

RESEARCH ARTICLE

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A Residential Landscape Design Model for the Tirana Area

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Abstract

Landscape architecture is a relatively new discipline in Europe, but almost unknown in Albania before 1990. It has experienced rapid development during the last decade in our country.

A model of residential landscape design for a family home in Lunder, Tirana is presented. Tirana lies at the coordinates 41.33°, north latitude to 19.82 ° latitude to the east. The Tirana plain is included in the Coastal Lowland area, which is distinguished by a Mediterranean climate, with short and mild winters and hot summers. The city of Tirana has an average height of 110 m above sea level while the height of the plain is 521m.

Three site visits were conducted during the design process; at the first visit, a general survey of the country, climatic and soil conditions, and a family interview were conducted. After analyzing this information, a design program was compiled. The main request of the project beneficiaries was its realization at minimal cost, recommending the use of plants with small size that, over time will give the full ornamental effect.

A freehand project idea is presented during the second visit taking into account all the requirements of the project beneficiary.

The agreement with the family members was reflected in the final master plan submitted with the help of the Real-time Landscape Architect software.

The selection of plants was done by applying the basic design principles by combining their flowers with the reddish color of the house and surrounding wall with local stone tiles.

Lagerstroemia indica, *Bougainvillea spectabilis*, *Rosa spp.*, *Wisteria sinensis* with red, pink, purple flowers combine quite well with the colors of the structural elements of the garden and the house.

Keywords: Residential landscape, design project, Mediterranean plants.

1. Introduction

A model of residential landscape design for a family home in Lunder, Tirana is presented. Tirana lies at the coordinates 41.33°, north latitude to 19.82 ° latitude to the east. The Tirana plain is included in the Coastal Lowland area, which is distinguished by a Mediterranean climate, with short and mild winters and hot summers.

The city of Tirana has an average height of 110 m above sea level while the height of the plain is 521m.

The purpose of our work is to present a design process of the residential garden and to propose the species and materials that can be used in the landscape in the area of Tirana. Landscaped correctly, the property surrounding a home will be attractive all four seasons of the year. Incorporating a few basic

design principles will give the landscape unity, balance, and interest throughout the year [7].

Designers dealing with the design and development of residential landscapes are recommended to face three important and unique aspects of each project: (1) the client, (2) the location, and (3) the house [1].

To realize a design project, it is very important to develop a system that takes into account the knowledge of landscape design following the steps of the design process.

Around the design process, there are various theories by the authors of landscape architecture about a method to help design a landscape always focusing on the requirements of the beneficiaries with the help of communication technology that has been carried out.

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However, this process can never be a template because each site is distinct from the other due to the topography, the surrounding landscape, vegetation, and conditions of the surrounding area, etc.

Each client has his or her own set of attributes, desires, wishes, lifestyles, and so on that make each client special [1].

There are different descriptions in the literature regarding the landscape design process [3], [1], [6]. Some of the authors propose some sequential steps a design process should follow. The differences found in the references of many authors can cause some confusion.

It is useful to bring in mind the saying of ancient Chinese philosopher Lao Tzu, "Some people consider it noble to have some method; others consider it equally noble to have no method. To have no method is bad. To be strict to the method is worse still.

It is necessary at first to observe a strict rule, then to penetrate intelligently into all the transformations.

Landscaping project realization of a residential building in Tirana's pass in some preliminary stages:

- Agreement on the purpose and method of a design process

- Survey and analysis of the geographic information of the area covered under the project.

Site evaluation is one of the most important steps in residential landscaping. Before purchasing any plants or other landscaping materials and even before beginning to plan a design for the home grounds, it is essential to evaluate what already exists [7].

- Creation and presentation of a design proposal

- Evaluation and modification of a design proposal, examination of an alternative [5].

After years of investment in the housing sector in Albania, a lot of people and businesses are showing an increased interest in landscape design [8].

Moreover, green areas in Albania are under threat by the expansion of constructions and concrete, such as metastasis, which makes urgently recommending a landscape design for different areas of the country.

Three site visits were carried out during the design process; during the first visit, a general survey of the place and a family interview was conducted.

An important part of the site was soil and climate evaluation.

The agreement with the family members was reflected in the final master plan submitted with the help of the Real-time Landscape Architect software.

Lundera based on the USDA classification of plant stability zones, is part of zones 9a, therefore the selection of plants should be done following this temperature range.

The selection of plants in the plain area of Albania should be done following its climate...there are chosen components plants to suit a mild and rainy winter and hot and dry summer [2].

The plants placed in the project are realized by applying the basic design principles by combining their flowers with the reddish color of the house and surrounding wall with local stone tiles.

2. Materials and Methods

The average annual temperature of Tirana is 15.3 ° C. The hottest months of the year are July and August at 24 ° C. The coldest month is January with an average temperature of 6.4 ° C. Absolute maximum temperature 42 ° C. Absolute minimum temperature - 10.5 ° C.

The average annual rainfall in Tirana reaches 1250 mm. The wettest month is November with 169 mm of rainfall; the driest month is July with 30 mm of rain.

Landscaping Project realization of a residential building in Tirana's pass in some preliminary stages:

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- Survey and analysis of the geographic information of the area covered under the project

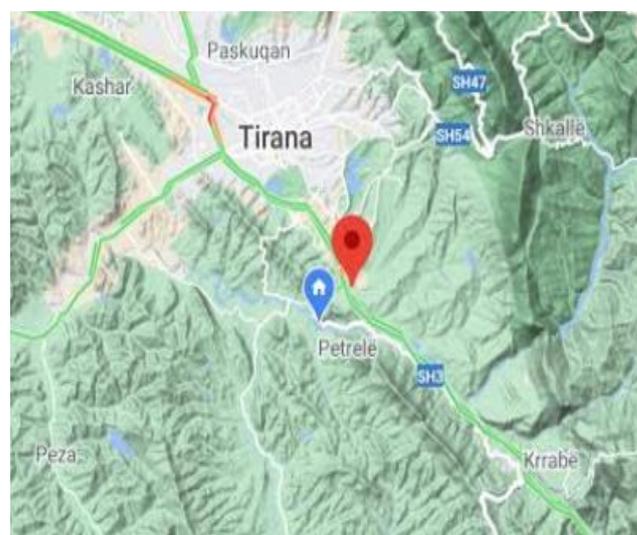


Figure 1. Lundera (Tirane) location of the project

- Creation and presentation of a design proposal

- Evaluation and modification of a design proposal, examination of an alternative [5].

Three site visits were conducted during the design process; at the first visit, a general survey of the country, climatic and soil conditions, and a family interview were conducted

An imported part of site analysis is climate evaluation. A careful study was done in determining the sunny and shady areas of the garden and the angle with which the sun's rays fall throughout the day.

After analyzing this information, a design program was compiled.

- A second visit a functional scheme and a preliminary model were prepared. These were discussed with family members during our visit.

The main request of the project beneficiaries was its realization at minimal cost, recommending the use of plants with small size that, over time will give the full ornamental effect.

This visit was combined with a study of the nursery market in the area of Tirana and Durres. The requests of family members were reflected in the master plan submitted.

The Lundra based on the USDA classification of plant sustainability zones, is part of Zones 9a, therefore the selection of plants should be done following this temperature range.

Today several computer programs help in the realization of landscape projects.

However, we have successfully used the Realtime Landscape Architect program that gives a great opportunity to present the building and its elements and based on its rich fund accurately presents the species of green components.

While in the end, the final master plan was prepared which was presented during our third visit the end of our final master plan of the residential landscape is delivered to the project beneficiaries presented in 2D and 3D.

3-Results and discussions

Based on the results of the site evaluation for climatic conditions and soil conditions, a project idea by hand was realized during the second visit taking into account the requirements of the project beneficiary. In continuation, a division of "functional diagrams" is realized, creating a concept in thick lines of the project idea of a separate residential garden in

functional areas. separate residential garden in functional areas.



Figure 2. First functional idea

Every space and elements of the garden should be positioned in such a way as to be complementary to the functions of the space and the existing conditions of its rugged terrain.

A very important element to pay attention to is the ratio of a relative relationship between length and breadth and volume and the definition of sunny and shady areas of the garden.

The plants that will be planted in this residential project should be with a relatively small crown so as not to become occupiers of the little green mat that we have available (400 m²).

After a detailed discussion of the project idea variants, the preliminary project in the 2D plan was realized.

This project is accurately expressed all the structural elements and plant components of the project by choosing plant species.

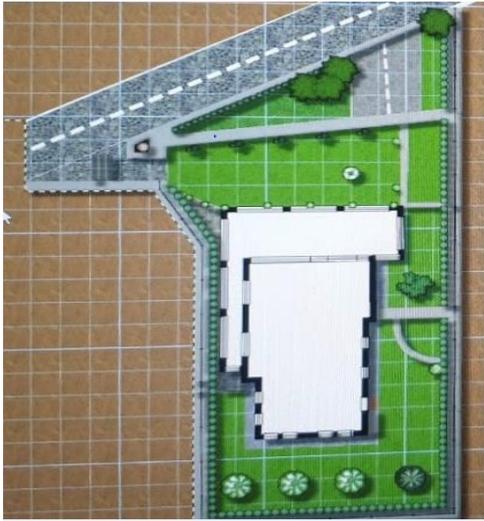


Figure 3. The preliminary project

While at the end of the design program after taking into account all the suggestions of the client was prepared the final master plan was presented during our third visit.

We have successfully used the Realtime Landscape Architect program, which gives a great opportunity to present the building, and its elements based on its rich fund accurately represent the species of green components.

This space is divided into several functional areas keeping in mind the frugal use as concrete because the main function of this "Country house" is contact with nature and departure from the stress and noise of the city.



Figure 4. The final master plan

3.1. The front yard

The front yard of most residential sites has two primary functions: (1) it is the setting or foreground for viewing the house from the street and (2) it is the public area for arrival and entrance into the house [1]. An oval-shaped olive tree has been planted in the front yard, right in the center.



Figure 5. The front yard

In the direction of each column is selected the species *Buxus sempervirens* with globose shape.

While from the main entrance is designed an alley with arched tiles following all forms of the facade of the building.

In front of the entrance are planted some plants *Cotoneaster* spp. to cover with green the stone wall about 1m and to create a continuity of greenery with the other space located above.

3.2. The backyard

The function of the backyard, on the typical residential site, is to accommodate a number of activities including (1) outdoor living and entertaining, (2) recreation, and (3) utilitarian activities such as gardening and storage [1].

Living area.

It is located near the secondary entrance of the house to be as functional as possible. In this space, it is planned to place an "outdoor room", to accommodate family members.

In this area, it is planned to place a "Barbecue" which is in the function of various holidays that can be realized in "Nature".



Figure 6. Living area

Jasmine plants are planted in this area at the request of the beneficiaries, which emit wonderful aromas from spring to autumn, as well as Pitospora tubirum dwarf plants that also bloom white aromatic flowers. Near this area was established to plant “roses group” together in a triangular pattern with different colors to give color and flavor all the time. In this way, family and “Guests ” will feel very well in this garden. They will always feel their good smell.

3.3.The garden of vegetable and fruits

In this area are planted some fruit trees such as Pomegranate, Lemon, Orange, and Tangerine. Also, there is left a suitable place for the collection of various vegetable plants, but the whole surrounding area is covered with grass carpets so that all the space is used for movement.

Also not far from these areas is a source of water where it is envisaged to establish a monumental piped which at the same time will be functional with a water supply and serve as a structural element for the ornamental garden.

Also, to move without stepping on the grass and especially on wet days, an alley has been built next to the house.



Figure 6. The garden of vegetable and fruits

Perimeter fence.

The railings are planned to be partially covered with flowering creepers.

The request of the project beneficiaries was to use only Jasmine plants (*Trachelospermum jasminoides*). At our suggestion, we also use other plants such as *Wisteria* spp, *Bougainvillea* spp. to combine year-round leaf holding with red and purple flowers that match the color of the stone and alleys.



Figure 7. Perimeter fence

3.4.Plants selected in the project.

Lundra based on the USDA classification of plant stability zones, is part of zones 9a of strength, therefore the selection of plants should be done following these temperature ranges.

Table 1. Plants selected for residential landscape

No	Plants selected for residential landscape	Unit, pieces
1	<i>Jasminum multiflorum</i>	89
2	<i>Bougainvillea spectabilis</i>	8
3	<i>Punica granatum</i>	1
4	<i>Citrus spp.</i>	2
5	<i>Buxus sempervirens</i>	8
6	<i>Lavandula officinalis</i>	1
7	<i>Chamaerops exelsa</i>	5
8	<i>Pitosporum tobira</i>	10
9	<i>Rosa spp.</i>	8
10	<i>Cotoneaster horizontalis</i>	9
11	<i>Laurus nobilis</i>	27
12	<i>Viburnum davidii</i>	1
13	<i>Viburnum lucidum</i>	19
14	<i>Lantana camara</i>	1
15	<i>Wisteria sinensis</i>	10
16	<i>Landestromia indica</i>	1
18	<i>Chrysanthemum spp.</i>	2

The selection of plants was done by applying the basic design principles by combining their plants with the surrounding landscape.

In our project, we have used plants such as *Lagerstroemia indica*, *Bougainvillea spectabilis*,

These species bloom profusely and excellently support drought in the summer season in Tirana.

At the request of the owner in the front part of the house is planted a rare plant Feijoa (*Acca Sellowina*) originating from Brazil that bears fruit and adds value to the greenery while also increasing the curiosity of visitors.

4. Conclusion and Recommendation

Residential landscape design realization in Tirana must pass in some preliminary stages:

Agreement on the purpose and method of a design process.

Survey and analysis of the climatic information of the area covered under the project creation and presentation of the design proposal.

We have successfully used the Realtime Landscape Architect program, which gives a great opportunity to present the building in 2D and 3D, and its elements based on its rich fund accurately represent the species of green components.

Lundra based on the USDA classification of plant stability zones, is part of zones 9a of strength,

Rosa spp., *Wisteria sinensis* with red, pink, purple flowers that we combine quite well with the reddish color of the stone that dominates the structural parts.

Besides, a very suitable solution has been realized by planting 19 *Viburnum lucidum* plants along the road to create a dense, evergreen fence that serves to prevent dust and noise.

Most of the plants selected in the residential project are Mediterranean plants that adapt well to climatic and soil conditions.



Figure 7. Plants in the final landscape

therefore the selection of plants has been done following these temperature ranges.

It is recommended that the selection of plants should be done by applying the basic design principles by combining their plants following the local landscape.

Therefore, after collecting all the necessary information, we have chosen the plants as *Lagerstroemia indica*, *Bougainvillea spectabilis*, *Rosa spp.*, *Wisteria sinensis* with red, pink, purple flowers that we combine quite well with the reddish color of the stone that dominates the structural parts.

We conclude that Mediterranean plants to give a physiognomy to the gardens and a better adaptation of them to climatic and soil conditions should dominate plants selected in the Tirana model residential project.

5. References

1. Booth Norman K. & James E. Hiss; **Residential Landscape Architecture** , 2p. 2012.

2. Vuksani, Gj. **A Residential Landscape Design Model for the Durres Area.** Albanian j. agric. Sci.;19 (1): 7-11 ,2020.
3. Ingels JackE. **Landscape architecture principles and practice**, Seventh Edition. Delmar, Cengage Learning. The United States. 560p. 2009.
4. Rogers Walter; **The professional practice of landscape architecture – A complete guide to starting and running your own firm**, Second Edition, John Wiley & Sons, Inc., USA, 563p. 2011.
5. Riken H, Kazuhisa I, 2014; **Development of the knowledge-sharing sheet system for landscape design management.**
6. Sauter David; **Landscape Construction**, 3rd Edition- Delmar, Cengage Learning, USA, 642p. 2011.
7. Trinklein D; **Residential Landscaping Missouri Master Gardener, Core Manual.** 2016.
8. Teqja, Z., Vuksani,Gj.: **A residential Landscape design model for northern Albania.** ICRA 2015, ISSN: 2308-0825; 10/2015.