

# Rocking Rebeginning

## Talent's Choice

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## PROLOGUE

Besides driving, the main way start from the station is the by detour from the north. Therefore, we chose the site which is on a small valley with no trees to block the view. We want this building to act as a catalyst and landmark, our design presents a fully open gesture towards the view and serve as starting point for downhill and climbing, to stimulate the place's vitality.

People can enter through three ways, from the corridor on the north side to the roof, from the stairs on the south side to enter the leisure area, or take the escalator to the platform. Visitors can pass through a tunnel to the starting point for climbing. And can also take the elevator and go down to the bike downhill point.

The shape takes energy conservation and environment into account. The overhead space facilitates natural wind. The vertical cavity is used as an air shaft. We choose safe, environment-friendly materials which are also good for health. The double-layer Low-E glass has good thermal insulation performance. The burning fir board has the characteristics of anti-corrosion, moisture-proof and insect prevention, and is suitable in mountain environment.

In order to reflect the locality of architecture, we try to refer to the local materials. And hope that through the combination of new and old materials, we can make our building more distinctive.



Fig.1. Looking at the building from below

## PROJECT LEARNING

In the lecture of the period, the professors gave a detailed explanation of the venue. Although we did not arrive at the base in person, combined with the professor's lectures and Google Maps, we have a comprehensive and intuitive understanding of this venue. We want to design a building here that allows visitors to get close to nature and can activate the vitality of this area. For this goal, we have found many excellent cases and studied them. The following is our understanding of the cases.



Fig.2. Atherton Pavilions  
Image source: Reference 1



Fig.3. Atherton Pavilions  
Image source: Reference 1

The Atherton pavilions are two accessory structures rich in detail and imagined by the owners to be of the landscape. The boxes are transparent and discrete to blend in with the surrounding softscape. The pavilions' facades are wrapped in naturally weathering Alaskan Yellow Cedar that shroud each end of both structures while screens help form trellises on the front and back. Lifting the pavilion's concrete foundations at the front and rear of each pavilion creates an edge - giving the illusion that the structures are hovering over the lush landscaping below. At either end of each pavilion, concrete returns to the site, tying the structures back to the earth.

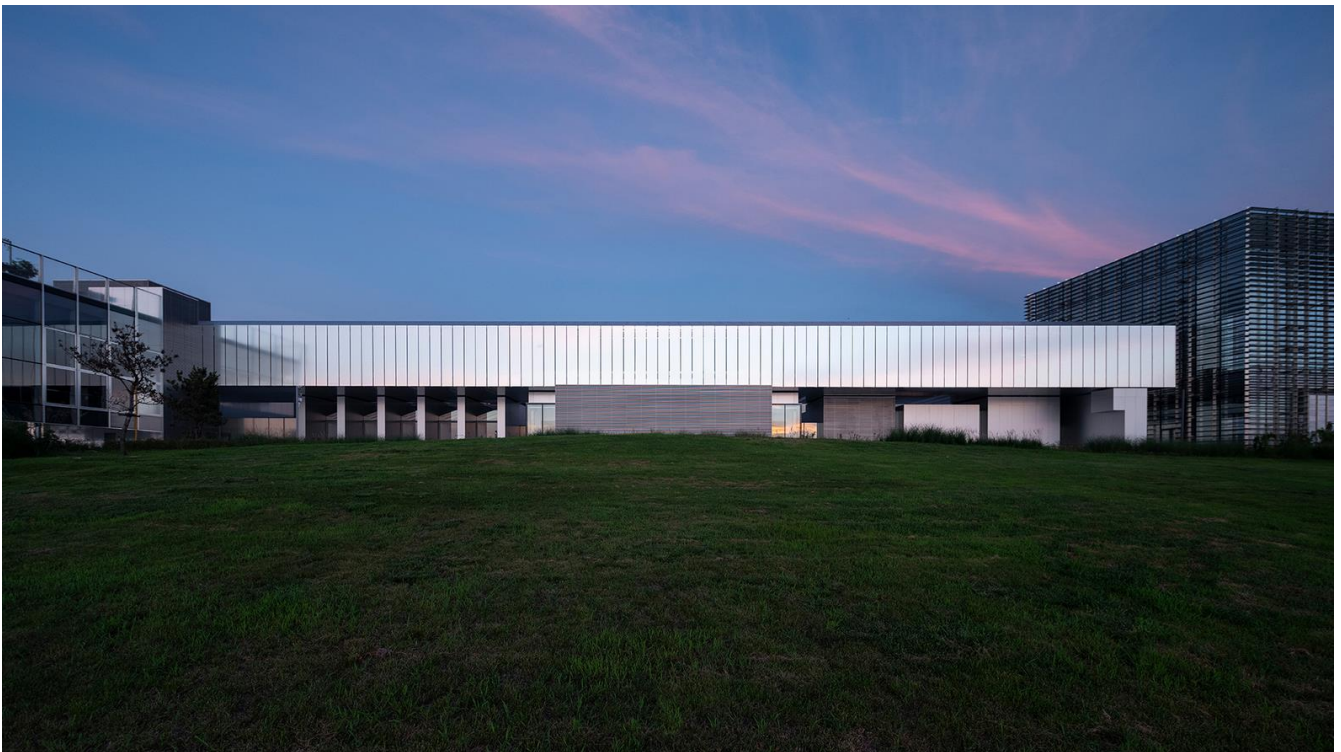


Fig.4. Coastal TAG Art Museum  
Image source: Reference 2

The museum is located in the West Sea Bay in Qingdao, China. Strung along a covered promenade that weaves through planted gardens and woodland, running along the coastline towards a new marina, the structures consist of 12 interconnected exhibition halls. During winter, the walkway will be protected from the elements by retractable transparent curtains, reflecting the scenery of ocean and sky when the weather is clear. The flat facade of the building reflects the gradation of the sky at dusk. The material of the museum is switched between transparency and substance, environment and space are juxtaposed between virtual and reality, and architecture and nature blend between mountains and seas.



Fig.5. Kokage-gumo Pavilion

Image source: Reference 3

The idea was that the new sunshade would blend in with the historic landscape with an inherent sense of antiquity from the start, despite it being newly built. More specifically, wooden pillars and roofs were planned to cover the entire garden, then the structure was charred using the technique of yakisugi (burned cedar). By controlling the amount of heat, the surface of the cedar is carbonized and in some places the structure itself is charred. As it is burned, the wooden structure that spreads out in the garden is flexibly shaped to avoid the old trees growing in the existing garden. Charred by the flames, the pitch-black structure is reminiscent of a ruin. As if dashing through time and transformed from a new building to a ruin instantly, it seems to have acquired at once all the changes that architecture can undergo over time.

All three cases make good use of the natural landscape. The first case makes the building transparent, so that people inside the building can fully feel the natural beauty, and the building is also integrated into the nature. In the second case, a large glass curtain wall reflects the surrounding scenery, which makes artificial materials appear less obtrusive in nature. The third case uses a traditional technique to make the wood look old, and at the same time it can extend the use time of the wood.

## SITE LOCATION

The entire base is located on a scenic hillside, and there is a railway below the hillside. This railway is an important way for tourists to reach this area. There is a road passing through the center of the base. On both sides of this road, there are many important buildings. These buildings have witnessed the development and changes of this area, and carry the daily life and activities of the residents here. Many buildings have a distinctive Austrian style, which can represent some unique architectural culture here. For such a road with superior cultural conditions, we hope to add another unique charm to him. Therefore, we chose the base around this road.

Except for the tourists who come by car, we consider most of the tourists who come to visit by rail. For them, entering the base from the north is a better choice. Therefore, we set the base at the first corner of the north end of the road in order to allow tourists to better reach this building. At the same time, there is a small valley here, where the building can be better embedded in the mountain, integrated with the environment, and can also get a better view of the landscape. At the same time, we also consider setting up the building below the road, so that the line of sight in the building can avoid road interference, and at the same time, it can also allow visitors on the ground floor to better enter our building.

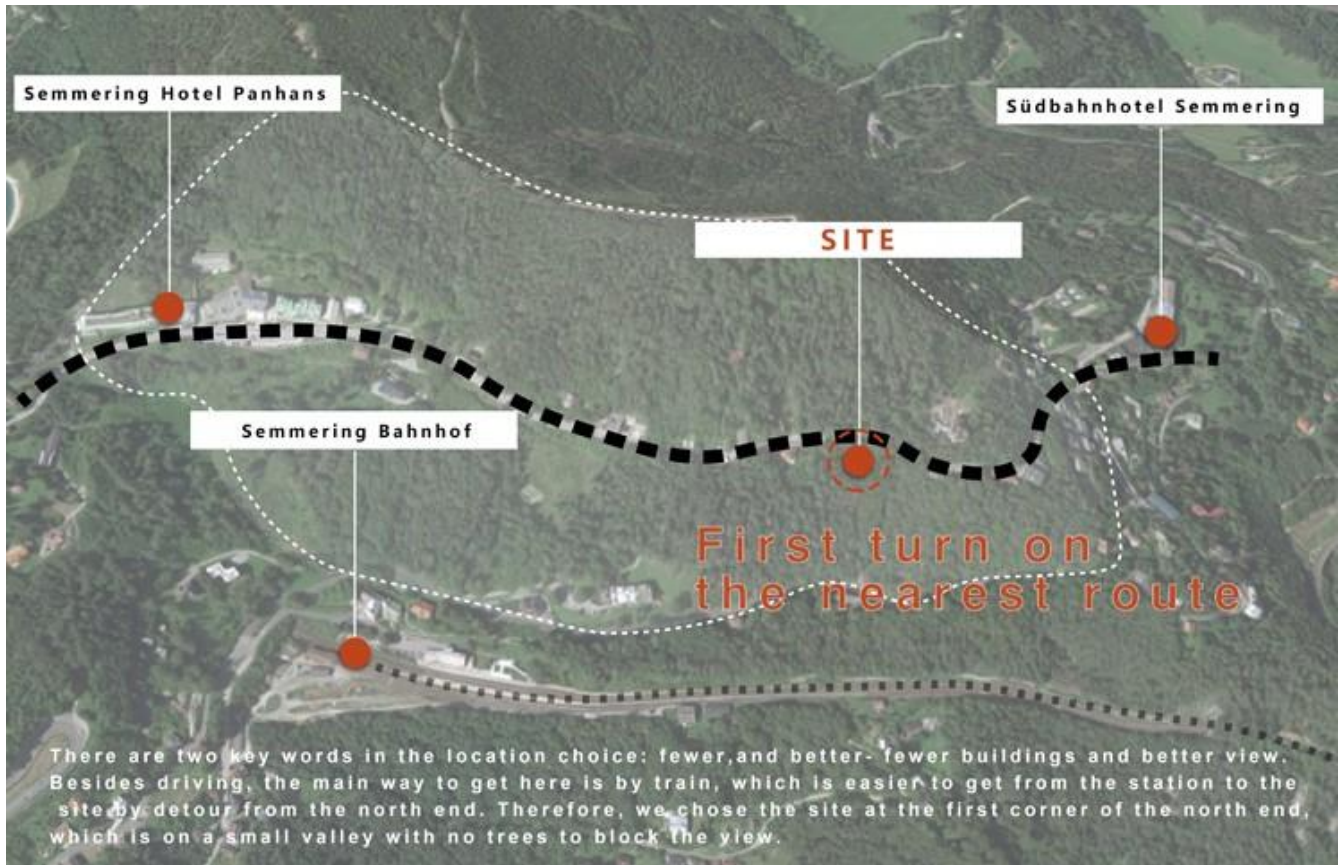


Fig.6. Site location

## ACTIVITIES

In order to attract tourists and stimulate the vitality of this area, it is very important to organize a series of activities with this building as the core. We divide the activities surrounding this building into two types. One is outdoor activities. At this time, the building acts as the starting point for these outdoor activities. The other is indoor activities. Visitors can participate in these activities inside the building and get some public service facilities provided by the building.



Fig.7. Various activities

Because the building is located on a mountain with excellent natural scenery, climbing and mountain biking have become two good sports. At the same time, we can distinguish the streamlines of the two kinds of sports, climbing up to the top of the mountain and downhill by bike. And this building will become the starting point of these two movements. In climbing and downhill activities, besides the tourist center at the starting point, we can also set up some camps in the route, which provides camping, rest and venues. We can also set up small devices such as stage along the way to bring some surprises to tourists.

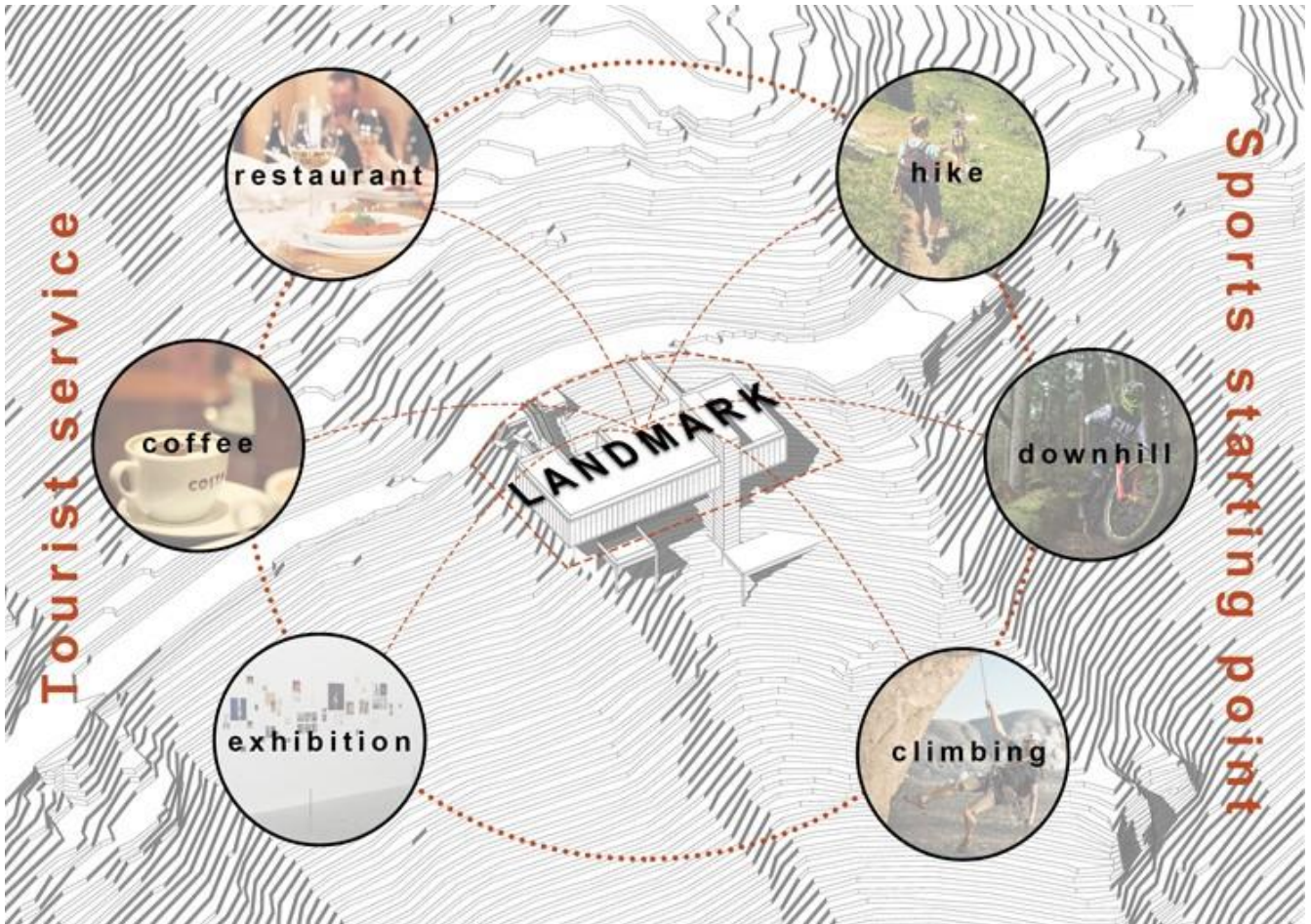


Fig.8. Functional analysis

Inside the visitor center, we also prepare some activities. For example, in the vertical space with high height, we are going to set up indoor climbing wall. It may be dangerous to play this sport outdoors, but there is no need to worry indoors. There may be many platforms in our building, which provide a place for sun bathing.

**MORPHOGENESIS**

We first placed a horizontal mass in the field. This volume bears the main function of the building and is the main place for tourist activities. A floor-to-ceiling glass curtain wall is used on the side of the volume facing the landscape, which is open to the landscape to the greatest extent. It also allows people to see a transparent and light box from the mountain. During the day, the glass curtain wall can reflect the surrounding scenery and beautiful sky. At night, the light from the box also became a unique scenery.

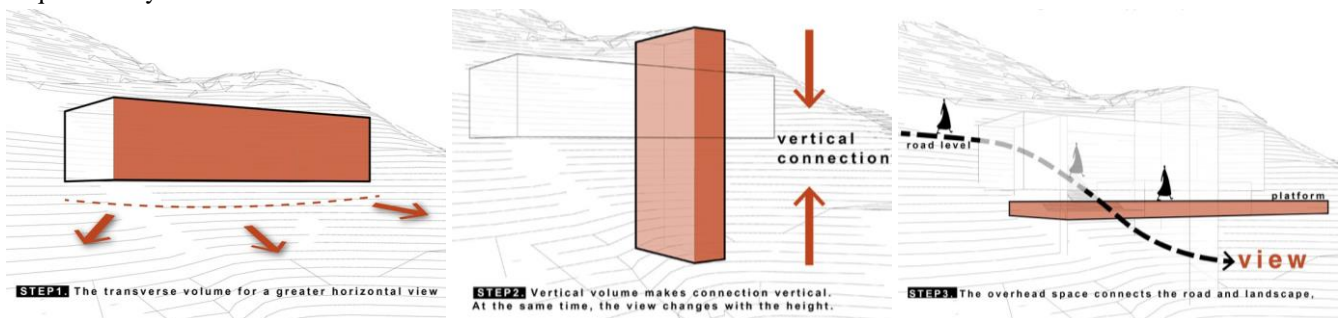


Fig.9. The process of morphogenesis

Then we placed a vertical volume on the north side of the building. This volume is a completely transparent glass box, which is supported by a steel structure. On the one hand, this box acts as a structural support for the entire building. It is inserted downwards into the mountain and lifts the horizontal square box up so that the main volume is suspended in the air. On the other hand, the vertical box serves to connect the entire building. It serves as a vertical traffic core with vertical elevators and stairs. People can enter the entire building from the roof level and reach the bottom platform of the building. In addition, people can also perform some indoor activities on the vertical wall.

Finally we are in the middle of the building. A gap was opened. The use of escalators allows visitors to enter directly from the road level to the platform at the bottom of us, which also realizes the circulation of the internal circulation of our building. The platform at the bottom can be used for sun bathing activities and can also be used as a starting point for bike downhill.

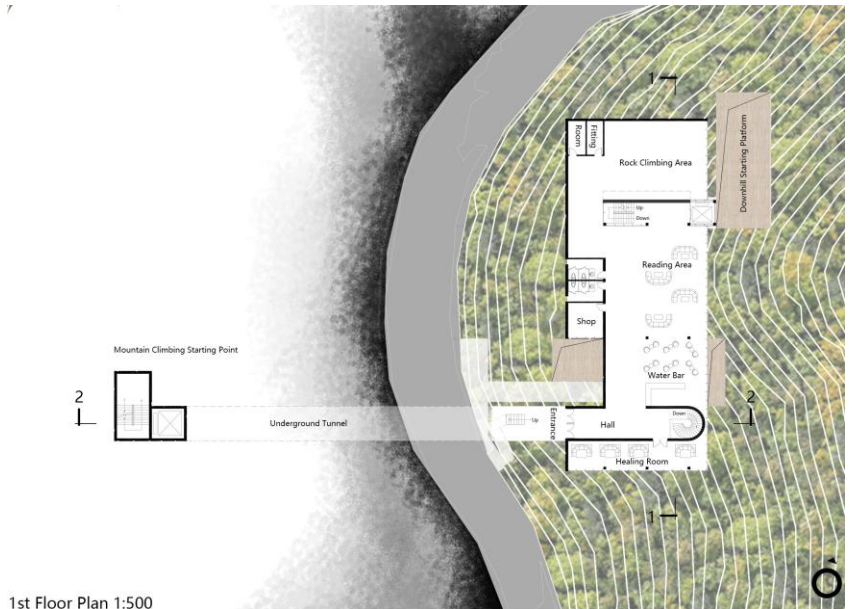
### DESIGN DEVELOPMENT

把拜拜！ At the road level, people have three ways to enter the building. The first is to enter from the northernmost roof level, and people come to the roof level of the building through a corridor. There are many green roofs planted here, and people can take a walk or sunbathe here. The vertical glass box protrudes upward from the roof level, through which we can enter the room and then down through the vertical elevator and stairs to enter the interior of the building. The second way to enter is to descend from the stairs on the south side to the first floor of the building, so that people can directly enter the core area of our building. The third is through the escalator in the middle. Go directly down to the underground platform. This platform is also completely open to the public, and people can come here to get close to nature anytime, anywhere.



Site Plan 1:2000

Fig.10. Site plan



1st Floor Plan 1:500

Fig.11. 1st floor plan

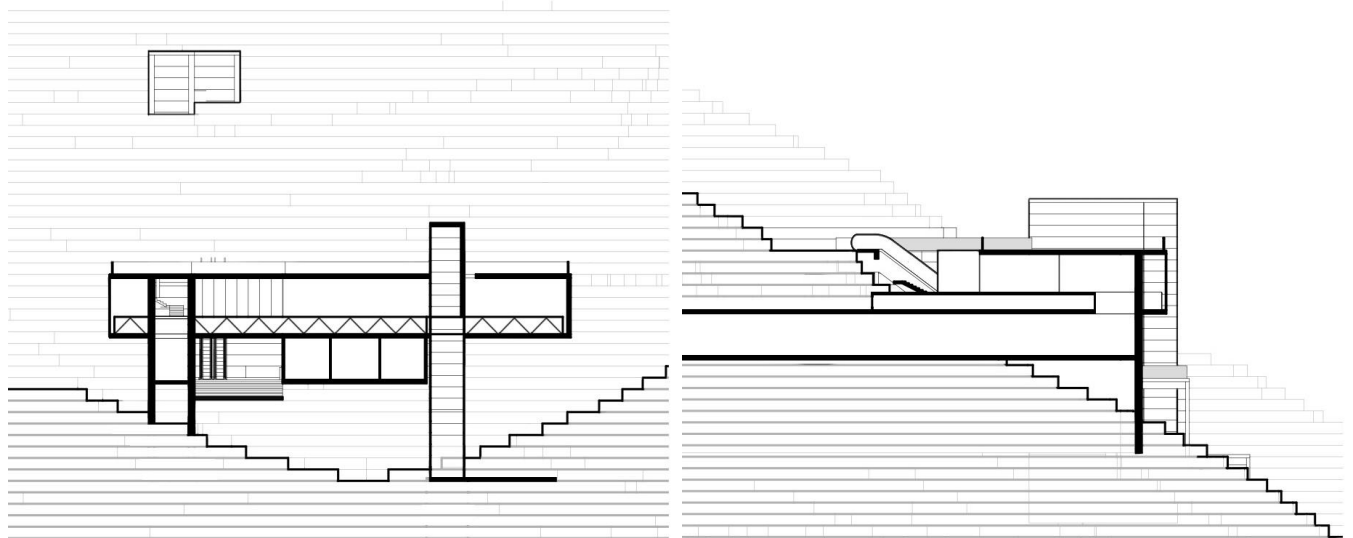


Fig.12. Section

Entering the first floor of the building, we unfold the main functions along the open glass curtain wall. We divide the main functions into three types. On the north side, using the high wall brought by the vertical glass block, we arranged a rock climbing area here. A large area of glass on the south side brings a good view of the landscape. We use solid walls to enclose an area as a place for people to enjoy the beautiful scenery quietly. In the middle, we have placed two relatively neutral functions, a water bar and a reading area, and a retail supermarket for this area, where people can buy some mountaineering, downhill and rock climbing related equipment and surroundings.

It's on the basement level. There are several outdoor platforms open to the landscape, where people can enjoy the natural beauty up close. At the same time, the office area is also arranged on the basement floor.

Through the vertical elevator in the glass box, we can reach the platform on the second floor underground. This is the starting point of the bike downhill. And through the core tube on the south side to enter the underground floor, we can go through an underground tunnel and the vertical elevator at the end of the underground tunnel to a platform at the upper end of the hillside, which is the starting point for mountaineering. We distinguish the starting points of downhill and mountaineering, so that there is no conflict between the flow lines of each other.

### STRUCTURAL ANALYSIS

The overall structure of the building is clear and firm. Structural transfer layer is between the two traffic core of steel structure and Upper Frame structure. The office area is hung under it as a box.

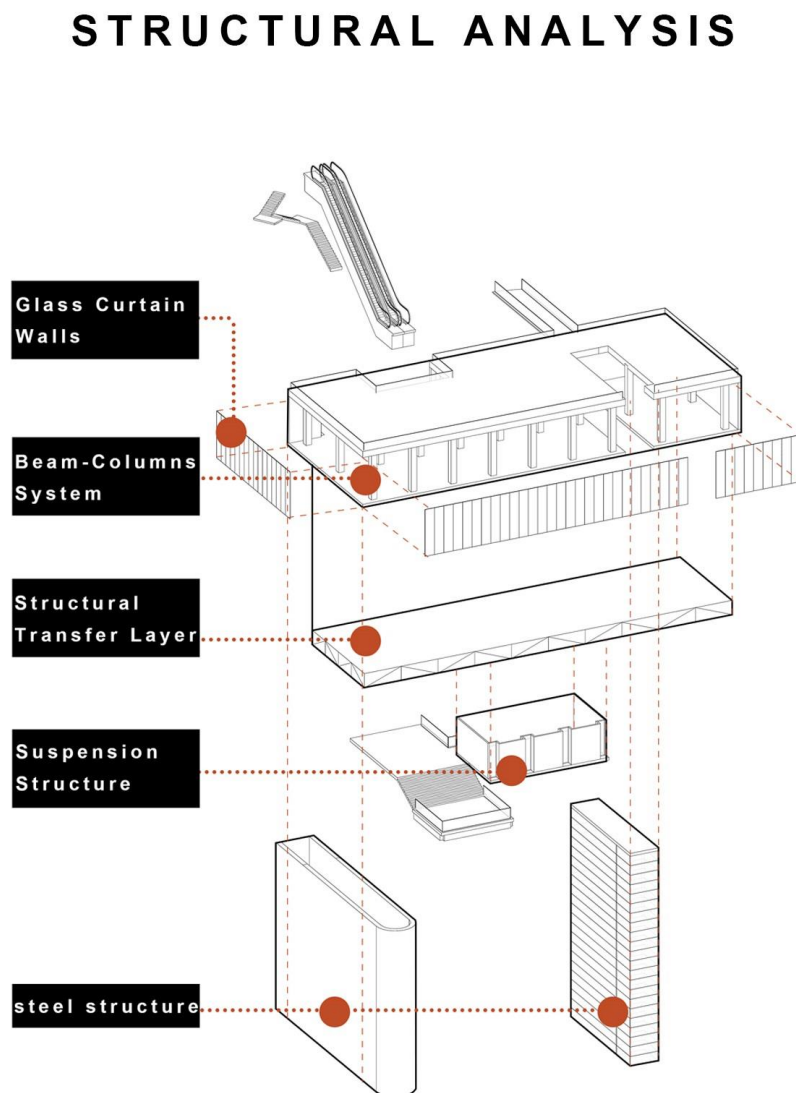


Fig.13. Structural analysis

We hope that the box supported by the two core heads is like a transparent volume suspended in the mountains, which is very eye-catching, but it can be well integrated with the environment.

## GREEN ARCHITECTURE

The design takes energy conservation and environment into account. During the day, the sun heats up mountain air rapidly while the valley remains relatively cooler. Convection causes it to rise, causing a valley breeze. At night, the process is reversed. During the night the slopes get cooled and the dense air descends into the valley as the mountain wind. The overhead space not only connects the road and landscape, but also facilitates the passage of natural wind. The vertical dimension is used as an air shaft to realize the natural ventilation of the building.

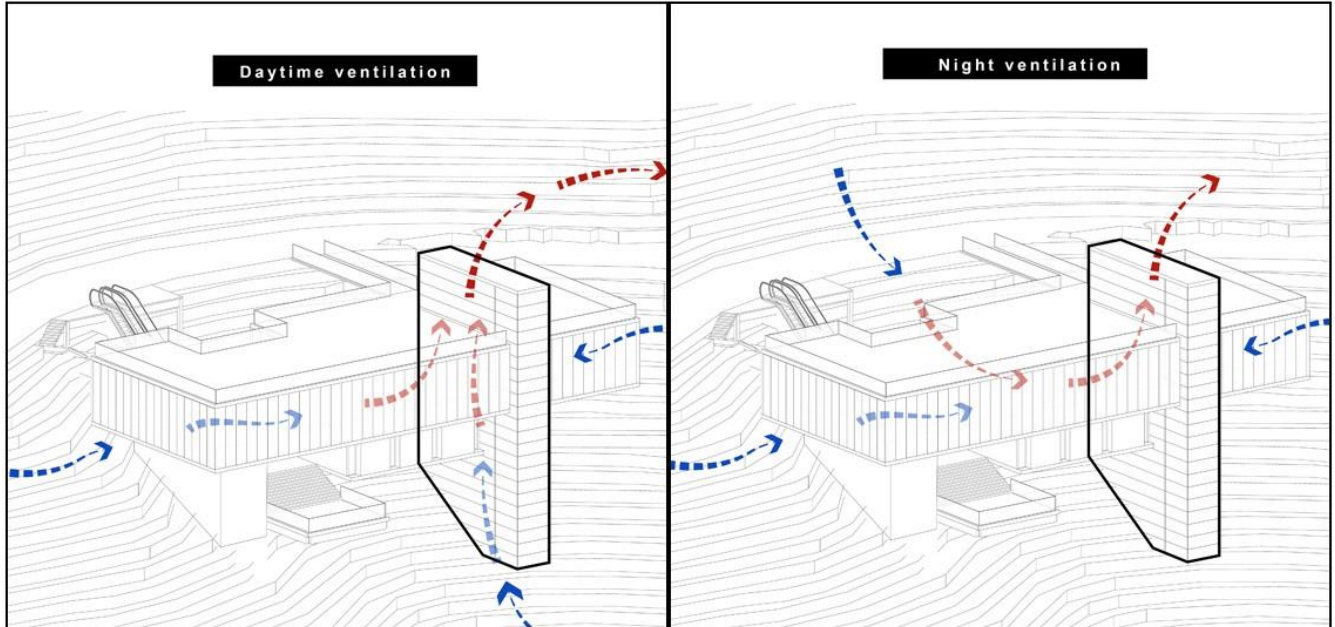


Fig.14. Ventilation system

We choose safe, environment-friendly materials which are help to conserve energy. The double-layer Low-E glass has good thermal insulation performance, so as to save energy. The first of the big advantages of low E glass is the supreme insulating power it adds to the windows. Low E glass has higher insulative properties than standard uncoated glass thanks to its low-emissivity film. Adding the soft-coat low E film allows your glass to have an emissivity as low as 0.05. So, when combined with other insulating tech, such as warm-edge spacer bars and argon gas-filled cavities, low E glass can be used to create an IGU (insulated glass unit) of real insulating potential. Double-glazed units made with low E glass, and the aforementioned IGU tech, can have a U-value as low as 0.9.

As a green building material, shou sugi ban has the characteristics of anti-corrosion, moisture-proof and insect prevention, and is suitable for the building in mountain environment.

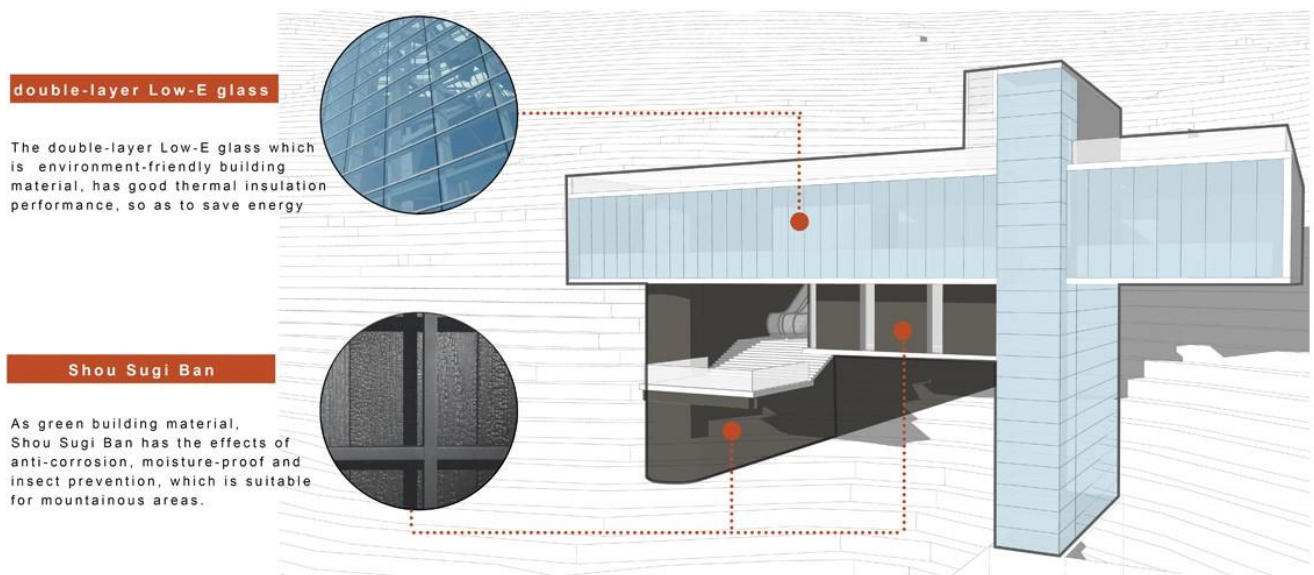


Fig.15. Green materials



We have set up a roof garden on the roof. Green roofs improve and reduce energy consumption. They can reduce heating by adding mass and thermal resistance value, also can reduce the heat island by increasing evapotranspiration. Green roofs can reduce stormwater runoff via water-wise gardening techniques. The roof garden grows many plants that will not grow in the wild, and people can get closer to nature more freely here. Our roof garden also has an area for people to rest and play, which is unavailable for outdoor activities.



Fig.16. Planted roof

**LOCALIZATION**

In order to reflect the localization, we try to make use of local rich natural resource such as wood to reduce the construction cost. And hope that through the combination of new and old materials, to make our buildings more distinctive.

We use the craft of shou sugi ban as the main method to realize the use of wood in this area. When fire is applied to wood boards, the burning process creates a thin layer of carbon on the wood surface, which is what we see as burnt wood. This carbon layer protects the interior wood in very much the same way that stains or sealants would. Shou Sugi Ban siding is very low maintenance and naturally resistant to insect as well as moisture damage. These benefits are made even more apparent when Shou Sugi Ban is used to enhance modified wood boards, which already are more dense, durable and long-lasting than many other wood types and species.

The Shou Sugi Ban process is environmentally friendly and doesn't contribute to harmful pollution. There are no chemicals present in this siding to potentially leach into the environment and it's entirely safe for homes with children. Shou Sugi Ban is a sustainable means of naturally protecting exterior siding and once its lifespan has been reached, can be recycled or disposed of without any concern of harming the environment, like one might have when disposing of treated wood.



Fig.17. Shou Sugi Ban process

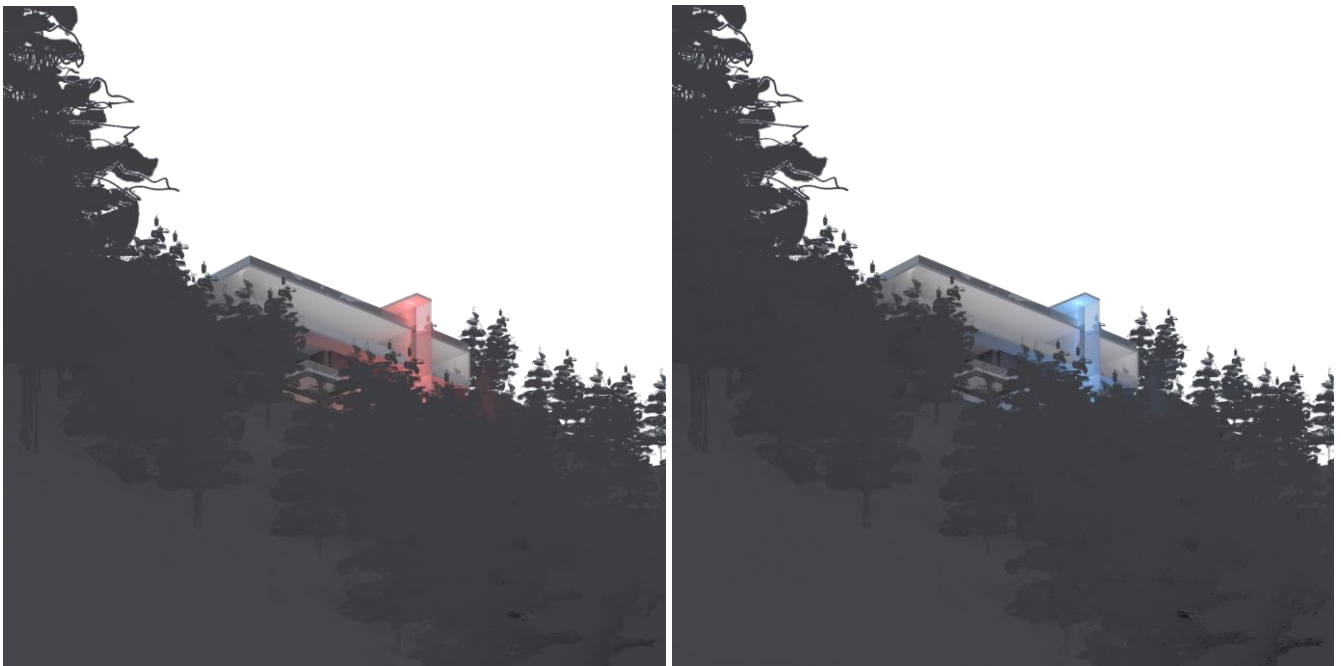
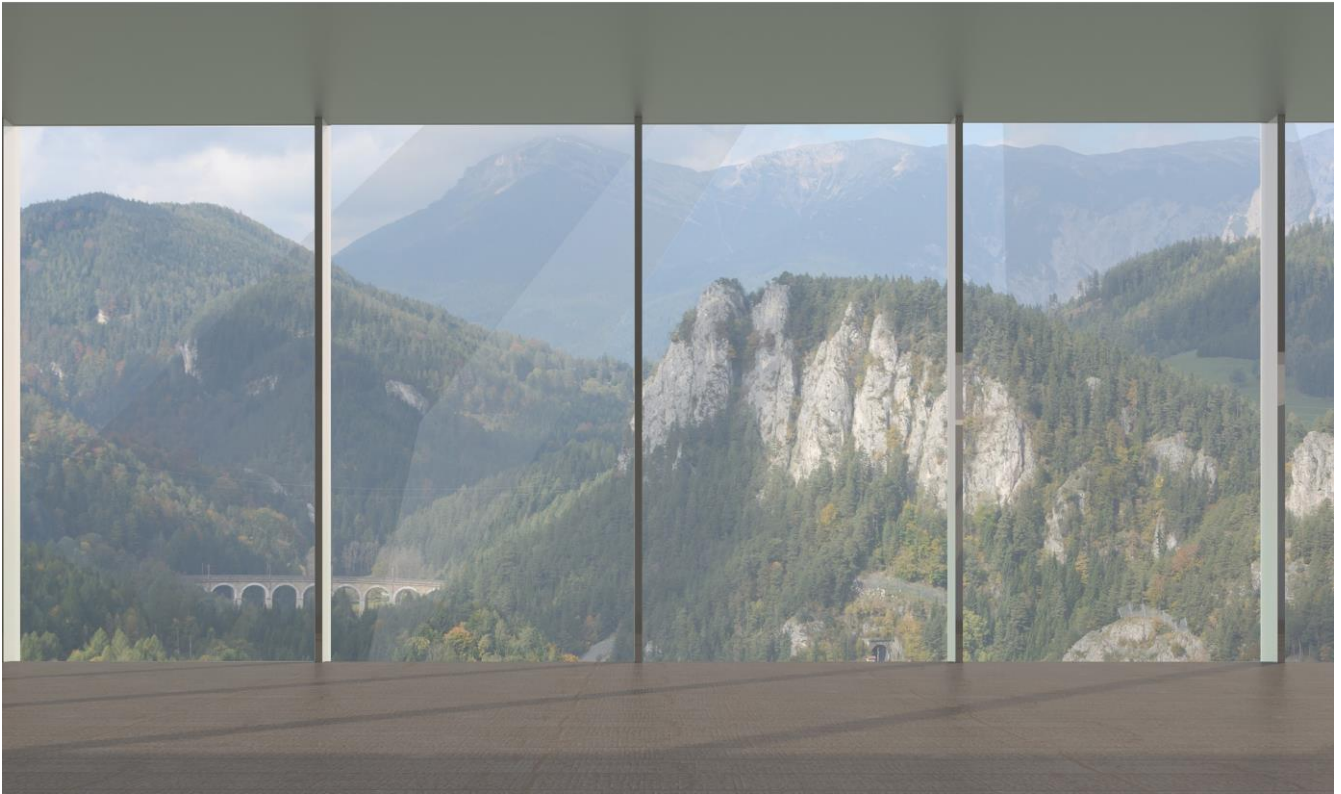


Fig.18. Perspective

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