PRODUCTS FOR WOODEN FLOORS

The Centennial Hall

WROCŁAW - POLAND

KEY FACTS

- An unique building that inaugurated the reinforced concrete architecture, listed on UNESCO List of World Heritage since 2006
- 325 m^2 of oak floor thoroughly installed with MAPEI system solution

POLISH REFERENCE GRAND PRIX 2012 SELECTION

The Centennial Hall

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Let's present the project…

The Centennial Hall is surely an unique building. Since 2006 it finds its place on the UNESCO List of World Heritage as an important landmark which inaugurated the reinforced concrete architecture. Its construction took fourteen months, followed by a ceremonial opening on the 20th of May, 1913. The City Council decided the Hall should be raised to house the Centennial Exhibition (in commemoration of the centennial anniversary of the "Address to the German Nation", presented by King Frederick William III, in 1813, as an appeal to offer general resistance to Napoleon). The architectural competition to design the outskirts of Park Szczytnicki was won by Wroclaw municipal architect Max Berg and his project - visionary and innovative for this era.

The world's first multi-purpose public building made from reinforced concrete sparked controversy and caused strong emotions, both because of the pioneering technology and innovative approach to the design process (Berg had particular interest in hall's functionality and the cohesion of the interior arrangement with the structure). The rumor says that after the works completion, when it was necessary to remove the formwork, Max Berg had to find a passer-by who would loosen the safety screws for one gold Deutsch mark. The workers feared the structure might fall, meanwhile it stands in the same place until today.

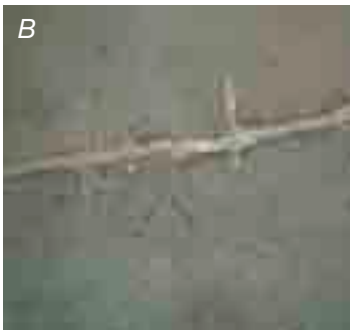
This exceptional project required especially selected materials. Special cement used for concrete mix was submitted to restrictive tests. The steel passed the frangibility tests and eventually, enhanced resistance high-grade rolled steel material was used. In areas especially exposed to higher stress, the highest performance aggregate was used, known under the name of strzegomski granite. Windows woodwork was made from ironwood imported from Australia. In the era, the reinforced concrete roof covering span of the Centennial Hall was the largest in the whole world. The building's capacity was of 10 000 people, the structure was 42 meters high, 95 meters wide, the dome's diameter was equal to 67 meters and the total area amounted to 14 000 m^2. The hall can be considered a landmark in the reinforced concrete architecture history and an outstanding example of modern engineering in the early 20th century.

The Centennial Hall hosted over the past years many different events. After the Centennial Exhibition in 1913, the hall staged the Exhibition of the Reclaimed Territories in 1948 and simultaneously, the World Congress of Intellectuals in the Defense of Peace. On May 31st, 1997, pope John Paul II welcomed with ovations by a group of ten thousands pilgrims and congress guests from more than 70 countries lead an ecumenical prayer, whereas during the autumn of 2010 Dalai Lama spoke for nearly 5000 persons. In 2011, within the scope of Polish Presidency in the European Union, the Centennial Hall hosted the European Culture Congress. One year earlier Jean Michel Jarre gave a concert in the Hall and soon Deep Purple will thrill their fans.

…and MAPEI contribution

For a long time the Hall hadn't been renovated at all. The very first make-over had place in 1989. A general renovation was carried out eight years later and its major task was to lower the floor level of 1 m and to install a sliding stand and mobile sports fields. This would make possible staging events for which the Hall wasn't adapted before. In 2010 the external facade was renovated along with the old windows replacement (which in total sum up to 600). Because of the fact that originally was used a currently extincted iron mahogany, the monuments restorer advised to replace it with teak wood (exotic type of wood, highly resistant to water). Further minor reinforced concrete structure repairs were executed.


A


B


C


D


E

MAPEI solutions were applied when it came to thorough oak floor renovation in an oval room, called the Caesar's Chamber (325 m^2 big, with social back-up facilities) with a balcony and a direct entrance to the Hall's auditorium, used often as the VIP zone during concerts, fairs and conferences.

The existing cementitious screed (A) required smoothing and milling - in effect, a clean, adherent substrate was obtained which needed only local cracks' filling and defects' elimination. The 40 meters of cracks and scratches were filled with EPORIP TURBO - very fast-hardening, two-component polyester resin-based adhesive (B). The remaining substrate renovation (on nearly 50 m^2) were carried out with PLANITOP 400 (C) - a fast-setting thixotropic mortar with compensed shrinkage. The areas repaired with PLANITOP 400 can be submitted to loads only after few hours from application - this cast allowed to pass to the next works' stage which was the primer treatment. For this scope, the chosen product was ECO PRIM T - universal purpose, solvent-free, acrylic-base primer with low level of volatile compounds (VOC) for absorbent and non-absorbent surfaces. Its effectiveness consists in enhancing the adherence of the smoothing layers. Such prepared substrate was treated with ULTRAPLAN ECO self-leveling mortar (D). This product is perfect for zones subjected to heavy loads and intense traffic (which the Caesar's Chamber surely is). The thickness of ULTRAPLAN ECO layer on the whole surface was equal, on average, to 11 mm - which is optimum for wooden coverings. After a two-week technological break the oak parquet installation begun (E) with a two-component epoxy-polyurethane adhesive ULTRABOND P902 2K. This product allows foot traffic on wooden floors only after 24 hours.

In good conditions, one day is enough also to start smoothing the parquet (F, G). At this point, however, few surprises occurred. Water which got into the Caesar's Chamber through an ajar roof hatch (as a consequence of other simultaneous renovation works) inundated a part of freshly installed wooden floor. In effect, it was necessary to tear down the dampen parts and replace them with new parquet elements. Because of the time pressure, these areas required additionally to cut off the moisture absorbed into the substrate. The contractor made a good use of ECO PRIM PU 1K, one-component ecological, solvent-free primer for waterproofing the cementitious screeds which thanks to a vapor-proof barrier cuts off the residual damp and allows a safe wood covering installation.

The parquets' finishing layer was carried out with the ULTRACOAT system. The first stage consisted in applying a nitrocellulose based binder in ULTRACOAT LS solvent dispersion mixed with sawdust (H). Just after 30 minutes from treating the surface with ULTRACOAT LS it is possible to varnish the floor. The oak parquet in the Caesar's Chamber was painted with ULTRACOAT P920 2K - a two-component base varnish in water dispersion, NMP-free and with very low emission of volatile compounds (VOC) (I). Its features include good covering, easy application, as well as smoothing off, and permits to eliminate the discoloration effect deriving from the high content of tannin in the oak wood. ULTRACOAT P920 2K thanks to high amount of dry substance, in combination with a two-component, finishing water-based varnish ULTRACOAT P925 allows to obtain a two-layer varnish coat. This solution was effectively applied in the building and spared 2 days of work.

The base-boards were installed with the use of ULTRABOND SUPER GRIP - general purpose, acrylic-base, water dispersion adhesive with high initial adherence.


F


G


H


I

MAPEI PRODUCTS: ECO PRIM PU 1K, ECO PRIM T, EPORIP TURBO, PLANITOP 400, ULTRABOND P902 2K, ULTRABOND SUPER GRIP, ULTRACOAT LS, ULTRACOAT P920 2K, ULTRACOAT P925, ULTRAPLAN ECO.

TECHNICAL DATA

- **Name of building intervention:** The Centennial Hall / Wrocław / Poland
- **Type:** Public (other: VIP zone – CAESAR'S CHAMBER)
- **Designer:** Max Berg
- **Period of construction:** 1911-1913

- **Period of MAPEI intervention:** 2011
- **Intervention by MAPEI:** installation of an oak parquet
- **Customer:** Wrocławskie Przedsiębiorstwo Hala Ludowa Sp. z o.o.
- **Project designer:** Daniel Nowak, Bartłomiej Dorobisz
- **Laying company:** Centrum Parkietowe NOWAK
- **MAPEI Coordinator:** Wojciech Sikora.

MAPEI PRODUCTS	MATERIAL INSTALLED	SUBSTRATE	QUANTITY OF PRODUCT	SURFACE	INSIDE/ OUTSIDE	NEW/ RENOVATION	PRODUCT LINE
	DO NOT COMPLETE FOR BUILDING PRODUCTS						
EPORIP TURBO	OAK PARQUET	MILLED CEMENTITIOUS SCREED	15 kg	325 m²	INSIDE	RENOV.	PRODUCTS FOR WOODEN FLOORS
ECOPRIM T		MILLED CEMENTITIOUS SCREED	75 l		INSIDE	RENOV.	PRODUCTS FOR WOODEN FLOORS
PLANITOP 400		MILLED CEMENTITIOUS SCREED	300 kg		INSIDE	RENOV.	PRODUCTS FOR WOODEN FLOORS
ULTRAPLAN ECO		MILLED CEMENTITIOUS SCREED	5 750 kg		INSIDE	NEW.	PRODUCTS FOR WOODEN FLOORS
ULTRABOND P902 2K			600 kg		INSIDE	NEW.	PRODUCTS FOR WOODEN FLOORS
ULTRACOAT LS		OAK PARQUET	65 l		INSIDE	NEW.	PRODUCTS FOR WOODEN FLOORS
ULTRACOAT P920 2K		OAK PARQUET	35 l		INSIDE	NEW.	PRODUCTS FOR WOODEN FLOORS
ULTRACOAT P925			70 l		INSIDE	NEW.	PRODUCTS FOR WOODEN FLOORS
ULTRABOND SUPER GRIP		OAK PARQUET, OAK PROFILES	20 pcs		INSIDE	NEW.	PRODUCTS FOR WOODEN FLOORS
ECO PRIM PU 1K		CEMENTITIOUS SCREED	10 kg		INSIDE	NEW.	PRODUCTS FOR WOODEN FLOORS