

Case Study



PROJECT INFORMATION

Project name: American University of Beirut - AUB
(*stamped concrete*)

Consultant: MK2

Contractor: M Management s.a.r.l

Location: Beirut, Lebanon

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expertise



quality



full range



PROJECT REQUIREMENT

Task at Hand

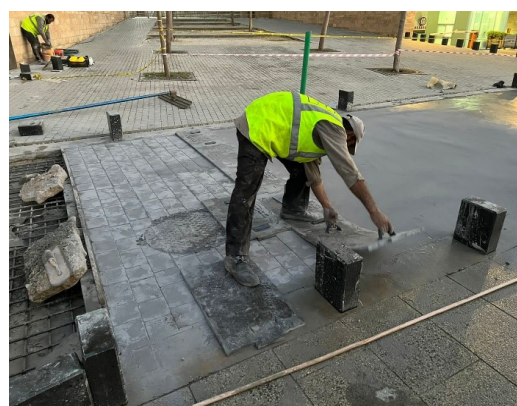
The American University of Beirut (AUB) was established in 1866 and is a private, non-sectarian, and independent university chartered in New York with its campus in Beirut, Lebanon. AUB campus is made up of 64 buildings, including the AUB Medical Center, four libraries, three museums, and seven dorms. AUB has an operating budget of \$423 million and an endowment of approximately \$768 million.

The campus at AUB was in need of renovation and refurbishment of its existing walkways and floors, and this client requested a stamped overlay system offering all the aesthetic benefits of conventional stamped concrete that is applied over the existing material.

DCP SOLUTION

Stamped concrete overlay is the perfect balance between price and aesthetic in terms of decorative concrete. Advances in this system make it preferable to other options such as chemical staining, interlocking tiles and polished concrete. Stamped concrete also allows for duplication of the beauty and texture of natural stone or brick.

DCP provided a special stamped concrete overlay system comprising five main components; **Cempatch SBR 100** Liquid polymer additive, **PP Fiber** monofilament polypropylene fibers added to the concrete mix, **Monotop** a dry shake hardener to be spread over the concrete surface, **Monorelease** a powder release agent to facilitate matts' release from the concrete, and **Monoseal** a sealer coat.



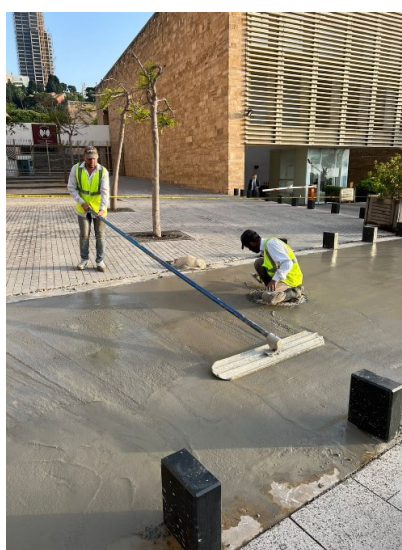
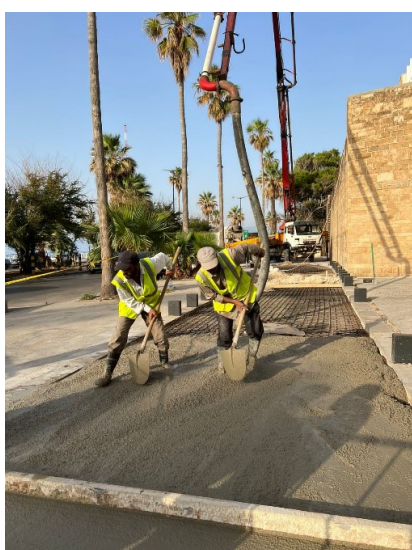
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DCP SOLUTION



The type of concrete for this project needed to be highly specialized to ensure proper placement and performance to avoid issues that can arise without the proper slump or mix design. **Cempatch SBR 100** Liquid polymer additive was added to the concrete mix to provide improved mechanical and physical properties by increasing tensile, flexural and adhesive strengths. It also aids in improving workability and cohesion of the concrete mix.

The inclusion of **PP Fiber** within the stamped concrete mix will inhibit settlement crack formation as well as controlling plastic shrinkage. 12 mm long **PP Fiber** was added directly to the concrete mix at its specified rate and mixed for 5 minutes before discharge into the prepared area. A stainless steel straight edge was used for levelling.



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DCP SOLUTION

After the concrete has been floated, and light foot traffic will leave an imprint of about 3 - 6 mm (a quarter of an inch), it is ready to receive the dry shake hardener **Monotop**. This hardener is applied in 2 stages. The first stage requires 2/3 of the total quantity of **Monotop** to be spread onto the concrete surface, where it is allowed to absorb any moisture from the concrete.

Once the slab has an even, solid-colored appearance, this has indicated that all moisture has been absorbed. The surface is floated again using a magnesium bull float, and afterwards the remaining quantity of **Monotop** is evenly applied over the surface. The concrete is then floated for a final time.



To transform the surface of freshly placed concrete into a low-maintenance natural texture, special imprinting tools and mats are required. These stamping tools will allow the desired pattern to be uniform across the entire surface. The window of time in which stamping is allowed is generally short, especially in warmer climates. The prepared floor should be covered with **Monorelease** before any tools are applied, where it will act as a release agent to facilitate the release of imprinting tools from the concrete.

Using a reference line, the concrete is then stamped in the same sequence it was placed, and the mats are tamped using a special pounder. It is vital to have adequate hand tools for completing the whole area without a delay. Once stamping is complete and all tools are removed, excess **Monorelease** is brushed off and the stamped area is cleaned using pressurized water.

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DCP SOLUTION

No decorative stamped concrete installation is complete without a final application of a sealer. As a final step and one of the most important, **Monoseal** sealer coat was applied in two coats over the finished area to provide the required durable dust-proof finish, enhance the abrasion of the stamped surface, enrich the color of concrete and add a sheen to the surface, and prevent penetration of oils and liquids.



Products and Quantities Supplied

- PP Fiber
- Cempatch SBR100
- Monotop
- Monorelease
- Monoseal

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