Our vision is to transform the former defence firing range at Malabar Headland on the Sydney coast into the Boora Parklands as a ‘Centre for the Art and Science of Sustainability’. The sounds of gunfire will be replaced with the voices of children playing and visitors engaged in a wide range of recreation and learning activities; set in the context of a site with rare ecological values and unrestricted access for everyone.

Located 12 km from the Sydney CBD and covering an area of 180 ha, the Malabar Headland forms a visually prominent landmark on the coast between Botany Bay and Sydney Harbour. Bounded by spectacular sandstone cliffs the Headland provides panoramic coastal and ocean views, combined with the sound of crashing waves and wind blowing through the natural coastal heath vegetation. Aboriginal use of the site is evidenced by rock engravings, grinding grooves and middens.

Occupied by Defence from 1910 to 1986, the Headland was used as a rifle range and the site of major coastal defence installations constructed during World War II. The Australian Heritage Commission lists 43 important World War II defence sites including “forts, unique gun positions, underground defence facilities, and a sunken munitions railway”. The ANZAC Rifle Range is no longer used by Defence and the Australian Federal Government is in the process of transferring it to NSW state agencies.

An endangered ecological community Eastern Sydney Banksia Scrub that covers 15 ha has been dedicated as part of the Boora National Park. A further 54 ha will be added to the National Park after site remediation works are completed. The balance of the 108 ha, which was occupied by the rifle range, is to be made available as public parkland.

This proposal presents a concept for the whole Headland with the intent of managing the areas of National Park with the parkland in an integrated and sustainable way.

The concept aims to create a model of successful integration of social equity community health, well being and community engagement and enhancement of natural and human habitat with economic viability. The fusion of the creative arts with the science of sustainable energy, climate change adaptation, water management and recycling will create new models of sustainable infrastructure.

The concept incorporates a set of complex but related uses and facilities in a series of Precincts as shown below.

The Boora Parklands are to be managed by a Trust, which is similar to the Western Sydney Parklands and Centennial Park that provides the flexibility to incorporate research facilities and the capacity to generate revenue to maintain the Parklands.
The Boora Parklands are accessed from Malabar via the southern entrance and from Maroubra Beach via the northern entrance. Car parks are located at the two entrances to limit the extent to which vehicles intrude into the Parklands.

An outdoor plaza, which is located between the main car parks, is used for markets (food, goods, arts and plants), exhibitions and community events. Paved areas are shaded by trees and shelter structures. A skateboard facility is located in the vicinity of the indoor sports centre.

‘Wayfinding’ is assisted by signage that provides clear directions to the various Precincts and facilities. Public art is integrated with the wayfinding and interpretation system throughout the Parklands.

The Coastal Walkway runs from Maroubra Beach along the northern edge of the Parklands and the boundary between Energy + Art Precinct and Boora National Park East, connecting to Malabar Beach. A pedestrian walkway extends to a cliff-top lookout at the south east corner of Malabar Headland and provides access to the Military Heritages Precinct.

Pedestrian and cycle access throughout the Parklands is provided by a network of shared pedestrian/cycle paths and sections of pedestrian path. Emergency and maintenance vehicle access is integrated into the path network.

“One of the great things about the Boora Parklands is that once you arrive you can choose different ways to move around and experience the variety of facilities and types of landscape. Our family enjoys cycling along the system of shared paths in a series of loops throughout the Parklands. We also enjoy walking along the pedestrian paths throughout the Botanic Gardens and the natural landscape of the adjoining Boora National Park.”

Margaret, Visitor (2014)
The Boora Parklands are accessed from Malabar via the southern entrance and from Maroubra Beach via the northern entrance. Car parks are located at the two entrances to limit the extent to which vehicles intrude into the Parklands. An outdoor plaza, which is located between the main car parks, is used for markets (food, goods, arts and plants), exhibitions and community events. Paved areas are shaded by trees and shelter structures. A skateboard facility is located in the vicinity of the indoor sports centre. 'Wayfinding' is assisted by signage that provides clear directions to the various Precincts and facilities. Public art is integrated with the wayfinding and interpretation system throughout the Parklands.

The Coastal Walkway runs from Maroubra Beach along the northern edge of the Parklands and the boundary between Energy + Art Precinct and Boora National Park East, connecting to Malabar Beach. A pedestrian walkway extends to a cliff-top lookout at the south east corner of Malabar Headland and provides access to the Military Heritages Precinct. Pedestrian and cycle access throughout the Parklands is provided by a network of shared pedestrian/cycle paths and sections of pedestrian path. Emergency and maintenance vehicle access is integrated into the path network.

"One of the great things about the Boora Parklands is that once you arrive you can choose different ways to move around and experience the variety of facilities and types of landscape. Our family enjoys cycling along the system of shared paths in a series of loops throughout the Parklands. We also enjoy walking along the pedestrian paths throughout the Botanic Gardens and the natural landscape of the adjoining Boora National Park."

Margaret, Visitor (2014)

Boora National Park East

"Walking along the narrow sandy track I feel a strong sense of exposure to the natural elements of wind and sunshine. The views change from dramatic scenes of waves breaking violently on the rocks at the base of the soaring sandstone cliffs to enclosed 'tunnels' formed by the dense coastal shrub vegetation. This is a very exciting and memorable experience."

Noel (Visitor), 2013.

Observation decks located along the cliff top edge of the Park allow whale watching and provide information about the migration of whales along the east coast of Australia. Signage designed to be compatible with the natural coastal landscape character assists 'wayfinding' and provides interpretation information. Bird watching is assisted by information available on the National Parks web site and by downloads to smart phones.

Boora National Park West

"Walking through this area of dense remnant Eastern Suburbs Banksia Scrub (ESBS) vegetation you have a sense of enclosure which changes dramatically when you walk out on to the long sandstone rock ledge overlooking the parklands and ocean beyond."

Jason (Visitor), 2013.

The National Park is managed to conserve the remnant Eastern Suburbs Banksia Scrub (ESBS) vegetation as an endangered vegetation community.

Existing tracks are upgraded using natural materials to provide a safe walking surface while minimising the impact of visitors. Sections of timber boardwalk have been constructed where necessary to avoid walkers impacting ecological and cultural values.
The Anzac Botanic Garden forms a key component of the Boora Parklands as an Annex of the Sydney Royal Botanic Gardens. It showcases the Sydney coastal vegetation communities in the dramatic setting of Malabar Headland.

Botanic Garden Director, 2020.

The Garden Entrance (A) is located directly opposite the main southern car park. The Visitor Centre includes audio and visual presentations about the local ecological systems. Interactive installations help visitors to understand the coastal ecological systems and the impacts of urban development and climate change. The Garden is linked ‘virtually’ to other similar environmental education centres in Australia and around the world.

The Water Garden (B) located in the south east corner of the Botanic Garden is supplied by waste water from the adjoining treatment plant. Earth embankments provide a sense of enclosure and protected growing conditions for moist coastal gully vegetation communities. A series of wetland habitat ponds (C) are framed by groves of Melaleuca trees with their white bark reflected on the water surface.

The eastern sector of the Garden features constructed landforms (D) to reflect the system of sand dunes that characterise the coast and the nearby Botany Bay. The landforms are designed to direct visitors through constantly changing spaces with varying visual perspectives and plant associations. The ‘Bush T ucker’ section supports plant species used by indigenous people for food and medicinal purposes. Local Aboriginal people play a major role in establishing, managing and interpreting this section of the Garden.

Coastal Biodiversity Resource Centre carries our research, propagation and replanting that engages volunteers, youth groups and school children. The Botanic Gardens engage with landscape architects, contractors, ecologists and bushland regenerators as well as commercial organisations and community groups.

The Botanic Garden compliments the adjoining Boora National Park containing Eastern Suburbs Banksia Scrub (ESBS) which is a rare and endangered vegetation community. Community awareness of the ESBS is raised through interactive interpretation in the Environmental Education Centre and throughout the Gardens. Research, seed bank and plant propagation play a key role in re-establishing ESBS and other indigenous vegetation communities along the coastal edge of Sydney from Botany Bay to Broken Bay. A plant sales centre supplies coastal plant species propagated in the Gardens. Advice on how to establish and manage Sydney coastal vegetation is provided to residents and volunteer community groups.
Boora Parklands is our favourite family recreation place. It has provided many happy memories of our children at play with family and friends enjoying a barbecue picnic and strolls along the network of paths.”

Bill (Father), 2014

A series of outdoor spaces are defined by bands of coastal vegetation along the western edge of the Boora Parklands adjoining Boora National Park West. Access for vehicles (A) is provided by a low-speed road that extends from the existing Maroubra Beach car park, with a series of car parks (B) provided along the road. Adjoining the car parks are picnic facilities (C) with shelters and barbecues, playgrounds and amenities buildings. Shade trees have been established in bands associated with the picnic facilities. A number of playgrounds have been developed for different age groups and children with special needs.

An area designated for off-leash dogs is located in this Precinct.
4. PARKLANDS + SCULPTURE

“I vividly recall the first time I arrived at the headland for the inaugural Boora Sculptural Festival in 2014 and my sense of exhilaration upon seeing the spectacular setting. The collection of sculptures is now recognised as one of the most significant in Australia and makes a major contribution to the experience and enjoyment of visitors to the Boora Parklands.”

Henry (Sculptor), 2020.

Ribbons of coastal vegetation define a series of very large outdoor rooms with extensive areas of native grasses (A). The colourful soaring and swooping kites are visible from many parts of the headland and adjoining coastal areas. An annual Kite Festival is held at the headland and draws local and overseas competitors.

A grass-sloped amphitheatre (B) adjoining the Cultural + Recreation Plaza is used for outdoor performance and concerts. An extensive network of shared paths used by cyclists and walkers criss-crosses the outdoor spaces. Connections to the Coastal Walk running along the northern edge of the parkland allow walkers and cyclists to explore and enjoy the visual and physical diversity of the headland.

Clusters of sculptural elements define many of the intersections throughout the path network. The sculpture collection has been assembled over a number of years through an annual Boora Sculptural Festival, which focuses on a different location in the parkland each year. Sculptors are encouraged to respond to the distinctive physical character of the site and focus on themes that relate to the cultural, social and environmental issues through creative self expression. Camping facilities are provided in the area adjoining Habitation Precinct (C).

5. CULTURAL + RECREATIONAL PLAZA

“It is a pleasure to see the positive social interaction between young people using the Sports Centre and other visitors making use of the diverse selection of facilities throughout the Precinct.”

Angus (Sports Centre Manager), 2015.

The Function Centre (C) is used for social and cultural events, performances and wedding receptions. The restaurant serves customers using the Centre, visiting the adjoining outdoor performance area or using other facilities throughout the Parklands.

Conference facilities (D) provide both indoor and outdoor spaces together with overnight accommodation.

The indoor Sports Centre (A) located at the western end of this Precinct forms an anchor to the cluster of buildings that defines the central plaza space. The Centre incorporates a variety of sporting activities together with a fitness club and community rooms that are use by residents throughout the region and visitors from a wide catchment involved in sporting competitions.
I vividly recall the first time I arrived at the headland for the inaugural Boora Sculptural Festival in 2014 and my sense of exhilaration upon seeing the spectacular setting. The collection of sculptures is now recognised as one of the most significant in Australia and makes a major contribution to the experience and enjoyment of visitors to the Boora Parklands.

Henry (Sculptor), 2020.

Ribbons of coastal vegetation define a series of very large outdoor rooms with extensive areas of native grasses (A). The colourful soaring and swooping kites are visible from many parts of the headland and adjoining coastal areas. An annual Kite Festival is held at the headland and draws local and overseas competitors.

A grass-sloped amphitheatre (B) adjoining the Cultural + Recreation Plaza is used for outdoor performance and concerts. An extensive network of shared paths used by cyclists and walkers criss-crosses the outdoor spaces. Connections to the Coastal Walk running along the northern edge of the parkland allow walkers and cyclists to explore and enjoy the visual and physical diversity of the headland.

Clusters of sculptural elements define many of the intersections throughout the path network. The sculpture collection has been assembled over a number of years through an annual Boora Sculptural Festival, which focuses on a different location in the parkland each year. Sculptors are encouraged to respond to the distinctive physical character of the site and focus on themes that relate to the cultural, social and environmental issues through creative self expression. Camping facilities are provided in the area adjoining Habitation Precinct (C).

The Environmental Education Centre (B) incorporates interactive multi-media facilities that address a wide range of environmental issues that are both local and global, including climate change adaptation. The Centre is virtually linked to similar centres around Australia and overseas allowing visitors to exchange ideas and observations. School groups visit the Centre to engage with the interactive exhibitions, reference material and project opportunities as part of their curriculum. The Centre is also accessed on-line by schools around Australia. The Centre is linked physically to other Precincts including the sustainable energy research facilities and the wind and solar energy installations.

The Function Centre (C) is used for social and cultural events, performances and wedding receptions. The restaurant serves customers using the Centre, visiting the adjoining outdoor performance area or using other facilities throughout the Parklands.

 Conference facilities (D) provide both indoor and outdoor spaces together with overnight accommodation.

“It is a pleasure to see the positive social interaction between young people using the Sports Centre and other visitors making use of the diverse selection of facilities throughout the Precinct.”

Angus (Sports Centre Manager), 2015.

The indoor Sports Centre (A) located at the western end of this Precinct forms an anchor to the cluster of buildings that defines the central plaza space. The Centre incorporates a variety of sporting activities together with a fitness club and community rooms that are used by residents throughout the region and visitors from a wide catchment involved in sporting competitions.

The Function Centre (C) is used for social and cultural events, performances and wedding receptions. The restaurant serves customers using the Centre, visiting the adjoining outdoor performance area or using other facilities throughout the Parklands.

Conference facilities (D) provide both indoor and outdoor spaces together with overnight accommodation.
“I am constantly amazed by the creativity and energy that design teams bring to their concepts for new low cost and emergency habitation as well as climate change adaptation strategies.”
Andrew (Annual Design Competition Convenor), 2016.

Permanent buildings provide research facilities focused on low cost and emergency human habitation with an emphasis on sustainability and climate change adaptation (A). A number of buildings are used for overnight and short term accommodation for youth groups, students and people involved in research and those attending seminars and workshops.

Climate change adaptation research is carried out in collaboration with a number of universities in Australia, such as the Climate Change Research Centre at UNSW, as well as overseas research centres. The research is focused on practical solutions to how human habitation can be adapted to make it more resilient to the increasing occurrence of extreme climatic events, such as heat waves, droughts and severe storms as well as rising sea levels.

The annual Australian Sustainable Habitation Decathlon takes place on the open space to the south (B). Teams are invited from colleges and universities from Australia and the Asian region to participate in a competition to design, build, and operate the most attractive and energy-efficient habitation. The winning entries remain on site until the next annual competition and some are retained permanently to provide accommodation and research space. The Decathlon strives to unite industry, academia and government in responding to climatic change and creating sustainable, economically viable and visually attractive habitation. The design drawings are made available to organisations such as Architects for Humanity to implement at appropriate locations. Visitors are invited to evaluate and comment on the structures and suggest refinements.

Boora Parklands
Malabar Headland

BOORA PARKLANDS
6. HABITATION + CLIMATE CHANGE RESEARCH CLUSTER

SUSTAINABLE
HABITATION
RESEARCH
EMERGENCY
BUILDINGS
PROTOTYPES

AUSTRALIAN SUSTAINABLE HABITATION DECATHLON
“As a researcher focused on the science of sustainability, I feel very fortunate to be working with creative artists to produce new technology that is not only functional but also engaging and beautiful to look at.”

Hillary (Sustainable Energy Researcher), 2016.

The research facilities, which are focused on sustainable energy, are accommodated in buildings that incorporate and clearly demonstrate current thinking about sustainability (A).

The fields of research include:
- Wind
- Solar
- Ocean tide, waves and currents
- Bio-gas
- Human mechanical energy

Institutions working in partnership include universities, such as the University of NSW, UTS Sydney, Macquarie University as well as CSIRO and other research organisations, together with energy generating and distribution companies.

The research not only addresses renewable energy associated with buildings but other structures such as shelters, pavilions, amenities and lookouts.

A distinguishing aspect of the Centre is the collaboration between researchers and artists. The provision of art studio (B) alongside the research facilities provides a collaborative culture in which the art and technology of sustainable energy are given equal attention. The result is a constant improvement in the aesthetic quality of sustainable energy installations. A number of these have been commercialised and installed on a broad scale in urban areas as well as rural environments, resulting in substantial social, environmental and economic benefits.

Solar collectors are installed on all buildings throughout the Parklands with facilities to recharge batteries of vehicles used on the site.

Wind and solar energy generated in Boora Parklands is fed into the grid and the equivalent amount of power is made available at no cost to low income families and community facilities in the region to provide a significant social benefit.
"As I walk through the array of installations generating energy from the sun and wind I am not only struck by the fact that they are renewable and non-polluting but also by their sculptural beauty; an inspiring marriage of art and technology."

Anne (Visitor), 2016.

Located on a former landfill area that provides a large elevated flat site, a variety of wind and solar energy installations are displayed and tested (A). Design of all these installations has involved an artist to facilitate improvement to the aesthetic quality of the energy generating devices. A number of designs have been commercialised and used on a large urban scale producing commercial benefits as well as improvements to the urban environment.

An annual design competition is held that requires the involvement of artists working in collaboration with renewable energy technology researchers. The winning designs are constructed and substantial prize money awarded, which provides strong incentive for design teams.

Categories in the design competition include:
- Wind
- Solar
- Ocean tide, waves and currents
- Bio-gas
- Human mechanical energy

The energy capacity of the Art+Energy Park has built up over a number of years as the winning entries are constructed. Energy generated is fed into the grid and credits provided free to low income families as well as a number of community centres in the region.

Lookout platforms (B) are located at the southern and northern ends of the Precinct providing spectacular views along the coast and back to the skyline of central Sydney.

A lookout tower (C) located in the centre of this Precinct forms a landmark and visual reference for people moving around the Boora Parklands and Boora National Park. Views from the tower extend along the cost, both to the north and south, well out to sea and inland.
"Descending into the long trench alongside the concrete bunker like observation structure I try to imagine the feelings of those who were stationed here during World War 2 anticipating shelling from enemy ships. The trench provides a very different environment from the exposed windy Headland.”

Precinct Visitor 2015

Restoration of the military installations provides safe public access to the structures as well as sections of trenches and tunnels. Signage and information downloaded to smart phones allows visitors to interpret the heritage values associated with the coastal defence installations.

Adaptive reuse of the observation post has created a Military Heritage Interpretation Centre (A) that incorporates interactive displays. Visitors enjoy panoramic views from the top floor of the observation structure that extend along the spectacular coastline and out to sea.

A sense of enclosure is experienced within the concrete bunkers of the gun emplacements (B), which incorporates military heritage interpretation material.

The subterranean environment within the military trench (C) strongly contrasting with the generally exposed coastal environment of the Headland. An opportunity is provided for visitors to go below the ground surface and see the geological formation of sandstone within the military trench. A large vertical surface of cut sandstone exposes the complex pattern of layers and joints which are interpreted both graphically and by an audio presentation.