

University of Business and Technology in Kosovo

## UBT Knowledge Center

---

UBT International Conference

2019 UBT International Conference

---

Oct 26th, 3:30 PM - 5:00 PM

### Residential Collective building facilities for reintegration of repatriated people in Ferizaj

Labinot Mehmeti

University for Business and Technology - UBT, lm36460@ubt-uni.net

Lulzim Beqiri

University for Business and Technology, lbeqiri@ubt-uni.net

Follow this and additional works at: <https://knowledgecenter.ubt-uni.net/conference>



Part of the [Architecture Commons](#)

---

#### Recommended Citation

Mehmeti, Labinot and Beqiri, Lulzim, "Residential Collective building facilities for reintegration of repatriated people in Ferizaj" (2019). *UBT International Conference*. 254.

<https://knowledgecenter.ubt-uni.net/conference/2019/events/254>

This Event is brought to you for free and open access by the Publication and Journals at UBT Knowledge Center. It has been accepted for inclusion in UBT International Conference by an authorized administrator of UBT Knowledge Center. For more information, please contact [knowledge.center@ubt-uni.net](mailto:knowledge.center@ubt-uni.net).

# Urban blocks, geometric methods, application of space syntax

Arsim Murseli

UBT – Higher Education Institution, Lagjja Kalabria, 10000 p.n.,  
Pristina, Kosovo

**Abstract.** This study is based on the strategic development plan (SDP) and urban development plan (UDP) for the city of Ferizaj, 2008-2015 +, as well and the 2011 regulatory plan (RP), which expired in 2016. Functionality of the city center of Ferizaj, solving the problem of moving in the downtown area and other areas, regeneration, reorganization and revitalization of the formation of urban blocks. Adequate traffic solution that enables the creation of reorganized areas of the city is a must and a primary necessity. The methodology of approaching the solution of urban problems with the geometric method using the constants  $\phi = 1.618$  and  $\square = 3.14$  golden section and golden number as well. The impact of Space Syntax which highlights it's the relation between abstract social relations and physical space through spatial characteristics. The relationship between the internal space of buildings (micro world) and the outer space (macro world) which are determined by the buildings themselves.

**Keywords:** space syntax 1, urban block 2, infrastructure3, “The Image of City” Kevin Lynch 4

## Introduction

The research is based on my experience and commitment to the Council of Experts on Urban Issues and Development and Regulatory Plans, for a long time active participant in their drafting in the role of consultant, even as active participants in public discussions.

These discussions did not provide any output in the process. The reasons for this failure are many, among others worth mentioning

- Missing prior experience, the city has had no regulatory or development plan, no general urban plan, except for some parts that were worked 40 years ago, and as a result we have
- Spontaneous construction, which has formed a greed of inadequate longitudinal roads and alleys with an extension and positioning that creates a dysfunctional road
- Professional development, it is not proven that it is at the right level for preparing the documentation and approaching this problem. this should be added to the preparation for presentation at public discussion with citizens, as a consequence;
- Public discussions are too long without results;
- the construction process continues with rules that only further complicate the situation in the city

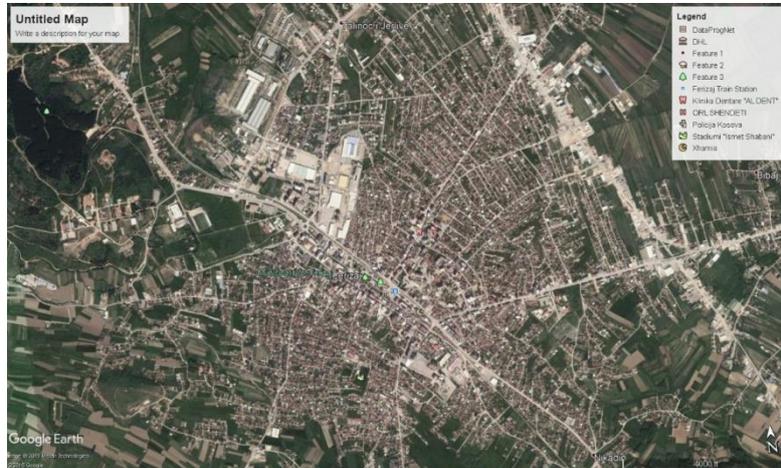


Fig.1 Ferizaj city taken from google earth

## Consequences

1. Lack of sun presence in the spaces where we live (distance between objects under any minimum)
2. Lack of space surrounding the building and affecting in the comfort of residents who it's living in it (parking lots, green areas, children's playground)
3. The street network, inherited from a street with individual residential buildings (houses) now serving collective housing facilities, the houses have been replaced by multi-floor residential buildings.
4. Hierarchy, in terms of organization in a standard's Residential block, urban block, urban area, does not exist.

## Threats

- Pollution of the environment due to the overloading of roads by vehicles
- Psycho-physical condition of the inhabitants especially of the younger generation
- Lack of social life, turning it into a threat's
- Creating an isolated life, cut off from the outside world

All that has been said so far, are known and identified, are part of our daily lives. The question is how we approach problem solving, not just identify problems. So far, the more we try to make changes, the sooner we get back to the beginning, and this makes us feel "the lost" not only geographically but also intellectually and mentally.

Before approaching the solution of the problem we must first understand:

What is the City?

A space organized on a surface that is managed by the people who living in it, which space must provide a healthy, harmonious environment that space must be adaptive and evolving. A space where every person living in it follows the path of life by their choice.

How we approach the change that will be the result of the ingenuity and understanding of global technology development and how we will accept that change.

The 20th century city's as a result of technological development has been divided into 3 zones, in the Industrial zones, sports and recreation, living, and the fourth element is the traffic that connects all these zones and has enabled interoperability between these areas.

But the development of technology also influences the change of organization of spaces in the city itself. New technology no longer requires as many workers as it was in the last century, new computer and robot systems create new occupations that can be performed or developed by the home or any other object, far from the place where the product is manufactured.

Some firms do not even have a facility in which employees have to be present every day, just through an electronic system to process their work in a center.

Sport and recreation is increasingly under the service of professional sports and their sponsors, rather than people who would like to recreate those spaces. Traffic should not be overlooked, namely the roads on which vehicles are increasingly presenting a breakdown rather than a connecting element, a pedestrian to cross from one side to the other ten road profiles  $b = 20\text{-}25\text{m}$  presents a stressful challenge.

All these factors are elements that cannot be overlooked in the approach of changing living spaces in our cities.

In the book *THE IMAGE OF THE CITY* author Kevin Lynch, among other things he says:

*“Not only is the city an object which is perceived (and perhaps enjoyed) by millions of people of widely diverse class and character, but it is the product of many builders who are constantly modifying the structure for reasons of their own. While it may be stable in general outlines for some time, it is ever changing in detail. Only partial control can be exercised over its growth and form. There is no final result, only a continuous succession of phases. No wonder, then, that the art of shaping cities for sensuous enjoyment is an act quite separate from architecture or music or literature. It may learn a great deal from these other arts, but it cannot imitate them.”*

### **The art of forming cities**

What can be learned from other arts?

- Literature - written language, in which linguistic elements (such as words) are joined to form the logical meaning and content of a description (such as phrases or clauses), while the way in which words are arranged in grammar is called Syntax<sup>1</sup>
- Architecture: a connected or regular system: the harmonious arrangement of parts or elements that serve a function or functions, an arrangement of spaces here too we have syntax but a syntax of graphical language. But it should be noted that the architecture is also based on proportions, a module which is the measure of the dimension of each space and each element in that space, a module that is a product of what is called the Golden section and the golden number.

Art music that is not seen but heard, its elements are tones and overtones, which, depending on the arrangement (syntax<sup>1</sup>), are arranged in a harmonic rhythm that creates the melody.  $1; 1 + 1 = 2; 1 + 2 = 3; 2 + 3 = 5; 3 + 5 = 8; 5 + 8 = 13 \dots\dots$  and so on, one a mathematical sequence or process that represents the constant  $F_i$  ( $\phi = 1,618\dots$ )

In this combination, using the other arts, we reach the rectangle which if the longest arm has the value of 1 (one) then the shortest arm will be  $1/\phi$ , this rectangle represents the ideal proportion, on the basis of which the golden spiral is created, the golden triangle Pi ( $\square = 3.14\dots$ ) Constant which appears much earlier than Fi ( $\phi = 1.618\dots$ ), sometime around 600 BC which is constantly discovered by Pythagoras during the solution of the design structure, namely the design of the pyramids in Giza.

How will the above elements now affect the planning, change and reorganization of our cities: space syntax; constants Pi and Fi, gold section, golden spiral, and golden triangle. Proportion

Kevin Lynch - points out that there are 5 key elements that make us understand space syntax in the city

5. The description of space
6. The theory of natural movement
7. Cities as movement economy
8. The simultaneously multi-scale city
9. The dual grid

These 5 elements represent the fundamental concept of space syntax.

In my research I will focus on the element:

## The description of space

Existing areas or existing spaces as stated above (Consequences... 3. Infrastructure network, inherited from a road with individual residential buildings - the house on both sides of it) and an extension of these roads in the distance between the 40 -50m, with a profile outside the norms that would be suitable for a residential road, with a great length of 600-700m 'some terminating without access or connection to any other road, which are connected only to one main road by also made it non-functional (for reasons of short distance access). Extremely narrow sidewalks, and an economy stretching along this main road.

In such a description, it is noted that it is not possible to organize a space with objects that would meet the normal conditions of life unless steps are taken to enable an organization based on the principles of Space syntax using geometric methods based on the constant's Pi ( $\square$ ) and fi ( $\phi$ ).

There are 3 main elements in the city that interest every resident in the city;

10. **The road**, as short as it can be
11. **Plato-area** (residential block, urban block) in which it is located
12. **Address** - the object where he lives

Object-building which can have many floors (apartments) or individual residential object (house) The purpose of the study will be to change the living space - from individual living (house), to collective living spaces - apartments with different shape and flooring.

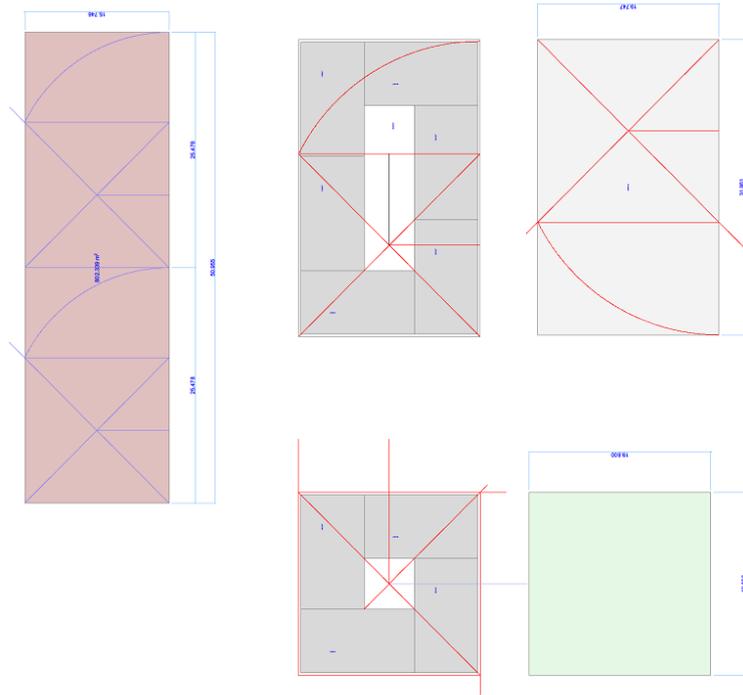


Fig. 2 Possible form of objects solved based on the principle of  $\phi$ -constant  
 Fig. 2 shows 3 different versions of the shapes that represent the types of multi-story buildings. The object is the basement of an object can have a maximum length  $L = 50m$  ', also permitted by the building laws (fig. 2) in which the apartments are located, while an apartment that meets the normal conditions for a family will be

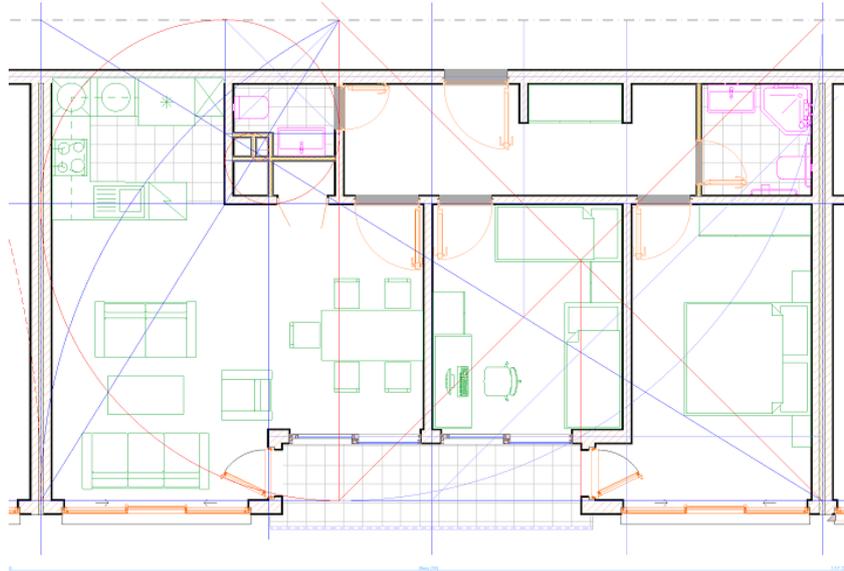


fig.3

The most requested apartment in the market and which fulfills the requirements for a family, with a surface of  $A = 85 \text{ m}^2$  on which surface are organized the spaces that need to own an apartment. We will take this as a floor unit.



Fig.4

Fig. 4 shows how many apartments can have a characteristic floor length  $L = 50\text{m}'$ , as well as the width of the building  $B = 16\text{m}'$ . At the bottom of Fig. 4 is shown the pot garage of the same lane in which 30 vehicles can be parked, a number equivalent to 3 residential floors, respectively 24 apartments.

Whereas the proper surface where the object is placed depends on the distance obtained where the edges of the surface where the object is placed will be the axes of future roads.

If the short arm of the rectangle where the object is placed will be  $L = 50\text{m}$  then the longest arm will be  $L \times \phi = 80.902\text{m}$ .

Then with the geometric principles, we will have objects with floor and height, basement depth and foundations as well. the corridor of the street as in Fig. 5.

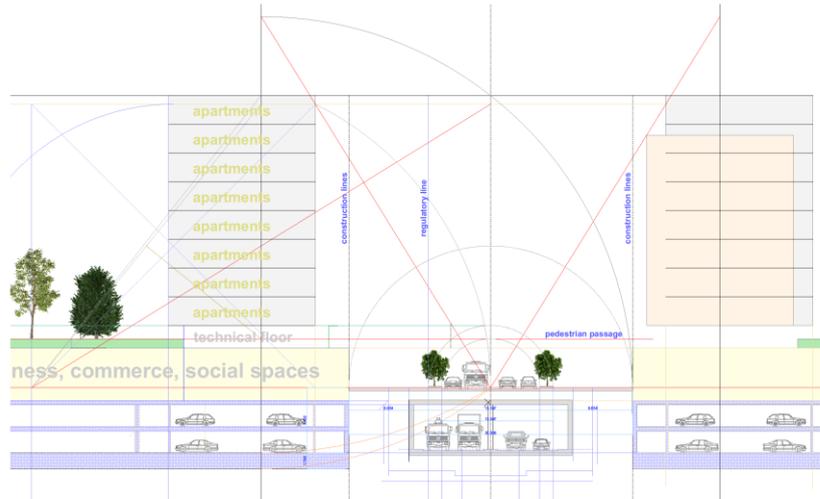


Fig.5 the example where the short side of the surface where the object is placed is  $L = 50\text{m}$ . On the left side of Fig. 5 is the building belonging to a residential block, on the right side is the building located in a row around a street profile. the example shows how the objects arranged in blocks have higher story's than the objects that belong to a string that are bounded on both sides by the road. Residential block organization is a better option, it enables higher flooring, green area organization, parking and business.

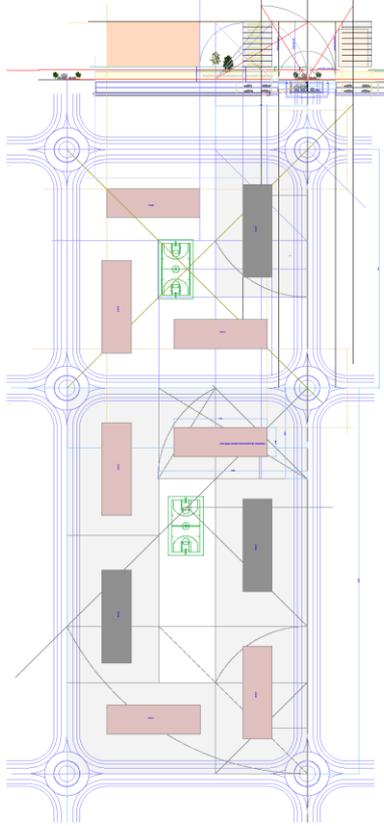


Fig.6 Residential block in group of 4 objects and group of 6 objects

Figure 6. Possible blocks are presented, if we analyze the example of a residential block with 6 objects that are placed on an area  $A = 27,725,425 \text{ m}^2$ , we will have this information

- 384 apartments
- Road profile  $a = 10.7\text{m}' + 1.5\text{m}$ ; green ribbon on both sides +  $8.65\text{m}$  sidewalks on both sides of the road
- Designated regulatory and construction lines
- Apartment's and number of floors
- Height of public and business spaces
- Number of vehicles and parking lots in garages and underground parking levels
- Technical flooring that separates the apartment's floors from the business

With this method we will not only have a graphical or functional solution but we will get a set of information. With the increase or decrease of the short side of the rectangle where the object is placed, all parameters will change, but not in content.

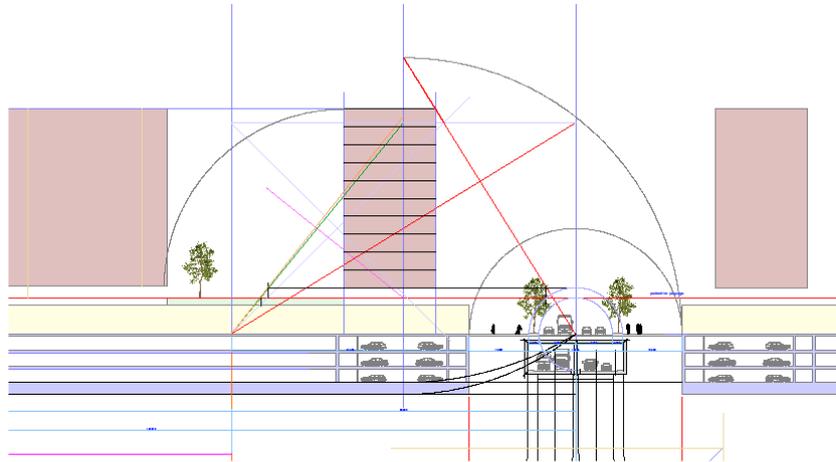


Fig.7

Example where the short side of the rectangle, the surface where the object is placed,  $L = 60\text{m}$

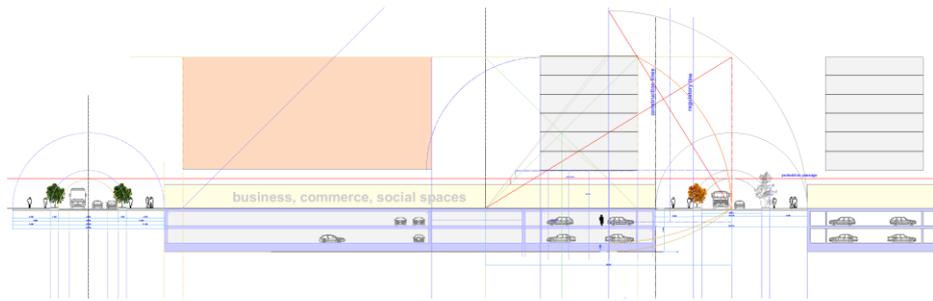


Fig.8

Example where the short side of the rectangle, the surface where the object is placed,  $L = 40\text{m}$

## Purposes of the research

Cities in general are in the process of urban change, a partial and continuous process which, with time and social economic changes, has been rising or falling respectively stagnation, faster or slower changes, but that process has not stopped. Implementation of geometric methods as a product of  $P_i$  ( $\square$ ) and  $F_i$  ( $\phi$ ) constants, as well as the analysis of space syntax in urban research and planning. Provide a sustainable solution that can be characterized as a process in which the quality of life is developed so that social and economic life is not a threat to the survival of environmental elements and ensures their continuous improvement.

With these methods we will have a process that will be a continuum of changes in the transformation of the city for decades to come. For me, applying these methods represents disciplined thinking and disciplined minds in solving the spaces in which we live.