

Parson's Tunnel to Teignmouth Rail Resilience Project

Whilst the National Rail proposal achieves the goal of providing resilience, it does so at the expense of the beach, the original sea wall and the possible consequential flooding of Shaldon, Teignmouth and Newton Abbot should the climatic conditions combine as they did so in 1953 in the North Sea, causing a catastrophic loss of life, in excess of 2,500.

I have spent close on fifty years in construction engineering and management. A lot of it overseas and in a senior management positions for an international construction consultancy. I have also been involved in a lot of coastal defence projects in the South West over the last decade. Having been encouraged by my own love of this area to take a closer look at the engineering problem, I have come up with the following proposal which I believe provides a viable alternative to the current National Rail proposal. I did this following attendance at one of the current consultation meetings and discussing the problem with Mike Smith, National Rail's Head of Structures Southern Division. It addresses two main problems of building a viaduct in the sea, namely restricted height of viaduct which leaves it vulnerable to high waves and cost. I have also submitted the proposal to National Rail through their formal comments channel.

Enhanced Viaduct Proposal

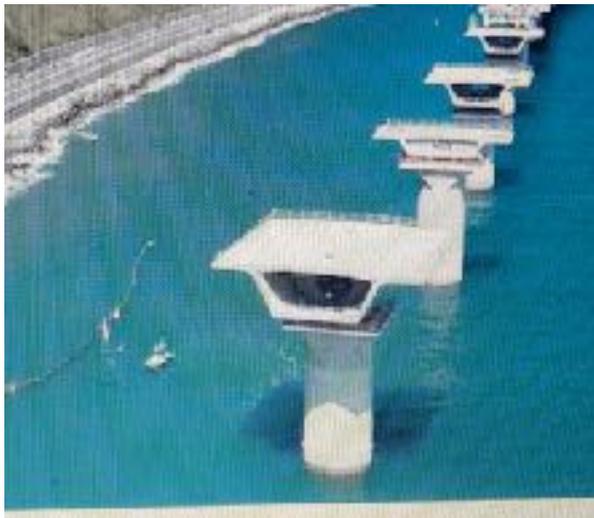
- Off shore viaduct from Parson's Tunnel to Teignmouth
- Wave height protection by a reef further out to sea which will dissipate wave height and strength.
- Reef constructed from china clay waste produced at St. Austell and Lea Moor. (china clay mining has 90% waste product) using resilient HDPE bags. Transported to location via sea from the ports at Par and Teignmouth.
- Use of tidal electrical generation located between causeway piers to offset cost of project.
- Large diameter hollow piers to accommodate electrical generation equipment.
- The large diameter piers have the potential to negate the use of deep marine piles using large pad foundation.
- Architectural designed piers and viaduct to provide aesthetic enhancement. (Sir Norman Foster et al)
- Use land currently occupied by rail line and promenade to construct cliff stabilization structure.

Benefits

- The above measures allow space to realign cliff face geometry and support in a less aggressive manner than presently proposed. Therefore, less time and cost to install support measures to properties on cliff top.
- Reduced marine impact due to large diameter pier base. Quicker marine impact recovery time.
- Use of mining by product in an environmentally friendly manner.
- An even more stunning section of rail track between Parson's Tunnel and Teignmouth.
- Over time a cost neutral solution via electrical generation

- Production of a surfing reef that would further enhance the tourist industry in the south west
- Increased tourism as a result of new structure. Similar to Millau Viaduct.
- Retention of current beach
- Retention of historic engineering features.
- Reduction of risk of consequential damage (flooding of Teignmouth, Shaldon and Newton Abbot) caused by the current proposal

Please check out url link below to see how the French are approaching a similar problem. Why can't NR's engineers design and construct a similar solution?



<https://www.vinci-construction-projets.com/en/realisations/new-coastal-road/>

The new coastal road was designed to provide a safer road connection between Reunion Island's two main urban centres (Saint-Denis, the largest city, and La Possession). The road is 12.5 kilometres long, and its construction was divided into several work packages. One of the two main work packages was the full-service construction of a viaduct built in the sea, between Saint-Denis and La Grande Chaloupe. The road was designed and constructed by VINCI Construction Grands ..

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