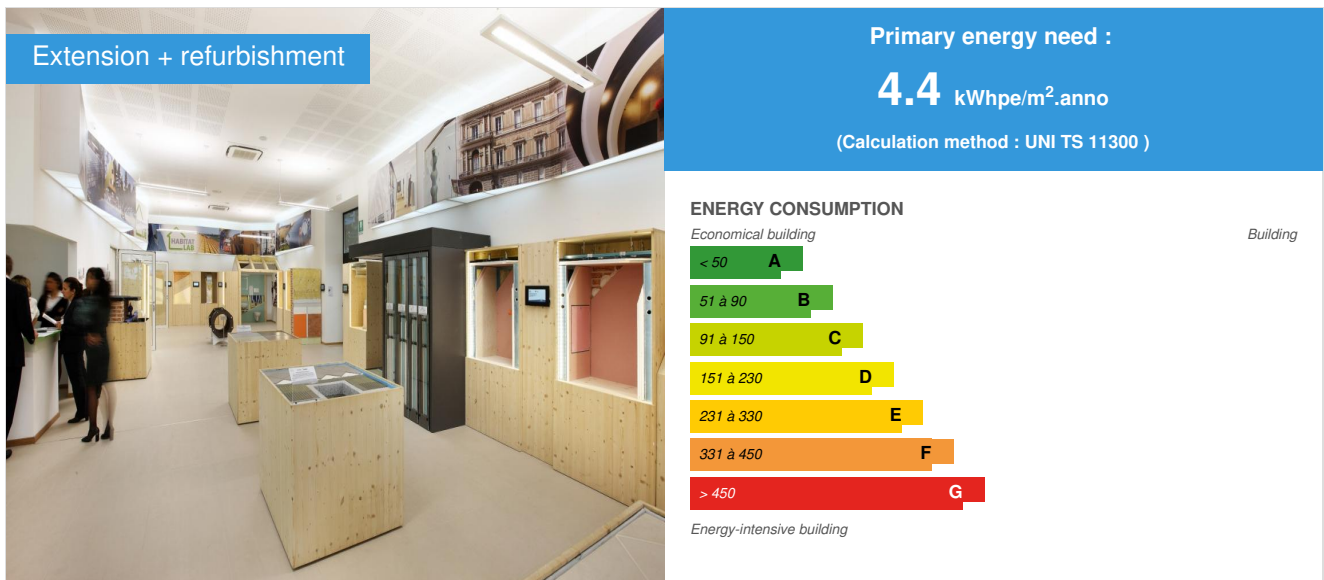


Lab habitats Saint-Gobain

by [Gianluca Cavalloni](#) / 2015-06-18 14:55:59 / Italia / 9862 / IT



Building Type : Other building
Construction Year : 2012
Delivery year : 2012
Address 1 - street : Via per Cesano Boscone, 4 20094 CESANO BOSCONI, Italia
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 1 200 m²
Construction/refurbishment cost : 4 000 000 €
Cost/m2 : 3333.33 €/m²

Certifications :



General information

Habitat Lab is Saint-Gobain's center of innovation and training : a sustained building, Platinum LEED certified (LEED 2009 NC Italy), with 90 points over 110, the highest score in Italy.

HabitatLab is a multifunctional space, where is a showroom of solutions and products for Sustainable Habitat, meeting rooms, facilities for education activities and equipped spaces for application demonstrations of products. Unlaboratorio for field monitoring technologies ecocompatibili Saint-Gobain, for the development of innovation and research on nuovimateriali and constructive solutions. A training center dedicated a progettisti, businesses and applicators for the dissemination of models costruttivi del future. Il centro unites old and new, past and future of the building. Il progetto predicted fact redevelopment of a struttura pre-esistente, a wing of an old building of the 50 700 m², and the construction of a new building of another 500 m² (1,200 m² of surface). HabitatLab is designed with the most advanced and comprehensive building solutions per garantire high levels of energy saving, reducing consumption of non-renewable natural raw dimaterie, abatement emissioni inquinanti, comfort of use of the spaces. The structure intendeporsi as a reference point of a new culture of living, inspired al benessere human and environmental protection: a space dove condividere culture of sustainability.

See more details about this project

<http://www.habitatsaint-gobain.it/habitatlab/il-centro>

Data reliability

3rd part certified

Stakeholders

Stakeholders

Function : Contractor

Saint-Gobain PPC Italia S.p.A.

Via E. Romagnoli, 6 - 20146 Milano Tel. +39 02 61115.1

<http://www.saint-gobain.it/>

Function : Company

PR Color S.n.c.

Largo Brugnatelli, 33 - Buccinasco (MI) - Tel. +39 02 4571 3565

Implementation of the renovation and expansion of the Habitat lab Saint-Gobain

Function : Other consultancy agency

Greenwich S.r.l.

via Presolana, 2/4 - 24030 Medolago (BG) Tel. +39 035 4948794

<http://www.greenwichsrl.it/>

Consultant of the Customer in the process of LEED certification (LEED AP)

Contracting method

Build and sell construction

Owner approach of sustainability

Saint-Gobain designs and manufactures complete and innovative solutions for building sustainable high living comfort and low energy consumption, respecting man and the environment through the respect of those who have long been defined as its main "values": environmental sustainability, energy efficiency, security, temperature, sound, visual, indoor air quality, design. Respect for the environment is a fundamental principle for Saint-Gobain: Market leader in sustainable building, is one of the leading manufacturers of building materials recyclable and composed of recycled raw materials. Great attention is given to the Analysis of the Life Cycle of the product (LCA - Life Cycle Assessment). This is now at the center of studies of the Group being increasingly aware of its scope and the benefits it can produce. Its overall objective is to evaluate the environmental impacts associated with the various stages of the life cycle, with a view to environmental improvement of processes and products. In innovation, another key issue is the Ecodesign. The Ecodesign take into account any possible environmental impact of a product from its first planning, to avoid waste throughout its life cycle. To translate into figures the Group's commitment to innovation, 23% of Saint-Gobain sold today, did not exist five years ago. Through its unparalleled research effort, Saint-Gobain has been included for the third consecutive year in the Top 100 Global Innovators program, which identifies companies and research facilities most active in terms of innovation. The reduction of energy consumption and pollutant emissions, both direct and indirect, is a commitment to which the Saint-Gobain Group directs most of its resources. All industrial processes of Saint-Gobain are functional objective to limit air pollution, reducing direct emissions of carbon dioxide in the atmosphere. The main cause of energy consumption in Europe is represented by sector: Saint-Gobain develops, manufactures and distributes innovative solutions to make buildings more energy efficient and more pleasant to live About 30% of the turnover of Saint-Gobain is related to products and solutions for energy efficiency, achieved thanks to the insulation in interior and exterior, the wrapping and the roofs, with the use of glass wool, gypsum coated systems, thermal insulation, high performance glazing. Thanks to the materials Saint-Gobain for the building, the main advantage in terms of energy efficiency of a building is the reduction of heat loss through the facade and roof, resulting in energy savings that can reach over 75% of consumption initial heating, and an equally consequent economic advantage of relief.

Architectural description

Habitat Lab is a multifunctional space, which houses a showroom of solutions and products for the sustainable Habitat, meeting rooms, facilities for educational activities and spaces equipped for application demonstrations of products. A laboratory for monitoring the field of clean technology Saint-Gobain, for the development of innovation and research of new materials and manufacturing solutions. A training center dedicated to designers, contractors and applicators for the dissemination of building models of the future. The Center unites old and new, past and future of the building. The project involved the upgrading of fact a pre-existing structure, a wing of an old building of the 50 700 m2, and the construction of a new building of another 500 m2 (1,200 m2 of surface). Habitat Lab is designed with the most advanced and complete construction solutions to ensure high levels of energy saving, reducing consumption of non-renewable natural raw materials, the reduction of polluting emissions, comfort of use of the spaces. The structure is intended to be a point of reference for a new culture of living, inspired by the human welfare and environmental protection: a place to share the culture of sustainability.

Building users opinion

At the end of the training taking place in the Habitat Lab, is required guests to fill out a questionnaire about the perceived well-being during their stay at the Center: the questionnaire includes, for example, questions about the perceived temperature (feeling hot or cold). The results of the interviews are used by staff that manages the Habitat Lab to constantly optimize the interior comfort.

Energy

Energy consumption

Primary energy need : 4,40 kWhpe/m².anno

Primary energy need for standard building : 62,80 kWhpe/m².anno

Calculation method : UNI TS 11300

Final Energy : 18,33 kWhfe/m².anno

Breakdown for energy consumption :

The various items of consumption of the building are completely covered by electricity generated by the photovoltaic system installed on the roof.

Initial consumption : 260,00 kWhpe/m².anno

Envelope performance

Envelope U-Value : 0,11 W/m²K

More information :

Stratigraphy of the perimeter wall to dry (from top): - smoothing weber.therm AP 50 and finish weber.cote action R - panel glass wool Isover Capp8 (20 cm) - lightweight concrete slab Gyproc Aquaroc (13 cm) - metal frame Gyproc Aquaroc 8/10 with protective coating alloy aluminum / zinc - panel glass wool Isover Extrawall (10 cm) - Gyproc plasterboard bundle Rigidur (15 cm) - metal frame Gyprofile 6/10 with environmentally friendly coating, antioxidant, dielectric - Gyproc plasterboard panel Habito ActivAir (13 cm) - Gyproc plasterboard panel Habito ActivAir Vapor (13 cm) Performance of external wall cleaning: - thermal transmittance: U W 00:11 / m²K - Sound insulation: DnT, w 66 dB - phase shift: 13 h Stratigraphy of the flat roof (from top): - reflective membrane with high SRI Bituver Megaver California - bituminous membrane Bituver Megaver 4 mm - wool panels Isover glass Superbac Roofline (30 cm) - vapor barrier Bituver Aluvapor Tender - layer vapor diffusion Bituver Bitumat V12 drilled Performance of flat roof: - thermal transmittance: U 0:09 W / m²K - Solar Reflectance Index: 96% - fire resistance External: B roof (t2)

Indicator : n50

Air Tightness Value : 0,60

Real final energy consumption

Real final energy consumption/m² : 16,25 kWhfe/m².anno

Year of the real energy consumption : 2 014

Renewables & systems

Systems

Heating system :

- No heating system

Hot water system :

- Other hot water system

Cooling system :

- VRF Syst. (Variable refrigerant Volume)

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic

Renewable energy production : 100,00 %

Environment

GHG emissions

GHG in use : 7,04 KgCO₂/m²/anno

Indoor Air quality

Indoor environmental quality is a fundamental value for Saint-Gobain, which finds full expression in the Habitat Lab. The materials used were chosen for low VOC content and controlled mechanical ventilation prevents the formation of mold and bacteria, helping to improve indoor air quality. The highlight in terms of air quality is the technology Activ'Air Gyproc Saint-Gobain, which has found wide use on interior walls and ceilings of some of the Centre: this technology is able to absorb more than 70% Formaldehyde in the air and turn it into inert elements, allowing a marked improvement in indoor environmental quality. This choice, combined with the monitoring of the concentration of formaldehyde in the environment has allowed the obtaining of a LEED point as innovative credit in the family Innovation in Design. In May 2015 (the latest month for which we have complete data at the date of the competition), the average concentration of formaldehyde in the month was 0.114 ppm. The minimum concentration reached in the month of May 2015 was 0,113 ppm, and a maximum of 0.118 ppm.

Comfort

Health & comfort : Natural light and views are guaranteed dall'amplessima portion of transparent envelope. The glass facade is placed in West made triple glazing solar control (Solar Factor g 0.25). This technology allows you to filter the excess heat of the Sun, so Habitat Lab can have light all year, reducing up to 75% summer overheating. The front window of the meeting room is created with innovative electrochromic glass (Light transmission adjustable from 63% to 2%; g Solar factor adjustable from 0.47 to 0.06): these glasses "Active", able to change the 'color intensity and, therefore, the light transmittance (intensity of incoming light) while ensuring thermal insulation and transparency. The set of architectonic solutions and choice of materials allows the center to have 95% of the surfaces employable with direct view towards the outside and to ensure that more than 77% of the surfaces benefit from natural lighting significant.

Measured indoor CO2 concentration :

Nel mese di Maggio 2015 (ultimo mese per cui disponiamo di dati completi alla data dell'iscrizione al concorso), la concentrazione media di CO2 del mese è stata di 908,60 ppm. La concentrazione minima raggiunta nel mese di Maggio 2015 è stata di 520,40 pp

Measured thermal comfort : Nel mese di Maggio 2015 (ultimo mese per cui disponiamo di dati completi alla data dell'iscrizione al concorso), a fronte di una temperatura media giornaliera esterna che è variata da un minimo di 15,6 °C ad un massimo di 25,4 °C, all'interno dell'Habitat

Acoustic comfort : Insulation solutions used Habitat Lab providing perfect protection from outside noise: the vertical envelope opaque, built dry, offers exceptional value of sound insulation of the facade, measured on site: DnT, w 66 dB. Even the glass façade with triple glazing offers a remarkable performance: D2m, nT, w 45 dB. The sound insulation between a local and another allows carrying out various internal activities simultaneously without mutual interference: the partition have a dry sound insulation in work of R'w 50 dB. Even the acoustic correction is cured in every detail: for example, in the meeting room area of the stage is reverberating to ensure that the speaker's voice comes clear and easily intelligible at all points of the room. Instead the ceiling and the bottom wall are made of sound-absorbing products to eliminate the background noise.

Products

Product

Technology Gyproc Activ'Air

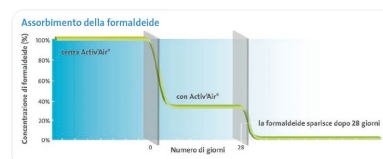
Saint-Gobain PPC Italia S.p.A. - Attività Gyproc

Via E. Romagnoli, 6 - 20146 Milano Tel. +39 02 61115.1

<http://www.gyproc.it/>

Product category :

The technology Activ'Air®, international patent Gyproc Saint-Gobain, is able to neutralize up to 70% of the formaldehyde present in indoor environments. We spend 85% of our time indoors: home, work, school, gym. Without realizing it, we breathe large amounts of pollutants. First of all, the formaldehyde. Activ'Air® uses a specific component capable of receiving and transforming into inert compound up to 70% of the formaldehyde present in indoor air. Activ'Air® triggers a chemical reaction that transforms formaldehyde and aldehydes in substances not more volatile and dangerous. The overall performance of Activ'Air® has been validated by tests performed by CSTB and Eurofins, independent laboratories in the field of bioanalysis environmental, food and pharmaceutical industries, particularly internationally renowned.



Habitat Lab is controlled by a home automation system that allows real time detection of numerous factors of indoor environmental quality, including the concentration of formaldehyde. The monitoring data are constantly visible on a dedicated screen in the center. Visitors can thus constantly display the benefits that technology brings Activ'Air environment inside the center where they are staying.

Glass wool Isover 4+

Saint-Gobain PPC Italia S.p.A. - attività Isover

Via E. Romagnoli, 6 - 20146 Milano Tel. +39 02 61115.1

<http://isover.it/>

Product category :

Glass wool Isover 4+ is the ideal product for the insulation of the interior. Isover 4+ helps improve the air quality of the environment in which it is installed because it has no emissions. Glass wool Isover 4+ consists of totally natural raw materials, renewable, recyclable: over 80% of recycled glass and a special binder

patented plant-based components.

The home automation system installed in the Habitat Lab and considerations mentioned in Activ'Air technology allows us to appreciate the contribution of nil fiberglass 4+ emission of formaldehyde in the indoor environment of the center, to the benefit of air quality for the occupants.



Costs

Urban environment

Lab habitats bridge sustainable mobility: the site was chosen because it is easily accessible by the adjacent railway. In addition, emphasis was placed on the mobility of the future, providing guests a column for charging electric vehicles. In addition, anyone wishing to visit the center located at the entrance to a bike rack to store his bike and showers and changing rooms inside to change.

Green space

Green space : 693,34

Building Environmental Quality

Building Environmental Quality

- indoor air quality and health
- works (including waste management)
- acoustics
- comfort (visual, olfactive, thermal)
- waste management (related to activity)
- water management
- energy efficiency
- renewable energies
- building end of life management
- mobility
- products and materials

Contest

Reasons for participating in the competition(s)

Categoria Net Zero Energy Buildings

HabitatLab ha ottenuto il 100% del punteggio LEED nei crediti relativi all'ottimizzazione delle prestazioni energetiche e alla produzione in sito di energie rinnovabili, comprese le relative prestazioni esemplari. L'involucro trasparente e l'involucro opaco raggiungono trasmissioni termiche rispettivamente di $0,60 \text{ W/m}^2\text{K}$ e $0,11 \text{ W/m}^2\text{K}$. **La copertura dell'Habitat Lab è perfino più performante delle sue pareti (trasmissione di $0,09 \text{ W/m}^2\text{K}$).** Tali prestazioni hanno permesso al Centro di essere certificato in classe A+ dalla Regione Lombardia (consumo energetico $< 1,1 \text{ kWh/m}^3\text{a}$). L'impianto fotovoltaico sul tetto piano dell'edificio apporta il 17% del fabbisogno annuale di energia rinnovabile. Il risultato finale è un risparmio del 51% dei consumi energetici per riscaldamento, condizionamento, illuminazione, etc. rispetto a un edificio di riferimento modellizzato sugli standard minimi di legge.

Categoria Salute e Comfort

La qualità ambientale interna è un valore fondamentale per Saint-Gobain, che trova completa espressione nell'Habitat Lab. I materiali utilizzati sono stati scelti per il bassissimo contenuto di VOC e la ventilazione meccanica controllata evita la formazione di muffe e batteri, contribuendo al miglioramento della qualità dell'aria interna. Il fiore all'occhiello in tema di qualità dell'aria è la tecnologia Activ'Air di Gyproc Saint-Gobain, che ha trovato ampio impiego sulle pareti interne e su alcuni controsoffitti del Centro: questa tecnologia è in grado di assorbire oltre il 70% della formaldeide presente nell'aria e di trasformarla in elementi inerti, consentendo quindi un netto miglioramento della qualità ambientale interna. Questa scelta, abbinata al monitoraggio della concentrazione della formaldeide nell'ambiente ha permesso l'ottenimento di un punto LEED come credito innovativo nella famiglia Innovation in Design.

Luce e vista naturali sono garantite dall'ampissima porzione di involucro trasparente. La facciata vetrata posta a Ovest è realizzata con tripli vetri a controllo solare (Fattore Solare $g \ 0,25$). Questa tecnologia permette di filtrare l'eccesso di calore del Sole, in questo modo Habitat Lab può avere luce tutto l'anno, riducendo fino al 75% il riscaldamento estivo.

L'insieme delle soluzioni architettoniche e di scelta dei materiali permette al centro di avere il 95% delle superfici occupabili con visione diretta verso l'esterno e di garantire che oltre il 77% delle superfici beneficino di illuminazione naturale significativa.

Le soluzioni di isolamento utilizzate all'Habitat Lab, oltre all'efficienza energetica, consentono una perfetta protezione dai rumori esterni:

l'involucro verticale opaco, costruito a secco, offre un eccezionale valore di isolamento acustico di facciata, misurato in opera: $D_{nT,w}$ 66 dB.

Anche la facciata vetrata con tripli vetri offre una prestazione notevole: $D_{2m,nT,w}$ 45 dB. Il fonoisolamento tra un locale e un altro consente lo svolgimento di diverse attività interne in contemporanea senza interferenze reciproche: le pareti divisorie interne a secco hanno un potere fonoisolante in opera di R'_{nw} 50 dB. Anche la correzione acustica è curata in ogni minimo dettaglio: ad esempio, nella sala riunioni la zona del palco è riverberante per garantire che la voce dell'oratore giunga chiara e facilmente intelligibile in tutti i punti della stanza. Invece il soffitto e la parete di fondo sono realizzati con prodotti fonoassorbenti per eliminare il brusio di fondo.

Building candidate in the category



Net zero energy buildings



Health & Comfort



**Green Building
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