

Design for D&C Post Tensioned Projects

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Introduction

- Why do PT contractors get involved in the design of the project to start with?
- What are the common efficiencies introduced to the structure by a PT contractor?
- Integration of the PT contractor into the design team.
- What aspects of the existing design will the PT contractor review/change
- Examples
- Conclusion

Why do PT contractors get involved in the design of the project to start with?

- Commercial
- Specialist Engineers
- Risk
- Time
- Constructability

What are the common efficiencies introduced to the structure by a PT contractors?

- Element thicknesses
- Support optimisation
- Slab type and formwork
- Reinforcement rationalisation

Integration of the PT contractor into the design team.

- Definition of structure performance
- Documentation status
- Coordination
- Design Program
- Certification

What aspects of the existing design will the PT contractor review/change?

- Depends on the type of project
- I_{eff} / I_{gross} (for buildings)
- Concrete grade / volume / thickness
- Restraint design
- Rebar content

Eureka Tower



- *Conforming design*
- Reinforced slabs

Eureka Tower



- *Non conforming design*
- PT bands and slabs
- Driving force TIME

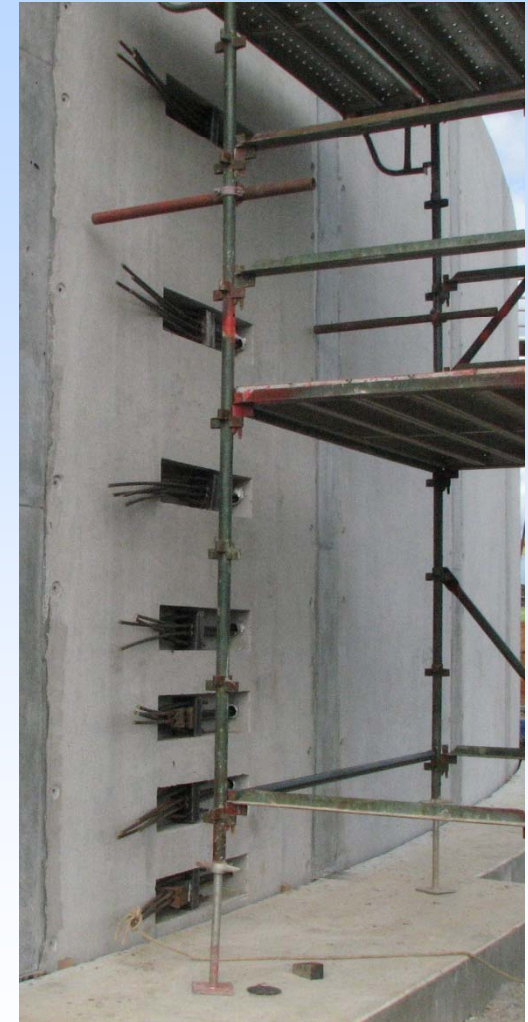
Austrak Business Park



- *Conforming design:*
- PT Slab on Ground
- Only perimeter reinforcement

Tarago Water Tanks

- *Non conforming design (steel)*
- Material savings Steel → Concrete
- Programme savings
- Driving force TIME & COST



PT in Buildings

- Builders & developers request for PT alternative
- Save
 - \$
 - Time
 - Materials



Dam Walls



- PT used to “bolting the wall to the rock”
- Alternative would be for shear mass → expensive

Conclusions

- Project Engineers to coordinate with contractors
- Involve a PT contactor early