WORLD HIGHEST HOTEL FACING WORLD HIGHEST MOUNTAIN

# AURA PENG PROJECT

## CONTENT



## TEAM

## INTRODUCTION AURA PENG PROJECT

My Peak partner Ueli Lehmann and I were sitting on the plane about to land in Lhasa. It was to be the first time that I would set foot on Tibetan soil. Through the small windows I tried to catch my first glimpse of the buildings. This country, its people, their beliefs and culture have fascinated me for a long time. Soon, I would be among them.

However, I probably would not have travelled there without a special incentive. At the beginning of this trip stood the 2005 Klein Matterhorn project by Peak Architekten for the world's highest hotel. It is a dream location for a hotel that will explode all dimensions. Like a space station, its pressurized cabins equipped with all amenities will make life comfortable at an altitude of 4000 m – just over 13,000 ft – above sea level.

The project made headlines all over the world and interest in the Klein Matterhorn project is huge. News of it travelled to the Far East, which is why we were invited by Mr. Goki Nakae to participate in a contest for a hotel project in Tibet, at an altitude of 5200 m asl.

We wanted to learn everything we could about Tibetan culture. We were also hoping to be welcomed into the hearts of the local inhabitants. So we asked Mr. Goki Nakae to obtain permission for us to visit as many monasteries and private homes in Tibet as possible. For days we drove along the rugged road from Lhasa via Shigatse towards the location of the project. The region left deep impressions on our souls that shook us up more than the rutted road. Before our trip what I most wanted to see was Tibetan buildings, architecture and culture. Now it is the people who are of much greater interest and who make me feel most enthusiastic. In short, I have fallen in love with the Tibetan people! I still don't know why – because of their poverty, my compassion, or their charisma?

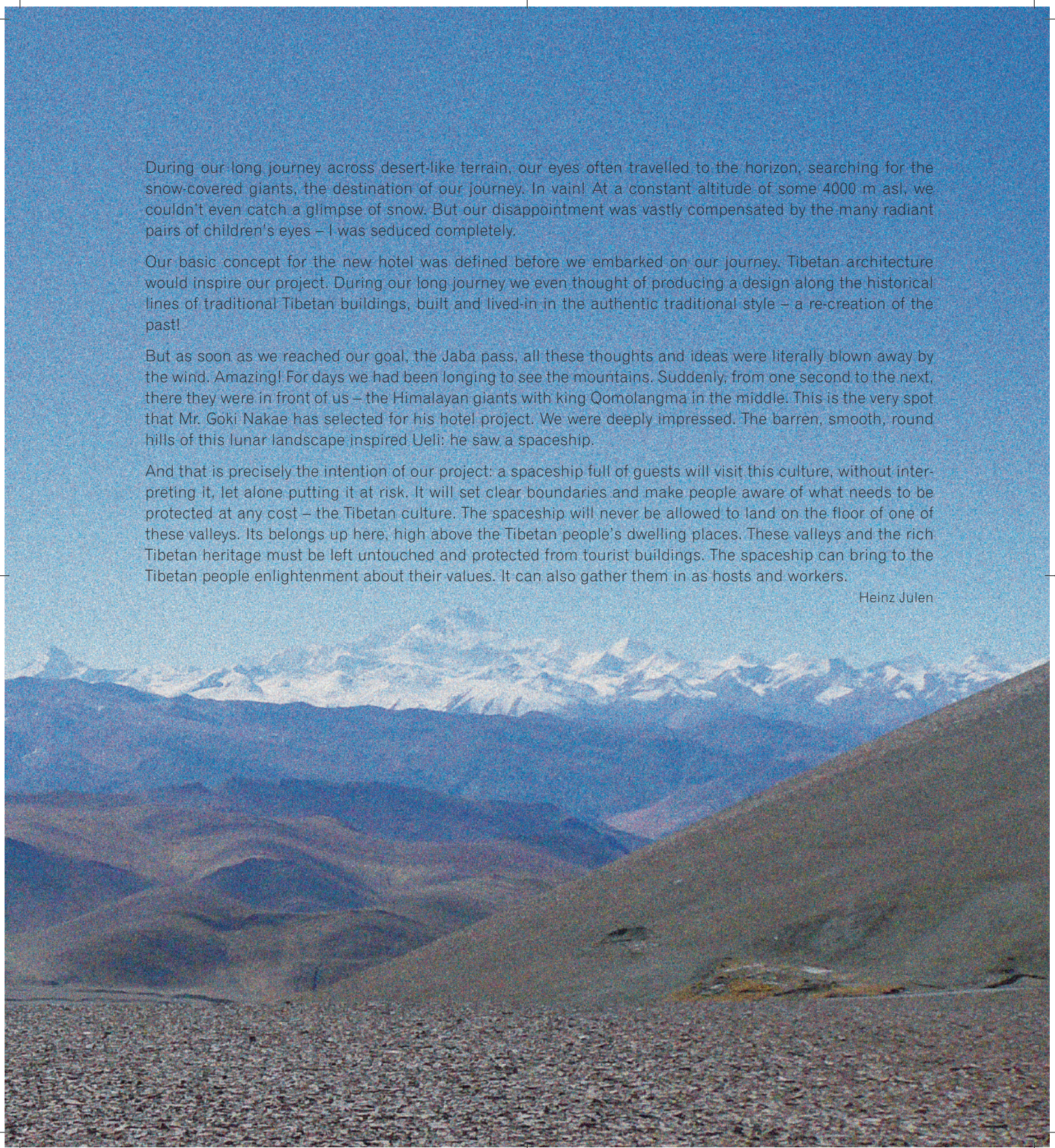
During our long journey across desert-like terrain, our eyes often travelled to the horizon, searching for the snow-covered giants, the destination of our journey. In vain! At a constant altitude of some 4000 m asl, we couldn't even catch a glimpse of snow. But our disappointment was vastly compensated by the many radiant pairs of children's eyes – I was seduced completely.

Our basic concept for the new hotel was defined before we embarked on our journey. Tibetan architecture would inspire our project. During our long journey we even thought of producing a design along the historical lines of traditional Tibetan buildings, built and lived-in in the authentic traditional style – a re-creation of the past!

But as soon as we reached our goal, the Jaba pass, all these thoughts and ideas were literally blown away by the wind. Amazing! For days we had been longing to see the mountains. Suddenly, from one second to the next, there they were in front of us – the Himalayan giants with king Qomolangma in the middle. This is the very spot that Mr. Goki Nakae has selected for his hotel project. We were deeply impressed. The barren, smooth, round hills of this lunar landscape inspired Ueli: he saw a spaceship.

And that is precisely the intention of our project: a spaceship full of guests will visit this culture, without interpreting it, let alone putting it at risk. It will set clear boundaries and make people aware of what needs to be protected at any cost – the Tibetan culture. The spaceship will never be allowed to land on the floor of one of these valleys. Its belongs up here, high above the Tibetan people's dwelling places. These valleys and the rich Tibetan heritage must be left untouched and protected from tourist buildings. The spaceship can bring to the Tibetan people enlightenment about their values. It can also gather them in as hosts and workers.

Heinz Julen



## FIRST IMPRESSIONS AND IDEAS, OCTOBER 2006

### DESCRIPTION OF THE ENVIRONMENTAL AND CULTURAL HERITAGE

In the valley at the bottom of the Jaba pass and the Qomolangma, we found a timeless, authentic Tibetan culture in a magnificent valley – to people coming from modern civilisation, this is a kind of paradise.

### PROTECTION OF THE ENVIRONMENTAL AND CULTURAL HERITAGE FOR THE FUTURE OF 'PARADISE' VALLEY

A future hotel project should respect and help to preserve the natural and cultural values of the valley mentioned above. People in the valley should know how much we appreciate their existing culture and how proud we feel about it. We have therefore decided to leave this culture intact and to use a different architectural expression at an altitude of some 5000 m asl, an area unoccupied by existing buildings.

We hope this project will have a positive impact on the future of Tibet.

### THE SITE

Heading towards Qomolangma from Lhasa and reaching the Jaba pass after a long journey, the sudden view of the four 8000'ers of the Qomolangma range is amazing. The soft rounded hill covered with brown scree but lacking any vegetation gives the impression of a lunar landscape.

This is the site where the new hotel is to be built. Far from the busy cities, this place and its spectacular surroundings invoke spiritual qualities anchored in the ancient culture. Guests enter a new world. The world's highest hotel at 5,200 m asl is a symbol of the future; the ancient culture in the valley is a reminder of the past. Together, they provide a contrast that creates a unique experience.

## PROJECT

To enable people used to modern civilisation to live comfortably at this altitude, we will create an artificial space. Leaving the hill untouched is one of the major concerns of the project. Therefore, the hotel is on columns five meters above the natural ground evokimg a spaceship that has just landed. The construction is based on a radial arrangement of fully-fitted, prefabricated containers including pressurised areas. The containers will be brought in by truck and will be placed on top of each other.

The hotel is organised as a self-sufficient space with its own energy and water systems.

The huge collecting dish on top, inspired by Tibetan tea-cookers, allows to collect rainwater, which will be kept in huge tanks, and to generate electrical power in times of sunshine.

Because rainfall is rare, water management within the hotel will be optimised to guarantee an optimal use of every drop of water. The technical installations will be on display to the guests to remind them of the *fragility* of human life and the potential of cutting-edge technology. The hotel will combine the characteristics of a research station with the standards of high-class accommodation.

To enable people who unused to living and sleeping at altitude, the rooms are pressurized to simulate a lower altitude.

To make sure that each room can enjoy a view of Qomolangma, the hotel will revolve around its axis about four times a day.

**MOUNTAIN SPIRIT**

Mountains have always been places of silence and spirituality, as numerous examples in Eastern and Western world religions demonstrate. Tibetan and Christian monasteries create moments of meditative silence and a feeling of being close to creation and its creator.

These ancient rituals, deep-rooted yearnings and desires are still embedded deep in the human soul, especially in the souls of western people whose lives are far removed from those places.

One may ask why and how such a project should be able to lead us back into that world. AURA PENG will help us land there – surrounded by our usual luxury and in a familiar environment – as though we were in a spaceship. The project relies on the contrast of two worlds: an interior connected to the whole world by cutting-edge technoloy, and excursions into a barren lunar landscape or into valleys alive with Tibetan culture.

We believe that people from industrialised and fast-paced societies yearn for silence all the more because they are surrounded, flooded by noise. It may seem paradoxical, but AURA PENG could provide a therapy against noise. It could lead people back to nature, one day making spaceships unnecessary.

What is rising tourism's possible contribution to TIBETAN SOCIETY? DEVELOPMENT, ENLIGHTENMENT, EDUCATION, HYGIENE, MEDICINE etc. – they are all pouring into Tibet along new transport routes; Tibetan development is being pushed by the Chinese government. The important question is, what projects should be supported? What lessons can be learnt from mistakes made in the West, especially in mountain regions?

Suddenly we are faced with this central question: what lessons can SPACESHIP TRAVELLERS learn from TIBETAN CULTURE? Tibetan hospitality is legendary and it is likely that we can learn much more still … In which direction does development aid go?

We want AURA PENG to be a life-affirming project, a project for people, not against nature. This spirit lives in the self-sufficiency of the project and in the sustainability of its attitude to nature and to people from diverse cultures.

Above all else is mankind, human dreams and yearnings, the human spirit that changes and shapes the world.

## AURA PENG PROJECT

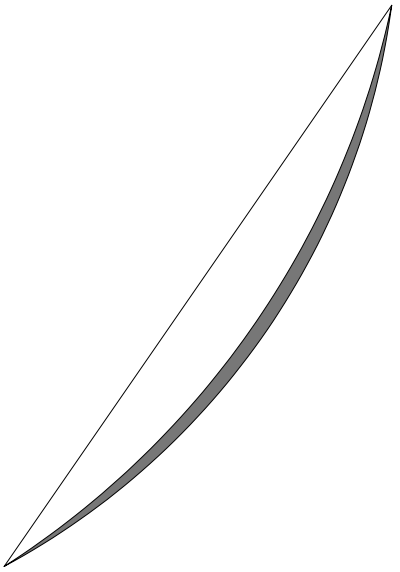
Once you leave Tingri on the long journey from Lhasa to Jaba pass, the scenery grows more and more arid. The sparse vegetation disappears as the winding road climbs higher up the rugged valley flanked by craggy mountains. However, as you reach the pass, your destination reveals itself for the first time in its spectacular glory. It is the snowy Himalaya range crowned by the peaks of Qomolangma, Lhotse, Cho Oyu and Makalu.

This is the unique location of a new hotel set on top of a round hill where its cylindrical shape with its central symmetry will add a self-referential highlight to the landscape.

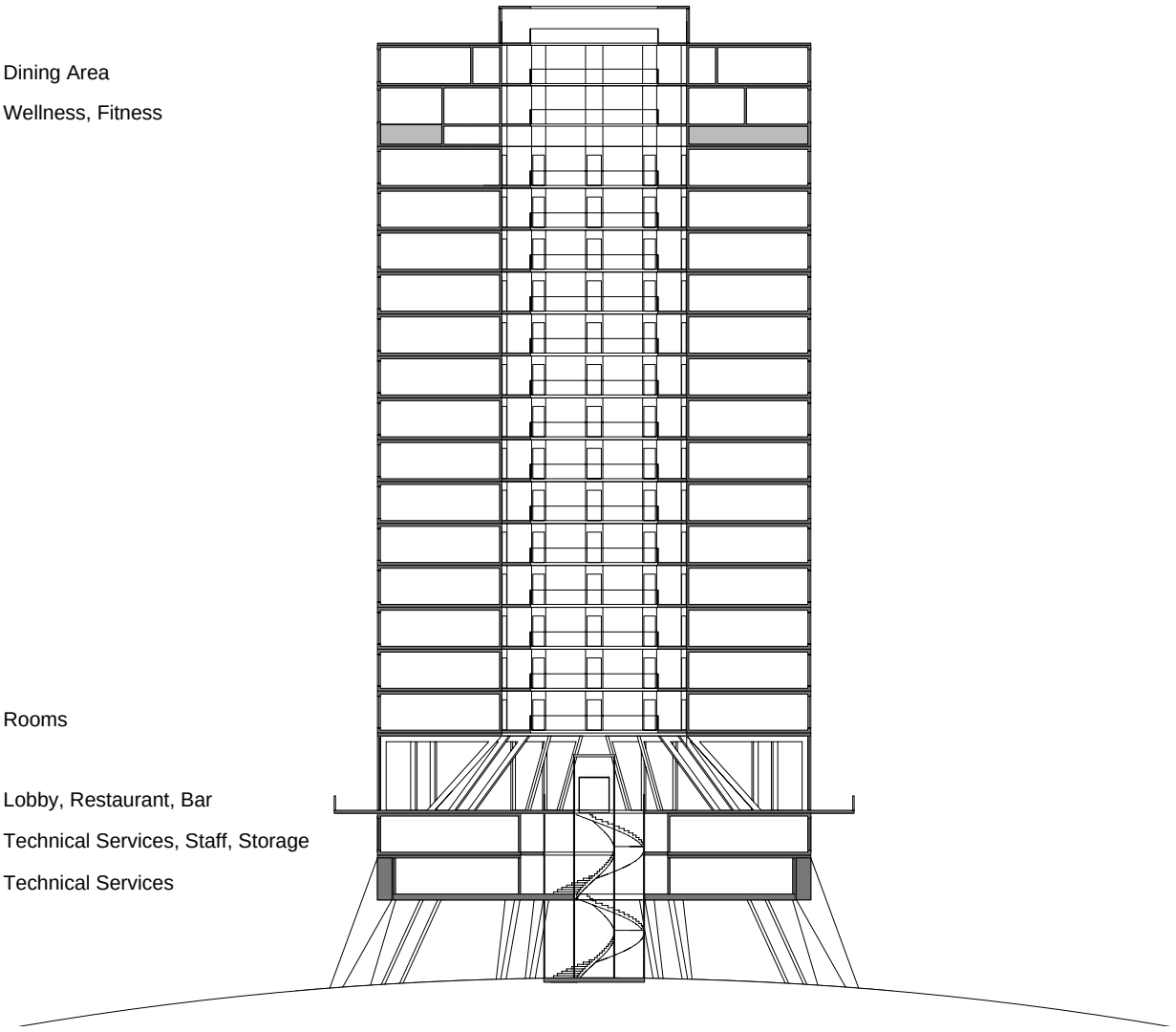
The impact of our project on the harmony of this remote landscape should be minimal. Set on columns for minimal contact with the hill, the hotel will not obstruct the view of the Himalaya range. The round tower with its prominent concentrator for energy and water collection evokes a spaceship that has just landed in a lunar landscape.

**SECTION**

The striking concentrator at the top provides the tower with its unique aspect. The concentrator is inspired by the solar-powered tea cookers that we saw all over Tibet. It is a key element in the hotel's energy and water supply, making the hotel completely self-sufficient, and avoiding costly and elaborate access by conductor pipes. The concentrator with its Dash/Stirling engine converts solar energy into heat and mechanical energy. It is rotatable to follow the sun, and will collect rainwater in the rainy season. The concentrator symbolises the use of cutting-edge technology for a sustainable presence in this unique environment.



Dish/Stirling Concentrator



Dining Area

Wellness, Fitness

Rooms

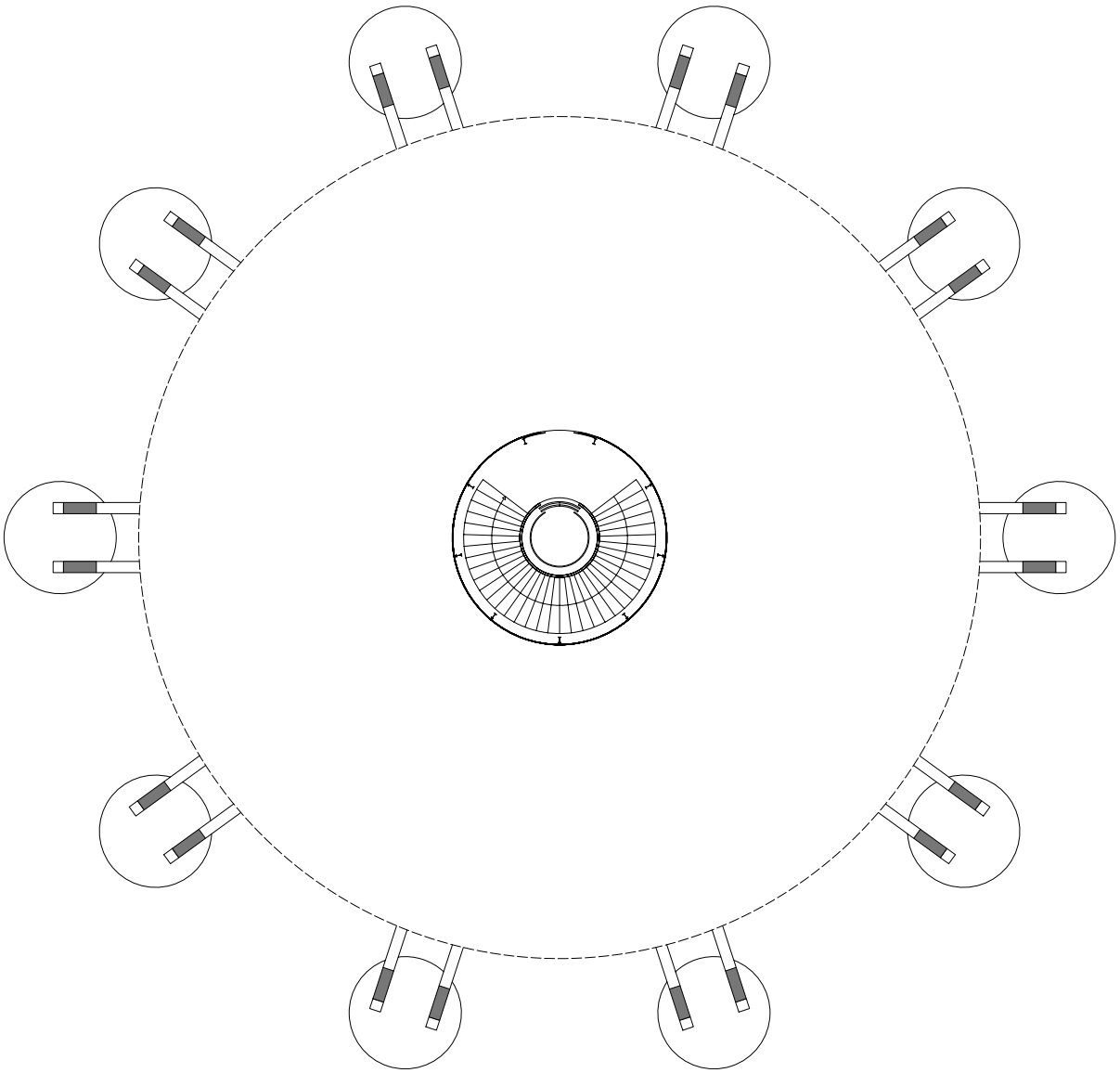
Lobby, Restaurant, Bar

Technical Services, Staff, Storage

Technical Services

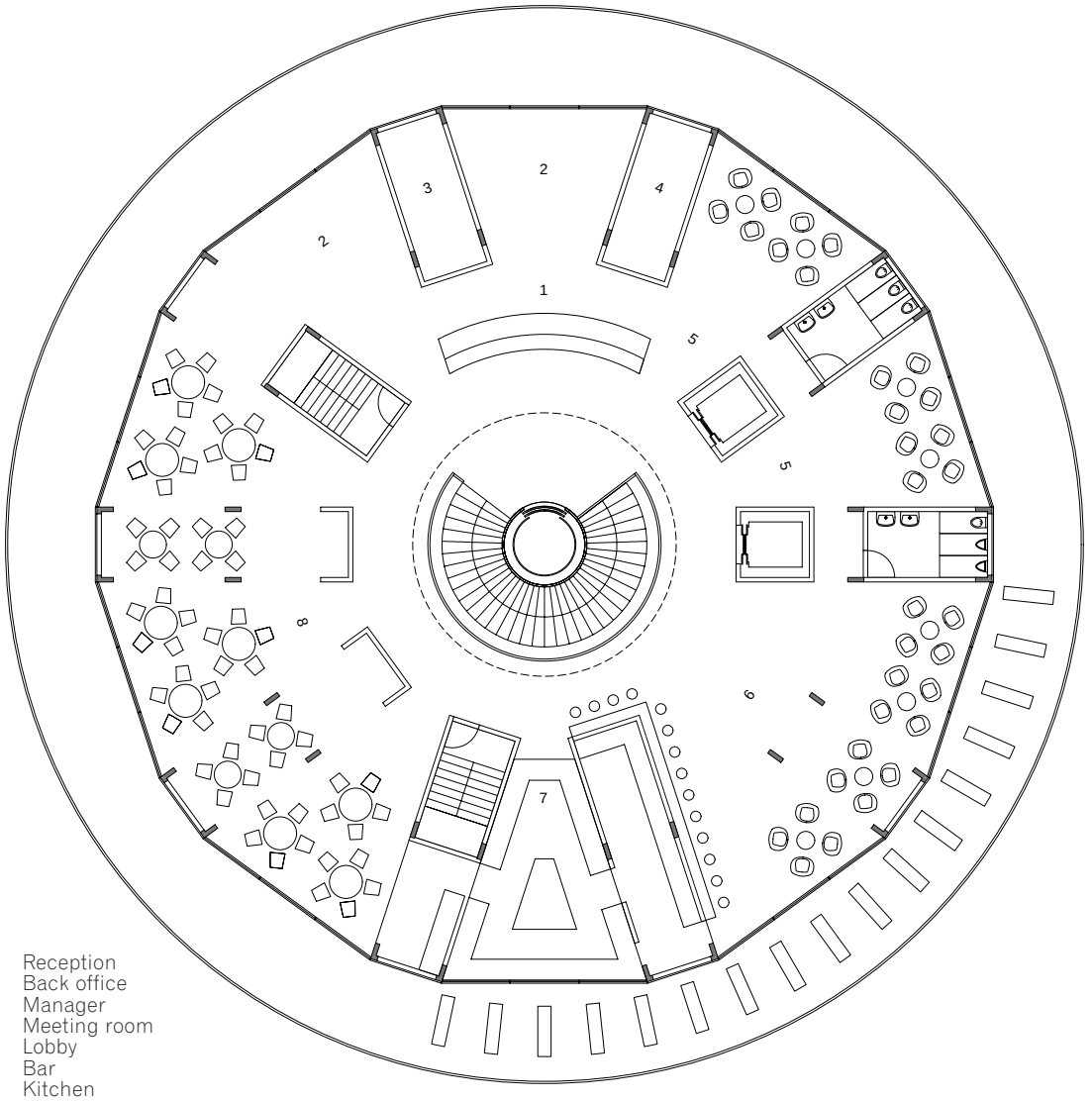
**ARRIVAL**

Access to the structure is through a glass cylinder, which is the only part that touches the ground. A spiral stairway and glass lift lead past two service levels, straight to the lobby on the third floor.

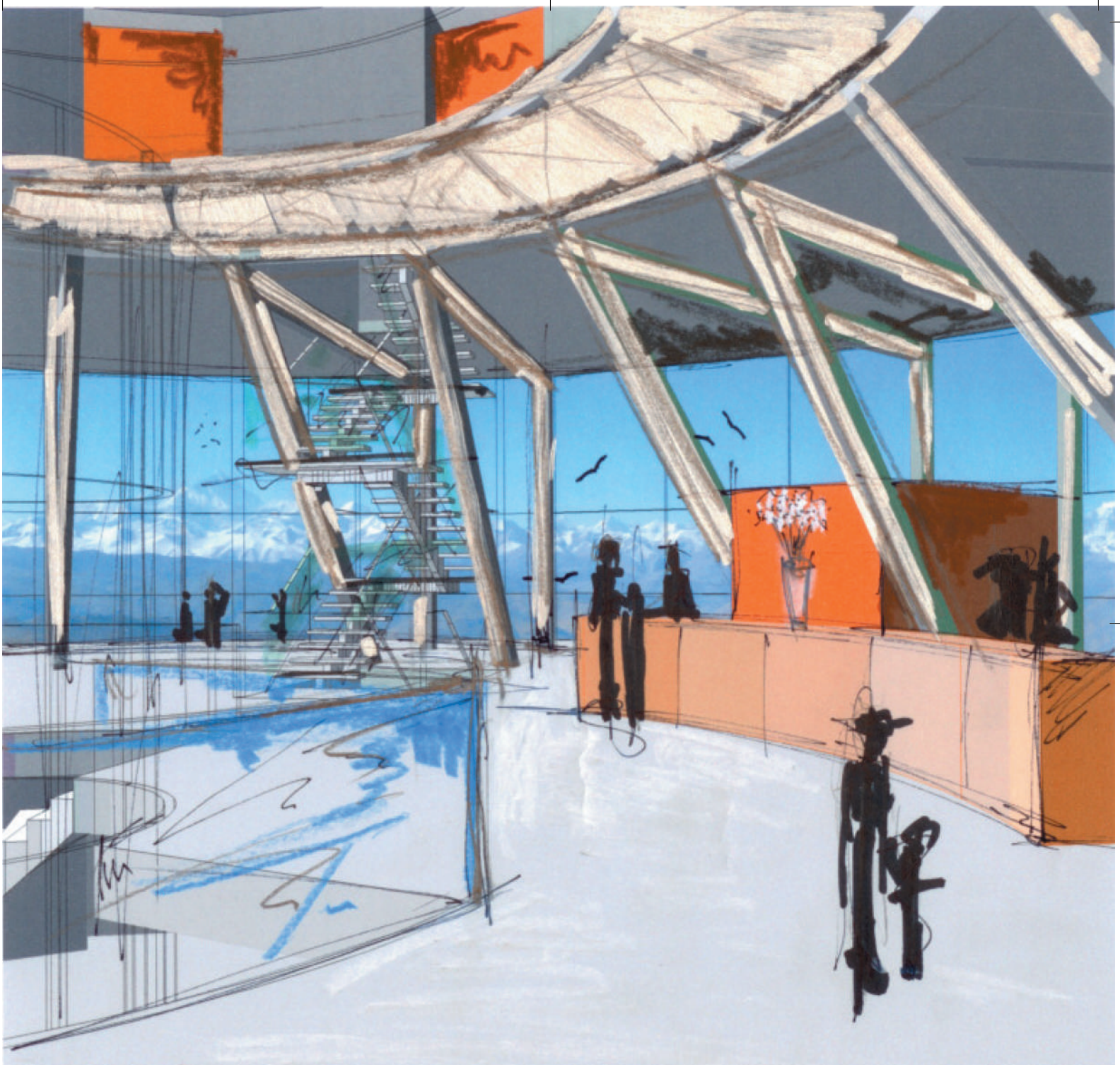


## LOBBY

The open-plan design of the reception, restaurant and bar provides a 360° view of the spectacular scenery. Each day, the tower revolves around its axis so that these views can be enjoyed from all guest areas.

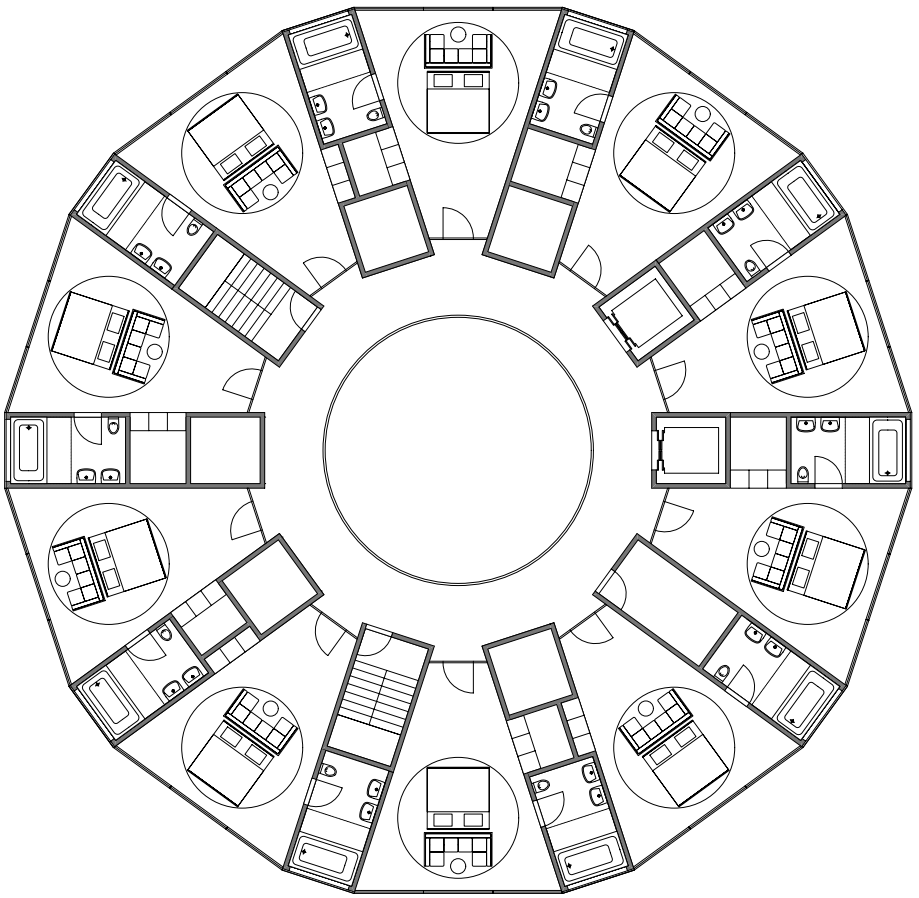


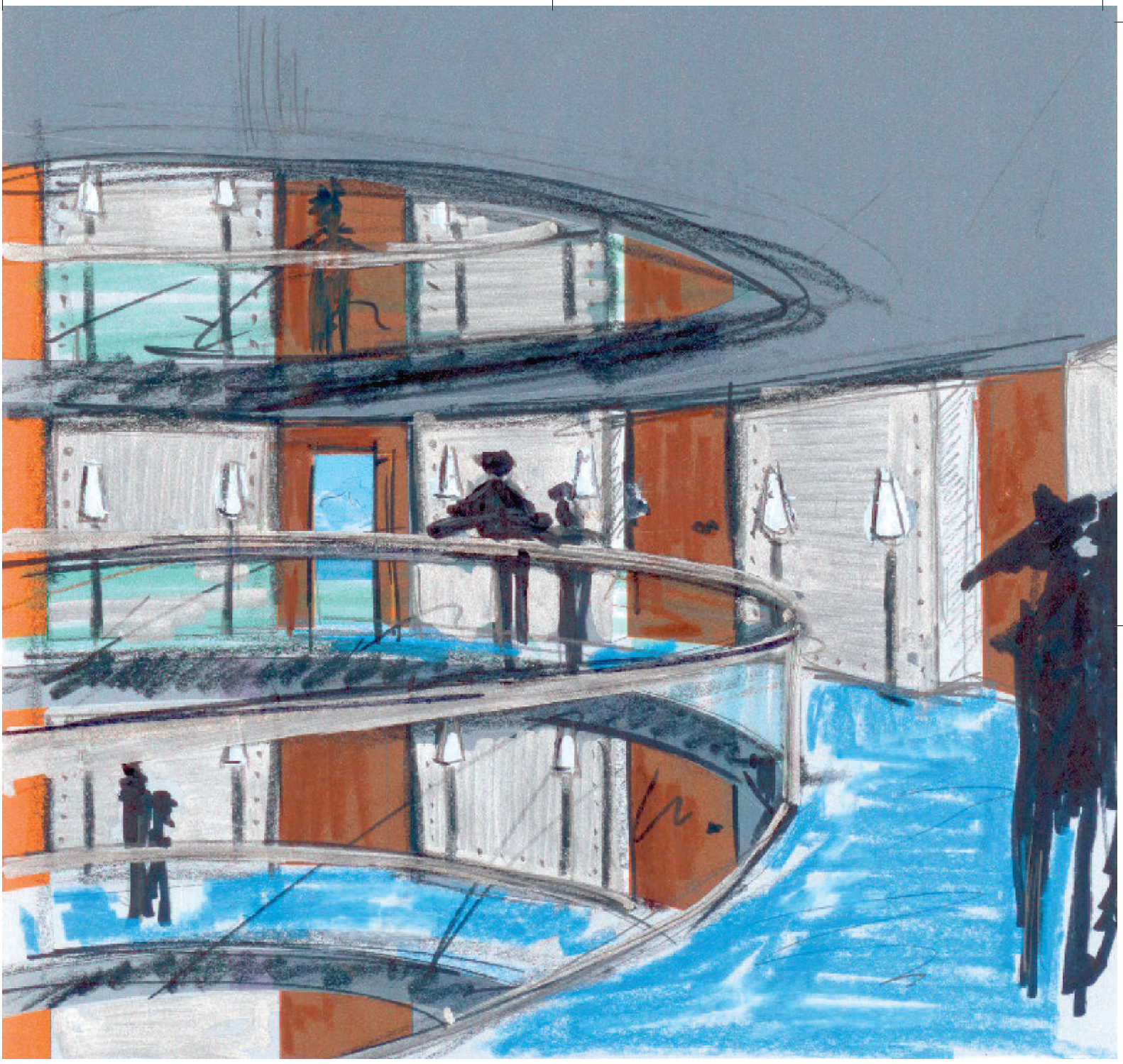

1 Reception
2 Back office
3 Manager
4 Meeting room
5 Lobby
6 Bar
7 Kitchen
8 Restaurant

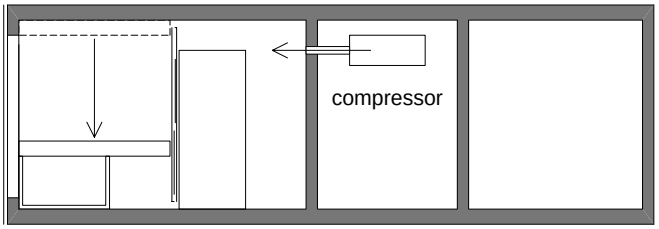


## ROOMS

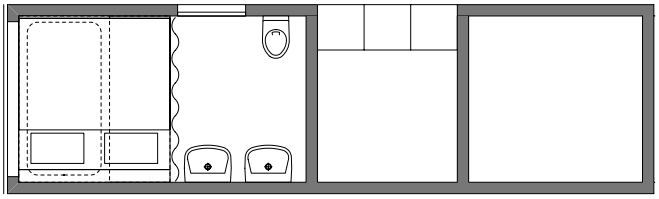
From the central access area on the upper floors radiate modular rooms consisting of a rectangular space, with technical installations at the rear and an outward-looking bathroom, alongside the segment-shaped open-plan living area. Guests can enjoy the spectacular view from either the sofa or the bed, which are placed on a turntable.



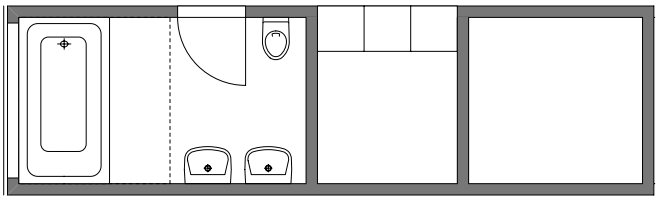




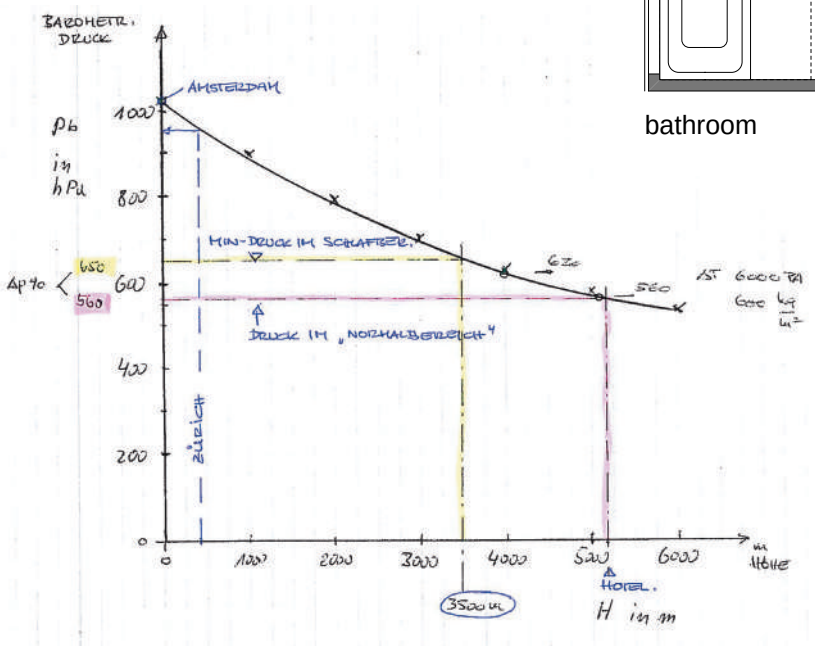

section



pressure chamber

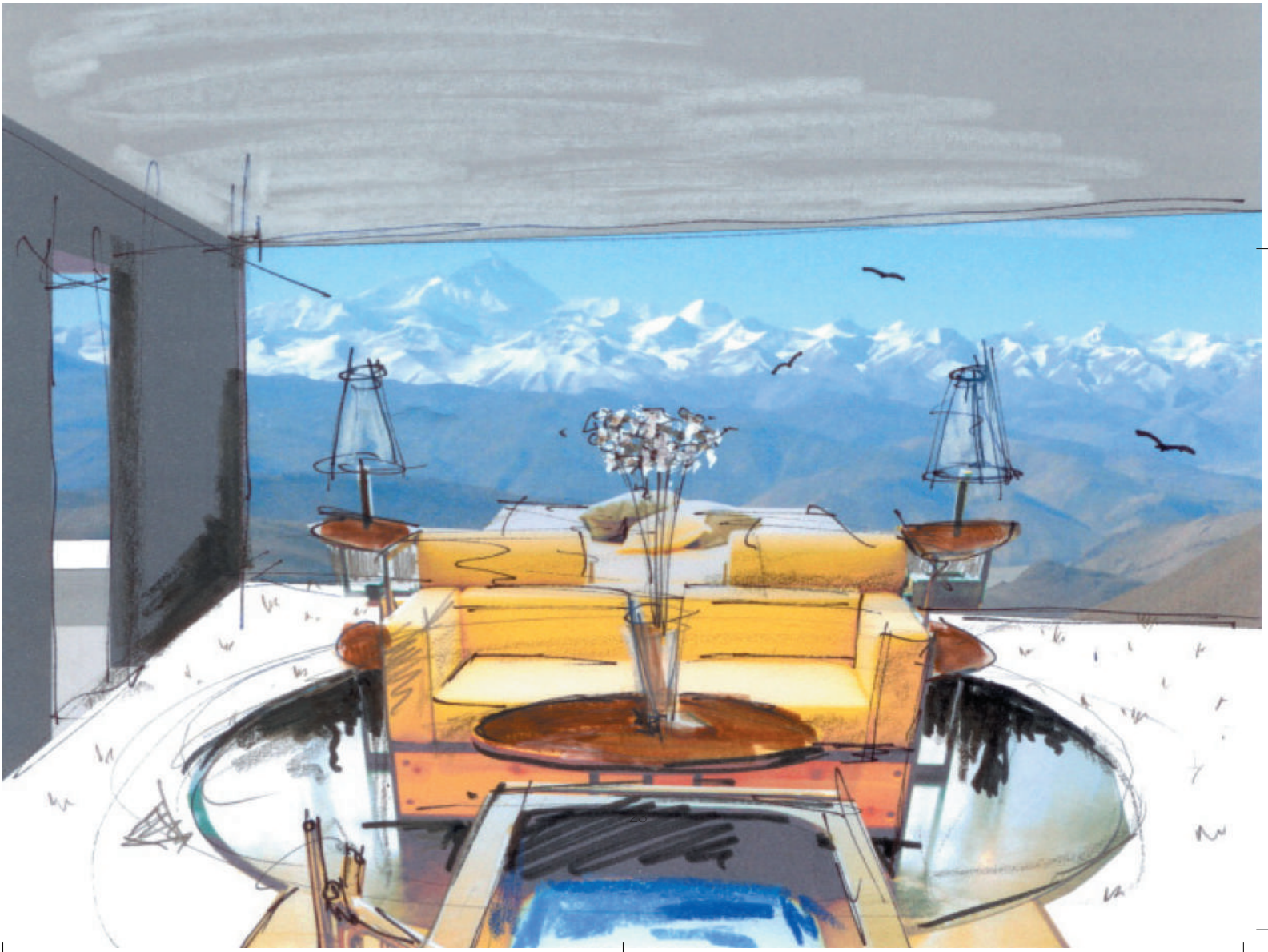


bathroom



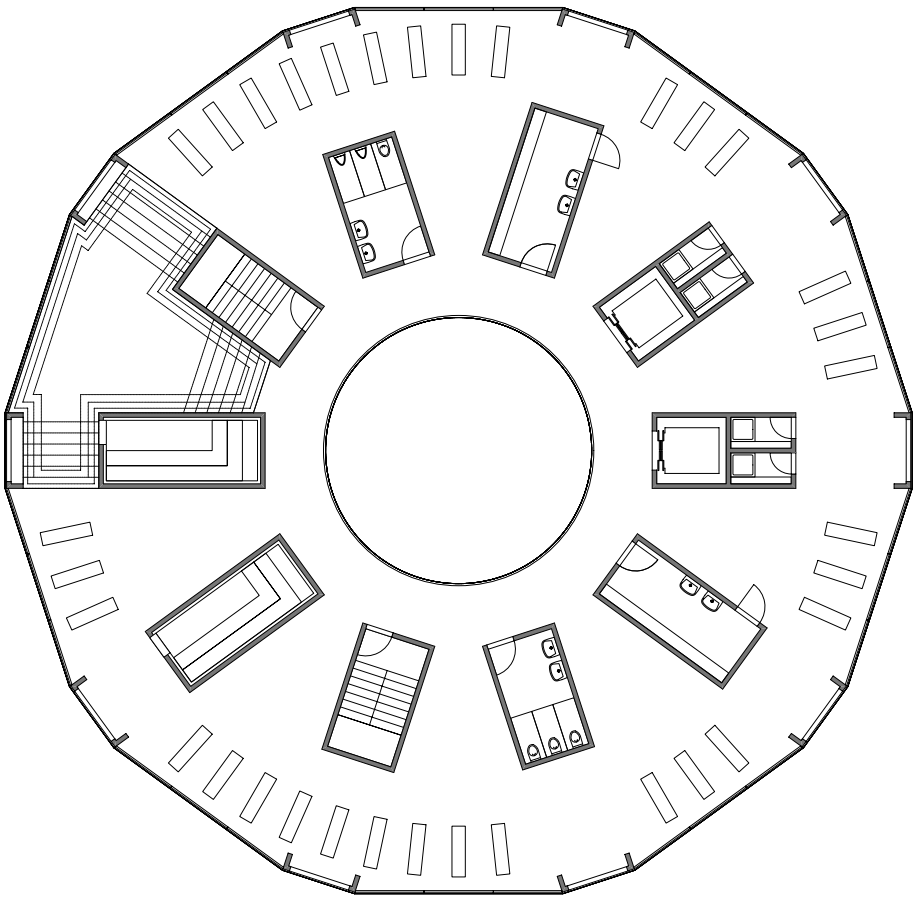
**ALTITUDE COMPENSATION**

The bathroom is fitted with an airtight door: guests with altitude problems may use this space as a pressure chamber. Until they have adapted to the high altitude, they can sleep in an extra bed that can be fitted above the bathtub.



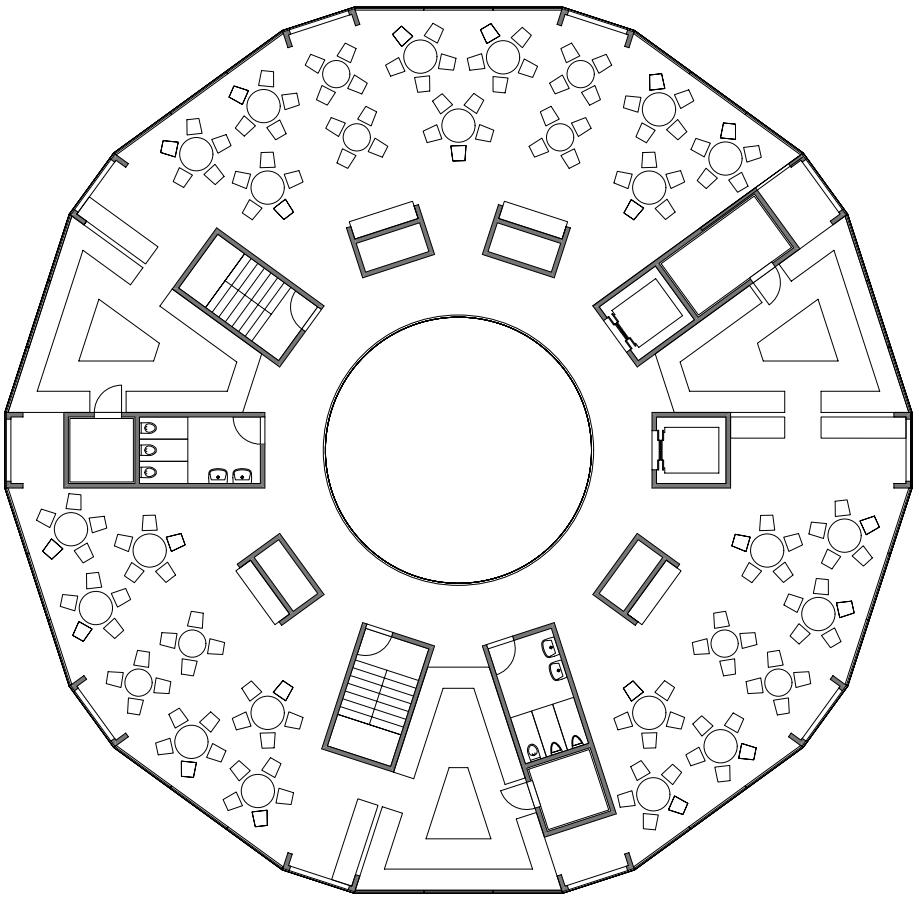
## WELLNESS

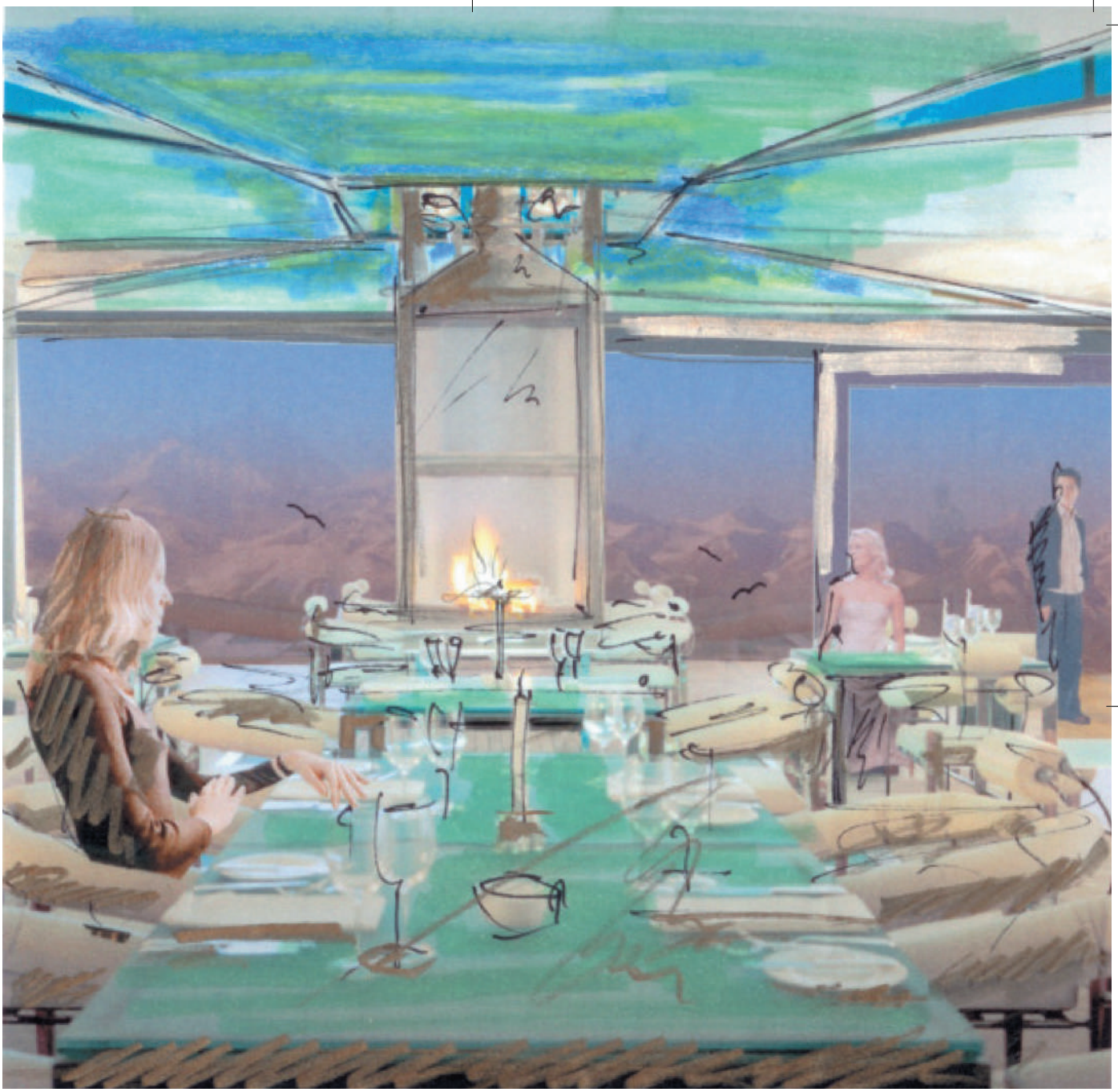
Guests returning from a stroll in the cold high-mountain air can relax in the wellness area, which also affords the unique Himalayan views, to enjoy a sauna, steam bath, a dip in the hot pool or a massage.



**RESTAURANT**

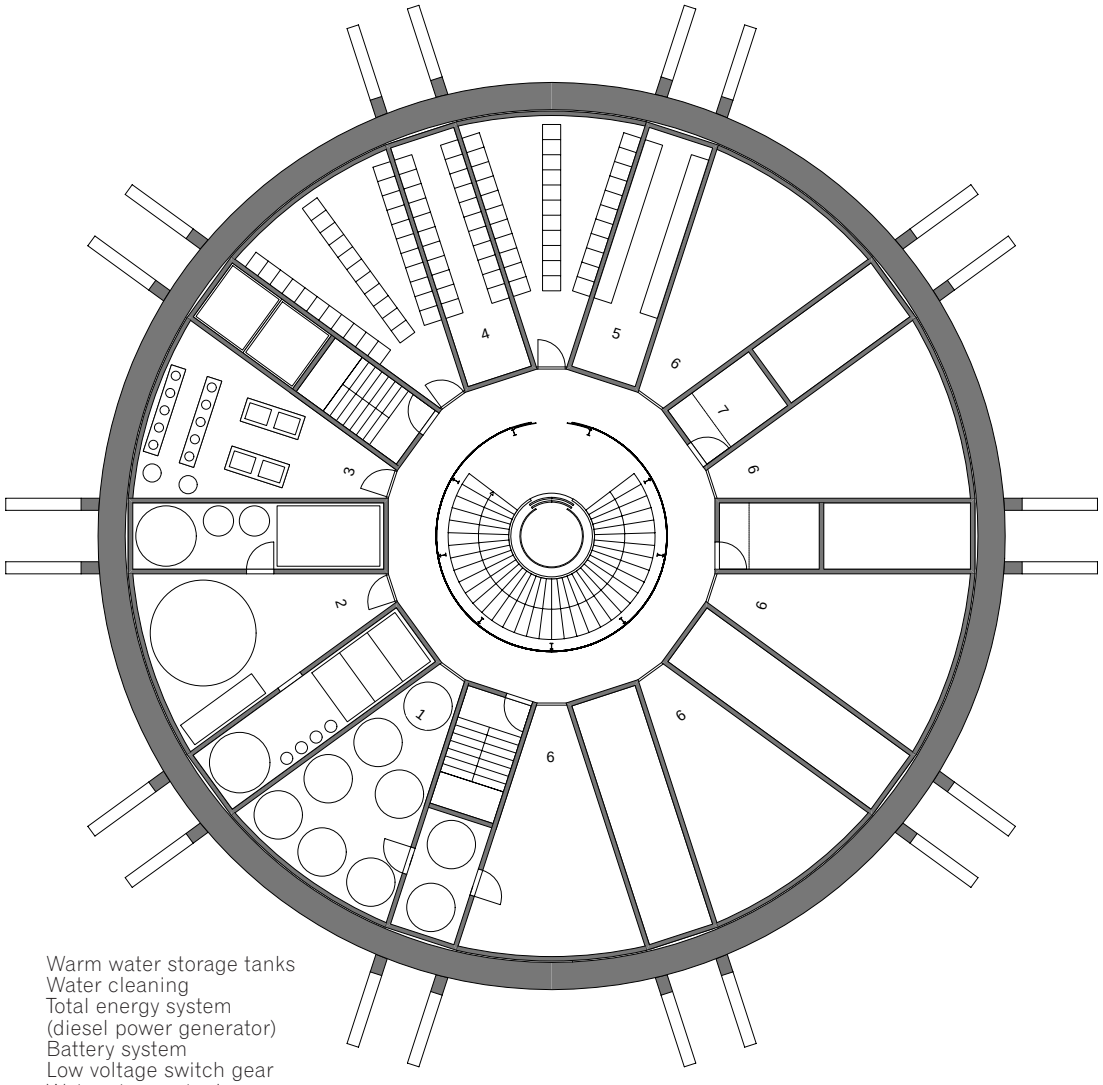
The dining area with three kitchens, serving tibetan, chinese and international food, are located on the top floor. The radial arrangement of the containers is made transparent at this level also, chiefly because the rear walls of the containers circumscribe the central circulation zone. However, the segment structure becomes less clear in the outward-looking part of this floor level. Four fireplaces mark the rear end of each dining room. The spectacular views will turn each meal enjoyed here into an unforgettable experience.



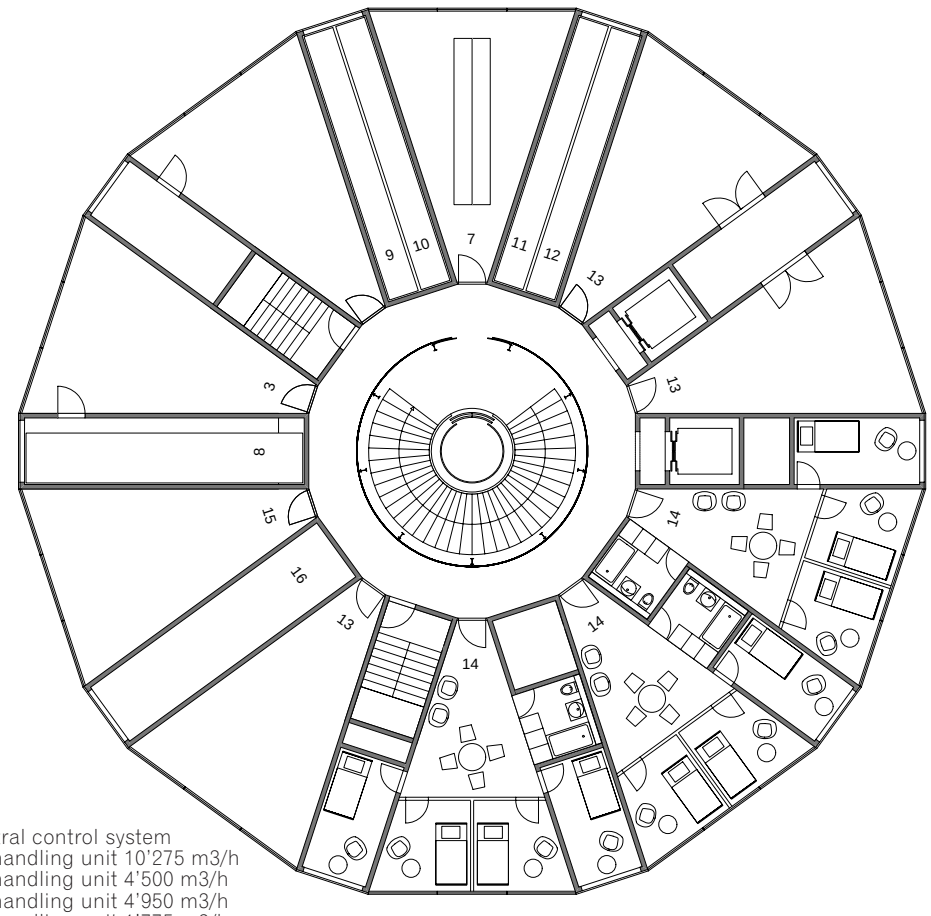


## SERVICE LEVELS

Staff rooms, service and storage areas, water tanks and the water purification unit are located on the lower floors.




1 Warm water storage tanks
2 Water cleaning
3 Total energy system (diesel power generator)
4 Battery system
5 Low voltage switch gear
6 Water storage tanks
7 Elevator engine




7 Central control system
8 Air handling unit 10'275 m3/h
9 Air handling unit 4'500 m3/h
10 Air handling unit 4'950 m3/h
11 Air handling unit 1'775 m3/h
12 Air handling unit 4'950 m3/h
13 Storage
14 Staff amenities
15 Laundry
16 Garbage

## TECHNICAL COMMENTARY

### USE OF NATURAL RESOURCES

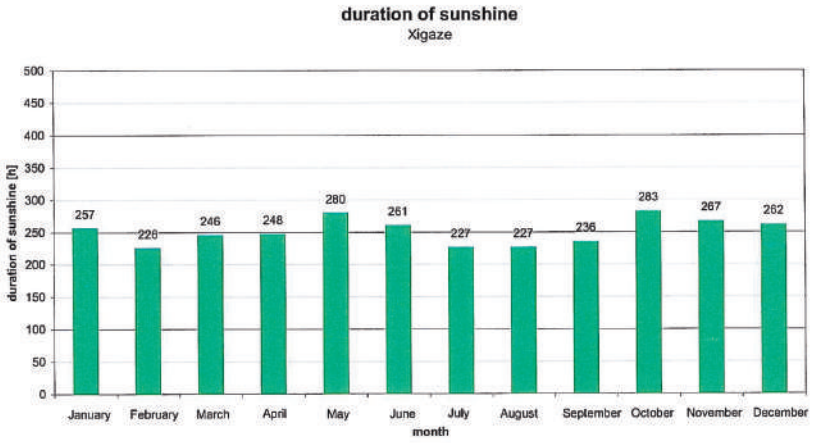
The location of Aura Peng is characterised by outside temperatures ranging from –15 to +10°C. The resulting demand of high amounts of thermal energy will be mitigated by the structure's excellent insulation keeping energy consumption at a minimum. See diagramme for outside temperatures (measurements taken over 24 hours) at a nearby location.

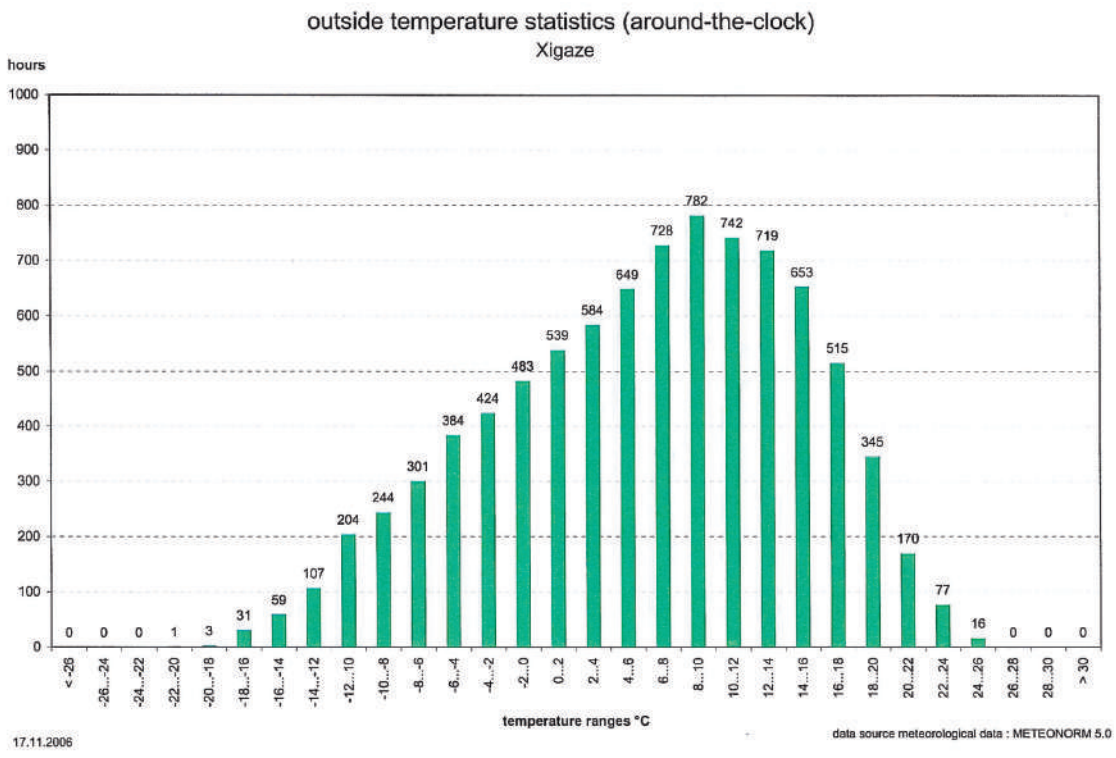
Two diagrammes show the number of sunshine hours and the amount of global solar radiation at an analogous location in the region.

These graphs show that each month has roughly the same number of sunshine hours, with a high amount of global solar radiation. Due to low pollution (turbidity factor), global solar radiation can be used to a high degree to produce electrical and thermal energy.

Rainfall and average wind speeds are quite low; water consumption must be kept at a minimum; wastewater must be recycled.

In view of average wind speed of 2–2.5 m/s, the use of windmills for the production of electrical power would not be effective.


duration of sunshine
Xigaze
duration of sunshine [h]
500
450
400
350
300
250
200
150
100
50
0
257
226
246
248
280
261
227
227
236
283
267
262
January
February
March
April
May
June
July
August
September
October
November
December
month


outside temperature statistics (around-the-clock)
Xigaze
hours
1000
900
800
700
600
500
400
300
200
100
0
0
0
0
1
3
31
59
107
204
244
301
384
424
483
539
584
649
728
782
742
719
653
515
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170
77
16
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-8...-6
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-4...-2
-2...0
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4...6
6...8
8...10
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12...14
14...16
16...18
18...20
20...22
22...24
24...26
26...28
28...30
> 30
temperature ranges °C
17.11.2006
data source meteorological data : METEONORM 5.0

## BUILDING SERVICES ENGINEERING

Preliminary dimensioning has been carried out to assess the dimensions of technical supply facilities (energy supply). The resulting energy requirements are indicated below:

- maximum thermal energy required ca. 430 kW
  corresponds to ca. 8,570 kWh / day
- maximum electrical energy required ca. 280 kW
  corresponds to ca. 5,560 kWh / day

Due to very low year-round outside temperatures, no cooling energy and therefore no refrigerating or recooling devices will be required.

## VENTILATION

Ventilation systems will be required to supply/extract ca. 26,450 m3/h of outside/used air to/from the various areas. To reduce thermal energy requirements, all ventilation systems will be equipped with highly efficient heat recovery devices.

Due to the hotel's high altitude, some guest areas (i.e. sleeping areas) will require special ventilation.

The sleeping areas will be hermetically sealable so that air can be pressurized to ca. 650 hPa. For this purpose, the sleeping areas will be equipped with small high-pressure ventilators that supply pressurized air. Extra oxygen can be added so that oxygen content inside the sleeping area is significantly higher than 21%.

## HEATING

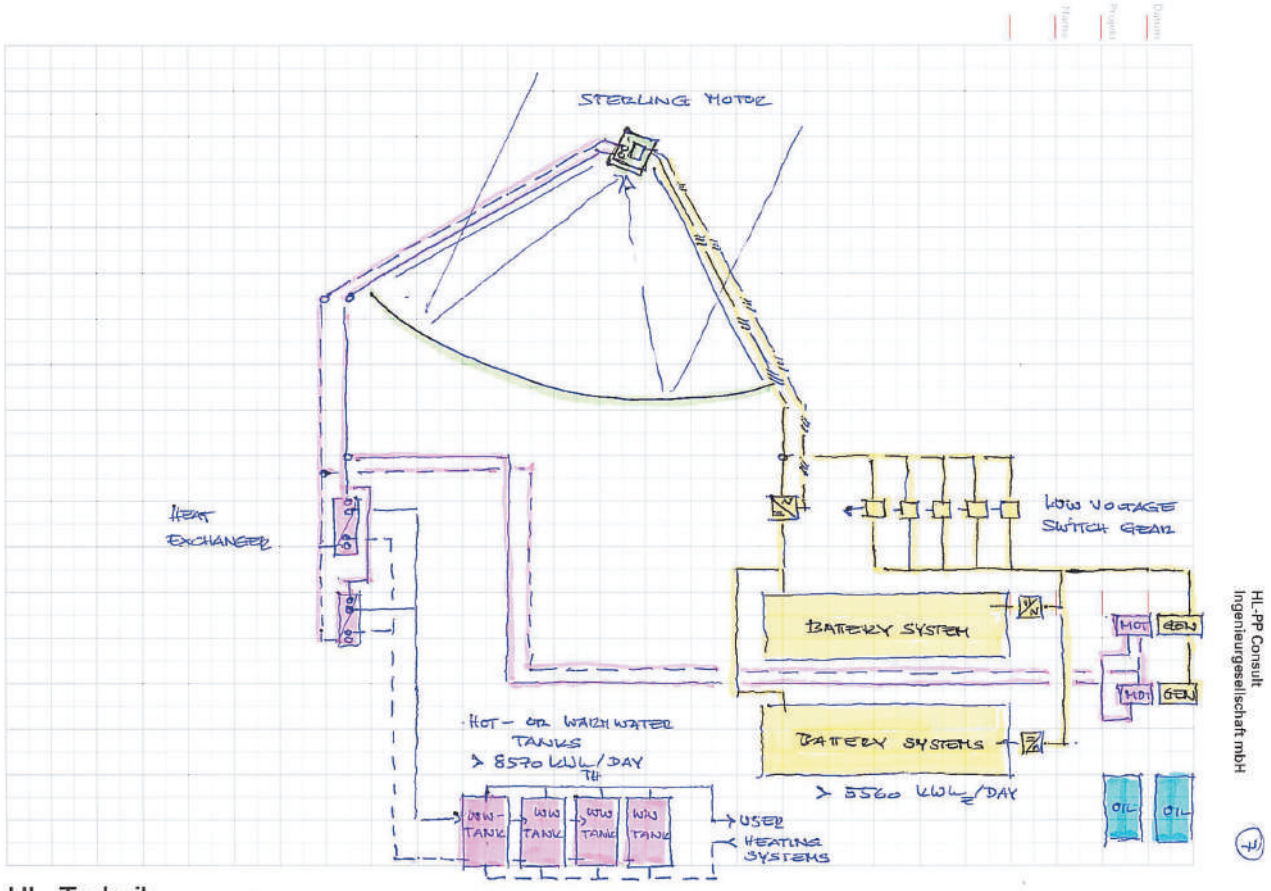
Required thermal energy is supplied by a Stirling engine, supplemented by a co-generation plant (total energy system) activated if and when solar energy input is inadequate.

The thermal energy produced by the Stirling engine and the co-generation plant will be stored in storage tanks for later supply to heat users. Essentially, such users are fan coil devices ventilating the guest rooms, and static heating systems in unventilated areas.

## ELECTRICAL ENERGY SUPPLY

Both the Stirling engine and the co-generation plant produce electrical energy. The co-generation plant will be diesel powered. Its two diesel engines producing ca. 160 kW each drive two generators, each producing 140 kW of electrical energy. Some of this energy will be stored in batteries to assure emergency energy supply of up to 60 kW.

All technical supply facilities will be located on a service level in the lower areas of the tower. Power and heat are supplied to relevant areas via shafts and suspended ceilings. The diagramme below shows electrical and thermal power supply as well as the technical supply facilities on the lowest level.




HL-PP Consult Ingenieurgesellschaft mbH

HL Technik
ENGINEERING PARTNER

## DISH / STIRLING SYSTEMS

### THE PRINCIPLE

Dish / Stirling systems convert concentrated solar radiation into electricity. Essentially, a system consists of the following components:

Parabolic solar concentrator
Tracking system
Solar heat exchanger (receiver)
Stirling engine + generator

The parabolic concentrator reflects and bundles the incoming parallel solar rays. The solar heat exchanger, or Stirling engine receiver, where the solar beam radiation is absorbed, heating helium or hydrogen, is located at the concentrator focal point. The Stirling engine converts this heat into mechanical energy, which in turn is transformed into electricity by an electrical generator directly connected to the engine's crankshaft.

The reflected solar radiation is kept constantly focused on the receiver by a tracking system that continuously rotates the concentrator, following the sun along its daily path.

The system electrical output is directly proportional to the intensity of the solar radiation, the size of the concentrator, its optical efficiency and the efficiency of the Stirling engine and generator.

## THE STIRLING ENGINE

The Stirling engine is based on a highly efficient thermodynamic cycle that transforms heat into mechanical energy. These are its most outstanding features:

While the Otto and Diesel engines are internal combustion motors, the Stirling engine depends on heat from an external source, like the sun, and converts that external heat, in this case, solar heat, into electricity.

In a Stirling engine, a constant amount of working gas (helium or hydrogen) is heated and cooled. Its expansion during heating and contraction during cooling moves two pistons connected by a crankshaft that deliver kinetic energy.

The higher the maximum process temperature, the more efficient the Stirling engine is. Therefore the point-focusing solar concentrator, which produces very high temperatures, is the perfect combination.

Most of the solar energy that is not transformed to electrical energy can be used for heating purposes, resulting in a total efficiency of up to 90%.

50 kW / 17 m diameter dish / Stirling systems

## THE WATER CYCLE

Combining the necessary with the useful, achieving maximum effect with minimum effort – nature's global ecosystem is perfect.

The natural water cycle is an excellent example. At various stages in the cycle, water is available in varying quality for human use or consumption. Indeed, mankind uses it more or less intensively. No water is lost in the cycle; it merely changes its state. This is the idea that drives the functional design principles of the water purification unit that we propose for the Aura Peng project.

## CASCADE CONNECTION

Rainwater collected on the rooftop is the ‚spring' where our water cascade begins. Of excellent quality, it is used as drinking water and therefore reserved for domestic purposes.

Water used once is treated in the purification unit, after which it can be used for washing, in the wellness area, and as bath and toilet water. Excess wastewater is returned to the natural cycle after treatment in the purification unit.

## RAINWATER AS DRINKING WATER

At an altitude of 5000 m asl in this very thinly populated area, the rainwater can be expected to be comparatively pure. Therefore, it is evident that rainwater should be used as drinking water. However, rainwater is available only for a short period each year, which requires adequate storage that ensures drinking water quality over

a period of ten to twelve months. Storage tanks must therefore be dark and as cool as possible. To prevent the microbiological contamination of stored water, UV radiation is used. This is an effective method to kill viruses and bacteria without impairing the quality of the water.

## WASTEWATER TREATMENT

All the wastewater from the building is conveyed to the water purification unit. The initial treatment stage ensures mechanical separation, allowing large materials and solid waste to settle before they are retained.
At the next stage, the clarified sewage is conveyed to the biotreatment chamber. Biological wastewater treatment processes resemble natural purification processes in rivers and lakes where bacteria digest waste products, converting them into carbon dioxide, water and biomass. In the biotreatment chamber, this process is faster due to optimal conditions involving specialized bacteria and optimal oxygen supply.

At the last stage, ultra-membrane filters are used to separate the purified water from sludge containing microorganisms. These filters form a mechanical barrier with minute pores ca. 0.35 $\mu$m (10-6 m or micrometre) in diameter. Water molecules pass through these pores while suspended solids are retained. This process allows to separate liquids and solids without the use of chemicals. Microorganisms, i.e. bacteria, viruses and other germs, are effectively retained; wastewater is purified hygienically and effectively.

The quality of the resulting filtrate (water) is significantly better, with effluent concentrations lower than those permitted by the European Bathing Water Quality Directive (see European Council Directive 76/160/EEC and DIN 19650).

## PROCESS OF A CLOSED CYCLE

The treatment and recycling process for toilet wastewater includes buffering / primary clarification and biological treatment with filtration. The process also includes downstream storage and re-use of filtrate.

## STRUCTURAL CONCEPT

The most specific demand on the building's structural design is the necessity to turn almost the whole building around its vertical axis.

The rooms / containers of every story form a ring. Their loads from deadweight, traffic load and wind forces are collected by vertical columns, arranged on circles at the inner and the outer circumference of these rings. The loads of the outer columns are directly transmitted to the sliding bearing at the outer circumference of the building, situated below the lobby and service levels. The forces from the inner columns are transferred to the bearing via circularly arranged diagonals. A pressure ring at the upper end of the diagonals has to take the reaction forces from redirecting the forces from the vertical columns to the diagonals. Similarly, a tension ring is required to take the respective reaction forces at the lower end of the diagonals.

A circular ring truss, supported by inclined columns that transmit all loads to the foundation, carries the sliding bearing. The horizontal loads from wind are also taken up by the inclined columns and the outer bearing, the latter being a combination of axial and radial bearings. The inclined support columns have to be designed stiff to take the horizontal forces.

The staircase and the access area can be designed rotating or fixed to the ground. In the first case they are suspended by the pressure ring at the upper end of the diagonals, leaving a gap to the ground/foundation. If they shall be fixed, they are supported by the foundation and the gap is located at the outer circumference of this block.

The solar concentrator's dead and wind loads are introduced to the building's support structure just where the main structural elements are: via the central azimuth bearing with its vertical axis to the core and via the wheels to a circular running rail, the latter arranged on a ring truss which transfers the loads to the vertical outer columns.

Rotation of the building is accomplished by means of a rack and pinion drive system with electric motors, situated at the outer sliding bearing.

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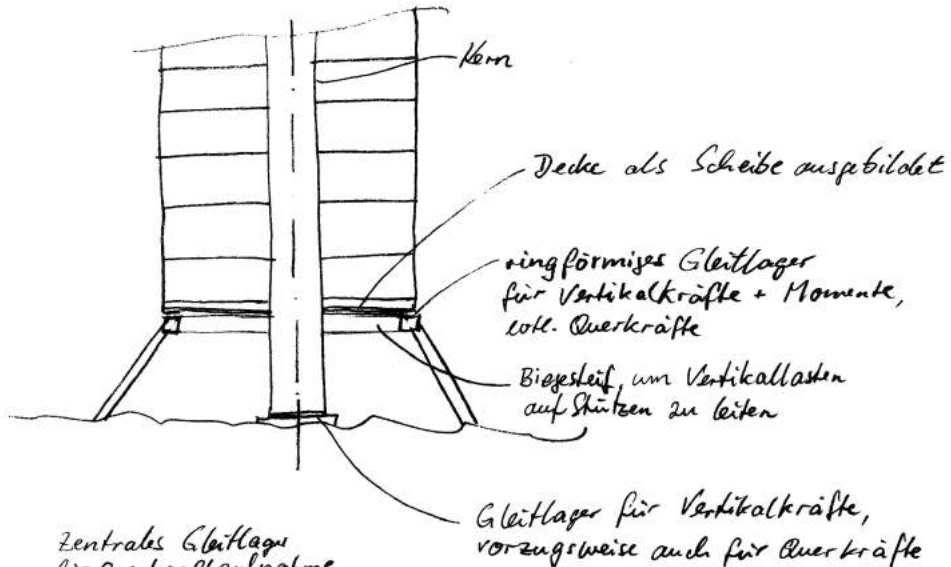
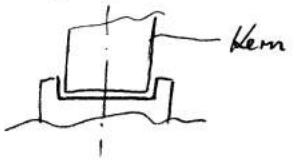
Telefax ++ 49 (7 11) 6 48 71 - 66

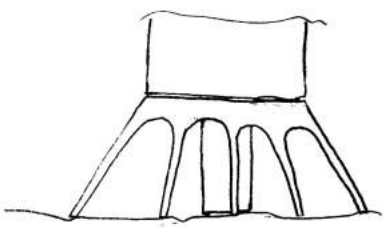
# Drehlager, Stützen



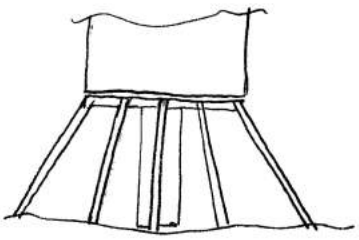

Zentrales Gleitlager für Querkraftaufnahme




Stützenkreis für Querkraftaufnahme

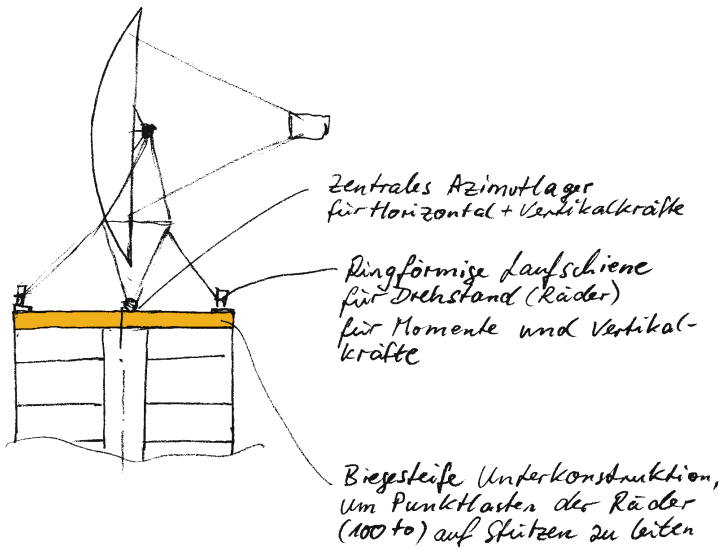


ohne Querkräfte

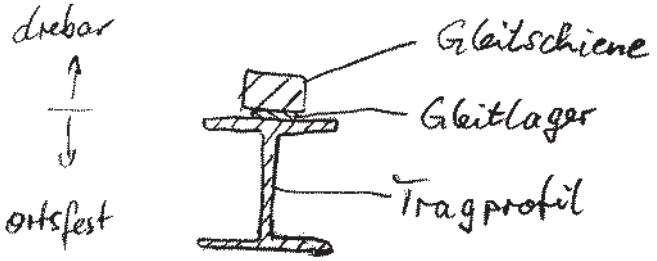


Projekt/Nr. Aura Pong
Datum 15.12.06 Seite 1

## Solarkonzentrator Lagerung




## Gleitlagerung




## PREFABRICATION, INSTALLATION

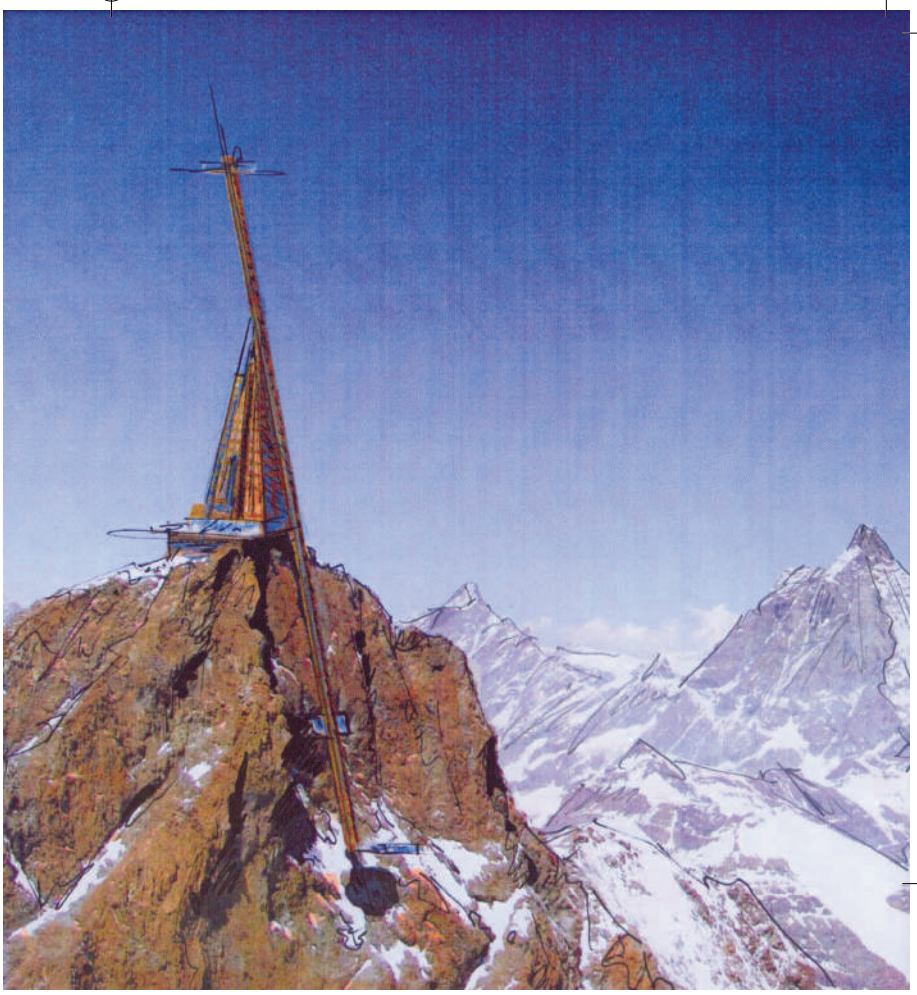
Construction work at an altitude exceeding 5000 m asl is a great challenge. The proposed tower involves a maximum number of prefabricated elements. Most of the tower consists of a modular bearing system of fully fitted, freight-sized containers that can be delivered by train and truck. These elements also ensure static stability. Intermediary and façade elements can also be prefabricated.

**«LES PIERRES SACRÉES»**

The Holy Stones, a philosophical essay by Dr. Michel Clivaz

A sea of stones, a cairn, a standard with many flags sending out a message of peace and love to all corners of the Earth: "Aura Peng", on the pass leading up to Everest's base camp! It is here that a new high altitude hotel will be erected, just like a spacecraft arriving from nowhere and ready to depart on a new journey leaving no trace of its existence....

Aura Peng: somewhere in the Heights, in front of the Everest, a kind Location on the Road to the base Camp; one Cairn and colored Banners ...



Peak Architekten: «Dream Peak», Zermatt; Present and Past

Construction is an act of responsibility! In the mountains, when it involves building in a protected area the issue is even stronger. “Peak Architekten's”first mission came from winning an architectural competition organised by the Matterhorn lift company to design a high altitude hotel for the summit of the Klein Matterhorn in Zermatt. At the end of the 19th and the beginning of the 20th centuries several mountain hotels were built in the Alps following the rack and pinion trains such as those going up the Gornergrat and the Jungfraujoch. Using a modern contemporary architecture known as “Dream Peak” new boundaries will be broken as much with the levels of comfort and technical skills as with the whole life experience. The result will be spectacular: the Klein Matterhorn will be hoisted to the exalted levels of other 4000 metre peaks and its high altitude hotel aims to provide tourists with an experience of the Valais in full flight, proud of its heritage, steadfast in its ideas and confident in its solutions for the future.

For Valaisans the image of “Progress” borne by this unusual project highlights as much their own development towards cutting-edge technology as to their everlasting search for the natural soul and their authentic spiritual values that the mountains have always allowed them to discover. But what should they make of a hitherto untouched Tibet, a place of pilgrimage?

A century and a half of intensive tourist development separates the Valais and Tibet, two regions which are very similar according to Maurice Chappaz. How does one take advantage of our alpine experience and then transport its benefits to other mountain regions around the world? How does one transpose generations of hotel knowledge such as the Ritz or the Seiler? What planning and landscaping tools should we take to anticipate recurring problems in the tourism and property economy or more simply how can we avoid them? To counter any speculation, who would merely embark on such a project with purely utilitarian goals, whatever the consequences, and ignore the burning issue of sustainable mountain development be it in the Alps or the Himalayas. Even if the alpine solutions are not so easily transposed, they hold merit as a point of reference. In this context

Peak Architekten: «Dream Peak», Aura Peng; Past and Present

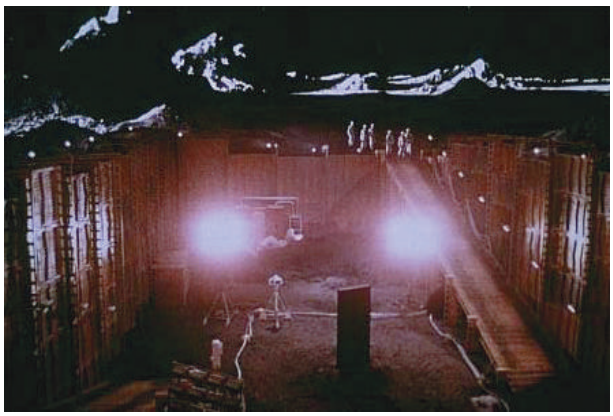
the answer that one bring as an architect is as so often before in our mountain history, that of “Progress”. Not just progress for progress sake, but one that makes better men, forges brotherhood and allows mankind to rise to another level...

History would appear to be repeating itself with the Aura Peng project in Tibet. The “Dream Peak” evoked the most surprising of reactions notably in the local and international Press and TV: what was this monolith doing on top of a mountain peak? A mountain forgotten by Bruno Taut in his 1919 crystalline mountain peak architecture project (Monte Rosa, Lyskamm, Breithorn and Matterhorn). Why somewhat strangely did this architect and visionary from Berlin have no Utopian project for the Klein Matterhorn? The exclusion of the Klein Matterhorn will remain an enigma until the “Dream Peak” project is revealed to the world at large.


Bruno Taut: «Alpine Architektur», painting number 18 called «The Snow and Icechain of Monte Rosa from Gornergrat»

A feeling of “I've seen it all before” comes to mind: the monoliths of Stanley Kubrick's “2001, A Space Odyssey” bear a close resemblance with the high altitude hotels of “Peak Architekten”. Stanley Kubrick's film presented the scenario thus: at the dawn of humanity a mysterious monolith appears amongst the primates. Several thousands of years later he reappears on the moon of Clavius where the inhabitants of earth have built a space centre. A team of astronauts is sent to Jupiter to investigate the mystery of a strange signal which seems to have a link with the monolith. On board the craft, where most of the crew are in a sort of deep sleep, only two men and a powerful computer (Hal) share the responsibility for this journey into outer space. All is going well until Hal decides that the human factor is not reliable enough for the mission which has been entrusted to them...

Knowledge and unscrupulous science only serve to corrupt the soul: surely progress will only make real sense for those who are aware of these failings and wrongdoings?



Stanley Kubrick: «2001, The Space Odissey»;
he dressed Stone on the Clavius's Moon

In fact, the high altitude hotels designed by "Peak Archtitekten" seem to me like true monoliths with all their power to evoke that which is sacred alongside a huge ability to awaken us. The emotion shown by the public with the "Dream Peak" only served to remind us what we felt in the face of Kubrick's monoliths. Going right back to our historical roots this experience of the sacred bore a close link to our insatiable curiosity with the unknown and the metaphysical.. The Celts had for a long time got us used to monolithic structures drawing upon thermal energy from the ground at special sites. I was suddenly aware that a whole mix of knowledge and lost competences were concentrated in the high altitude projects devised by "Peak Architekten".

From Mountain hut to high altitude hotel, alpine architecture has learnt to be the architecture of silence, night, awakening, spirituality... In the mountains the ideal of authentic construction and of monastic austerity, be they Cistercian or Tibetan, is never far away. Just as where within monasteries life becomes survival, so the high altitude architecture of "Peak Architekten" becomes functional and spiritual.

The inside Court of the cistercian Monastery, Thoronet

The inside Court of the tibetan Jokhang Monastery, Lhassa

At the same time simple in form and complex in its mission, it draws its references in the sobriety and the powerful callings of crosses and cairns, these artificial piles that one finds for the most part on the reliefs, the peatbogs or the mountain tops... Its secret ambition is to recreate in proportion to the land some new edifices and patrimonial restorations, the “sacred feeling”. The “Walser” knew how to do it so well in the alpine valleys, from the Austrian Vorarlberg to the Aosta valley.

Obergabelhorn: somewhere in the Heights, in front of the Mount Cervin, a kind Location on top of the Mountain, a christian Symbol ...

The mission is noble! Will it be possible? The architecture of “Peak Architekten” turns the monk into a tourist and the monastery into a hotel. Through the simple wish of man wild stones become sacred. The interior walled garden is now completely open to the outside world. The monks cells built in the courtyard take on a focal position in the monolith. Interior becomes exterior. Revealed to a full 360* the panorama is a never-ending marvel. The project takes on territorial proportions.

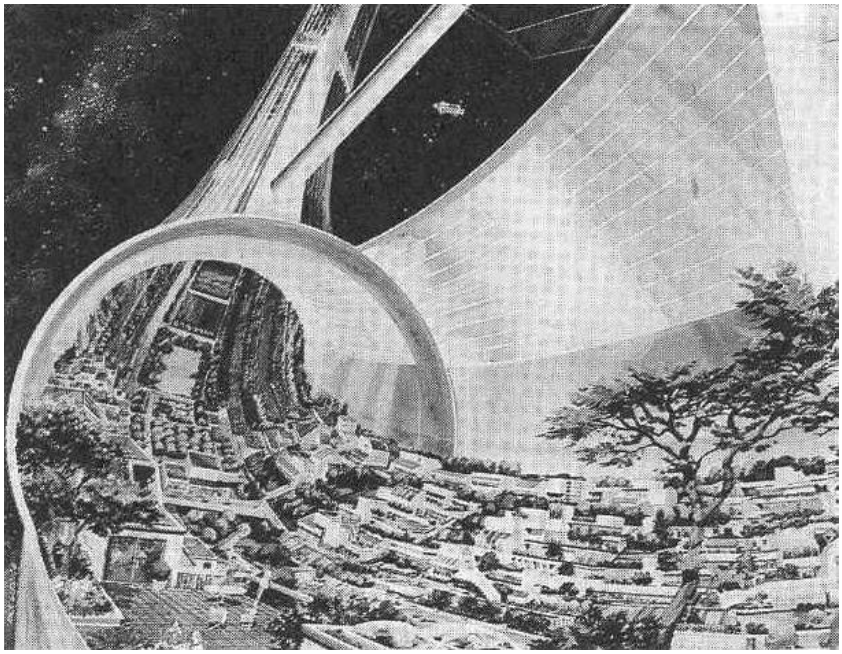
In such a setting accessible via an excursion into its risks and dangers everyone plays with their autonomy, quality of life and the faculty of being... The tourist lives his own transfiguration, a veritable metamorphosis revealing his divine being. In our culture of excess men are full of their physical exploits: solo climbs, the pilgrimage to Compostella, desert crossings... In high altitude hotels “Peak Architekten's” adventure will principally be spiritual. In the Valais, land of the resurrection, the “Passion” of Christ is never far away... In Tibet, land of reincarnation, the tourist discovers “Compassion”. Once felt this quality is a state of love for fellow man. The individual becomes part of a collective. Give and take, one is turned inside out to live with empathy and vice versa : the intention is clear, it is the message which will search out the tourist.

Within the monolith, everything is legible: the development systems used, renewable resources available, storage of useful materials, passive and active solar power, energy consumption, water consumption, waste recycling... Just as in a space station, the autonomy is managed in a responsible and conscientious fashion. The

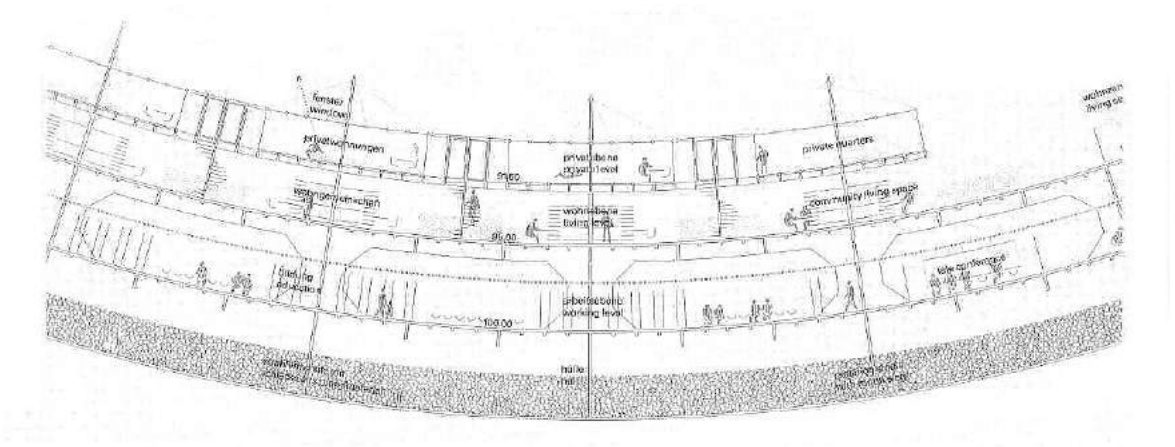
tourist views each bit of information as he enters his room or common areas. The precarious life of Apollo 13 is lived by everyone every moment of the day. The economics of survival, the law of averages, the combination of possibilities, underpin the functioning and usage of “Peak Architektens” high altitude hotels.

With their prefabricated architecture, assembled in situ, at the reception of containers, technical equipment, three dimensional structures, of solar panels and receptors, one is a long way from the traditional tourist accommodation of our large towns or the Kitch hotels of our village-like resorts. One is equally far removed from international “designer” hotels denuded of all local and environmental qualities. We will tend to veer towards the typology designed by the the first of the modern generation in Vienna with a functional, ornament-free, architecture.

What could be more natural in the mountains than this fight to forbid all designs capable of unnecessary distraction or cost. The same applies to outer space. It is the reason why we have drawn inspiration for the high altitude hotels of the Klein Matterhorn and Aura Peng from the space stations developed in the last quarter of the 20th Century by Fritz Haller for NASA. Earth-based projects inspire us yet more, speaking of well-being, tranquility and meditation, all the very opposite of the sleeping orbital space-station of “2001”... Doesn't the freedom granted by the Garden of Eden type atmosphere further endorse the recreation of a life ideal first inaugurated in their own way by the Cistercian and Tibetan monasteries?



The Space Station designed by the Swiss Architect Fritz Haller for the NASA in the 80’



Fritz Haller, Space Station; the Shape was incurved like a Tore and allowed, by Rotation on itself, to create an artificial Gravity. The Containers took place in the three dimensional Structure

In so far as civil engineering and contemporary architecture are concerned the high altitude hotels designed by “Peak Architekten” sit comfortably with state of the art technology, the utopia of modernity, responsible economics, compounded by the ecological aim of answering to the comfort and resources only to be expected by the modern-day tourist in a high mountain setting. So far as being a work of contemporary art, they meet the requirements reinforced in personal development and in the need for sustainable education.

As with Kubrick's scenario, the amibiguity of the works scenario created by “Peak Architekten” is to offer multiple interpretations leaving nothing to chance, permitting a keen mind to accept the coexistence of the desirable and the undesirable. One knows with this type of open work that there remains an element of the indomitable, of risk and a high stake that it helps to limit. Its interpretation can appeal to all scholars, but it will not reveal its secret. Not because it does not have one but because in order to discover it you need to use your heart's own intelligence. The comparison of the scenarios stops here because if Stanley Kubrick speaks in his films of all forms of violence, individual, social, artificial or mediated, “Peak Architekten” speaks about non-violence and a better world for all those who wish to sow the seeds of their lives by opening up their souls!

Would that our wish becomes reality!

1
Maurice Chappaz, Une journée d'août 1976 à Crans avec Alfred Eibel in Pages choisies, Editions l'Âge d'Homme, Paris, 1988 Le Valais visible au sens le plus banal pourrait être simplement le Valais transformé économiquement, le Valais de l'industrie touristique, le Valais des routes, le Valais de la surexploitation économique sous tous ses aspects, et le Valais invisible c'était l'autre réalité, celle qui lie un homme au monde. Le Valais de mon enfance était un Valais assez silencieux dans beaucoup de domaines, un Valais sans peintres, un Valais sans écrivains, ou uniquement un Valais avec des peintres qui venaient d'ailleurs et qui s'étonnaient parce que s'était un pays vierge. Les valaisans étaient un peuple sans livres, ou avec un seul livre qui était la Bible sous forme de livre de messe, la Bible sous forme de liturgie. La simple façon, même, de mettre une nappe blanche sur une table, de déposer un verre, de déposer une miche de pain, de s'asseoir, de garder une certaine distance...engendrait une métaphysique. La sagesse serait peut-être de pouvoir mener une vie très simple, très calme, et à l'intérieur de cette vie très simple et très calme d'avoir le contact avec les éléments du monde, avec un inconnu dans la rue, avec son coiffeur, avec l'homme qui conduit un car, avec un arbre, avec trois, quatre prunes qu'on mande, avec une feuille de papier qui vous servirait à gribouiller quelques lignes et il me semble qu'on est éloigné de ça... La sagesse de l'Occident consiste dans les exploits. « Après tout, ne rien faire et tout s'accomplira ». Alors, le rien-faire ne me semble pas du tout une chose passive mais me semble correspondre à une extrême attention. Alors, la vie monacale, je ne la comprendrai que sous forme d'une ascèse pour permettre cette extrême attention et non pas sous forme d'un secret ou sous forme de se retirer du monde pour ne pas le connaître. L'Asie représente une autre façon de penser, une autre logique. Elle représente en même temps le... Valais de mon enfance qui en partie pour moi était un pays d'Asie. En passant à pied dans les montagnes j'ai eu l'impression de retrouver les propres villages de ma vallée natale quand j'avais six ou sept ans. L'attitude même des moines aux moulins à prière correspondait tout à fait à l'attitude des religieux ou des curés du Valais, l'attitude des paysans, leurs croyances également. Et dans l'action même, il me semblait qu'ils portaient cette espèce d'immense réserve et profondeur qui pouvaient tout à coup affleurer. Et ce qui nous manque, c'est ce manque de source qui peut jaillir en nous. J'ai trouvé quelque chose qui ressemblait beaucoup aux alpages du Valais qui m'avaient imprégné depuis tout petit, que j'avais connu avec les bergers que j'avais fréquentés, et avec cette immense coloration de désert brun et là de désert jaune, mais très proche. ... comme si j'avais retrouvé ma propre enfance. Mais le Tibet devient une espèce de... non pas de paradis mais comme une espèce d'autre monde, comme un désert qui représente l'inconnu qu'on n'a pas réussi à atteindre par soi-même, presque l'expérience mystique qu'on n'a pas faite. Il me semble qu'on la compense un peu si on arrive à Lhassa, si on arrive à sentir l'immense désert. Parce que ce qui me fascine le plus ce sont les cimes blanches, les immenses steppes brunes, jaunes, cette herbe sèche et les gens qui y sont, ces bergers, ces caravanes grelottantes, murmurantes, litanies des clochettes de chèvres et des bouches d'hommes à demi ouvertes que j'ai rencontrées Voir aussi Maurice Chappaz, ValaisTibet, Icône des paysans de montagne, Le Cadratin, Vevey, 2000 Aum mani padmé houm ! C'est le cas de me rappeler les six syllabes où vibre le cosmos. Les six espèces d'êtres, dieux, démons, génies. Hommes, animaux, habitants des purgatoires. Aum : le son créateur qui construit les mondes et résonne intimement. Houm : le cri de guerre « mystique » pour conclure contre notre « moi » imaginaire. Ces sons se prononcent sans discontinuer comme le vent, c'est une méditation.

2
SCHIRREN Matthias, Bruno TAUT, Alpine Architektur, Prestel, München, 2004

3
« Film en creux, lisse et froid comme un miroir, « 2001 » se laisse voir aujourd'hui pour ce qu'il a toujours été : un espace vide, tracé à la ligne claire, dépositaire de nos interprétations. De toute évidence, « 2001 » n'est pas un film métaphysique » nous dit le critique cinématographique Sébastien Bénédict. « Epure verbale, ballet sonore, pure objet de contemplation béate, il nous traverse autant que nous le traversons. La question est toujours la même : de quoi ce film parle-t-il ? De tout, dit-on généralement. En réalité, il est fort à parier que ce film ne parle de rien. Il se donne à voir, simplement, et peut sans doute se réduire à sa forme, son mouvement, qui est celui de l'ouverture, de l'embrassement. »

4
Stéphane Cardinaux, Géométries sacrées, Editions Trajectoire, Bayeux, 2004

5
Fernand Pouillon, Les pierres sauvages, Les Editions du Seuil, Paris, 1964 Ce roman se présente comme le journal du maître d'œuvre qui, au douzième siècle, édifia en Provence l'abbaye du Thoronet, exemple d'architecture cistercienne. Jour après jour, nous voyons ce moine constructeur aux prises avec la faiblesse des hommes et l'inertie des choses, harcelé par les éléments contraires et, plus encore, par ses propres contradictions. C'est aussi une réflexion passionnée sur les rapports du beau et du nécessaire, de l'ordre humain et de l'ordre naturel. Et elle est encore une méditation lyrique sur l'Ordre en lequel tous les ordres ont leur place, et sur cet art qui rassemble tous les autres : l'architecture. Le monastère cistercien, se distingue par sa simplicité et sa sobriété. De toute évidence, la pureté de ses lignes, l'économie des matériaux et la simplicité de son plan d'ensemble est une réaction au laisser-aller des monastères clunisiens vis-à-vis de la règle de Saint Benoît. Les attaques virulentes de Saint Bernard contre le luxe des églises et celui des monastères bénédictins ont imposé un style dépouillé. On se remémore volontiers les propos de l'Abbé de Clairvaux, « c'est à la vertu de prudence, intermédiaire et en quelque sorte arbitre entre les plaisirs des sens et les besoins de la nature, qu'il appartient d'en délimiter exactement les zones respectives, d'assigner et de fournir aux uns le nécessaire, de retrancher des autres le superflu ». La forme carrée choisie par Bernard pour le monastère cistercien est celle qui exprime au mieux son projet de vie monastique : le carré est une figure simple qui permet d'approcher le mystère dans l'humilité ; le carré peut être appliqué partout, il est le signe de la Jérusalem nouvelle ; pour le cistercien, le carré est le symbole du passage du sensuel au spirituel.

6
La catastrophe d'Apollo 13 a fait l'objet d'un film du même nom avec l'acteur Tom Hanks dans le rôle du commandant de bord

7
Erika Keil und andere Autoren, All design, Leben im schwerelosen Raum, Museum für Gestaltung Zürich, Verlag Schwabe, 2003, Basel

8
Umberto Eco définissait ainsi « L'œuvre ouverte », dans la préface de son livre éponyme : « L'œuvre d'art est
un message fondamentalement ambigu, une pluralité de signifiés qui coexistent en un seul signifiant : on verra
comment cette ambiguïté devient aujourd'hui une fin explicite de l'œuvre »

**PEAK ARCHITEKTEN**

**HEINZ JULEN** – INDEX OF WORKS AND BIOGRAPHICAL DATA

| | |
|---|---|
| 29.02.1964 | Born in Zermatt; grew up with his parents and 3 sisters, for the most part in the Findeln Alp area, above Zermatt, 2100m above sea level. Rebuilt various old houses in the Wallis canton with his father |
| 1980 | Started building his first mountain workshop in Findeln<br>First attempts at painting and compositions using objects |
| 1982–83 | Attended preparatory classes at the School of Beaux Arts in Sion |
| 1984 | Opening of the Galerie Heinz Julen built by him in the basement of a clothes shop in the heart of Zermatt. Only works by Heinz Julen were exhibited: furniture, paintings, sculptures |
| 1986 | Exhibition of sculptures on various mountain peaks around Zermatt for Film/Photos |
| 1987 | First workshop in Zermatt was built. |
| 1988 | Exhibition at the Rieder Gallery, Munich (objects and paintings) |
| 1989 | Enlargement of the mountain workshop in Findeln<br>Three-month stay in New York |
| 1990 | Conversion of the Rudenhaus in Zermatt<br>Expansion of the mountain workshop in Findeln<br>Exhibition in Zurich: In the framework of the international Women's Tennis Tournament, sponsoring was obtained from the Tages-Anzeiger group for a gallery to be built there and in which Heinz Julen exhibited (furniture objects, drawings, sculptures, collages). |
| 1991 | First exhibition at the Andy Jllien Gallery, Zurich<br>(religious objects and sculptures, drawings, photos) |
| 1992 | Opening of the Vernissage cultural center in Zermatt, planned and built by Heinz Julen.<br>Opening exhibition: Respekt (Respect) (Work by Heinz Julen – with a catalogue) |
| 1992–96 | Director of the Vernissage cultural center. Organisation of various international concerts and exhibitions |
| 1993 | Religious work with Jesus- and Maria-representations<br>One-month stay in Israel<br>Exhibition at the Vernissage, Zermatt: seven private houses |

| | |
|---|---|
| | Exhibition at the Ludger Vlatten Gallery, Heidelberg |
| | Building of a workshop in the industrial zone in Zermatt from the remainders of the Zermatt art deco train station |
| | Exhibition at the Andy Jllien Gallery, Zurich: Frigorsessel |
| | Fountain sculpture Überfluss (Overflow); gift to the population of Zermatt |
| 1993/94 | Building of the View House in Zermatt |
| 1994 | Development of the Cube Systems (object/commodities/household utensils) |
| | Exhibition at the Wälchli Gallery: Bergwürfel (Mountain Cube) objects) |
| | Exhibition at the Schönegg Gallery, Basel (objects, paintings) |
| 1996 | One-man-show at Kunst 96 in Zurich (Andy Jllien Gallery): Bergwürfel (Mountain Cube) |
| | Presentation of Cube Systems at Möbel Strebel AG in Aarau and in the Kornschütte Lucerne |
| | Building of a mobile Bar in Aarau Affenkasten |
| 1997 | First plans for INTO the hotel and opening up of the hotel grounds by means of a tunnel |
| | Opening of the Enzo-Vrony restaurant in Zermatt (conversion of a 200-year old Wallis house) |
| 1998 | Building of the INTO the hotel started |
| 1999 | Opening of the Cœur des Alpes hotel in Zermatt (concept, planning and partial completion) |
| 2000 29/02: | Opening of the INTO the hotel in Zermatt |
| | Exhibition at Kunst 2000, Zurich: Der letzte Raum einer Vision (The Last Room of a Vision) |
| | Exhibition at the Vernissage, Zermatt: Der letzte Raum einer Vision (The Last Room of a Vision) |
| 2001 | Completion of the INTO employee houses and of a loft in Zermatt |
| 2002 | Exhibition at Malmö Art Museum: The Last Room of a Vision |
| | Invitation to speak at Cimes 2002 in Courchevell on the subject of Perspectives pour un nouveau siècle de sports d'hiver (Perspectives on a New Century of Winter Sports) |
| | Invitation by Michel Clivaz to speak at Château Mercier in Sierre, Valais |
| | Presentation of Matterhorn Highway Stadium to the municipality of Zermatt (in cooperation with Michel Clivaz) |

| | |
|---|---|
| 2003 | Invitation to speak at the Ecole d'architecture de Grenoble, France: Naissance d'un mythe (Birth of a Myth)<br>Project design for hotel in Bouznika (in cooperation with Michel Clivaz)<br>Invitation to speak at the Ecole polytechnique fédérale de Lausanne. EPFL: The Destroyed Project<br>Invitation to speak at UQAM (University of Quebec in Montreal) on A Marriage of Art and Tourism<br>Invited by Daniel Gauthier, founder of Cirque du soleil, to participate in project studies for Le Massif, a skiing resort in Quebec combining art and sports |
| 2004 | Cooperation on designing Le Massif skiing resort by Daniel Gauthier<br>Project proposal for hotel The Swiss Cottage in Verbier (in cooperation with Michel Clivaz)<br>Design presentation at Contemporary Art Fair in Strasbourg, France |
| 2005 | Exhibition Portrait d'architecture (Architectural Portrait) at Fondation Braiard, Geneva<br>Project proposal for museum entrance, Zermatt<br>Cooperation with Ueli Lehmann: invited to submit project proposal for architectural contest for the Little Matterhorn, 1st place<br>Founding of PEAK Architekten with Ueli Lehmann |
| 2006 | Amsterdam Congress Meeting Center: interior design<br>Opening of a shop in Zermatt www.heinzjulen.com |

**ADDITIONAL INFORMATION**

Information on the artist Heinz Julen
www.heinzjulen.ch
www.kunstraeume.ch

**UELI LEHMANN** – BIOGRAPHICAL DATA

| | |
|---|---|
| 30.10.1967 | Born in Biel/Bienne, Switzerland |
| 1988-1994 | Architectural studies at ETH Zürich, Diploma (Prof. H. Kollhoff) |
| 1995 | Worked at Santiago Calatrava's architectural office in Zürich |
| 1996 | Co-founder with Tom Keller of architectural office in Zürich |
| 1996-2000 | Completion of various buildings, e.g. extension of Sonnegg school, Goldau |
| 2001 | Co-founder with Franziska Felber and Tom Keller of architectural office in Zürich |
| 2001-2005 | Completion of various buildings, e.g. extension of Kantonssschule Willisau, Willisau |
| 2005 | Cooperation with Heinz Julen: invited to submit project proposal for architectural contest for the Little Matterhorn, 1st place<br>Founding of PEAK Architekten with Heinz Julen |

## SCHLAICH BERGERMANN UND PARTNER

Schlaich Bergermann und Partner (sbp gmbh) are independent consulting civil and structural engineers. Headed by 8 managing directors, a staff of approx. 70 members is located in Stuttgart, Berlin and New York.

The capability and capacity of our consulting firm is based on the experience of our highly qualified staff, which successfully cooperated for many years and since 1980 acts first under the name Schlaich + Partner, since 1989 under the name of Schlaich Bergermann und Partner (SBP) and since July 1, 2002 as a limited company.

This consultancy strives to design sophisticated engineering structures ranging from wide-span lightweight roofs, a diversity of bridges and slender towers to innovative solar energy power plants.

Our ambitions are efficiency, beauty and ecology. For the sake of holistic solutions we seek the collaboration with architects and engineers from all fields of expertise who share our goals.

Schlaich Bergermann und Partner are engaged in several fields of civil and structural engineering:

| | |
|---|---|
| Bridges | Road Bridges<br>Railroad Bridges<br>Pedestrian Bridges |
| Buildings for | Administration<br>Residence<br>Universities<br>Hospitals |
| Towers, Silos | Telecommunication Towers<br>Water Towers<br>Cement Silos |
| Sport Facilities | Stadiums<br>Athletic and Swimming Arenas |
| Special Structures like | Cable-net Structures<br>Shell Structures<br>Cooling Towers<br>Aircraft Hangars |
| Industrial Plants | Use of new Energy Sources<br>Solar Updraft Towers<br>Solar Collectors |

The scope of work includes all planning phases and ranges from feasibility studies, conceptual design through detailed structural design to the supervision of workshop and site construction. Our close contact to teaching and research work at Universities places readily at our disposal the latest “state of the art” as well as the know-how of new construction methods and materials. This easily enables us to include any type of experimental work (such as material testing, structural testing, wind-tunnel tests) in our project studies.

Uncommon solutions are part of our daily work. Solar energy systems are an example for; the solar updraft tower and concentrating solar collectors like dish/Stirling systems and parabolic trough collectors have been developed and built since more than 20 years, giving us unique experience and knowledge in this field.

Amongst our the international work numerous projects have been conducted in many Asian countries like China and India.

Freedom Tower, New York

sbp's managing directors

Lookout Tower, Stuttgart

## HL-PP CONSULT
## INGENIEURGESELLSCHAFT MBH

### COMPANY PROFILE

HL-PP Consult is a fusion of PP-Consult Ingenieurgesellschaft mbH (established 1985, founded by Dipl.-Ing. Klaus G. Peter), Platzer Ingenieure (established 1991, founded by Dipl.-Ing. Jakob Platzer) and parts of the HL-Technik (established 1968, founded by Prof. Dr.-Ing. e. h. Klaus Daniels).

HL-PP Consult is located in Unterfoehring near Munich and has branch offices in Frankfurt/M., Dresden and Vienna.

### ECOLOGICAL BUILDING – TECHNICAL INNOVATIONS

If one examines future trends against the background of the major economic and ecological, social and cultural changes which are taking place, it is clear that a change in attitude has to take place which will lead to those resources which are still available being utilised as conservatively as possible, with the greatest possible protection being given to the environment.Our philosophy is therefore, as part of a network of users, architects, structural and landscape planners, to help promote those developments in the planning of buildings which will be necessary in the future.

### ECOLOGICAL AND SUSTAINABLE BUILDING

Our aim is to create living and working environments which are comfortable and which encourage creativity in order to design environmentally friendly and energy-saving buildings which are distinguished by an economical use of natural resources. This involves the passive and active use of wind energy, geothermal heat, solar energy, rainwater and the use of materials which cause as little harm as possible to the soil and air during manufacture and in the use and disposal of water.

### COMPLETE SPECTRUM TECHNICAL EQUIPMENT – INTEGRATED PLANNING'S

Our main focus is building services like sanitation, heating, ventilation, air-conditioning, refridgerating and cooling technology, Building climate studies and simulations and also physical building studies.

### YOUR DEMANDS ARE OUR OBJECTIVES

Client proximity, future orientated concepts, general solution for techniques and buildings, sustainable and ecological technologies


British
Antarctic Survey

## TERRALINK GMBH

### OUR PHILOSOPHY

We have made it our mission to assist our clients in their search for innovative solutions that are not only sustainable for mankind and the environment, but ecologically and economically viable as well. Our products and processes for careful and efficient resource utilisation have stood the test of time.

### OUR BEGINNINGS

terraLink gmbh was founded in 2003 by Martin Holzapfel and Heinz Kupferschmid as a private limited company. Its purpose is to develop, distribute and implement environmental technologies.

### OUR ASPIRATIONS

We expect only the best from our suppliers and partners. We only provide and supply products, services and support that correspond with our philosophy of sustainability and environmental compatibility.

### OUR CLIENTS

Working for our clients means working with our clients. We cooperate worldwide with public authorities, architects, engineering and planning offices. We also advise private clients and companies searching for innovative solutions.

### OUR BUSINESS

Sustainable water management concepts have already put our young company on the map among experts. Our strength is the strategic cooperation of systems suppliers and research institutions combined with hands-on expertise from various projects. Some recent developments concern special water treatment processes, efficient sea water desalination processes and fish protection systems for hydropower plants.

**OUR SUCCESS STORIES**

Planning and construction of Europe's highest membrane water purification plant at Hohtälli/Zermatt, Switzerland: closed-system circulation and re-use of industrial water.

Research project, Decentralized Treatment and Re-use of Toilet Wastewater in Alpine Areas, in cooperation with Eawag, Swiss Federal Institute of Aquatic Science and Technology, Zürich.

Development, dimensioning and supply of a fish protection system for offshore seawater intake at Tallawarra power station, Melbourne, Australia, commissioned by Alstom (Switzerland) Ltd.

Expert planning of wastewater concept for Studio Monte Rosa, project for an extreme-altitude mountain refuge (Swiss Alpine Club, SAC).

Development and use of surface coatings for chemical-free thermal sea water desalination. Industrial project in cooperation with Abu Dhabi Coating Enterprises (ADCE).

Research project, Artificial Snow from Treated Wastewater, in cooperation with University of Applied Sciences/Hochschule Wädenswil, Switzerland.

**OUR LATEST NEWS**

Winner of the Muelheim Water Award 2006, Technological Progress in Urban Water Management.