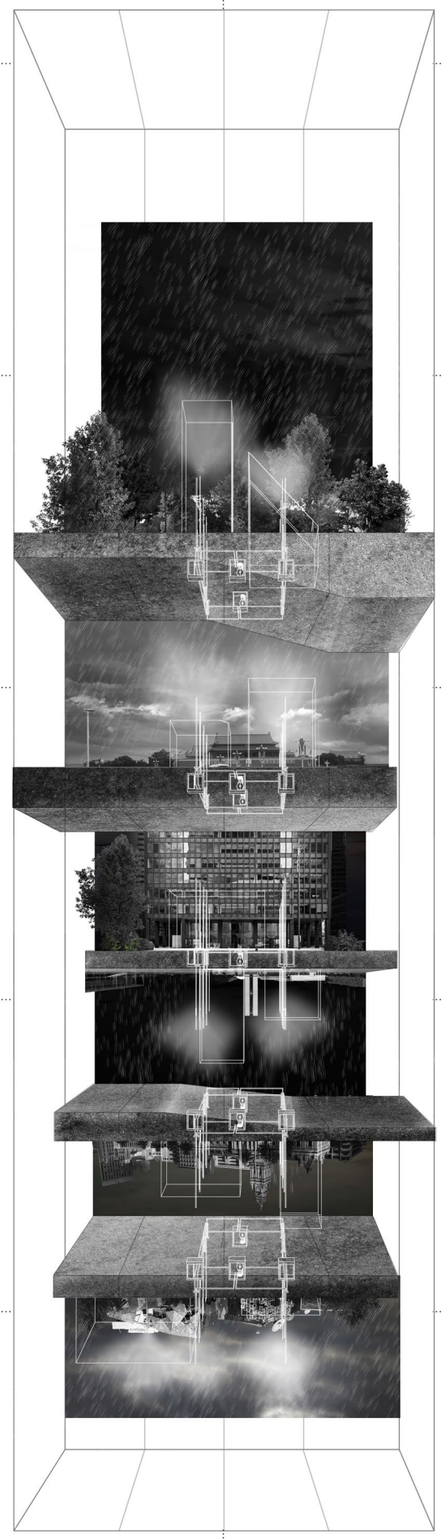
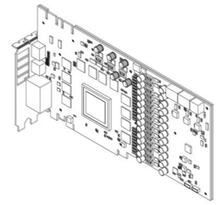
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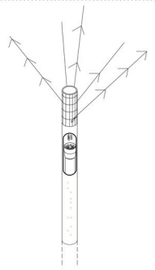
_Application Part 02

_Research Projects

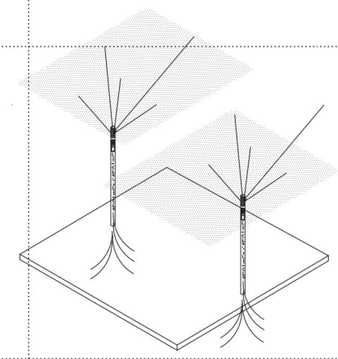




_urban hardware



_air pressure device



_ invisible dynamic roof

project ephemera

part 02

www.ephemeraar.com

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_P01

_The Invisible Museum

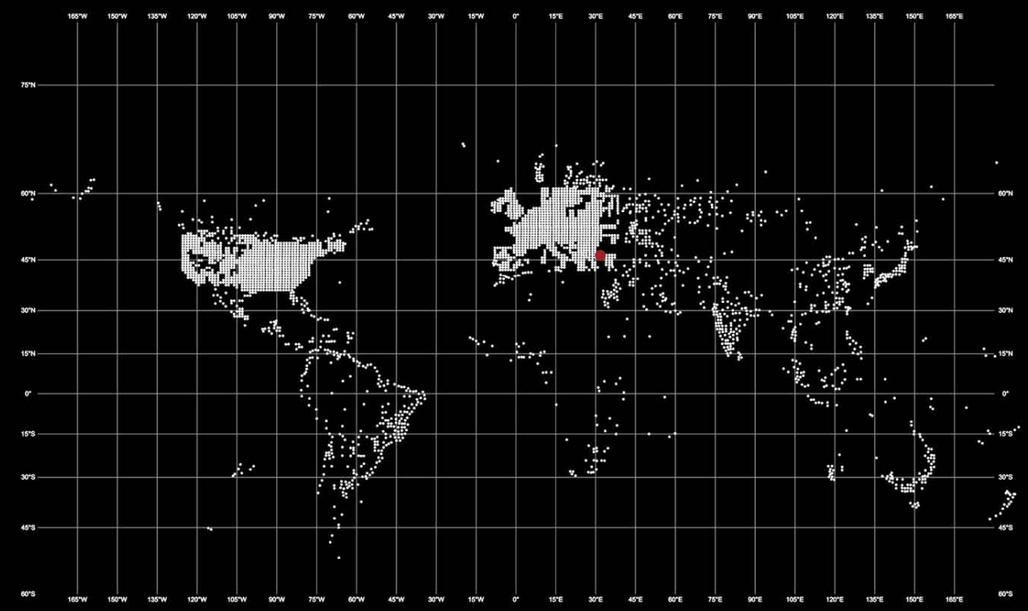
https://www.ephemeraar.com/yenikapi

_Coordinates: 41.. 01384 , 28. 94966

_Continents: Europe, Asia

_City: Istanbul

_Site: Yenikapi



_Awards

_Rethinking the Future Awards 2014- 1st Award (Public Buildings)

_The City Academy Awards 2015- 1st Award (Architecture)

_2A Europe Architecture Award 2017 - Gold Medal Nomenee

_TEDxACSofia "Spaces for the Future"- Feature

_P01

_Principle 04
_Grid-Based Design

What is the role of the museum of tomorrow? How does it answer to the rapidly changing conditions of the digital age? In a world of mass connectivity and extreme growth we witness an online revolution which redefines our perception of reality. A period of globalization in which cultural institutions tend to lose their position within our present and not to mention our future society. The museum is a central figure within the urban hierarchy and it manages to preserve and maintain the cultural tangible and intangible heritage of the world. Unfortunately it often fails to answer to the high level of digitalization of our society. In its own idea it is so deeply rooted in its classical expression that it does not manage to transform itself to a place which can truly answer to the demands of our time. Today's museums are, as such, obsolete. New dynamics, the exposure by the web of all new works of arts in an almost real time, the consumption of such works through the digital media, everything is challenging the notion of museum as a stationary box where artistic productions are displayed. As Walter Benjamin predicted, the digital (mechanical in his age) reproduction of an artwork leads to the loss of its aura, but at the same time makes it available to the masses.
The "Invisible Museum" is located in Yenikapi , a historically significant site of Istanbul. As a place of high concentration of people from different nationalities and very high density it gives a good opportunity to face a possible concept for new museological typology. As a future infrastructural center , Yenikapi holds the urban potential for the development of a project of such typology .
The idea of the "Invisible Museum" evolves from one of the most fundamental principles of the digital age - the growing value of immateriality . As such it aims at creating an immaterial habitable space- an "Immaterial Building". A temporary habitable space which appears and is active only during the period in which it is used by its visitors. In order to achieve this the project considers what are the main features of a normal building :

- **Comfort** - inside the building you feel thermal comfort
- **Privacy** - the walls of a building decrease the excessive noise from the outside environment
- **Shelter** - the roof of a building protects you from the weather conditions
- **Function**- a building should provide functional conditions depending on its typology.

_function

The original and foremost function of a museum is to preserve the tangible and non tangible heritage of the world. However , the contact between people and artefacts remains on visual level. Based on this "The Invisible Museum" is a virtual building with digital copies or originals displayed with Augmented Reality. The augmented spaces are observed through glasses or devices which allow for the possibility to observe virtual images of this character. As the "building" is constantly connected to the internet all information about digital representation of artworks can be accessed and represented. Spaces can be customized and transformed according to the necessity of the exhibition, whether personal or public. The augmented spaces are adjusted according to the floor system of the park, in which every hole is actually a pixel in an overall image.

_privacy

The Museum is a public building. As such privacy can mostly be achieved by finding a zone with decreased noise from the surrounding. Based on this privacy in the "Invisible Museum" is achieved by creating sound spaces which follow the zones where the Virtual Galleries are active. The sound spaces are based on the principle of active noise control in which sound from the outside is taken via microphone and repelled via counter waves produced from a speaker. This does not lead to absolute silence but results in change of the state of sound. We can decrease the constant noises surrounding the site by providing microphones in the periphery and speakers under the urban furniture. In our scenario the benches are considered as sources of "anti sound" forming changing with the augmented layer.

_shelter

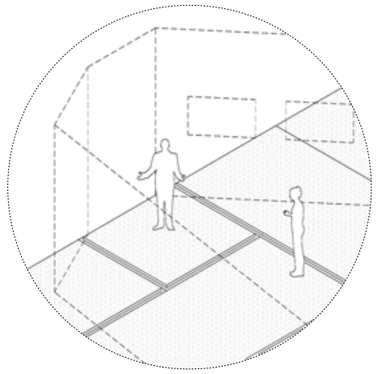
Every building is above all a shelter from the influence of the outside environment. Inspired from experimental devices in contemporary product design the "Invisible Museum" has a system of pillars which can generate surface of air which repels the falling rain and acts as a temporary roof system. The air pressure layer allows to block the rain, in case of such, through suction in the tubes of the lights. Air is taken from the foundation of the lamp and turbulated through the top resulting in an invisible layer of air pushing away the rain. The system responds the change of the augmented layer.

_comfort

The temperature within a building varies between 15 to 25 degrees Celsius. This temperature range guarantees thermal comfort for the users. In order to achieve such comfort the Invisible Museum has a convective micro-climatic system which generates thermal comfort. In order to create comfortable conditions for the usage of the digital spaces of the visual layer a microclimate must be established on the site. The layer is formed from a system of smart pillars which resemble street lamps. They are all organised in a grid system based digital grid of the augmented reality. In this way the two systems can be easily adjusted and the climate current which is blown from the pillars can be oriented according to the occupied spaces.



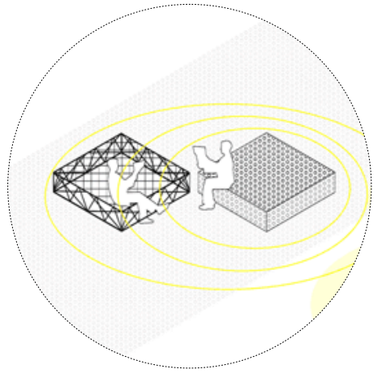
Virtual Augmented Layer



Virtual Augmented Spaces



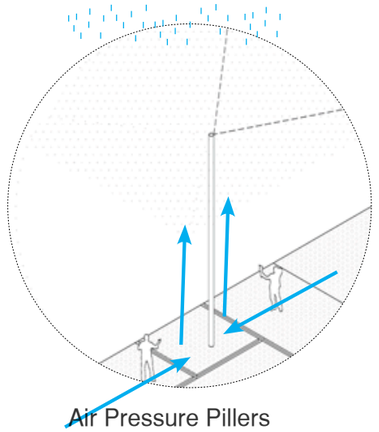
Anti - Sound Layer



Anti - Sound Devices



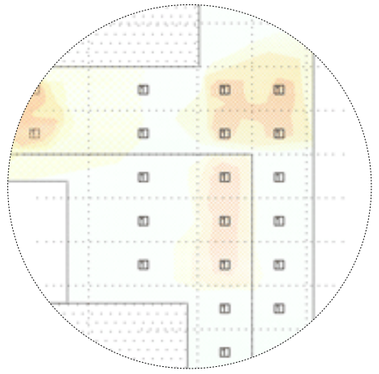
Air Pressure Layer



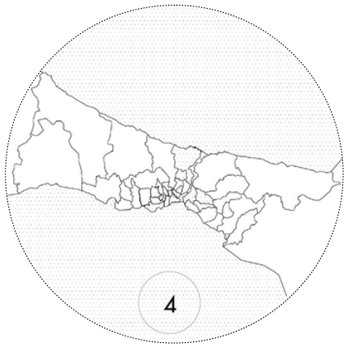
Air Pressure Pillers



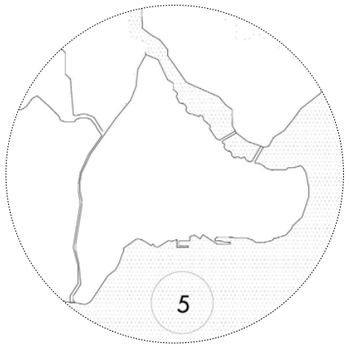
Convective Micro-Climate



Convective Micro-Climate Ducts



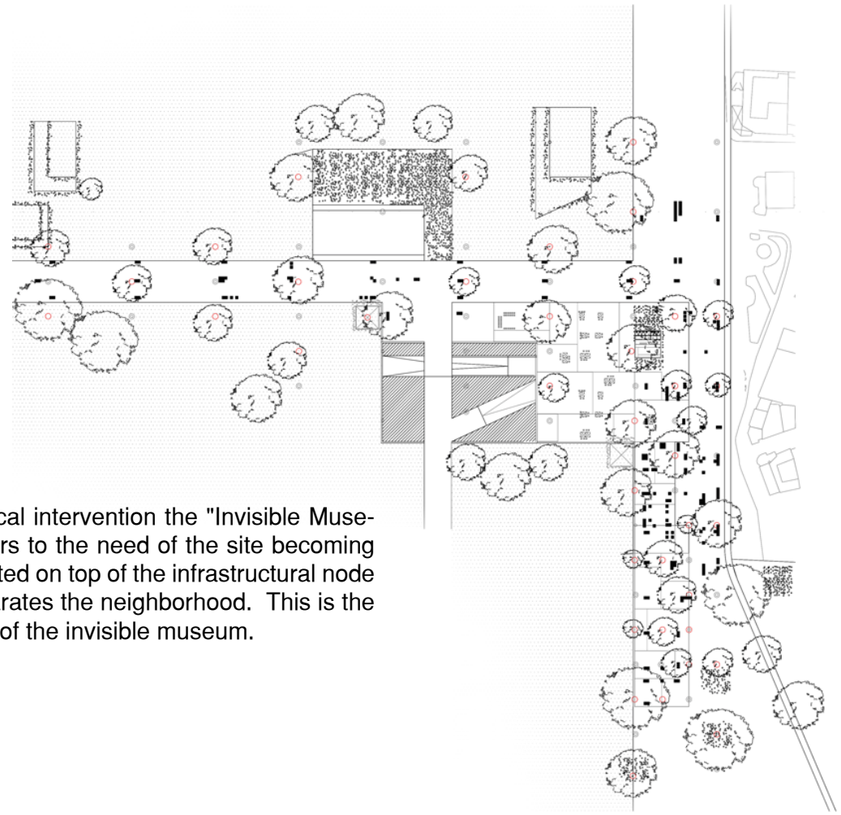
The current number of inhabitants of Istanbul is approximately 14,160,467 people. Within a density of this scale we arrive at a situation in which people tend to be pushed away instead of being attracted by cultural institutions. This turns museums into isolated objects, rather than educational catalysts.



Fatih is one of the most important historical areas of Istanbul. This leads to high concentration of tourists of different nationalities and interests. Therefore in a museum of the future we need to be able to answer to these demands of global locations



Yenikapi, the historical harbour of Istanbul, is to become one of the main infrastructural hubs in the upcoming future. It is therefore ideal spot for high concentration of global tourists, seeking different cultural experienceses answering to the historical potential of Istanbul.



As a physical intervention the "Invisible Museum" answers to the need of the site becoming a park located on top of the infrastructural node which separates the neighborhood. This is the foundation of the invisible museum.



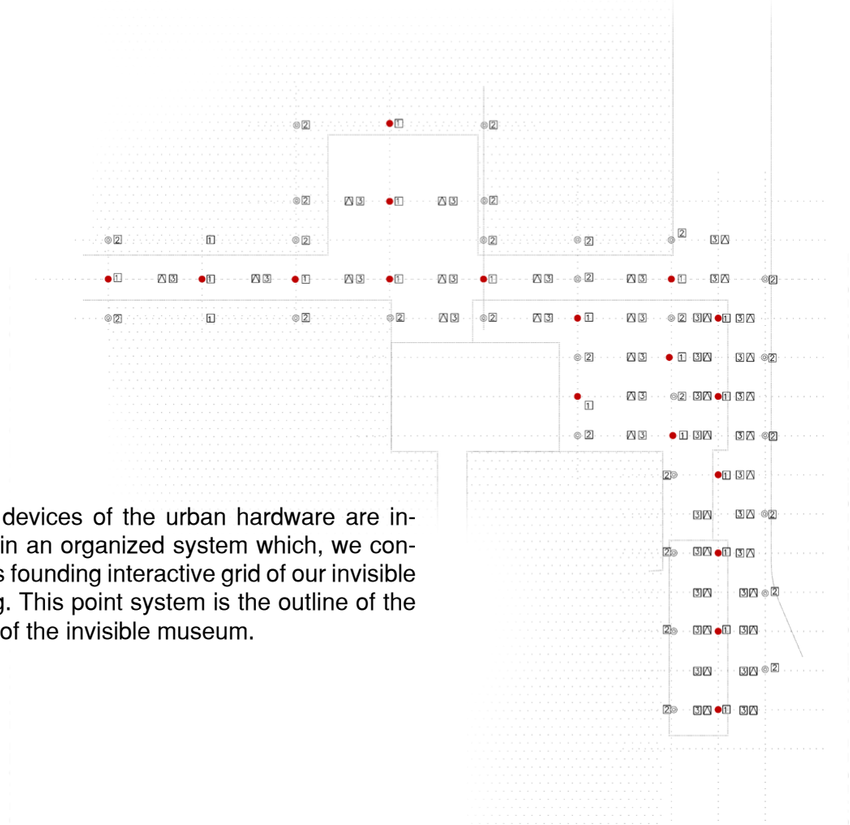
We observe a normal view from the park. In that view we select and redefine all the different elements within the park.



We identify and map all the positions of the trees in park. In this way we create a basis for the developement of an interactive grid.



We install in the sequence of the natural elements all the urban hardware - the air roof pillers, the sound benches and the microclimate air vents.



All the devices of the urban hardware are installed in an organized system which, we consider as founding interactive grid of our invisible building. This point system is the outline of the design of the invisible museum.

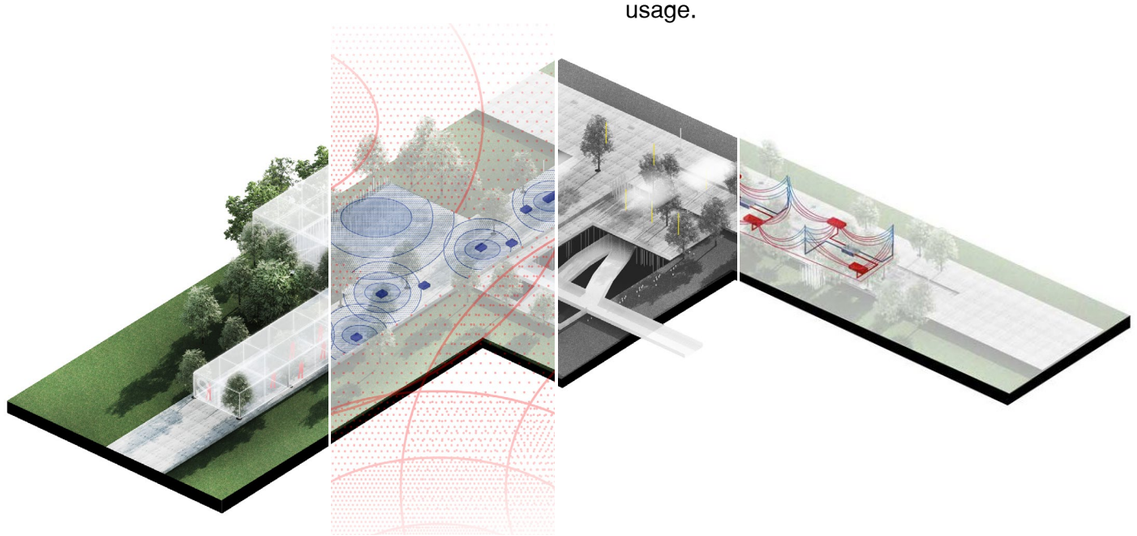
1 Air Roof Pillars

2 Micro-Climate Vents

3 Sound Benches

_Layers Superimposition

Once all hardware devices are installed they create invisible layers. Superimposed on top of each other they combine and perform the functions of a standrad build space. They produce an interactive, adaptive invisible/digital field.

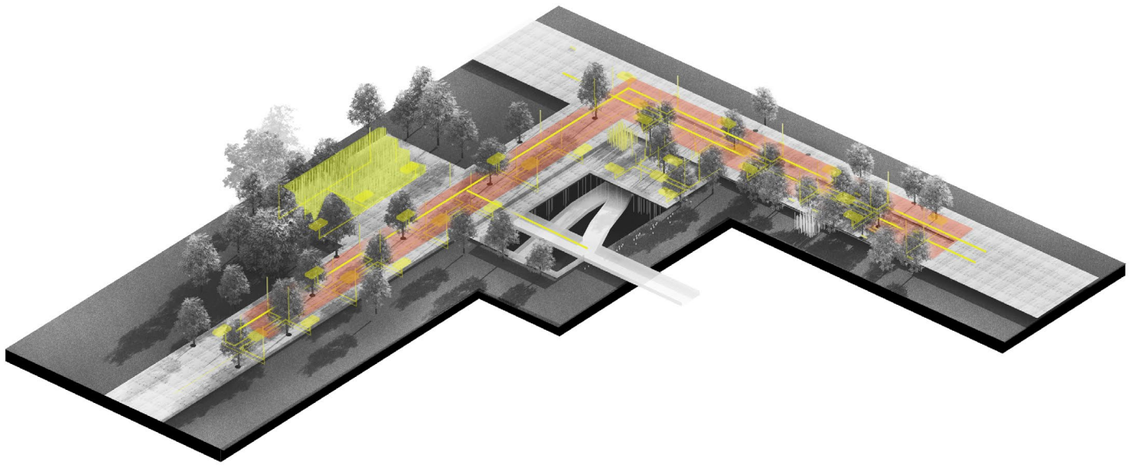


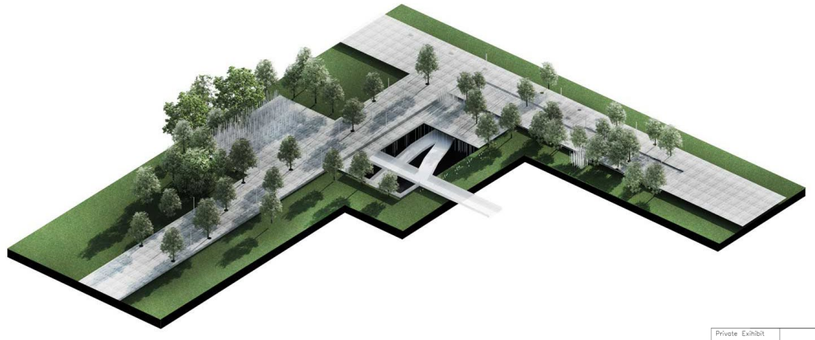
_Adaptive Transformations

The software of the "Invisible Museum" uses sensory system which feeds data related to the number of visiotrs and the spaces they occupy. The galleries adapt and transofrm according to the number of visiors and the preset of the exhibition. In this way the building exists only when it is activated and its size and resource usage corresponds to the level of its usage.

_Kinetic Energy System

In order to supply the Invisible Museum with energy, the whole flooring system uses kinetic energy plates. Through them with every step a person can generate up to 7 W. This turns the park and the Invisible Museum into an energy independent area.



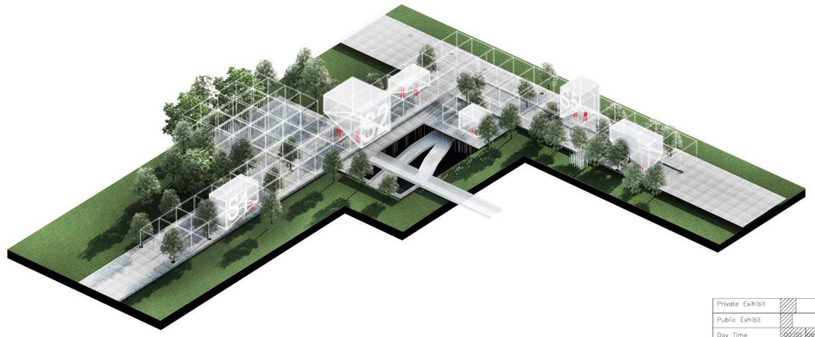


0%

Private Exhibit	250		500				
Public Exhibit	250		500				
Day Time	00:00	06:00	09:00	12:00	15:00	18:00	21:00
Weather conditions	Rain						

Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7
X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:

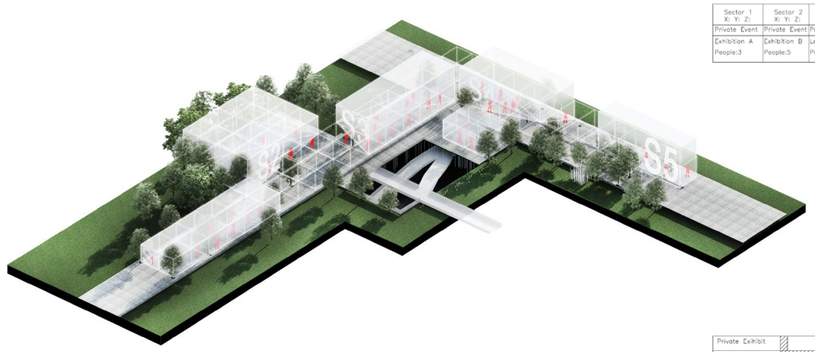
Sector 8	Sector 9	Sector 10	Sector 11	Sector 12	Sector 13	Sector 14
X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:



25%

Private Exhibit	250		500				
Public Exhibit	250		500				
Day Time	00:00	06:00	09:00	12:00	15:00	18:00	21:00
Weather conditions	Rain						

Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7
X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:
Private Event	Private Event	Public Event	Private Event	Private Event	Private Event	Private Event
Exhibition A	Exhibition B	Lecture A	Research Lab	Discussion	Gallery	Archive
People:3	People:3	People:35	People:2	People:8	People:2	People:1

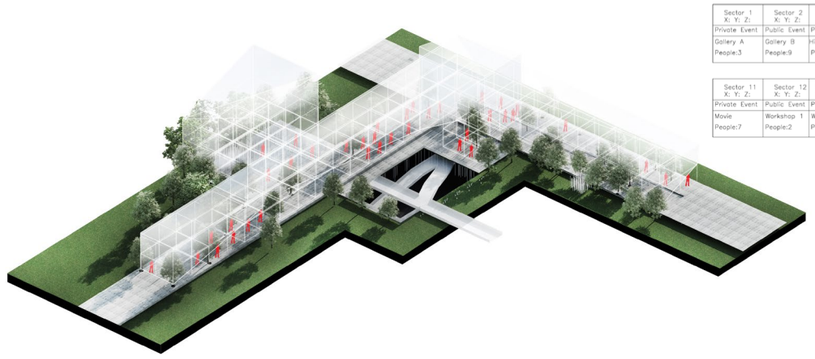


50%

Private Exhibit	250		500				
Public Exhibit	250		500				
Day Time	00:00	06:00	09:00	12:00	15:00	18:00	21:00
Weather conditions	Clear Sky						

Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Sector 8	Sector 9	Sector 10
X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:
Private Event	Public Event	Private Event	Private Event	Public Event	Public Event	Public Event	Public Event	Public Event	Private Event
Gallery A	Gallery B	HistoryArchive	University Lab	Exhibition	Exhibition	Lecture	Gallery	Discussion Forum	Gallery
People:3	People:9	People:2	People:13	People:5	People:9	People:21	People:3	People:5	People:4

Sector 11	Sector 12	Sector 13	Sector 14
X: Y: Z:	X: Y: Z:	X: Y: Z:	X: Y: Z:
Private Event	Public Event	Public Event	Public Event
Movie	Workshop 1	Workshop 2	Study Archive
People:7	People:2	People:3	People:1



100%

Private Exhibit	250		500				
Public Exhibit	250		500				
Day Time	00:00	06:00	09:00	12:00	15:00	18:00	21:00
Weather conditions	Rain						

Sector 1	Sector 2	Sector 3
X: Y: Z:	X: Y: Z:	X: Y: Z:
Public Event	Public Event	Public Event
Exhibition	Exhibition	Exhibition
People:150	People:138	People:253



_P02

_The Fake City

https://www.ephemeraar.com/the-fake-city

_Coordinates: 53.2012334 , 5. 79991330

_Continents: Europe,

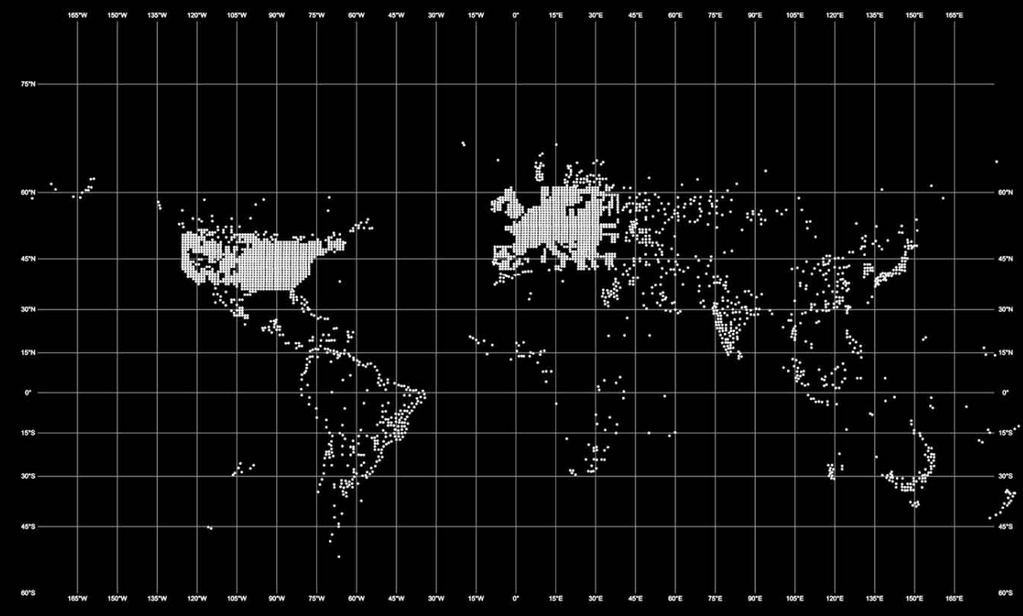
_City: Leeuwarden, the Netherlands

_Site: Central Historical Part

_Awards

_Europan 13 - NL 2015 - Special Mention

_The City Academy Awards 2016- 1st Award





_P02

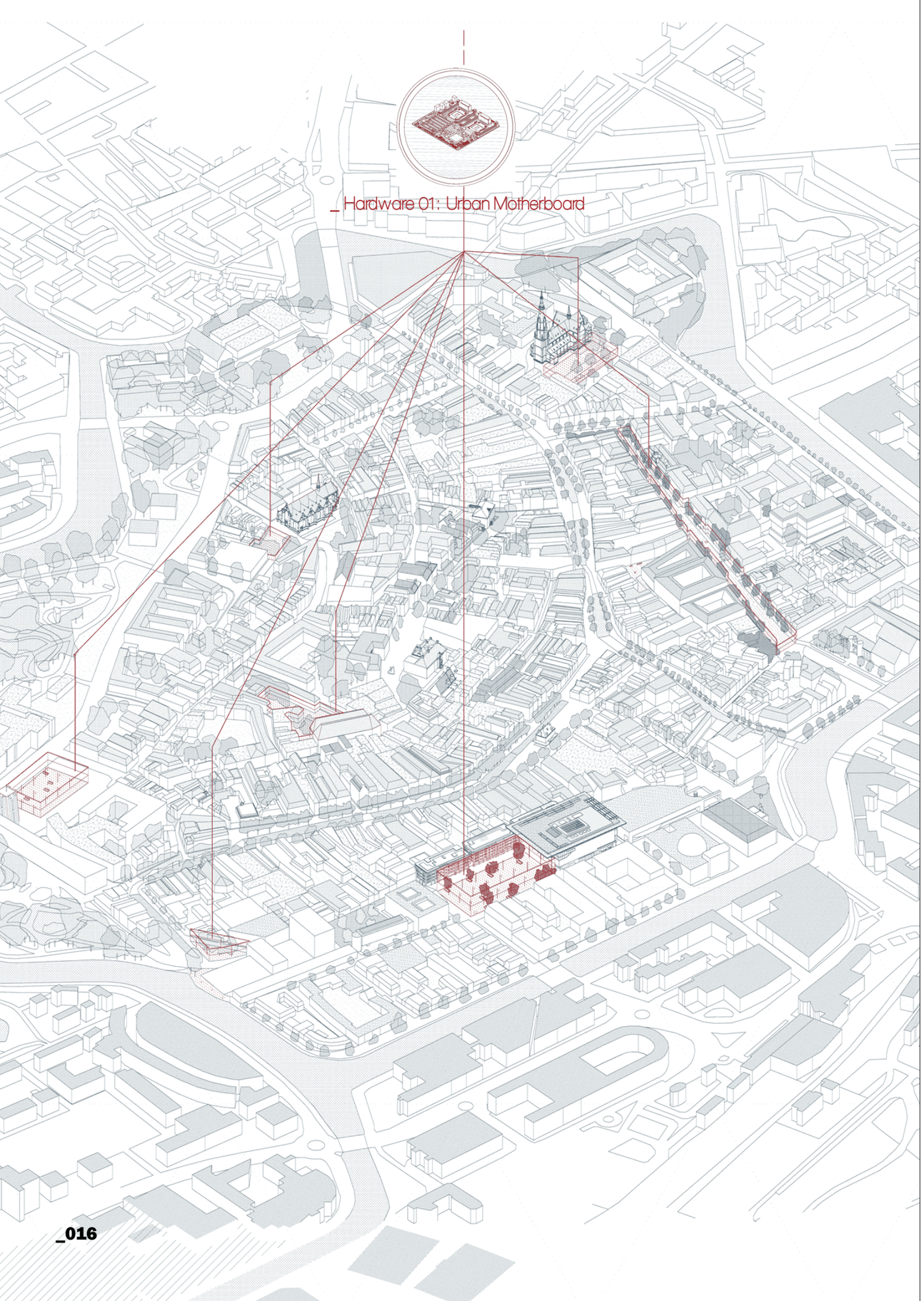
_Project 02
_The Fake City

The Fake City is a possible conceptual interpretation of the consequences of the Information Revolution. This is an architectural experiment, which lays on the border between utopia and reality and proposes a different typology of architectural space. A space inspired from the current technological transformations which shifts the attention from tangible to non-tangible space. Designed to be located at the historical heart of Leeuwarden, it investigates the possibility of becoming a Global Capitol of Culture for 2018. It reveals a new concept of architectural space and a new approach towards urbanism, a new layer on top of the existing architectural fabric of the city.

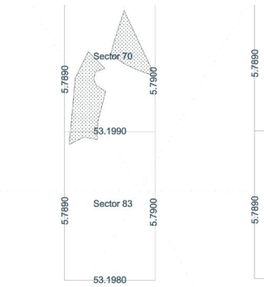
The fake city introduces the concept of the "Process Structure" a digital building, a system which is located on a group of sites in the city and appears when activated by the users. A concept inspired from the key factor in the digital age the computer. The fake city is an interpretation of the computer.

The Fake city is a dynamic, interactive, user-generated virtual urban layer in constant process. An urban space just as responsive as a computer program or smartphone application. Once initiated and connected with the user the urban fabric generates a digital structure which meets the needs of the user. These structure becomes a physical entity based on the constant interplay of various dynamic fields. It reacts according to the changes in the environmental conditions and the momentary needs of people, a democratic architecture which is active only when necessary.

In 2018 Leeuwarden will be the new European Capital of Culture. With the prototype of the "The Fake City" I wanted to give a new dimension of understanding for the event, an opportunity to reuse the existing public spaces, without new construction. At the same time the data structures can be represented in every possible place with internet connectivity. They are global structures, global scrapers with which the "The Fake City" becomes a global display platform for young artists and Leeuwarden "the first Global Capital of Culture"



The motherboard is the main hardware component in a computer. It is the backbone for its structure. In this concept the Fake City reinvents the idea of the motherboard using it as a metaphor, an urban motherboard- a public space on top of which the structures of the Fake City appear. The urban motherboards are selected public spaces in Leeuwarden with decreased public interest. An archipelago of Data Islands.





Site - Mata Hari Square

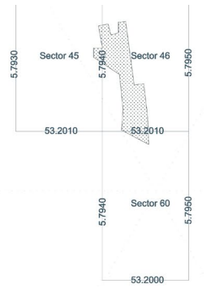
historical square located next to the city Concert Hall





Site - Oldehove

historical square located next to the city medieval church tower of Oldehove

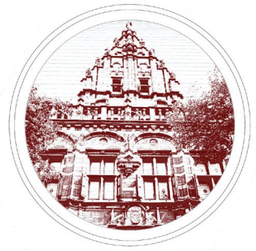




Site - Romain Square

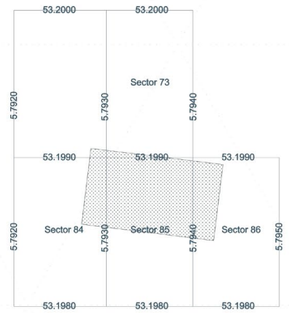
urban square located next to the historical Werterkerk, readapted to a theater of Leeuwarden





Site - Turfsmarkt street

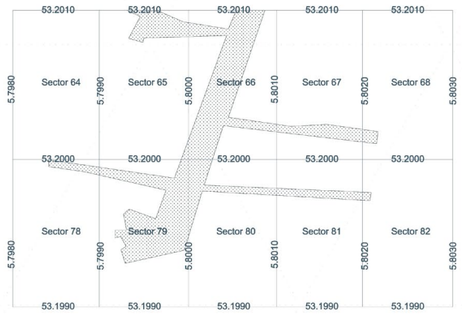
street which is located next to the historical Kanselarij , the court of Leeuwarden.





Site - Wilhelmina Square

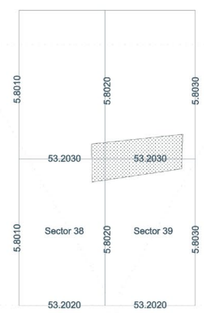
square between the Court of Justice and the Frisian Museum. A place where the weekend market took place.





Site - Tweebaksmarkt

street located between the Provincehouse and the local historical prison.





Site - Sint Bonifatius Square

square located next to the church of Saint Boniface





Site - Square of Jacobijnerkerk

street which is located next to the historical Jac Church

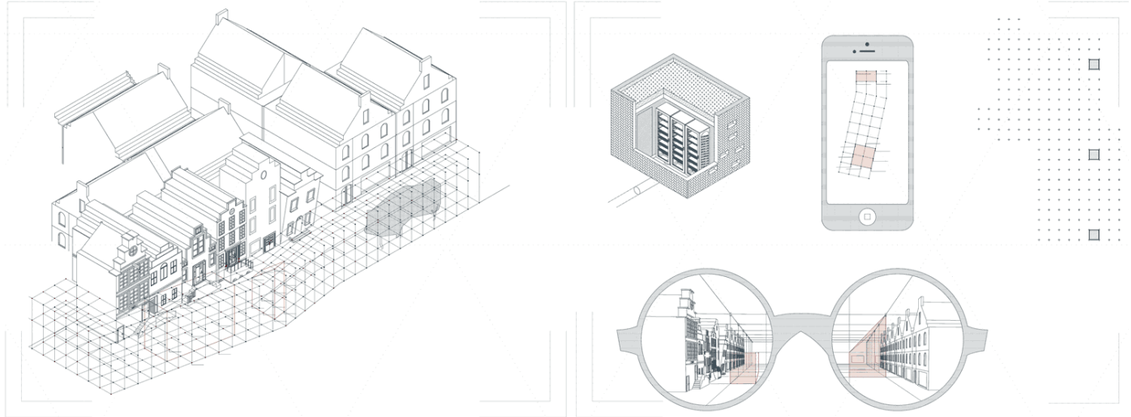


_ Hardware 02 : Urban Components

Every computer has different components all of which have a particular function, such as the video card, the sound card, the processor and its memory. All those components combined, allow for the computer to function as a whole. For the "Process Structure" we designed a system of urban components, which a functional and microclimatic transformation of the public space. They all interact with dynamic fields and once combined together form temporary spaces, transforming an empty public space into a functional private space.

Component A

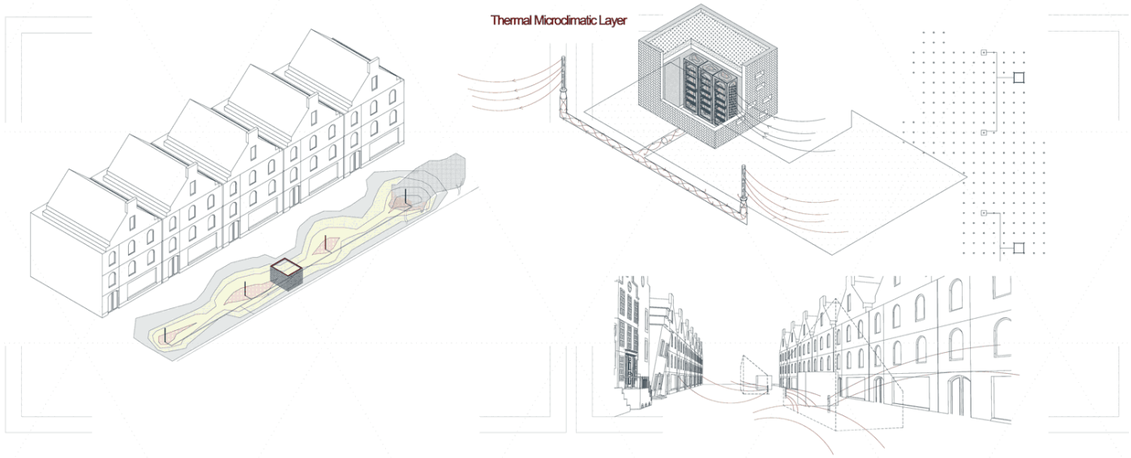
Virtual Augmented Layer



The data field is a layer of augmented reality used in real time and urban scale so the building visual and functional part will actually be augmented reality. The ability of visualizing digital object in real space and time and inserting them in urban context, provides the building with a dynamic interactive presence. The augmented data is stored in local urban units known as "urban servers".They are used to store the data and are inserted in a double room space. This build up space contains the server and a public toilet which can be used by the users of the building.

Component B

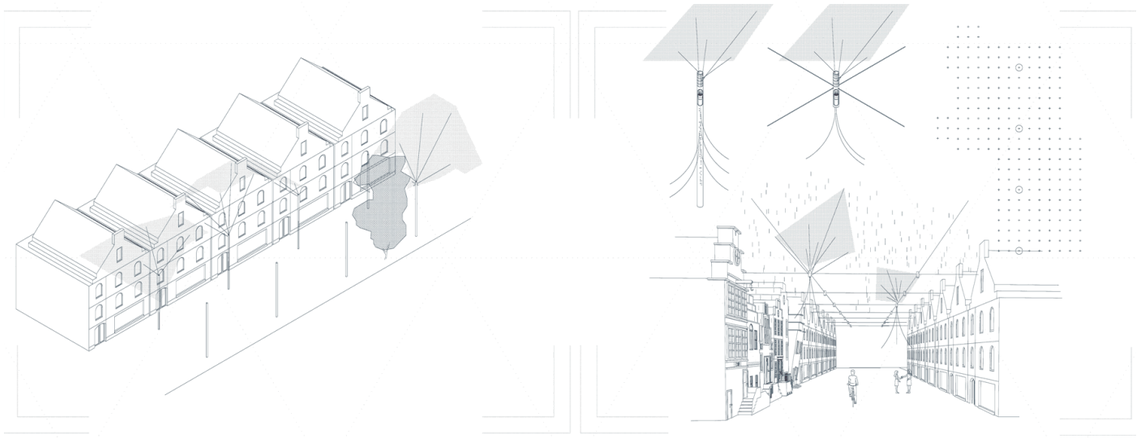
Thermal Microclimatic Layer



The temperature in Leeuwarden vary in such a scale that there is a need for heating but scarcely for cooling . In that sense the Process Structure will be heated by outlets sticking from the ground and blowing hot air. The hot air will not be produced separately but will actually use the hot air produced by the servers, which generate high level of heat. The heat will then be redirected to the site and blown in the direction of the particular event.

Component C

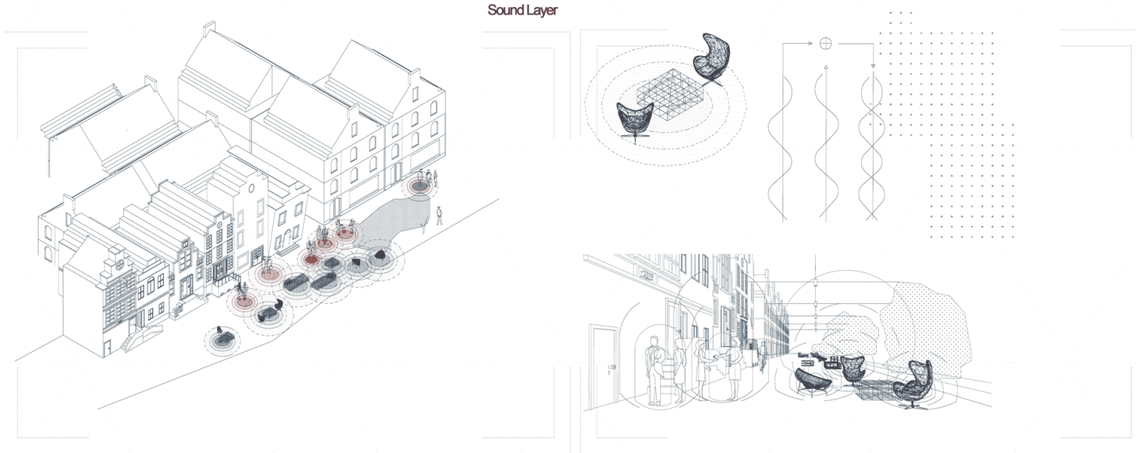
Air Pressure Layer



Rain Protection is another vital aspect in the Netherlands. In order to provide rain protection for the Process Structure, there are air pressure components installed. The air pressure layer allows to block the rain, in case of such, through suction in air in the provided pillars. Air is taken from the foundation of the pillars and turbulated through the top resulting in an invisible layer of air pushing away the rain. The system responds the change of the augmented layer.The shape of the dome can be controlled and thus can reveal the used spaces when there is rain

Component D

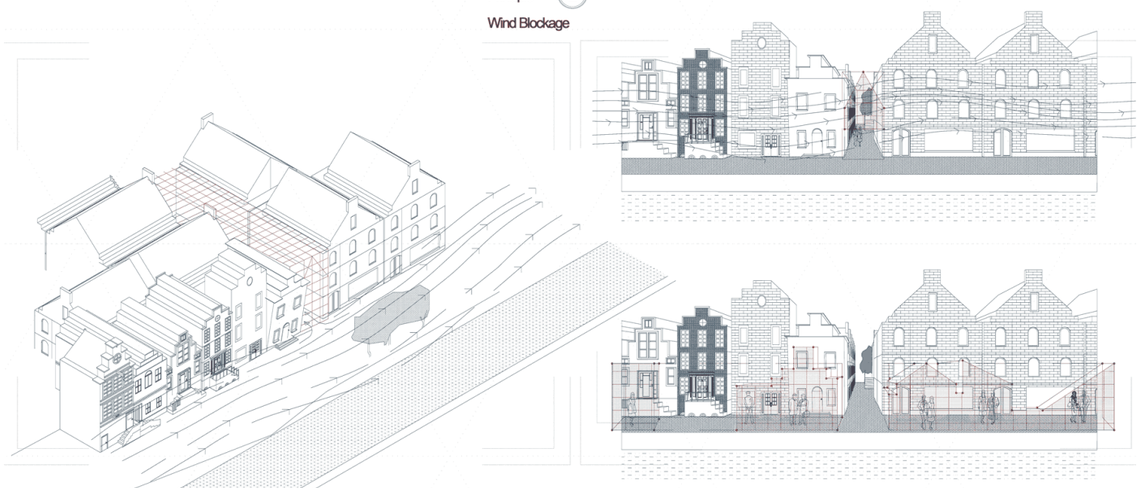
Sound Layer



Noise canceling field, which uses the principles of noise cancellation in order to generate a space of quietness and privacy within the noisy environment. The desire to obtain a completely quite space is impossible but a steady and constant decrease would lead to sense of privacy in a public space. What we do in order to achieve this is by prerecording some of the constant sound waves of the site and propagating their counter waves through the urban components. Thus we decrease the noise once a person uses the process structure.

Principle E

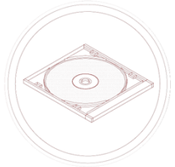
Wind Blockage



Since the structure is based on a system of sites and has no physical constraints, the Process Structure will use the urban fabric for wind protection. The structure can be in open spaces when there is no wind, and can move and hide in the smaller streets in order to protect the users from the wind.

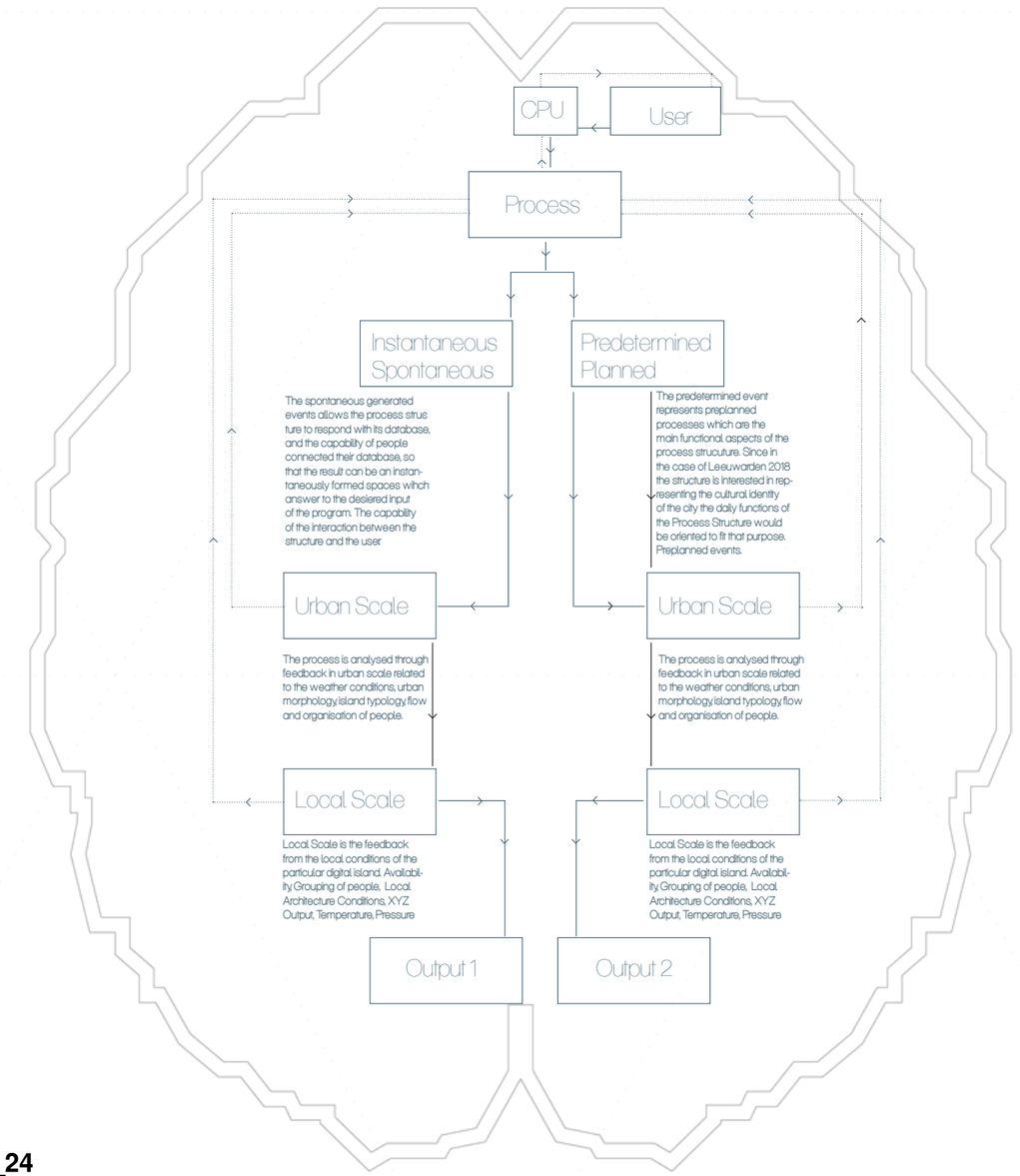
_project ephemera

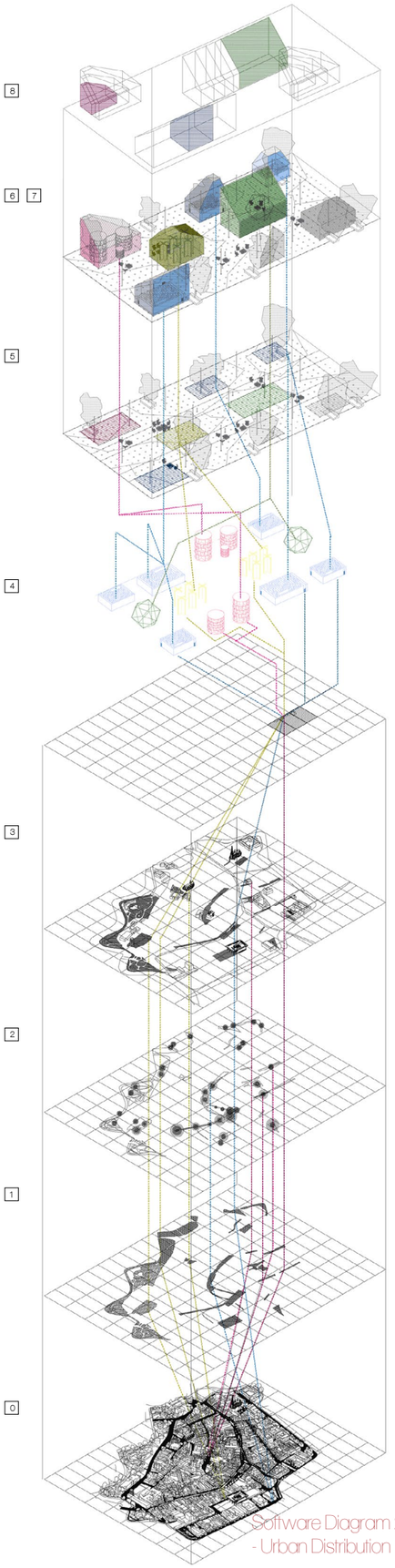
_the fake city



_Urban Software

The Urban Software is the program which controls and coordinates the different devices, making their synchronization with city and the users, result in a temporary space with a particular function. In order to do so the Fake City is constantly getting feedback on the changing urban conditions. In that way every appearing gallery is always unique. Its appearance is based on the event, the context, the conditions, the number of users.





Software Diagram 2
- Urban Distribution

8 Adaptivity

Moving Function	Extruding Function	Scaling Function	Merging Function
Repositioning of structure due to weather conditions	Extruding function due to elongation of the reached maximum x or y maintaining	Scaling function due to increase of size maintaining x and z or y and z composition	Connecting between two sectors with different but related events.
Event P1 — Increasing Wind: Relocation to Sectors 15, 16	Event P1 — Elongation of the partition. Extrusion Y coordinate	Event S1 — Increase of People. Scaling XYZ	Event S2 P2 — Merging Events S 2 and P2
Event P2 — Increasing Wind: Relocation to Sectors 15, 16		Event S2 — Increase of People. Scaling XYZ	Event S4 P3 — Merging Events S 2 and P2
Event P3 — Increasing Wind: Relocation to Sectors 15, 16		Event S3 — Increase of People. Scaling XYZ	

7 Result

Event P1	Event P4	Event SP1	Event SP4
Event P2	Event P5	Event SP2	Event SP5
Event P3	Event P6	Event SP3	Event SP6

6 Design Preset

Event P1	Event P4	Event S1	Event S3
S 4.1 Distribution Follow Pattern — Organized Follow Guideline 1	S 4.6 Distribution Follow Pattern — Organized Follow Guideline 2	S 4.1 Distribution Follow Pattern — Organized Follow Guideline 2	S 4.6 Distribution Follow Pattern — Organized Follow Guideline 1
Event P2	Event P5	Event S2	Event S4
S 4.2 Distribution Follow Pattern — Organized Follow Guideline 1	S 5.1 Distribution Follow Pattern — Organized Follow Guideline 3	S 4.2 Distribution Follow Pattern — Organized Follow Guideline 3	S 5.1 Distribution Follow Pattern — Organized Follow Guideline 1
Event P3	Event P6		
S 4.5 Distribution Follow Pattern — Organized Follow Guideline 1	S 5.4 Distribution Follow Pattern — Organized Follow Guideline 2		

Predetermined | Spontaneous

5 Availability

At the moment of initiation the structures sees which of the spaces in the data island are available and compare that to the need of the requested event. If there is a similarity of two similar events they connect and become one.

Public	Private	Public	Private
Event P1 — S 4.1 x y z	Event P4 — S 4.6 x y z	Event SP1 — S 4.1 x y z	Event SP4 — S 4.6 x y z
Event P2 — S 4.2 x y z	Event P5 — S 5.1 x y z	Event SP2 — S 4.2 x y z	Event SP5 — S 5.1 x y z
Event P3 — S 4.5 x y z	Event P6 — S 5.4 x y z	Event SP3 — S 4.5 x y z	Event SP6 — S 5.4 x y z

Predetermined | Spontaneous

4 Event

The events are further broken into two main groups, Public and Private events
Every requested event has a preset of design conditions related to space requirement and distribution. At this step the process structure prepares the events for execution.

Public		Private		Public		Private	
Event P1	Open Lecture	Event P3	Private Office	Event S1	Prison Language Course	Event S3	Music Room
People	10	People	3	People	10	People	1
Duration	1 hour 30 mins	Duration	8 hours	Duration	2 hours	Duration	30 mins
Event P2	Van Gogh Exibition	Event P4	Cinema	Event S2	Photographic Exhibition	Event S4	3D Modeling
People	50-100	People	20	People	4	People	2
Duration	90 mins	Duration	90 mins	Duration	20 mins	Duration	open end

3 Context

Sectors as cording to the flow of people and occupied spacespaces.

Sector 1	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 11	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 20	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 29	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 39	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 49	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 2	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 12	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 20	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 30	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 40	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 50	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 3	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 13	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 21	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 31	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 41	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 51	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 4	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 14	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 22	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 32	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 42	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 52	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 5	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 15	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 23	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 33	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 43	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 53	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 6	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 16	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 24	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 34	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 44	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 54	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 7	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 17	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 25	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 35	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 45	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 55	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 8	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 18	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 26	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 36	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 46	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 56	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 9	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 1	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 27	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 37	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 47	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 57	Kunstulleen Friesland Park Environment, Dense Forestry
Sector 10	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 19	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 28	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 38	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 48	Kunstulleen Friesland Park Environment, Dense Forestry	Sector 58	Kunstulleen Friesland Park Environment, Dense Forestry

2 Density

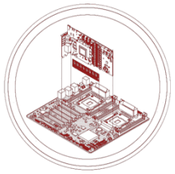
Sectors as cording to the flow of people and occupied spacespaces.

Sector 1	36	Sector 11	36	Sector 20	36	Sector 29	36	Sector 39	36	Sector 49	36
Sector 2	25	Sector 12	25	Sector 20	25	Sector 30	25	Sector 40	25	Sector 50	25
Sector 3	5	Sector 13	5	Sector 21	5	Sector 31	5	Sector 41	5	Sector 51	5
Sector 4	15	Sector 14	15	Sector 22	15	Sector 32	15	Sector 42	15	Sector 52	15
Sector 5	15	Sector 15	15	Sector 23	15	Sector 33	15	Sector 43	15	Sector 53	15
Sector 6	36	Sector 16	36	Sector 24	36	Sector 34	36	Sector 44	36	Sector 54	36
Sector 7	25	Sector 17	25	Sector 25	25	Sector 35	25	Sector 45	25	Sector 55	25
Sector 8	5	Sector 18	5	Sector 26	5	Sector 36	5	Sector 46	5	Sector 56	5
Sector 9	15	Sector 1	15	Sector 27	15	Sector 37	15	Sector 47	15	Sector 57	15
Sector 10	15	Sector 19	15	Sector 28	15	Sector 38	15	Sector 48	15	Sector 58	15

Weather

Sector distribution according to the weather conditions.

Sector 1	low wind - accessible	Sector 11	low wind - accessible	Sector 20	low wind - accessible	Sector 29	low wind - accessible	Sector 39	low wind - accessible	Sector 49	low wind - accessible
Sector 2	low wind - accessible	Sector 12	low wind - accessible	Sector 20	low wind - accessible	Sector 30	low wind - accessible	Sector 40	low wind - accessible	Sector 50	low wind - accessible
Sector 3	low wind - accessible	Sector 13	low wind - accessible	Sector 21	low wind - accessible	Sector 31	low wind - accessible	Sector 41	low wind - accessible	Sector 51	low wind - accessible
Sector 4	low wind - accessible	Sector 14	low wind - accessible	Sector 22	low wind - accessible	Sector 32	low wind - accessible	Sector 42	low wind - accessible	Sector 52	low wind - accessible
Sector 5	low wind - accessible	Sector 15	low wind - accessible	Sector 23	low wind - accessible	Sector 33	low wind - accessible	Sector 43	low wind - accessible	Sector 53	low wind - accessible
Sector 6	low wind - accessible	Sector 16	low wind - accessible	Sector 24	low wind - accessible	Sector 34	low wind - accessible	Sector 44	low wind - accessible	Sector 54	low wind - accessible



_Hardware Installation

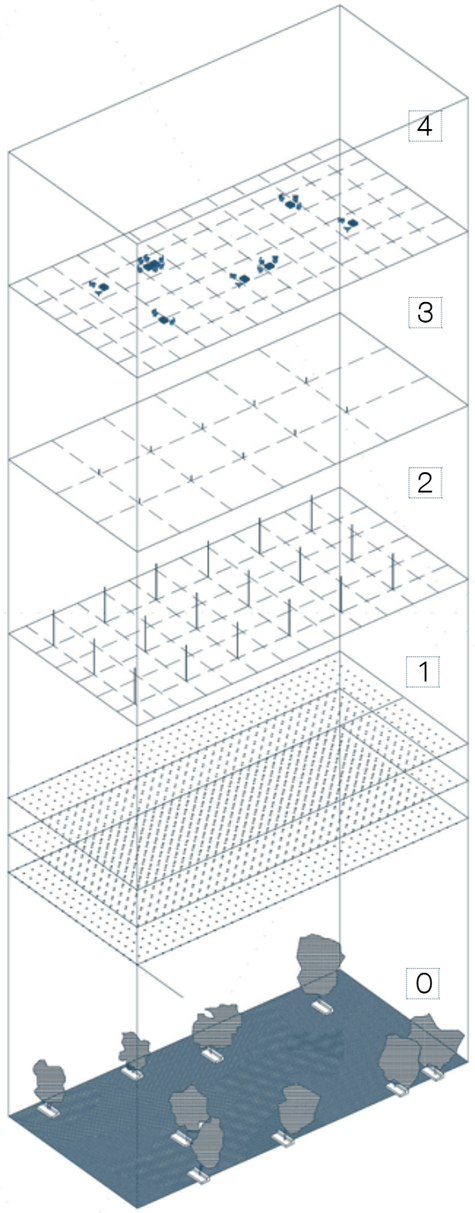
Since all the components have a separate function, they all need to be combined in for the Virtual Spaces of the "Fake City" to appear consistently. All the produced fields are layered on top of each other, through the installation of the "urban components" in the public spaces.

4

The sound canceling speakers are installed in the urban furniture so when the specific place is taken or the urban element is moved this would create a sound decreased space.

3

The heat exhausts from the data servers. These devices are engaged though the cold days in which the building attempts to augment its temperature environment. They blow the hot air in a certain direction or equally in all.



2

The air pressure machines are distributed in every 15 meters apart. This would mean that in order to be able to provide a combined roof structure it would require that each pressure tool has a radius of 7 . 5 meters.

1

Augmented Reality

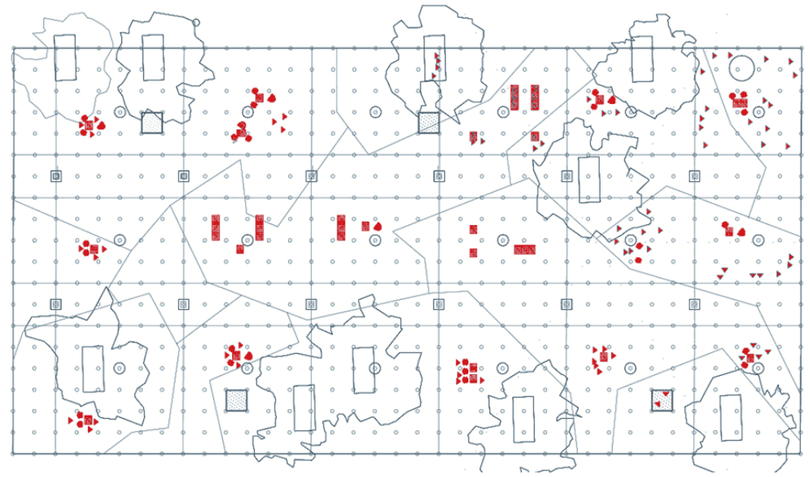
A 2,5 m by 2,5 m xyz system in which the building finds its coordinates and creates spaces.

0

Existing Conditions

All existing elements on the site. Every component is recorded and mapped so that the process structure can interact with it.

_project ephemera
_the fake city



1

Process Unit. The process unit has a double function. The first is it contains the urban server which is used as a founding point for the augmented layer. The second is it is a urban toilet for the users of the process strcture.

2

The air pressure machines are distributed in everey 15 meters apart. This would mean that in order to be able to provide a combined roof structure it would require that each pressure tool has a radius of 7 . 5 meters.

3

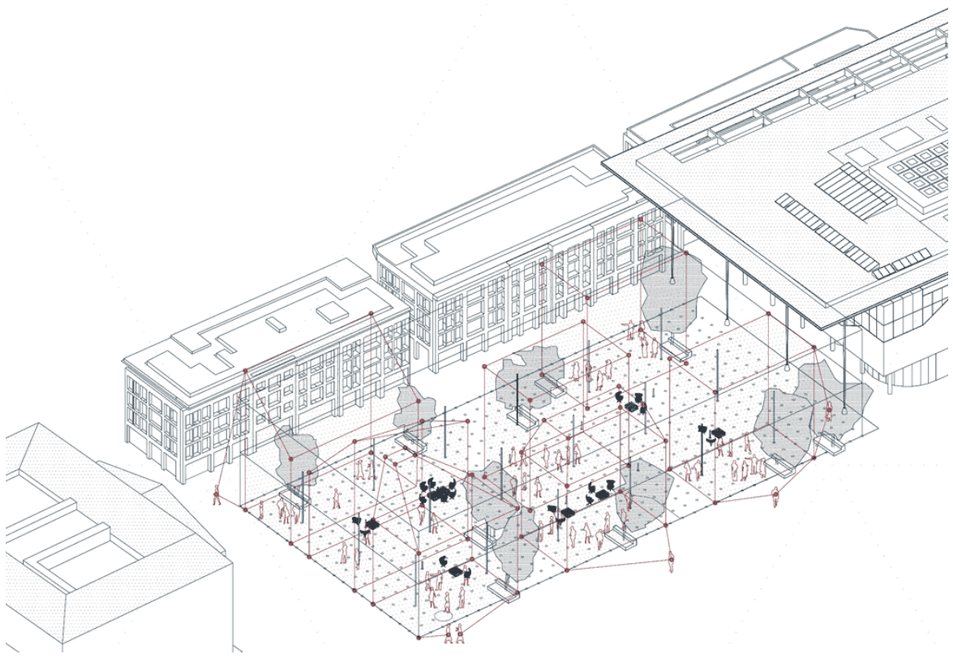
The heat exhausts from the data servers. These devices are engaged though the cold days in which the building attempts to augment its temperature environment. They blow the hot air in a certain direction or equally in all.

4

The sound cancelling speakers are installed in the urban funiture so when the specific place is taken or the urban element is moved this would create a sound decreased space.

5

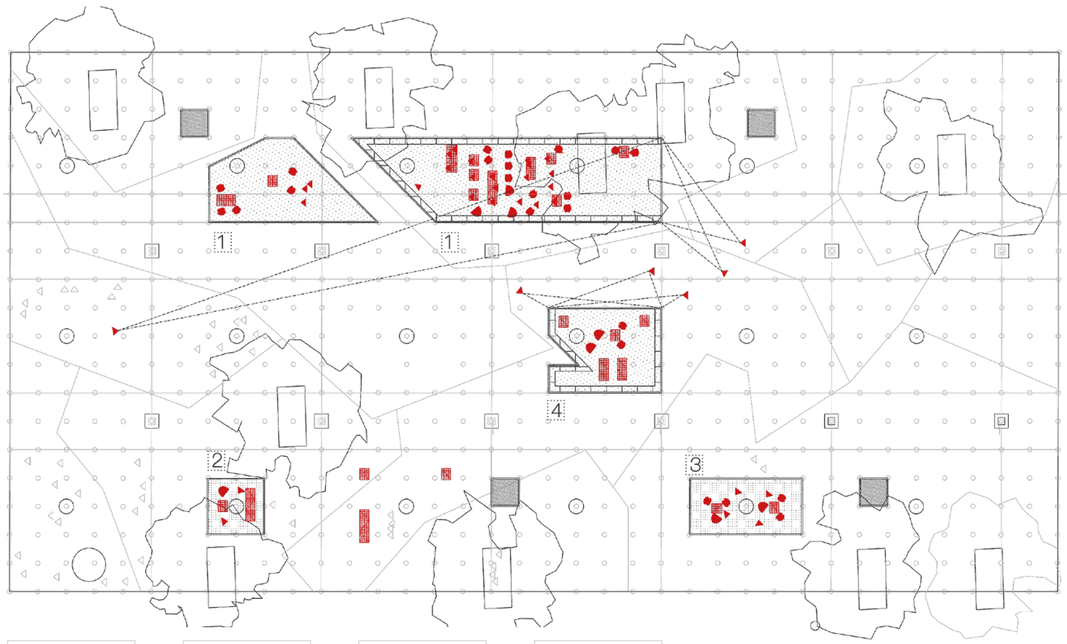
The users of the structure which are just like every other variable traced. The building forms around their presence and connects with their interests.



Site 5
Wilhelmina Square

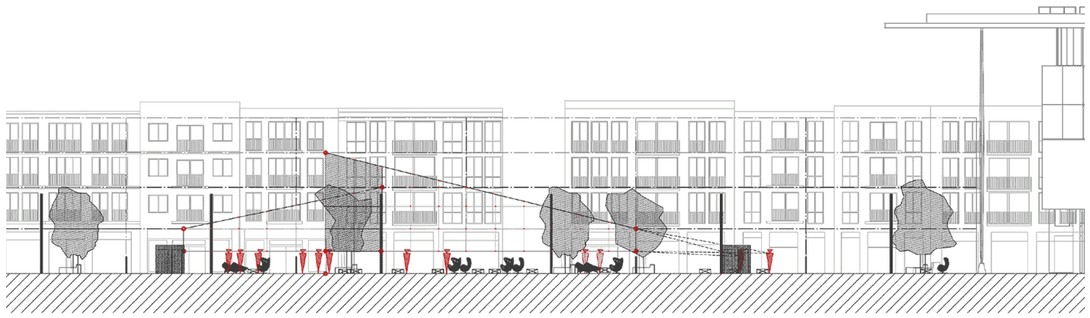


Planned Events	S.84 X:636161561611111 Y:636161561611111 Z:636161561611111		S.85 X:636161561611111 Y:636161561611111 Z:636161561611111				
Spontaneous Events	S.84 X:636161561611111 Y:636161561611111 Z:636161561611111		S.85 X:636161561611111 Y:636161561611111 Z:636161561611111				
Local Time	06:00	09:00	12:00	15:00	18:00	21:00	00:00
Weather Description	15 C	Rain					

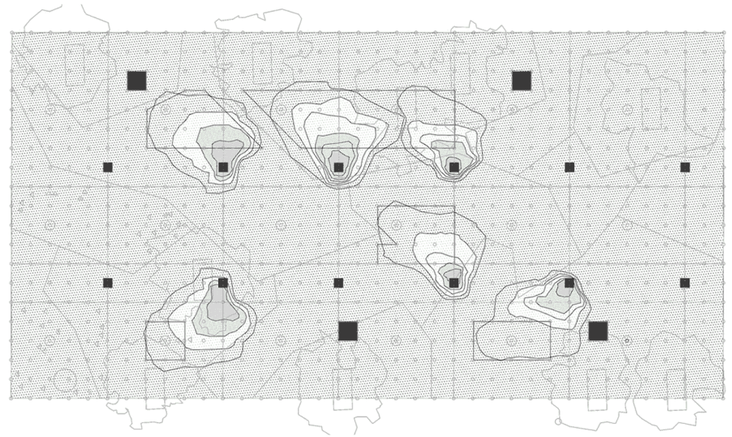


Planned Event	Simultaneous Event	Planned Event	Simultaneous Event
Public	Private	Private	Public
Lecture NHL	Free Office	Frisian Language	Frisian Library Database
45 people+	10 people+	4 people	3 people

Wilhelmina Square Process Structure Event 2 Plan



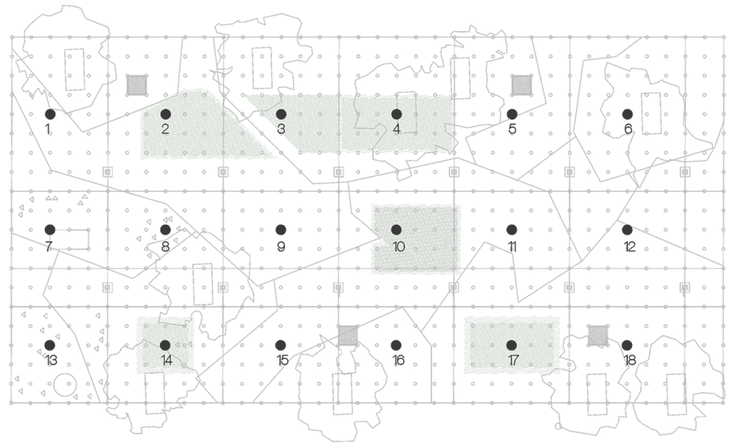
Wilhelmina Square Process Structure Event 2 Section



Wilhelmina Square Process Structure Event 1 Plan Heating System

Heating System

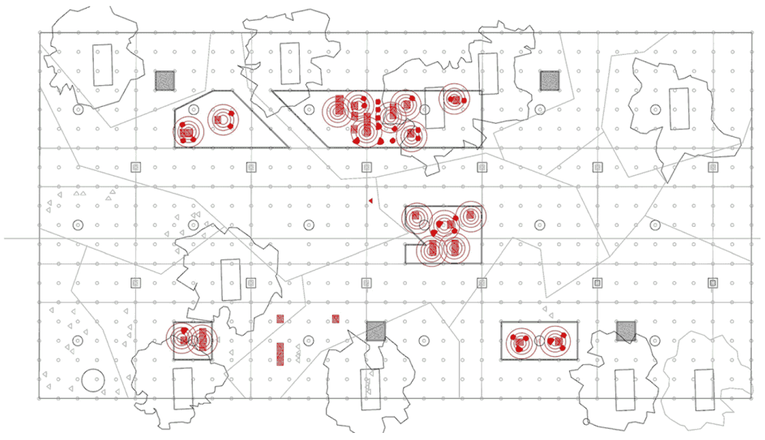
Server 1 / Event 1	
Server 2 / Event 1	
Server 3 / Event 2	
Server 4 / Event 3,4	



Wilhelmina Square Process Structure Event 2 Plan Rain Protection System

Rain Protection

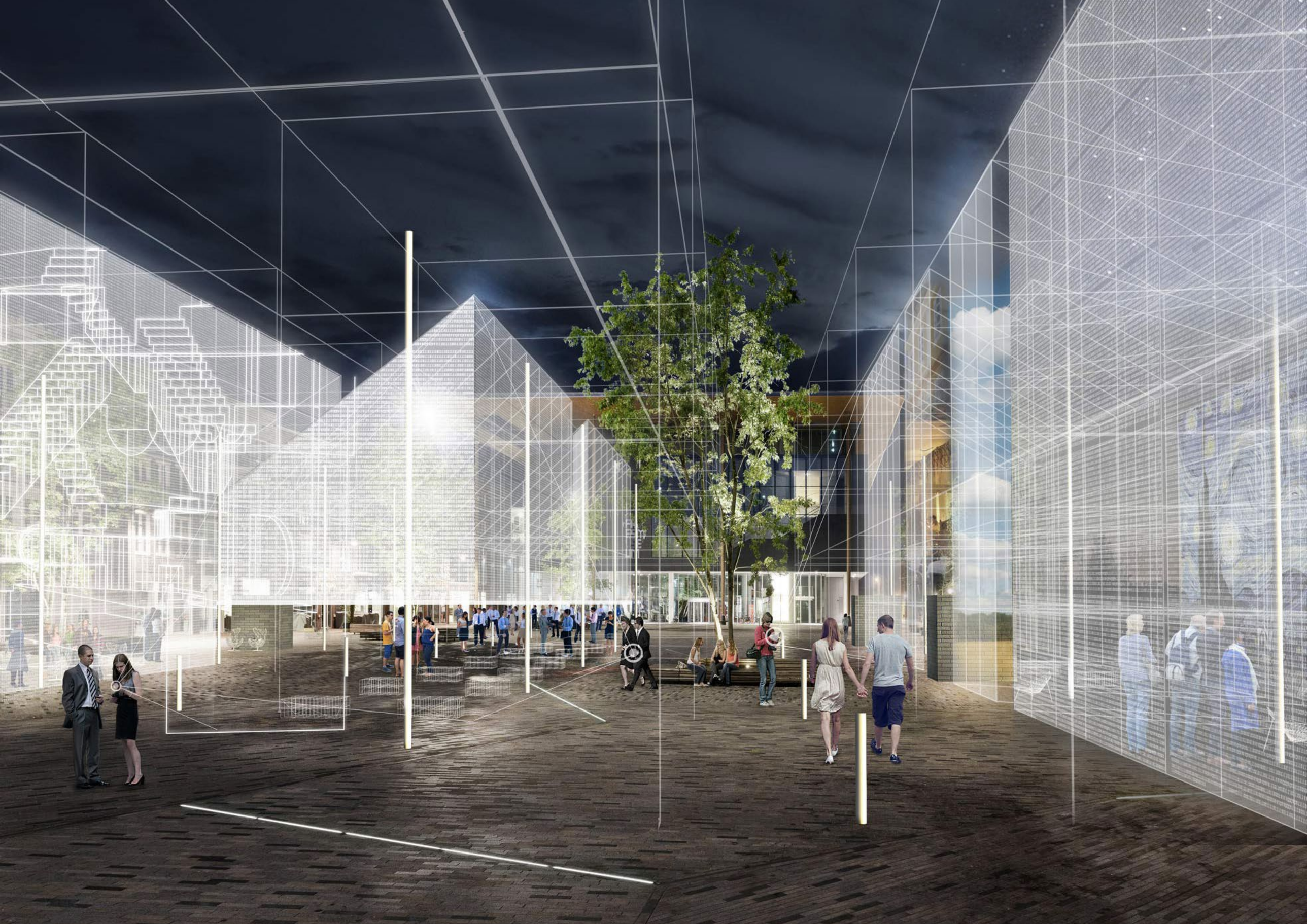
D2.34	Event 1
D 10	Event 4
D 14 17	Event 2, 3



Wilhelmina Square Process Structure Event 2 Noise Cancellation System

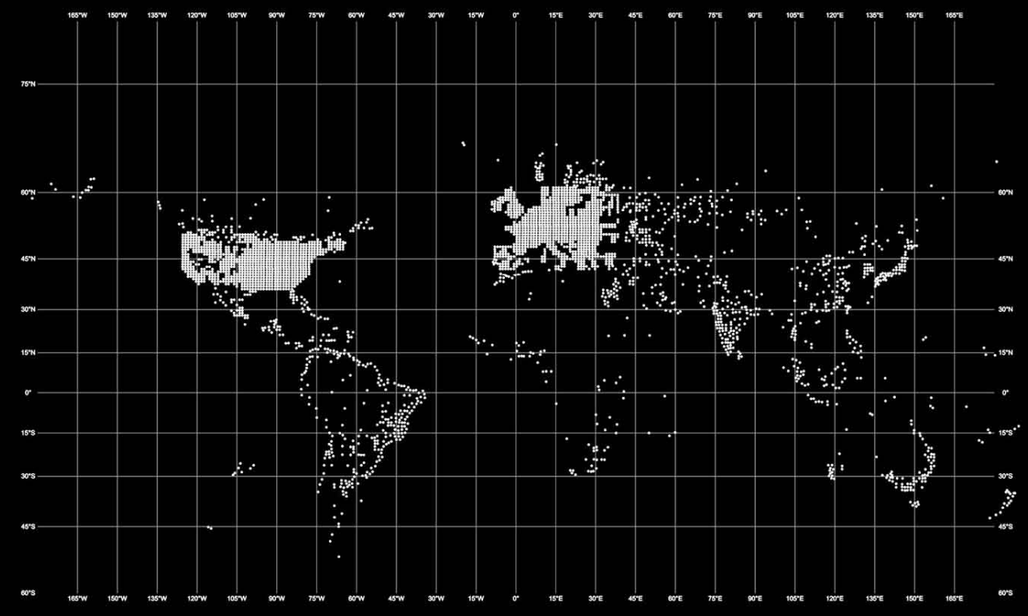
Noise Reduction

Event 1, 2, 3	High
Event 4	Moderate



_P03

_The Global Skyscraper



https://www.ephemeraar.com/the-global-scraper

_Coordinates: Global

_Continents: Global

_City: Global

_Site: Varies

_Awards

_Non-Architecture Competitions - "Seeing" - 2017 - Final Shortlist

_TEDxACSofia "Spaces for the Future"- Feature

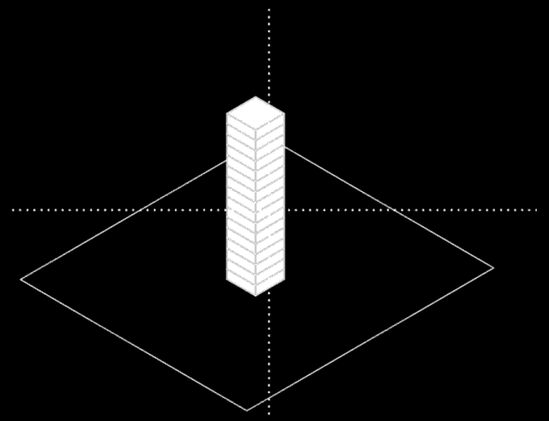
_P03

_Project 03
_The Globalscraper

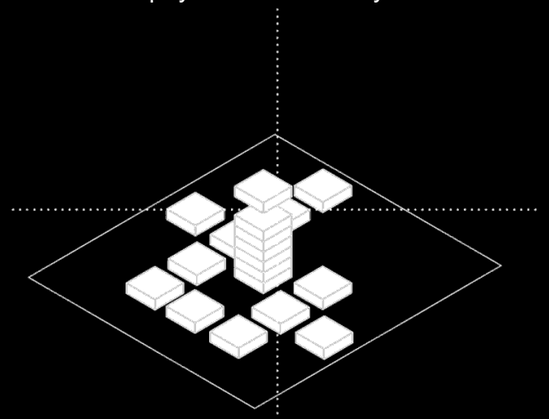
What if the world's biggest skyscraper is just one storey high?

The "Globalscraper" represents an architectural experiment, which lays on the border between utopia and reality and proposes a different typology of cultural space. This architectural prototype proposes the existence of a possible global structure, a new digital urbanism. It is a conceptual interpretation of the consequences of the Informational Revolution and its technological achievements. As such it questions the fundamental principles of architectural space and the way it is achieved by shifting the attention from tangible to non-tangible. It transforms the model of the vertical skyscraper by turning back attention to ground level and distributing each of the floors in different locations around the globe. Every floor becomes a hotspot for the Global Skyscraper travelling across latitude and longitude and using the world wide web as a structure. Instead of a tangible solid space, it is a dynamic, interactive, user-generated augmented space in constant process. Spaces for display and usage are constantly transforming, connecting and interacting with the users, thus creating a space just as responsive as a computer program or smartphone application. It reacts according to the changes in the environmental conditions and the momentary needs of people, a democratic, heterogeneous architecture which is active only when necessary.

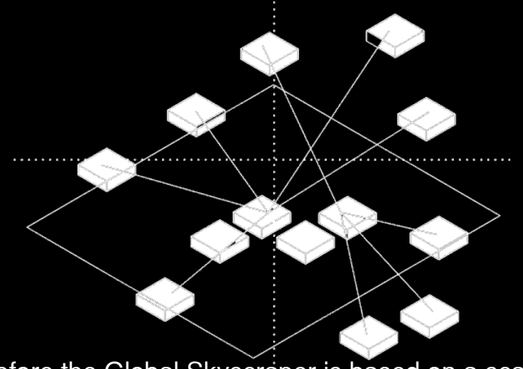
In his book "Le tour du monde en quatre-vingts jours" Jules Verne, envisions the possibility of going around the world in just 80 days. What if today we can limit this period to seconds?



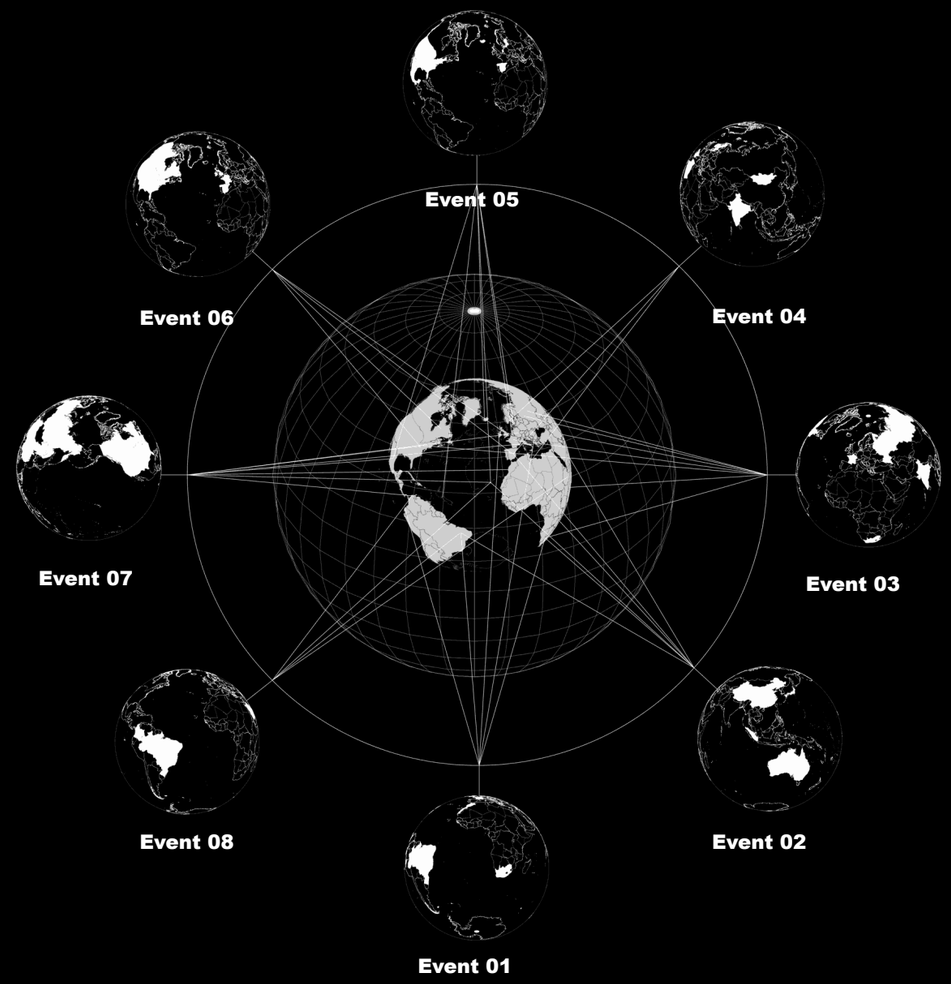
The classic model of the skyscraper as a vertical structure. It is based on solid physical connectivity from bottom to top.



Instead the Global Skyscraper proposes a return to the groundfloor. If the Industrial City requires an answer to density, the Digital City demands an anwer to the openness of internet.

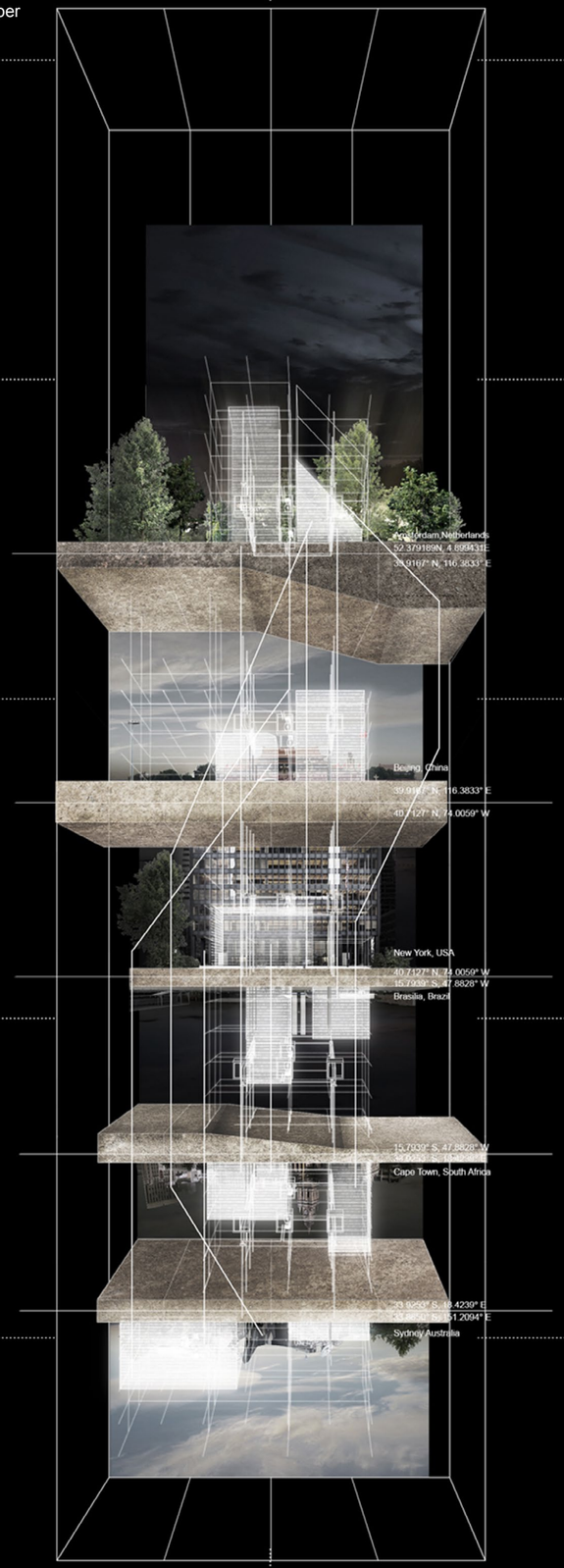


Therefore the Global Skyscraper is based on a scattered system of mutually interacting ground floors. It is a digital structure moving as a dynamic data field on top of them. A system of distributed connected sites.



Event 01	Event 02	Event 03	Event 04	Event 05	Event 06	Event 07	Event 08
Source:	**Source:**	**Source:**	**Source:**	**Source:**	**Source:**	**Source:**	**Source:**
Expo 01	Tennis	Escher	Festival	Van Gogh	Lecture MArch	Football	Marine
Brazil	Australia	Leeuwarden	India	Amsterdam	USA	Russia	Science Lab
Connected:	**Connected:**	ECoC 2018	**Connected:**	**Connected:**	**Connected:**	**Connected:**	Brazil
London	Beijing	Netherlands	Beijing	London	London	Amsterdam	**Connected:**
Capetown	Singapore	**Connected:**	New York	Los Angeles	Paris	Capetown	Amsterdam
Rome	Istanbul	London	Seoul	Buenos Aires		Istanbul	Sydney
Singapore	Tokyo	Capetown	Cairo	Singapore	Rome	Cairo	Beijing
		Rome			Madrid		Singapore

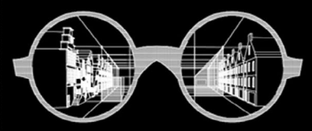
The idea of the Global Skyscraper is based on Peer-to-Peer connectivity. It aims at the development of a global interacting network of urban hotspot. Once installed on a particular site, the location becomes a component in the network and a gate for all the events of the "Global Skyscraper".



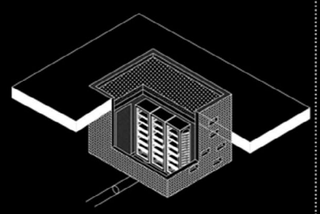
_Layer 01 : Visual

1. Augmented Reality

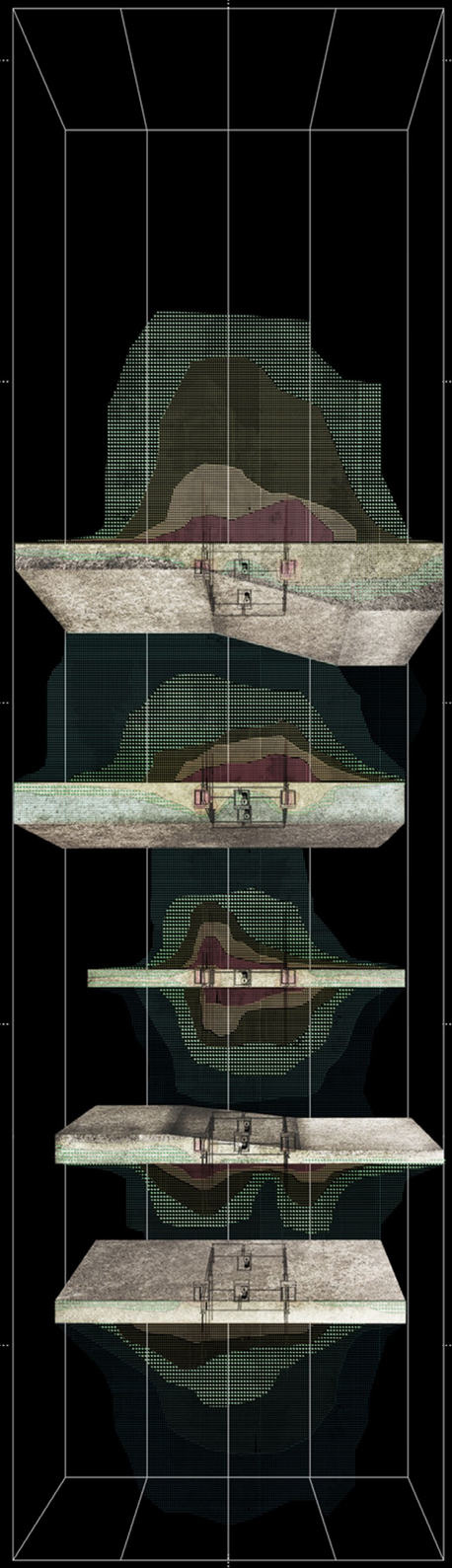
The visual and functional layer is a field of augmented reality used in real time and urban scale. Each digital structure "floor" is formed by an event held on some of the sites around the world. The augmented spaces grow bigger as more people enter and vice versa Carried by nothing but the columns of live feed chat between the different events, the Global Skyscraper becomes an architecture driven entirely by communication and interest. Storeys of the Global Skyscraper are arranged according to your areas of interest.



These spaces of the Global Skyscraper are (a)live, they glitch, they freeze, they adapt and are always in process. They are based on a digital grid which exists within the pedestrian borders of the public spaces. The digital structure can only be seen through glasses or devices which work with augmented reality. The spaces and floor plans are controlled and adapted with the usage of personal devices. The augmented data is stored in local urban units known as urban servers .



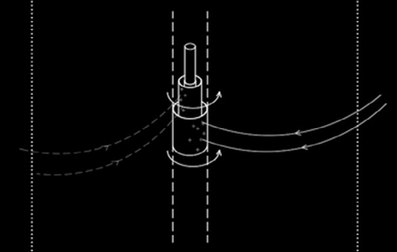
They are all installed underground, making the presence of this invisible building completely unpredictable and surprising. They enhance the existing context without the need to transform its physical presence.



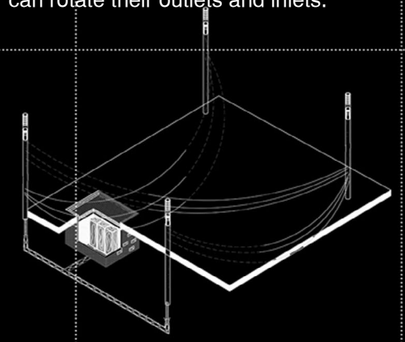
_Layer 02 : Climate

2. Microclimatic Layer

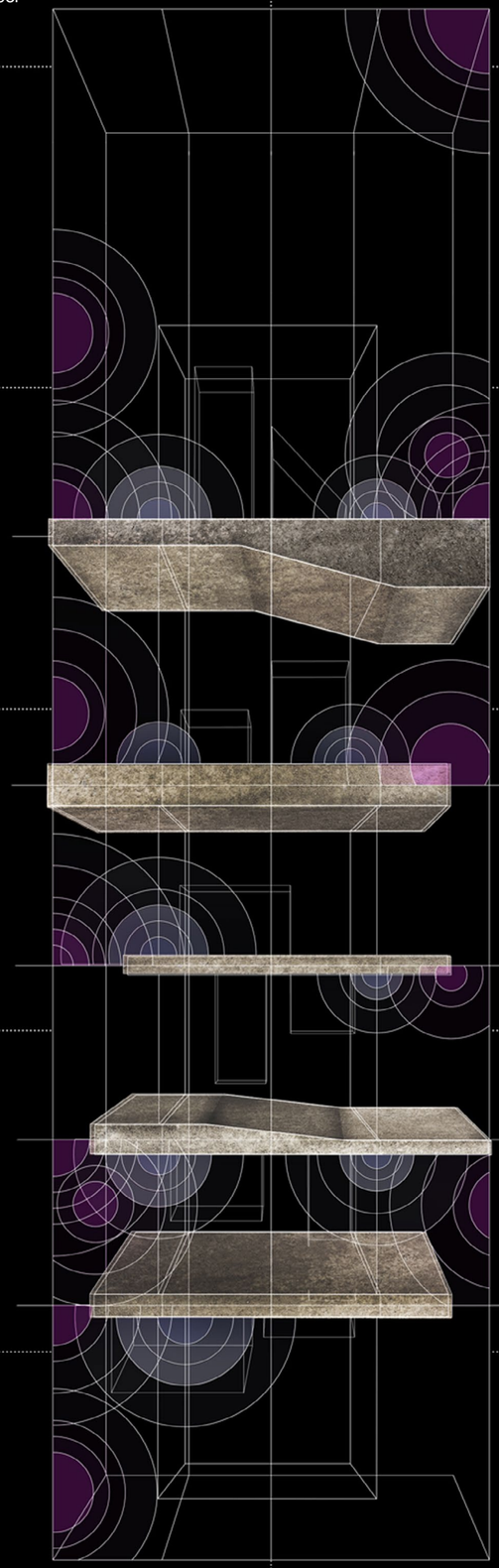
In order to create comfortable conditions for the usage of the digital spaces of the visual layer a microclimate must be established on the site. The layer is formed from a system of smart pillars which resemble street lamps. They are all organised in a grid system based digital grid of the augmented reality. In this way the two systems can be easily adjusted and the climate current which is blown from the pillars can be oriented according to the occupied spaces.



The pillars comprise of three vertical tubes all with a different diameter. The widest has openings in the bottom and is used as outlet for hot air when heating is needed and inlet when cooling is needed. The second follows the reverse principle so that based on the rules of convection a flow of cool or warm air can be generated. As the digital structures transform, adapt and move around the site, in order for the currents to follow the occupied spaces, cylinders of the pillers can rotate their outlets and inlets.



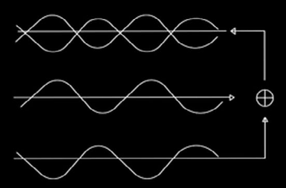
The hot air will not be produced separately but will actually use the hot air produced by the servers, which generate high level of heat. The heat will then be redirected to the site and blown in the direction of the particular event.



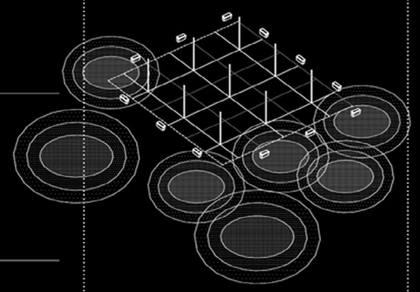
_Layer 03 : Privacy

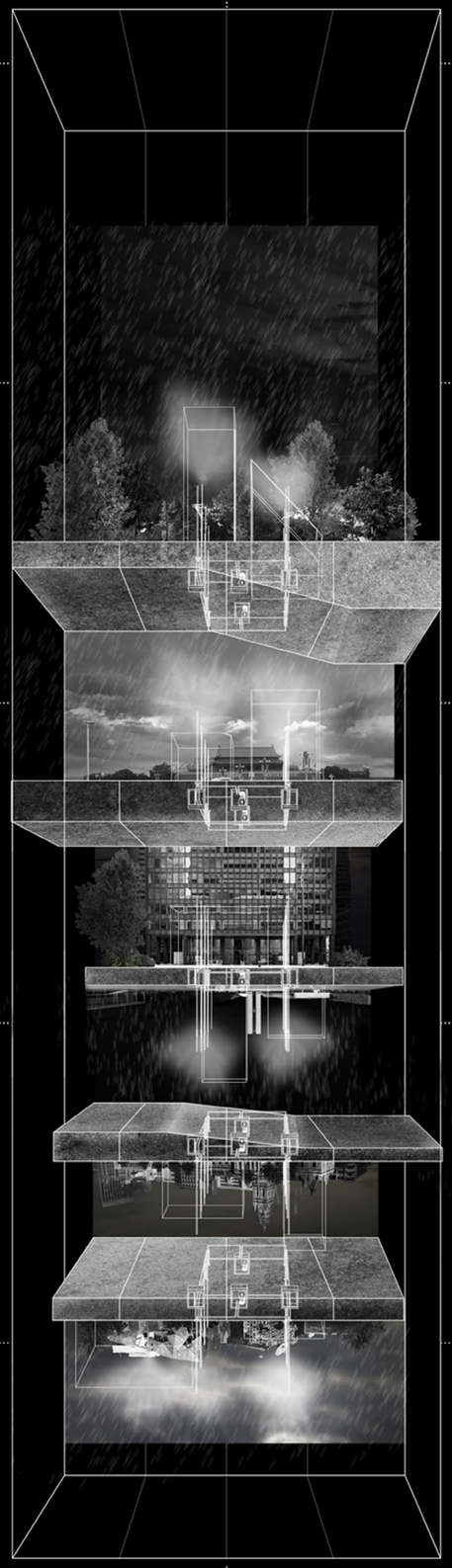
3. Anti Sound Layer

In order to give a state of privacy within the public space occupied by the Global Skyscraper a noise canceling field is constantly generated. It uses the principle of active noise control in order to eliminate some of the constant noises which pollute the site. The desire to generate a completely quite space is impossible but a steady and constant decrease of the regular site noise would lead the creation of anti-sound invisible walls which would give a sense of privacy within the borders of the digital spaces.



What we do in order to achieve this is by prerecording some of the constant sound waves of the site. In the periphery of each site of the Global Scraper there is a microphone and a speaker at a small offset from one another. In this way when there is noise arriving from a particular direction the speaker reacts and releases counterwave. Thus we decrease the noise once a person uses the temporary spaces.

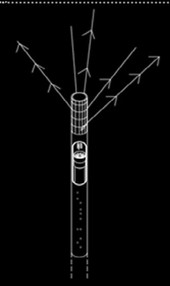




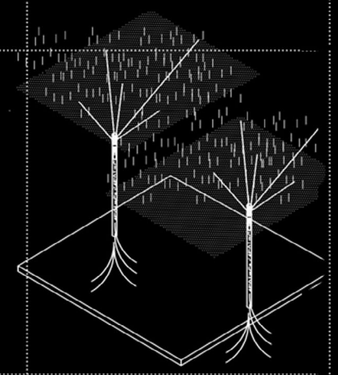
_Layer 04 : Shelter

4. Air Pressure Layer

In order to provide rain protection for the Global Scraper without affecting the urban fabric, and creating physical roof, air pressure system is installed. The air pressure layer allows to block the rain, in case of such, through suction in air in the provided smart pillars. The third and smallest in diameter cyclindrical pipe in the pillar is used for this purpose. It is the only to have an opening on the top. Air is taken from the foundation of the pillars and turbulated through the top resulting in an invisible layer of air pushing away the falling rain.



The system responds the change of the augmented layer. As the rain can fall in different directions and needs to be pushed within a safe zone, the cap of the pillars is designed to give controll over the direction in which the air pressured cloud is blown. Thus the shape of the air dome can be controlled and thus can reveal the used spaces when there is rain



04

_Conclusion?!
_Beginning!

"Project Ephemera" demonstrates that archtiecture can expand and can find new opportuinities for development beyond design. The proposed ideas demonstrate the capability of architectural space which responds to the changes in the urban environment of the contemporary global digitalized society. Considering the fact that the final outcome of the building is a result of a system of variables (the design presets developed by the architect, the context given by the site, the natural and urban conditions fed back from sensor technologies, the event activated by the user) we can begin to investigate the capabilities of a new heterogeneous dynamic architecture which operates on a world scale - a Global Building

