SYNOPSIS

The thesis has evolved from an architecture competition for a new cultural precinct, in the city of gold coast, Australia. The design has also been entered as a proposal for the new precinct.

The project focuses upon how the design can evolve while keeping the initial expression or idea of a design. Working on the aesthetic and atmosphere as an design tool.

Out from this large scale project the group has decided to detail a two of the four buildings due to the size of the project. Amongst them a auditorium where acoustics has been a key factor in the design.

GOLD COAST CULTURAL PRECINCT

Department of Architecture, Design & Media Technology
Aalborg University 2013

MSc4 Architectural Design

Group 8

Submission: 2013-05-22

Appendix: Drawing folder

Supervisors: Claus Bonderup and Poul Henning Kirkegaard

Tonny Lykke Jensen

Inge Hjelmsø Müller

Emil Lehman Dornonville de la Cour

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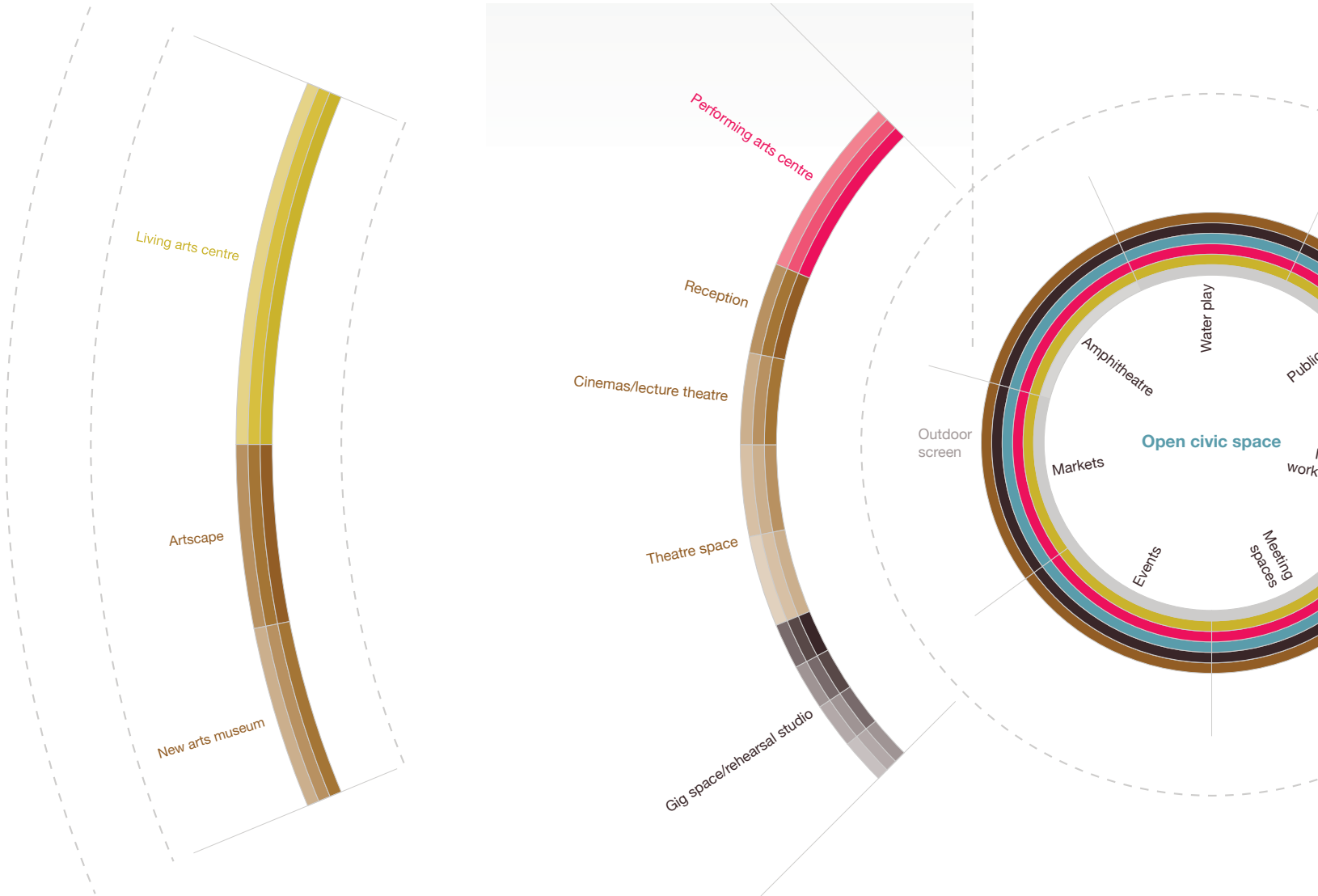
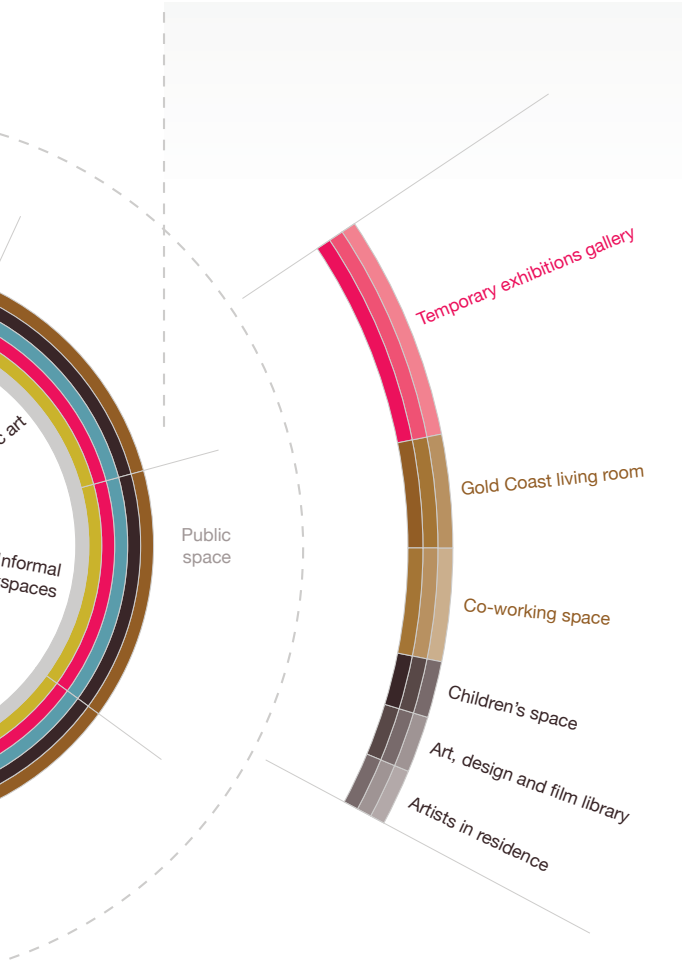
INTRODUCTION





This project is produced as a competition proposal, participating in the first stage of the two stage international competition of designing a new cultural precinct in Gold Coast, Australia. The first stage is open and of a conceptual character, while the second stage of the competition is more detailed and for three teams chosen by a jury.

The new cultural precinct should contain a performing arts centre, a new arts museum and a landscaping plan relating to the arts, which is dubbed the "artscape". The city wishes for a variation in theatre sizes and functions. The precinct should accomodate both the experience of the arts but also the creation by featuring workshops and studios.

This project, being also a student project, has a conceptual scope on the complex building programme as a whole. The main theme is theatre building, and a more detailed focus is given to the main auditorium. Thus the design focus covers the main architectural concept, the spaces between the building volumes, the lobby and the main auditorium. Weight has been given on work with the atmosphere surrounding the arrival and flow through the precinct and the scenario of attending a live performance as well as the acoustical and visual experience in the auditorium.

CONTEXT

Gold Coast is a relatively young city undergoing development and currently finds a need of a cultural heart and identity. Gold Coast is especially famous for its holiday and surfer culture and the city feature some of Australia's tallest buildings. One of the currently most significant landmarks of Gold Coast is Q1, one of the tallest sky scrapers in Australia. Even though, the city is in need of a cultural landmark, which further south is exemplified in Jørn Utzon's Sydney Opera House.

A distinct characteristic of Gold Coast is the typology mix and the man-made landscape and rivers, visible on p. 14-15. High-rises up to 200-300 meters are closely combined with with a low typology of one to five stories. The sky scrapers form a vertical barrier towards the ocean in a linear concentration along the beach. Many commercial functions and sky scrapers are concentrated around Surfers Paradise, which is envision to be linked to the site at Evandale by a green connection for pedestrians.

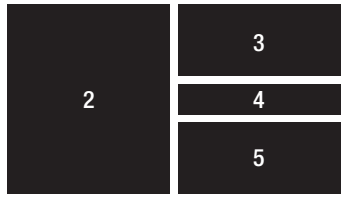
PART 01

GOLD COAST CULTURAL PRECINCT

CONCEPT / ARTSCAPE / PLAZA / LOBBY / AUDITORIUM / ORGANISATION

CONCEPT

P. 8-9



P. 10-11

1 BIRD'S EYE ON SITE
2 GOLD COAST SKYLINE
3 NEW YORK CENTRAL PARK
4 MOUNTAIN INSPIRATION
5 MOUNTAIN INSPIRATION

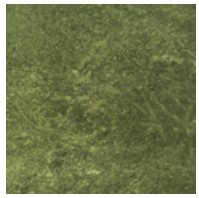
The building concept evolves from the intention of bringing dramatic nature and organic elements back into the rigorous, geometrical city to inspire and express the creation and experience of local arts and culture. A contrast to the conformity and repetition of the built context is thought to express a sensuous and atmospheric interpretation of the city.

The concept of the mountain or rising landscape comes into mind, an organic and natural contrast to the one-dimensional sky scrapers as well as a reference to the western hinterland visible on the horizon. An uncompromising, recreational oasis within walking distance of the centre of Surfers Paradise will provide the city with a cultural and recreational centre. This will accompany and counterweight the linear concentration of commerce and recreation along the ocean beach, thus creating a cultural heart for the city to identify with.

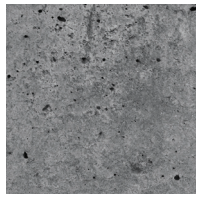
The idea of the precinct being a centre is emphasized by the introduction of the gaps. They are conceived as chaotic, geometrical shapes breaking and controlling the organic landscape, a dramatic element building up an atmosphere upon arrival. The gaps point towards the centre and from the centre to significant views and flows in the near context.

The idea of the precinct being a centre of concentration continues into the architectural concept and the introduction of the sphere as the ultimately directionless and centralized volume. The strongest functional symbol of both the performance and experience of the live art is the main theatre, which is contained within the sphere. Thus the sphere becomes both a functional and aesthetical symbol and representation of the essence of the arts, expressing the abstraction, intangibility and liveliness characterising the arts, as if the creation of art would sprout from this inner core hidden under the landscape.

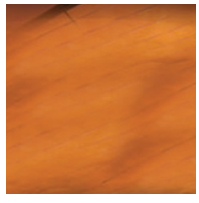
SKIN
MOSS

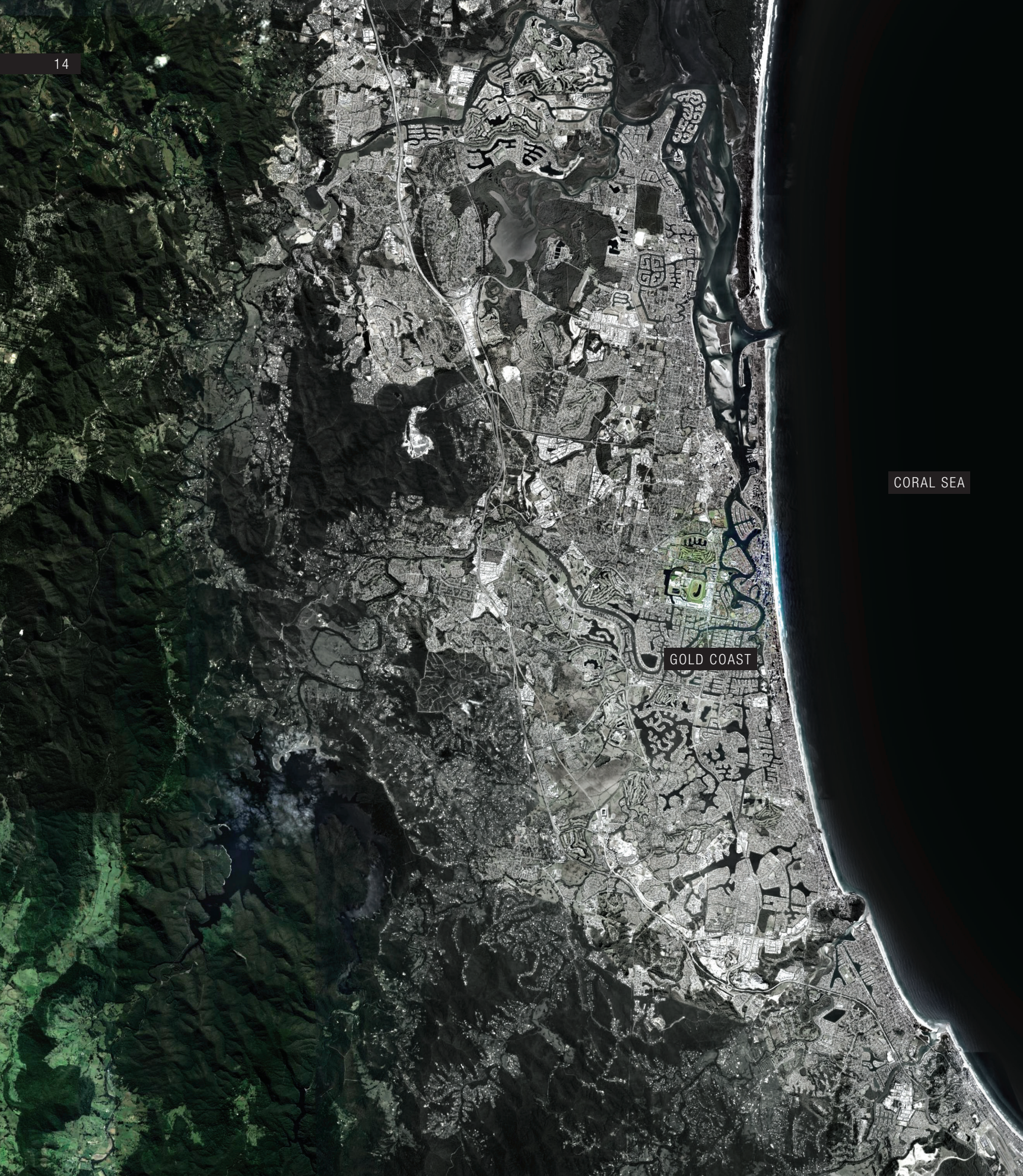


FACADES
CONCRETE

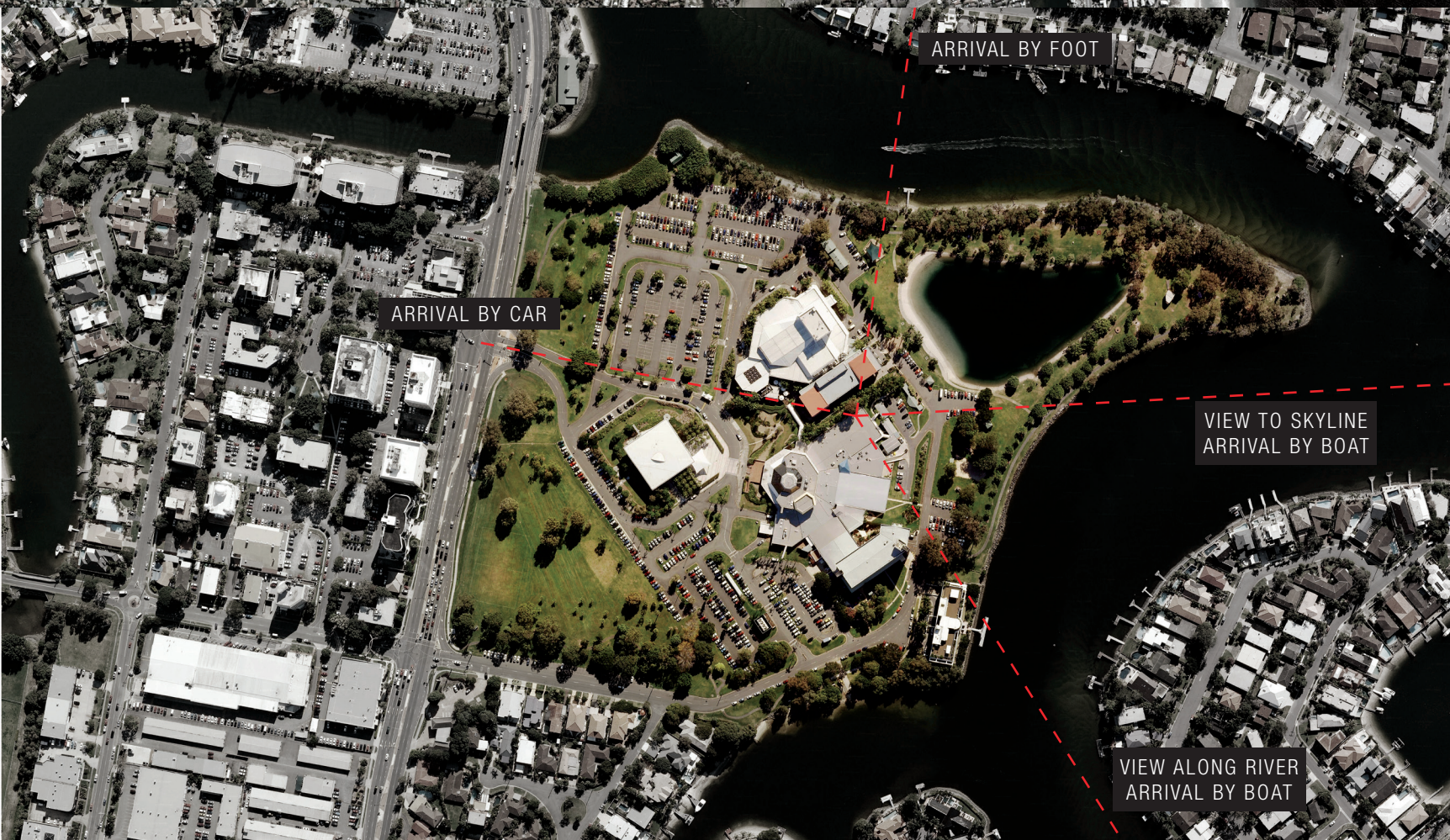


SPHERE
ALUMINIUM




CORAL SEA
GOLD COAST

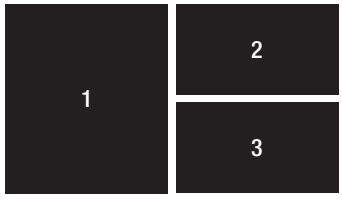
CHEVRON ISLAND
SURFERS PARADISE
EVANDALE


ARRIVAL BY FOOT
ARRIVAL BY CAR
VIEW TO SKYLINE
ARRIVAL BY BOAT
VIEW ALONG RIVER
ARRIVAL BY BOAT

NED
653

Cap-Ferret

ARRIVAL



P. 14-15

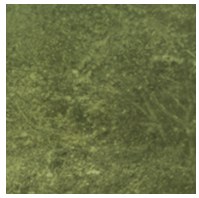
P. 16-17

P. 18-19

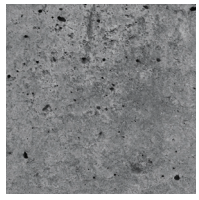
P. 20-21

1 AERIAL VIEW ON GOLD COAST
2 AERIAL VIEW ON NEAR CONTEXT
3 AERIAL VIEW ON SITE
4 ARRIVAL VIA BRIDGE FROM CHEVRON ISLAND
5 ARRIVAL BY CAR
6 ARRIVAL BY BOAT

SKIN
MOSS



FACADES
CONCRETE



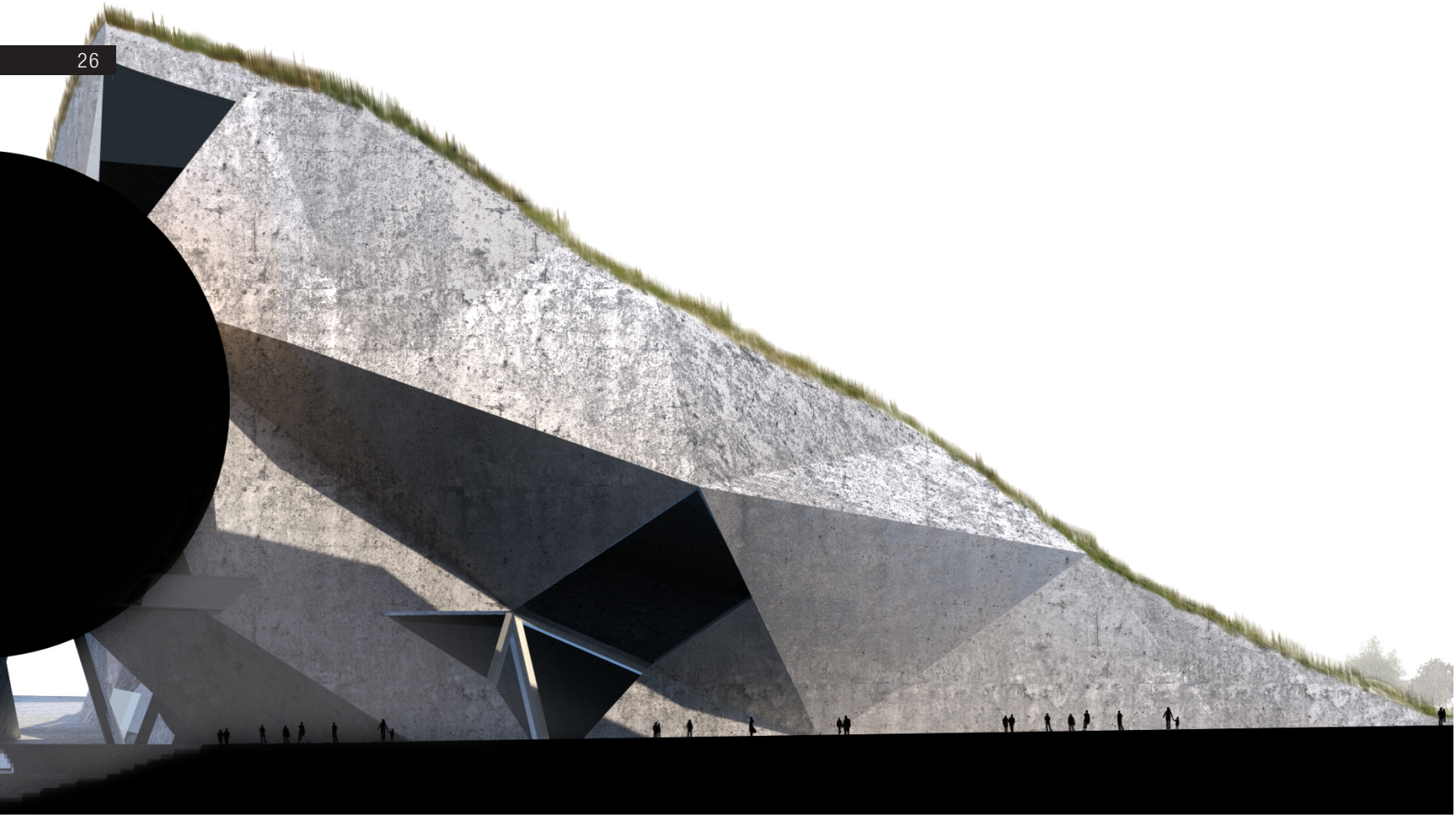
SPHERE
ALUMINIUM

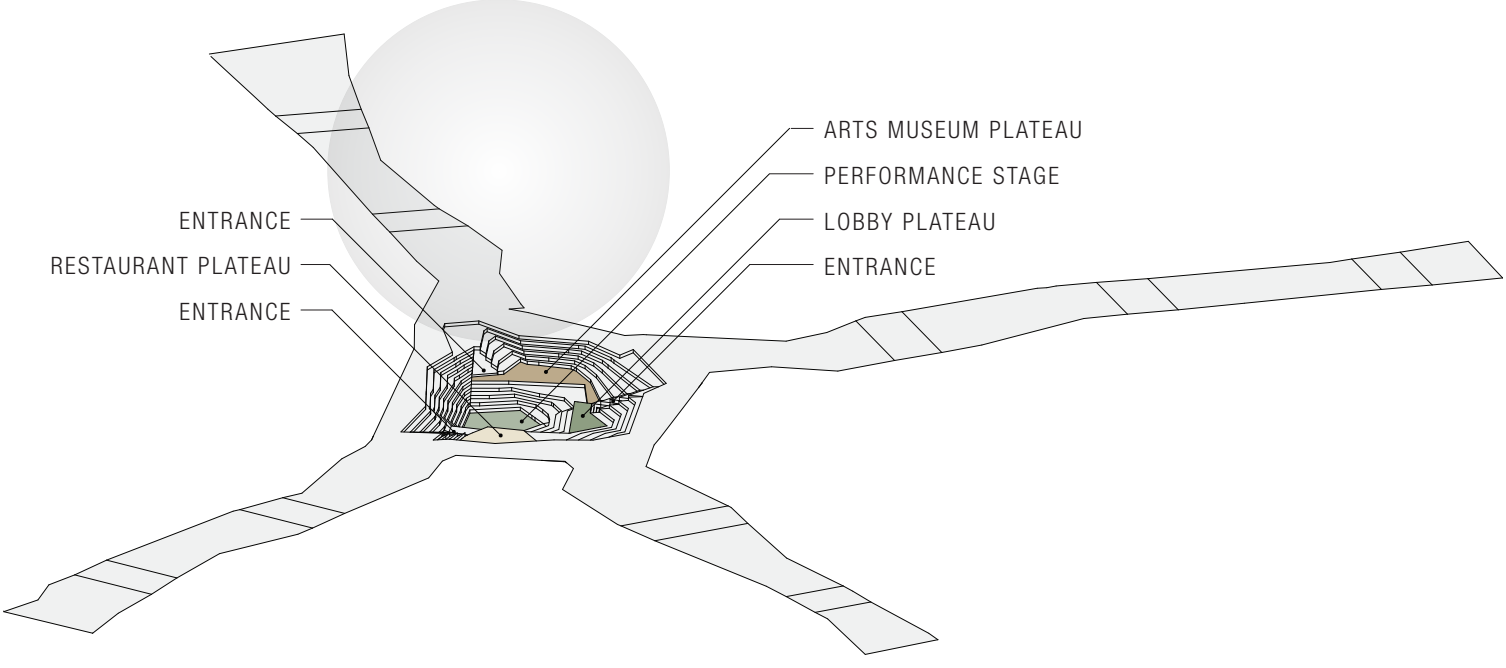
The experience of arriving at the precinct is different depending on the means of transportation. Each of the four paths leads to a site entrance by foot, car or boat, while all of them offer a view towards the sphere, leading the way. Thus access paths and views both to and from the sphere and plaza have been main parameters when placing building functions on site.

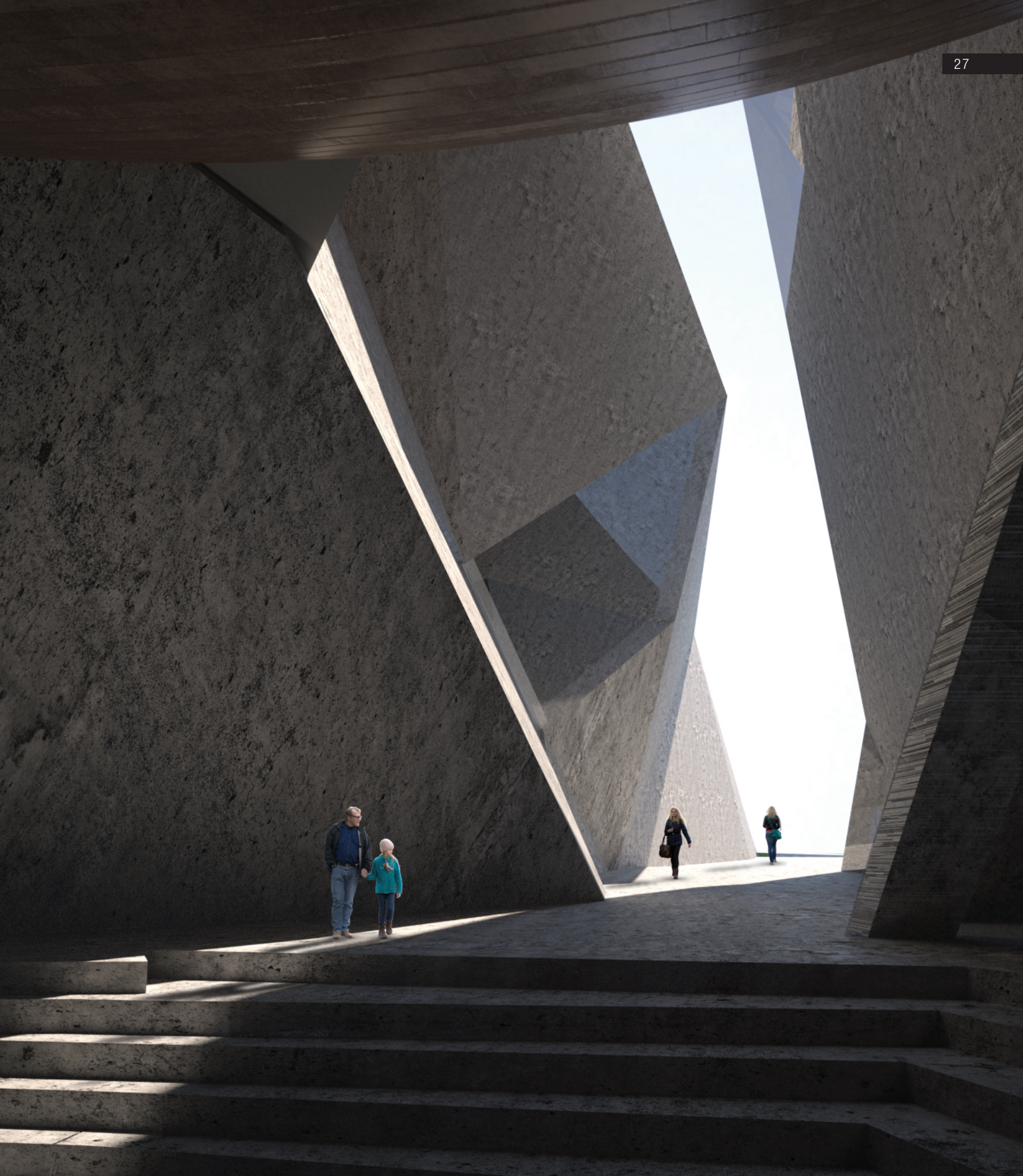
The precinct is connected to the city centre of Surfers Paradise by a pedestrian bridge linking to Chevron Island to the north. Thus a view to the sphere is obtained all the way from Chevron island, so that pedestrians are encouraged to take the turn south to Evandale.

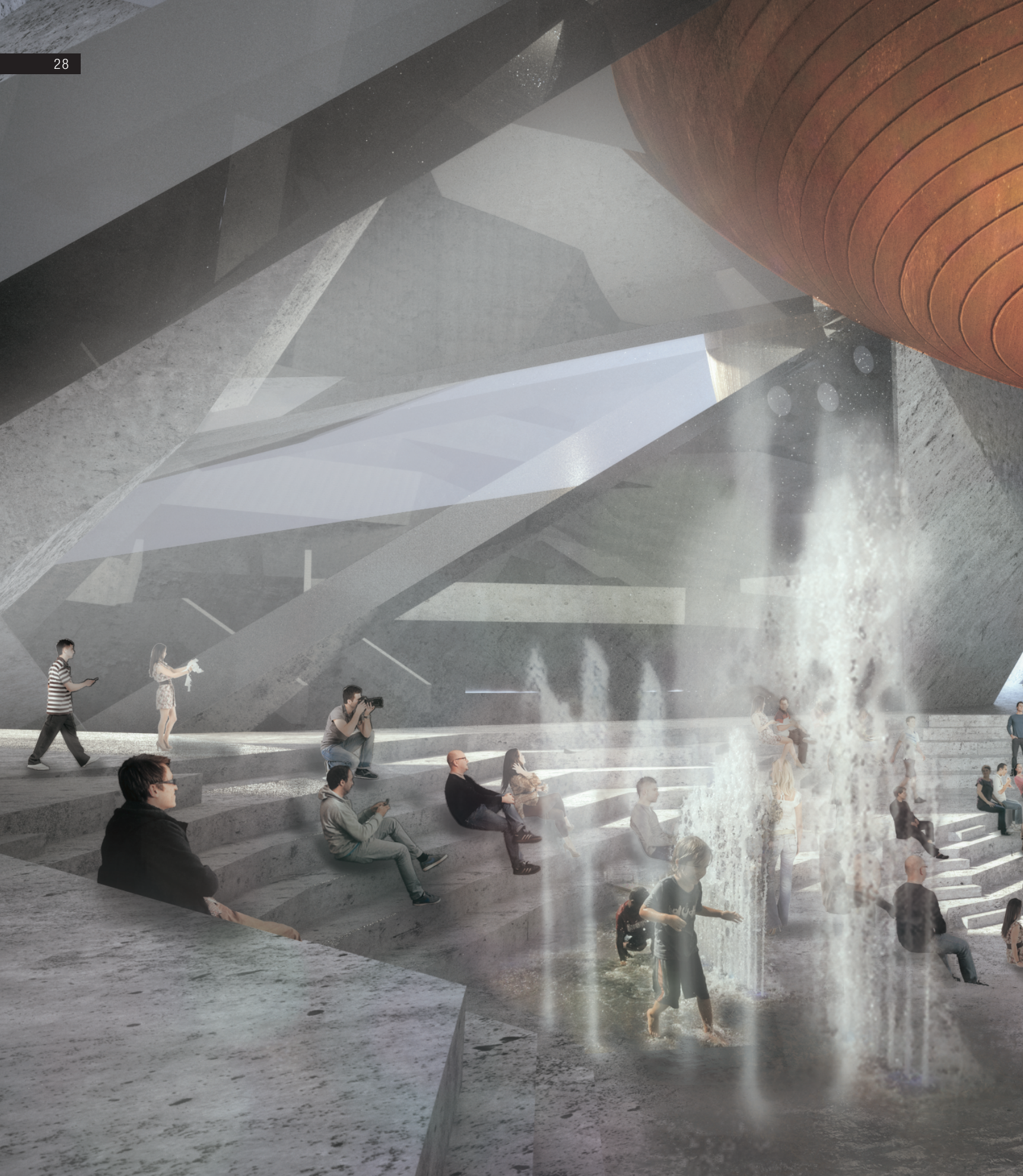
The path and view towards west relates to guests arriving by car having a view towards the sphere before driving underground. The ramp down is combined into the western pedestrian path, which connects the park to the precinct.

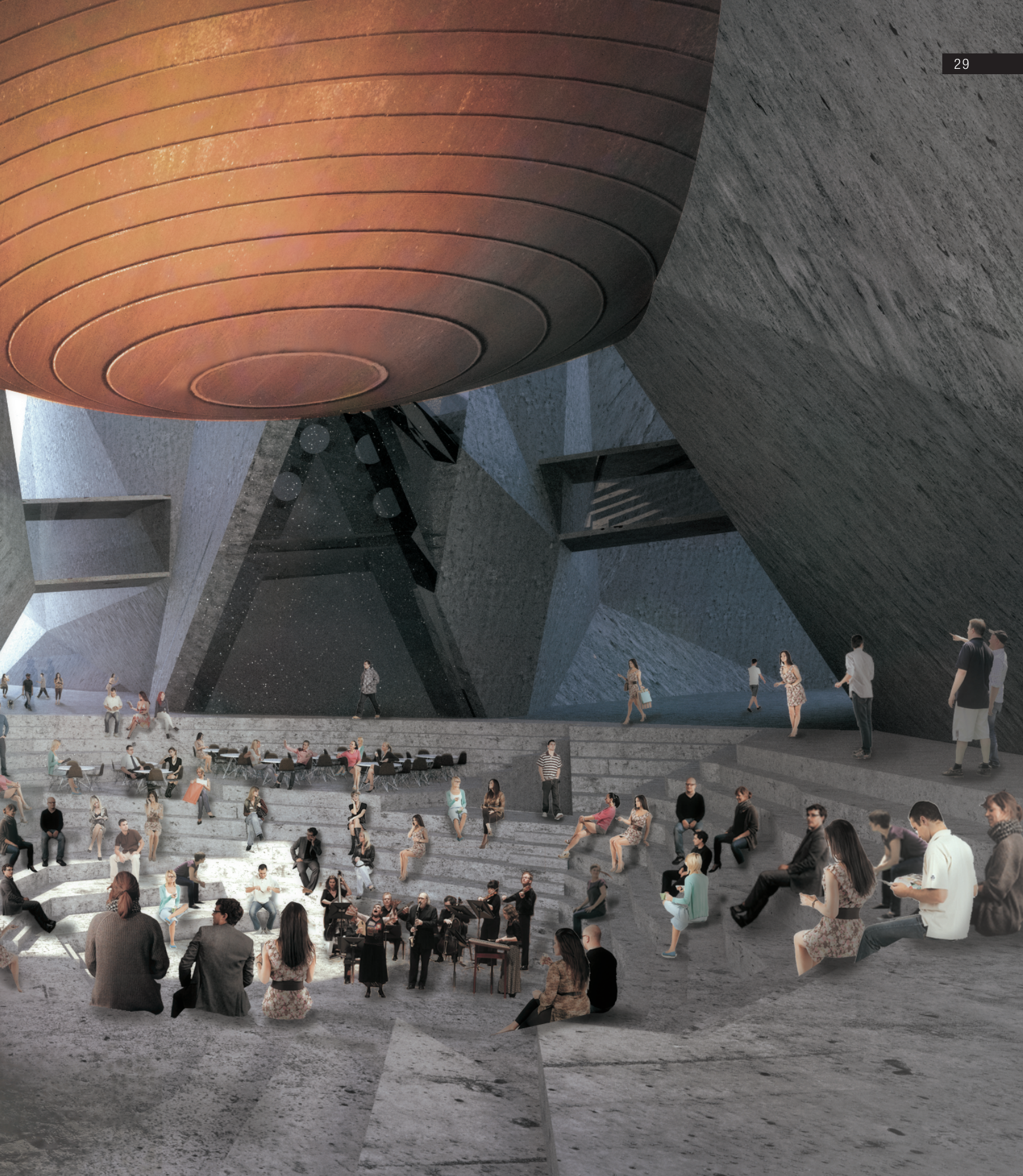
To the east and southeast respectively, two of the main paths relate to the river and arrival by boat. The view lines are placed, so that a view to the sphere is obtained not only from the river, but in the direction of travel, so that everyone passing by on water experiences a journey towards the mountain and the core. A shuttle boat to Surfers Paradise is envisioned as an alternative to the walking route.




ARTS MUSEUM PLATEAU
PERFORMANCE STAGE
LOBBY PLATEAU
ENTRANCE
ENTRANCE
RESTAURANT PLATEAU
ENTRANCE

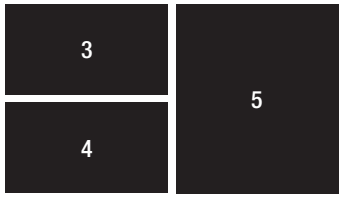






PLAZA

P. 24-25



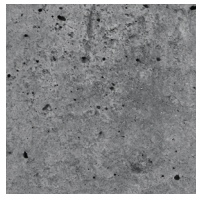
P. 26-27

P. 28-29

P. 30-31

1 VIEW TOWARDS SPHERE
2 CROSS SECTION 1:200
3 FACADE ELEVATION
4 PLAZA FUNCTIONS
5 VIEW ALONG PATH
6 PLAZA AT DAY
7 PLAZA AT NIGHT

FACADES
CONCRETE

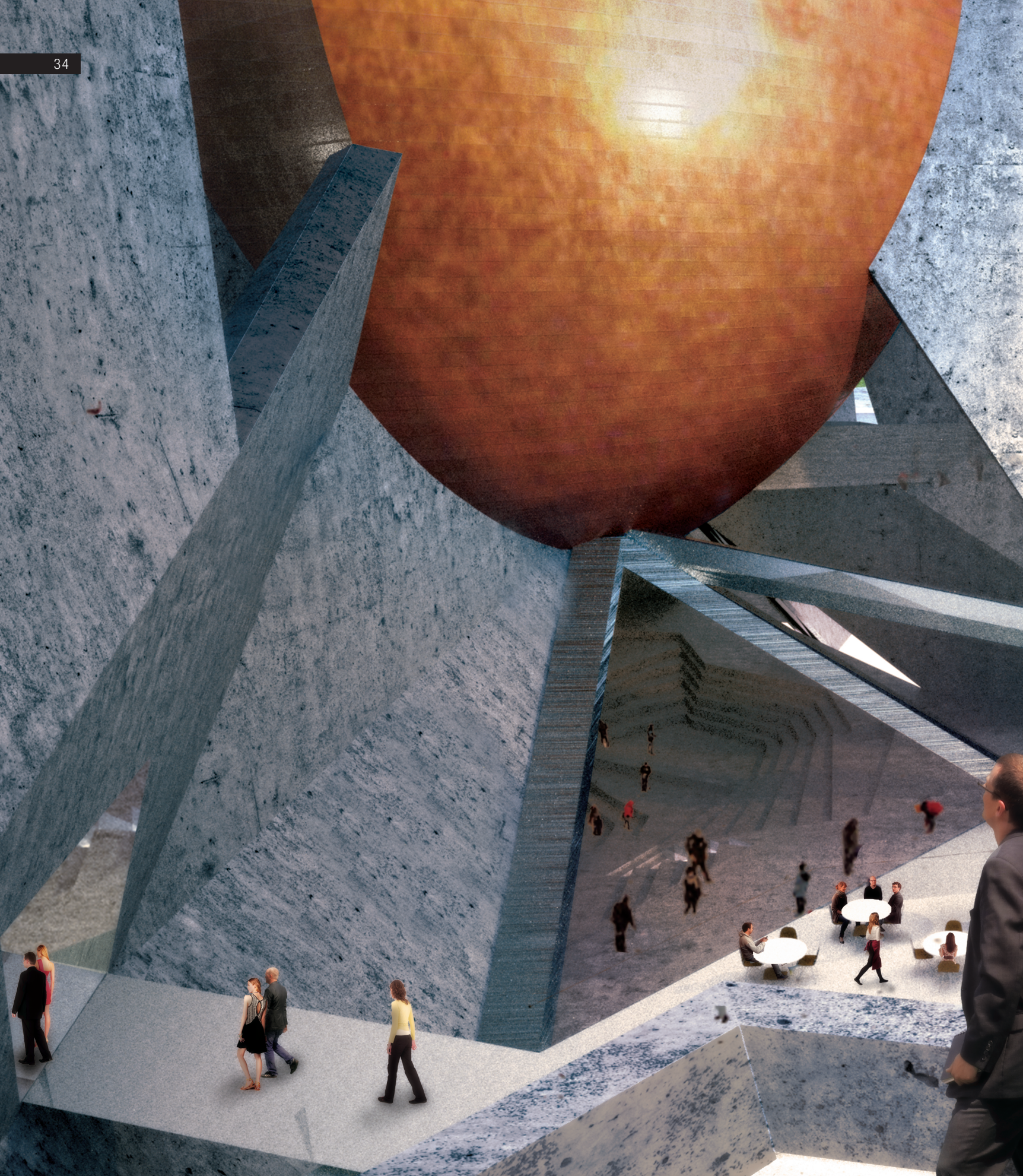


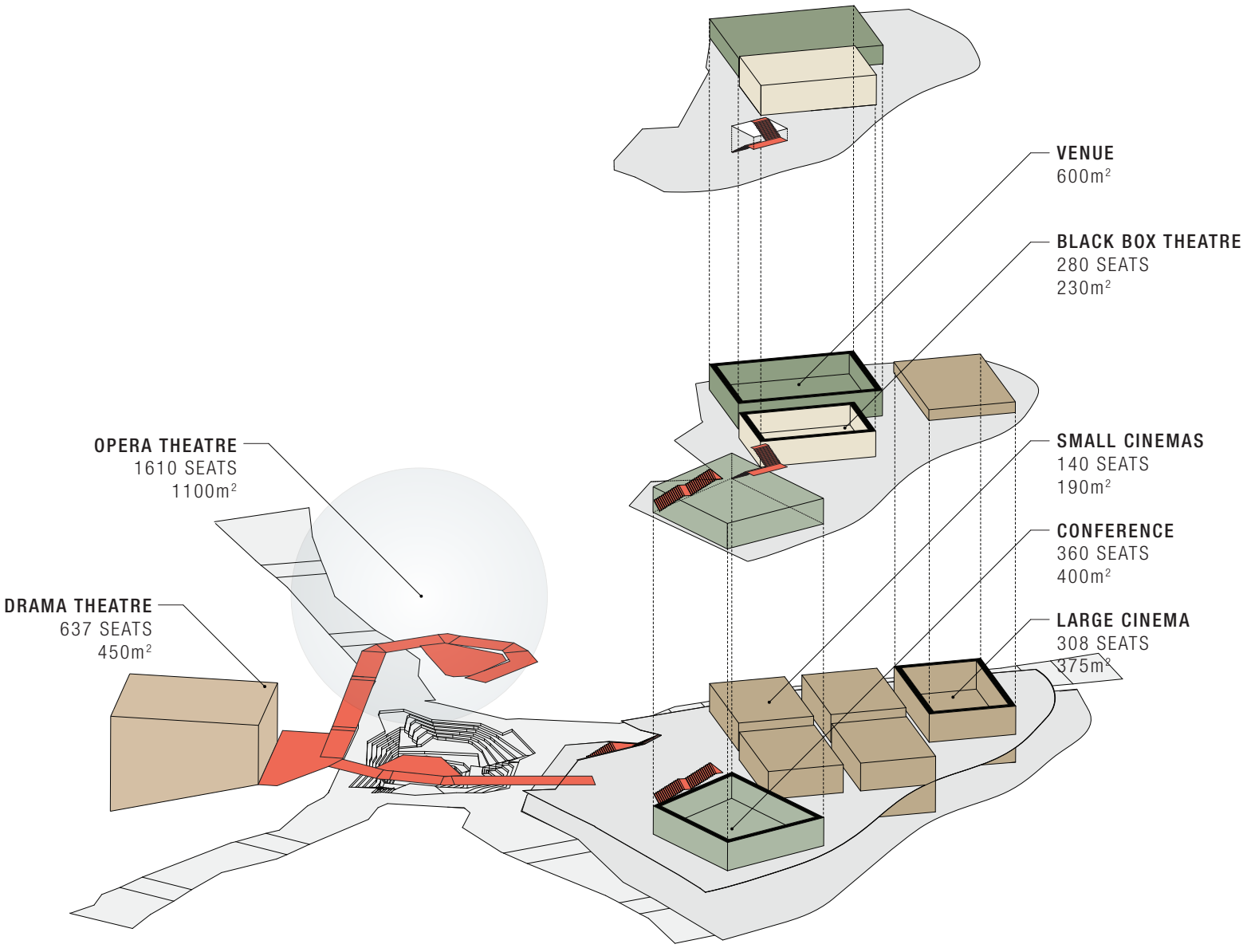
SPHERE
ALUMINIUM

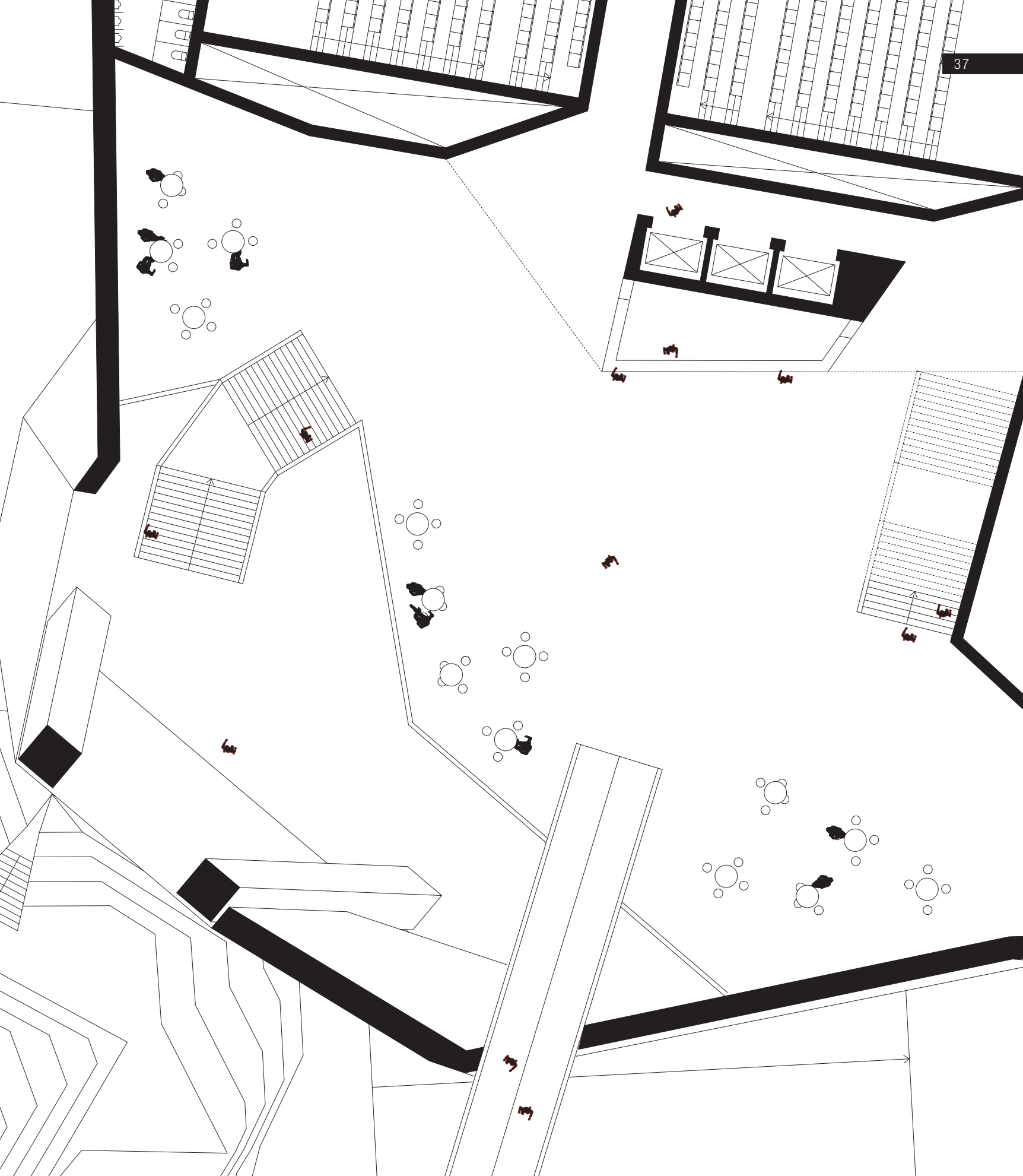
COLUMNS
STEEL

Moving on from the atmosphere of the park one enters into one of four gaps between the building volumes. In both form and material, the gaps break and contrast the organic shapes of the landscape. From the open park space the warm sphere is partly visible through the gaps. The sphere being lit provides a warm glow to the central plaza, perceptible from the outside. Inside the gaps, intimacy, dimensions, form and materials are used to create the specific atmosphere of a descent from an oasis into the cool mountain gaps resulting in a tall and vertical space when compared to the human scale. Concrete is a material that has a distinct cold presence, while affording a sense of mass and solidity, ideal to create the sense of a movement underground. The dimensions of the space is defined so that the space is tall, narrow and dramatic and enclosed by mass though still voluminous and spacious. The acoustics and reverberation time of the concrete is intended to contribute to the sense of enclosure, mass and low experienced temperature of the space.

The sphere is in contrast to the concrete, the aluminium having a warm glow attracting guests towards the centre. The plaza becomes the central space from where buildings are entered: the crater inside the mountain and the culmination of the flow through the central planned building. It envisaged that the sphere functions as an acoustic reflector, when the subjacent space is utilized as an amphitheatre or concert space, inspired from vineyard-typology concert halls. Formally, the plaza interprets the shape of the facades in a series of contours allowing and audience to experience what takes place on the stage both visually and acoustically. The plaza is programmed on three deep steps allowing for the restaurant to serve outside and the arts museum to install temporary artwork. When arriving by car, stairs lead from the parking level directly to the central plaza.




VENUE
600m²
BLACK BOX THEATRE
280 SEATS
230m²
OPERA THEATRE
1610 SEATS
1100m²
SMALL CINEMAS
140 SEATS
190m²
CONFERENCE
360 SEATS
400m²
DRAMA THEATRE
637 SEATS
450m²
LARGE CINEMA
308 SEATS
375m²



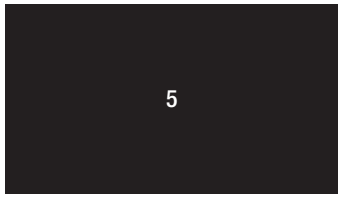
< MAIN THEATRE
WARDROBE >
TOILETS >
ELEVATORS >

LOBBY

P. 34-35

P. 36-37

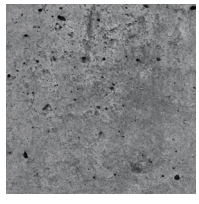
P. 38-39



P. 40-41

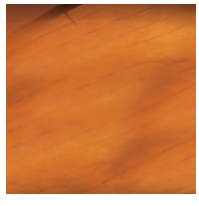
1 VIEW FROM LOBBY BALCONY
2 FLOW AND ORGANISATION OF THEATRES
3 PLAN LEVEL 6 METRES 1:200
4 VIEW FROM RAMP INTO ARTS MUSEUM
5 VIEW FROM RAMP INTO SPHERE

WALLS
CONCRETE



FLOOR
TERRAZZO

SPHERE
ALUMINIUM



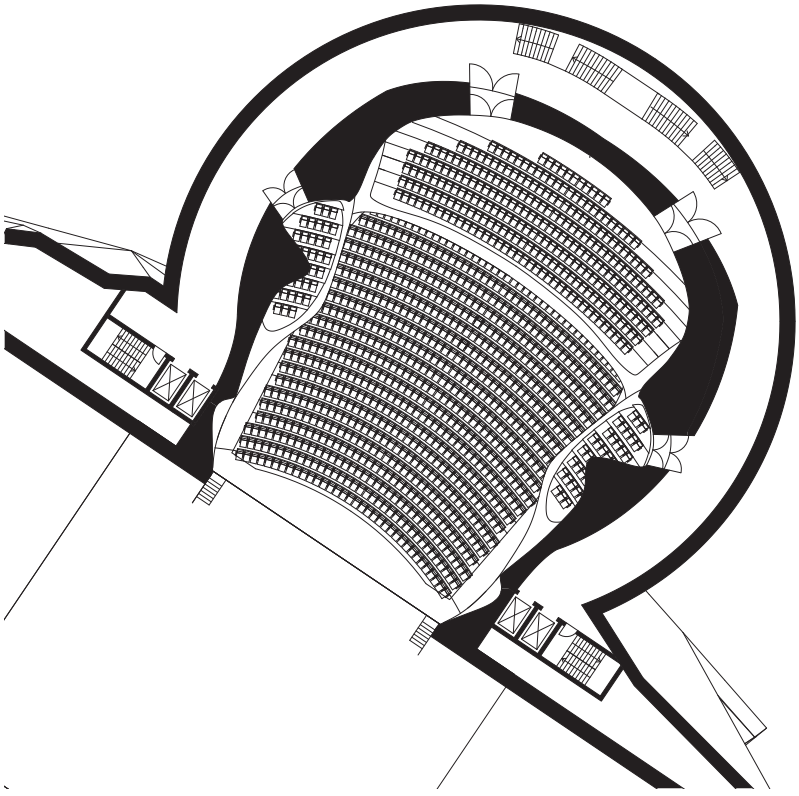
COLUMNS
STEEL

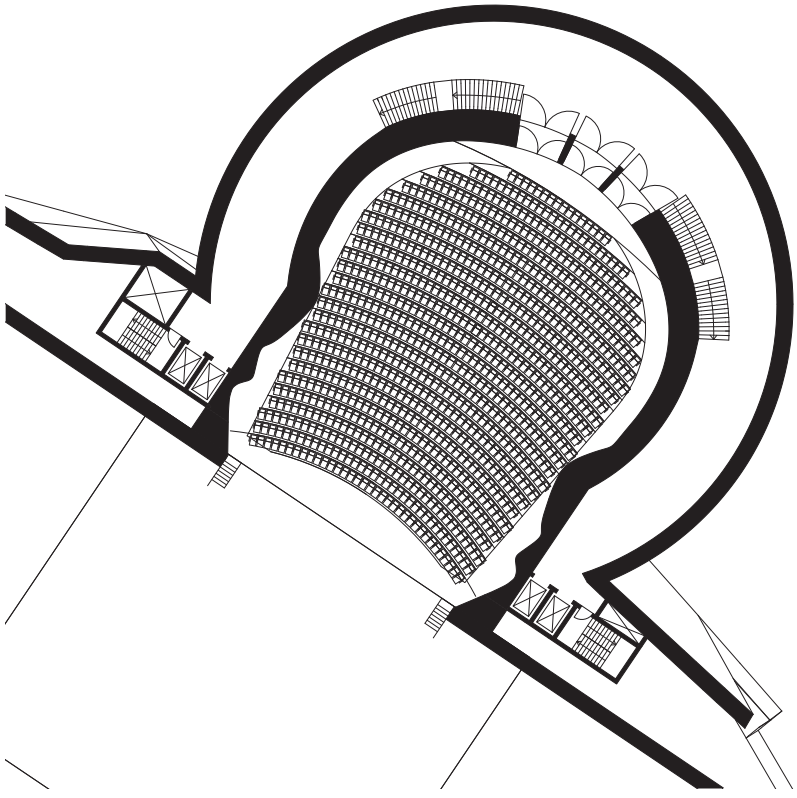
SPHERE INTERIOR
RED UPHOLSTERY

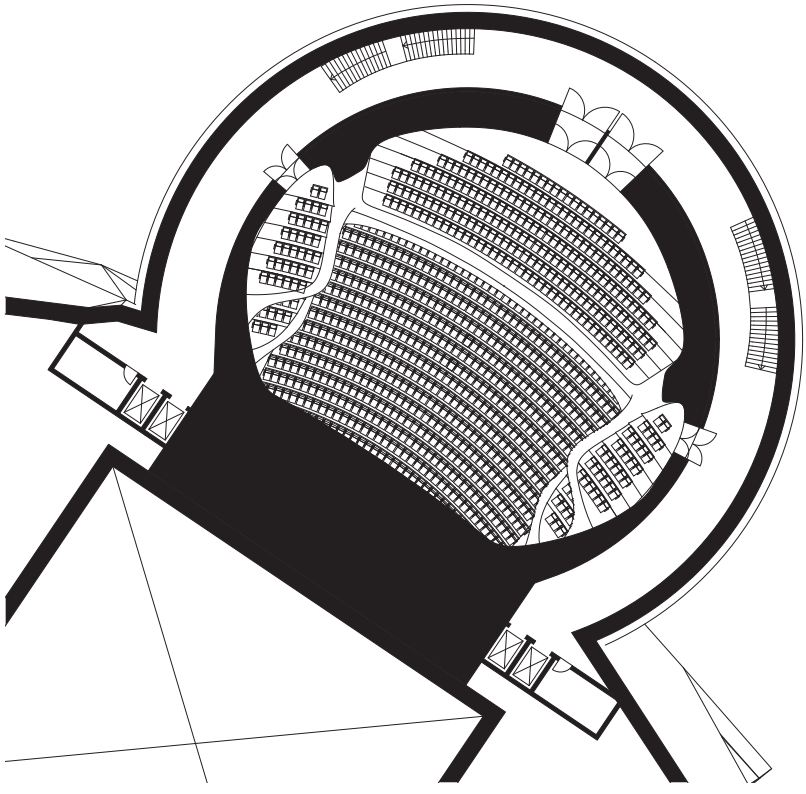
The lobby interior continues the scale, expression and materials of the outside facades on the inside in order to strengthen the concept of the chaotic concrete gaps contra the simple sphere.

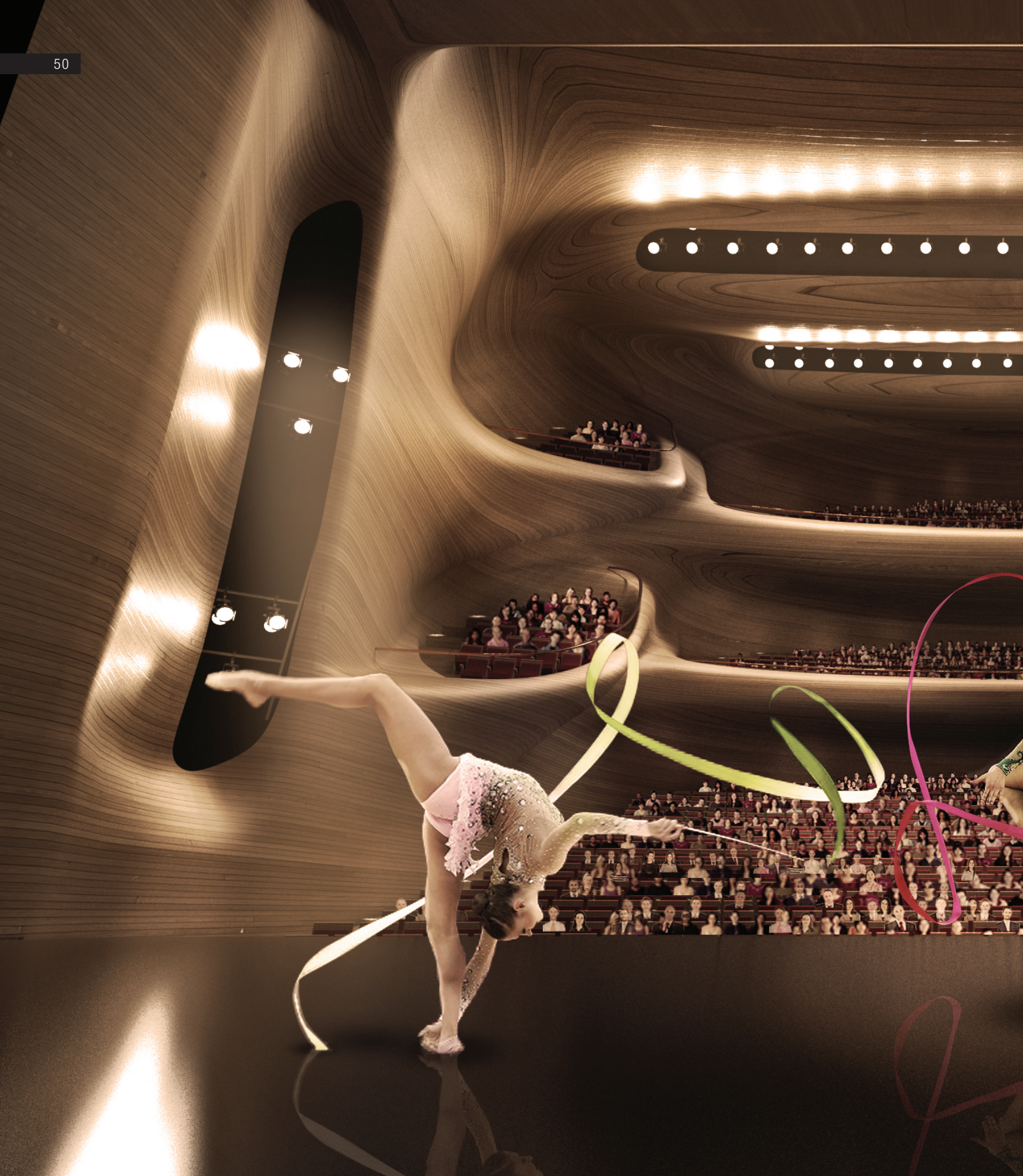
The circulation space of the lobby leads to the five cinemas, the conference hall, a venue space, and a black box theatre. The drama and opera auditoriums area reached by following the spiral ramp starting from the lobby. The flow of the ramp relates to the sphere and the plaza: guests experience the space and the sphere from all sides while ascending to the level of the opera auditorium. Inside the library and art museum volumes, the ramp becomes open mezzanine levels in the tall lobby spaces for bar and intermission areas.

The ramp culminates as it intersects with the sphere. This is the point, where one leaves space of the gaps and the inside of the mountain and enters the core, and main attraction of the precinct and the auditorium. Starting from here, a reference to the organic landscape covering the precinct is obtained: guests are met by a soft, woven space referring to the warm inside of the core, contrasting in many ways the experience of being in the gaps.









AUDITORIUM

P. 44-45

P. 46-47

P. 48-49

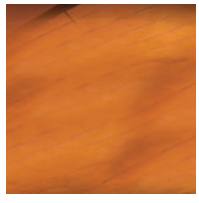
P. 50-51

1 PERSPECTIVE FROM TOP LEFT BALCONY
2 AUDITORIUM SECTION 1:500
3 PLAN LEVEL 20,5 1:500
4 PLAN LEVEL 26 1:500
5 PLAN LEVEL 32 1:500
6 CAVE INSPIRATION
7 CHILE MARBLE CAVES INSPIRATION
8 PERSPECTIVE FROM AUDITORIUM FRONT
9 PERSPECTIVE FROM LOWER REAR BALCONY
10 PERSPECTIVE FROM STAGE

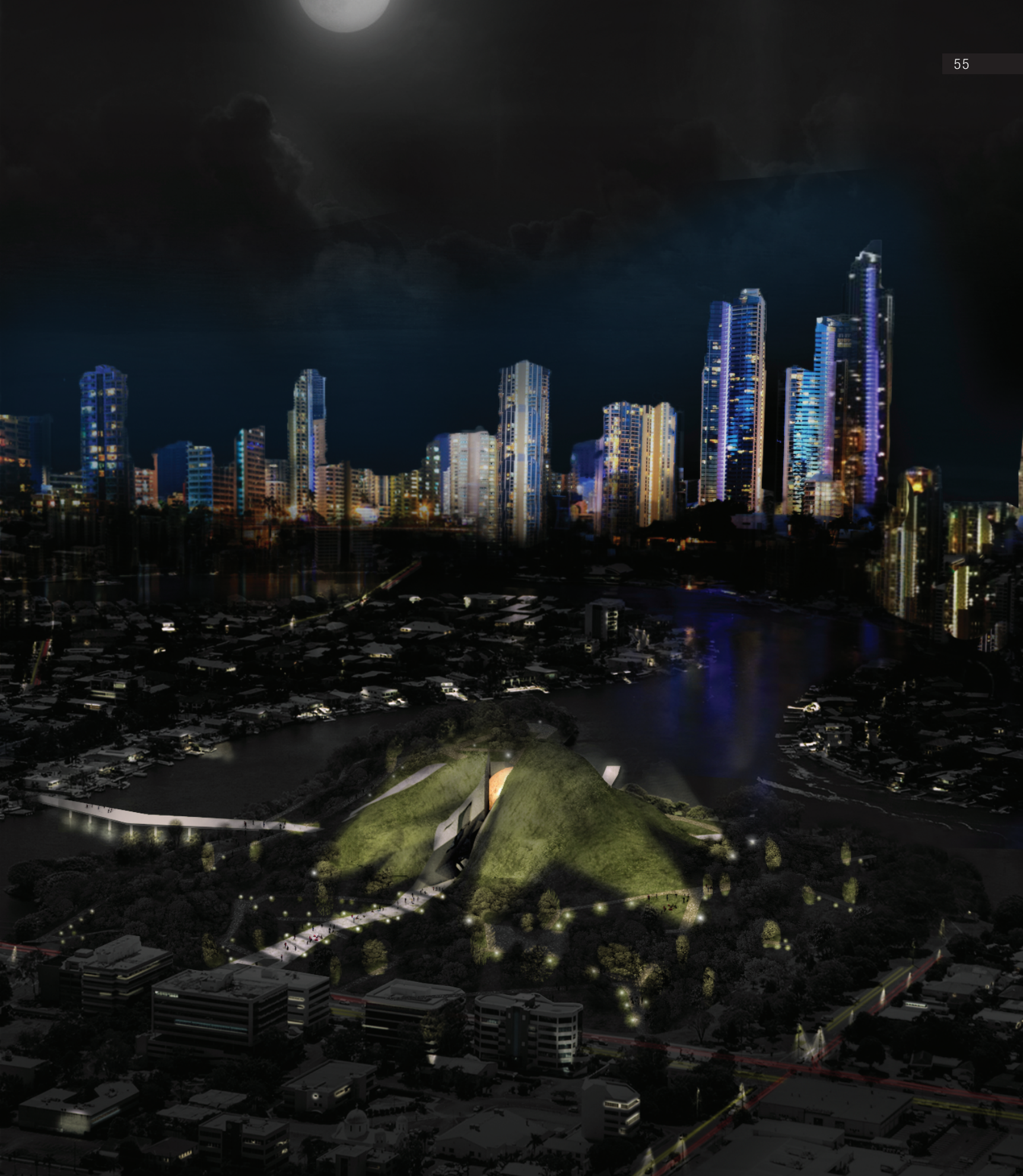
WALLS
STEAMED WOOD

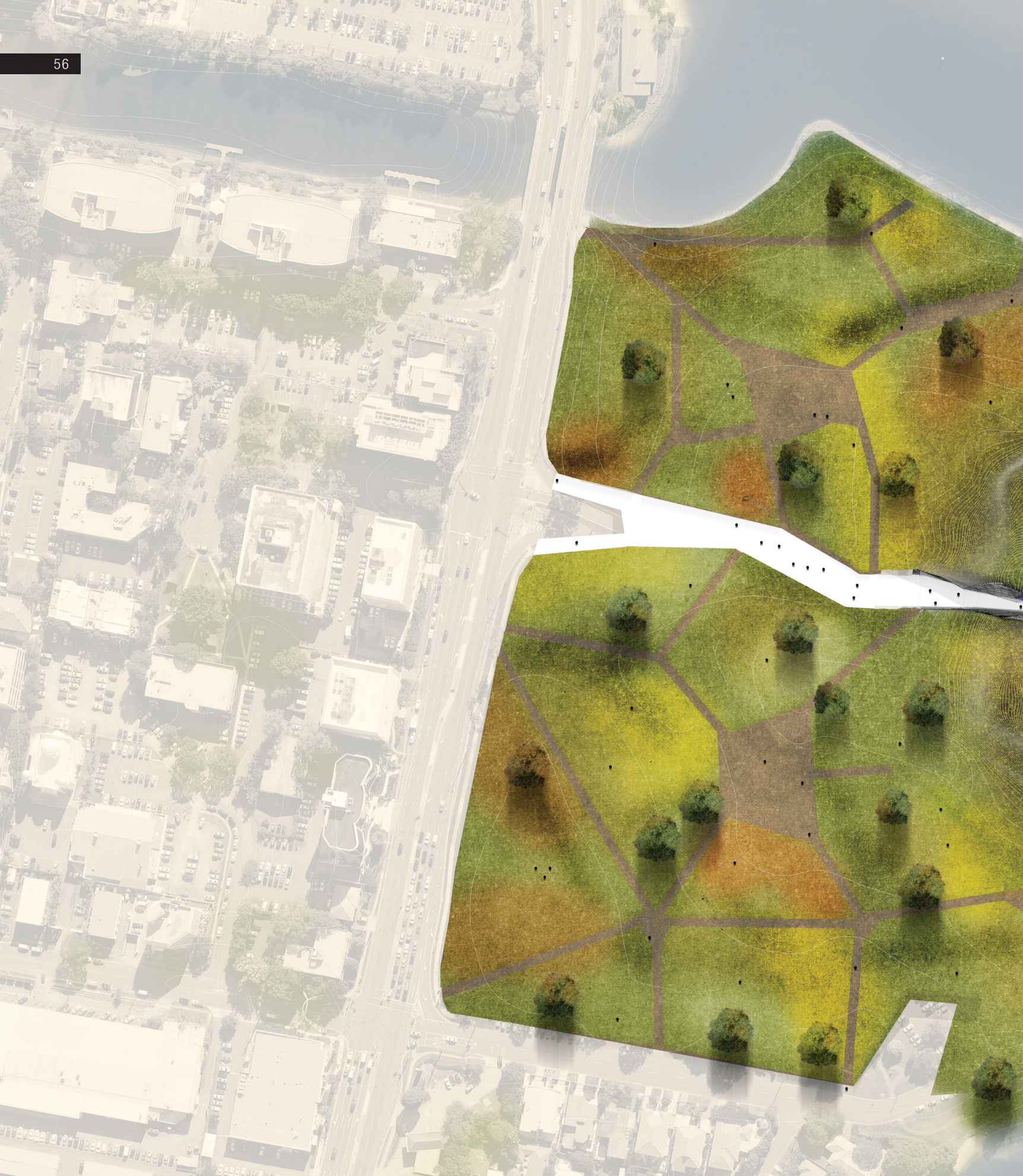
SEATS
RED WOOL

HANDRAIL
ALUMINIUM

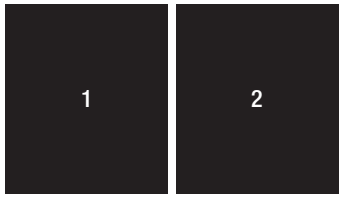


Inside the auditorium, one gets the sensation of being inside the core as the organic shapes reoccur as reference to the surrounding landscape. The warm nuances of the wood and upholstery function acoustically and contribute to to the atmosphere.





SITE AND CONTEXT

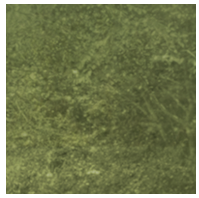


P. 54-55

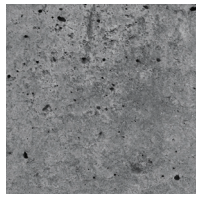
P. 56-57

1 BIRD'S EYE DAY
2 BIRD'S EYE NIGHT
3 SITE PLAN 1:2000

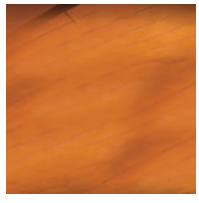
SKIN
MOSS



FACADES
CONCRETE



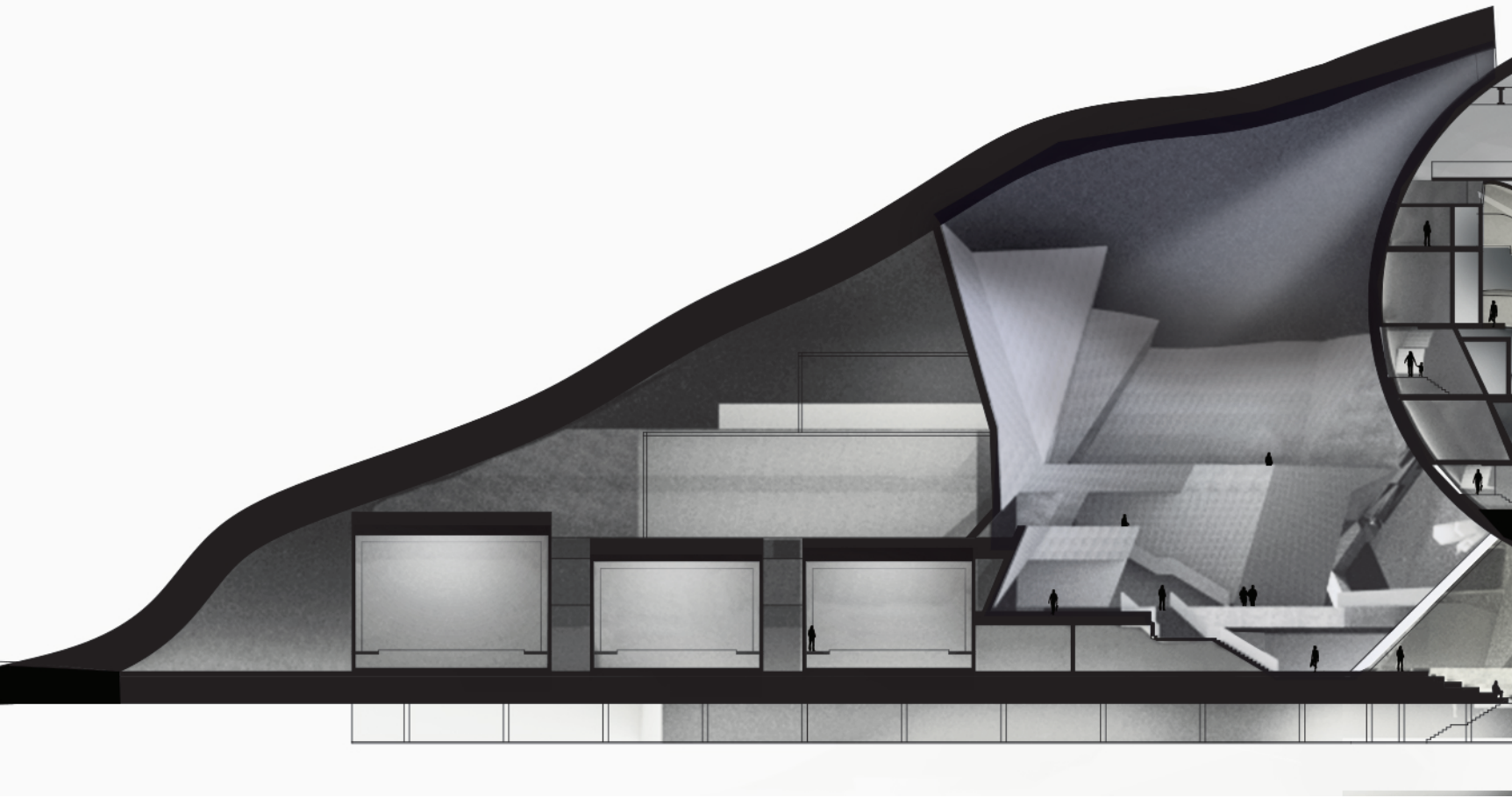
SPHERE
ALUMINIUM

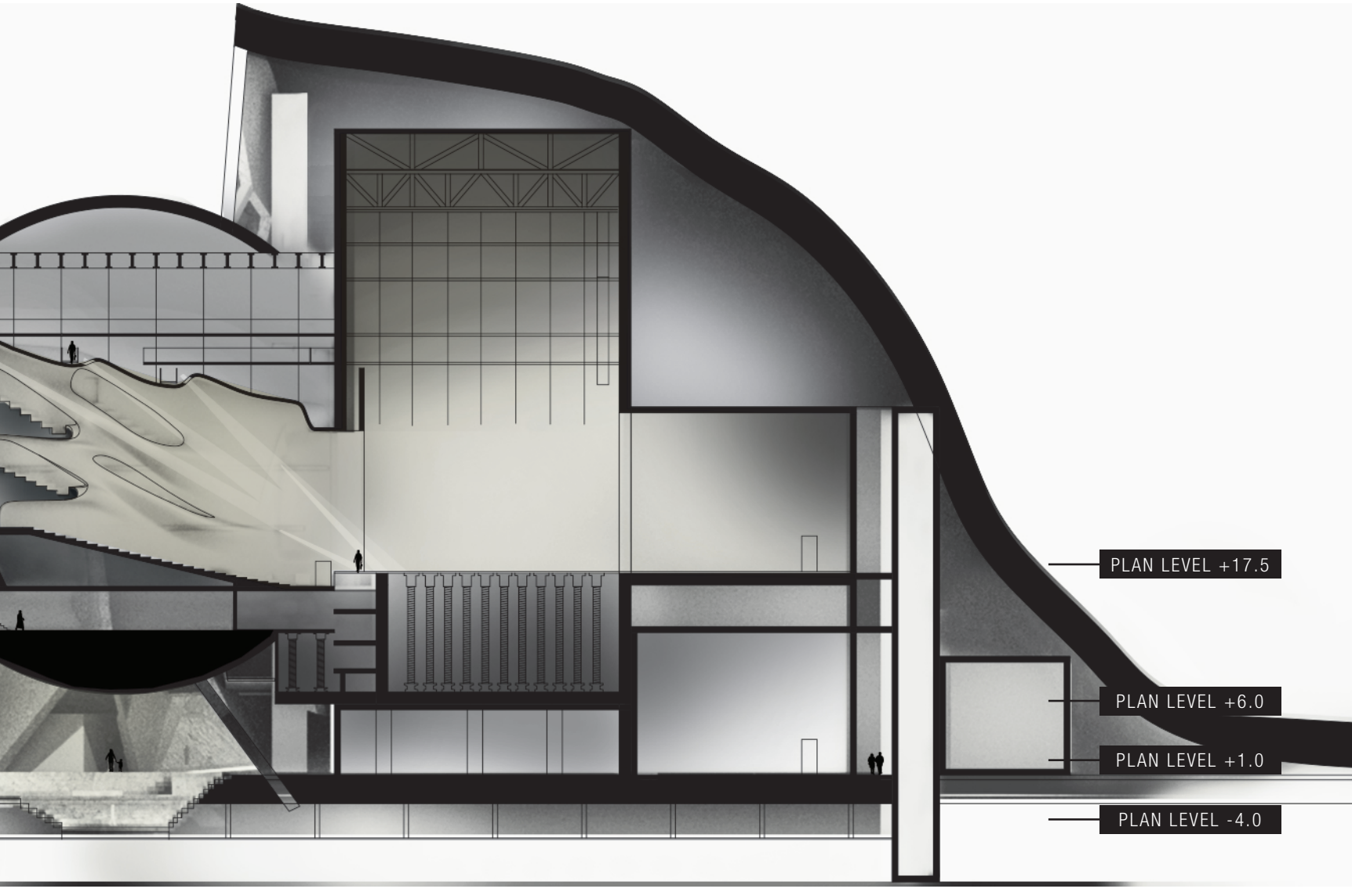


The surrounding context is characterized by the two extremes: 100-300 meter sky scrapers by the ocean water front and 1-6 story buildings in the immediate surroundings of the site. The two extremes have in common an international and quite conforming architectural style as if extruded a number of stories from a plan outline.

The building concept relates to the low typology by gradually ascending from the ground to reach a height of 70 meters above water level. The green site fits into the immediate context as an organic landscape and oasis bounded by water in an otherwise built and strictly planned context.

The precinct relates to the skyline by contrasting the vertical elements and the inherent symbolism of the sky scraper. In this way, the building reinterprets the culture and soul of Gold Coast as a city of creativity, arts and leisure and provides the city with a large, recreational park close to the city centre.



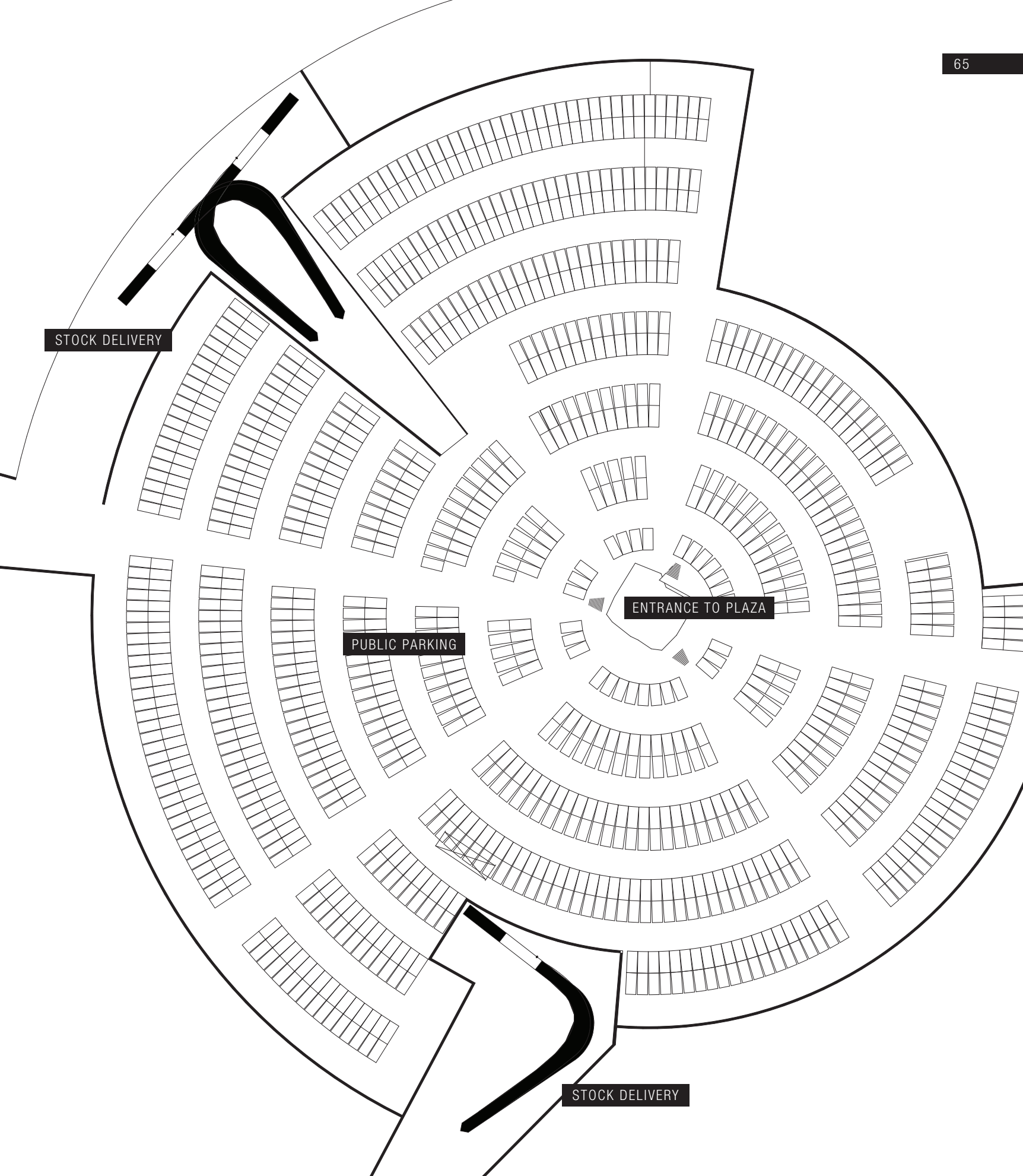

PLAN LEVEL +17.5
PLAN LEVEL +6.0
PLAN LEVEL +1.0
PLAN LEVEL -4.0

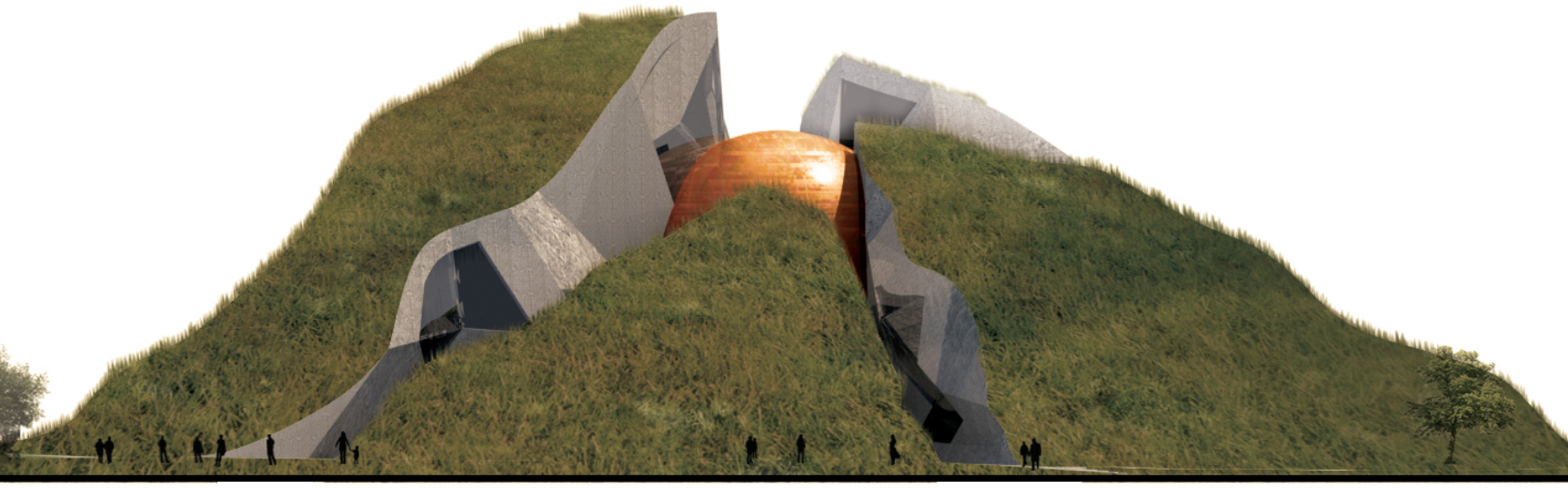
1 PLAZA AMPHITHEATER
2 ENTRANCE LOBBY
3 RESTAURANT
4 STAFF ENTRANCE
5 DRAMA THEATRE
6 DRAMA STAGE
7 DRESSING ROOMS
8 SCENE DOCK
9 REHEARSAL
10 RECORDING STUDIO
11 SCENERY WORKSHOP
12 CINEMAS
13 MUSEUM SUPPORT
14 STORAGE
15 TECHNICAL SPACE

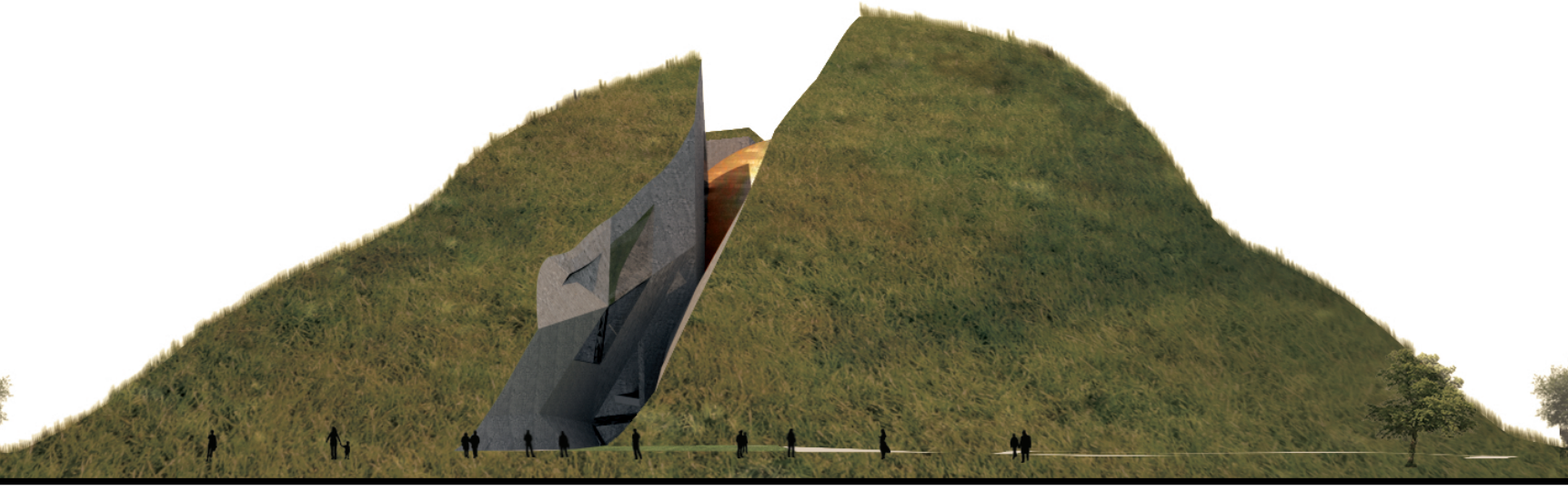
1 LOBBY
2 CONFRENCE HALL
3 CINEMAS
4 LIBRARY
5 DRAMA THEATRE
6 STAFF CANTEEN
7 EXHIBITION GALLERY
8 STORAGE

SECTION

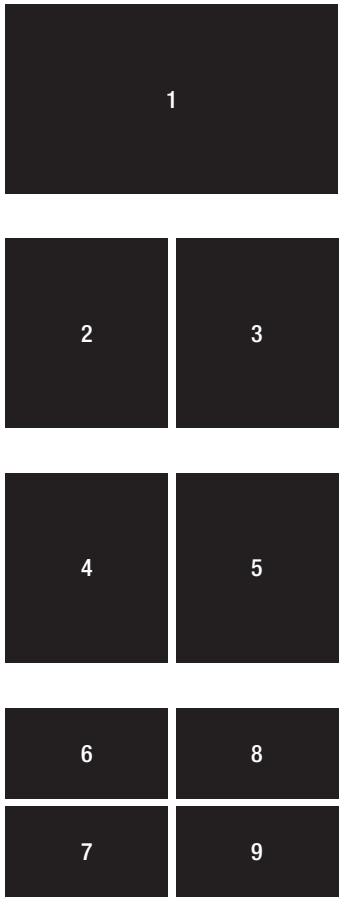
1 CIRCULATION SPACE
2 BLACK BOX THEATRE
3 CONFERENCE
4 VOID ABOVE VENUE
5 THEATRE AUDITORIUM
6 MAIN STAGE
7 SIDE/REAR STAGES
8 REHEARSAL
9 STORAGE
10 TECHNICAL SPACE


STOCK DELIVERY
PUBLIC PARKING
ENTRANCE TO PLAZA
STOCK DELIVERY





ORGANISATION



P. 60-61
P. 62-63
P. 64-65
P. 66-67

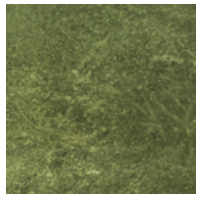
1 SECTION 1:500
2 PLAN LEVEL 1 1:1000
3 PLAN LEVEL 6 1:1000
4 PLAN LEVEL 17,5 1:1000
5 PLAN LEVEL -4 1:1000
6 FACADE NORTH 1:1000
7 FACADE SOUTH 1:1000
8 FACADE EAST 1:1000
9 FACADE WEST 1:1000

The building organisation is based on four separate volumes formally connected by a central sculptural sphere. The idea is that the main auditorium contained within the sphere should connect to both front of house, which is lobby, auditoriums etc., and back of house, which is stage, dressing rooms, supporting functions etc., as the only element linking these building parts. This means that functions that do not require large support area such as cinema and conference are placed inside the volume containing the lobby, whereas functions that require large support areas such as opera and drama theatre are located in the support volume, thus sharing the same workshop, rehearsal, dressing, orchestra and administrative facilities. The two remaining volumes accommodate arts museum and library respectively.

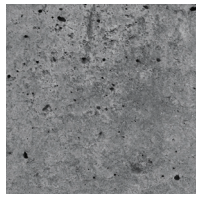
It is visible how the placement of the auditorium in a separate element, the sphere, enables the integration of the significant stage tower into the tallest point of a coherent shape rather than attaching the tower as a separate element. This results in the emergence of a covered public plaza and a culmination of the landscape at the centre of the building. In order to experience and understand the sphere visually from inside, the lobby becomes a tall and voluminous space, leaving a great volume around the sphere for it to characterize the space.

In plan the central organisation is clearly visible and it characterizes the flow. Upon entrance through the gaps or from parking level to the central plaza, three lobbies are accessible from the same level. Theatre guests enter the performing arts lobby at this level, where box office, cloak room and toilets are accessible. Stairs and elevators lead to the lobby circulation space, from where cinemas and conference hall are accessed. On the above levels, venue space for comedy and jazz, as well as the 280 seat black box theatre are accessible. The ramp leads to the drama and opera theatres through a series of intermission spaces.

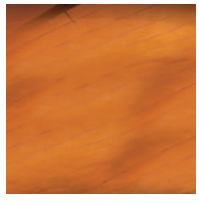
SKIN
MOSS



FACADES
CONCRETE



SPHERE
ALUMINIUM

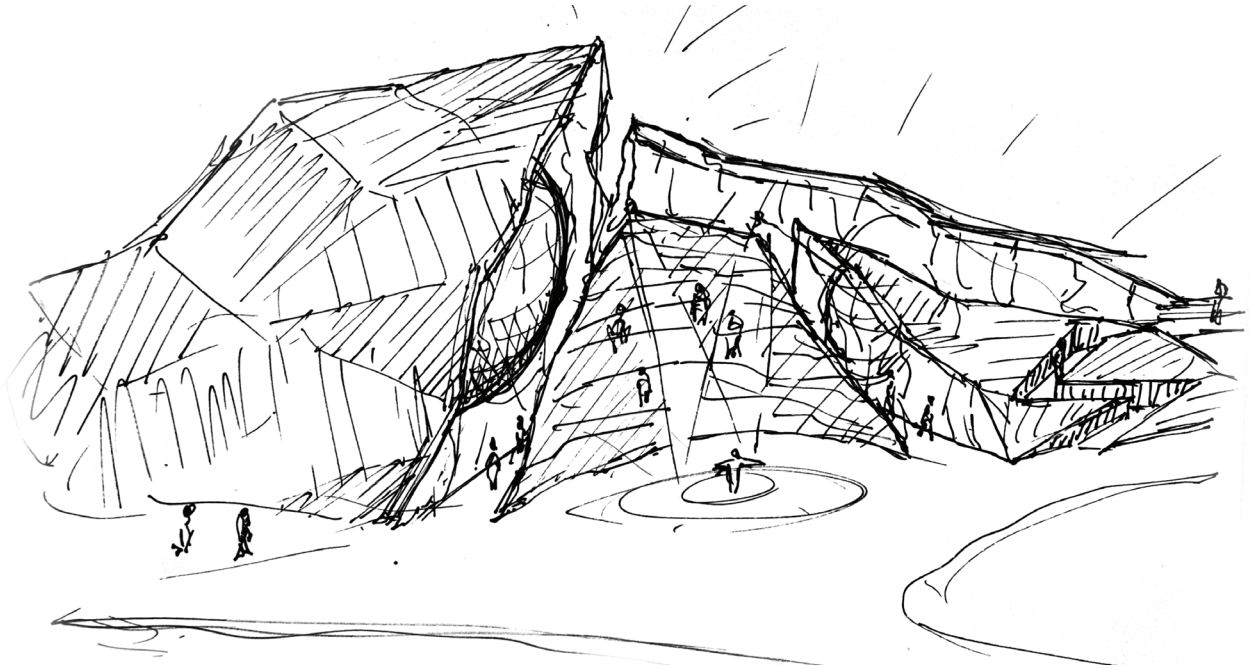


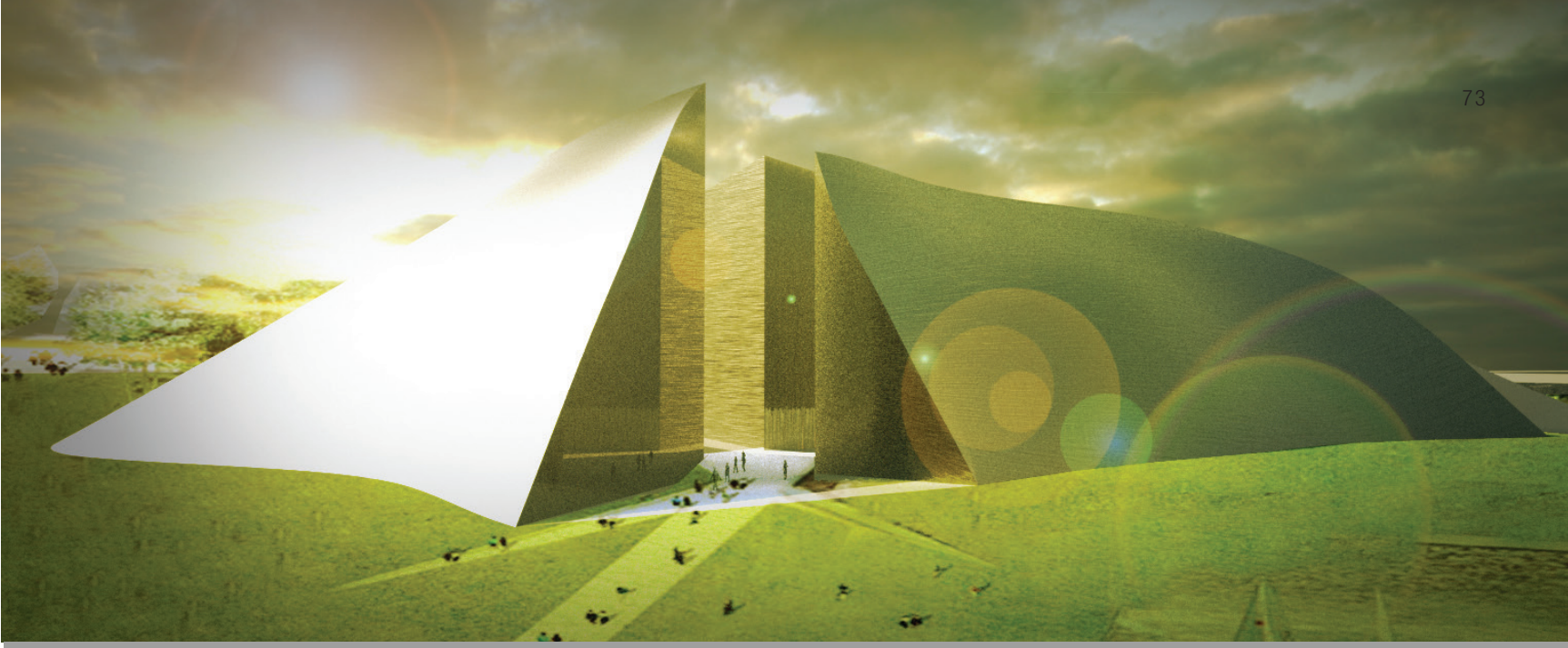
PART 02

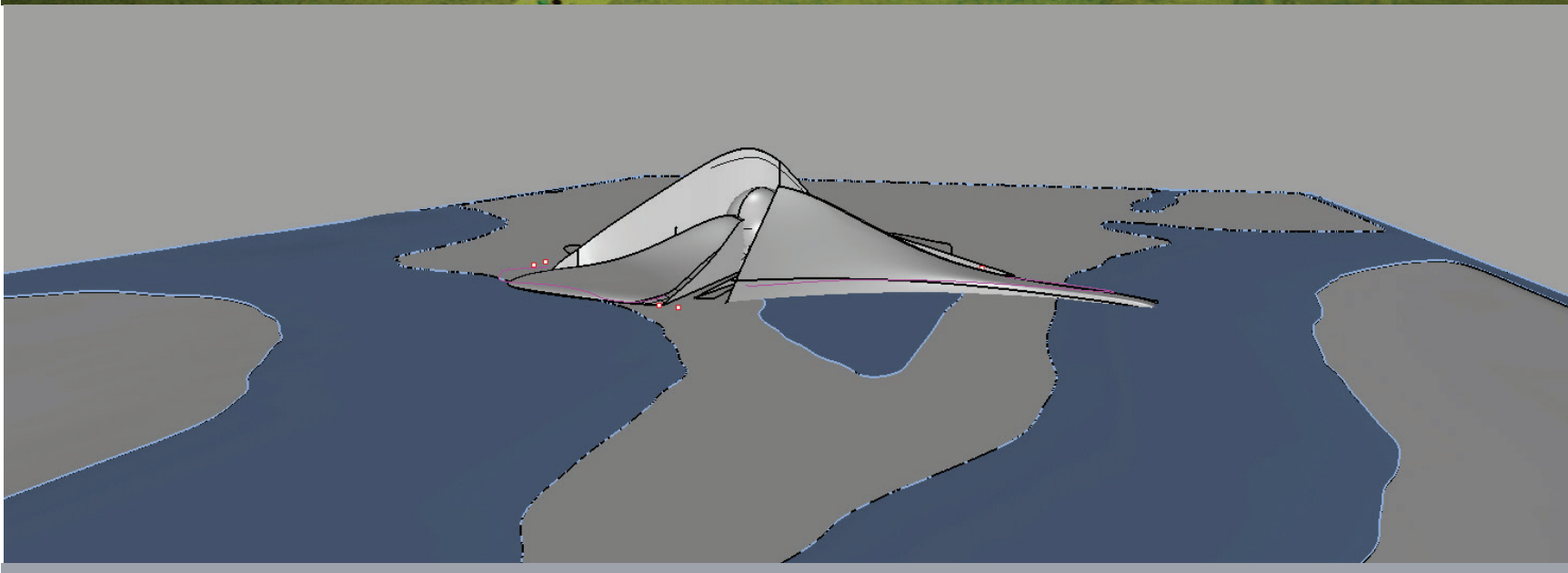
STUDIES

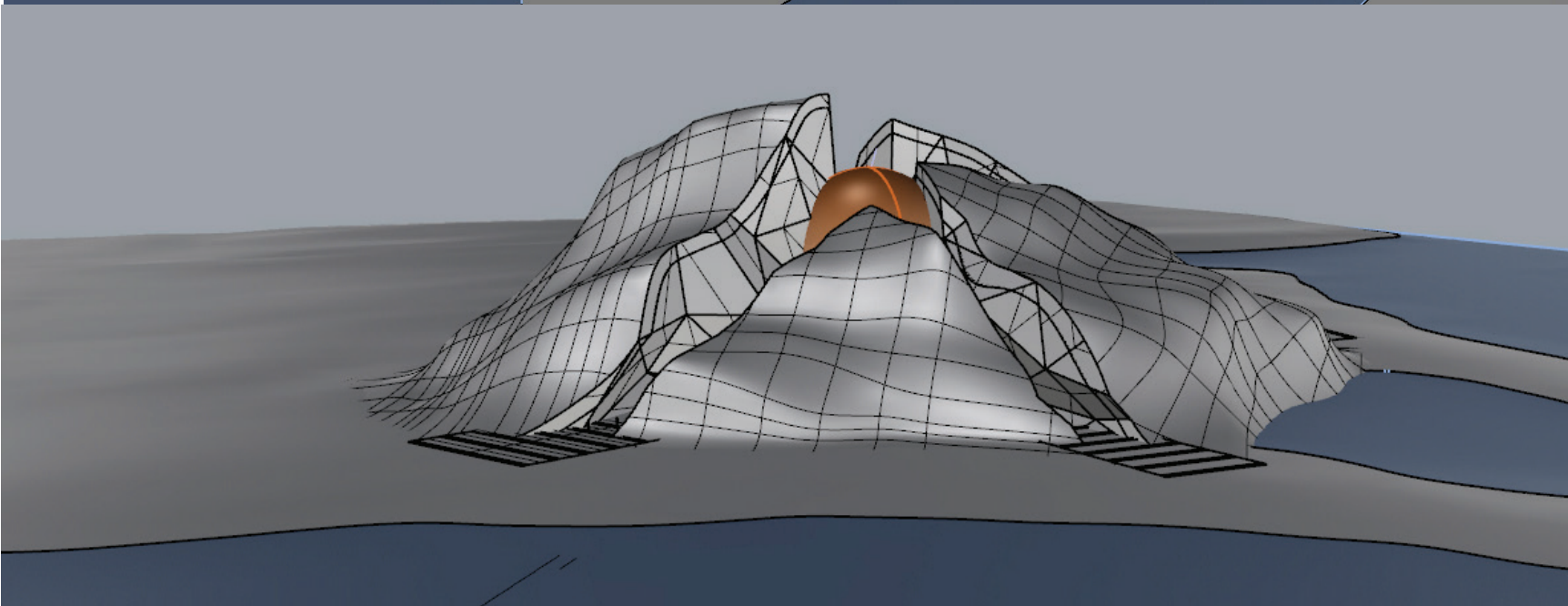
CONCEPT / AUDITORIUM CONCEPT / ACOUSTIC DESIGN / EXTERIOR

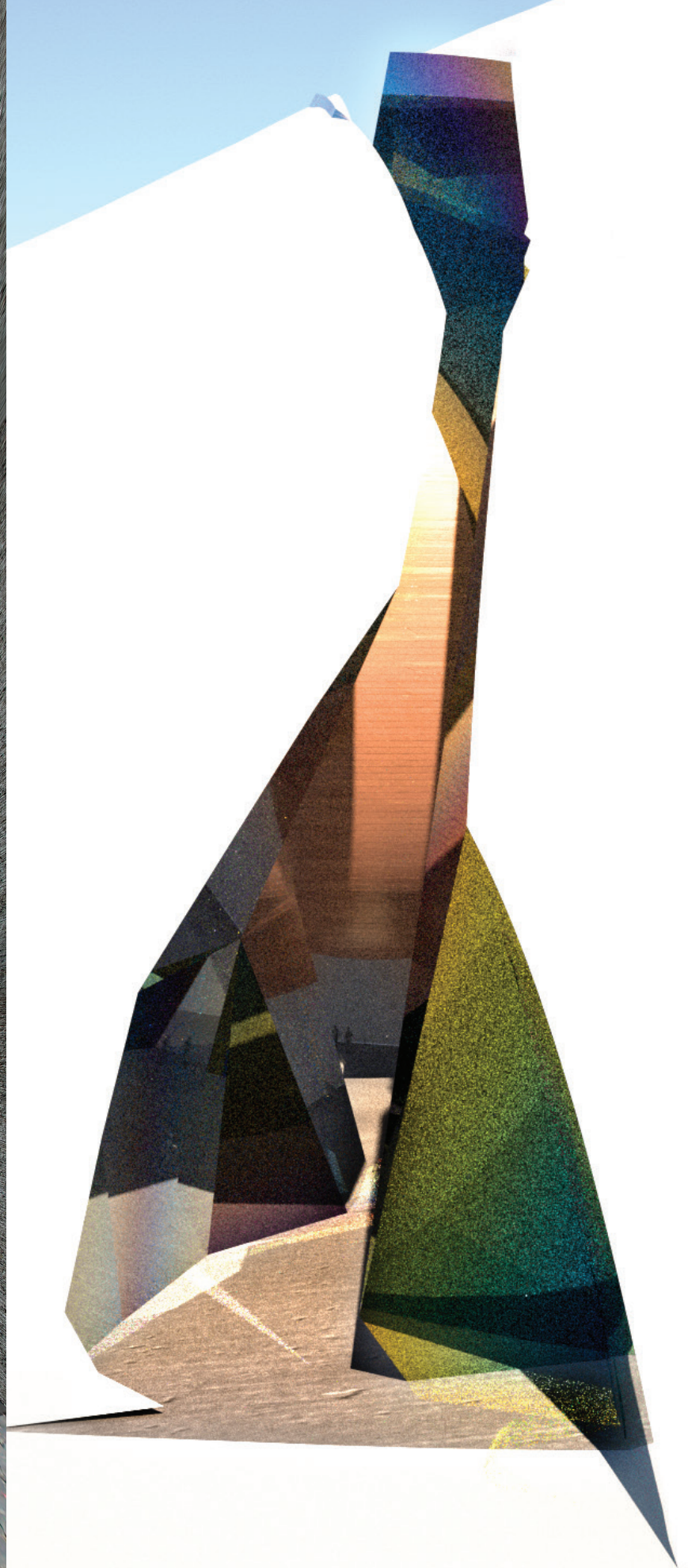
NER









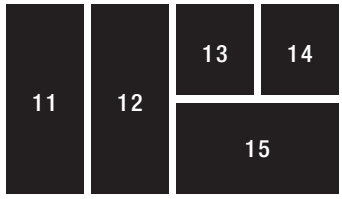


ICHARD ISLAND
HENRI LLOYD
Massimo Dut

CONCEPT

P. 72-73

P. 74-75



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1 HAND DRAWING CONCEPT
2 HAND DRAWING CONCEPT
3 HAND DRAWING CONCEPT
4 CONCEPTUAL RENDER
5 3D MODEL
6 3D MODEL
7 LAKE MOOGERAH
8 GLASSHOUSE MOUNTAIN
9 GLASSHOUSE MOUNTAIN
10 MAD ARCHITECTS: ORDOS MUSEUM
11 CONNECTION TO SKYLINE
12 NARROW PATHWAY
13 PETRA VISION
14 ANCIENT CITY OF PETRA
15 JEAN NOUVEL: ONE NEW CHANGE, LONDON

The conceptual idea of a mountain started as a need to bring nature back to the city of Gold Coast. As a city of rapid expansion, Gold Coast saw the need to establish a cultural centre as the heart of the city. As if the long lost heritage of the city breaks out of the ground, forming a mountain of culture, and creating a green, recreational area amongst the high-rises.

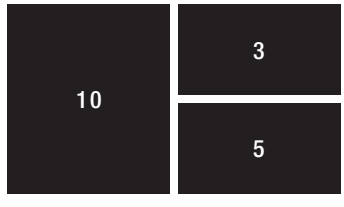
The form of the building takes its cues from the surrounding hinterlands and the organic shaped roof has been developed from a modest representation of a mountain to a more varied form fitted to the functions underneath. However keeping the aesthetics and the initial idea in mind in the ongoing process. Rather than making one massive form, the mountain is separated into four different buildings which relates to one another without being just a form cut into pieces.

The narrow paths leading into the centre of the mountain has been inspired by the ancient city of Petra. Where the sense of walking in between narrow cliffs, before reaching a larger centralized space, divides the different experiences. In the project the narrow corridors follow certain guidelines . Two of the corridors visually connects a central plaza to the city by having a directed view to selected high-rises. The other corridors are oriented towards the main access paths leading into the site.

In the midst of this is the core. A suspended auditorium wedged in between the different buildings. A sphere of copper coloured aluminium reviling a glow as the sun hits the material. Serving as the inner core of the earth and the main attraction.

The basis for sphere material selection has been the atmosphere and patina that is obtained. Copper has a warm nuance that creates a tension between the cold nuances and masses of the concrete and the skin. But copper has a characteristic patina, that is very interesting and highly desired but unobtainable indoors compared to outdoors. Though the sphere intersects with the building volumes, it is important that it is conceived as a whole, and a characteristic patina is thus unwanted. A more suitable material in this situation is aluminium, which can be produced in warm nuances. An example of this is Ordos Museum by MAD Architects.

AUDITORIUM CONCEPT



P. 80-81

1 AUDITORIUM INSPIRATION
2 ZAHA HADID: GUANGZHOU OPERA
3 JEAN NOUVEL: DR KONCERTSAL

The main theater derives from the competition conditions, where it specifies that the theater will contain different performances, including opera, broadway shows, musicals and dance performances. This diversity induces different acoustical requirements that needs to be integrated into one theater.

According to different acoustical requirements, there is different hall typologies. The most consistent performer is the shoebox or rectangular plan because of its acoustical advantages. However in the case of opera, the horseshoe is popular among architects because of its dramatic- and large freedom of appearance. (Marshall, 2005).

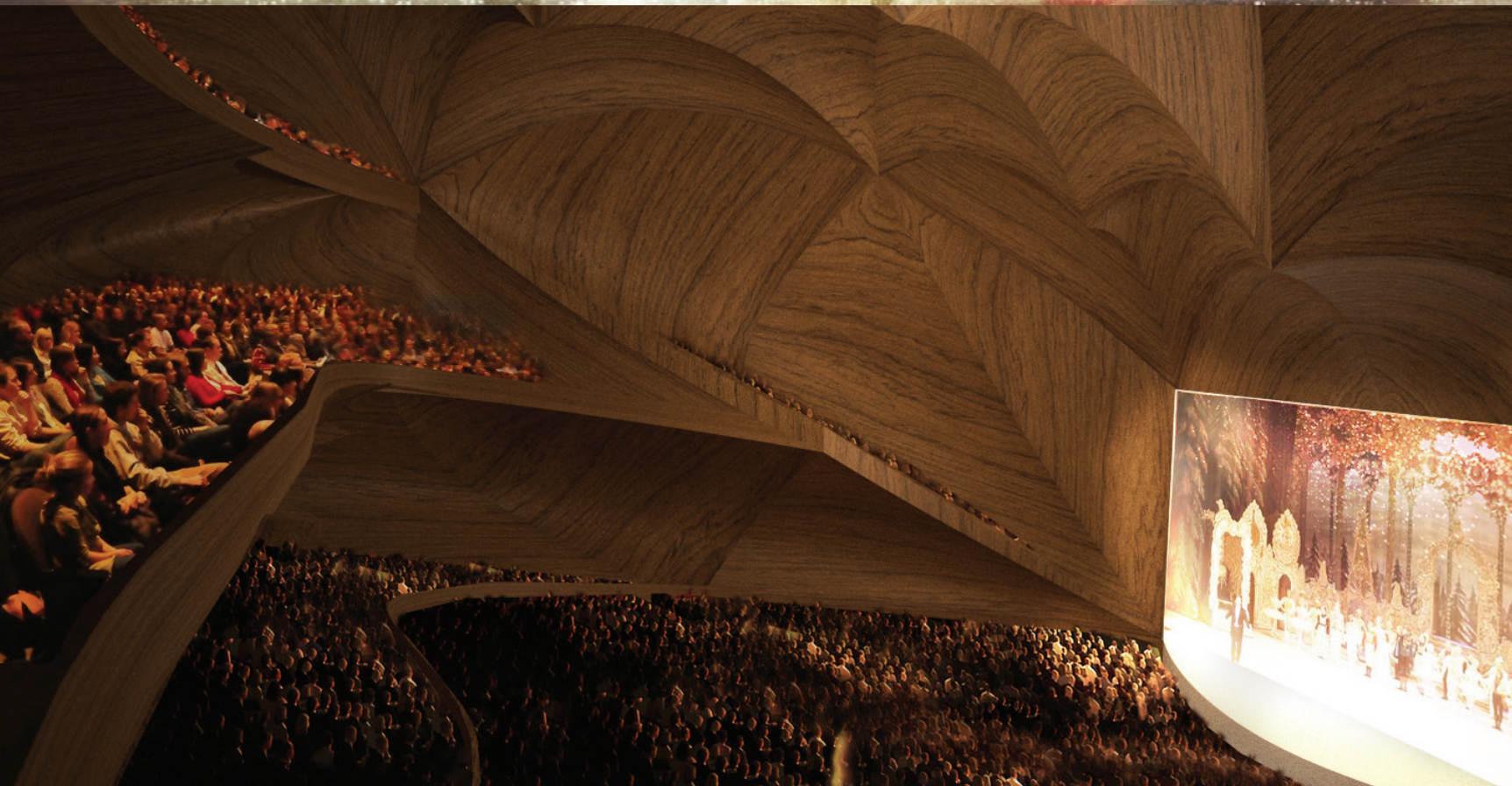
The concept of the main theater, is the atmosphere of a cave. The cave is a dark enclosed space, defined by dramatic rock formations where materiality and light is the atmosphere. The intimacy of the cave, is something that can be brought into the theater, where the feeling of being enclosed is important. The fascination of the cave, induces different studies of how to translate the intimacy and naturalness into the architecture of the auditorium.

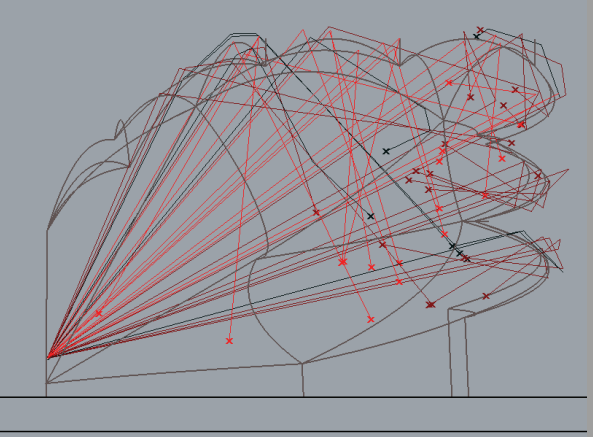
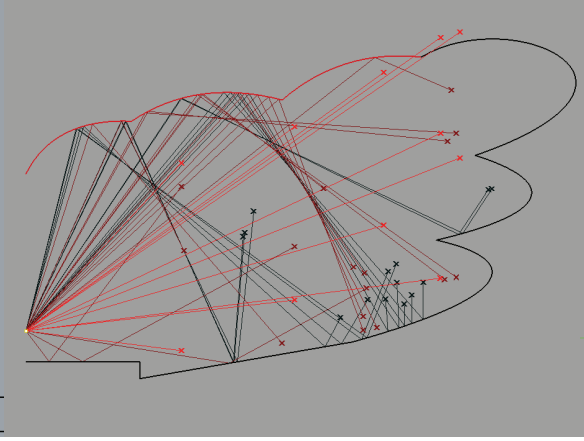
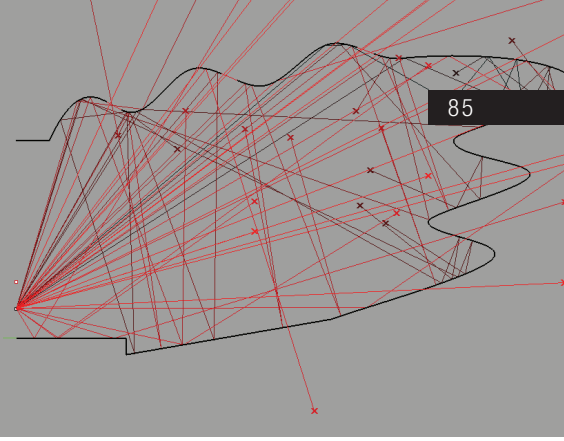
The horseshoe typology is chosen as a basis for the theater, because of its adaptability, and dramatic appareance compared to more regular shapes. The Guanzhou Opera of Zaha Hadid and DR Concert House by Jean Nouvel is examined, since the projects has similarities to the described design parameters.

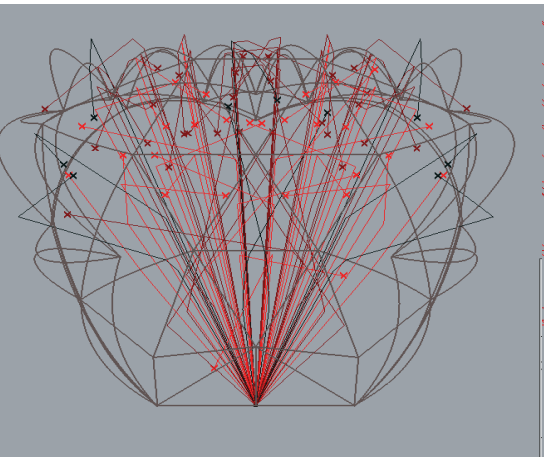
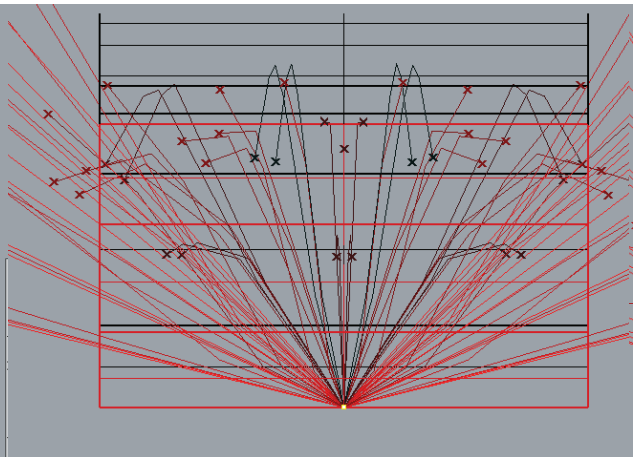
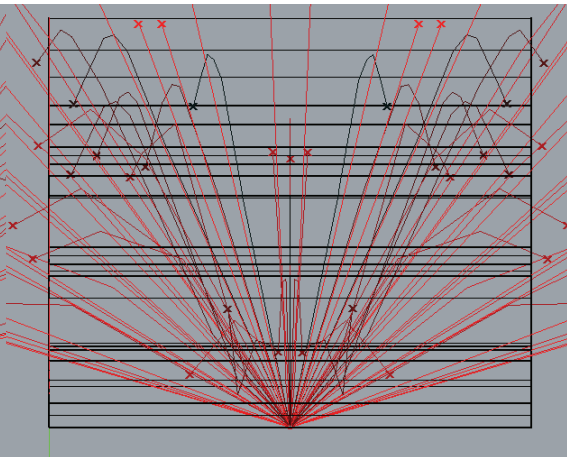
Guanzhou Opera, derives from the horseshoe typology and is modified by separating the balconies into parts. This irregularity, makes the auditorium seem more natural, alive and intimate. Combined with the mode of expression, the double curved shapes in same material, creates an enclosed space and the right atmosphere.

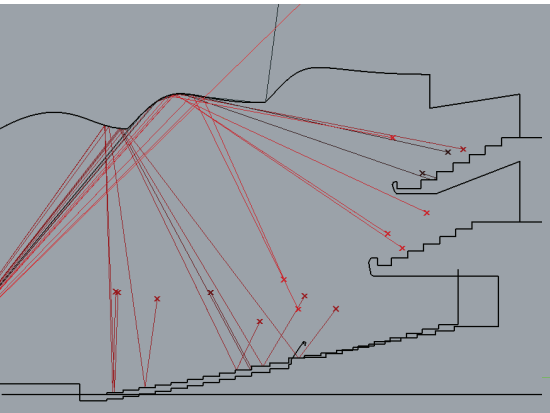
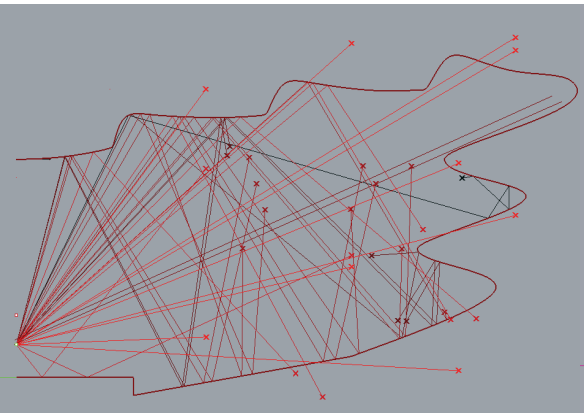
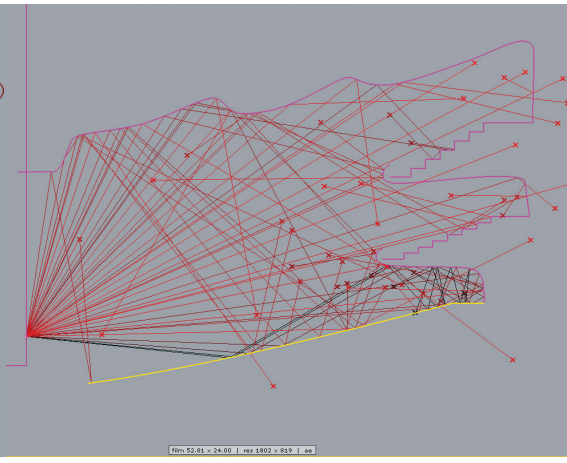
The concert hall by Jean Nouvel, has another mode of expression, but the atmosphere is comparable. The hall, refers back to the cave by giving the same intimate atmosphere.

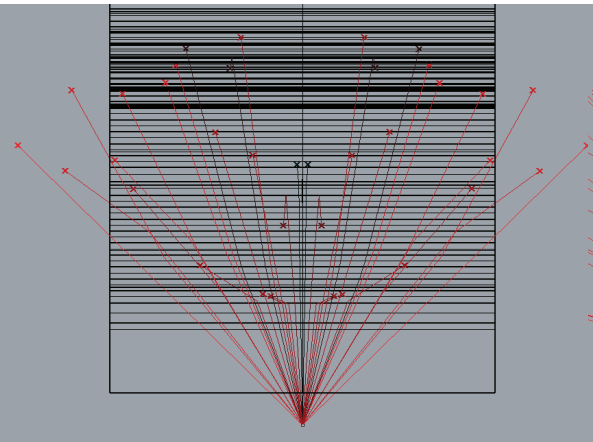
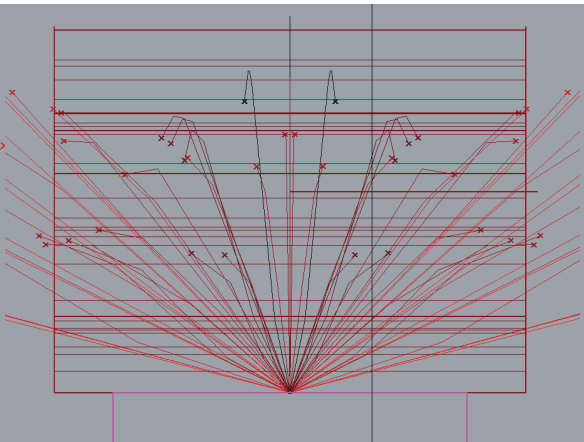
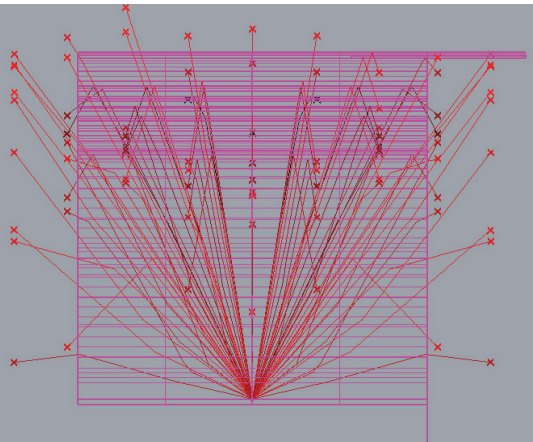
These projects has been inspiration of how to interpretate performing arts, and how to combine a performance with an experience created by atmosphere.

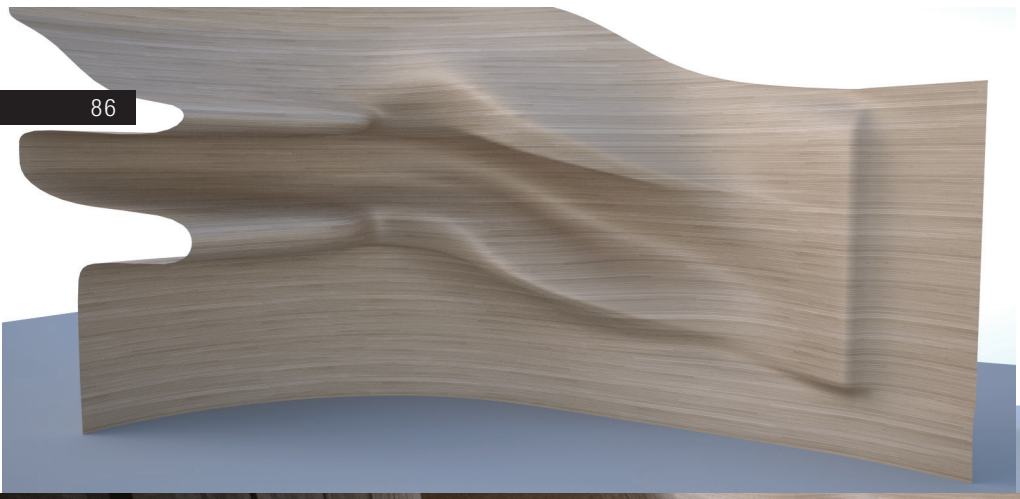


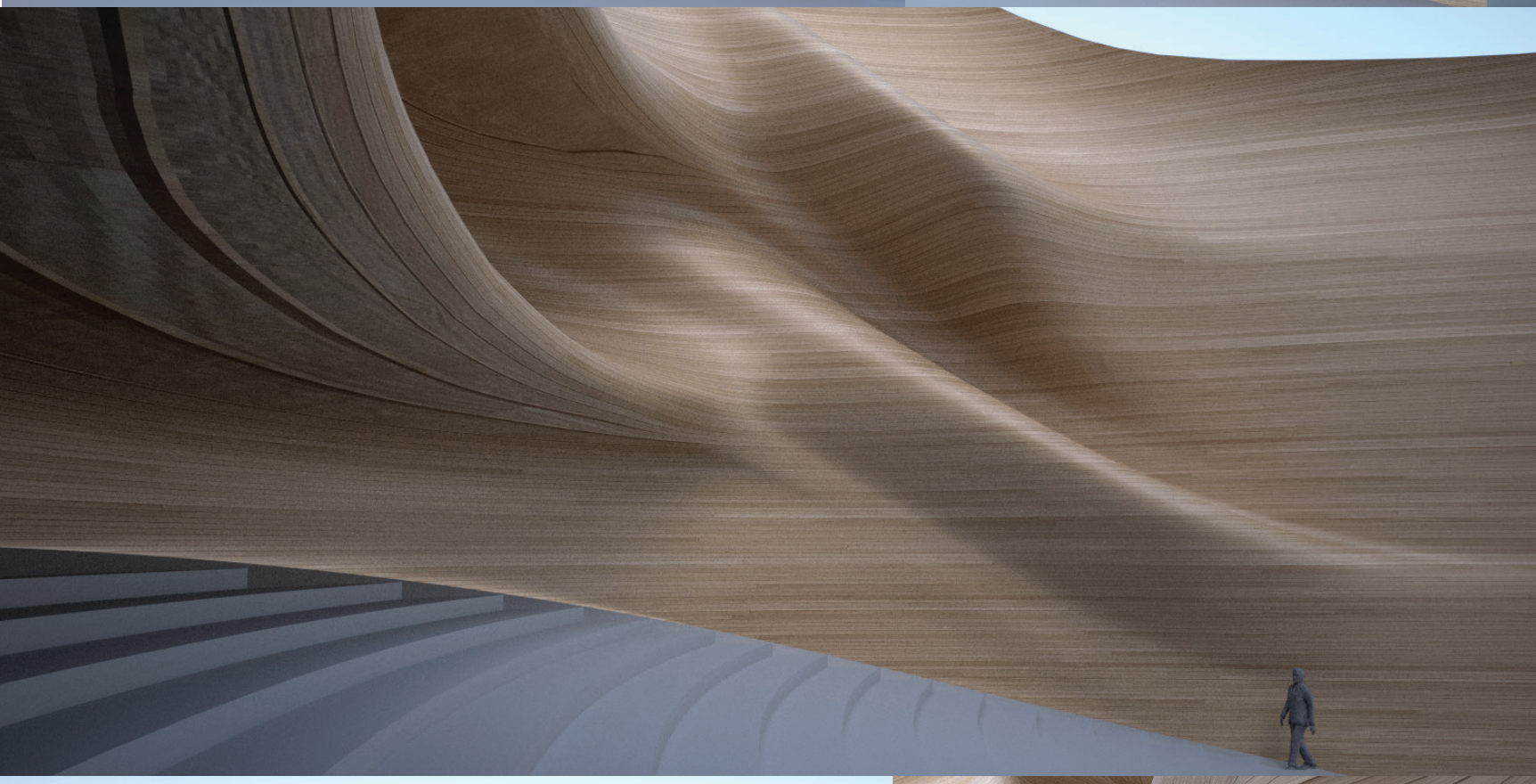




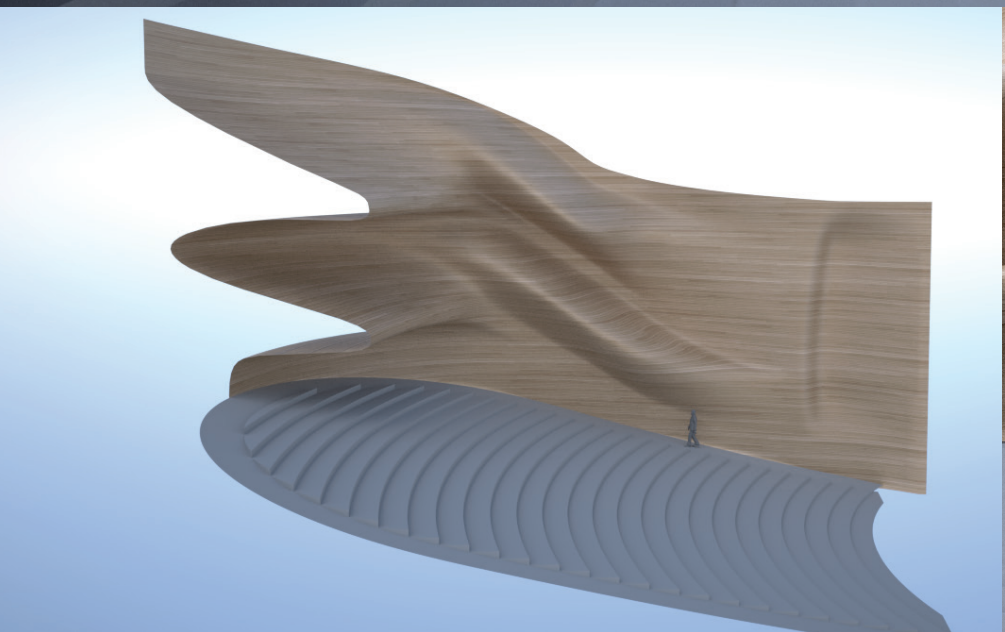




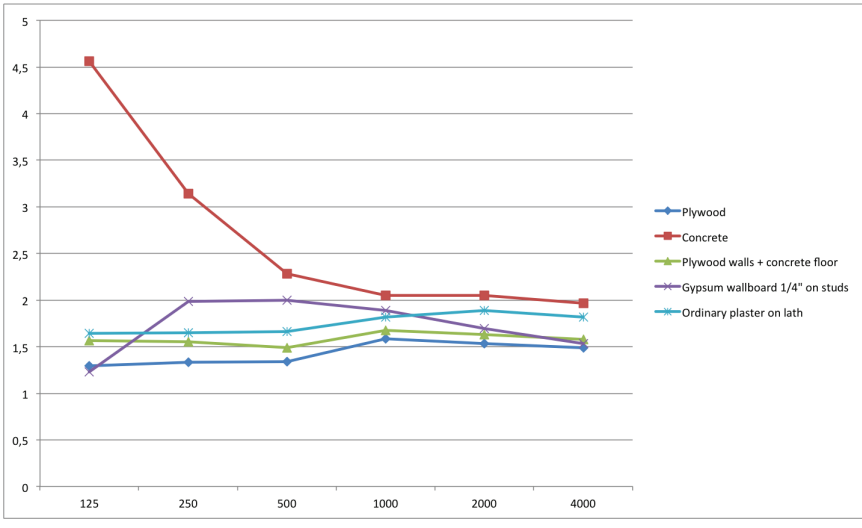








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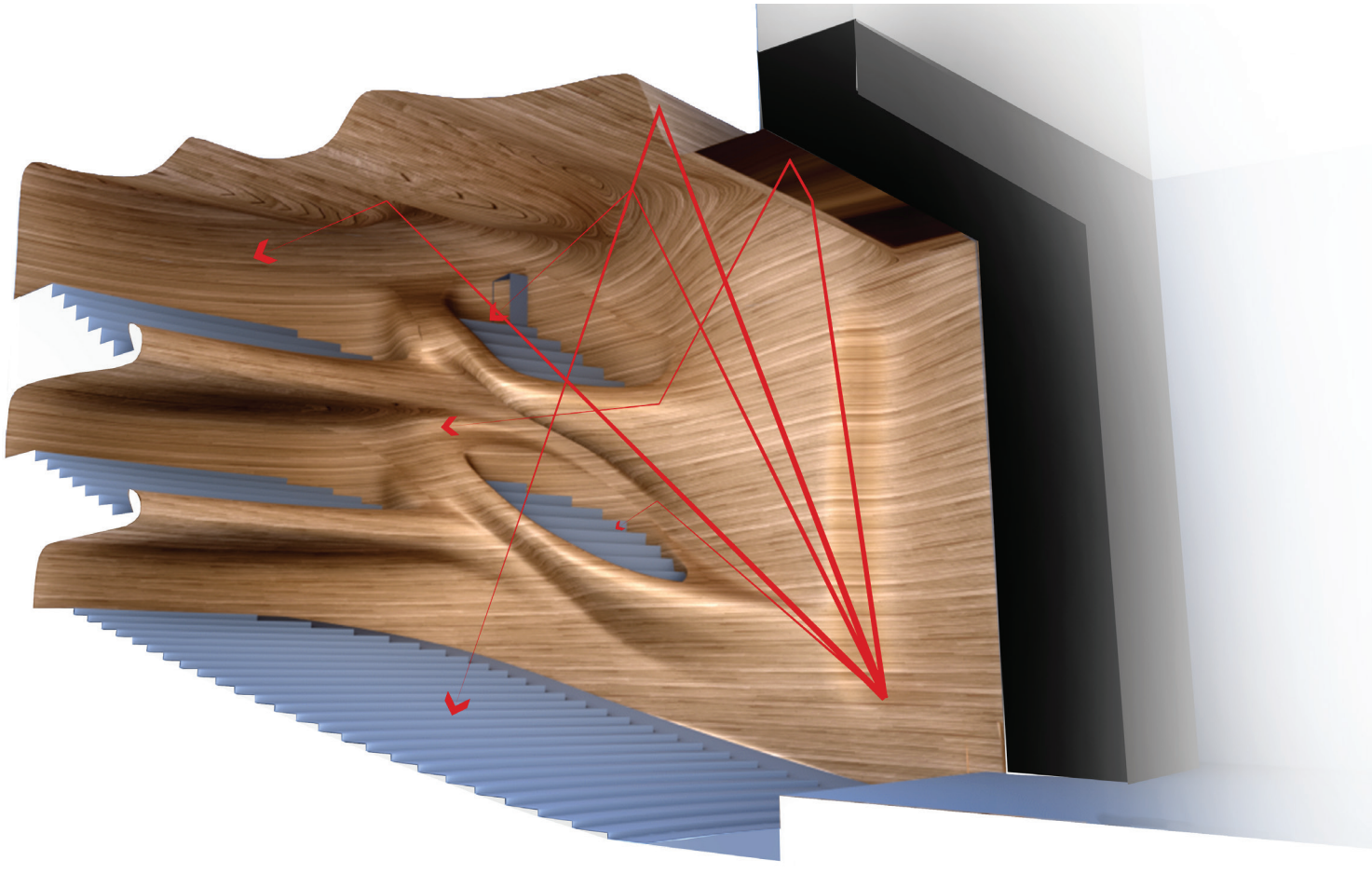
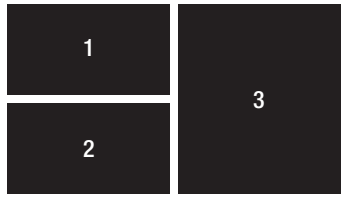
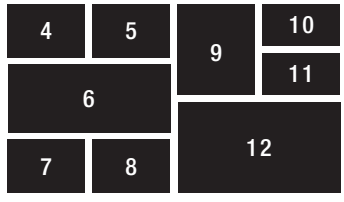
125
250
500
1000
2000
4000
Plywood
Concrete
Plywood walls + concrete floor
Gypsum wallboard 1/4" on studs
Ordinary plaster on lath



ACOUSTIC DESIGN



P. 84-85



P. 86-87

1 INITIAL AUDITORIUM CONCEPT
2 INITIAL AUDITORIUM CONCEPT
3 ADOUSTIC RAYS IN PLAN AND SECTION
4 PROCESS VISUALIZATION
5 PROCESS VISUALIZATION
6 PROCESS VISUALIZATION
7 PROCESS VISUALIZATION
8 PROCESS VISUALIZATION
9 MATERIAL PROTOTYPE
10 MATERIAL IRREGULARITIES SECTION
11 REVERBERATION TIME DIAGRAM
12 RAYS DISTRIBUTION PERSPECTIVE

With the idea of the auditorium as an intimate enclosed space with the reference back to caves, the first studies tested the concave shape. The concave shape contributed to the atmosphere of being inside a cave, In an acoustical point of view, the concave shape has some challenges according to the distribution of the sound. In comparison to the convex shape, the concave creates concentrated reflections. Further studies examined how to enhance the concave shape, by rotating the concave curve, away from the direct sound. In this way, the expression could be obtained and the acoustics improved.

The idea of combining concave and convex shapes, was also examined, and it became obvious that it gives the acoustics better conditions. In the combination, it is possible to make the convex shapes reflect sound specific to the ground floor and the two balconies.

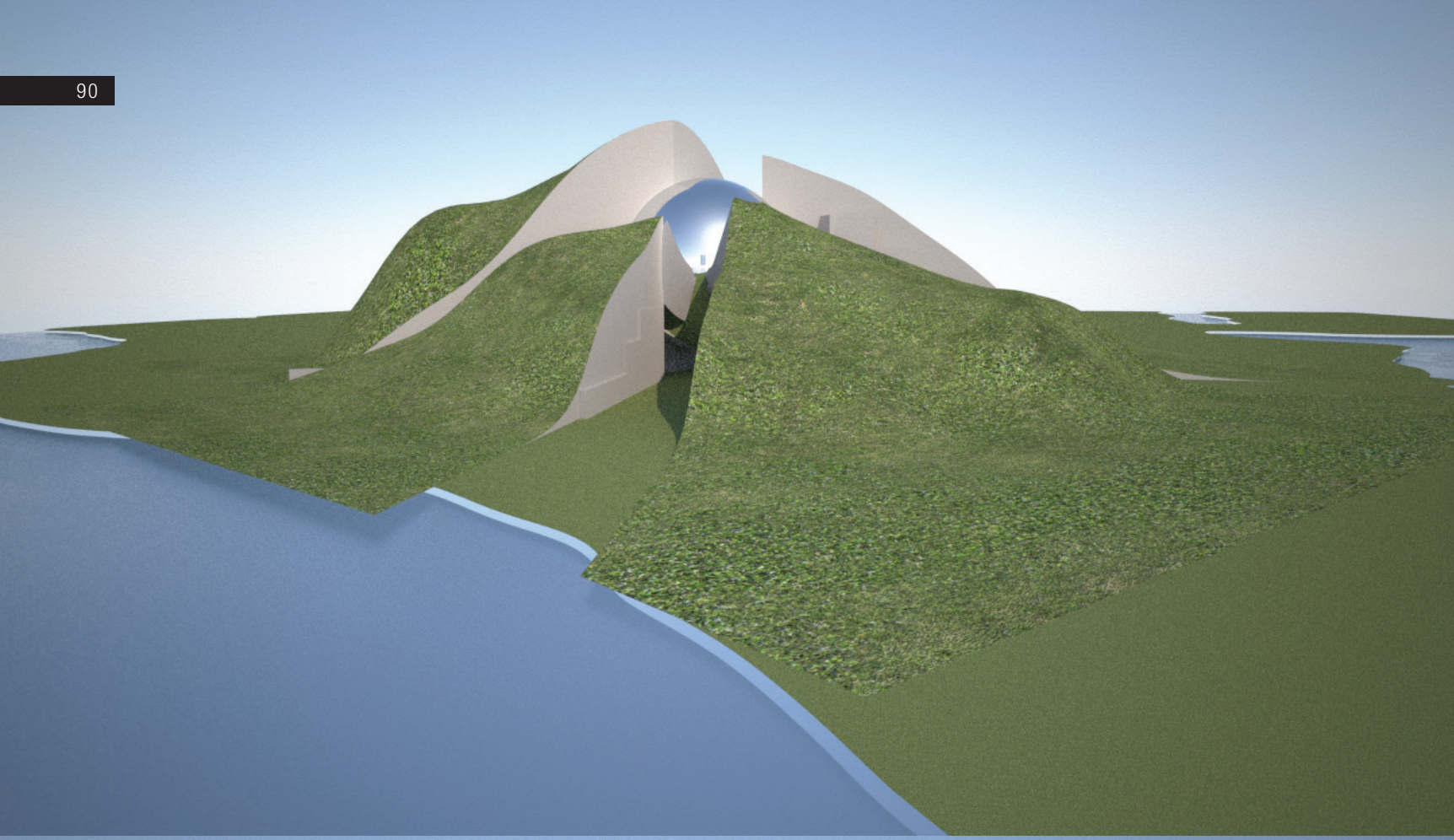
A normal horseshoe has two or three balconies on a row. Studies are made to see, how a separation, can contribute to the overall atmosphere comparable to the cave. Before this, several studies upon the mode of expression is made. The organic expressions seems to be the best one according to the idea of one enclosed volume, where it is percieved as one interior. For the whole surface, the same material will be applied, in order to enhance this feeling.

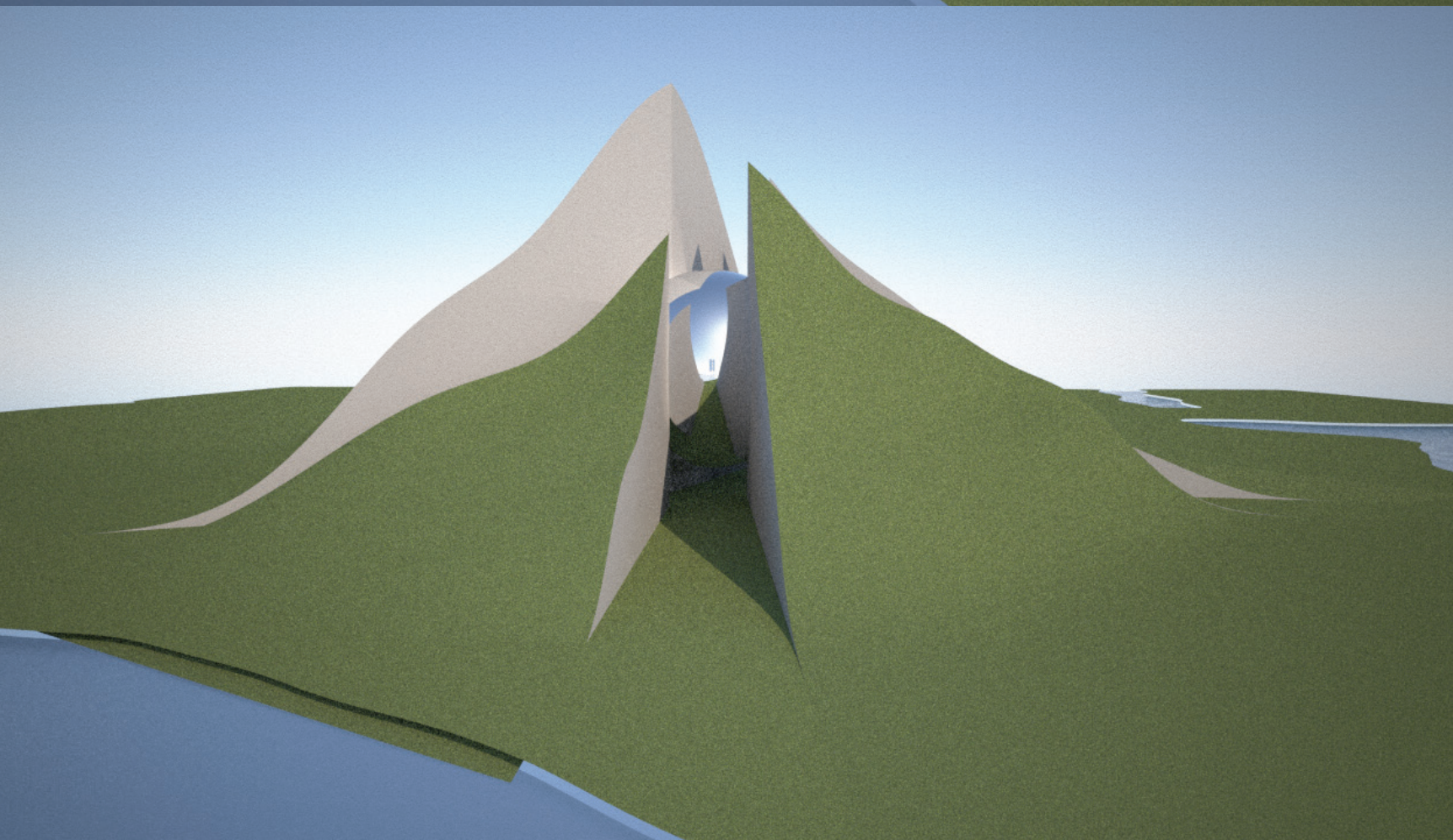
In order to evaluate the acoustics in the theater, one of the parameters is the reverberation time. The theater is examined according to how the reverberation time corresponds to the change of materials and volume. Since the main theater, is supposed to be used for different acoustical purposes, it is nesscesary to understand the different reverberation times for the different purposes.

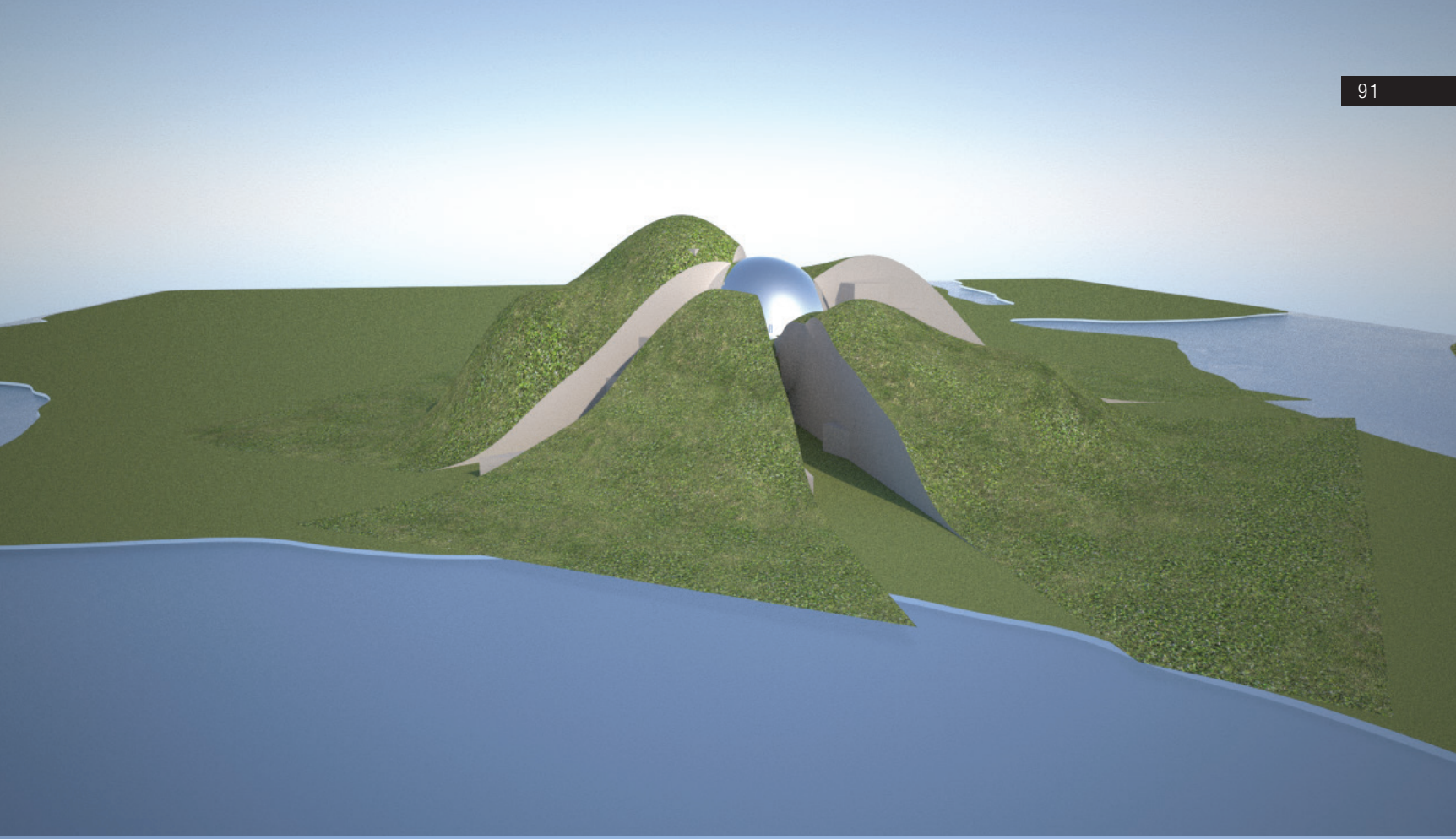
Opera is from 1.3-1.8sec and drama (spoken word) 0.7-1.0sec (Marshall, 2005). By having a reverberation time on 1.3sec, the theater will be possible to use for both. For instance, Deutscheooper in Berlin has a reverberation time on 1.36sec (Beranek, 2004).

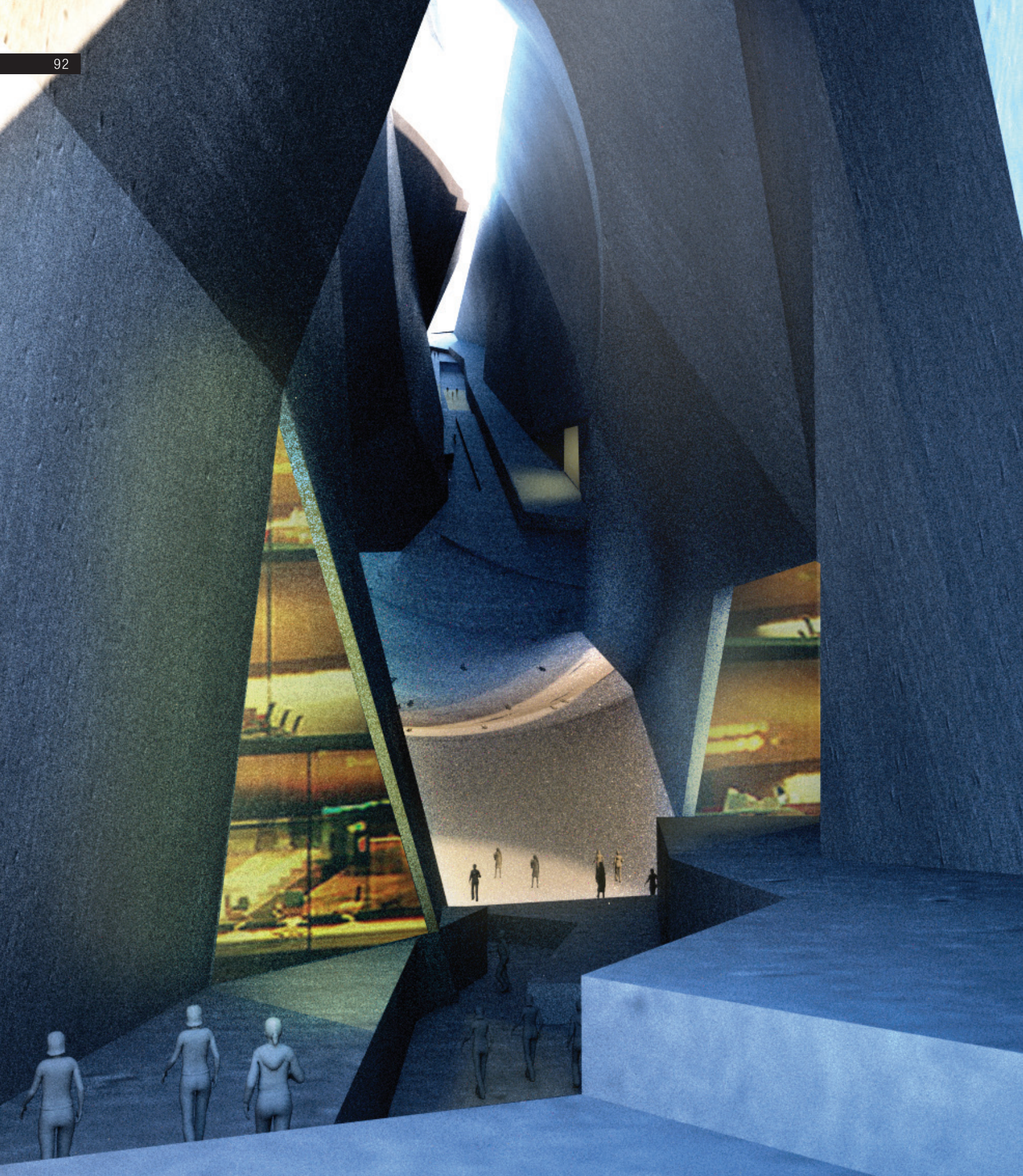
Mid- and high frequencies are controlled by acoustic treatment of the wood panel.

The diagram above examines how different materials affects the reverberation time. For instance it would be possible to achieve a higher reverberation time by combining wood on the wall with concrete on the floor. However wood is choosed for the whole interior to keep the reverberation time at 1.3sec.

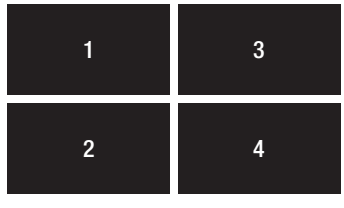








EXTERIOR



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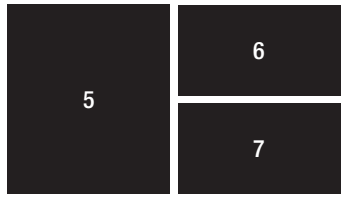

P. 92-93

1 SKIN SHAPE STUDY
2 SKIN SHAPE STUDY
3 SKIN SHAPE STUDY
4 SKIN SHAPE STUDY
5 GAP ATMOSPHERE VISUALISATION
6 STUDY ON TRIANGULAR FACADE SYSTEMS
7 STUDY ON TRIANGULAR FACADE SYSTEMS

Exterior design has been carried out through a process off quick visualisation followed up by evaluation and conceptulization.

The preceeding pages show examples of studies carried out on skin and facades. The skin has evolved through a process of iterations, where the shape has been supplied with more movement and dynamics to approach the desired expression and to fit appropriately with the volumes below.

The facades have been developed through studies on triangle systems and their advantages and disadvantages as well as materials and the way light enters the gap.

PART 03

EVALUATION

DISCUSSION / CONCLUSION

DISCUSSION

The design process has been characterized by an on-going flow of analyses and iterations, where design issues have been solved by testing solutions concretely. Tools have primarily been 3D modelling and graphic visualisation. In this way atmospheres have been effectively communicated between team members and design issues have been continuously visualized, so that discussions are ended on a basis of concrete knowledge on the effect of a certain idea.

It has not been the intention of the team to follow a specific process method in this course, as the intention of the team has been to produce relevant analyses when needed, which has made the design process productive. The free combination and usage of various methods and processes when relevant has allowed a focus on the design and early concept development, resulting in a large production of visual material for evaluation and basis for selection.

However a more structured and systematic approach to designing could have resulted in a higher level of performance based design. As an example, the auditorium could have been controlled to a larger degree, than what is the case, by acoustic parameters. Though it has been the intention of the team to primarily work with the concept holistically in relation to the atmosphere and concept, which involves many parameters other than acoustics. Thus the starting point of the auditorium has been the conceptualization of the desired mood and atmosphere. In the meeting with acoustic investigation the concept has shown to take a turn away from the initial concept of the sharp-edged, concave cave to a soft organic shape that integrate both the convex and concave surfaces to create a functional acoustic environment. In this way the acoustical parameters has clearly impacted the architectural concept in a reinterpretation of the cave or the core.

CONCLUSION

The intention of designing a complex cultural building with an emphasis on the experience and atmosphere of the scenario of attending a live performance has resulted in a conceptual proposal with a potential of becoming a landmark of the city. The city wants to be aligned with other major australian cities like Sydney and Brisbane and with this building, Gold Coast will be competitive. The result is a building that relates to the context by contrast and by integration. The development of the city, has been rapid over the last decades, which has induced a monotonous one dimensional architecture.

With the new cultural precinct of Gold Coast, the city will have world class facilities, with various sizes and configurations for the different use. Among them, they get a main theater, symbolical placed in center. The city needs a city center, and the cultural heart will create the boundaries of a two dimensional development. The building creates the missing link between the beautiful nature in hinterland and the exisiting city. The building contributes to the future development, of green arts walk, park areas and a greener cityscape. Now the city people has a green oasis, combined with the new cultural heart.

REFERENCES

ILLUSTRATION

P. 6-7. ILLUSTRATION BY GOLD COAST CITY COUNCIL.

P. 10, ILL. 2. ILLUSTRATION BY GOLD COAST CITY COUNCIL.

P. 11, ILL. 3. ILLUSTRATION BY BOOMVISITS.
[HTTP://BOOMVISITS.COM/WP-CONTENT/UPLOADS/2012/10/NEW-YORK-CENTRAL-PARK.JPG]

P. 11, ILL. 4. ILLUSTRATION: GLASSHOUSE MOUNTAINS.
[HTTP://GLOBALVILLAGECALOUNDRA.FILES.WORDPRESS.COM/2009/10/SUN-SHINE-COAST-GLASSHOUSE-MOUNTAINS.JPG]

P. 11, ILL. 5. ILLUSTRATION BY ONEBIGPHOTO AND DAVID BUTALI.
[HTTP://ONEBIGPHOTO.COM/STUNNING-DOLOMITES-MOUNTAINS-ITALY/]

P. 48, ILL. 6. BY FLICKR/YAHOO.
[HTTP://WWW.FLICKR.COM/PHOTOS/IMMYWIMMY1/8577735189/]

P. 48, ILL. 7. ILLUSTRATION BY PUNBIT: CHILE MARBLE CAVES.
[HTTP://PUNBIT.S3.AMAZONAWS.COM/2012/04/04/07/7592_76FA21_2812.JPG]

P. 74, ILL. 7. ILLUSTRATION BY DEVIANTART AND LEAHYC
[HTTP://LEAHYC.DEVIANTART.COM/ART/LAKE-MOOGERAH-292907382]

P. 74, ILL. 8. ILLUSTRATION BY FA-STOCK
[HTTP://FC05.DEVIANTART.NET/FS71/I/2012/063/7/8/GLASSHOUSE_MOUNTAINS_2_BY_FA_STOCK-D4RR1S5.JPG]

P. 75, ILL. 9. ILLUSTRATION BY GREAT QUEENSLAND BUSHWALK.
[HTTP://WWW.GQB.ORG.AU/IMAGES/STOCK/GLASS%20HOUSE%20MOUNTAINS%20PANORAMIC%20SHOT.JPG]

P. 75, ILL.10. ILLUSTRATION BY SOLIDFORM: ORDOS MUSEUM
[HTTP://WWW.SOLIDFORM.CO.UK/STORAGE/ABRAHAM_GARCIA-MUSEUM3.JPG?__SQUARESPACE_CACHEVERSION=1324363027096]

P. 77, ILL. 14. ILLUSTRATION BY WIKIMEDIA.
[HTTPS://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:PETRA_FIRST_GLIMPSE.JPG]

P. 77, ILL. 15. ILLUSTRATION
[HTTP://AD009CDNB.ARCHDAILY.NET/WP-CONTENT/UPLOADS/2010/02/1265235778-OVERALL-WINNER-ONE-NEW-CHANGE-LONDON-UK-DESIGNED-BY-ATELIERS-JEAN-NOUVEL-AND-SIDELL-GIBSON-ARCHITECTS-ST-PAULS-VIEW.JPG]

P. 81 ZAHA HADID: GUANGZHOU OPERA
[HTTP://4.BP.BLOGSPOT.COM/-PQXU3YXGBOI/TN8XSFUSRQI/AAAAAAABDVE/OF-J5ARD-W3K/S1600/GUANGZHOU+OPERA+HOUSE+BY+ZAHA+HADID+ARCHITECTS-PHOTOGRAPHS%25C2%25A9+HUFTON+%252B+CROW-05.JPG]

P. 81 JEAN NOUVEL: DR CONCERT HALL
[HTTP://MULTIMEDIA.POL.DK/ARCHIVE/00335/KULKONCERTSAL_07-04_335352A.JPG]

P. 87. PHOTO BY MAD ARCHITECTS

TEXT

BERANEK, LEO: *CONCERT HALLS AND OPERA HOUSES*. SPRINGER-VERLAG, NEW YORK 2004

MARSHALL, LONG: *ARCHITECTURAL ACOUTSICS*. ACADEMIC PRESS