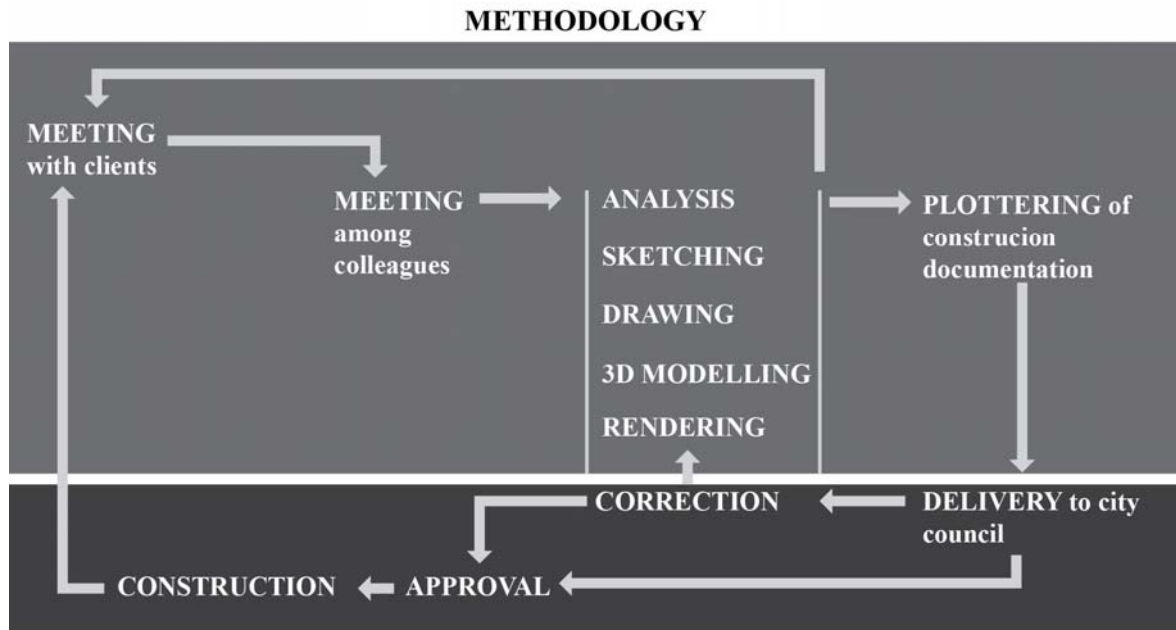


Figure 4. The Methodology of SMS Arquitectos, Lda

This presented methodology of the firm was the dominant one during the internship. But during the design process for the analysis of developed works the descriptive case study was used one more time with such tactics as analysis and bibliographic research.

4 The Theoretical Research. Development of a theoretical base for the framework of Synergy of Architecture and Landscape Architecture

Looking to the past for the inspiration

My personal vision of architecture in connection with landscape architecture has started from meeting with European palaces and parks ensembles of sixteenth - eighteenth centuries, treasures-houses of European landscape architecture concept. Visited by me in France, Germany, Italy and Russia they serve as architectural icons of connection architecture and landscape architecture through my entire career (figure 5). Yes, they appeared long before the concepts of ecological sustainability but “come alive by the skilful interplay of natural landscape and architectural elements” (Steenbergen & Reh, 2003). The gardens were designed as external extension of building. Thus personally during design I always refer to images of these ensembles especially in the terms of their

aesthetic harmony. Searching for bibliographic sources I repaired that there are a lot of authors (Milani, Steenbergen and Jellicoe) which study the relationship between architecture and landscape architecture based on the analysis of historical examples. For example Jellicoe refers those Italian baroque gardens with their major axes of composition, “this lyrical and experimental use of land sprang many of the ideas of future townplanning”.



FRANCE
The Palace of Versailles

GERMANY
Schloss Nymphenburg

RUSSIA
Peterhof

Figure 5. Visited european palaces and parks ensembles. Source: the Internet

Later I will analyse modern frameworks and example but for the beginning I chose old palaces with its gardens as an inspiration for my research. The way how those project were created, when architectural and landscape architecture parts were designed in conjunction, gave me an idea for my personal research that nothing of the both disciplines, both practices is in front of other, but they are simultaneous at the process of design. And I marked the holistic approach in design as the first condition of successful functioning of its products in the future.

4.1 Terminology: Architecture, Landscape architecture, Project.

I started the theoretical part from the definition of what is Architecture, Landscape Architecture and what is a Project in both these fields.

Architecture

I start the definition of architecture from the general and then present some quotes which reflect different sides of it. Architecture could mean both the process and the product of planning, designing and construction and other physical structures.

Architecture - Response

As the process architecture is well described by Francis D.K.Ching (2007)

Architecture is generally conceived, designed, realised and built in response to an existing set of conditions. These conditions may be purely functional in nature, or they may also reflect in varying degrees the social, political and economic climate. In any case, it is assumed that the existing set of conditions “the problem” is less than satisfactory and that a new set of conditions “a solution” would be desirable. The act of creating architecture, then, is problem solving or a design process. (p. IX)

Architecture - Actions

Bernard Tschumi, the architect that became famous with the project of Parc de la Villette, showed that architecture existed just with events, with actions or activity. By his opinion buildings respond to and intensify the activities that occur within them, and that events creatively extend the structures that contain them. In other words, architecture is not defined by its “formal” container, but rather by its combinations of spaces, movements, and events.

Architecture - Culture

Architectural work is often perceived as cultural symbol or as a work of art. Historical civilizations are often identified with their surviving architectural achievements.

Architecture - Simplicity

One more quote to describe architecture and its simplicity is by Galofaro (2003)

The architecture is not a complex of composition of opposing elements. It expresses simplicity and clarity, and attempts to take the light of the everyday world and transform it, without losing clarity. In this process architecture becomes the art of composing spaces, capturing natural elements, integrating them with empty spaces and protecting them from the chaotic movement of urban environmental characteristics (p.)

Landscape Architecture

By someone opinion landscape architecture is a branch of architecture. It deals with the planning and design of land and its relation to the buildings around it. Others think that landscape architecture grew out of garden design.

Landscape Architecture - Site

Robert Holden (2014) tells that

Landscape architecture is about site, without a place, landscape architecture has not *raison d'être*". While many believe that it is just related to landscaping and plants, landscape architecture is actually much more involved than that. It is a trinity of design, planning and management.

Landscape Architecture - Evolution

The evolution of landscape architecture is quite different to architecture. In nineteenth century it was more matter of aesthetic. It became more ecological focussed in the twentieth century and in the twenty-first century it is increasingly concerned with sustainability. (Holden, 2014)

Landscape Architecture - Blend

Landscape architectural practice blends land planning, landscaping, art, and environmental restoration to help connect an area to the buildings around it, and make the landscape attractive in itself.

Project

The term project is equal for architecture and landscape architecture. "Project is the possibility to make it the present which is not present yet...The project in landscape architecture is the project of architecture and nature at the same time" (Colafranceschi, 2007, p. 25).

The principal characteristic both for project in architecture and in landscape architecture is their aim to create space for various activities and necessities (Freire, 2011).

Common among architecture and landscape architecture

After understanding what is what I decided to look at both fields in conjunction and find what is common among architecture and landscape architecture and which are relations among them.

Daniela Colafranceschi (2007) described the relationship between architecture and landscape in the book "Landscape + 100 words to inhabit it" which she edited by the next phrase

Architecture of landscape and landscape of architecture, architecture in landscape and landscape in architecture, architecture as landscape and landscape as architecture...Previously, it was a building or a house in a garden; then, it was a garden in a building but also on it, below it...The

conjunction ‘and’ is no longer sufficient to accompany landscape and architecture, two physical entities in complete harmony (p. 25).

So relations between architecture and landscape architecture were always changing. “Architecture interpreters landscape and landscape informs architecture”. (Colafranceschi, 2007, p. 25). By Berrizbeitia and Pollak (2003) the identity of both landscape and architecture is that products of these two disciplines are constructed.

Jellicoe (2000) defined four stage of space design. First it was environment was perceived as hostile and buildings were like “no more than a structured cave with one opening” (p. 376). Centuries passed and building became with “glazed barred windows” already opening it more to environment. Then came the time when landscape considered as a friend rather than an enemy and thanks to the invention of heating and large-paned glass “the barrier between interior and exterior was broken”. From this stage is harmony of architecture and landscape design and “when highly sophisticated abstract art is seen in direct association with nature” (Jellicoe, 2000, p. 376). Finally the fourth stage is the “single art of landscape architecture”. And finally nowadays landscape architecture is more than any art is turning to ecology and sustainability trying to balance the lack of it appreciation in architecture.

Both for architects and landscape architects their work is a spatial design which they create using various materials and constructions. Yes, they work with different material, architects mostly with more artificial as concrete and metal, landscape architects work more natural as plants, water and stone, including materials from other group. Nowadays these different professions frequently even working on the same project compete one with another, with a lot of critics, misunderstanding and discontent, with discussion who is more important in design process.

4.2 The Problem: Separation between Architecture and Landscape Architecture

The professional boundaries of architecture and landscape architecture have conditioned the perception of what is possible within the project, upholding this way the idea that each disciplines is responsible for an exclusive area of concerns. (Berrizbeitia & Pollak, 2003).

The fact of separation between architecture and landscape architecture led to the problem that architectural projects became less linked to their surround. Balmori called it “false dichotomy”. Architects mainly start to design a building on its own and just then think about the site, its characteristics and conditions. “Buildings...have been conceived as isolated objects that float in naturalistic landscape” (Balmori & Sanders, 2011, p.). By the contrast landscape architects start their projects from deep analysis of a site creating this way more sustainable solutions. The formal autonomy of architecture is from one side and landscape architecture ecological focus and disinterest in artistic self-consciousness from other are the main tendencies in modern architecture. (Berrizbeitia & Pollak, 2003). It seems that “The architecture has lost all purposefulness and simply responds to the most standardized of needs” (Galofaro, 2003, p)

But professional collaboration, the occurrence of processes of design simultaneously could join the built environment. It is important to “appeal to designers to pursue a new approach that overcomes the false dichotomy between architecture and landscape”. (Balmori & Sanders, 2011). The urgent ecological concern is the one of the reasons that motivates this union. “An integrated practice of landscape and architecture could have dramatic environmental consequences: the disciplines would cease to have separate agendas and would instead allow for buildings and landscapes to perform as linked interactive systems that heal the environment” (Balmori & Sanders, 2011)

Notwithstanding the fact that architecture and landscape inhabit each other’s conceptual and physical space, a combination of factors has fostered a deep and enduring division between them. This division has not only impoverished both discourses, it has had a negative impact on the built environment (Berrizbeitia, Pollak, 2003, p.10).

The problem of a lot of architects is that they invert the order of design process. Most of them work in the studio and the shift their products into a place. This way a site loses its importance, becoming a pedestal. But the any structure depends on a landscape around, that is why is so important to establish a dialog with a context. (Galofaro, 2003).

There is an opinion that the landscape architecture due to its ecological orientation and in the terms of sustainability is in front of architecture. "Landscape architecture is now at the forefront of modern disciplines as they relate to the best use of our fragile natural surrounding" (Shlomo, 2008)

So with the research of relationship between architecture and landscape architecture, on the base of existing frameworks in contemporary architectural practice in this work the mode for architectural and landscape architecture practice is proposed and applied during the internship to see on the practice how could it be operated the work both of architects and landscape architects to connect buildings to nature, to operate with building and landscape as with reciprocal entities.

4.2.1 The History of Division and its Consequences

To understand how to join in practice previously separated fields we need to go back to the history to know how they were divided. The focus in this chapter will be also on what the architecture lost as a result of this division, or how the architecture without landscape turned the habitat of human.

With the transformation in sixteenth, seventeenth and more in eighteenth centuries of Western civilization from restrictive to a liberal society, with transformation of philosophy and law “began the universal interchange of ideas that ultimately lifted landscape arts from the level of local and domestic design to the modern concept of comprehensive planning” (Jellicoe, 2000, p. 203)

Some authors explain this division by the appearance in the nineteenth century the opposition between human and nature, or in this case building and its surrounding landscape. This dualism finds its roots in the concept of wilderness and environmentalism (Balmori & Sanders, 2011). So this way to support the thinking that building is different from landscape was required the new profession and with some debate in the right name for the new professional the field called landscape architecture appeared (Waldheim, 2013). The key event in this allocation of landscape architecture from architecture was the creation of ASLA - American Society of Landscape Architects in 1899. The father of the landscape architecture in America is considered Frederick Law Olmsted. Briefly after it the establishing of new academic discipline, programmes of study, a professional journal (1910) confirmed the institutional foundation for the new profession (Waldheim, 2013).

With the appearing of landscape architecture Frederick Law Olmsted presumed that the new profession would be pressed by increasing demands of scientific knowledge toward increasing reliance on specialized bodies of technical knowledge, and a resulting alienation from the fine arts and architecture (Waldheim, 2013). So architects sort of dumped ballast of landscape technical knowledge to work more with aesthetic components.

After the division into two professions architects sort of left part of their work for landscape architect and from this moment started the process of neglect of the surrounding conditions. Thus division impoverished both discourses and has got a negative impact on build environment (Berrizbeitia, Pollak, 2003).

By Jellicoe in Europe at the same period as in America with birth of new science as town- and country-planning with the main influence of Patrick Geddes, with Garden City movement initiated by Ebenezer Howard “were gifted an individual architects working in isolation, who each to his own satisfaction resolved the relation of architecture to landscape.....and a collective conception of landscape began to crystallize... and the profession of landscape architecture was established, long after that of America” (Jellicoe, 2000). In Europe it also has got its negative consequences for architecture. For example the dominant in the beginning of twentieth century constructivism movement was the opposition if forces of ecology in landscape. Mass-produced architecture, concrete jungles, architecture removed from nature are all the fact is the prove that the separateness of two fields has been a disaster.

Finally “the professional identity of the landscape architect and the professional field of landscape architecture were consolidate as the definitive formulations internationally through the foundation of the International Federation of Landscape Architects (IFLA) in 1948” (Waldheim, 2013).

4.2.2 Interdisciplinarity

Going from territorial planning to urban planning then to landscape architecture and architecture the scale is becoming smaller but the core is the always the same all those practices work with space. In the next chapter the question of interdisciplinary of landscape architecture and architectural practices is discussed because it is one of the methods to merge architecture with landscape architecture in design practice.

It is often occurs that landscape and architectural designers work within overly defined categories. This fact prevents from the methods and experiences of one practice benefit the other. Moreover such professional division prevents different designers from creating interconnections in their projects, impedes the simultaneous work on a project.

In the construct architecture and landscape architecture should have interdisciplinary relationship because that brings together different modes of thought that

are transferred across the disciplines. This way a design transcends into a new context focusing on how elements share an urban space, an ecosystem or a temporary framework.

Notion of the interdisciplinarity defines relationship between architecture and landscape architecture. The collaboration between architects and landscape architects must be intensive to create buildings linked to its surround. And there are some firms there two practices are crossed and architects and landscape architects work in one team. Such a “collaboration between an architect and a landscape architect has advanced the architectural relationship of inside vs. outside for the first time in decades” (Berrizbeitia & Pollak, 2003, p10).

In terms of building and landscape a new knowledge can appear, to join two disciplines, a knowledge which focuses on how share a surround, an urban space, an ecosystem, or a temporal frame, incorporation in this union two others urban design and ecology (Berrizbeitia & Pollak, 2003). The example of it is the engagement of topographic concerns which is a part of landscape architecture in a building project or when the landscape affects orders of an interior.

To conclude, to resolve the problem of connection architecture to landscape could become easy in multidisciplinary team. And more and more firms go this way which also enrich design process. How should be a leader in such teams: architects or landscape architect?

4.2.3 Man versus Nature - Architecture versus Landscape Architecture

The ideological root of division of architecture and landscape can be found in opposition between human and nature. The concepts of Wilderness and Environmentalism in America appeared in the nineteenth century, the century when the division between two fields occurred. Following this theories the building is a constructed artefact and it is very different from its natural surround. Thus should be other profession who work with surround. (Balmori & Sanders, 2011)

Territories between architecture and landscape architecture need to be explored in order to create amalgamated space where the interconnections between the two practices are reconceptualised. The concepts of man-versus-nature, formal to informal, hardscape to soft-scape need to be investigated in the following discourse as not many design projects succeed in fully incorporating the opportunities offered by the integration of the two fields.

This subject has been long overlooked in modern bibliography. There are a lot of bibliographic sources where "Green" architecture is presented and discussed. Yet I, like the student of the Master Course of Landscape Architecture with architectural background believe that these pertinent investigations are essential for any design that is sited in the outdoor environment. "Technology has progressed to the point that Architecture no longer needs to dominate the outdoors.... it no longer needs to be the "machine in the garden Architecture can mean more to its environment, and vice/versa." (Berrizbeitia & Pollak, 2003).

"Although every building is of course located in particular spot, its relation the site involved can in principle be reduced to a question of situation, access, orientation and finally foundation" (Steenbergen & Reh, 2003). So normally in the process of architectural design a programme defines designed of the site. In landscape architecture in the contrast the programme is inspired by the site.

The tendency of approximation between both fields tells others authors as Luca Galofaro. "The relation created between landscape and architecture is one of exchange. Not only does architecture seek a new spatial quality in pursuit of a different relationship with nature, but landscape architects also try to absorb within a new practice of "landscape urbanism" (p. 163).

I would like to summarize the previous theoretical research by the phrase of Jellicoe: "Today it is recognized beyond doubt that amalgamation is necessary in an ecosystem...to lift it beyond this into the realm of great art" (p.). Nowadays more and more projects and frameworks where this "amalgamation" is occupied appear and in the next chapter some of them will be analysed.

4.3 The analysis of existing frameworks

It is obvious that the previously described problem of disconnection of architecture from landscape architecture is already studied by architects and landscape architects. Mostly of them as me work in multidisciplinary team or studied both architecture and landscape architecture. Thus they could see not only the origin of the problem but also some solutions.

To create a model of work for a practice in a multidisciplinary team some elaborated earlier frameworks were found, described and analysed. In the search of the

existing frameworks I have addressed to the contemporary bibliography. Every of found frameworks are based on the analysis of constructed examples where architecture is closely connected to its surrounding landscape and authors discuss a lot about interconnection of architecture and landscape architecture.

Three frameworks were chosen as a base for the future proposal of the framework of synergy of architecture and landscape architecture.

4.3.1 Inside Outside: Between Architecture and Landscape

The first studied framework is described in the book “Inside Outside: Between Architecture and Landscape”. Written by landscape architect Anita Berrizbeitia and an architect with educational background and experience in landscape architecture Linda Pollak, the book tells how to reconceptualise the interconnection between landscape architecture and architecture. This book explores the territory between landscape and architecture through five themes, or like the authors called them operations. These operations form the conceptual framework of interpretation for architecture and landscape architecture. The operations which construct a specific mode of relation between elements are "reciprocity," "materiality," "threshold," "insertion" and "infrastructure" (figure 6). Reciprocity stands against hierarchy, an ordering principle through which architecture has historically subjugated landscape. It is a principle and dominant approach. Materiality challenges an aesthetic tradition of disembodied contemplation. Threshold precludes a fixed and static conception of boundary. Insertion calls into question a figure/ground formulation of the city. And finally Infrastructure critiques an assumption of landscape as original ground. What is important in this theory that it “can extend from the act of design to the act of perception”. (Berrizbeitia & Pollak, 2003). All these operations support, defining conditions and suggesting possible actions answers the question “How?” rather than “What?” in a project.



Figure 6. Inside Outside: Between Architecture and Landscape. Source: the Internet

In this book like in others analysed the framework of five operations is explored through the analysis of examples, in this case of twenty four built projects. It has been done to contribute in a unique way to the definition of an operation. Among the authors of the projects are Frank O. Gehry, Rem Koolhaas, Carmen Pinos and Enric Miralles and others well- and lesser-known late modern and contemporary architects. The authors examine the interconnections between architecture and landscape through the elements of the design which are made to interact, overlap and affect each other in unprecedented ways.

To mention here as an exemplified project I chose from the operation "threshold," Alvaro Siza's Municipal Ocean Swimming Pool in Portugal (1961-66) (figure 6). The authors described it as "between land and sea, constructed and natural, road and beach." Through a variety of stairs, terraces, interconnecting walls and roofs, Siza enriched the act of swimming by subtly incorporating the design into the rocky outcroppings of the sloping site, the nearby ocean and even the layout of the adjacent town.

Through all book, in the determining in each examples one of the operation authors undermine the autonomy of individual disciplines of architecture and landscape architecture declaring this way the idea of interdisciplinary as a solution to resolve the problem of disconnection architecture from landscape.

Thus through the concept of the operation the authors undermined to autonomy of the individual disciplines of architecture and landscape architecture. The intricate names for the operations and its specifications made this framework too much scientific for future application in practice. Just some ideas from this book were used for elaboration of proposed framework and during practice in the firm. For example I noted the way the authors called their operations using not standardized terminology. This inspired me in the future development of my framework.

4.3.2 Groundwork: Between Landscape and Architecture - Reconsidering the Relationship between Landscape and Architecture

What is it between landscape and architecture? The authors of the book, landscape and urban designer Diana Balmori and architect Joel Sanders, in the search for this answer started from brief history and from the problem of distinction between building and environment.

The main idea of the book is the Interface. This Interface means interconnection between landscape and architecture. On the base of the analysis of international projects authors of the book identified three design directions where the relation between architecture and landscape is clear, where building is connected to landscape. They are **Topographic**, **Ecologic** and **Biocomputation** (figure 7). So all the examples are belonged to one of the groups with following characteristics.



Figure 7. Groundwork: Between Landscape and Architecture. Source: <http://www.archdaily.com/>

Topographic designers create projects that manipulate the ground in a way to merge building and landscape following the concept “instead of resorting to a naturalistic vocabulary, they invent a shared landscape/architecture expression that makes a bold imprint on the land.” This group in my opinion is the most common for architectural practice.

Ecologic designers develop environments in the search of solutions for energy, climate and remediation problems, the designers who are “interested in unleashing the creative potential of sustainability.” Some of the projects here are fanciful and imaginative; others include elements—such as growing walls and roofs—that seem simplistic and some finds new ways to bring buildings alive with vegetation. All of projects from this group are the nice example of sustainable architecture.

The third direction Biocomputation, which explores digital design, is the most contemporary and diverse. Here with the help of new technologies and on the base of biology designers create structures which emulate living organism.

The structure of the book is simpler in compare with the previous one. One more time the editorial tandem of architect and landscape architect presented necessity of interconnection of architecture and landscape architecture through discussions and characteristic examples.

4.3.3 “Arquitectura Vegetal” (“Inspired by Nature - Plants: The Building Botany Connection”, English title) - Analogies

In the series of book *Inspired by Nature* the world of analogies in architecture with nature is presented. The most linked to the theme of the thesis is the framework of the book “*Inspired by Nature - Plants: The Building Botany Connection*” which could be also named by the most common words *Green Architecture*. In this book the authors on the examples show analogical relations in architecture with vegetable world. One more time the group of authors is truly interdisciplinary. Alejandro Bahamon is an architect, Patricia Perez is a landscape engineer and Alex Campello is an architect a landscape architect. The conceptual framework of the book serves me as a base in organic architecture, as a source of organic materials and was a potential inspirations for architectural forms.

The main objective of this book “is to reveal the analogical similarities that can exist between contemporary architecture and the vegetal kingdom as a result of adaptation processes.” The scientific base of the book is very linked to the botany, with a lot of explication of analogies function for vegetable world and how it could be applied in architecture. Solutions for most of described project where searched and meted in the nature, which helped in every case create more sustainable and effective architectural forms. The authors analyse “the diverse formal, structural and physiological attributes proper to the vegetal element ... on the basis of the relationship between plants and their surrounding space and environment, comparing the most relevant adaptation and survival methods with those reflected through architecture.”

The value of this framework is that solutions which are based on the analogies responds to principal tasks both in architectural and landscape architecture. First of all it is of course the sustainability. When design of one building is organised on the base of any perfect vegetable organism it turns its functioning less costly and more effective. The second one is the visual comfort because on the base of this approach in architecture buildings with organic characteristics resembling forms of flora which are more pleasant for the human view appears.

The principal analogy which the authors present in the book is the “tree”. They compare the structure of a tree with the structure of a tall building. “The analogy lies in the notable verticality of both elements and in the coinciding existence of subterranean foundations”. The authors also apply this analogy in different scale using terms from tree-

column to “concrete jungle”. I thought this principal idea very close to my preferences in architecture because I often identify in projects a column with a trunk of a tree.

This direct connection between architecture and landscape is extrapolated in the introduction by Perez. She proposes that: "...the observation of nature and experimentation has long served as tremendously valuable methods in designing architectural forms."

The structure of the framework is following. Looking for the examples where potential inspirations for architectural was found in vegetal sources authors separated all the examples are separated into six groups: Light and Spatial Arrangement, Water Control, Temperature Control, Extreme Conditions, Defense, Homologies (figure 8).



Figure 8. Inspired by Nature - Plants: The Building Botany Connection. Source: the Internet

All these groups are the kind of translation of function to architectural form from vegetable world. This methodology is applicable to not only aesthetic ideas, but functional aspects as well. In this way it bridges the art/science question, and becomes a sort of code-book to applied “Vegetated Architecture”.

For instance, homologies, which “...refers to the general and quite ancient observation of similarity of form seen in the biological world of animals or plants...”, and the “...anatomical correspondences between different species...” is a common scientific evolutionary function. Or in the chapter Water Control the analogies are interpreted as

three principal functions: collection of water, functioning of root system, and adaptation to hydrological conditions which are very used in contemporary architectural practice.

This framework is more practical in compare with two other. Despite the fact that the book is based in the analysis of example as in others, it is more related to functional analysis of the projects rather to the search of theories. Thus the framework of Analogies in architecture from the vegetable work inspired a lot my future framework and a lot of its methods from it were borrowed.

The most important idea which learnt from the analysis of the frameworks is that they call to “reconcile longstanding division between architecture and landscape architecture and tap into the formal and programmatic potential of sustainable design” (Balmori & Sanders, 2011)

4.4 The Analysis of contemporary examples in Portugal

The second step in the elaboration of the framework was the analysis of the contemporary examples of interaction of architecture and landscape architecture, where traditional distinction between building and environment was dissolved. To connect it more to the traineeship which would pass in one Portuguese architectural firm examples from Portugal were chosen. It was done to approximate in the analysis to the climatic, cultural and economical conditions to the conditions of the projects of the firm and get this manner some base of examples for future work.

The analysis of these projects is already structured according to the preliminarily defined principal modes of interaction of architecture and landscape architecture. That is why all examples were characterized within three principal groups: topography, ecology and aesthetic. Two directions of design were defined by Balmori and Sanders in their book “Groundwork: Between Landscape and Architecture”. Topographic designers create projects that manipulate the ground to merge building and landscape. Ecologic designers develop environments that address issues such as energy climate and remediation. The aesthetic direction based on the fact that landscape architecture is the hybrid practice of scientific and artistic action (Etteger, 2008).

Every project is shortly presented and examined in the terms of an integration of architecture and landscape architecture. Also the types of the buildings selected for this

analysis are mainly the types of projects in which I was supposed to collaborate during the internship.

The first described example relates to the type of projects where topography defines design. The project of the bus station in Mogadouro, Portugal (figure 9) shows how exterior part of the project became its main character and turned the “transport” character of the building into oasis of the landscape. The project was designed by Portuguese architectural firm Cannatà & Fernandes. In this project the difference in levels of relief allowed to create gigantic canopy for busses and passengers. This canopy is presenter as a garden/green roof – one more place to relax for passengers. The using of few materials defines clear character of the building and its territory and corresponds with contemporary architectural image.



Figure 9. Mogadouro’s Bus Station (Source: <http://cannatafernandes.com>)

The guesthouse “De Lemos” located in Passos do Silgueiros, Viseu, Portugal (figure 10) was designed by Carvalho Araújo, Arquitectura e Design. The base and inspiration of this project like in the previous example is topography of the site. That is why the configuration of the building repeats the curves of the relief. Such approach helps to implant building in rural space without creating dissonance between natural and artificial. The building is drawn by the land, and its openings, orientations and intern definition of the programme respect the main points of view over the vineyard, natural light’s control and the discretion.



Figure 10. Guesthouse “De Lemos” (Source: <http://www.carvalhoaraujo.com>)

The next type is where design is ruled by aesthetic principles and presented by the House in Serra de Freitas (figure 11). This project by the Oficina d'Arquitectura is located in Serra de Freitas, Arouca, Portugal. In the environment of mountain scenery, dominated by granite rock where mankind little marked its presence was created the object that is blended with landscape. The volume of the house follows the slope and the exposed concrete reminds the surfaces of natural surrounding. With this approach mainly in application of appropriate materials the structure which looks very harmony with nature was created.



Figure 11. House in Serra de Freitas (Source: <http://oficinadarq.wix.com>)

The example of the one more type of ecologically sustainable buildings is the House in Travessa de Patrocinio in Lisbon, Portugal (figure 12) and it was designed by Luís Rebelo de Andrade and by Architectural & Design Studio. Its walls are completely covered with vegetation, creating this way the vertical garden. Small levels of water consumption are guaranteed as well as little gardening challenges. This project is in fact a mini lung and keeps the principles of a living typical habitat and a relationship with the outside, assuming a revitalizing urban role. Resolving here the question of sustainability at the same time was achieved aesthetic and social tasks. Implemented in the heart of the city, the vertical garden creates a unique link with nature and a relaxed atmosphere. This house is very characteristic example of the building-integrated vegetation.



Figure 12. House in Travessa de Patrocinio (Source: <http://www.rebelodeandrade.com>)

Another example where despite the limited area principles of ecological sustainability play a dominant role is Centre School of S.Miguel de Nevogilde by AVA Architects in Oporto (figure 13). The green roof was designed to minimize the ecological impact of the building. Also in terms of aesthetic the walls of the building was designed in mirror to reflect preserved natural elements as trees and lawn. This way this example also refers to the second type of aesthetic group architecture and landscape architecture were bridged.



Figure 13. Centre School of S.Miguel de Nevogilde (Source: <http://www.ava-architects.com>)

Casa Varatojo of Atelier Data is the nice example of reusing of organic materials and as a result of sustainability. This house situated in Varatojo, Torres Vedras shows both in its forms of building and exterior and its materials how to create a building connected to rural surround. By the words of the architect it was important from the start to promote relationship between building and landscape, taking advantage of the place's overlooking position over the city, castle and surroundings and to encourage a strong complementarity between the house and the garden in order to create an intense visual relation between the inside and the outside, between construction and natural elements (figure 14). Recycling of materials such as in the decoration of the walls with wooden pilings (former railway sleepers), introduced a certain experimentalism and innovation from the way the material is usually used. All that with using of native vegetation in garden helped to create the building linked through aesthetic mode to its surrounding landscape.



Figure 14. Casa Varatojo (Source: <http://www.atelierdata.com/>)

In White Wolf Hotel the idea to broke and spread one space of a hotel into parts and connect it to the nature is the main concept. The Hotel is situated in Penafiel, and it was designed by AND-RE architectural firm based in Porto. Basic and clear architectural shapes of building are neutral in its landscape, avoiding this way aggressive architectural impact on surround (figure 15). The buildings are divided in the ground, in a unification process that enhances the relation of proximity between the user and the site, between man and nature. All these facts relate this project to the topography and aesthetic categories.



Figure 15. White Wolf Hotel. Source: <http://www.and-re.pt/>

The next analysed example, Nordial Center, was chosen because of using in some elements the model of analogies. The Nordial Center by MJARC Architects Associated is situated in Mirandela. The columns that support the canopies of entrances were designed here in the form of stylized trees (figure 16). This building illustrates the described before principal concept of the book ““Inspired by Nature””.



Figure 16. Nordial Center. Source: <http://www.archdaily.com/476042/>

This house-garden House in Caxias was designed in the tandem of architect Antonio da Costa Lima and L Arquitectos. As the site is situated on the slope the volume of the house was integrated into it (figure 17). Green roof and greened slope are the main landscape elements here.



Figure 17. House in Caxias Source: <http://www.archdaily.com/459210>

Thus the presented analysis Illustrates the relationship between design disciplines architecture and landscape architecture finding at the contemporary projects. To summarize the analysis of Portuguese projects the table of techniques applied there was done (figure 18).

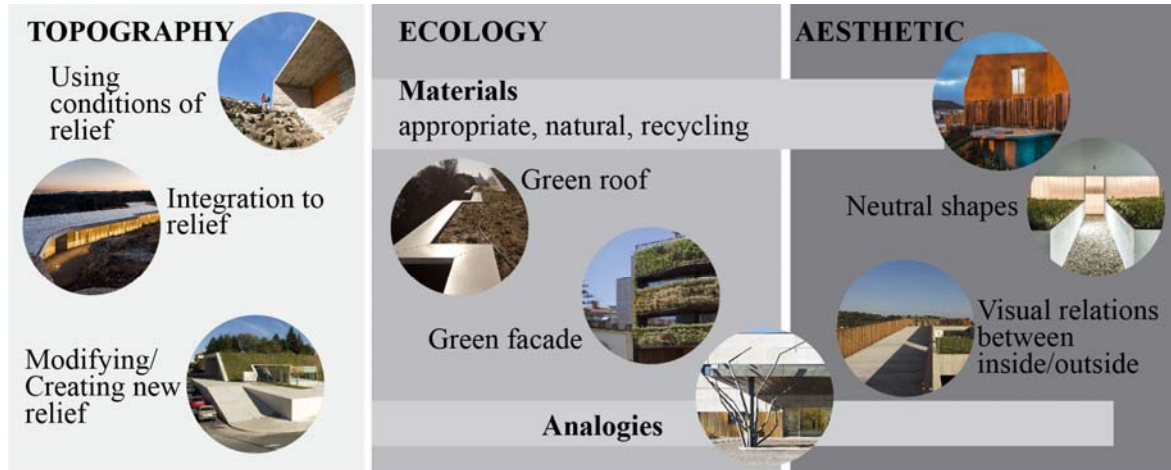


Figure 18. The techniques applied in the analysed projects

In this manner all presented projects illustrate close interaction between architecture and landscape architecture practice in the using different design modes. For the future internship some ideas as recycling of materials, work with forms and green roofs were noted. These modes could be combined or used separately. Sometimes it was difficult to classify a project to any of defined categories because very appropriate method was used there. But more important is that all analysed projects could be referred to the type of architecture where ecological and aesthetic components are unified through integration to them techniques from landscape architecture.

4.5 The Development of Framework of Synergy of Architecture and Landscape Architecture

On the base of analysed frameworks, concepts and examples and considering that the internship is a design process the new framework was developed to apply it in more specific practical case, in the work in small architectural atelier. The name of the framework is “The Synergy of Architecture and Landscape Architecture”. Yes, this framework is more appropriate in case like mine, when a professional has got two educations, architecture and landscape architecture, because such an educational tandem will have a great influence on the future professional practice. Thus the proposed framework is my view for my future career, my personal search how to apply and join in practice knowledge received from both fields, architecture and landscape architecture.

The framework is about the methods which could be used both in architectural and landscape architectural practice, because they are principally is the mix of both disciplines. Also the aim of this framework is to design and build preserving existing landscape, its

strong characteristics and at the same time correcting its weak features. Creating new building in a site architects change the landscape and this framework helps to integrate architecture and landscape.

The principal base for this mode was the framework from the book “Groundwork: Between Landscape and Architecture” with some alterations and additions from others frameworks and of course from the observations and conclusions received during the analysis of the examples in Portugal. During previous analysis I noticed that in the analysed examples and in the descriptions of examples of frameworks the attention is accented on its ecological and sustainability part. Also referring to many examples of sustainable architecture through study at the University and by my own observation these examples are often made with little hint of design. These engineering structures could be very sustainable but they not architecture, they are not art. But others analysed examples confirm the other fact that architecture is the art and it must create aesthetically harmonious objects.

Thus I decided to take into account both components: ecological and aesthetic. Any architecture object is created for the human comfort. So firstly I identified two levels of the comfort of the framework: Ecological and Visual/Aesthetical. These two levels have appeared in the framework on the base of my education and professional experience. As an architect I always think about aesthetic characteristics of design. As a student of Master Course in Landscape Architecture I studied that it is very important to take into account ecological aspects. In my opinion the combination of one with another will lead to the creation of high quality architecture. The main condition of these levels is the synchronicity, they must be both achieved in the final product of design.

Then the actions by which these levels could be achieved were defined. The actions which a professional architect or landscape architect does during design to achieve both levels of comfort in a project. I named these actions by verbs because the project is the process, it is an action in essence. The main characteristic of these actions that they could be used both in architecture and landscape architecture and they help merge architecture with its surround too. These actions are: **To Emulate** (to create architecture on the base of analogies from vegetal work, looking there for an inspiration); **To Sculpt** (to work with forms of a building, opening this way inside space to exterior and integrating outside to inside, using organic forms, to work with topography respecting existing relief or creating new); **To Naturalize** (to integrate plants into building’s structure, elements like green

roof, walls, inner gardens + using native for region vegetation, using of water, applying natural materials with high visual characteristics, to recycle materials); **To Programme** (to define the way of building's function, respecting the concept of integration into it renewable resource equipment, alternative technologies as solar energy, geothermal energy, wind energy, closed circle of resource); **To Observe** (to locate building in the best manner regarding visual characteristics of site, taking into account the historical and cultural context, connecting architecture to landscape from inner(big windows and semi-opened spaces).

All the actions will be briefly presented and some methods by which they could be composed are mentioned. Some of the actions or methods used during them are crossed and referenced simultaneously in a project process.

To emulate

This method was based on the analysed book “Inspired by Nature - Plants: The Building Botany Connection”. The inspiration which architects and especially landscape architecture could draw from the world of nature is unlimited. The first way is related to other action which is the **To Programme**, and it is the analogy of the function of the building with a living organism. Using this action the perception of buildings could change dramatically. No longer will we expect walls to be sealed, floors to be hard and buildings to be static. Buildings will be more like organisms, which we can have relationships with (Sung). As in nature there is a circle of substance architects could create building with recycle of resources. Also organic forms, using of natural material all these methods come in architecture analogies from natural world. The both levels ecological and visual are strongly influenced by this action, because the emulation of nature could be used for sustainable solution and in the creation of individual image of a building too.

“The introduction of natural materials as materials of construction, ecological roofs, green facades, as well as the metaphors of clouds, water, molecules, enzymes, wind, flows, tornados and others atmospheric or meteorological phenomena like imaginary triggers of projects is on the agenda” (Ábalos, 2009).

In last two decades there is an obvious movement of scientist and architects in the search of new materials which could. As it told the author of Groudwork framework “materials become the connective tissue that enacts the passage between landscape and architecture”. For example materials could be compared with body skin - building skin.

Building skins can operate the same way and prevent the mechanical system (air conditioning or heating) from overworking and using up huge amounts of unnecessary energy. With “smart” materials like thermobimetals, envelopes can self-shade, self-ventilate, and self-operate. For example there is a new material by biologist and Los Angeles-based architect Doris Kim Sung called Thermal Bimetals. Such “smart” materials can make a large impact on architecture and landscape architecture. Buildings and structures become both more sustainable and receive new look. If more architects get involved in the development, there is greater potential for thinking holistically about the entire building envelope system.

To Sculpt

This action refers to the using of power of sculpturing in architecture and landscape architecture. A building could be compared with as a sculpture and in landscape it could be the work with forms of street furniture or more important with relief modelling. Starting a project one of the most string characteristic of a site is its relief. Thus architects could use existing relief as an advantage creating new forms or could design a new relief following the design solution of a building. This action **To Sculpt** also includes such methods as orientation of building on a site due its insolation. To think of forms in entirely new ways helps to connect nature and synthetic, exterior and interior space. Primary it could seem that this action has got an influence just on the visual level, but such aspects as insolation reference it also to the ecological sustainability of a project.

To Naturalize

This method is one of the most evident reflection of synergy of the architecture and landscape architecture in the achieving if both levels. Green roof, green facades, using plants in engineering structures are the most common methods of this action in contemporary architectural practice. Also using materials with natural characteristics as wood and stone which are not only good in microclimate characteristics but due to their aesthetic characteristics. The use of plants on building surfaces has a long history, stretching back at least to the legendary Hanging Gardens of Babylon (Larson, Matthes, Kelly, Lundholm & Gerrath, 2004). Incorporation of vegetation on the surfaces of "green architecture" has a more recent pedigree, revolving around the functional benefits of plants to building performance. The impact of urban development on natural ecosystems is severe

due to habitat replacement and the amount of energy and materials required to sustain the built environment.

Recent approaches to mitigating this damage include the development of technologies to increase the efficiency of building energy use and decrease the export of waste products out of the built environment. Green roofs provide a variety of services to the urban environment, including visual relief, accessible green space, stormwater retention, reduced building energy consumption, and habitat provision for other organisms (Dunnett & Kingsbury, 2004).

Likely the building-integrated vegetation could be applied not only in new building but also for green rehabilitation (Carroon, 2010)

The other aspect is the reusing of materials. Contemporary architecture often seeks to take old buildings and structures and reuse them in innovative and fresh ways. This might mean a simple redesigning of interior furnishings, or it might entail extensive renovations that dramatically change the look, layout, or function of the space. For this reason, the style often ties easily to work by previous architects and designers, especially since it often uses fairly traditional materials, such as steel and concrete.

To Programme

This action defines the way of the function a building, respecting the concept of integration into it of renovative resource equipment, alternative technologies as solar energy, geothermal energy, wind energy, closing the circle of resource. “Exploring the overlaps can generate new ways of thinking not only about form but also about programme” (Balmori & Sanders, 2011). The way to imagine a project as a living organism with processes happening there is the start to understand how to organize its life using design. This action is the most scientific of all others and is referenced more to the achievement of ecological level of comfort.

The vision of energy as a real material of construction is provoked by the control the consumption of energy techniques of its optimization. (Ábalos, 2009).

To Observe

This action is about visual analysis and has got its primary influence on the visual level. Locating a building in the best manner regarding visual characteristics of site, taking into account the historical and cultural context are the main preoccupations of this action.

For example it could be the connection from inner to outer using big windows and semi-opened spaces. The action **To Observe** is connected with the action **To Sculpt** because it implies the fact that any product of architecture or landscape architecture is like a sculpture that you can observe and that is why architect should start the design from the observation of a site, thinking about its visual characteristics and how a built structure could be integrated there. This action includes also the seeking of the memory of a place. “The moment of observation becomes important because it leaves the observer in the present, establishing an inseparable and necessary relation between person who looks and the object looked at, which become a single entity” (Galofaro, 2003). To make the observer involved into a place could be one of the important characteristic of a project. For example in urban surround architects should consider traffic, streets, neighbouring building, in more open space, like rural surround you need to take into account movement of observer. This way the work becomes an integral part of a landscape or urban context in which it is placed.

The scheme

The following scheme of the Synergy of Architecture and Landscape Framework explains connections between described actions and their influence on the achievement of ecological and visual levels of comfort (figure 19). This scheme serves me as reminder how I could interact architecture and landscape architecture during design process.

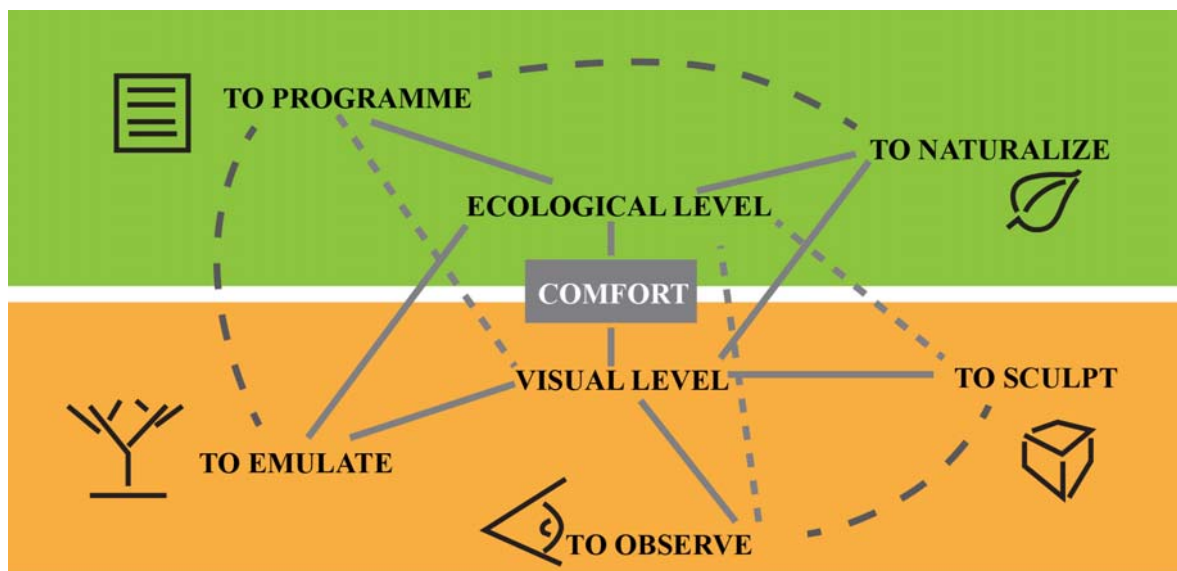


Figure 19. The Framework “Synergy of Architecture and Landscape Architecture”

The developed framework could be applied on projects of different scales. These actions are more about how to integrate landscape architecture into architecture, how these

fields work together. A lot of all defined actions were applied during the internship to create architecture merged to landscape. Thus more detailed how to interact architecture and landscape architecture in one project, the actions and methods will be described in the practical research part, related to the works developed during the internship.

5 The Practical Research. The Application of the Framework of Synergy of Architecture and Landscape Architecture in Practice

5.1 The Presentation of SMS Arquitectos Lda

According to the programme of the Master Course of Landscape architecture of the University of the Algarve as an option of the last semester curricular internship was chosen. The internship has been taking place in the SMS Arquitectos, Lda, the architectural firm which is located in Loulé, Portugal. Sergio Marcelo Santos is the Manager and the Senior Architect there and he was a coordinate of the internship. The main task of the internship was to participate in the collaboration of residential and commercial types of projects in a role of landscape architect.

As the internship has been passed in the architectural studio it was supposed during the work to analyse what is the role of landscape architect in the project where the coordinator is an architect, to understand how these professionally segregated since the late nineteenth century parts (Balmori, 2011), landscape architecture and architecture could bridge. This intention responds to the theme of the thesis “Synergy of Architecture and Landscape Architecture” or “Inventive modes of interdisciplinary practice”. This way the internship turned the practical research about synergy of architecture and landscape architecture during the five months time.

5.1.1 Choice of the place of the internship

After the professional experience in Belarus I had got a wish to know how the system of architectural business in Portugal functions. It was one of the reasons why I choose to take an internship as a final stage of the Master Course. It was an interest, kind of comparison, kind an intention to know what the differences are.

Honestly it was not so easy to find a place even for curricular internship in Portugal which is now in economical crisis and low construction. Even more complicated was the fact that I am not from here and employees seem without a great enthusiasm in hiring foreigners.

But during my stay in Portugal I make a lot of friends and some of them helped me to find the Architectural Studio SMS Arquitectos in Loulé. Normally students choose big and well known studios. In my case it is a small firm, known just among the locals. But this is just another scale of works, I thought. Why not?

I have already known some works on this firm. I liked its style and finally decided to participate during 5 months in its professional life as a landscape architect with the experience in architecture.

5.1.2. SMS Arquitectos, Lda firm

The description of the firm starts from the presentation of the senior architect and is followed by the short history of the studio. The main part of the chapter is the presentation of some finished works with short analysis of them. At the end some common characteristics of the projects were defined to understand trends of the firm. During the analysis in order to support some conclusions the references to some worldwide known examples were used.

5.1.3 Sergio Marcelo Santos, Senior Architect

After finish in 1995 of the course of architecture at The Lusíada University at Lisbon Sergio Marcelo Santos did not start his architectural career immediately but worked three years as a teacher of the 2nd cycle of Visual and Technological Education lessons at schools in Lagos and Loulé. This practice allowed him to develop his artistic aptitude which now is very well notable in his designs by hand. Then in 1998 he started to work as an architect on the Loulé City Council where he received the experience in the design and coordination of various public projects like schools, centres of health, sports and leisure buildings. During this year Sergio Santos also worked as an independent architect.

After six years of experience as an architect and project manager Sergio Marcelo Santos has started his own architectural business. At the moment he has got 17 years of experience in architecture. Manager of the architecture office SMS-Arquitectos, Lda, he is responsible for the coordination of the multi-professional team, specialized in architecture

and engineering projects. He is a person who leads a team of architects throughout each phase of a building's design and construction. While the specific projects that an individual works on can vary, the senior architect of SMS Arquitectos has got five primary job duties. These include assessing client needs, identifying potential risks, generating ideas, supervising other architects and overseeing the construction process. Consequently, a senior architect is often required to travel to a construction site and provide guidance. If problems arise during construction, he is asked to make the necessary changes.

5.1.4 The organization of work in SMS ARQUITECTOS, Lda

The SMS ARQUITECTOS, Lda was founded the 2004 in Loulé. During the economic growth of the country it was well equipped studio with the team consisted of nine architects, landscape architect and some engineers. Now it is a smaller atelier composed by three architects, one of them is the Senior Architect Sergio Marcelo Santos. The architect Teresa Gomes is responsible for the elaboration of projects of execution phase and for delivery and presentation of projects in a city council. The architect Paulo Gomes is the participant of the Internship Program of the Centre of Employment and he is responsible for various types of works like drawing and 3D design. As the senior architect does not work with computer he is responsible for meeting with clients, to control construction and also he is the main generator of ideas and concept. Two others architects following his instruction work in computers “digitalizing” and developing the ideas of the senior architect. This hierarchy is normal for architectural firm and also leaves the space for employees’ creativity because often they are those who are responsible for final decision due to the absence of the boss in the office at a moment or just because he let them to take a decision to resolve any situation.

To create complete projects the firm regularly collaborates with engineers, landscape architects and designers. So the size of the firm is quite small but in the epoch of economical crises and existing temps of construction in the country it is quite sufficient.

The name of the studio was composed by the first letters of the name of the founder and the senior architect Sergio Marcelo Santos. Also the personal style and logo of the studio were created which helped to stress its individuality (figure 20). The office was located in Loule on the Avenida José da Costa Mealha which is quite good location both for clients and for employees. But at the end of my internship in the search of clients was

decided to move to Almancil, closer to the zone of greater investment into building and preferred place of habitation of foreign investors in the Algarve.



Figure 20. The office and the logo of SMS Arquitectos, Lda. Source: SMS Arquitectos, Lda

The profile of the atelier is presented mainly by the projects of architecture and its interiors and exteriors. It is specialized in the public and private projects of architecture, urbanism and engineering. The firm designs architectural projects primarily of small scale and all of them are situated in the Algarve, in the same region where the office is situated. It has got its advantage like easier control during construction and also allows to monitor the functioning of buildings after construction to understand if everything was taken into account during the process of design and use this knowledge in future.

5.1.5 The structure of the office

The office is primarily the open space just the hall of meeting with clients is the separated room (figure 21). Thus, all the colleagues work closely one to another. The main space is decorated in basic colours of the SMS Arquitectos style, white, grey and red. The office is equipped with all techniques need for the design process: computers, plotters and others. The hall of meeting is equipped with big TV screen linked to one of the computers to show to customers drawings without printing them.

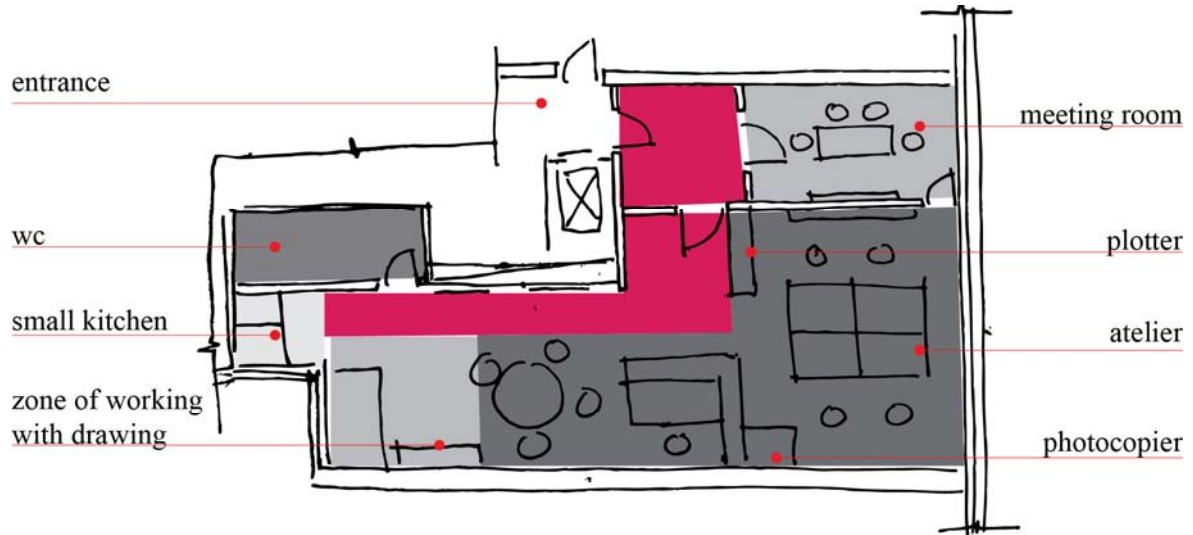


Figure 21. The sketch of the office of SMS Arquitectos, Lda

5.1.6 The Relevant Projects

In this chapter some of built project of SMS Arquitectos are presented. With short description with the analysis of architectural and landscape architectural solutions was made. This study was done well before the internship and helped to understand the style of works, to be prepared for future internships and found out how architecture and landscape architecture interact in the practice of the firm.

Preschool in Quarteira

The preschool is situated in Quarteira. This project is the part of the PRO-ALGARVE program. The building and its territory were designed on the base of simple and regular geometry (figure 22).



Figure 22. The preschool in Quarteira. Source: SMS Arquitectos, Lda.

This project demonstrates well done cooperative work of the architect and landscape architect. Here the principals of sustainability were expressed by design of green roof, preserving existing trees and creating the big greened space with integration of native for the region vegetation. In terms of aesthetic it could be called the project of contrast:

colour contrast, pavement construct, texture construct. But at the same it has got the united space. Just the playground does not present the great variety in kid's equipment which in my opinion is a weak part of the project. Playground could be not just a set of different equipment with rubberized surface but a strong element of the project. It could combine industrial materials with natural (Gelfand 2010). Maybe kids do not understand the role of the athletic characteristics of the equipment when they play with but it is better to work with this aspect of the project more carefully because this way designer and architects influence the aesthetic evolution of new generations.

The school in São João da Venda

This is the example of the reconstruction of an existing typical building of primary school near Almancil. Here the reconstruction both of landscape and architecture was solved by integration of minimal details (figure 23). But in spite of the quiet rural surrounding the territory of this school does not look like that and reminds one situated in a bigger city full of stone and concrete in pavement and with the lack of green spaces. It is a pity that children should play on the concrete playground but not on more naturalized space, because the character of playground plays a big role in the education of children (Gelfand, 2010).



Figure 22. The school in São João da Venda. Source: SMS Arquitectos, Lda

Casa do Pai (Father's House)

This house is considered as one of the most luxurious houses in the Algarve. It is situated in the zone of so called golden triangle and occupies the area of approximately 12.000 m² surrounded by agricultural lands.

This project is the nice example of how wishes of clients sometimes rule the process of design and define the solutions (figure 24). The idea of round house was realized in popular and sometimes not justified methods both in architecture and landscape

ignoring the concept of ecological sustainability reflecting just social and economics aspects. Many of the plants used in this project are not originally from the Algarve.



Figure 24. The Casa do Pai. Source: SMS Arquitectos, Lda.

The Malha Game Building in S. Sebastião, Loulé

The next example is the Malha game building in S. Sebastião. The exterior space due to the complex relief is more expressive than the architecture of the building (figure 25). Existing trees, ramps, retaining walls coloured with the same colour of the terracotta walls of the buildings, steps, benches, lamps, flowerbeds create quite cosy environment and with specific manner veil the buildings. But the posts of the lamps in this project are not well combined with the modern style of whole project. In this project both in landscape and architecture were taken in account aspect of topography and aesthetic harmony.



Figure 25. The Malha game building in S. Sebastião, Loulé. Source: SMS Arquitectos, Lda.

Support of the Beach in Quarteira

This small building which includes cafe and WC was integrated into slope and situated near the esplanade of the beach in Quarteira (figure 26). This project is the part of the urban arrangement of the marginal in Quarteira and was designed in collaboration with landscape architect from the Loulé City Council. It has got patterned pavement, irrigated lawn, illumination and all others street furniture which form nice place for walk and sport along the coastline. So this example is one of the best combination of architectural and landscape in the practice of the SMS Arquitectos, Lda.



Figure 26. The Support of the Beach in Quarteira Source: SMS Arquitectos, Lda.

The common characteristics of the projects

All these projects were analysed to understand the tendencies of the SMS Arquitectos, Lda. Analysing all the projects were identified some common characteristics which could be used in future, during the internship as ways to unite architecture and landscape architecture in professional practice (figure 27).

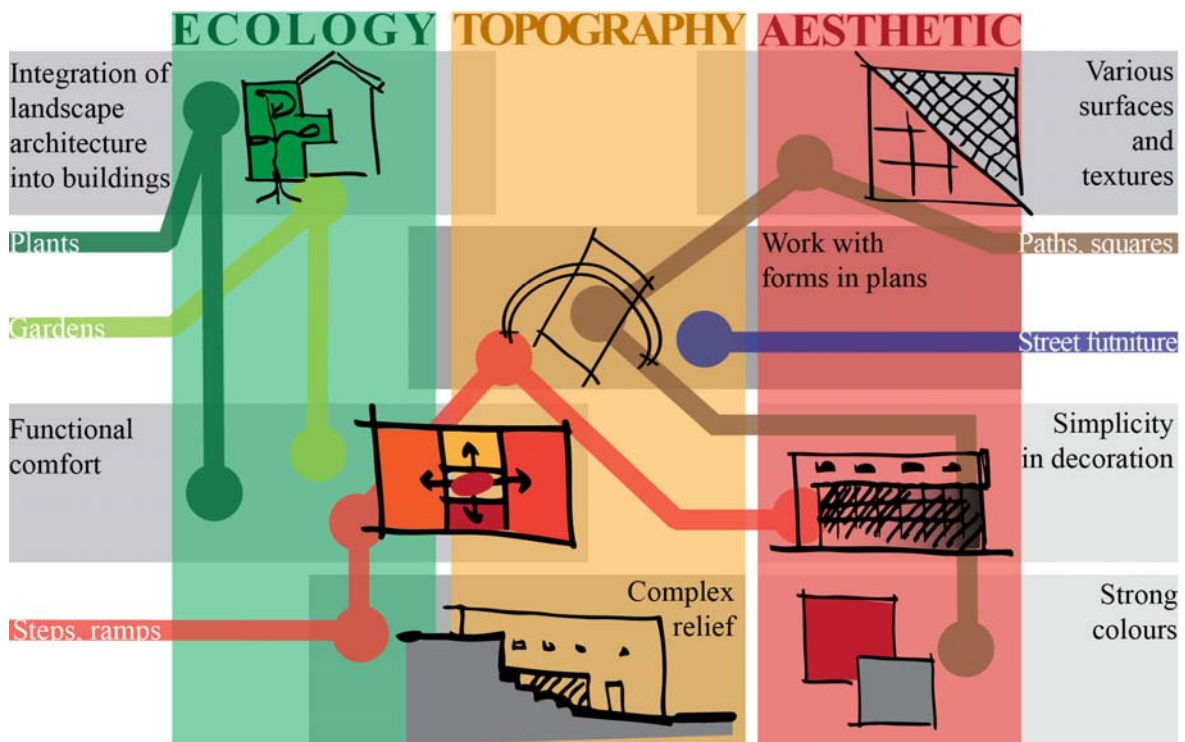


Figure 27. The scheme of common characteristics of relevant projects

These characteristics are:

- The integration of elements of landscape architecture into buildings (inner gardens, semi-opened gardens, green roofs);
- The painting with strong colours, colours contrast mainly different tones of red and dark grey/green;

- The using the complex relief as an advantage of project;
- The combination of various surfaces and textures both in the decoration of walls as well as in pavements;
- The simplicity in decoration, minimal decoration and details;
- The work with forms in plans;
- The functional comfort.

It is obvious from the analysis of the projects that the SMS Arquitectos, Lda collaborate with different landscape architects. The reputation of the firm in the region is quite good and during relatively short period of time they realized a lot of projects. In some of them work with architects was really well interconnected which helped create sustainable objects. But sometimes with the lack of united work of landscape architect and architect ecological, aesthetic and social tasks not were resolved in conjunction.

5.2 The Report about Developed Projects

Due to the theme of my thesis the task was participate in a role of landscape architect in the close collaboration with architects and to design the exterior part of the building researching how it is in a practice to interact architecture and landscape architecture. How my architectural background influence the work on landscape. Also participating in the architectural part of projects I could see how some techniques from landscape architecture could be applied in architecture. So all that internship is how to apply the developed Framework of Synergy of Architecture and Landscape Architecture. I should admit that the senior architect Sergio Marcelo Santos has got a great influence on the design and his taste in the incorporation of natural elements into building's structure helped a lot to practice the frameworks.

During the internship a lot of works of various scales and types were developed. Also a lot of small size and technical works was done like design of fence, drawing of sections. But to present in this work I chose ten projects which are more related to the subject of connection of architecture and landscape architecture. These projects have got of different scales. Most of them are private houses, also two apartment buildings and one hotel. In this capture all these projects will be described in terms of participation in its elaboration as well as in team and individually and analysed from the architecture versus landscape architecture point of view.

During these five months I was responsible to design exterior parts of all projects in the firm. The software that I have been using is: AutoCad, SkechUp, V-ray and Adobe Photoshop. Thanks to my earlier professional experience and the course at the universities I know how to work in these programmes.

The report of every project is structured by the same scheme. Firstly a site and its condition are presented. Then briefly some architectural solutions which are related to the theme of the practical research are described. The main part is the description is the presentation of exterior design with the references to the proposed in the theoretical research framework o Synergy. Then explications of my role in the developing of the project follow and to conclude the description of the scheme of graphical analysis of a project is presented.

The illustrations of all projects are integrated in text. Mainly they are presented by drawing and renders which I developed. Also some drawing developed by colleagues are integrated to clarify some solutions. Some developed by me drawings of big format are attached and referenced along the report (contents of designs).

5.2.1 The Schedule

The next scheme presents the time spent on work of each developed project (figure 28). As the process of design depends on many aspects there are no specific periods for work per day on a project. So sometime at the same day you can work on two projects and that is why the “timelines” of projects are layered one above another on the schedule scheme.

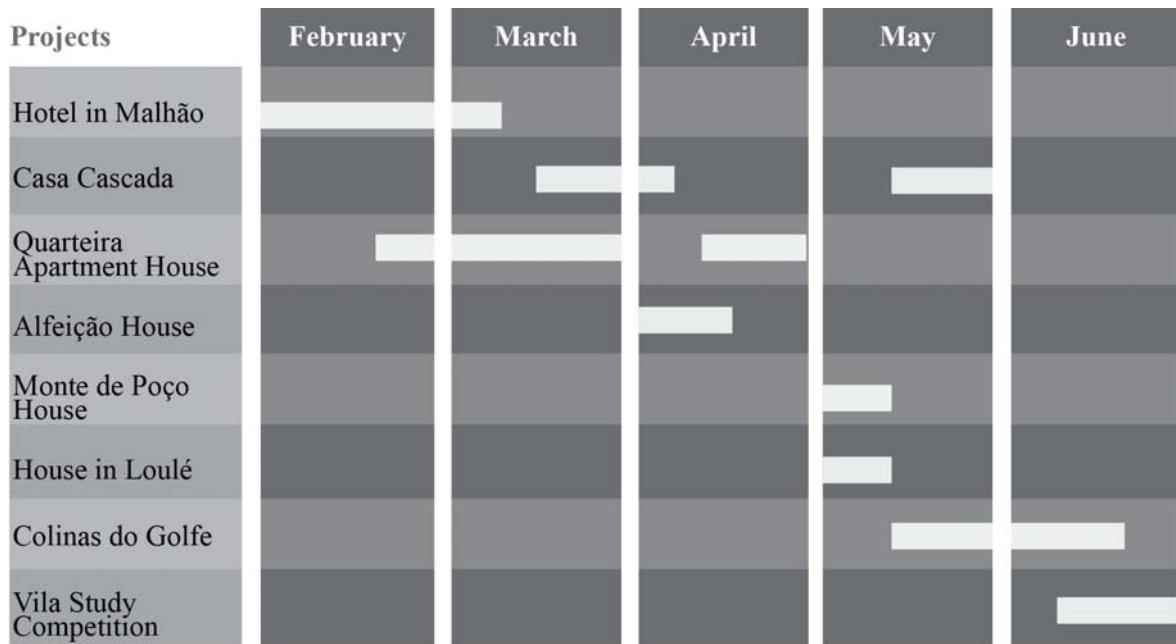


Figure 28. The schedule of developed projects during the internship

A necessity to work on a certain project was always defined by the senior architect Marcelo Santos. In its turn it mainly depended on clients' requests and by the terms of delivery of a project to a city council. Many times due to the fact that the work in the firm is organized in the team it was required to help to the colleagues and in the contrast they helped me a lot in time pressure moments.

Various projects were on various stage of their development. Some were on the final stage, others on its beginning and it defined the degree of my participation in their development.

5.2.2 The Developed Projects

a. The Rural Hotel in Malhão

The site for the hotel is situated near Malhão, the Algarve. This picturesque village is located in mountings complex, 537 m above the level of the sea, where live a lot of birds of prey. This place of Sobreiral (from Portuguese translated as forest of cork-oak trees (*Quercus suber*) is under the control by The Institute of Conservation of Nature and Forests. That is why the requests of building here are very strict. Due to this fact the programme applied in this project was sustainability.

The work on the plan of the building started from an analogy. As it was mentioned above this region is the habitat of birds of prey. That is why in plan the building has got a

shape which resembles a bird. The shape of the building is formed by two principal volumes – “wings” one of rooms and another is the service part. These two wings are linked by the cylindrical volume of entrance and reception – “body” (figure 29).

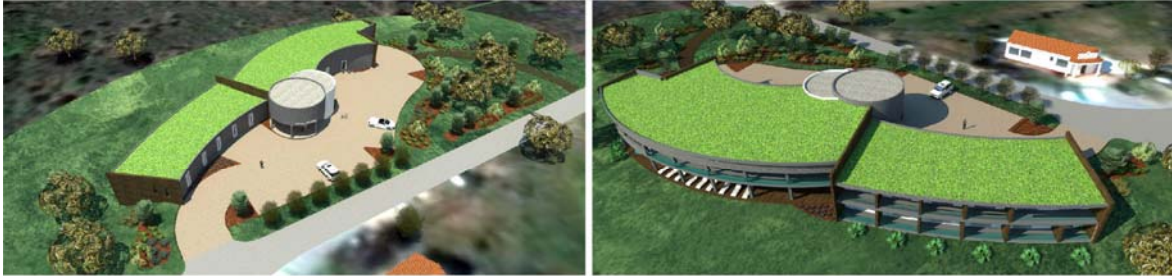


Figure 29. The perspectives of the Rural Hotel in Malhão. Bird's-eye views. Source: SMS Arquitectos, Lda.

The site here dictated not only integration into the existed topography but also using of sustainable principles both on architecture and in landscape architecture. This is why the program here defined the design of green roof, using in pavement of permeable materials and the project of ETAP.

I started to participate in this project not from the beginning. As it happens often in architectural business projects could be done, then are put aside and then renewed again. It was in this case. And its revitalizing happens at the time when I started the internship. The clients appeared and asked to finish the preview stage of the project to present it to the Loulé City Council and to The Institute of Conservation of Nature and Forests. So I was instructed to design exterior part, with some technical designs and then to make 3D visualization. At the moment the architectural part was almost done but the in landscape just the configuration of road and parking places were defined.



Figure 30. The masterplan of the Rural Hotel in Malhão. Drawing and rendering. Source: SMS Arquitectos

Pavement

The geometry of the road and parking place has got an organic character (figure 30). This was the intention of the senior architect to link through the configuration of exterior elements to rural surround. Due to the fact that the configuration of the road and parking were already defined it was necessary for me to choose materials for pavement. The permeable “terra batida” (port.) of neutral beige colour was chosen. To mark the limits of artificial and natural zones the wooden fence was designed (figure 31). The style as well as materials for this fence was chosen considering the rural context of surround. Also a wooden path was designed and connected this way the entrance of the hotel with a picturesque landscape zone. For the material of this path the former railroad slipper were used. Thus materials chosen for the pavement are natural and respond to the ecological and aesthetic criteria. Such application of former railroad slipper is one of the examples of using of recycling material in design. The final drawing of this stage of work was the drawing of master plan (design 1).



Figure 31. The perspective of the Rural Hotel in Malhão. Pavement materials. Source: SMS Arquitectos

Vegetation

The vegetation was organized in the form of small islands - “oasis” - one more time in organic configuration. Species are planted by module system (figure 32). To follow the sustainable concept the vegetation for this project were used native for the region. The dominant choice of native vegetation for the garden (trees, shrubs and herbaceous) takes advantage of site soil and climate characteristics, creating an ecological system integrated into the landscape of the region. So all cork-oak trees were preserved. On the organic oases always some tree was planted (*Arbutus Unedo*, *Laurus nobilis*) surrounded by smaller species (*Rosmarinus officinalis*, *Lavandula dentata*). Using organic forms refers to the practicing of the action **To Naturalize** (design 1).



Figure 32. The perspective of the Rural Hotel in Malhão. Vegetation. Source: SMS Arquitectos

Green roof

To Naturalize the building was reflected in the idea to make the green roof and responded at the same time to the project's programme to create sustainable architecture (figure 33). One of the advantages of the using of green roof is the temperature regulation inside of building. It was very important in this case because during summertime day's temperatures in the region are very high. So this method of naturalization allows to achieve ecological level of comfort. Moreover it has a lot of aesthetic benefit. It makes easier to link the building to natural surround and it is visually more attractive. The species for the roof were chosen native for the region to reduce the water consumption for its irrigation and with shallow rooted cuttings. During the work on drawings of the green roof for the hotel I consulted the notes from the course of the University "Sustainability Techniques Applied to the Project" and also some materials which my coordinator had presented to me because he passed last year a seminar about green roof design. The green roof type "Sedum Carpet" by Zinco Co was chosen which requires minimum maintenance and applicable for roofs without standing water and with a slight slope up to 8° (design 2).

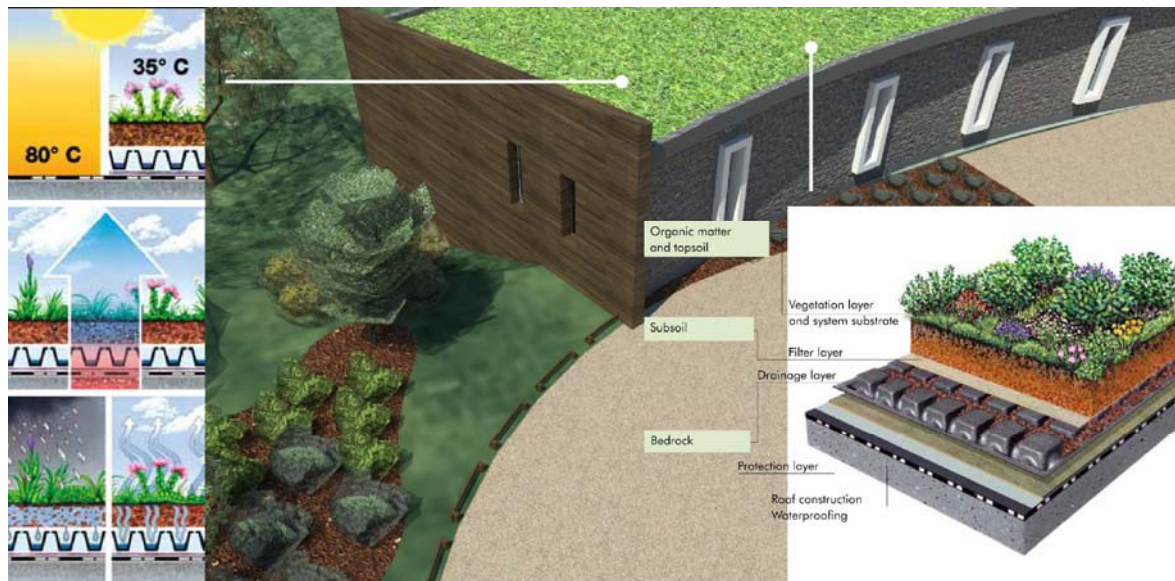


Figure 33. The Rural Hotel in Malhão. Green roof. Source: SMS Arquitectos

ETAP

For sewage treatment ETAP - The station of water's treatment by plants was decided to design. It has been located 115 m away from the hotel on the area 500 m². The site for the ETAP is located lower the level of the hotel area which provides the natural movement of sewage water to the place of its treatment (figure 34). The plants chosen for the station is common reed (*Phragmites australis*). It is obvious that the advantage of using ETAP is not only technical but also visual. This type of engineering structure with using of plants for treatment has got a minimal visual impact and even could enrich the landscape. Like in the case of the project the ETAP was naturalized and designed in organic forms to integrate it better into natural surround. To work on the drawing I one more time consulted the notes from the course of the University "Sustainability Techniques applied to the project" and some internet resources (design 3)

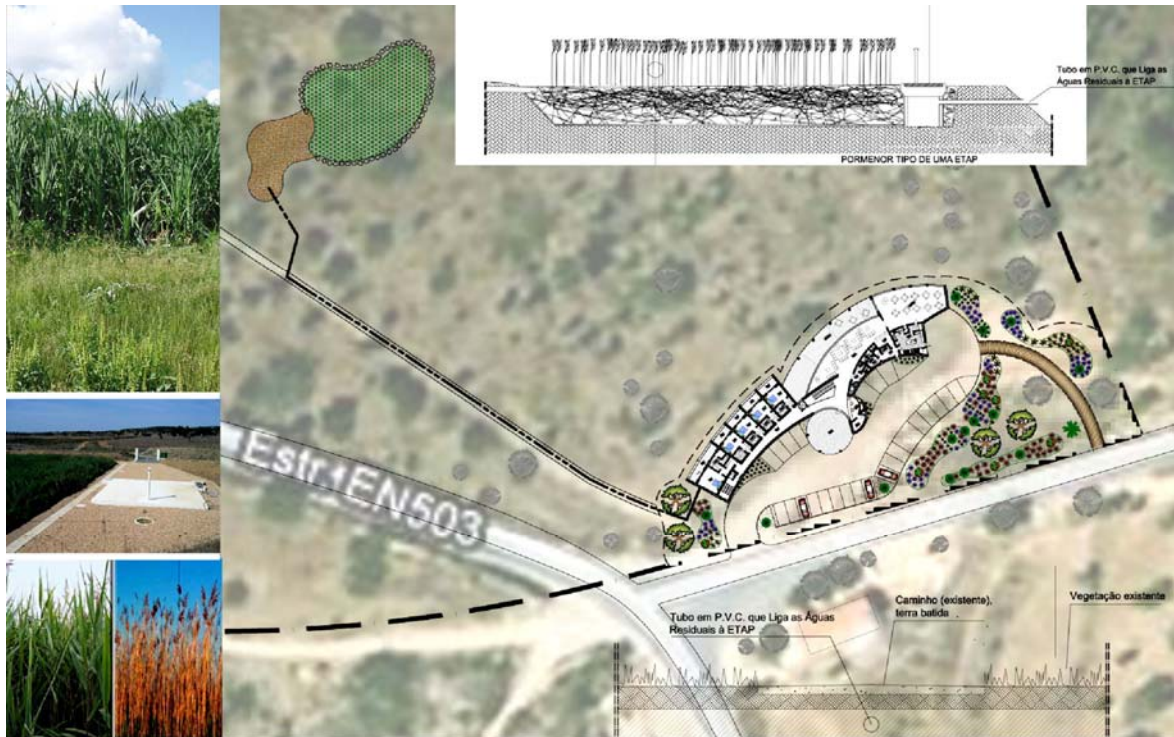


Figure 34. The Rural Hotel in Malhão. The station of water's treatment by plants. Source: SMS Arquitectos

Materials

As a final stage of my collaboration in this project I was asked to do 3D visualization of the project. It was allowed to change previously chosen materials. This time I could participate in the architecture field and influenced to apply for the decoration of walls more organic material as wood and stone (figure 35). This way the building became visually more linked to the rural surrounding landscape.



Figure 35. The Rural Hotel in Malhão. Materials. Source: SMS Arquitectos

Responsibility

I was responsible for the development and drawing of exterior part and for the 3D visualization. The work on exterior design has been passed almost at the same time in 2D and 3D. It helped to check in 3D visualization the ideas designed in 2D. For example some configuration of islands of vegetation was corrected after the work on it in 3D taking into account better visual characteristics.

The Scheme

On the final scheme of graphical analysis of applied methods are illustrated (figure 36). Firstly it is the integration into relief, which allowed illustrated from the road create a one story volume with minimal visual effect thanks to using of material with adequate for the zone visual characteristics. Then the picturesque forms in the organization of vegetation, also with organic forms of ETAP and green roof are principal methods of both ecological and visual synergy of architecture and landscape architecture in this project.

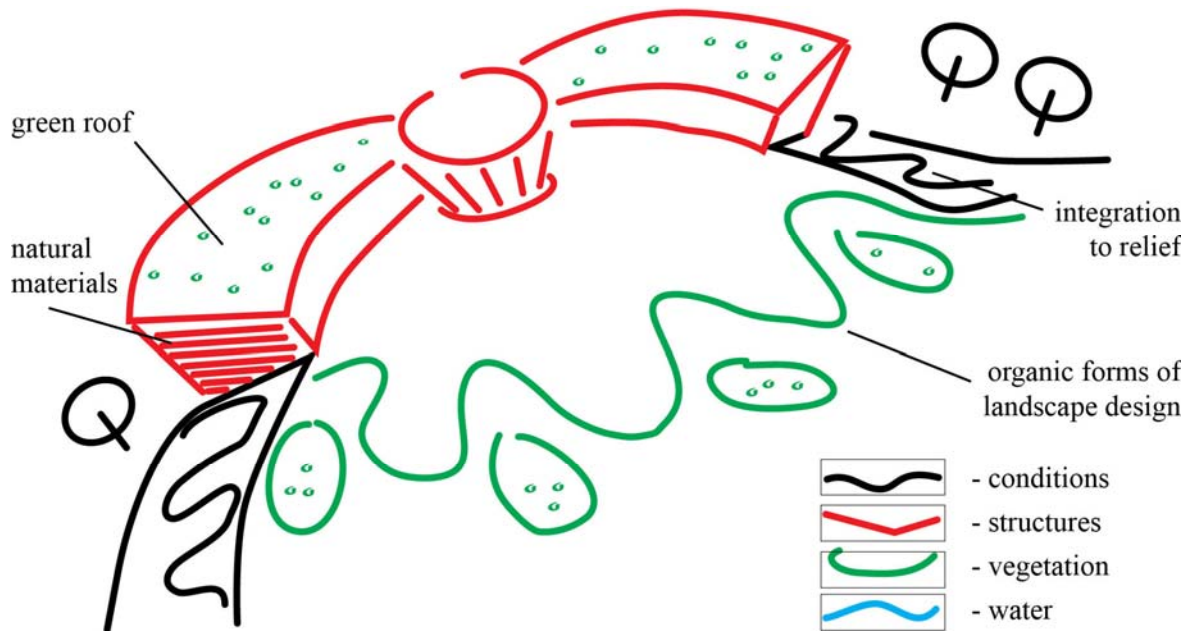


Figure 36. The Rural Hotel in Malhão. The scheme of graphical analysis

Conclusion

So the participation in the project of the hotel of Malhão let me from the very beginning of the internship applied in practice the methods which help link architecture with landscape in this case following the principally both the sustainable and aesthetic levels defined previously in the Synergy Framework. The principal actions applied here was **To Naturalize**. Through the design of green roof and ETAP was achieved the Ecological level. Actions **To Sculpt** through the work with topography and **To Emulate** helped to create the image of building which aesthetically is well integrated into natural surround.

b. Casa Cascata (Waterfall House) in Almancil

The name of the house is translated from Portuguese as the Waterfall House. The site is located in Almancil, Loulé Council. The conditions of the site are following: plain relief and low aesthetic characteristics of surrounding buildings. The contemporary style

of architecture was chosen for this house. Rectangular forms of building were repeated in landscape design (figure 37).



Figure 37. Casa Cascata. The perspectives of bird's-eye views. Source: SMS Arquitectos

The main element of the exterior project here is the L-shaped pergola with a waterfall. This pergola together with the L-shaped building forms the rectangular courtyard around the pool. The structure of the pergola is made of cement with pillars and some wooden elements. The pergola was holed for palm trees passing through it creating this way the visual barrier for the rest of the site from the entrance (figure 38). Also the same holes on the roof of the pergola appeared on the zone of the wooden deck. The main element of the pergola which gave the poetic name to the house is the waterfall. Water exits from the roof of the pergola and falls right to the pool tank.



Figure 38. Casa Cascata. The perspectives from the entrance and of the pool. Source: SMS Arquitectos

The pool was designed in simple rectangular form 5x20 meters but with some additional elements. It has got two parts, one dipper and another for sun beds. As the pool crosses the site from the west to the east it was necessary to design stepping stone blocks which formed two dotted bridges (figure 39). These little bridges are connected with the same dotted paths and linked this way the area of entrance with the deck.



Figure 39. Casa Cascata. Masterplan. Sketch and rendering. Source: SMS Arquitectos

The role of water is very important in this project. Thus in addition to the principal 12-m pool some decorative pools were designed from the back side of the house, on the limits with 4-storey apartment building (figure 40). The idea to open the inner space of the house, in this case dining and living rooms, to the landscape, using big windows argues with the fact that facades of the neighbouring building has got low aesthetic qualities. Thus these decorative pools which have got as a limits the windows of the rooms were fenced from the opposite side by rock walls which created visual barrier with the surrounding buildings and improve the view from the inside of the house. In the middle of these pools small circle island for palm trees were designed. This landscape element serves just to improve visual comfort of the inhabitants naturalizing the atmosphere of the lot.



Figure 40. Casa Cascata. The decorative pools. Bird's-eye view and view from inside of the living room. Source: SMS Arquitectos

The fireplace was located near the wooden deck. It was designed in the form of rectangular and integrated into landscape design on the level which is lower than the rest of site. It is one of the favourite methods of senior architects to design such element (figure 41).

The materials applied in the exterior design are calçada, wooden deck and stone plates. Using in the decoration of the house some natural materials as stone and wood responds to the intention to link the building with landscape. The design of the green roof above the living room with the access from the terrace of bedrooms responds to ecological sustainability and creates one more place for recreation for inhabitants.



Figure 41. Casa Cascata. The fireplace. The garden. Source: SMS Arquitectos

The choice of vegetation has been dictated mainly by the taste of senior architects. One more time he has preferred palm trees for their decorative effect in the combination with the structure of pergola (figure 38). Also he insisted in the planting of *Cupressus Sempervirens* along the west side of the lot to one more time decorate the view to the neighbouring house. The senior architect often chose palms and *Cupressus Sempervirens* just because of their decorative features proving one that many architects think more of aesthetic qualities of plants rather than on their ecological role. The rest of species was defined by me and I chose native for the region plants as Strawberry Tree (*Arbutus Unedo*), Grecian (*Laurus Nobilis*) and Rosemary (*Rosmarinus Officinalis*). Two little gardens with mentioned plants were designed, one near the entrance to the site (figure 41) and another behind the deck. Such location of the gardens was defined during the action **To Observe** and the visual analysis made through the 3D visualization.

Responsibility

In this project I was responsible to design in 3D the house and the site, working between architecture and landscape architecture. And in my opinion it resulted very well. The simple rectangular geometry of the house was repeated in the forms of exterior elements as pool, fireplace, pathways and deck configurations. All these structures create the image of contemporary architecture so popular nowadays in the Algarve. The process of the work on this house was discontinuous. I started to work on this project in March. But at the end of the internship I was asked to propose more solutions for the landscape designed which I have done just on paper.

The Scheme

The scheme illustrates the site's conditions with the low aesthetic characteristics of surrounding buildings and the way how it was resolved by the sculpturing the space and creation of the courtyard. Using such landscape materials as water and vegetation helped **To Naturalize** the principal concept (figure 42).

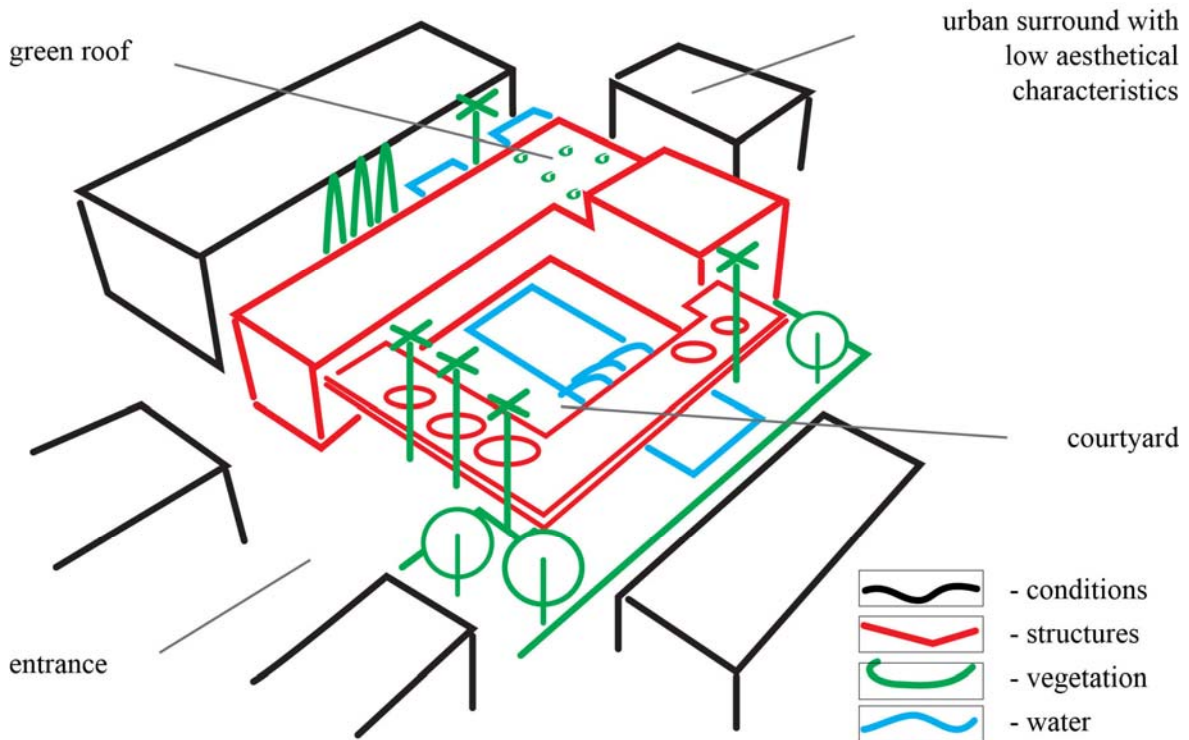


Figure 42. Casa Cascata. The scheme of graphical analysis

Conclusion

Aesthetically the main task in this project was to neutralize the low visual characteristics of the surround. Thus the complex design of house with its exterior in the form of rectangular created the effect of closed space and the views from some windows were corrected by the design of exterior walls. It was resolved by the action **To Sculpt**. Inside of this rectangular courtyard thanks to using of water and plants the naturalized space with high aesthetic characteristics was created. One of the strong characteristic in this project is that architecture and exterior were designed simultaneously, as a whole. In terms of sustainability the project in my opinion was not elaborated so well. Using of exotic trees as palms, great quantity of water just for decoration, the creation of big spaces with impermeable materials do not respond to ecological principal. The reason of this was mainly the condition of the site, taste of the senior architect and wishes of clients. All these

aspects which landscape architect need to take into account too and it is one of the great task to manage all that in one project.

c. Apartment house in Quarteira

The site is situated in Quarteira, Loulé Council. One of the borders of the site is the Avenida Sá Carneiro, the east enter to the city. The character of the surround is quite rural and there are not any multi-storeyed buildings around. But the program and wishes of clients dictated here the construction of five-storied apartment building using maximally the amount of constructed meters allowed by Portuguese norms. The house sits in a street corner.

Two variants of the house were designed which resulted in two different proposals for the landscape part of the project. The most characteristic condition of the site is the topography. The difference between topographic spot heights from the south to the north is about two meters. This difference in elevation between the two streets allowed the entrance to be made by the most favourable place, so as to avoid large movements of earth and conflicts with a possible connection to the street below, structuring street of the city. Thus the main action applied here was **To Sculpt** through the integrating of the building and landscape design into topography (figure 43).

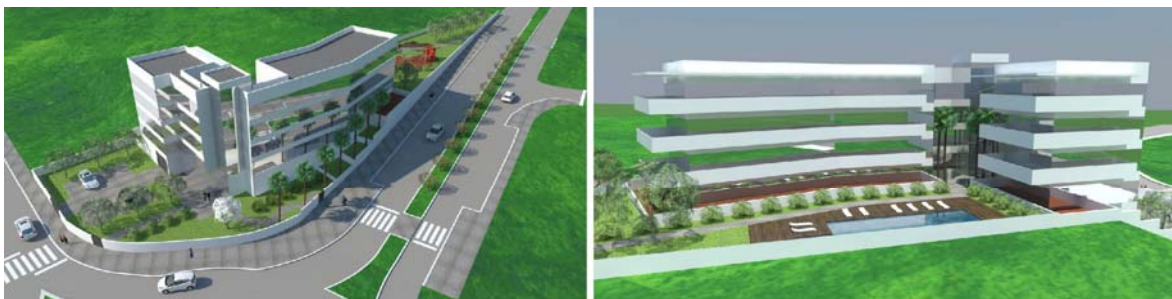


Figure 43. Apartment house in Quarteira. Bird's-eye views. Source: SMS Arquitectos

The scale of this project is quite big especially in comparison with majority of projects which are designed in the firm. It was one of the reasons why here the team was not able to apply widely but just partially methods which help lead to the achievement of both ecological and visual levels of comfort.

After the definition of the configuration of the building access points were marked and the territory has got three entrances (figure 44). One entrance serves for cars which goes to garage and which stay on the guest parking. Two others are from the west side and serve for people coming by foot from a nearby bus stop or from the street. Between two

volumes of the building the courtyard with palm trees (*Washingtonia filifera*) was designed. This courtyard was the attempt **To Naturalize** to the strict structure of the house. But one more time the choice of the senior architect to plant here palm trees turned it less sustainable.



Figure 44. Apartment house in Quarteira. Masterplan. Source: SMS Arquitectos

The territory was zoned for two parts. One is the main entrances and parking. Another zone is more private with located there pools and children playground. These two zones are situated on different levels due to the relief of the site. Also thanks to the existing topographical conditions it was possible to design the entrance to the garage on the basement floor without ramp and at the same time the entrance to house from is on the level of the ground floor. So in this project the topography defines and simplified the design solutions and presents the action **To Sculpt**.

The pools were located behind the building to hide it from quite noisy because of the transit street. Also such location promotes the best insolation of the pools which is very important because during all the day the house despite its big height does not make a shadow. So already from the planning of site the work on the ecological and aesthetic qualities of this project began. The main pool has got simple rectangular form and the smaller L-shaped pool was designed to be dipper for children.

The children playground was designed on the base of geometric concept (figure 45). It is an example how methods of architecture was applied in landscape design. Linking all the possible ways on the territory from the south side to the north the circle playground appeared. This circle is crossed by triangle. The materials of the playground are composite. They are clay, plastic imitation of wooden deck, grass and calçada. The equipment was design in consideration with different age's groups of children. Also it has

got a zone equipped with benches for parents to seat and watch the children. The integration of lawn into the planning structure of playground not only around but in the middle of it was the way **To Naturalize** maximally the space. Following the circle configuration of the playground the bushes (*Tamarix Africana*) were planted to hide the fence behind them. Also a garden with olive trees nearby the playground (*Olea Europaea*) was designed to separate it from big volume of the house. The trees (*Melia Azedarach*) along the pathways were planted to create shadows during summer and one more time *Tamarix Africana* plays the role of decoration of the fence in this case of the patios of the apartments of the ground floor.



Figure 45. Apartment house in Quarteira. Perspectives of children playground. Source: SMS Arquitectos

The part of the entrance due to the fact that the territory has got a difference in relief coat as 2 meters was sculptured creating huge terraces from the west and east facades of the house with planted on its Rosemary (*Rosmarinus officinalis*). To shadow the guest parking places trees (*Melia azedarach*) were planted on their borders (figure 46). The concrete slab path links one principal entrance to the site with another and followed by the green wall of bushes (*Tamarix africana*).



Figure 46. Apartment house in Quarteira. Perspectives of entrance. Source: SMS Arquitectos

The Second Variant

The change in configuration of the building in the second variant provoked some minor changes in landscape organisation of the site keeping the principle concept of space organization. This time the building was designed in simpler parallelepiped shape (figure 47).



Figure 47. Apartment house in Quarteira. Variant 2. Bird's-eye views. Source: SMS Arquitectos

From the north side of the building the terrace this time with organic configuration was designed (figure 48). The character of the white terraced curves is similar with the design of the building's walls (figure 49). It helps to link the grand scale of the building with the landscape. So in this variant the aesthetic level of synergy of architecture and landscape architecture was more elaborated. The pool was dislocated more to the north of the site leaving more space for the deck.



Figure 48. Apartment house in Quarteira. Variant 2. Masterplan. Source: SMS Arquitectos

From the zone of entrance the staircase with terraced flower beds (*Rosmarinus officinalis*) lead to the level of the deck and the pools (figure 49). The entrance from the west part now is connected with the zone of principal enter by the path constructed of former slippers integrated into grassed slope with some terraces. These terraces of wood serve as additional space for rest, could be used as benches or zones for games.

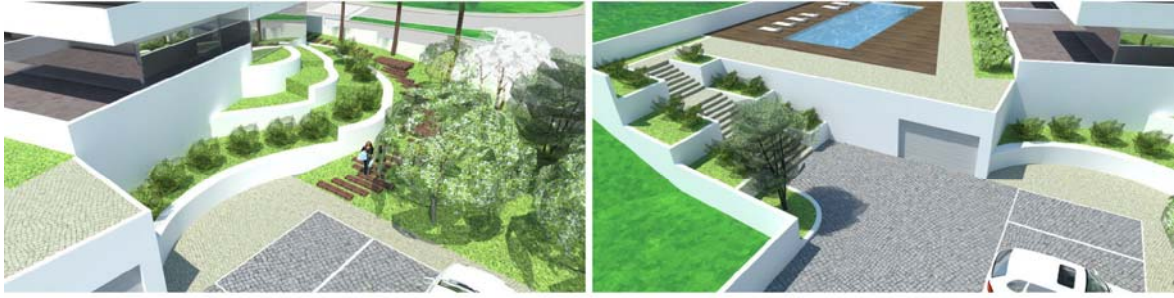


Figure 49. Apartment house in Quarteira. Variant 2. Perspectives of terraces. Source: SMS Arquitectos

Responsibility

As normal I was responsible for the landscape architecture 3D visualization. This project was on its prime stage which called here PIP (Pedido de Informação Prévio). It means that before to order a project on any site a client must apply to City Council and integrate some ideas which he want realize there. This defines the “superficial” character of design and its graphical presentation with minimum details just to illustrate a principle idea. Both architecture and landscape architecture were visualized in schematic way.

Scheme

The scheme illustrates the contrast of the volume of the house with its exterior (figure 50). Following the wishes of clients architect sometime must create object which is dissonant with its surround. It was the attempt to neutralize it by the landscape design using terraces and integrating a lot of vegetation let to create more comfortable zone for the inhabitants.

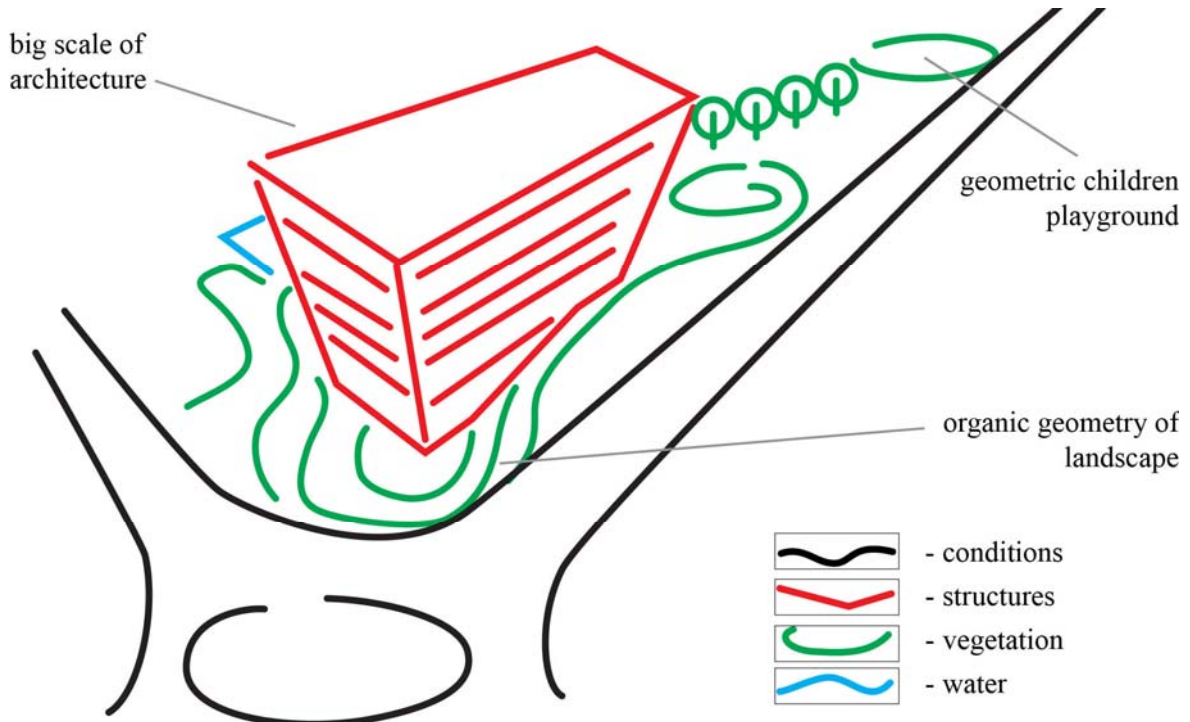


Figure 50. Apartment house in Quarteira. The scheme of graphical analysis

Conclusion

To summarize in both variant was more elaborated the aesthetic/visual level and forgotten the ecological one which is explained by its big scale. The attempt **To Naturalize** and **To Sculpt** the design could be better if the stylistic principles of building and its exterior were the same. But building became very rectangular and landscape solution is the mix of different styles.

d. The House in Alfeição, S. Sebastião, Loulé

The site is situated in Alfeição, Loulé Council. The area of the site is 4159 m² with following features. Firstly the region where located the site has got a terraced relief and secondly there is a ruined building there. Thus this project was a response to these specific site's conditions.

The principal idea of this project was to include the old building into a new structure taking into account the existing topography (figure 51). The location of open spaces of the house responds to the character of relief that is why the deck with pool, entrance and terraces are all situated on different levels.

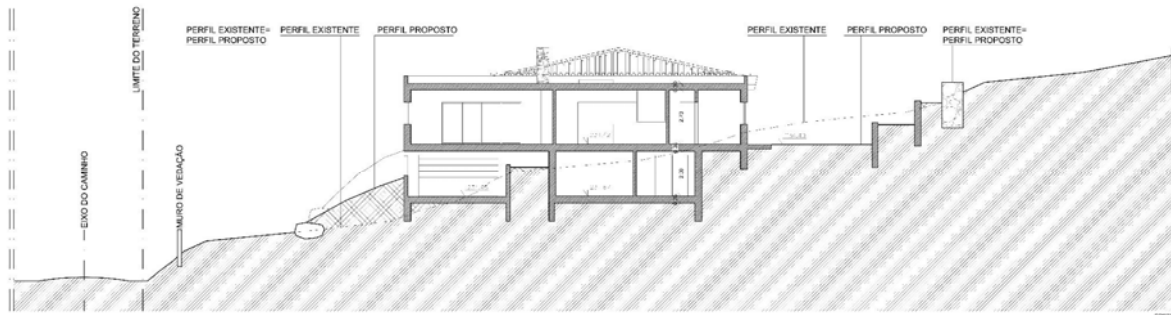


Figure 51. House in Alfeição. Section of the site. Source: SMS Arquitectos

All these open spaces are opened to the spectacular view. Such application of the action **To Sculpt** is the proof of the synergy of architecture and landscape architecture in this project. From the west side it seems that the house has got just one floor due to its integration into the slope. From the east it turns to the multi-levelled volumes with console (figure 52).



Figure 52. House in Alfeição. Bird's-eye view. Source: SMS Arquitectos

The entrance to the site was organized from the north by the road in Portuguese pavement type *calçada*. The rest of the territory around the house was preserved as it is. The native vegetation is presented here by Carob Tree (*Ceratonia siliqua*) and by Almond Trees (*Prunus dulcis*). So these trees create on this site an image of green backstage for the house. Thus it was important for architectural structure to do not dissonant with the existing the rural surround. This landscape condition defined the character of architecture with using of forms and materials characteristic for the region (roof pitch, stucco, ground floor integrated to relief) with symbiosis with modern elements (glass fences, iron columns

to support consoles). This way the house which has got quite a big total area 548 m² is well integrated into existing landscape (figure 53).



Figure 53. House in Alfeição. Masterplan. Source: SMS Arquitectos

The idea to include as much as possible into the structure of the house elements of nature like water and plants was realized in this project through the design on the basement floor of the pool with waterfall and integrated into it tanks with trees (*Laurus nobilis*). This semi-opened space has got an access from the hall on the basement floor, bedroom and laundry and it is opened from above creating this way an additional source of natural light for the specified rooms (figure 54). Also this space is visible from the outside of the house. The waterfall was integrated into the rock wall, one of the walls of the inner-yard. The details of this element are presented on the figure (design 4)



Figure 54. House in Alfeição. The decorative pool with waterfall Source: SMS Arquitectos

As it was decided to preserve maximally the existing relief a lot of elements appeared in the exterior design. For example a staircase with terraced flowerbeds with planted there Strawberry trees (*Arbutus Unedo*) and Rosemary (*Rosmarinus officinalis*) leads to the main entrance to the house (figure 55). The walls of the terraces were decorated by stone. Actually the stone was chosen as one of the principal material both for the building and for architectural elements. It was a response to the authenticity of the site where old hydraulic structures made by stone are located.



Figure 55. House in Alfeição. The elements of landscape. Source: SMS Arquitectos

Responsibility

The task for me here was the 3D visualization with elaboration of some details of the semi-opened yard of the waterfall. The 3D visualization was necessary to present for clients and also for future web site. The time frame was as always as faster means better. But the difficulties provoked by the modelling of the relief made this work longer than it was expected. Also during the modelling some alterations in the project were made. On previous stage of the project landscape design was not elaborated and during the work on visualization some ideas for the exterior part were found. For example the client liked the idea to create near the pool a little garden with planted bushes and trees (figure 55). The plants chosen for this are Bay Laurel (*Laurus nobilis*), Strawberry Tree (*Arbutus Unedo*) and Rosemary (*Rosmarinus officinalis*). Also some vegetation was added to decorate monotony of the rock wall of the basement floor near one entrance (figure 56).



Figure 56. House in Alfeição. The elements of landscape. Source: SMS Arquitectos

The Scheme

One the scheme of analysis the main methods of interaction of architecture and landscape architecture applied in this project are presented (figure 57). So in this house both aesthetic and ecological levels were achieved due to its integration to slope and using **To Sculpt** action.

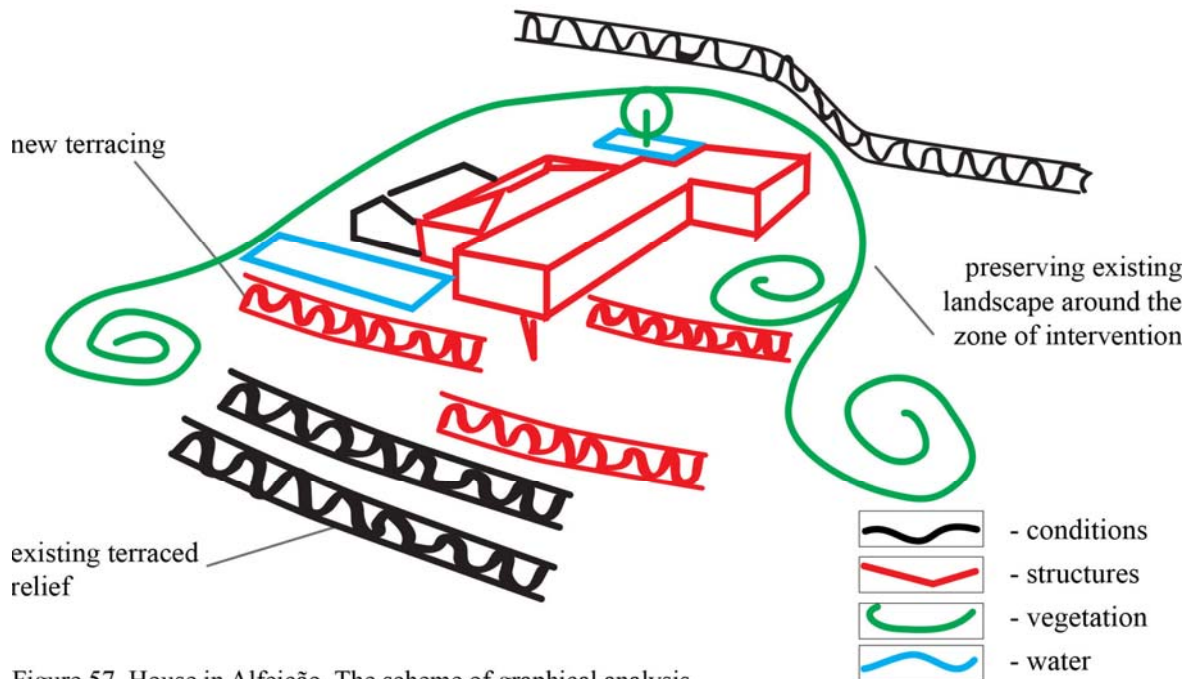


Figure 57. House in Alfeição. The scheme of graphical analysis

Conclusion

The concept of the integration of the house into existing relief refers this project to the application of the topographic method with small inclusion of sustainability concept either are the characteristics of the synergy of architecture and landscape architecture in this project. Also the work with forms allowed creating in these projects a lot of semi-opened spaces to connect inside and outside.

f. House in Monte de Poço, S. Sebastião, Loulé

The site is located in town Monte de Poço, Loulé Council. The area of the site is 1750 m². One building in ruins in an advanced state of degradation is situated there. The existing vegetation is presented mainly by almonds trees (*Prunus dulcis*).

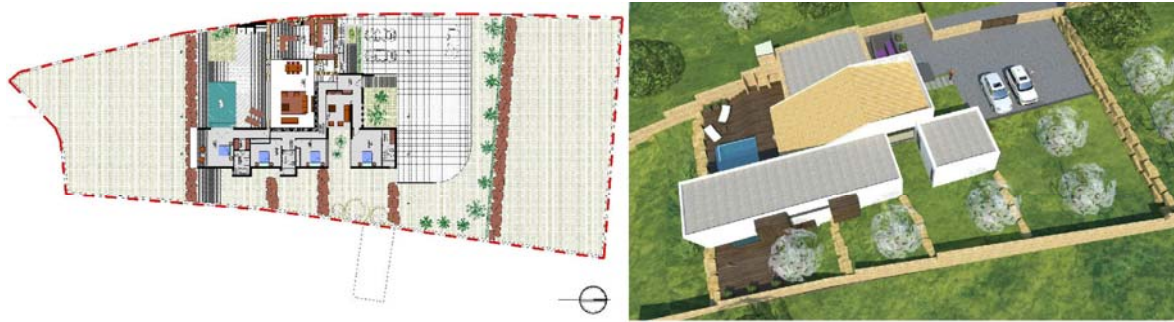


Figure 58. House in Monte de Poço. Masterplan and general view. Source: SMS Arquitectos

Complex relief dictated to apply here **To Sculpt** action both in architecture and landscape. The difference in heights of relief from south to north is approximately 12 meters. So definitely the integration into existing topography of the site was the method applied here (figure 58). The idea to literally lay down the new constructed part of the building on the ground creates from the south the consoled part where one bedroom with terrace is situated (figure 59). This way the picturesque view to countryside is opening from the terrace linking this way landscape to architecture from inside to outside. Two inclined pillars serve as support for this consoled volume. Under the sticking put volume the pool and multileveled wooden deck with zone of barbecue integrated into the rock fence of the site is situated.



Figure 59. House in Monte de Poço. Perspective. Source: SMS Arquitectos

The entrance to the territory was organized from the higher part of the site, from the north where the road to a contiguous site already exists. The north part of the place is terraced and every step is forced with stone (figure 60). Every platform is greened with

plants. From the east side rock garden with planted around Lavender (*Lavandula dentata*) was designed. Existed almond trees were maximally preserved.

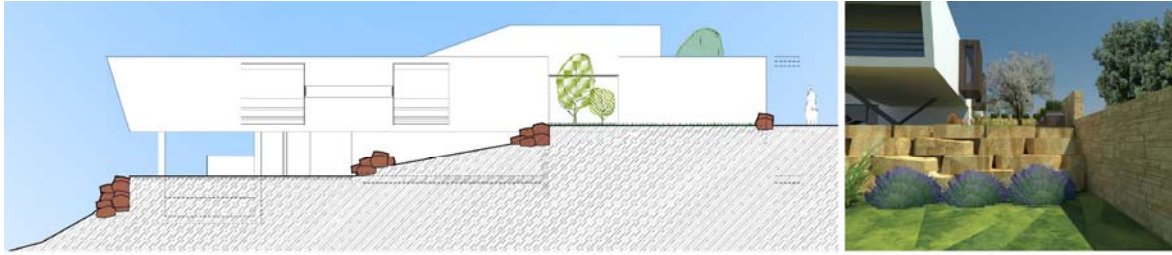


Figure 60. House in Monte de Poço. Section of the site and the view of terraces. Source: SMS Arquitectos

The ruined building was integrated into the new one and appeared as volume with pitched roof which is typical for old buildings in Portugal and its walls were decorated by stone of the region. Using of traditional materials in decoration of some walls such as stone with integrating wood and preserving the forms of old construction helped to create architecture not only opened to but also merged to its rural surround (figure 61). **To Sculpt** action also is manifested in the volume of building with some semi-opened spaces for natural lighting and access to basement floor. These spaces were greened.



Figure 61. House in Monte de Poço. Perspectives. Source: SMS Arquitectos

Responsibility

In this project I as in many others was responsible for 3D visualization. By the way 3D modelling is one of the methods which help a lot to see the aesthetical component in designing. Modern software with realistic effects shows how from different points of view one or another element of design will look in the future. I was trying to create here the more realistic renders. As the project was on its final stage and everything in design was defined I just reflect through 3D all developed ideas with integration of more vegetation (figure 62).



Figure 62. House in Monte de Poço. Perspectives. Source: SMS Arquitectos

Scheme

The scheme reflects the most characteristic feature of the site - inclined relief and the concept of the building where through the work with forms the structure opened from the inner to outer was created (figure 63).

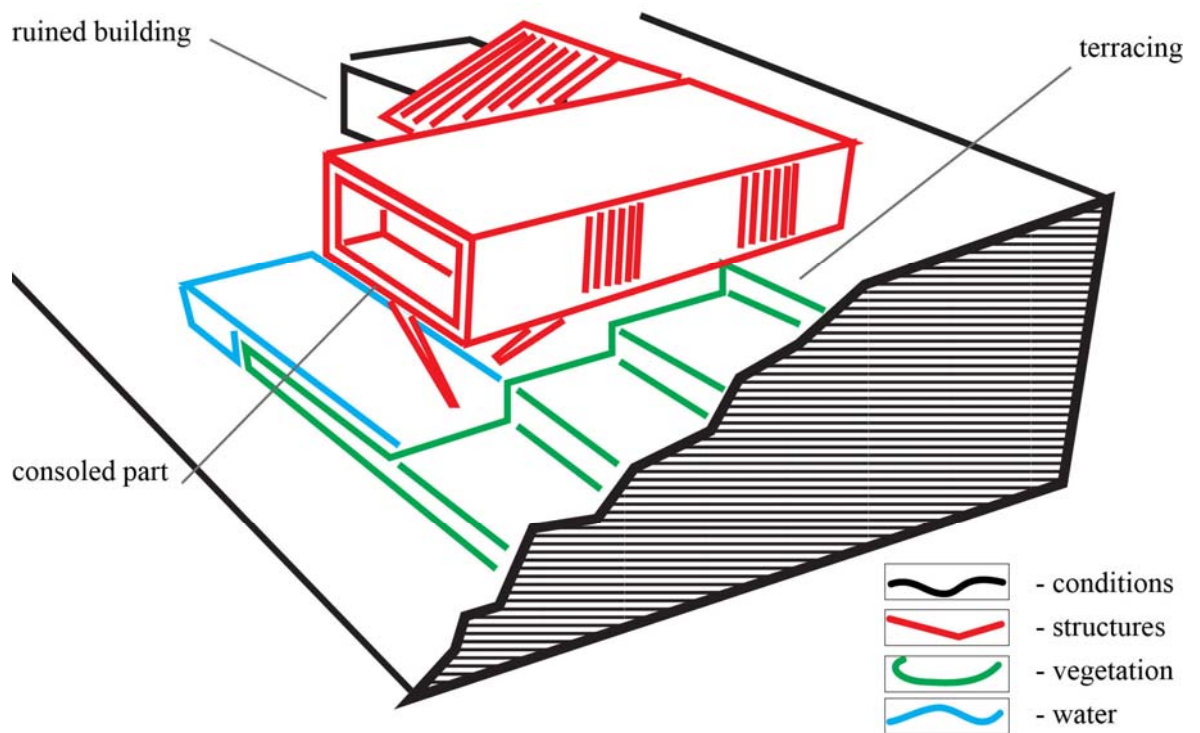


Figure 63. House in Monte de Poço. The scheme of graphical analysis

Conclusion

The main concept is to promote the relationship between building and landscape, taking advantage of the place's overlooking position over the countryside surrounding was realized by integration of the building into the existing relief and in use of native for the region vegetation, by the framework through **To Sculpt** and **To Naturalize** actions.

g. The House in Loulé

The site is located right in the city Loulé and has got an area of 458.03 m². The simplicity of rectangular site with plain relief here dictated the laconic solutions both in landscape and architecture. The building is linked with the urban surround of the city. The site is situated in the corner of the private houses zone which is located in front of multi-storeyed apartment building (figure 64).

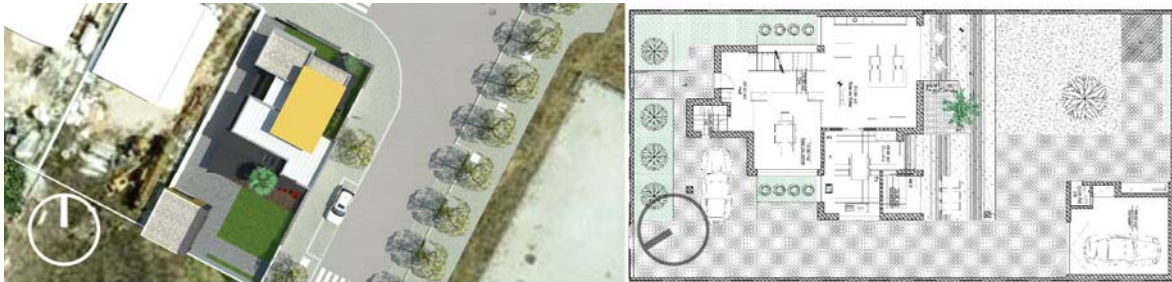


Figure 64. House in Loulé . Masterplan. Rendering and drawing. Source: SMS Arquitectos

During the work on this project it was difficult to use the framework because the design was already elaborated during last six months before my appearance in the firm. So my task here was arranged the landscape design to present it to the Loulé City Council (design 5). The principal pavement of the lot is the calçada. It covers the passage to the garage and some guest parking places. So to vary some small lawns in the part of entrance in regular forms were design. From the backyard the deck with larger green zone were created. The geometrical patterns of landscape design echo with the volumes of the house following this way the common contemporary style (figure 65).



Figure 65. House in Loulé. Perspectives. Source: SMS Arquitectos

During the work on it some mistakes of architects were corrected. Almost all the trees and bushes were chosen from native species. Just the palm from the backyard as always serves as a characteristic mark of the senior architects.

Responsibility

To create here link between architecture and landscape was almost impossible due to the fact that my participation was on the last stage of project's development. The urban

character of surround and the lack of space of the lot allowed just **To Naturalize** the project with such elements of landscape architecture as trees, brushes, lawn (figure 66). I drew the exterior design masterplan with some specification of material and plants. Also the 3D visualization was corrected by me to make it more photorealistic. To summarize the work on this project I can characterize it as more technical than creative.



Figure 66. House in Loulé. Perspectives. Source: SMS Arquitectos

Scheme

The scheme of graphic analysis illustrates how in the urban surround trying to build as much as it possible by norms architecture with high aesthetic qualities but with ecological part not resolved appears (figure 67). And some elements of exterior design do not resolve this problem.

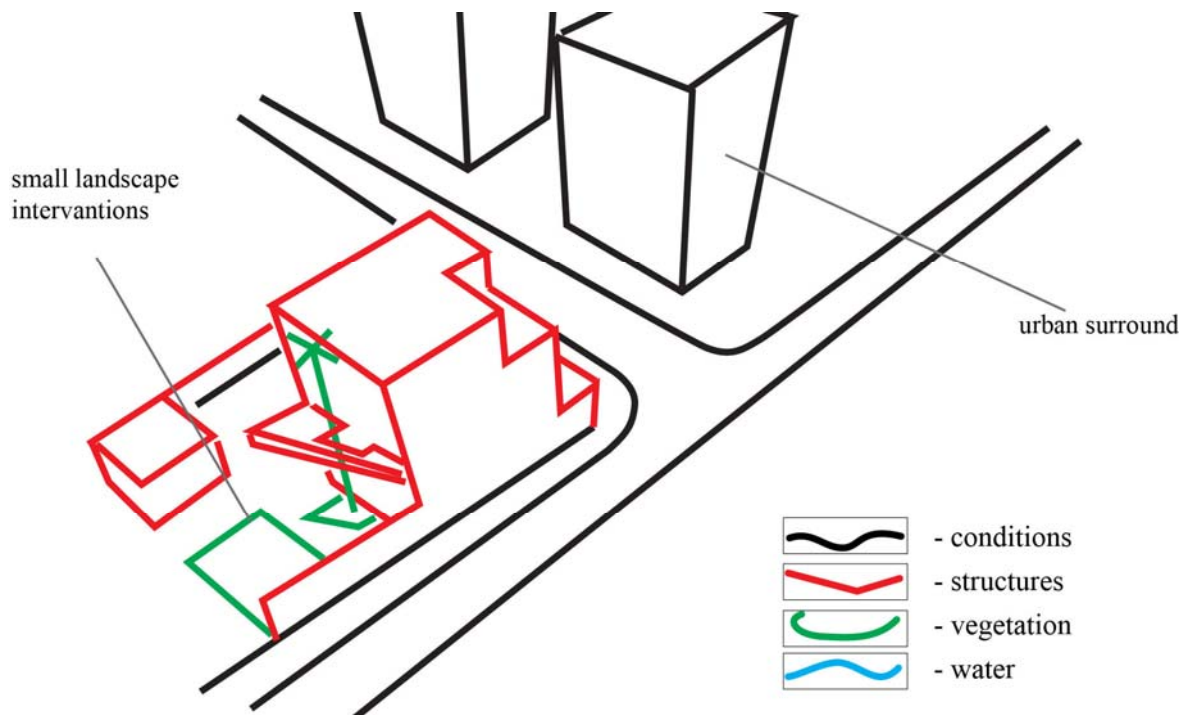


Figure 67. House in Loulé . The scheme of graphical analysis

Conclusion

This project is not very illustrative example or synergy of architecture and landscape architecture in term of ecological level. Just if a lot of impermeable areas create in the city which already has shows that ecological situation of the city was aggravate. Instead of Portuguese calçada the pavement “terra batida” (port.) could be applied. But in terms of aesthetic level it was designed following the interconnection in work between architecture and landscape architecture.

h. The Houses in Colinas do Golfe

Three houses (lots 2, 5 and 6) are situated in the Urbanization “Colinas do Golfe” (port.) in Vilamoura.

The luxury character of the site defined here both the architecture and landscape architecture of the project. Following the concept of the senior architect all three designed houses intent to interpret the relations between indoors and outdoors through yards, terraces, balconies and lightshade slabs. The style of all three houses is quite similar due to the taste of the senior architects but wishes of clients defined some differences in these projects which will be described in this chapter.

Lot 2

The work was started from the lot 2. The site has got the area of 824,30 m². The project initially sprang from the wish to obtain the lot in the least usual manner, albeit conforming to all legally stipulated requirements. That is why the configuration and limits of the house were defined mainly by the 5-meters non-constructed zone from the limits of the lot. One challenge regarding the design of the house was to follow building laws while producing sufficient living space on the small plot. In reaction to these demands a sculptural structure originated that seems to jump back and forth playfully multiple times.

A privileged view over the fields of golf defined the orientation of private parts of building to the south. That is one of the major impacts which has got any landscape on the inside organization of building (figure 68).



Figure 68. Houses in Colinas do Golfe, Lote 2. Masterplan and general view. Source: SMS Arquitectos

It was decided to design a house in which spaces are interconnected and opened into interior courtyards at the centre of the polygon-shaped lot. The idea of complex building configuration with integration into its multileveled green zones allowed to create here the house connected to its surround (figure 69). The house is gutted by courtyards that sculpted the volumes and open new facades recreating spaces within spaces. So here by the work with volumes and with relief, mainly creating a new topography of the site the concept for all the lots was elaborate. Also the using of wood and stone in the decoration of walls helped to connect it **To Naturalize** the design. Wooden bollards and pillars in exterior were used.

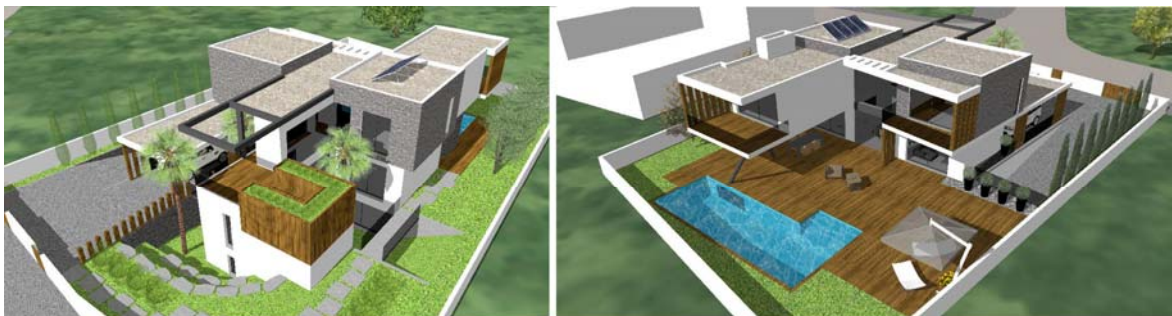


Figure 69. Houses in Colinas do Golfe, Lote 2. Perspectives. Source: SMS Arquitectos

The basement floor has got a great influence on the remodelling of topography. The existing relief is plain. But to provide the entrance for cars into the garage on the basement floor and to illuminate with daylight the rooms on the basement floor the existing relief was modified. Two ramps were designed: one for cars and one for provide the basement floor rooms with daylight. The last one was greened. The terraced pit was designed from the side of the entrance to the house. Here the rock garden was created to make the character of the landscape design more picturesque and some plants (*Rosmarinus officinalis*) were planted around. To pass above mentioned green ramp and above the pit two bridges were designed (figure 70).

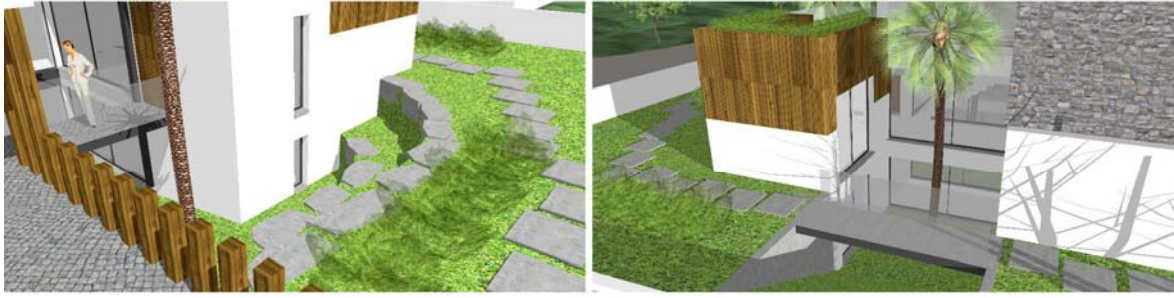


Figure 70. Houses in Colinas do Golfe. Lote 2. Perspectives. Source: SMS Arquitectos

The one leads to the main entrance of the house. Another passes above the green pit and is linked with a path from concrete slabs. This path connects the main entrance to the lot with the backyard where situated 12-meters pool. Above one of the volume of the house the green space with the bench integrated and hided between wooden containers with *Rosmarinus officinalis* was designed (figure 71). This way one more green space for relax was created.



Figure 71. Houses in Colinas do Golfe. Lote 2. Perspectives. Source: SMS Arquitectos

For vegetation some native species and some exotic one were chosen. Mediterranean Cypresses (*Cupressus sempervirens*) were planted along the fence from west site to decorate the ramp to the garage. Into the green pit and ramp palms were planted following the taste of senior architect. Near the pool from the East Side Bay Laurel (*Laurus nobilis*) were planted to create a visual barrier from a neighbourhood lot. Some pots with flowers were integrated in street furniture of the deck and also planted in pots.

In the outdoor areas, namely the courtyards and gardens, design simplicity was chosen for the paving materials, decking, granite slabs and cobbles (Portuguese *calçada*), conferring a very minimalist reading to the spaces. A barbecue space was designed in retreat of the terrace, contiguous to the living room.

Thus integrating into the design all defined by the programme of the house elements and structures and interconnecting architectural and landscape design in them the small lot was turned to the example of contemporary architecture.

Lot 5

The area of the next developed lot 5 is 766.45 m². As it was mentioned the concept of the design has been already elaborated during the work on the house in the lot 2 (figure 72). But to distinguish it from another some new elements of landscape design were integrated.



Figure 72. Houses in Colinas do Golfe. Lot 5. Masterplan and general view. Source: SMS Arquitectos

One of them is the pool on the level of the basement floor with waterfall going out from the support wall (figure 73). This pool is a part of the semi-opened space limited by rock walls with exits from the bedroom and the office on the basement floor. This way the open space was created within the semi-enclosed space, expanding living areas, expanding spaces. And the exterior space as ‘the container’s interior’ possesses a dual ‘outside-inside’ living space.



Figure 73. Houses in Colinas do Golfe. Lot 5. Perspectives. Source: SMS Arquitectos

Another element of the building with integrated plants is the blank wall decorated by wooden and concrete console with round holes in which the trees are planted (figure 73). The Bay Laurels (*Laurus nobilis*) are planted on the rectangle area decorated by white gravel, so trunks pass through the holes in the concrete console. This element was

one of the ways to decorate the monotony of the wall and is a characteristic example of the synergy of architecture and landscape architecture (figure 74).

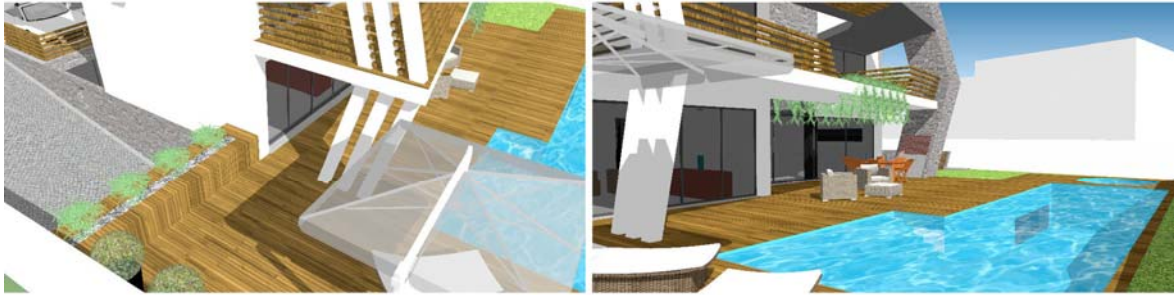


Figure 74. Houses in Colinas do Golfe. Lote 5. Perspectives. Source: SMS Arquitectos

One more time the using of natural materials like wood and stone in the decoration of walls of the house make it visually connected to the surround. The landscape design, paths, ramps and wooden deck were designed in simple rectangular forms following the modern character of the building. Palms, Bay Laurel, Mediterranean Cypress were planted around the house.

Thus one more contemporary house was designed with a lot of landscape integration into its structures (figure 75).



Figure 75. Houses in Colinas do Golfe. Lote 5. Perspective. Source: SMS Arquitectos

Lot 6

One more lot number 6 with the area of 777.80 m² was designed. The house in this lot is simpler from the all. It was dictated by the wishes of clients. They asked to do not integrate a lot of plants into the project because they think that it could be difficult to

maintain them. However the inner garden on the level of basement floor with greened terraces was designed here (figure 76). Some plants in pots were located on the terrace of the first floor and on the platform above the garage. Also along the ramp the small rock garden was designed. On the canopy above the main entrance a small area with planted on it bamboo and decorated with white gravel was created.



Figure 76. Houses in Colinas do Golfe. Lote 6. Masterplan and general view. Source: SMS Arquitectos

Although the volume, apparently, is being treated as a solid monolith, it is fully traversed, with vertical and horizontal voids, coloured surfaces with the purpose of creating strong visual relations with its contiguous exterior spaces, and allowing the light to enter through the entire house (figure 77).



Figure 77. Houses in Colinas do Golfe. Lote 6. Perspectives. Source: SMS Arquitectos

The geometry of exterior design is very simple and designed in rectangular forms (figure 78).



Figure 78. Houses in Colinas do Golfe. Lote 6. Perspectives of landscape elements. Source: SMS Arquitectos

The most characteristic element of landscape design here is the terraced space which is situated on the level of basement floor (figure 79). This space is the outer continue of the cabinet and it is a bright example of interaction of architecture and landscape architecture in this project.



Figure 79. Houses in Colinas do Golfe. Lote 6. Perspectives of landscape elements. Source: SMS Arquitectos

Responsibility

I participated in the development of these houses right from its beginning. In these three projects I was responsible for the 3D modelling and visualization. The work on the houses passed very extensive and in one week the first solution of each was presented to clients. After the first sketches of the senior architect one of the architects designed in AutoCAD a master plan. Then I in SkechUp created simultaneously architecture and its exterior consulting all the time with the senior architects. My experience both in architecture and landscape architecture helped here during the work on 3D models and their visualizations. My task was to convert 2D in 3D and to design more in details the exterior part. This type of professional tandem made possible to create project in stylistic unity between architecture and landscape architecture and shows how the discussed in theoretical part interdisciplinary works in practice. By the way sometimes appeared pauses in work and this allowed me to devote to the work on the landscape part.

The scheme

I drew the same scheme for all three lots because as it was mentioned they have got the same concept (figure 80). It illustrates the using of **To Sculpt** action and with the integration into building such elements of landscape as semi-opened yards, water and plants. Such a remodelling of existing topography on a small area helped to design architecture linked to its surrounding.



Figure 80. Houses in Colinas do Golfe. The scheme of graphical analysis

Conclusion

Thus the main principle there in the planning of lots was to open up the private zone to fields of gold, the sun, the light and the privacy that the surrounding land offers using **To Sculpt** and **To Naturalize** actions.

i. The “Vila Study” Competition. Quarteira

The site is situated near Quinta da Quarteira. Its surround is quiet rural. By the programme of the competition the existing on the site house must be demolished to build a new one but the tennis court must be integrated into new solution. The scale of the project is quite big. The total area of the new house is about 1700 m² and of its site is 9750 m² (figure 81).



Figure 81. “Vila Study” Competition. Masterplan. Source: SMS Arquitectos

In this project one more time water plays the principal role. The concept is to integrate water in maximally possible exterior and some interior spaces. The area covered by water is 1369 m² and it is about 14% of the territory. It flows from pools and then goes through the house spaces and goes out in the front part of the building near the entrance making the north facade reflected into the mirror of water (figure 82).



Figure 82. “Vila Study” Competition. Perspective. Source: SMS Arquitectos

In this project the object to design luxury house argues with the concept of sustainable architecture and landscape. The using of such amount of water mainly for decorative effect is very expensive. The volume of the house was sculptured in a way to encourage a strong complementarity between the house and the exterior in order to create an intense visual relation between the inside and the outside, between construction and natural elements. Thus a lot of inner yard were design with the integration into them lawns and palms (figure 83).

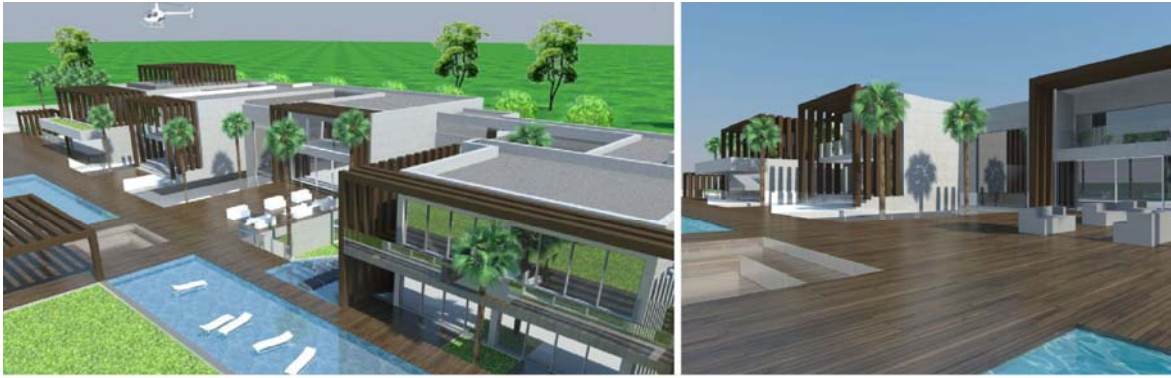


Figure 83. “Vila Study” Competition. Perspective of pools and deck. Source: SMS Arquitectos

The site has already got some plants mainly presented by maritime pines (*Pinus pinaster*) which were preserved as it possible. Due to the deadline of the competition the vegetation was not defined by species. The landscape design was thought to use luxuriant tropical plants that protect from the view of the neighbours and accentuate the untouched character of the site and as always the senior architect insisted on planting of palm trees.

Due to the luxury character of site the helicopter pad was designed as a separate structure (figure 84). It was link with the entrance to the house by the pathway in Portuguese *calçada*.

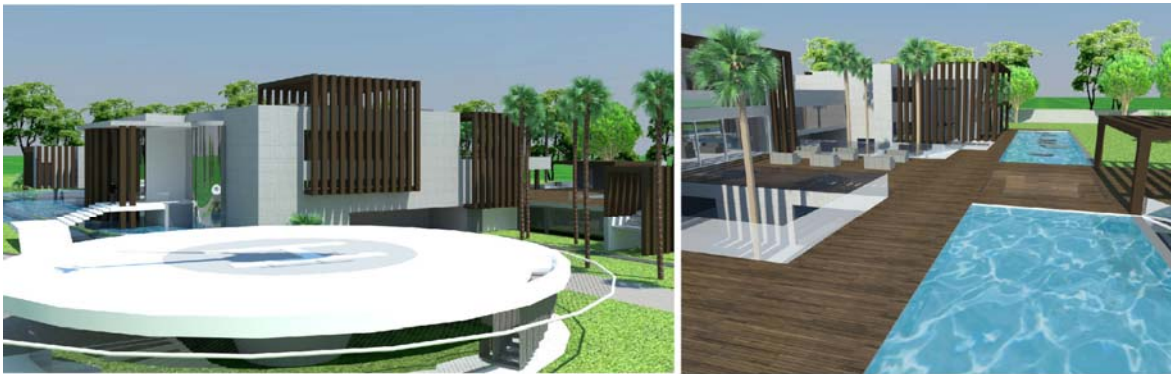


Figure 84. “Vila Study” Competition. Perspective helicopter pad and deck. Source: SMS Arquitectos

Responsibility

The work on this project was distributed among/between three persons. The senior architect as always generated main ideas, another architects drew all this in 2D in AutoCAD and I was responsible to the 3D visualization. This time it was decided to do a video about the project and this process always demands a lot of technical resources of computer and a lot of time. To make one second of the video you need to render 30 images. But at the end you receive one of the more realistic presentation of project with with the language more understandable for clients. And in the case of the competition it is very important. Thus in this project I practiced more my technical skills in the computer

visualization. The scale of the project, its character and the task to make a video complicated the work but this way made it more valuable (attachment 2).

Scheme

The scheme illustrates the principal concept - the movement of water and its presence at the most part of the territory (figure 85). The actions **To Naturalize** and **To Sculpt** contributed here mainly to the visual level rather than to ecological.

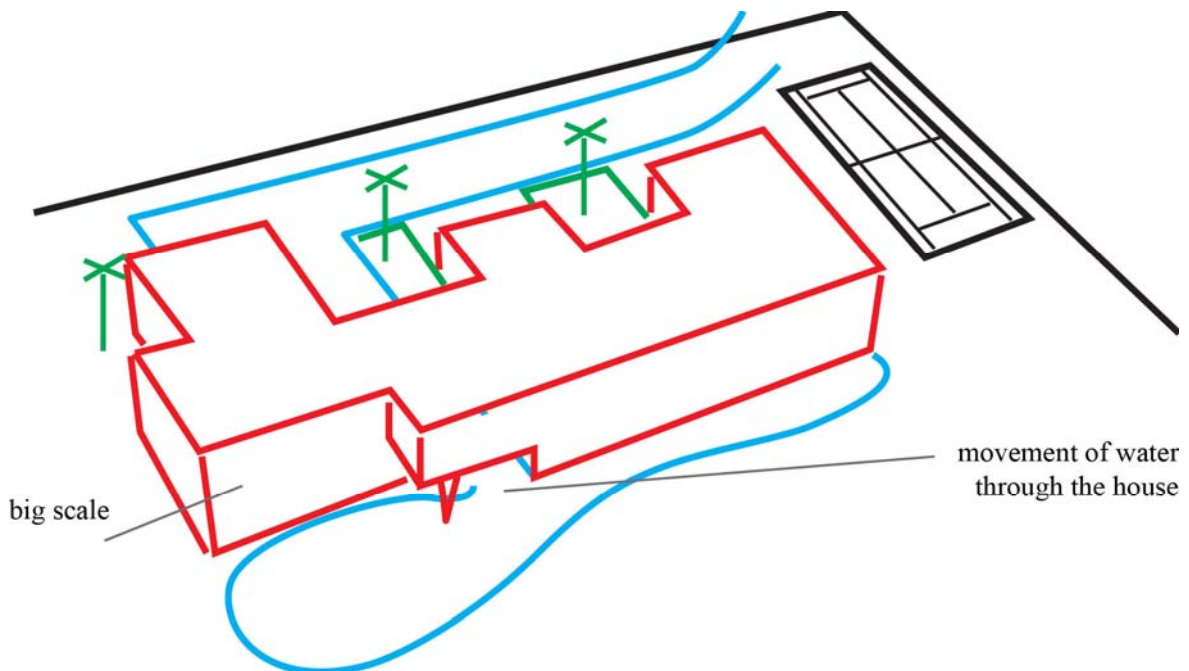


Figure 85. “Vila Study” Competition. The scheme of graphical analysis

Conclusion

This project is one of such examples where architect leaves the exterior part for the last scene and finally forget about it. But for competition the well designed landscape design could play an important role in the choice of winners.

5.3 Evaluation of the Internship. Recommendations for Future Development of the Firm

To conclude the report about the internship I will evaluate both my work and SMS Arquitectos, Lda with some recommendations for the future development of the firm. I participated in the development of twelve projects. The dimensions of the biggest one were 150x60 meters. Working with such small areas I needed to dedicate me more to details and at the same time it was easier to see a whole project. The style of the project was the same, popular now contemporary minimalism in decoration, functional comfort and minimal

costs of maintenance. To summarize the report about the internship I decided to find some recommendations for the future firm’s development, the development which follows the concept of Synergy of architecture and landscape.

Achievement of Objectives

Mainly all the objectives from the practical part have been achieved during the internship. The framework was applied and skills were practiced and knowledge about architectural business in Portugal was received. The principal actions applied during the internship were **To Observe**, **To Naturalize** and **To Sculpt**. The actions **To Emulate** and **To Programme** due to the character of the developed projects and the taste of the senior architects were applied just in some cases.

SMS Arquitectos Lda, Evaluation

To evaluate the firm where I passed my curriculum internship I made the SWOT analysis.

	Helpful	Harmful
Internal Origin	<ul style="list-style-type: none"> - High temps of work; - Bilingual team; - Working with 2D and 3D simultaneously; - Good reputation of the senior architect; - High quality of projects. 	<ul style="list-style-type: none"> - Out of date software; - Projects just on the territory of the Algarve; - There is now specialist who makes photo realistic renders.
External Origin	<ul style="list-style-type: none"> - Old clients which come back and recommend the firm; - International clients. 	<ul style="list-style-type: none"> - Economical crisis in Portugal.

From the table it is obvious that the firm has got more strong sides. That is why despite the fact that there is an economical crisis in Portugal SMS Arquitectos has got sufficient clients to keep on its functioning.

Work in Group

One of the advantages of this internship was the experience to work with Portuguese architects in the role of landscape architect. Working on landscape architecture I was very different from them, with another mindset, which is more concerned to the

aspect of ecology and sustainability. This experience to work in group, in multidisciplinary team helped me to confirm putted in the theoretical research statement as necessity to work on inside and outside simultaneously.

The Pace of Work

It was quite an extensive pace of work during the internship which was mainly defined by the senior architects. He is who controls the work and defines deadline of delivery of the projects to clients and to a city council. This deadlines not always were been met because of some aspects different in every case and because often deadlines which were set by the boss were not justify. But this way stimulated a lot of the work and I moreover was used to work this way. Of course the design is the creative process and time could not command ideas but more organized you work more you are able to do.

Used Software

The software of the firm is quite out of date. Also some programmes are installed just on one computer. So when you need to work for example in Photoshop you must ask your colleague to work on his computer. Some limitation in the software of the firm influenced a lot the graphic quality of drawings and images. For example AutoCAD has got an architectural version which accelerates a lot of design process. But the version of AutoCAD of the firm is usual one and out of date. So I recommend a lot to update the software and maybe think about more progressive in the terms of architecture programmes as for example ArchiCAD.

3D Visualization

About fifty percent of my internship passed designing in 3D. My coordinator from the firm understood that I knew to make it well and moreover I liked to do it. Thus often right from the start of the design process, ensuring that clients can fully appreciate the subtleties and impact of concepts being proposed, I was able to fully engage them in the design and be confident that they are really going to love their new house. By the other side there is no other specialist in the firm who know how to do photorealistic renders. Nowadays both in architectural and landscape architectural practice is very important to present to clients images of high visual quality not just drawing because what sales a project it its images.

Work with Clients

I expected that I will work more with clients and could go to visit the projects during construction. In my opinion it is one of the important parts of educational process. But I was a little bit disappointed about the few opportunities which I got during the internship. The senior architect is mainly who talks with clients and who goes to a site during construction. So this aspect was out of my responsibility.

Reference to the University

During the internship I often consult the notes from different courses which I completed in the University, training practical skills in the synergy of architecture and landscape architecture.

This internship was more practical than poetical experience. Working with clients and taking all the time in account a taste of architect is more about how to resolve a situation to make everybody content.

6 Conclusion

The main objective which was defined at the beginning of the work was achieved. Through the research of history of division of architecture and landscape architecture, of current tendencies in the interconnections of these two fields and the analysis of characteristic examples “The Framework of Synergy of Architecture and Landscape Architecture” was developed and applied in practice during the internship at SMS Arquitectos, Lda.

The contemporary tendency to resolve problems (ecological, aesthetics) in architecture through the interconnection of both disciplines was carried out through the whole work. In contemporary architectural practice more and more examples where methods from landscape architecture were applied in project appeared. Architects become more and more concerned in ecological and sustainability aspects of building environment. More and more interdisciplinary teams create harmonious projects. And this work was my personal contribution to this tendency.

The main idea of my work both in the theoretical and practical researches was to study how to shape a world where architecture and landscape architecture interact in pleasurable and thought-provoking ways. That is why this investigation was the important step in my professional transformation, in the search of holistic approach in architecture.

This research both theoretical and practical was the weaving of my knowledge from architecture and landscape architecture, of my education and work experience to escape the terms of building and landscape altogether, focusing on how elements share an urban space, an ecosystem, or a temporal frame. It was training how to apply in my future career knowledge and skills received from courses of both disciplines.

This work was a manner to understand my preferences in professional practice, do I prefer to stay architect or do I want to become a landscape architect? Will I work as landscape architects applying architectural tactics, or will I stay an architect acting in some way as a landscape architect? I can not respond to all these questions because it depends on the place where I will work in the future. Moreover in architectural business you not always can choose what you prefer to do, and it is mainly defined by your boss, but you always can choose the direction of your works, direction to architecture and landscape architecture working together, enriching each other. For now I am sure that both my educational experience and research made me more valuable in the professional world, both of architecture and landscape architecture.

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Attachment 1

The Declaration of the Internship

Attachment 2

Video of the “Vila Study” Competition in Quarteira