PRECISION GRADE CONTROL UNDERGROUND ON NORTH EAST LINK

CASE STUDY

3000 MACHINE HOURS ACROSS BOTH MACHINES

98.6% UPTIME ACHIEVED ACROSS BOTH MACHINES

0 COMPLIANCE EVENTS RECORDED



Project: North East Link – Cut and Cover Tunnel Section
Industry: Major road infrastructure / tunnelling
Location: Bulleen, Victoria
Project Scope: Supplying specialist excavators configured for precise underground excavation, compliance and safe operation within a confined tunnel environment.

THE **PROBLEM**

During construction of a cut-and-cover section on the North East Link project, excavation works needed to achieve precise grade underground.

Without satellite signal underground, standard GPS machine control systems could not function.

The project also required reduced-radius 35t excavators capable of bulk excavation while meeting strict Tier 1 underground safety and emissions requirements, including fire suppression and Tier 4 Final compliance.

Incorrect excavation levels risked costly rework, programme delays and additional surveying within confined working areas.

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THE **SOLUTION**

Focus Machinery supplied two Volvo ECR355 reduced-radius excavators, specifically configured for underground tunnelling conditions.

The machines were engineered for the scope with:

- Trimble UTS machine control systems for accurate grade control without GPS signal
- Certified fire suppression systems for underground safety compliance
- Tier 4 Final emissions-compliant configuration
- Reduced-radius operating profile to suit confined excavation conditions

The ECR355 platform was selected because it provided the largest reduced-radius excavator configuration available, allowing efficient bulk excavation while maintaining a compact working footprint underground.

Prior to delivery, Focus Machinery coordinated:

- Fire suppression installation, testing and certification
- Trimble UTS integration and commissioning
- Chekrite inductions and compliance preparation
- After-hours operator training onsite to ensure crews could confidently operate and calibrate the UTS systems immediately

All equipment was delivered Ready to Dig, fully configured for immediate production work underground.

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THE **RESULTS**

The specialist configuration enabled accurate excavation in a complex underground environment without relying on GPS infrastructure or constant survey intervention.

Across approximately 3,000 combined machine hours, the excavators supported continuous tunnelling operations while maintaining compliance with underground safety and emissions requirements.

Key outcomes included:

- Precise grade control achieved underground using UTS technology
- Estimated 98.6% uptime across both machines
- All breakdown events attended and resolved within 24 hours
- Zero compliance incidents recorded
- Reduced need for survey personnel within confined excavation zones
- Continuous support during a critical infrastructure delivery programme

By engineering the machine specification around the project constraints - rather than supplying standard fleet equipment - Focus Machinery helped support safe, compliant and productive excavation on one of Victoria's largest infrastructure projects.

Compliance | Performance | Reliability | Certainty

Go Ahead and Dig®

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