

### Construction at Barangaroo's Headland Park committed to 100 per cent reuse of millions year old sandstone



Barangaroo construction partner Boulderstone has commenced sandstone extraction on Barangaroo's Headland Park site with a commitment to sustainability, including 100 per cent on-site reuse.

Up to 37,000 cubic metres of iconic Hawkesbury stone— a personification of Sydney and originating more than 200 million years ago, will be used to transform a former shipping yard into the six-hectare Headland Park at the northern end of Barangaroo.

The use of sandstone in the design of Headland Park is a key feature and reminiscent of the naturally occurring sandstone foreshores throughout Sydney Harbour.

Committed to sustainable methodologies, Boulderstone has set up a sandstone extraction pit at the north-east end of Sydney's latest precinct development with on-site extraction expected to continue throughout this year. As part of the sustainable process, all individual blocks will be sourced from the Barangaroo excavation works with the expectation that no sandstone will be sourced off site.

In line with Barangaroo's sustainable agenda, the pit will then be transformed into a 300-space underground car park as part of an open-space cultural facility. Surplus material from the rock extraction process will also be converted into select fill and used to create the upper bluff mound and other purposes within the site, ensuring 100 per cent recyclability.

"The sandstone is the showpiece of the future public space and using the existing natural stone on site is a fundamental part of Barangaroo's design philosophy," said Barry Murphy, Boulderstone's Project Director for Barangaroo's Headland Park.

"As such, we have carried out careful planning and engaged highly skilled and experienced people to assist in the planning of the works with the intention of bringing these experts forward with us as an integral part of the delivery team," said Mr Murphy.

As part of its expert planning, Baulderstone has employed a complex system that uses conventional 3D modelling with more detailed database capabilities and inventory management. This involves the system modelling and tracking more than 600 different types and shapes of blocks prior to cutting, treatment and individual placement.

“This process also incorporates different finishes and special treatments such as weathering effects, translating into a more efficient and waste-reducing process, from extraction through to placement in the foreshore,” said Mr Murphy.

The unique cutting-edge method, along with the commitment to 100 per cent reuse, plays an integral role in Barangaroo’s goal to be a world leader in sustainability.

“This is a very exciting stage for the construction of Barangaroo’s Headland Park. We look forward to a world-class delivery from Baulderstone in line with Barangaroo’s overall commitment to sustainable methods and practice,” said John Tabart, CEO, Barangaroo Delivery Authority.

The Hawkesbury stone expected to be uncovered from the Barangaroo site is of a durable and stable quality very much suited to two major and unique landscaping purposes—the construction of the current headland into a naturalistic form, including a cove and tidal rock pools, and to nurture the diversity of the 75,000 native florae currently growing for the park at Andreasen’s Green Nursery.

The highly siliceous sandstone is regarded as less prone to weathering in a marine environment, making it suitable for retaining walls at sea level. The more clay-rich sandstone will be used for landscaping purposes away from the shoreline.

An area steeped rich in Aboriginal and European settlement history, Barangaroo’s Headland Park will feature plants and trees native to Sydney Harbour. Its unique landscape design is also reflective of how the headland once looked in its natural form.

“Sandstone-based soils are a wonderful medium in which to grow Australian native plants as they are superbly adapted to this type of nutrient-poor, yet very free-draining soil,” said Barangaroo consultant and celebrity horticulturist Don Burke.

“The ingenious re-created topsoil at Barangaroo features a combination of crushed sandstone blended with washed, crushed waste and compost to create the ideal home for all those plants. The many eucalypts, which will be one of the highlights of the plantings at Barangaroo will thrive under these conditions. They are going to look superb,” said Mr Burke.

Barangaroo was named after the second wife of cross-cultural envoy Bennelong and was once the hunting and fishing ground of Australia’s Aboriginal Gadigal people. Throughout the 1800s and beyond the area became a hive of industrial activity and was known as The Hungry Mile for its employment opportunities. Until the early 1900s the site operated as a gasworks and more recently as a shipping yard.

Designed by world-renowned landscape architect, Peter Walker, Headland Park will provide space for recreation, expression, celebration and community against a naturalistic setting featuring bush walks, grassed areas, lookouts, walking and cycle paths, and a new harbour cove.

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