



WELLNESS AND BETTER LIFE

Lohja wellness and healthcare center supported by a spa hotel

Wei Qian

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School of Architecture

Master's thesis

Examiner: Professor Ilmari lahdelma

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ABSTRACT

Master's of Science Degree Program in School of Architecture

Author: Wei Qian

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Lohja wellness and healthcare center supported by a spa hotel

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Key words: Building design, Healthcare center, Spa hotel, Conference center, Wellness resort

With the rise of global tourism industry, the number of Chinese tourists travel outbound for various purposes has a great increase, aiming at the huge market resulting therefrom, a wellness resort project is brewing in Lohja with the support of local government. The thesis is based on this real project.

The primary aim of this project is to develop a wellness resort which consists of three main sections, they are respectively Wellness and healthcare center, Villa area and Cancer rehabilitation center. The healthcare center is situated in the center of the resort, the villa area and the cancer rehabilitation center are distributed around it.

This master thesis mainly explores the solution for the Wellness and healthcare center of the resort, which is not a traditional type of healthcare center. As a multi-functional building, it combines functions of medical treatment, spa hotel, restaurant, recreation center, conference and training school. This thesis mainly focuses on dealing with relations of different functional zones, how do they function themselves, co-relate and coordinate to each other; besides, organizing fluent and effective visiting flow for multiple target groups; meanwhile, exploring the possibilities and attractiveness of the new type hospitality building, attempting to create a fabulous experience atmosphere for users.

In the first place, the author would be discussing general information about the project, the introduction will expose the location, origin of the project, the intention and target of the project.

Further, this thesis would be organized, based on my personal design process, starting from analyzing the situation of the site and challenges steamed from the building design tasks, guiding readers to learn the project comprehensively.

In the end, this thesis would elaborate the final design through floor plans, sections, perspectives to present my thinking and studies for an ideal solution for the late-model Wellness and healthcare center.

PREFACE

On the summer of 2018, a call of searching for Chinese architects for a Finland vacation resort caused my attention, by contacting the person in charge of the project, I gradually realized the specialty and novelty of the project, it kindled my interest quickly.

Since I'm already employed at that time, I didn't join their architect group, instead, I worked as an assessor to assist some of their works with my working experience in Finland. The resort project went slightly slow, when I started my thesis for the Wellness and healthcare center, the project only progressed to the planning stage of the villa area. Slow project progress is one of the reasons that prompted this thesis. I had most interest in the main building of the resort - the Wellness and healthcare center at that time, but it seemed it would still take more time to turn to it, therefore, I decided to start to think and study it by myself in advance, and I also believed that it must be a topic that worth exploring as the first hybrid hospitality building that combines multi functions in Finland.

It was my first time to design this kind of building, when processing, I couldn't just imitate the custom of designing hospital, hotel or conference center, I should study a way to coordinate those different functions, meanwhile, try to solve other problems. Here I would like to express my thankfulness to my supervisor Prof. Ilmari Lahdelma for his kindly guidance and help during my thesis process. Besides, I would also like to say thanks to the project group of Intercol Oy, who helped me in collecting data and materials of the site and their fully cooperation.

Finally, I hope you enjoy your reading.

Wei Qian

Tampere, July 2019



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ACKNOWLEDGES



Figure 1 Lake view, Lohja city

According to a research report, the global health and wellness tourism market has reached to the market size of 4.2 trillion US dollars in 2017.¹ Also, from the research, at the end of 2016, around half a million Chinese citizens have left their country to seek a better medical experience overseas.² Health and wellness tourism have been a prevailed business over the world, however, comparing to other European countries, there are far less wellness resort in Nordic countries, which is incompatible to the high-quality natural environment in Nordic countries. The health and wellness tourism industry in Nordic countries has great potential to be developed. Based on this situation, Intercol Oy and Lohja government had a mutual interest to develop a wellness resort to support the local tourism industry.

The target clients are Chinese high-ending customers who are cancer patients, who have family history of cancer and other genetic disease and who expect a chance to experience new ideas, techniques and methods of being healthy. Out of the consideration of reducing the potential misunderstandings caused by culture difference, the project managers of Lohja project from Intercol Oy invited me and other chinese architects to propose some ideas for the resort. The basic concept of the resort is to develop three main sections, they are respectively Wellness and healthcare center, Villa area and cancer Rehabilitation center. As I started to study the project, the deeper I got into this project, the more interest I gained in the main building of the resort- Wellness and healthcare center, finally I decided to deliver an ideal solution for it and chose it as my master thesis.

Working on this project, there are some questions regarding to architectural design were considered. Firstly, the traffic relation to the other resort parts, that is, the connection from healthcare center to villas area, cancer rehabilitation center and city main roads. Secondly, the Lohja healthcare center is not a traditional type healthcare center, it is a multi-functional center, which includes the functions of medical treatment, spa hotel, restaurant, recreation and conference and training center. Hence, it is great important to deal with the arrangement of different function spaces to make it comfortable and fluent. Thirdly, how to cater different target user groups' psychological needs by designing different atmosphere spaces. While trying to solve these problems, I was attempting to explore the potential and attractiveness of this kind late-model hospitality building.

This thesis provides a brief picture of the Lohja wellness resort project, forms the process of studies of healthcare center building and presents a final design solution for it.

1 Beth McGroarty, *Wellness Now a \$4.2 Trillion Global Industry – with 12.8% Growth from 2015-2017*. <https://globalwellnessinstitute.org/press-room/press-releases/wellness-now-a-4-2-trillion-global-industry/>

2 Daxue Consulting, *The Rapid Growth of Outbound Chinese Medical Tourism*. <https://daxueconsulting.com/rapid-growth-outbound-chinese-medical-tourism/>



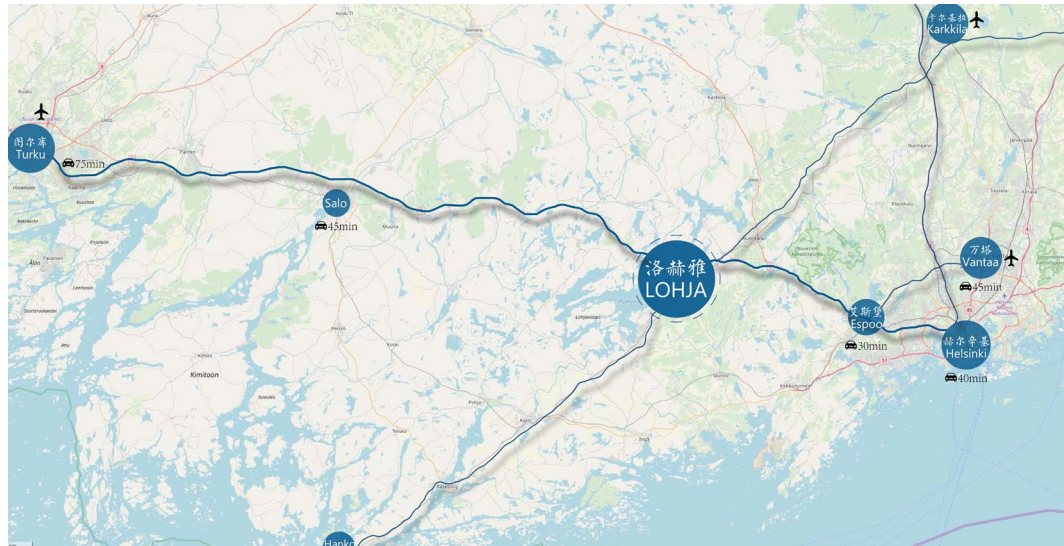


Figure 2 Distance map



Figure 3 Lohja city

CITY OF THE WELLNESS RESORT PROJECT: LOHJA, FINLAND

The city of Lohja, with a population of 50,000, is located on the shores of Lohja Lake in southern Finland metropolitan area of Helsinki. It takes just 45 minutes from Helsinki and the Capital International Airport by car to Lohja. The 2-hour travel circle covers the 5 largest cities in Finland with nearly 70% of the population.

European Highway 18 and National Highway 25 pass through Lohja. Finland's first planned high-speed railway will build a new station in Lohja, which will bring new opportunities for the development of the city Lohja. Lohja is rich in tourism resources, 50 kilometers southwest of the world is the largest archipelago in the world.

The climate of Lohja is temperate maritime climate. From south to north, the average temperature in January is about -4--16 °C; the temperature in July is 16-13 °C. The annual precipitation is about 400-600 mm (one third is sputum and snow). Rich in water and minerals resources.³

³ Wikipedia, *Lohja*. <https://en.wikipedia.org/wiki/Lohja>

SITE OF WELLNESS RESORT PROJECT: PALONIEMI AREA, LOHJA

Paloniemi is located about 3-4 km northwest of the center of Lohja. City plans for the Paloniemi area will be drawn up in several stages, in accordance with the planned order of implementation of the area in the current Paloniemi sub-plan.

The I-phase plan (L50) is located in the east-west direction to the central part of Paloniemi and extends from Karstuntie to Lohjanjärvi. The design area has a beach area, an agricultural area and a wooded area. In addition, there are, among others, Paloniemi Beach, Hirmuholma, Paloniemi Hospital Area with Buildings and Area of Kartanonmäki Retirement Home. The area covers an area of about 57 hectares and is mainly owned by the city.

After the start-up phase of the L50 city plan, the city plan goals have been updated and the cropping has been changed. The main goal of the station plan is, for example: develops the area in accordance with the current design reserve for the year-round use of holiday, tourist center and wellness center.

The L50 Paloniemi I station plan is an ongoing city plan in accordance with the Lohja City Planning Program, which will be continued.⁴



Figure 4 Urban plan of Paloniemi, planning architects: Iris Koivula



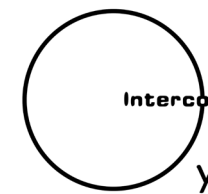
Figure 5 Paloniemi's sandy beach is an unknown secret of all the Lohja people

CONCLUSION

Lohja is a medium-sized Finnish city between Helsinki's fast-paced and rural tranquility, which gives it the advantage of convenient transportation and preserved original natural scenery. According to the urban planning of the paloniemi area, we can piece together the impression of paloniemi, a place with lakes, beaches, hillsides and woods that maintains the traditional Finnish nature. It is the best experience site for overseas visitors. The site is also a ideal place for recreation and rehabilitation. How to maximize the advantages of the paloniemi area is a subject that must be studied during the project.

⁴ Lohja Järvikaupunki, *L50 Paloniemi I*. <https://www.lohja.fi/asuminen-ja-ymparisto/kaupunkisuunnittelu-ja-kaavoitus/vireilla-olevat-kaavat-ja-suunnitelmat/l50/>

BACKGROUND OF THE RESORT PROJECT



Lohja Wellness Resort project is conducted by Intercol Oy. Finland Intercol Ltd. is located in Helsinki, Finland. Under the leadership of Dr. Xu Baizhuang, the company is committed to the development of the Finnish health and wellness tourism industry, focusing on strengthening the exchanges and cooperation between China and Europe, medical science and health care between China and Europe.

Xu Baizhuang, the leader of Intercol Oy, has education background of medical and public health, during his 20 years experience on business in Finland, he gradually realized the great potential of health and wellness tourism industry in Finland. Before the Lohja Wellness Resort project, there was no any similar program ever implemented in Finland, health and wellness tourism industry is still a blank in Finland. On 2018, Mr Xu led the formation of the financial advisory team, the marketing team, the architectural design and construction team and the trade management team to inaugurate the Lohja Wellness Resort project.

City of Lohja has positioned health and wellness as a brand and goal of its urban development, and Lohja Wellness Resort project has been prioritized in the economic development plan of the city. In June 2018, Lohja Mayor Mika Sivula signed a letter of strategic cooperation between the city of Lohja and Intercol Co., Ltd., intending to invest in and support the resort's regional infrastructure and surrounding environmental transformation. In 2018, the two mayors Mika and Pekka had periodical meetings with project financial advisors, representatives of fund companies and investors of the project. Jointly to explore and develop cooperation plans to promote the health and wellness tourism industry in Lohja and even in Finland. At the same time, the nursing department of Laurea University of Applied Sciences trains advanced nursing talents from China through careful selections and will provide the resort with a pool of advanced nursing talents who understand Chinese. Kiskallio Sports Academy will also cooperate with China in many aspects and will bring more cooperation prospects to Lohja Wellness Resort project.

INTRODUCTION OF THE PROJECT

In February 2018 it was reported how the city of Lohja and Intercol Oy made deals on hospital properties in the Paloniemi area. Intercol Oy bought a Paloniemi hospital, a department of 4 buildings and a terraced yard with a total of 650,000 euros from Lohja, Vihti and Siuntio. In addition, the city sold the Kartanomäe property for EUR 250,000. The hospital properties will first be transferred to Intercol Oy for rent. Once the city plan becomes final, the final real estate transactions can be made. The entrepreneurs behind the Paloniemi holiday village are Kai Wahlberg, Bai Zhuang Xu and Ari Kuittinen of Intercol Oy.

"The Paloniemi area will be a major and extensive project on the southern scale, which will significantly increase the visibility of the city. Another plenty of holiday homes, spas, hotels and restaurants, as well as various wellness facilities offered in the area, increase Lohja's tourist attraction both nationally and internationally. We are excited to take the project forward with Intercol."

- Pekka Puistosalo, vice president of vitality.⁵



Figure 6 Site plan map by Interco Oy

There are 80 holiday homes in Paloniemi. The key target group would be very wealthy Chinese customers. In the 55-hectare site plan, the focus of land use is on tourism, ie the holiday village and other tourist activities. The smallest apartments would be 50 and 60 square meters, but other demanding types like 80-, even 100-square-meter apartments are also offered. The former hospital building will be the home to a wellness center that includes a hotel spa and restaurants.

"The building will be a four-storey building with wellness facilities downstairs. The next floor is the restaurant floor and the two top floors are for hotel accommodation. There are rooms for 50-70. There are 80 luxury apartments in the area. Some of these holiday apartments are intended to be used for holiday use."

- Kai Wahlberg, Project manager of Intercol Oy⁶

Wahlberg pointed out that the wealthy Chinese people would be the top target group, the region will become very international. From 2017, the starting point for Intercol was to develop a year-round and international tourism and conference center in the surroundings of Paloniemi beach and hospital. Further away from the beach to the edge of the public street area would be the construction of a small apartment building.



Figure 7 This hospital building will see its last moments in the next few years.

^{5,6} Päätoimittaja, *Paloniemen tulevaisuus suuri kysymysmerkki*, 2018. <https://www.ykkoslohja.fi/paloniemen-tulevaisuus-suuri-kysymysmerkki/>



Figure 8 The global health and wellness tourism market has reached to the market size of \$4.2 trillion in 2017

Countries	Population (million)	Increasing rate on average, %
China	18.1	26.6
USA	12.6	4.1
Germany	8.3	7.9
India	6.0	8.8
France	4.9	9.0
Australia	4.0	26.7

Figure 9 The global medical tourism outbound data 2013-2016

INEVITABILITY AND NECESSITY OF THE WELLNESS RESORT IN FINLAND

According to reports, the number of outbound tourists in China reached 145 million in 2017, and travellers for medical tourism take a great proportion among it. These high networth client are sufficient to support a large market of 9.7 billion euros.⁶

In addition, comparison of amount of spa hotel in Northern Europe and other parts of Europe. (* Finland, Sweden, Norway, Denmark) Nordic health and wellness tourism is relatively lagging behind in other parts of Europe, with high quality in Northern Europe. The society and the natural environment are not compatible. Nordic has a strong market demand for health tourism and good prospects.

Based on the facts of such research, we can see the inevitability and necessity of the Lohja Wellness Resort, the Lohja Wellness Resort in Finland would be a comprehensive healthcare destination that integrates medical rehabilitation, health treatment and recreation programs. It will be the first health and wellness resort in Finland operated in a platform mode. It is a great important development strategy for Finland and Lohja government. This new one-stop service model of medical tourism will lead a new business model and a new healthy lifestyle, bringing better experience and rehabilitation to domestic and foreign consumers.

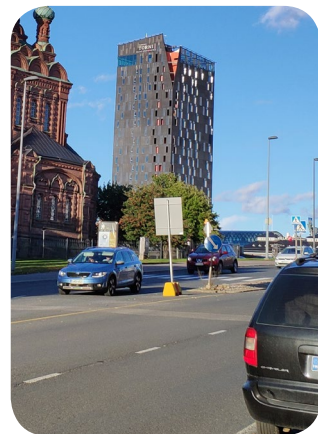
Countries	SPA Hotel/Resort
Nordic*	205
Switzerland	526
Austria	1535
Germany (Easten areas along sea only)	266

Figure 10 The amount of spa hotels in different countries

⁷ Daxue Consulting, *The Rapid Growth of Outbound Chinese Medical Tourism*. <https://daxueconsulting.com/rapid-growth-outbound-chinese-medical-tourism/>

To create a one-stop wellness tourism vacation destination in the southern Finland for "Healthy, Leisure, Wellness, Recreation and entertainment".

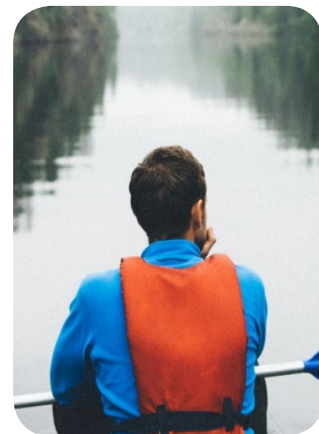
WELLNESS RESORT CONCEPT



TOURISM



LEISURE



HEALTH



SPORT



ENTERTAINMENT



The Wellnes Resort focuses on selecting Finland's best health and wellness programs to the resort and assisted with chinese traditional medicine treatment. Customers can experience the authentic traditional and modern Finnish sauna cultures, as well as sauna yoga. Visitors can also experience a good blending with its nature in the purest forests and lakes. The resort also has traditional Chinese medicine and wellness programs to meet the various needs of international tourists.

The resort will also provide visitors with beauty and anti-aging treatments including autologous serum. Finland has the world-class IVF technology and sound legal support and protection to its customers. Parents with IVF needs are welcome to come to Finland to give birth to their beloved baby.

The resort will also provide customers with health check-ups and disease screening services.

Finland ranks among the best in the world in terms of medical care and health care, a variety of cancer diseases treatments and the 5-year cancer survival rate in the world. The Cancer Rehabilitation Center is an independent functional section in the Lohja Wellness Resort. It not only is the first comprehensive professional cancer rehabilitation center in Europe, but also cooperates with the top medical hospitals in Finland to provide comprehensive services from screening, diagnosis and treatments to rehabilitation for cancer patients.

Lohja Wellness Resort and Cancer Rehabilitation Center apply a VIP system to its customers. For all the VIP members, they can come to Lohja for a relaxing holiday every year to experience the latest health and wellness programs. For VIP cancer patients, they can come to the medical rehabilitation center and get the best value and quality services. The resort's online health management system helps to track the lives and health of every customers.

The three main functional sections of Lohja Wellness Resort, Lohja Wellness and Healthcare Center, Cancer Rehabilitation Center, Medical and Health Communication Center, ensure the continued profitability and sustainability of the resort in many aspects. Intercol Oy is aiming to promote the exchanges between the Chinese and European medical and health care industry peers through the Lohja Resort and develop together.

ONE-STOP OPERATION MODE

Comprehensive wellness resort service center in southern Finlan.
-Health, Wellness, Leisure, Holiday, Entertainment

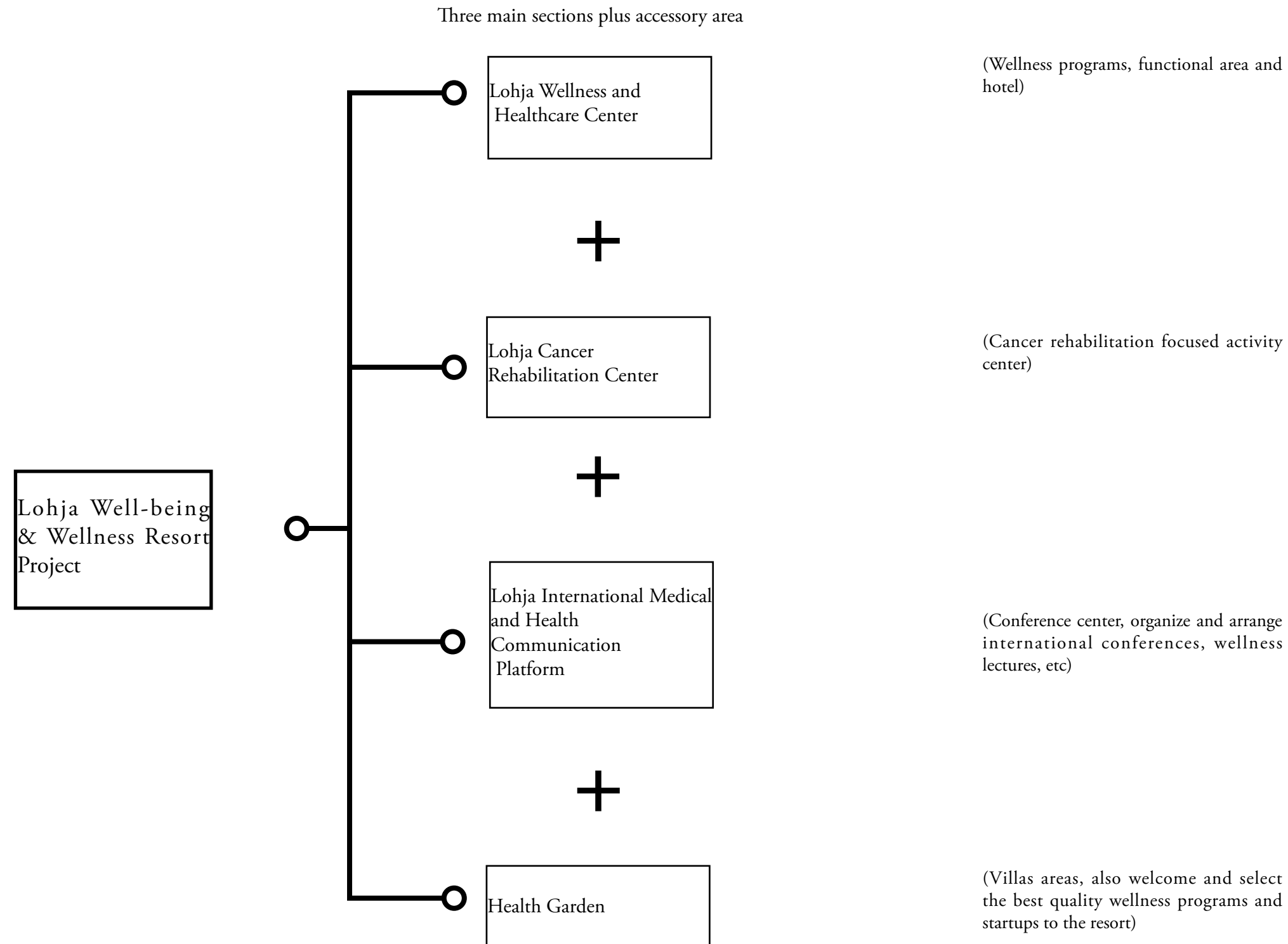


Figure 11

SITE PLANS FOR WELLNESS RESORT

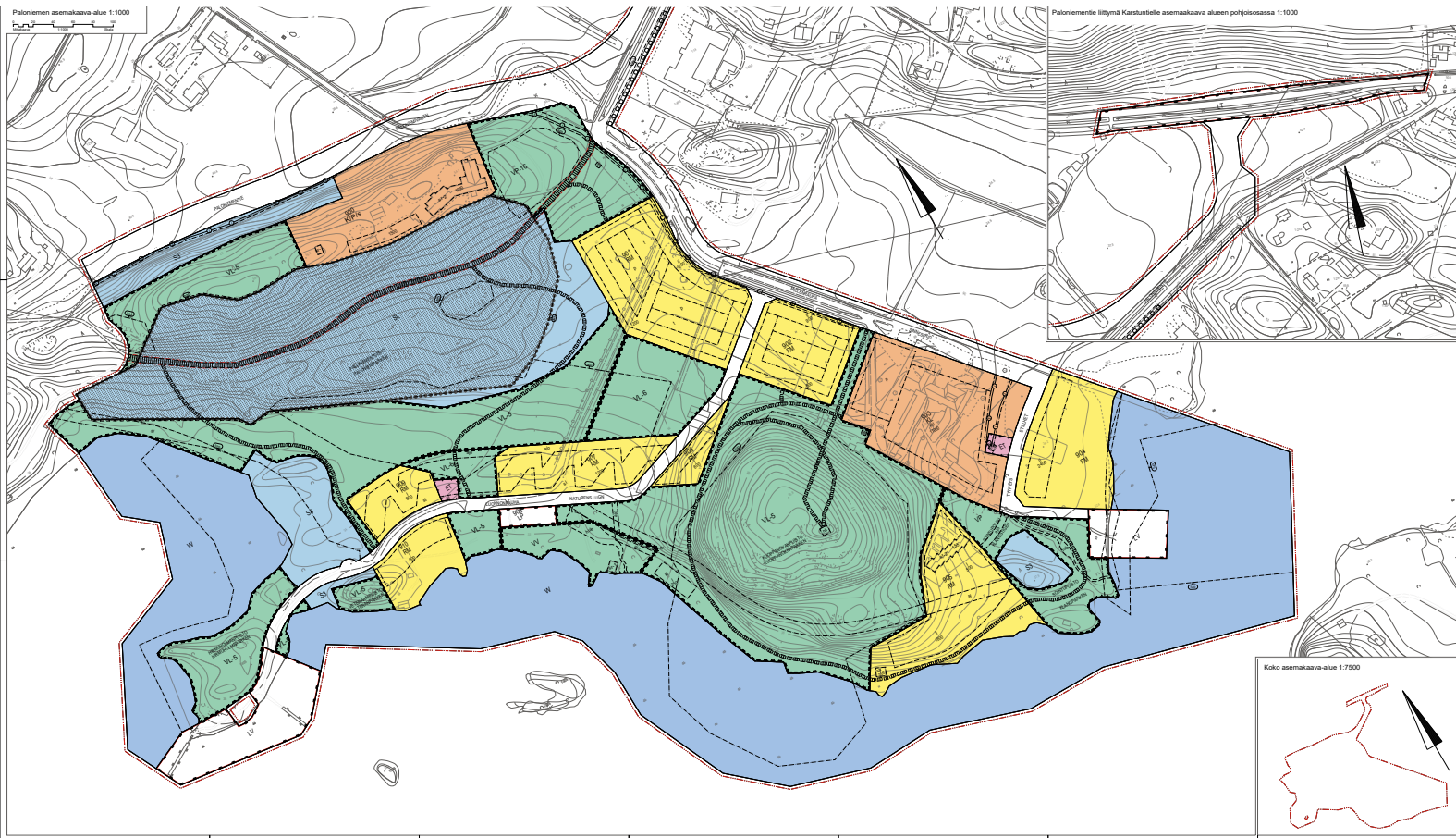


Figure 12 Urban plan of Paloniemi

K/P/s

Business and service building block area.

It is possible to build construction for hotels, accommodation, meetings, training and welfare services and premises for commercial services that support tourism. An area of culturally and historically valuable building stock and environment. The construction must take into account the cultural and historical value of the area, so that construction and location should be related to the existing building stock and environment, and that existing buildings and structures, roads, woods and other vegetation that are historically significant are preserved.

Parking spaces must be allocated 1ap / 100k-m².

KL

Business Building Block Area.

It is possible to build premises for hotels, accommodation, meetings, training and welfare services and premises for commercial services that support tourism.

Parking spaces must be allocated 1ap / 100k-m².



Parkland



A park whose cultural and historical values are preserved.



Middle park.



Beach area.



Area where playgrounds can be placed.



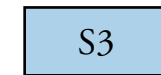
The building block of the tourist buildings.

Buildings for small and row houses and connected holiday homes can be built in the area.

Parking spaces are required for 1 ap/ apartment.



Areas of buildings and installations serving municipal maintenance.



Reserved area.



The nature reserved area.



Territorial waters

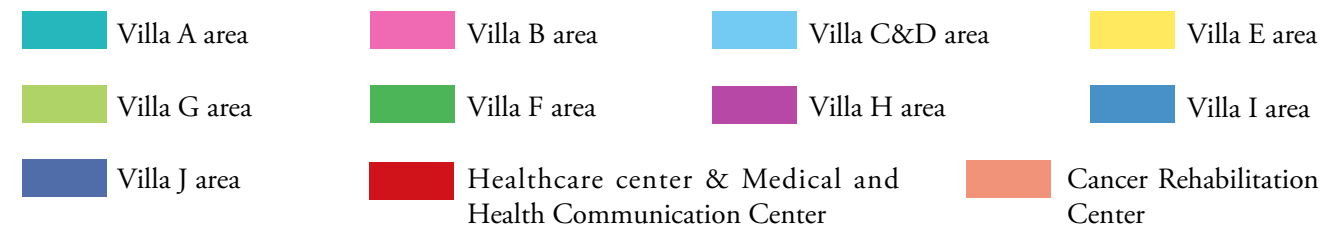
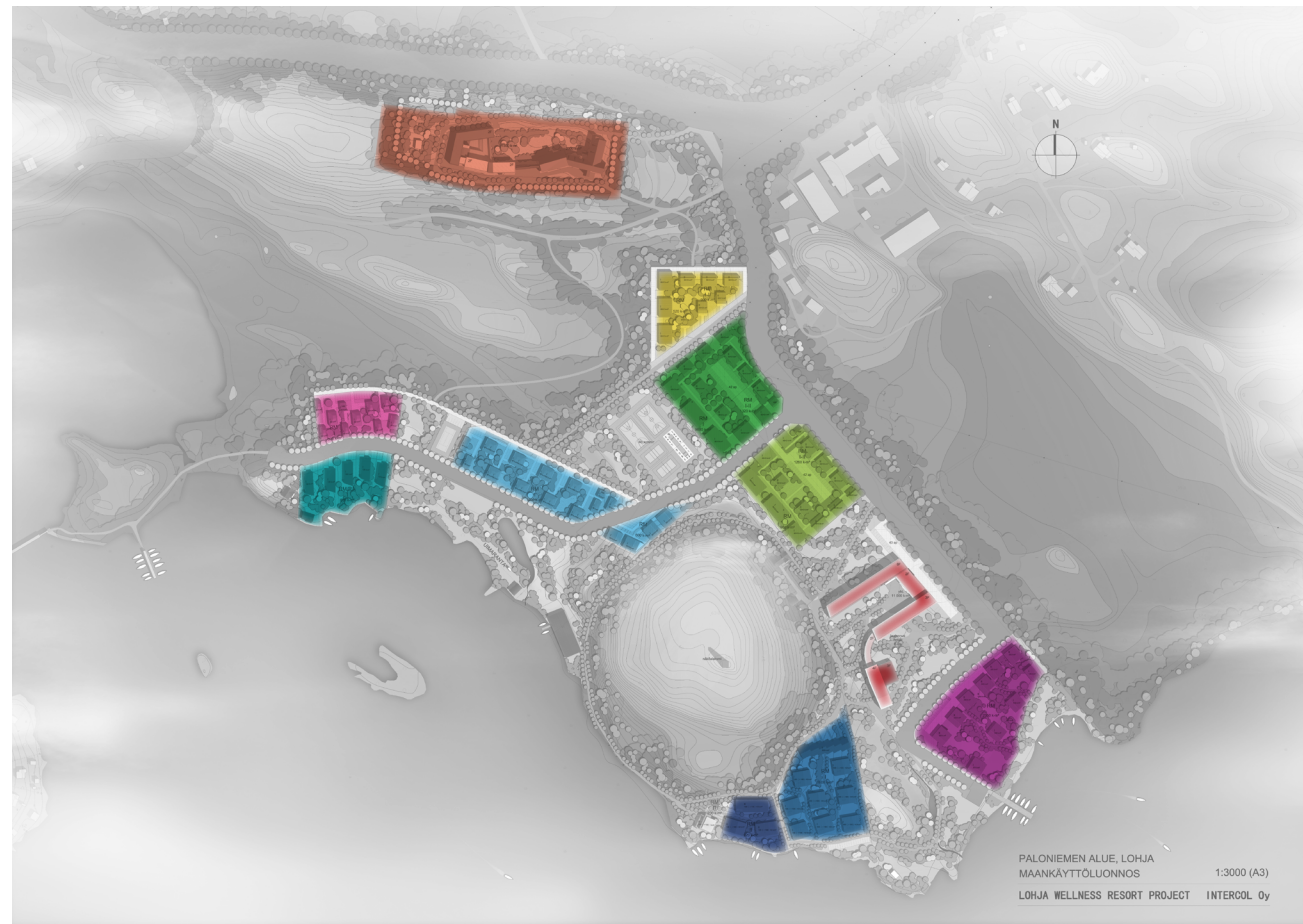
DEFINING THE LOCATION FOR HEALTHCARE CENTER, MEDICAL AND HEALTH COMMUNICATION CENTER

After determination of the basic concept of Wellness Resort project, we architects group started to organize different functional spaces to appropriate places. Going through the urban plan of Paloniemi area, we found only the K/P/s and KL blocks could be used for constructing public buildings, so that we decided to place sections of Lohja Wellness and Healthcare Center, Cancer Rehabilitation Center, and Medical and Health Communication Center there, then to place villas buildings and other accessory services in RM blocks, with trying to respect reserved areas as much as possible.

By analysing the function of three main sections buildings, the Cancer Rehabilitation Center needs relative quiet and peaceful environment. Considering the infectiousness of some disease, it's also wise to separate it from dense habitat area, therefore, we finally agreed to put the Cancer Rehabilitation Center to the K/P/s block, which is in a edge of project site comparing to KL block.

Containing main services and functions, the Wellness and Healthcare Center undoubtedly should be situated a relative central place of the resort, Block KL satisfies it's need. Owing to the limited public-used area in zoning plan, the Medical and health Communication Center finally was planned to be located in the same block of the Wellness and Healthcare Center.

AREA DISTRIBUTION FORMAT



UNIT DISTRIBUTION

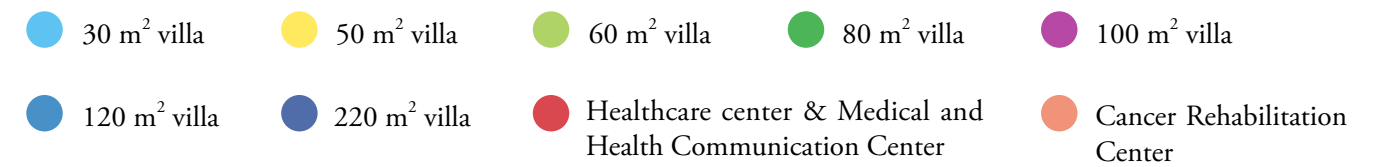
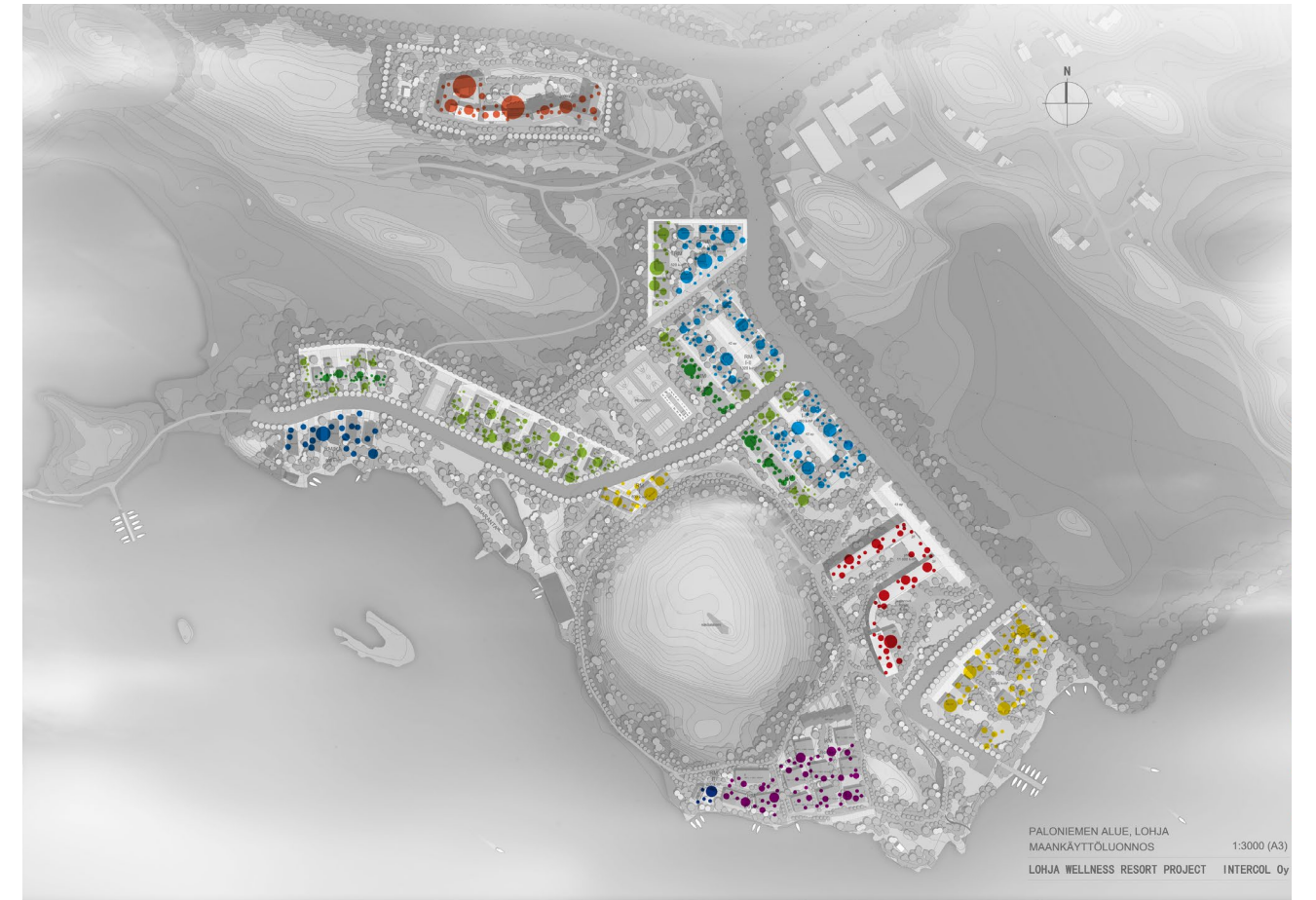




Figure 13 Intention site plan at investment attracting phase by Intercol Oy



Figure 14 Wellness Resort intention aerial view perspective by Intercol Oy



Figure 15 Wellness Resort intention Southwest view perspective by Intercol Oy



3

WELLNESS AND HEALTHCARE CENTER

THE OLD PALONIEMI HOSPITAL SITE

-Where the new healthcare center will be

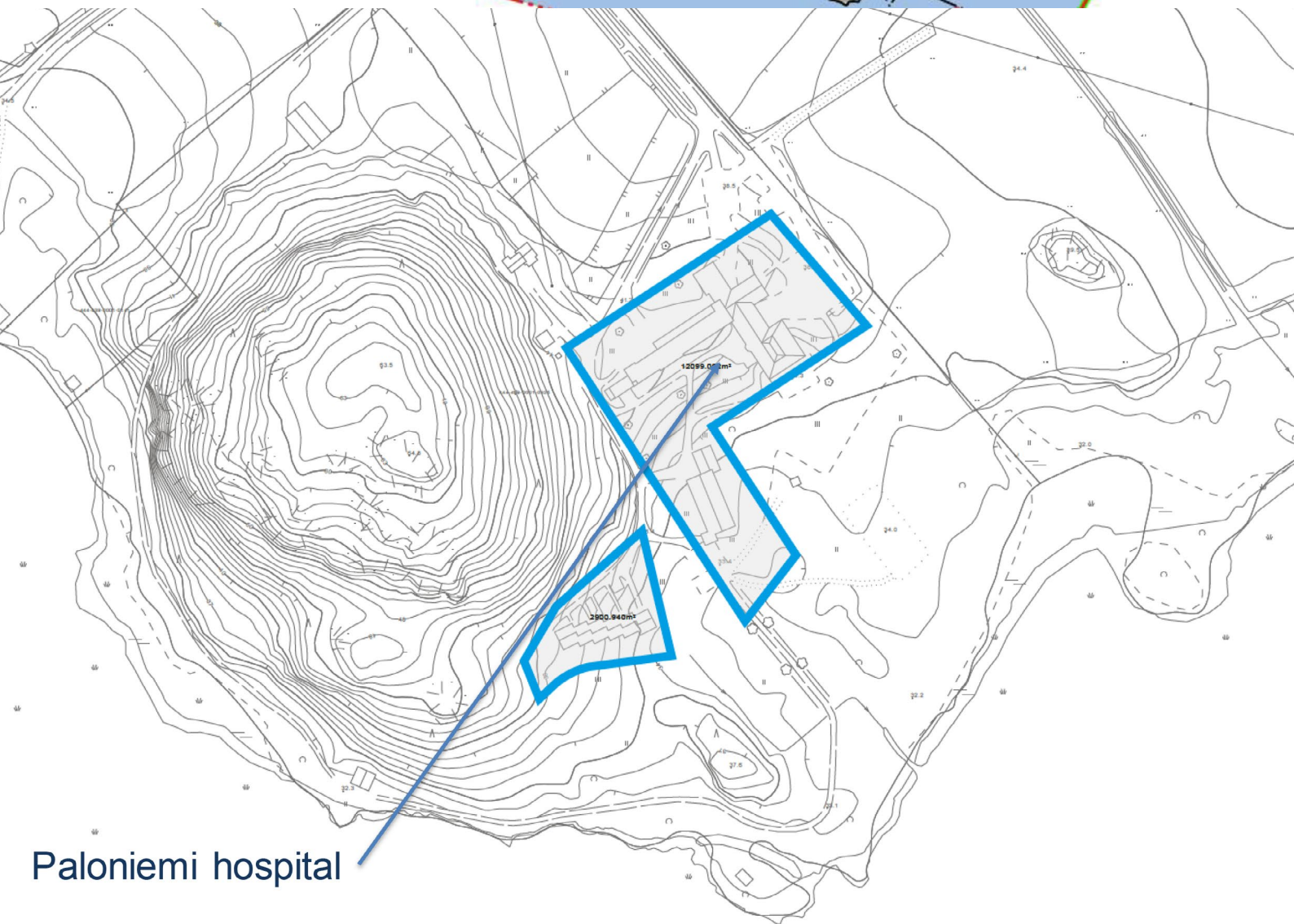
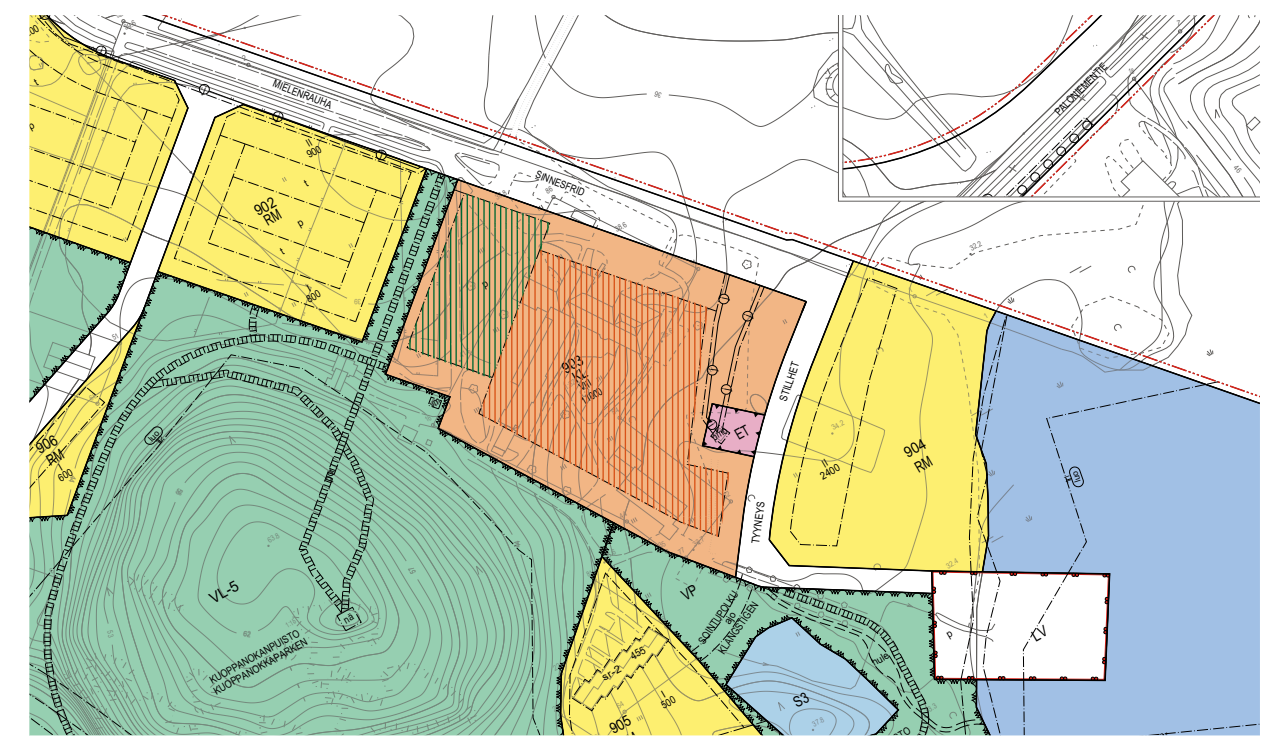
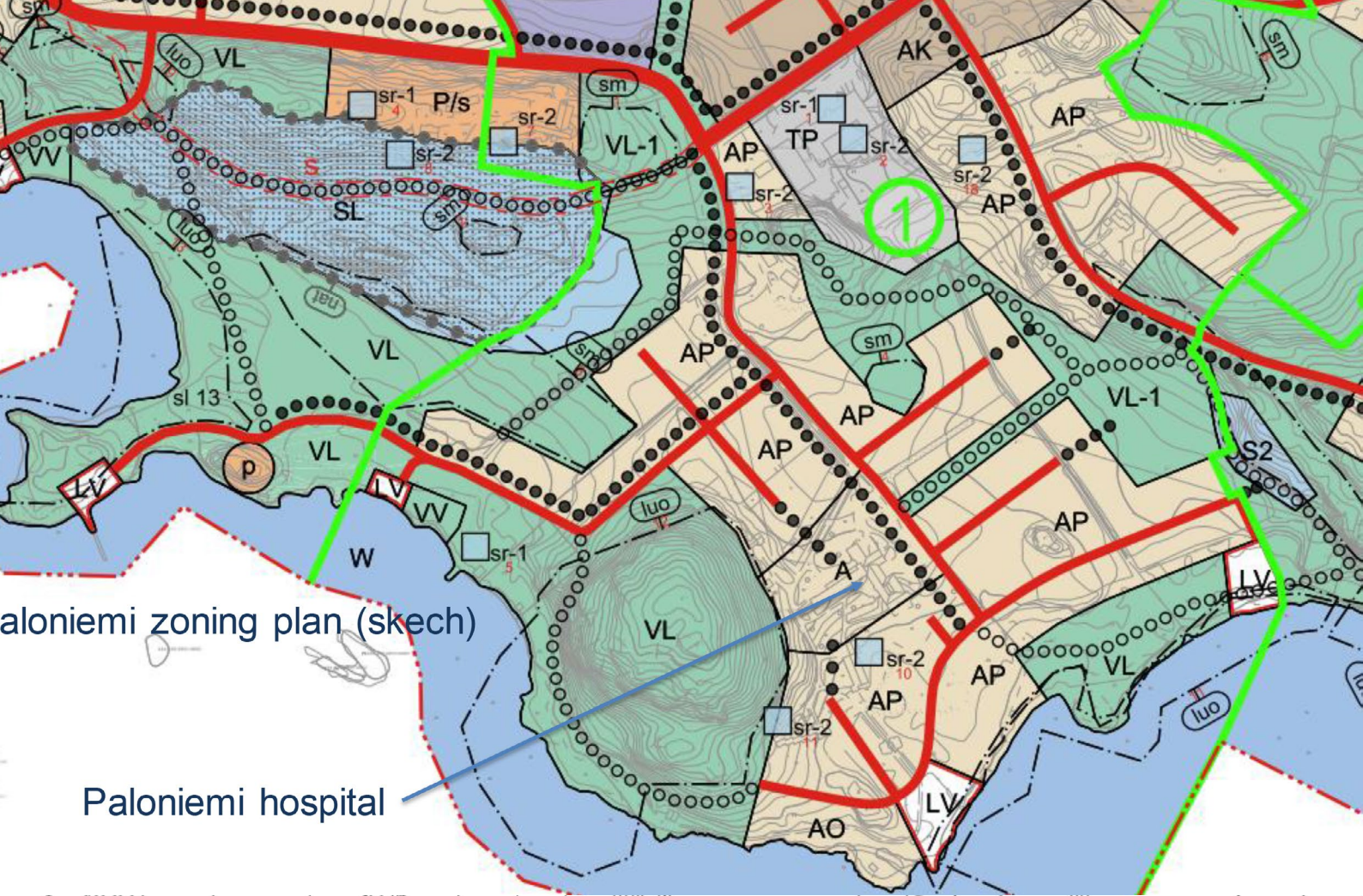



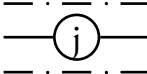


We project architects group visited the old paloniemi hospital area on the summer of 2018. The old paloniemi hospital area is a peaceful place with graceful landscape, it's apparently a undeveloped land, the terrain, vegetation, trails, all objects keep their raw appearance. It is a place where you would easily feel being close to the nature.

The Paloniemi hospital was constructed in 90's, it was actually a elderly health care center at that time. When we approached it, we were suprised at the good condition it is in. Both exterior and interior components function well, indoor enviroment keeps clean, the spatial layout of the interior is still clear, I and other architects all were positive about the possible renovation and tranformation works in it.

The first thinking by Intercol is to convert the old paloniemi hospital to new healthcare center, to keep the original frame and structure and to arrange new space distribution , although it might limit some ideas and innovation, it's still a feasible plan. However, After the calculation of the technical staff, the spend budget for demolishing and rebuilding is only 10% more than the reconstruction. After deliberation, the project manegers decided to choose the plan of demolishing it and to construct a new building.

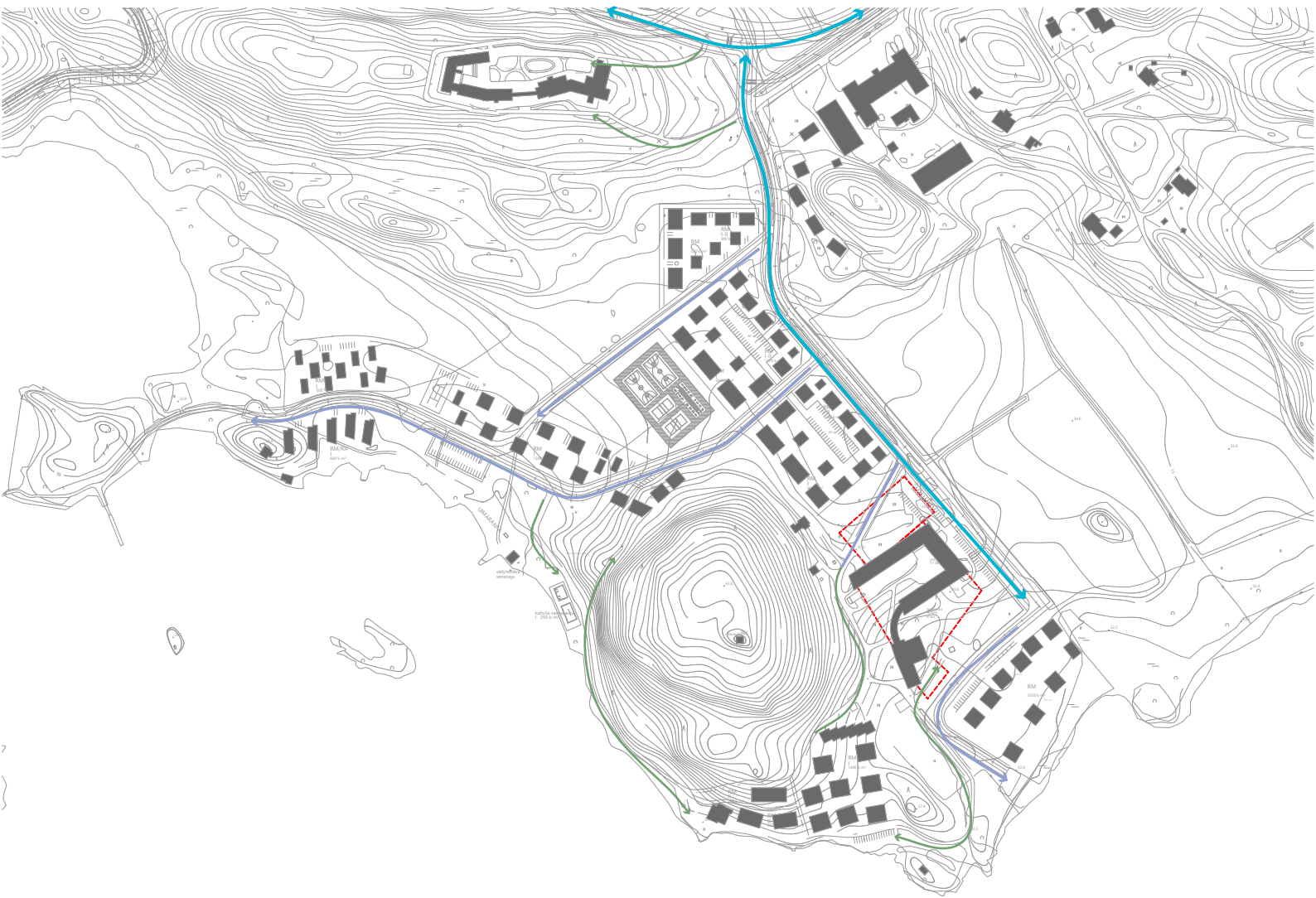




-  **ET** Areas of buildings and installations serving municipal maintenance.
-  **j** Area reserved for management.
-  **P** Parking place
-  **KL** Area for constructing public building.

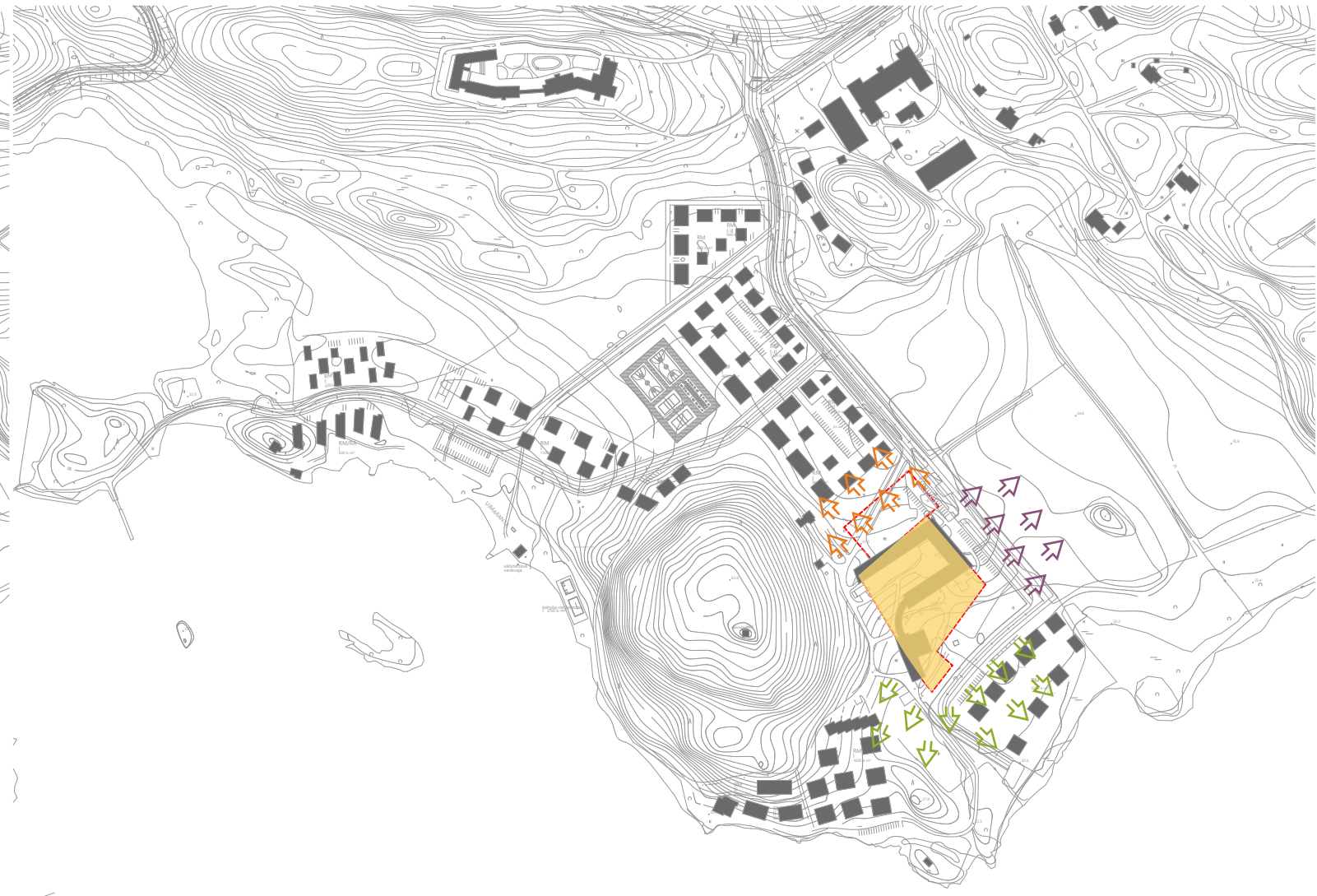
Following the urban plan of Ploniemi, the old paloniemi hospital area can be divided as three parts- parking space, building area and area for management service. By deciding the parking and building spaces, next stage is to consider about the entrance of the site and to manage the access routes in the site. Besides, the problem of height difference in the site should be particularly taken care of as well.

SITE ANALYSIS



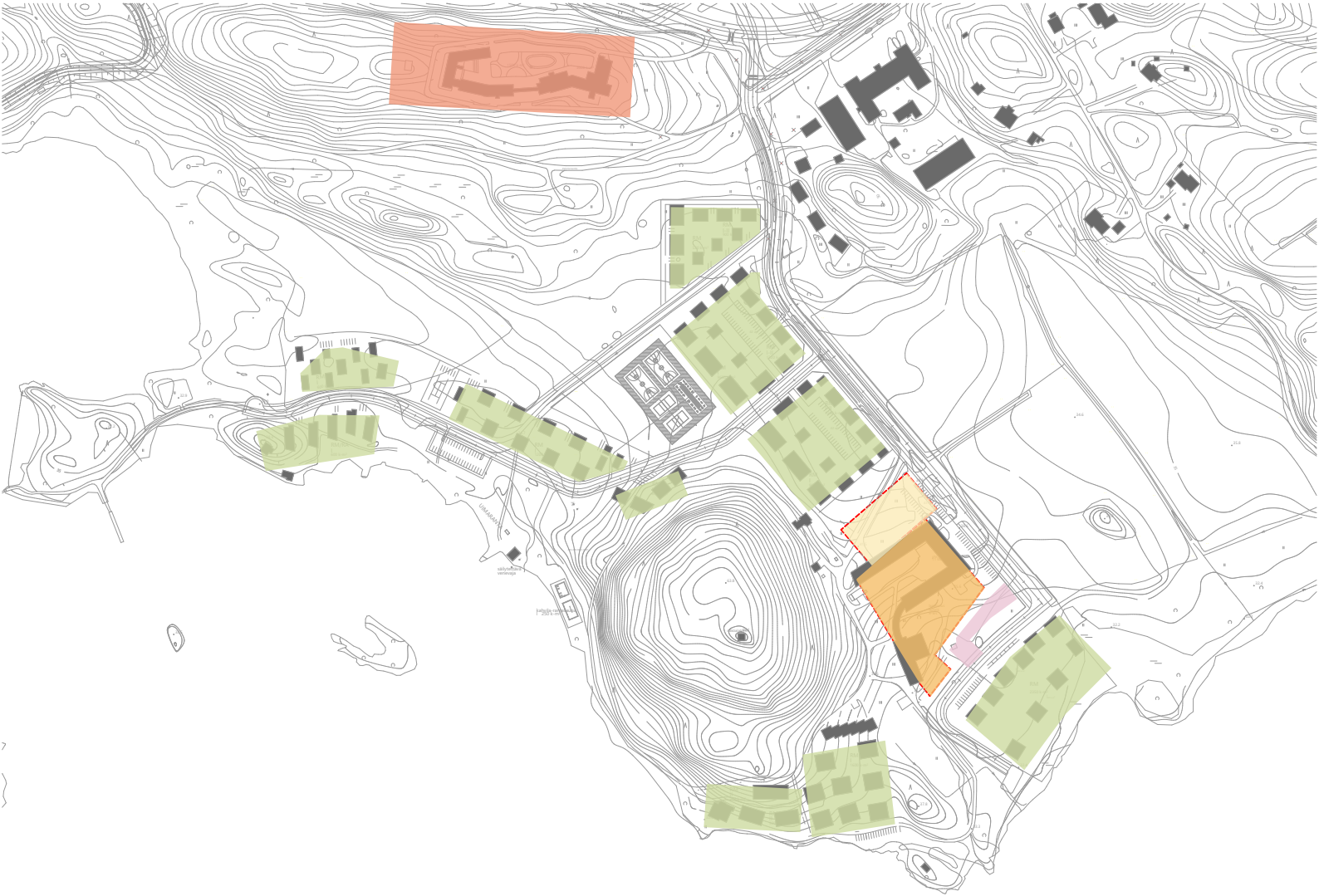
- City main road/ For car
- City semi-road/ For car and bicycle
- Pedestrian roads






SITE ANALYSIS



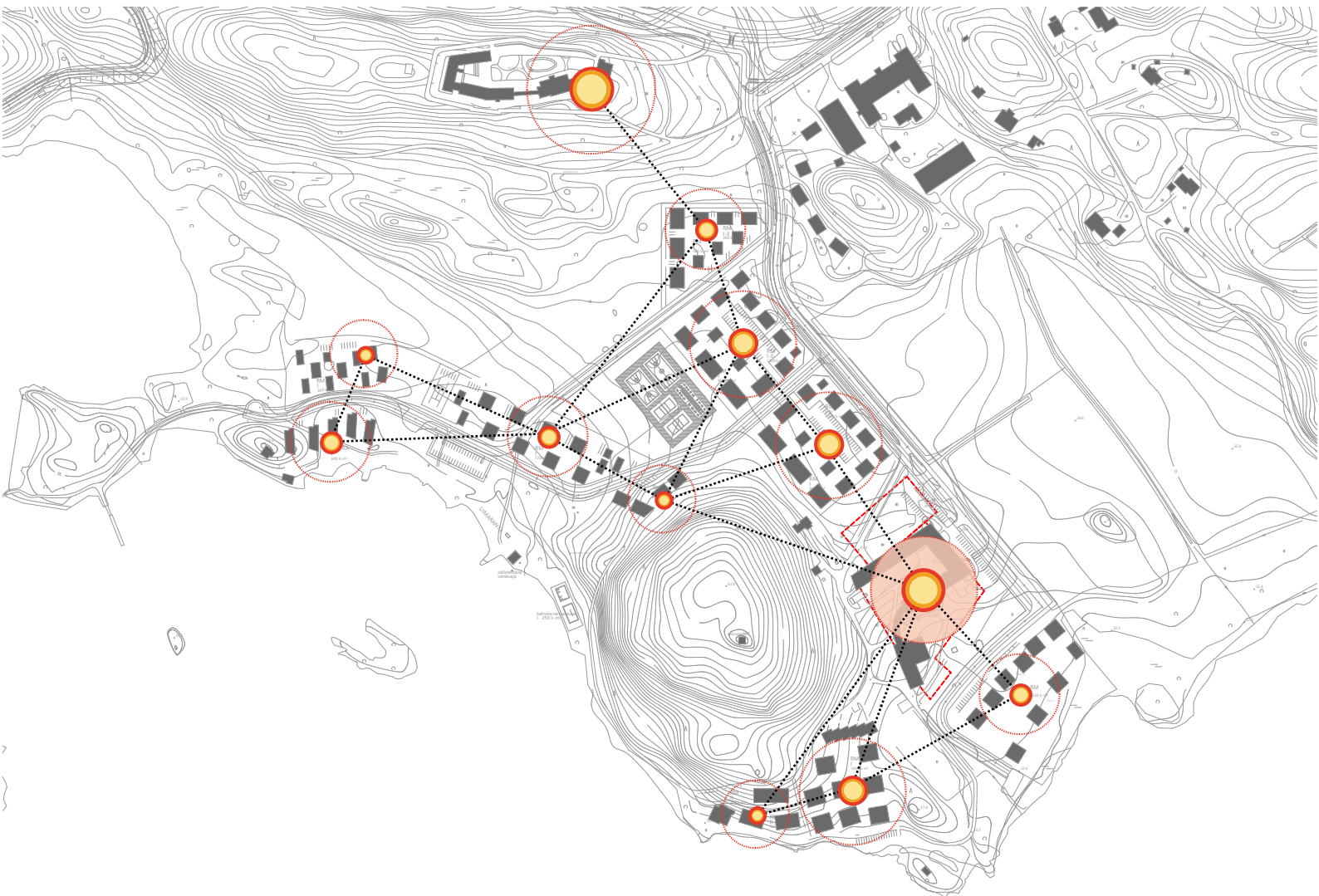
- ↘ Lake view
- ↘ Noise source
- ↘ Residence side

SITE ANALYSIS



-  Cancer Rehabilitation center
-  Villas area
-  Parking lot
-  Wellness and Healthcare Center
-  Maintenance area

SITE ANALYSIS

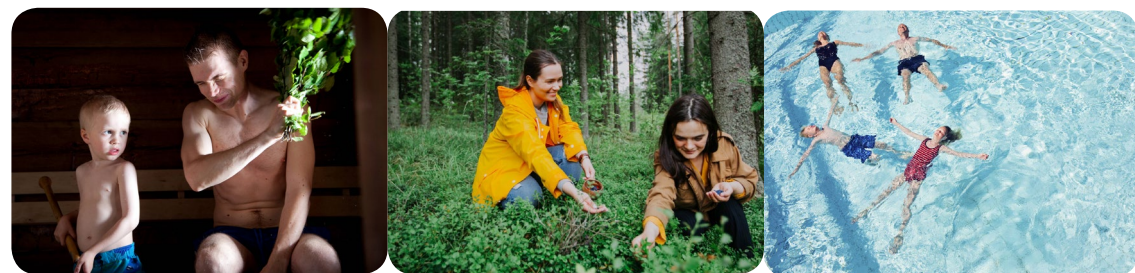


..... Connections between each sections

-PRODUCTS AND SERVICES

Finish traditional health program:

Finnish traditional sauna, modern sauna, suana yoga, water health care, dietitian, Baltic Amber essential oil massage



Chinese medicine health and wellness project:

Reflexology, body massage, scraping, moxibustion, acupuncture



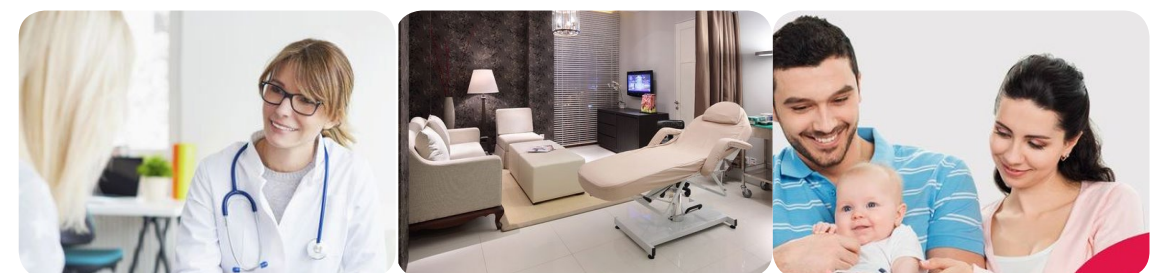
Beauty anti-aging:

Autologous serum beauty, wrinkle care, anti-aging care



Health medicine:

Health checkup, test-tube baby technology.



Rehabilitation of tumors and some major diseases:

Screening, diagnosis, treatment, rehabilitation



Hotel services:

Family rooms varying from multiple types, restaurant, pub





MEDICAL AND HEALTH COMMUNICATION CENTER

Providing a platform for medicine and healthcare professional conference and forum, as well as talent training.



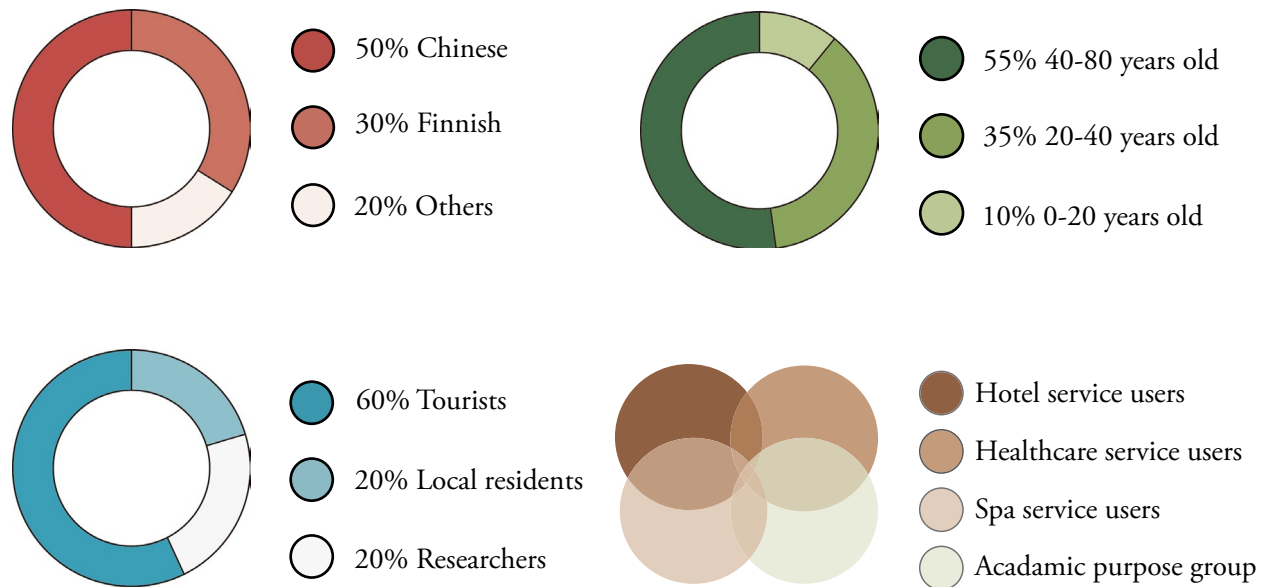
SPACE DISTRIBUTION TASK

ITEM	AREA m ²	REMARK
Hotel service		
Hotel lobby	150	
Assistance room	150	
2-bed rooms	2000	50 rooms of 30m ²
King-bed rooms	1000	15 rooms of 50m ²
Healthcare service		
Employee lounge	100	
Change room	50	
Storage and archive	100	
Inquiry rooms	200	
Examination room	200	
Laboratory	150	
Threapy area	600	
Preparation	100	
Swimming and sauna		
Reception	50	
Change room	100	
Swimming area	600	
Sauna area	200	
Spa area		
Spa rooms	250	
Change room	50	
Gym	150	
Children recreation area	100	
Conference center		
Auditorium	600	
Preparation	100	
Exibition hall	300	
Training area		
Lecture rooms	500	
Coference rooms	250	
Administration		
Kitchen and lounge	100	
Open office area	350	
Personal offices	150	
Meeting room	100	
Restaurant	750	
Pub	750	
Total	10250	

According to regulation of urban plan,
 Parking lot: 1ap / 100k-m²=101ap
 Greenery ratio: 35%

DESIGN CONCEPT

TARGET GROUPS

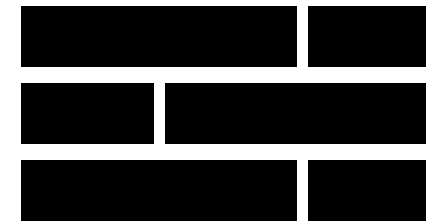


The new Wellness and Healthcare Center would be a platform where all ages group could experience new healthcare technologies and a new relaxing lifts type, it also provides the platform for professionals, researchers and students in related fields to communicate and cooperate. As a multi-function building, understanding precisely the target groups and how to satisfy them is highly important.

As previously analyzed in this article, Chinese tourist would be the primary target group, among them, Chinese tourists mainly visit the Center for experience purpose, might for beauty purpose, relaxation, entertainment or medical treatment. For Finnish, no matter the local residents or traveler from other cities, it's a place for vacation and recreation. For both Chinese and Finnish, hotel service, healthcare service, spa and other recreation services would satisfy their needs of visiting the Lohja Wellness Resort. For the research group from all over the world, a relatively independent area should be offered for their academic needs, a place to meet the space requirements for different meetings, open and private, spacious and small-scaled, interactive and independent.

By understanding different groups' needs, the basic idea of the form of Wellness and Healthcare Center can be brewing.

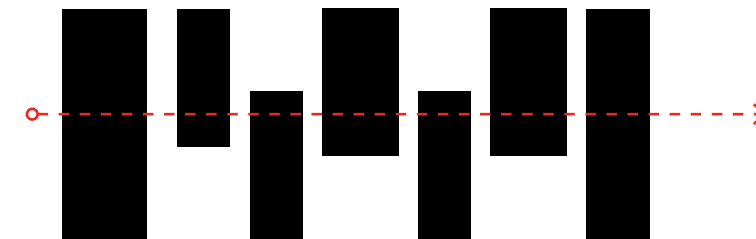
SPACE COMBINATION STUDIES



PARALLEL COMBINATION

Parallel combined space refers to a spatial combination formed by spatial units having the same functional properties and structural features connected in parallel in a repeated manner.

This combination is simple and fast and is suitable for building spaces with relatively simple functions. Such as classrooms, dormitories, hospital wards, hotel rooms, residential units, kindergartens, etc., the shape of such spaces is basically similar, there is no clear master-slave relationship between them, they can be connected to each other or not by different usage requirements.

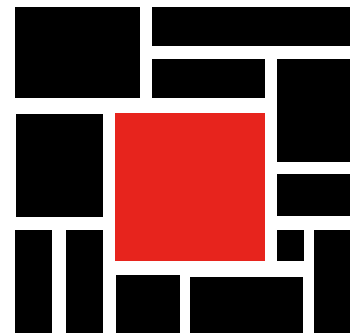


TANDEM SPATIAL COMBINATION

Each combination space unit has a clear order in terms of function or form, and is arranged in series with each other into a spatial sequence, which is linearly arranged. Therefore, the combination mode is also called "sequence combination" or "linear combination".

These spaces can be connected directly one by one, or they can be connected by a link. The former can be applied to buildings where people must pass through various parts of the space in turn, and the combination form must form a sequence. Such as exhibition halls, memorial halls, exhibition halls, etc., the latter is suitable for building spaces with more branches and more complex interiors, such as general hospitals, large railway stations, airports and so on.

In order to create a majestic atmosphere, the ancient Chinese palace complex designed a sequence of spaces with complete structure and climax, which also belong to this combination, such as the Beijing Forbidden City complex. In the spatial sequence of the tandem combination, a space that is important in terms of function or symbol can be highlighted by changing the size, shape, etc., or by its position, such as at the beginning and end of the sequence. Deviate from the linear group or at the transition point of the change, etc. In addition, the spatial combination of high-rise buildings can also be attributed to the tandem combination, in which the vertical space cores are connected in series in the vertical direction.



CENTRALIZED COMBINATION

A centralized combination is usually a stable centripetal composition consisting of several secondary spaces around a large, dominant central space.

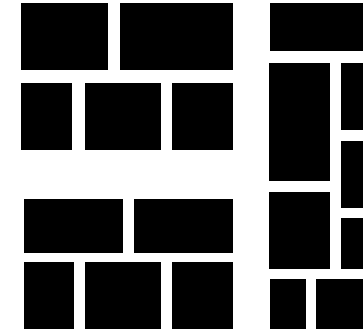
The centrally dominant space is generally a relatively regular shape and should have a large enough volume to enable the secondary space to be gathered around it; the function and volume of the secondary space can be identical or different to suit its function and the needs of the environment.

In general, the centralized combination itself has no clear directionality, and its entrance and guide parts are mostly located in a secondary space. This kind of space combination is suitable for buildings with large spaces such as stadiums and opera houses, and many ancient Western churches use this combination of spaces.

RADIANT COMBINATION

This spatial combination combines both centralized and tandem spatial features. Composed of a central space and several radially expanding series spaces, the radiant combined space extends outward through the existing branches and is tightly integrated with the surrounding environment.

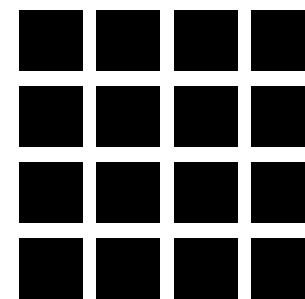
The function, shape and structure of these radial branch spaces may be the same or different, and the length may be long or short to adapt to different base environment changes. This spatial combination is often used in mountain hotels and large office groups. In addition, the "windmill" combination commonly used in design is also a variant of the radiant type.



UNITS COMBINATION

Dividing the space into several units, use the traffic space to connect the units together, and to form the unit combination.

The internal functions of the unit are similar or closely related, the relationship between the units is loose, and have common or similar morphological features. The courtyard type that is commonly used in practice belongs to this combination. The combination between units can be based on a geometric concept such as symmetry or interlacing, which is often used in resorts, nursing homes, hospitals, cultural centers, libraries, etc.

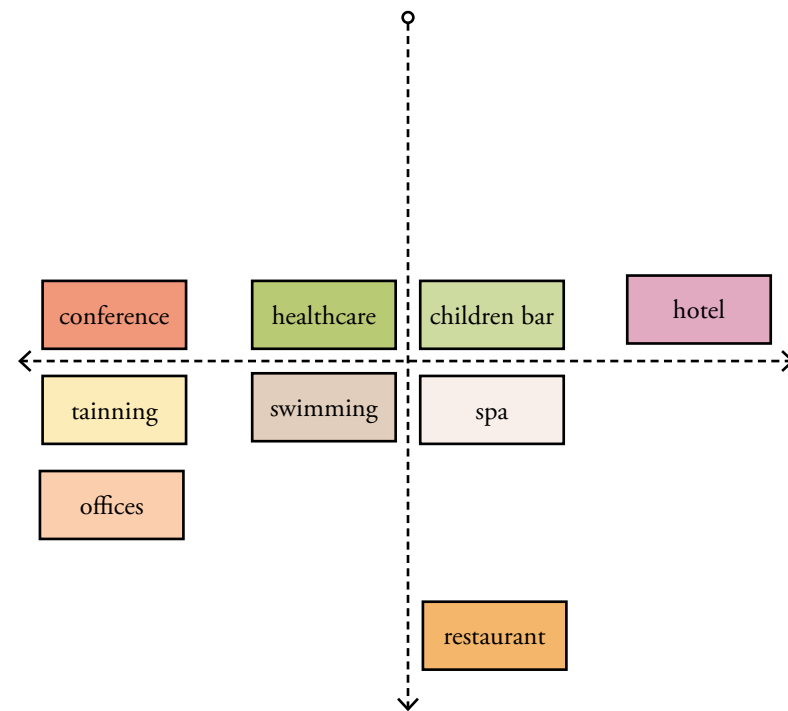


NET FORMAT COMBINATION

This combination method is to organize and connect the functional space of the building as a modular unit according to the two-dimensional or three-dimensional grid. We call this the network format combination.

In architectural design, such a grid is generally established by the beams and columns of the structural system. Since the grid has the characteristics of repeated spatial modulus, it can be added, cut or stacked, and the identity of the grid remains unchanged. The space combined in this way has the characteristics of regularity and continuity, and the structure is standardized, the types of components are small, the force is uniform, the contour of the building space is regular and rich, the combination capacity, the adaptability is strong, so it is widely used in various buildings.

SPATIAL COMBINATION FOR WELLNESS AND HEALTHCARE CENTER

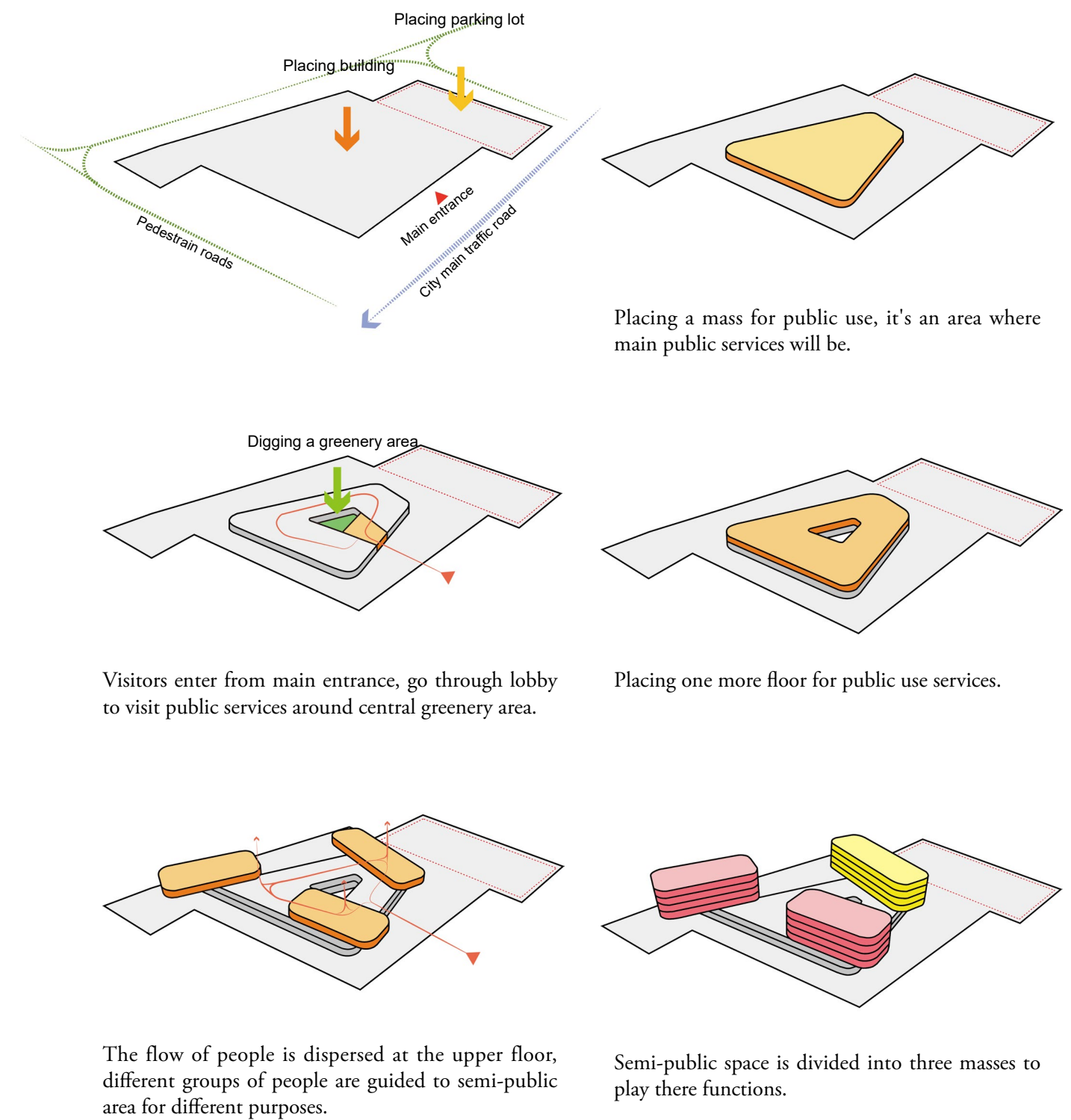


As a hybrid building, the Wellness and Healthcare center has the function of spa hotel, hospital, office building, etc. By studying different spatial combinations ways, I finally selected Radiant combination as the way for organizing those function spaces. As illustrated in the Figure, this kind traffic flow provide options for visiting, it creates a central hub for distributing different visiting groups. The traffic flow is diverse and flexible,

Parallel and tandem spatial combination provide clear traffic flow, but the advantages and disadvantages lie both in its simplicity. It might bring inconvenience to works for staffs, it's very likely to repeat visiting routes for visitors if they would like to come to several function areas. And different user groups' traffic flow is likely overlapped.

The net format combination wins in its rigor and regularity, but his lack of flexibility is what the Wellness and Healthcare Center needs most, so this combination can not be applied to center. The various functional areas of the Wellness and Healthcare Center have been closely linked to each other and assisted in coexistence. They are committed to providing a platform for health, entertainment and communication. Therefore, the relatively independent and weakly connected units combination can not be applied to it neither.

DESIGN PROCESS



Placing a mass for public use, it's an area where main public services will be.

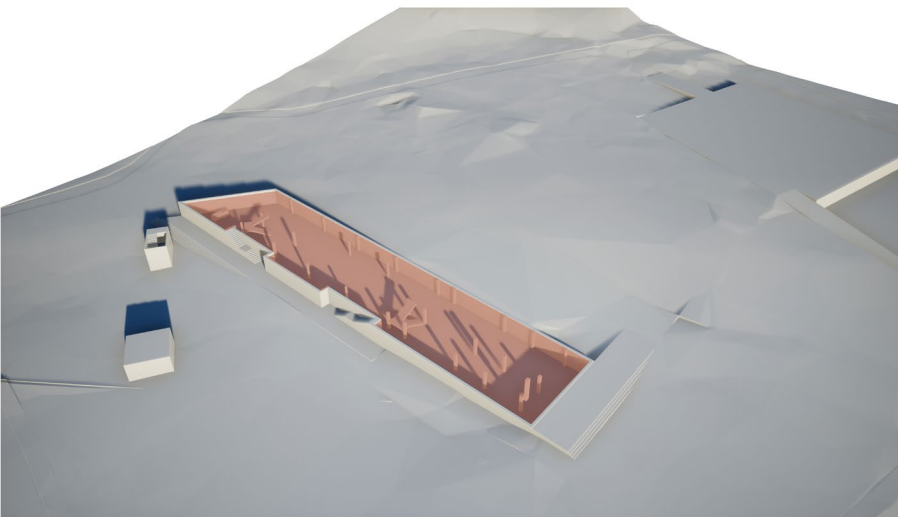
Visitors enter from main entrance, go through lobby to visit public services around central greenery area.

Placing one more floor for public use services.

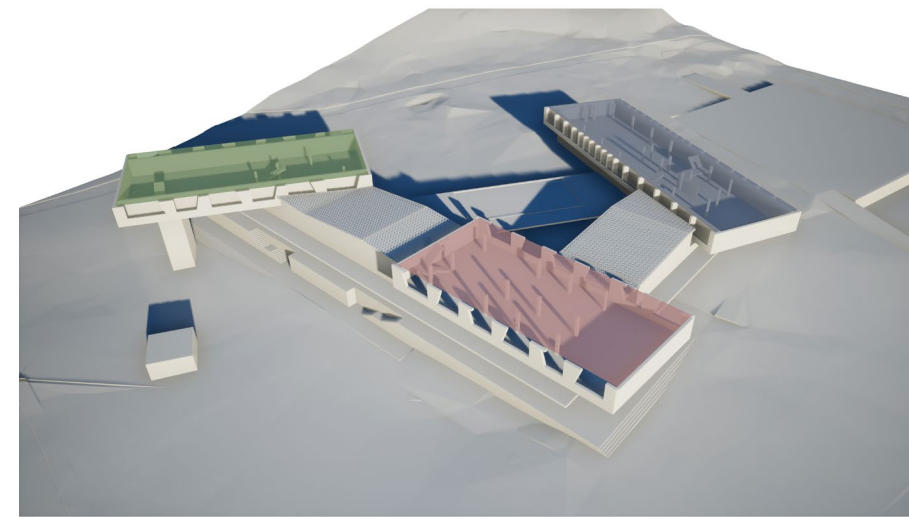
The flow of people is dispersed at the upper floor, different groups of people are guided to semi-public area for different purposes.

Semi-public space is divided into three masses to play there functions.

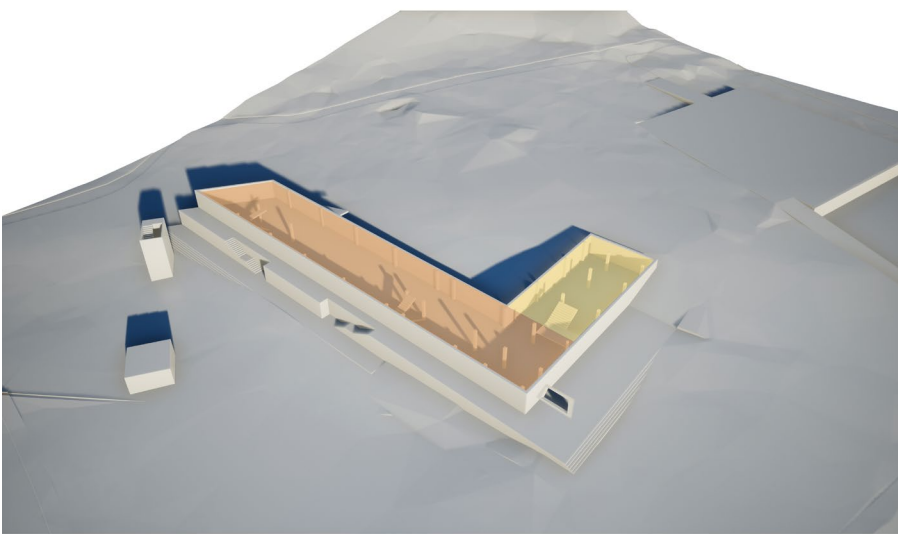
SPACE DISTRIBUTION



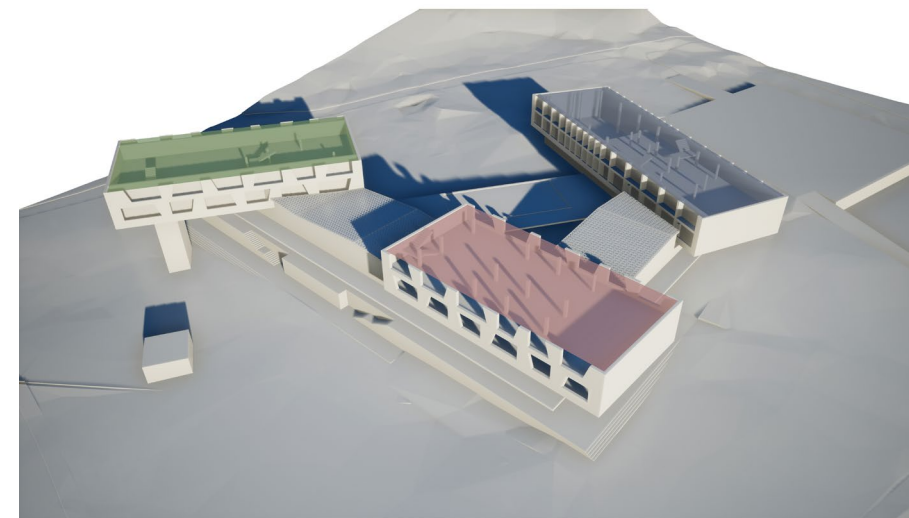
Indoor swimming pool and Sauna



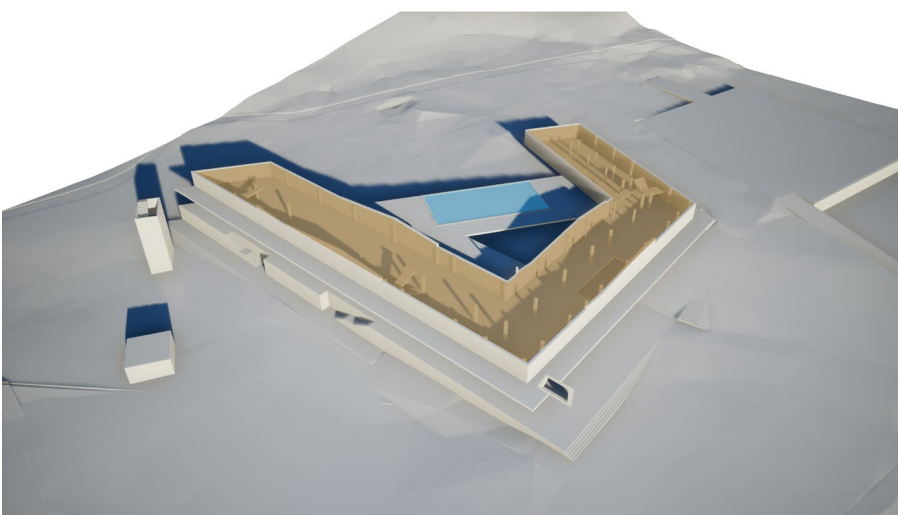
Hotel rooms
Restaurant area
Conference center



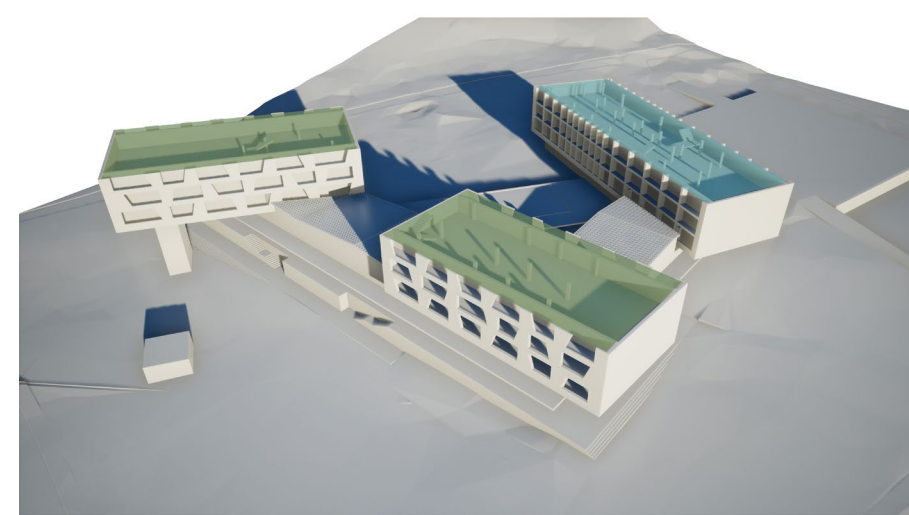
Spa and children recreation area
Hotel service lobby



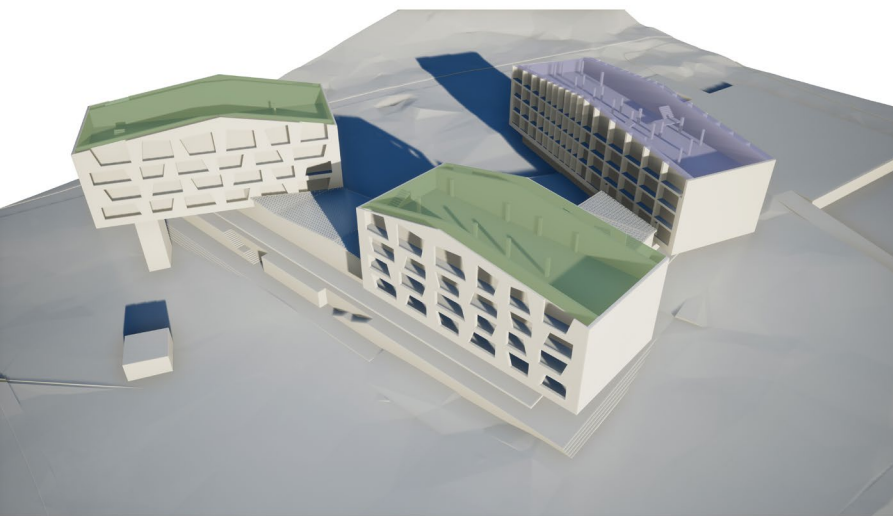
Hotel rooms
Bar area
Conference center and training area



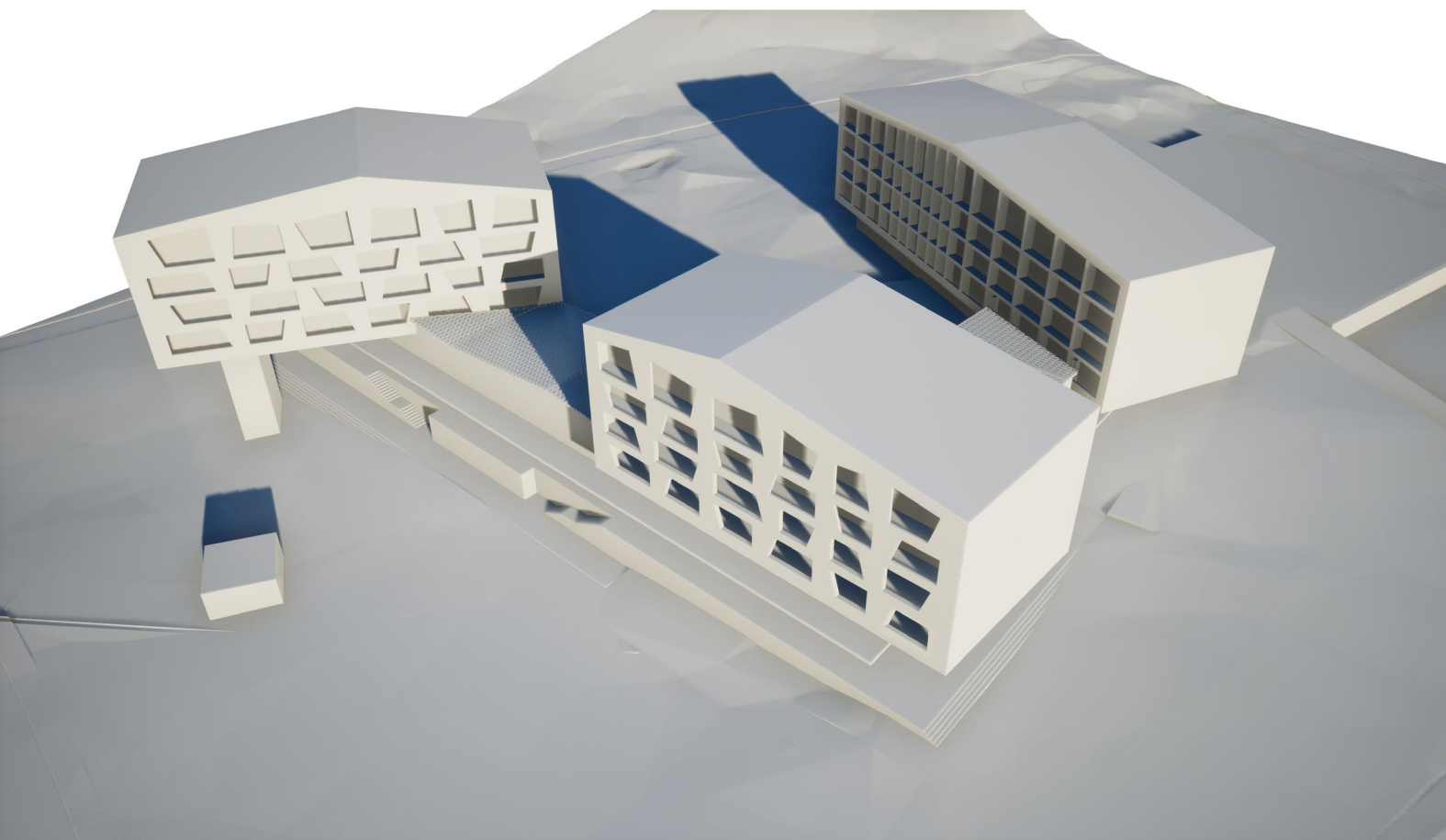
Healthcare service area
Outdoor swimming pool



Hotel rooms
Training and education area



- Hotel rooms
- Administration area



SPACE DISTRIBUTION

The space distribution is designed according to the site conditions. Since the east side is the main road of the city, the main entrance of the site is set to the east, which is convenient for visitors to visit by drive. The parking lot on the north side of the building is divided into an upper parking lot and a lower parking lot due to the terrain height difference.

Due to the overall terrain height difference of the site, the basement is on the ground floor in the south, and an entrance is set there to facilitate the residents of the resort to travel along the pedestrian road. Due to the limit of the light condition, the underground floor is arranged with indoor swimming pools and saunas that do not require much natural light.

The first-floor entrance is designed in the east, the entrance hall is the hotel function lobby, and serves as the information desk for the whole building as well, it is oriented to the visitors. The south part of the same floor is set as a spa function area, which is coordinated with the lower swimming sauna.

The second floor of the building is healthcare service area, which is the core area of the building. The streamlined function distribution allows customers to clearly visit. The central terrace on the same floor is equipped with an outdoor swimming pool. The swimming pool is located on the west side of the building and faces the hillside of the paloniemi area with beautiful sight view.

The third and fourth floors of the building are three separate areas, the two areas in the south are the hotel rooms and restaurant area, the northern area is the conference center. The three functions areas are independent of each other.

The two southern areas of fifth floor of the building are both hotel rooms facing the paloniemi lake, with a good view. Training center is in the north, which can be reached from the vertical traffic at the entrance of the lower building. The sixth floor of the building are hotel room areas in the south, and offices in the north, they are independent of each other and function themselves.

MASTER PLAN



Wellness and Healthcare Center

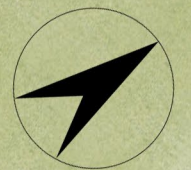
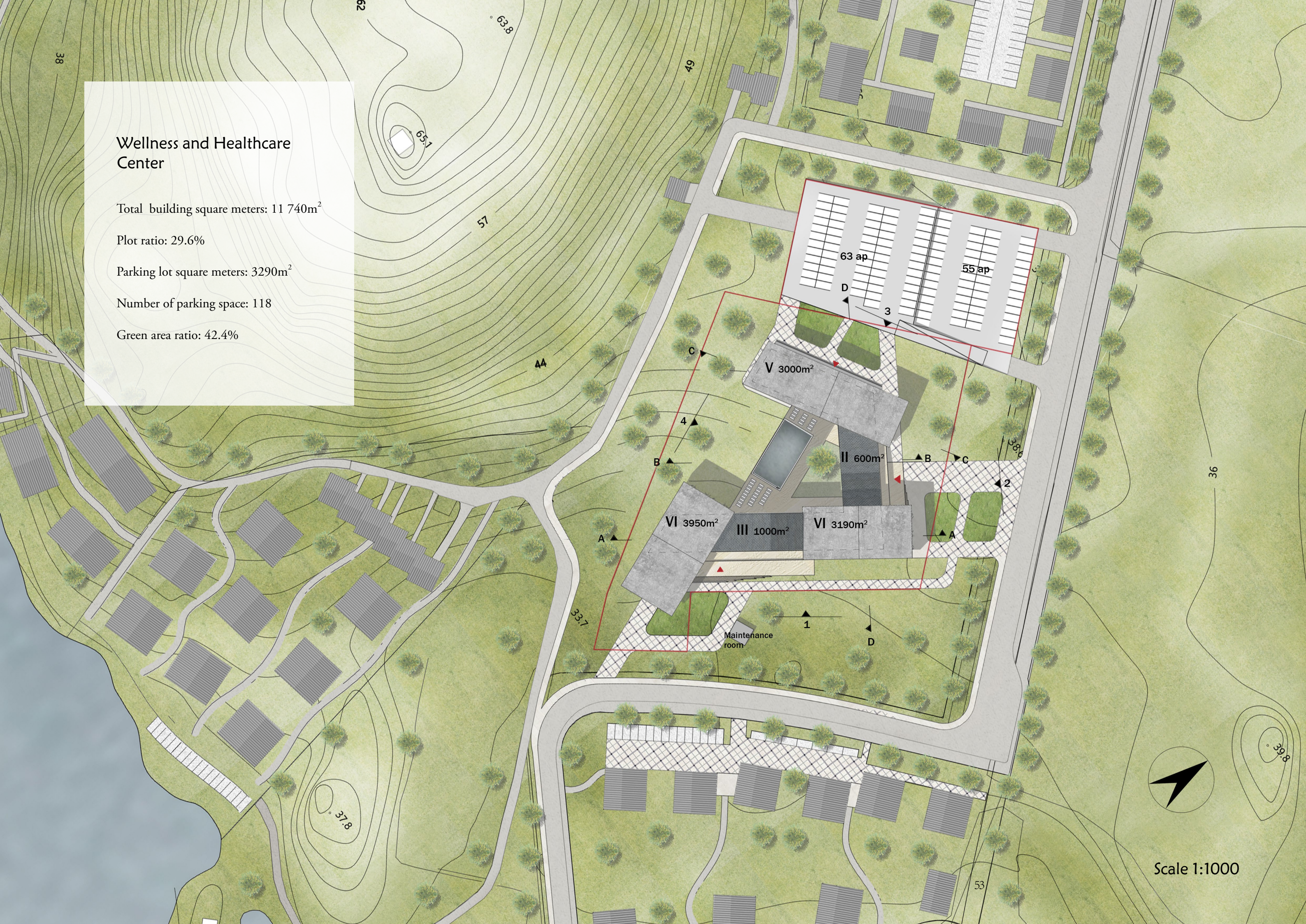
Total building square meters: 11 740m²

Plot ratio: 29.6%

Parking lot square meters: 3290m²

Number of parking space: 118

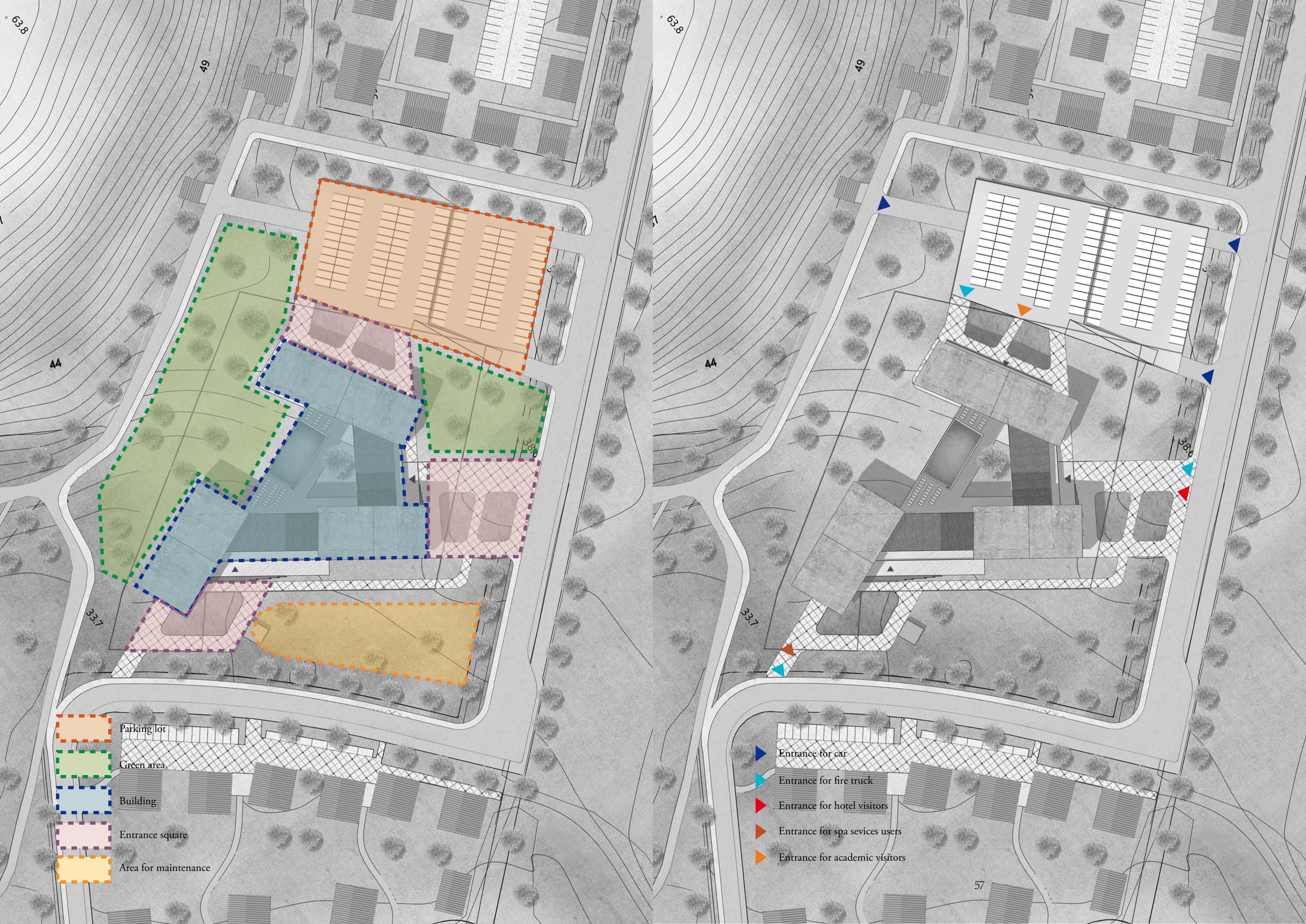
Green area ratio: 42.4%



Scale 1:1000

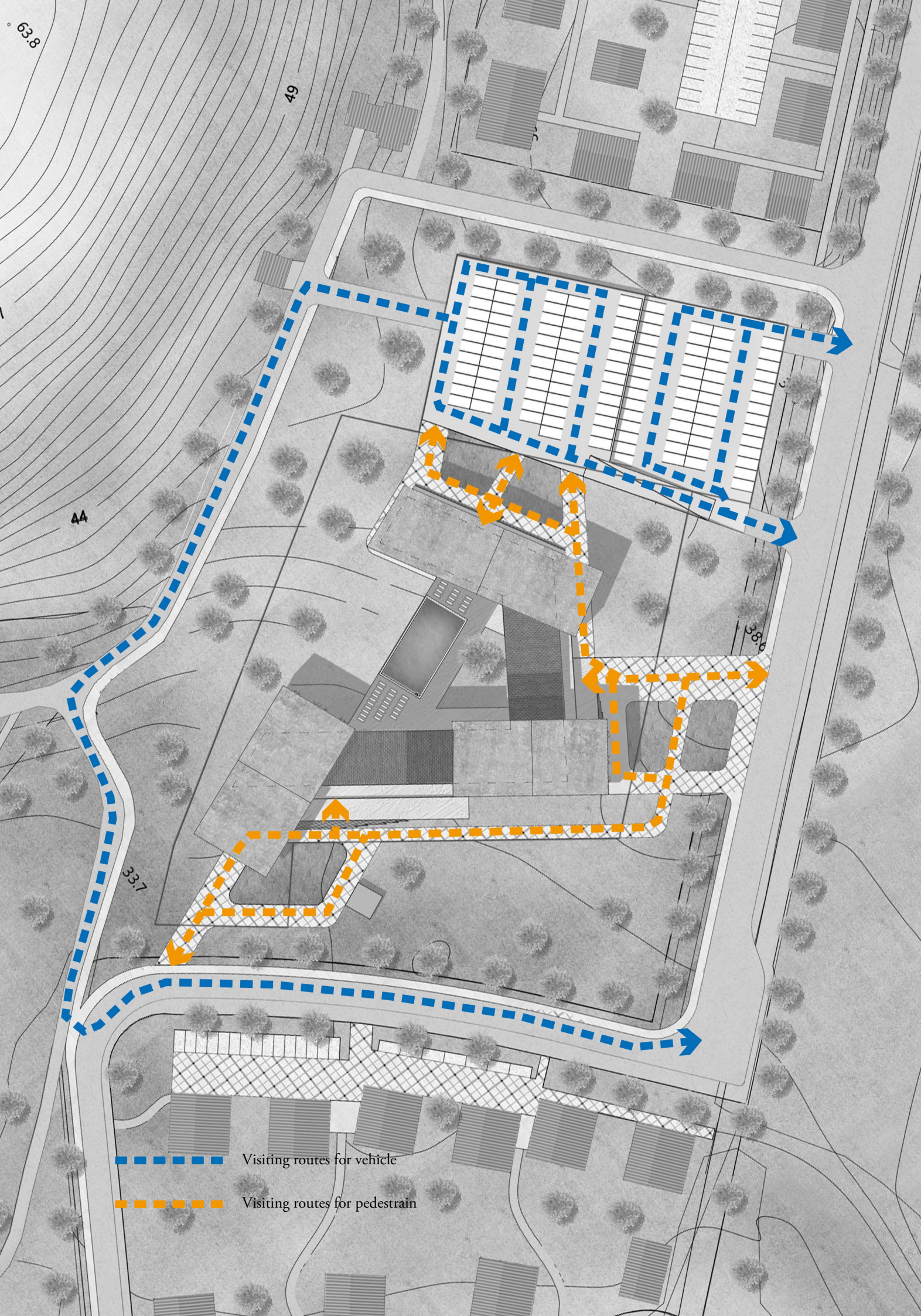


BIRDVIEW PERSPECTIVE



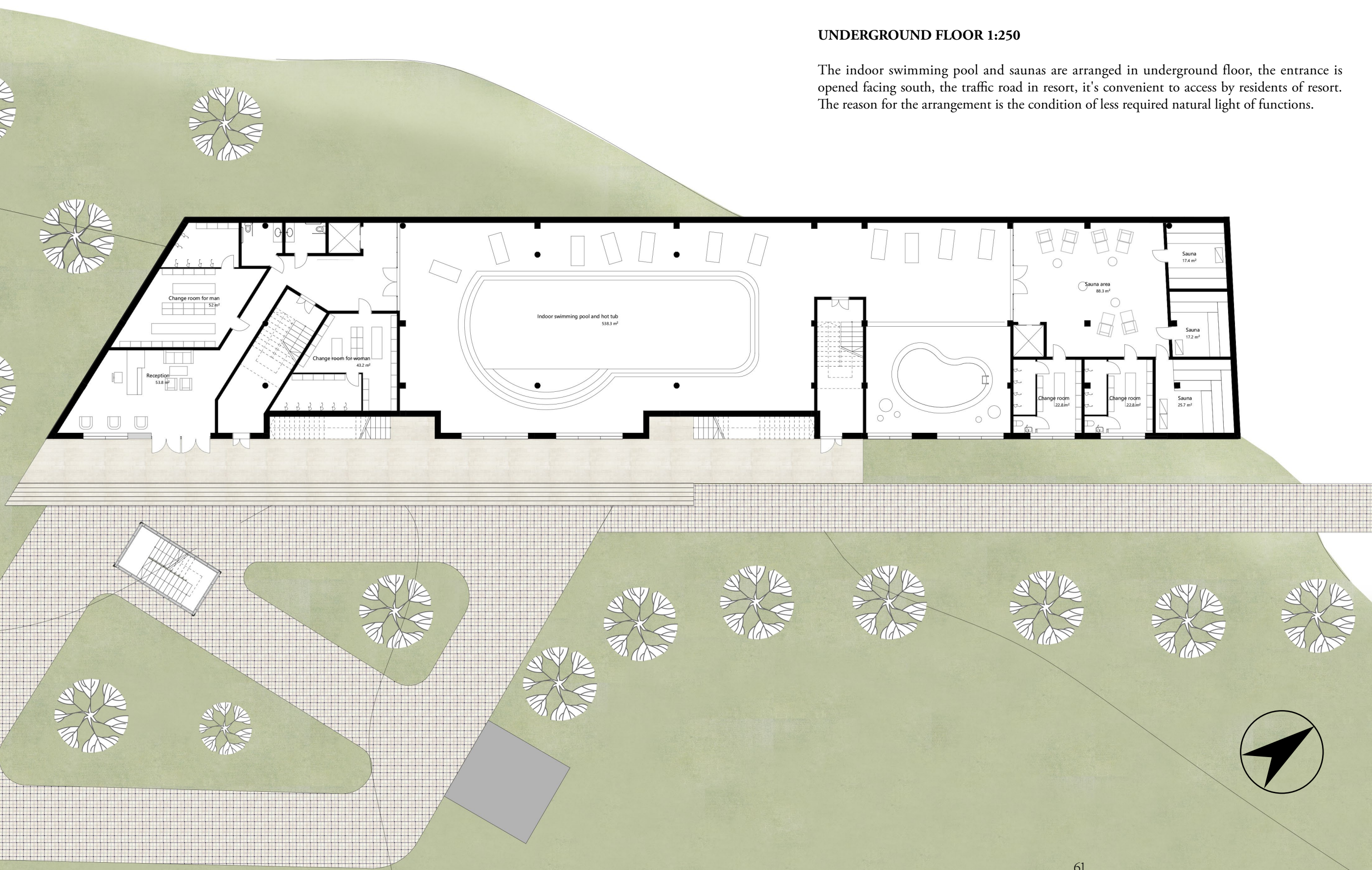
- Parking lot
- Green area
- Building
- Entrance square
- Area for maintenance

- Entrance for car
- Entrance for fire truck
- Entrance for hotel visitors
- Entrance for spa services users
- Entrance for academic visitors



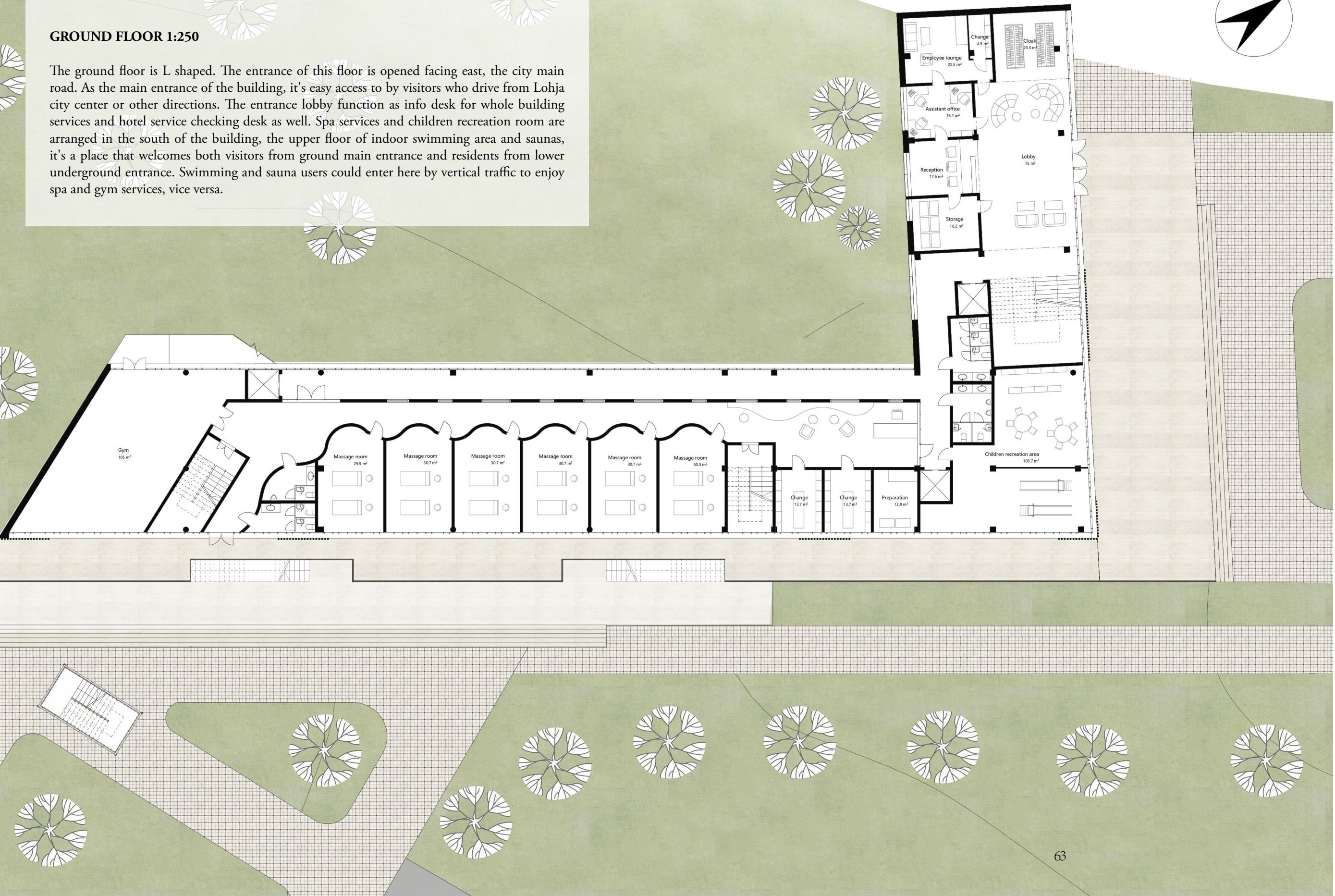
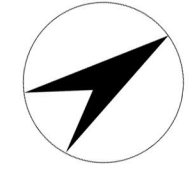
UNDERGROUND FLOOR 1:250

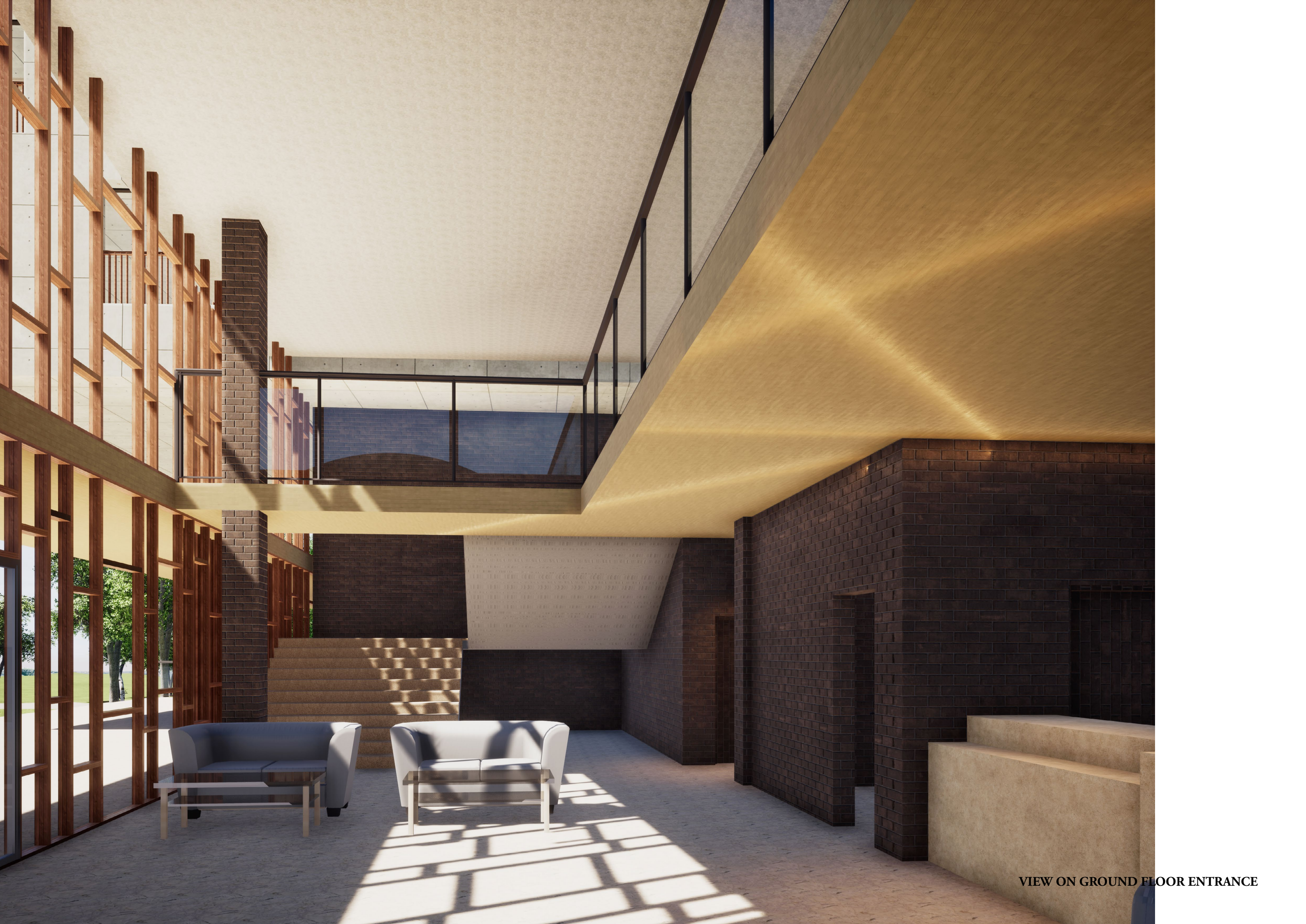
The indoor swimming pool and saunas are arranged in underground floor, the entrance is opened facing south, the traffic road in resort, it's convenient to access by residents of resort. The reason for the arrangement is the condition of less required natural light of functions.



GROUND FLOOR 1:250

The ground floor is L shaped. The entrance of this floor is opened facing east, the city main road. As the main entrance of the building, it's easy access to by visitors who drive from Lohja city center or other directions. The entrance lobby function as info desk for whole building services and hotel service checking desk as well. Spa services and children recreation room are arranged in the south of the building, the upper floor of indoor swimming area and saunas, it's a place that welcomes both visitors from ground main entrance and residents from lower underground entrance. Swimming and sauna users could enter here by vertical traffic to enjoy spa and gym services, vice versa.

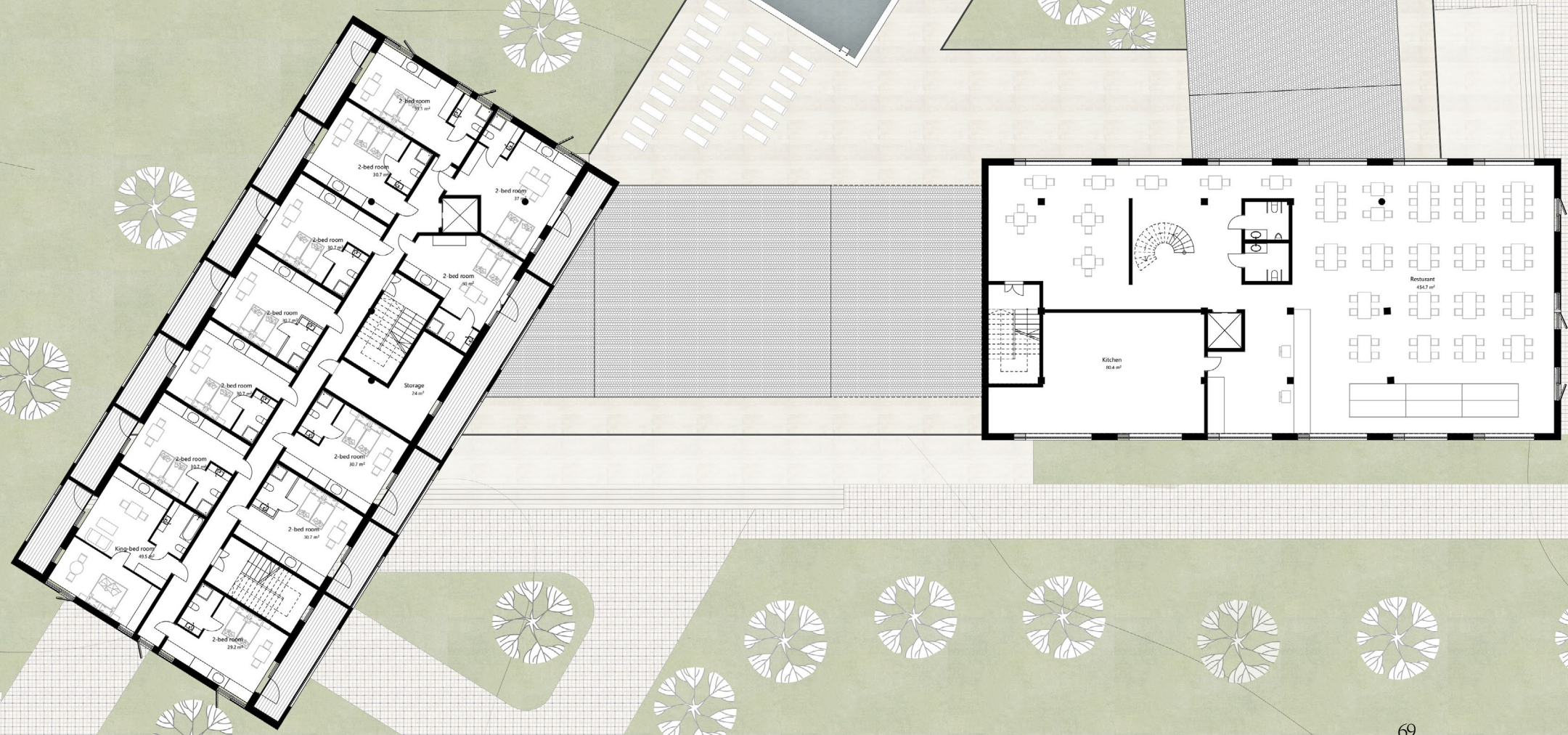




VIEW ON GROUND FLOOR ENTRANCE

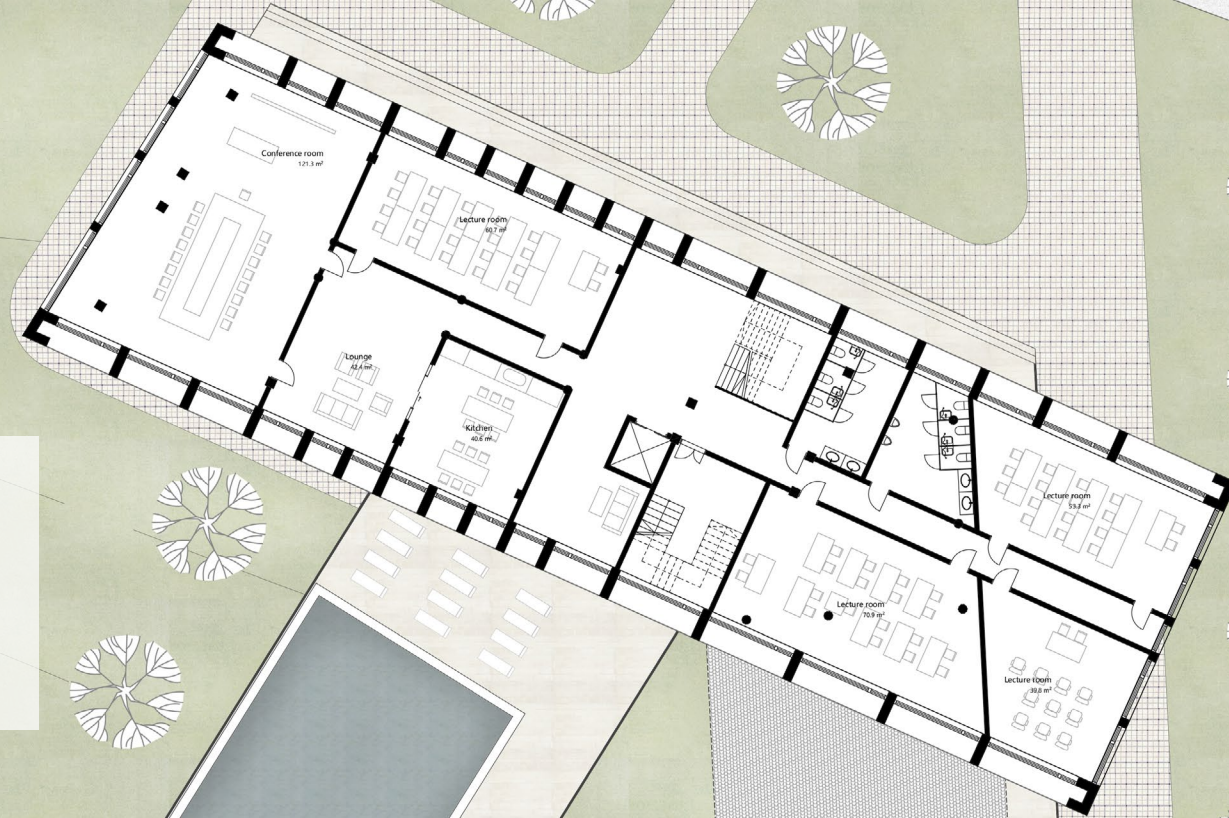
3RD FLOOR 1:300

On 3rd floor is three separated blocks. The northern block function as conference center, it consists of auditorium and medical services exhibition area, it's easy accessed to from entrance and vertical traffic of 2nd floor. The southwestern block function as hotel services area that consists of hotel rooms, the southeastern block is the restaurant area, both these two blocks could be entered from lower southern side vertical traffic.



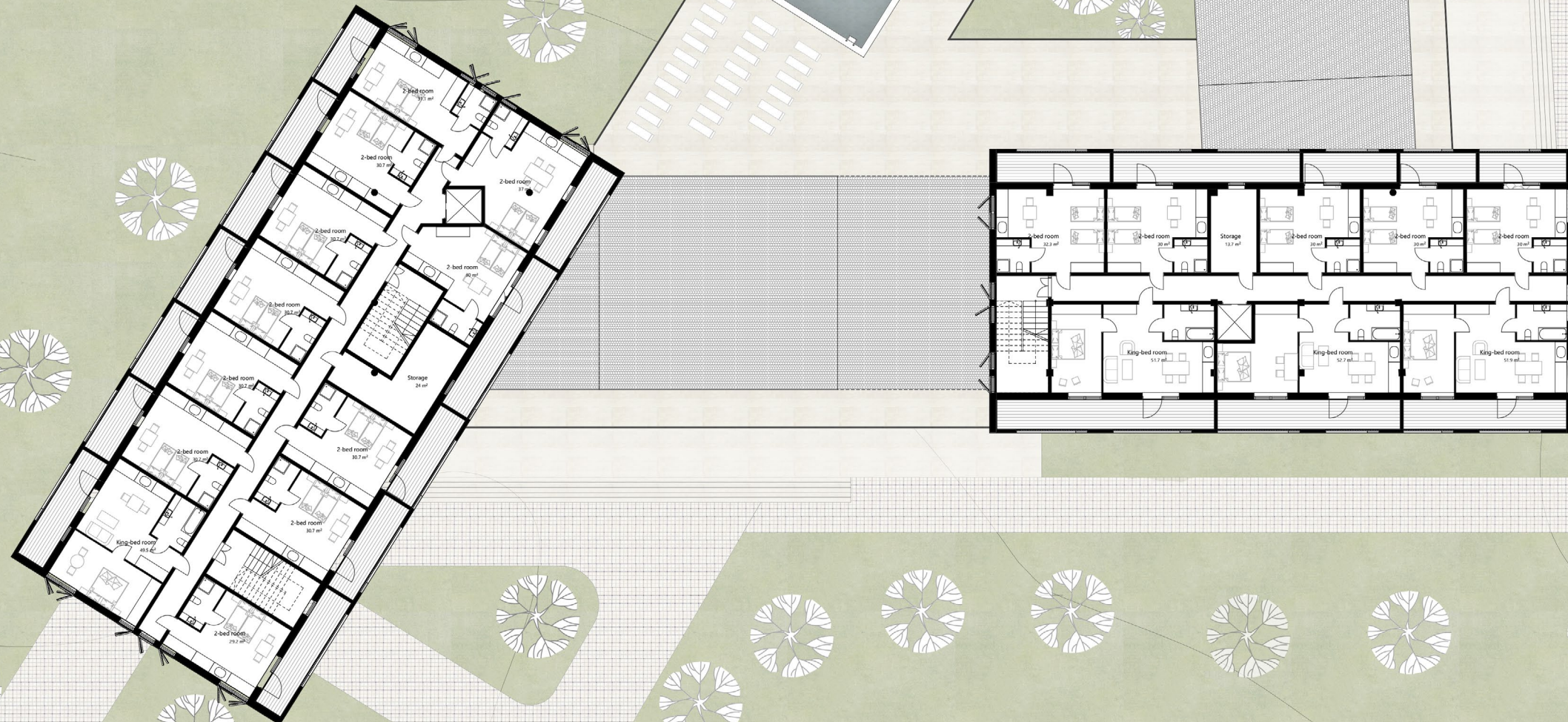
5TH FLOOR 1:300

On 5th floor, there are hotel rooms both in southwestern and southeastern block with good view direction to lake. In northern block is conference rooms and training classrooms.



6TH FLOOR 1:300

On 6th floor, in northern block is administration area, it's the place where the staff is working, where the staff is managing and coordinating the entire building. Three blocks are connected by traffic of 2nd floor.







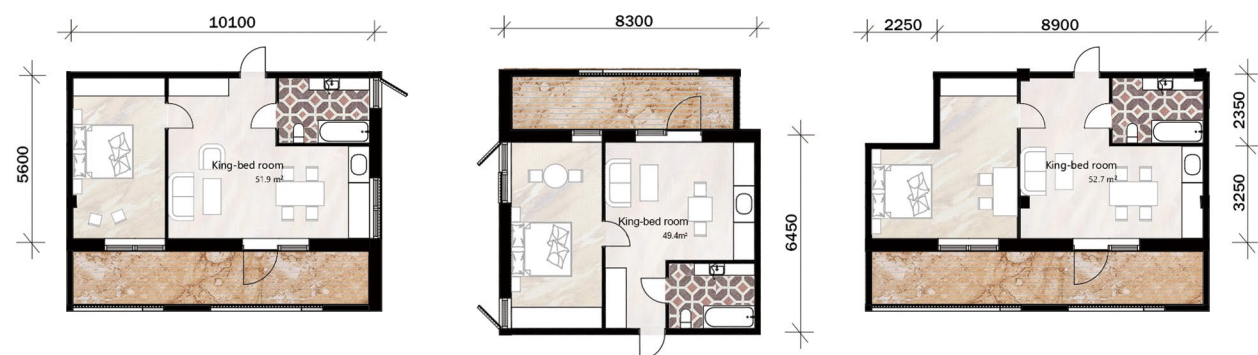


HOTEL ROOM TYPES

Studio room type



King-bed room type



Studio room type



King-bed room type



King-bed room type



King-bed room type

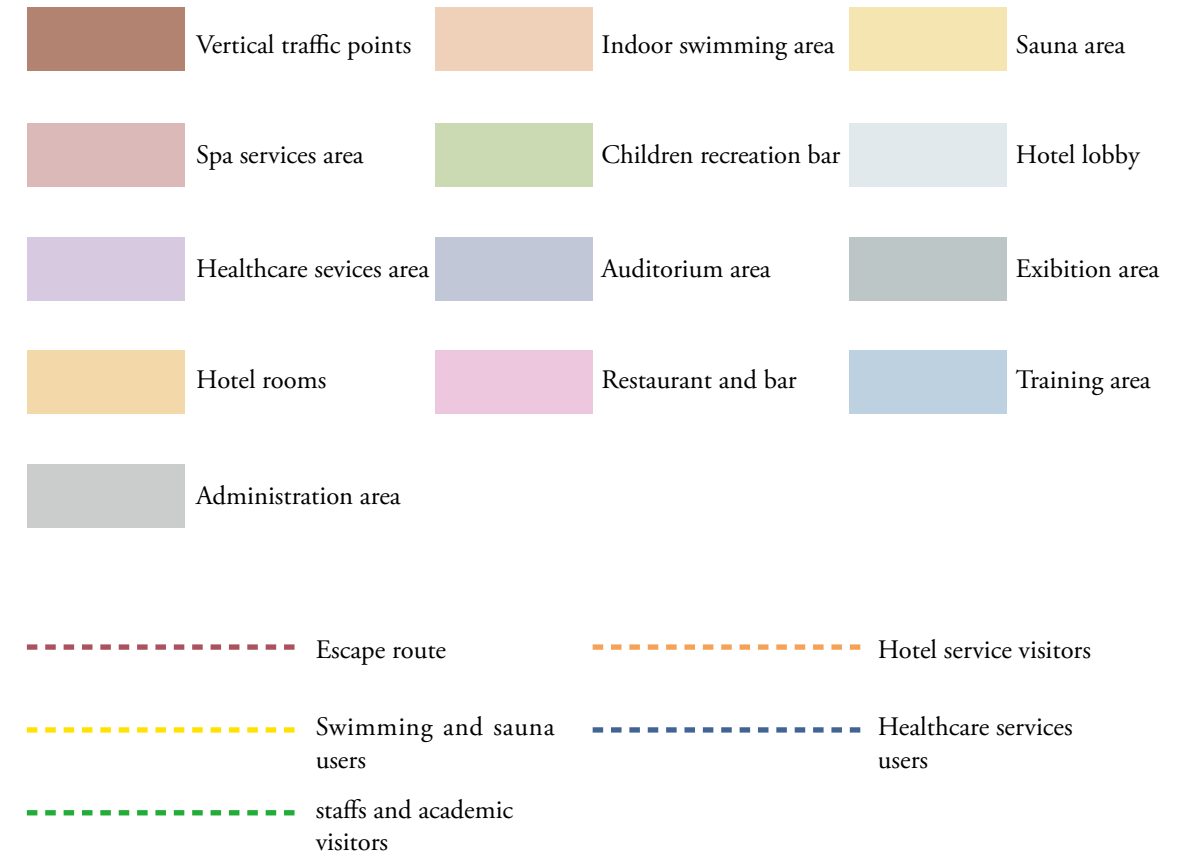
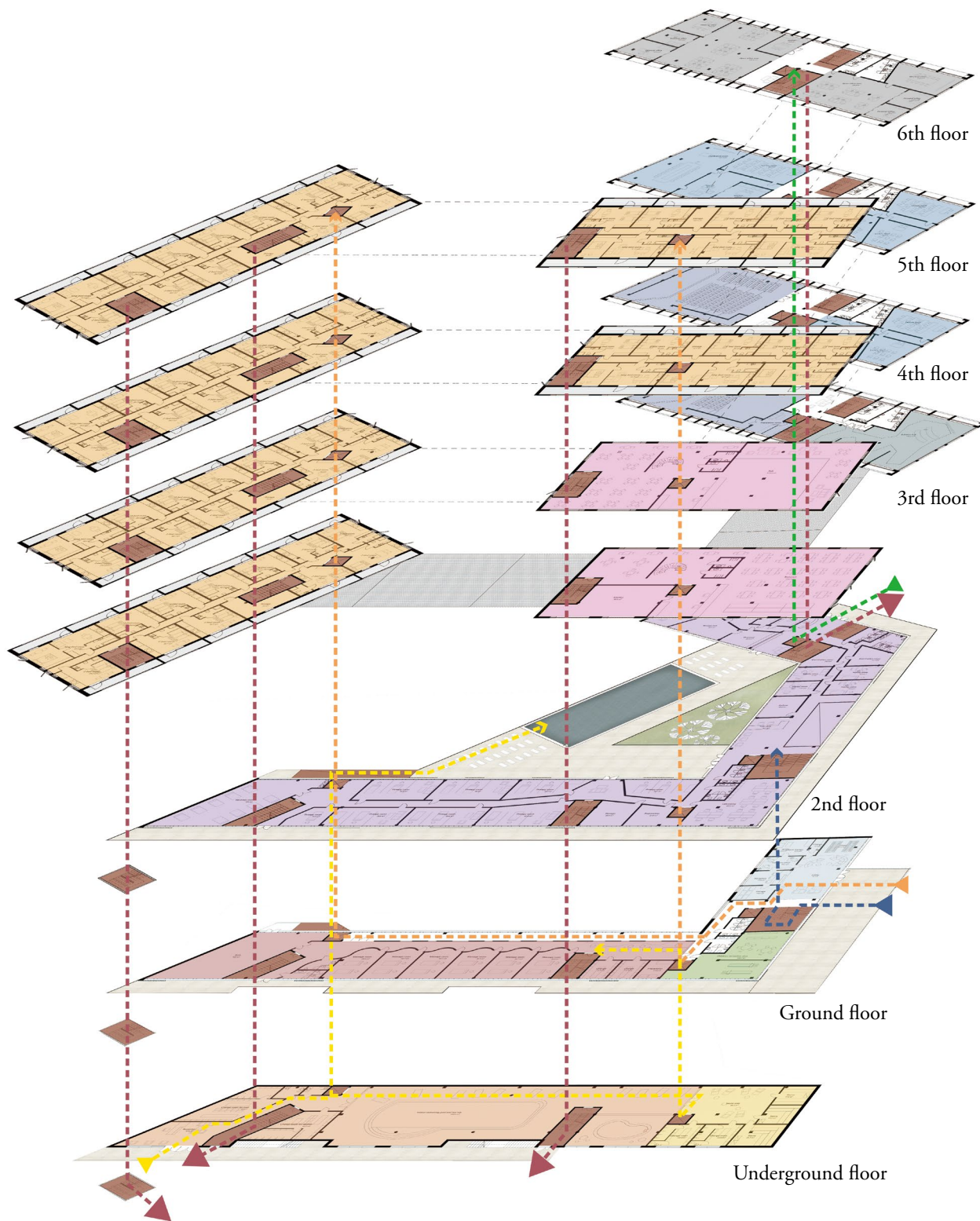
King-bed room type



Studio room type

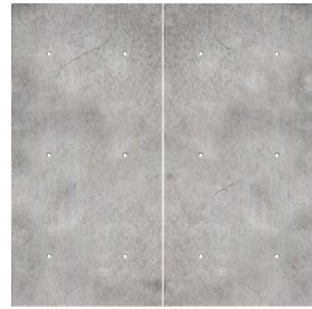


VISITING FLOW OF DIFFERENT GROUPS



Visitors who come to the building for the first time will enter the building through the lobby on the ground floor, through the checking and info desk in the hall, they can be directed to the hotel rooms along the orange lines or guided along the blue lines to the healthcare area or guided along the yellow lines to the swimming and spa area. The Children center is placed close to the main entrance, adults visitors can host children to the Children center first before exploring other areas of the building. The two traffic cores on the south side connect the hotel rooms, restaurants, healthcare, swimming and spa areas, making it easy for hotel guests to experience the full-service facilities. Resort residents entering from the entrance of underground floor can also access the service floors via the south side traffic points. The northern area of the building is relatively independent, mainly serving visiting scholars and staff, and scholars and staff can reach other public service floors through the second floor traffic cores. At this point, the traffic lines do not interfere with each other, and the traffic flow is fluent. The second floor of the building is used for the main medical and healthcare services to function as a shunt-oriented connection.

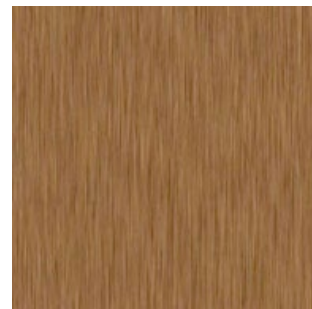
FACADE DESIGN



POURED CONCRETE
Three blocks external wall



BROWN AXED STONE
Underground floor external wall



RED CEDAR
Lattice, glass grille and railing



BROWN LIMESTONE
Terrace and outdoor corridor



BROWN PAINT
Hotel rooms balcony interior wall

Materials



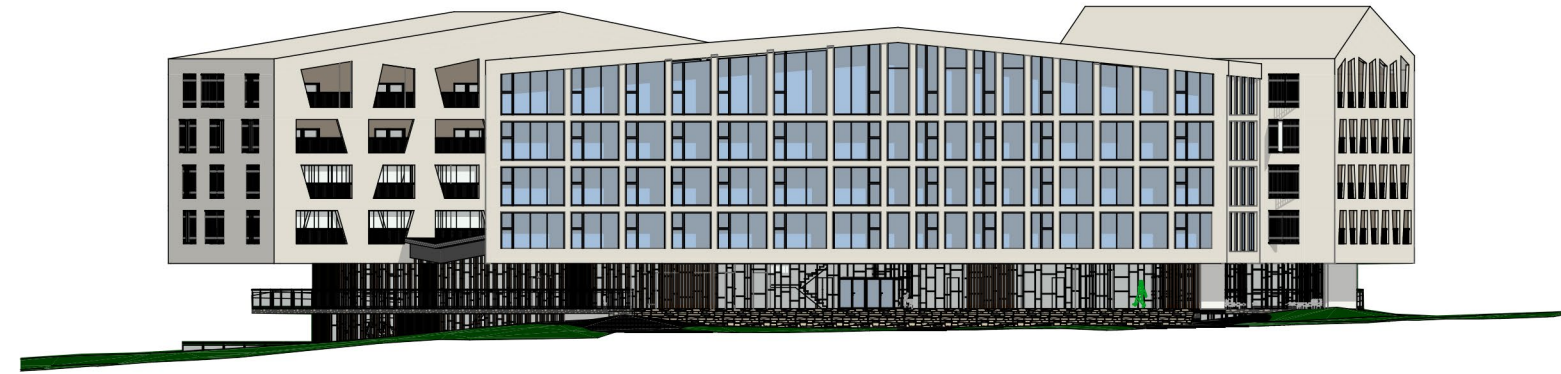
FACADE 1 1:500



FACADE 2 1:500

FOR FACADE

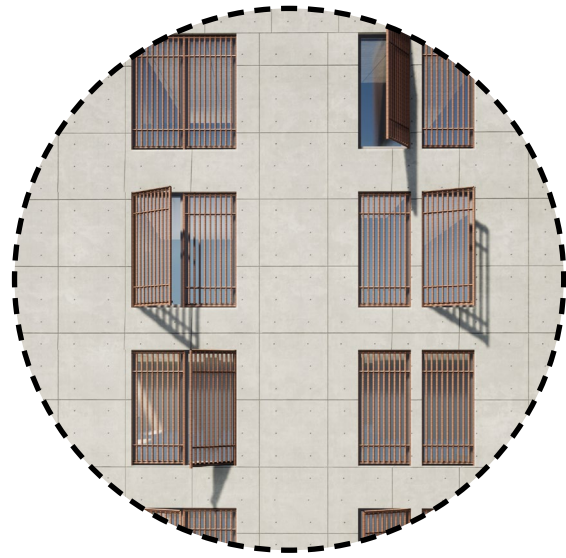
From the underground floor to second floor are public areas for all visitor groups , so I designed the facade to glass wall to make it as open as much, the glass partitions are made of wooden purlins, arranged irregularly, with traditional Chinese ancient architecture tone to evoke the familiar intimacy of Chinese tourists. Because the underground floor does not require a lot of natural light, the exterior facade of the building is designed as brown axed stone solid wall, giving a solid sense of building foundation. The material of the three high-rise blocks façade is made of poured concrete. The poured concrete surface of the two blocks of the hotel rooms is contrasted with the warm brown paint of the interior balcony space, which highlights the comfort and warmth of the interior living space, allowing a strong comfortable and cozy atmosphere shown out. The surface of the main functional conference and office block in the north is poured concrete and glass. The large area of window design brings brightness to the office and academic area, and the regular arrangement façade design gives a solemn and rigorous sense to the building.



FACADE 3 1:500



FACADE 4 1:500



WINDOWS ON SIDE WALL OF HOTEL ROOM BLOCK

A push-pull wood grille with Chinese architectural elements blocks the sun while creating a quite and peaceful atmosphere



WOODEN PURLINS OF GLASS PARTITIONS

Glass partitions are made of wooden purlins, arranged irregularly, with traditional Chinese ancient architecture tone to evoke the familiar intimacy of Chinese tourists.



IRREGULAR WALL HOLES ON HOTEL ROOM BLOCKS FACADE

Irregular wall holes design on facade of hotel room blocks create a feeling of rhythm, the poured concrete material has contrast to the warm brown paint material of inside balcony walls.



FACADE OF CONFERENCE CENTER BLOCK

Regular facade window arrangement gives a solemn and rigorous sense. Big openness design of the facade leads enough day light to the building.



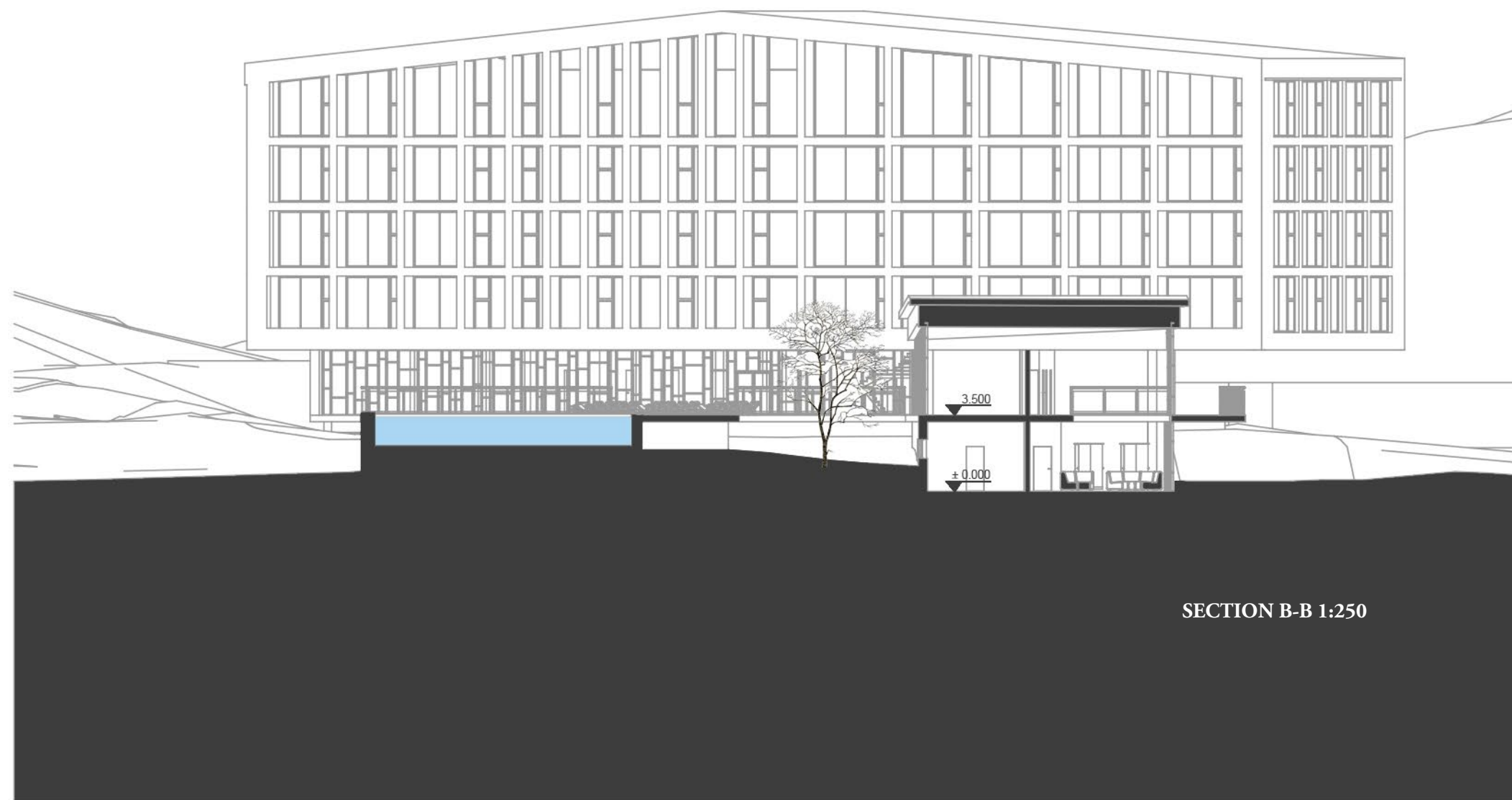
FACADE OF UNDERGROUND FLOOR

The facade of underground floor is made of brown axed stone, the sense of bareness of the raw materials can be utilized to create solid feeling of foundation of the building.

SECTIONS



SECTION A-A 1:250



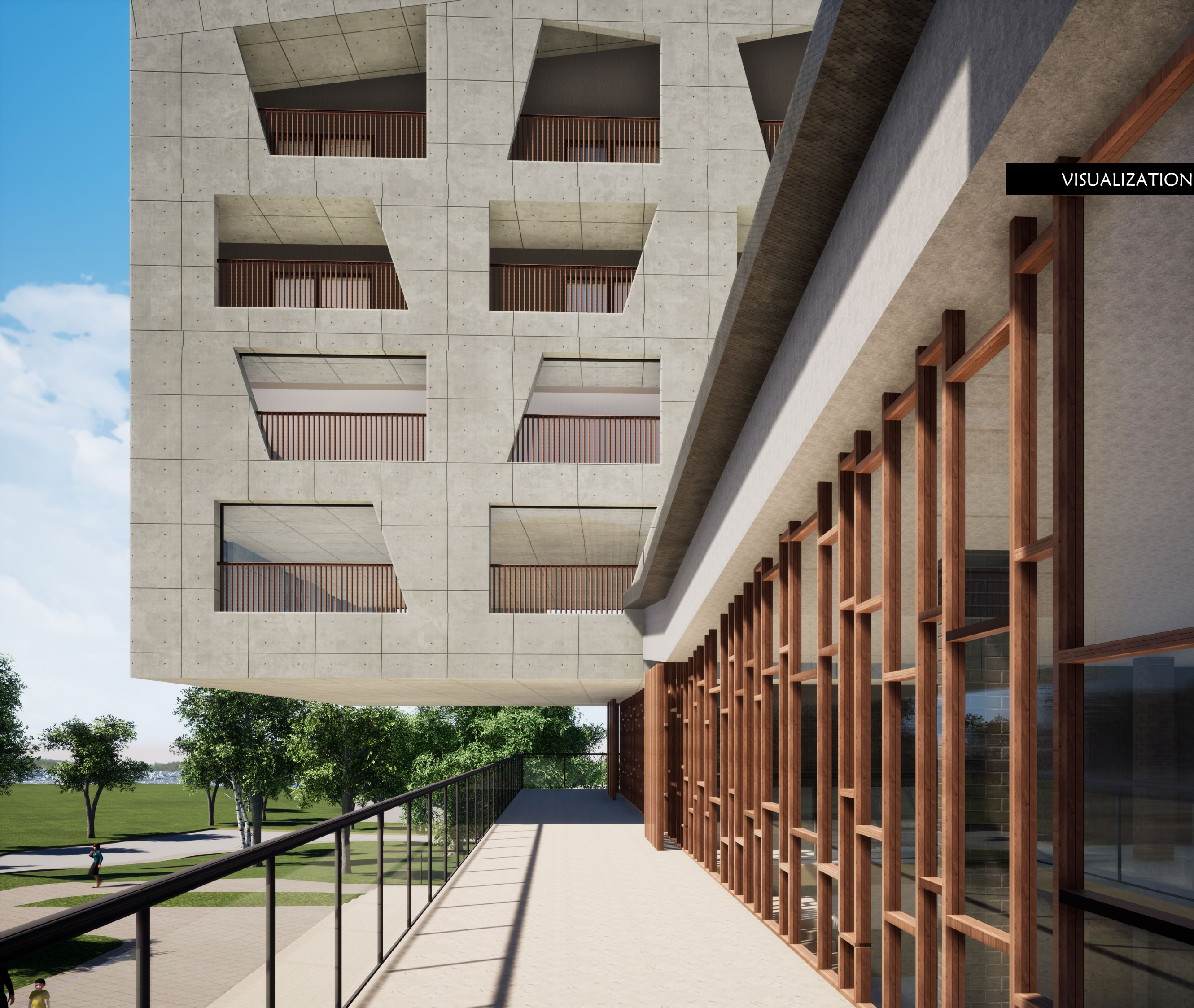
SECTION B-B 1:250



SECTION C-C 1:250



SECTION D-D 1:250



VISUALIZATIONS









VIEW OF ENTRANCE OF UNDERGROUND FLOOR





VIEW OF EASTERN BUILDING MAIN ENTRANCE



VIEW OF NORTHERN SECONED FLOOR ENTRANCE



4 CONCLUSION

More than just a design task, this is an attempt to explore ways to combine building functions. While reasonably arranging the plan functions, I tried to give the building's façade a form that echoes its function. In the design of the floor plans, I aimed at the independent and non-interference of each traffic flow of users, and main idea is to allocate the functional areas along the visiting lines with fully respect to site topography. In the design of the facade of the building, I adopted the traditional Chinese architectural elements combined with the modern expression techniques to express the feelings I want to convey. According to the functions, the façade of public areas is designed as open as much with glass walls, and the living area is semi-open and quiet, and the office meeting area is rigorous. I wish that readers could also recognize the charm of the building that the designer wants to convey by design.

It is surely undeniable that the subject could be developed further, the medical center can be presented in other forms. Maybe my plan is not the perfect answer, but it is my understanding of the site and understanding of this task, it shows a best answer responded to the new Wellness center on the old paloniemi hospital site in my mind. Through this task, I gained new thoughts and improved my ability on the architectural design of complex functions building. In addition, in this practical project, I communicated with the project leader during the design process and listened to the opinions of the customers directly and adopted some to my design, it's a new experience for me. I hope that after this experience, in my future design career, I can continue to maintain the enthusiasm of exploration and the determination to solve design challenges.

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Figure 9 Intercol Oy, *The global medical tourism outbound data 2013-2016*

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Beth McGroarty, *Wellness Now a \$4.2 Trillion Global Industry – with 12.8% Growth from 2015-2017*. <https://globalwellnessinstitute.org/press-room/press-releases/wellness-now-a-4-2-trillion-global-industry/>

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WEI QIAN
2019