

Invitation for Competition Submissions

# **ISOVER Multi-Comfort House - Office Building**

**Office building Saint-Gobain Isover**

**International, two-stage, open competition**

**Participants:** Students

**Organizer:** Saint-Gobain Insulation with the participation  
of national Saint-Gobain Isover organizations

# **1. General information**

## **1.1. Contents of the competition**

The subject of the competition is the creative approach to the concept of energy-efficient construction at the passive-house level.

The aim is to design an office building according to ISOVER Multi-Comfort-House definition, whereby the choice of location is completely unrestricted. The planned office building should be a new headquarter for the company Saint-Gobain Isover. The extensive documentation about Multi-Comfort-House design principles will be provided from local organisations.

Isover is part of Saint-Gobain group which acts worldwide. Through its product range, continuous innovation and market development; Isover is one of the leading building materials industries in many countries. The present focus of the company is the comfort and energy efficiency of buildings. In addition, Isover offers the solutions and systems adapted to the local tradition and the architecture culture.

## **1.2. Who can participate**

Participants are the students of architecture, design and construction engineering from universities in all countries with ISOVER presence.

Participation is individual or in teams of up to 3 persons.

Only one project may be submitted per person and project.

## **1.3. Awarding organisation**

The awarding organisation is Saint-Gobain Insulation with the participation of national Saint-Gobain Isover organizations.

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#### **1.4. Form and organization of the competition**

The competition will have a two-stage process and it is open.

The first stage is a national contest in each respective country, where the three best entries will be chosen. The first, second and third placed submissions will receive an award at a presentation ceremony.

In the second stage, the three best entries from each country will participate in an international final. This will take place at a gala in Slovenia to which the entrant(s) who submitted the project and their professor(s) will be invited. During this event, the participating projects will be displayed for inspection and discussion.

An independent international jury will nominate the three international winners.

In the course of the international jury meetings, the participants will have the opportunity to give a three-minute presentation to the committee, covering the basic ideas behind their project. These presentations will be followed by the jury's deliberations and the award ceremony for the winners.

#### **1.5. Prize money**

1<sup>st</sup> stage – national competition:

1<sup>st</sup> prize €1,500

2<sup>nd</sup> prize €1,000

3<sup>rd</sup> prize €750

2<sup>nd</sup> stage – international competition:

1<sup>st</sup> prize €1,500

2<sup>nd</sup> prize €1,000

3<sup>rd</sup> prize €750

The organizer may give also awards for special project performances.

## **1.6. Time shedule**

National announcement of competition at the respective universities:  
Start October 2008

Distribution of invitation for competition submissions as part of an information event:

Start December 2008  
Contact person: "Name, contact details"

Closing date for submissions for the national competition:  
March 6, 2009 in universities

National jury meeting and award ceremony:  
Completed by March 27, 2009

International jury meeting and award ceremony:  
April 22-25, 2009 in Slovenia

## **1.7. National jury**

The selection of the national winners will be carried out by a national jury consisting of representatives of the faculties and employees of Saint-Gobain Isover.

## **1.8. International jury**

The international jury will consist of the experts in building physics, passive house buildings and architects.

The international jury will be announced later on.

## **1.9. Transport and travel expences**

The risks and costs of the submission of entries to the national awarding organisations shall be borne by the participants.

The forwarding of project documentation to the final international gala shall be carried out by the respective national Isover company. Furthermore, Isover shall bear the entire travel costs, as well as the costs of accommodation and lodgings for the participants at the international gala in Slovenia.

## **1.10. Legal**

Competition participants shall retain unlimited copyright on their projects. The submitted documentation shall become property of the organiser (Saint-Gobain Isover). The organiser shall in addition receive full rights of use, and all participants implicitly agree to the publication of their projects.

The decision of the jury is final. All participants hereby accept the incontestable and definitive nature of the jury's decisions.

By participating in the competition, the students acknowledge and accept the conditions laid out in this invitation for submissions.

## **2. Details of the task**

By unrestricted choice of location and property an office building with the building physics performances of ISOVER Multi-Comfort-House has to be designed. ISOVER local organizations will place the supporting documentation at the disposal.

The planned office building shall be the new headquarter for Saint-Gobain Isover.

### **2.1. Property**

The property can be freely chosen and must be represented on a plan of the site. For the purpose of better illustration, the property or the surrounding natural and cultural environment should be photographed (the site for construction need not be real in the legal sense).

### **2.2. Space allocation**

At the notional location 60 permanently used office working places with the computer and internet access are needed. In addition, a meeting room for 50 people and two smaller meeting rooms for 25 persons each, should be available.

The office building shall include the common spaces and the infrastructure facilities as toilets, kitchen(s), storages for brochures and office supplies, archives, etc.

The fictitious organization has following functional entities: sales, customer services, marketing, product development, purchasing, IT and bookkeeping, general management and registry.

A space for the permanent exhibition of insulation systems and solutions and for the training of customers shall exist on the ground floor or elsewhere but easily accessible.

The parking places for cars, bicycles and motorcycles, as well as external plant shall be roughly designed.

### **2.3. Type of construction, technical parameters**

The high-performance thermal, acoustic and fire protection requirements have to be considered in order to achieve the Multi-Comfort-House criteria.

In the course of the competition, lectures on the subject of “Passive-house planning and construction” will be held at the faculties.

### **2.3.1. Construction**

Basically, the construction method (static system, wood, masonry or steel construction) can be chosen freely, whereby Isover products should be employed in the process. Isover shall provide free planning assistance in the form of a CD containing construction details and sample constructions, as well as a brochure on passive houses, both of which will be supplied together with the invitation for submissions.

Additionally, the following Isover contact persons are available to answer any questions:

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### **2.3.2. Technical parameters for thermal insulation**

The exterior structural components should have the following U-values:

- All opaque external structural components  $U \leq 0.15 \text{ W/m}^2\text{K}$
- Windows and doors  $U_{\text{wtotal}} \leq 0.8 \text{ W/m}^2\text{K}$

In the case of very small volumes or a poor surface-to-volume ratio, the opaque structural components should have a U-value of up to  $0.1 \text{ W/m}^2\text{K}$ .

### **2.3.3. Protection against overheating in summer**

Sufficient outside sun protection for the eastern, southern and westward windows shall be planned. In the project the ratio of transparent to opaque components has to be taken in account. For the large glass faces the summer performance has to be calculated and fulfilled in accordance with national requirements.

### 2.3.4. Technical parameters for fire protection

In the floor plan design and space organization it has to be pay attention on the construction of fire sections. In additon the emergency exit ways have to be considered.

The fire protection should acheived the national requirements.  
If national requirements are not defined, all bearing internal and external walls have to achieve at least REI 60 according to ISO standards.

### 2.3.5. Technical parameters for sound insulation

Depending on the location of the property the increased sound protection against outside immissions has to be included. The airborne sound insulation and acoustic in office building has to be special planned, because these parameters are influencing the quality of working place and comfort.

The following values have to be kept:

|  |                       |
|--|-----------------------|
| Airborne sound insulation for exterior walls   | $R_w \geq 55$ dB      |
| Airborne sound insulation for roof   | $R_w \geq 50$ dB      |
| Airborne sound insulation between special protected areas (meeting rooms, training spaces) | $R_w \geq 55$ dB      |
| Airborne sound insulation for internal walls between regular offices                       | $R_w \geq 45$ dB      |
| Airborne sound insulation for all ceilings   | $R_w \geq 55$ dB      |
| Impact sound insulation for all floors:  | $L_{nt,w} \leq 45$ dB |

All ceilings should be designed to comply with Sound Absorption Class A to EN ISO 11654.

In practice, sufficient sound insulation for windows and doors, as well as for sanitary installation and ventilation systems should be consider.

## 2.4. Competition requirements

### 2.4.1. The following minimum requirements should be observed

#### Plans

- Plan of site 1:500
- Floor plan and cross-section 1:100
- Horizontal façade cross-section 1:50
- Vertical façade cross-section 1:50
- Strip view of south façade 1:50
- Construction details 1:10
- Renderings and /or photos of the modell

## **Descriptions**

- Energy supply and ecological concept (optionally with the graphic illustration)
- Design report – description of the design concept
- Description of construction
- List of constructions with U-values
- Results of simulations and calculations
- Recapitulation of all thermal and acoustic properties in the table

### **2.4.2. In addition, the following may also be submitted**

- Expandability and flexibility of the structural grid
- Ergonomical quality of the working places
- Energy and ecology estimation (energy-pass, eco-pass)
- Usage of alternative energy systems (photo voltaic modules, sun collectors, wind)
- Representation of the possibilities for coupling or terracing of the detached house – formation of a compact development structure
- Use of rainwater for watering gardens – rainwater harvesting
- Accessibility

## **2.5. Formalities for submission**

Projects should be submitted in poster format measuring 60x80cm, 100x100cm or 70x100cm, and additionally in digital form on the CD. A digital presentation of the project in the format 180 cm x 80 cm is obligatory.

## **2.6. General assessment criteria**

### **Design:**

Involvement in environment and landscape, structure of the building, the building concept of property, functionality and quality of floor plans, formal design of the building, spatial quality of the interior

### **ISOVER Multi-Comfort-House:**

Total energy concept (passive house technology), thermal quality of the building envelope, summer performance, passive and active solar gains, acoustic comfort, renewable energy sources

### **Ecology:**

Exposure and lighting concept, materials choice, green space design, accessibility