NEUMANN CONTRACTORS

PROJECT PROFILE

Project: ***Chinderah Bypass***

Principal:
Roads & Traffic Authority NSW

Consultant:
Cooks Construction

Location:
Tweed Heads, NSW

Introduction

It takes time to adapt to new regulations and methodologies; however, the Chinderah Bypass contract saw Neumann Contractors placed in a situation that required experience that was yet to be gained. No precedence had been set so a sharp learning curve was essential.

The Chinderah Bypass was a technically complex project that required a combination of best management practice and the conception of new industry practises to achieve the desired end. Modification of the original concept during the construction phase through systematic scientific research and a touch of entrepreneurship have seen a potential environmental nightmare turned around to benefit both the contractor and the community.

Despite the difficulties faced during the project, Neumann Contractors were able to complete the contract to the clients' requirements both on time and within budget.

Environmental Impact Studies (EIS) had concluded that increasing the waterway by the removal of sand would reduce the risk of flooding of adjacent low-lying developed areas. Therefore, the dredging of the River was part of a longer term plan for the Chinderah Bypass area.

The dredging operation was to be conducted with strict control as the road traversed over 800m of tidal wetland, crossing three large tidal drains and areas that were considered environmentally sensitive.

To further complicate the situation prior testing had revealed that existing soils in the road corridor had recorded a significant Acid Sulphate Potential.

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Project: **Chinderah Bypass, cont.**

Scope of Work:

The scope of work included:

- Importation by dredge of approximately 700,000m^3 of fill;
- Dredging of alluvial sand from the Tweed River directly to the road corridor;
- Pollution mitigation measures relating to sand pumping operations;
- Containment and treatment of dredge tailwater to meet EPA standards;
- Containment and disposal of Acid Sulphate dredge residue.

Challenges

The dredging operation was to be conducted with strict control as the road traversed over 800m of tidal wetland, crossing three large tidal drains and the following areas that were considered environmentally sensitive:

- Two separate coastal wetlands including an area of mangroves.
- A coastal dune area; and
- The only remaining section of rain forest in the district that contained a stand of endangered trees (*Acronychgia litturalis*)

Innovation

There were many environmental challenges on the Chinderah Bypass some of the methods for overcoming these were;

- During the dredging process the sand and silts separated within the slurry. At the dredge head the sand separates allowing the tailwater containing the acid sulphate silt to run to the lowest point where a secondary pumping system had been established to pump the tailwater and fines to a temporary sedimentation pond and treatment facility.
- A water treatment facility with a 132,000m^3 capacity was constructed on thirty-two hectares of land adjacent to the road's corridor leased from a sugarcane farmer.
- The final 75,000m^3 of topsoil product was sold on the Gold Coast and won several large supporters amongst the landscape industry (See picture adjacent of gardens grown in Neumann's recycled acid sulphate soil)

Outcome

The Chinderah Bypass project was a great success for all those involved and became a valuable building block in the future treatment and management of acid sulphate soils. Neumann's treatment of the soil has been the topic of several scientific publications including the National Conference on Acid Sulphate Soil. Throughout the contract interested visitors to the site included: -

- ASSMAC Committee
- Department of Agriculture
- Department of Natural Resources
- Queensland and NSW Acid Sulphate Committees.
- Federal Airports Commission
- Tweed Shire Council
- Gold Coast City Council

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