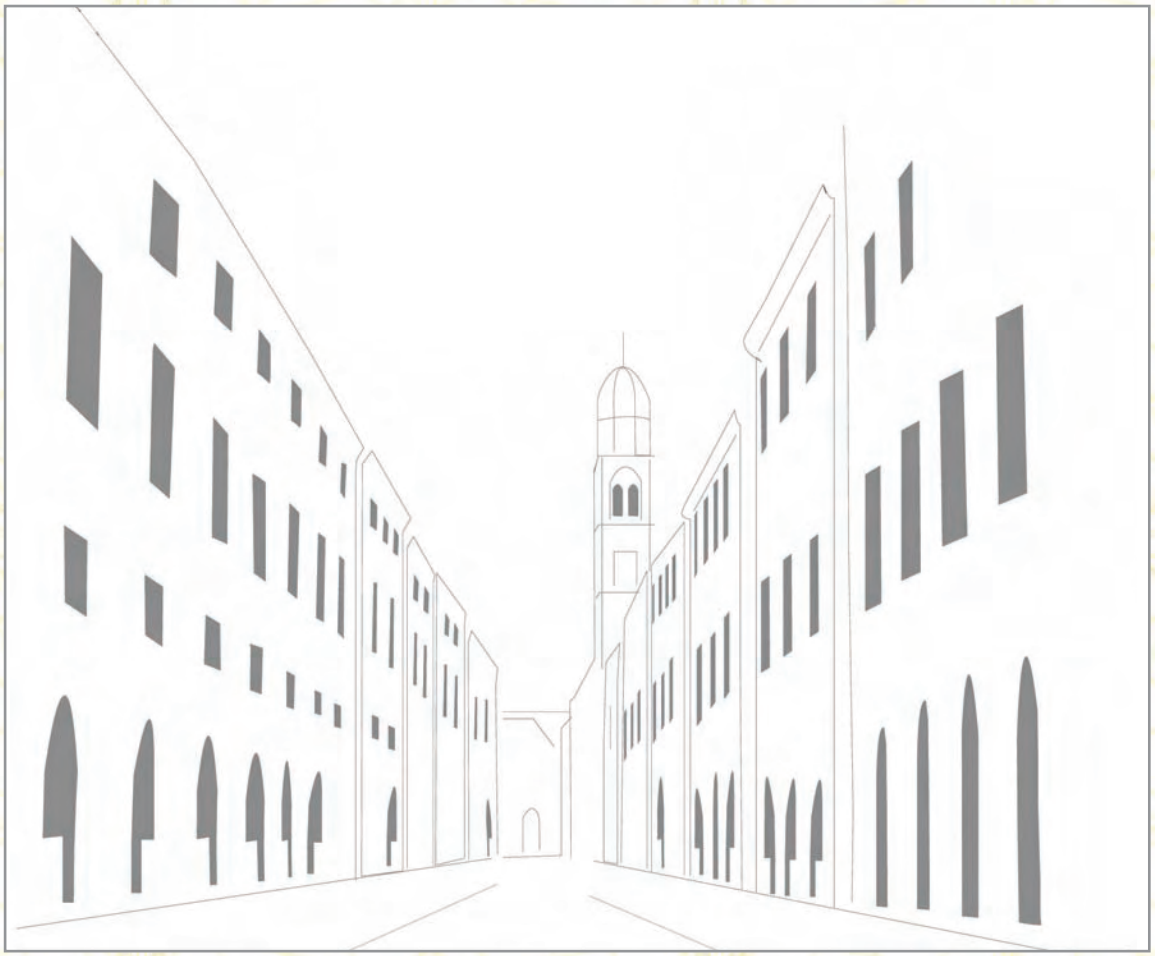
ISOVER Multi-Comfort House School
A New Concept for Learning

Architectural Student`s Contest
Dubrovnik 2008

ISOVER Multi-Comfort House

ISOVER

isover
Multi-Comfort House



ARCHITECTURAL CONTEST FOR STUDENTS DUBROVNIK 2008
A NEW CONCEPT FOR LEARNING

CONTENTS

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HISTORY

In the last 6 years ISOVER architectural contest for students developed from a regional competition for proper application of thermal- and sound insulation to an international forum for energy efficiency and comfort among future architects and professors.
The contest started in 2003 in Belgrade. Architectural Faculty in Skopje joined the year after. In 2005 it involved already 5 countries from the Balkan Region. In December 2005 on official ceremony the project was awarded with the prestigious award for public relation and communication of Saint-Gobain Corporation – the "Star of communication". The idea of stimulating young people to think about thermal and sound comfort, to exchange ideas and gather knowledge about contemporary design and insulation solutions was highly appreciated. This encourages organizers to present new interesting project assignments every year and help students develop know-how to solve different thermal- and sound insulation problems in various types of buildings.

ASSIGNMENT

In 2008 Architectural faculties from 13 countries participated in the contest with the aim to design a school which combines classical school elements with modern learning facilities. The school project was intended for children from the age of 6 to 15, with a capacity between 200 and 230 students. In addition, the school should set a positive example in terms of ecology and sustainability.
Technical parameters for the thermal insulation were $U \leq 0.15$ W/(m²K) for all opaque external structural components and $U_{Wtotal} \leq 0.8$ W/(m²K) for windows and doors. Special technical requirements for sound insulation in line with Isover comfort level had to be respected:
Exterior walls and roof – protection against air-borne noise: $R_w \geq 55$ dB.
Protection against air-borne noise between classrooms and corridors: $R_w \geq 63$ dB.
Footfall soundproofing for ceilings: $L_{nt,w} \leq 40$ dB.
The most important factor for speech intelligibility was excellent room acoustics. The reverberation time should therefore be around 0.5 seconds.
The fire protection should meet the respective national standards.

FINAL STAGE

The final stage of International contest for students took part from 1st to 4th June 2008 in Dubrovnik, Craotia. Each of the 13 participating countries Austria, Bulgaria, Czech Republic, Croatia, Kazakhstan, Latvia, Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain and United Kingdom presented their three best projects. Four of the countries – Czech Republic, Kazakhstan, Spain and the United Kingdom participated for the first time.
Special guest of the conference was Dr. Wolfgang Feist from the Passive House Institute in Darmstadt who opened the conference with convincing examples of global warming threats and the opportunities that passive house design principles give to tackle the problem. His expose was proper introduction to the project presentations of the students. 39 projects were presented from their authors by permanent interest of the audience in the stimulating atmosphere of the Dubrovnik old town Theatre. All participants and professors nominated the best project from each country.
The second day of the conference was dedicated to comments and ideas exchange on energy efficiency design and enjoying historical heritage and natural beauties of Dubrovnik.
On official gala dinner the host Mirsad Begovic, General Manager of Isover Croatia, announced the voting of the students.

FUTURE

Today it is possible to build residential and non-residential buildings without conventional heating or cooling system. The excellent insulated building is heated by passive means such as solar radiation through the windows and the internal sources of people and house hold compliances. The ventilation losses are covered by controlled ventilation system with heat recovering.
Energy efficiency and CO_2 reduction is a big challenge for the present building design. It demands phantasm and the ambition of the young generation. With this responsibility Saint-Gobain Isover organizes the architectural contest for students every year. We gratefully thank every student and the ambitious professors that made this contest and dialogue possible, as well as Isover employees in local organizations who were supporting them. This little brochure is meant to be a souvenir in respect of the great work of the young people who proved that energy efficiency and creative architecture goes hand in hand. We wish all students a great success in professional and private live and thank you again for great participation.

More information about the contest, the winners of previous editions and education materials you can find on www.isover-students.com

THE PROFESSORS

ASSISTANT PROFESSOR DI DR. KARIN STIELDORF
Graduated architecture at the Innsbruck and Vienna Universities of Technology. She has practical experience in architecture offices in Innsbruck and Vienna and has made thesis at the Department of Building Construction and Design (Solar and Low Energy Architecture in Austria, 1997). Since 1992 Dr. Stieldorf is assistant teacher at Vienna University of Technology, with main working focus on building physics, human ecology and sustainable building. Since 2002 she teaches at the Sustainable Building and Design Group at the Department for Architecture and Design. Main teaching and research areas of Assistant Professor Stieldorf are basics of building physics and ecology, solar architecture, climate-appropriate design, sustainable building concepts, renewable energy resources, "passive-house" building concepts, ecological declaration of buildings, mud building. She is a member of the Austrian Standards Institute and Task 7 of International Energy Agency (IEA) - Integration of photovoltaics in buildings, Contact officer of the Austrian section of the International Solar Energy Society.
Together with Arch. DI Pekka Janhunen Dr. Karin STIELDORF developed couple of design programmes within the Master Course at the TU Vienna.

PROF. MARTINA ZBAŠNIK SENEGAČNIK
Born in 1961 in Ljubljana. She graduated at the University of Ljubljana, Faculty of Architecture, Slovenia, in 1986. Since 1988 she has been working at the faculty as a teaching assistant. She received a Master degree in 1992 and in 1996 a Ph. D. degree (Negative influences of building materials on the environment and human beings). In the year 2000 she became an assistant professor. She attended the international ecological seminars (ecological materials and building technologies). Since 2001 she has been teaching a subject Ecological architecture. She writes the scientific and professional articles in domestic and foreign literature. Dr. Zbasnik-Senegacnik has published two books; the last one is Passive house (2007), the first book about this topic in Slovene language. She takes part also in architectural and research projects.
She arranges and leads additional professional education for the architects from the practice. In this courses the topics on different building technologies, last years on low-energy and passive houses are lectured.

PROFESSOR BLAGOVEST VALKOV, PHD in Architecture
Born on 07.04.1946 in Botevgrad - Bulgaria. Teaching Architectural Theory and design from 1972. Since 1992 head of Public Buildings department at Architectural Faculty of University of Architecture, Civil Engineering and Geodesy - Sofia Bulgaria.
Post graduate study at London University College, BARTLETT School of Architecture and Planning. In 1984 conferred Doctor Degree on Interaction of Architecture, Sculpture and Painting. Research on Theory of Creativity process and Space morphology.

SVETLANA LEBEDEVA
Studied Architecture in Kazakh Polytechnic Institute in Almaty and graduated it in 1976.
In 1982 passed postgraduate course in Moscow – department of Public Buildings in Institute of Educational Buildings (ЦНИЭП Учебных Зданий). Since 1976 with interruptions used to work as an Architecture teacher in Almaty – in Polytechnic Institute and in Institute of Architecture and Construction. Has 5 years practical experience in Architecture in 1985 – 1990 in KazStoyProject institute in Almaty in department of experimental and individual construction which was conducted by Tokhtar Yeralimov – one of the well – know Kazakhstan Architects. From 1990 till 2005 used to work in KazGASA as chief teacher in department of Architecture of dwelling and public houses. From 2005 till now works as a chief teacher in KazNTU in department of Architecture and Design of Institute of Construction and Architecture. She has more then 70 science publications. Member of Union of Architects of Kazakhstan and of Union of Designers of Kazakhstan. Her student in different years took part in various contests in Kazakhstan and abroad and achieved good results.

PROF. LJUBOMIR MIŠČEVIĆ, D.I.A.
Born in 1954 in Zagreb. Graduated from the Faculty of Architecture of the University in Zagreb in 1979. Received Dean's and Rector's awards. Since 1979 he has been working in the Institute of Architecture and as associate at the Department of Architectural Design. Since 1991 he has been teaching Energy and Ecology Architecture. He became a senior lecturer in 1994/95 and assistant professor in 1996/97. He completed the post-graduate program in Urban and Physical Planning in 1982. Attended a specialist seminar in Bioclimatic Architecture and Practical Design in Lisbon in 1993. Since 1985 he has been engaged in Croatian project Passive Solar Housing Architecture and in international research project (Croatia-the USA) in Energy and Ambience Rehabilitation in Housing. PhD thesis Energy and Ecology Houasing Architecture in progress. His realized projects include: 20 single-family houses (mostly passive solar houses), interior designs, graphic and product design, theatre and TV stage designs. He participated in home and foreign architectural, urban and design competitions. He received the award from the Croatian State Administration of Environmental Protection in 1995 and from Ford Motor Company for the protection of nature and cultural heritage in 2000. He has published papers on solar and ecology-based architecture as well as architectural theory, sustainability, timber and brick architecture, high-tech and environmental protection. He is the editor of an architectural journal, visiting lecturer in Croatia and abroad, takes part in international research projects, reviewer, member and head of professional associations. Since 2000 he has been head of International Summer School of Architecture in Motovun. Chairman of the Association of Zagreb's Architects from 2001-2005.

THE PROFESSORS

PROF. VICENTE BLANCA
Architect, born in 1960, Professional degree of Architect graduated from the Faculty of Architecture in Valencia in 1984. He has been teaching courses in Energy and Ecology Architecture in Passive Systems. He participated in many Investigation Projects as well as Environmental Protection Courses. He has been collaborating in Solar Housing Architecture. He is a member of multiple Spanish Associations related in Architecture.

PROF. ING. ARCH. AKAD. ARCH. JIŘÍ SUCHOMEL
Born in 1944. Graduated the CVUT - Czech technical University in Prague in 1967 and Academy of fine arts in Prague in 1971. Chartered architect at the Czech Chamber of Architects. In 1967-1969 worked at the atelier of prof. Gottfrieda Böhma in Aachen - Germany. Since 1969 worked and later became a director
of Atelier SIAL. Since 1994 prof. Suchomel is Head of architecture department at Technical University in Liberec.

DOC. ING. ARCH. PETR MEZERA, CSC.
Born in 1939. Graduated CVUT - Czech technical University in Prague – architecture and town building in 1974.
Chartered architect at Czech Chamber of Architects. From 1965 till 1969 worked as a designer of sports buildings at Prague project institution. Lecturer at the Faculty of Civil Engineering (1969-1976) and Faculty of architecture (1977-1992) at CVUT. Member of expert committee at Ministry of Education. Since 1991 works as a designer at PRO. ARCH yet teaching at Faculty of Civil Engineering.

ING. ARCH. LADISLAV KALIVODA, CSC.
Born in 1949. In 1974 Graduated CVUT - Czech technical University in Prague and became chartered architect at the Czech Chamber of Architects. He started his teaching career in 1975 as assistant in Faculty of Civil Engineering at CVUT. He was designer at project atelier in (1977-1978) and later a head of atelier SSDS (1991-1992) and ateliers Stavmont Ltd and Stavba 15 Ltd (since 1992). Starting from 2004 ing. Kalivoda is a part time lecturer at CVUT – Faculty of Civil Engineering.

UGIS BRATUSKINS
Architect, born in 1961, Professional degree of Architect (1984), Master of Architecture (1995), Doctor of Architecture (2006). Doctoral thesis “Development of Public Open Spaces of Riga Medieval Centre in the 19th and 20th Centuries”. Member of Latvian Association of Architects. Author of many public and dwelling buildings in Riga and other towns of Latvia. Dean of the Faculty of Architecture and Urban Planning of Riga Technical University. Regular publications in the almanac “Architecture and Construction Science”, ”Scientific Proceedings of Riga Technical University” and local professional magazine “Latvijas Arhitektura”.

DR. ARH. MIHAI OPREANU
Lecturer at Tehnical science cathedra at Urbanism and Architecture University “Ion Mincu” in Bucharest since 1990. Research studies in ecological, bio-climatic and energy - efficient architecture and also in historical monuments restoration. Developed specific Performance criteria regarding solar control and natural light in architecture. Studyed the restoration principles for the definition of the intervention strategy.
Post-graduate in Architecture at UAIM Bucharest and Techniques history at EHESS Paris:
-Ambient physics
-Architectural Ecology and technology
-Restoration and conservation
Author of articles in Arhitectura and Arhitext-Design (RO) and in Monuments Historiques . Participated International conferences for patrimonium preservation in France (1991 and 1997) Germany (1999 and 2000) Czech Republic (2002). The Salzburg Congress for Urban Planning and Development (SCUPAD), 1992, 1994, 1996, 1998, 2000. H eld restoration workshop UAUIM - Ecole de Chaillot, Paris, 1994-2002.

PROF. MARTIN GULESKI, PHD
Full time professor at the Faculty of Architecture of University “SS.Cyril and Methodius” in Skopje - Republic of Macedonia. Head of the Department of Architectural Design, teaches Architectural Design and Design of Public Buildings. Prof. Guleski designed numerous public buildings, apartment blocks and houses. For his work he has been awarded highest national architectural prizes.

THE PROFESSORS

PROFESSOR MIHAILO TIMOTIJEVIĆ
Born in 1949 in Belgarde. Graduated Faculty of Architecture University of Belgrade. Professional experience in istitute for Planning and Development and " Invest Biro". Research work in IMS Institute Belgrade. President of Urban Planning Commission.
2000-2002 Head of Department for Architectural and Urban Design. 2002-2004 president of Faculty Council. Since 2004 Dean of Faculty of Architecture and professor. His practical and theoretical curses, in bachelor and master programmes, are aimed for developing architectural design skils understood as process of functional and space fore thinking in urban context, with special approach in analyses of its urban and natural elements relation.
Theoretical courses: Education & Child Care; Urban Reconstruction
Among his projects, mentioned with numerous awards are: 2006 - Gradiška river bank / urban plan, BH Federation; 2004 - Divčibare / landscape and spatial plan, Serbia; 2003 - Valjevo city centre / urban reconstruction; 2003 - Užice Lido; 2003 - Multiplex, Jagodina.

ARCH. ZORAN LAZOVIC
Born in London. He graduated Architecture University of Belgrade and became professional perfection at the Royal Academy of Fine Arts in Copenhagen. Arch. Lazovic attended Architectural Faculty DEA in Belleville, Paris and obtained license for professional work in France. He was major architect at DOMELA & SARFATI, Paris.
Since 1989 arch. Lazovic is teaching Methodology of Architectural Design at University of Belgrade.
Some of his resent big projects are Residential complex in Novi Belgrade, Sports complex in Belgrade, Observatory at Geocentre in Denmark.

PROF. DOC. ING. JOZEF STEFKO
Born in 1962. Teaching at the Technical University Zvolen. He is a Vice-dean of the Faculty of Wood science and Technology. Along with teaching and realized architectural projects he leads researches in building physics and energy efficiency. Exceptionally profound are his studies in the field of wooden constructions, published recent years - "Wood architecture", "Wooden structures", "Preferences of utilizing wood in residential parts of buildings", "Environmental simulation and computer modelling of wooden building".

PROFESSOR BRIAN FORD, DIP ARCH, MA, RIBA
Professor of Bio-climatic Architecture, Head of the School of the Built Environment
Professor Ford is an architect and environmental design consultant who joined the University of Nottingham in June 2003, after 25 years in architectural practice and consultancy. His experience in the design of naturally ventilated and passively cooled buildings in different parts of the world includes acting as consultant for the Sydney Olympic Stadium, Australia; Pittsburgh Convention Center, USA; Torrent Research Laboratories, India; Duxford 'AirSpace' Museum, UK, as well as theatres, offices and University buildings. Since 1996, Brian has initiated over 3.0 million Euro of funded research projects within both EC and UK Government Research and Development Programmes.
Professor Ford's research experience has concentrated on natural ventilation, passive cooling and daylighting. He is currently Co-Investigator (with Rosa Schiano-Phan) for two EC funded projects: 'Passive-On' (exploring the application of the German Passivhaus to other countries in Europe), and 'PHDC' (Passive & Hybrid Downdraught Cooling). He is co-author of the revised CIBSE Applications Manual AM10:'Natural Ventilation of Buildings', 2005.

ASSOCIATE PROFESSOR DR MARK GILLOTT
Co-Director of the Institute of Sustainable Energy Technology at the School of the Built Environment, University of Nottingham. He has a BEng (hons) degree in Civil Engineering, an MSc in Architecture, Environmental Design and Engineering, and a PhD in Sustainable Energy Technology. Dr Gillott's doctorate led to the development of an internationally patented novel heat recovery/heat pump system for homes. He has over 13 years research experience in low carbon sustainable energy technologies and low energy buildings. Dr Gillott lectures on renewable energy and environmental design to undergraduate and postgraduate Architecture and Engineering students. He is currently project managing the research and development of the "Creative Energy Homes Project" at the University of Nottingham which will be a research test facility and educational showcase of six sustainable homes. Dr Gillott's work is widely published and he has presented numerous papers relating to his research at national and international conferences. He has also presented his research work internationally and nationally through television/radio media and his work has been exhibited at the National Science Museum in London.

David Oberhummer

Year of birth: 1985
Year of study: 4
Place of birth: Salzburg
School: TU Vienna

Johannes Giselbrecht

Year of birth: 1983
Year of study: 6
Place of birth: Badischl
School: TU Vienna

Elisabeth Mayr

Year of birth: 1984
Year of study: 6
Place of birth: Oberndorf
School: TU Vienna

1

FIRST PRIZE - first stage, Austria

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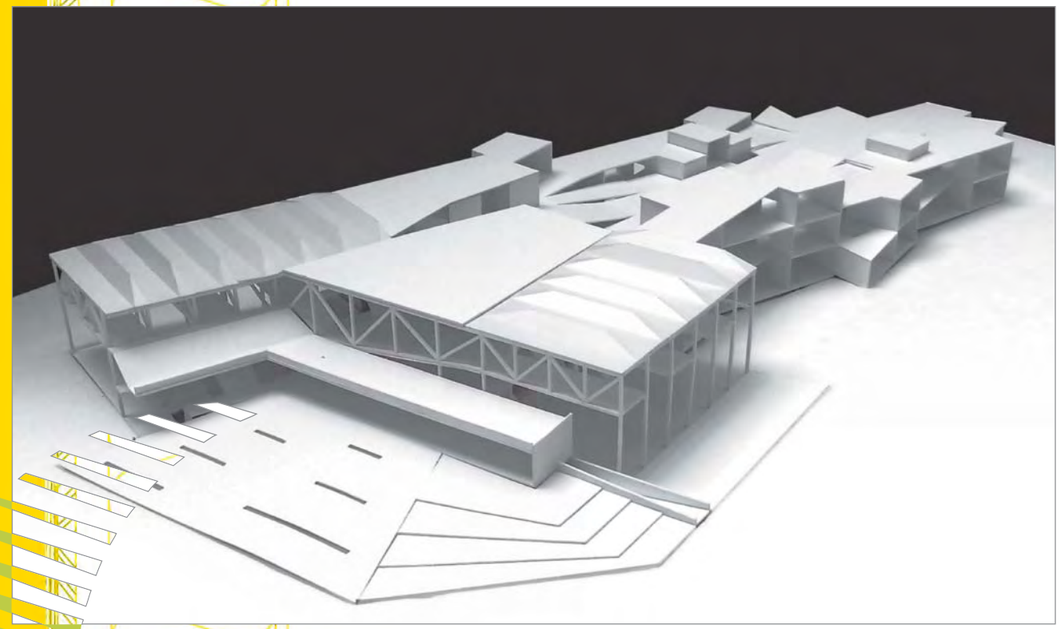


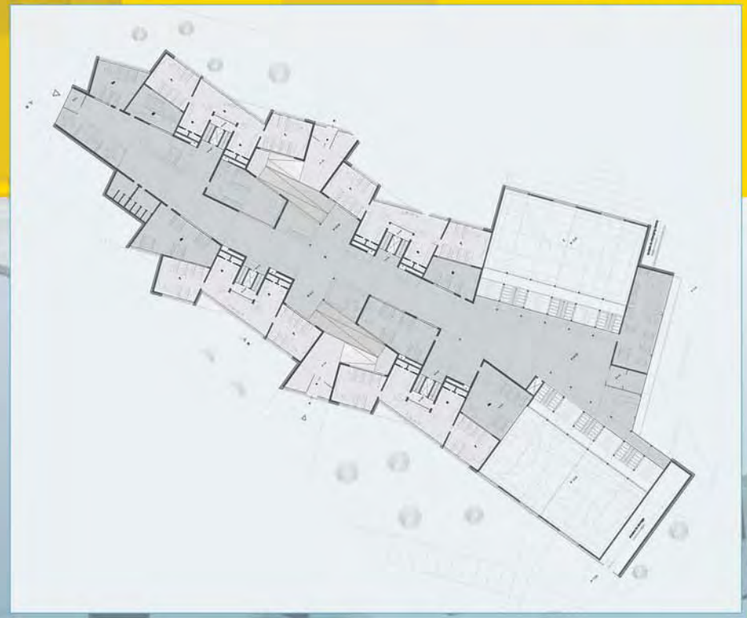
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

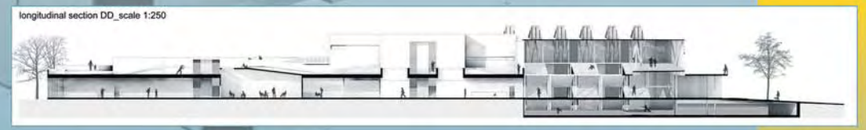
A NEW CONCEPT FOR LEARNING

DETAILS

CONCEPT

accessable roof





Barbara Brandstaetter

Year of birth: 1983
Year of study: 5
Place of birth: Salzburg
School: TU Vienna

2

SECOND PRIZE - first stage, Austria

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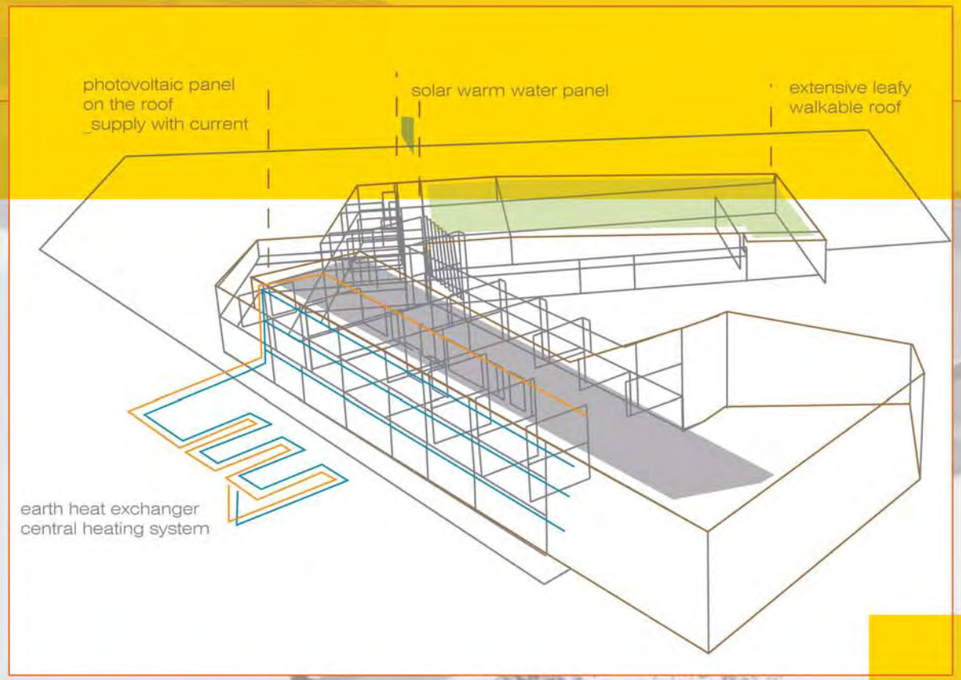


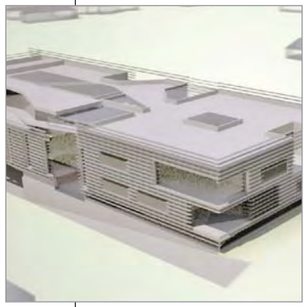
CONCEPT

Hans Reumann

Year of birth: 1983
Year of study: 5
Place of birth: Oberpullendorf
School: TU Vienna

Nikolas Kichler

Year of birth: 1983
Year of study: 5
Place of birth: Nijmeng
School: TU Vienna



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THIRD PRIZE - first stage, Austria

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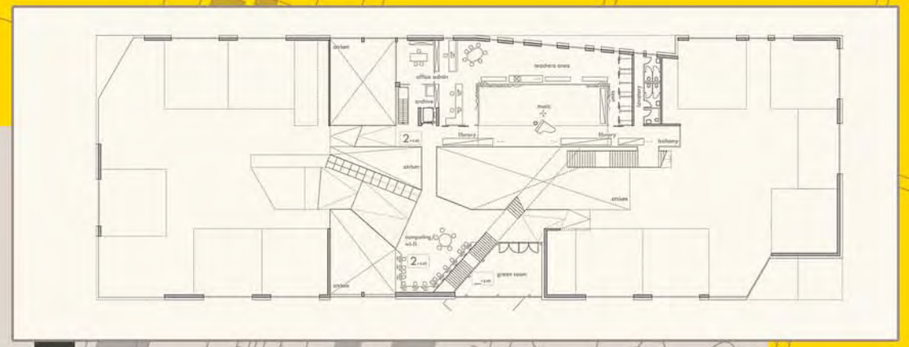

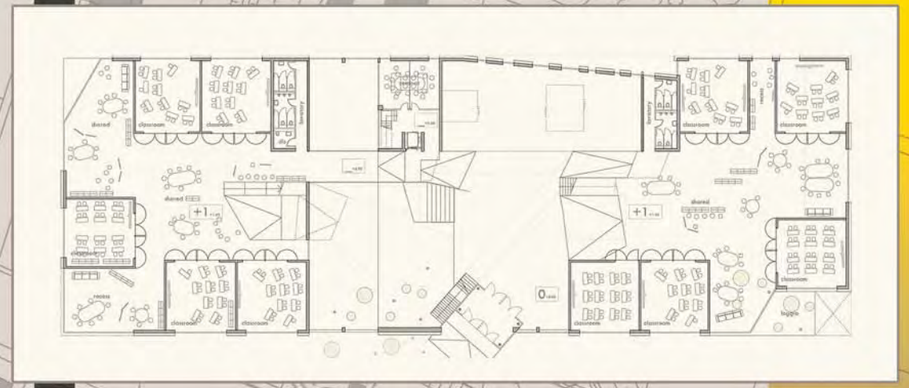

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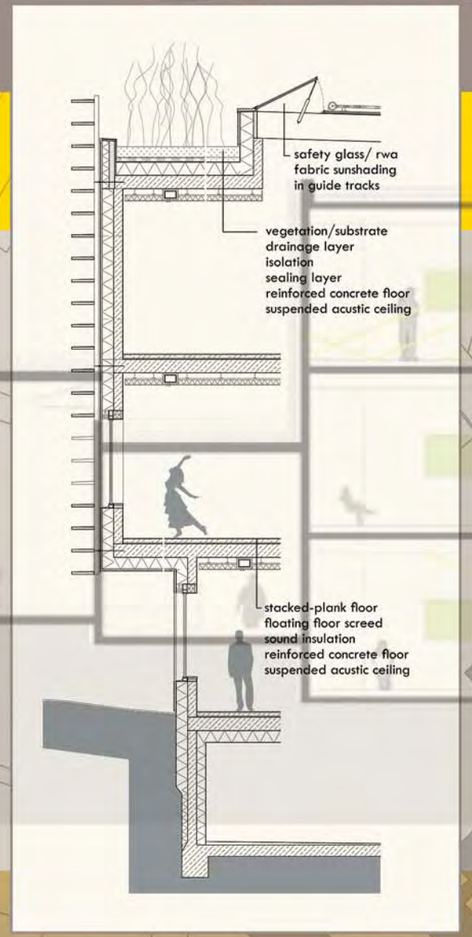

Mariela Andreeva

Year of birth: 1986
Year of study: 3
Place of birth: Sofia
School: Higher School of Civil engineering Sofia

2 SECOND PRIZE - first stage, Bulgaria

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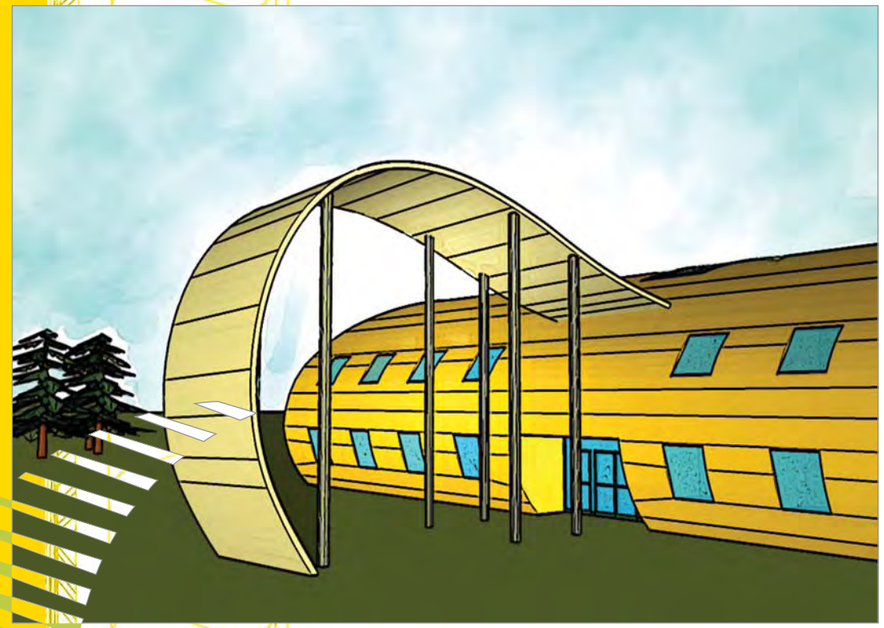

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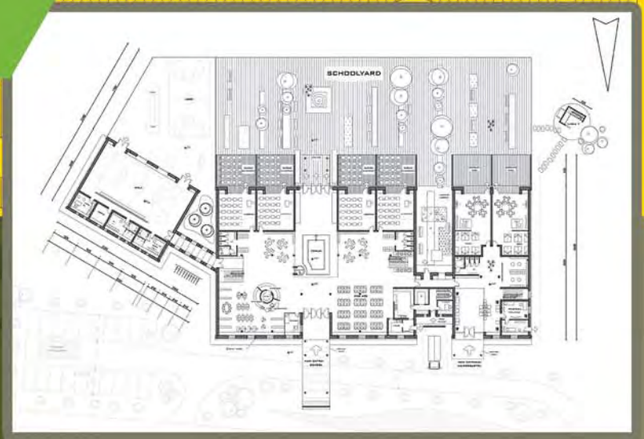

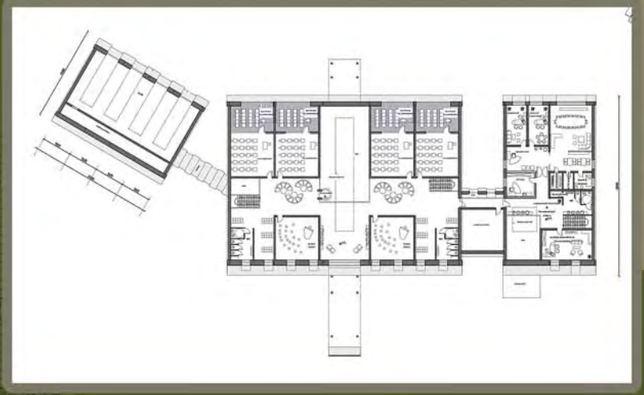

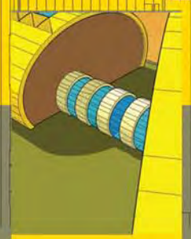

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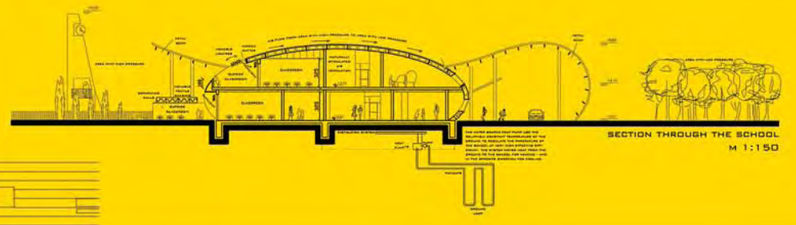

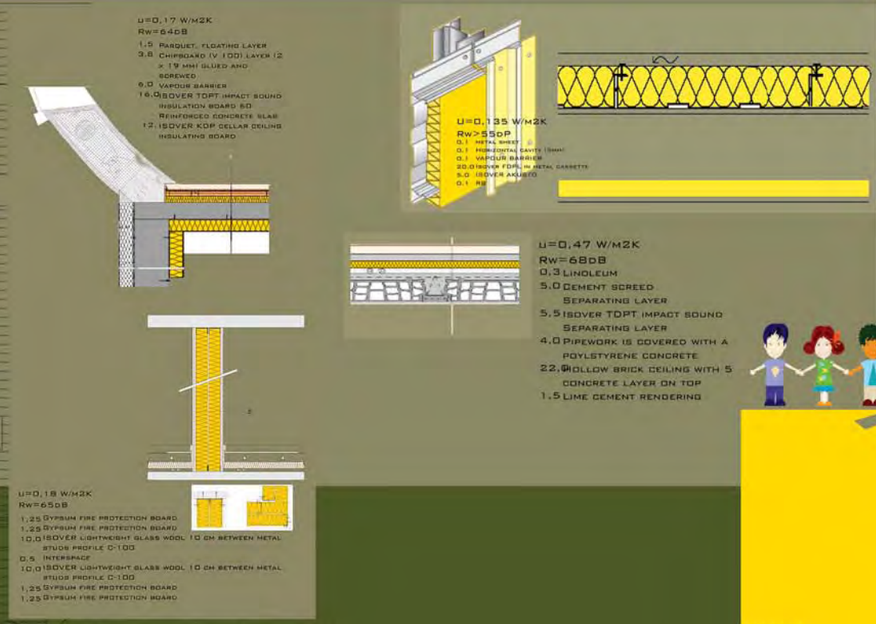

SCHOOLYARD

Vasil Sharlanov

Year of birth: 1983
Year of study: 3
Place of birth: Stara Zagora
School: Higher School of Civil engineering Sofia

2 SECOND PRIZE - first stage, Bulgaria

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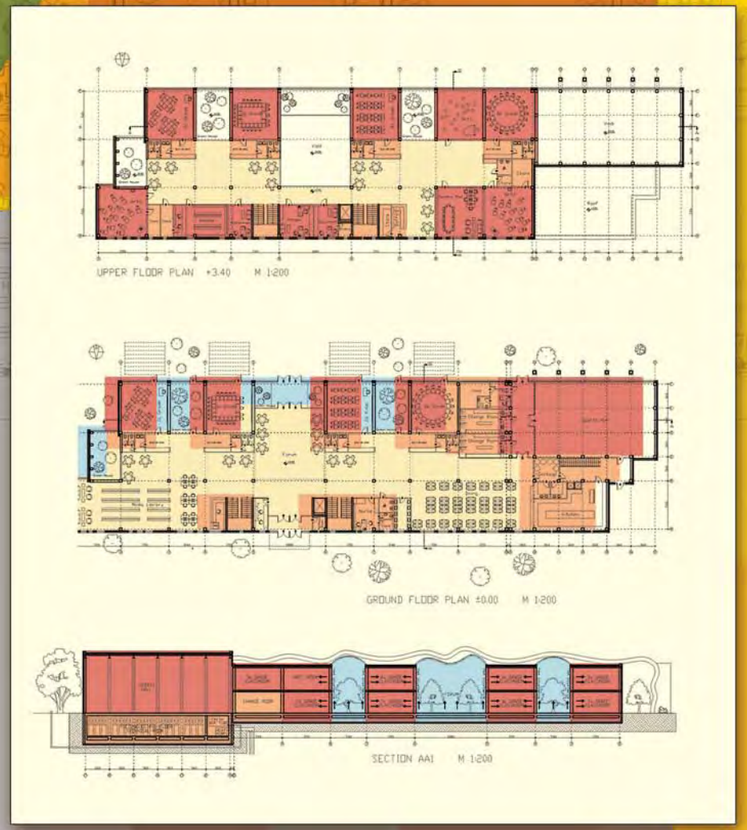

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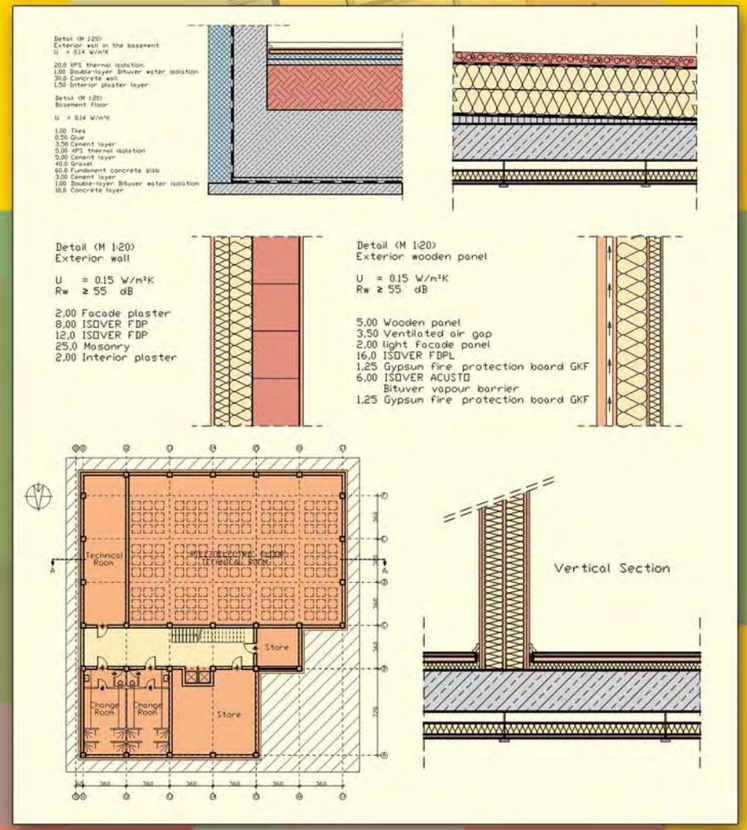

Kuncho Tsilkov

Year of birth: 1985
Year of study: Aps.
Place of birth: Karlovo
School: University for Civil engineering and Architecture Sofia

3

THIRD PRIZE - first stage, Bulgaria

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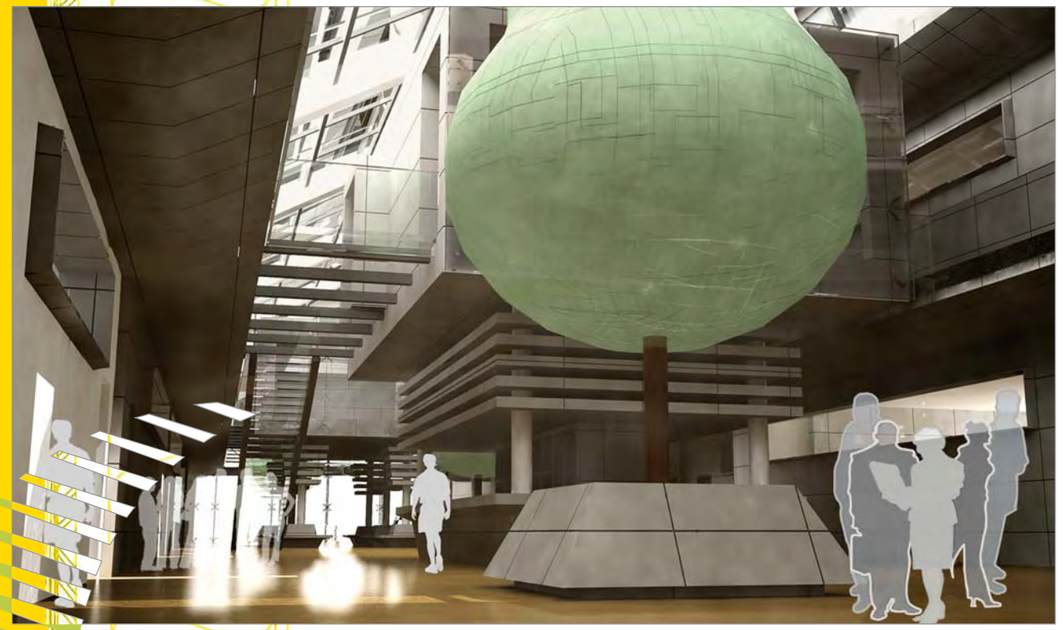

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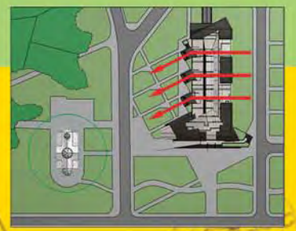
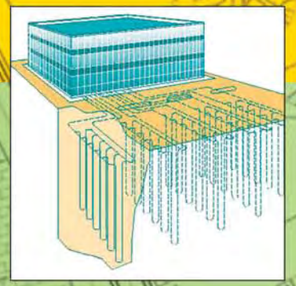
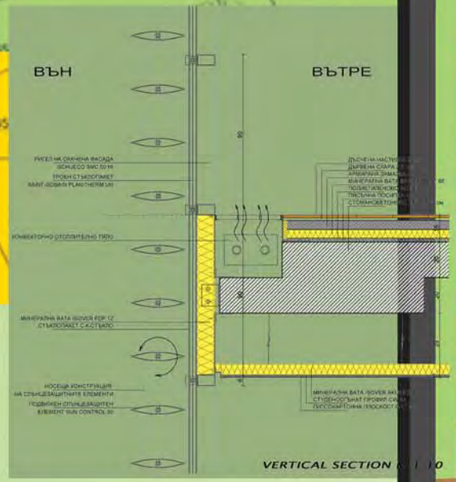




CROSS SECTION M 1:100

CONCEPT



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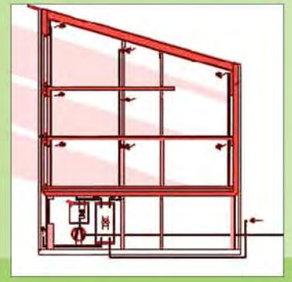
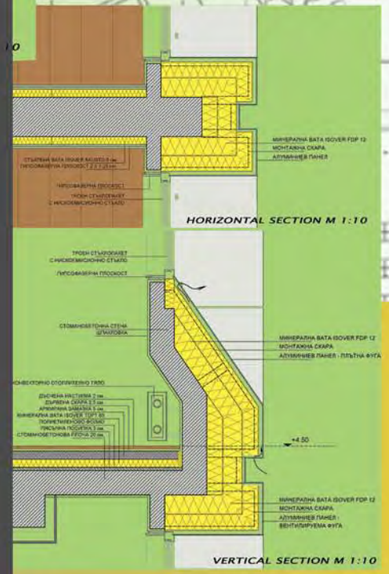
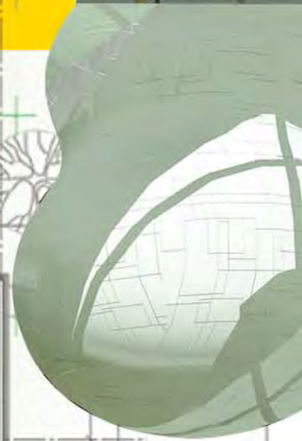




HORIZONTAL SECTION M 1:10

VERTICAL SECTION M 1:10

DETAILS

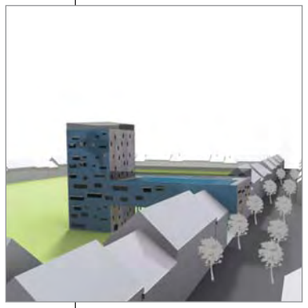


Ivan Capan

Year of birth: 1983
Year of study: 4
Place of birth: Zagreb
School: Faculty of Arcitecture Zagreb Univercity

Igor Kozlina

Year of birth: 1982
Year of study: Aps.
Place of birth: Zagreb
School: Faculty of Arcitecture Zagreb Univercity

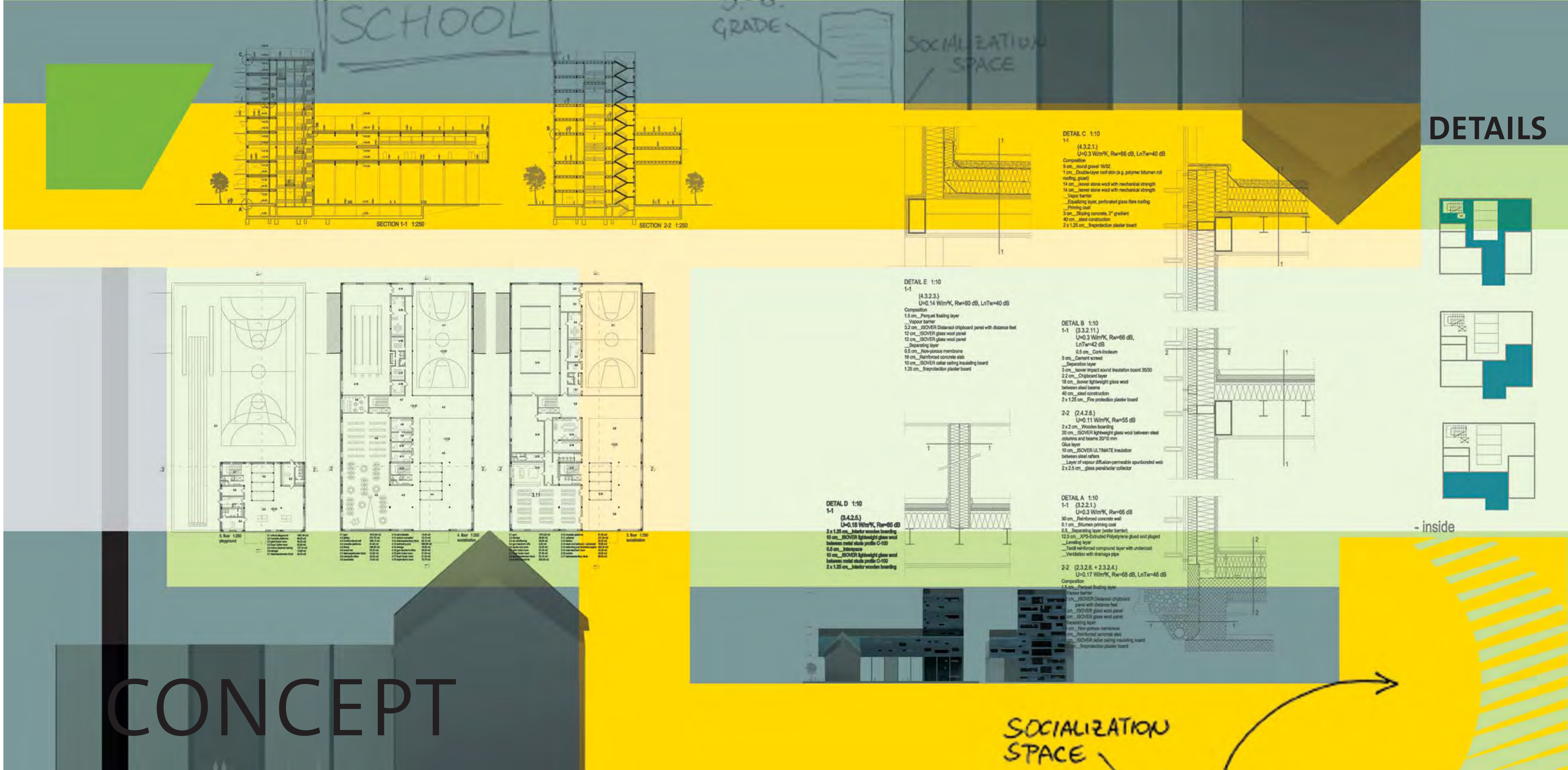


1 FIRST PRIZE - first stage, Croatia

isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING


SCHOOL
GRADE
SOCIALIZATION SPACE
SECTION 1-1 1:250
SECTION 2-2 1:250
DETAILS
DETAIL C 1:10
DETAIL E 1:10
DETAIL B 1:10
DETAL D 1:10
DETAIL A 1:10
- inside
SOCIALIZATION SPACE
CONCEPT

Ivan Filipovic

Year of birth: 1985
Year of study: 3
Place of birth: Split
School: Faculty of Arcitecture Zagreb Univercity

Boris Buljan

Year of birth: 1985
Year of study: 3
Place of birth: Travnik
School: Faculty of Arcitecture Zagreb Univercity

2 SECOND PRIZE - first stage, Croatia

isover Multi-Comfort House

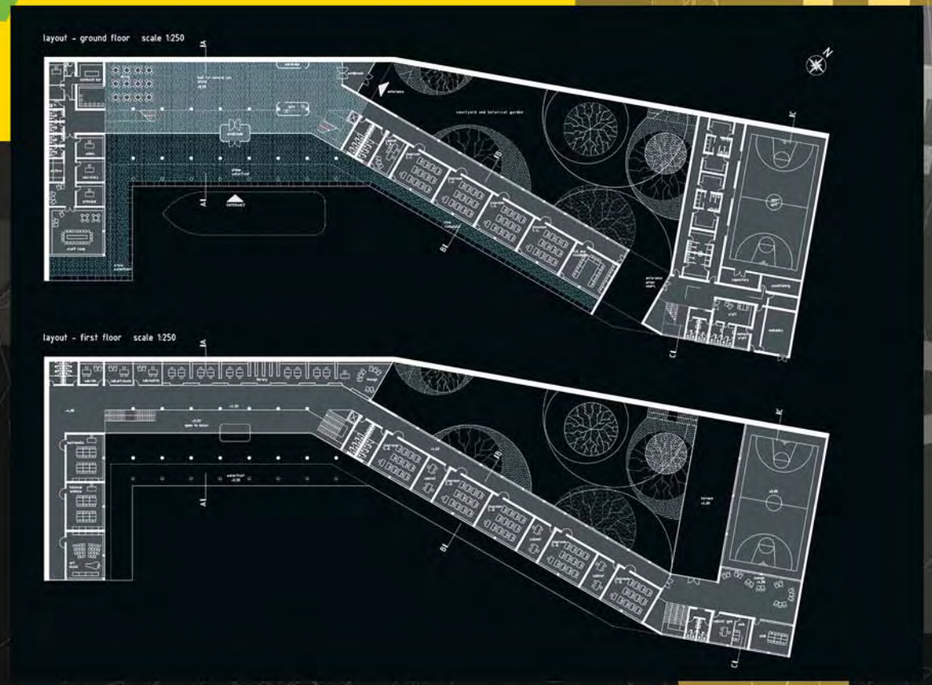
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

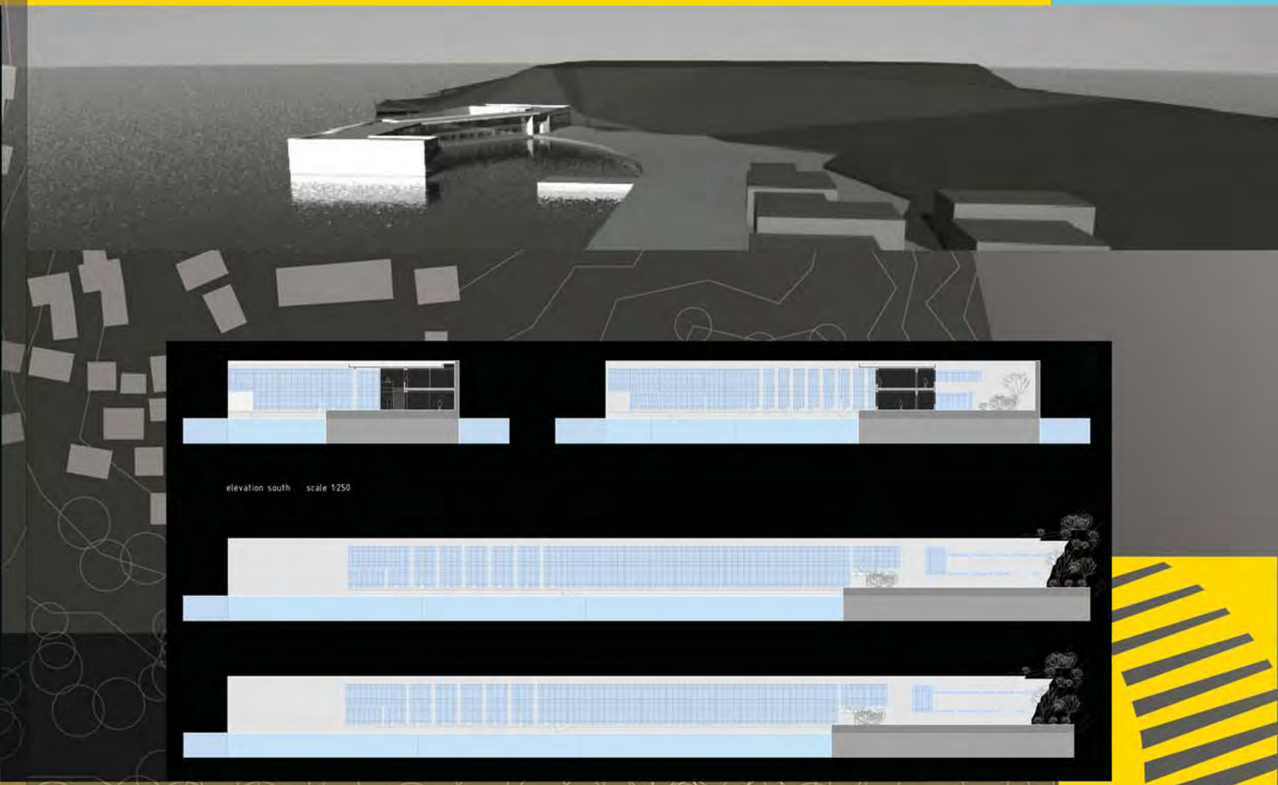
A NEW CONCEPT FOR LEARNING

The idea is to link and unify several small islands that are mostly isolated in an educational aspect.

Students of neighboring islands travel to school by boat

DETAILS





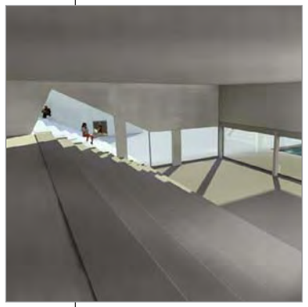
CONCEPT

Hrvoje Hanze Hanzlin

Year of birth: 1986
Year of study: 3
Place of birth: Slavonski brod
School: Faculty of Arcitecture Zagreb Univercity

Marino Dujmovic

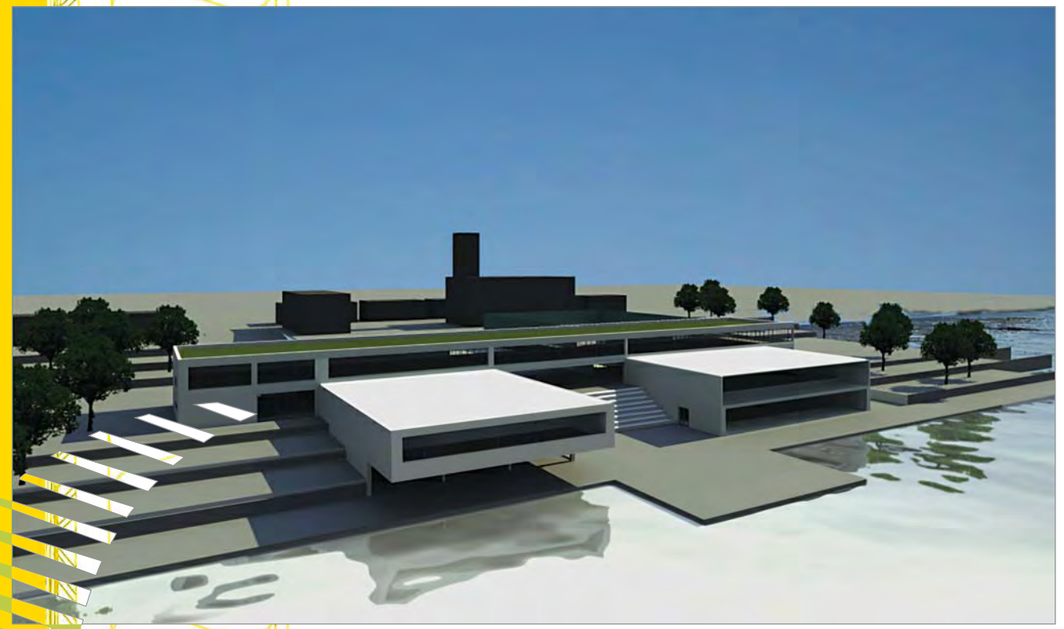
Year of birth: 1987
Year of study: 3
Place of birth: New York, USA
School: Faculty of Arcitecture Zagreb Univercity



3

THIRD PRIZE - first stage, Croatia

isover
Multi-Comfort House



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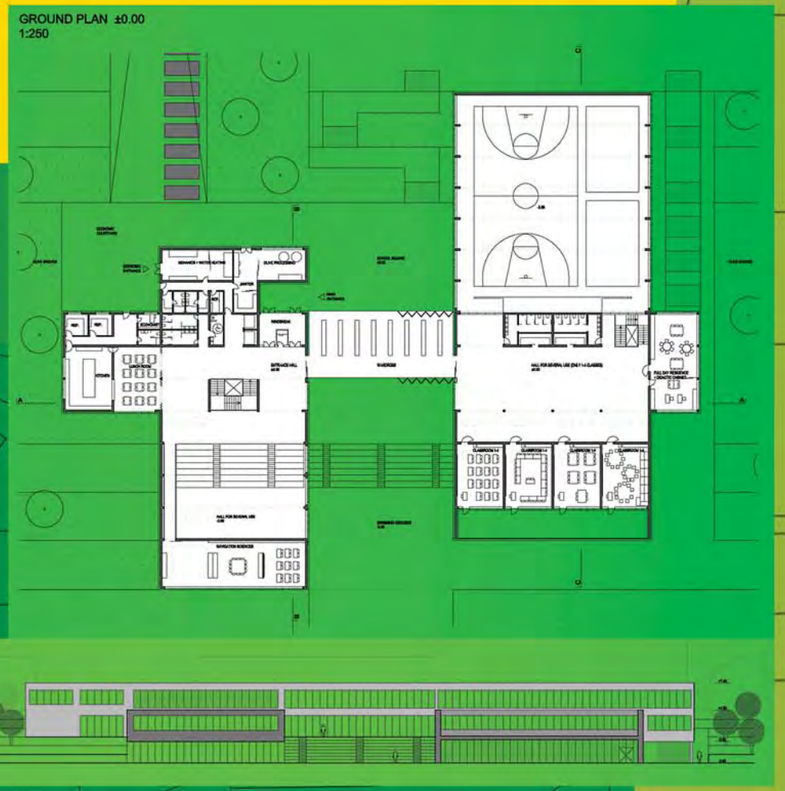
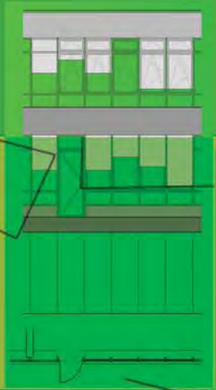
A NEW CONCEPT FOR LEARNING

CONCEPT

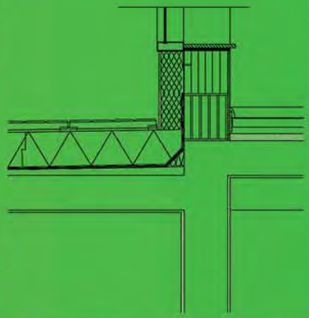




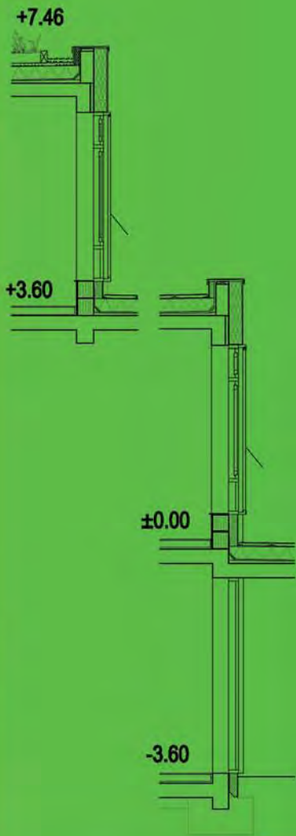
DETAILS

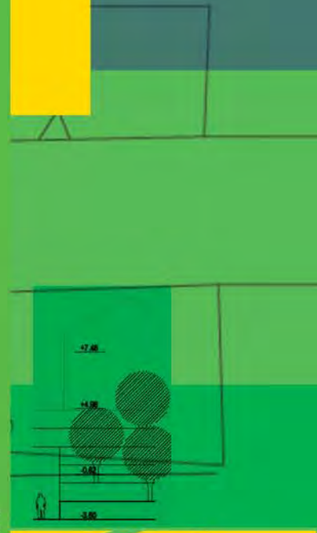
DETAIL - GREEN ROOF
1:20

DETAIL - TERACE JOINT
1:20



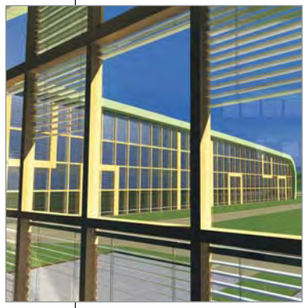
FACADE SECTION
1:50





Petr Kvasnicka

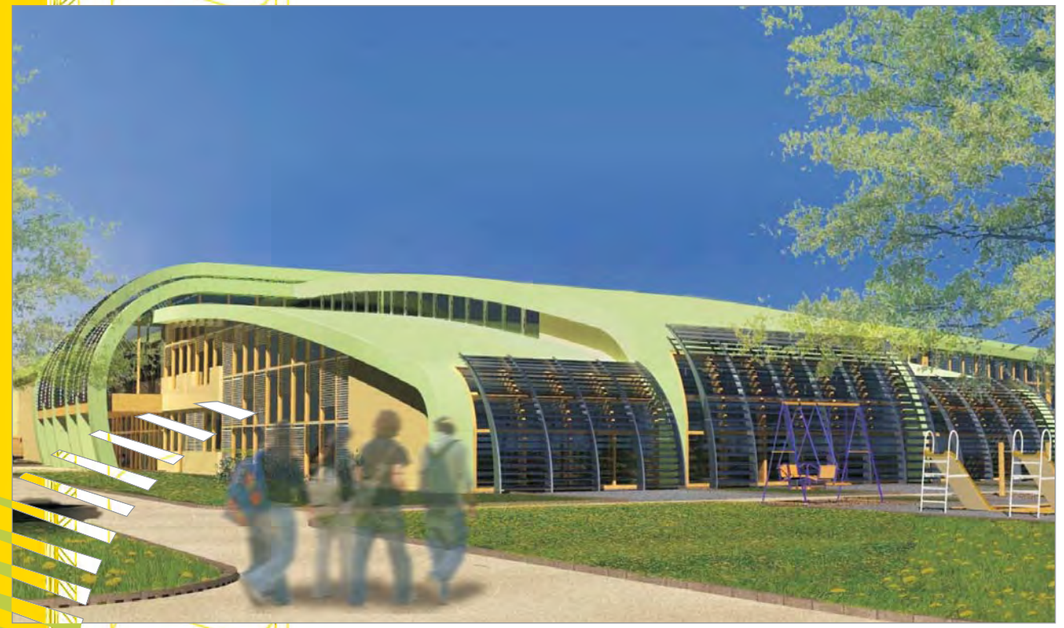
Year of birth: 1984
Year of study: 4
School: Czech Technical University in Prague



1

FIRST PRIZE
first stage, Czech Republic

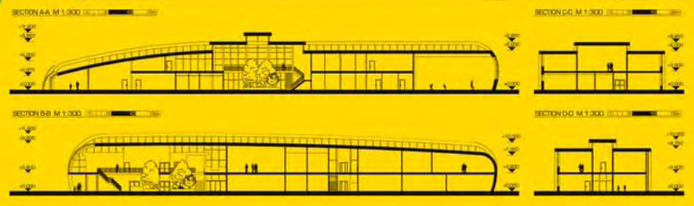
isover
Multi-Comfort House



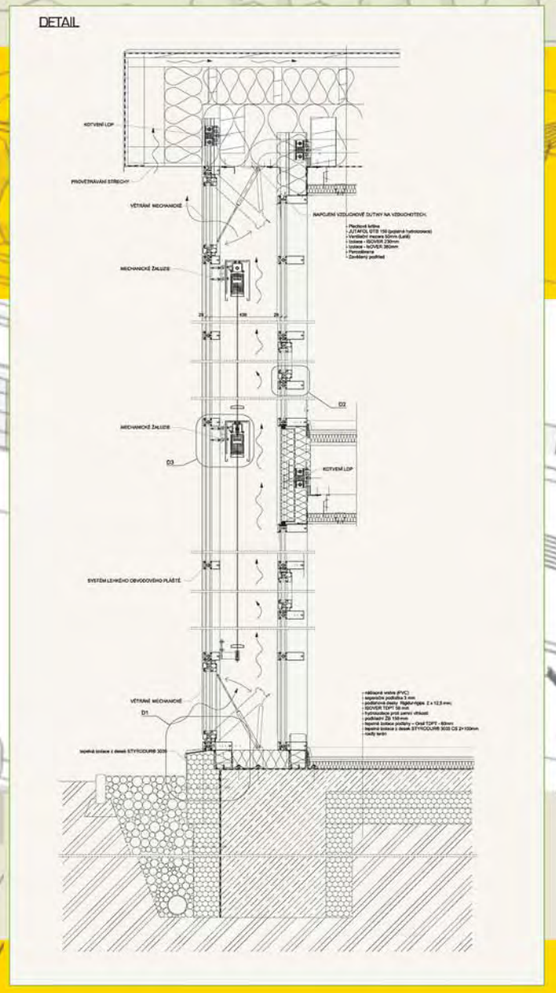
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

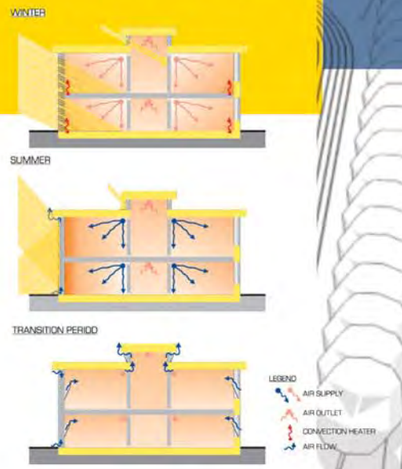
A NEW CONCEPT FOR LEARNING

DETAILS



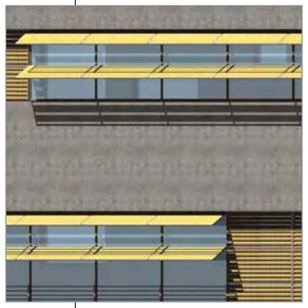
CONCEPT





Lenka Letalova

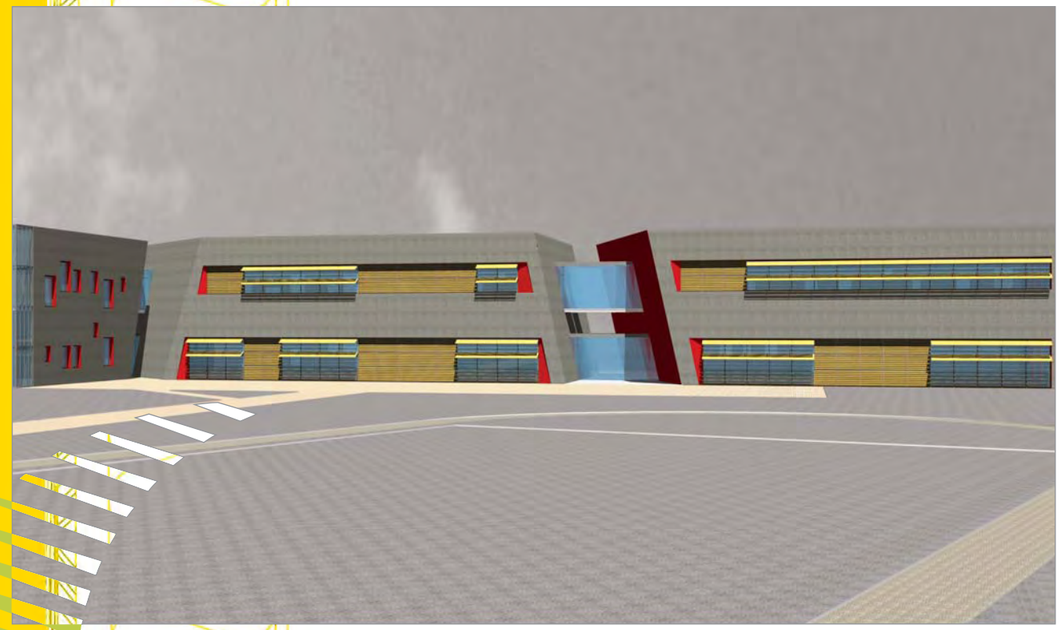
Year of birth: 1982
Year of study: 6
School: Czech Technical University in Prague



2

SECOND PRIZE
first stage, Czech Republic

isover
Multi-Comfort House



Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

DETAILS

CONCEPT

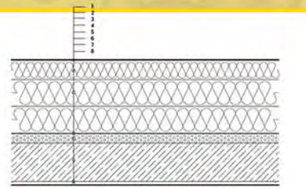
STRUCTURE OF FACADE

CONTACT SYSTEM WITH VERTICAL FIBRE :

1 -	PERLIT RENDERING BAUMIT THERMOPUTZ	16 mm
2 -	BAUMIT PRE-APLICATION	4 mm
3 -	POROTHERM 30 P+D	300 mm
4 -	ORSIL UNI	140 mm
5 -	VAPOUR BARRIER PE FOIL	
6 -	VENTILATED AIRSPACE	40 mm
7 -	FACE CONTRETE PANELS	60 mm

ORSIL NF 333
ORSIL UNI slabs are suitable for no-load external walls (ventilated facades to be insulated with insulant in cassettes or frames) and for insulating slanting roofs, ceilings, false-ceiling, and other sandwich constructions. The material is suitable for fire protection partition walls where density equal or over 40 kg/m2 is required.
λ_D = 0,042 (W/m.K)

STRUCTURE OF ROOF



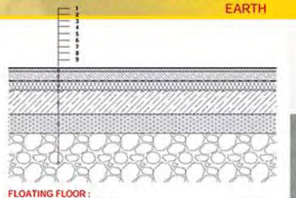
FLAT ROOF WITH CLASSIC ORDER OF LAYERS :

1 -	HYDROISOLATED FOIL SIKAPLAN S	3 mm
2 -	ORSIL S 100 mm	100 mm
3 -	ORSIL T 2x140 mm	280 mm
4 -	VAPOUR BARRIER SARNAVAP	2 mm
5 -	GRADIENT PERLIT CONCRETE min.	50 mm
6 -	ARMOURED CONCRETE SLAB	200 mm
7 -	BAUMIT PRE-APLICATION	4 mm
8 -	PERLIT RENDERING BAUMIT THERMOPUTZ	16 mm

ORSIL S
ORSIL S slabs are suitable for thermal, acoustic, and fire insulation of warm deck flat roofs. Slabs are laid in one or two layers onto the gravity flow layer; directly on them, the water-proofing membrane can be laid (glued, mechanically attached or with a load) .
λ_D = 0,039 (W/m.K)

ORSIL T
ORSIL T slabs are suitable under ORSIL S slabs for warm deck flat roofs.

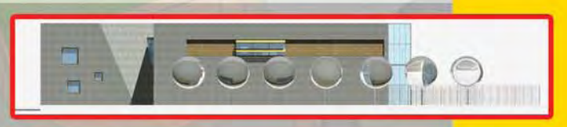
STRUCTURE OF FLOOR IN CONTACT WITH EARTH



FLOATING FLOOR :

1 -	TIMBER FLOORING	15 mm
2 -	GLUE	5 mm
3 -	CEMENT SELF-LEVELING SCREED	50 mm
4 -	SEPARATED FOIL	
5 -	ORSIL T-N	50 mm
6 -	ASFALT HYDROISOLATION	5 mm
7 -	GROUND CONTRETE	120 mm
8 -	STYRODUR 3035CS	100 mm
9 -	GRAVEL SAND BEDDING	150 mm

ORSIL T-N
ORSIL T-N slabs are suitable for improving impact and airborne sound reduction in heavy floating floors under concrete or reinforced concrete slab (minimum thickness 50mm, C25/30, steel net W4, 150x150mm loops, insulation thickness minimum 40mm); suitable for spaces with high useful load (area useful load up to 4kN/m2, i.e. 400 kg/m2).
λ_D = 0,039 (W/m.K)



Petra Huskova

Year of birth: 1983
Year of study: 4
School: Technical University in Liberec

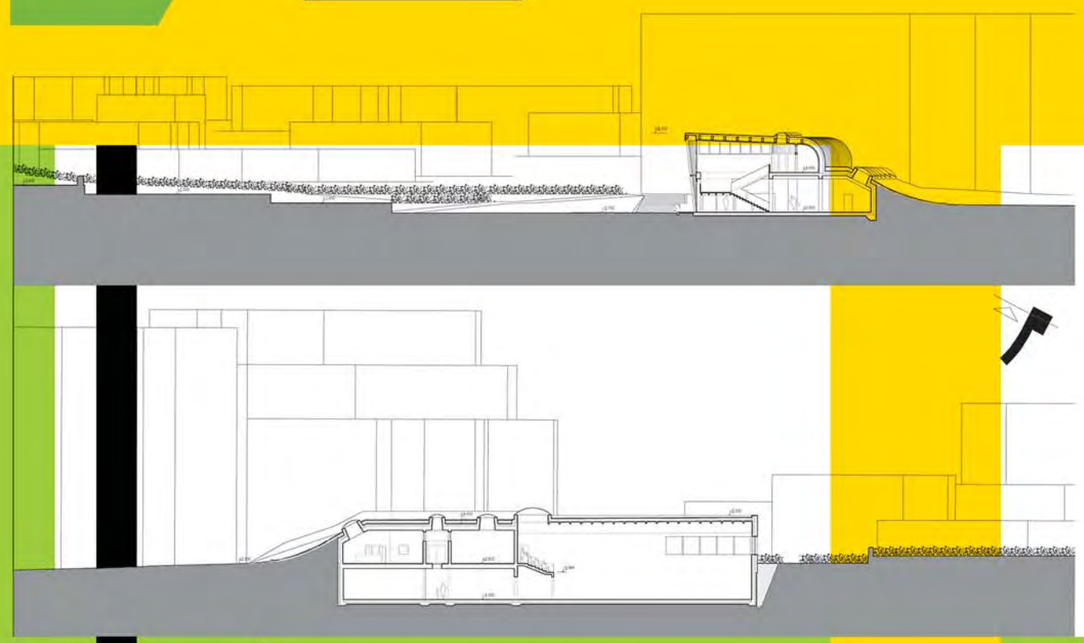
3

THIRD PRIZE
first stage, Czech Republic

isover
Multi-Comfort House

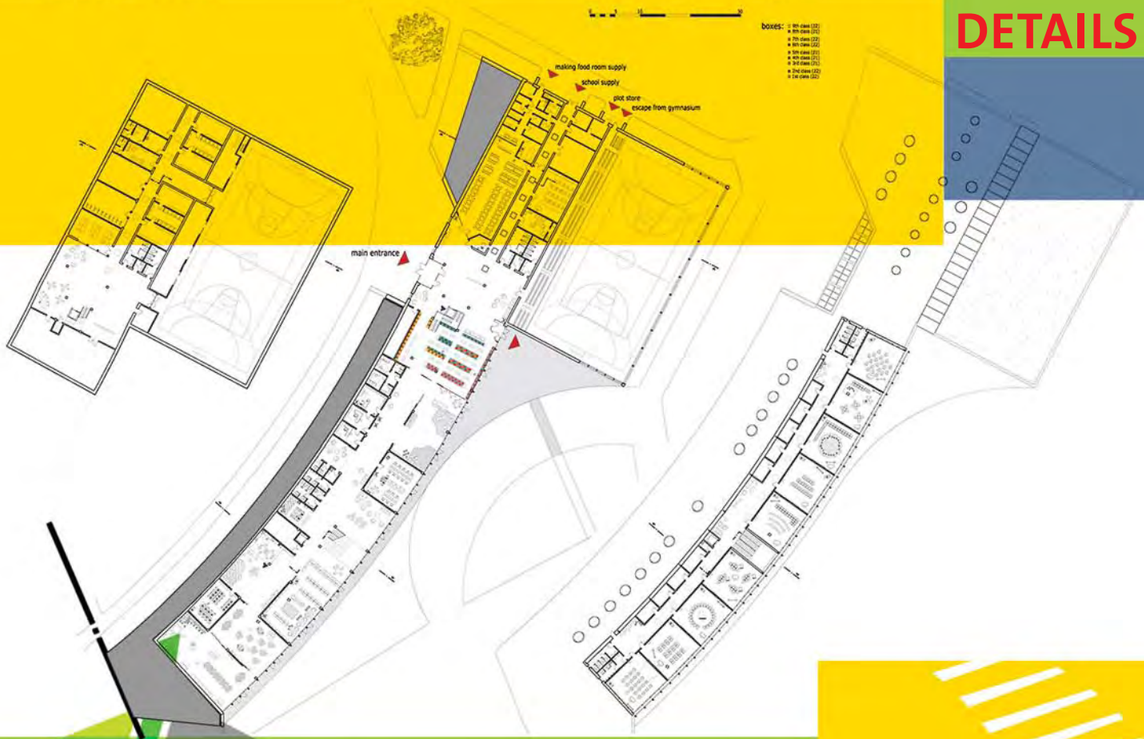
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

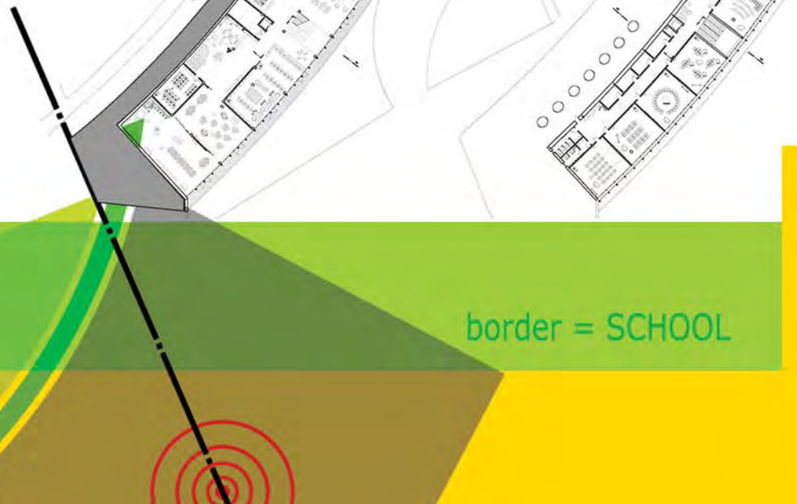
A NEW CONCEPT FOR LEARNING



CONCEPT

DETAILS





Vladimir Yaskevich

Year of birth: 1987
Year of study: 4
Place of birth: Almaty
School: Kazakh National Technical University

Anton Khojikov

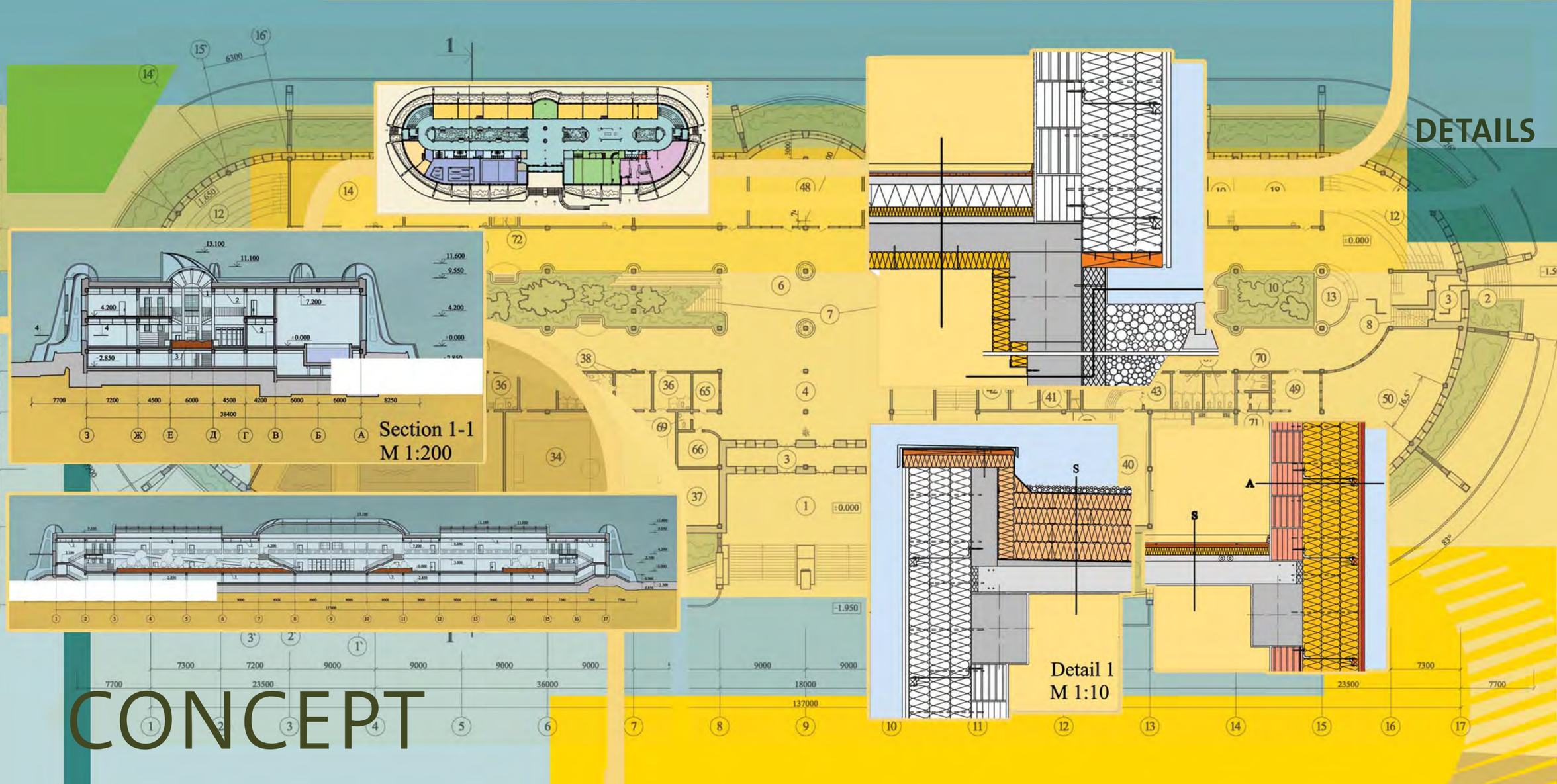
Year of birth: 1986
Year of study: 4
Place of birth: Almaty
School: Kazakh National Technical University

1 FIRST PRIZE - first stage, Kazakhstan

isover
Multi-Comfort House

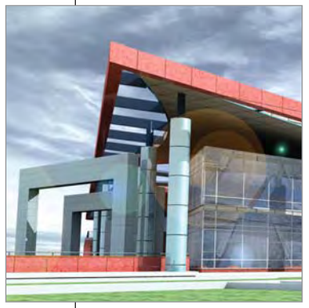
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING


DETAILS
Section 1-1
M 1:200
Detail 1
M 1:10
CONCEPT

Nurtas Majanov

Year of birth: 1985
Year of study: 4
Place of birth: Almaty
School: Kasakh State Academy for Constuction and Architecture



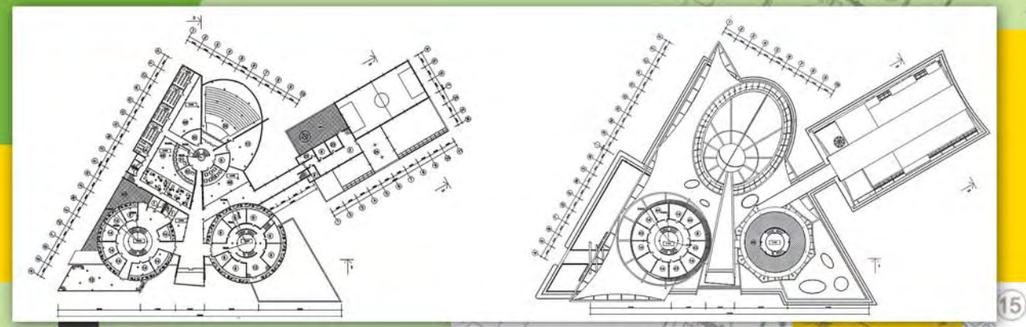
2 SECOND PRIZE - first stage, Kazakhstan

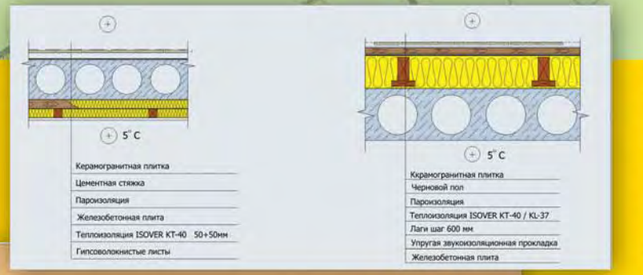
isover
Multi-Comfort House

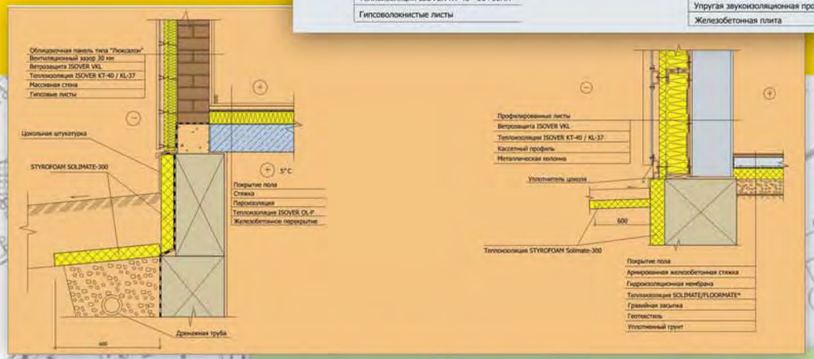
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

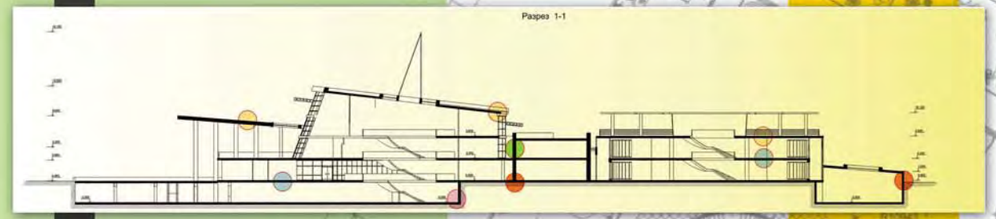
A NEW CONCEPT FOR LEARNING

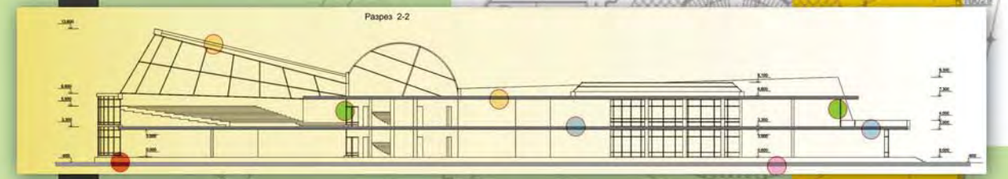
DETAILS

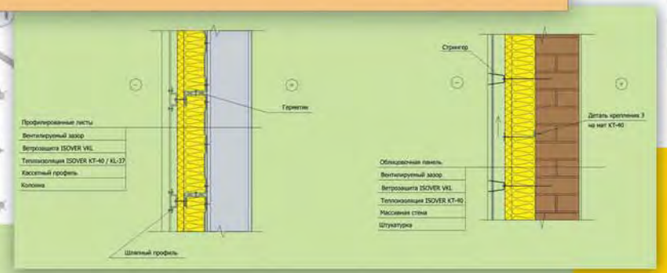








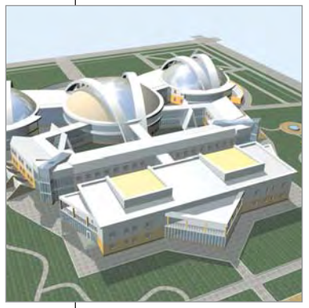




CONCEPT

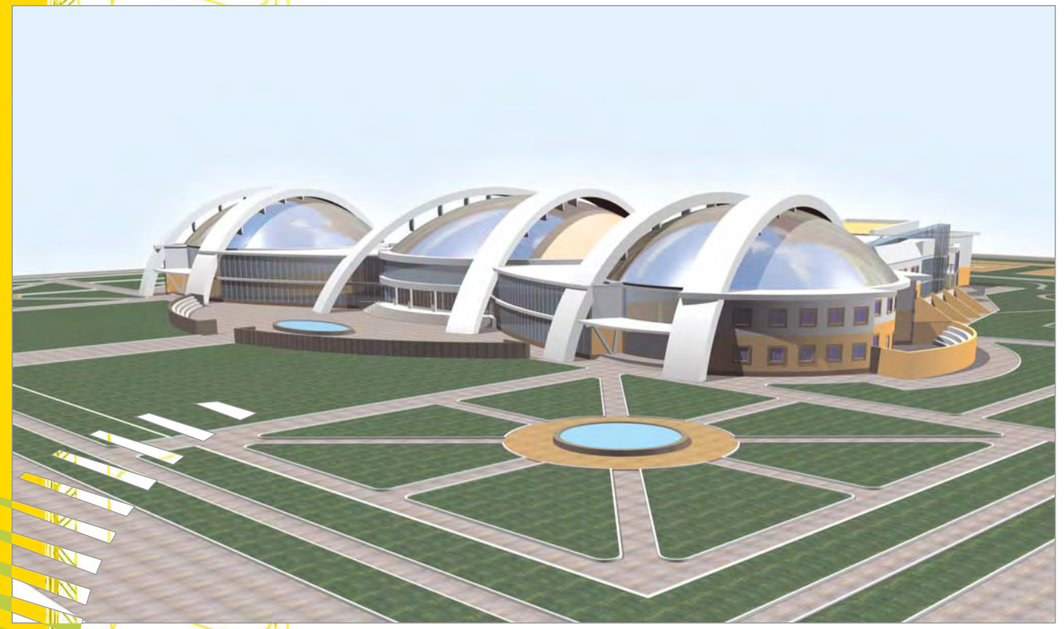
Elena Kovalenko

Year of birth: 1985
Year of study: 5
Place of birth: Almaty
School: Kasakh State Academy for Constuction and Architecture



3 THIRD PRIZE - first stage, Kazakhstan

isover
Multi-Comfort House

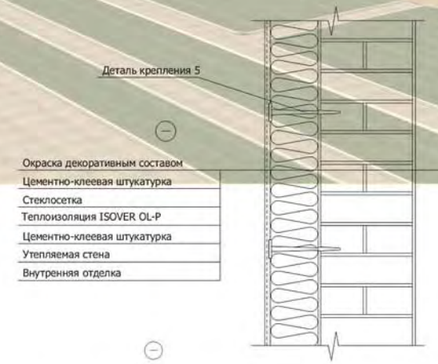


Isover Architectural Students Contest 2008 “Multi-Comfort House School”

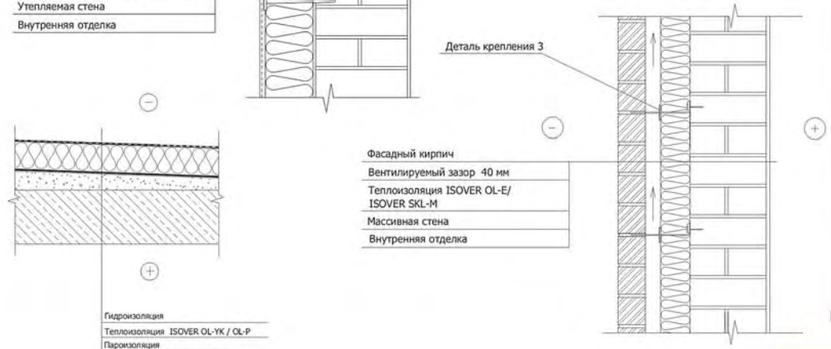
A NEW CONCEPT FOR LEARNING

DETAILS

Утепление стены методом “легкой” штукатурной системы

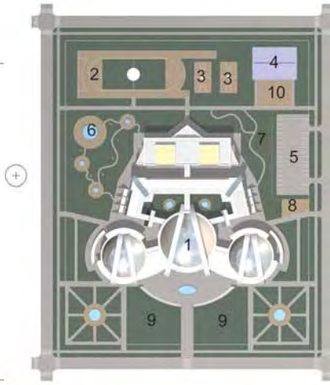


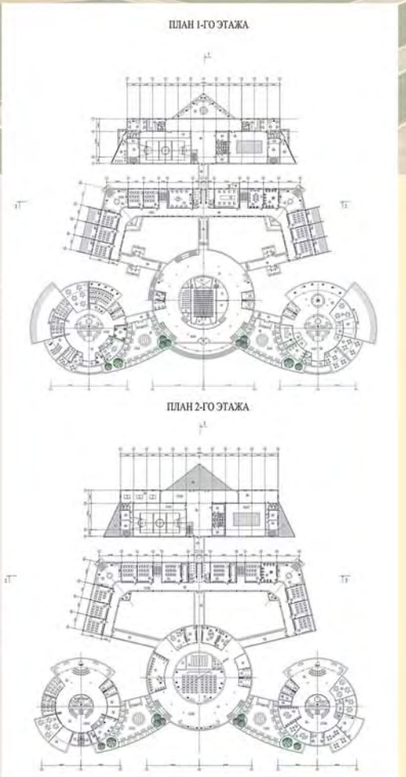
Утепление массивной стены с облицовкой фасадным кирпичом

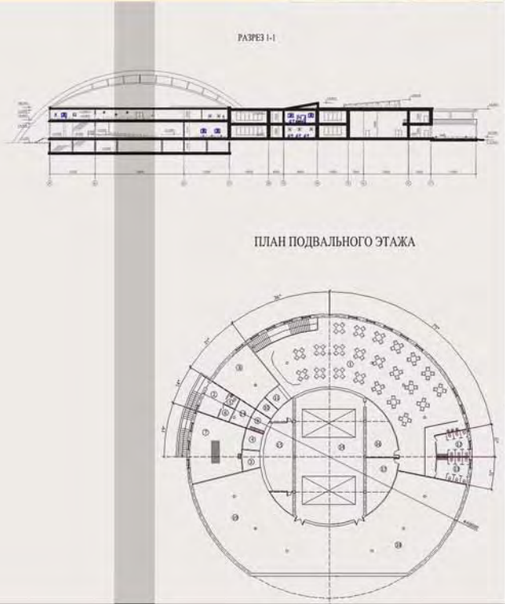


Однослойное утепление неэксплуатируемой кровли по железобетонному перекрытию

Генплан







CONCEPT

Laura Laudere

Year of birth: 1986
Year of study: 3
Place of birth: Riga
School: Riga Technical University

Didzis Jaunzems

Year of birth: 1987
Year of study: 3
Place of birth: Riga
School: Riga Technical University

1

FIRST PRIZE - first stage, Latvia

isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

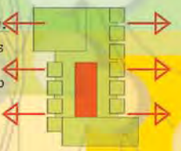
A NEW CONCEPT FOR LEARNING

SUSTAINABILITY -
PLACEMENT OF PUBLIC SPACES.

SCHOOL CAN BE USED
NOT ONLY BY STUDENTS
BUT ALSO BY OTHER
CITIZENS EVERY DAY
ALL YEAR ROUND
(IN EVENIGS AND
SCHOOL HOLIDAYS).

SUSTAINABILITY -
PLACEMENT IN THE LOT.

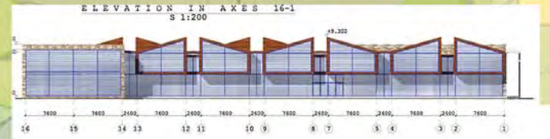
SEPERATED COURTYARDS
FOR YOUNGEST AND
OLDEST STUDENTS
AND COMMON COURTYARD
INSIDE THE SCHOOL.



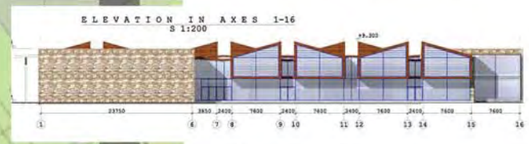
ARRANGEMENT
OF NOISY AND
QUIET ROOMS.

ROOMS ARE PLACED
IN ORDER THAT
GROWS FROM THE
NOISY ONES TO
THE MOST QUIET
ONES.

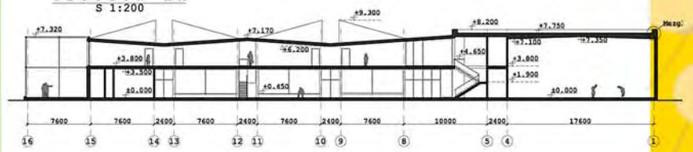
ELEVATION IN AXES 16-1
S 1:200



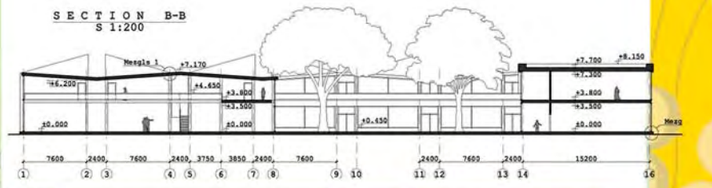
ELEVATION IN AXES 1-16
S 1:200



SECTION A-A
S 1:200



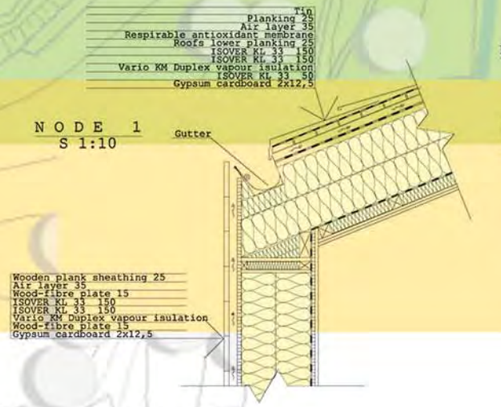
SECTION B-B
S 1:200



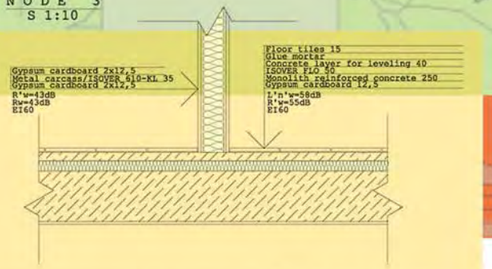
CONCEPT

DETAILS

NODE 1
S 1:10



NODE 3
S 1:10



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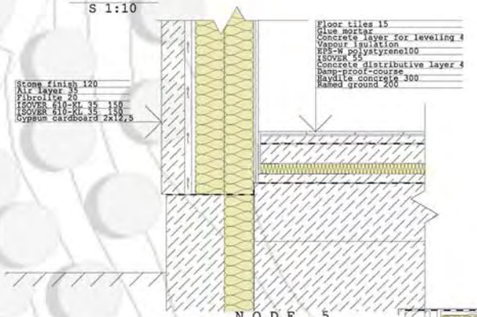
S 1:10



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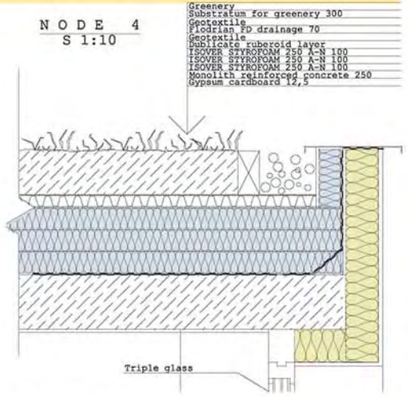
S 1:10



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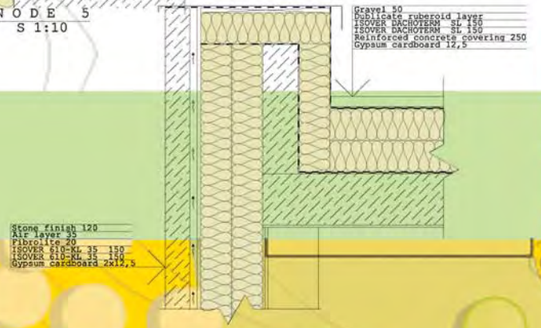
S 1:10

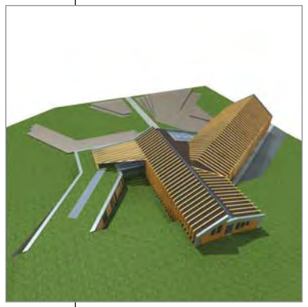


Aleksandrs Čepiguss

Year of birth: 1986
Year of study: 3
Place of birth: Riga
School: Riga Technical University

Dāvis Graudinš

Year of birth: 1984
Year of study: 3
Place of birth: Riga
School: Riga Technical University



2 SECOND PRIZE - first stage, Latvia

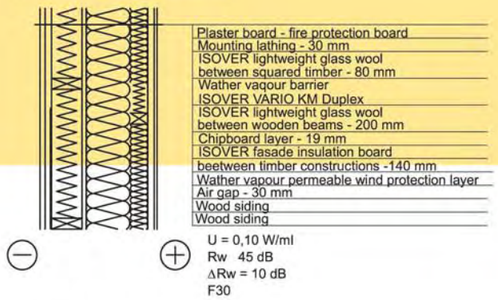
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

DETAILS

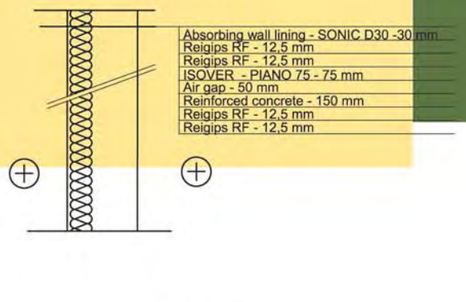
WALL - 2 S 1:20



- Plaster board - fire protection board
- Mounting lathing - 30 mm
- ISOVER lightweight glass wool between squared timber - 80 mm
- Wather vaqour barrier
- ISOVER VARIO KM Duplex
- ISOVER lightweight glass wool between wooden beams - 200 mm
- Chipboard layer - 19 mm
- ISOVER fasade insulation board beetween timber constructions -140 mm
- Wather vapour permeable wind protection layer
- Air gap - 30 mm
- Wood siding
- Wood siding

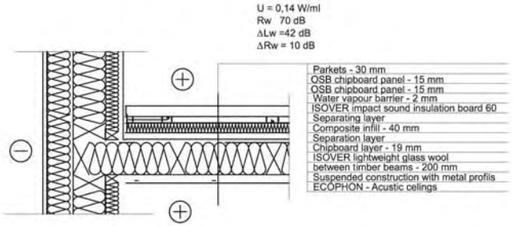
U = 0,10 W/ml
Rw 45 dB
ΔRw = 10 dB
F30

WALL - 3 S 1:20



- Absorbing wall lining - SONIC D30 -30 mm
- Reigips RF - 12,5 mm
- Reigips RF - 12,5 mm
- ISOVER - PIANO 75 - 75 mm
- Air gap - 50 mm
- Reinforced concrete - 150 mm
- Reigips RF - 12,5 mm
- Reigips RF - 12,5 mm

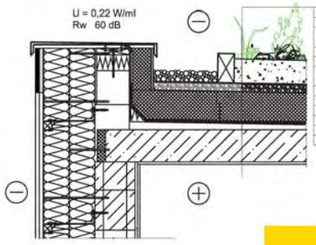
FLOOR - 1 S 1:20



U = 0,14 W/ml
Rw 70 dB
ΔLw =42 dB
ΔRw = 10 dB

- Parkets - 30 mm
- OSB chipboard panel - 15 mm
- OSB chipboard panel - 15 mm
- Water vapour barrier - 2 mm
- ISOVER impact sound insulation board 60
- Separating layer
- Composite infill - 40 mm
- Separation layer
- Chipboard layer - 19 mm
- ISOVER lightweight glass wool between timber beams - 200 mm
- Suspended construction with metal profils ECOPHON - Acustic celings

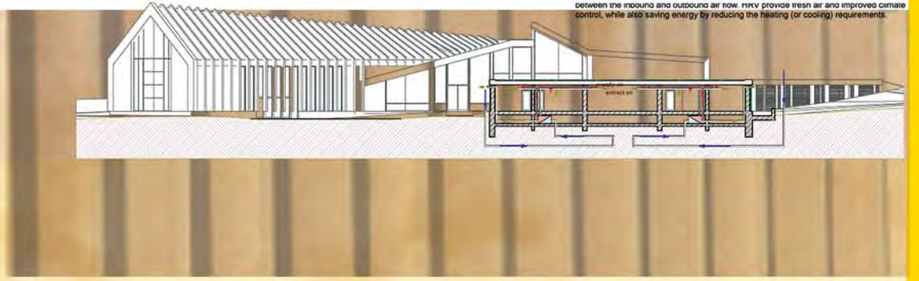
ROOF - 2 S 1:20



U = 0,22 W/ml
Rw 60 dB

1. Plant substration for intensive greening - 150 mm
2. Filter layer (geotextil fibrous web, non-decaying)
3. Drainage layer, expanded concrete aggregate 8/16 - 50 mm
4. XPS-Extruded Polystyrene foam board - 18 mm
5. Roof confinment layer - 6 mm
6. Double-layer roof skin (e.g. polymer bitumen roll roofing, glued)- 8 mm
7. Equalizing layer, perforated glass fibre roofing
8. Priming coat
9. Sloping concrete, 2c gradient
10. Reinforced concrete slap with XPS-Extruded polystyrene as - 200 mm
11. Interior plaster

CONCEPT



Māris Bārdiņš

Year of birth: 1986
Year of study: 3
Place of birth: Cēsis
School: Riga Technical University

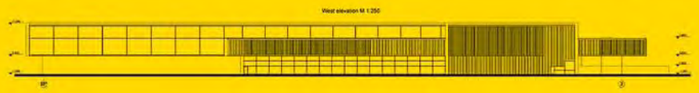
3 THIRD PRIZE - first stage, Latvia

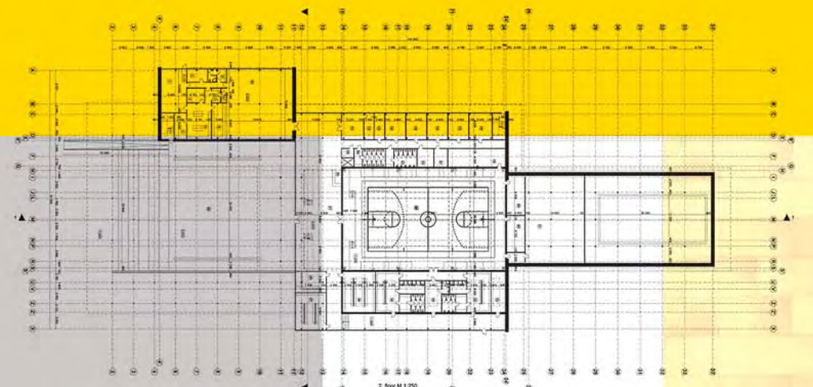
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

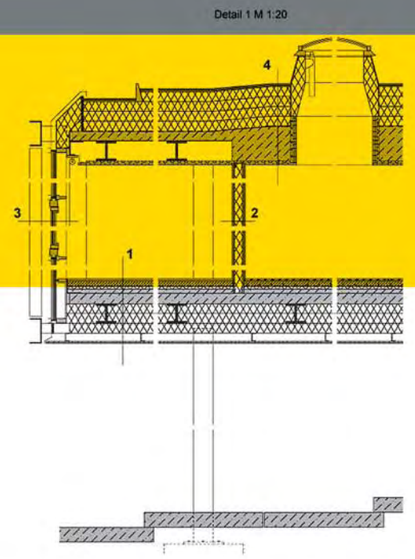
A NEW CONCEPT FOR LEARNING

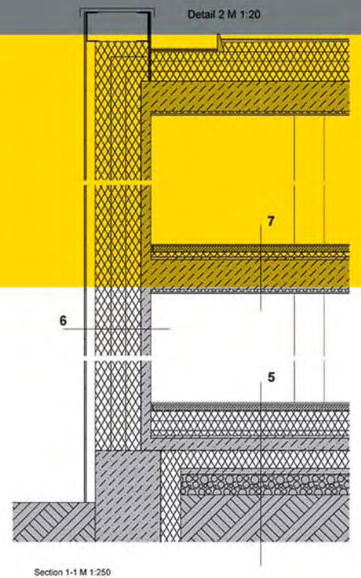
CONCEPT

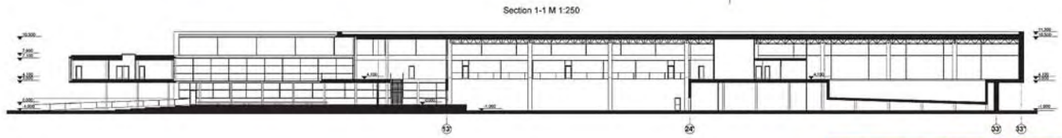




DETAILS







Marta Ilievska

Year of birth: 1986
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Place of birth: Skopje
School: Faculty of Architecture, University “SS. Cyril and Methodius” Skopje

Aleksandar Bocevski

Year of birth: 1987
Year of study: 3
Place of birth: Skopje
School: Faculty of Architecture, University “SS. Cyril and Methodius” Skopje

Zlatko Lazarovski

Year of birth: 1985
Year of study: 3
Place of birth: Skopje
School: Faculty of Architecture, University “SS. Cyril and Methodius” Skopje

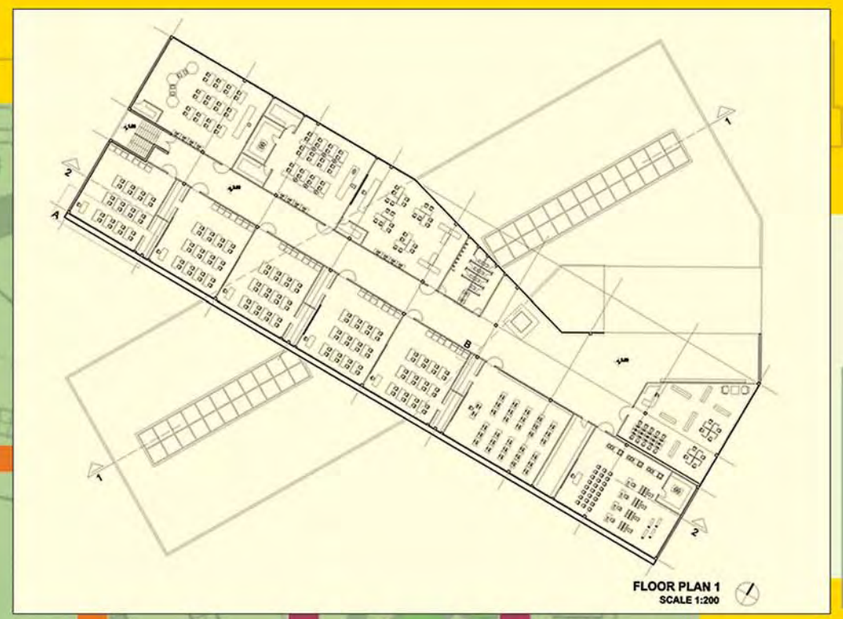
1 FIRST PRIZE - first stage, Macedonia

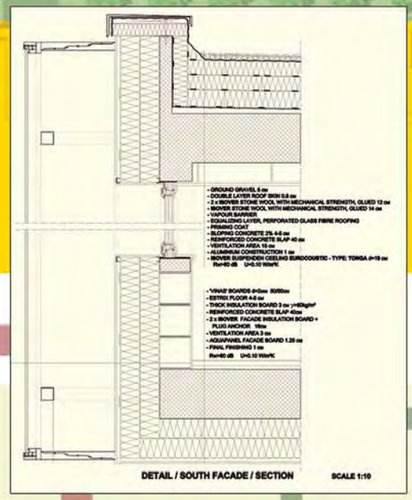
isover
Multi-Comfort House

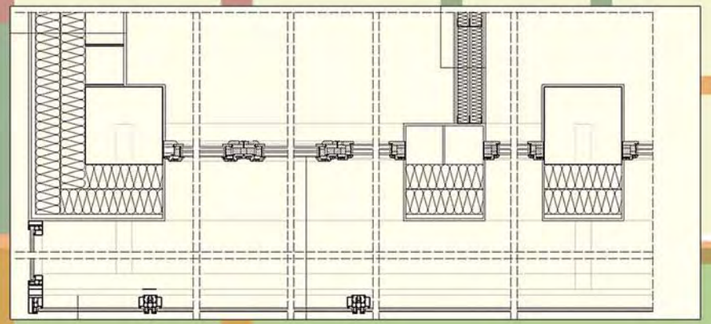
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

DETAILS







CONCEPT

Ana Filipovska

Year of birth: 1984
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Place of birth: Skopje
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Natasha Stojmanovska

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Year of study: 5
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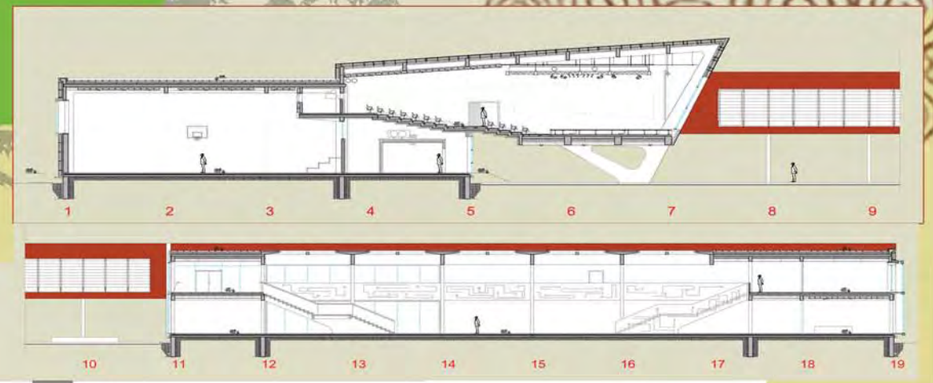
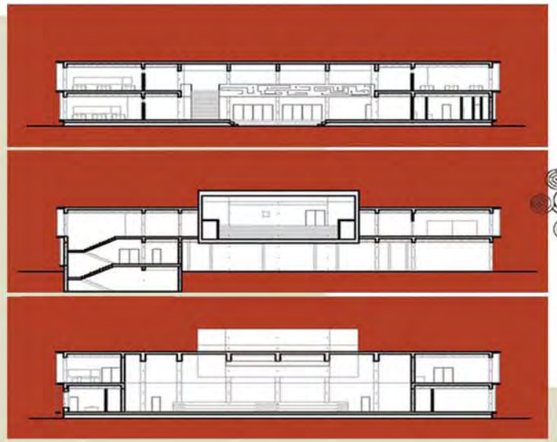
2 SECOND PRIZE - first stage, Macedonia

isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

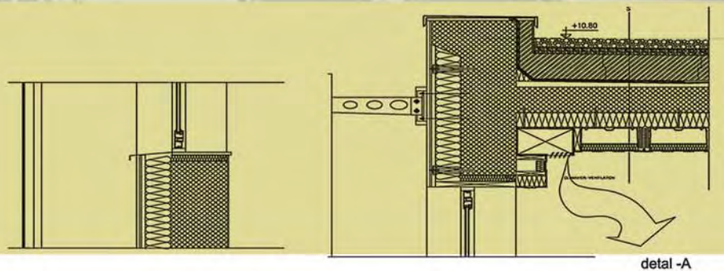
A NEW CONCEPT FOR LEARNING



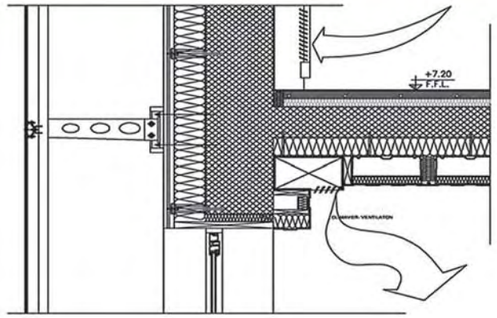


CONCEPT

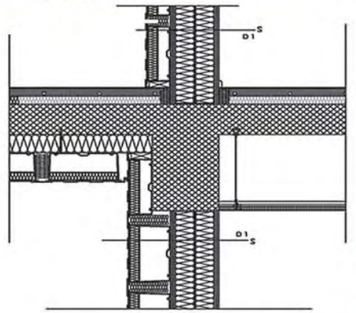
DETAILS



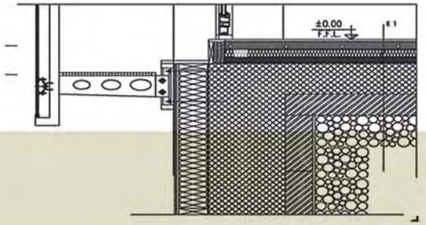
detal -A



detal -B



detal -D

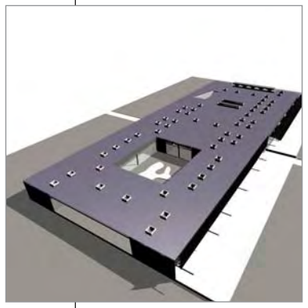


Biljana Stamboliska

Year of birth: 1986
Year of study: 3
Place of birth: Skopje
School: Faculty of Architecture, University “SS. Cyril and Methodius” Skopje

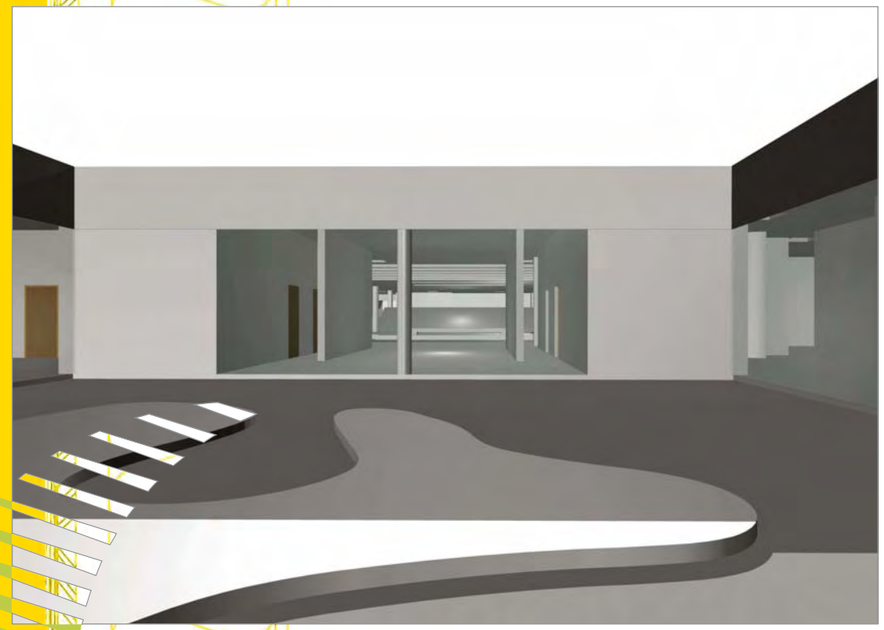
Jasmina Simeonova

Year of birth: 1986
Year of study: 3
Place of birth: Skopje
School: Faculty of Architecture, University “SS. Cyril and Methodius” Skopje



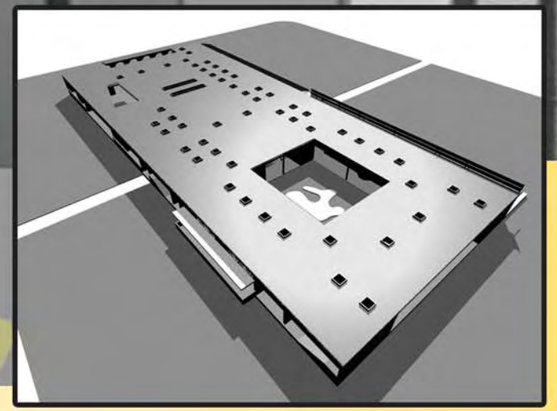
3 THIRD PRIZE - first stage, Macedonia

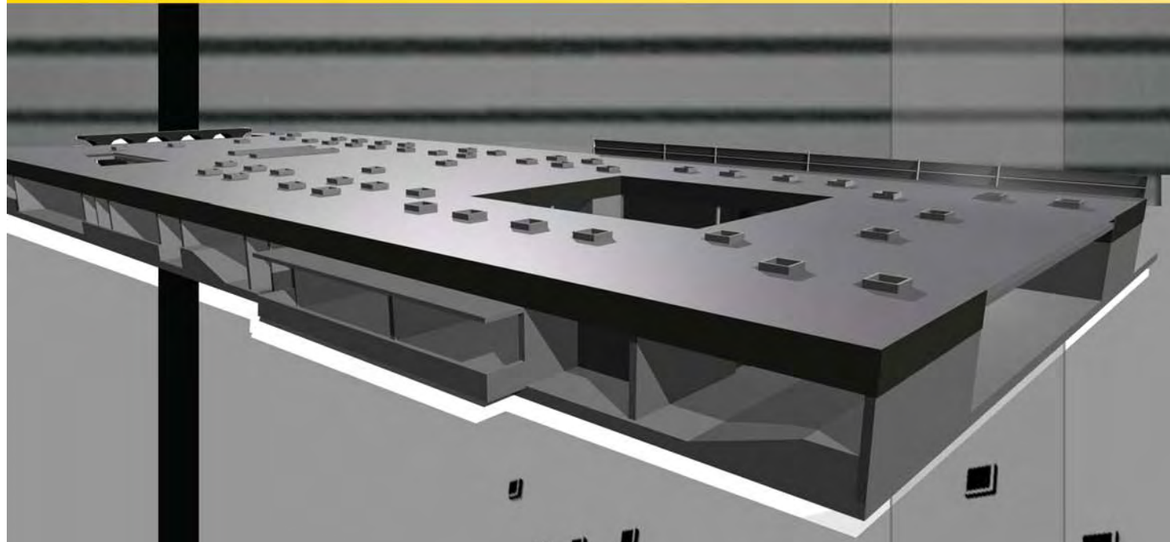
isover Multi-Comfort House



Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING





CONCEPT

Matei Stefan Vlasceanu

Year of birth: 1986
Year of study: 3
Place of birth: Brasov
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest

Ciprian Ionut Rasoiu

Year of birth: 1986
Year of study: 3
Place of birth: Brasov
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest

Sinziana Macareiu

Year of birth: 1986
Year of study: 2
Place of birth: Brasov
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest

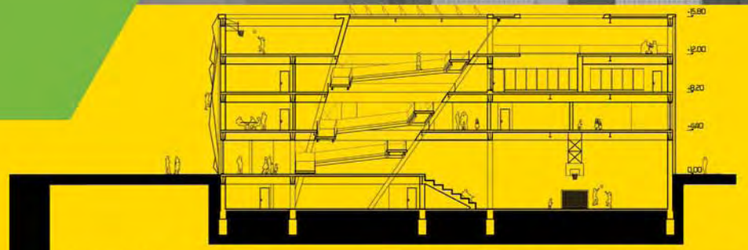
1 FIRST PRIZE - first stage, Romania

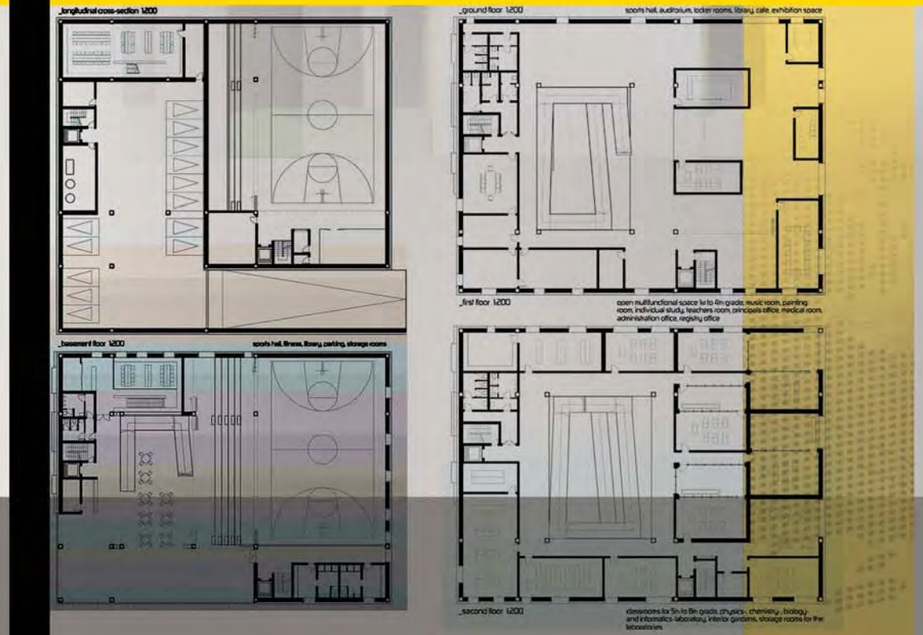
isover
Multi-Comfort House

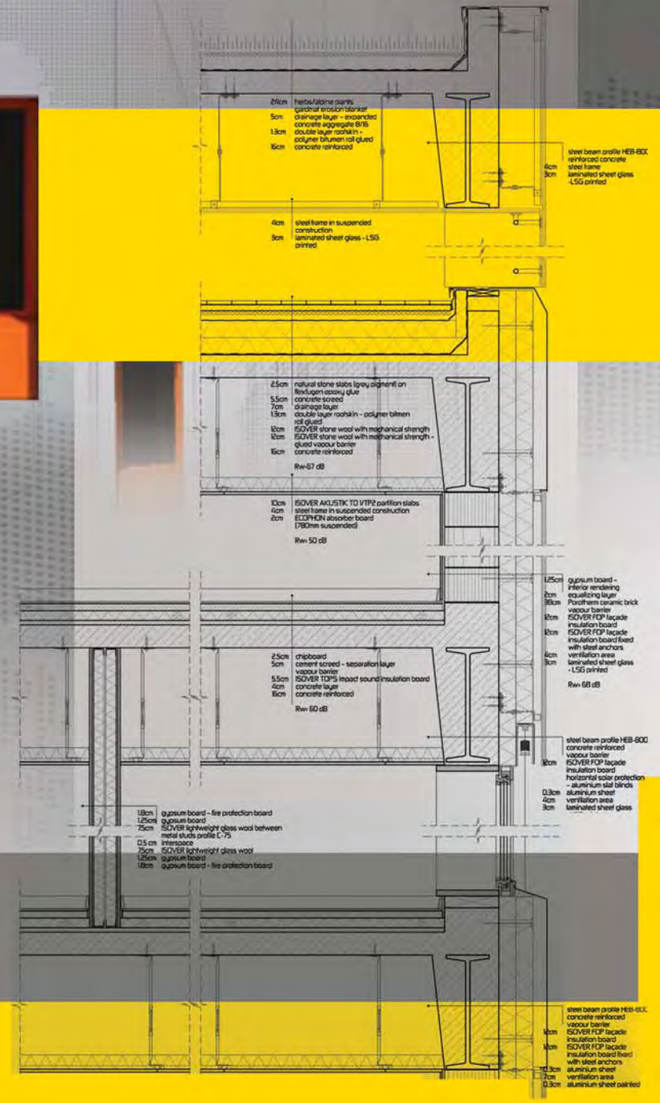
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

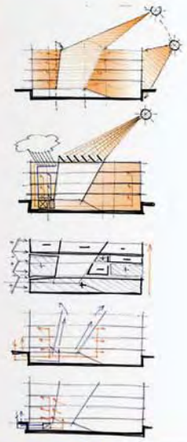
CONCEPT







DETAILS



Alina Bontas

Year of birth: 1984
Year of study: 5
Place of birth: Bucharest
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Madalina Licsandru

Year of birth: 1984
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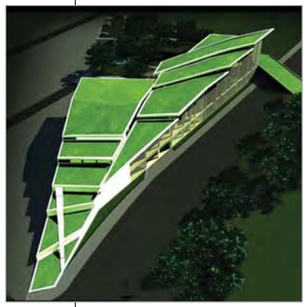
Place of birth: Bucharest
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest

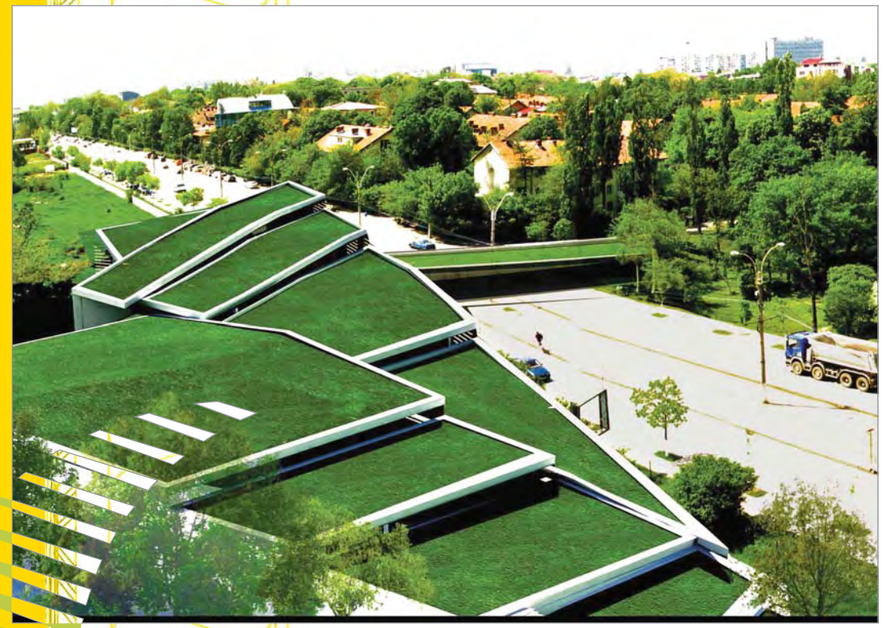
Claudia Preda

Year of birth: 1984
Year of study: 5
Place of birth: Targoviste
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest



2 SECOND PRIZE - first stage, Romania

isover
Multi-Comfort House



Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

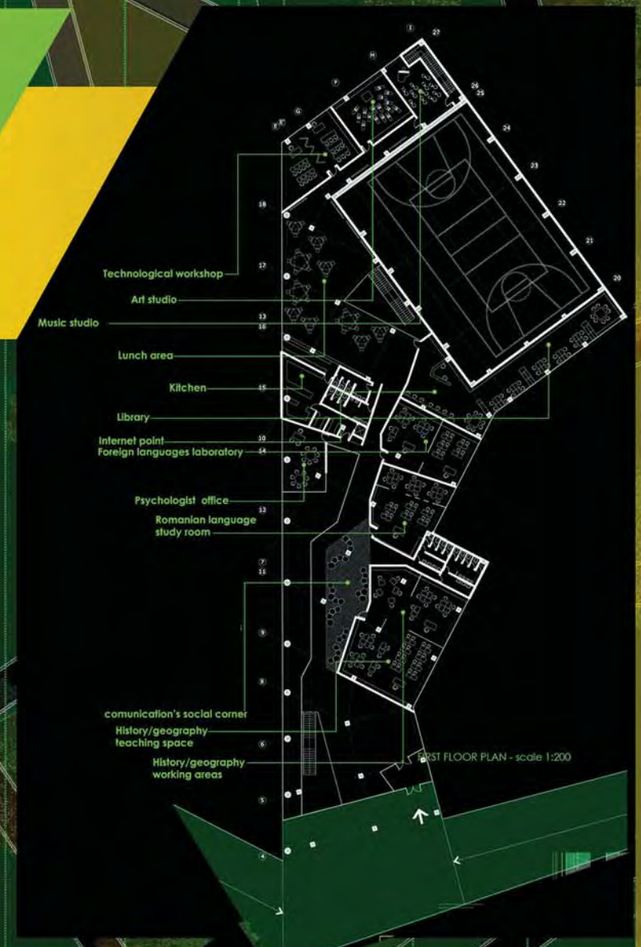
DETAILS

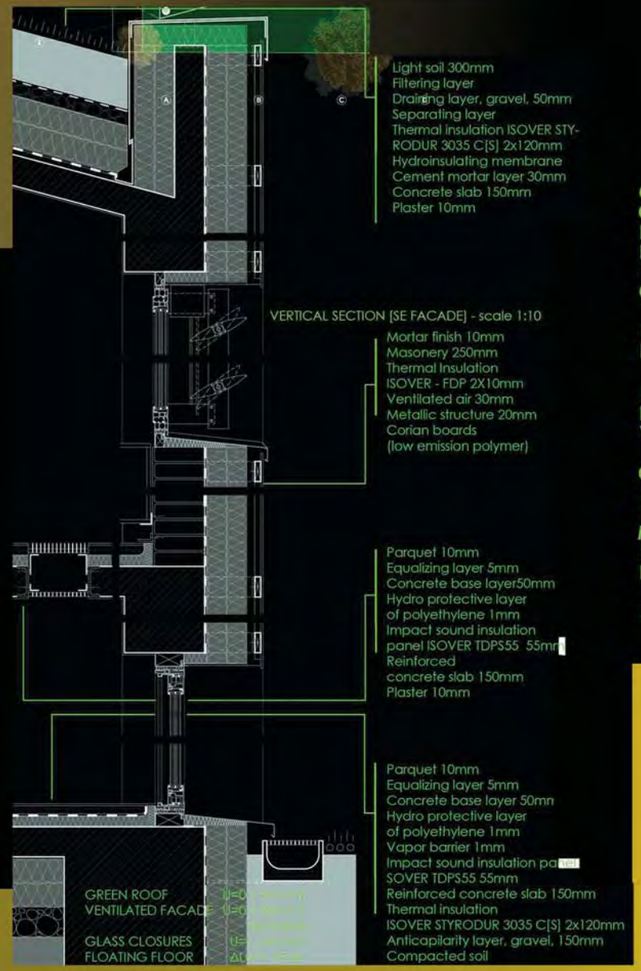
SOCIAL

EDUCATIONAL

NATURAL

CONNECTED ENVIOREMENTS





CONCEPT

Irina Tescaru

Year of birth: 1984
Year of study: 5
Place of birth: Buzau
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest

Bogdan Ispas

Year of birth: 1982
Year of study: 5
Place of birth: Brasov
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest

Irina Dragomir

Year of birth: 1984
Year of study: 5
Place of birth: Bucharest
School: “Ion Mincu“ University of Architecture and Urban Planning, Bucharest

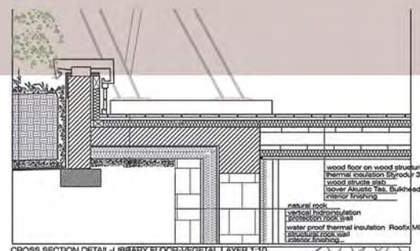
3 THIRD PRIZE - first stage, Romania

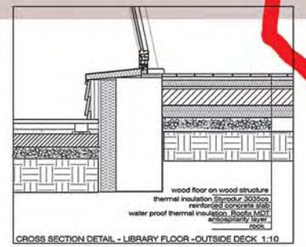
isover Multi-Comfort House

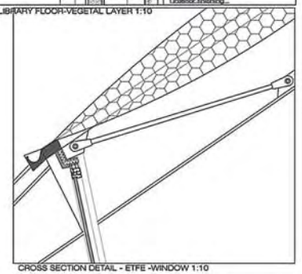
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

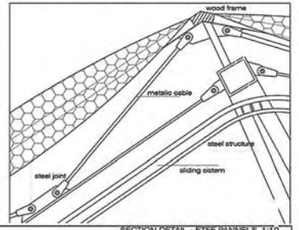
A NEW CONCEPT FOR LEARNING

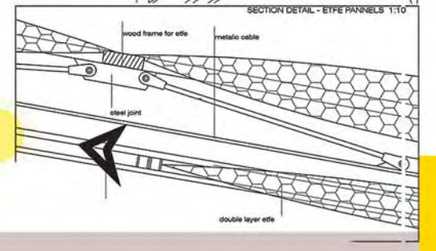
DETAILS

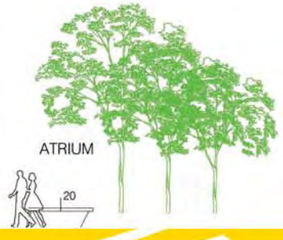












CONCEPT

Uros Kostic

Year of birth: 1983
Year of study: 5
Place of birth: Belgrade
School: Faculty of Architecture Belgrade University

Jovana Stojanovic

Year of birth: 1984
Year of study: 5
Place of birth: Belgrade
School: Faculty of Architecture Belgrade University

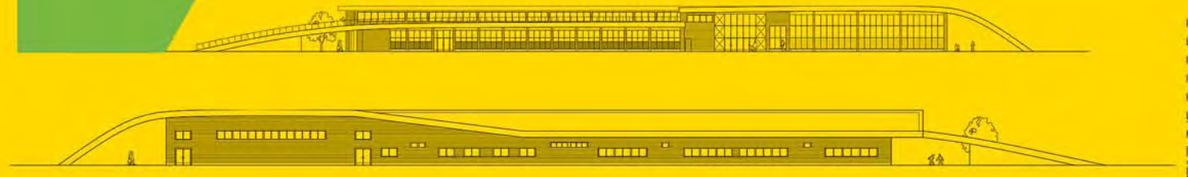
1 FIRST PRIZE - first stage, Serbia

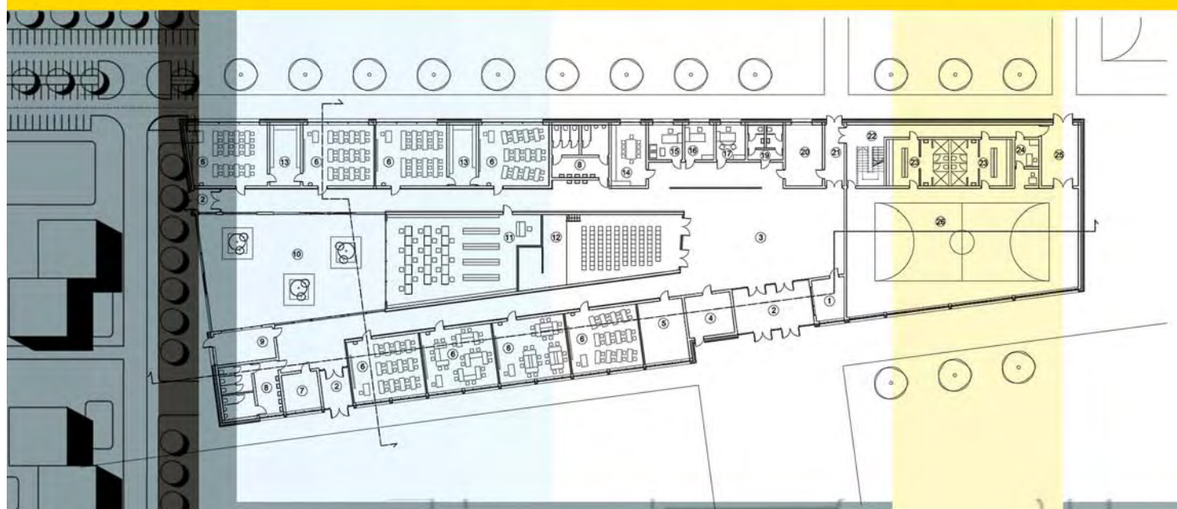
isover Multi-Comfort House

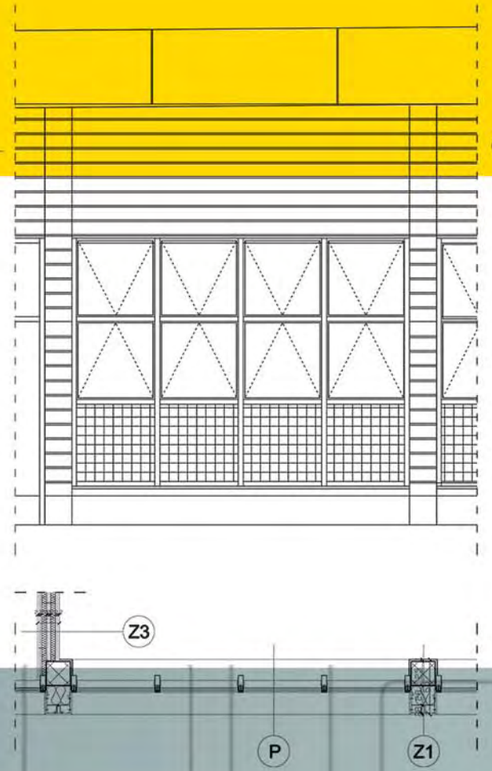
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

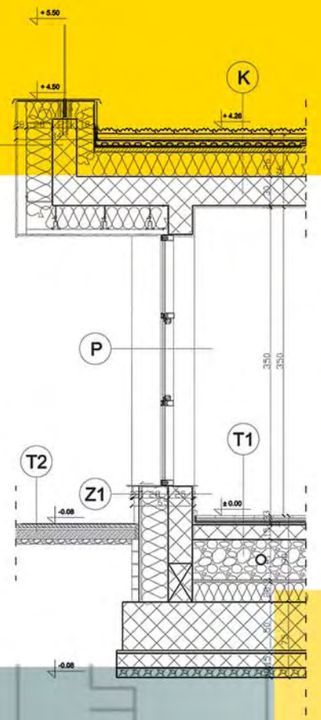
A NEW CONCEPT FOR LEARNING

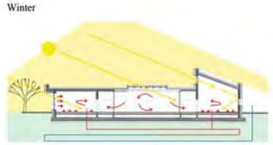
DETAILS

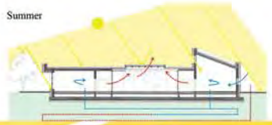












CONCEPT

Zorana Radovanovic

Year of birth: 1980
Year of study: last
Place of birth: Cacak
School: Faculty of Architecture Belgrade University

2 SECOND PRIZE - first stage, Serbia

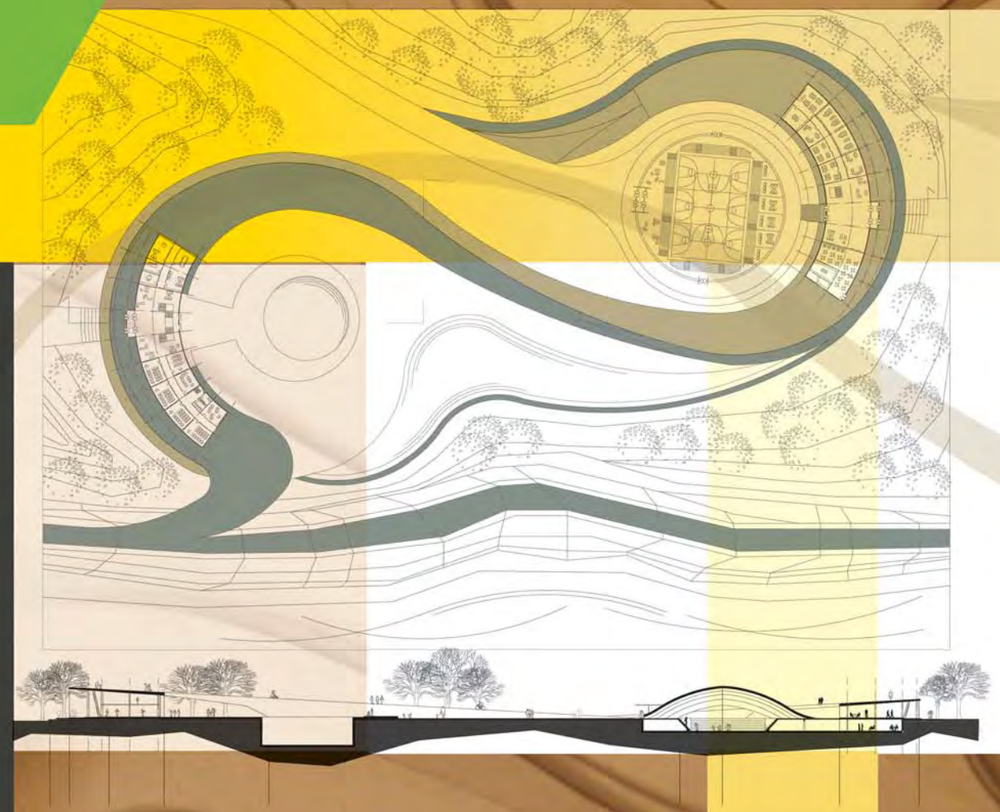
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

CONCEPT

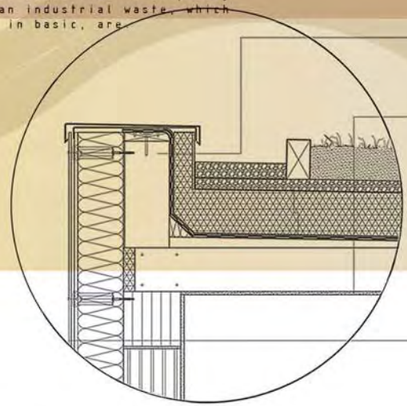
_thermo_isolation materijals are made of recyclable glass and sand, which is perfect for my project of eco-house that is completly recycable and not an industrial waste, which tradicional houses, in basic, are.



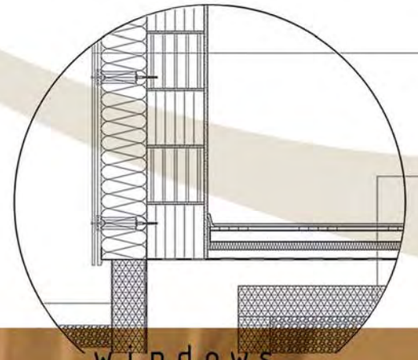
_thermo_isolation

_thermo_isolation materijals are made of recyclable glass and sand, which is perfect for my project of eco-house that is completly recycable and not an industrial waste, which tradicional houses, in basic, are.

DETAILS



5,0	STYRODUR 2800 C EXTRUDED POLYSTYRENE AS THERMAL BRIDGE INSULATION
9,0	STYRODUR 10E EXTRUDED POLYSTYRENE COPING INSULATION
20,0	COPING OF FOAMED CONCRETE
15,0	PLANT SUBSTRATUM FOR INTENSIVE GREENING WITH ROUND GRAVEL 16/32 ON MARGIN
	FILTER LAYER (PLASTIC FIBROUS WEB)
5,0	DRAINAGE LAYER
	FILTER LAYER (PLASTIC FIBROUS WEB)
20,0	STYRODUR 3035 CS EXTRUDED POLYSTYRENE INSULATION
	ROOF CONFINEMENT LAYER
1,2	DOUBLE LAYER ROOF SKIN, I.E. POLYMER BITUMEN ROLL ROOFING
	PERFORATED ROOFING WITH GLASS FIBRE INSERT
	COLD BITOMINOUS PRIMING COAT
	SLOPING CONCRETE MIN. 2%
20,0	REINFORCED CONCRETE LOAD-BEARING SLAB
1,5	INTERIOR PLASTER
1,0	ETERNIT CLADDING MOUNTED ON METAL FRAME
2,0	VENTILATED AIR GAP
16,0	ISOVER FDPL 16 INSULATING GLASS WOOL BOARD
25,0	PERFORATED BRICK WALL
1,5	INTERIOR PLASTER



1,0	ETERNIT CLADDING MOUNTED ON METAL FRAME
2,0	VENTILATED AIR GAP
16,0	ISOVER FDPL 16 INSULATING GLASS WOOL BOARD
25,0	PERFORATED BRICK WALL
1,5	INTERIOR PLASTER
1,5	PARQET
	LEVELLING COURSE
5,0	CEMENT SCREED
	ISOVER FLAMMEX VAPOUR BARRIER
3,5	ISOVER TDP 40/35 IMPACT SOUND INSULATING GLASS WOOL BOARD
4,0	PROTECTIVE CONCRETE
	SEPARATION LAYER
0,5	NON-POROUS MEMBRANE
12,0	SUB-CONCRETE
14,0	STYRODUR 3035 EXTRUDED POLYSTYRENE INSULATION
	ROUD GRAVEL

_windows

_triple_layered (with low "u" coeficient of 0.47, low emission and filled with argon. _to avoid loss of temperature on edge ofglass special isolating profiles are used on window frames combined with warm edge sistem.

Zlatko Milovanovic

Year of birth: 1983
Year of study: last
Place of birth: Belgrade
School: Faculty of Architecture Belgrade University

Mladen Mladenovic

Year of birth: 1983
Year of study: last
Place of birth: Doboj, BIH
School: Faculty of Architecture Belgrade University

3

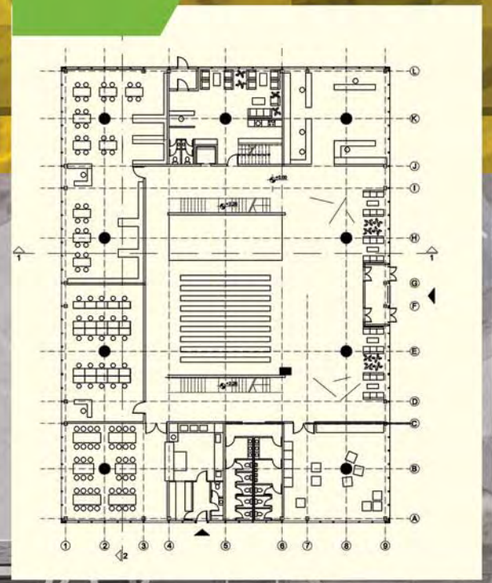
THIRD PRIZE - first stage, Serbia

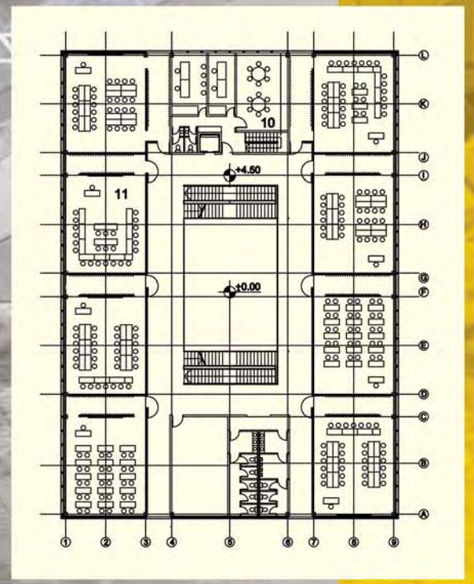
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

DETAILS





CONCEPT

Matúš Podskalický

Year of birth: 1981
Year of study:4
Place of birth: Zlaté Moravce
School: Fakulta architektúry STU

Ján Miškov

Year of birth: 1986
Year of study: 3
Place of birth: Bzovík
School: Fakulta architektúry STU

1 FIRST PRIZE - first stage, Slovakia

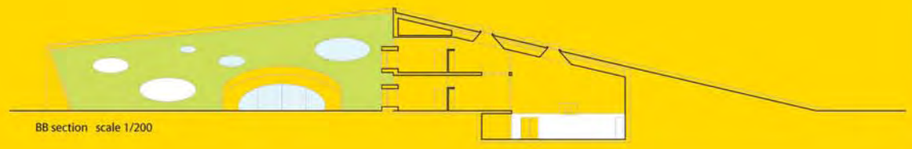
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

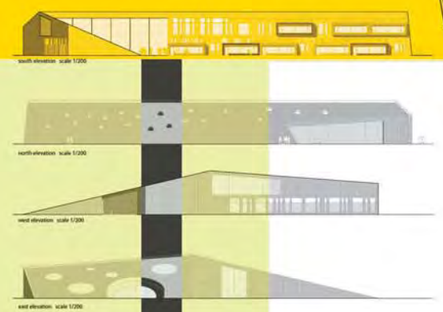
DETAILS

AA section scale 1/200



BB section scale 1/200

second floor scale 1/200

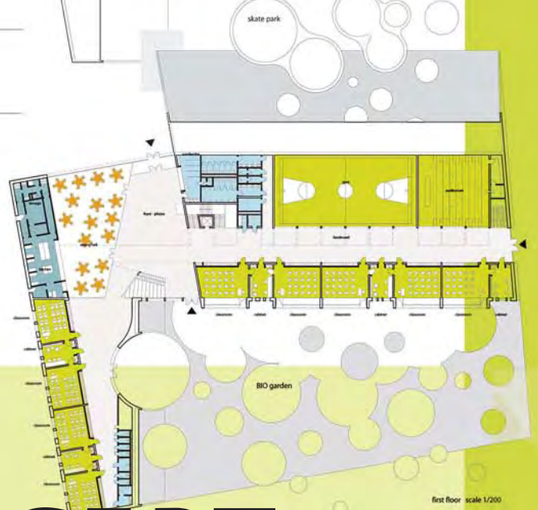


south elevation scale 1/200

north elevation scale 1/200

west elevation scale 1/200

east elevation scale 1/200



first floor scale 1/200

classroom detail scale 1/25

CONCEPT

Tomáš Krištek

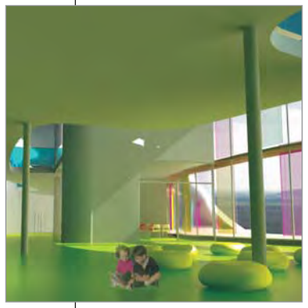
Year of birth: 1986
Year of study: 3
Place of birth: Brezno
School: Slovenská Technická Univerzita - Fakulta architektúry, Bratislave

Peter Kucharovič

Year of birth: 1986
Year of study: 3
Place of birth: Trebišov
School: Slovenská Technická Univerzita - Fakulta architektúry, Bratislave

Ondrej Kurek

Year of birth: 1986
Year of study: 3
Place of birth: Žilina
School: Slovenská Technická Univerzita - Fakulta architektúry, Bratislave



2 SECOND PRIZE - first stage, Slovakia

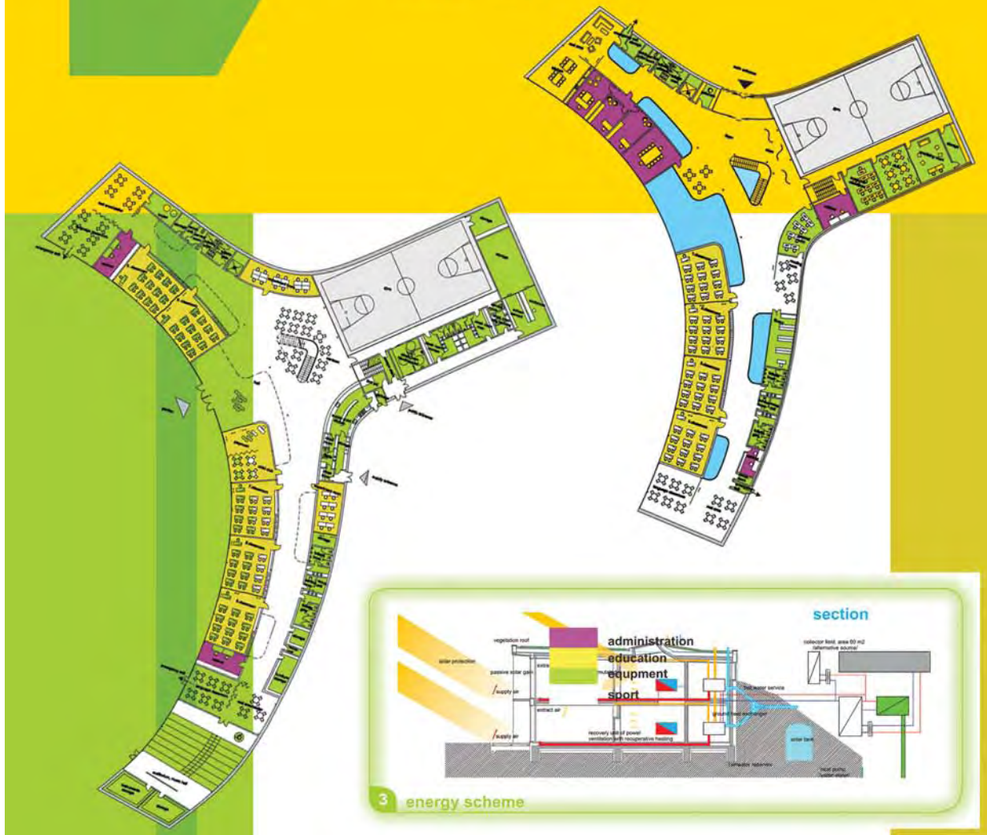
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

park flows

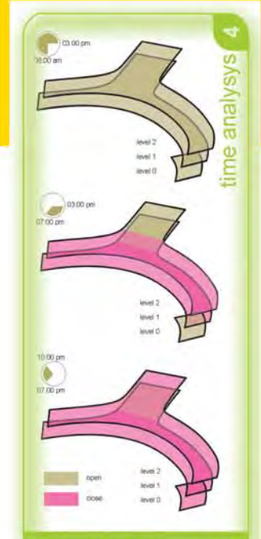
energy stays



3 energy scheme

CONCEPT

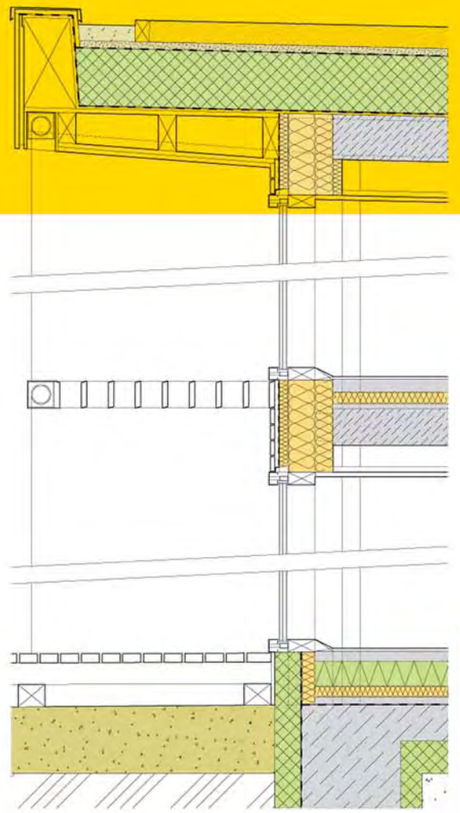
energy concept



4

school, like a public building, changes the functiontions according to daytime, every part opens and closes specially for every user . Functions are separated but connected togerther, it enables building to be variable.

DETAILS



education

culture

sport

leasure

Marián Lucký

Year of birth: 1987
Year of study: 3
Place of birth:Trstená
School: Faculty of architecture STU Bratislava

Robert Loffler

Year of birth: 1986
Year of study: 3
Place of birth: Zvolen
School: Faculty of architecture STU Bratislava

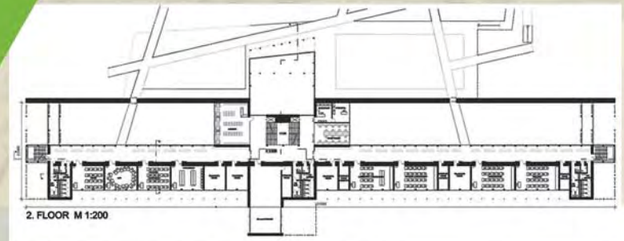
3 THIRD PRIZE - first stage, Slovakia

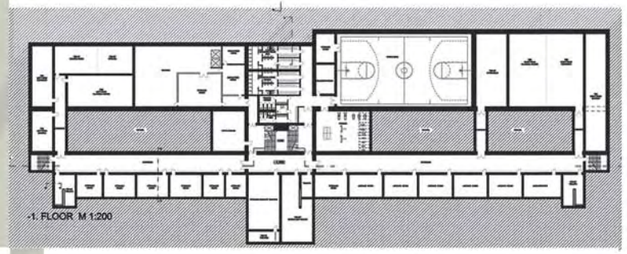
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

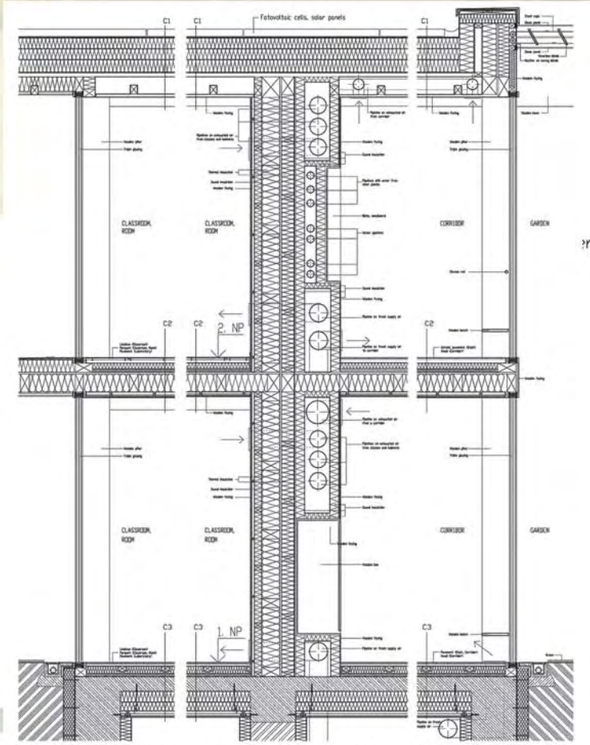
A NEW CONCEPT FOR LEARNING

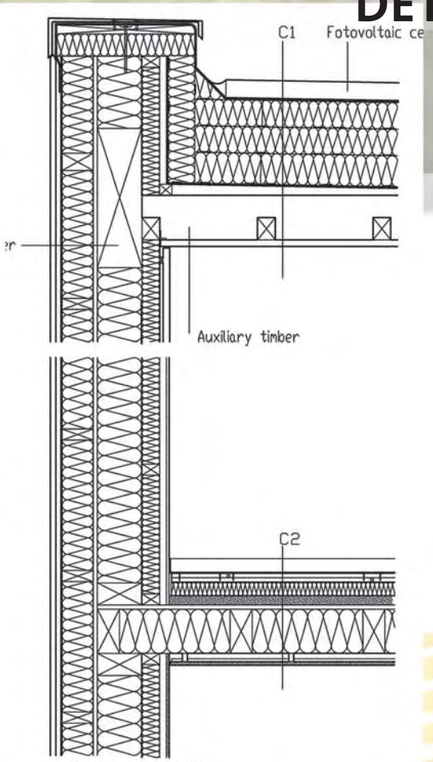
DETAILS





CONCEPT





Neža Žnidaršič

Year of birth: 1984
Year of study: 5
Place of birth: Kranj
School: Faculty of Architecture - University of Ljubljana

Barbara Tratar

Year of birth: 1983
Year of study: 5
Place of birth: Ljubljana
School: Faculty of Architecture - University of Ljubljana

Klemen Kušar

Year of birth: 1985
Year of study: 4
Place of birth: Ljubljana
School: Faculty of Architecture - University of Ljubljana

1 FIRST PRIZE - first stage, Slovenia

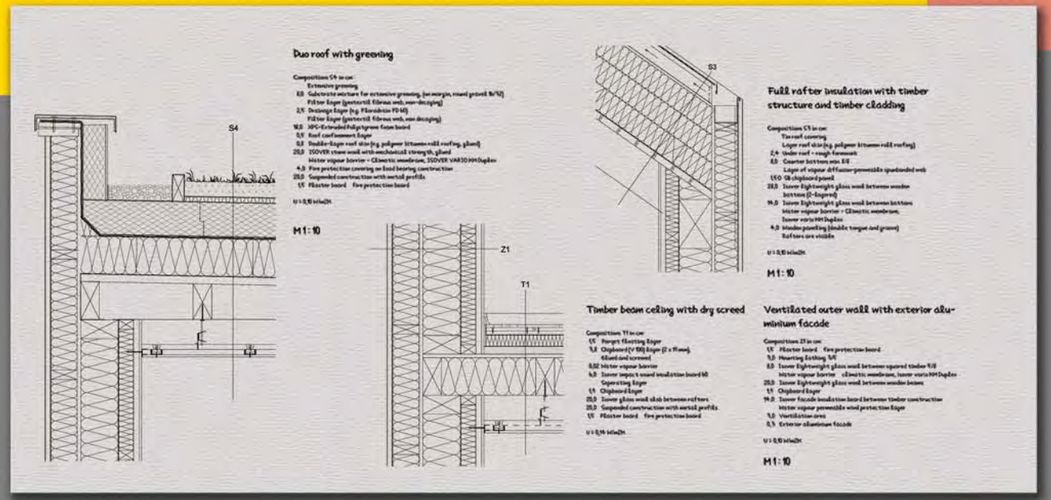
isover Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

multi comfort house : school

DETAILS



CONCEPT

Jasna Štrukelj

Year of birth: 1986
Year of study: 3
Place of birth: Ljubljana
School: Faculty of Architecture - University of Ljubljana

Nina Majoranc

Year of birth: 1986
Year of study: 3
Place of birth: Celje
School: Faculty of Architecture - University of Ljubljana

2 SECOND PRIZE - first stage, Slovenia

isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

DETAILS

CONCEPT

Nina Rossi

Year of birth: 1984
Year of study: 4
Place of birth: Ljubljana
School: Faculty of Architecture - University of Ljubljana

Vesna Sindičič

Year of birth: 1984
Year of study: 4
Place of birth: Ljubljana
School: Faculty of Architecture - University of Ljubljana

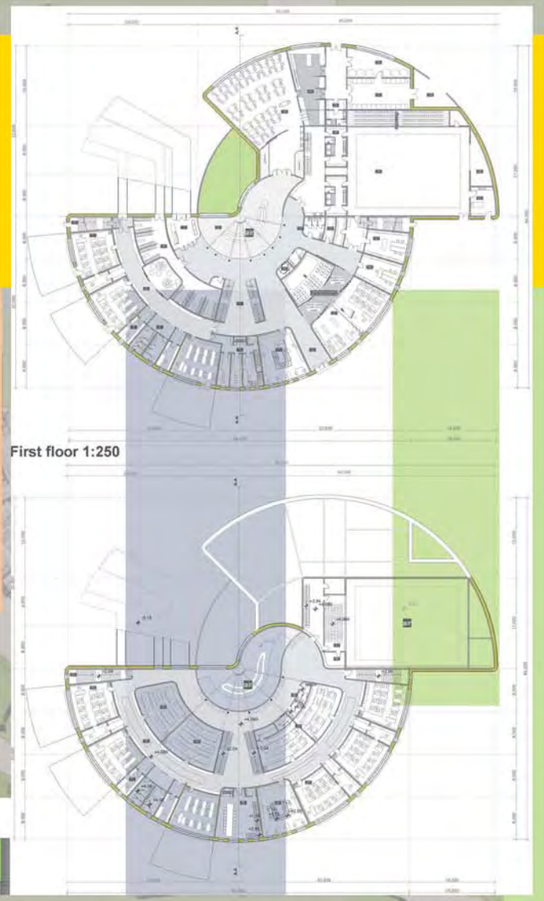
3 THIRD PRIZE - first stage, Slovenia

isover Multi-Comfort House

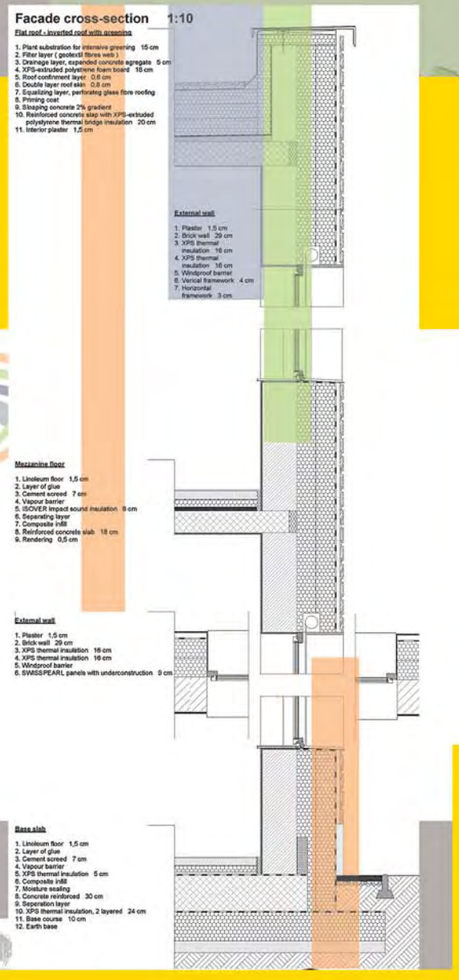
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

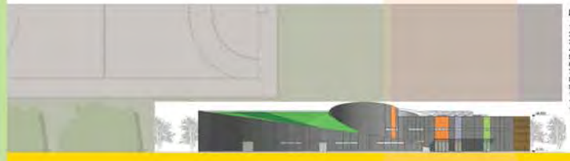
A NEW CONCEPT FOR LEARNING

CONCEPT



DETAILS





Yesim Gülsular

Year of birth: 1982
Year of study: 5
Place of birth: Darmstadt
School: Universidad Politécnica de Cataluña

Daniel Fernández Boissier

Year of birth: 1985
Year of study: 5
Place of birth: Barcelona
School: Universidad Politécnica de Cataluña

1

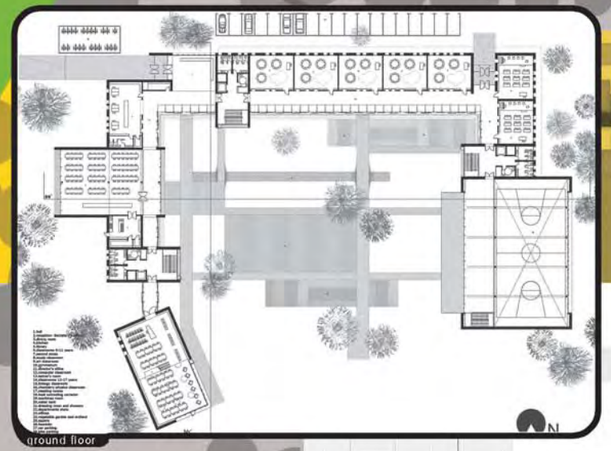
FIRST PRIZE - first stage, Spain

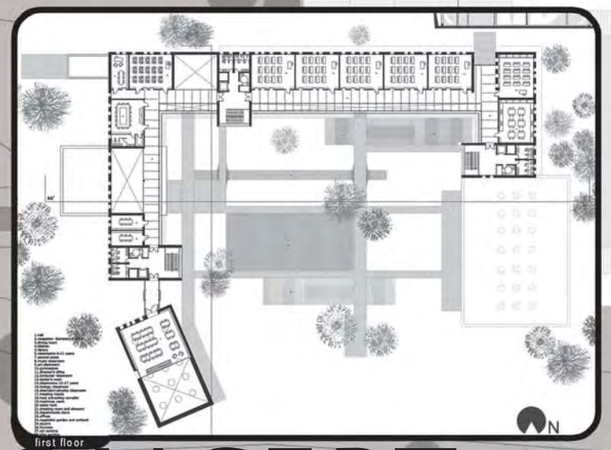
isover
Multi-Comfort House

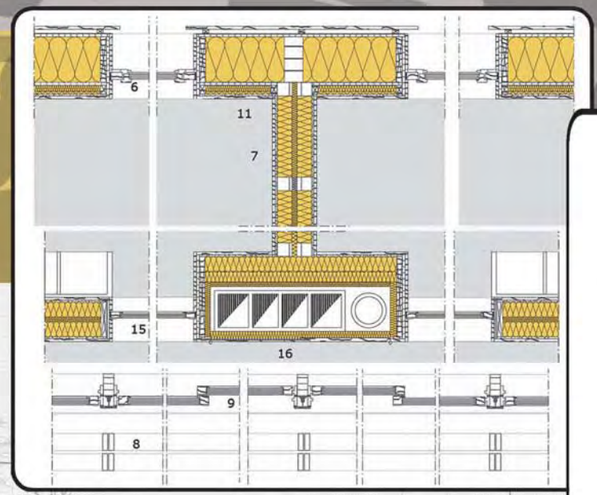
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

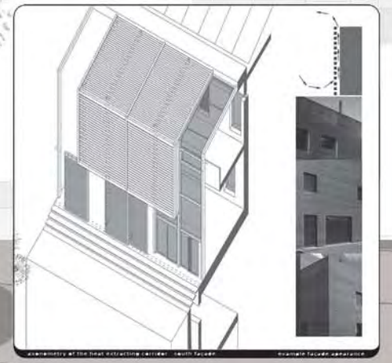
A NEW CONCEPT FOR LEARNING

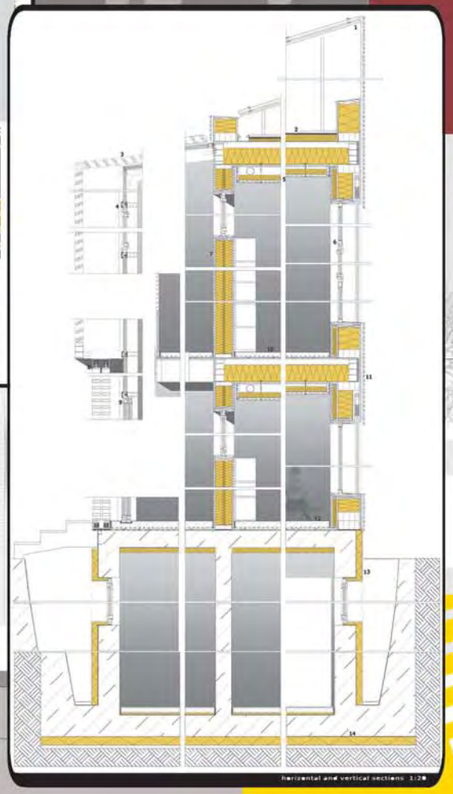
DETAILS











CONCEPT

Carmen Martínez Fernández-Barja

Year of birth: 1987
Year of study: 3
Place of birth: Madrid
School: Escuela Técnica Superior de Arquitectura de Madrid

Alejandro Burgueño Díaz

Year of birth: 1987
Year of study: 3
Place of birth: Madrid
School: Escuela Técnica Superior de Arquitectura de Madrid

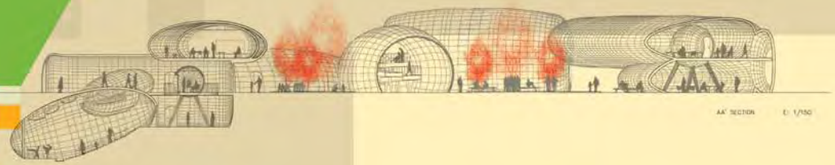
2 SECOND PRIZE - first stage, Spain

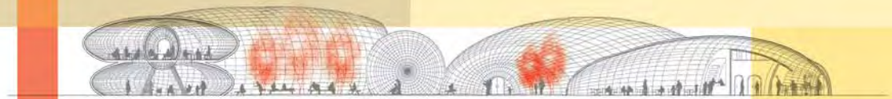
isover Multi-Comfort House

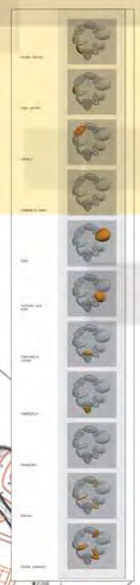
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

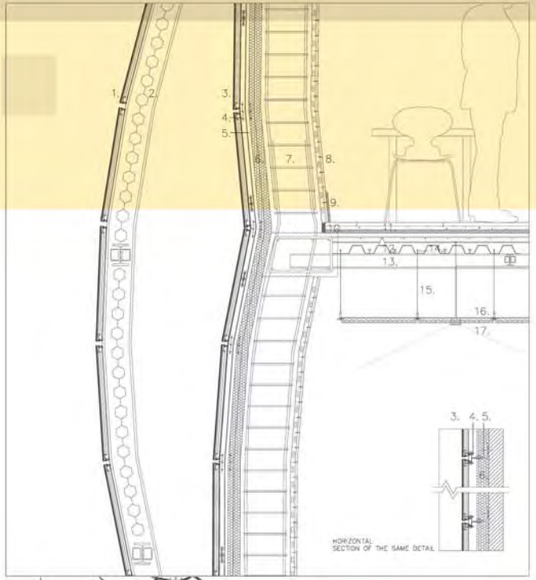
A NEW CONCEPT FOR LEARNING

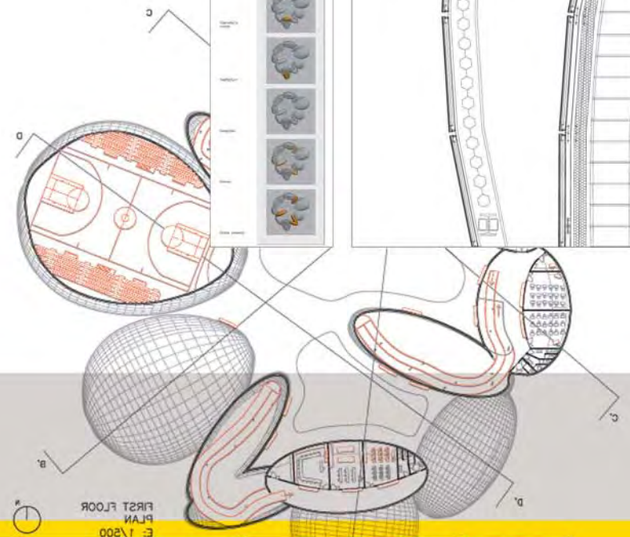
DETAILS

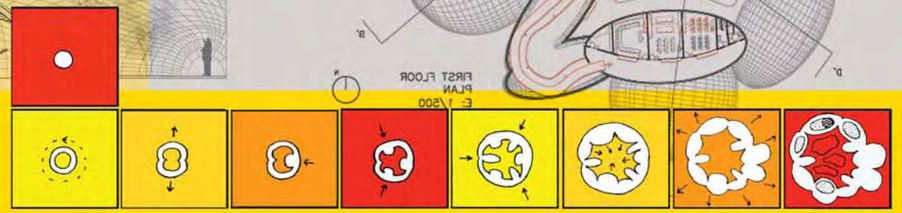












CONCEPT

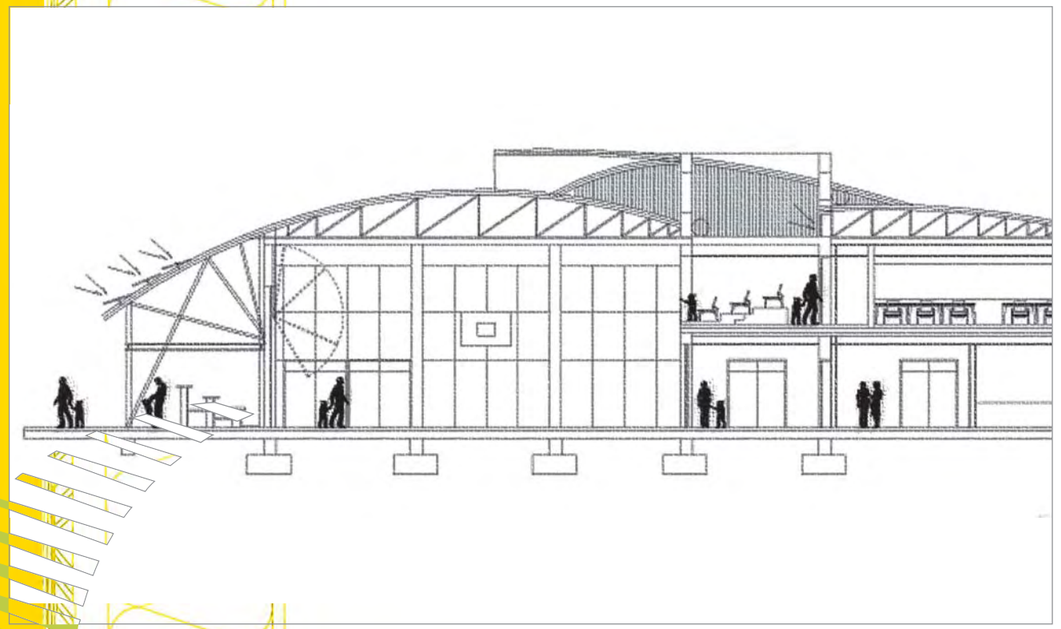
Roxana Patricia Lopera Berdugo

Year of birth: 1978
Year of study: 6
Place of birth: Colombia
School: Universidad Politécnica de Cataluña

3

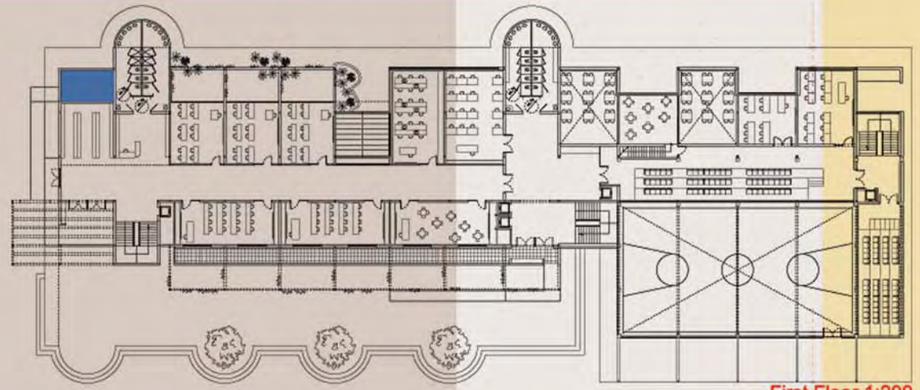
THIRD PRIZE - first stage, Spain

isover
Multi-Comfort House



Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

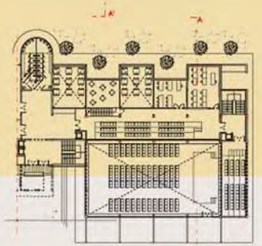


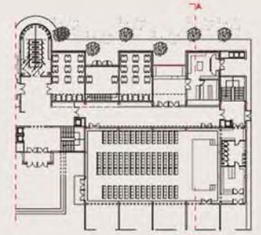
First Floor 1:200

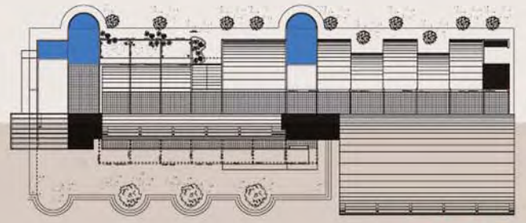
Section A-A' 1:100

The general concept:: The integration of the school in the community in which it is implanted, complementary functions Opened to the public are: the school restaurant, the library and the multiple building destined to be cultural or religious audience and sports space.

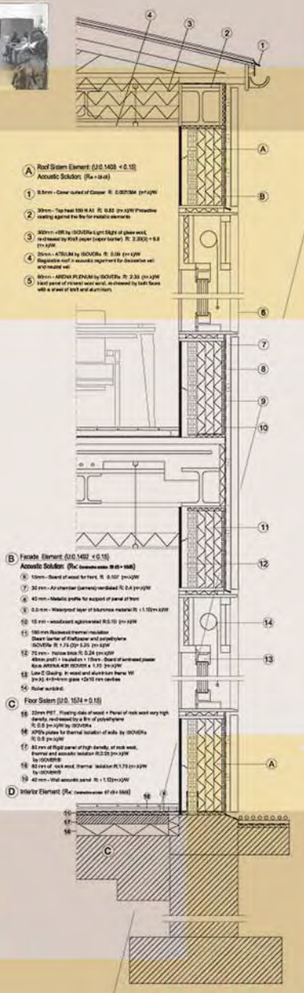
CONCEPT







Roof Plant 1:200

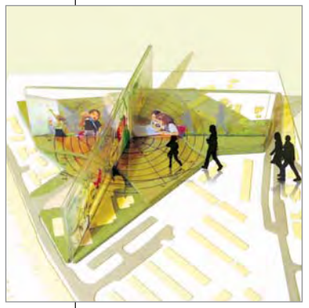


Detail Section 1:10

DETAILS

Iona Campbell

Year of birth: 1980
Year of study: 3
Place of birth: Paisley, Scotland
School: Univesity of Nottingham



1 FIRST PRIZE - first stage, United Kingdom

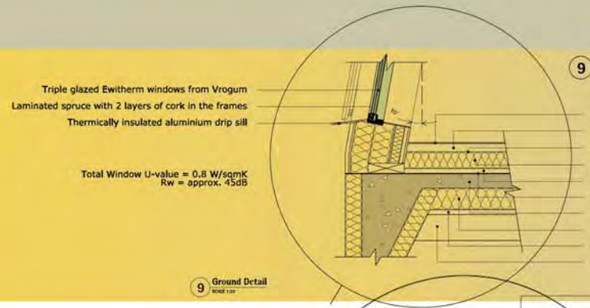
isover
Multi-Comfort House

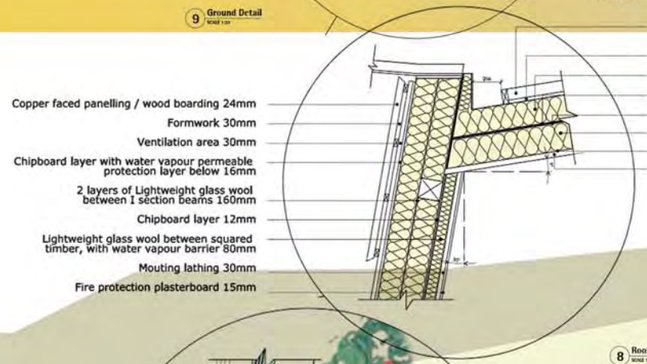
Isover Architectural Students Contest 2008 “Multi-Comfort House School”

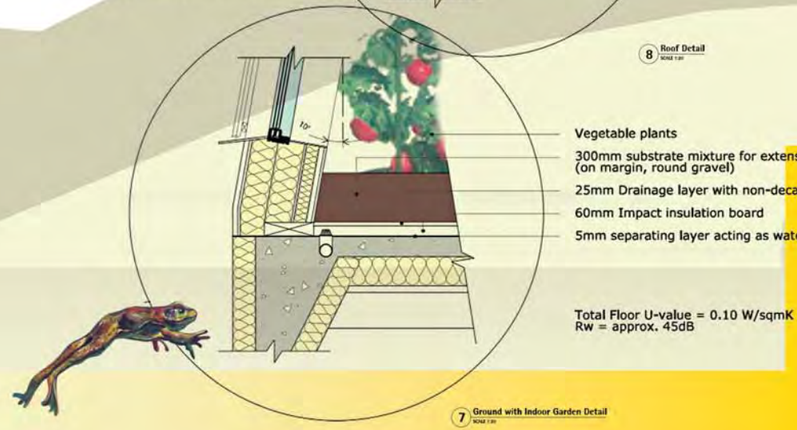
A NEW CONCEPT FOR LEARNING

CONCEPT

DETAILS





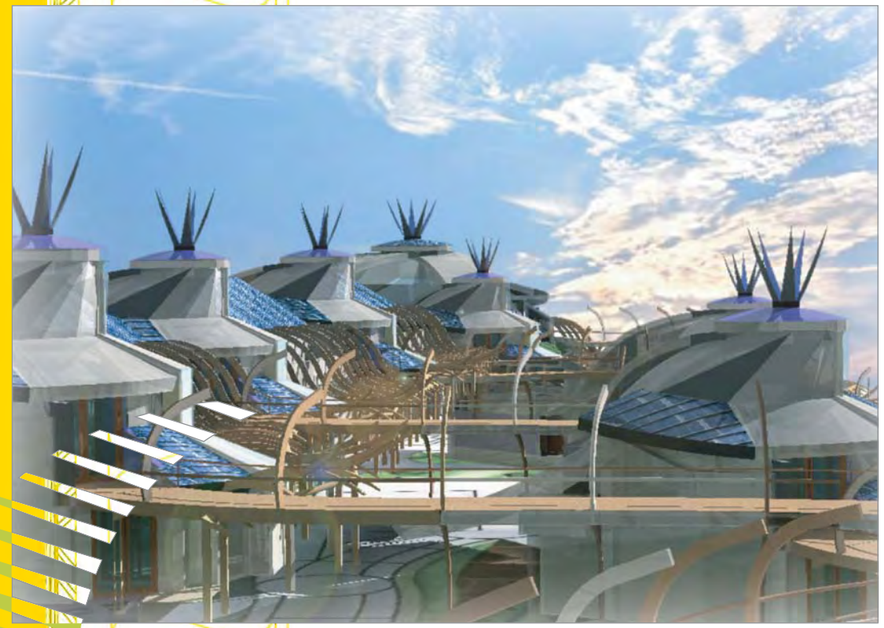


Thomas Bennett

Year of birth: 1986
Year of study: 3
Place of birth: Devon, UK
School: Univesity of Nottingham

2 SECOND PRIZE - first stage, United Kingdom

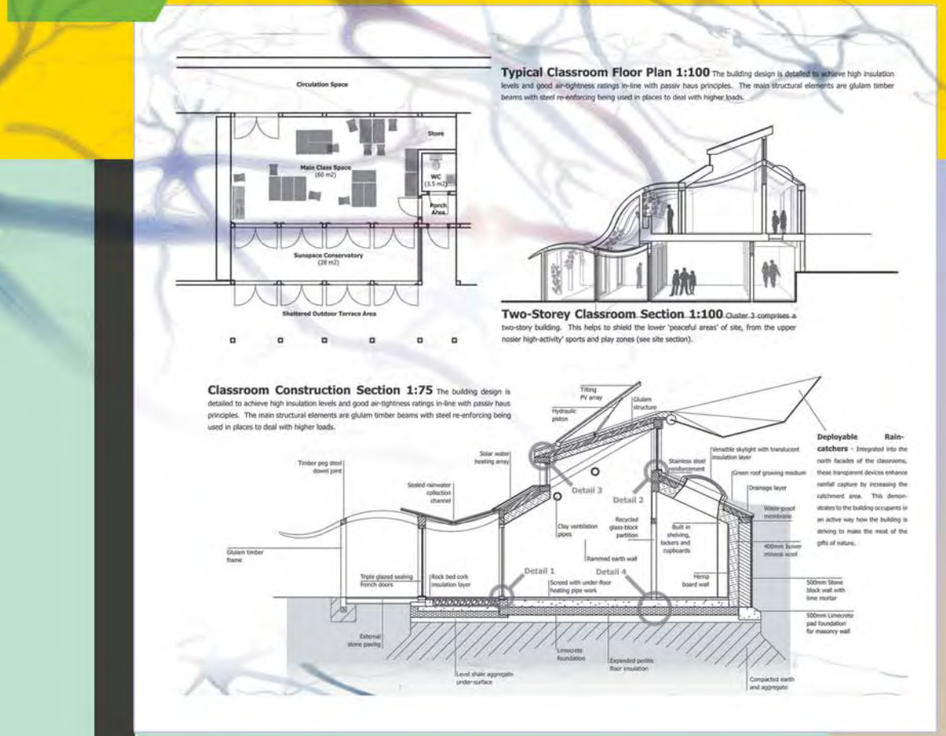
isover
Multi-Comfort House



Isover Architectural Students Contest 2008 “Multi-Comfort House School”

A NEW CONCEPT FOR LEARNING

DETAILS



Typical Classroom Floor Plan 1:100 The building design is detailed to achieve high insulation levels and good air-tightness ratings in-line with passiv haus principles. The main structural elements are glulam timber beams with steel re-enforcing being used in places to deal with higher loads.

Two-Storey Classroom Section 1:100 Cluster 3 comprises a two-story building. This helps to shield the lower 'peaceful areas' of site, from the upper nosier high-activity' sports and play zones (see site section).

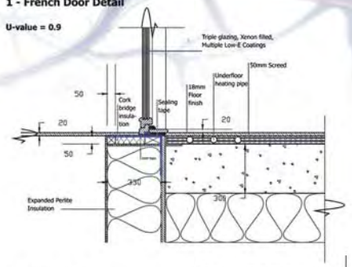
Classroom Construction Section 1:75 The building design is detailed to achieve high insulation levels and good air-tightness ratings in-line with passiv haus principles. The main structural elements are glulam timber beams with steel re-enforcing being used in places to deal with higher loads.

Deployable Rain-catchers - Integrated into the north facades of the classrooms, these transparent devices enhance rainfall capture by increasing the catchment area. This demonstrates to the building occupants in an active way how the building is striving to make the most of the gifts of nature.

Construction Details 1:10 Details have been designed to minimise air leakage from the envelope and ensure thermal bridges do not occur across the envelope. Climatic barrier and sealing tape are used to prevent air leakage from joints between construction components.

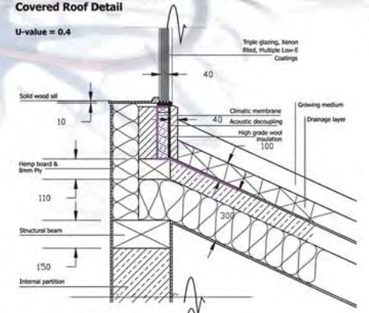
1 - French Door Detail

U-value = 0.9



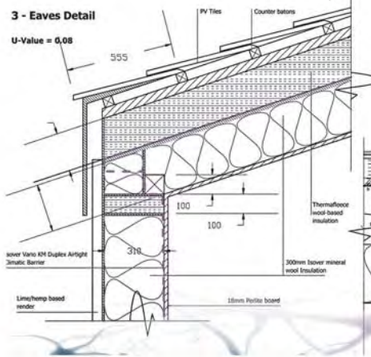
2 - Upper Window & Earth Covered Roof Detail

U-value = 0.4



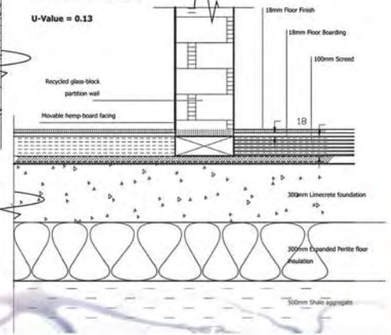
3 - Eaves Detail

U-Value = 0.08



4 - Internal Partition

U-Value = 0.13



CONCEPT

Liming Qiao

Year of birth: 1985
Year of study: 3
Place of birth: Australia
School: Univesity of Nottingham

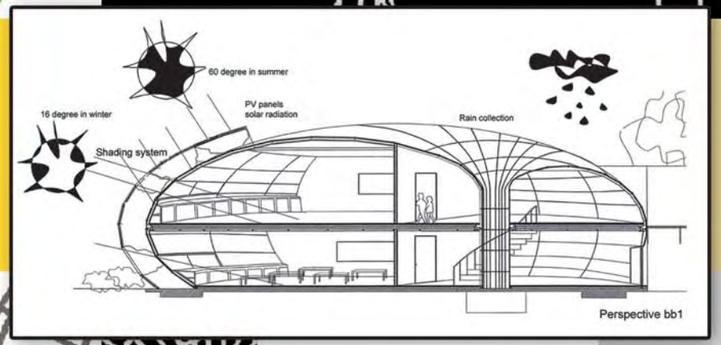
3 THIRD PRIZE - first stage, United Kingdom

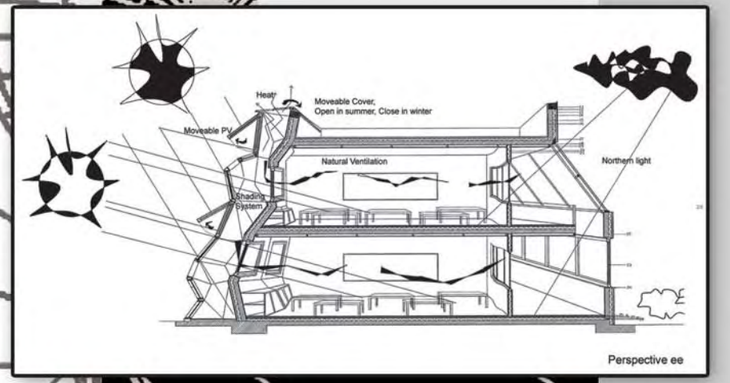
isover
Multi-Comfort House

Isover Architectural Students Contest 2008 “Multi-Comfort House School”

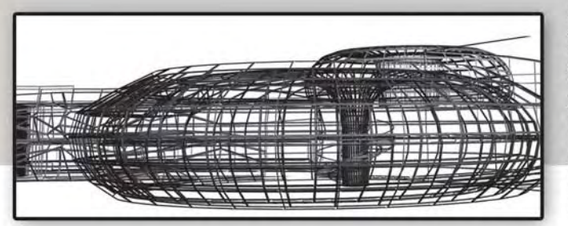
A NEW CONCEPT FOR LEARNING

CONCEPT



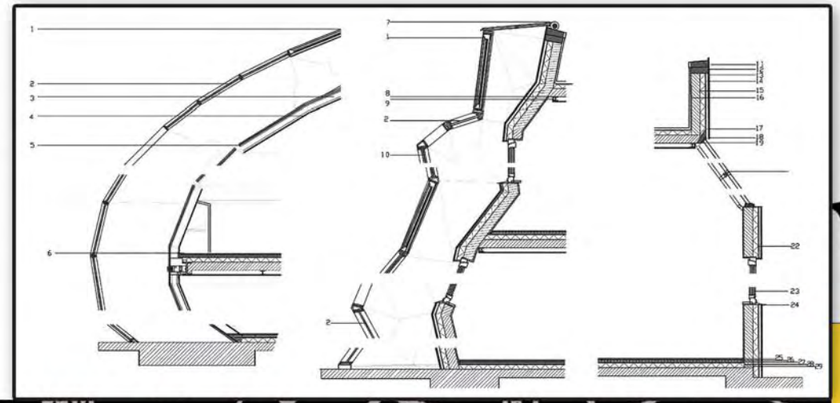


DETAILS



LABELS OF CONSTRUCTION DRAWINGS

1 PV panels
2 Zinc panels
3 Façade post
4 Toughened glass
5 Steel window farm
6 Floor heating
7 Glass cover
8 Beam
9 Ceiling board
10 Glass
11 Fiber cement panel
12 Vertical Battens
13 Vapour Permeable
14 Thermal Insulation
15 Reinforced Concrete
16 Plaster Board
17 Timer Farm
18 Glass Panel
19 Steel Pipe
20 Glass Retainer in vertical joint
22 Waterproof Membrane
24 Aluminous Profile
25 Timber Floor
26 Cement with integrated
27 Acoustic Decoupling
28 Sealing Tape
29 Foamglass



THE MULTIPLE DIMENSIONS OF COMFORT.

ISOVER Multi-Comfort House

DIMENSIONS OF COMFORT:

- Thermal comfort
- Acoustic comfort
- Good indoor air quality
- Improved working conditions
- Safety (humidity and fire protection)
- Lower energy bills - more money for enjoying life
- Use of local and sustainable energy sources
- Independence from external energy suppliers
- Active environmental protection
- Higher value of the real estate

COMFORT COMES FIRST!

Although the ISOVER Multi-Comfort House concept stands for energy savings and environmental protection, we have not forgotten the most important issue: the well-being of the inhabitants!

NEITHER COLD FEET NOR SWEATY HANDS - THERMAL COMFORT IN PASSIVE HOUSES.

Invigorating coolness in summer and comfortable warmth in winter. No problem for an ISOVER Multi-Comfort House. You will enjoy agreeable room temperatures between 20 and 23 °C - all year round.
Cooling in summer. Jointless insulation with only few thermal bridges and tight windows with outside shading are indispensable to keep the summer heat outside. Cooling can be achieved by consciously using natural ventilation during day and night. A small adjustable cooling device ensures optimum temperatures.
Heating in winter. On cold days, the built-in ventilation system ensures that the used outgoing air warms up the fresh incoming air. Jointless insulation and only few thermal bridges help keep the warmth inside. Even a small candle or an inhabitant can be an efficient heat source then.

A FIRE-SAFE HOME.

Always on the safe side: preventive fire protection with non-flammable mineral wool insulation made by ISOVER. Optimum protection of roof, walls and floors.

ENJOY THE PEACE AND QUIET OF YOUR HOME - WITH ACOUSTIC COMFORT BY ISOVER.

Noise from the outside and noise from the inside. Every sound can be annoying if you're not in the right mood or need to sleep. For this reason, the ISOVER Multi-Comfort House concept offers acoustic insulation that allows house owners and tenants to enjoy the peace and quiet of their homes. Whether you want to rest or do concentrated work - your noisy neighbour will not disturb you. This works, of course, both ways.

BUILD WITH ALL COMFORT. AND GAIN ENERGY AT THE SAME TIME.

The most inexpensive energy is the one that is not consumed in the first place. It does not need to be generated, imported, or paid for. Naturally, this also doesn't have any harmful effects, neither on human beings nor the environment. This is the basic concept of the passive house. Since a sufficient amount of warmth remains in the house, any active heat supplied by traditional space heating is usually superfluous. This saves energy and costs. The more so in view of further increasing world market prices for limited resources such as oil and gas. Thanks to its uncomplicated technical equipment, the ISOVER Multi-Comfort House requires very little maintenance.

THE PASSIVE HOUSE STANDARD GIVES YOU ALL THE FREEDOM YOU WANT.

A passive house does not define itself by outer appearance but by its inner values. Therefore any type and size of building can be realized. Every year, a growing number of examples testify to that. Whether one-family house or industrial estate. Whether school or church or mountain shelter. And it is no longer only the new buildings which comply with this future-oriented building standard. There is an increasing number of existing, old and even historical buildings where the refurbishment is based on passive house principles. By using well-selected passive house components it is possible to achieve ecologically and economically sensible results.

SNUGLY WARM WITH

COUNT ON ENERGY SAVINGS OF UP TO 75 %.

Compared to conventionally built new houses, the space heating requirement of a passive house is lower by about 75 %. And in contrast to old buildings, savings amount to as much as 90 %. In cold winters, a room of 20 m² can be heated with just 10 tea lights or two bulbs of 100 watts each to keep it snugly warm. In terms of fuel consumption, a passive house needs less than 1.5 l heating oil or 1.5 ≥ natural gas per square meter and year.

1. College of Physical Education Albstadt, Architect Prof. Schempp, Teubingen, Germany; 2. Office and residential building in Mosnang. Insulated with Flora natural hemp by ISOVER. Architect: Monika Mutti-Schaltegger; 3. WeberHaus, Reinau-Linx

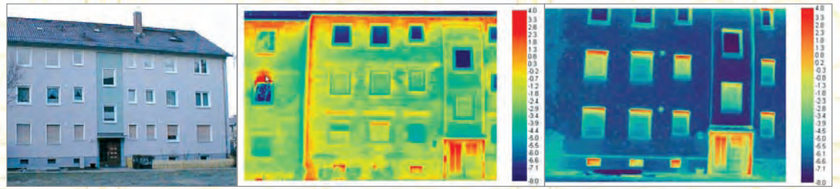
THE MOTTO FOR ALL ROOMS: KEEP THE WARMTH INSIDE!

Based on the thermos flask principle, the ISOVER Multi-Comfort House retains its comfortable temperature. As in the thermos flask, the interior is well protected against loss of heat. Active heat from outside is supplied in a controlled way. The passive house really lives up to its name by making extensive use of “passive” components. These include heat-insulating windows, heat distribution systems in the heated space and, above all, efficient thermal insulation to ensure that the warmth is kept inside.

10 TEA LIGHTS.

EVERY OCCUPANT IS A HEAT SOURCE.

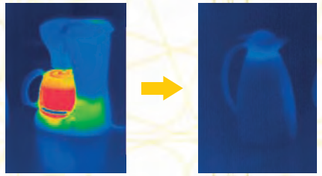
Unlike conventional buildings that suffer high losses of heat to the outside, the thermal discharge of humans, animals and household appliances is quite important for covering the required amount of heating energy. Every person contributes by a calorific value of approx. 80 watts to heating up the interior. Considerable heat gains are realized through the windows which in winter allow higher amounts of sun energy to enter the house than those lost to the outside. Add to this the heating energy recovered from the exit air and you can normally save yourself the expense incurred by a conventional heating system.



1. Multi-family house after energetic refurbishment
2. Thermographic pictures:
2.1 Before refurbishment: The entire house is a thermal bridge.
2.2 After refurbishment: The external wall is thermally insulated, but heat still leaks through windows and doors.

Modern comfort: keeping warm without consuming energy.

FROM ACTIVE TO PASSIVE!



EVERYTHING WELL-INSULATED AND AIRTIGHT.

From the roof down to the foundation slab: a jointlessly sealed and airtight building envelope ensures thermal and acoustic insulation. And the ventilation system - complete with heat recovery - takes care of fresh air supply and heat distribution.

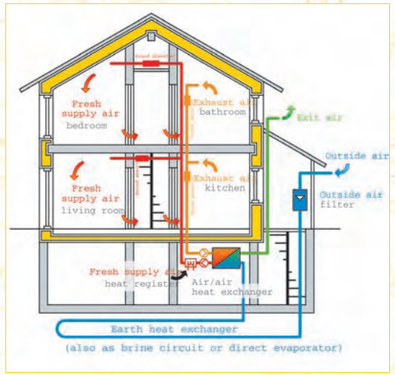
POINT BY POINT A PROFITABLE SYSTEM.

- Heat-insulating roof structure
- Heat-insulating wall structures
- Heat-insulating floor structures
- Airtight building envelope
- Triple-glazed windows
- Heat-insulating window frames
- Comfort Ventilation System
- Optimum installation

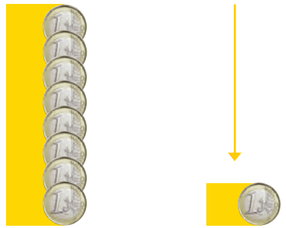
LIVE COMFORTABLY AND

AIR TEMPERATURE 20-23°C, RELATIVE AIR HUMIDITY 30-50 %.

In order to enjoy such agreeable living conditions, you have to dig deep into your pockets with conventionally built houses. Not with the ISOVER Multi-Comfort House where highest living comfort in all rooms helps you save a lot of cash. Even if the construction of such a house may incur extra cost, the total financial burden will be significantly lower compared to a conventionally built new house - thanks to extremely low energy costs over its useful life.



COSTS OF ENERGY CONSUMPTION



Standard house acc. to building regulations
8Euro/m² per year

Multi-Comfort House
1Euro/m² per year

IMPROVEMENT BY 8:1 COMPARED TO BUILDING REGULATIONS. THAT'S LIFE IN AN ISOVER MULTI-COMFORT HOUSE.

Compared to the passive house standard, not only conventionally built new houses but even more progressive types such as the low-energy house are comparatively expensive. Whenever possible, choose the passive house standard right from the start. After all, how often do you build a house? Just once in a lifetime.

MAKE HIGH SAVINGS.

PLANNING WITH MAXIMUM PRECISION AND RESPONSIBILITY.

Optimum house location, correct positioning of windows and doors, proper dimensioning of the ventilation system, very high insulation standard, tight building envelope - all these factors are considered before building an ISOVER Multi-Comfort House. Special attention must be paid to avoiding thermal bridges. Thermal bridges and leaks have serious consequences for every type of building. Technically as well as energetically.

Airtightness

Largely reduced thermal bridges

HEATING ENERGY DEMAND:
< 15 kWh/m²a

Max. 10	W/m²	Heating load calculated according to the Passive House Planning Package
Max. 15	kWh/(m²a)	Specific heating energy demand
40-60	kWh/(m²a)	Specific total[1] final energy demand
100-120	kWh/(m²a)	Specific total[1] primary energy demand

Reference area (m²) is the heated useful living space.

[1] total = including all of the household's energy consumers (heating, hot water, ventilation, pumps, lighting, cooking and household appliances)

U-value 0.1 W/m²K

U-value 0.7 W/m²K

COSINESS.

When living in a passive house, the enclosing areas such as walls, floors and windows have very pleasant inner surface temperatures, even at very low outdoor temperatures. External walls as well as floors above the cellar are only by 0.5 to 1 degree cooler than the room air temperature. Passive house windows are by 2 to 3 degrees cooler than the room air temperature. In houses that do not comply with the energy standard of a passive house, such a high degree of cosiness can only be reached with considerably higher heating costs.

FROM NATURE - FOR NATURE.

Optimum thermal insulation produces the highest energy savings. But it must also meet the highest demands in terms of workability, quality and in particular ecology. ISOVER has committed itself to fulfil all these criteria and develop the right products. ISOVER glass wool is primarily produced from waste glass. With a share of up to 80 %, this material now substitutes the main raw material quartz sand.

Production goes easy on our environment. The natural raw materials are extracted in small open-cast mines where regreening starts immediately after finishing the mining activities. Modern manufacturing methods assure that also the next production steps are environmentally sound.

WITH ISOVER MINERAL WOOL PRODUCTS ON THE SAFE SIDE OF INSULATION.

When production is based on a natural raw material, the finished product will also qualify as natural and eco-friendly. Benefits of ISOVER glass wool that speak for themselves:

- safe application and use
- not carcinogenic and not a hazard to health in compliance with Directive 97/69/EC of the European Commission
- free of propellants and pesticides
- chemically neutral
- excellent heat, sound and fire protection
- especially economical in high insulation thicknesses
- non-combustible
- free of flame-retardant, groundwater-polluting chemicals
- durable and rotproof
- capable of diffusion.

Ultimate, the new high-performance insulation material by ISOVER.

INSULATING WITH ISOVER.

ISOVER PRODUCTS - EXCEPTIONALLY CONVENIENT HANDLING.

ISOVER glass wool not only proves its worth in later energy savings, but as early as in the installation phase. Here, the material shows its strengths, also under economic aspects:

- up to 75 % storage and transport savings due to high compressibility
- easy workability
- dimensionally stable, high tensile strength
- no waste
- straight off the roll onto the wall
- versatile, reusable, recyclable
- easy disposal.

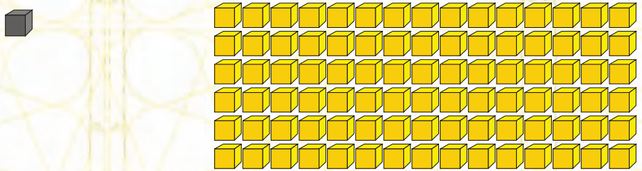
FROM OLD BOTTLES TO WELLNESS

What the industry and households discard as useless waste glass is turned by ISOVER into a valuable raw material. ISOVER glass wool consists by about 80 % of recycled waste glass. The other ingredients such as quartz sand, soda ash and limestone are virtually inexhaustible resources. This does not only sound but definitely is ecologically sustainable in many ways. Just a few examples may illustrate the point.

EACH BUILT-IN TON OF GLASS WOOL INSULATION FELT HELPS US SAVE 6 TONS OF CO_2 EVERY YEAR.

The use of glass wool does not only help us meet the Kyoto target but also realize energy-efficient living all around the globe. Just consider: The production of 1 ton of glass wool releases about 0.8 t of CO_2. The annual CO_2 saving that can be realized by building in glass wool amounts to as much as 6 tons. Assuming a useful life of 50 years, we can thus save up to 300 t of CO_2. And this is 375 times as much as the CO_2 emission caused by production.

ISOVER TURNS 1 M³ RAW MATERIAL INTO 150 M³ GLASS WOOL.



This is sufficient to completely insulate a large one-family house from top to bottom in keeping with the passive house standard.

CLIMATE WITH ISOVER GLASS WOOL.

ISOVER Multi-Comfort House

ENERGY AMORTIZATION

The production and transportation energy needed for glass wool already amortizes within a few days. The example below compares an upper floor slab made of reinforced concrete without thermal insulation with a reinforced concrete floor equipped with 35 cm (λ_D 0.04 W/mK) glass wool insulation (passive house level).

1 m³ upper floor slab		
Structure	Heat transfer coefficient	Energy loss per square meter and year
Reinforced concrete (20 cm), not insulated	U-value = 3.6 W/m²K	360 kWh
Reinforced concrete insulated with 35 cm glass wool	U-value = 0.1 W/m²K	10 kWh
Energy saving per m² and year (thanks to thermal insulation)		350 kWh

Compared to annual energy savings of 350 kWh/m², the energy needed for production, transportation and installation of the insulation material amounts to a mere 22 kWh. The energetic amortization time is less than 10 days.

GLASS WOOL MAKES SHORT WORK OF APPLICATION AND AMORTIZATION TIMES.

When compressed into rolls, glass wool can be transported space-saving and quickly. With only little manual effort, it is installed directly from the roll onto the wall.

And glass wool offers further positive properties as it is
- non-flammable
- not a hazard to health in compliance with Directive 97/69/EC
- free of propellants, pesticides, flame-retardant chemicals

TAKE RESPONSIBILITY: BUILD SAFELY WITH ISOVER.

Always on the safe side: preventive fire protection with non-flammable mineral wool insulation materials made by ISOVER - glass wool, stone wool and Ultimate. Optimum protection of roof, walls and floors.

www.isover.com

ISOVER
Multi-Comfort House

ISOVER Multi-Comfort House School - A New Concept for Learning • Architectural Student`s Contest, Dubrovnik 2008

УАСГ

UPC

АРХИТЕКТОНСКИ ФАКУЛТЕТ

Af Sveučilište u Zagrebu Arhitektonski fakultet

FACULTATEA DE ARHITECTURĂ G.M CANTACUZINO IAŞI

STU FA

Univerza v Ljubljani Fakulteta za arhitekturo

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КАЗ УТУ

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UNIVERSITATEA TEHNICĂ FACULTATEA DE ARHITECTURĂ CLUJ-NAPOCA

The University of Nottingham

SAINT-GOBAIN