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New Coastal Road, Reunion Island

A 3.6km, 6-lane coastal road and interchange, with investment of €786m, operating under the challenging logistics of a remote island location, within a protected and regulated environment.



In the main economic area in the north of the island, between Saint Denis city and the port, this cornice road is often affected by storms and rockslides and with significant risk factors like the typhoon season from mid November - April. The safety stakes are immense.

Economic stakes are also high and the project design process was complex. Various transport solutions were considered in-depth in order to find the most effective, from tramways to over-sea roadways built upon dams and viaducts.

The project, via an unincorporated Joint Venture with Colas (55%) and Vinci (45%), is for several dam constructions and a major road crossing. Design is by French company EGIS and €30m worth of specialist maritime work has been subcontracted to international companies e.g. Dutch subsidiary SDI.

A 4-step building schedule began with seaworks, moving on to the dam construction itself, followed by the implementation of maritime protection against sea as well. Step 4 will see the embankment substructure build commence.

Colas SA's Central Lab ('CST') in Magny les Hameaux made unprecedented structural calculations to ensure a 100-year lifespan of the concrete and allow for rising sea levels due to climate change.

A critical point of the project arose when an alternative solution for backfill needed to be found, due to local constraints not apparent at time of tender. One source identified was 'windrow' aggregate from local fields and the teams are hoping to substitute the remaining requirement with imported aggregate, once environmental constraints and regulations have been fully and carefully considered.



- > Project commenced in 2014 and due for completion in 2022
- > €850m forecast investment value
- > 3.6km long
- > 6 lane coastal road
- > 19 million cubic metres of backfill
- > 36,000 dam accropodes (30m concrete blocks) incorporating 320,000 cubic metres of concrete

Critical aspects

Insurance: Given the scale of the project and specific works, two insurers have been engaged and are liaising with a dedicated Insurance Manager. Robust processes, with regular site inspections, verify that the works schedule and all activities conform with the design and client briefs.

Quality: A single quality plan developed specifically for the project, under a dedicated quality manager and using Colas's certified central lab ensures that internal and external controls are in place.

Safety: In a specific safety plan defined with the client, divers have been replaced by GPS tracking to check on underwater build activity. This reduces risks and avoids dependency on sea conditions.

Environmental issues

The project is within strongly protected areas of La Reunion Island with special animal & flora species. A specific budget of €8m has been allocated to preventive measures, such as:

- Chartering light aircraft to fly over the work area to ensure there is no presence of whales and dolphins before starting works
- Progressive noise increase system to reduce impact on local wildlife
- Implementation of a 'bubbles wall' to isolate the work area when using the hydraulic hammer
- Special buoy to monitor and alert teams to suspended matter allowing works pause if an issue arises
- Protection net for coral reef
- Regulated lighting system on the project to protect birds' breeding period

Challenges

- Logistics associated with remote island location
- Finite local resources
- Corniche road affected by storms, typhoons and rockslides
- Complex structural design and engineering requirements
- Climate change
- Operating within a protected and regulated environment zone

Solutions

- Global resources and deployment
- Training and knowledge sharing
- 100-year design incorporating changes in sea level
- Collaborative delivery with specialist partners
- Use of Colas CST to identify design and delivery solutions



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