

PORTFOLIO

ROAM IN THE PROJECTS' WORLD



FOLLOW THE 'PATHS'

Dipl. Architect (AUTH)

ViktoriaStrasse 29

8057, Zürich

Switzerland

e-mail: katerinabouziana@gmail.com

web page: [http://www.mas.caad.arch.ethz.ch/](http://www.mas.caad.arch.ethz.ch/MAS0809Students/Bouziana)

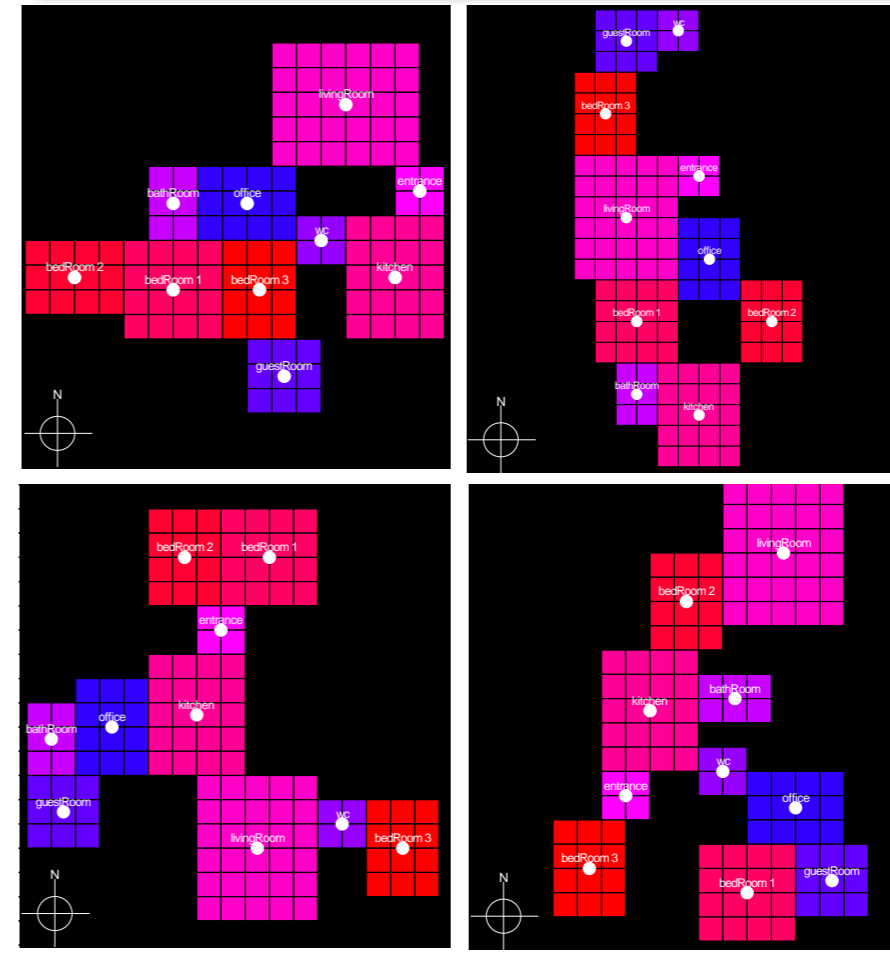
MAS0809Students/Bouziana

mob: +41 762675407 | +30 6977486642

tel: +41 433335091 | +30 2310934094



KATERINA BOUZIANA



4 different floor plans

1 Room: Number 1 = entrance
 2 Room: Number 3 = kitchen
 3 Room: Number 8 = wc
 4 Room: Number 10 = office
 5 Room: Number 5 = bedRoom 2
 6 Room: Number 6 = bedRoom 3
 7 Room: Number 4 = bedRoom 1
 8 Room: Number 2 = livingRoom
 9 Room: Number 7 = bathRoom
 10 Room: Number 9 = guestRoom

Perimeter: 111
 North Facade: 24
 South Facade: 29
 East Facade: 29
 West Facade: 29

Temperature: 11 C
 Evaluation of Temperature: 1000.0

	DistL	DistD	Noise	Light
entrance:	14,000	11,000	25	21
kitchen:	10,500	10,012	24	48
wc:	18,000	7,000	24	11
office:	21,000	4,000	0	42
bedRoom 2:	6,021	8,500	3	69
bedRoom 3:	17,007	12,500	21	99
bedRoom 1:	18,000	6,000	9	57
livingRoom:	4,031	4,500	0	57
bathRoom:	10,012	6,500	22	15
guestRoom:	17,507	2,550	0	69
total:			128	488

Evaluation of floor plans

An application in Java-based programming language Processing Beta 0135 that produces possible floor plans for houses, depending on the climate of the area that it is going to be built in. The result every time is evaluated from factors such as average temperature, noise, light and the house is optimized until it finds the best position for the rooms. The program is based on cellular automaton theory.

TO BE CONTINUED...

KATERINA BOUZIANA

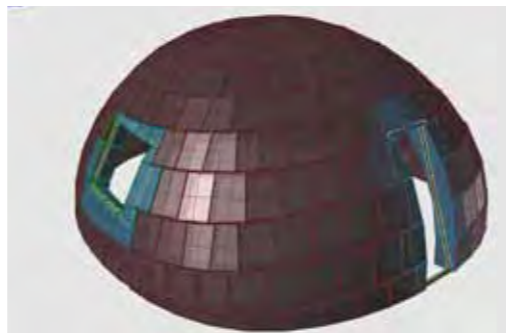
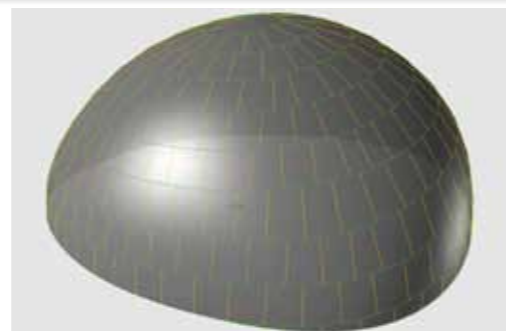
01

311 unique pieces generated by rhinoscript and cut by CNC fabrication machine, were assembled to give the final shape of the cardboard pavillion. The exterior skin was covered by commercial poster paper (donated by local firm). The door and the window were taken from a retired passenger railcar. The total time from project proposal to completion was 8 days. The project got the 16th place at the competition ARCH+ "WETTBEWERB SIMPLE SYSTEMS - COMPLEX CAPACITIES".



02

KATERINA BOUZIANA



Screenshots from Rhino



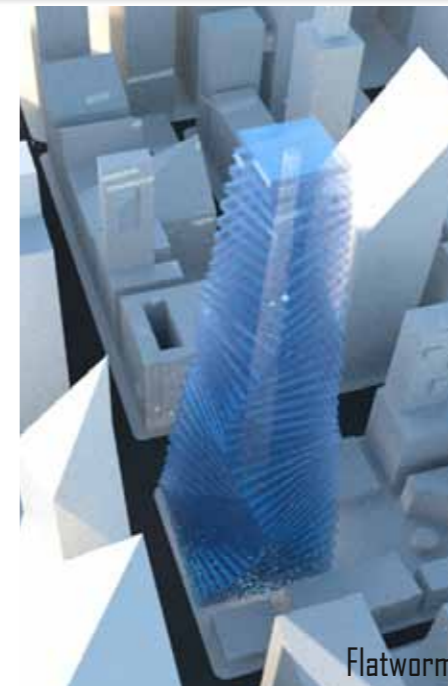
View of the pavillion



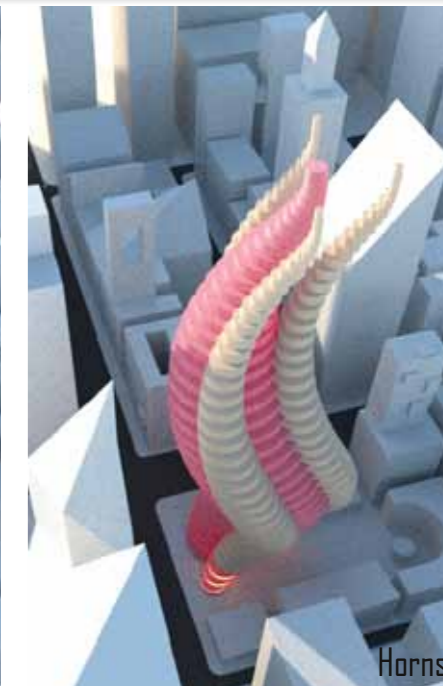
View of the interior



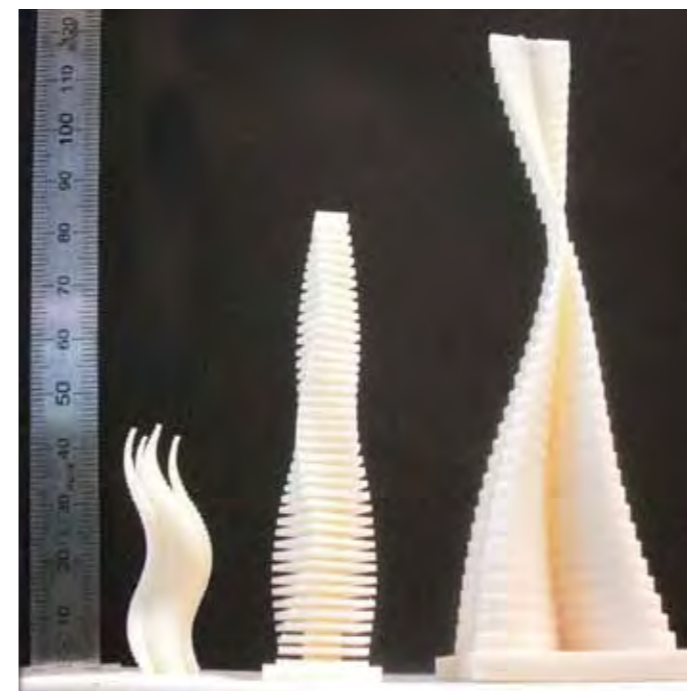
Butterfly



Flatworm



Horns

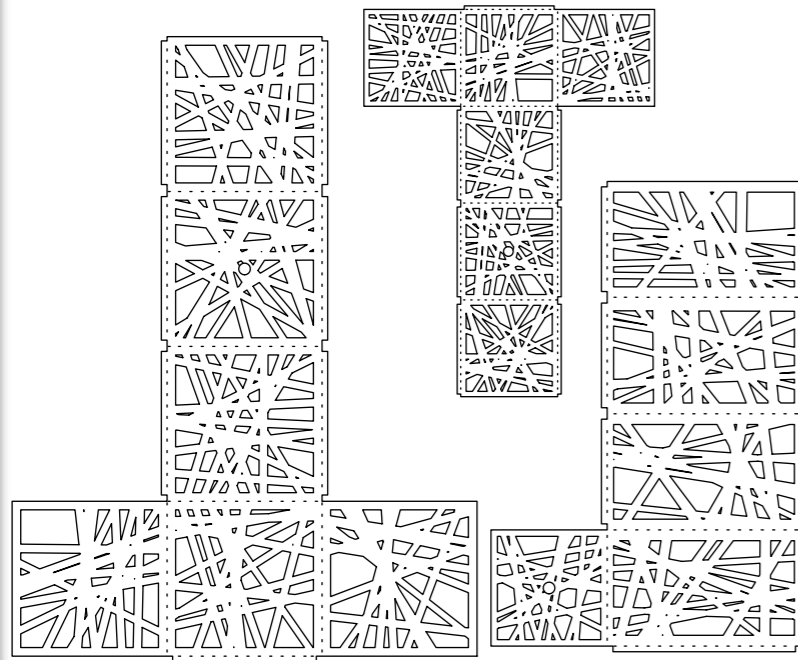


Models in 3D Printer

The skyscrapers were designed in Java-based programming language Processing Beta0135. Based on simple shapes and parametric equations the final experimental forms have a complexity and a dynamic character. Every time a parameter in the script is changed the user can have a different outcome. The outcomes were exported from processing and printed in 3D-printer.

KATERINA BOUZIANA

03

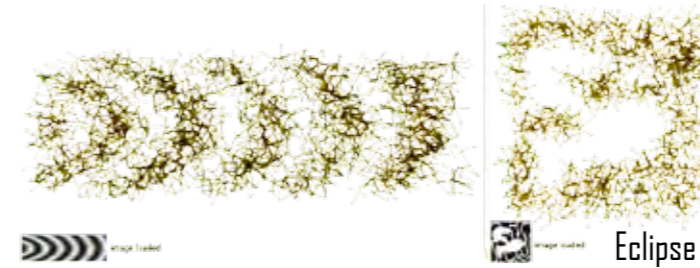


Span of Lampshades

The lampshades are based on parametric design. They are programmed in rhinoscript and produced by CNC (Computer Numerically Controlled) fabrication machine. Random stripes generate the shape of the lamps, creating areas with more or less light.



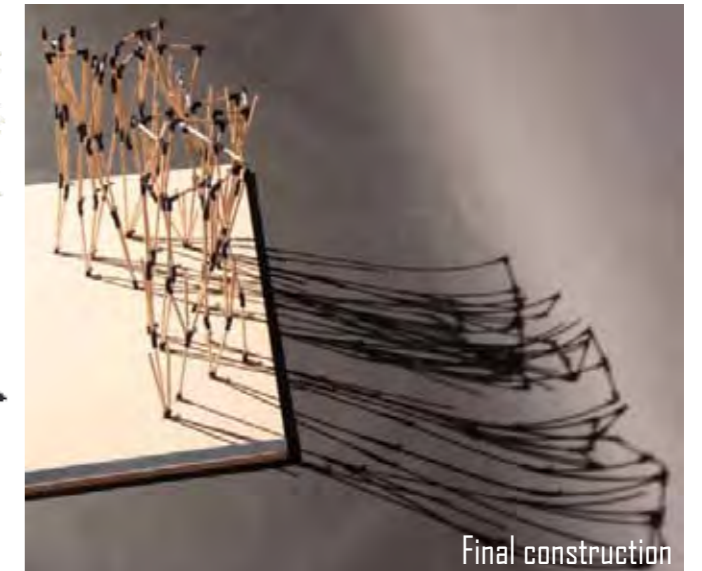
Lampshades in a bar in Zurich



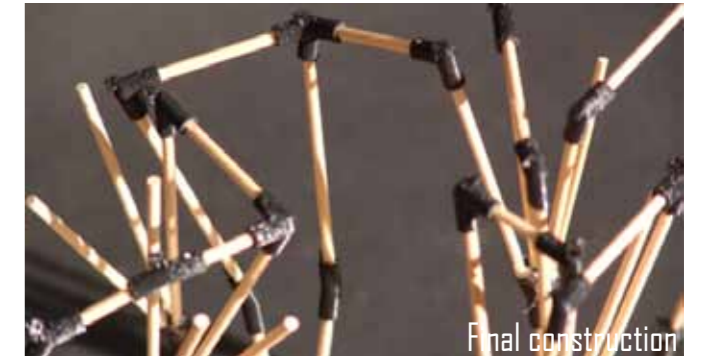
Forest from Rhinoscript



Connections for printing



Final construction



Final construction

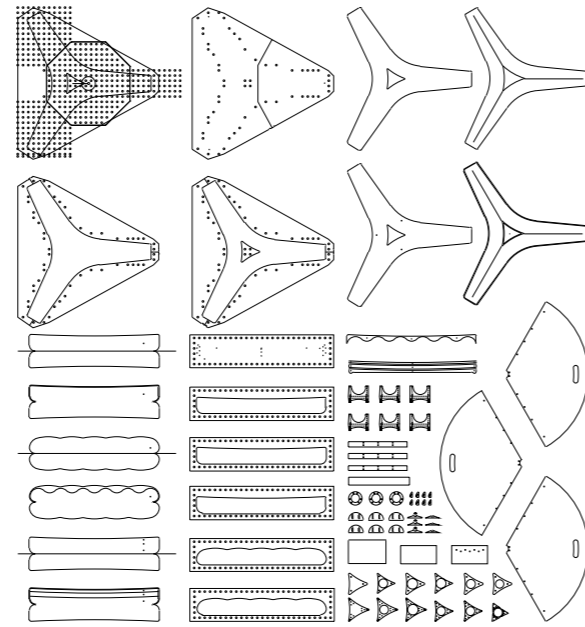
The forest was created in Eclipse-Java and Rhinoscript. An image was loaded and depending on the brightness of the pixels, "trees" were created. The result was exported from Eclipse to Rhino and the connections that were created there, were printed in 3d printer for the construction of the forest.

In the search for possibilities concerning renewable energies, a wind turbine was demonstrated which was produced using FiDU technology (new technology for blowing-up metals). Three separate wing designs were subsequently advanced and developed: a single-chamber, triple-chamber and a waveform wing. The three wind turbines were exhibited in DMY Berlin 2009.

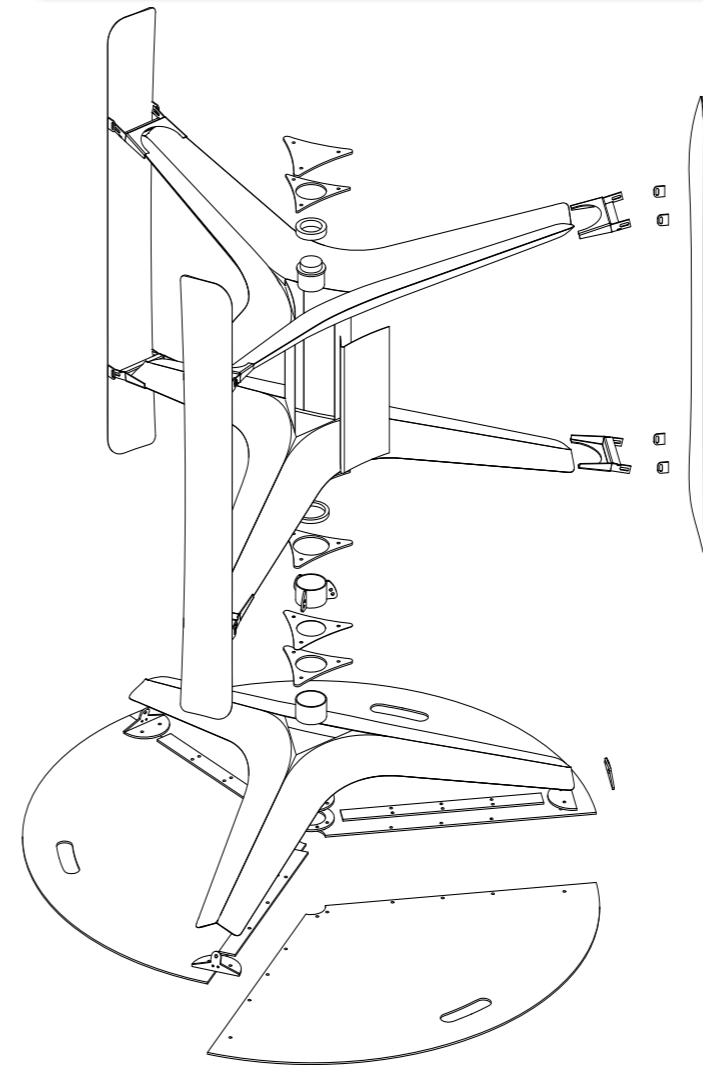


06

KATERINA BOUZIANA



All the parts for the wind turbine



Axonometry of the wind turbine

Published in:

- 1) <http://www.igreenpot.com/fidu-rotor-by-mas-students-0809/>
- 2) <http://www.designboom.com/weblog/cat/16/view/6694/oskar-zieta-and-caad-fidu-rotor-at-dmy-berlin-design-week-09.html>
- 3) <http://www.dailytonic.com/fidu-rotor-by-oskar-zieta-eth-zurich-at-dmy/>
- 4) <http://indegablogspot.com/2009/06/fidu-rotor-renewable-household-wind.html>



Coeus in DMY Berlin 2009



Coeus in DMY Berlin 2009

KATERINA BOUZIANA

07



Building under construction

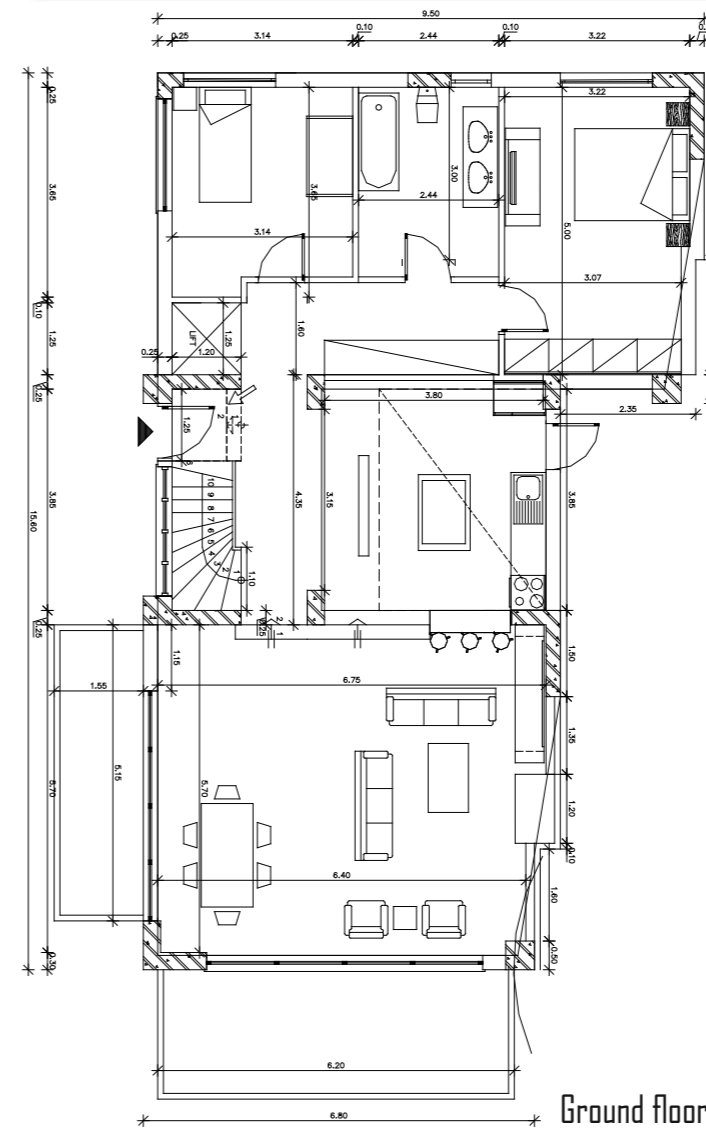
The form of the house was defined by the features of the configuration of the facades of the existing building, although in more austere and modern pattern. Bearer skeleton is made of concrete, the veneers are made of plaster, the window frames of aluminum and there is partial stone tile. In terms of volume-handling and design the building could be characterized as monolithic. One would describe it as perforated externally, as it is infiltrated by the surroundings, while at the same time it infiltrates the surroundings itself with pergolas and lodges.



Ground floor



1st floor



Ground floor



3D Model

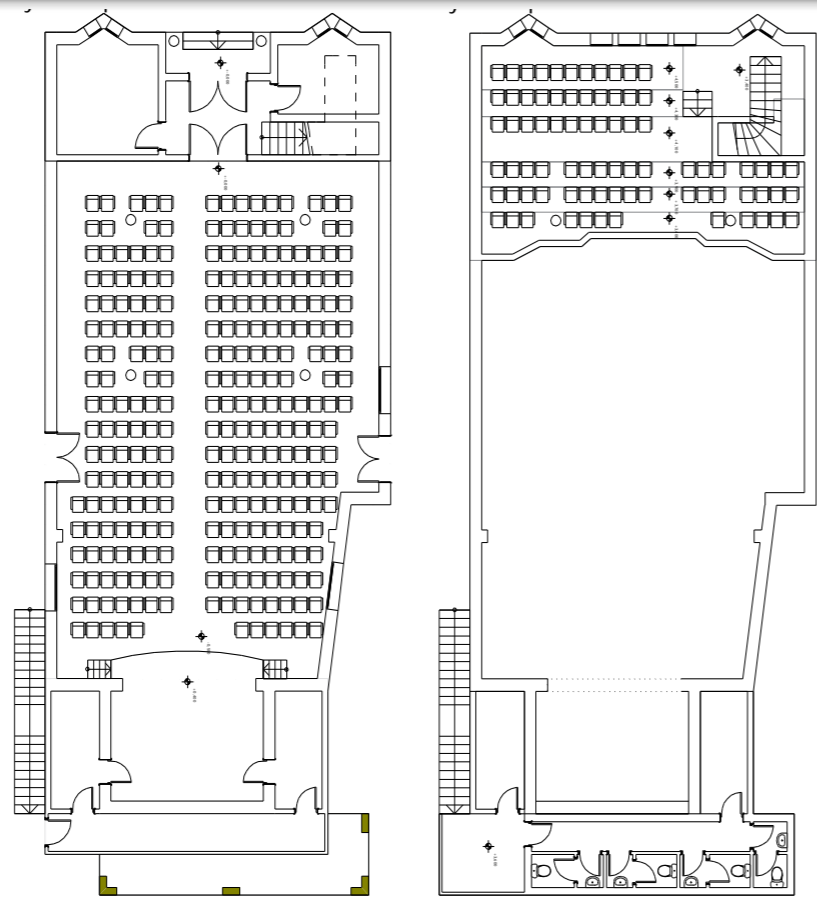
In the design we always take into consideration the volume we create, studying simultaneously the structure of the area, as well as future development and thereby a house showing a desire of communication with the surroundings and light. It is located in a privileged spot, with view of the city of Thessaloniki and Thermaikos bay. Intense inclination and shape of the building site dictate, in a way the morphology of the 4-storey building.



Building under construction

WORK PROJECT TITLE: LOFT ADDITAMENT IN THE MULTIPURPOSE HALL "APOLITROSIS"-2007

Addition of a balcony and some secondary and auxiliary rooms to the already existing multi-purpose hall was requested. The fact that the hall is high-ceiling helped in the creation of multiple levels, aiming at achieving visual contact with the scene from any point in the hall. Auxiliary rooms are created in the ground floor and before the hall entrance, whereas the restrooms are placed behind the hall scene, their accessed only from outside the building. A separate entrance is created for the backstage. The project was published at the monthly magazine of the organisation "apolitrosis", December 2007.



Ground floor

1st floor

10

KATERINA BOUZIANA

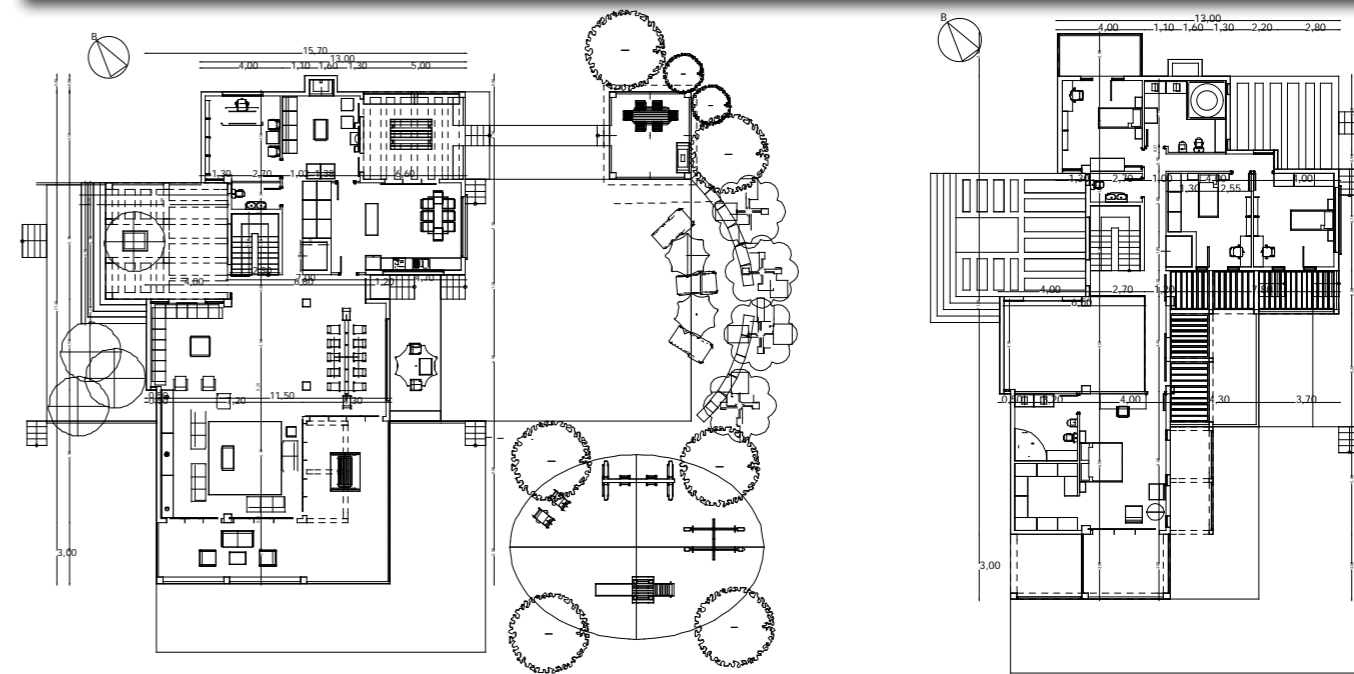


3D section



Building under construction

WORK PROJECT TITLE: SINGLE FAMILY 3-STOUREY HOUSE IN THESSALONIKI-2006



Ground floor

1st floor



Sketch

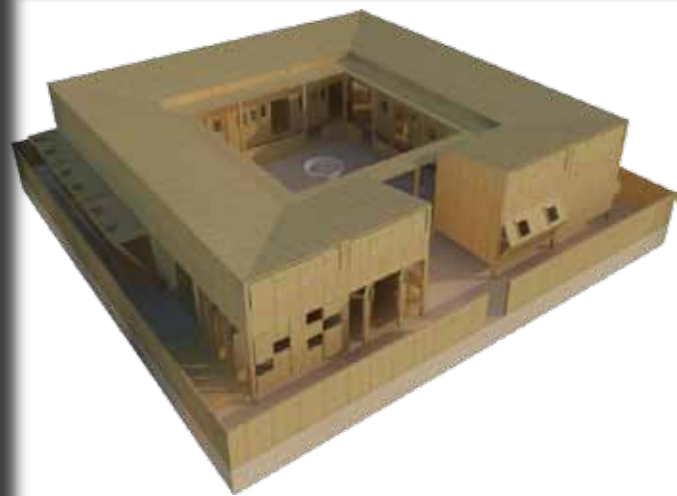


Sketch

Handling of volume is simple and the scaled pattern of the building's volume follows the building sites topology. A 3-storey space is created linearly along the party wall, offering visual contact between the two floors. Use up of the lawful square meters, because the opportunity of building an extra house in the future for one of the children of the family should not be overlooked. "Void" and "full", compact and lucent (glass planes) parts, light and shadow, alternate in the facade. Monotonous volumes "break" by placing pergolas and lodges in all faces of the building, thereby stimulating an esthetic game and attracting interest.

KATERINA BOUZIANA

11

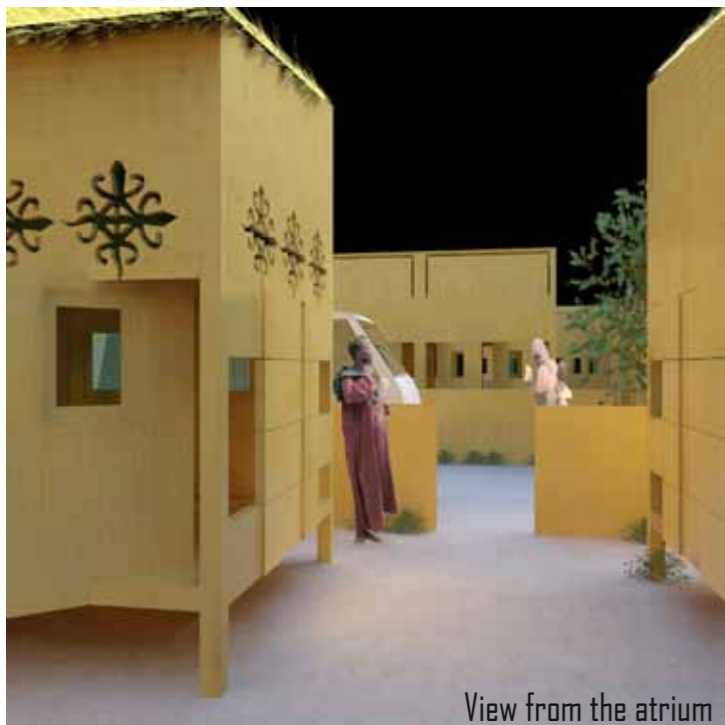


3D model of the house

Subject of the thesis is the creation of a model settlement and a house in Ghana, Africa. This house has the potential to change over the progress of time, according to the needs of the extended family that lives there (average family size app. 25 people). Because of the relatively poor financial status of the inhabitants, use of local materials (wood, straw) is recommended. The forms are based on the traditional architecture of the Ashanti tribe. Every house comprises of 15 units. Every unit consists of a skeleton and filling layers that vary and move in several ways (depending on their use). Simple and economic systems for water collection and storage, shadowing, ventilation and energy self-containment have been provided. In summary, it is a residence characterized of flexibility and changeability.

12

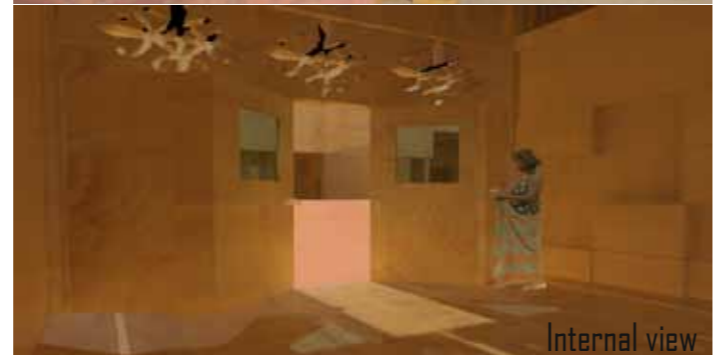
KATERINA BOUZIANA



View from the atrium



View from the atrium



Internal view



Settlement

As far as the settlement is concerned, the purpose is to design a theoretical model which can "fit" almost everywhere. It is based on a grid (Hippodamus system- this is the contemporary way of designing in Ghana), which evenness "breaks" from the random placement of the blocks and the elements of the area. Traditional settlements are defined from the chaotic placement of the residences. The green "paths" that start from the river bank across the blocks generating parks and public spaces. The urban furniture were inspired from the symbols of the Ashanti's tride.

KATERINA BOUZIANA

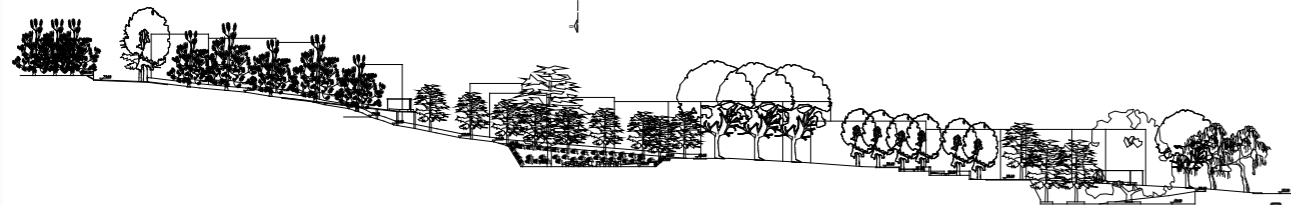
13



Urban furniture



Plan

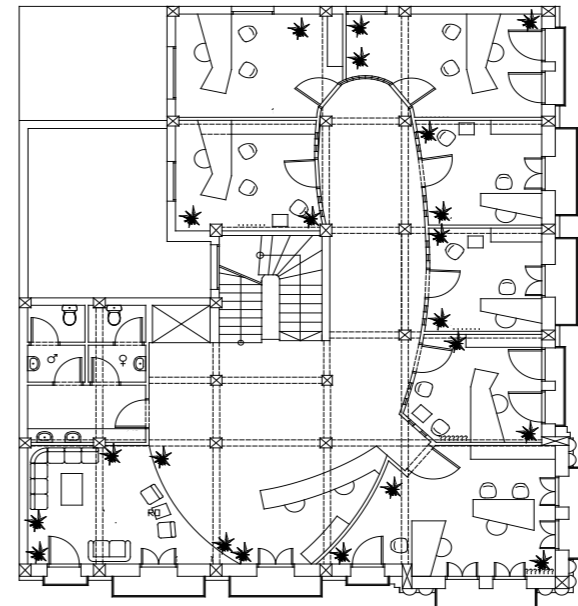


Section

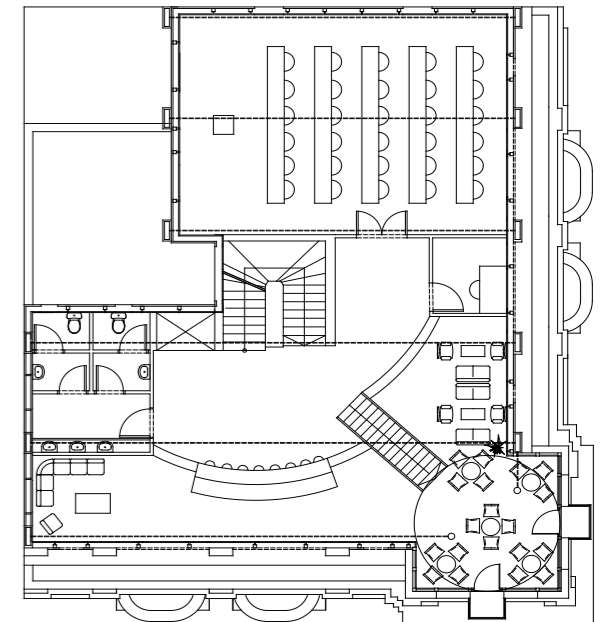


Maquette

Two main routes that develop in the shape of an eye, are sequentially transformed from walkways into rest points, secondary routes etc. These main routes penetrate the surrounding urban landscape forming a uniform entity of riverbed and surrounding urban terrain, while at the same time they separate the riverbed into 4 zones.



1st floor (proposal)



4th floor (proposal)



Sketch

The building's location is interesting and noticeable, in the center area of the city, a commercial point. The new uses should be fitted into this peculiarity of the area and accentuate the historical value of the building. The adjunct building could be described as introvert, as all its "flights" are directed inwards, because of the compact facades of its external shell. The showcase emerges dynamically and seems to face outwards to all points of horizon because of the transparency- semi transparency that dominates. Perforated copper panels are the main material used for showcase construction. Those copper panels are removed from the corner portion, revealing the metallic skeleton, in an effort to point out the building's location and its individuality.

Katerina Bouziana

Date of birth: 06-11-1984

Nationality: Greek

Sex: Female

Current address: Viktoriastrasse 29, 8057 Zurich, Switzerland

Telephone: +41 (0) 433335091

Mobile: +41 (0) 762675407

E-mail: katerinabouziana@gmail.gr

Web page: <http://wiki.caad.arch.ethz.ch/MAS0809Students/Bouziana>

Education

2008-Today: Master of Advanced Studies in Computer Aided Architectural Design (CAAD), ETHZ, Switzerland

2002-2008: Diploma in Architecture in Aristotle University of Thessaloniki (AUTH), Greece, Grade 8.49 (out of 10)

Work Experience

09/2004-09/2008: External collaborator at projects' base in the "PROENTASIS" technical office, Thessaloniki.

06/2007-09/2008: External collaborator at projects' base in the technical office of the civil engineer K. Vlahodimitrakos, Thessaloniki.

01/2007-05/2007: External collaborator at projects' base in the technical office of the architect N. Tampouri, Thessaloniki.

Computer Knowledge

Archicad 12.0, Autocad 2008, 3D Studio Max 2009, Maxwell Studio, Rhinoceros 4.0, Corel Draw 14, Corel Photo-Paint 14, Adobe Photoshop

CS4, Adobe Premiere Pro CS4, Adobe Indesign CS4, Windows Movie Maker, Microsoft Office, idvd, Keynote (macintosh), RhinoScript,

Processing, Eclipse-Java.

Languages

Greek: Native Language

English: Certificate of Proficiency in English, University of Michigan, March 2004

First Certificate in English, University of Cambridge, June 1999

German: Courses during the spring semester 2009 in ETHZ Sprachenzentrum

French: 3 years courses at High School (1996-1999)

Spanish: 2 months intensive courses (May-June 2006)

KATERINA BOUZIANA