



RHINO
CARBON FIBER
REINFORCEMENT PRODUCTS

CFRP CASE STUDY

SHOPRITE FACILITY CONCRETE BEAM STRENGTHENING – TRIANON SHOPPING PARK



LOCATION

Mauritius Island

CLIENT

PND Contracting

PRODUCTS USED

- Rhino Carbon Fiber™ CFRP (Unidirectional, Vertical): 400 GSM in 6-Inch Widths
- Rhino Carbon Fiber™ CFRP (Bidirectional): 560 GSM in Various Widths
- RCF™ Saturant-Adhesive Epoxy



CASE BACKGROUND

The PND Contracting company out of Mauritius Island was hired to strengthen concrete beams at the Shoprite facility in the Trianon Shopping Park that was damaged due to a catastrophic fire.

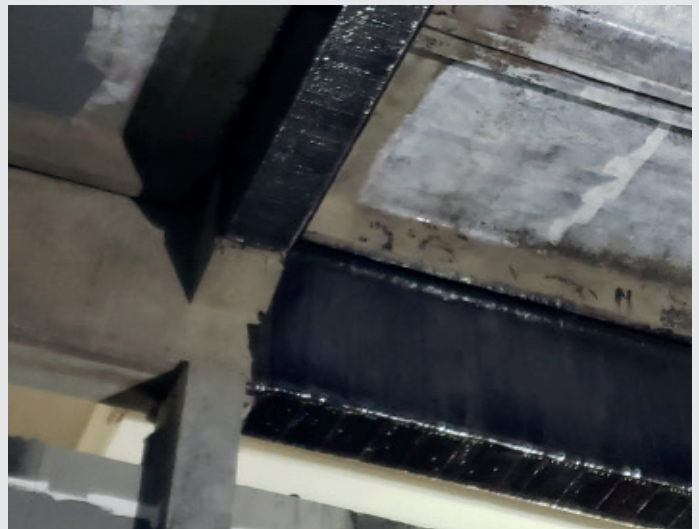
The building owner's engineer discovered damage to the primary and secondary beams that supported the roof. The PND Contracting company determined that using CFRP would be the ideal solution to strengthen the beams based on its high-strength, resistance to corrosion, low-weight, cost-effectiveness, low thermal expansion and high and low temperature tolerance. The PND Contracting company reached out to the **Rhino Carbon Fiber™** company to review their CFRP options and determined that using 400 and 560 GSM **Rhino Carbon Fiber™ CFRP** with **RCF™ Saturant-Adhesive Epoxy** would be the best solution to strengthen the structure.



THE SOLUTION

The first step was for the building owner's engineer to develop a structural design. Due to the tight schedule and immediate need for materials, the PND Contracting company relied on Rhino's ability to quickly deliver high-quality products that met or exceeded the project specifications outlined in the structural design. **The Rhino Carbon Fiber™** company overcame many logistical hurdles to deliver the products on time, such as specific packaging requirements and customs clearance across 3 countries. The project which included over 500 square meters of **Rhino Carbon Fiber™ CRFP** applied with **RCF™ Saturant-Adhesive Epoxy** was completed in 11 days using three 4-man crews working off 27' scaffoldings for 16-18 hours per day. The installation included sections with 3, 4 and 5 layers of CFRP to meet the technical requirements of the structural design, which was very difficult due to the humidity, heat and access restrictions.

Upon completion of the installation, the PND Contracting company performed load tests on the beams and observed only a fraction of the deflection that was expected (7-8mm was expected and the beams deflected less than 1mm). The PND Contracting company was able to successfully reinforce and restore the building, while staying on schedule, due to immediate product availability and ease of installation.



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