



PRESS
release

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Saint-Gobain is supporting seven student projects at the Solar Decathlon Europe 2014 competition

Saint-Gobain is supporting seven student projects at the Solar Decathlon Europe 2014 competition which has been officially opened today in Versailles by the French Housing Minister Sylvia Pinel. The aim of this international academic architectural competition is to improve education and research in the fields of sustainable architecture and solar energy. This year, 20 student teams representing 41 universities from 16 countries and three continents are presenting full-scale prototypes of the sustainable, comfortable, innovative and affordable solar energy houses they designed. The projects will be assessed according to 10 criteria: architecture, engineering & construction, energy efficiency, electrical energy balance, comfort conditions, house functioning, communications & social awareness, urban design, transportation & affordability, innovation, sustainability. The competition will be open to the public from June 28 to July 14.

Saint-Gobain creates and delivers innovative and high-performance solutions that improve our habitat and daily life and is sponsoring the competition to help young and talented student teams to build and renovate comfortable, healthy, economical and energy-efficient buildings. Saint-Gobain brings support through its know-how in building physics and its innovative solutions for creating sustainable habitats. Through its different brands, it has given students from France, Germany, the United States, Denmark, Romania, India, Mexico and Spain access to its 350-year expertise providing knowledge on building materials, technical advice and general guidance. It has also given financial support and building materials. The following student teams received sponsorship from Saint-Gobain:

France

The Atlantic Challenge team comprising about 100 students from schools in Nantes, including Ecole Centrale de Nantes, Ecole Nationale Supérieure d'Architecture de Nantes and Ecole Supérieure du Bois, is presenting a project called Philéas. This project consists of renovating CAP 44, an abandoned industrial building from 1895 situated in the Nantes area, by inserting prefab wooden modules in the existing structure. The idea is to transform the building into a multiple use building with housing, offices, a nursery, a restaurant and a farming activity on the roof.

To accompany the team in the execution of this project, Saint-Gobain gave the students access to the expertise of its researchers and engineers specialized in building physics. The Group organized workshops to address technical subjects and provided answers to their questions on thermal, acoustic, visual comfort and the building's environmental quality. During the visit of Saint-Gobain's Multi-Comfort-House in Beaucouzé (France) and its Innovation Center Domolab in Aubervilliers (France) the students had the opportunity to

discover the diversity of the Group's systems and construction materials. Ten Saint-Gobain Group brands (Placo®, Saint-Gobain Glass, Glassolutions, SWISSPACER, ISOVER, Weber, LAPEYRE, CEDEO, POINT.P and SAINT-JUST) provided value-added building materials as well as tools and individual protection equipment. The construction materials include: innovative Gypsum boards (Duo Tech® partition wall system with Activ'Air® by Placo®) for the interior walls providing a perfect balance between affordability, rapidity of assembly and the highest thermal and acoustical performance; low-emission glazing providing optimum thermal insulation for the atrium and the agricultural greenhouse (Climaplus ONE by Saint-Gobain Glass and Glassolutions); warm edge spacer bars (ULTIMATE by SWISSPACER) installed on the double glazing to reduce energy consumption, insulation panels (GR 32 by ISOVER) for the walls and floors to optimize thermal and acoustic comfort; membrane (VARIO XTRA by ISOVER) providing air tightness and thermal comfort for the overall prototype; non-irritant, low-dust flexible tile adhesives (WEBER.COL FLEX ECO); partition walls and ceilings with integrated invisible loud speakers (ACTIV'TONE® by Placo®); innovative glass towel radiators (THERMOVIT Eden by Glassolutions) and bathroom equipment (from LAPEYRE and CEDEO).

USA-Germany

The German-American team Inside Out with 50 students from the Rhode Island School of Design and Brown University (United States) and 12 students from University of Applied Sciences (Erfurt) Germany, is competing with its 75 m² Techstyle House which is completely powered by the sun. The house consists of a lightweight steel structure supporting a pre-stressed architectural membrane insulated by several flexible layers to create a "textile" house meeting the PassivHaus standard, the highest international standard for energy efficiency. It is the first time that a Solar Decathlon team has built a house with an enclosure entirely made of textiles which allow for a modular design and adaptive spaces that can answer increasingly diverse needs of the modern family.

The textile material the team used is an architectural membrane provided by Saint-Gobain (Sheerfill® II Architectural Membrane with EverClean® Photocatalytic Topcoat) equipped with a weather barrier (CertainTeed), a layer of mineral wool maintained between straps (ISOVER) a vapor barrier (ISOVER) and an interior fabric designed by a NewYork pullover manufacturer creating a free shape supporting flexible PV panels. Saint-Gobain also provided triple solar control glazing (Saint-Gobain Glass and Glassolutions), bathroom furniture (LAPEYRE) and an innovative lighting fabric (ADFORS) for the bathroom as well as canvas impregnated with a thin layer of concrete for the design of innovative and durable outdoor furniture. Apart from building materials from 9 Group brands, Saint-Gobain also provided the students with financial support and technical expertise.

India

The Indian team Shunya representing 70 students from the Indian Institute of Technology of Bombay and the Academy of Architecture of Mumbai are presenting their H Naught project. The students' aim was to design and build an affordable and sustainable zero-energy solar powered house with fast prefabrication and a modular indoor-space to meet the exponentially increasing demand for urban housing and energy in India. At the same time, they wanted to combine modern science with the heritage of India by incorporating essential elements of VastuShastra, the ancient Indian science of buildings and construction. The result is a 4-storey building module designed for a traditional Indian family (grandparents, parents and children).

Saint-Gobain is sponsoring this project through financial and mentoring support as well as building materials from two Group brands (Gyproc® and Saint-Gobain Glass). The building materials included innovative fire resistant and moisture resistant plasterboard (Gyproc® FRMR) as well as water- and moisture- resistant cement boards (Gyproc® Fiber), in order to adapt the building to a tropical climate with monsoon. Saint-Gobain Glass supplied double glazing (SKN165) with a low U value* and a low solar heat gain to keep the building interior

cool, reduce air conditioning costs and achieve excellent light transmission permitting interior illumination using only daylight.

Denmark

The Danish team DTU with about 60 students from the Technical University of Denmark conceived a project named Embrace. It consists of a dwelling where the building envelope is split into two different parts, a thermal envelope and a weather shield. Between the two parts, the team created a new kind of space which could be described as an indoor garden. Thanks to a passive strategy, the weather shield will dramatically improve the local climate around the thermal envelope. This project is meant to integrate the increasingly dense city of Copenhagen and is aimed at saving resources, energy, space and money. It is perfectly adapted to Denmark's severe winters with sharp wind and bitter cold. Saint-Gobain's support for this project consisted of R & D expertise, knowledge about materials and general guidance. The Group also provided very low thermal conductivity materials with a low λ value** (ISOVER Lambda 30) allowing for thinner walls without losing performance, a climate membrane (ISOVER Vario) to ensure that the timber construction is kept dry and durable and transparent glass (Saint-Gobain Glass) for the solar panels.

Romania

The Romanian team EFdeN consisting of 70 students from three top Technical Universities in Bucharest - the "Ion Mincu" University of Architecture and Urbanism, the Technical University of Civil Engineering and the University Politehnica Bucharest - is presenting a project called EFdeN. The idea of this project was to reintegrate nature into an urban environment. They designed and built a one-family house which is ideal for urban areas and the rehabilitation of former industrial zones, well connected to the urban network and includes a green house.

Saint-Gobain is sponsoring the Romanian team through mentoring support as well as building materials from three Group brands (ISOVER, Rigips and Saint-Gobain Glass). The Group provided highly innovative plasterboards (Rigips Alba® Balance) which reduce energy consumption for heating by 50 % and provide natural regulation of the indoor climate, thanks to innovative microcapsules with phase-change material (PCM). Saint-Gobain also supplied impact resistance boards (RIGIDUR impact resistance by Rigips) making walls and ceilings durable and resilient and requiring little maintenance, thermal insulation for walls and roofs (Uniroll Plus by ISOVER), sound insulation (ISOVER AKUSTO), intelligent vapor barriers against moisture ensuring that walls and roofs are airtight (Vario KM DUPLEX by ISOVER) as well as solar control glazing (sGG Stadip 4 S Evolution by Saint-Gobain Glass), triple glazing (sGG Stadip ULTRA N) for the green house and lacquered glass panels for interior design (sGG Planilaque Evolution).

Mexico

The Mexican team UNAM comprises 78 students from the following UNAM (Universidad Nacional Autónoma de México) entities: the School of Engineering and the School of Architecture, the Research Center of Industrial Design, the National School of Plastic Art and the School of Social and Political Science. They are competing with a project called CASA, conceived for the Metropolitan Area of Mexico's Valley, the third most populated metropolitan area in the world. Focusing on issues like water management, pollution and the acute risk of poverty, the students' aim was to design a sustainable housing proposal to face urban sprawl and adapt to environmental changes. The envelope is made of several different layers.

Saint-Gobain's support for this project consisted of building materials from two Group brands (ADFORS and Saint-Gobain Glass), assistance on the establishment of the building material specifications (glass and interior/exterior reinforcement coverings) and general guidance for a correct installation of the building materials. The Group provided a solar screen (Sun Guard by ADFORS), a new product which filters the light for greater heat reduction and less glare, increases energy conservation, lowers air conditioning costs, reduces fading of carpets, drapes and upholstery and protects from insects through its extremely tight fiberglass weave.

It also supplied coverings for walls and ceilings (NOVELIO® by ADFORS) reinforcing surfaces and resisting to abrasion and impact as well as different types of glazing (CLIMAPLUS SILENCE, sgg Securit, sgg Stadip Protect, sgg Planitherm ONE, by Saint-Gobain Glass) to maintain a comfortable interior temperature, protect against UV rays, eliminate unwanted exterior noise and protect against vandalism and burglary.

Spain

The Plateau Team from Spain with 27 students from University of Alcala de Henares and University of Castilla La Mancha is presenting a project called SymbCity. The idea of this project is to take advantage of unused space on buildings - roofs, terraces and other elevated urban areas -to optimize the urban infrastructure and create a real symbiosis between existing buildings and the constructions added on their roofs.

Saint-Gobain is sponsoring this project through financial and technical support as well as training and building materials from three brands (ISOVER, Placo® and Saint-Gobain Glass). They include insulation materials for optimum thermal comfort (ISOVER), ceiling tiles providing good acoustic properties and indoor air quality (GYPTONE by Placo®), double glazing combining high thermal insulation and solar control (sgg CLIMALIT PLUS 4S) and printed decorative glass for interior and exterior applications (sgg SECURIT PIXARENA).

*A U value is a measure of heat transmission in a building element such as a wall, floor or roof.

** λ: the lambda value is used to express the thermal conductivity of an insulation material – the lower the lambda, the higher the material’s capacity to insulate.

More about Saint-Gobain

Saint-Gobain, the world leader in the habitat and construction markets, designs, manufactures and distributes building and high-performance materials, providing innovative solutions to the challenges of growth, energy efficiency and environmental protection. With 2013 sales of €42.0 billion, Saint-Gobain operates in 64 countries and has nearly 190,000 employees. For more information about Saint-Gobain, please visit www.saint-gobain.com.

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