

# AVALON PARK IN MISKOLCTAPOLCA

SOLUTIONS FROM SIX MAPEI PRODUCT LINES TO COMPLETE A PRESTIGIOUS COMPLEX FOR PROMOTING TOURISM IN EASTERN HUNGARY

The natural and historic treasures of Eastern Hungary offer a good basis for developing the tourism sector. Miskolctapolca stands out due to its extraordinary geographical resources: a cave bath, a rock chapel situated deep in a cave, the Békás-tó (Frog Pond) located in the crater of a now extinct volcano, etc.. This is the heart of the Bükk Hills hosting the largest continuous forest in Hungary on over 100,000 hectares and the Bükk National Park.

This is the area where Hell Energy LLC found a highly exclusive location for building Avalon Park, a hotel and family amusement and theme park offering its guests a whole range of tourism services. The project was the largest investment in the Hungarian touristic sector in 2015 and was completed in two stages. As a result, a building compound unique in its complexity was constructed, which contains a karting track, an event center, an open air theatre, an artificial turf pitch, outdoor and indoor pools, a hotel, a restaurant, a covered and open restaurant and beer garden, Finnish log cabins, a playground, etc.

## SIX MAPEI PRODUCT LINES AT WORK

Mapei products belonging to six different product lines were employed during this large scale building project which cost nearly 320,000 Euros. Mapei materials were used in the apartment houses, the event center, the Italian restaurant, the grill bar, the storage room attached to the kart track, the hotel building, the wellness unit, the outdoor pools, and the parking garage.

## SUBSTRATE PREPARATION

PRIMER G synthetic resin-based primer in water dispersion was applied on the floor substrates and plaster walls in all the areas where ceramic tiles and textile floors were installed.

PROSFAS solvent-free, silicate-based consolidator was

instead used for consolidating the porous and weak concrete floor substrates of the log cabins.

Before installing ceramic tiles on all the involved areas (except for the terraces, bathrooms and wellness areas), the surfaces were levelled with either ULTRAPLAN ECO 20 or ULTRAPLAN RENOVATION levelling compounds, depending on the differences in thicknesses. Both products are manufactured and distributed on the Hungarian market by Mapei Kft.

PLANITOP FAST 330 quick-setting, fibre-reinforced cementitious mortar was employed for smoothing unevennesses on the substrates irregularities in the pools and terraces.

## WATERPROOFING INTERVENTIONS

All indoor bathrooms had underfloor heating floorings, which were waterproofed with MAPELASTIC flexible cementitious mortar. MAPEGUM WPS quick-drying flexible liquid membrane was installed on the wall substrates in the bathrooms of the hotel rooms, while MAPELASTIC AQUADEFENSE ready-to-use, ultra quick-drying, flexible liquid membrane was used on the walls of the bathrooms of the common areas and MAPELASTIC TURBO rapid-drying elastic cementitious mortar, reinforced with MAPENET 150 alkali-resistant fibre glass mesh, was instead used on over 80 m<sup>2</sup> substrates on the terraces. MAPEBAND PE 120 tape was used for waterproofing corners between surfaces treated with MAPEGUM WPS and MAPELASTIC AQUADEFENSE membranes. MAPEBAND SA self-adhesive butyl tape was used for sealing fillets between the floors and the wooden walls of the bathrooms as well as the joints between adjacent plasterboard panels in the log cabins. MAPEBAND tape with alkali-resistant fabric was also applied in the bathrooms of the common areas and the guests rooms for sealing corners between walls and floors.









**INSTALLING CERAMIC TILES AND STONE MATERIALS**

Thin porcelain tiles measuring 120x60 cm were installed with ULTRALITE S2 in the Italian restaurant on the sidewalls of the counter. 60x60 cm ceramic tiles were bonded on outdoor floors with KERAFLEX LIGHT S1, an adhesive which is manufactured and distributed on the Hungarian market by Mapei Kft. Ceramic tiles of the same size were installed on the walls of the bathrooms of the common areas, guests rooms and log houses, as well as on the outdoor floors of the block-houses with KERAFLEX cementitious adhesive with extended open time and no vertical slip which was also used for bonding 30x60 cm ceramic tiles on the walls of the bathrooms and the wellness areas. Small- and normal-sized ceramic tiles were installed with ADESILEX P9 cementitious adhesive

with no vertical slip and extended open time. Natural stone slabs were installed onto floors and walls of the conference rooms, and well as on the façades of several buildings with KERAFLEX MAXI S1 deformable cementitious adhesive. This product was also used for bonding the 20x20x1.8 cm ceramic tiles on the kitchen floors and the stone coverings on the parapet walls.

KERABOND T cementitious adhesive with no vertical slip was employed for bonding ceramic tiles on the walls of the service areas. The surfaces of the outdoor and indoor pools were covered with glass mosaic bonded with ELASTORAPID highly-deformable, cementitious adhesive with no vertical slip. The product was chosen for its quick setting properties which allowed the pools to be put into use as fast as possible. Mapei grouts for joints were widely used as well. In most





**IN THE FACING PAGE.** The surfaces of the outdoor and indoor pools were covered with glass mosaic bonded with ELASTORAPID adhesive, after treating smoothing unevennesses on the substrates with PLANITOP FAST 330 quick-setting, fibre-reinforced cementitious levelling mortar.

**ABOVE, LEFT.** In all indoor bathrooms the floor substrates were waterproofed with MAPELASTIC flexible cementitious mortar.

**ABOVE.** In the showers and bathrooms of the log cabins the joints of the platinum glass mosaics were grouted with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar.

cases, KERACOLOR FF FLEX cementitious mortar (which is manufactured and distributed on the Hungarian market by Mapei Kft.) was used for the joints of ceramic and stone coverings. In the showers and bathrooms of the log cabins the joints of the platinum glass mosaics were grouted with ULTRACOLOR PLUS anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology. Tile joints in the pools and kitchens were grouted with KERAPOXY CQ epoxy grout with excellent cleanability, a bacteriostatic agent and BioBlock® technology.

In the indoor wellness unit three-dimensional installations were completed by mixing MAPEGLITTER metal-effect coloured glitter, in its golden shade, with KERAPOXY DESIGN anti-acid, decorative, translucent epoxy mortar. After grouting, the expansions joints of the ceramic surfaces (including those on the terraces) were sealed with MAPESIL AC mould-resistant, acetic silicone sealant. MAPESIL LM neutral, silicone mould-resistant sealant was used for sealing joints in the natural stone coverings. Before applying MAPESIL AC, MAPEFOAM closed-cell, extruded foam polyethylene cord was inserted into the flexible joints of the ceramic tiles of the grill bar and the beer garden on the terrace for correct sizing of the joints.

### INSTALLATION OF TEXTILE MATERIALS

Mapei products were used for installing textile floorings in the apartment houses, the conference building and the hotel. The Mapei system chosen for this kind of application included PRIMER G as primer, ULTRAPLAN ECO 20 as levelling compound, ULTRABOND 333 and ADESILEX LP as adhesives.

### IN THE SPOTLIGHT

#### ULTRALITE S2

It is a cementitious (C), improved (2), rapid-setting (F), extended open time (E), highly deformable (S2) C2FE S2 class adhesive according to EN 12004 standard. It is used for bonding all types and sizes of ceramic tiles (including thin porcelain tiles) and stone materials on internal and external substrates. Because of its high wetting capacity on the backs of tiles, it is particularly

suitable for laying any type of thin porcelain tile (using the double buttering technique), including on thermal insulation systems, such as MAPETHERM TILE SYSTEM. It can contribute up to **7 points** to obtain the **LEED** certification.



### PRODUCTS FOR BUILDING

“Mapei products for building deserve five points on a scale of five, they perform at 100% and are the best value for their price. The full support offered by the Mapei staff throughout the construction process was another major asset” so claimed Gergely Bodnár, the site manager for Avalon Park. Indeed, several Mapei solutions for building operations were used for this project.

The irregularities in the concrete surfaces on the terrace of the conference building were treated with PLANITOP 400 quick-setting, controlled-shrinkage thixotropic mortar, before levelling the surfaces with PLANITOP 550 (manufactured and distributed on the Hungarian market by Mapei Kft.).

The irregularities in the concrete floor substrates of the conference room were repaired with EPORIP solvent-free, epoxy adhesive before installing the ceramic coverings.

The screeds were prepared by using TOPCEM special normal-setting, quick-drying, controlled-shrinkage hydraulic binder or TOPCEM PRONTO normal-setting, controlled-shrinkage mortar. The contractors were looking for a solution that would allow them to prepare sloping concrete surfaces in cold winter weather. TOPCEM PRONTO was the proper choice for this purpose.





**ABOVE AND IN THE FACING PAGE.** The textile covering was installed in several areas with ULTRABOND 333 while ceramic tiles were bonded around the fireplace with KERAFLEX.

The contractors were also particularly pleased with MAPEPUR UNIVERSAL FOAM, which was used to fill the gaps around the doors and the windows throughout Avalon Park. MAPEFLEX FIRESTOP 1200° refractory grout was used in the elevator machine room where a fire-resistant material was needed. For repairing the concrete surfaces in the outdoor pools the contractors used MAPEGROUT 430 fine-grained, fibre-reinforced, thixotropic mortar in large quantities. Some irregularities in pouring the concrete were evened out by using MAPEFER 1K (anti-corrosion cementitious mortar on the steel reinforcement rods) and Mapei mortars for concrete repair. Expansion joints between the outdoor sidewalk and the façades of the Italian restaurant were made waterproof and resistant to UV rays with MAPEFLEX PU45 one component, rapid-hardening, paintable, thixotropic polyurethane sealant and adhesive with a high modulus of elasticity. MAPEFIX VE SF styrene-free, hybrid vinyl resin-based chemical anchor was chosen for structural loads and construction bars in concrete.

### WATERPROOFING WITH POLYGLASS PRODUCTS

The basement of the parking garage was made waterproof by installing two layers of FLEXO S6 PREMIUM membranes by Polyglass, a subsidiary of the Mapei Group. The structural deck was protected against rainwater with double layers of PLANA P PREMIUM membranes. A single layer of PLANA P PREMIUM membrane was applied in combination with POLYGLASS ANTIRADICE root barrier membranes on about 2,500 m<sup>2</sup> of the garden roofs.

### PRODUCTS FOR THERMAL INSULATION AND WALL COATINGS

The MAPETHERM thermal insulation system was used on several sections of the external walls of the hotel, the storage



room of the kart track, and the restaurant, as well as on the abutments of the playground where façades were not covered with stone. The insulating panels were bonded in these areas with MAPETHERM AR1 cementitious mortar or, where a thicker layer of adhesive was required, with MAPETHERM AR1 GG large-grained cementitious mortar.

The external walls of the buildings were impregnated with ANTIPLUVIOL W silane and siloxane water-repellent impregnator, after removing all the cement and lime stains with KERANET acid-based cleaning solution. The brick walls inside the restaurant were treated with ANTIPLUVIOL W.

### TECHNICAL DATA

**Avalon Park,** Miskolctapolca (Hungary)

**Period of Construction:** 2014–2016

**Period of the Mapei Intervention:** 2014–2016

**Intervention by Mapei:** providing solutions for concrete repair, thermal insulation, substrate preparation, waterproofing of substrates and roofs, installing ceramic tiles and stone slabs, installing textile and resilient materials

**Project:** Peka Bau 2000 Kft.

**Client:** Hell Energy LLC

**Main Contractor:** Peka Bau 2000 LLC

**Contractors for ceramic tile and stone installation:** Novient LLC, Csaba Pálfalvi, Tororé LLC

**Contractors for textile and resilient floorings:** K-Deco LLC, Kulenda & Partner LLC

**Contractor for building interventions:** Attila Szilágyi entrepreneur

**Contractor for thermal insulation:** Attila Szilágyi entrepreneur

**Contractor for roof and basement waterproofing:** Geszig LLC

**Mapei Distributors:** Mikorex LLC, Alapozóker LLC

**Mapei Co-ordinator:** Gábor Nagy, Mapei Kft. (Hungary)

### MAPEI PRODUCTS

**Substrate Preparation:** Adesilex P4, Primer G, Eco Prim Grip, Prosfas, Ultraplan Renovation\*, Ultraplan Eco 20\*, Topcem, Topcem Pronto, Planicrete

**Installing ceramic tiles and stone materials:** Adesilex P9, Adesilex P9 Express\*, Keraflex, Ultralite S2, Mapetex, Keraflex Light S1\*, Keraflex Maxi S1, Elastorapid, Kerabond T

**Installing textile materials:** Ultrabond 333, Adesilex LP

**Grouting joints:** Ultracolor Plus, Keracolor FF Flex, Kerapoxy Design, MapeGlitter, Kerapoxy CQ

**Sealing expansion joints:** Mapesil AC, Mapefoam

**Waterproofing substrates:** Mapelastastic

AquaDefense, Mapelastastic, Mapeband, Mapeband PE 120, Mapenet 150, Mapegum WPS, Mapeband SA

**Building interventions:** Planitop Fast 330, Planitop 400, Mapeflex PU45, Mapepur Universal Foam, Mapeflex AC4, Mapeflex Firestop 1200, Planitop 550, Eporip, Mapefer 1K, MapegROUT 430, Mapefix VE SF

**Thermal insulation:** Mapetherm AR1 GG, Mapetherm AR1, Mapetherm Net

**Roof waterproofing:** Polyglass Antiradice\*\*, Plana P Premium\*\*, Polyprimer\*\*, Flexo S6 Premium\*\*

**Cleaning substrates and providing wall coatings:** Keranet, Antipluviol W

\*These products are manufactured and distributed on the Hungarian market by Mapei Kft.

\*\*These products are manufactured by Polyglass (Mapei Group)

For further information see [www.mapei.com](http://www.mapei.com) and [www.mapei.hu](http://www.mapei.hu)