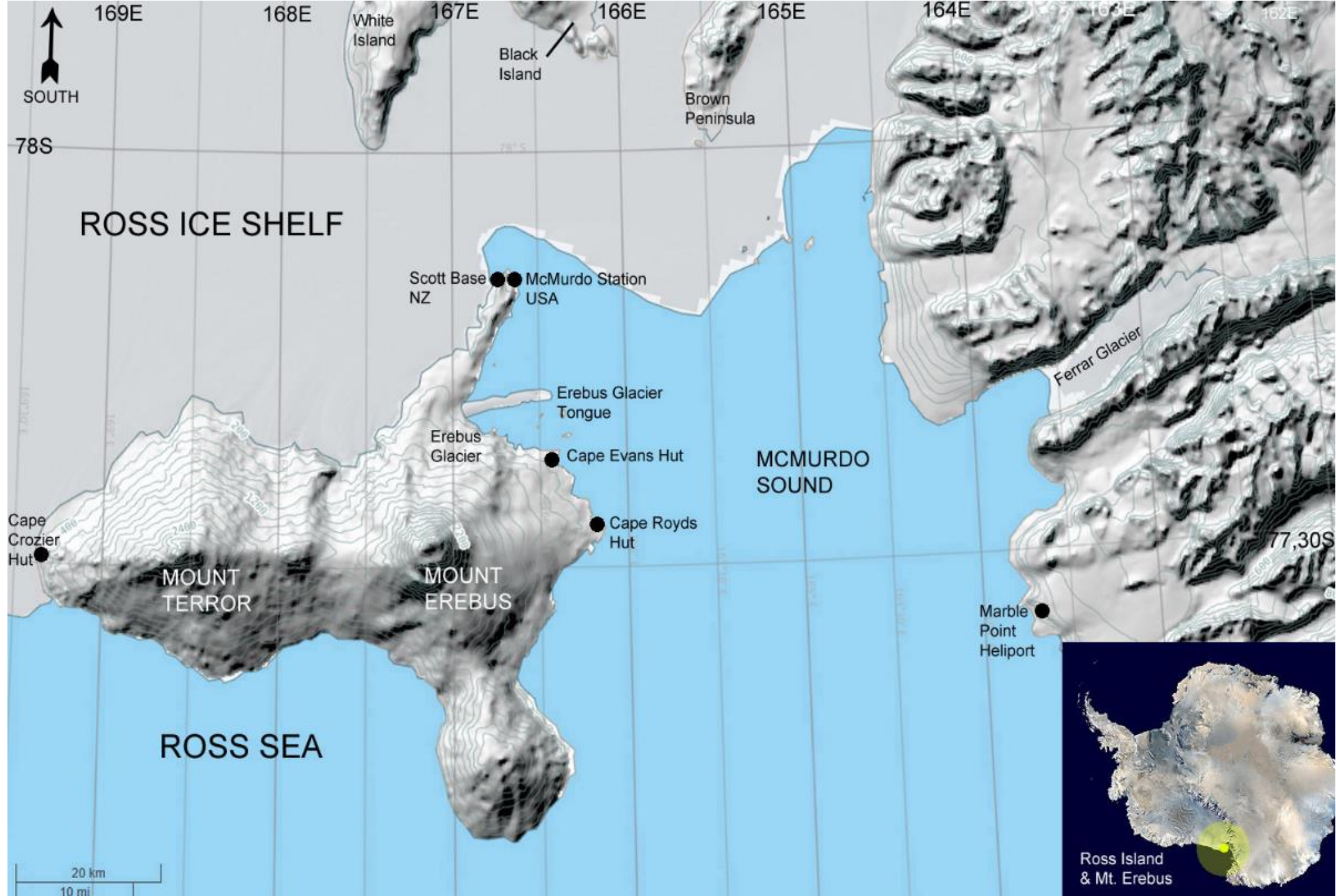


Quarrying Way Down South



Gavin Hartley & Craig Upston
QuarryNZ Conference, Wellington
14-16 July 2021





Recon. Team - Tim, Gavin and Michael





AIMS Project Scope

Lodging Facility

- 285 Beds

Emergency Operations

- Firehouse with 3 bays
- Medical Facility
- Gym/Mass Casualty Space

Central Services Building

- Administrative/Station Support
- Auditorium and collaboration space
- Circulation space
- Dining, food services, retail, chapel
- Furniture, Fixtures and Equip (FF&E)
- Enclosed walkway to Field Science
- Ground-level build-out
- Architectural features

Vehicle Equipment Ops Center

- 5 heavy and 1 light service bays
- Cold and warm warehouses
- Wash bay and support facilities
- Administrative offices, shop space

Trades Building

- Light industrial trades and craft materials
- High-density storage racking and FF&E

Field Science Support

- Field gear issue/return/cleaning/repair
- Field safety training and staging
- Station cargo operations, Ice core storage
- Covered concourse for staging

Utilities - Water tank / pump house, Utility mains to new buildings, Electrical feeder upgrades, site drainage

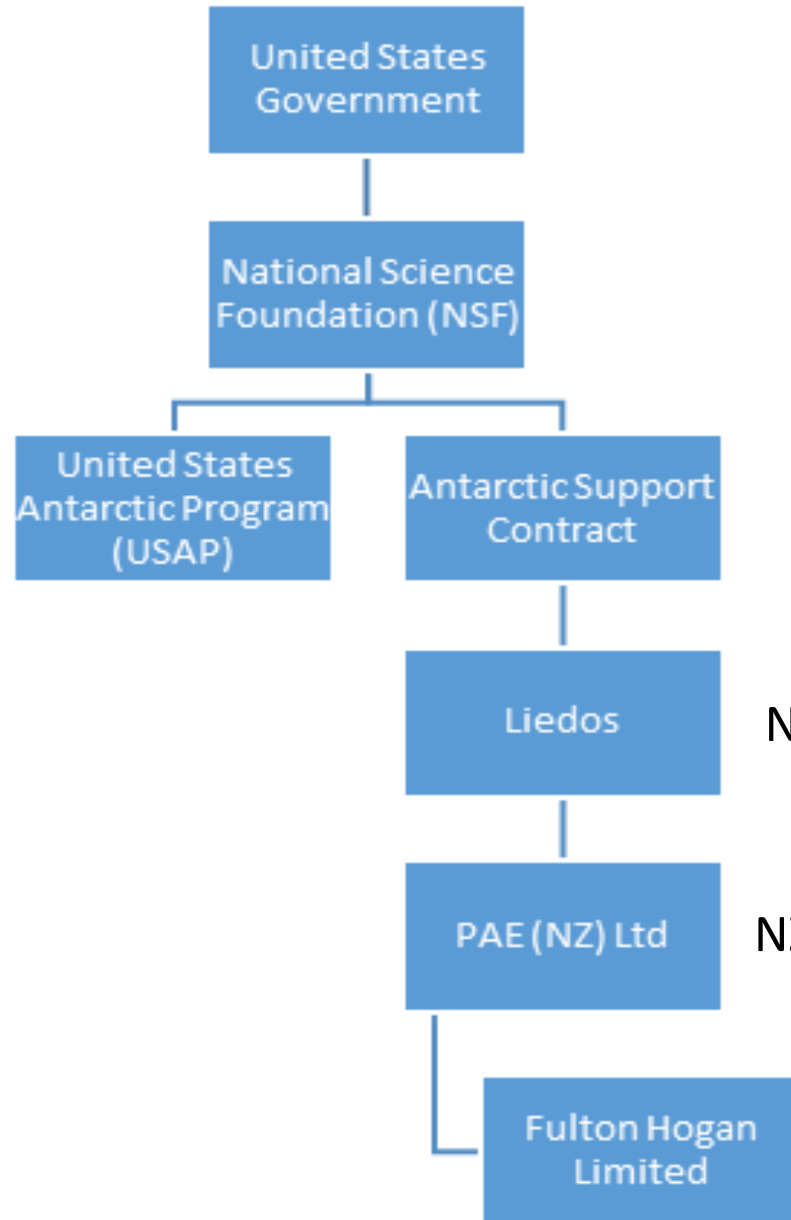


Facts & Figures

- Produce - 66,000yd³ of 2 ½ " (50 000 m³ of AP65) for foundations for 6 new buildings.
- Two deployments to the ice - First January 2020, second TBC. (Warmer and day light)
- For every scientist there is a support person, at the peak of the season the base can have a population of 1200 people. Only around 80 people winter over. (Max population at Scott Base 100)
- Before anyone is given a ticket to fly there is a rigorous medical to pass - Personal Qualification (PQ)
- Communication almost nil, internet at dial up speed and very limited, no streaming allowed, cell phones only any good as cameras.



Team to deliver - Antarctic Infrastructure Modernisation for Science (AIMS)



NSF's Main Contractor. Purchased LT106, LT200HP, ST3.8, Cat 336 and Cat 972.

NZ Company employed to support USAP

Blackhead Quarries Ltd – Man power

Full House on C17 Flight time 4.5 hrs



First steps on the ice, C17 parked on ice runway



The bus 40 minutes from airport to McMurdo Station



McMurdo Station Hospital





Cleanliness even before Covid 19



McMurdo Fire House, off to yet another spill

A workshop like any in NZ





Arrivals

Air Services x42347

12:22

Monday, October 21

Flight	From	ETA	ATA
--------	------	-----	-----

Intercontinental Arrivals

AZM004	CHC	21-Oct 15:45	
AZM005	CHC	22-Oct 14:00	

Basler Arrivals

MKBZSP01R	SOUTH POLE	23-Oct TBD	
-----------	------------	------------	--

McMurdo Station Weather

Currently

-15°C
5°F



Mostly Clear

- ③ McMurdo
- ③ T-Site
- ③ Arrival Heights
- ③ Scott Base
- ③ Road to Scott Base
- ③ Phoenix Field
- ③ Road to Phoenix Field
- ③ Sea Ice
- ③ LDB Site
- ③ Williams Field

Departures

Flight Data

Last Update 21-Oct 12:21

Flight	To	ETD	ATD	Bag Drag	Transport
--------	----	-----	-----	----------	-----------

Intercontinental Departures

ACH004	CHC	21-Oct TBD		TBD	21-Oct 14:15
--------	-----	------------	--	-----	--------------

Passengers: Please note transport time.

ACH005	CHC	22-Oct TBD		TBD	TBD
--------	-----	------------	--	-----	-----

Basler Departures

MKB	MZS	21-Oct 17:00		TBD	TBD
-----	-----	--------------	--	-----	-----

Italian Zuccehlili Station Put In.

MKBZSP01	SOUTH POLE	23-Oct TBD		22-Oct 14:00	TBD
----------	------------	------------	--	--------------	-----

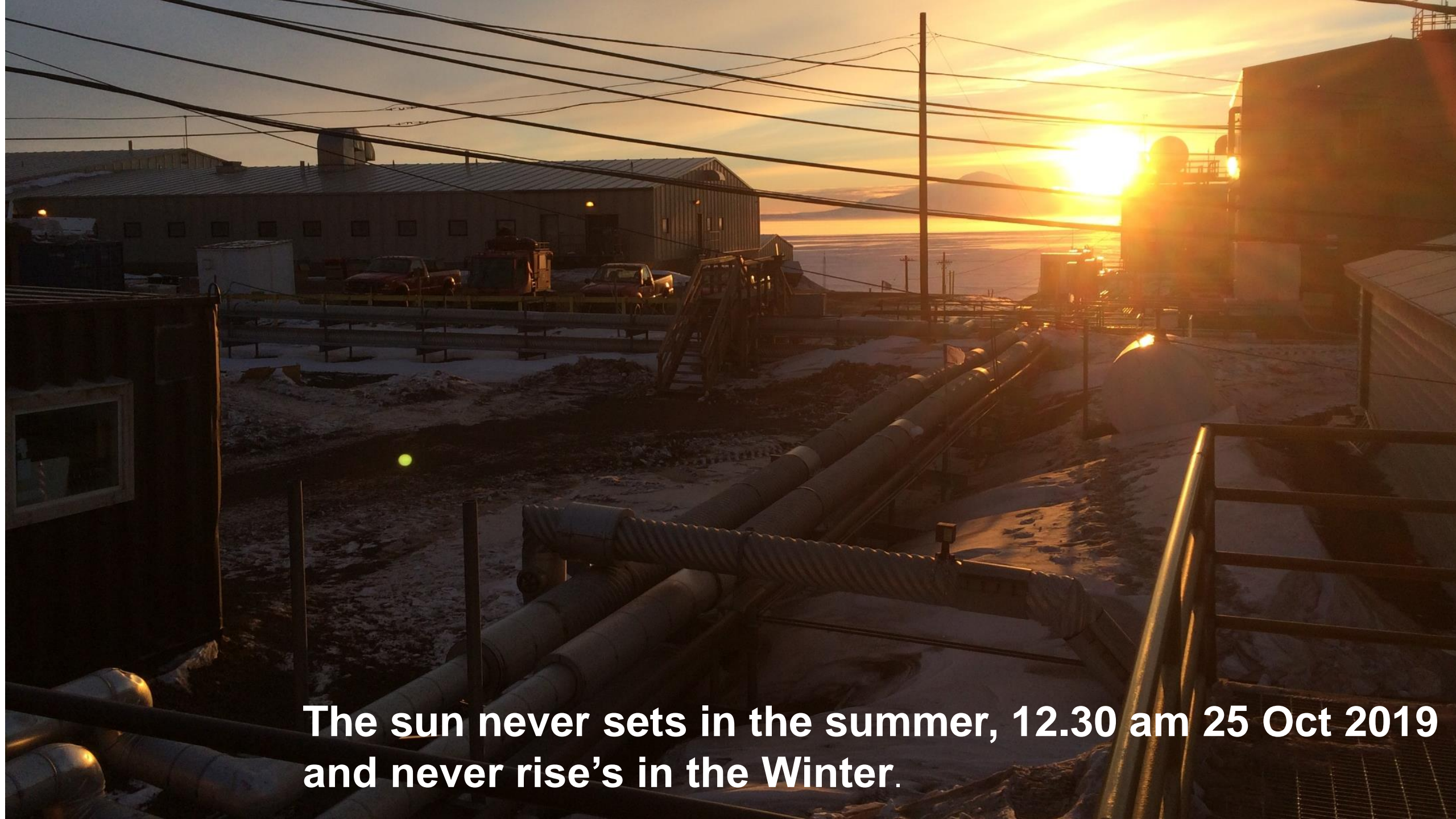
Bag drag at BL140.



SAMSUNG

These channels don't change, so please don't push buttons. Thanks!

Monitors at Exit to Building 155 with weather Info



**The sun never sets in the summer, 12.30 am 25 Oct 2019
and never rise's in the Winter.**



McMurdo Station 10.43am 24 February 2021

<https://www.usap.gov/videoclipsandmaps/mcmwebcam.cfm?t=1>

McMurdo Station 2.43pm 5 May 2021



Status: **Live**

Refreshing in 10 seconds...

McMurdo Station 11.43am 16 April 2021

<https://www.usap.gov/videoclipsandmaps/mcmwebcam.cfm?t=1>



McMurdo Station - Observation Hill Webcam 2021-05-05 14:41:25

Status: **Live**

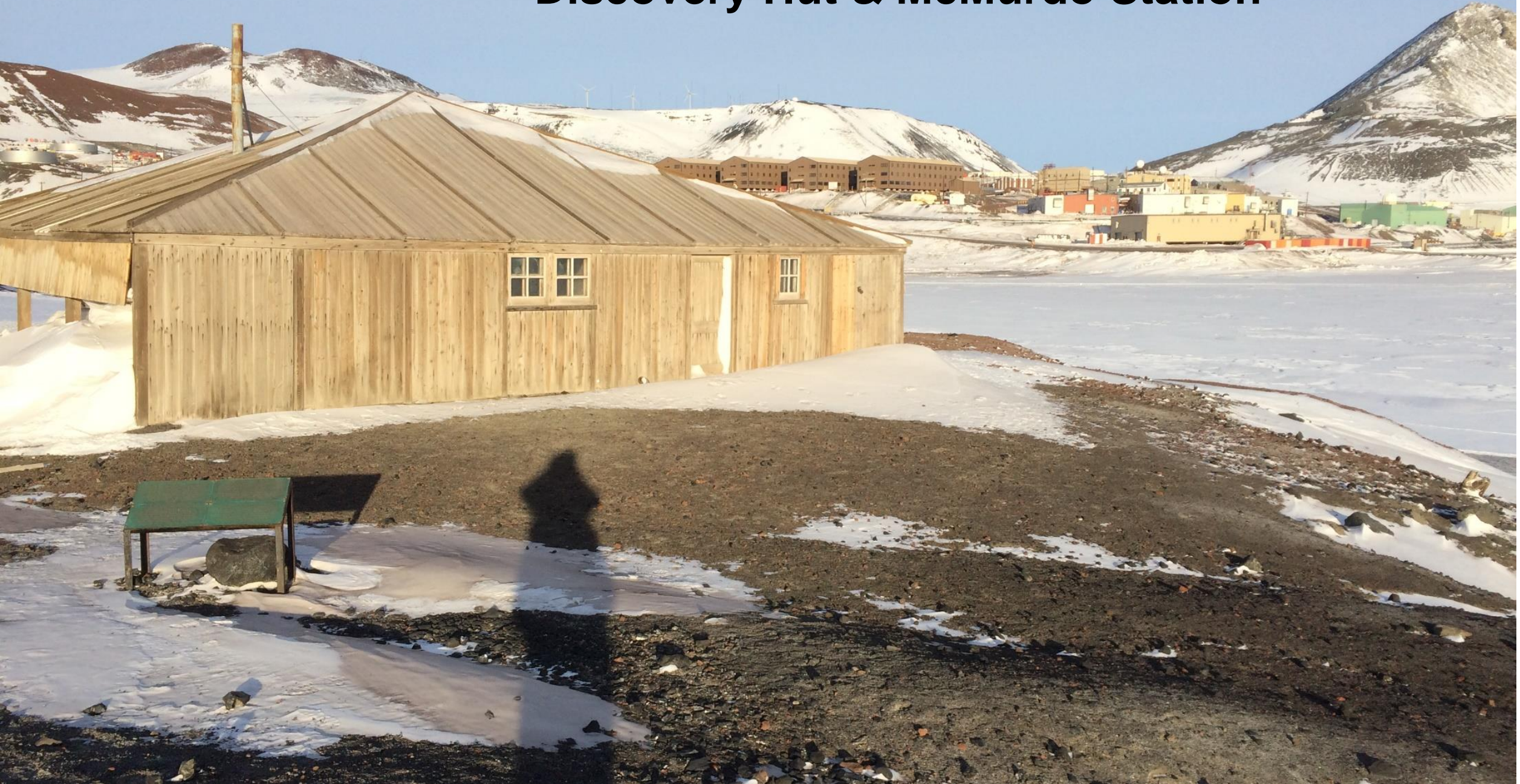
Refreshing in 14 seconds...

McMurdo Station 2.43pm 5 May 2021

Time to be a Tourist, Scott's hut in the mid ground



Discovery Hut & McMurdo Station





Only 1500 people per year allowed in Scott's Hut

Firewood Antarctic style



Science is why we are here for every scientist there is one support person



Hilary's Hut, Scott Base



Mt Erebus from Scott Base





Hartley deciding on his next mission

Held up at airport by bloody Quarry Explosives, a procedure for everything





**Home bound in the C17 most of the
other passengers had wintered over
at the South Pole**





The Crushing Team – from Left Craig Upston, Quinn McNab, Steve Brosnahan, Blair Ferguson and Chris Williams



Transport options





Ship arrives with Crushing Plant and ties up to ice wharf

Most heavy Plant arrives by sea



Although some arrives by air





Nice and shinny plant being set up for the first time



Grey's Chute was chosen due to it's close proximity to town



Quarrying starts in Grey's Chute, Americans love their big bulldozers

Crushing starts in Grey's Chute



The Quarry





Looking up Grey's Chute to top of quarry



The weather is the dominant factor and it can change in minutes.



Rock was blasted although this oversize is perma frost boulders

Getting Colder



Really cold, wind chill probably around minus 40 degrees Celsius, exposed skin frost bitten very quickly.



Keeping the Cone Warm



If not being used plug it in





Pad Construction begins



Start of the Rebuild, Concrete pads brought in from the States

Without Fuel Oil there would be no station



Thanks to Fulton Hogan Ltd & Blackhead Quarries Ltd for the once in a life time opportunity. Who would have thought a career in quarrying would take you to Antarctica!!!!!!



Questions