2026 AUSTRALIAN LANDFILL &
TRANSFER STATIONS CONFERENCE

Final Cell at Victorian Regional Landfill

Delivering compliance through design, construction and risk management

01 The Site

02 Previous Construction

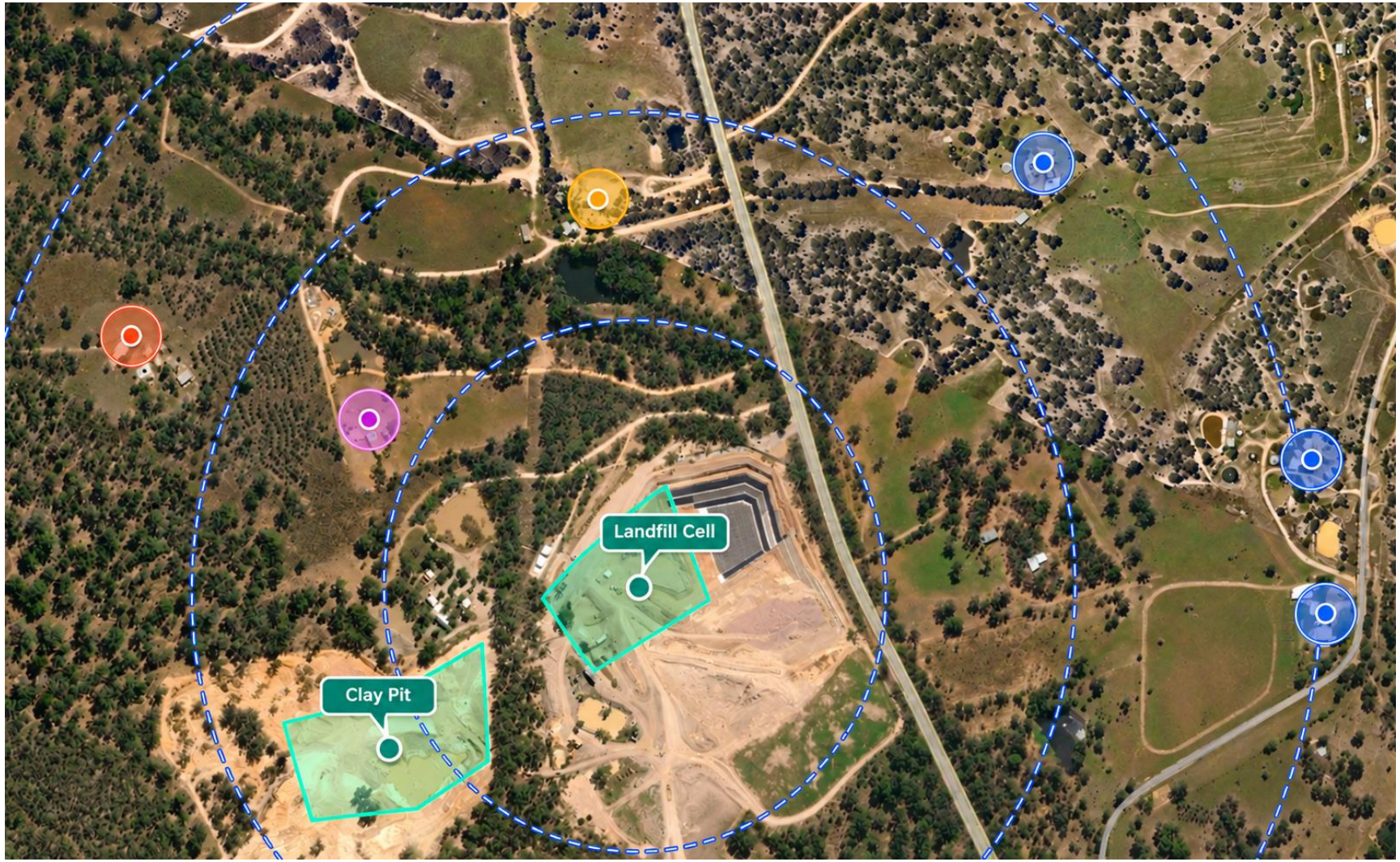
03 Last Cell Construction

04 Challenges

05 Noise Attenuation Measures

06 Design Change Benefits

Introduction to Regional Landfill Site



Receptors with distances @250m interval

Incoming waste

~3,900 tons per month

Regulatory interfaces

EPA — landfill construction and operations, GED

ERR — excavation and quarry-related works

Sensitive receptors

Nearby residences shown relative to Landfill and the clay pit area.

Previous Cell constructions

Legacy 1:1 batters

Inherited design maximised landfill airspace.

Up to 20 m deep

Deep cells extended site life within the available footprint.

Quarry business model

Excavated rock was processed and sold.

Construction and safety

Steep slopes complicated plant access, excavation and liner installation.



Previous Cell constructions



Large ramps + double handling



Complex liner installation



Complicated Access to 20m deep Cell

Final Cell and Infrastructure

Cell construction and enabling infrastructure had to be delivered together while the landfill remained operational.



CONSTRAINTS

Shared Access

Construction and Operations to operate in limited space

Infrastructure

Existing offices, parking and weighbridge conflicted with excavation and waste placement

Stockpiling Limitations

Approximately 150,000 m³ required drilling, blasting, hauling and stockpiling as per legacy design

Sensitive Receptors

GED, Dust, Noise, Odour and litter required Environmental controls.

ADDITIONAL PROJECT REQUIREMENTS

Weighbridge Relocation
New wheel wash and Workshop

Stockpile Management

Environmental Controls

Site Infrastructure and Cell Design Changes



1 SITE INFRASTRUCTURE

- Relocate facilities within the excavation footprint
- Change site access to allow operations continuity.

2 CELL DESIGN | 1:1 → 1:3

- Less excavation and stockpiling
- Better access on slopes
- Reduced need for rock breaking.

3 CONSTRUCTION & NOISE BENEFITS

- Safer, faster construction
- Additional noise controls were still needed.

Refining the Construction Methodology

Once the model showed the remaining risk, we focused on the biggest noise driver and engineered the controls around the construction sequence.

REASSESS

Consultant Review

Challenge the original assumptions and re-test the construction methodology

→

RE-SEQUENCE

Five construction stages

Separate the highest-noise activities and control when they occur

→

FOCUS

Drilling = key driver

Target the biggest contributor first

→

ENGINEER

6 m barrier solution

Reverse-engineer barrier height and specification from the model

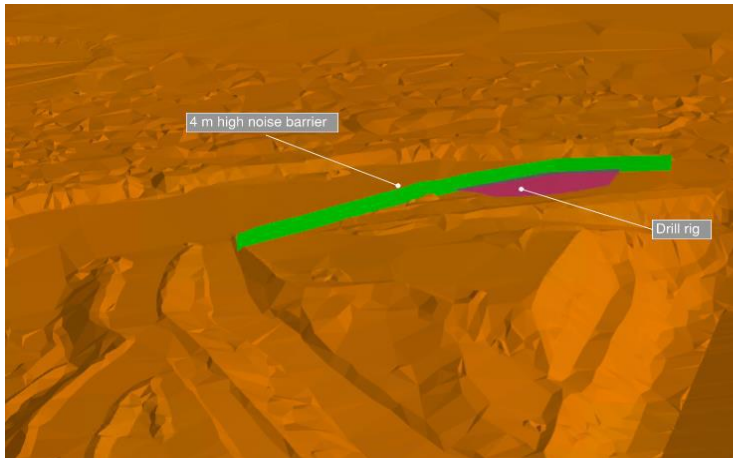
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EQUIPMENT

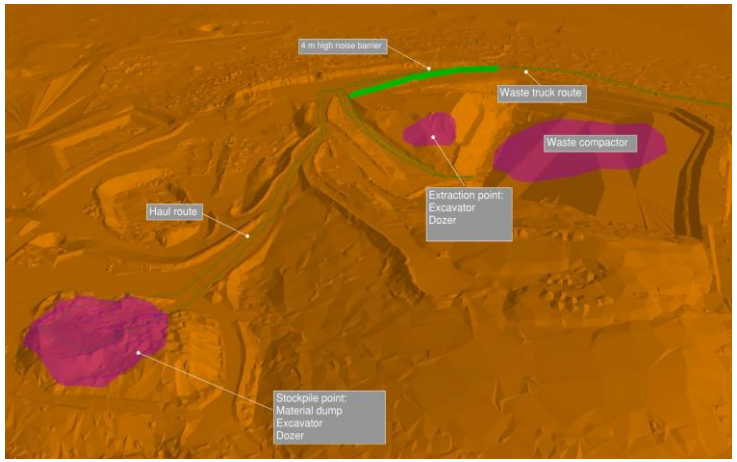
Low-noise drilling

Reduce noise at source as well as at the receptor

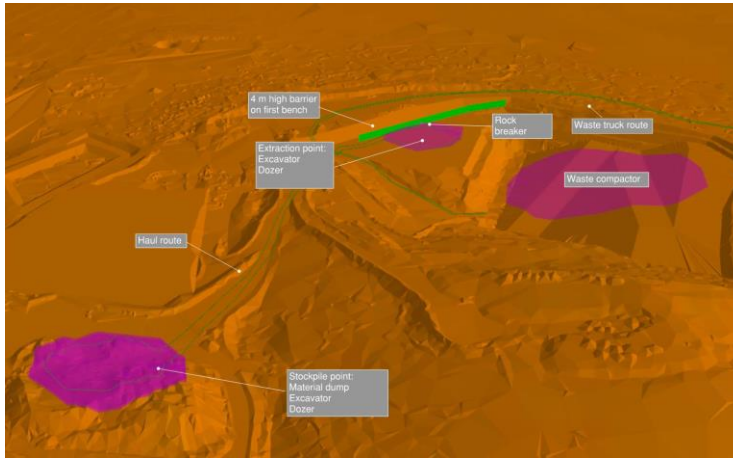
Construction Sequencing and Noise Mitigation



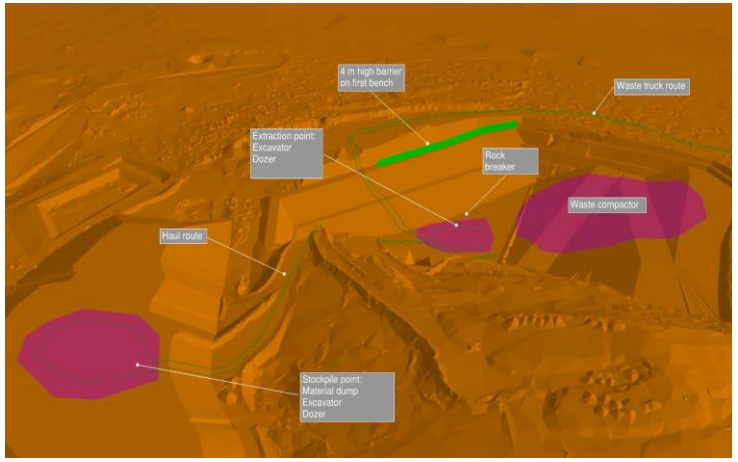
STAGE 1A | Drilling near the northern barrier



STAGE 1B | Surface excavation, haulage and stockpiling



STAGE 2 | Excavation 5 m below surface



STAGE 3+ | Full-depth extraction and haulage

Modelling considered drilling, excavation, haulage and stockpile locations at each stage.

Noise mitigation and excavation sequencing









6 m acoustic screening

2 m earth bund + 4 m barrier

Stage-based drilling, excavation and haulage

Measured performance informed modelling and controls.

Key outcome: acoustic screening and staged works supported predicted compliance at sensitive receptors.

AFTER | 1:3 CONTINUOUS BATTER

Final Cell Construction Approach



Continuous working surface

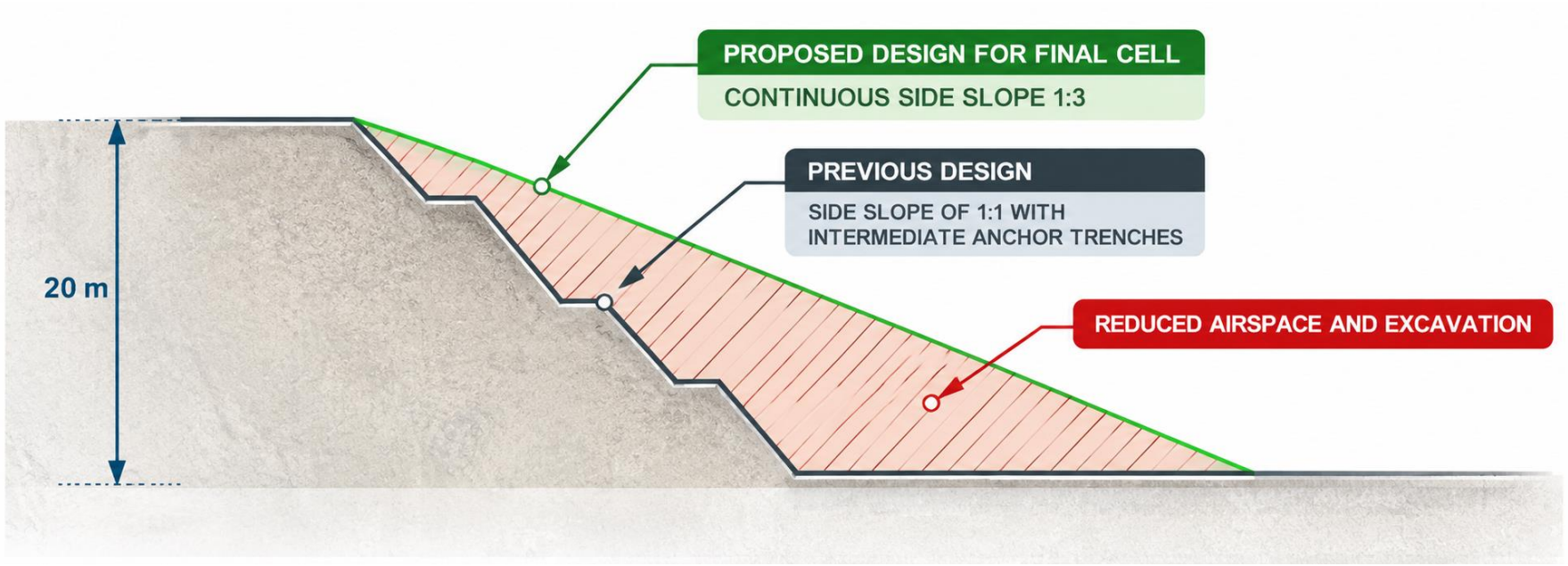


Direct plant access



Simpler liner installation

Final Cell Design Optimization



~$1.3M

direct construction savings

~$0.45M

airspace value foregone

What improved

- Substantially reduced Noise; Less excavation & rock handling
- Increased Project Safety, Reduced work-at-height exposure and machinery movements
- Less double handling; Simpler plant access
- Shorter duration / lower GITA costs