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Press Release

THE SECRETS OF PALAZZO ITALIA

Outstanding products and next generation technologies for the construction of the symbol of Expo 2015

From the silver medal at the 1867 Universal Exposition in Paris to the new material created especially for Palazzo Italia at Expo 2015: the most innovative materials are the product of Italian research

The Italian Pavilion in figures

9,000 mq outdoor surface area

900 plane and curved panels

600 frameworks and 300 different corner frameworks, all different one another

4 x 4.2 metres typical size of each panel

10,560 hours of research dedicated to the project

15 researchers involved in developing the new product

2,000 tonnes of biodynamic cement used

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Milan, 8 April 2014 – Biodynamic cement for Palazzo Italia: this is the innovative solution developed by **Italcementi** for the construction of the Italian Pavilion at Expo 2015.

For an ambitious project like Palazzo Italia, the leading Italian specialized companies have been called on to pitch in to design and build an extraordinary structure.



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Biodynamic cement: innovative shapes and cleaner air

The Italian Pavilion will be the throbbing heart of Expo 2015. The architectural design, by Nemesi & Partners, envisages the construction of a complex structure whose exterior and some interior spaces recall the shapes of branches in a thick forest. The entire outdoor surface and part of the interiors will consist of **i.active BIODYNAMIC** cement panels, obtained using Styl-Comp technology from the new material developed at i.lab, the heart of Italcementi's research and innovation.

The product's name is a summary of its innovative characteristics. The “**bio**” component is given by the product's **photocatalytic properties**, originating from the active ingredient TX Active, patented by Italcementi. In direct sunlight, the active principle contained in the material “captures” certain pollutants present in the air and converts them into inert salts, helping to purify the atmosphere from smog. Additionally, the mortar is made from **80% recycled aggregates**, part of which consist of scraps from the cutting of Carrara marble, and therefore provide a superior brilliance compared to traditional white cements. The “**dynamic**” component is a specific characteristic of the new material, whose particular **fluidity** allows the creation of complex shapes like those found in the Palazzo Italia panels. Thanks to its high workability, i.active BIODYNAMIC is able to penetrate in the frameworks, designed one by one and manufactured by Styl-Comp, and form the final design of the panel, ensuring an **extraordinary surface quality**. The new material also features outstanding workability and resistance compared to classic mortars. Its initial fluidity is three times greater (300 mm vs 100 mm); it is twice as resistant to compression (over 60 MPa compared to 30 MPa of classic mortars) and twice as resistant to flexion (over 10 MPa against 5MPa of classic mortars).

«Palazzo Italia, the icon of Expo 2015»

*«The 2015 Universal Exposition is a great opportunity for a general relaunch of Italy; it will be an occasion for our Country to showcase its excellence in a vast array of fields, from manufacturing to technology and science» said **Diana Bracco**, President of Expo 2015 and Commissioner for the Italian Pavilion. “Our Pavilion, inspired by the Vivaio Italia (Tree Nursery Italy) and Albero della Vita (Tree of Life) concept by Marco Balich, will be a window on the past, the present and the future of Italy. Innovation will be one of the key drivers of the Milan Expo. We want the Italian Pavilion to be an opportunity to showcase the innovation capabilities of our companies and to promote the development of sustainable products and eco-compatible technologies. An emblematic example of this will be Palazzo Italia, conceived as a landscape-like architecture where the building, through its structure and volume, takes on the appearance of a tree/forest into which visitors can plunge for a thrilling experience. The realization of this architectural narrative, designed by Nemesi & Partners in collaboration with Proger, BMS Progetti and Livio De Santoli, will be entrusted to Italian companies, like*



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Italcementi, capable of meeting this challenge." As Diana Bracco remarked, "As home of the hosting country, Palazzo Italia will be the heart of the entire exhibition site, and the whiteness of its biodynamic cement branches will remain in the future as the icon of the 2015 Universal Exposition».

«A new achievement for Italian research»

As the company that developed the transparent cement solution for the Italian pavilion at the Shanghai Expo 2010, Italcementi immediately seized the new challenge, relying on its 150 years experience in the world of construction materials. *«From the silver medal at the 1867 Universal Exposition in Paris, through the international success of the Italian Pavilion, symbol of the Shanghai Expo 2010, to the new biodynamic cement that will characterize Palazzo Italia at the Milan Expo 2015: Italcementi is once again a key player in a Universal Exposition thanks to its innovative products – said **Carlo Pesenti**, CEO of Italcementi. "By providing materials for the realization of the architectural and engineering quality that our Country is able to express, our performance and solutions have contributed to the creation of the symbol buildings of several Expos. From Paris to Shanghai to Milan, Italian research wins again».*

“Creativity and innovation go side by side”

“Creativity and innovation go side by side” says Marco Balich, artistic director of the Italian Pavilion. “Creativity is usually the generating force and the tool required for innovation to come to fruition. In our case, the Vivaio (Tree Nursery) Concept was a stimulus and a source of inspiration for the study and design of the Italian Pavilion, of which Palazzo Italia is a part, and from which the architects took inspiration. It is very gratifying for me to see how the concept has been embraced and developed by Italcementi, and how they created biodynamic cement especially for the entire outer structure of Palazzo Italia”.

“The Italian Pavilion has been conceived as a place to protect and cultivate young talents, new energies, diverse cultures, and also to set an objective for our work” concluded Balich. “The objective is hope and confidence in our abilities and in our future as human beings and as Italians”.

“Architecture made possible by new materials and technologies”

“Our architectural design for the Italian Pavilion takes inspiration from an urban forest” explained architect Michele Molè of Nemesi & Partners, author of the architectural design of the Italian Pavilion. “The branch-like



texture of the outer “skin” of Palazzo Italia, the heart of the project, evokes a primitive figurative style, and consistently renders Marco Balich's Tree of Life theme in the form of a petrified forest. The intertwining lines generate an alternation of light and shadows, of full and empty spaces, from which a “natural architecture” comes to life. The volumetric complexity of Palazzo Italia is based on four main blocks organized around a central void/piazza and connected to each other by bridge elements; inside these blocks are organized the main macro-functions: Exhibition Area, Auditorium, Offices and Conference Rooms. Just like trees, the four architectural volumes rest on massive supports simulating the huge “roots” of the exhibition pathway on the ground floor; these same volumes, viewed from the central piazza, expand and widen upwards, loosening their light “foliage” across glass surfaces, stretching out their “branches” and dynamically weaving a web that reaches up to the great roof terrace. The outer skin of Palazzo Italia,” concluded Molé, “an essential aspect of the poetics of this design, was made possible by the innovative materials and technologies developed by Italcementi and Styl-Comp”.

On his part, Sergio Zambelli, Managing Director of Styl-Comp, emphasized the ability to *“enhance the expressive potential of the cementitious material, creating amazing architectural structures that love light and seem to ask to be caressed”*.

The challenge of innovation

With biodynamic cement, Italcementi successfully brings innovation to construction materials, a segment that is only apparently “traditional”, and confirms the innovative and creative dimension of products *Made in Italy*, always ready to accept the challenges posed by the world of architecture.

To Italcementi, research, innovation and sustainability are at the centre of its industrial strategy, with investments of approximately 13 million euro per year in R&D activities, one of the highest in the industry as a percentage of revenue. This marked propensity for product innovation has led over the years to the development of a wide range of unique and innovative products: photocatalytic cement, based on the TX Active active principle, able to help improve air quality with its de-polluting and self-cleaning properties; i.light SHANGHAI, the transparent cement used for the exterior walls of the Italian Pavilion at Shanghai Expo 2010, highly appreciated by the world of architecture; i.design EFFIX for creative applications, used by designers to create interior decoration complements; and i.idro DRAIN, the draining cement for the construction of roads and pavings that respect the natural cycle of water.

The products developed by Italcementi are made available to the world of architecture, with which the company has maintained for decades close cooperation relations. Researchers and architects work side by side to



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find solutions and materials able to meet new challenges and reach beyond the traditional characteristics of constructions materials, setting new standards in safety, durability, design and sustainability.

Italcementi and architecture

With its materials and know-how, Italcementi Group has always been a key player in **innovative, high tech projects**. Today, the Group not only accepts the challenge of innovation, but takes it to a higher level by offering to the building community an integrated platform of services, products and solutions for architecture as a tool for the sustainable transformation of the territory. This commitment has resulted in support to the main events offering opportunities for discussion and dialogue with the world of architectural design in Italy and abroad. From participation in the Venice Biennale to cooperation with the Milan Triennale, from sponsorship of the World Conference of Architects in Turin to partnership with the MAXXI for the exhibition project dedicated to the work of **Pier Luigi Nervi**. Collaboration with American architect **Richard Meier** led to the construction of the Dives in Misericordia church in Rome and, more recently, of i.lab, Italcementi's own Research and Innovation Centre. Italcementi laboratories also saw the development of the i.light transparent cement, used for the Italian Pavilion at **the Shanghai 2010 Expo**, and of the biodynamic cement that will be employed in the branch-like structure of the Italian Pavilion at **the Milan 2015 Expo**. Initiatives supported by Italcementi Group at the international level include the **arcVision Prize - Women and Architecture**, an award for women architects that promotes the best social vision projects.

Italcementi's studies and tests, both in the laboratory and on the field, have helped to address the complex issues inherent in the designs of today's great architects, from the development of increasingly sophisticated products to advanced structural and technological solutions; from optimization of construction and prefabrication techniques to green methodologies and models for sustainable buildings. Italcementi's commitment to smart building is based on the right balance between science and aesthetics, between static investigation and creative inspiration. A balance where architecture is a synthesis of design and calculation, and finds its formal value in its own structural characteristics.



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ITALCEMENTI GROUP ON THE INTERNET:

www.italcementigroup.com

www.italcementi.it

www.i-nova.net

Media Relations

Ph. (39) 035.396977

Mail: ufficiostampa@italcementi.it

Live tweeting of the event on:

@italcementi - @arcVisionorg - @BalichWS - @Pad_Ita2015