

Once-upon-a-time in Liverpool

The conversion of this old match-manufacturing factory in the industrial suburbs of Liverpool into a business centre is something of a fairy tale. The building was built in 1919 to a design by engineer Sven Bylander and the architects Mewes and Davis. It was purchased by Bryant & May in 1923 to make matches from wood imported all the way from Canada. Due to the potential hazards associated with the material being manufactured, a huge water tower holding 125 thousand litres of water was built on the roof. The building's most notable architectural feature was the absence of beams supporting the floors and roof. The building holds a unique position in British architecture as the first to have a flat slab concrete floor. After being closed in 1994, the building was left to rot. The roof eventually collapsed leaving it open to the elements and causing considerable damage to the reinforced concrete frame. After years of decay, a leading building development company, Urban Splash, came to the rescue. The company engaged the services of the award-winning architects at Shed KM and concrete repair specialists at Clan Contracting Limited to help convert the building.

Repairs

An initial survey of the structures showed that the external concrete columns and beams would require extensive repairs. Urban Splash and Clan decided together with the Mapei Technical Department upon a schedule of repairs to the main structure based on the use of products from the Mapei grout

the matchworks

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application of MAPEFINISH*, a two-component cementitious mortar for finishing concrete surfaces. The smooth surface resulting from this application was then given a protective coating of ELASTOCOLOR*, protective and decorative elastic paint for concrete based on acrylic resins in water dispersion. This protective paint allowed the facade to be restored to its original colour.

Building the Mezzanine

Behind the art-deco facade with its acres of glass window there was one big open

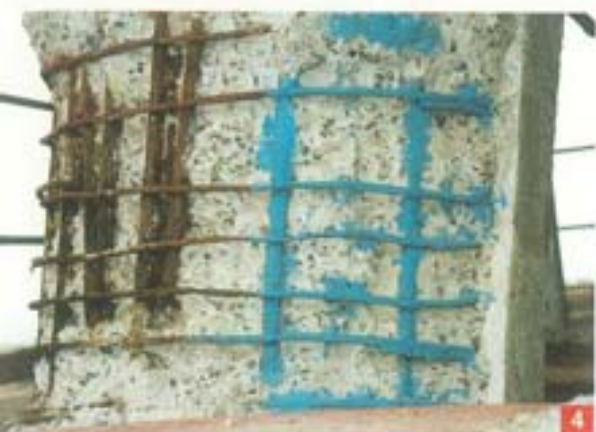


Photo 1. Front of the old match factory, note a business and services centre. The water tower up on the roof.

Photo 2. The state of disrepair called for major repairs to the concrete columns and beams.

Photos 3 and 4. MAPEFER was applied to all the columns and beams.

Photo 5. The structure of this column was reinstated with MAPEGROUT after repairing the steel.

Photo 6. The MAPEFINISH cementitious mortar used for smoothing the surface of the front.

Photo 7. Detail of a column after receiving a final protective coating of ELASTOCOLOR.



range. After removing all damaged parts, the whole building was blast cleaned to remove existing finishes and prepare the steel reinforcement for repair work with MAPEFER*, a cementitious anti-rust mortar made of a mixture of polymers in water dispersion, cement binders and corrosion inhibitors. The structural concrete, where parts had been removed, was reinstated using mortars like MAPEGROUT THIXOTROPIC*, MAPEGROUT FAST-SET* and MAPEGROUT HI-FLOW*. The surface of the entire facade was given an

space with a single floor slab supported by 128 massive concrete columns. These huge columns now support a new mezzanine floor dividing the original ground floor area in two horizontally. Before the new floor could be installed, the columns had to be repaired at the various points where they had corroded. MAPEGROUT THIXOTROPIC*, a fibre-reinforced grout, was used to repair the concrete. A coat of MAPEFINISH* was then applied. To create the suspended steel mezzanine floor, each of the columns had to be carefully diamond drilled to let a 75 mm solid steel pin be grouted into position using MAPEFILL* shrink-free anchoring grout. The new floor beams were then fixed to these pins between the columns and then the floor was suspended from the new main beams. This creates a striking overall effect: the new floor appears to be floating between the columns. The inside finish is distinctly minimalistic, with steel





girders and bare concrete ceilings reflecting the essentially industrial nature of the original structure.

Repairing the Decorative Tiles

Mapei supplied specially pigmented paint to match the original colour to decorate the top of the external columns. There are panels of glass ceramic tiles between the columns, over the windows, many of which were cracked, broken or even missing. Clan Contracting Ltd. commissioned tiles from Italy to replace those missing and secured them using



Photo 8. The huge concrete columns fitted with steel pins to support the mezzanine beams.

Photo 9. Completion work on the building front.

Photo 10. A detail of the front: the missing or cracked tiles have been replaced, while the decorations at the top of the columns have been treated with a special pigmented paint.

Photo 11. One of the branches of the complex as work draws to a close.

Photo 12. The rear of the building at the end of the project.



Mapei adhesives and grouts. The front of the old building has now been perfectly restored to its original state. The only addition are metal pods at the rear of the building designed to protect the heating and ventilation plants, the toilets and the kitchen facilities serving the various office units.

A Developing Area

The building is located near Liverpool's rapidly expanding airport in an area undergoing gradual redevelopment. A number of exciting new projects are under way in the area: the original Speke Airport building has been dramatically redeveloped into a new luxury hotel complex, the aircraft hangars have been revamped into a fitness centre together with tennis and badminton courts, a gymnasium and Olympic-size swimming pool.

From the road, the Bryant & May building still looks the way it did in its heyday and is once again a major landmark on the city skyline. You cannot help but notice it as you look down from above when taking off or landing at nearby Liverpool Airport.





TECHNICAL DATA

Former Bryant & May Match Factory - Speke (Liverpool), England

Project: renovation and redevelopment of the factory and its interiors, construction of a mezzanine floor

Built: 1919

Redeveloped: 2000-2001

Works Management: Urban Splash

Architects: Shed KM

Structural Engineer: Roy Billington Associates

Sub-Contractors:

- concrete repairs: Clan Contracting Ltd., Liverpool
- ceramic tiling: Clan Contracting Ltd., Liverpool
- window replacement: Rea Metal Windows, Liverpool
- mezzanine floor installation: Merseyside Sip Repairs

Mapei products used:

- for the concrete: MAPEFER, MAPEGROUT THIXOTROPIC, MAPEGROUT FAST-SET, MAPEGROUT HI-FLOW, MAPEFINISH, ELASTOCOLOR
- for the installation of the floor support bearings: EPOJET and MAPEFILL
- for the ceramic tile repairs: GRANIRAPID and ULTRACOLOR

Mapei Retailer: Clan Contracting Ltd., Liverpool

Mapei Technical Consultant: John Bradley, Mapei UK Area Sales Manager

* The products referred to in this article belong to the "Building Products" and "Products for Ceramics and Stone Materials" ranges. The technical data sheets are available on the CD entitled "Mapei Global Infonet" and at the Internet site: www.mapei.com. The Mapei adhesives and grouts conform to EN 12004 and EN 13888 standards.

Mafer: two-component corrosion-inhibiting cementitious mortar for reinforcing rods

Mapegrout Thixotropic: shrinkage-compensated fibre-reinforced mortar for concrete repair

Mapegrout Fast-Set: shrinkage-compensated fibre-reinforced mortar, with rapid setting and hardening for the repair of concrete

Mapegrout Hi-Flow: shrinkage-compensated fibre-reinforced grout for concrete repair

Mapecolor: two-component cementitious mortar for finishing concrete surfaces

Elastocolor: protective and decorative elastic paint for concrete and renders based on acrylic resins in water dispersion.

Epojet: superfluid epoxy resin for injection

Mapefill: high-flow shrink-free grout for anchoring

Granirapid (C2F): two-component fast setting and drying adhesive system for ceramic tiles, natural stones and agglomerates (adhesive thickness up to 10 mm)

Ultracolor (CG2): rapid setting and drying grout for joints 2-20 mm, available in 26 colours; does not produce efflorescence

