

MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD



MERIT AWARD

OPTIMISATION OF TERMINAL 5 GROUND TRANSPORTATION CENTRE CARPARK



PROJECT TEAM



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OVERVIEW

NEED FOR
PROJECT

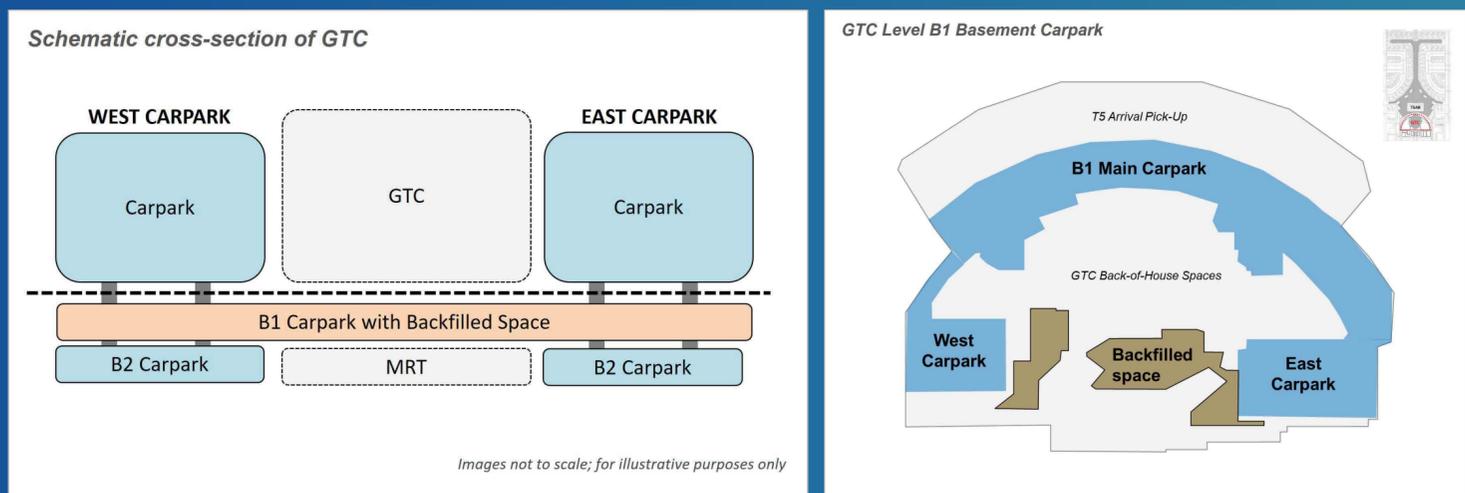
SOLUTION

IMPACT

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NEED FOR PROJECT



- T5 Ground Transportation Centre (GTC) is an integrated transport hub that connects to T5, housing various facilities such as carparks, MRT station and bus interchange.
- CAAS' review of CAG's plans identified an optimisation opportunity - prevailing technical requirements had constrained basement headroom, rendering part of the space unusable and leading to a proposal for soil backfilling.
- This would have resulted in unusable constructed space, incurring unnecessary construction costs and land charges for non-functional Gross Floor Area (GFA).

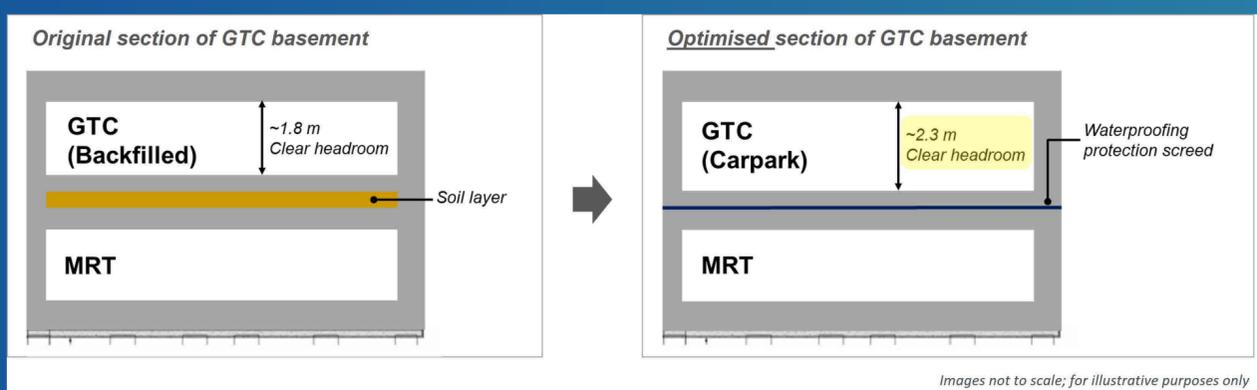
PROBLEM STATEMENT

Need to optimise the utilisation of basement space so as to overcome technical constraints in the T5 GTC basement design which led to planned soil backfilling, creating unusable space and incurring unnecessary costs.

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SOLUTION



- Initiated workshops between CAAS, CAG and LTA to value-engineer the design.
- Identified the 500mm soil layer between the GTC basement and MRT structures, typically required for water drainage, as the critical constraint.
- Successfully developed alternative watertightness solutions that eliminated the need for the soil layer.
 - This has increased the basement headroom that can now be used for carparking, thereby allowing B2 carparks to be relocated to B1 level.

SOLUTION STATEMENT

Through inter-agency collaboration and technical discussions, the team successfully optimised the GTC basement design by removing the soil layer requirement between underground structures, transforming unusable backfilled space into functional carparks.

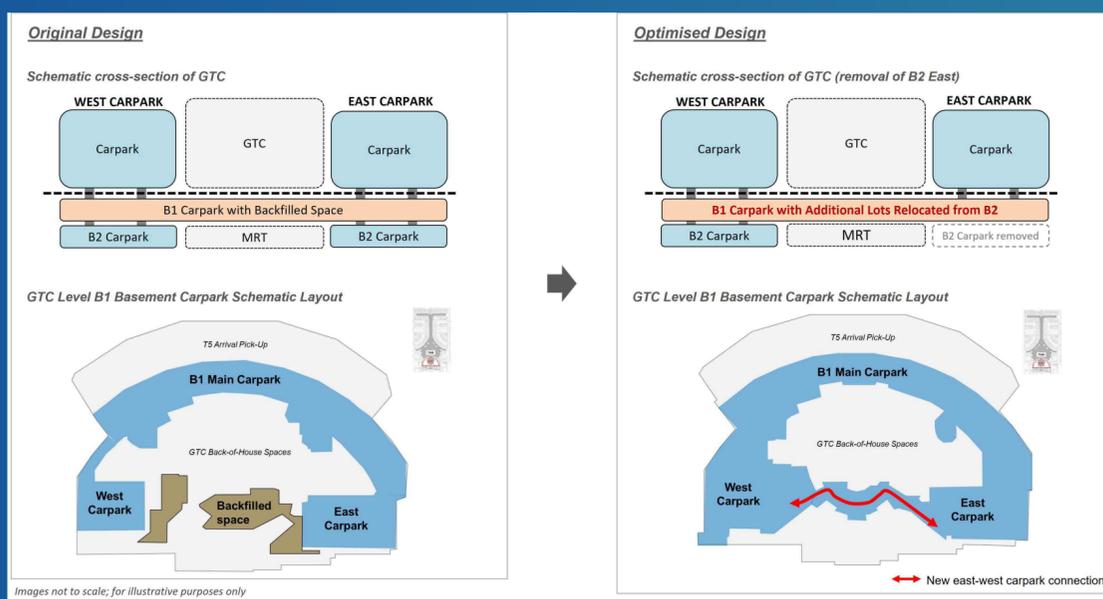
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IMPACT



Economy

- Achieved substantial cost savings by optimising basement excavation, and converting unusable Aviation-use GFA into functional non-GFA carpark areas.

Efficiency

- Enhanced operational resilience through improved carpark connectivity.
- Increased construction efficiency by eliminating soil backfilling and reducing excavation extent.

Effectiveness

- Demonstrated effective inter-agency collaboration in design optimisation and established precedent for reviewing standard requirements and implementing site-specific engineering solutions.
- Cost savings: \$23mil.

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OUTCOME STATEMENT

The T5 GTC basement redesign achieved threefold benefits: enhanced carpark connectivity and operational resilience, improved construction efficiency, and substantial cost savings, by challenging conventional requirements and inter-agency collaboration.

OVERVIEW**NEED FOR
PROJECT****SOLUTION****IMPACT**