

## **INFORMATION ON THE TRAINING PROGRAM IN 2012-2013**

### **Institute name / local project**

MGSU Moscow State University and  
Future Lab Munich

### **Program name**

Future technologies and ecologic building design – 1 year course

### **Contact person / responsible program leader**

+49 172 5868877 - Prof. Peter Ebner - pe@ebnerandfriends.com

+7 905 7498761 - Prof. Michael Eichner - me@ateliereichner.de

+79161416167 - Prof. Balakina Alevtina - isa@mgsu.ru

### 1. **Studio theme 2012 – 2013 - Understanding Evolution**

Life on Earth evolved in approximately 3.7 billion years by reproduction and modification of basic elements, based on biochemical processes and morphological rules. Our cities and buildings, as we can perceive them today developed or “evolved” in a much shorter time, but nevertheless on a complex and constant recoding, redefining and reconnection process according certain rules. Milestones in Architecture like for example the 'Cryctall palace' from Paxton, the opera house in Sydney or the headquarter of BMW in Munich are marking new cycles in architectural evolution and technology invention. Understanding evolution in disciplines related to architecture and design, like the global fashion industry, car and airplane design or the rapidly transforming of the virtual space can help us to find new ideas and solutions for a contemporary approach in building design.

The last years show worldwide a commitment in sustainable questions, but also a widely lacking knowledge in the related complexity. To address this search for a future orientated architecture for more and ecological and human cities, within the 1 year course a “hybrid housing and office building” parallel for Moscow and for Munich will be designed. Factors such as new climate change, social migration, changing business habits are creating a demand for flexible buildings or entirely new forms of architecture dedicated to life cycle optimization. The course work is based on the profound understanding of a specific working process. In regards to diverse processes, students will learn how to identify contemporary tendencies in order to generate substantially new spaces and environments for state of the art production facilities.

## 2. Scientific program aims

a) Housing-hybrid design and research course;

b) Material and technology based architectural design and sustainable research program;

c) Latest innovation and future technologies in construction, design and urban design;

- TRAINING PURPOSE: Development of fundamental knowledge and skills for globally arising questions in the field of climate saving design strategies, building construction;
- METHODOLOGY: Architectural design strategies based on newest material and technology inventions through close cooperation with in Germany based companies. And research institutes;
- TECHNOLOGY: Specific testing of different innovative materials, building technologies and related innovations in the field of architectural design, construction and spatial creation. Developing as architects a special and outstanding knowledge in these areas, being able to foresee the development of cities and buildings for the next 20 to 30 years.
- WORK EXPERIENCE: Experimental housing and future ecological urban design will be explored with main focuses on industrial production, new energy generating materials and technologies for façade constructions, minimizing of material application and material circulations and artistic form finding methods. Parametric design to supporting architectural form generation processes will be trained as well as on site observation and real space exploration to develop with the student understandings for proportion and space quality aspects. The connection and interdependence of research and architectural design will be deepened by students individually shaping their research field
- WORKSHOPS: Every semester different workshops will take place to reflect on a variety of ideas in a relatively short time. The themes are realized under supervision of internationally well known invited professionals. Students will discuss and design with a maximum of freedom, giving them the opportunity to find different and unusual solutions.

## 3. Educational institution

MGSU Moscow State University

## 4. Place of education

Future Lab Germany, Munich

Address: Adalbertstreet 84, 80799 Munich

## 5. Teaching Professors

Prof. Peter Ebner

Prof. Michael Eichner

Other experienced architects and teachers

6. Dates

Start date of the training: 15. September. 2012  
Course in Munich: 15 February, 2013 till 30. April 2013  
Date of completion of the training: 30. June 2013  
Holidays: 15. January – 15. February 2013  
Total duration: 8 months

7. Max. number of participants

10 students (specialization in architecture or engineer-architecture)

8. INSURANCE

Students must have healthcare and travel insurance and travel at their own risk. The design studio will be kept free of all liabilities. The studio will not check on the insurances. It is the students' responsibility to have all necessary insurances for the entire stay.

9. FIELD TRIP

One week of the studio in Munich will be dedicated to excursions to different architectural sites and manufacturing companies, working in the field of our Future lab-studio. The studio's field trip will go to cities like Aachen, Mainz, Darmstadt, Basel, Zurich and Lausanne.

The studio will attend a symposium on sustainability.

10. COST

Students have to take care about the flight ticket, accommodation such as student hostel, rented apartments, food, the insurance, the trips for the studio.

11. Studio aim

During research, students will be dealing with upcoming spacial, constructive and physical tasks, exploring materials solutions and resulting reciprocal effects to the process of generating forms and shapes. Students will learn diverse methods of conception, presentation and an overview of new materials. The studio will focus on today's challenges on a structure for advanced production, including questions on technology, sustainability, materials and sociology. Students will be working on all scales of the design process.

12. LECTURES, GUESTS, SYMPOSIUM

A wide range of international and national guests will give weekly lectures on themes like structural solutions, energy management, ecology, production cycles, climate technology and more.

Evening lectures and a symposium will welcome international guests such as Farshid Moussavi, Coop Himmelblau - Wolf Prix, Kazuhiro Kojima, AMID cero9, Heatherwick Studio, R&Sie, Massimiliano Fuksas, Jakob & MacFarlane, Philip Beesley, Olaffur Eliasson, Eduard Francois, Jason Payne, Sauerbruch & Hutton, Stefan Behnisch, Francis Soler and others.

### 13. REQUIREMENTS

Regular attendance, completion of background research, participation in design technique workshops, excursions, lectures and the completion of a final design project are the requirements. All students must take care and are responsible for insurance and travel arrangements and accommodation. Students must bring their own computers. Facilities for printing and equipment for model making will be provided at the academy of fine arts in Munich.

- Students must take care of their accommodation;
- All Students have to be present in Munich by 15 February, 2013 till 30. of April 2013;
- The first seminar will be held September 15, 2012 in Moscow;

### 14. Information on participants

No	Name and surname	status	departement	course year	date of birth	English knowledge
1.		student				
2.		student				
3.		student				
4.		student				
5.		student				
6.		student				
7.		student				
8.		student				
9.		student				
10.		student				

### 15. Document issued

As document on passing of the training will be issued a certificate. The results will be credited as a regular academic year at the MGSU.

### 16. Additional training

The training is carried out on basis and within rooms of the State Technical University MGSU and the Future Lab Munich. Some academic courses/seminars and lectures will be held in Moscow some in Munich were as the first half of the program will take place in Munich (Future Lab Munich), the second part in Moscow (MGSU)

### 17. Form of the organization of the payment of training

- All Payment will be processed through MGSU (in the form of business trip)
- The Future Lab Munich will be paid directly by the MGSU;

- The MGSU will pay not less than 80.000 EURO/year to the Future Lab;

18. Detailed specified cost of the 1 year program

№	Cost position	Payment per person in Euro	Max. participants	Sum in Euro
1	Education	8.000	10	80.000
2	Journey	Around 600		6.000
3	Accommodation in Munich	Around 900		9.000
4	Daily allowance	Around 1.000		10.000
5	Visa providing	Around 110		1.100
6	Insurance	Around 30		300
7	Transfer	Around 40		400
8	Other: Excursion in Germany	Around 220		2.200
	<b>Sum</b>			<b>109.000</b>

19. Planned scientific results of training

- number of prepared dissertations\_\_\_\_\_;
- number of the monographs prepared for publication\_\_\_\_\_;
- number of articles published in magazines, entering into VAK \_10 lists \_;
- Another \_\_\_\_\_.

20. Planned results of the training in the educational sphere

(to specify preliminary names):

Result	ВПО	ДПО
• New course		
• Part of a course		
• New lecture		
• educational and methodical materials		
• others		

Approved  
Chairman of the commission  
on the training program

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**Duration of the program**  
Start date 01.Oct. 2012 – completion of training 30. June 2013 total 8 months

**Schedule of training**

Name of the lecture/ seminar	Description lecture/seminar	Responsible Expert/ teacher	Location
1 month – 15.Sep. 2012 – 30.Okt 2012			
INTRODUCTION WORKSHOP	MOSCOW START UP WEEK With a 1 week “start up workshop” the 1 year program will be introduced and started on the 01. of October in Moscow in the MGSU Workshop topic: “Genetic buildings” (Will have to be announced in detail)		MOS

Name of the lecture/ seminar	Description lecture/seminar	Responsible Expert/ teacher	Location
DESIGN 1 “ANALISYS”	<p>Moscow Site Analysis: During the course of the studio, two 10-20 floor level hybrid housing-office Buildings, one in Munich, one in Moscow will be designed. One floor will have an area of 600 square meters. The site given will be located in Munich and in Moscow.</p> <p>The design work will be made in teams of 2 students.</p>		MOS
SEMINAR 1 “EVOLUTION”	<p>The studio's SEMINAR part will start with a series of research topics and a public presentation. The first subject is a field research on organizational structures within a specialists/firms design or production team:</p> <p>A team of 2 students chooses from one of the following disciplines to investigate:</p> <ul style="list-style-type: none"> <li>• Fashion industry history</li> <li>• Space and cosmos exploration evolution</li> <li>• Film production/ animation history</li> <li>• Web production history</li> <li>• Car production facility</li> <li>• Façade manufacturing</li> <li>• Recycling industry</li> </ul>	Prof. Peter Ebner, Prof. Michael Eichner	MOS
SEMINAR 1 “EVOLUTION”	Public presentation of the research results		MOS
2 month – 01.Nov. 2012 – 30.Nov. 2012			

Name of the lecture/ seminar	Description lecture/seminar	Responsible Expert/ teacher	Location
SEMINAR 2 “Construction”	<p>The studio's 2 SEMINAR will be dedicated to a research topic in the field of sconstruction and modern construction management. It will be a field research on innovative building products within a firm's production team:</p> <p>A team of 2 students chooses from one of the following disciplines to investigate:</p> <ul style="list-style-type: none"> <li>• Construction management</li> <li>• Prefabricated construction - Wood</li> <li>• Prefabricated construction – Steel</li> <li>• Prefabricated construction – concrete</li> <li>• Energy-efficiency monitoring</li> </ul>		MOS
SEMINAR 2 “ECO”	Public presentation of the research results		MOS
DESIGN 2 “VOLUME”	<p>Within the design studio following works on this stage of the project have to be carried out the teams of 2 students:</p> <ul style="list-style-type: none"> <li>• Density model</li> <li>• Volume collage</li> <li>• Essay on the concept</li> </ul>		MOS
INVITED SPECIALISTS LECTURE	A specialist on following related topic will be invited Topic: _____		MOS
EXCURSION	An excursion to outstanding contemporary buildings will be organized. Duration 5 days		MOS
3 month – 01.Dec. 2012 – 30. Dec. 2012			



Name of the lecture/ seminar	Description lecture/seminar	Responsible Expert/ teacher	Location
SEMINAR 3 "European City"	<p>The studio's third SEMINAR will be dedicated to the phenomenon of evolution of the "European city", through history, their space, social and economic condition.</p> <p>The teams of 2 students will choose from one of the following disciplines to investigate:</p> <p>Topics will be provided.</p>		MOS
SEMINAR 3 "European City"	Public presentation of the research results		MOS
DESIGN 3 "Structure"	<p>Within the design studio following works on this stage of the project have to be carried out the teams of 2 students:</p> <ul style="list-style-type: none"> <li>• 3D Printed working model</li> <li>• Design drawings</li> <li>• Energy scheme winter/summer/autumn/fall</li> </ul>		MOS
INVITED SPECIALISTS LECTURE	<p>A specialist on following related topic will be invited Topic: _____</p>		MOS
HOLIDAY – 01.Jan. 2013 – 15. FEB. 2013			
4 month – 15.Feb. 2013 – 30. Feb. 2013			
FLIGHT FROM MOSCOW TO MUNICH			

Name of the lecture/ seminar	Description lecture/seminar	Responsible Expert/ teacher	Location
SEMINAR 4 "ECO"	<p>The studio's 4 SEMINAR will be dedicated to a research topic in the field of sustainability. It will be a field research on innovative building products within a firm's production team: A team of 2 students chooses from one of the following disciplines to investigate:</p> <ul style="list-style-type: none"> <li>• Renewable Energy design</li> <li>• Heating Cooling</li> <li>• Climate Facade Construct.</li> <li>• Energy-efficient Insulation</li> <li>• Ventilating</li> <li>• Light and Electricity</li> </ul>		MUC
SEMINAR 4	Public presentation of the research results		MUC
DESIGN 4 "ENERGY"	<p>Within the design studio following works on this stage of the project have to be carried out the teams of 2 students:</p> <ul style="list-style-type: none"> <li>• 3D Printed presentation model</li> <li>• Presentation drawings</li> </ul>		MUC
INVITED SPECIALISTS LECTURE	A specialist on following related topic will be invited Topic:_____		MUC
INTERMEDIATE DESIGN REVIEW	Intermediate public presentation of the design concept results with invited architects		MUC

5 month – 01.Mart 2013 – 30.Mart 2013

Name of the lecture/ seminar	Description lecture/seminar	Responsible Expert/ teacher	Location
SEMINAR 5	The teams of 2 students will choose from one of the following disciplines to investigate:  Topics will be provided.		MUC
SEMINAR 5	An internal presentation of the research results		MUC
DESIGN 5 "TECHNOLOGY"	Within the design studio following works on this stage of the project have to be carried out the teams of 2 students:  <ul style="list-style-type: none"> <li>• Detailed design drawings</li> <li>• Lasercutter façade concept</li> </ul>		MUC
INVITED SPECIALISTS LECTURE	A specialist on following related topic will be invited Topic:_____		MUC
<b>6 month 01.April 2013 – 30.April 2013</b>			
DESIGN 6 "LIVE CYCLE ASSESSMENT"	Within the design studio following works on this stage of the project have to be carried out the teams of 2 students:  <ul style="list-style-type: none"> <li>• Detailed design drawings</li> <li>• Live cycle assessment concept</li> </ul>		MUC
<b>FLIGHT FROM MUNICH TO MOSCOW</b>			
<b>7 month 01.Mai 2013 – 30.Mai 2013</b>			
DESIGN 7	Within the design studio following works on this stage of the project have to be carried out the teams of 2 students:  <ul style="list-style-type: none"> <li>• Detailed design drawings</li> <li>• Technical drawings</li> <li>• Light and energy simulation tools</li> </ul>		MOC

Name of the lecture/ seminar	Description lecture/seminar	Responsible Expert/ teacher	Location
INVITED SPECIALISTS LECTURE	A specialist on following related topic will be invited: Topic: Energy simulation "Tall building modeling", Ove Arup		MOC
8 month 01.June 2013 – 30.June 2013			
DESIGN 8	<p>Within the design studio following works on this stage of the project have to be carried out the teams of 2 students:</p> <ul style="list-style-type: none"> <li>• Production of all final architectural drawings</li> <li>• Production of all final technical drawings</li> <li>• Presentation model 3D Print/Laser cutter</li> </ul>		MOC
FINAL DESIGN REVIEW	Final exams and public presentation of the design project and research results with invited architects in the MGSU		MOS

Head of institute / local project \_\_\_\_\_

Approved

Director of the Program

\_\_\_\_\_ *Name/Surname*

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