

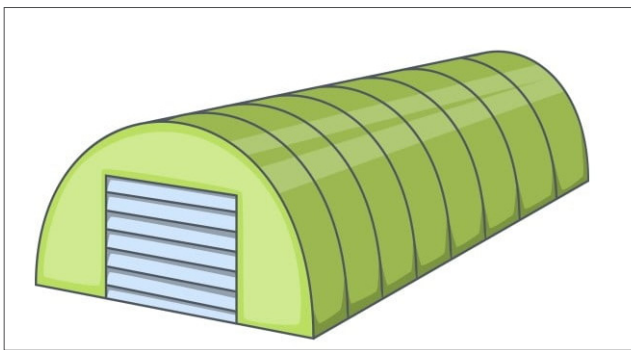
Strengthening of Structures with Construction Chemicals

Overview

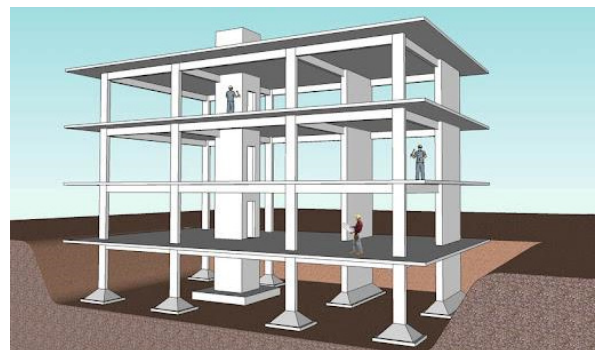
Every concrete structure demands equal attention at various stages of its life. Surely, they are built with the utmost care but with time, they require repair, maintenance and modifications in terms of design, loading, aesthetics, etc. Our Maxtreat® range of repair & rehabilitation products come into play in these later stages of the structure's life to reinstate, strengthen and retrofit concrete. Our proficiency in rehabilitation has allowed us to successfully execute over 100 projects. These references have helped us reach out even to tier 2 cities like Satara. Here's one such repair project undertaken for Shivneri Multipurpose Hall in Satara wherein the structure had to undergo a major loading shift.

Challenges

The structure is a newly being constructed reinforced concrete G + 3 structure. Initially, it was planned and designed for loads of a metal roof on the top of it. However, owing to the aesthetics of the final hall, a flat concrete roof was finalised to cover the top of this huge multipurpose hall. This caused a major change in loading from the additional concrete and the shear reinforcements from the shear connectors due to which the columns immediately demanded a need for strengthening.



Planned Roof Design



Final Roof Design

Solution

Leveraging our rich experience in handling structures, Thermax team evaluated the various options available for strengthening and devised the most economic strengthening scheme to suit the needs of the RCC consultant for this project. The columns were strengthened using our corrosion-resistant, non-shrink, rheoplastic, high strength cementitious micro-concrete, BS 66 MuCis. To ensure proper bonding with the new concrete, an acrylic emulsion based concrete bonding agent, TM Bond® AR was also suggested.

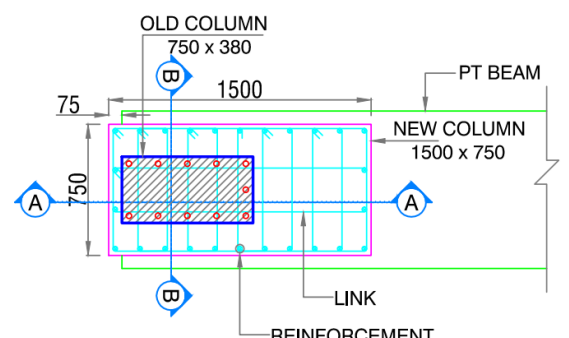
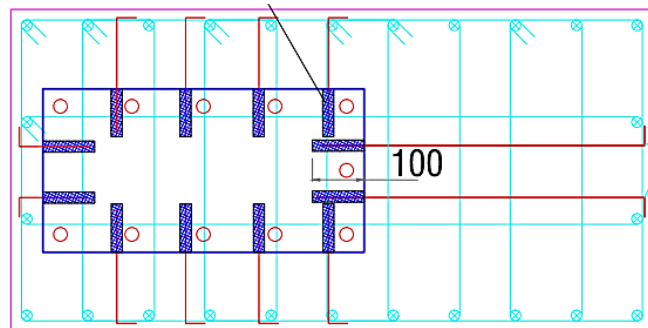


Product Characteristics

BS 66 MuCis is a repair micro-concrete with carefully graded aggregates, fillers and additives to impart excellent strength and controlled expansion characteristics in the plastic state while minimising water demand. The low water requirement ensures high early strength and long-term durability. BS 66 MuCis is used for repairs to damaged reinforced concrete elements, particularly where access is restricted and the vibration of the placed material is difficult or impossible. It is suitable for various structural strengthening measures like encasement build-ups, jacketing and many more.

TM Bond® AR is a modified acrylic emulsion specially designed for use in repair work for bonding mortars, damaged concrete. TM Bond® AR, due to its excellent adhesion to concrete, masonry, plaster and stonework, is the recommended primer for the Thermax cementitious repair systems.

Bonding Agent - TM Bond® AR



Results

Our technical solution facilitated repair for an aesthetic and structurally strong multipurpose hall without many modifications in the design of the structure and without destroying the previous construction.

Innovation & Technology

With the help of pre-examination of structures using FEM software's like SAFE and Maxtreat® range of cement and resin-based products, Thermax ensures a highly effective overall solution to all the repair problems associated with structures, including underwater repairs. Thermax also provides in-house design consultation for the repair and rehabilitation of structures.