

An example of industrial archaeology realized on Giudecca Island has been restored also thanks to Mapei.

NEW LIFE

for the Stucky Mill

The recovery of the area

Mills existed in Venice already in 1353, and the stories tell of windmills on the San Giorgio Island, in San Nicolò del Lido and in Castello, one seems to have operated in the Moranzani channel, some were built on barges and anchored to the banks while others were solid constructions. The advent of the steam engine and of the cylindrical mills started a process that witnessed the emergence of impressive complexes precisely like the Stucky Mill. This is the period in which there was a diffusion of industrial settlements in the lagoon cities, in addition to the Stucky Mill, the Cotton Mill and the Junghans watch factory, and infrastructures were built such as the trans-lagoon railway that connects the city with the inland. The Swiss Giovanni Stucky, after having operated a mill in Treviso, realized quite early that a large firm had to settle on the sea in order to exploit the advantages of the maritime and fluvial transport. Thus he moved to Venice and, in December 1882, poured the foundations of the Mill on the fields of the Giudecca Island, the largest Venetian island located in front of San Marco. In 1895, the Architect Ernst Wullekopf was commissioned to handle the transformation and enlargement of the

original mill.

After the presentation to the Municipality Committee, where some modifications to the original design were required, the German architect realized a huge mill similar to a medieval castle, imposing a style very different with respect to that dominant on the island at that time and that recalled in its forms and grandeur the large commercial buildings of Northern Europe. Unfortunately, after the last post-war era began the decline of the construction and the Mill, not being able to follow the technological development imposed by the market, became obsolete. During the 50's the installations of the Stucky Mill were definitively closed. From then the building, despite numerous designs and various proposals that however risked to radically alter the original solidity, was abandoned to neglect. None of the recovery attempts were successful until when, in 1988, a restriction of the Superintendency transformed it into a national monument, and the Ministry for the Cultural and Environmental Heritage decided to attribute the entire structure of the Mill with the restriction provided for by law 1089 of 1939. During the Eighties a resolution of the Venice city council established its

Photo 1. The grandeur of the Stucky Mill viewed from San Marco.

transformation into a residential, hotel and cultural complex. This decision, in addition to a very thorough historical study of the industrial structure and of its evolution in the urbanistic context, determined the choices and the development of the design of reuse and restructuring of the existing Mill. Without having to resort to

peculiarity of the city and of its artistic and architectural constraints. Mapei was called to intervene in the part dedicated to the residential zone where approximately one hundred apartments were obtained.



Photo 2. All the floor screeds were realized in cement and polystyrene hardened superficially with the water consolidating compound PROSFAS.



Photo 3. The installation followed a determined sequence that included first the spreading of two sheets of polyethylene with a thickness of 0.15 micron used as a waterproof shield to protect the flooring from the humidity present in the cement and polystyrene floor screeds.



Photo 4. On top of the polyethylene sheets were placed tongue and groove waterproof chipboard panels of 22 mm, with a perimetral joint of one centimetre.



Photo 5. The final phase, the fixing of the African teak wood-blocks of the parquet, was performed with Ultrabond P990 1K, the new hydro-hardening one-component polyurethane adhesive of Mapei.

demolitions and without adding new constructions, it was possible to hypothesize the reuse of the Mill making only internal additions, and the new functions did not distort the pre-existing spaces. Thus a part was divided up and dedicated to a residential area, the first large volume of the Mill was transformed into a hotel, another part became a shopping centre capable of exploiting the ease of access of the goods by means of channel, while a congress centre was obtained from that which was once a pasta factory.

Analysis of the project

Well, an impressive and particularly challenging project for the designers, engineers, and companies that have worked on it and for the products used in a restructuring that proved to be difficult not only for the long state of abandonment of the building but also for the

The recovery must absolutely maintain intact the external supporting structure in bricks with an as-cast finish effect. This imposed weight limits in the realization of the various inhabited floors, for which from the first floor to the fifth and last floor, all the floor screeds were realized in cement and polystyrene superficially hardened with PROSFAS*, a water consolidating compound of Mapei ideal for the reconstruction of the cementitious substrates and for the hardening of the cementitious screeds. After this necessary operation the floorings of the apartments had to be parquetted. To execute the work the firm of Angelo and Luigi Cattaneo was contacted, the qualified Milanese parquet installers that installed prefinished parquet in two-ply African teak (approximately 11x70x450 mm) interposing a waterproof chipboard of 22 mm. For the dimensions of the job, consisting in



Photo 6. A picture of the finished and polished parquet.

approximately 2400 square metres of parquet, the work progressed in lots, starting from the fifth floor and moving downward.

The installation operation followed a determined sequence that involved first the spreading of two sheets of polyethylene with a thickness of 0.15 micron, used as a waterproof shield to protect the flooring from the humidity present in the floor screeds in cement and polystyrene. This phase was then followed by the free laying of the tongue and groove waterproof chipboards, with a perimetral joint of one centimetre. Finally for the fixing of the African teak wood-blocks of the parquet ULTRABOND P990 1K*, a very new hydro-hardening one-component polyurethane adhesive of Mapei was used.

The installation system described above is not very common if compared with the fixed system, but in difficult conditions such as those of the Stucky Mill where there are inconsistencies and considerable humidity

present in the screed, the technique in question is the only one that can ensure good results both for that which concerns the aesthetic aspect and the durability over time.

Furthermore it does not excessively penalize the noise reduction since that which is called the "hollow sound" that is produced by trampling is notably

dampened by the elasticity of the adhesive used. The wood panel, both chipboard and multi-ply interposed between the screed and the parquet, can easily handle cementitious substrates thanks to its mechanical characteristics. Indeed, technically its resistance to shear stress on the surface is decidedly superior and when the thickness is sufficiently high with respect to the parquet, as in the specific case, a certain stability and inertia is also obtained. Thus any small movements of acclimatization of the flooring just installed do not give rise to problems of swelling of the walking surface.

The Mapei products

To ensure greater work safety, the Cattaneo business chose to fix with the ULTRABOND P990 1K* adhesive of Mapei, a hydro-hardening one-component polyurethane adhesive completely free of solvents. The product is characterized by a strong adhesion together with a considerable permanent elasticity capable of totally absorbing the natural movements of the parquet both upon installation and with the change of the seasons, without transferring particular strains or stresses to the panel, allowing it to remain always flat without having to endure stresses of any type. Even at winter temperatures (in fact it was installed from December to February) the adhesive guaranteed its performance, demonstrating to suffer the low temperatures less than the two-component products, also with regard to the spreadability. ULTRABOND P990 1K*, presented at the last Saiedue in Bologna by Mapei, is a new generation adhesive, ready-to-use and specially designed for the fixing of wooden flooring, prefinished and laminated of any size and woody species onto cementitious screeds, existing wooden floorings, ceramic tiles, marble. Thanks to the particular aluminium bag with hermetic closure in which it is contained, ULTRABOND P990 1K*, if it is not used and if conserved in a suitable manner, it is reusable for other applications avoiding unnecessary product waste. Hypoallergenic, it can also be used by installers that are allergic to epoxy-polyurethane products. Easy to apply even at low temperatures, it has a yield 20-30% greater than that of the traditional two-component products, thanks to its low viscosity and the fluidity of the adhesive under the trowel. The expansion of the adhesive, very limited, does not modify the flatness of the installed wooden flooring, while the absence of solvents prevents the propagation of unpleasant odours; it is sound absorbing and forms an elastic layer that reduces



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Photo 7. The ceramic tiles of the bathrooms were installed with the adhesive Keraflex, characterized by high adhesion and no vertical slipping. Keracolor FF was used for the joints.

Photo 8. The Granirapid quick-setting adhesive system was used to fix the marble tiles and reassembled stones in the main entrance, while Keracolor GG was chosen for the joints.

the trampling noises. Before being applied it is necessary to carefully check the substrate to verify its condition and to make it suitable for the installation of the wooden flooring. ULTRABOND P990 1K* is spread with the Mapei notched trowel for wood and must be recovered with the within 60 minutes. The floors are set to light foot traffic after approximately 12 hours and are polishable 3 days after the installation. The Mapei adhesives have also been used in other rooms of the residential zone. To install the ceramic tiles in the bathrooms of the apartments, both on the floorings and on the walls, the KERAFLEX* adhesive was chosen, characterized by zero vertical slipping, while the grouting was performed with KERACOLOR FF*.

For the installation of the marble slabs and artificial stone materials

The Fire

On April 15 – during the writing of this article – there was a serious fire of the Stucky Mill that unfortunately destroyed the wing in restoration that overlooks the internal canal. No damage was suffered by the residential part, in which were obtained the more than one hundred apartments and where Mapei had worked (already delivered last year to the customer), but the facade, the turret and the part destined to become a large hotel (to be delivered in 2006) have been seriously devastated. Despite this tragic event, the restoration work will continue and certainly within a short time the impressive facade of the Stucky Mill will return to sparkle on the canal of the Giudecca as remembered by many Venetians.

INFOPHOTO



that cover the central entrance of the residential building there were instead used GRANIRAPID*, a quick setting two-component adhesive system, and KERACOLOR GG* for the grouting.

The contribution given by the Mapei products has also enabled the achievement of excellent results, even with quite problematic initial working conditions.

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**The products cited in this article belong to the "Products for the Installation of Resilient, Textile and Wood Floor and Wall Coverings" and "Products for Ceramic Tiles and Stone Materials" lines. The relative technical data sheets are available on the "Mapei Global Infonet" CD and on the website www.mapei.com.*



The Mapei adhesives and grouts conform to the EN 12004 and EN 13888 standards.

Granirapid (C2F): two-component adhesive system with rapid setting and hydration for the installation of ceramic tiles, natural and artificial stones (thickness of the adhesive up to 10 mm).

Keracolor FF (CG2): cementitious grout for grouting joints up to 6 mm.

Keracolor GG (CG2): cementitious grout for grouting joints from 4 to 15 mm.

Keraflex (C2TE): cement-based adhesive with fair deformability, good adhesion strength and no vertical slip, ideal for ceramic tiles and stone materials.

Profas: silicate-based solvent-free consolidating compound for cementitious substrates.

Ultrabond P990 1K: one-component ready-to-use, polyurethane adhesive, elastic and solvent-free, for all types of wooden floors and laminates.

TECHNICAL DATA

Stucky Mill in Venice

Year of project: 2002

Customer: Molino Stucky Venezia S.p.A

Design: Centro Ricerche e Restauro Palazzo Cappello, Studio Ass. Arch. Francesco Amendolagine e Giuseppe Boccanegra

Works manager: Arch. Giuseppe Boccanegra
Project, structural analyses and calculations: Eng. Enzo Siviero, Eng. Luigi Rebonato, Eng. Giuseppe Colbertaldo

Systems design: Eng. Mauro Strada and Eng. Lamberto Borsoi, Società Steam

Construction company: Restauri Edili Fassi, Venice; Edilizia Edilizia Lombarda, Milan

Parquet installation contractor: Angelo e Luigi Cattaneo, Zelo Buon Persico (MI)

Mapei products: GRANIRAPID, KERACOLOR FF, KERACOLOR GG, KERAFLEX, PROFAS, ULTRABOND P990 1K

Mapei coordinators: Paolo Alberti, Mauro Orlando, Giorgio Zanardo