POLITECNICO
DI MILANO

HIDDEN IN THE LANDSCAPE

SALSOGOLF CLUB RESORT DESIGN

MASTER DEGREE THESIS

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ABSTRACT

The thesis is an architectural design based on a rural site, with natural landscape architecture as the concept, and earth-covered architecture as the form. In the design process, typological research was used, and a specific functional requirement suitable for the site of this design was worked out, through reference, analysis, and comparison of related cases in Italy and abroad.

The site is located on the edge of Salso Golf Club, about five kilometers southwest of Salsomaggiore Terme, Parma. This area is a hilly terrain, surrounded by mountains, close to a small lake, and the natural environmental conditions are excellent. According to the convenient location and other golf club cases, the new building function is determined to be a resort, including hotel area and villa area. In addition, we decided to keep the existing old farm on the site and transform it into a part of the new hotel.

About the architectural form, in recent years, earth-sheltered buildings have been increasingly used in architectural design due to their remarkable ecological, energy-saving, and earthquake resistance. In terms of artistic effects, this kind of architectural form closely integrated with the soil often forms a unique landscape architecture adapted to the environment.

Considering the beautiful site environment and the undulating terrain, we learned the design methods of earth-sheltered buildings and the design concepts of landscape art. We hided the building under the soil, and used its rising roof to guide the flow of people to create a more transparent viewing effect, which ends with the beautiful scene of lake and golf course.

Key Word Golf Club Resort, Earth-sheltered, Landscape Architecture

RIASSUNTO

La tesi è un progetto architettonico basato su un sito rurale, con l'architettura del paesaggio naturale come concetto e l'architettura ricoperta di terra come forma. Nel processo di progettazione è stata utilizzata una ricerca tipologica ed è stato elaborato un requisito funzionale specifico per il sito di questo progetto, attraverso il riferimento, l'analisi e il confronto di casi correlati in Italia e all'estero.

Il sito si trova ai margini del Salso Golf Club, a circa cinque chilometri a sud-ovest di Salsomaggiore Terme, Parma. Questa zona è un terreno collinare, circondato da montagne, vicino a un piccolo lago, e le condizioni ambientali naturali sono eccellenti. In base alla comoda posizione e ad altri casi di mazze da golf, la nuova funzione dell'edificio è determinata come resort, compresa l'area dell'hotel e l'area della villa. Inoltre, abbiamo deciso di mantenere la vecchia fattoria esistente sul sito e trasformarla in una parte del nuovo hotel.

Per quanto riguarda la forma architettonica, negli ultimi anni, gli edifici protetti da terra sono stati sempre più utilizzati nella progettazione architettonica per la loro notevole resistenza ecologica, a risparmio energetico e sismica. In termini di effetti artistici, questo tipo di forma architettonica strettamente integrata con il suolo spesso forma un'architettura paesaggistica unica adattata all'ambiente.

Considerando il bellissimo ambiente del sito e il terreno ondulato, abbiamo appreso i metodi di progettazione degli edifici protetti dalla terra e i concetti di progettazione dell'arte del paesaggio. Abbiamo nascosto l'edificio sotto il terreno e abbiamo utilizzato il suo tetto rialzato per guidare il flusso delle persone per creare un effetto visivo più trasparente, che termina con la bellissima scena del lago e del campo da golf.

Parola Chiave Golf Club Resort, Al riparo dalla terra, Architettura del paesaggio

CHAPTER 1 - PRELIMINARY RESEARCH

1.1 BACKGROUND

The site is located on the edge of Salso Golf Club, about five kilometers southwest of Salsomaggiore Terme, Parma. Based on the consumption power of the people it serves, transportation by plane or self-driving can be used. Therefore, the scope of services in this area can include many large cities in northern and central Italy, such as Milan, Turin, Genoa, Trento, Venice, Bologna, Florence, etc. Meanwhile, For nearby residents or tourists, the site is adjacent to a cycling sightseeing route, which means that after the building is completed, it can become a new attraction on the route.

At the same time, the nearest city to the golf club, Salsomaggiore terme, is known for its rich geothermal resources and has many excellent thermal spas there. Therefore, the newly built resort can also continue this feature of the local spa.

Figure1. Surrounding Cities & Airports

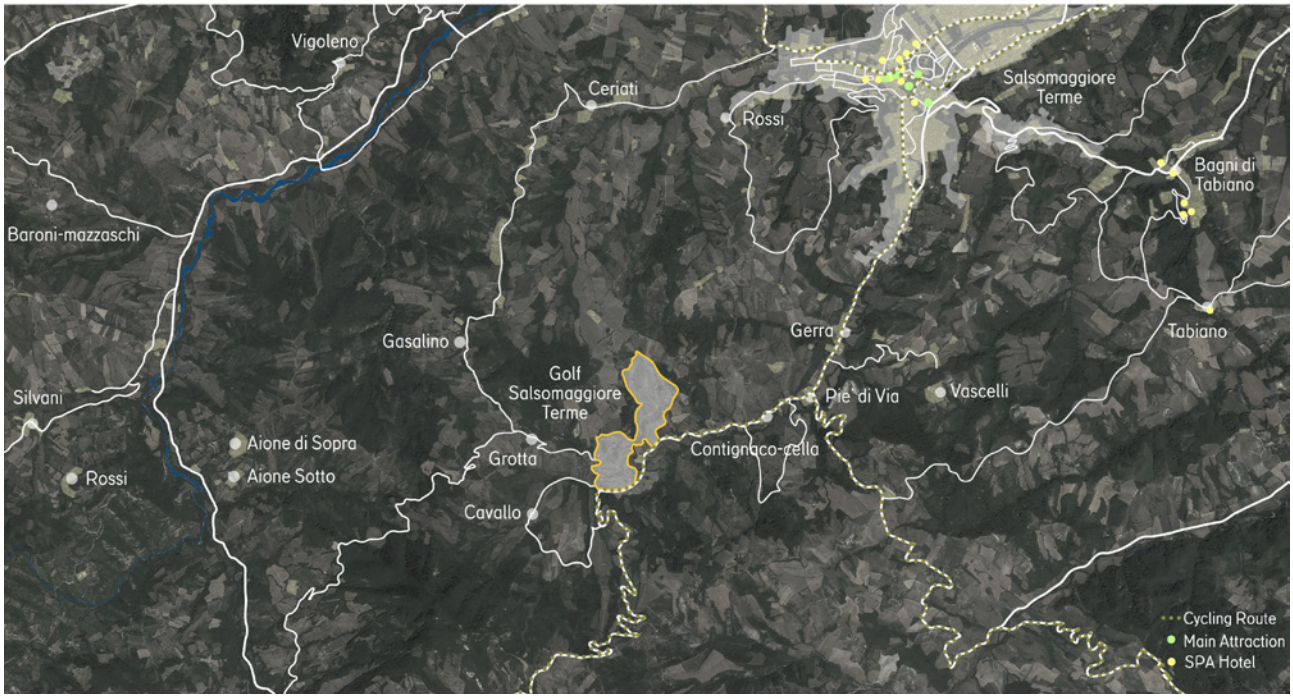


Figure2. Location (Salsogolf Club - Salsomaggiore Terme)

In addition, according to Relazione illustrativa del quadro conoscitivo (Var 2015 - Del. C.C. n.10 del 14/04/2016), the site belongs to Development of Integrated Activities Area, surrounded by Agricultural Development Area, which means it is appropriate to build a new resort here.

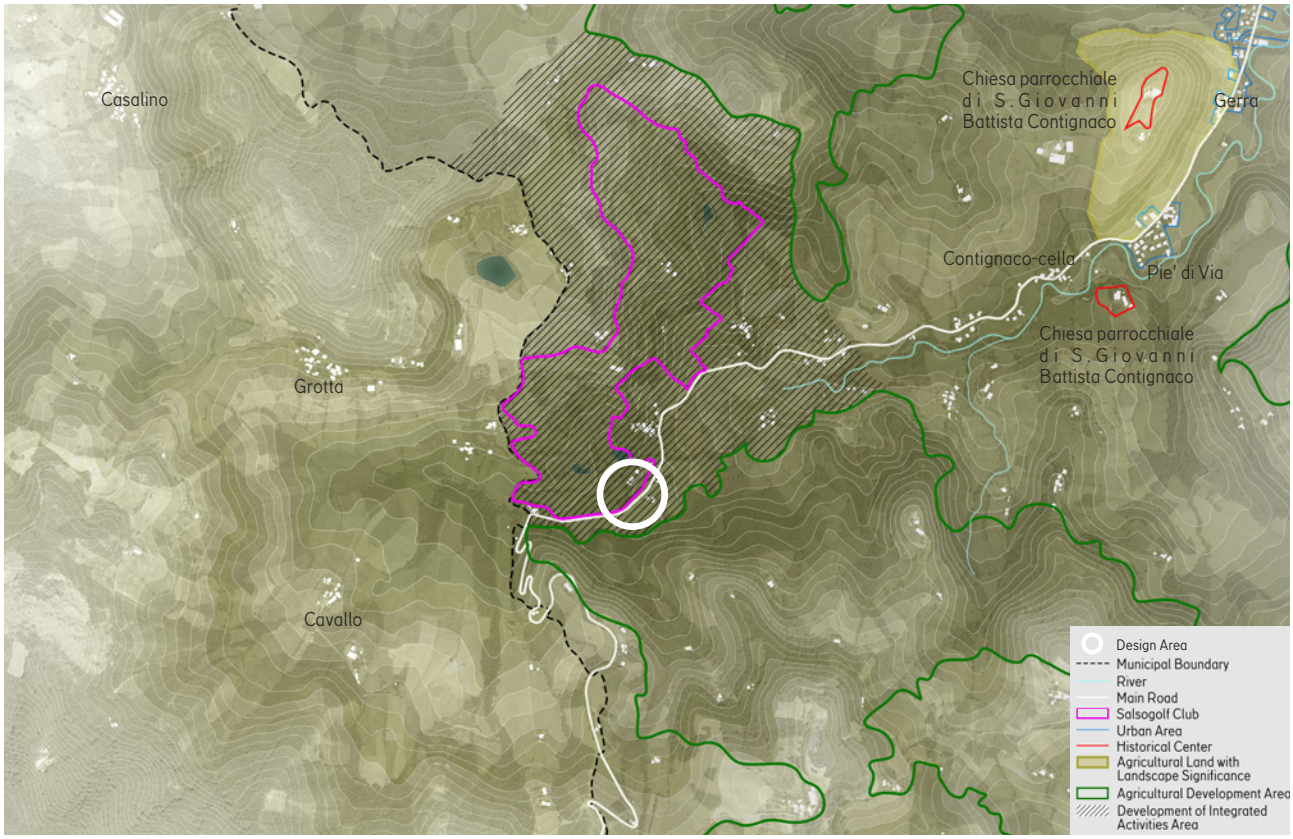


Figure3. Lond Use Zone

1.2 SITE ANALYSIS

This area is a hilly terrain, surrounded by mountains, close to a small lake, and the natural environmental conditions are excellent.

When further analyzing the advantages and disadvantages of the site itself, it can be seen that there is a section of undulating slope from the road to the lake in the center of the site. The original farmhouse is located at a high point on the site, which is easy to overlook the lake landscape and distant mountains and hills, and its outer walls are basically intact, so it can be renovated and restored as part of the new building. The fast-rising area on the north side also has a good viewing effect.

However, there are two main disadvantages of the venue. First, the abandoned houses on the opposite side of the highway affect the landscape effect. Secondly, the terrain on the northwest side of the original farm fell sharply, and the conditions for viewing were not available.

Figure4. The farm is on the left

Figure5. Hilly landscape

Therefore, the main viewing function can be arranged on the existing farmhouse side and the north side of the site, and the lower part in the middle part may be developed into an outdoor trail leading to the lake. In addition, trees can also be planted on the edge of the site to block the abandoned houses across the street.

Figure6. Preliminary Judgment

1.3 GOLF CLUB STUDY

In order to further refine and clarify the design task requirements, we conducted case studies of golf clubs and their supporting hotels and resort functions. A total of twenty cases were selected, ten worldwide cases, ten in Italy. The selected cases are the top 100 worldwide cases and the Italian case. All samples include clubs and residential functional areas. And we have also distinguished golf courses of different scales and the scale of supporting services adapted to this scale.

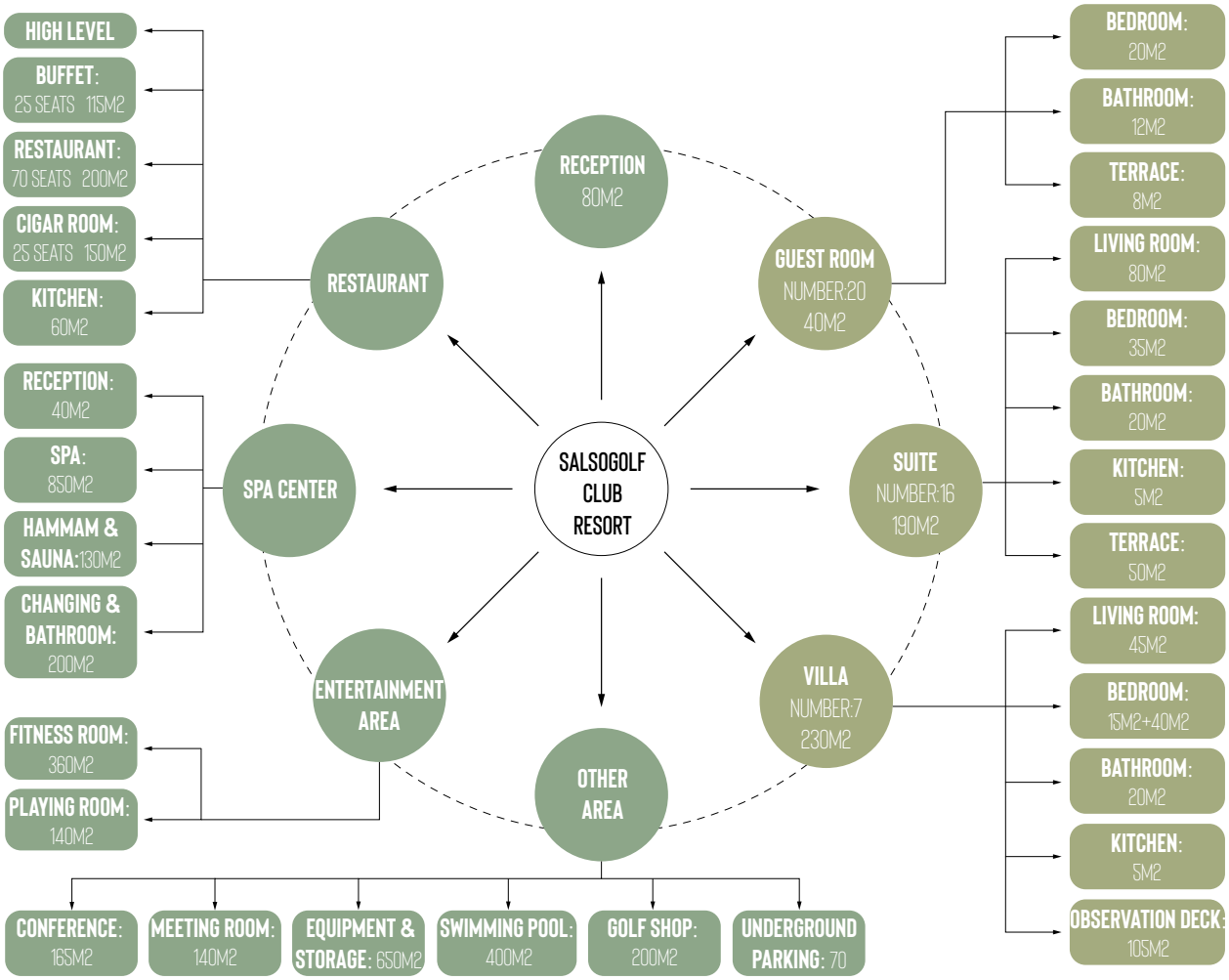
NAME	NUMBER OF HOLES	DISTANCE			FLOOR LEVEL (GOLF CLUB)	FACILITY (GOLF CLUB)	ROOM							RESTAURANT		
		CITY	AIRPORT	TRAIN STATION			FLOOR LEVEL (HOTEL)	STANDARD ROOMS	ROW VILLA	SINGLE VILLA	SEMI -DETACHED HOUSE	TOTAL NUNBER	FACILITY	LEVEL	CUISINE	SEAT
CAPE KIDNAPPERS GOLF COURSE, NEW ZEALAND	18	30.1 KM TO NAPIER	30.5KM	22KM	1	RESTUARANT, SHOP, CHANGING ROOMS	2	0	0	1(4ROOMS) +22 SUITES	0	28 ROOMS FOR 56 PEOPLE	SPA, GYM, SWIMMING POOL	MEDIUM	FRESH AND SEASONAL	NO DATA
TRUMP TURNBERRY, SCOTLAND	18+18+9	27.0KM TO AYR	32.5KM	27.4KM	2	SHOPS, CHANGING ROOMS	3	186+5SUITS	1	13	4	192 GUEST ROOMS	RESTAURANTS, BAR, SWIMMING POOL, SPA, FITNESS, EXHIBITION/ CONVENTION FLOOR	HIGH	TRADITIONAL FINE DINING IN SCOTLAND	500
CAPE WICKHAM LINKS, AUSTRALIA	18	200KM TO MELBOURNE	44.6KM	NONE	1	SHOPS, CHANGING ROOMS	1	0	3	0	0	16 ROOMS FOR 16-48 PEOPLE	PRIVATE DECKING	MEDIUM	LOCAL PRODUCE	NO DATA
PGA CATALUNYA RESORT, SPAIN	18+18	20KM TO GIRONA, 87.7KM TO BARCELONA	103KM	89.6KM	1-2	MEMBERS LOUNGE, SHOPS, MEETING ROOM, CAFÉ, CHANGING ROOMS, BAR, WELLNESS CENTER(SPA),	2-4	145+50	13(3-4 ROOMS)	26(4ROOMS)	28 (4-5 ROOMS)	619 ROOMS	3 SWIMMING POOL(NOT INCLUDE SMALL ONES), RESTAURANT, SPA, BAR	HIGH	EUROPEAN CUISINE, LOCAL ARTISAN	NO DATA
FELDON VALLEY GOLF CLUB, ENGLAND	18	73.1KM TO BERMINGHAM	59.7KM	51.0KM	2	RESTUARANT, BAR, SHOPS, CHANGING ROOMS, FITNESS SUITE	1-2	13	4	0	0	25 ROOMS	NO SPECIAL	MEDIUM	CLASSIC	NO DATA
PEBBLE BEACH GOLF LINKS	18	41.6KM TO MONTEREY	47.7KM	36.48KM	1	RESTUARANT, CAFE, SHOPS, GYM, SAUNA ROOMS,MEETING ROOMS,SPA	VILLA 1-2 STANDARD ROOMS 3	199	65	24	0	288 ROOMS	GAS FIREPLACE, DEEP DIP TUB, PIANO, SPA, KITCHEN	HIGH	ITALY, SPAIN, HAWAII CUSINE	NO DATA
CABOT LINKS	18	153KM TO SYDNEY	88.3KM	67KM	2	RESTUARANT, BAR, SHOPS, CHANGING ROOMS,MEETING ROOMS,SPA	VILLA 1, STANDARD ROOMS 2	72	32	20	0	124 ROOMS	KITCHEN, WASHER, DRYER, COFFEE MACHINE	MEDIUM	CANADA LOCAL SEAFOOD, WINE,MALT WHISKY	40
THE K CLUB	18	35KM TO DUBLIN	24KM	29.3KM	2	SPA, YOGA ROOM,FISHING, RIDING HORSES,GARDEN, EXHIBITION ROOM,CELLAR,CHILDREN CENTER	1-2	90	0	21	0	111 ROOMS	KITCHEN, WASHER, DRYER, COFFEE MACHINE, FIREPLACE, SAUNA ROOM, FITNESS ROOM	HIGH	IRISH CUISINE, THAI CUSINE, BRITISH TEATIME	87
MONTE REI NORTH AT MONTE REI GOLF & COUNTRY CLUB, PORTUGAL	18	45.1KM TO FARO	57.4KM	5.1KM	3	CHANGING ROOMS, HEALTH CLUB,SHOPS,RESTUARANT, BAR,MEETING ROOMS,FITNESS,4 POOLS,SPA	VILLA 2-3, STANDARD ROOMS 2	64	12	11	44	131 APARTMENTS	LIVING ROOM, MODERN KITCHEN INCLUDES LARGE STORAGE CABINETS, MICROWAVE AND ELECTRIC KETTLE.	HIGH	INTERNATIONAL CUISINE, PREMIUM PORTUGUESE WINES	98
HANDARA GOLF & RESORT BALI	18	54.2KM TO KOTA DENPASAR	66.3KM	22.4KM	2	SPA, CHILDREN CENTER,TENNIS COURT,SHOP,KARAOKE	VILLA 1, STANDARD ROOMS 2	45	20	12	0	77 APARTMENTS	SAUNA ROOM, YOGA ROOM,KITCHEN, WASHER,DAYER	MEDIUM	JAPAN AND INDONESIA CUSINE	NO DATA

Table1. Golf Club Cases Study - Worldwide

NAME	NUMBER OF HOLES	DISTANCE			FLOOR LEVEL (GOLF CLUB)	FACILITY (GOLF CLUB)	ROOM							RESTAURANT		
		CITY	AIRPORT	TRAIN STATION			FLOOR LEVEL (HOTEL)	STANDARD ROOMS	ROW VILLA	SINGLE VILLA	SEMI -DETACHED HOUSE	TOTAL NUNBER	FACILITY	LEVEL	CUISINE	SEAT
MARCO SIMONE GOLF & COUNTRY CLUB	18	22.2KM TO ROMA	47.6KM	27.2KM	1-2.5	RESTUARANT, CAFE, SHOPS	2	NO DATA	15	0	0	48 SUITS	RESTAURANT, GYM, SAUNA ROOMS, 1 POOL	MEDIUM	CLASSIC	NO DATA
LAGEPLAN PELAGONE GOLF	18	39KM TO GROSSETO	40.1KM	69.6KM	2	SHOPS, CHANGING ROOMS	1-2	NO DATA	11	10 CASOLARI (3 ROOMS EACH)	24	123 APARTMENTS +30ROOMS	RESTUARANT, BAR, 4 SWIMMING POOLS, AYURVEDA WELLNESS CENTRE	MEDIUM	ITALY, MEDITERR -ANEAN FLAIR	NO DATA
LE ROBINIE GOLF CLUB & RESORT	18	10KM TO MILAN	16.9KM	36.9KM	3	CHANGING ROOMS, INDOOR POOLS, HEALTH CLUB, SHOPS,RESTUARANT, BAR, 6 MEETING ROOMS WITH 3 DINNING ROOMS, FITNESS,2 POOLS	3	70	0	0	0	70 APARTMENTS	FITNESS FACILITIES, SAUNA AND SOLARIUM	MEDIUM	ITALY	45
DELLA MONTECCHIA GOLF CLUB	27	55.6KM TO VENEZIA	60KM	44.8KM	3	OFFICES, SHOPS, CHANGING ROOMS, RESTAURANTS, EXHIBITIONS, 2 POOLS, BARS	3	NO DATA	20	0	0	20 VILLAS	SAUNA ROOMS, CHILDREN ACTIVITY CENTER, GYM	HIGH	TRADITIONAL	NO DATA
ASOLO GOLF CLUB	27	64.3KM TO PADOVA	70.6KM	39.8KM	3	RESTUARANT, CAFE, SHOPS, SPA, 1POOL, CHANGING ROOMS, MEETING ROOMS	NO DATA	NO DATA	15	10	0	25 VILLAS	BAR, COMMON ROOM, GARDEN, CHILDREN PLAYGROUND, GYM TENNIS COURT	MEDIUM	ITALY	NO DATA
CASTELCONTURBIA GOLF CLUB	27	66.9KM TO VENEZIA	55.7KM	31.5KM	2	RESTUARANT, CAFE, SHOPS, 1POOL, CHANGING ROOMS, MEETING ROOMS,	NO DATA	19	62	8	0	89 APARTMENTS	FITNESS FACILITIES, SAUNA AND SOLARIUM	HIGH	ITALY	NO DATA
MIRA ACAYA GOLF RESORT & SPA	18	15.6KM TO LECCE	69.1KM	17.1KM	1-2	RESTUARANT, SHOPS, CHANGING ROOMS	3	97	0	0	0	97 ROOMS AND SUITES	1200M2 SPA, RESTAURANT, 2 SWIMMING POOL, A CONFERENCE CENTRE	HIGH	TRADITIONAL	NO DATA
MIRABELLA GOLF CLUB	9	74.1KM TO CASERTA	84.6KM	88.9KM	2	SPA, A POOL	2	12	0	0	0	12 ROOMS	NO DATA	NO DATA	NO DATA	NO DATA

Table2. Golf Club Cases Study - Italy

After that, the design requirements for this design was determined based on cases study above.



Graph1. Requirements for Salsogolf Club Resort

1.4 EARTH - SHELTERED ARCHITECTURE

Accorfing to the book Urban Environment Architecture Research Series: Earth-Sheltered Architecture, the Earth-Sheltered Architecture, not only refers to soil covered buildings or underground architectures, but the architecture linked closely with soil, wood, and nature, which has become an emerging comprehensive discipline in architecture field. The earth-sheltered building is a kind of ecological building, and it is also a special kind of contemporary architectural form. It is the product of the building after the rectification of the site form.

With many different forms, Earth-Sheltered Architecture can be mainly divided into three main categories, including sunken, leaning on the cliff, and freestanding. The sunken type refers that the whole or most of spaces of the building are underground. In order to achieve better lighting and ventilation conditions, this type of earth-sheltered architectures usually dig some wells, forming atria or patio courtyards. The cliff type means a building was set on a slope, and its roof and walls are covered with soil, which is the most energy-saving earth-sheltered architecture form in cold places. The freestanding type is also called the earth dam type, which is completely located above the ground. Compared to the other two types, this kind of building has better waterproofing capability and lower cost for construction.

In terms of energy saving, the advantages of earth-covered buildings are more significant. Firstly, the soil covered by the building's surface can provide good thermal insulation. During the day, about 50% of the solar heat is absorbed by the ground, and the earth-sheltered building utilizes the characteristics of the soil's large specific heat capacity to create a comfortable environment that is warmer in winter as well as cooler in summer. Secondly, compared with traditional buildings, the air humidity in earth-covered buildings can reach 50-70%. In addition to avoiding the problem of room drying in winter, it also has higher fire resistance. Furthermore, due to the protection of the soil, the earth-sheltered buildings also have the advantages of good wind resistance, sound insulation, and earthquake resistance. Finally, the application of planted roof makes the advantages of earth-sheltered buildings in terms of ecology and landscape even more unparalleled.

1.5 LANDSCAPE ARCHITECTURE

Landscape architecture, that is, after responding to, intervening, reshaping and integrating the shape of the earth, it shows the characteristics of a horizontally stretched earth landscape, and finally achieves an architectural form that is homogenous between the architecture and the earth shape.

Broadly speaking, the landscape architecture is not only a combination with the site, but also emphasizes the fit with the local culture and human relations. It not only breaks the boundaries of architectural design, landscape design, and sculpture design, but also pursues a new approach for the balance between

architecture and humanity and region, ecology and technology.

From the development process, the landscape architecture has generally gone through three periods. The earth-covered building is integrated with the natural form, and it is one of the earliest landscape buildings in human civilization. Cave dwellings, nesting dwellings, cliff dwellings or dwellings on platforms, megalithic cultures around the world, Egyptian and Mayan pyramids, cave dwellings on the Loess Plateau in China, etc., are all natural forms of artificial landscapes formed in the early days.

The carpet building is an architectural prototype developed by the CIAM ten-member team in the middle of the 20th century. It is a revision of the early modernism's attitude of neglecting relations and daily life and emphasizing independent objects. Horizontal extension and texture are the characteristics of carpet architecture. The thinking and operating strategies of early carpet-style buildings were based on structuralism and tended to be essentialism. But in modern times, starting from Eisenmann's Rebstock Park residential area, the phenomenon of horizontal architecture has become increasingly prosperous. At this time, it is very different from the early structuralism, showing the natural form and continuous ups and downs of landscape architecture. The carpet-like architecture gradually integrates into the contemporary context through continuous self-criticism, changing the form of the city with an open field and accommodating the rich and changing social life.

In the 1960s, the Cold War and ecological crisis made people rethink their own destiny and the destiny of the earth, and land art appeared. It essentially splits from minimalism. In the 1990s, under the influence of information technology, artists have shifted from showing the greatness and power of the landscape to focus on history and living conditions, and the places of creation have also changed from natural environments to urban environments. Land art is the source of the development of landscape architecture and provides a possibility of artificial nature.

When it comes to the characteristics of landscape architecture, landscape architecture is often not presented on the large foundation as a heterogeneous entity, and the boundary is diversified in the process of dissolving or blurring. Most of the landscape buildings meet the characteristics of "horizontal extension", "macro structure" and "manifold", and are urban-scale buildings.

Landscape architecture is often integrated with the landscape, completing the natural connection with the urban texture, and activating the surrounding area as a miniature landscaped urban unit.

CHAPTER 2 - DESIGN PROCESS

2.1 CONCEPT DESIGN

In our design concept, inspired by the idea of earth-sheltered architecture and landscape architecture, we hope that the building can be hidden in the landscape environment to minimize the landform while improving its landscape environmental conditions. The site is a gentle slope, with a calm lake near and hills in the distance. The hillside is green and the environment is beautiful. In the design process, we hope to maintain the original green landscape effect of the site, so the greening of the slope is upgraded to the roof of the new building, and it is used to guide the flow of people. Going to the highest point of the roof, guests can admire the tranquil lake and the hills and mountains in the distance in a better position.

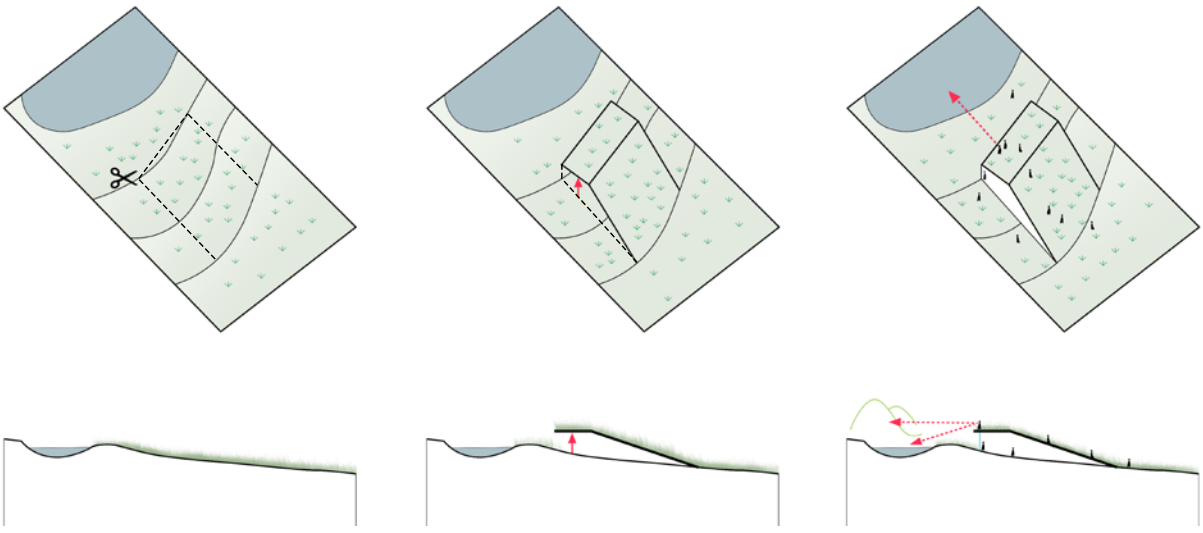


Figure7. Concept Diagram

2.2 SCHEME GENERATION

Our design process is roughly divided into six stages.
1. A pathway leading to the lake is designed because we hope that the guests can appreciate the lake and distant mountain landscape in the site as soon as they enter the site.
2.The main entrance of the new hotel is from the original farmhouse because the farmhouse is the highest building in the whole resort, which is the most obvious part. The landscape path of the site separates the two building volumes. Another path leads to the single villas area.
3.The land on the side close to the lake is raised as the roof of the new buildings, so that the buildings can be hidden and guests can enjoy the natural environment not just from the guest rooms but also platforms on the roof.
4.In order to give guests here best sunlight and lanscape view, standard rooms, suites and single villas are set along the lake, facing south or west direction.
5. A slope is designed in the middle of the two parts of hotel to renovate the original undulating terrain for pedestrians to pass, combine the two parts together in underground floor. As a result, it makes the circulation more fluent, and meanwhile shapes a *valley*.
6. To give better lighting, holes are made on the roofs, shaping patios inside the building. What's more, small sinking parts on the roof of villas is made to give people space to enjoy the view of the course.

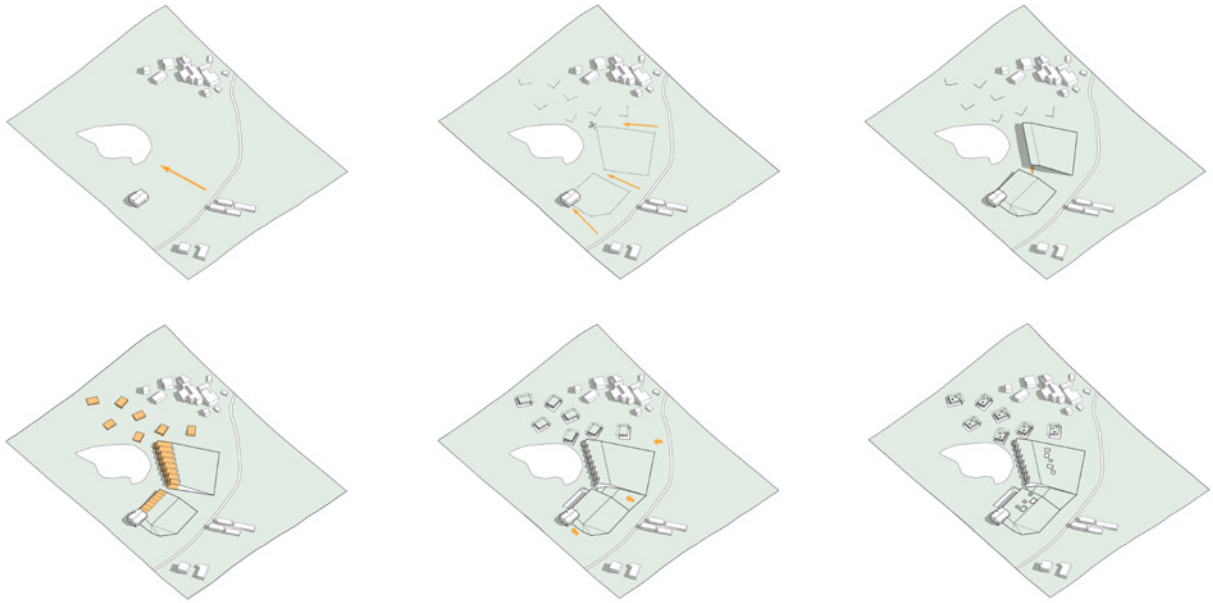


Figure8. Scheme Generation Diagram

2.3 STRATEGY

The internal circulation of the building starts from the existing farmhouse. The main entrance of the building is in the middle of the façade along the street of the existing farm, and then to the north to enter the hotel. Continue to move forward.In the west is the guest room area facing the lake, to the east is the conference room for holding ceremonies and meetings, and the open area is used as a rest area and golf shop. Pass through the outdoor corridor between the two blocks of the two hotels to enter the second block. On the west side of the lake area is a setback suite. This is to give each household more balcony space and better adapt to the terrain. The two blocks are connected in the underground layer, and the plane flow lines are basically close to the same layer. Two traffic cores are distributed inside the two blocks. The volume on the left has a traffic core in the transformed farm.

In the outdoor circulation part, the main landscape route starts from the lower part of the central part, which separates the two building volumes. After leading to the lake, there is a path around the lake for close viewing. In addition, there

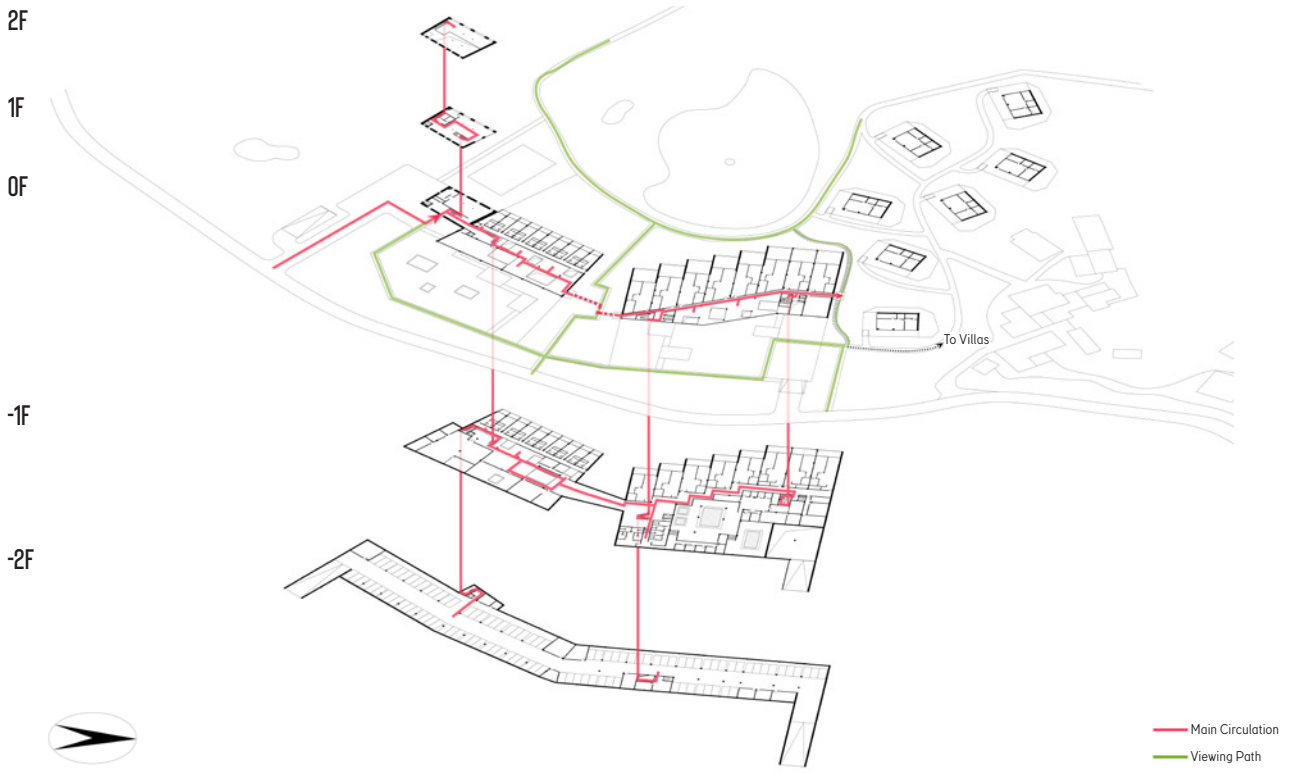


Figure9. Circulation

are roads leading to the lake on the north and south sides. There are two underground garage entrances and exits on the north and south sides of the site. On the north side, there is a curved path leading to the villa area along the lake. There are sidewalks along the outer edge of the building.

Functionally speaking, the north is a scattered villa area, the middle is a hotel and main public functions, and the existing farmhouse in the south are transformed into a restaurant function area. The ground floor of the farmhouse is a buffet area, the first floor is a restaurant, with toilet and kitchen, and the second floor is a cigar room. The function of ground floor of the volume in the south part of the hotel are the guest rooms and conference room, the open area is the golf shop, while the function of undergrund floor are the guest rooms and fitness center, as well as a playing room and meeting room. The ground floor of the volume in the north of the hotel is suites, and the underground floor is the spa center, including hot spring and warm spring, shower, sauna, turkish hammam. There are patios on each floor of the hotel to improve lighting and ventilation.

The roof garden is equipped with outdoor seating and flower ponds, where guests can relax and enjoy the scenery.

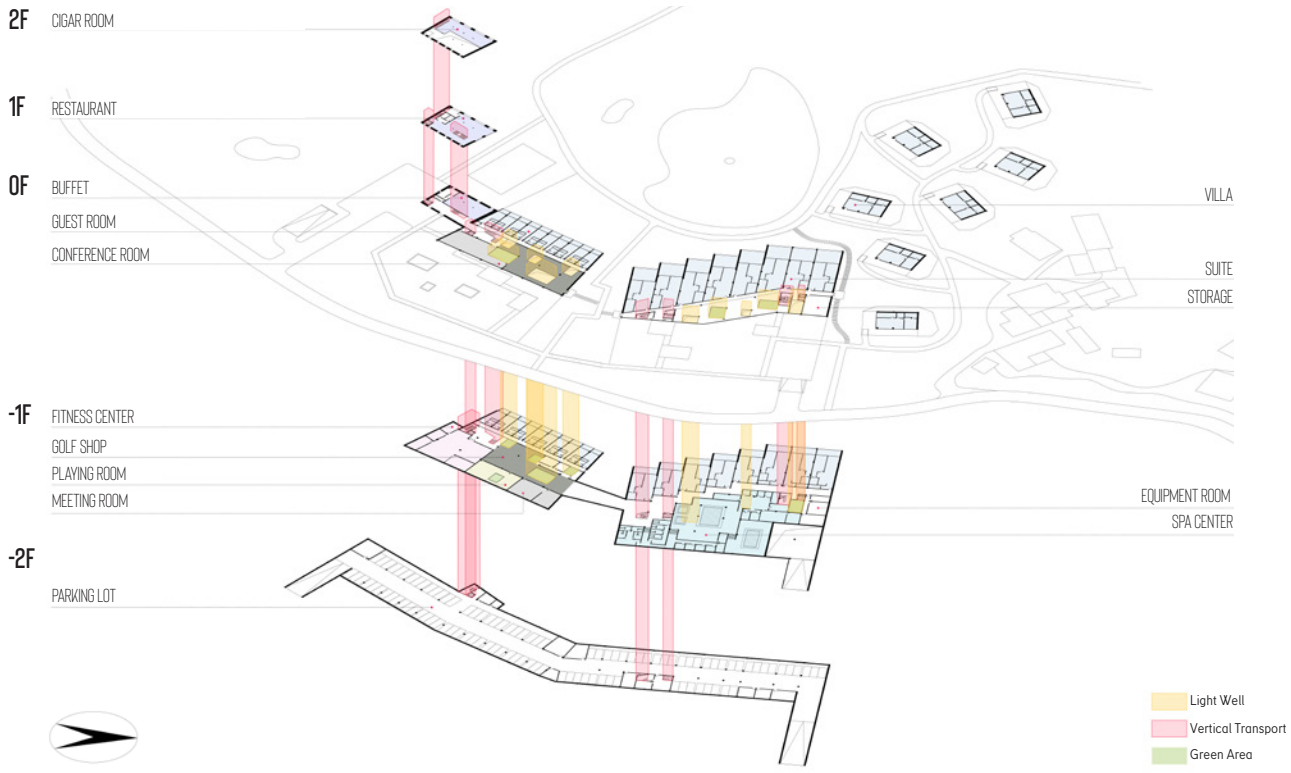


Figure10. Function

BIBLIOGRAPHY

1. JING QIMIN, ZHANG LI'AN, URBAN ENVIRONMENT ARCHITECTURE RESEARCH SERIES: EARTH-SHELTERED ARCHITECTURE
2. SCHEDA DEI VINCOLI_VARIANTE 2020_0
3. RELAZIONE ILLUSTRATIVA DEL QUADRO CONOSCITIVO (VAR 2015 - DEL. C.C. N.10 DEL 14/04/2016)
4. HTTPS://WWW.GOOOOD.CN/EWHA-UNIVERSITY-BUILDING-BY-DOMINIQUE-PERRAULT-ARCHITECT.HTM?LANG=CN

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