2. Details of the task

The subject of the competition is the design of a sustainable sky scraper in a part of Lower Manhattan called Greenwich South.
The building has to have the building physics performance of an ISOVER Multi-Comfort House.

Beside constructional, the social and economic aspects also have to be considered and respected as the building to be designed should give a new impulse in the existing urban area. Apart from the building design you are expected to propose urban space solutions for the immediate surroundings of the site.

2.1. Specifics of the urban context

Situated south of the World Trade Center site the urban space improvements that will be achieved with the new structures at the 9/11 site triggered an increased attention for the Greenwich area with its great yet undeveloped potential to add a significant amount to the overall quality of Lower Manhattan.

Since the year 2000 a considerable amount of conversions and new residential units have been executed in the area which underlines the heightened awareness as a living quarter.

Several studies have been commissioned, that propose to cover the existing Battery Tunnel ramp and install a public accessible space on top which can be linked with Battery Park and create a new heart of Greenwich South.

This new urban focus could link lower Manhattan on the north south axes via World Trade Center site with Tribeca, West Village and the Meatpacking District. It also could improve links between east (Financial District) and west (Battery Park South) with the demolition of existing / blocking parking structures and an additional pedestrian cross walk over West Sreet.

The overall development goals are: encourage an intense mix of uses (live, work recover and play), reconnect Greenwich Street (link northern parts with Battery Park with Greenwich Street as a spine), connect east and west, build for density – design for people (active building bases), create a reason to come and a reason to stay (create icons that establish a new identity and sense of place).

To complete the scene an iconic high rise will be needed in the axes to replace the existing parking structure in the north and ad to an unique character of the place.

The site occupies the south portion of the block bounded by the Battery Tunnel to the South, Washington Street to the West, Greenwich Street to the East, and Rector Street to the North (the site of the existing concrete parking structure, which is assumed to be demolished).

2.2. Zoning Requirements

The new high rise is expected to have about 60 floors above a base of about 5 stories. Its maximum horizontal size of each floor above the base should according to New York City zoning regulations not exceed 175´ (about 53.34 m).

Due to the specifics of the immediate surroundings and the location of the new structure in a widened spatial situation transfer development rights will apply and setbacks will not be required.

A maximum distance to the existing high rise at the immediate north of the site has to be secured.

2.3. Space allocation

Work, live, recover and play – there should be a programmatic differentiation between base and tower.

Base - total floor area per floor: 4,500 m² maximum 5 floors / about 60´/18 m wall height

With the new development, the lower floors / bases should be strategically designed and programmed for public use, transforming the public realm. While the tall new tower will define the skyline of Greenwich South, the most critical component of the area´s new developments will be how these buildings meet the ground.
Building design should be architecturally dynamic, offering energetic bases with a varying array of public-oriented uses including retail, cultural and community functions.
New and inventive building designs should seek to address the pedestrian, not only on street level, but also in the interstitial spaces created by changes in the topography across Greenwich South.
Lower level developments including subway access on Greenwich Street to the no.1 subway should be investigated.

1. Upper floors:
   library, theater, medical, community, exhibition, restaurants, recovery, gym

2. Ground floor/lower floors:
   retail, entrance lobby fashion hotel, entrance lobby student hotel, entrance lobby residential

Immediate surrounding urban space should be included in the concept and external plans shall be roughly designed.

Tower - total floor area per floor about 2,000 m²

1. ¼ fashion- and design-hotel:
   Rooms (60% single rooms, 40% double rooms), showroom, dressing rooms, conference rooms, kitchen, dining rooms, bath rooms
2. ¼ student design –hotel:
   bunk beds (4 beds per room, private bathroom each), common kitchen for each 6 bedrooms, common dining rooms
3. ¼ residential
4. ¼ offices

2.4. Type of construction, technical parameters

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

2.4.1. Construction

The bearing construction will be reinforced concrete and/or steel.

For the thermal, acoustic comfort and fire protection ISOVER, CertainTeed or Izocam products should be specified.

ISOVER, CertainTeed and Izocam will provide free planning assistance in the form of a CD containing construction details and sample constructions, as well as a brochure on Multi-Comfort House concept and renovation which will be supplied together with the invitation for submissions.

Additionally ISOVER, CertainTeed and Izocam contact persons are available to answer any questions. The contact details for the local ISOVER, CertainTeed and Izocam organization can be found on www.isover-students.com under Contacts > Saint-Gobain ISOVER.

2.4.2. Technical parameters for thermal insulation

The U-values of the individual building components should meet the passive requirements according to the PHHP (Passive House Planning Package, software developed by Passive House Institute Darmstadt, Germany) in an economic way.
The participants have to establish Passive House Standard by PHPP for a group of some useful coherent upper floors (3 - 4 floors)

You will find the individual ambient data for New York City for download in the competition documents (www.isover-students.com).

2.4.3. Protection against overheating in summer

Sufficient sun protection needs to be planned.
In the project the ratio of transparent to opaque components also needs to be taken in account. Furthermore the frequency of overheating of more than +25°C or +77°F indoor temperature must be less than 10%.

2.4.4. Technical parameters for fire protection

In the floor plan design and space organization attention must be given to the construction of fire sections. In addition the emergency exits have to be considered.
Fire protection should achieve the US requirements:

- all bearing internal and external walls have to achieve at least REI 60 according to ISO standards,
- the roof and ceilings have to achieve at least REI 60 according to ISO standards,
- all non-bearing internal walls between 2 different functional units (depending on the

function) have to achieve at least REI 30 according to ISO standards.

2.4.5. Technical parameters for sound insulation

Depending on the future function of the building parts the sound protection concept has to be included. The airborne and impact sound insulation of the residential and nonresidential building parts have to be planed according to ISOVER Acoustic Comfort Classes.
The room acoustics in the non-residential building part and the reverberation time depend on the function.

Residential usage or similar function:

Airborne sound insulation between dwellings	DnT,w ≥63 dB
Airborne sound insulation between the rooms in the dwelling (without the doors)	DnT,w ≥45 dB
Impact sound insulation between dwellings:	LnT,w ≤ 40 dB
Impact sound insulation in the dwelling:	LnT,w ≤ 50 dB

Non-residential usage of the building parts:

Airborne sound insulation for the exterior walls	Rw ≥55 dB
Airborne sound insulation for the roof	Rw ≥50 dB
Airborne sound insulation between special protected areas in the building	Rw ≥55 dB
Airborne sound insulation for all ceilings	Rw ≥55 dB
Impact sound insulation for all floors:	LnT,w ≤ 45 dB
All ceilings in non-residential usage 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 considered for residential and non-residential usage.

2.5. Competition requirements

2.5.1. Minimum requirements (obligatory)

Following minimum requirements for descriptions and plans must be considered:

Descriptions

- Functional solution
- Description of the design concept
- Energy supply and overall sustainable concept (optionally with graphic illustration)
- Description of construction
- List of constructions with U-values
- Results of calculations
- Explanation of all thermal and acoustic properties in the table

Plans

· Plan of site with solution public infrastructure / spaces	1:500
4 Elevations (East, West, North and South)	1:500
Cross Section	1:500
Base floor plans	1:500
· Tower floor plans of typical functions and cross-section	1:200
· Horizontal façade cross-section	1:50
Vertical façade cross-section	1:50
Strip view of façade	1:50
· Construction details	1:10
· 3D renderings and / or photos of a model	
Design Report (2 pages A4 maximum)	

2.5.2. Optionally documents

In addition, the following may also be submitted (optionally)

· Energy and ecology estimation (energy-pass, eco-pass)
· Usage of renewable energy systems
· Accessibility

2.6. Formalities for submission

For the national stage of the contest the projects should be submitted in maximum 3 posters format measuring *84 x120 cm,* and additionally in digital form on a CD.

The poster should be clear and legible and show the project title as well as the name of the drafter (or all names in the case of a team submission).
The personal information sheet, which is attached to this invitation for submissions, should also be handed in.

For the international stage of the contest the following documents are obligatory:

- One power point presentation (max. 10 MB, duration 5 minutes),
- The digital presentation of the project in the format 180 cm x 80 cm (height x width) for the roll walls and exhibition in Prague
- The CD with content above (presentation, graphics for roll walls), personal pictures and personal data sheet of the team.

This data will be used for inclusion in the edition of the book “ISOVER Multi-Comfort House Students Competition - Best of the Projects 2011”.

2.7. General assessment criteria

Design and functional concept:

- Idea and creative approach to the structure of the building,
- Functionality and quality of formal design,
- Connection to the existing urban area.

ISOVER Multi-Comfort-House:

- Energy consumption concept (passive house technology) for a group of useful coherent upper floors (3-4 floors), see pt. 2.4.2
- Thermal quality of the building envelope,
- Summer comfort,
- Passive and active solar gains,
- Acoustic comfort

Sustainability:

- Economical, ecological and social aspects of the future function and the impact of the design quality
- Exposure and lighting concept,
- Green space design,
- Accessibility,
- Implementation of the renewable energy sources.

3. Personal information sheet

ISOVER Multi-Comfort-House Students competition 2011 – Tower

Participant(s):

Name: Signature:
Address:
Telephone:
Post Code:
Bank account number:
Bank identification number:
Bank:

Additional participants (for project teams):

Name: Signature:
Address:
Telephone:
Post Code:

Name: Signature:
Address:
Telephone:
Post Code:

Name: Signature:
Address:
Telephone:
Post Code:

With their signature, the participants confirm their authorsation of the submitted project.

Place, date: