MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN

Kazakh National Research Technical University. K. I. Satpaeva
Institute of Architecture and Construction. T.K. Basenova

Department of Architecture
5B042000 - Architecture

Approve
H. Department of "Architecture"
_____ Sultanova.K.R

«____» _____ 2022 г.

Ramazani Mohammad Ali

Space of Satbayev University as an object of architectural art - a conceptual project (for participation in the London International Creative Competition licc.uk)

THESIS PROJECT

Specialty 5B042000 – «Architecture»

Almaty 2022

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Space of Satbayev University as an object of architectural art - a conceptual project (for participation in the London International Creative Competition licc.uk)

Specialty 5B042000 – «Architecture»

Performed: Ramazani Mohammad Ali
Supervisor: Alik Temirbayev

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Task

To accomplish thesis project
Student: Ramazani Mohammad Ali
Subject: « Space of Satbayev University as an object of architectural art - a conceptual project (for participation in the London International Creative Competition licc.uk) ».

Approved by order of the rector of the university № 2131-б from «» November 2021.
Deadline for the completed project «3» Jun 2022.

Initial data for the graduation project:
a) Real design task
b) Situational plan

List of issues to be developed in the thesis project:
1. Pre-project analysis:
a) Analysis of different aspect of the site
b) Analysis of climatic conditions

2. Conceptual and Architectural Section:

a) The goals and objectives of the project

b) The basics of designing public space

c) Technical justification of the project

3. Structural section:

a) Description of the building structures used

b) Description of the building materials used

c) Structural diagrams

List of graphic material (with precise indication of required drawings):

1 Pro-project analysis:

a) Analysis of different aspect of the site

b) Textual and illustrative material that formed the basis for the development of the graduation project (photos; sketches; analogues close to the theme of the graduation project, text explanations).

2 Conceptual and Architectural Section:

a) Situational scheme of the area M 1:1000;

b) General plan with elements improvement, landscaping and transport services (entrances and parking lots) M 1:500;

c) Section 1-1, section 2-2; section 3-3 M 1:200;

d) Facades M 1:200 - 1:100;

f) Floor plans M 1:200 - 1:100;

j) General view of objects from different angles;

h) Project output data (name of the university, institute, department, and project name, full name of the author (authors) of the thesis and project supervisor (filled in at the bottom of the tablets according to approved standards).

3 Construction section:

Schemes of possible constructive solutions in relation to the graduation project.

Recommended basic references:

1 Pre-project analysis:

A) Recommendations on the design of the environment, buildings and structures, taking into account the needs of visitors with different age categories and development of the area in term of public realm.

B) https://www.archdaily.com/

2 Conceptual section:

a) The Death and Life of Great American Cities. Jane Jacob. 1989

b) Exhibition road of London

3 Architectural section:

a) SN RK 3.02-17-2014 Public buildings and constructions

b) SN RK 3.02-21-2004* Retailers

c) SN RK 33100-2014. Interstate standard Roads for public use Rules for the design of highways

4 Structural section:

a) SN RK 3.02-17-2014 Public buildings and constructions

Consultation Section

№	Section	FULL NAME. consultant, academic degree, position	Deadline		Consultant's signature
			Plan	Fact	
1	Pre-project analysis section	Adilet Kozhakhmetov, Master of Science in Arts, Senior Lecturer			
2	Conceptual section	Adilet Kozhakhmetov, Master of Science in Arts, Senior Lecturer			
3	Architectural section	Adilet Kozhakhmetov, Master of Science in Arts, Senior Lecturer			
4	Construction section	Yessenov.K.I, Candidate of Architecture, Assistant professor			

Signature

Consultants and normative controller for the completed graduation project

Section names	Full name of the supervisor, consultants, normative controller	Date	Signature
Pre-project analysis section	Adilet Kozhakhmetov, Master of Science in Arts, Senior Lecturer		
Conceptual section	Adilet Kozhakhmetov, Master of Science in Arts, Senior Lecturer		
Architectural section	Adilet Kozhakhmetov, Master of Science in Arts, Senior Lecturer		
Construction section	Yessenov.K.I, Candidate of Architecture, Assistant professor		
Norm control	Sultanova.K.R, Candidate of Philology, Head of Department		

Diploma project Supervisor Alik Temirbayev

The task was accepted by the student Ramazani Mohammad Ali

«_____»_____ 2022 г.

Аннотация

Зона интервенции расположена перед головным кампусом Стабаев Университета, территория планировалась как концептуальный проект Лондонского международного творческого конкурса licc.uk.

В настоящее время общественное пространство представляет собой фрагментированные пространственные сети, разделенные университетами и жилыми домами, до 2021 года территория была закрыта заборами, поэтому территория была изолирована от остального общественного пространства вокруг, затем 14 июня 2021 года была предложена первая концепция от архитектурного факультета на реконструкцию территории, чтобы сделать ее более общественной, и снять заборы для присоединения территории к общественному пространству, но по-прежнему на территории не хватает общественных пространств.

Однако для решения проблемы я предложил общую улицу, которая дает пешеходам приоритет, чтобы пройти улицу и попасть в парк Satbayev University.

Тұжырымдама

Интервенция алаңы Стабаев университетінің бас кампусының алдында орналасқан, аумақ licc.uk Лондон халықаралық шығармашылық байқауының концептуалды жобасы ретінде жобаланатын болды.

Қазіргі уақытта қоғамдық аумақ университеттер мен тұрғын үй ғимараттарымен бөлінген бөлшектелген кеңістік желілерін білдіреді, 2021 жылға дейін аумақ қоршаулармен жабылды, сондықтан аумақ айналасындағы қоғамдық кеңістіктің қалған бөлігінен оқшауланды, содан кейін 2021 жылдың 14 маусымында бірінші тұжырымдама ұсынылды. аумақты қоғамдық кеңістікке айналдыру және аумақты қоғамдық кеңістікке бекіту үшін қоршауларды алып тастау үшін аумақты қайта құру үшін сәулет факультетінен аудан бөлді, бірақ әлі де аумақта қоғамдық аумақтар жетіспейді.

Дегенмен, мәселені шешу үшін жаяу жүргіншілерге көшеден өтіп, Сәтбаев атындағы университет саябағына жетуге басымдық беретін ортақ көшені ұсындым.

Annotation

The intervention area is located in front of Head Campus of Stabayev University, the area was planned be designed as conceptual project for the London International Creative Competition licc.uk.

Currently the public realm represents fragmented spatial networks divided by universities and residential buildings, till 2021 the area have been closed by fences, so the area was isolated from the rest of the public space around, then on June 14 2021 proposed the first concept of the area from Faculty of Architecture for reconstruction of the area to make the area more public space and to remove the fences for attaching the area to public space, but still there are lack of public realms on the area.

However, to solve the problem I proposed a shared street that gives a priority to pedestrians to pass the street and get to the Satbayev University Park

Contents

Introduction

Since the beginning of urban life, public space has become important issue in urban research and in the day–to-day running of the city, therefore, this has become an important feature of the city, as we explore the history of the old cities through the books and remains of ruined cities, open air-amphitheater, squares, parks and markets are often the main centers of the city, where many social and political events take place, such as, celebration of socio-politico events like; religious ceremonies revolution events, which, caused the political changes within the society. These defines the importance role of public space within urban context, in addition, that is public space, which, represent the quality of the city, whether it is good or not.

Public space is an important part of urban architecture which is created through urban nodes connections, like in a book, which is between lines, public space bring life in empty corners of the city, which is absolutely depend on construction which we called it city, and influence the kinship that grow within it. “When we refer to the streets and other public spaces of a city, we are actually talking about the city’s own identity. It is in these spaces that human exchanges and relationships, the diversity of use and the vocation of each place and the conflicts and contradictions of society are manifested,” explains Lara Caccia, Urban Development Specialist.

Public spaces create a connection between the communities. These are places for meeting, and, also can facilitate political mobilization, encourage job creation and help prevent crime. These are the environment, for interaction and exchange of ideas, which will affect the quality of the urban environment. Otherwise they are not considered as “Public Space”, although cafes, libraries and bars, they have the same impact. Public spaces also give the health benefit both physically and mentally: people feel better and more active, also attempt to be active in a beautiful public space, as Ben Rogers points out, the more diverse and lively urban spaces are, the more equal, prosperous and democratic society becomes.

When I have studied the area in front of Head Campus of the Satbayev University, I have found out that the area has lack of connectivity and infrastructure, which is less interest for visitors. Actually, the area has very power full potential of being a core attractive part of the city because of its location in the center with many mix functional buildings around, but due to very old and typical city structure, it has became isolated from other part of public areas, I have proposed the new solution for this area to regain its own potential to become the part of public spaces around, to implement the share street on the area will solve the connectivity issues and adding more retailing space will make the area more active.

1. Pre-project analysis

1.1. Satbayev University site analysis

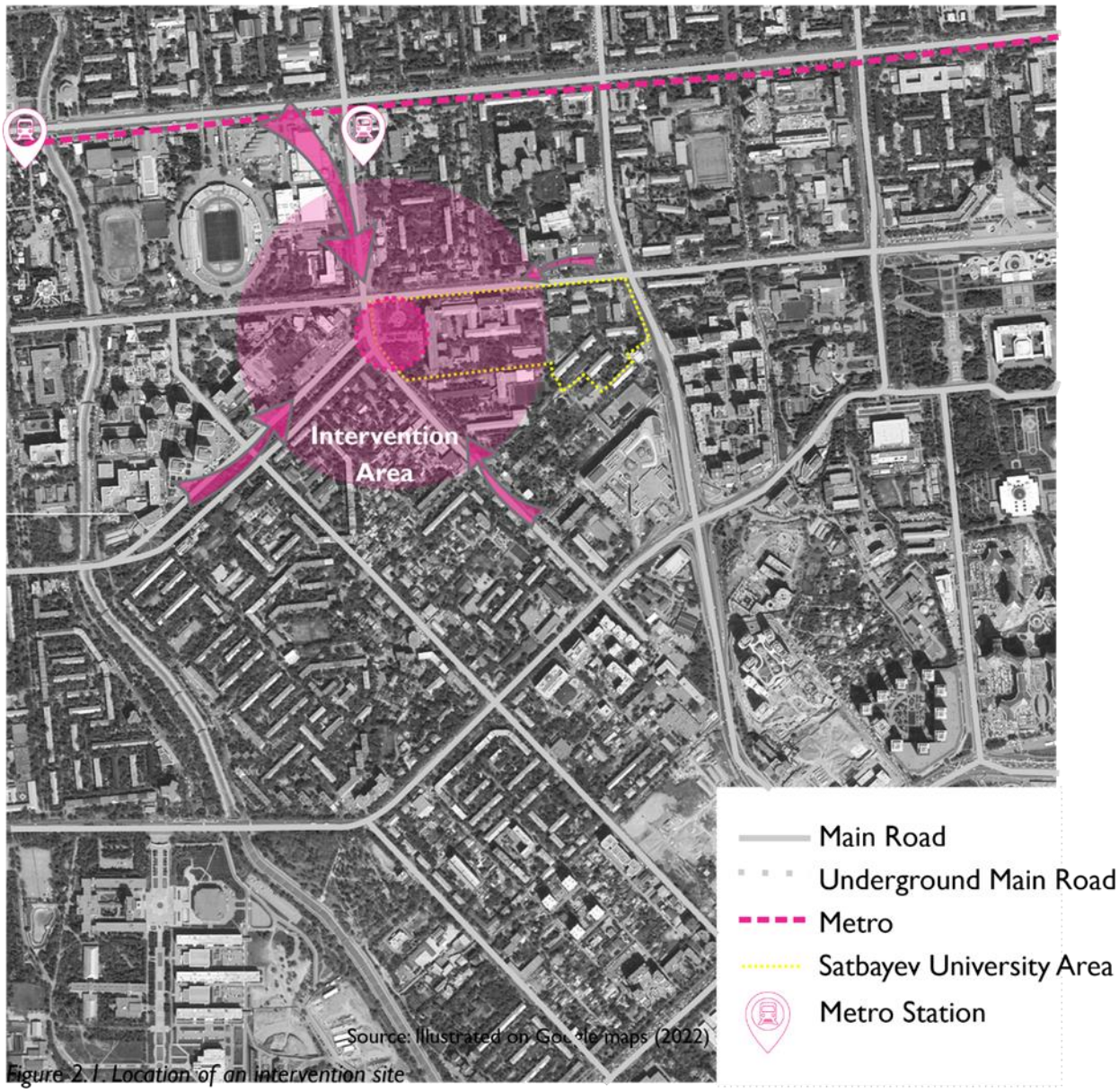


Figure 1 - Location of intervention site (Source: Google Earth Pro)

Satbayev University's history dates back to 1933 when the Kazakh Mining and Metallurgical Institute was found.

The institute was designed to improve the technical and economic state of Kazakhstan's nation economy; it had only two faculties when it first opened mining and non-ferrous metals. The institute's name changed several times throughout the years and only became Satbayev University in 2017.

The university located in Almaty, Kazakhstan's largest city, the location of Satbayev University made the area one of the most significant urban space in city Almaty. The area consist of economic and public potential for being a core node of the Almaty city.

Currently the public realm represents fragmented spatial networks divided by universities and residential buildings, till 2021 the area have been close by fences, so the area was isolated from the rest of the public space around, then on June 14 2021 proposed the first concept of the area from Faculty of Architecture for reconstruction of the area to make the area more public space and to remove the fences for attaching the area to public space, but still there are lack of public realms on the area.

1.2. Site location

Figure 2 - Site Location (Source: 2gis map)

Initially, the public realm is designed for residents and students of the Satbayev University. But, there is empty area and no one use the park, most of the time an empty space. Consequently, the area is interesting to analysis, whom exactly the site benefitting in terms of control and equity? Who is losing out? For example, to what extent it is equitable to organize an exhibition of the Satbayev University? Is it allowed to gather for expressing political issues? What if the public realm is given to homeless people as an informal township such as in Tahrir Square, Puerto del Sol and Zuccotti Park in 2011? Thus, the public realm of the Satbayev University Park area is an appropriate site to analyse for design interventions.

1.3. Analysis of public/private realms

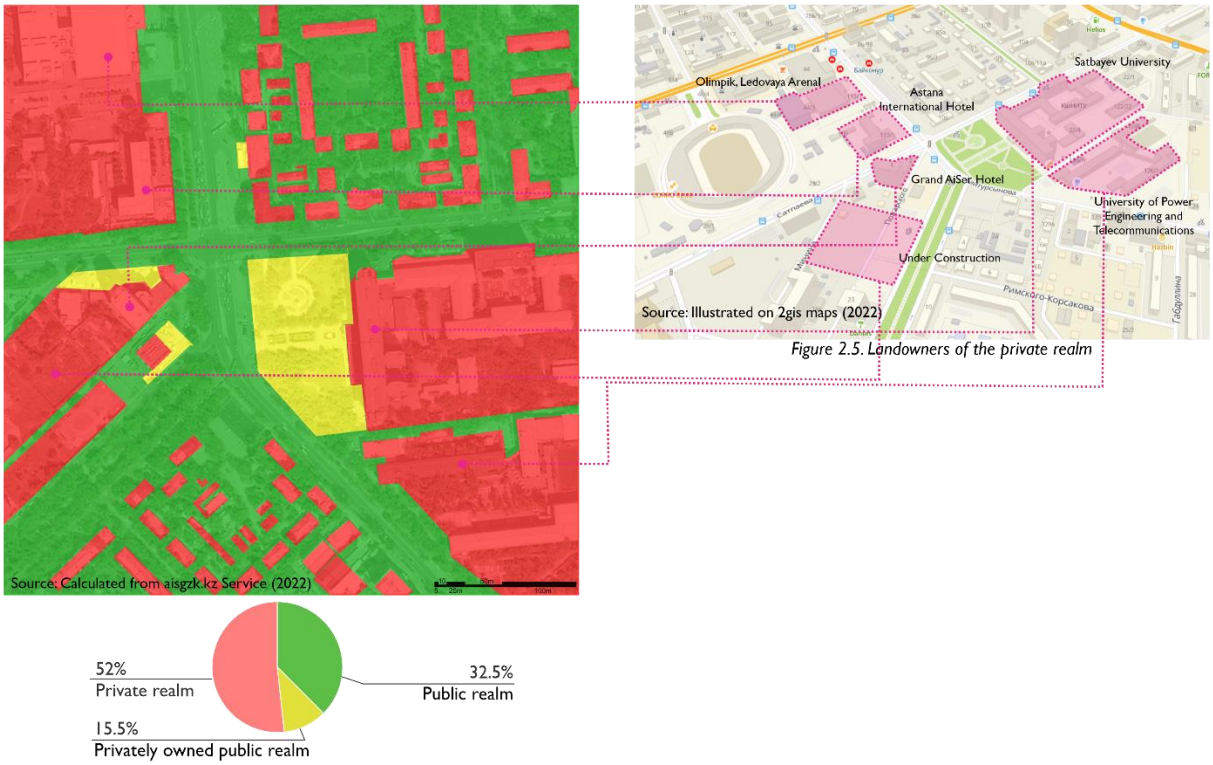


Figure 2.5. Landowners of the private realm

Figure 3 - Public/Private Realms(Source: Author's drawing)

The analysis of public/private realms shows that private landlords control the majority of the urban realm. Right now, a few of international companies and Kazakhstan's company privately own the core area around the site. Like Grand Aisar and Astana international hotels and many other small shops. In the main time the private owner want to build a high – rise residential complex near to the Grand Aisar Hotel, so at the moment they close the area by fences nobody can get to there but the future and it will make the area more dynamic part. Still due to location of two large universities by each other's side the area is going to be used by students and

University staffs which is a very busy place. the area need more public use realm functionally active.

1.4. Analysis of connectivity

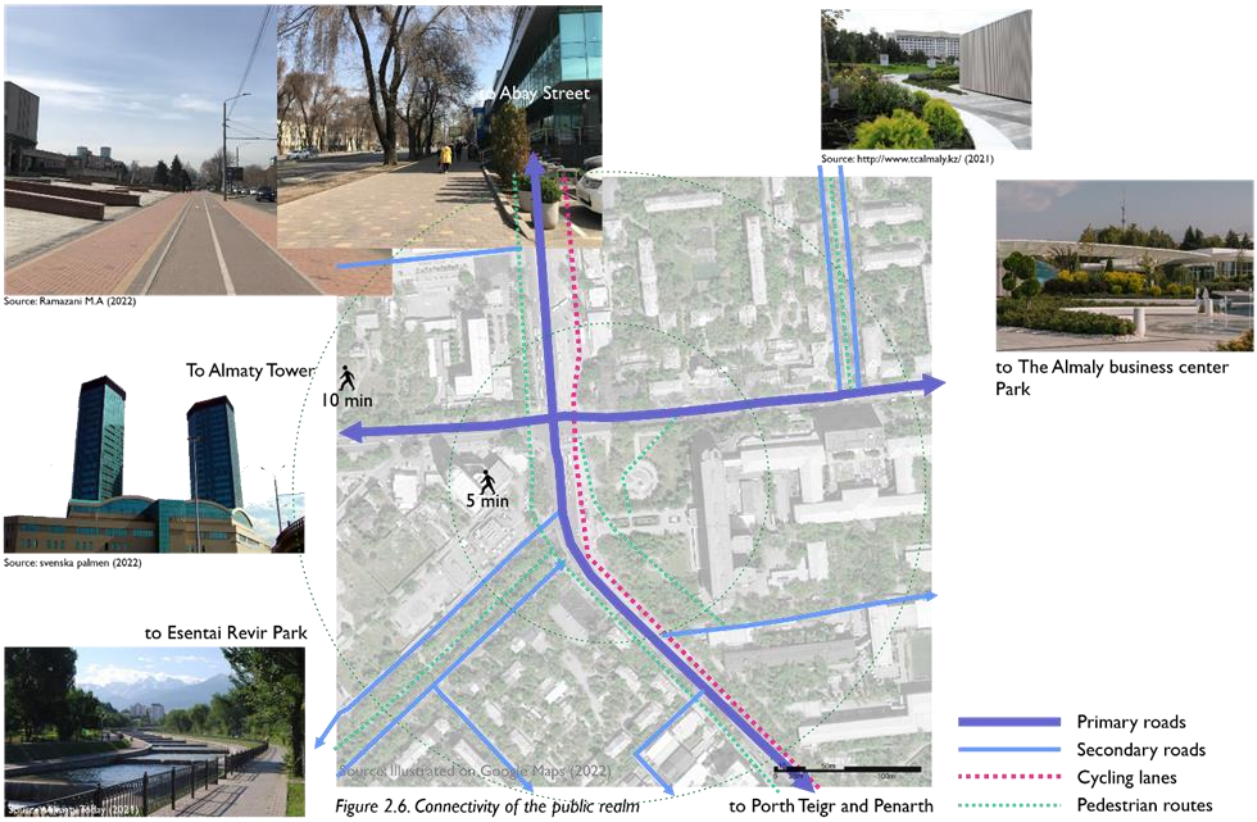


Figure 2.6. Connectivity of the public realm

Figure 4 - Transport Connectivity [12]

While the Satbayev university area has two main transport linking directions, but there is a lack of connectivity between the area and Bukhar-Zhyrau Boulevard. Also there is a lack of cycling lanes that could better connect the area with surrounding public realm. Besides, the area located Abay street which a very busy street during the spring and summer most of people using it for walking. so the area is used by three types of transport; cars, bikes and walking.

1.5. Analysis of interfaces

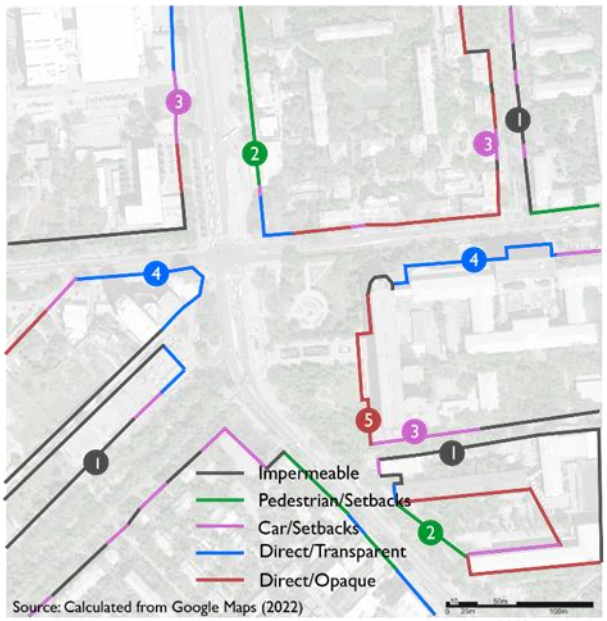


Figure 2.7. Relation of interfaces

Figure 2.8. Visual representation of interfaces

Figure 5 - Interface of the area (Source: Author's drawing)

The analysis of interfaces represents that lots of interfaces, which are edges of private and public realms, is mainly impermeable. Dovey and Wood (2018, p.145) state that impermeable interfaces are 'dead' and 'anti-social' that inhibit social activity. Consequently, it might lead to a lack of social safety (ibid). For example, Kamalipour and Peimani (2019, p. 8) claim that blank interfaces give a possibility to be appropriated by street trading. However, Lynch (2001) argues that without a right to control appropriation and modification of public realm is impossible.

1.6. Analysis of ground level night-time economy

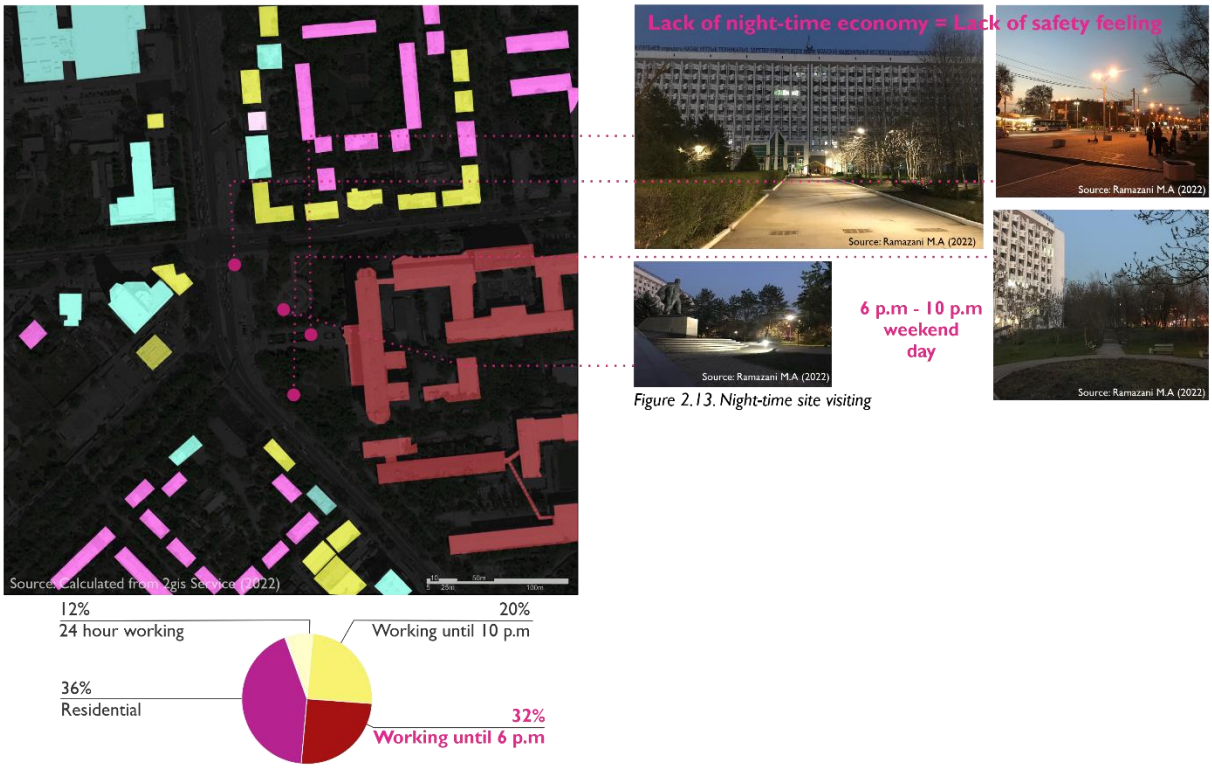


Figure 2.13. Night-time site visiting

Figure 6 - Night activity (Source: Author's drawing)

The analysis of ground-level nighttime economy illustrates that the area is mainly active until 6 p.m. although 20% businesses work until the late-night the capacity to provide 'eye on streets' is not enough for the large open area that is mainly on the south and west side of the area. At all the Satpayev University area is fragmentary active, but there is lack in terms of business activity. in addition, the rest ground floor secured mainly by CCTV except of the Bukhar-Zhyrau Boulevard, which is a public realm. therefore, because of wide range location proportion of the building footprint on the area and lack of functional mix the area do not interact with a private inner during the night. so, some part of the Satpayev University area is not equitable enough for night-time to walk alone due to mono functional buildings that close at 6 p.m.

1.7. Analysis of densities

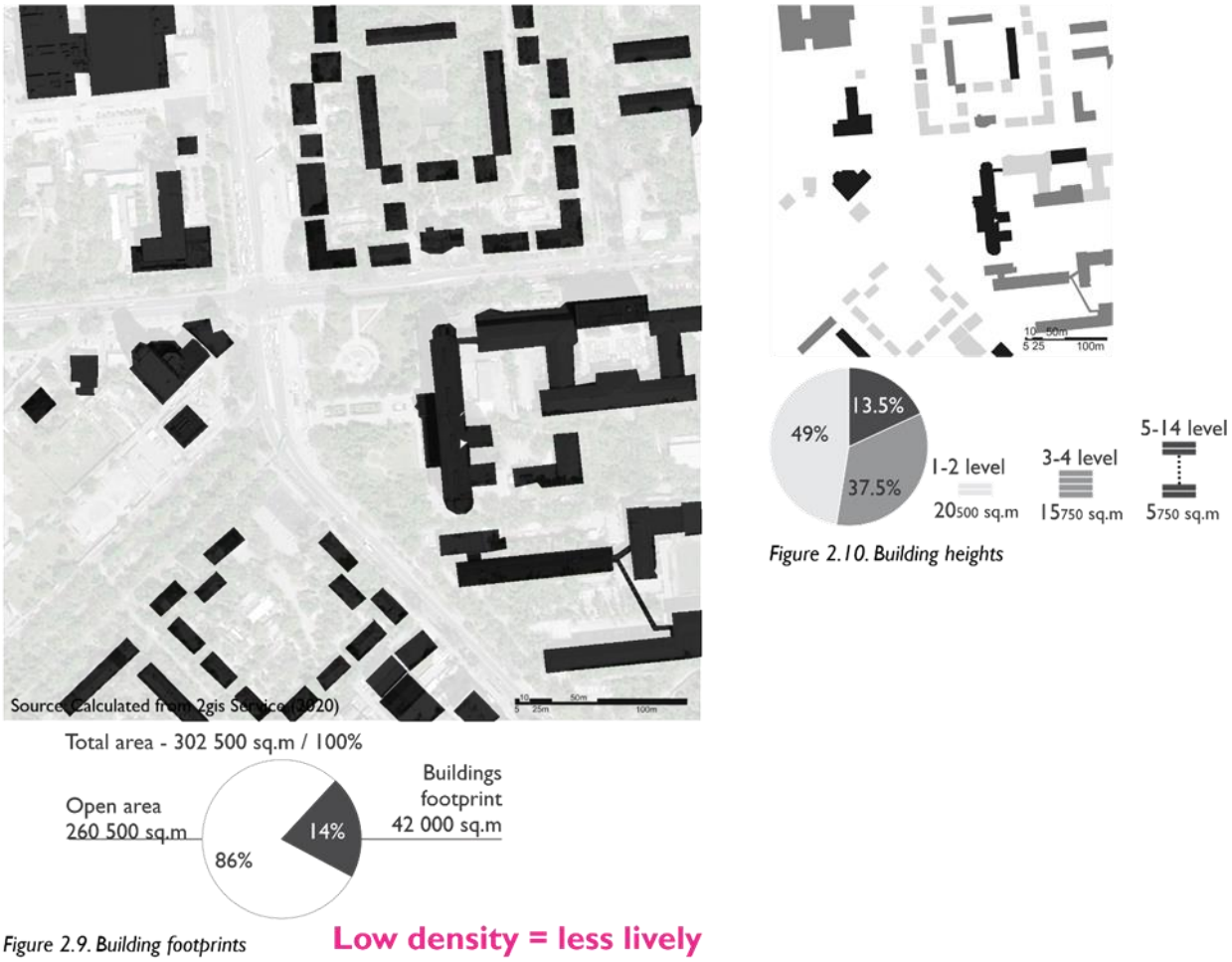


Figure 2.9. Building footprints

Figure 2.10. Building heights

Figure 7 - Building density (Source: Author's drawing)

The Satbayev University area's building footprint density analysis illustrates that the vast majority of the land is open. While 13% of buildings are high rise, the FAR is significantly low, which might lead to decreasing of liveliness in the neighbourhood (Dovey and Pafka 2018). Primarily, open spaces are used for wide roads and parking lots. It suggests that in terms of social control, the area does not highly depends on the CCTV and police forces. It is because this urban morphology partially provide "eyes on streets" to improve a feeling of invisible social security (Jacobs 1961).

1.8. Functional mix analysis

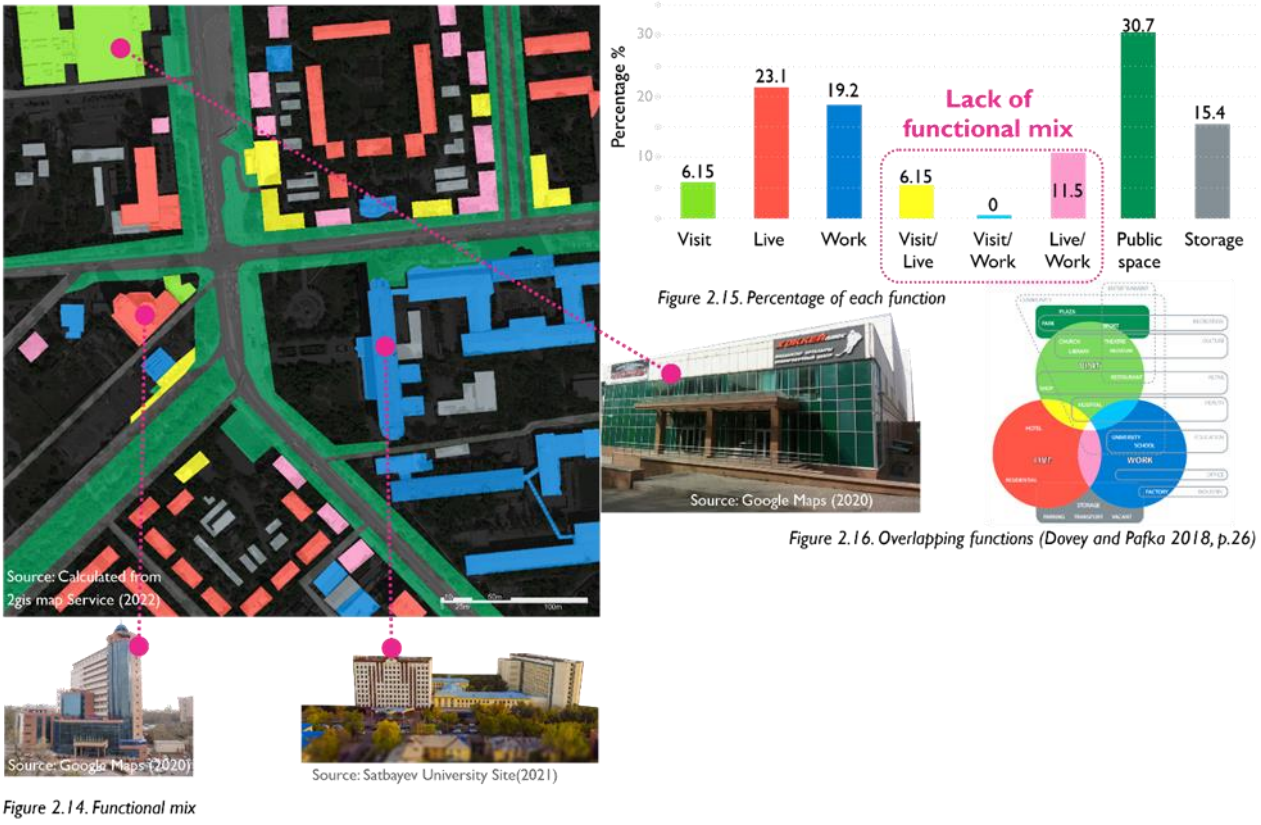


Figure 2.14. Functional mix

Figure 2.15. Percentage of each function

Figure 2.16. Overlapping functions (Dovey and Pafka 2018, p.26)

Figure 8 - Functions of the buildings (Source: Author's drawing)

Analysis of functional mix in Satbayev University area represents that core area is primarily dominated by vast mono-functional buildings. The majority of them are a live, which is located on the north and south part of the area and then work buildings It suggests that the area is more work-residential oriented, whereas the performative role of the public realm in terms of equity, might lack affordability of such profit-oriented facilities.

1.9. Analysis of permeability and accessibility

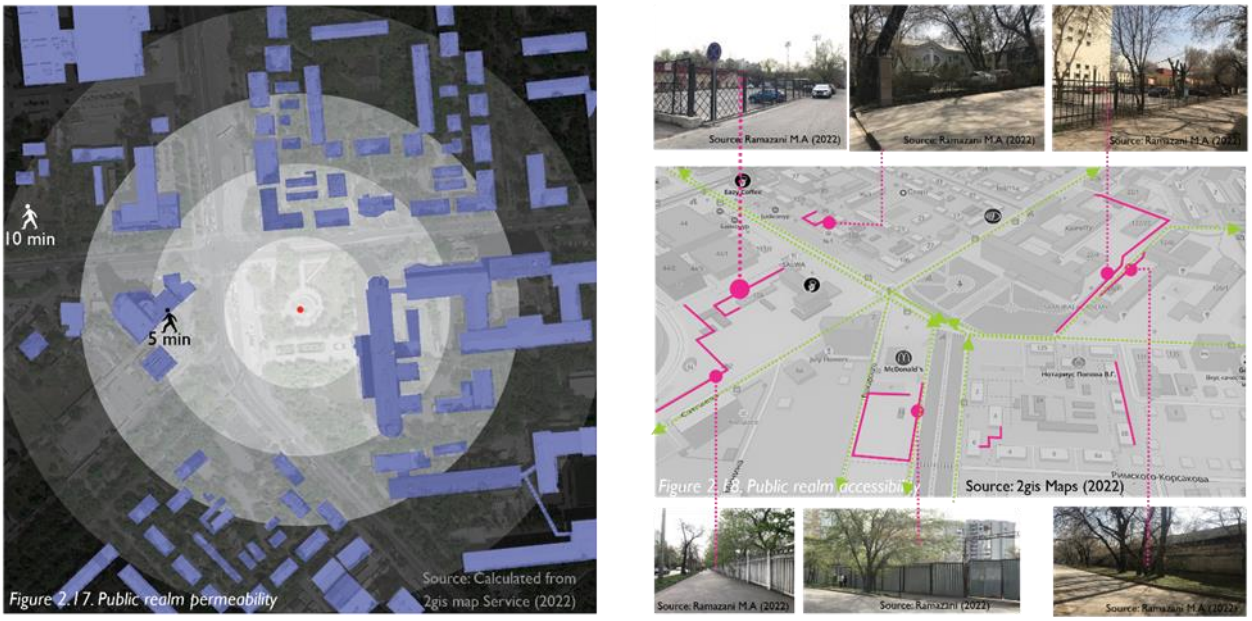


Figure 9 - Permeability and accessibility (Source: Author's drawing)

Within the 200m radius (3-5minute walk), permeability is 34%. It is because the construction going on, but at all there is not too much of them. However, analysis of the site connectivity (see Figure 2.6) and accessibility illustrates that the core area is highly car dependant and fragmented by wide car roads and parking spaces, which makes public realm inequitable for pedestrians.

Analysis of accessibility for pedestrians and vulnerable groups shows that the core public realm is highly accessible. However, there a significant number of segregation that could require for long distances to reach some places, such as the cross section of Satpaev and Baitursynov Streets It makes the public realm fragmented and inconvenient to use for children's pushchairs or wheelchairs and disabled buggies.

1.10. Analysis of greenery

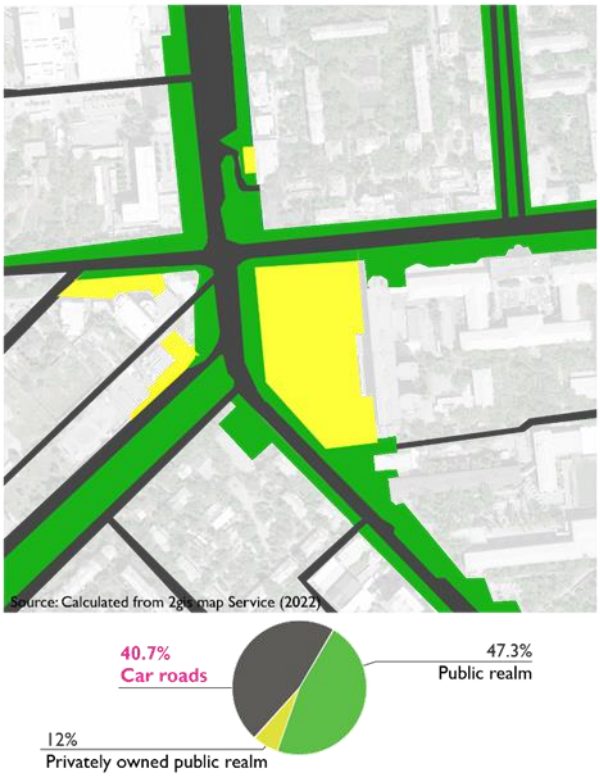
Figure 2.19. Public realm greenery

Figure 2.21. Site visit analysis of greenery

Figure 10 - Greenery (Source: Author's drawing)

Analysis of greenery on the public realm represents a very high rich proportion of green spots and trees. the area in front of the head campus of Satbayev University and bukhar-zhyrau boulevard has very massive trees. It makes the public realm more equitable for daily use that does have facilitate social cohesion as parks (Wood et al. 2017). Therefore, design strategies should consider how to keep equity through the greenery.

1.11. Analysis of public and privately owned public realms in relation to car roads



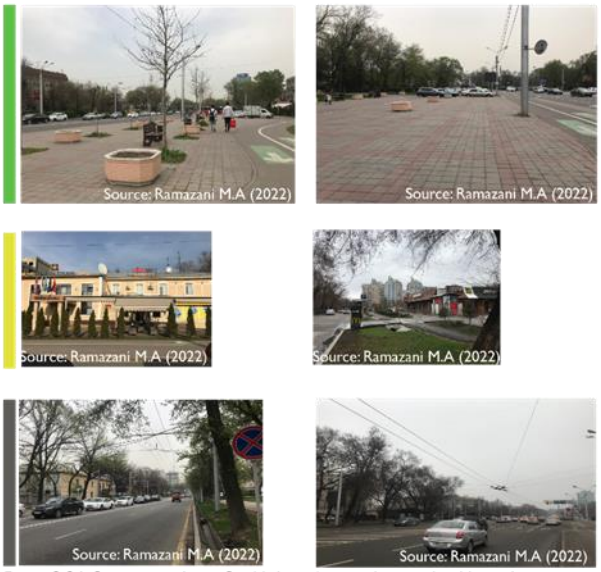


Figure 2.26. Site visit analysis of publicly and privately owned public realms

Figure 11 - Public and private realm in relation to roads (Source: Author's drawing)

Analysis of the public realm for car users illustrates that the vast proportion of all the public realm is equitable for drivers only. Although the public realm for pedestrians is 59.3%, 12% of it is privately owned public realm that is managed and controlled by private interests. Therefore, only 47.3% of all public realm might be equitable for Almaty citizens.

1.12. Analysis of Visitor's perception in the area

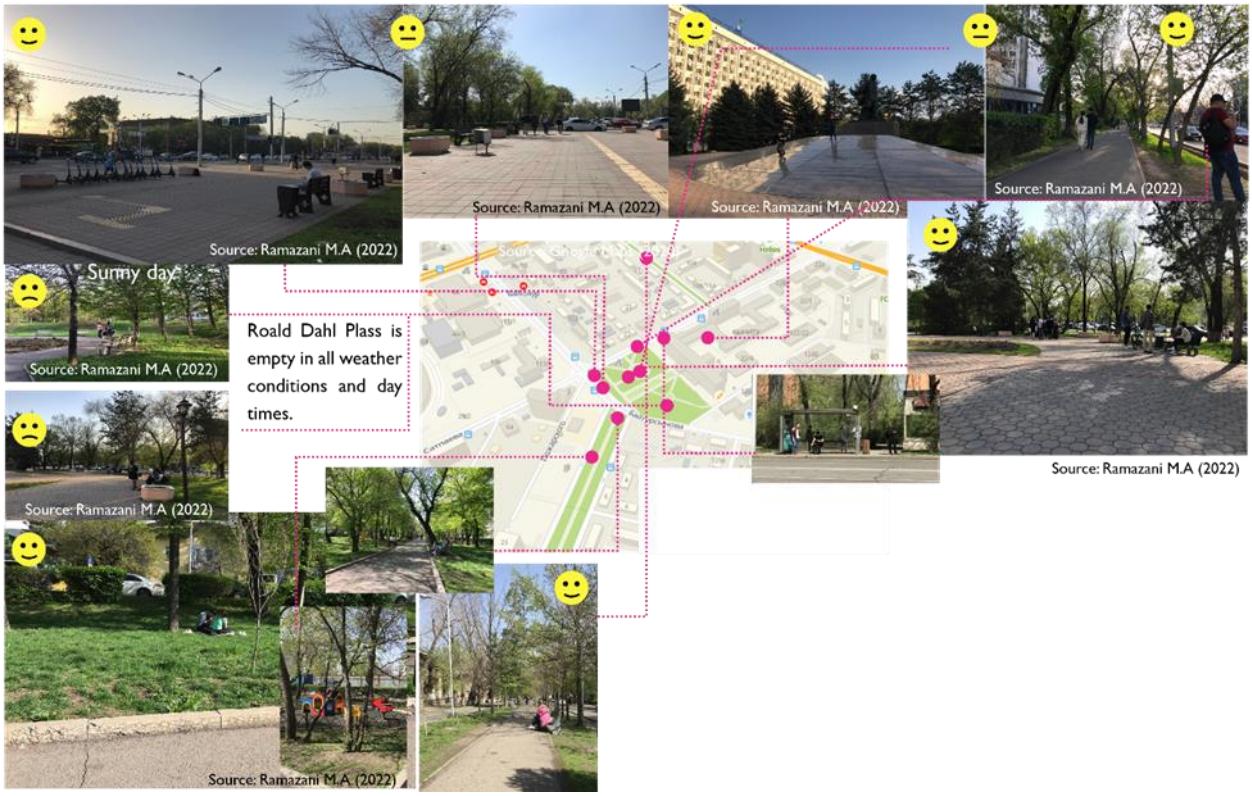


Figure 12 - Visitors' perceptions in the area (Source: 2gis map, Author's drawing)

The observation of public realm in the core area of Area from visitor's perception illustrates that public realm is not attractive with due to lack of fountains and waterfronts, as well as art-installations and edges of public space. While some fragmented parts of the public realm could be interesting for children, the large area on Roald Dahl Plass's is dull. O'Brien et al. (2000, p.275) suggest that "lack of attention to the different ways children use their cities will hinder advances in social policies designed to enhance participation for all children".

1.13. Analysis of climate condition and terrain

The city of Almaty is located in the center of the Eurasian continent, in the southeast of the country, at the foot of the mountains and the transition to the plain. The climate is called continental, cold winters and hot summers, mountain-valley winds are characteristic, which contribute to the circulation of air currents in the city. Climatic data for Almaty according to SP RK 2.04-01-201 Construction climatology: climatic region-IIIB; snow region -II; wind region of high-speed pressures -III.

Temperature:

The temperature regime of the city as a whole is much milder than the average for Kazakhstan due to relatively high temperatures in winter. The average long-term air temperature is +10°C, which is significantly higher than in Moscow and Nur-Sultan. The temperature of the coldest month (January) is -5°C, the warmest month (July) is +29°C.

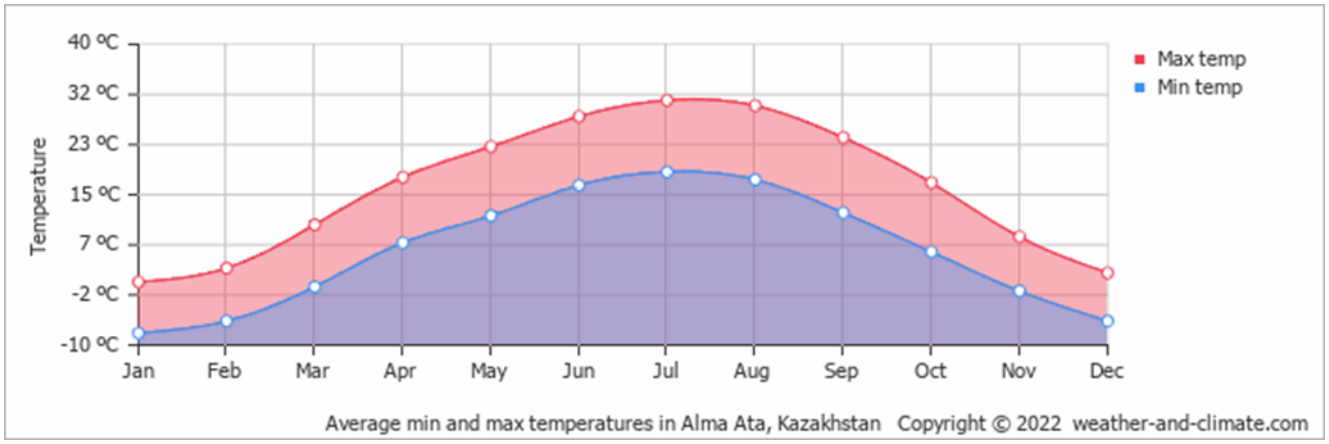


Figure 13 – Average min and max temperature in Almaty [13]

Precipitation, sunshine and humidity:

The month with the most rainy days is June (18 days).
The month with the lowest number is October (1 day).
The month with the most snow days is April (15 days).
The month with the lowest number is May (1 day).
Snowfall days 8.2 days (Figure 2).
There are about 3399.78 hours of sunshine in Almaty during the year. On average, there are 111.65 hours of sunshine per month. The month with the highest relative humidity is February (75%).
The month with the lowest relative humidity is August (45%)

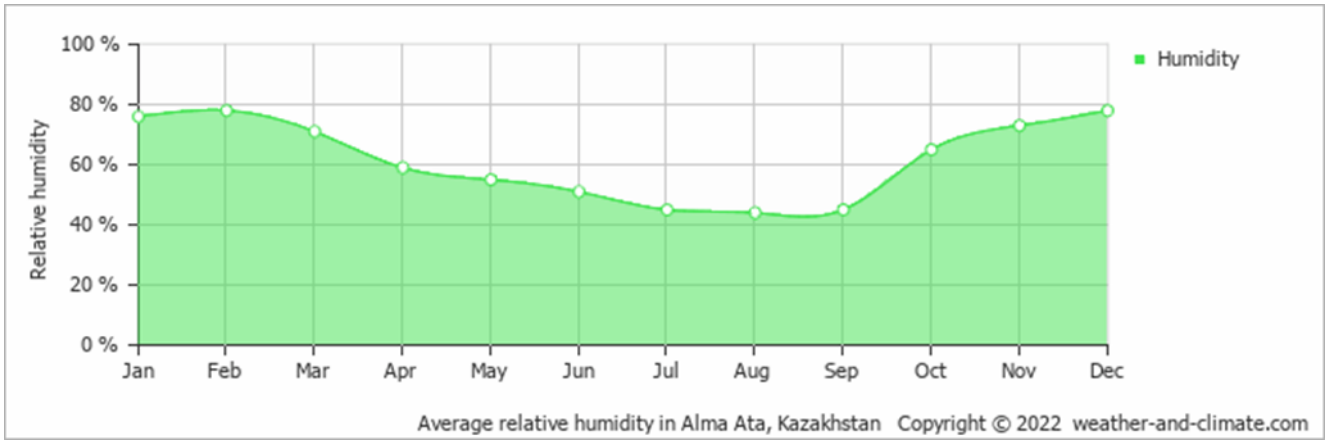


Figure 14 - Average humidity [13]

Wind:

As can be seen from the wind rose (Fig. 4), the main wind direction in the city of Almaty is south (910 h/year). In addition, the prevailing wind directions can be called southeast (768 hours/year) and west (170 hours/year). The rarest wind is easterly (9 h/year).

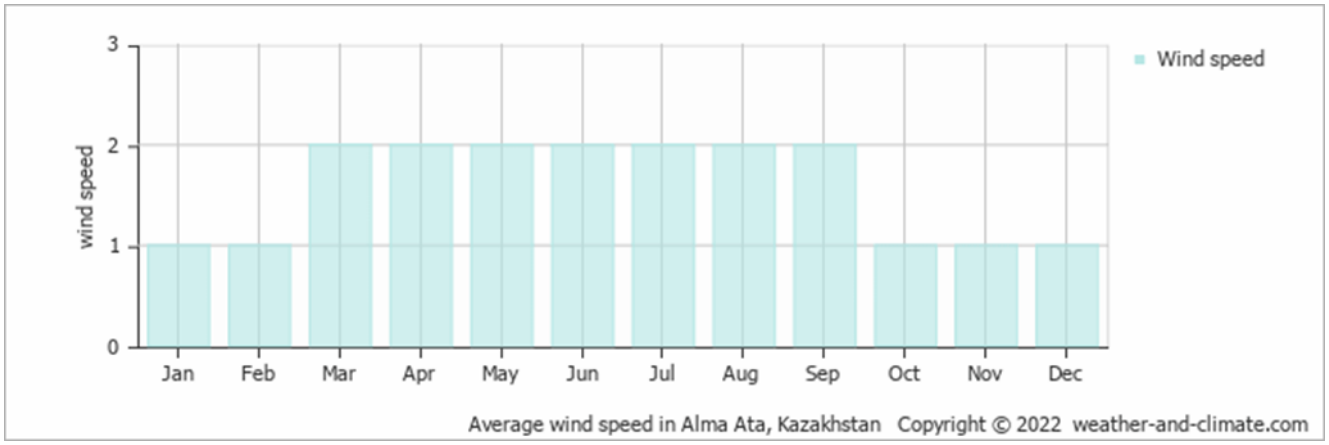


Figure 15 - Average wind speed [13]

Terrain:

An analysis of the relief of the territory determined the drop in the section from Baitursynov Street to Seifullin Avenue along Satpaev Street, where the maximum slope was 27.5%, and the average 3.5% - 1.1%. The level difference is from 845 m - 857 m above sea level.

The relief section of the main area of the GUK showed a drop from 848 m - 844 m above sea level.

When analyzing the relief section of the southern part of the area, one can notice a smooth transition of elevations from 849 m to 845 m above sea level. This determines the convenient location of the amphitheater here.

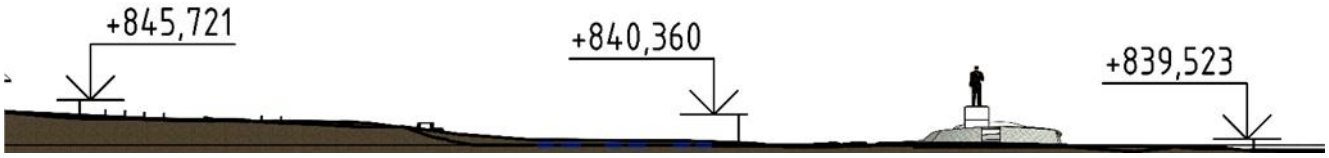


Figure 16 - Section terrain of the area (Source: Author's drawing)

2. Conceptual Part

2.1. Current Situation

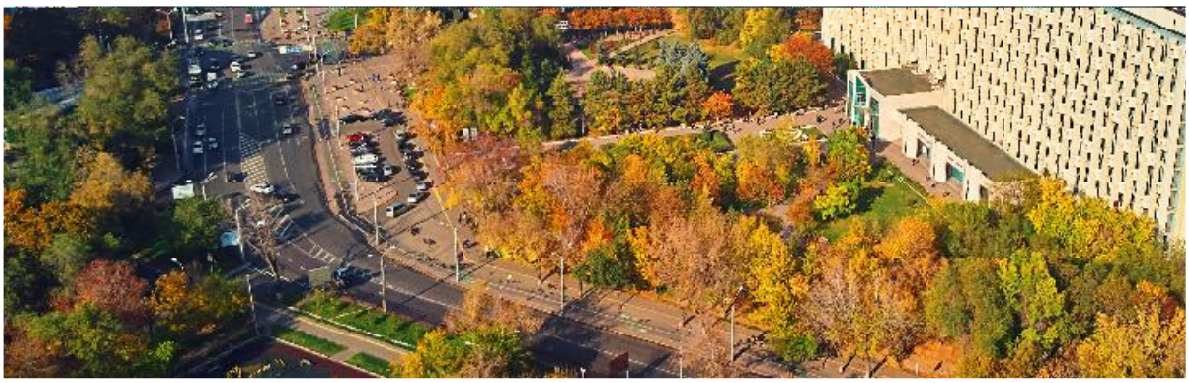


Figure 17 - Current Situation [14]

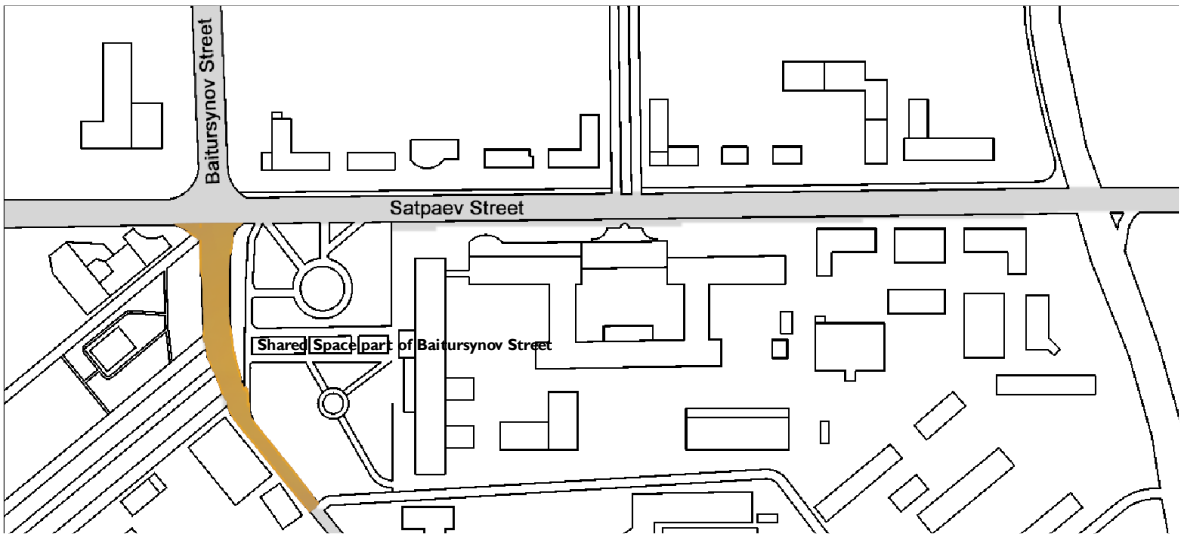


Figure 18 - Location of area (Source: Author's drawing)

What should be changed?

1. A kerb-free single surface
2. No barriers or street clutter
3. A logical street layout with large pedestrian areas
4. Visual and tactile lines to distinguish pedestrian areas from those used by vehicles
5. A 20mph speed limit
6. New high-quality street lighting
7. A wide and direct crossing in the Satpaev Street

2.2. Transforming Initiatives

2.2.1. Lack of connectivity

Due to lack of connectivity, there is unbalanced numbers of visitors on the two sides of the Baitursynov Street**.**

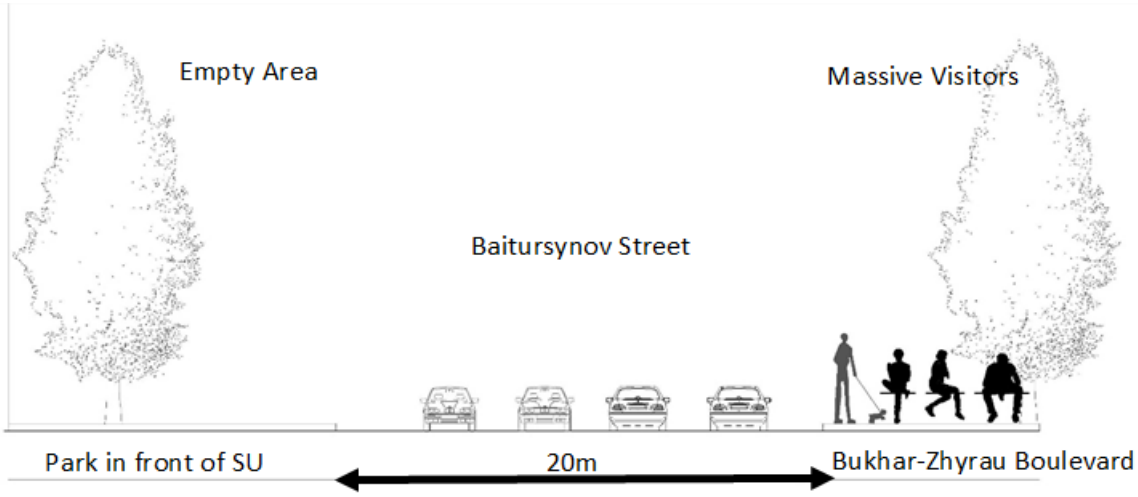


Figure 19 - Unbalanced area (Source: Author's drawing)

2.2.2. Creating a Dynamic Space

Adding commercial staffs, removing segregation between street and pedestrian's path will make the area more active.

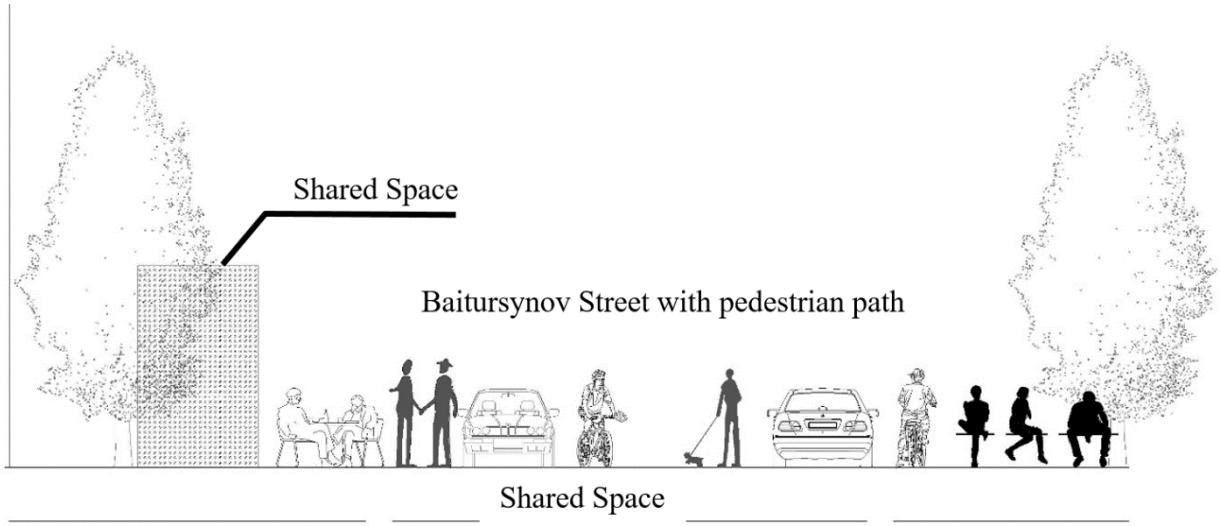


Figure 20 - Dynamic area (Source: Author's drawing)

2.3. Shared Space

Shared space is an approach, which eliminates the functional segregation of different ways of traveling in a shared space. It illustrates a picture that informal regulations can act as an effective tool. (Matthew Carmona, 2017, pp.1-36).

What to share?

1. Physical space

Different group people are mixed in a single space, the physical space will be shared by them.

2. Equal & Respect

There is no priority given to any type of transportation and we are all equal.

3. Rules

Create rules for sharing through smooth and harmless negotiation.

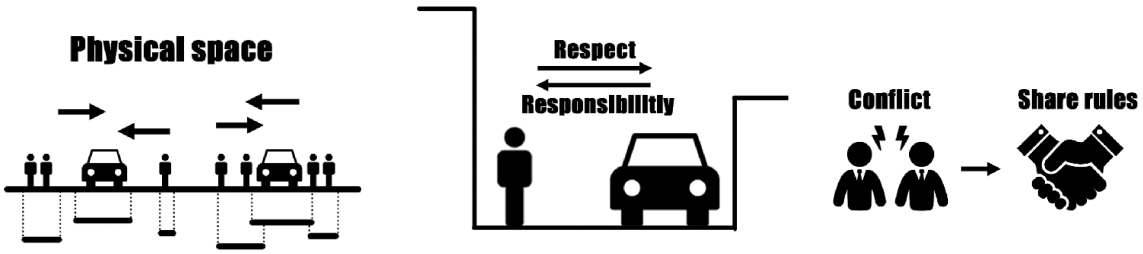


Figure 21 - Share more than space (Source: Exhibition Road Case Study)

What to expect in term of informal social regulation?

• **Achieving social justice:**

By treating cars and pedestrians in the same way which is don't give any of them any priority can realize the situation that everyone is completely equal

• **Ambitious and creative political act:**

Break conventions of regulation need to discussed and debated for many times and there is no doubt all kind of difficulties would obstruct the way, thus it is not only a creative political act but also an ambitious one.

• **Experimenter social reaction:**

Break conventions of regulation need to discussed and debated for a long period and there is no doubt such an experiment would significantly benefit the next stage.

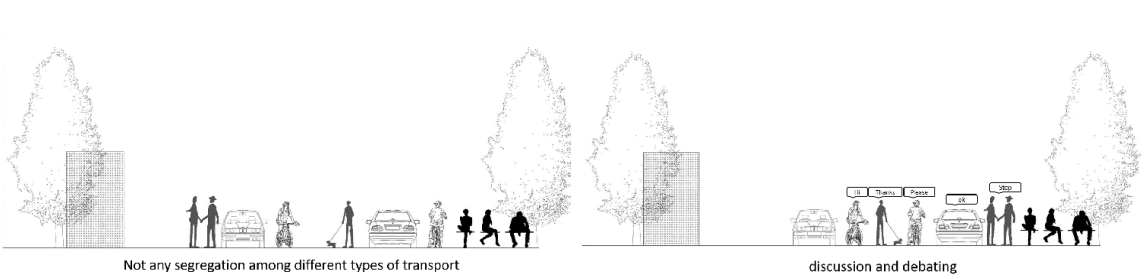


Figure 22 – social informal regulations (Source: Author's drawing)

Literature related

"The right to the city"
"Informal tools of designing governance"
"Creative political act"
"Mitigation vs Adaptation"
"Street as a common space"
"DE political, no regulation as a regulation"
"Sharing more than space

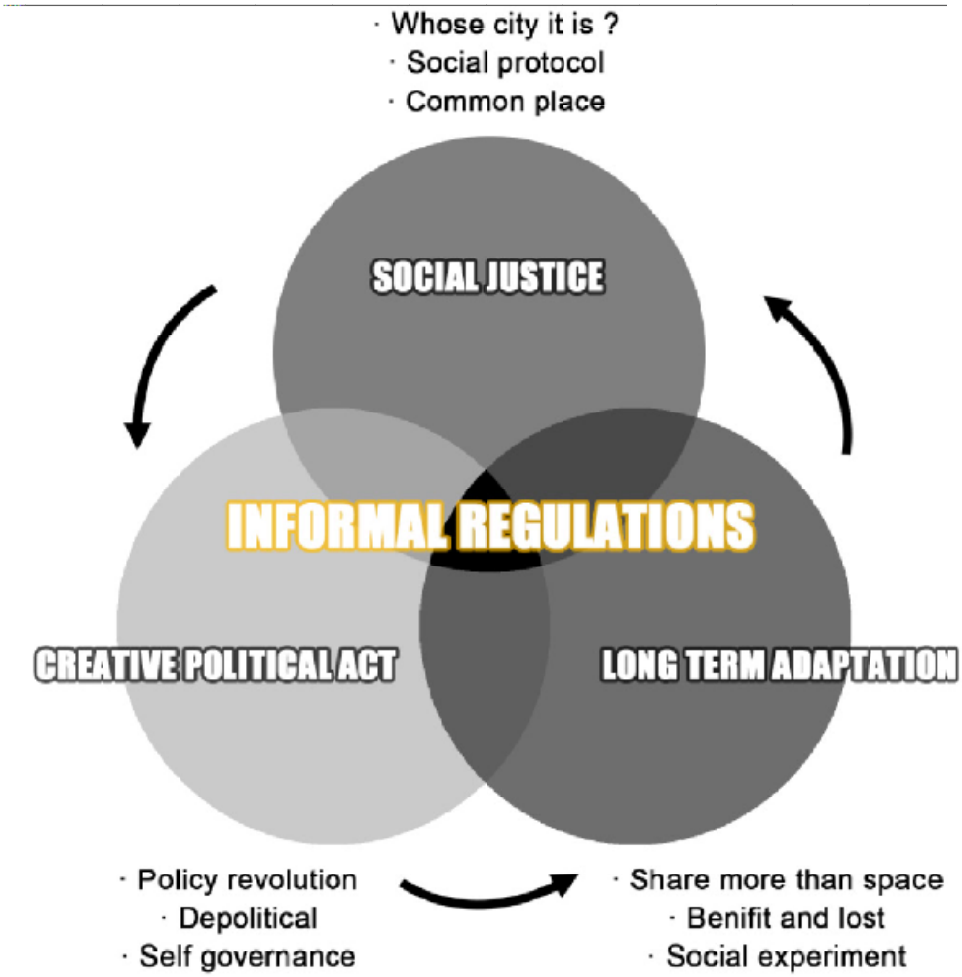


Figure 23 - Analysis framework [8]

2.4. Negotiation

How can they negotiate?

The shared space approach was initially formulated through focused research on the problems connected to traffic and especially on the ways; traffic has destroyed the city streets 'character as spaces of multiform public uses. Instead of dividing, this view integrates worlds of movement, which can differ in speed, form, means, etc. The very logic behind this shared space is that it allowed people to learn how to negotiate their place in urban settings, besides they are allowed to interact freely by knowing how to avoid accidents and find ways to coexist as street users. The rationality of the space is everyone in this particular space don't have access to any priority od usage, it is a space of justice. (Stavrides Stavros, 2016,pp. 129-158).

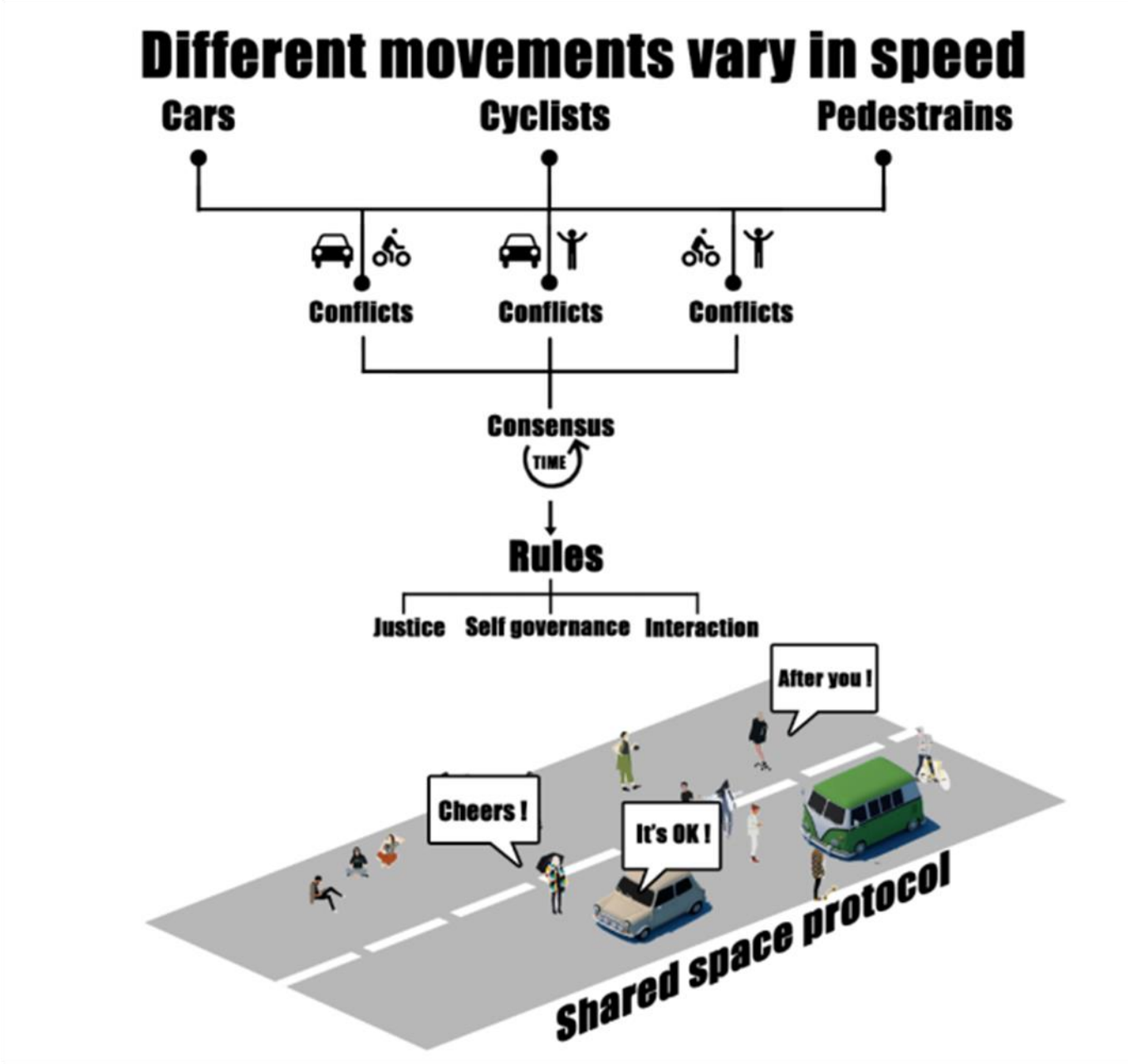


Figure 24 - Negotiation framework protocol [8]

2.5. Conceptual context of the street

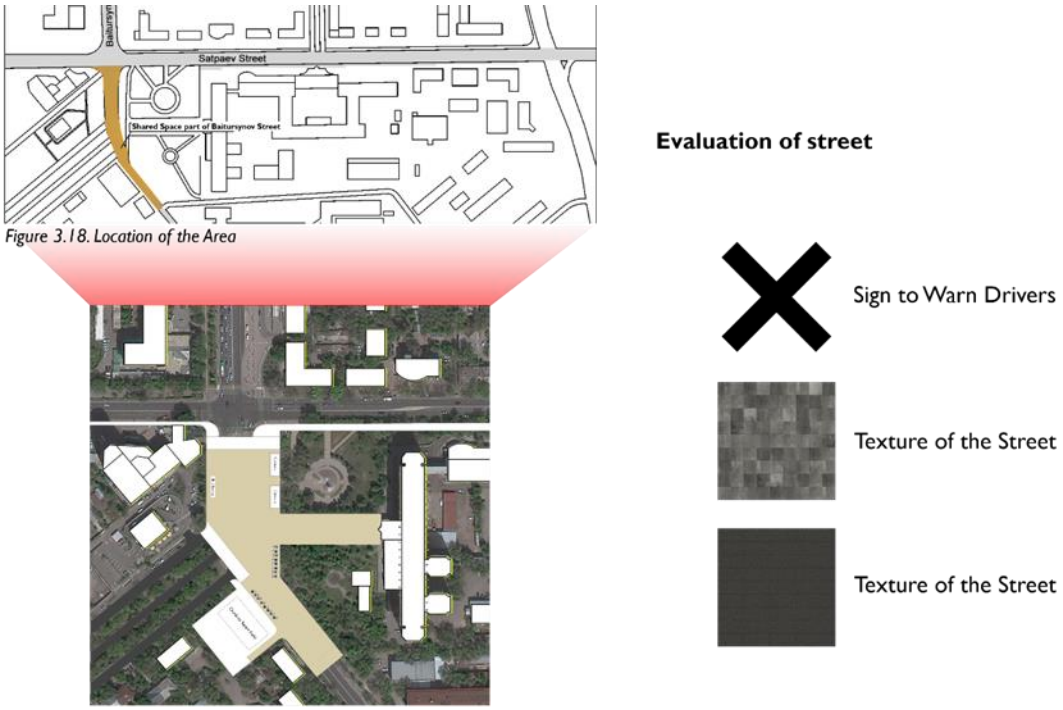


Figure 25 - Conceptual context of street (Source: Author's drawing)

The concept was based on improving the connectivity of the two side of Baitursynov Street, in which people can pass very easy and safely, in order to have such an space, I wanted to convert some part of Baitursynov Street (from Stapaev street up to Akcakova Street) to a share street, also the area will provide the parking for cars, commercial activities and space for visitors like some cafeterias.

2.6. Conceptual Connectivity Scheme

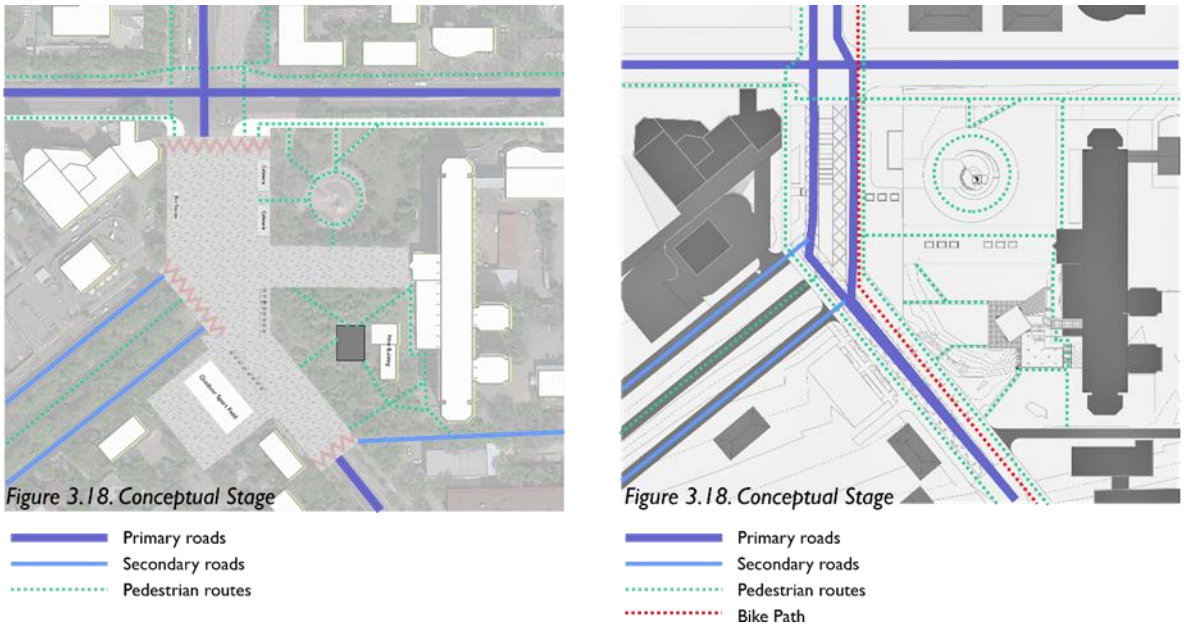


Figure 26 - Conceptual connectivity concept (Source: Author's drawing)

3. Architectural Part

3.1. Project Composition

The complete list of the project composition is indicated, according to the assignment for the graduation project:

- Master Plan M1:500
- Functional Plan M1:500
- Greenery Plan M1:500
- Connectivity Plan M1:500
- Floor plan +1.000 M1:200
- Floor plan +5.200 M1:200
- Section M1:100
- Visualization
- Facades M1:100
- Visualization

3.2. Master plan

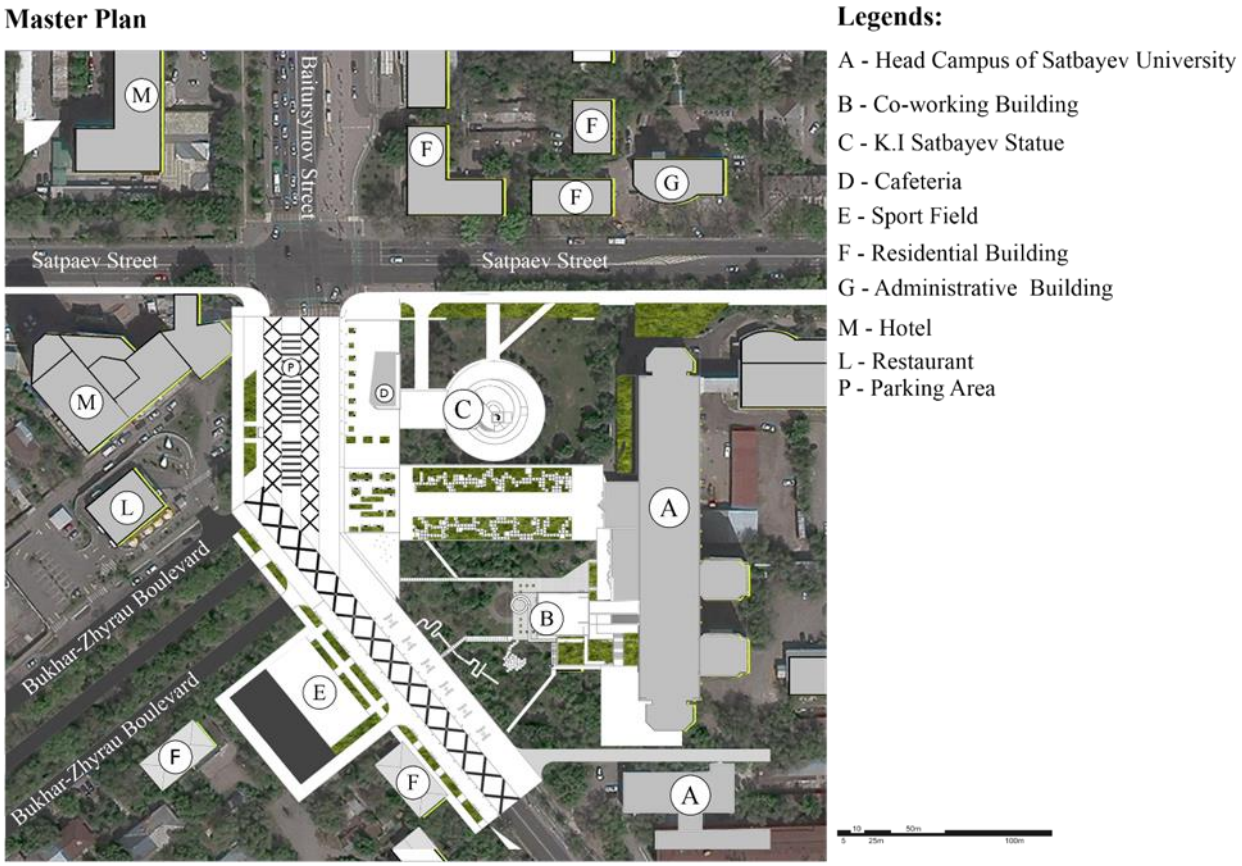


Figure 27 - Master Plan (Source: Author's drawing)

The intervention area is located in front of head campus of Satbayev University, the area is about 10.3 hectares

Part of baitursynov street is converted from a typical street to shared street, the area of the shared street is about 1 hectare, as you see there is a parking place in the center of the street about 500 square m, also there are a co-working space building by B consist of three floors, first one is as restaurant and exhibition hall and second floor is linked to the second floor of the Head campus and work as Library, at the 3rd floor there is a co-working space for students, also on the roof of ground floor there is an open air-amphitheater.

3.3. Functional Plan

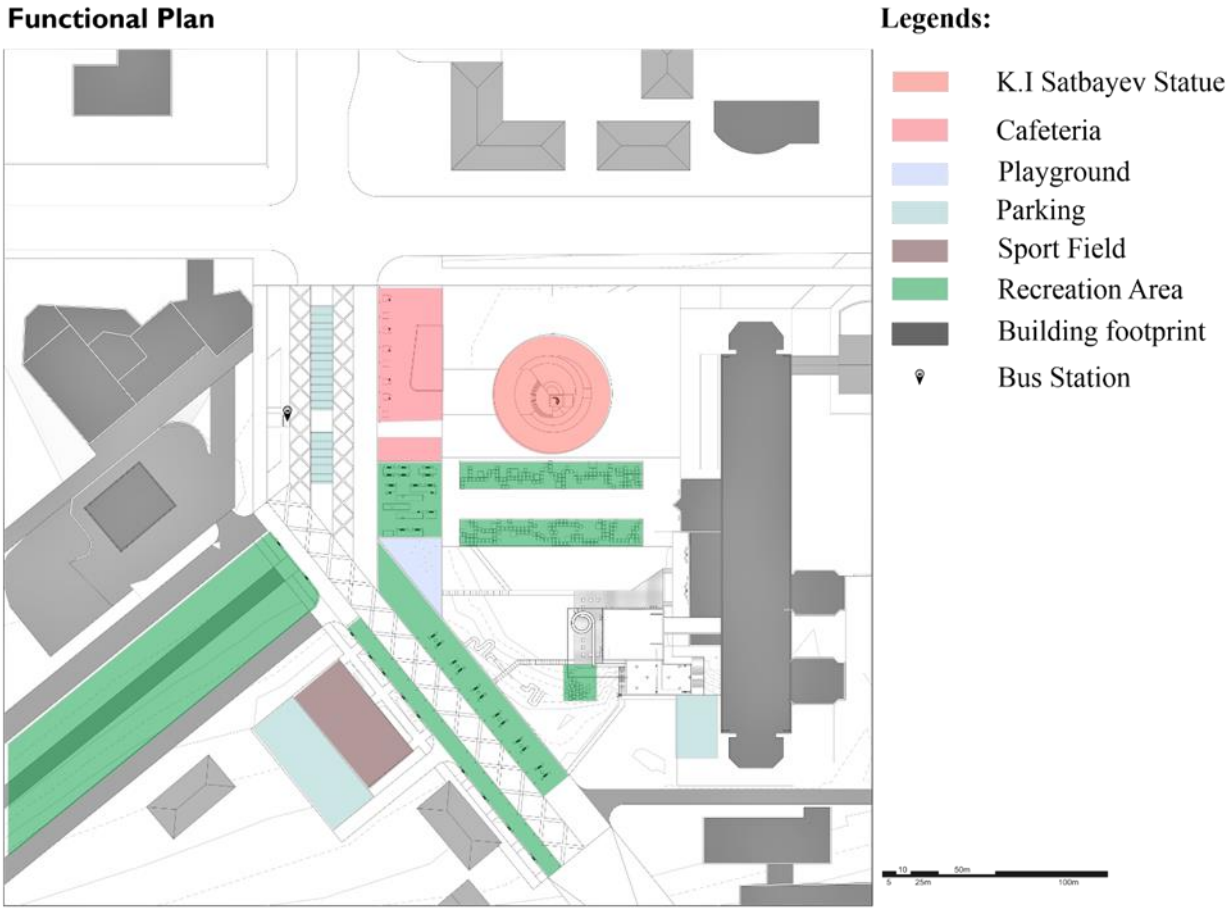


Figure 28 - Functional Plan (Source: Author's drawing)

In the functional plan, there have been shown a recreation area on the both side and retailing zone which provide a restaurant service for visitors, near to that there is also a playground which provide a space for children and family to set around to watch their kids.

4.4. Greenery plan

Figure 29 - Greenery Plan (Source: Author's drawing)

The area is very rich in term of greenery so the design strategy was to keep the greenery and find a good solution to not impose any change to the area; also, I have added some trees and plants on the middle of street to provide shadow during the summer time.

The plants have been added to the area are like; Purple Fountain Grass, white fountain grass, Feather reed grass, Mexican feather grass, Lavender.

4.5. Connectivity Plan

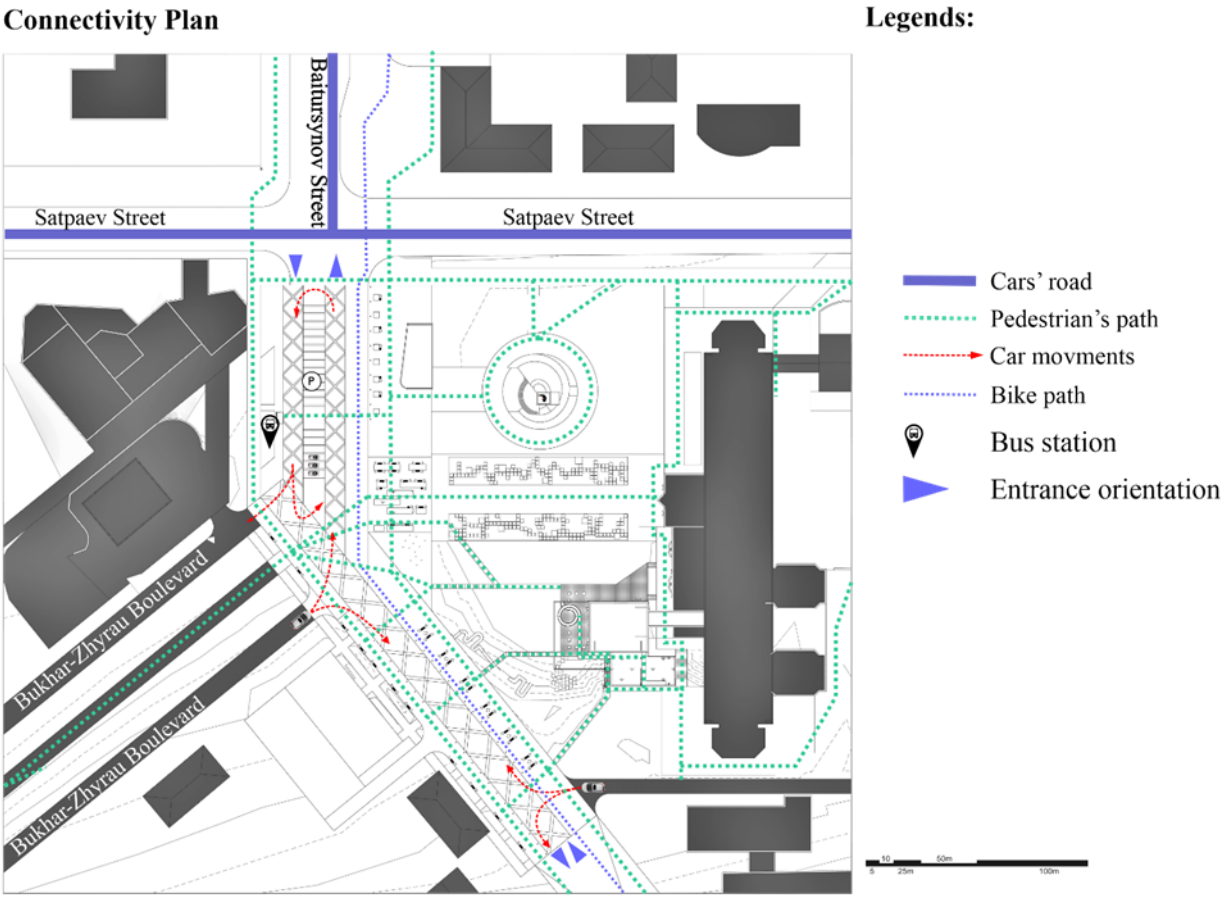


Figure 30 - Connectivity plan (Source: Author's drawing)

The area is located in the intersection of two main roads of the city; Satpaev and Baitursynov streets, baitursynov street connected to the Bukhar-Zhyrau Boulevard, which a public space.

The connectivity plan shows the movement of the cars and pedestrians, as street has been converted to a share space the pedestrians can pass through street in first priority, and cars speed should be about 20 km/h which provide enough safety for pedestrians to pass the street, in the same time the bikes also can ride, in the second place over the street, the bus stop is a key transport element, which is located on the area and provide the easy access to the public.

4.6. Co-working buildings' plans

Floor plan M1:200

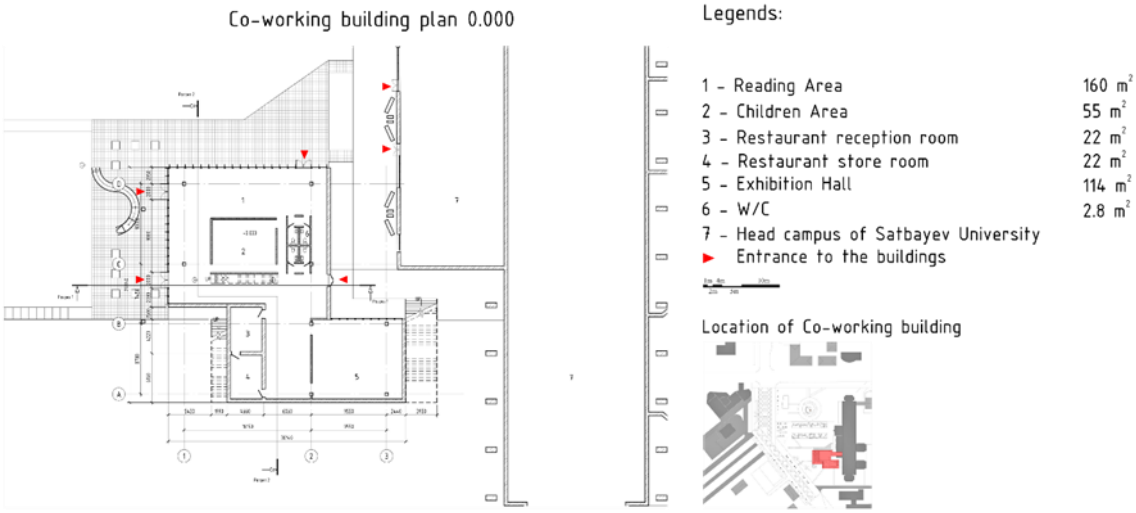


Figure 31 - first floor plan (Author's drawing)

Floor plan M1:200

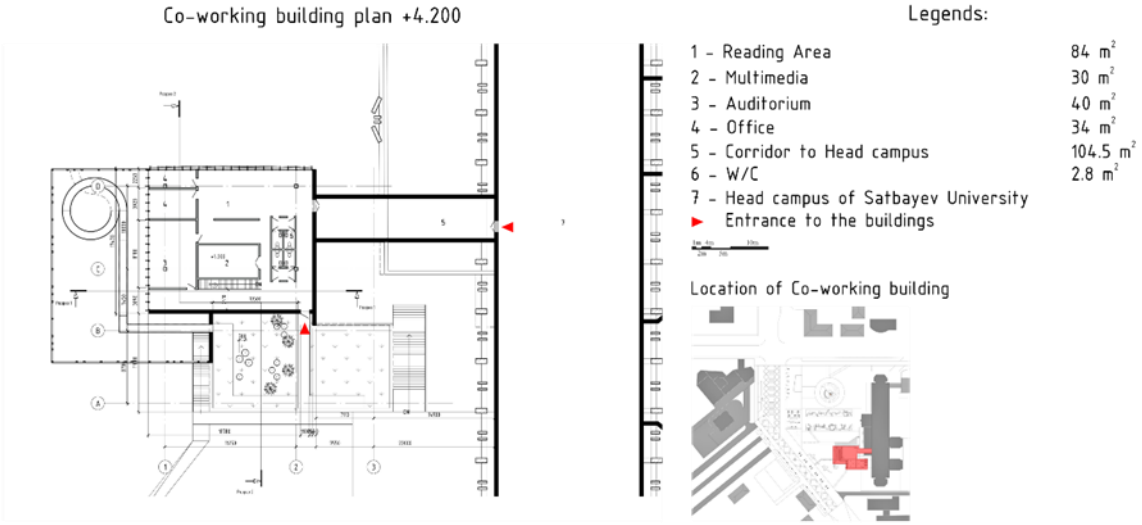


Figure 32 - second floor plan (Source: Author's drawing)

The plan of the building is a changeable plan, based on needs it can be changed quickly, the entire building can be used as an exhibition room, similarly on the first floor (ground floor Figure 32) there reading hall provide a very calm and naturally light space to for student and other staffs to study, also there is a room for children, women can bring their children there while they are studying there.

In addition, there is a small restaurant to provide food for visitors and it makes the building more usable, on the second floor, there is some offices and auditorium for some big meeting and there is multimedia which will be used for conferences and small meeting.

Sections M1:100

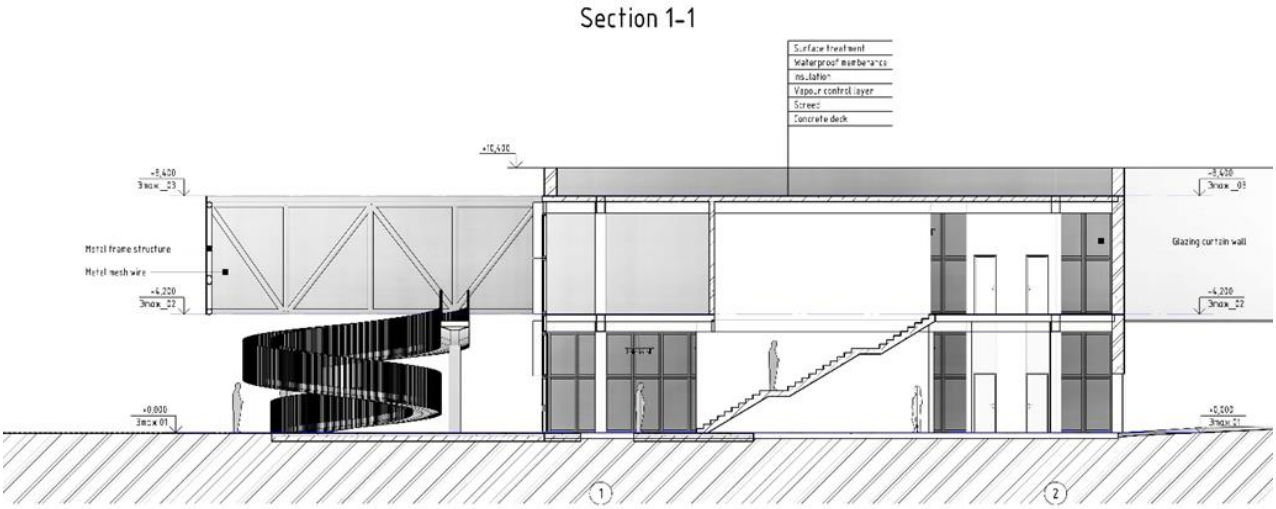


Figure 33 – Section 1-1 (Source: Author's drawing)

In the section, we can see the vertical circulation both inside staircase and ramp in the outside with vertical wooden railing will attract children and invite them to the green roof of the building.
As building is in a cube shape, the metal frame structure in front of the building extend the building boundary but with an open air space, at inside of the frame there is ramp.

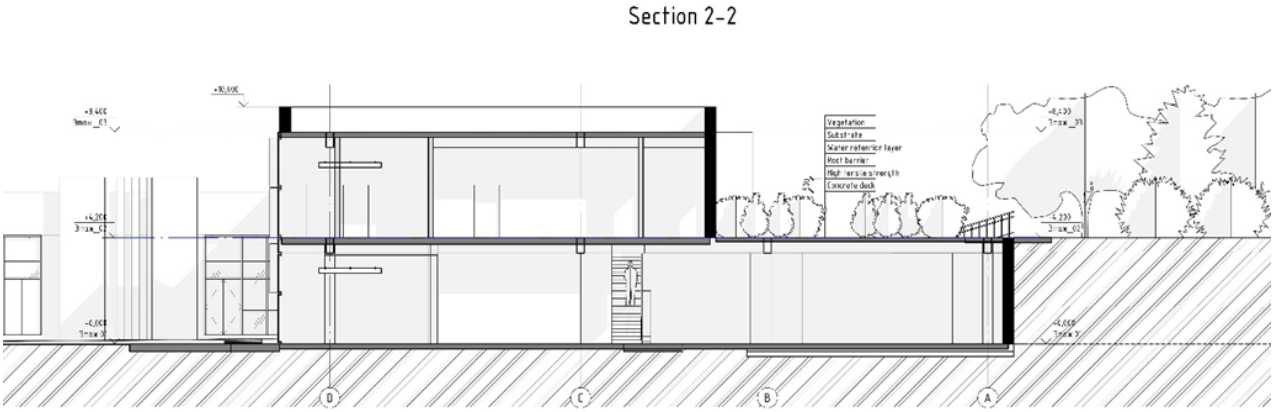


Figure 34 – Section 2-2 (Source: Author's drawing)

Section 2-2 shows the height difference of the site, which is almost about 4m, this section also, shows how roof of first floor became as one surface with rest of the site through the greenery.

Facades M1:100

Figure 35 – Façade 3-1 (Source: Author's drawing)

Figure 36 – Façade 1-3 (Source: Author's drawing)

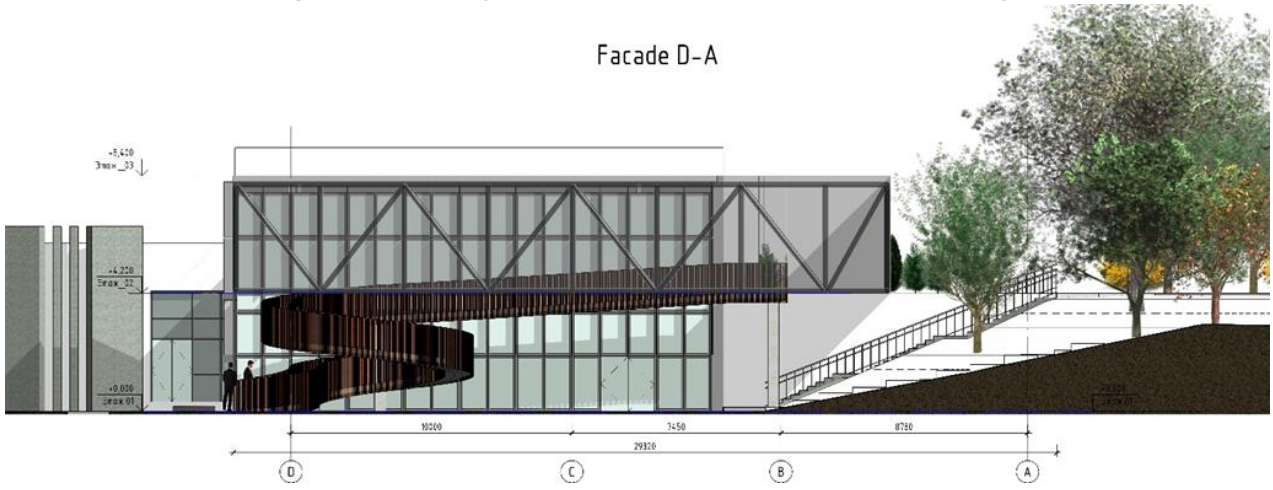


Figure 37 – Façade D-A (Source: Author's drawing)

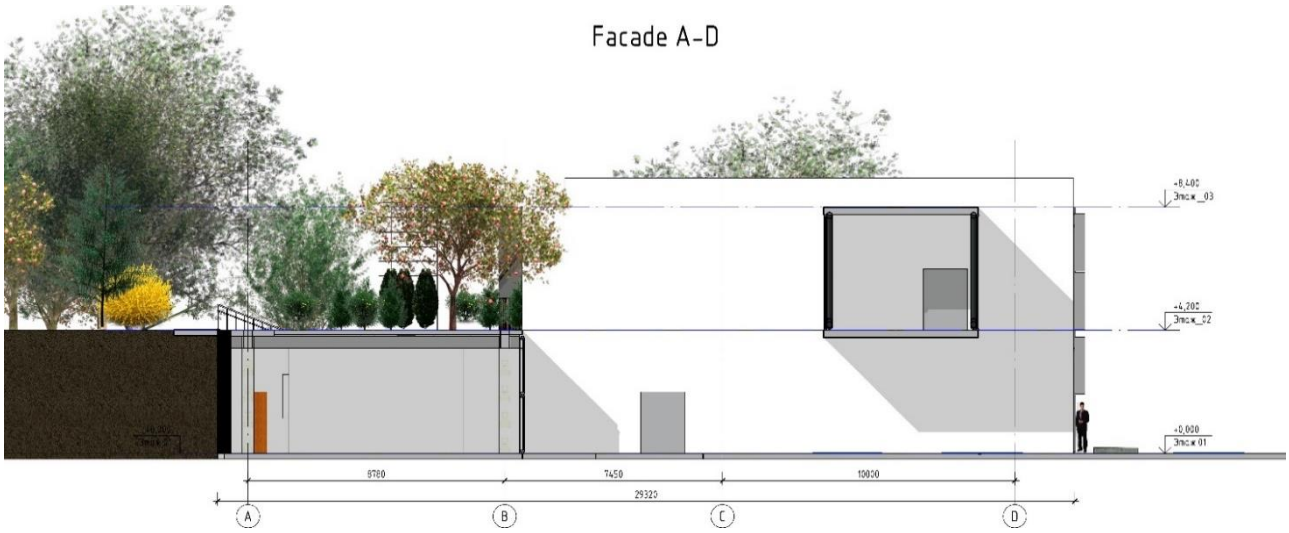


Figure 38 – Façade A-D (Source: Author's drawing)

Figure 39 – 3D view of the Co-working building (Source: Author's drawing)

Figure 40 – 3D view of the Co-working building (Source: Author's drawing)

4.7. Restaurant & Café Shop

Floor plan M1:200

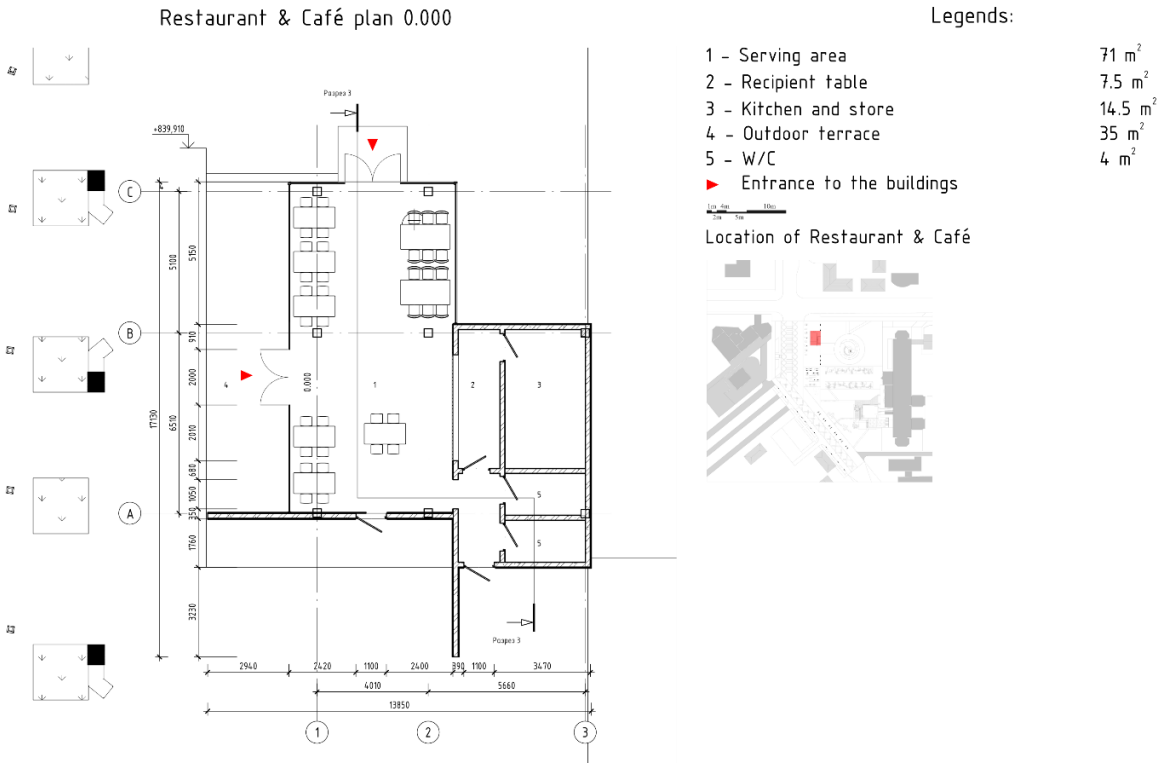


Figure 41 - First floor plan (Source: Author's drawing)

The restaurant has two serving zones, one inner zone and other outdoor zone, the restaurant is serving in one time for more than 40 persons, while, during the summer and spring the restaurant will serve more than 80 persons, in one time on both outdoor terrace and inner zone, but during the winter this number is going to be decreased by half, around 40 persons.

Section M1:100

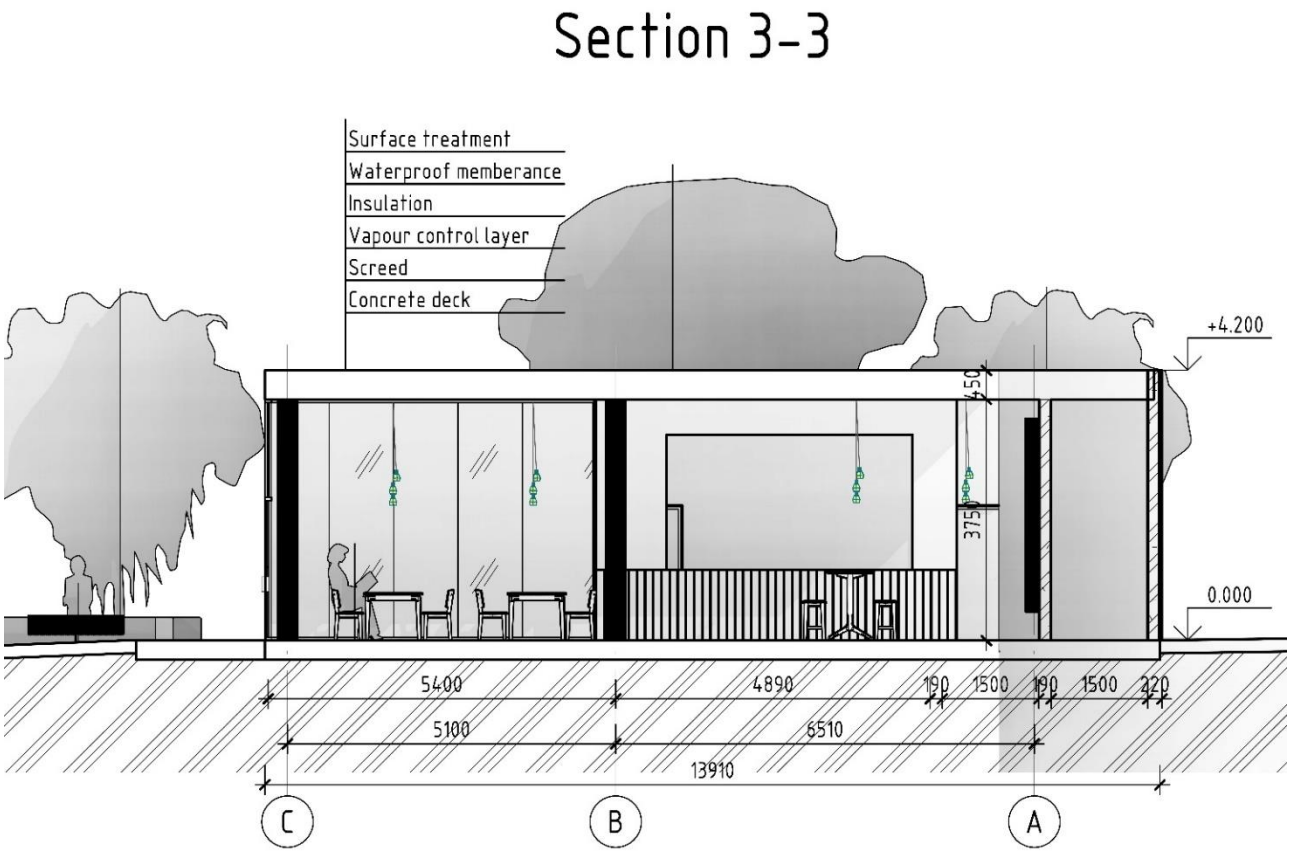


Figure 42 – Section 3-3 (Source: Author's drawing)

The building is one store, in height of 4.2m, which provide a very comfortable and bright inner space; also, the building is designed with glazing curtain wall façade. There used some wood planked vertically on the façade of the building for decoration.

Facades M1:100

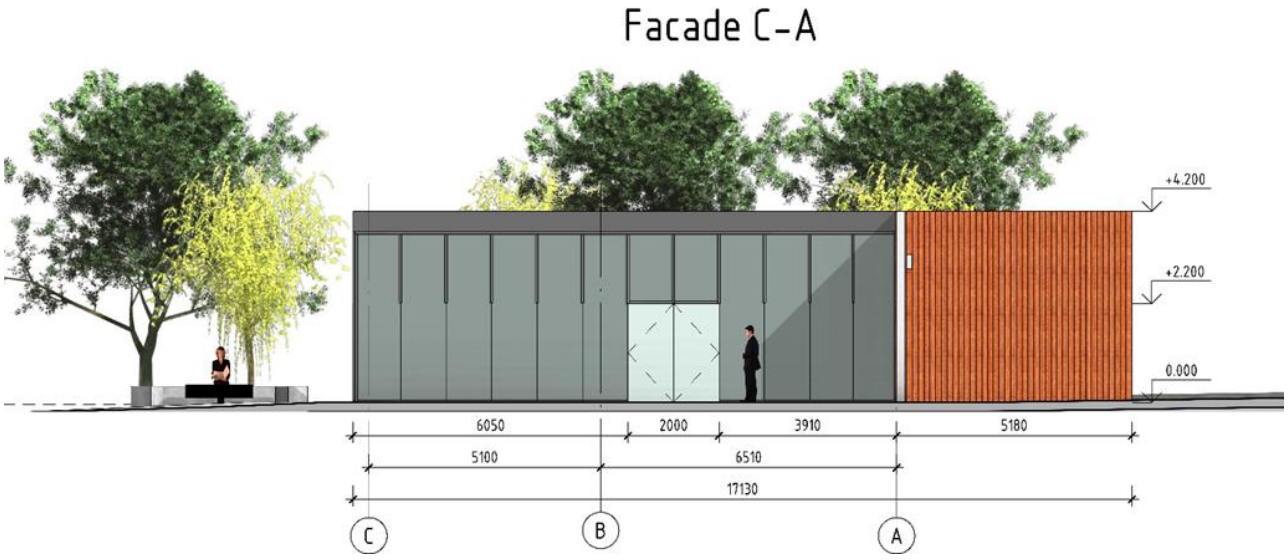


Figure 43 – Façade C-A (Source: Author's drawing)

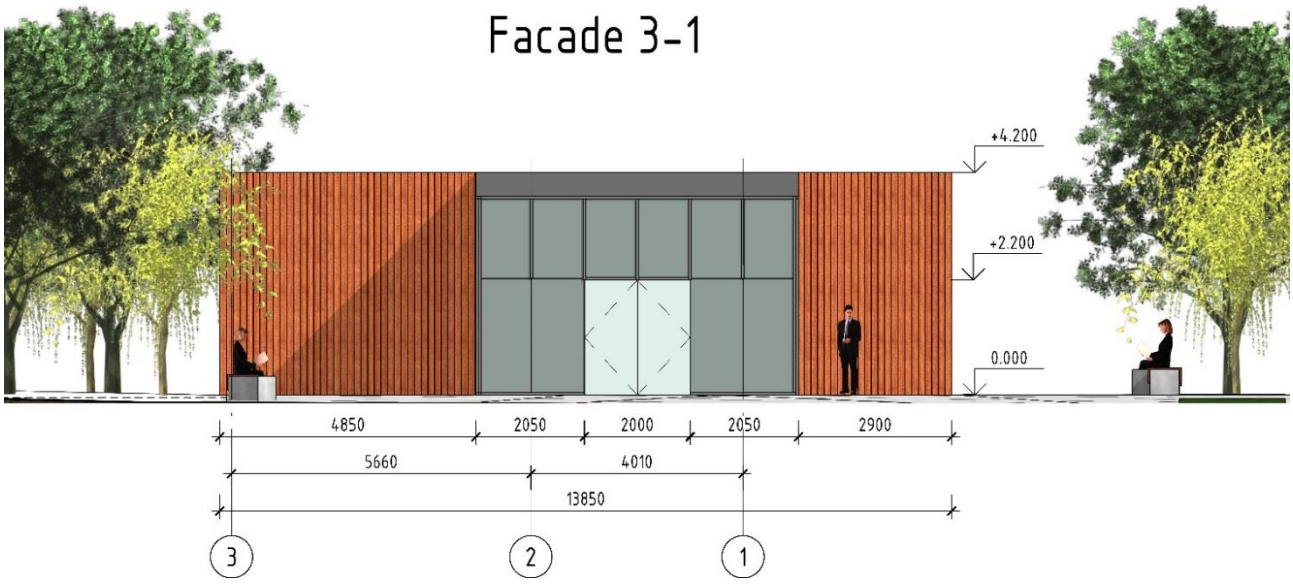


Figure 44 – Façade 3-1 (Source: Author's drawing)

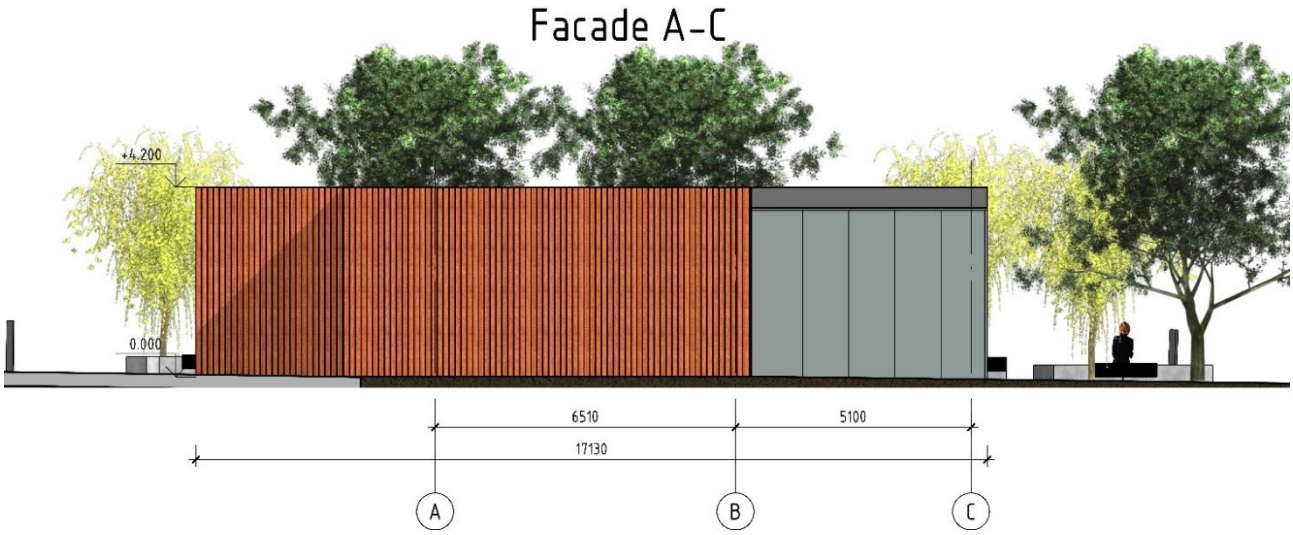


Figure 45 – Façade A-C (Source: Author's drawing)

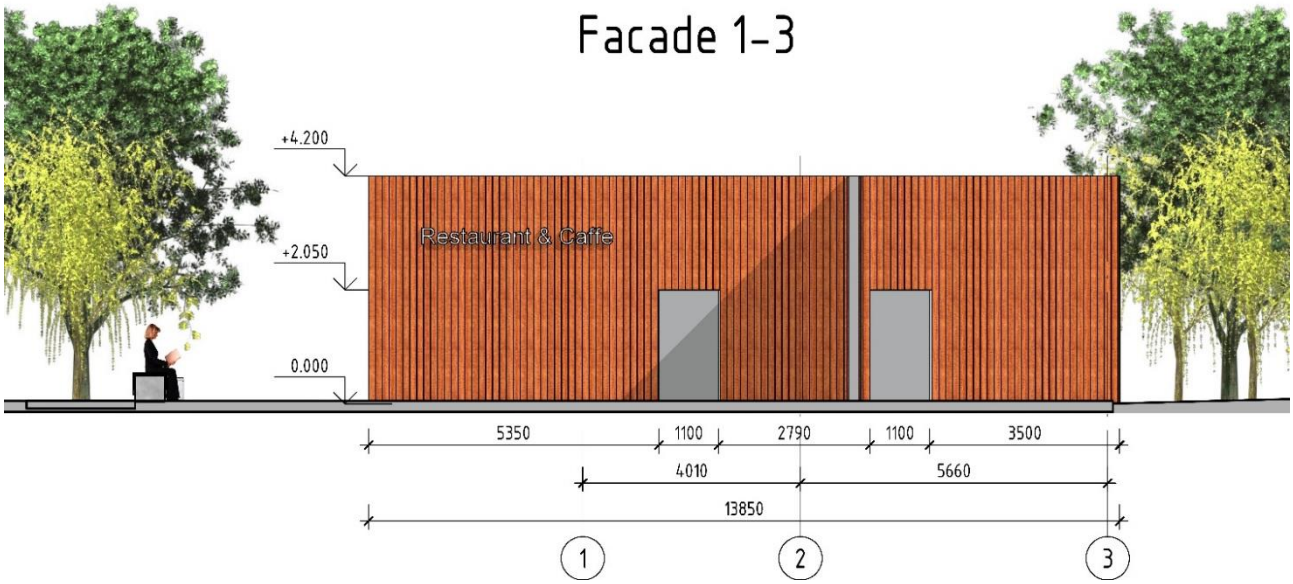


Figure 46 – Façade 1-3 (Source: Author's drawing)

Figure 47 – 3D view of the Restaurant & Café Shop (Source: Author's drawing)

Figure 48 – 3D view of the Restaurant & Café Shop (Source: Author's drawing)

Entrance to the University

Figure 49 – 3D view of the Entrance area (Source: Author's drawing)

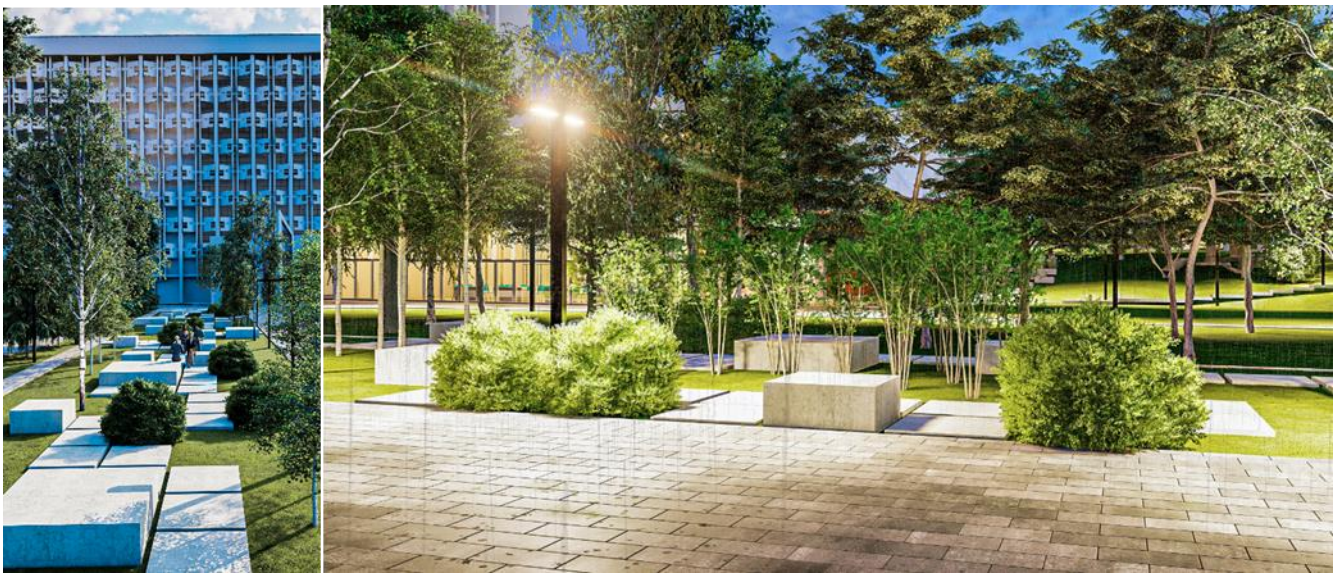


Figure 50 – 3D view of the Entrance area (Source: Author's drawing)

Baitursynov Street

Figure 51 – 3D view of the Baitursynov street as shared street (Source: Author's drawing)

Figure 52 – 3D view of the Baitursynov street as shared street (Source: Author's drawing)

4. Structural section

4.1. Justification of applied design solutions

Based on the volumetric, planning solutions, natural features of the area, the following design scheme was chosen –
The street was designed as mono-surface with multi textures to make clarification of zoning. On the playground, there have been used light blue tartan, on the street there have been used granite stone tile 600*400 for pavement.
The building was design as a frame structure with load-bearing columns and crossbars made of monolithic reinforced concrete, a common form of modern construction technology. This design allows you to create convenient layouts for the users of the building, based on the needs and desires of each overall users.
All internal surfaces of walls, partitions and ceilings of all floors are covered with improved water-based plaster. In wet rooms, the bottom of walls and partitions is ceramic tiles to a height of 1.6 meters and grouting with vetonite.
Floors in the building (co-working rooms, restaurant, halls) - laminate or granite. In other premises (kitchens, corridors, KSK, workshops, w/c, stair-lift hall, stairs) - porcelain stoneware. A cement screed is poured under the laminate and porcelain stoneware.

The foundation is monolithic, reinforced concrete.
The frame of the building is monolithic, reinforced concrete, with the filling of the outer
Walls with gas block 300 and curtain panels;
External walls - gas block GOST 31360-2007 t = 300mm on a solution of M100.
The walls of the basement floor are monolithic, lined with granite tiles 300*600*30mm, insulated with P-125 "Isotherm" mineral slab, 100mm thick.
Exterior wall decoration of the first and second are made of curtain panels – panels tiles 1000 * 2200 * subsequent floors - decorative plaster in a synthetic mesh.
Interior partitions - gas block t=100 mm, brick t=120mm.
Inter room partitions - gas block t = 200mm.
The roof is combined with the use of modern building materials.
Gutter internal, organized. Ladders are prefabricated reinforced concrete.
External doors - plastic, metal.
Interior doors - wooden, plastic, metal.
Windows – curtain panels with aluminum profiles.
Over lapping, coverings - monolithic, reinforced concrete.

4.2. Description of applied nodes

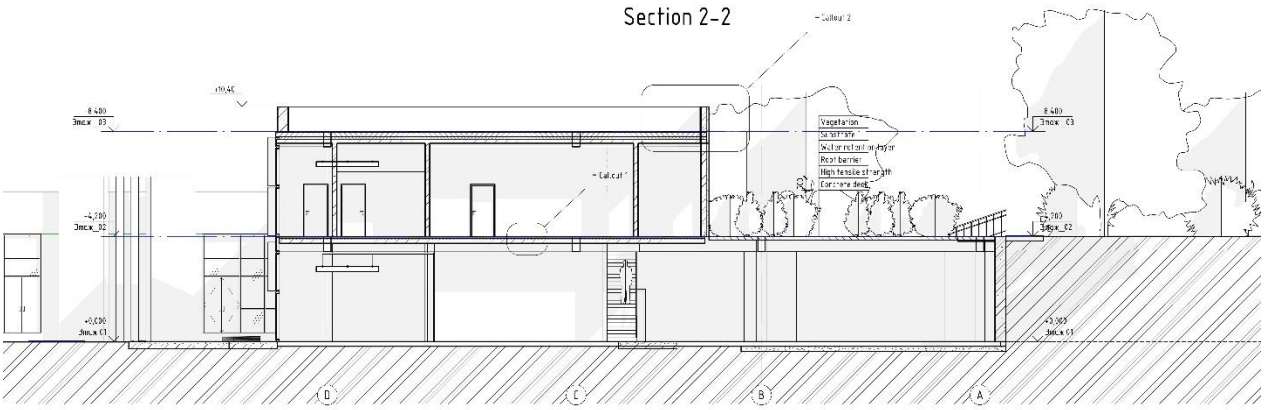


Figure 53 – Section 2-2 with callouts nodes (Source: Author's drawing)

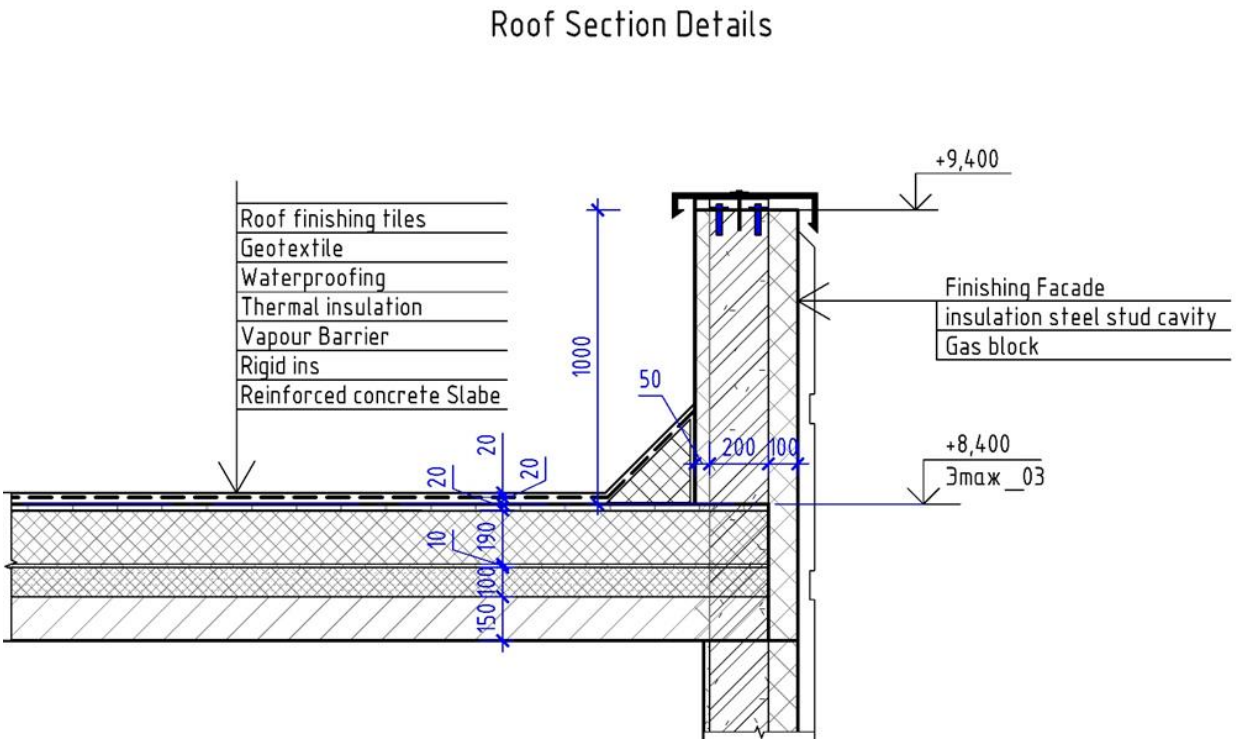


Figure 54 - Roof callout (Source: Author's drawing)

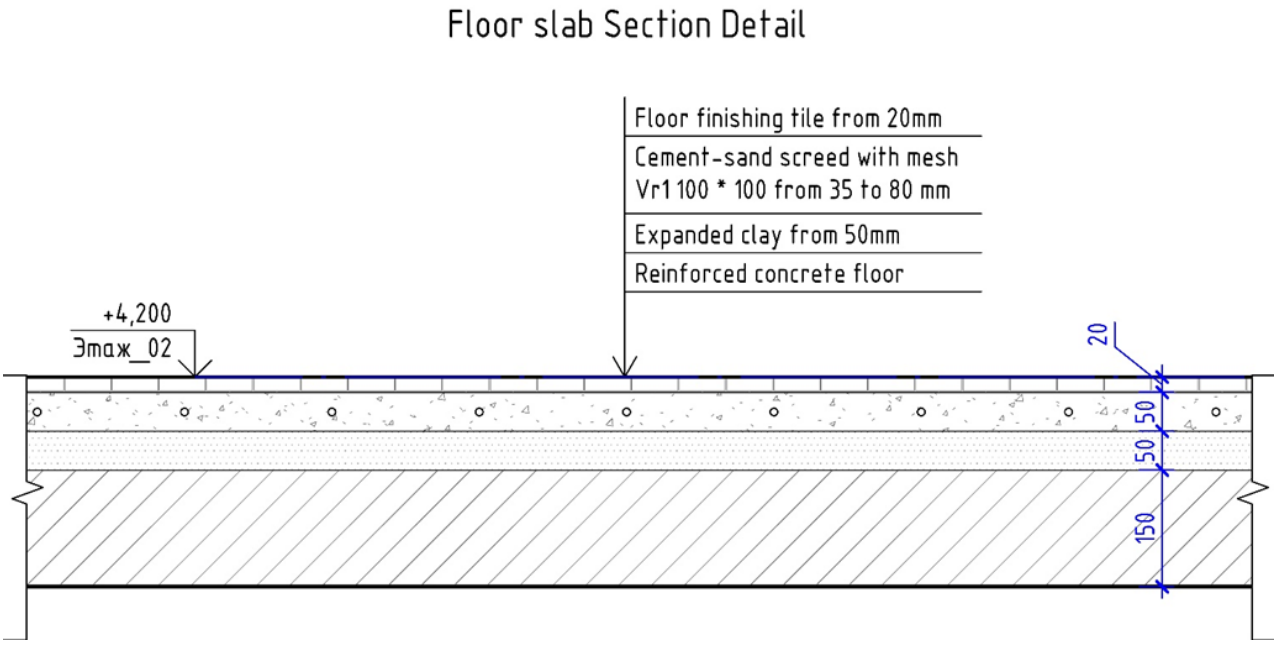


Figure 55 - Floor slab callout (Source: Author's drawing)

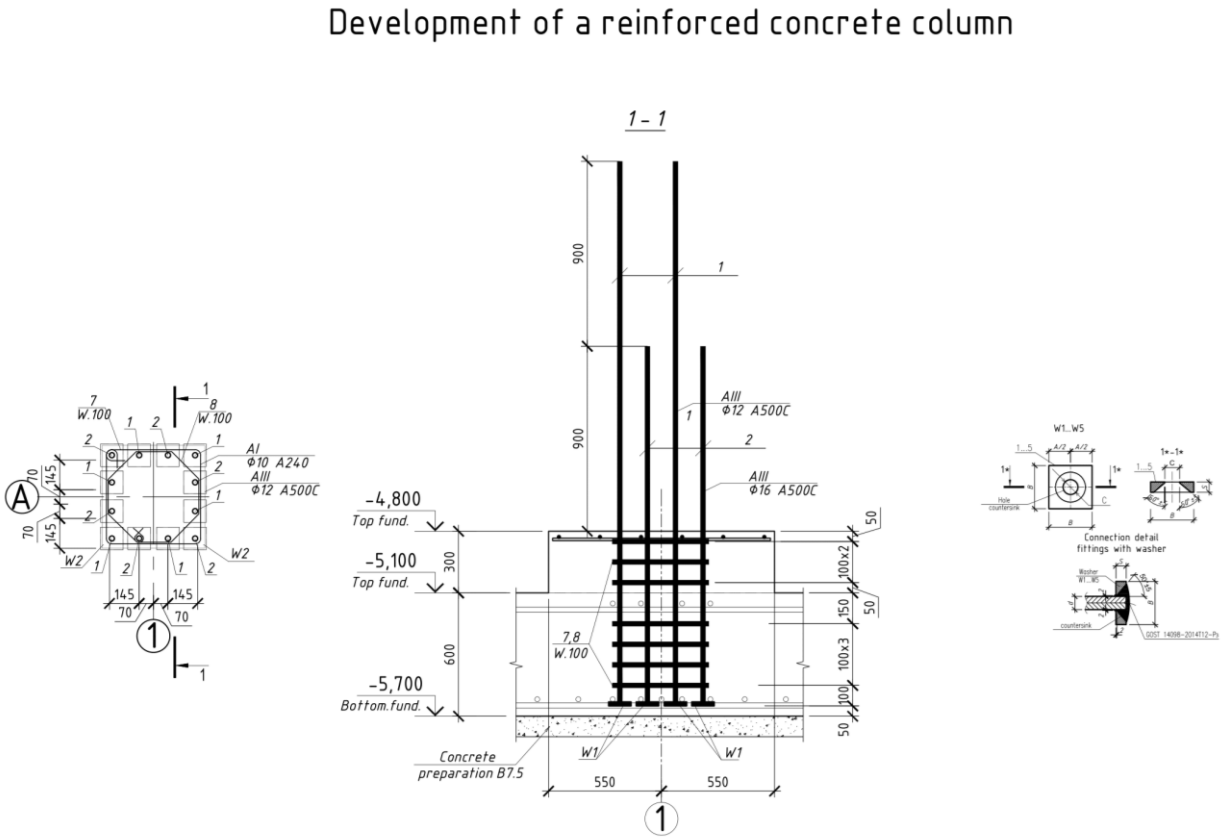


Figure 56 - Colum Details callout (Source: Author's drawing)

Reinforced concrete column uses reinforcement
class A-III and class A-I, concrete B7.5.
Class A-III fittings with a diameter of 16 and 12 mm are used.
Class A-I fittings with a diameter of 10 mm are used.
Reinforcement looks like steel wire.

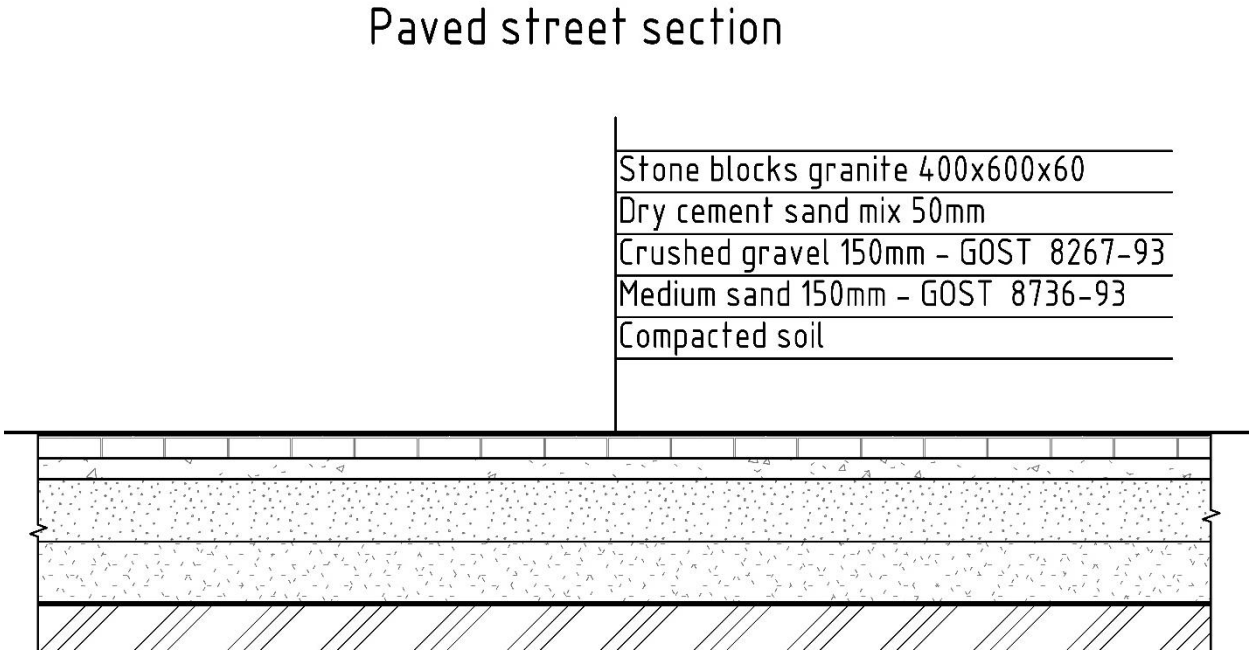


Figure 57 – Paved street callout (Source: Author's drawing)

Conclusion

In order to improve the well-being of the people, it is planned to reduce the street segregation like removing any curbs from street to make single surface, in order to make it easy for pedestrians to pass through, and implanting the large number of small commercial and recreational infrastructures. Architects and builders will have to change the appearance of our cities and villages, create a full-fledged living environment, in which conditions will be provided for the all-round development of the individual. But the network within the cities nowadays are mostly mono-functional it means just car used paths, it might be done in to other ways also, for example the part of streets in front or near to a public building should be more pedestrian use then car use and there should be safe during the night time. The typical form of city's street in front of public building or a public space decrease the attractiveness of that place and it will remain the area an empty place with no interest in there, as well has a negative effective on large and small economic activities, like small numbers of visitor = small numbers of business activities.
we will improve the basic fundaments of our socio-economic, If we use the potentials of every public spaces in a correct way, it means that public space as an eye catching part of the city attract the people, by gathering people there will be opened a space of communication in which people can discuss different issues and beside this there also will be an economic activities like small shops, restaurants, and etc.

In my graduation project, I wanted to pay attention to architecture for a well-being of the city, that is used to be for people at first, but nowadays with and old typical solution of city transport networking we lost the benefit of our most public spaces. In order to use the potential of public space, I thought that we need to re-think about our old solution and should find the new way to solve our cities 'transport network problems.

While working on the graduation project " Space of Satbayev University as an object of architectural art - a conceptual project ", all the sections necessary to start designing were analyzed; a search and selection of analogues for each component of the project was carried out, taking into account the recommendations identified during the analysis, and then the design was started based on all the collected data. The goals set and declared at the initial stage were achieved.
The organization, on the territory of the Satbayev university, meets modern requirements and rules.

List of used literature

1. “The Death and Life of Great American Cities”- Jane Jacobs. New York: Random House, 1961

2. “Architects` Data (Fourth Edition)” - Ernst Neufert. USA: CBS Publishers & Distributors Pvt. Ltd., 2012

3. “The Image of the City” - Kevin Lynch. USA: The MIT Press, 1960

4. SNiP RK 2.03-30-2006 "Construction in seismic areas"

5. Climatic analysis of the Republic of Kazakhstan and adjacent areas. Proceedings of the Hydrometeorological Center of Russia, 2001.

6. “Cities for People" Jan Gehl. USA. Island Press, 2010

7. “Modern architecture" - Kenneth Frampton- USA. Thames & Hudson, 2007.

8. “Exhibition Road" – Fan xu - Cardif University. School of Geography and planning, 2017.

9. SNiP RK 3.02-07-2014 public buildings and structures

10. https://globaldesigningcities.org/publication/global-street-design-guide/streets/shared-streets/

11. https://www.archdaily.com/968654/urban-redevelopment-of-marechal-deodoro-square-sotero-arquitetos?ad_source=search&ad_medium=projects_tab

12. https://news.myseldon.com/ru/news/index/237687048

13. https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,almaty,Kazakhstan

14. https://satbayev.university/en/mass-media