How Future Focused Logistics and Infrastructure will enhance Antarctic science

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The Australian Antarctic Division is delivering future focused logistics and infrastructure to enhance the ability of scientists to answer questions of global significance.
‘...expanded continent and ocean wide access year-round is essential, including to areas of high scientific interest, and ‘super sites’ should be established for collaborative, interdisciplinary research.’
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The future of the Australian Antarctic Program
A modern Davis research station

Stage One: Stabilisation

Stage Two: Enabling

CONCEPT ONLY
Stage Three: Davis Master Plan

CONCEPT ONLY

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SNOW MANAGEMENT
Aerodynamic buildings for living, science, management and technology, will be elevated above the ground allowing the wind to scour snow from undernearth, reducing the time that need to be spent clearing its fall.

SIMPLE MAINTENANCE
Buildings will be designed using simple repeatable structural platforms which are easy to access and maintain. The same systems can be utilised in the other ANARE stations.

FUTURE FLEXIBILITY
The repeating modular design allows the interior of the buildings to be easily re-configured to suit changing science priorities. When the population expands additional modules can be constructed and linked to the existing facilities.

REPRESENTING AUSTRALIA
The new station will embody the spirit of Australia. It will be a key step of sustainable design which supports science of global significance.

SUSTAINABILITY
Wind and solar power will be the primary sources of energy and heating for the new station. Governance will be in place to promote emergency back-up. Water will be recycled and resilience will be significantly improved.

WELL BEING
The interior design will provide a home from home for the residents. Natural materials will be complemented by good lighting. Fine balance open plan spaces will support a strong sense of community.

SUPPORTING SCIENCE
Future focused infrastructure will enhance Australia’s Antarctic Science Program. The new station will include a wide range of labs, an observatory and space for new technologies such as robotics, drones and long range submersibles.

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Proposed Davis aerodrome

If approved to proceed, the proposed Davis aerodrome would be the first paved runway in Antarctica. The infrastructure delivered by the project would include:

• A 2,700 m paved Code 4E runway

• Aviation infrastructure
  o Terminal Building
  o Fuel Storage
  o Hangars and storage facility
  o Airfield lighting and equipment room

• An access road from the station to the aerodrome

• Wharf upgrade
Proposed Operations

**Flight time**
- 6-7 hours from Hobart to Davis station.

**Intercontinental fixed wing**
- Australian owned and operated aircraft only.
- Fortnightly flights in summer.
- Less frequent over winter (up to monthly).

**Intracontinental**
- Approx. 100 flights to/from Davis each summer.
- Support for other nations to operate intracontinental flights to/from aerodrome.

**Helicopters**
- Approximately 650 flights over summer.
Science Opportunities

New and enhanced research

Increased innovation

Equality access

Research across seasons

Improved biological understanding

Improved data

Increased safety and efficiency

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THANK YOU for watching this presentation

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