Concrete Batching Plant and Aggregate Handling Facility

IPC Presentation – 17th May 2021

The Importance of Concrete and Aggregates

- Premixed concrete is used in almost all construction projects. These types of construction projects are fundamental to economic growth, and a reliable local concrete supply is the foundation of delivering these projects efficiently, affordably and in an environmentally sustainable way.

Sydney Metro - NRT

Sydney Metro - NRT

Alfords Pt Bridge

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Supply Flexibility

- Concrete batching plants are however required to operate in a flexible manner (24/7 and sufficient production capacity per, hour, week, month, year), responding to the needs of construction design requirements and project delivery programs. Furthermore, concrete batching plants need to be located in close proximity to the areas of demand.

M5- St. Peters

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Supply Requirements

- Major project specifications (including for TfNSW/RMS) can require concrete to be delivered and placed on site within 45 minutes from the time it is batched and mixed with water

M4 Widening

- CONCRETE IS A PERISHABLE PRODUCT!

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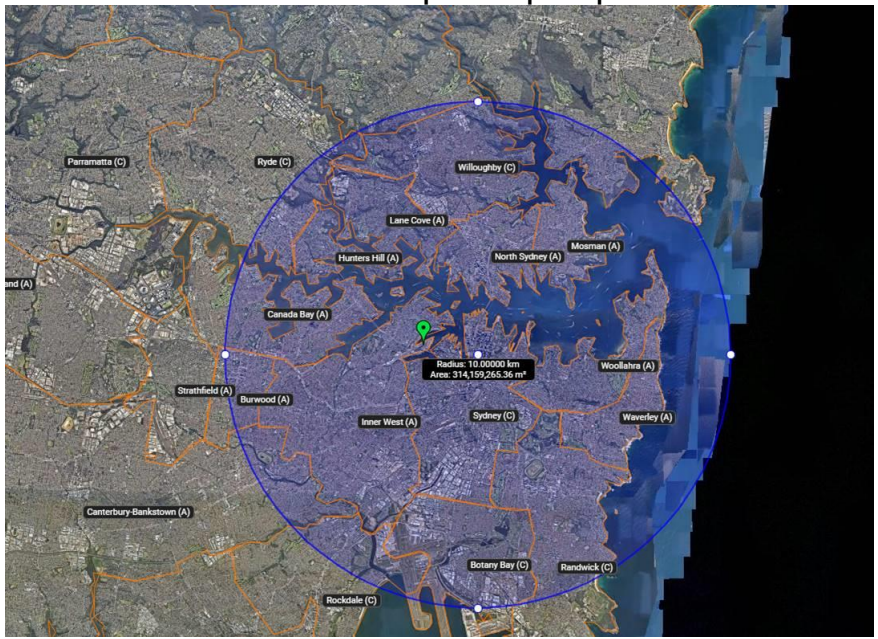
Why Glebe Island

- According to the *Supply and Demand Profile of Geological Construction Materials for the Greater Sydney Region, 2019*, commissioned by DPIE, the per capita consumption of extractive materials is around 3.5 tonnes per capita per annum.



Glebe Island supply area by LGA

	2016	2020
Sydney	208,347	248,736
Inner West	182,043	201,880
Hunters Hill	13,199	14,962
Lane Cove	36,051	40,534
North Sydney	67,658	75,094
Mosman	28,475	30,785
Willoughby	74,302	81,196
Woollahra	54,240	59,431
Botany Bay	46,654	51,838
Waverley	66,812	74,276
Randwick	140,660	156,619
Canada Bay (Half)	44,008	48,275
Burwood (Half)	18,405	20,433
Total	980,853	1,104,059

Population by LGA

Why Glebe Island

- The Glebe Island concrete batching plant is a critical part of the Hanson concrete supply network. To put its importance into context, Hanson currently supplies approximately 35% of concrete requirements within the City of Sydney.

- Based on a supply requirement of around 3.5 million tonnes per annum for the Sydney CBD and surrounding areas, Hanson's proposed Glebe Island concrete batching plant should have a capacity to produce up to 1 Million cubic metres (requiring to 2 million tonnes of aggregate) of concrete per annum.

- Co-location of a concrete batching plant with aggregate shipping facilities offers several logistical benefits including:
  - Removal of 65,000 trucks from Sydney's major roads (11,000 tonnes of CO_2 emissions)
  - Reducing our contribution to traffic congestion
  - A location that is proximate to demand to enable batched concrete to be delivered within 45 minutes.

- Access to a deep water port to enable bulk aggregate import by sea which is matched to Hanson's ship loading capability at its Bass Point Quarry

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Why Glebe Island

- Hanson is a major supplier of concrete and aggregates to government infrastructure projects. For example, Hanson will supply to WestConnex the following:
  - 1,000m3 of concrete per day (2,000 tonnes of aggregates)
  - Over 300,000m3 of concrete per year (600,000 tonnes of aggregates)
  - This is supplied both during the day and the night, Sundays and public holidays.

- Hanson will also tender and supply concrete to the following projects:
  - Crowsnest Station- 40,000m3 (80,000 tonnes of aggregates)
  - Pitt Street Station- 50,000m3 (100,000 tonnes of aggregates)
  - Barangaroo Station- 50,000m3 (100,000 tonnes of aggregates)
  - Metro West- Central Package- 200,000m3 (400,000 tonnes of aggregates)
  - Warringah Freeway Upgrade- 100,000m3 (200,000 tonnes of aggregates)
  - Western Harbour Tunnel- 100,000m3 (200,000 tonnes of aggregates)
  - Northern Beaches Link- 400,000m3 (800,000 tonnes of aggregates

All these projects will require flexible supply solutions including 24/7 reliability.

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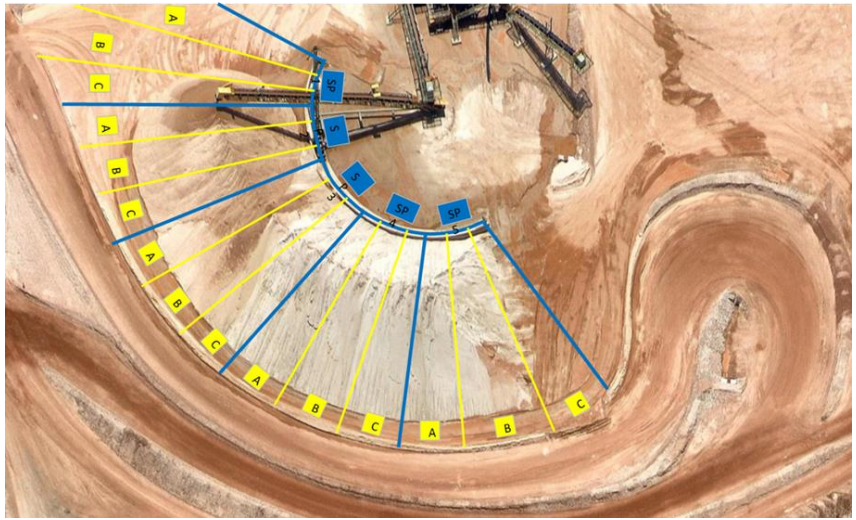
Why Glebe Island

- Resource Management
  - The Glebe Island Facility will allow Hanson to significantly improve they way critical construction materials resources are managed through:
    - Plant storage and production capacity to meet project/customer demands



- Dedicated stockpiles and traceable raw materials to ensure careful management and control from quarry source to end use.

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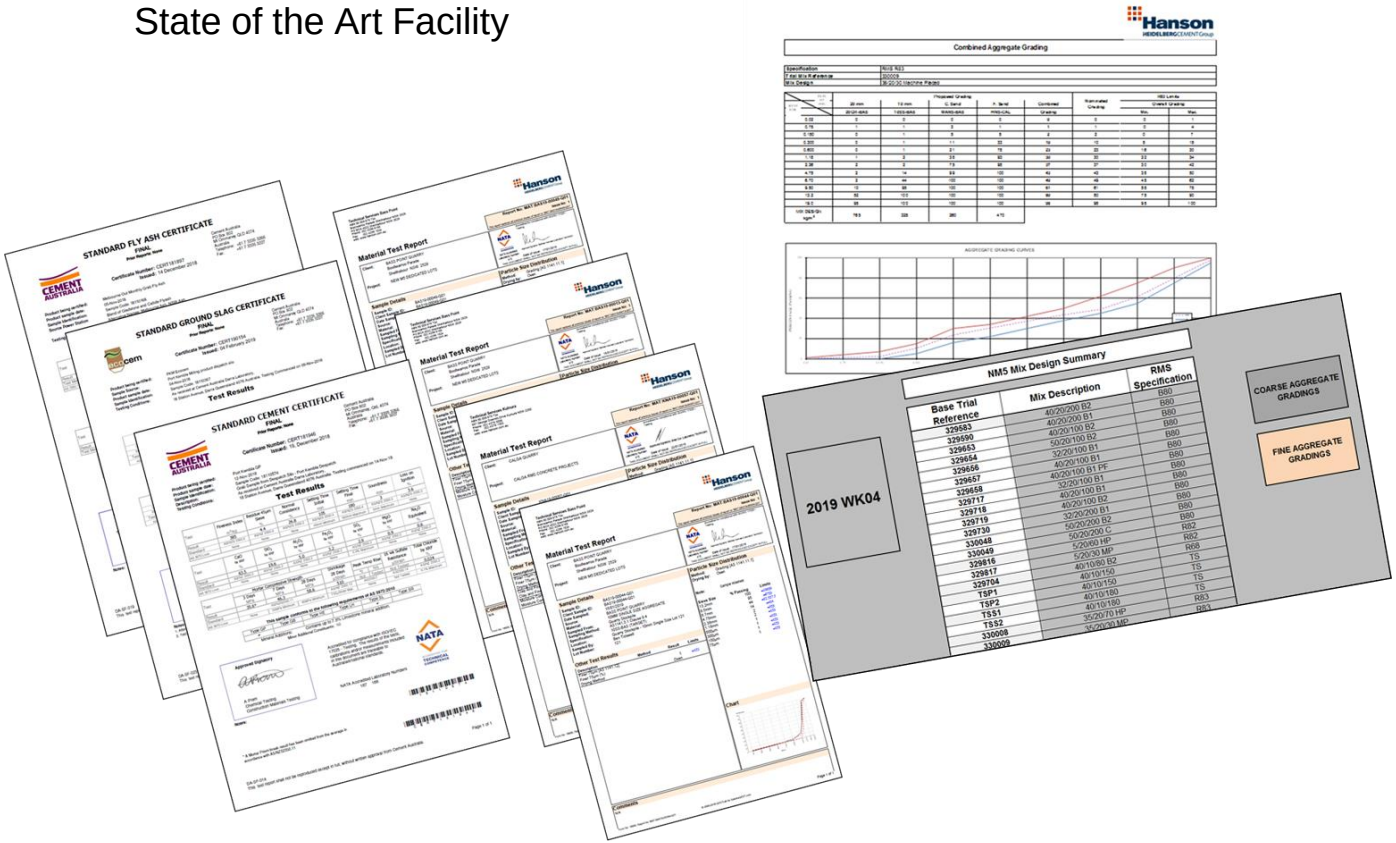
Why Glebe Island

- Compliance with high standards of concrete mix design can be better managed with a modern day State of the Art Facility



- Design
- Trial mixes / submissions
- Field trials
- Hold point release
- Approved mix register
- Testing

Why Glebe Island

- No other site close to the future demand near the Sydney CBD area is able to offer these attributes.

NewM5 Concrete Mix Register

Compressive Strength Grade	Maximum Aggregate Size	Concrete Supplier	Nominal Slump mm	Batching Plant	Mix ID	DMC codes	W/C Ratio	Mix Description	Laboratory Trial Mix Number	Cementitious	Coarse Agg	Fine Agg	Hold Point Number	Project Approval Status	IC Approval Status
Standard normal mixes - AS 1379 & R 53															
S15 Mpa Concrete	20	Hanson	100	Greenacre	ZN15C2S3 / 10083393	RM152AA00	0.83	S15 Mpa Concrete	Not Required	Cement Slag	20 mm Bass Point 10 mm Kulnura	Man Sand - Canberra Fine Sand - Calga	MSN-HPN-CDS-00005	Approved	Approved
	20	Hanson	100	Blackwattle Bay	ZN15C2S3 / 10083393		0.85	S15 Mpa Concrete	Not Required	Cement Slag	20 mm Bass Point 10 mm Kulnura	Man Sand - Kulnura Fine Sand - Calga	MSN-HPN-CDS-00005	Approved	Approved
N20 MPa Concrete	20	Hanson	100	Greenacre	ZN20P2S3 / 10076612	RM202AA06	0.71	N20 MPa Concrete	Not Required	Cement Slag	20 mm Bass Point 10 mm Kulnura	Man Sand - Canberra Fine Sand - Calga	MSN-HPN-CDS-00005	Approved	Approved
	20	Hanson	100	Blackwattle Bay	ZN20P2S3 / 10076612		0.72	N20 MPa Concrete	Not Required	Cement Slag	20 mm Bass Point 10 mm Kulnura	Man Sand - Kulnura Fine Sand - Calga	MSN-HPN-CDS-00005	Approved	Approved
N25 Mpa Concrete	20	Hanson	100	Greenacre	ZN25P2S3 / 10076615	RM252AA00	0.65	N25 Mpa Concrete	Not Required	Cement Slag	20 mm Bass Point 10 mm Kulnura	Man Sand - Canberra Fine Sand - Calga	MSN-HPN-CDS-00005	Approved	Approved
	20	Hanson	100	Blackwattle Bay	ZN25P2S3 / 10076615		0.65	N25 Mpa Concrete	Not Required	Cement Slag	20 mm Bass Point 10 mm Kulnura	Man Sand - Kulnura Fine Sand - Calga	MSN-HPN-CDS-00005	Approved	Approved
	20	Hanson	100	Greenacre	ZN32P2S3 / 10076617		0.57	N32 Mpa Concrete	Not Required	Cement Slag	20 mm Bass Point 10 mm Kulnura	Man Sand - Canberra Fine Sand - Calga	MSN-HPN-CDS-00005	Approved	Approved

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Why Glebe Island, Long-Term Tenure

- Hanson is investing more than $22M in this critical asset to secure the reliable supply of concrete and aggregates to support the construction industry and the continuation of Sydney's economical growth as a globally competitive city.

- The proposal supports the NSW government's ambition to maintain the last major working industrial port in Sydney Harbour.

- The NSW government has already approved Hanson to export aggregates (up to 4Mtpa) from its Bass Point Quarry. Logically an approval of this nature would require a destination receival port with close proximity to the consumer market.

- Maintaining Glebe Island as an aggregates receival port allows for possible sources of quarry materials from outside of the Sydney area which already has a limited life of resources.

- With this type of commitment being a key utility for both Sydney and Hanson, a long-term tenure is sensible, and paramount to ensure not only the required return on investment, but also to support the points above.

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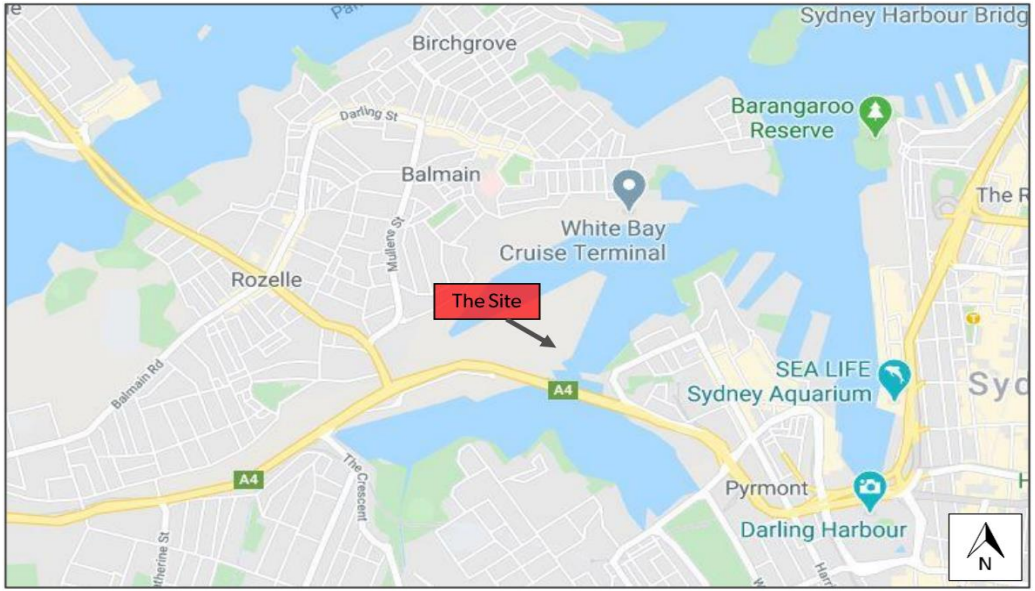
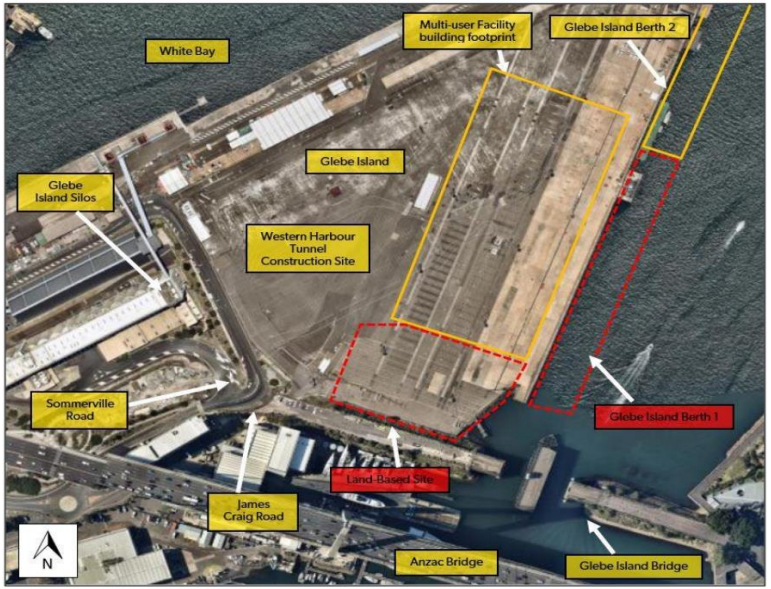
Glebe Island





- Glebe Island has historically been used as a shipping container terminal, for grain and car imports and transportation of bulk construction materials such as cement and gypsum.

- It is one of the last remaining port facilities in close proximity to the Sydney CBD and is one of the few deep-water wharves west of the Sydney Harbour Bridge. Glebe Island is currently used for common user berths, dry bulk imports (sand, salt, etc) and cruise ships.

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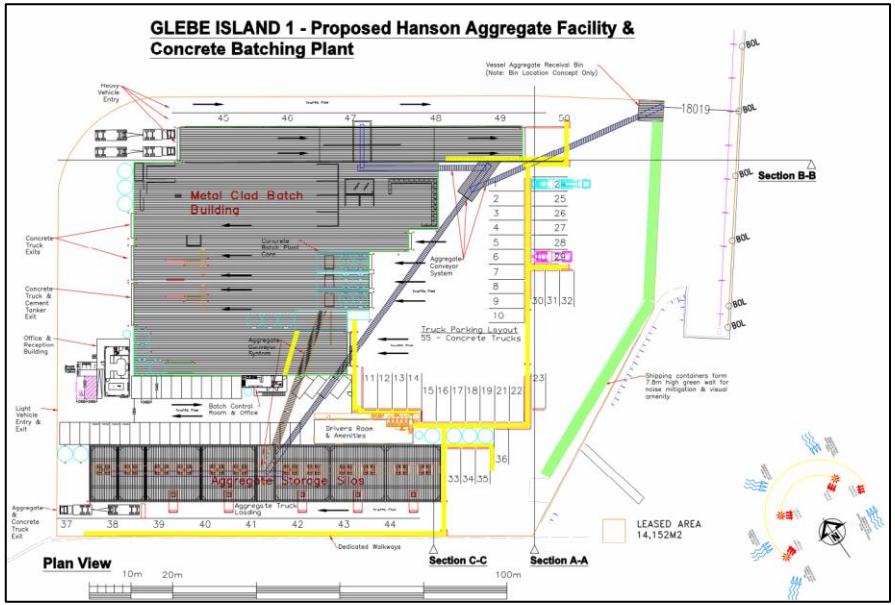
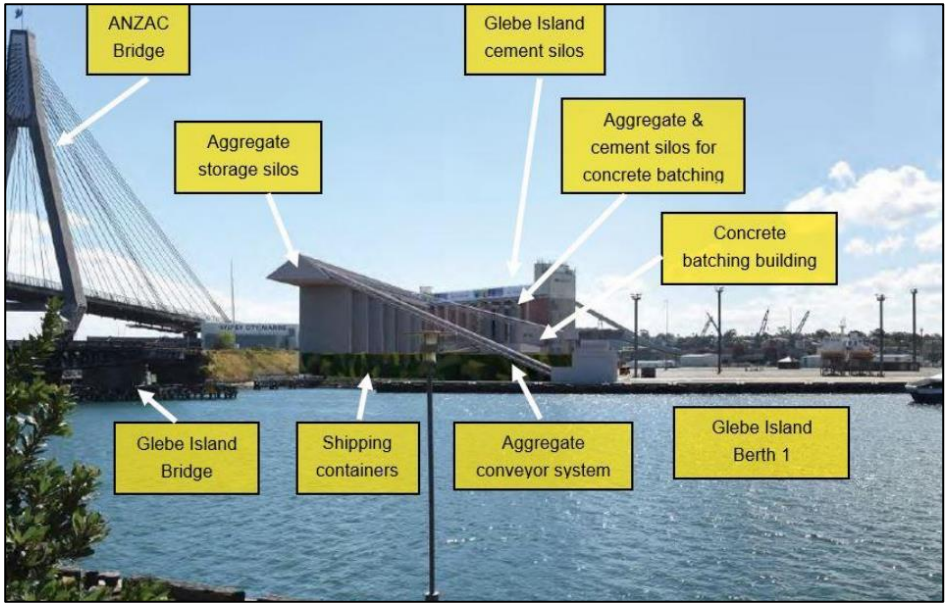
The Proposed Facility





The Proposed Facility

- Hanson is seeking consent to construct:
  - A concrete batching plant with the capacity to produce up to 1 million cubic metres of concrete per annum
  - An aggregate handling facility with a shipping terminal at Glebe Island Berth 1 (GLB1) to receive & handle aggregates delivered by ship
  - Six 34 m high aggregate silos compatible with the surrounding context, which includes significantly taller structures such as the ANZAC Bridge, the Glebe Island silos (52+ m) and buildings at Pyrmont (65 m).
  - A 15 m high concrete batching building (5 m lower than the height of the Multi-User Facility) and six 25 m high concrete batching silos.
  - 7.8 m high aggregate receiving bins.
  - Shipping containers stacked 3 high along the eastern boundary to a height of 7.8 m (for acoustic and visual screening).
  - Majority of activities will be undertaken in a fully enclosed building to limit noise and air impacts

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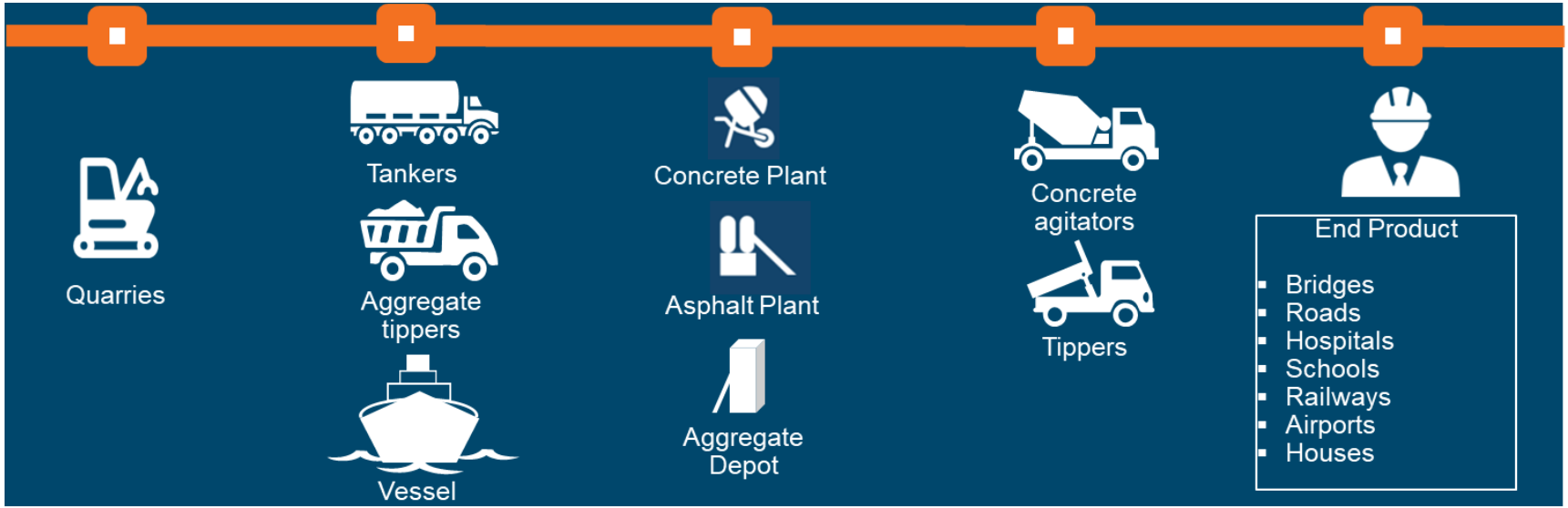
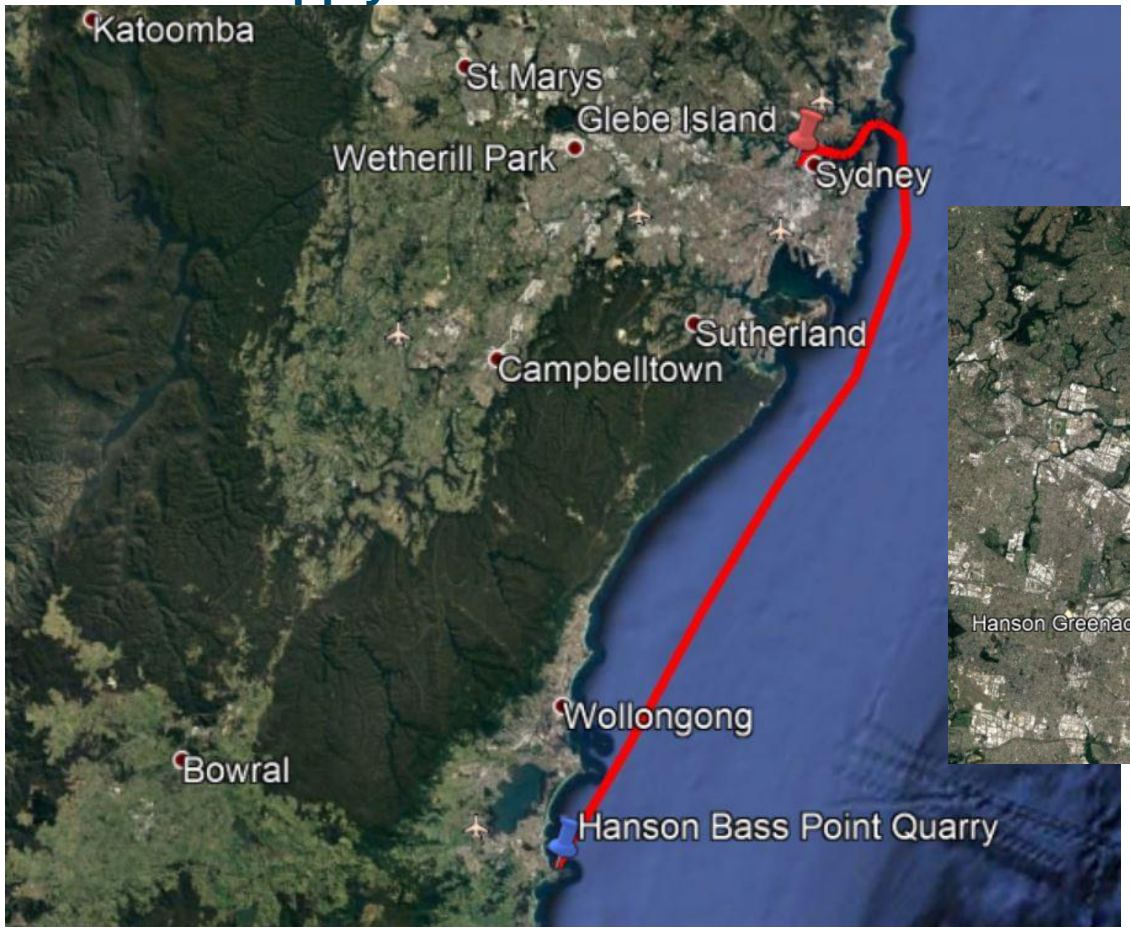
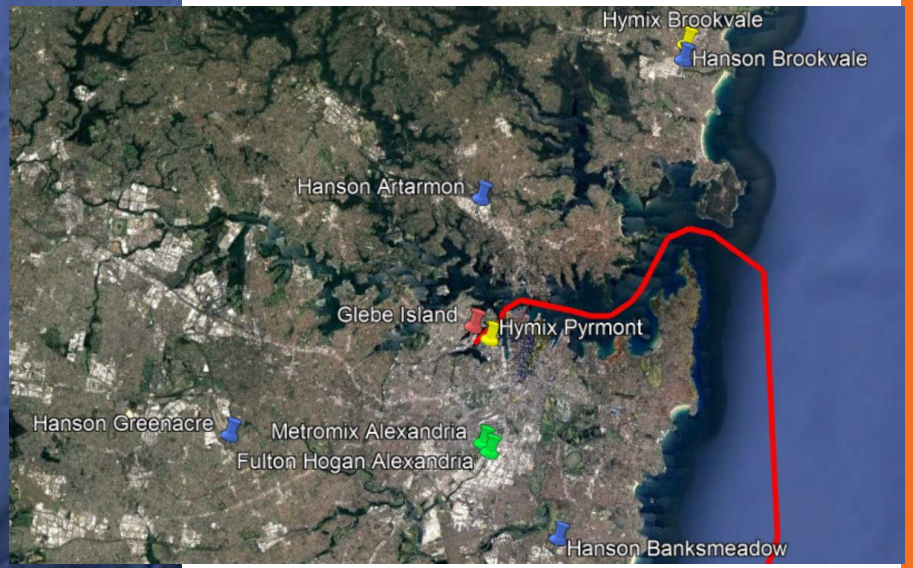
Hanson Supply Chain



Hanson Supply Chain





Shipping Depot

- The majority of raw materials consumed by the concrete batch plant will be feed directly from the aggregate depot silos.
- Some aggregates will need to be delivered by road transport to the batch plant because these raw materials (predominantly sand but also other aggregates due to specific government project requirements) are sourced from land-locked quarries.
- BPQ approval to ship logically requires a port destination close to market

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Built Form/Aesthetics

- The Hanson facility neighbours the Multi-User Facility (MUF) and is separated by a service road.
- Both sites are set back 18m the edge of the common user wharf. This provides potential for controlled public access along the waterfront.
- The Hanson facility is significantly smaller in footprint than the MUF, and lower in height than the existing cement silos.
- There is no operational/commercial connection with the MUF. However the MUF may be a potential source of sand.

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Glebe Island Port – A Working Harbour Port

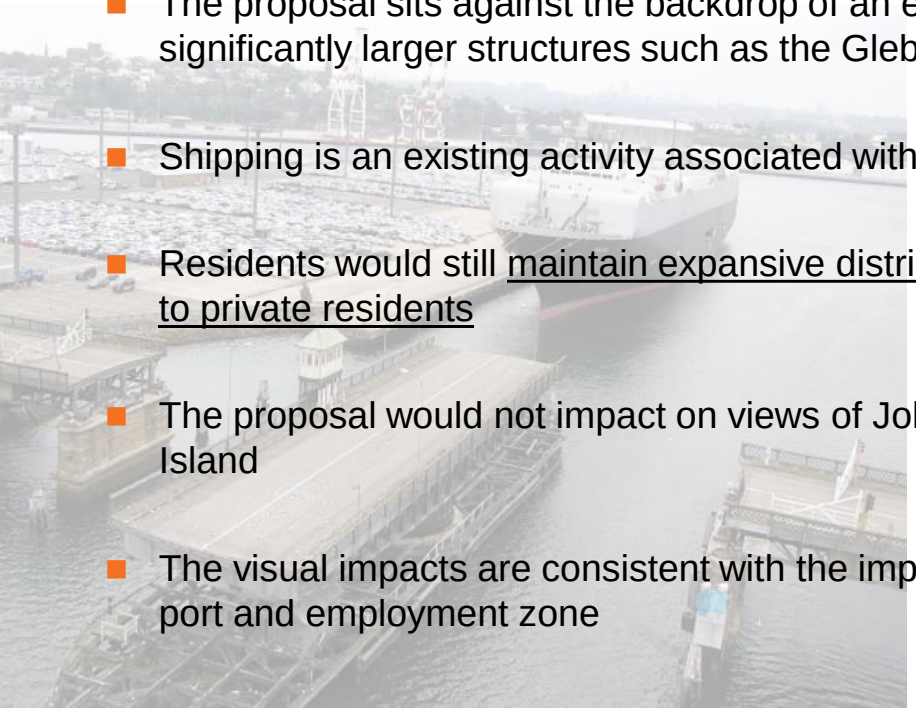
Image showing Glebe Island with the Approved MUF without the Hanson Facility

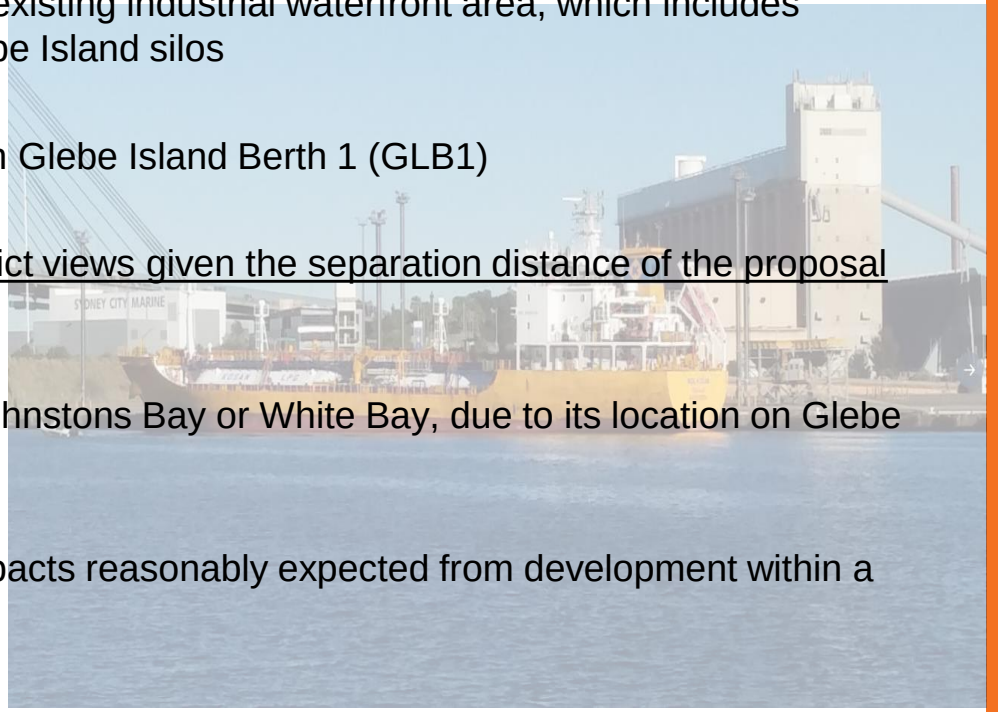
Glebe Island Port – A Working Harbour

Image showing Glebe Island with the MUF and the Hanson Facility

Visual Impacts

- The proposal sits against the backdrop of an existing industrial waterfront area, which includes significantly larger structures such as the Glebe Island silos
- Shipping is an existing activity associated with Glebe Island Berth 1 (GLB1)
- Residents would still maintain expansive district views given the separation distance of the proposal to private residents
- The proposal would not impact on views of Johnstons Bay or White Bay, due to its location on Glebe Island
- The visual impacts are consistent with the impacts reasonably expected from development within a port and employment zone





Visual Impacts

- The proposed built form of the development is consistent with the scale and port use envisaged in this part of Glebe Island and the working harbour.

- The proposal would not significantly impact on views towards the ANZAC Bridge or Glebe Island Silos.

- Hanson proposed visual mitigation measures such as a murals or a green wall to façade the shipping containers subject to design refinement.

Transport and Traffic

- Aggregates delivered by ship are expected to reduce up to 65,000 truck movements per annum from the greater Sydney road network.

- The development is predicted to generally maintain the current LOS across the three nearby intersections, until the Rozelle interchange is complete and this will significantly improve traffic flow in-and-out of Craig James Road.

- TfNSW/RMS did not object to the transport/traffic impacts but sought further information which was addressed in the RTS.

- Hanson's RTS limited the number of maximum hourly truck movements to 182 for every hour of the day until the opening of the WestConnex M4-M5 Link's Rozelle Interchange (Rozelle Interchange).

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Noise

- Shore-to-Ship power:
  - Hanson worked with the DPIE, EPA, and PANSW to address this issue. Hanson investigated the use of shore-to-ship power for reducing ship noise but was advised by shipping providers that none of the potential vessels can connect to this type of power supply. However, Hanson is committed to sourcing a dedicated vessel for the proposal to ensure noise from ship berthing is minimised and ‘poor’ noise performing ships are not used at the site.

- Hanson proposes noise mitigation measures such as fully enclosing the batching plant including conveyors and a 7.8 metre high shipping container wall, use of a dedicated vessel to achieve best practice vessel noise, as well as minor but critical improvements such as air release silencers on trucks.

- Hanson would comply with the Port Authority’s Glebe Island Port Noise Policy (PNP) and the EPA’s NPfI.

- Hanson will also conduct regular operational noise monitoring proposed.

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Air

- Key mitigation measures in place including enclosure of the batching plant and conveyors and truck loading and unloading inside the building.

- More than 11,000 tonnes of CO2 emissions will be removed from Sydney's roads

- DPIE commissioned a peer review by Todoroski Air Sciences (TAS). Matters raised by TAS have been adequately addressed in the RTS.

- Hanson will:
  - Adopt an operational air quality management plan, including on-going dust monitoring
  - Conduct post-commissioning air quality verification report to demonstrate that mitigation measures are achieving compliance with the criteria
  - Minimise the dust, odour, vapour and gas emissions throughout operation.

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Community Involvement

- **Glebe Island & White Bay Community Liaison Group**
- **Public Art Strategy**




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DPIE's Assessment Report

- **Operating hours**
  - 24/7 is crucial for modern day construction jobs for major projects. Theses major projects operate 24/7 and need the continual supply of materials on this basis which includes Sundays and public holidays. E.g WestConnex.
  - This is consistent with the MUF approved hours of operation 24/7.
- **Employment**
  - 90 construction jobs and 67 operational jobs.
- **Timing**
  - Construction is anticipated to take 18-24 months (not 6-9 months), with operations commencing in 2024
- **RTS- Hanson's concessions and amendments**
  - Reduced the footprint
  - Re-located noise generating activities further from the closest sensitive receivers and adopted measures to mitigate noise impacts
  - Limited the number of maximum hourly truck movements to 182 for every hour of the day until the opening of the WestConnex M4-M5 Link's Rozelle Interchange (Rozelle Interchange).

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DPIE's Assessment Report

- **Duration of Use**

The Department considers that the proposed permanent use is acceptable and it is not necessary to impose a time limit on the consent for the following reasons:

  - The duration of use can be controlled through leasing agreements with the Port Authority of NSW
  - The use would be consistent with the working harbour envisaged in the strategic planning documents for the site and surrounding area and would facilitate urban renewal and major construction projects
  - While the Department appreciates the long-term vision for Glebe Island includes opportunities for urban renewal, there still remains a strong imperative within the existing and emerging strategic planning framework for the site, to maintain and utilise Sydney's working harbour
  - The proposal's impacts are considered to be acceptable, allowing for potential future uses to coexist within the precinct.

- **Construction Noise**
  - DPIE recommends Construction Traffic Noise Management Strategy(CTNMS) and a Construction Noise and Vibration Management Plan (CNVMP)

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DPIE's Assessment Report

Other Conditions

The Department recommends the following conditions:

- Community Communication Strategy (CCS)
- Construction Environmental Management Plan (CEMP)
- Construction Air Quality and Odour Management Plan (CAQOMP)
- Construction Traffic Management Plan (CPTMP)
- Lighting with the detailed Lighting Strategy and with AS 4282, and be mounted, screened and directed to avoid nuisance to surrounding properties, the road network or waterway
- Ships to turn off any non-essential lights, consistent with on-board safety and security requirements
- An Operational Vessel Management Plan (OVMP) endorsed by TfNSW and the Port Authority prior to occupation or commencement of the use, and a copy submitted to the Planning Secretary
- Annual throughput of aggregates to be monitored and reported to the Planning Secretary.
- A historical archaeological monitoring program be undertaken concurrently with excavation works
- Works to cease if any previously unidentified Aboriginal objects found.

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DPIE's Assessment Report

- **Other Conditions**
- Stormwater- an OSQMP is prepared prior to the commencement of operation.
- Operational Environmental Management Plan (OEMP) be prepared which includes: consideration of waste management, mitigation, monitoring and response actions, and preparation of a community consultation and complaints management procedure.

THANK YOU

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