



当代世界建筑经典精选(5)

飞利浦·考克期及其建筑设计事务所

THE MASTER ARCHITECT SERIES

COX ARCHITECTS

Selected and Current Works



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北京·广州·上海·西安

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Introduction

An Essay

By Philip Cox & Michael Rayner

The work of Cox Architects covers a wider ambit than possibly any other practice in Australia. It represents 30 years of architecture, beginning with domestic projects designed at the height of the Sydney School, a movement which perhaps created the only collectively identifiable contemporary architecture yet to emerge in Australia. This architecture sought to create a spirit of design relevant to the country and its regional influences. Many of its architects, however, floundered in direction and the "school" dissipated. Throughout our lifespan, we have steadfastly maintained the promotion of Australian design, while constantly pursuing new attitudes and techniques to achieve that aim.

Our method for sustaining contemporary relevance is to persistently review and understand the history of the country's architecture. Barely 200 years old, it has been subjected to many influences, firstly from Britain, then America, then internationalism generally. A better understanding of Aboriginal cultural history and closer ties with Australia's Asian neighbours are now being fostered. Australia, like many countries, is becoming increasingly multicultural; however, the cultural forces which shape our society have to adapt to a land distinct from any other in climate, geography and history. The Australian continent is a vast island of dramatically varied terrains, each demanding widely divergent solutions which lend themselves to innovation and improvisation.

The roots of the architecture illustrated in this book are in the environment, both natural and built, and in the Australian vernacular. The early woolsheds and barns, while being directly responsive to their function, the landscape and the climate, were remarkably innovative in form and they nearly always expressed their structure. Our architecture is an intuitive response to this unpedigreed architecture, recognisable as having an innate spirit of place and the potential for evolving into a contemporary architecture of enormous spirit and vitality. We have often reinterpreted it to respond to contemporary and urban contexts, to newly available technologies and to emerging issues, but a constant course has been steered toward solving problems of design in a direct and honest manner with poetic qualities derived from structure and envelope rather than from applique.

Ours was one of the first practices in Australia to embrace the relevance of the vernacular. We endeavoured to translate its romantic qualities into a more human architecture than was generally prevalent in the early 1960s, our earlier buildings being rather more direct interpretations than the later. The C.B. Alexander Agricultural College at Tocal perhaps epitomises this quest. It is a brick and timber structure reflecting many aspects of earlier precedents—craftsmanship, open additive planning, structural expression and repetition, use of indigenous materials, and harmony with the landscape. It is, we believe, an architecture which has stood the test of time, remaining relevant some 30 years later.

One of the most satisfying pursuits has been in steel structures. As with the use of timber, there has also been a characteristic Australian tradition in the use of steel, in the early wind devices, prefabricated sheds and water towers. They tended to have an extraordinary skeletal quality, using minimal steel structure, and most were simply clad in corrugated iron. When we began using steel, we felt that its versatility and expressive qualities had not been fully explored in contemporary Australian architecture.

The National Athletics Stadium in Canberra and its associated National Indoor Sports and Training Centre were the first of our schemes to explore the minimalist use of steel. In the stadium, we endeavoured to create the effect of a roof hovering over the landscape using masts and cables to lighten the structure in a way not possible with timber supports. For the Sports and Training Centre, we used great sentinel steel columns and supported the roof on cables slung between them. In both buildings, there is a delight in seeing the structural forces at work, clearly displayed, yet with a grace and ease belying their complexity.

These projects were in many ways catalysts for later schemes in which other potentials of steel have been explored. Despite its hardness, steel is surprisingly malleable and we found that we could easily mould, sculpt and carve out forms to reflect or express a particular context. The cascading vaults of the National Maritime Museum, for instance, are dramatically different from the skeletal frames suspending the Sydney Exhibition Centre, yet both are designed to convey maritime themes while reflecting the industrial context of Pyrmont. The National Tennis Centre's emblem is its movable steel roof, but our main objective was to reflect the neighbouring skeletal building peaks such as on the Victorian Arts Centre, the city towers and the lighting stanchions of the Melbourne Cricket Ground. One of the most exciting explorations into the possibilities of steel has been for the Museum of New Zealand competition of 1988, where the materials and forms were used to resolve immediate relationships and to create metaphors for less tangible connections, especially those relevant to Maori culture.

Another project that became a catalyst for later work, and in a sense epitomised our pursuit of contemporary indigenous idiom, was Yulara Tourist Resort at Uluru (Ayers Rock). Located in the desert heart of the country, remote from other population centres and from conventional services, this project required qualities of improvisation for which Australians have a recognised reputation. The ingredients were there to create a characteristic Australian town physically, socially and culturally.

Yulara differs from archetypal Australian towns which traditionally are main street towns accessible by vehicle. The township of Yulara winds gently through a serpentine valley between sand dune ridges, with movement between components being entirely pedestrian. The design elements respond to the prevailing conditions, with solar collectors over much of the roofscape providing energy to the town, and double layers of fabric membrane cooling internal spaces. Hypar-shaped tent structures, developed for protecting pedestrian ways, are simple shade devices recalling early lightweight shelters.

The project reinforced a number of concerns which we had considered important for many years. These included the need for energy conservation, for landscape and colour to reflect immediate context, for preservation of natural landscape, and for the integration of art and architecture. Colour is used to particular advantage at Yulara: for example, the reds and ochres of the desert are used on walls and bases to camouflage their presence but are graded from dark to light towards the roofscapes where stark white sail structures reflect the cumulo-nimbus cloud formations characteristic over Ayers Rock.

Yulara reinforced the practice's reputation for being able to handle large projects in both master planning and architecture. It has an urban structure, a resonance with the landscape, and it involves innovation and originality. The principles used to form Yulara can be seen in the Sea Cities projects for Kuwait, a series of "urban" islands interspersed with mangrove islands which filter the water and generate natural ecosystems. These islands are created by excavating the mudflats spilled out by the Tigris and Euphrates rivers. The effect is that of a "green" city contrasting with the desert interior, using ecology that once existed in the Persian Gulf.

Throughout the world, existing cities are simultaneously re-evaluating how far development should spread. Many cities are losing their historic identity as previously separated urban centres merge to form amorphous conurbations. In Australia, were it not for national parks, Sydney, Newcastle and Wollongong would undoubtedly merge, and in Brisbane, the Gold Coast and Sunshine Coast have already spread to join the metropolitan area. Inner urban renewal has become the late 20th century focus, even though we are now witnessing some poor outcomes overseas, especially where congested traffic and transport remain unrelieved. In Sydney the Pyrmont renewal project, following Darling Harbour's revitalisation, and in Brisbane the Newstead Teneriffe urban renewal project, are major initiatives with which our practice is involved. Both are planned as identifiable urban communities rather than as mere extensions of city centres. While principally intended to revitalise inner urban fringe areas through residential activity, emphasis is placed upon retaining existing landscape and historic fabric, much of the latter being converted for retail, employment and educational facilities serving the precincts.

The housing projects illustrated in this book represent a variety of explorations into appropriate forms and relationships, a key objective being to "de-institutionalise" public housing. A selection of both private and public urban housing is illustrated, showing little distinction between them. The primary emphases are on the definitions of private and communal space, the interface with the public street, and the opportunity for individual self-expression by the occupants. Part of our search is for forms and symbols with which people already identify and which they value, sometimes at the expense of our own predilections.

Our contention is that the culture of a people reflects the character of the landscape. The vernacular architecture of the last century well illustrates this point as it not only adapted itself to different regions but reflected its inhabitants' lifestyles. The veranda, or perimeter space around buildings, for example, has become symbolic of the Australian character. The landscape and climate, alien to the early settlers, generated qualities of personal character for which Australians are renowned and are repeatedly described in both historic and contemporary literature. No doubt some viewing this book will see an extraordinary diversity of form and character; others, hopefully, will see a thread woven through the work demonstrating a rapport between the natural and the built environment. Consistently, we search for solutions that are both pragmatic and poetic, and which advance the art of architecture.

There is a difference in designing individual houses, although many issues such as context and environment remain important. Working directly with clients and eventual occupiers provides us with the opportunity of fulfilling those aspirations most important to them, and it is one of the reasons that we maintain a regular contingent of this type of work. A considerable degree of experimentation is also undertaken, sometimes as a precursor to other large projects, in other cases in relation to theories being developed.

One of our current important projects involves the Sydney 2000 Olympic Games venues. Our present involvement includes the sports facilities master plan, the aquatic centre for swimming events and the support stadium for the major athletics venue. These projects are genuine tests of ingenuity since the site, Sydney's old abandoned abattoirs in the middle of the city's western suburbs, offers little environmental encouragement. Our proposal re-creates a rural Australian landscape which typically comprised undulating, meandering hills and long, winding tracks. This character is repeated by moulding the flattish expanse into a series of serpentine berms and pathways in patterns reminiscent of traditional Aboriginal dream trails, in a deliberate attempt to convey to the rest of the world qualities that are inherent in Australian culture and environment.

Although large, the buildings are submerged within the topography so that only the roofscapes are apparent from beyond the immediate site. Steel structure is used in as light a filigree as possible, so that the roofs appear to hover over, and seem unconnected to, their bases. While the landscape itself is an abstraction of typical regional geography, these buildings are intended to convey broader national themes about the relationship of architecture and landscape.

Several previously unpublished works are illustrated here which we believe maintain our philosophies but explore new directions in design. These include the Brisbane and Cairns convention centres in Queensland. Their difference in form, both from each other and from their Sydney equivalent, also demonstrates our concern for designing to context. A number of similarly exciting projects are occurring in Western Australia, Victoria and South-East Asia. They include large-scale master planning, the work at Joondalup City Centre near Perth, and the Singapore Telecommunications Tower.

For us, Australia has an irrepressible identity. It is the world's largest island country and from the air, the undulating waves which roll into its eastern seaboard from the Pacific Ocean seem to continue across the interior in the red sand dunes, before re-emerging in the Indian Ocean westwards. The diversity of the country's environments is apparent from south to north—the cool rainforests and rugged terrain of Tasmania, the dramatic and rugged coastline of Victoria, the savanna lands and seemingly endless ranges lining the east coast, the brutal and sparse desert interior mysteriously pockmarked by huge rocks and canyons, and the humid sweltering tropics through Queensland and the north, are all distinctive.

Public and Commercial Buildings



- 14 Sydney Exhibition Centre
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Sydney Exhibition Centre

Design/Completion 1985/1988

Darling Harbour, Sydney, New South Wales

Darling Harbour Authority/Leighton
Constructions

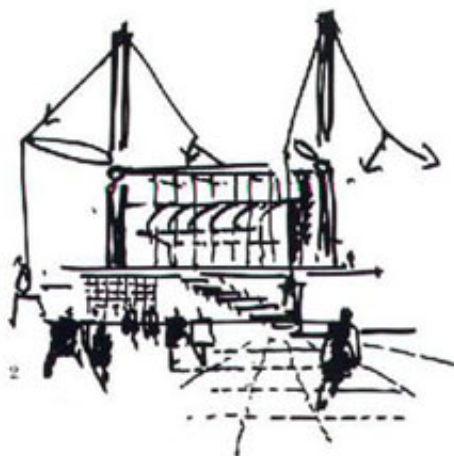
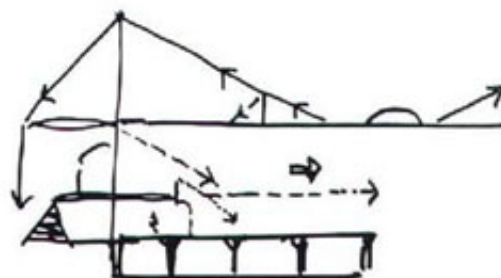
25,000 square metres plus 1,000 car spaces

Concrete base and steel superstructure, steel
cladding panels and glazing

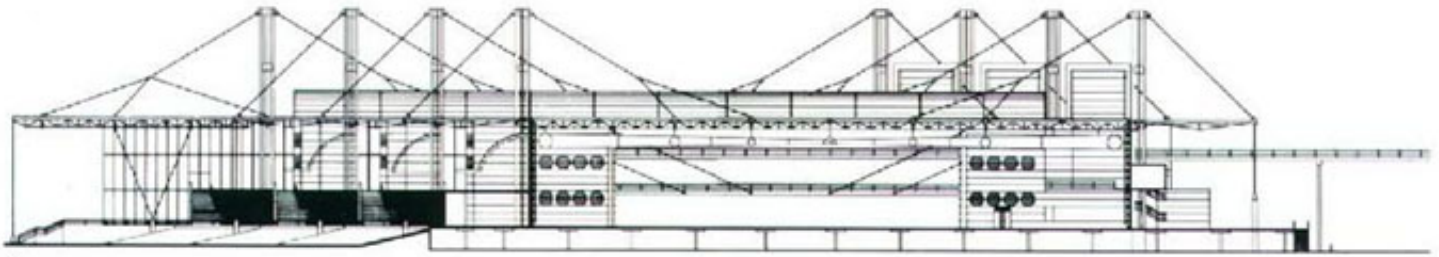
The Sydney Exhibition Centre was the first major exhibition centre to be built in Australia and it comprises five interconnected halls, each of 5,000 square metres. It is one of three public buildings undertaken by the practice in the Darling Harbour Redevelopment Area adjacent to Sydney's central business district and constructed to celebrate Australia's 1988 Bicentenary.

The concept for the centre principally arose from four objectives. The first was to continue the tradition of structurally innovative exhibition centres dating back to Joseph Paxton's steel, wood and glass Crystal Palace in London. The second was to establish an integral relationship with a new park stretched along one frontage. Thirdly, it sought to convey a distinctive maritime theme conducive to a historic harbour port, and finally it needed to achieve 100 metre spans without resulting in a massively scaled edifice.

Continued



- 1 Aerial view
- 2 Preliminary sketches
- 3 End elevation
- 4 View across gardens



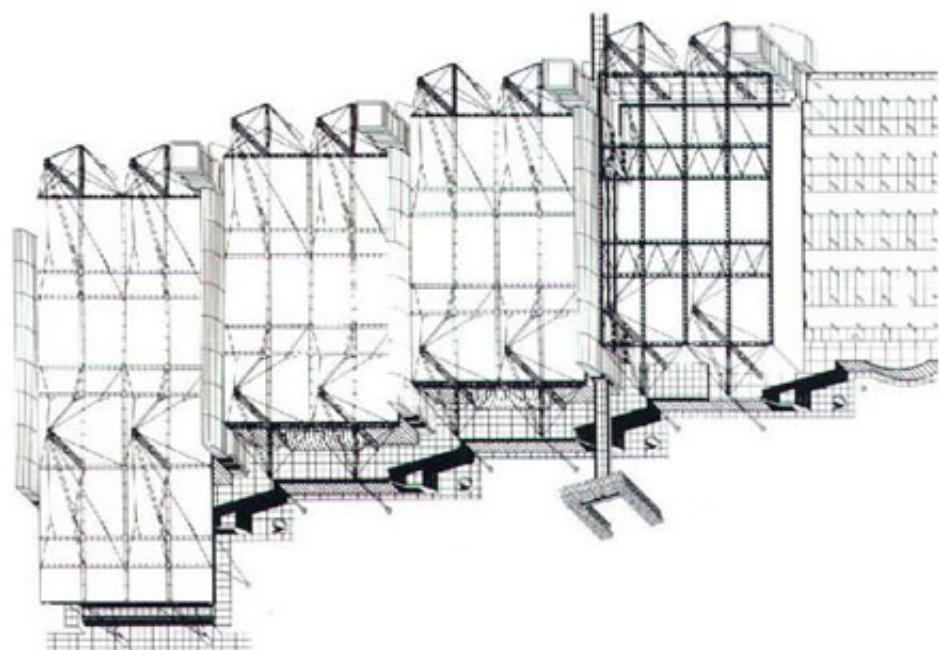
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These objectives were met by a continuous mast and cable structure, proving to be economical and also allowing a low horizontal scale to be developed.

A characteristic aspect of the centre is the staggering of the halls, which both articulates the park face and makes more efficient use of the structure. The total project, from design concept to completion, took only 32 months.



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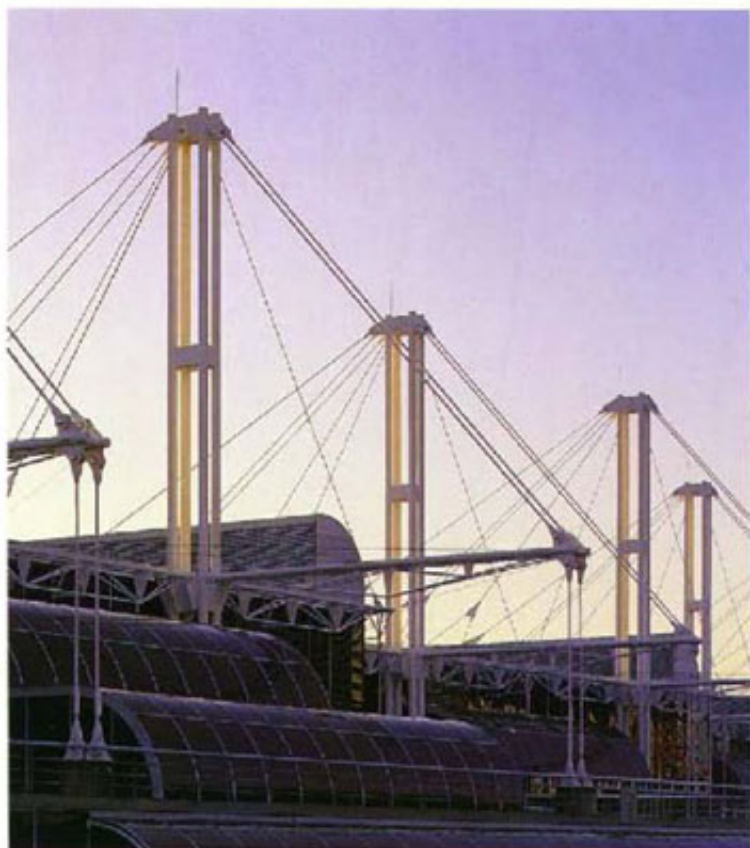


6



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- 5 Early axonometric study
- 6 Boulevard elevation
- 7 View across water
- 8 Mast detail
- 9 View across gardens



8



9

- 10 Typical mast detail
- 11 Upper-level promenade
- 12 Typical roof cable connections
- 13 Detail and rhythm of mast tops
- 14 Pedestrian promenade



10



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Australian National Maritime Museum

Design/Completion 1985/1990

Darling Harbour, Sydney, New South Wales

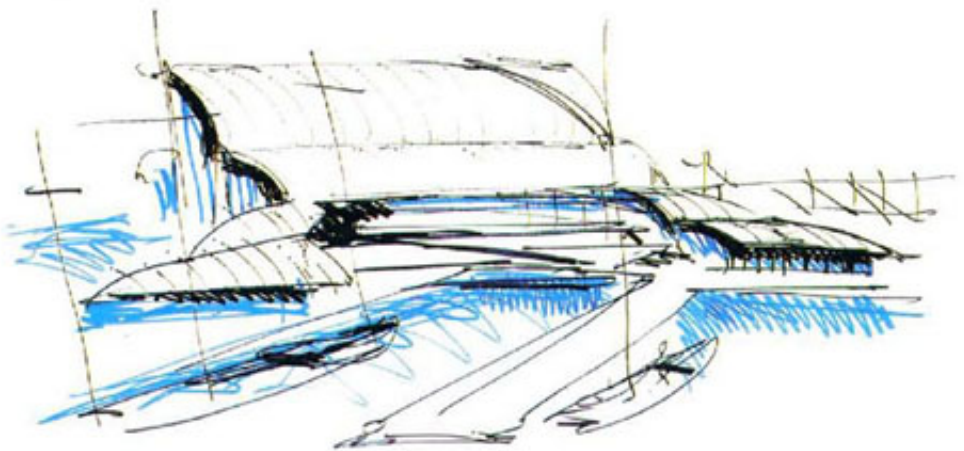
Darling Harbour Authority

8,500 square metres

Steel with concrete podium; off form concrete base, aluminium sandwich panels and glass walls, aluminium roof

The National Maritime Museum is designed as a facility for both internal and external exhibits. Its vaulted roofs form internal spaces that can accommodate varied museum exhibits, from America's Cup yachts to model ships, while outside a number of piers provide moorings for craft significant to Australia's maritime history.

The site has the benefit of facing towards the city's working port area, providing links between past and present maritime activities. For this reason, the building design incorporates controlled views of the port through a system of mezzanine floors and glazed panels. Together with the firm's other Darling Harbour public buildings, the Museum uses its structure to convey a unified architectural expression.

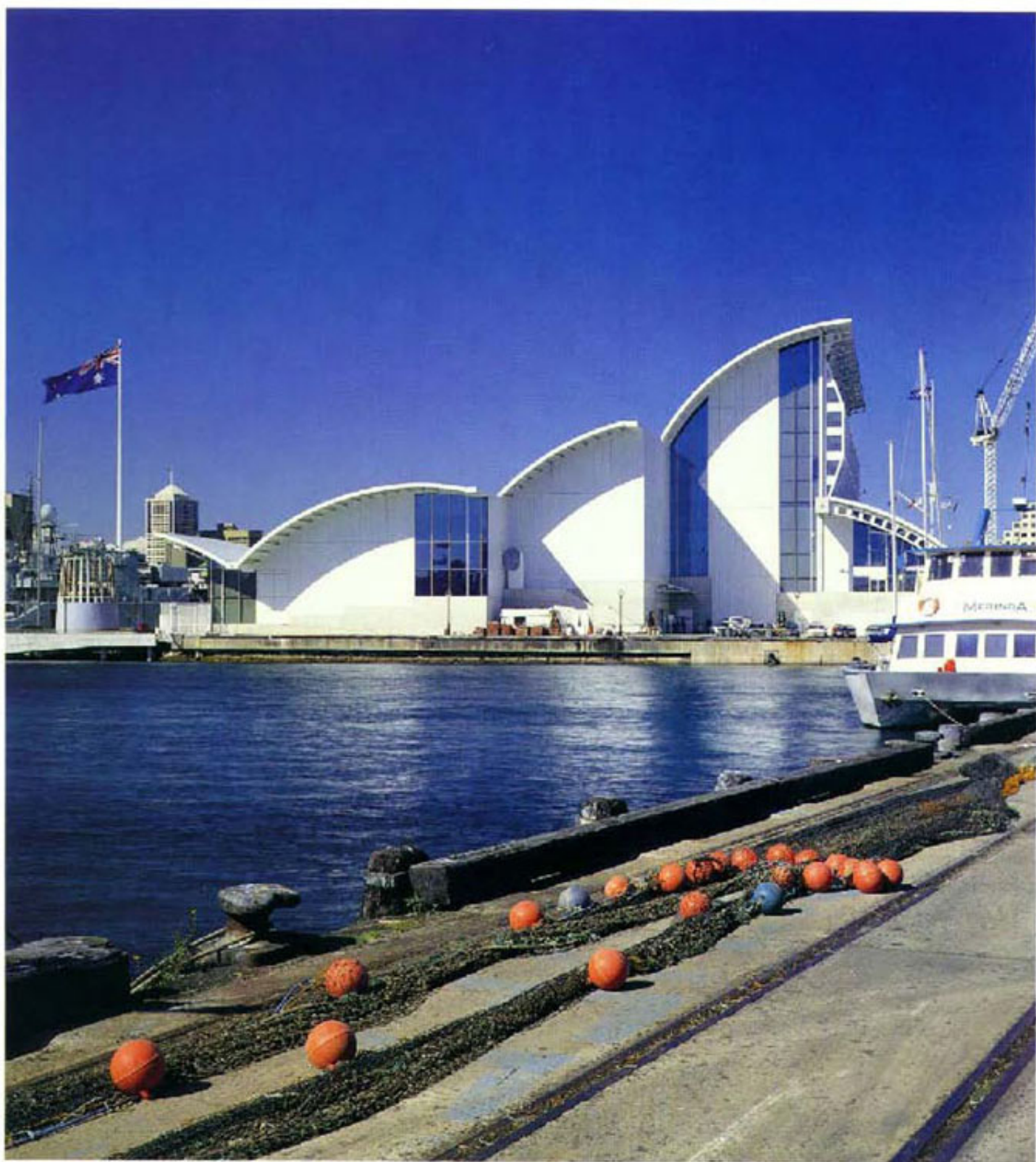


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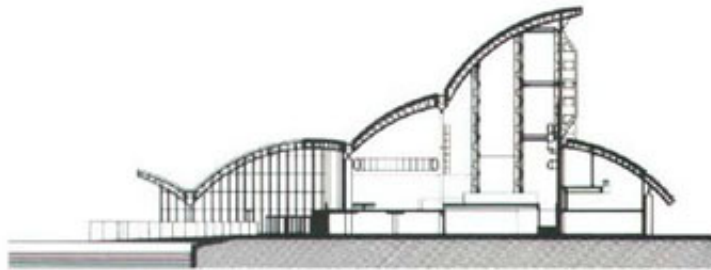


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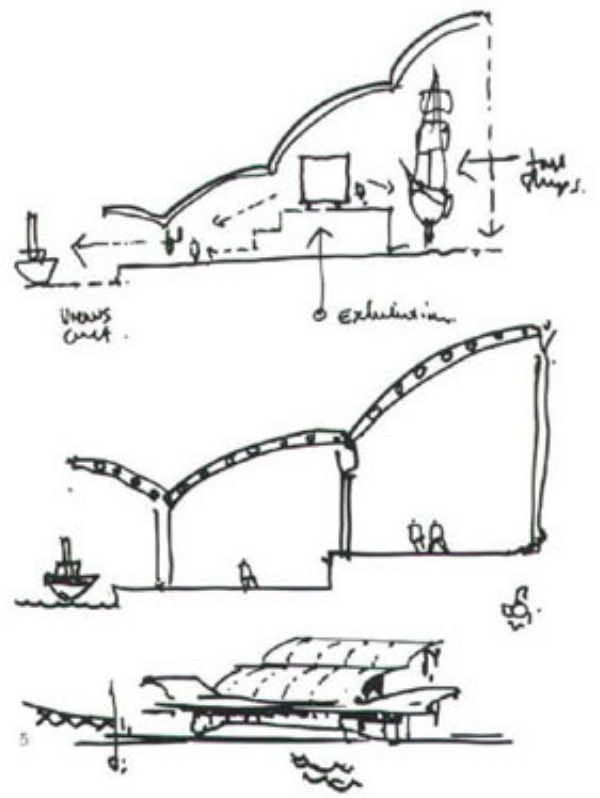
- 1 First design sketch
- 2 Aerial view against Pyrmont background
- 3 Northern elevation



- 4 Section
- 5 Preliminary sketches
- 6 View from Pyrmont Bridge
- 7 Elevations
- 8 View from harbour



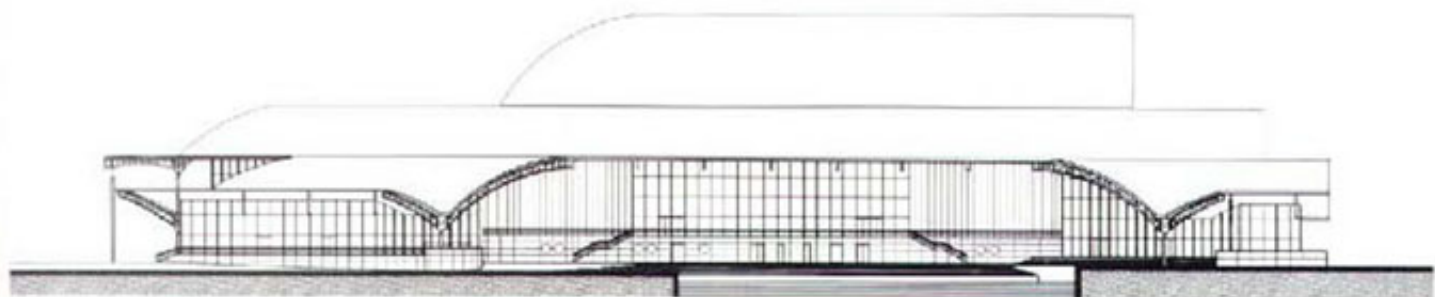
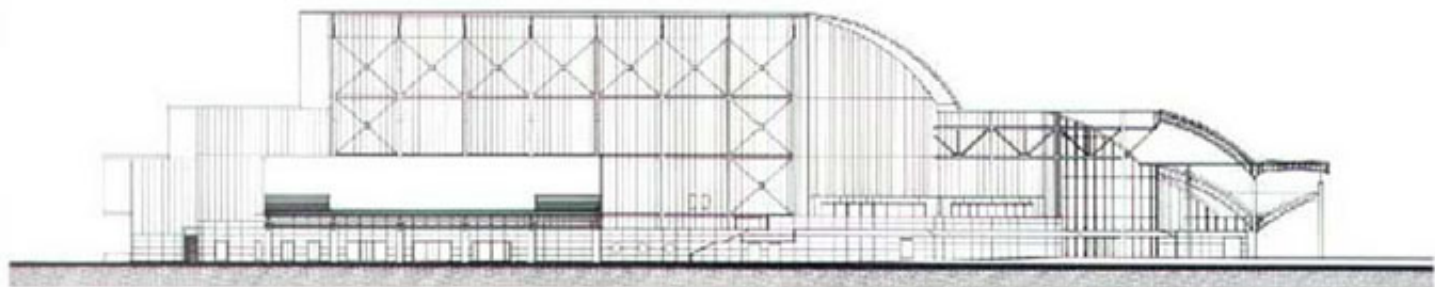
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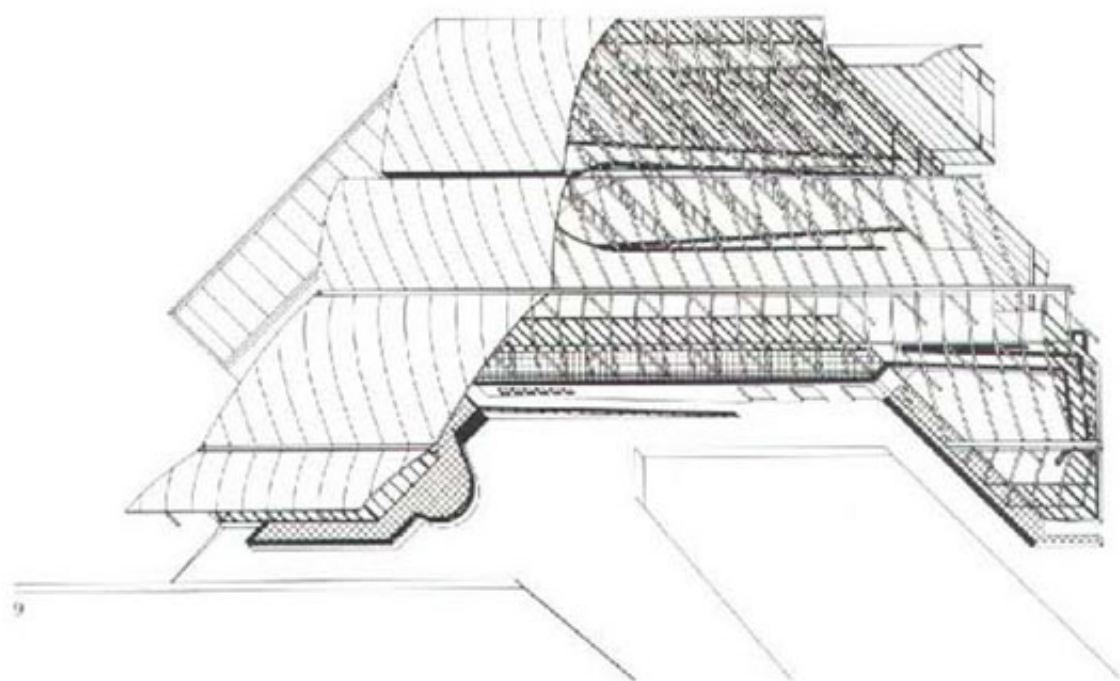


Margaret Mawson
Sydney.



6





- 9 Axonometric with structure revealed
- 10 Detail of winged roof structure
- 11 Detail of column head
- 12 View of city from inside Museum
- 13 Detail of rear support structure
- 14 Detail of rear support structure



11



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Sydney Aquarium

Design/Completion 1986/1988

Darling Harbour, Sydney, New South Wales

Jonray Holdings

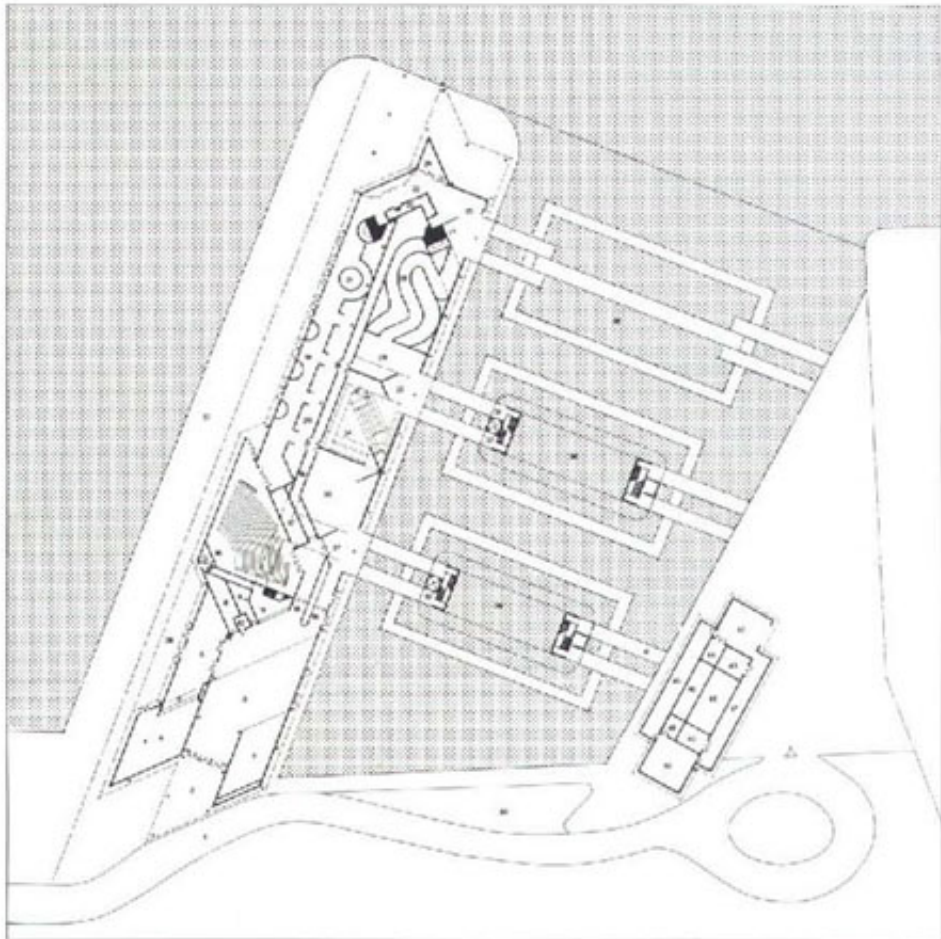
2,355 square metres, and two oceanariums each 760 square metres

Steel frame, precoloured corrugated zincalume walls and roof

Oceanariums: plate metal with fabric roof

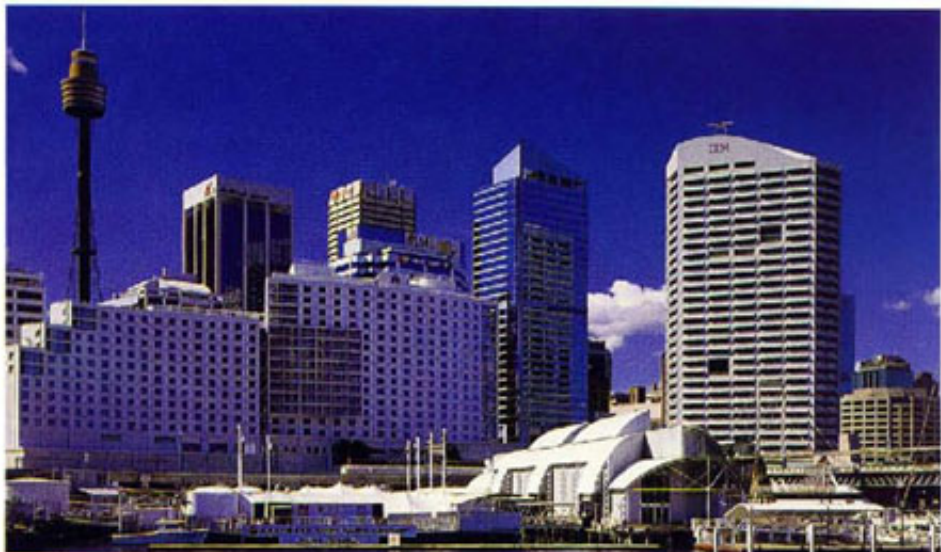
The third of the practice's Darling Harbour buildings, the Aquarium, forms a gateway into the harbour with the Maritime Museum opposite. The design strategy accordingly adopts comparable roof forms, but these are perpendicular to those of the museum to coincide with an older timber pier that extends into the harbour.

Part of the strategy involved submerging the aquarium tanks with translucent fabric covering into the harbour, producing a genuine experience of underwater life. The above-water pier structure contains interpretative displays in a sequential storyline through several levels, with controlled views to the harbour.



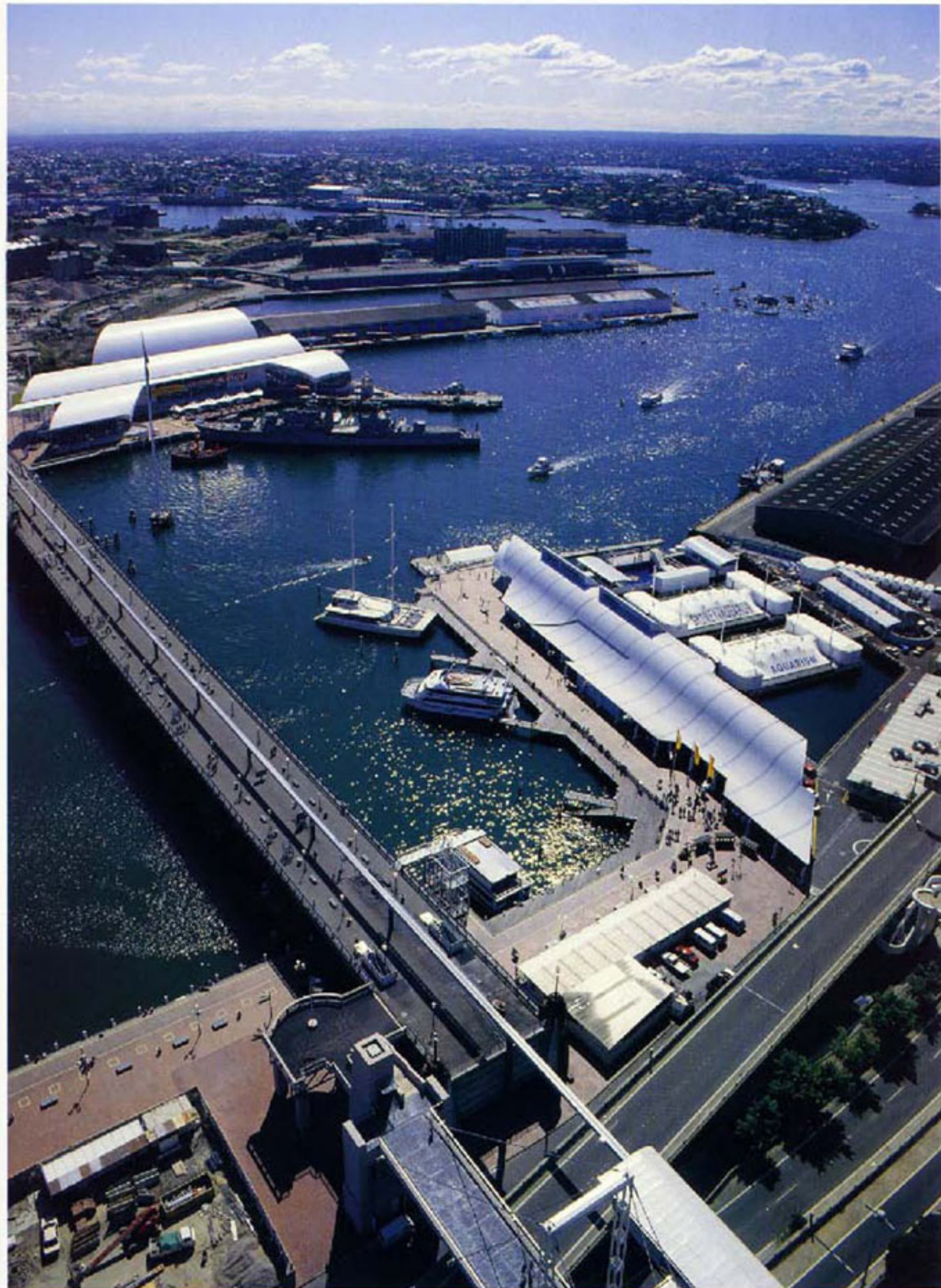
1

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2

- 1 Floor plan
- 2 Pier building with submerged aquarium tanks on left
- 3 Relationship between Aquarium and Maritime Museum





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- 4 Interior of pier building
- 5 Pier building on original timber structure
- 6 Southern elevation of pier building
- 7 Suspended membrane structure over underwater tanks
- 8 Ferry terminal at end of pier



7



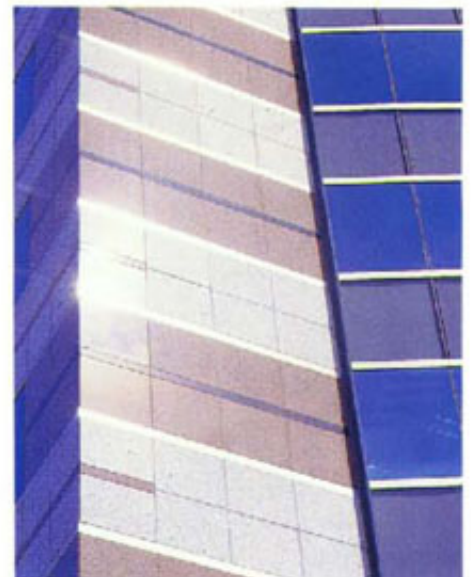
8

1 Pacific Highway

Design/Completion 1986/1987
North Sydney, Sydney, New South Wales
Schroders Australia Limited
7,000 square metres
Reinforced concrete structure with banded
stone and coloured glass finish

One of North Sydney's most prominent office buildings as viewed from Sydney Harbour Bridge, this building was designed to create a gateway to the North Sydney central business district as well as to optimise harbour views.

The site is an awkward "bow tie" shape in plan, constricted in the centre where least desired. The building plan responds to this problem by bulging outwards at the front to provide a continuous width of floor space, the curve being supported by two solid towers on either side. These form the gateway elements and have a strong horizontal banding of polished stone to reinforce their identity.



2

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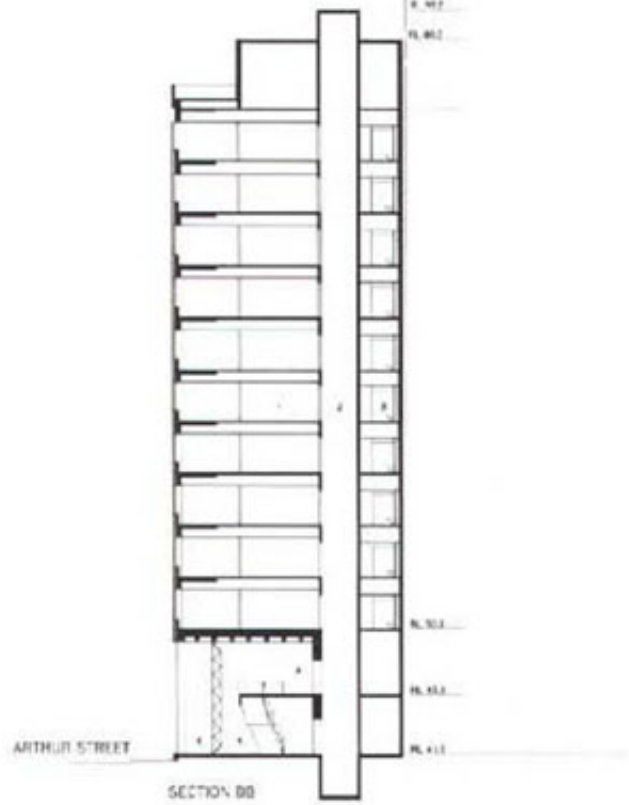
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KRIEPP BUILDING



5

KRIEPP BUILDING

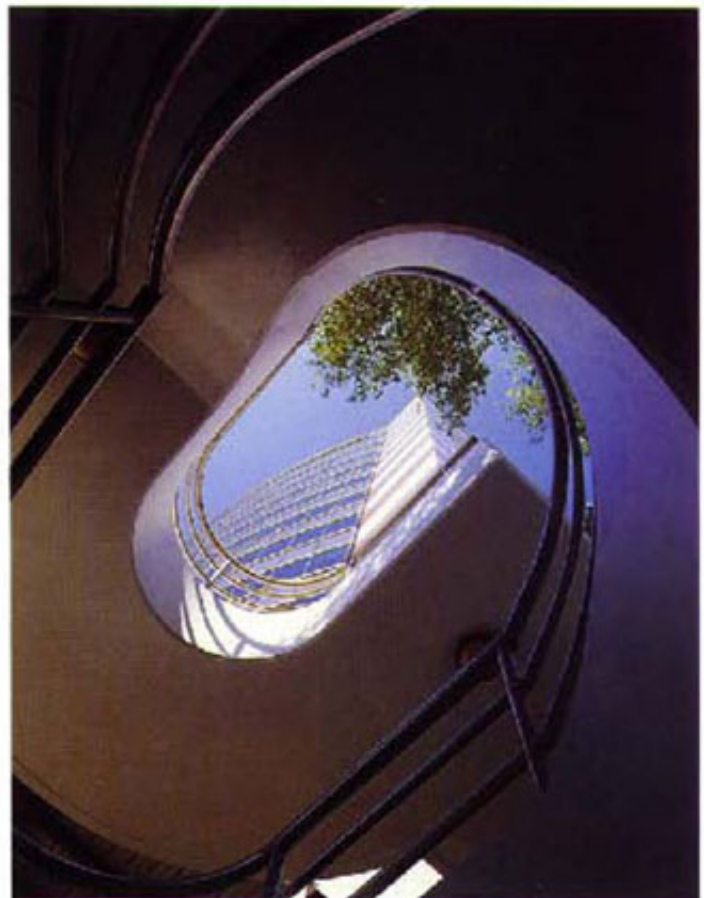


ARTHUR STREET

SECTION DD



6



7

- 1 View from freeway
- 2 Detail
- 3 Detail
- 4 Detail
- 5 South elevation and cross section
- 6 Main foyer
- 7 Detail stairs

Australian Pavilion

Design/Completion 1987/1988

Venice, Italy

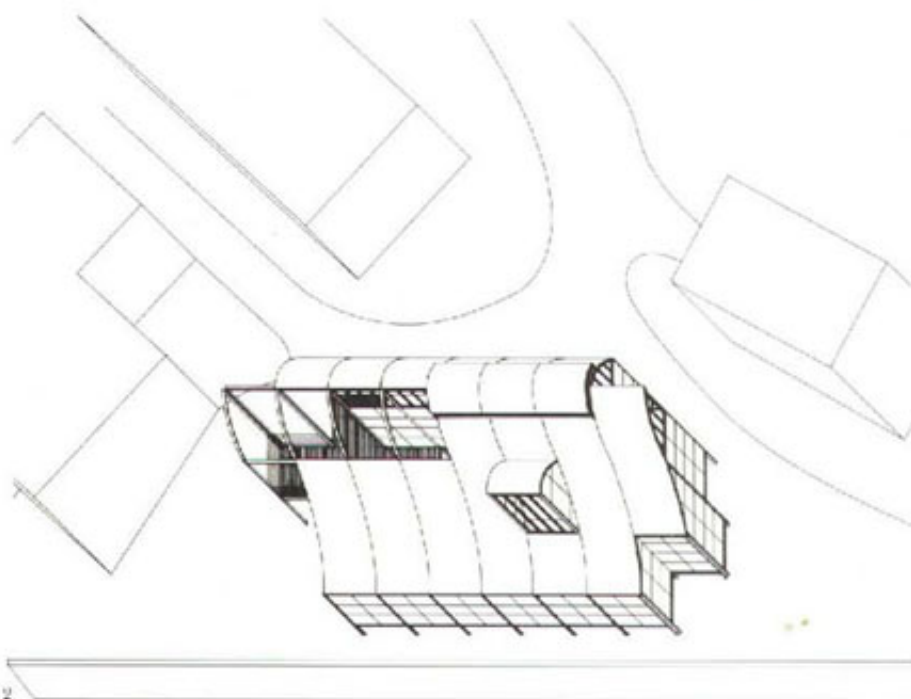
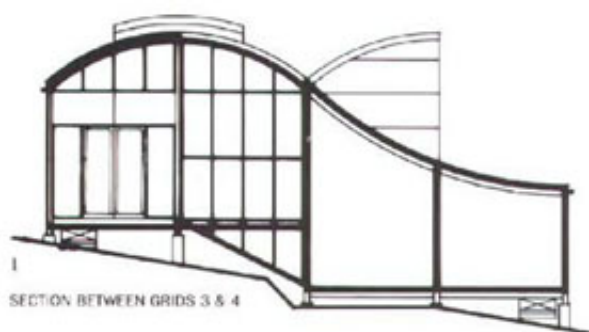
Australia Council

350 square metres

Steel structure, fibre cement sheet walls and aluminium steel cladding

A simple and economical steel structure, the pavilion conveys essential qualities of Australian architecture to an international audience. With its spare use of steel and undulating corrugated roof, the design also responds to its context, comprising a river frontage and some substantial trees. One of the more prominent of these trees is used to make an entrance statement and it is the focus of a veranda visible from the gallery spaces. Additional interest is provided by splitting the internal space into two adjacent levels, with the roof providing flexibility in display heights.

The building components, including structural frames prefabricated in Australia, were shipped to Italy and assembled on site by an Italian team. One of only a few contemporary Venetian buildings, the pavilion has received constant international coverage, as have its exhibitions of contemporary Australian art.



- 1 Cross section
- 2 Axonometric
- 3 River frontage
- 4 Entry canopy
- 5 Entry canopy
- 6 River frontage



The Cornerstone

Design/Completion 1987/1990

Sydney, New South Wales

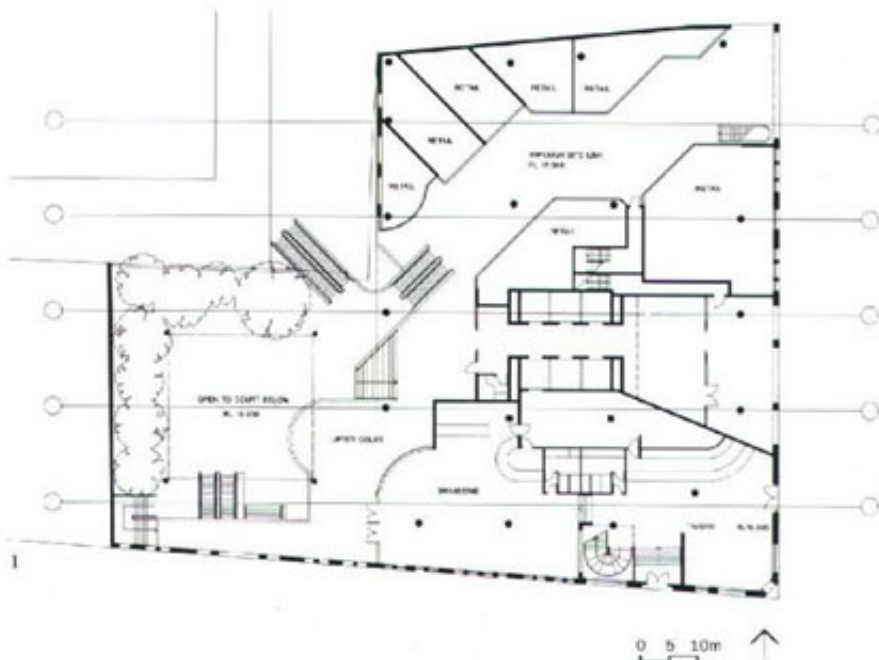
CRI Limited

19,000 square metres

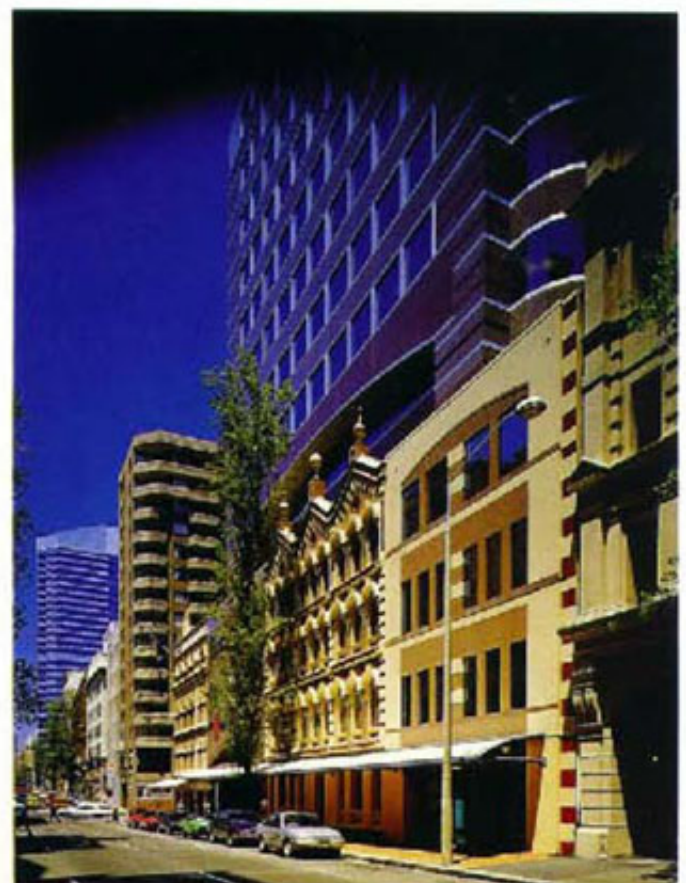
Concrete frame curtain wall incorporating granite cladding; retained historic facades

This commercial office development is located on the western edge of Sydney's central business district in an area which maintains a consistent historic fabric. In order to preserve this fabric, the scheme retains sections of existing buildings which have been converted to streetfront restaurants and bars. An existing service yard is converted into a glazed wintergarden continuing the low-scale frontage to adjacent buildings.

The tower is designed in polished stone and glass, consistent with existing materials. Its form is articulated into strong corner treatments which, in plan, form designated interior spaces as conference rooms and reception areas.



- 1 Ground-floor plan
- 2 Corner view
- 3 Corner view showing restored facades
- 4 Detail of restored facade and tower base
- 5 Kent Street elevation showing restored facades



Joan Sutherland Performing Arts Centre

Design/Completion 1987/1990

Penrith, New South Wales

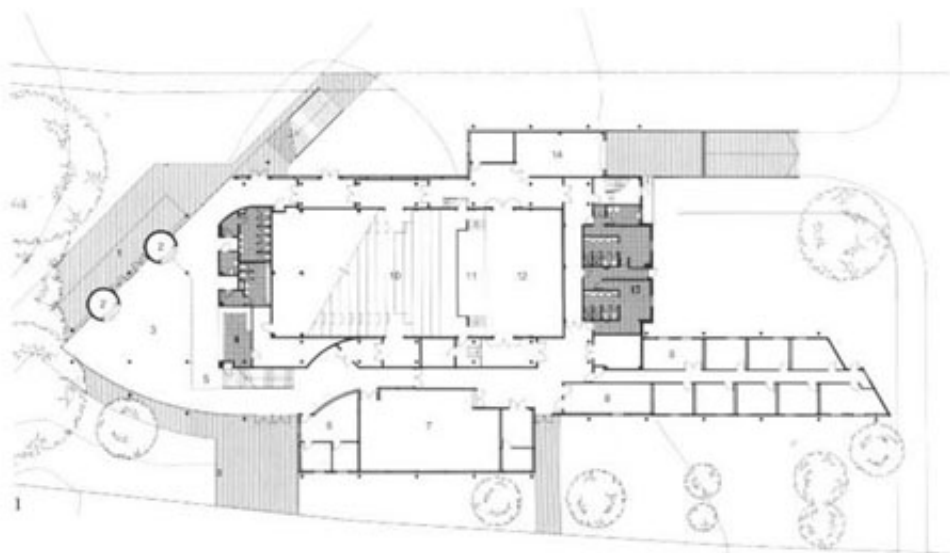
Penrith City Council

5,000 square metres

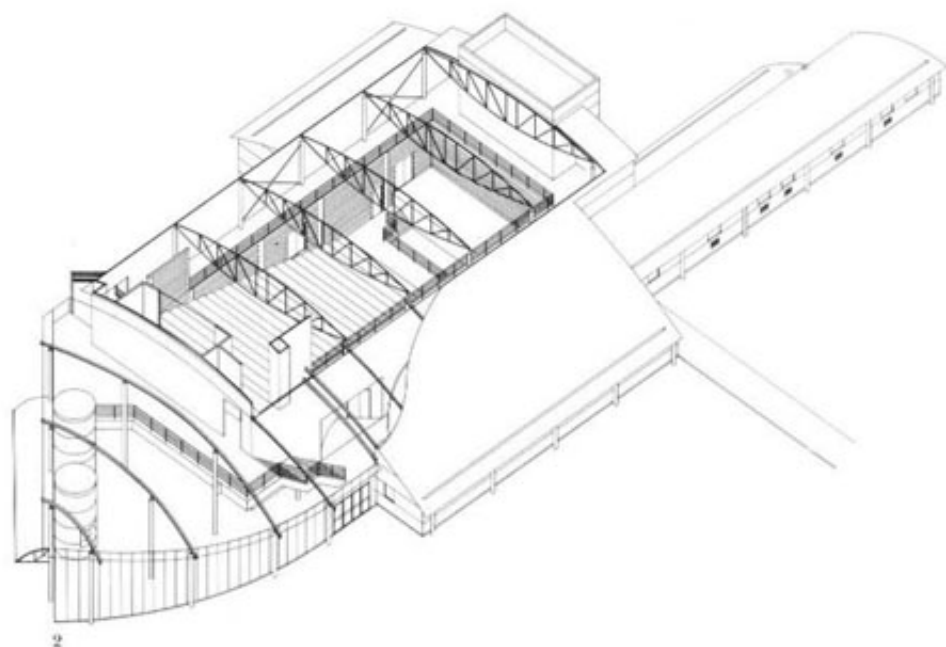
Prefinished steel structure with masonry stiffeners

This performing arts complex was conceived as an important new focus of cultural activity in Sydney's expanding far western suburbs. It also was considered as the catalyst for a larger civic centre to be formed around a square beside the complex.

These criteria were assessed as requiring a built form that had visual and artistic impact but also the ability to be developed into new buildings. The foyer, in which the structure is revealed and the edges are orientated toward the future square, is the most dramatic space. The 600-seat auditorium is designed as a traditional gallery theatre space but with fine exposed bow trusses producing a contemporary aesthetic. The rolled roof form was devised as a means of reducing scale along the edges to accommodate music teaching, solo performance, music practice and other smaller functions.



- | | |
|-----------------------------|------------------|
| 1 Main entrance | 8 Kitchen |
| 2 Tickets and cloaks | 9 Teaching rooms |
| 3 Foyer | 10 Auditorium |
| 4 Food and beverage servery | 11 Orchestra pit |
| 5 Mezzanine gallery above | 12 Orchestra pit |
| 6 Office | 13 Dressing room |
| 7 Assembly room | 14 Workshop |



- 1 Ground-floor plan
- 2 Axonometric
- 3 Elevations
- 4 Park elevation
- 5 Street elevation



3



4



5

Westralia Square

Design 1987

Perth, Western Australia

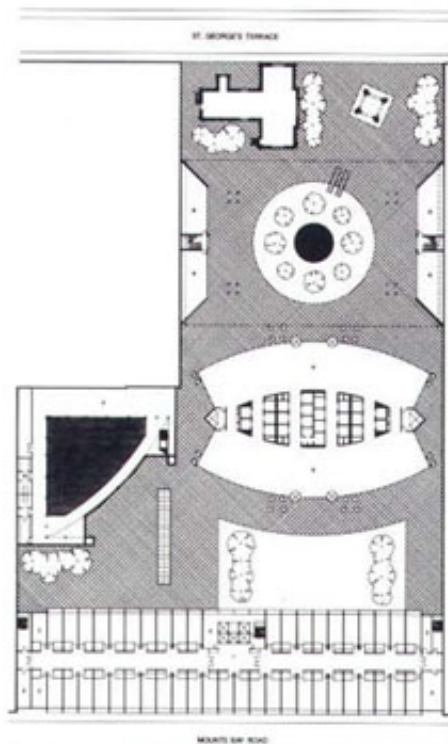
Bond Corporation

50,000 square metres

Exposed prefinished structural steel frame

This proposal was for a new tower and hotel complex sited on St Georges Terrace, Perth's grand central boulevard. The design approach was to incorporate a vast glazed canopy forming a covered civic square between the two buildings. Both buildings were conceived as being supported by externally expressed steelwork in line with the practice's philosophy of revealing structure. The relationship between the structures of the building and the canopy was devised to give the impression of scale continuity between three different building components. The structures are also beneficial in providing frames for supporting sun control devices that minimise internal heat loads.

Part of the project entailed the relocation of a historic structure which was reduced to form a gateway to the development. The juxtaposition of this old masonry building and the contrasting new steel structures was an important aspect of the design philosophy.

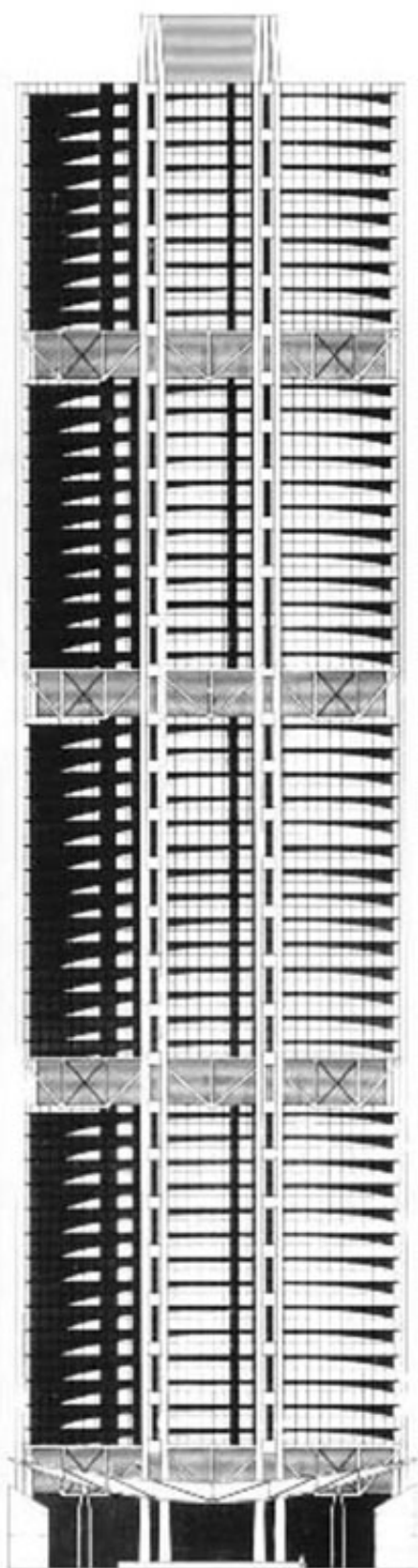


- 1 Lift lobby
- 2 Service rooms
- 3 Store
- 4 Pool
- 5 Health club and bar
- 6 Male toilet
- 7 Female toilet
- 8 Retail
- 9 Office foyer

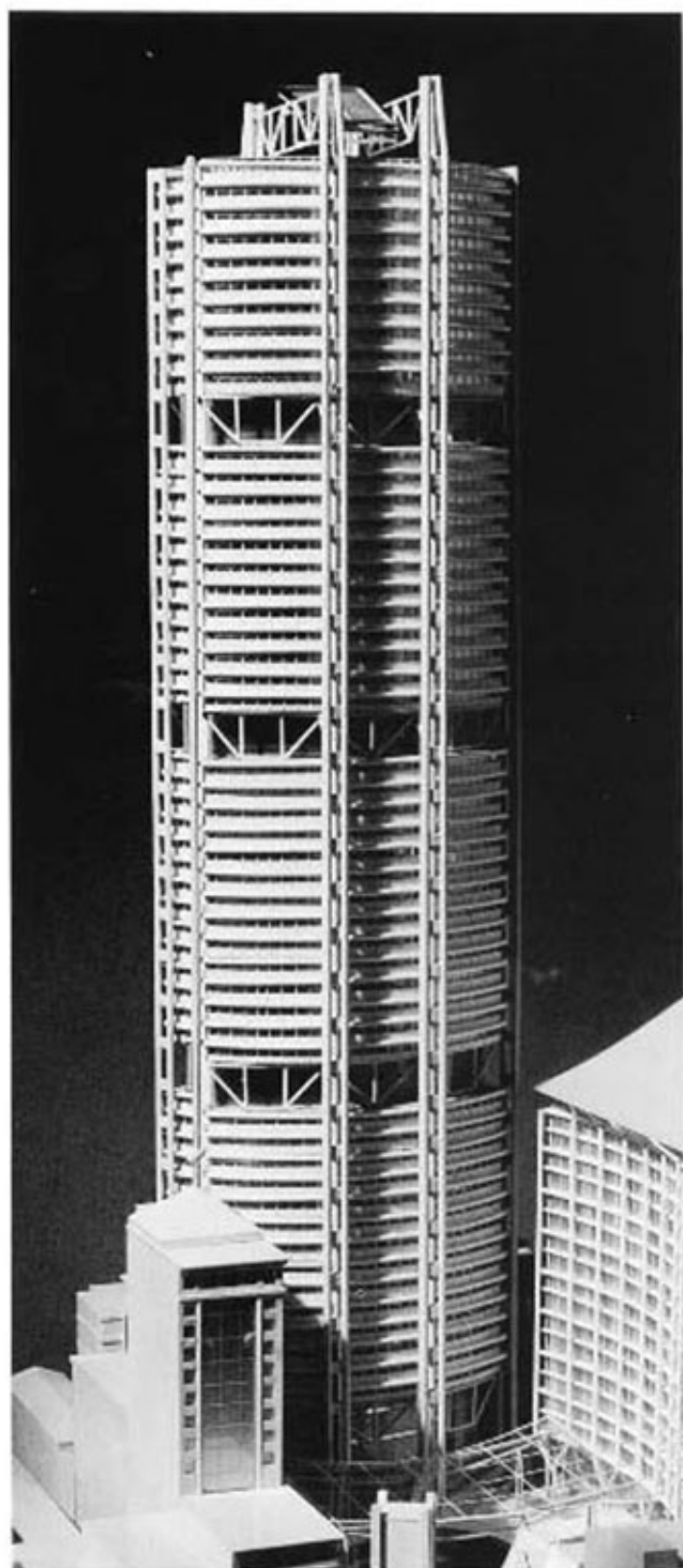


2

- 1 Site plan
- 2 Massing model from rear
- 3 Tower elevation
- 4 View of model, from the St Georges Terrace side



3



4

Gloucester Street Offices

Design 1989

The Rocks, Sydney, New South Wales

White Industries Limited

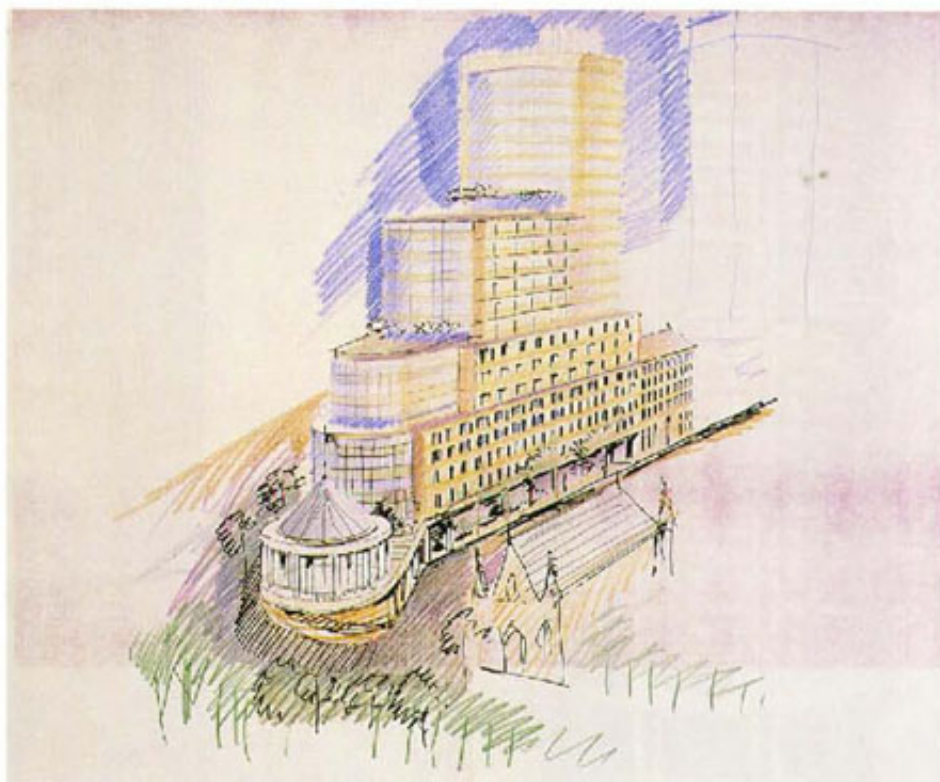
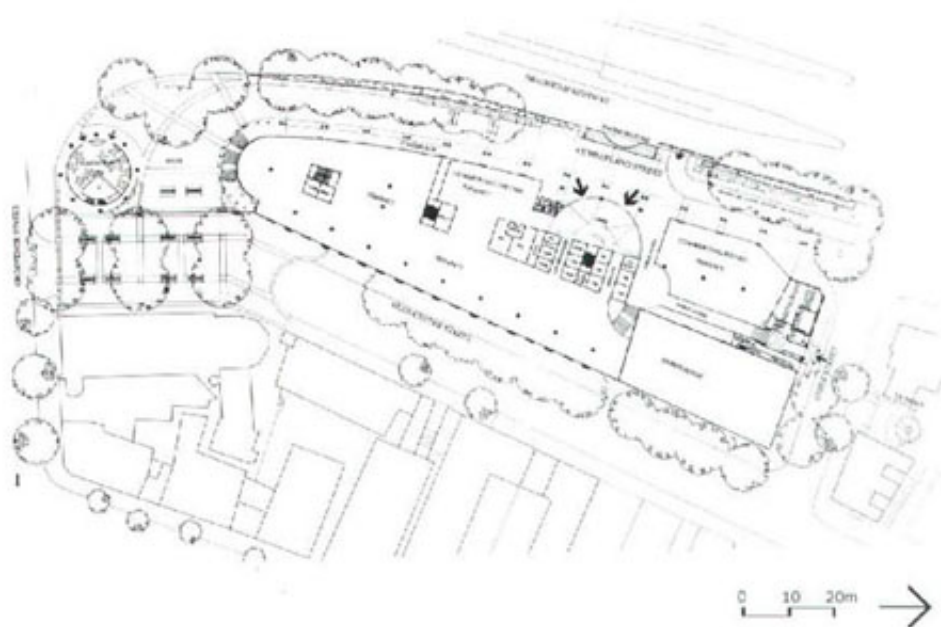
30,000 square metres

Reinforced concrete structure with reconstituted stone facade system

In association with Hassell Architects

This tower responds to highly restrictive guidelines which required maintenance of sunlight penetration to an urban park, control of materials, fenestration sizes, and the retention of some historic buildings to the rear of the site. The proposal won a limited competition for the development. The building is designed as three stepped forms scaled down toward the park with a cupola at the park interface.

The concept involved creation of a form sympathetic to the historic Rocks area. The formal details, however, such as entablatures and column capitals, were developed as exaggerated contemporary elements, thereby avoiding historic replication while, from a distance, appearing consistent with surrounding buildings. Elevational treatment of the three levels was subtly varied between base, middle and tower as a means of delineating scale. The decks were treated as roof gardens reflecting the neighbouring urban park.



- 1 Site plan
- 2 Sketch
- 3 East elevation
- 4 View from park showing tiered levels and entry pavilions
- 5 View from rear showing restored buildings



1



4



5

Museum of New Zealand

Design 1990

Wellington, New Zealand

New Zealand Government

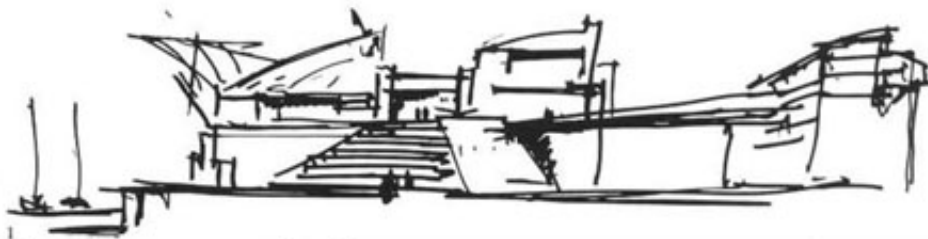
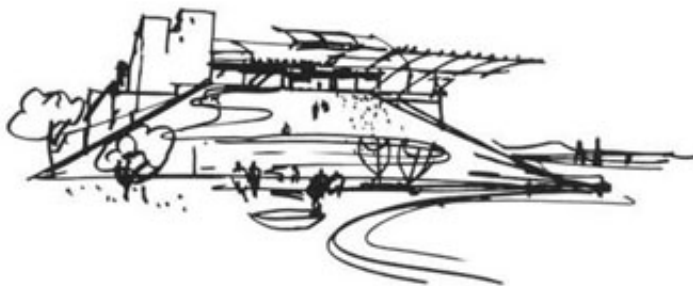
10,000 square metres

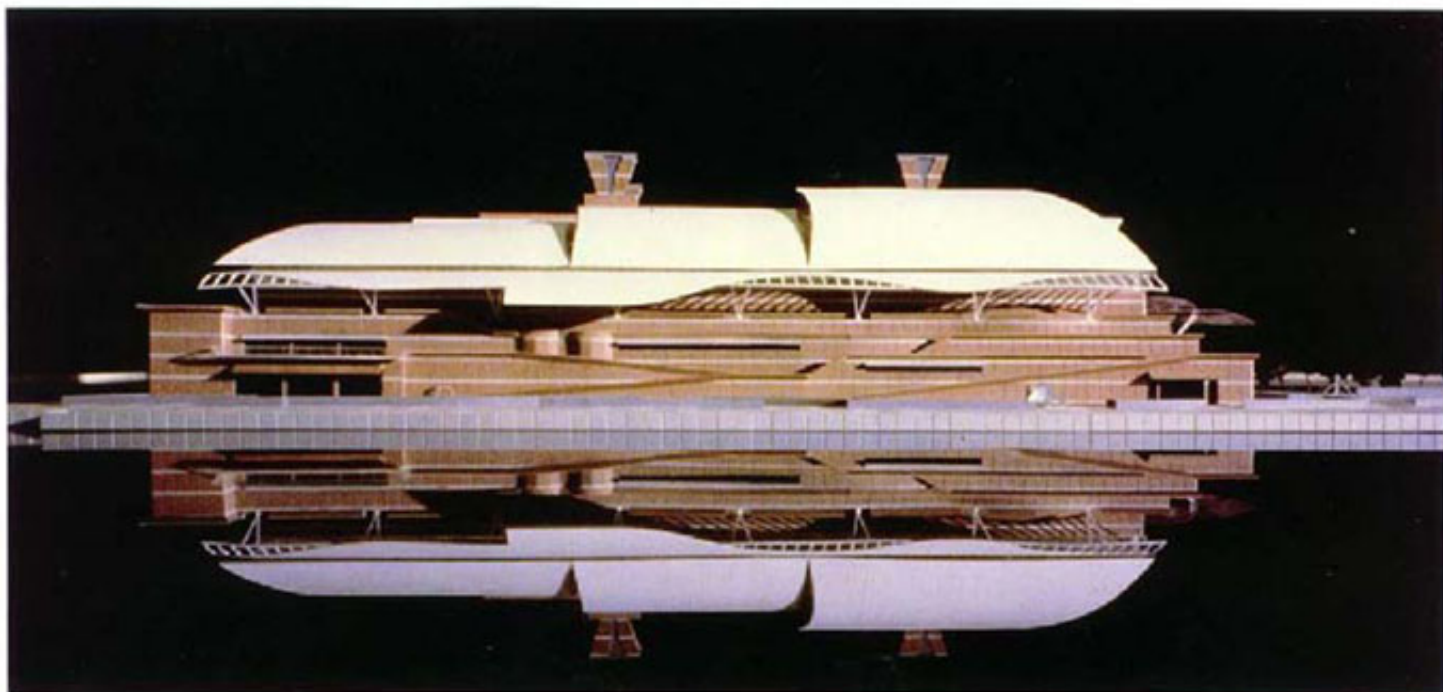
Reinforced concrete podium, polished aggregate precast concrete wall panels, timber roof structure supporting lightweight baked enamelled steel roof sheeting

In association with Boon Smythe Goldsmith

This finalist entry in an open international competition demonstrates many of the design principles that the practice has evolved. The expression of structural dynamics is one of these and a second is the translation of appropriate symbolism into architectural form. The rampart-sided substructure is a metaphor for the traditional Maori hill fortress and the patterns of the walls, squares and building masses are abstractions of ritualistic elements. The open area on top of the museum is a working "marae atae", the traditional Maori ceremonial space.

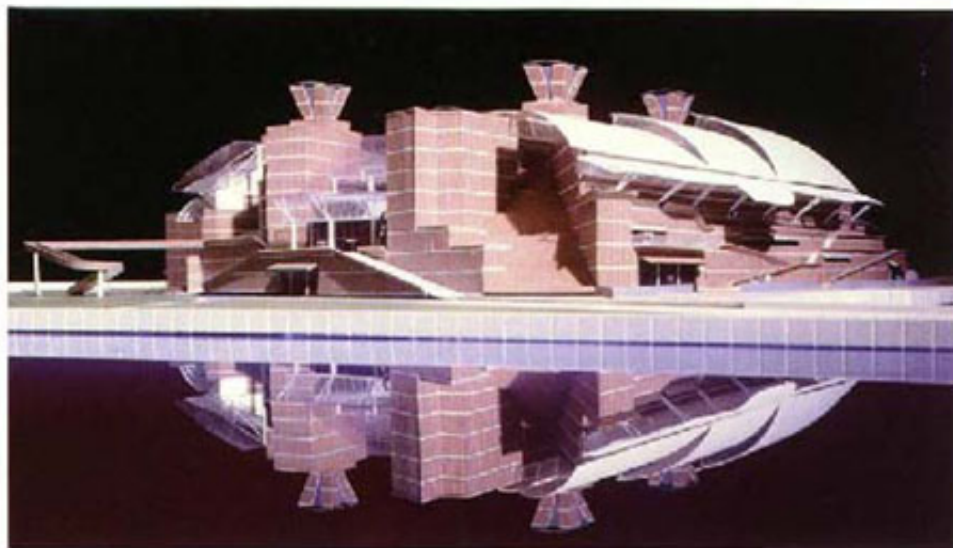
Located on a platform protruding into Wellington Harbour and surrounded by the city's steep hillsides, the museum is designed to be viewed from all aspects. The white steel roofs orientated to each frontage contain the major museum galleries and the cuts into the roof surface



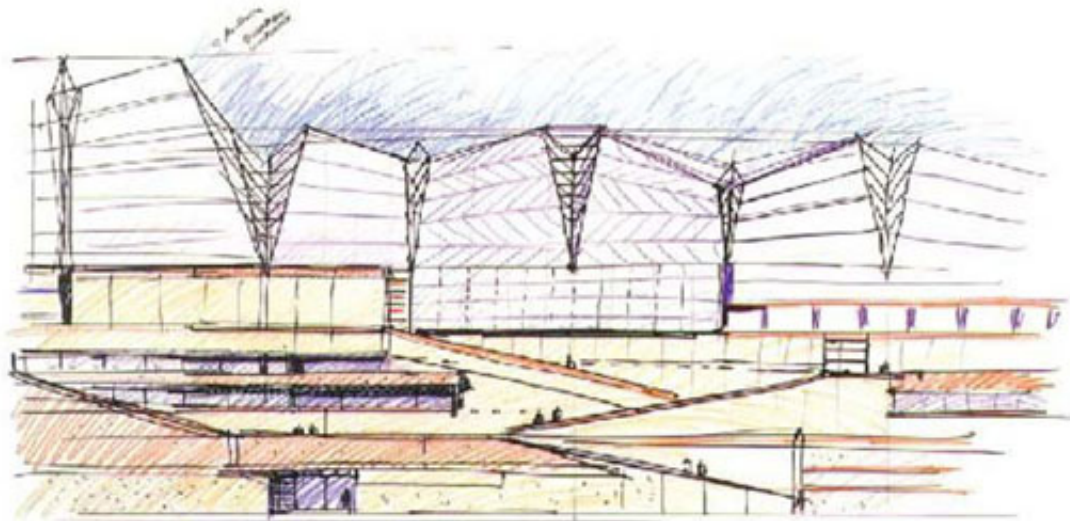


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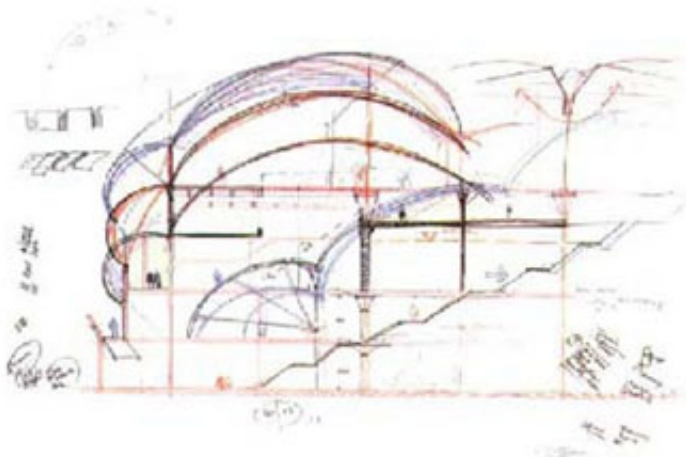
- 1 Preliminary sketches
- 2 Early concept sketches
- 3 Harbour elevation
- 4 Main entrance from Wellington Harbour



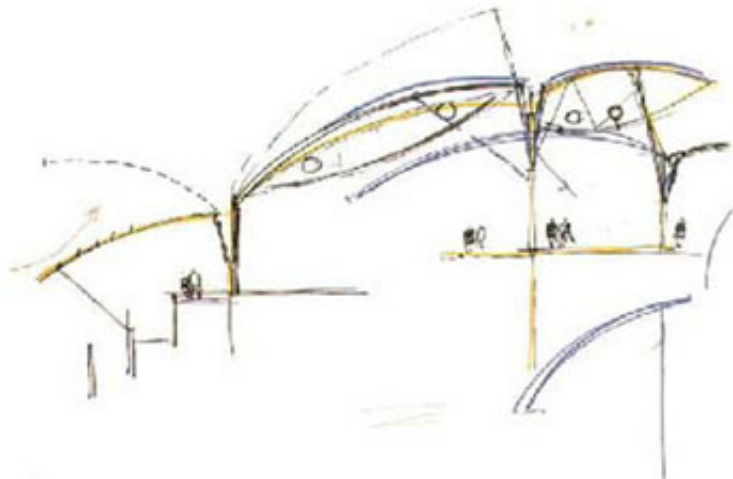
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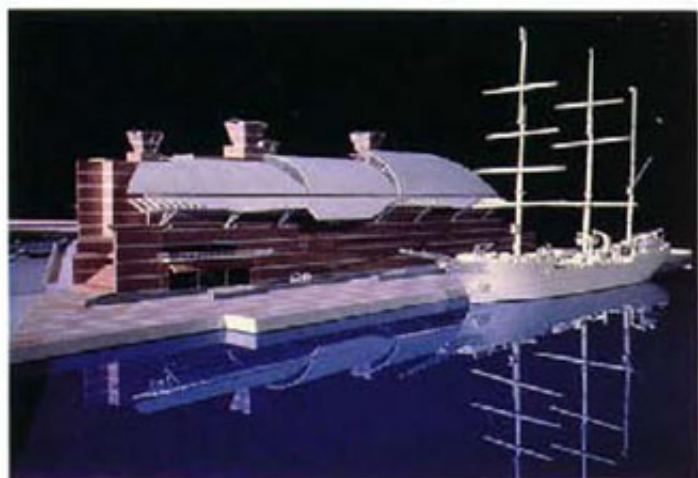


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- 5 Early concept sketch
- 6 Exploratory sketch of ramparts
- 7 Exploratory sketch of roof forms
- 8 Exploratory sketch for building services
- 9 Detail view of rooftop energy towers
- 10 View showing ramparts under roof canopies
- 11 Aerial view showing "marae area"
- 12 Rooftscape
- 13 View from park
- 14 Aerial view overlooking main entrance



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Joondalup Rail Station

Design/Completion 1990/1992

Colliers Pass, Joondalup, Western Australia

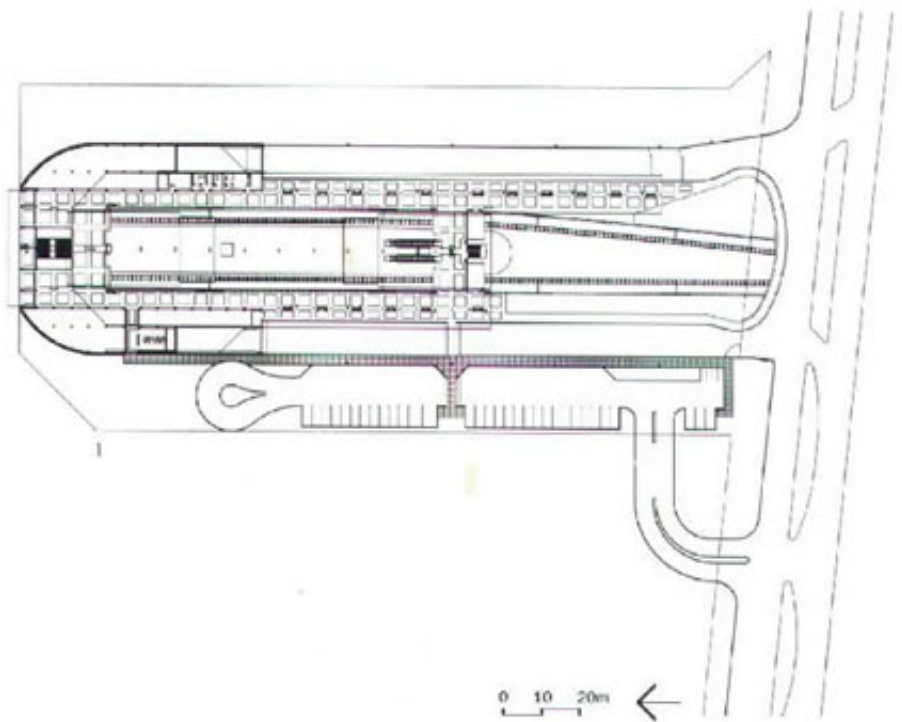
Urban Rail Development

8,000 square metres

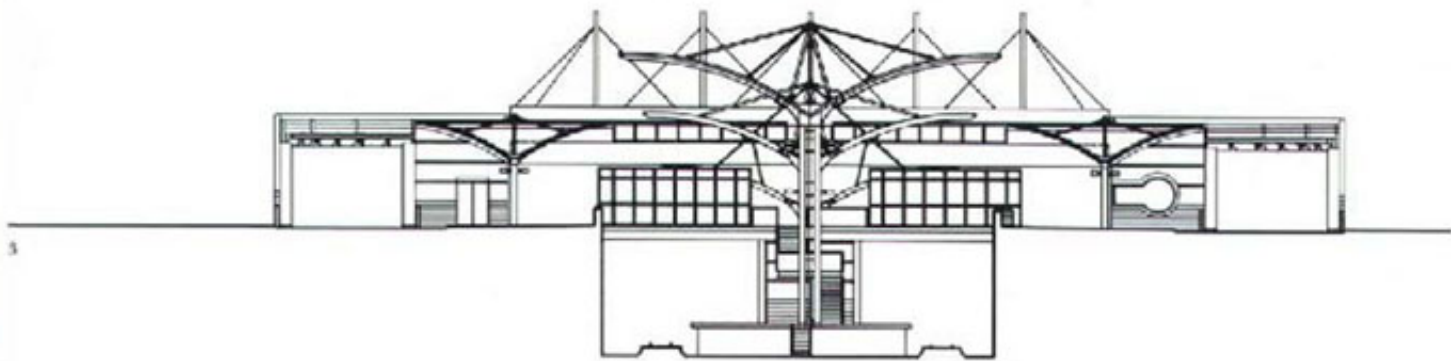
Reinforced concrete slabs, precast concrete, reinforced earth retaining wall, structural steel frame, concrete block masonry, steel roof

Development of Joondalup rail station is part of the Northern Suburbs Transit System, a major new system extending north from central Perth. Its main platform is an open space protected by a series of gull-wing steel roofs. These are designed to engender a spirit of movement and to demonstrate a development in railway station design away from satisfying only utilitarian needs.

Two steel bridges span the railway cutting, and the interior space below the roofs is designed to generate vitality, with visual connection between several levels.



- 1 Floor plan
- 2 Roof structures
- 3 Cross section
- 4 Evening view



- 5 Roof canopies
- 6 Roof canopies
- 7 Roof edge detail
- 8 Roof canopies





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Brisbane Convention and Exhibition Centre

Design/Completion 1992/1994

South Bank, Brisbane, Queensland

Queensland Government/Leighton Contractors

35,000 square metres

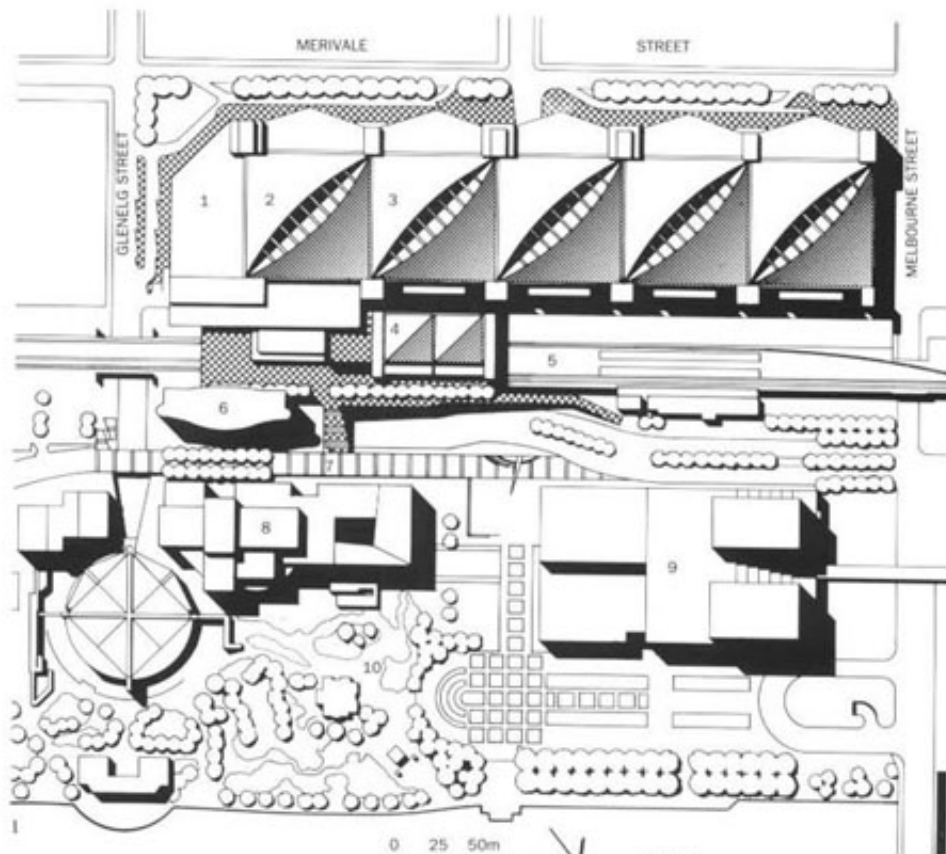
Precast concrete and aluminium cladding with clear glazing, structural steel framing and prefinished steel roof

In association with Peddle Thorp Architects

This project was designed in competition. Its form derives from a series of five hyperbolic/parabolic roofs from which large folded plate veranda roofs are extended to protect pedestrian accessways. These design elements were created to provide high internal volumes, low-scaled edges and a fluid relationship with Brisbane's South Bank Gardens lying between the building and the riverfront.

Design constraints included an elevated railway and a constricted site area. These constraints are overcome by extending a large plaza out over the railway area on which some building components are located, principally a ballroom accommodating 2,500 guests. The convention hall supports 4,000 delegates and can be subdivided, with flexibility of use facilitated by raiseable seating. Meeting rooms surround a three-level atrium space giving visibility between lower levels and railway plaza.

The design philosophy was evolved to produce a subtropical image and an identity different from previous centres.



- LEGEND
- 1 Convention and exhibition centre foyer
 - 2 Convention centre
 - 3 Exhibition halls
 - 4 Ballrooms
 - 5 Existing elevated railway
 - 6 Hotel (by others)
 - 7 South Bank elevated boulevard
 - 8 Conservatorium of Music
 - 9 Queensland Performing Arts Centre
 - 10 South Bank gardens

- 1 Site plan
- 2 West elevation
- 3 East elevation
- 4 View with city centre in background

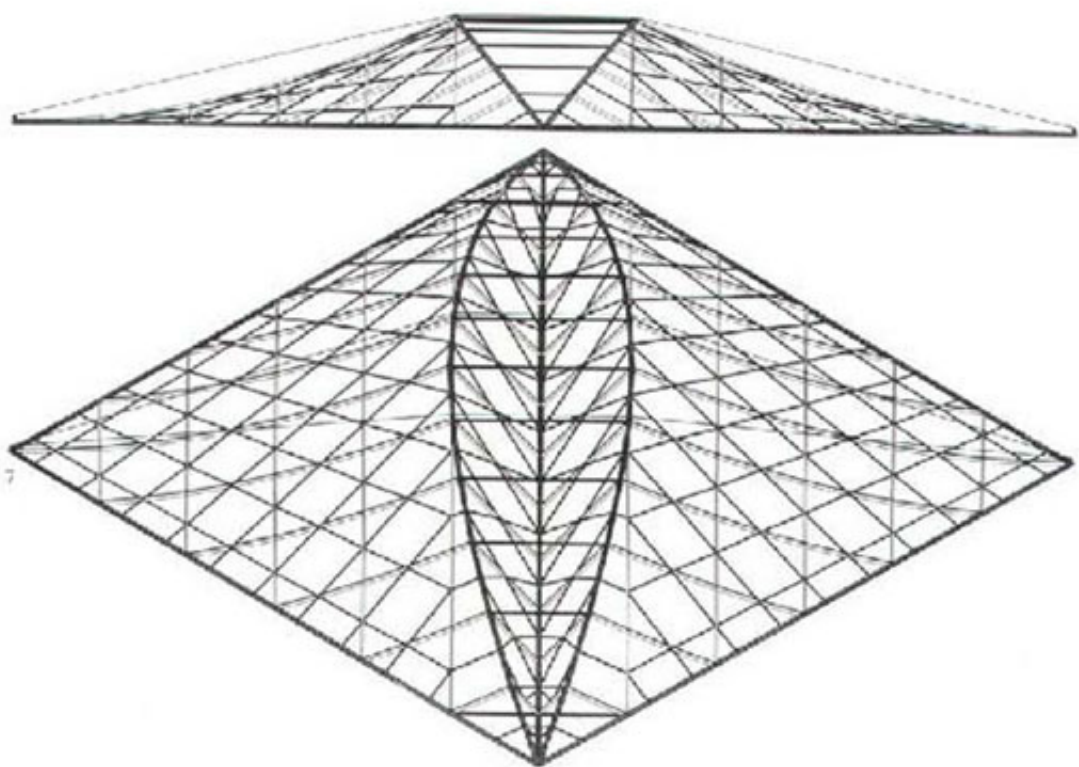


0 10 20m



- 5 Street elevation
- 6 John O'Brien-designed floor
- 7 Computer model of hyper roof module
- 8 External roof detail
- 9 Internal roof detail





Singapore Telecommunications Tower

Design 1992

Fort Canning, Singapore

Singapore Telecom

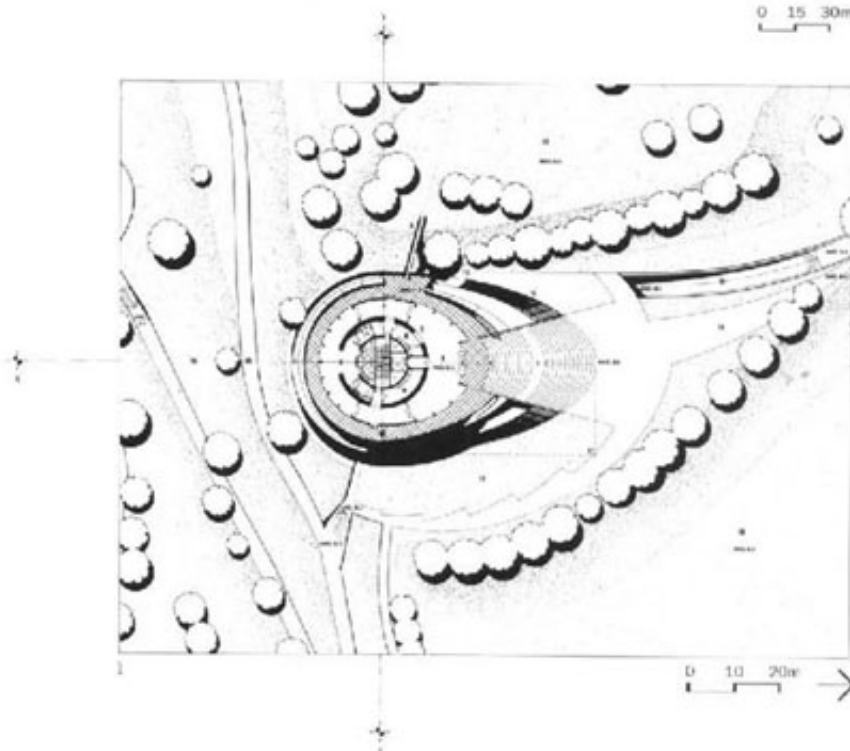
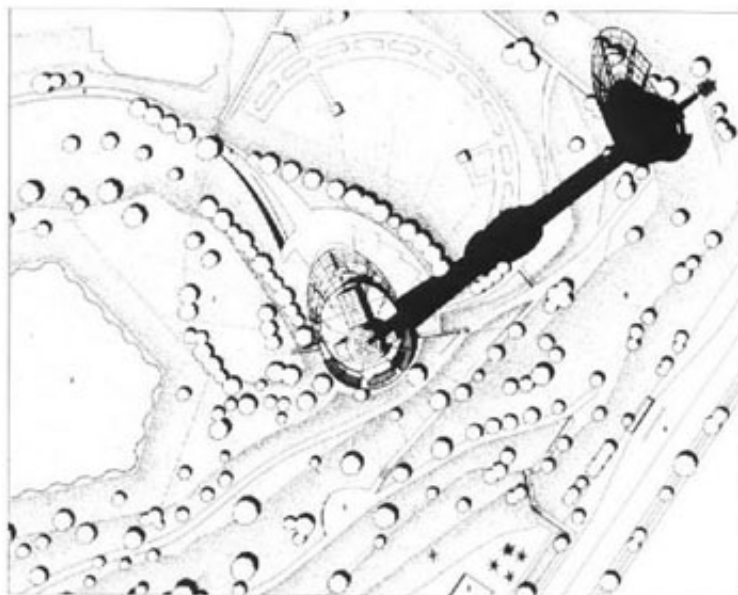
6,000 square metres

Reinforced concrete tower, prefinished aluminium panels and glass

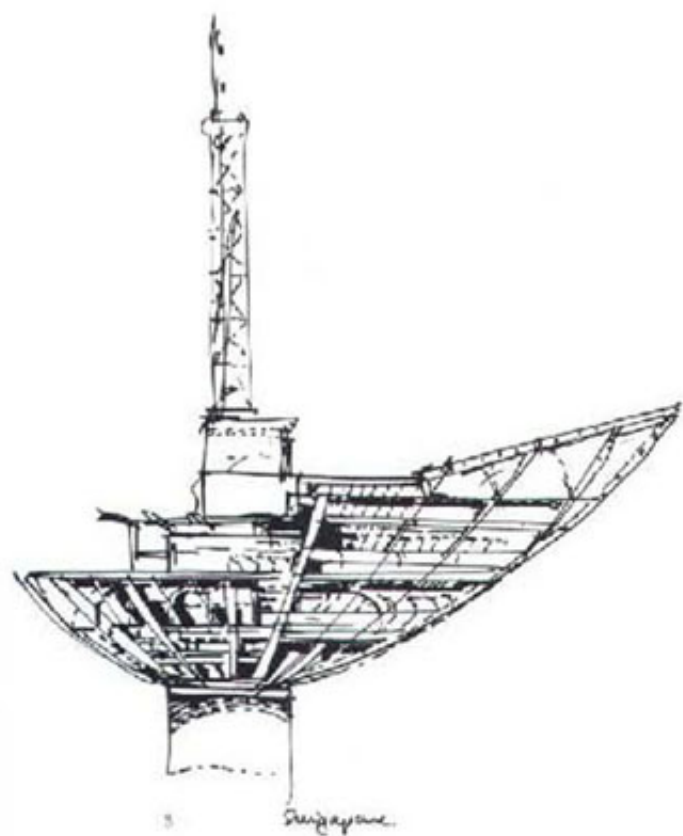
In association with Liu & Wo Architects

This proposal was a finalist in an international competition to design a tower structure to house the city's communications and its satellite reception and transmission. The tower design is also a symbol of Singapore's technological advancement.

The tower will stand 250 metres high, loosely modelled on the Singapore orchid with steel fans asymmetrically cantilevered from the stem. These fans incorporate reception and transmission systems, observation platforms and related equipment. The tower base houses the operational headquarters and administration.



- 1 Site plan and tower floor plan
- 2 Side elevation
- 3 Early concept sketch
- 4 Front elevation
- 5 Front elevation
- 6 Side elevation
- 7 Aerial view



Cairns Convention Centre

Design/Completion 1994/1995

Cairns, Queensland

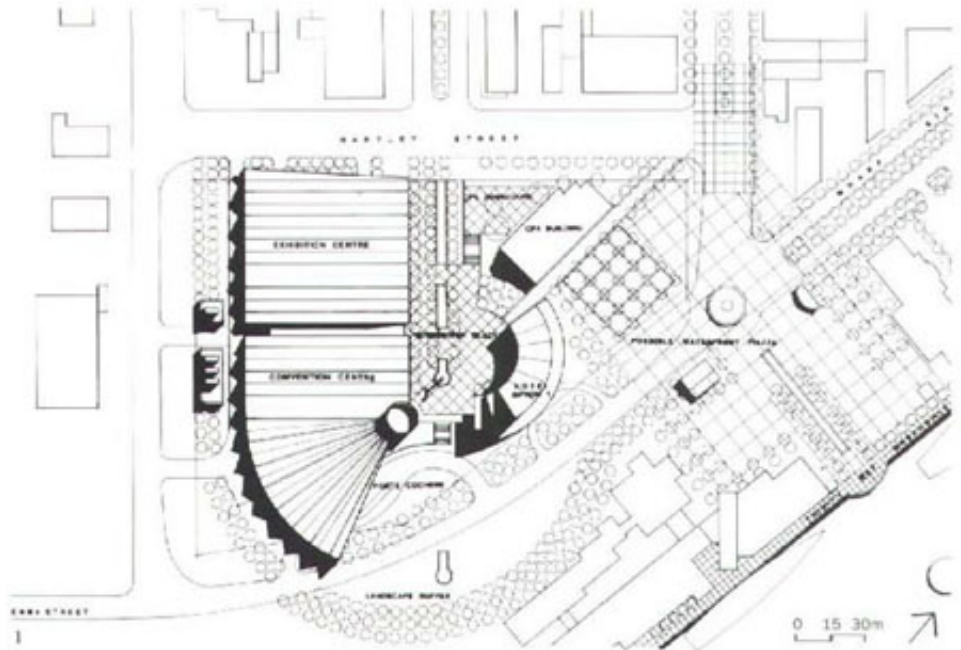
Queensland Government

22,000 square metres

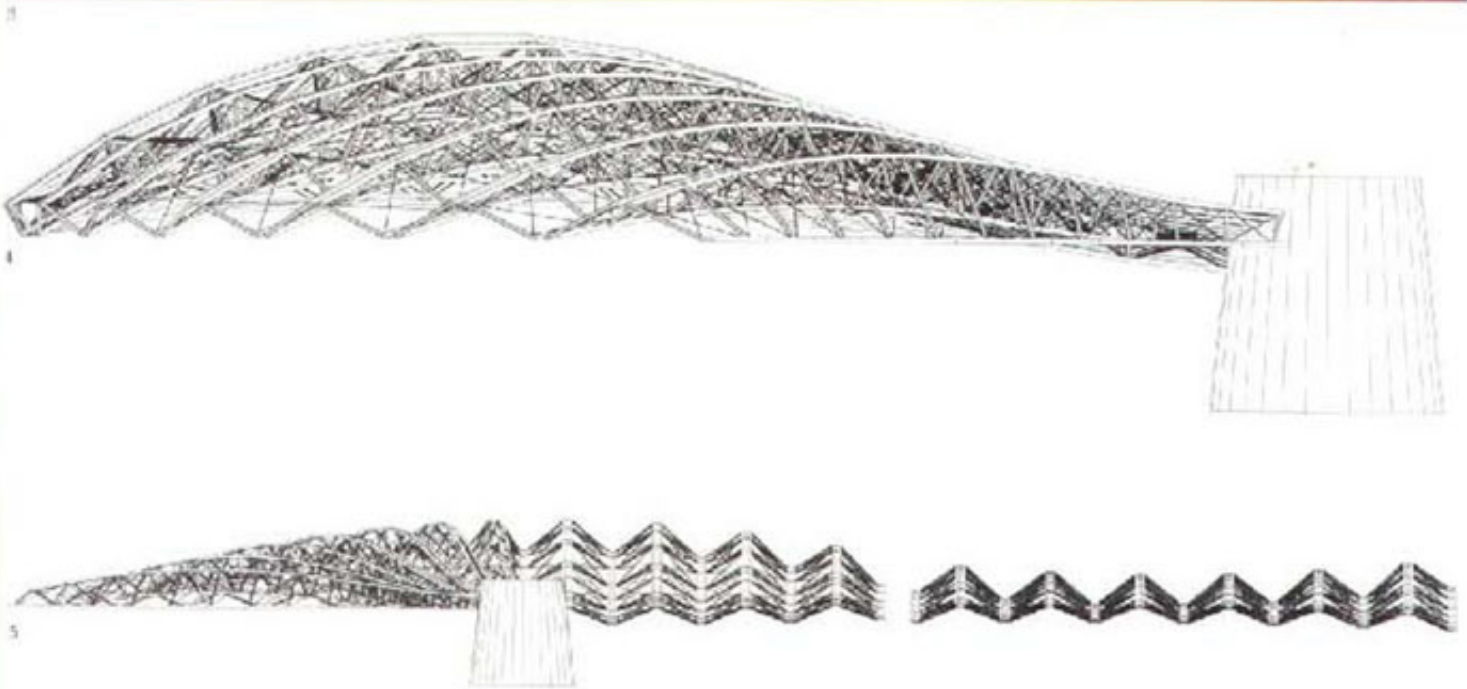
Plantation timber laminated structure, folded plate steel roof, clear glazing, timber louvre systems and concrete piled substructure

This proposal won a selected design competition for a 2,400-seat convention centre and a 3,000-square-metre exhibition centre to be added later. The competition brief also required a master planning concept for the riverside urban renewal area, at one end of which the convention centre is located.

A curved roof is developed as a means of terminating the riverside redevelopment. This curve is achieved using a folded plate structure, enabling the roof geometry to change from an orthogonal form to a fan-shaped form. Unlike previous public buildings, the structure is formed entirely from laminated plantation timber, producing a more crafted architecture and responding to environmental issues. The structure and lightweight cladding systems are also intended to assist local employment and industry.



- 1 Site plan
- 2 Front view at dusk
- 3 Main foyer upper level
- 4-5 Roof structure studies



Sports and Recreation Centres



- 60 Akuna Bay Marina
- 62 National Athletics Stadium
- 64 National Indoor Sports and Training Centre
- 66 Sydney Football Stadium
- 72 National Tennis Centre
- 76 Joondarup Sports Complex

Akuna Bay Marina

Design/Completion 1972/1974

Kuringai National Park, Sydney, New South Wales

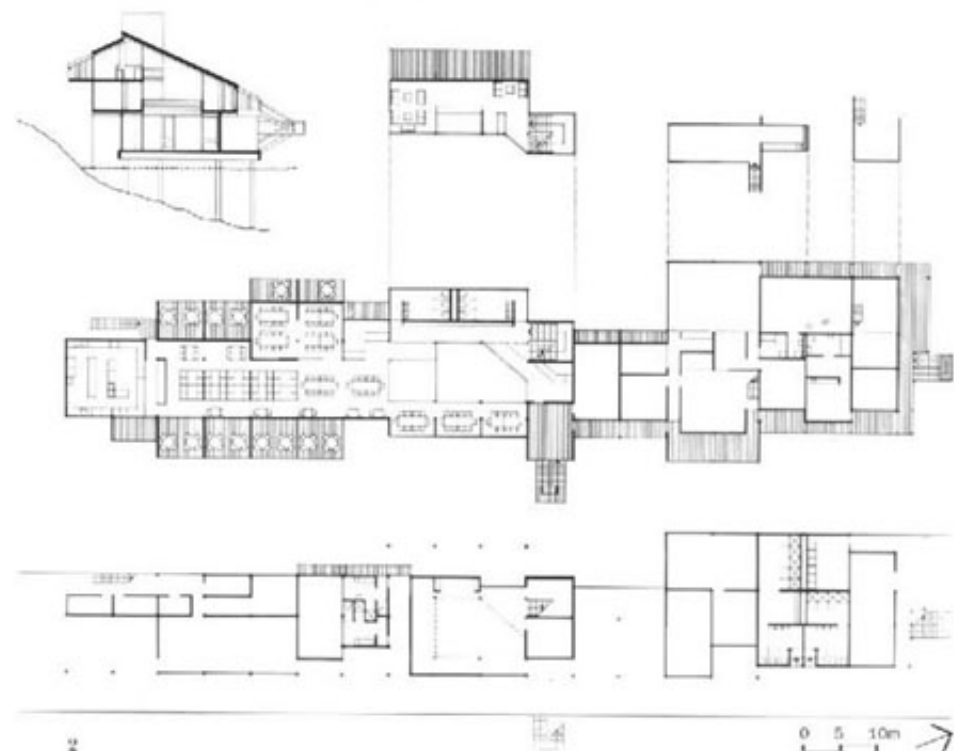
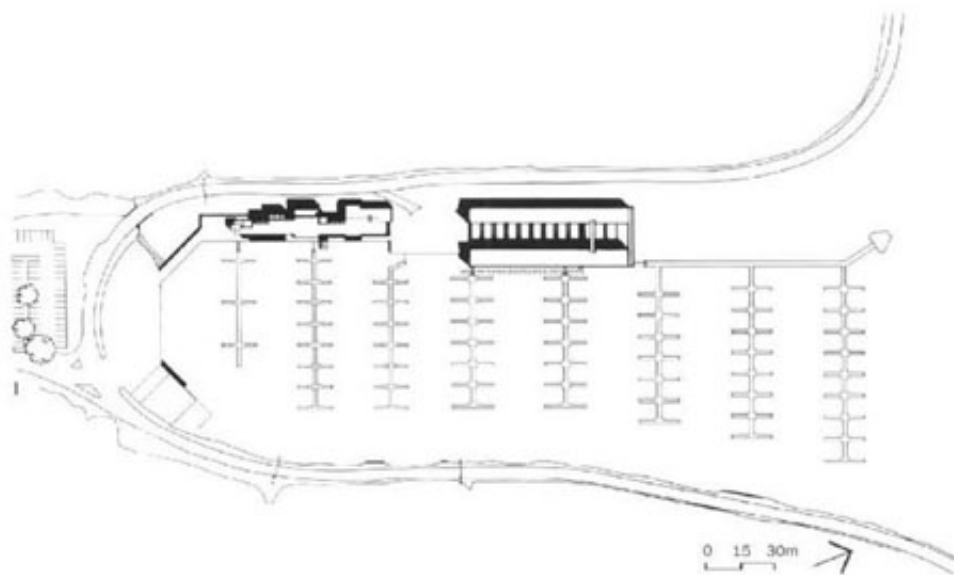
Clipper's Anchorage Pty Ltd

2,000 square metres

Timber frame structure, western red cedar cladding

Akuna Bay Marina is sited in one of Sydney's surrounding national parks, where new buildings have been traditionally discouraged. Stringent restrictions are imposed, specifying environmental sensitivity and minimum impact.

The marina was required to have relatively large buildings for boat storage, a restaurant, a chandlery, shops and administration. The scheme softens its impact by using weathered natural materials for its walls and roof and by mono-pitching the roof at the angle of hillslopes behind. Scale is further reduced by locating the upper of two floors within the roof volume inclusive of the balconies which extend out from the restaurant. The structure is supported by timber piles driven into the seabed in order to minimise disruption of marine ecology.



- 1 Site plan
- 2 Plans and sections of chandlery building
- 3 End view of boatshed
- 4 View across bay
- 5 View across bay to boatshed
- 6 Interior view



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National Athletics Stadium

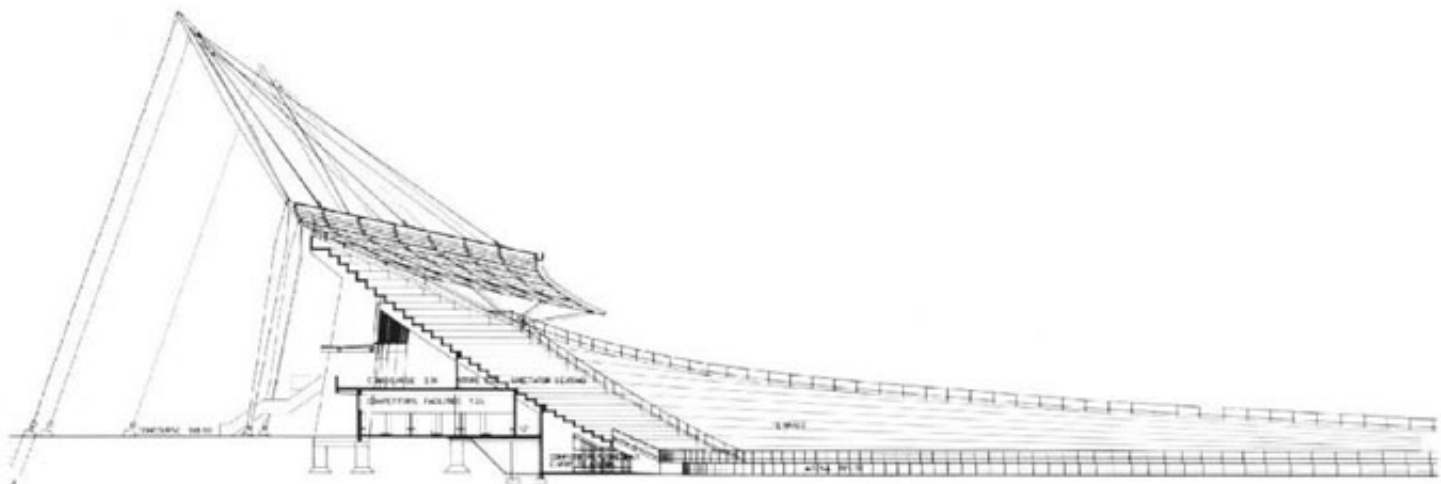
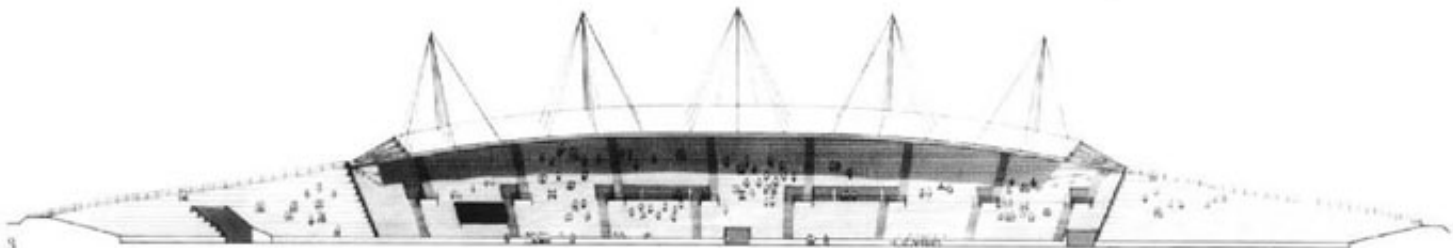
Design/Completion 1974/1977
Bruce, Canberra, Australian Capital Territory
National Capital Development Commission
20,000-spectator capacity
Steel framed cable-stayed roof, reinforced
concrete stand

The first of the practice's major stadia projects, the stadium required a shift in thinking from earlier projects as well as a search for ways to maintain an Australian idiom. These needs were met by reinterpreting the skeletal steel structures that typify much Australian vernacular architecture, and by moulding the landscape until it became integral with the architecture.

The effect sought is that of a lightweight canopy hovering above the landform. The cable-stayed structure is an efficient and expressive answer and one which was intended to produce a distinctive language for later components of Canberra's National Sports Centre complex, now the home of the Australian Institute of Sport.



- 1 Stadium arena
- 2 Silhouette of roof masts
- 3 Grandstand elevation
- 4 Grandstand section
- 5 Side view of grandstand
- 6 View of grandstand seating
- 7 Detail of cable support system



National Indoor Sports and Training Centre

Design/Completion 1979/1981

Bruce, Canberra, Australian Capital Territory

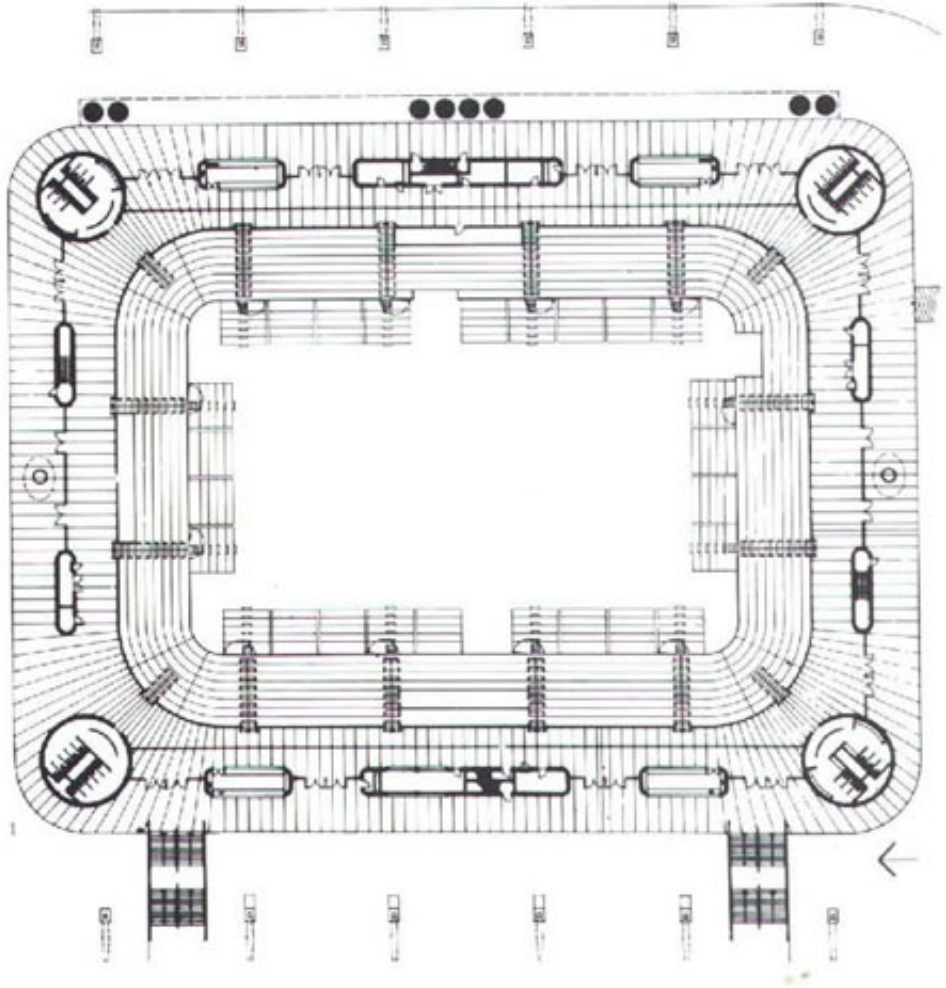
National Capital Development Commission

4,000 square metres

Catenary cable supported roof, membrane roofing, blockwork face

The second project in the National Sports Centre complex, the centre continues the theme of cable-supported structure and moulded landscape originated for the nearby stadium. The building is surrounded by planted banks which help to reduce its scale and to accentuate the support columns. These columns are tilted, pin-jointed at their bases and anchored by cables to withstand stresses from the roof.

The catenary cable system produces a column-free interior with minimal use of material. A feature of the system was the development of a triangulated gantry across the hall which enabled the flanking stanchions to be simultaneously stressed and the roof sections to be consecutively connected. This gantry was retained after construction to support lighting and audiovisual equipment.



- 1 Floor plan
- 2 End view showing catenary structure
- 3 Mast detail
- 4 Interior
- 5 Detail showing masts anchored to ground
- 6 Interior showing movable gantry



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Sydney Football Stadium

Design/Completion 1985/1988

Moore Park, Sydney, New South Wales

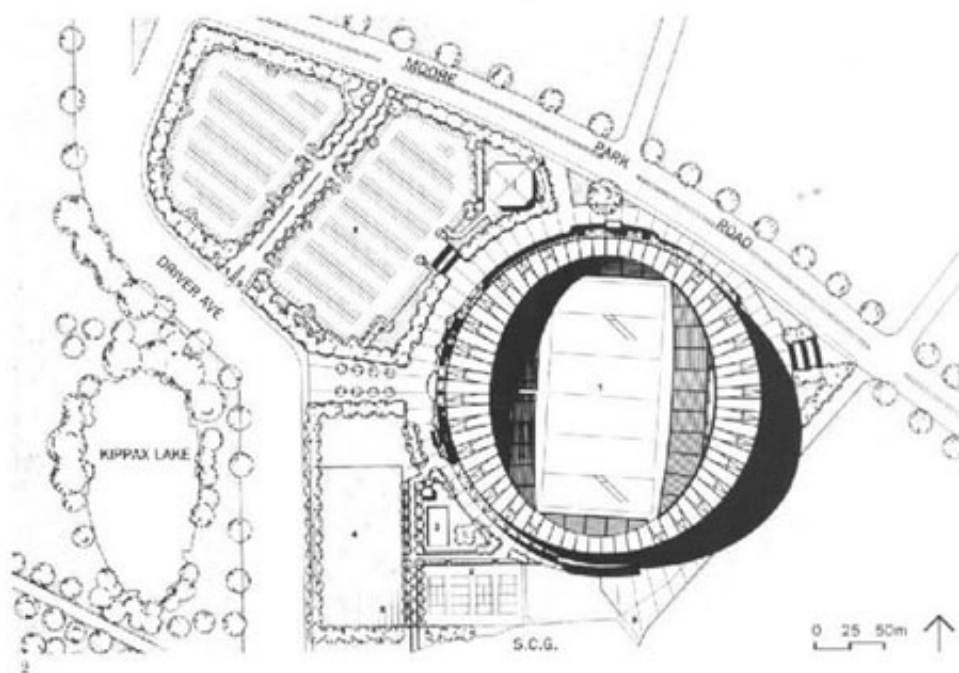
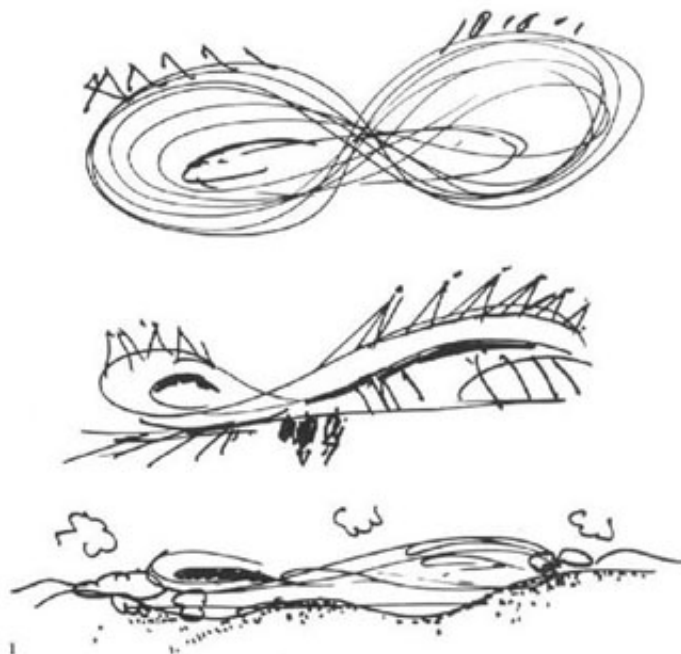
Civil & Civic

40,000-spectator capacity

Concrete framed floors, steel framed grandstands, cantilevered steel framed roof

The Sydney Football Stadium is Australia's first major venue dedicated to football and its development was planned to relieve the adjacent Sydney Cricket Ground from previous overuse.

Although demanding a rectilinear geometry for its field, the stadium is adapted to a circular perimeter repeating the forms of the cricket ground and the city's neighbouring showground. This transition produces a sculptural and poetic form and has a number of other advantages. These include an ability to lower the scale towards a residential precinct at one end, an increased seating capacity across the middle of the field and a roof elevation sufficient to support lighting along the edge. However, the major intention was to produce a structure of dramatic impact that celebrates the renowned Australian penchant for sport.



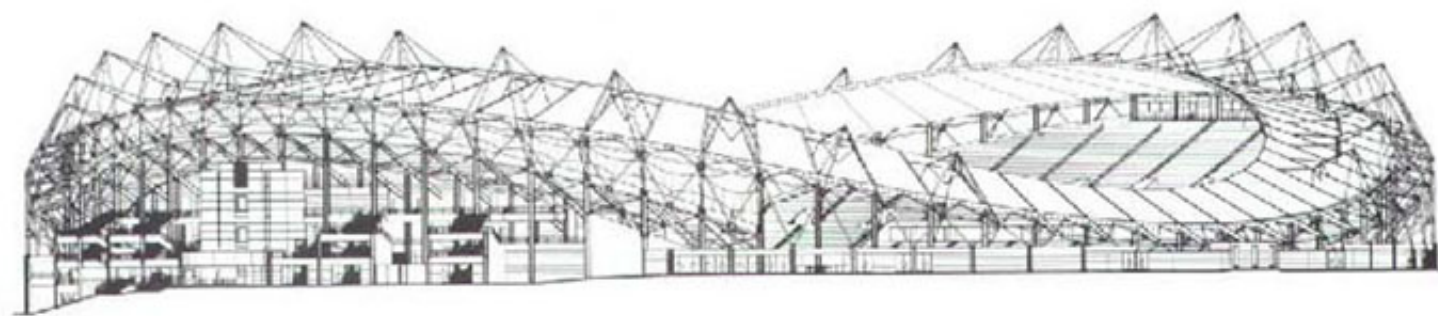
- 1 Preliminary sketches
- 2 Site plan
- 3 Aerial view showing warped roofing over main stands
- 4 Aerial view with city and harbour in background

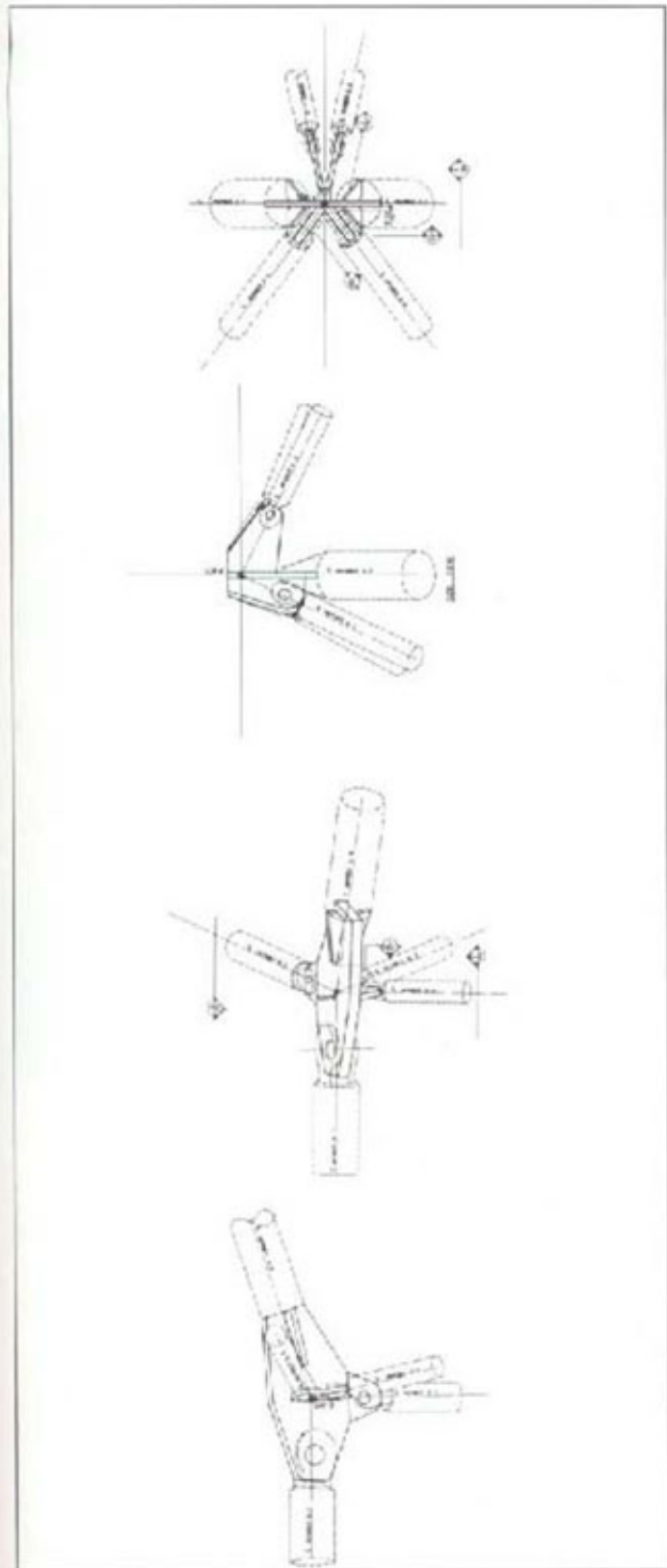
LEGEND

- | | |
|-------------------------|---------------------|
| 1 Sports stadium | 6 On-ground carpark |
| 2 Tennis courts | 7 Entry |
| 3 Swimming pool | 8 Exit |
| 4 Practice field | 9 S.C.G. Entry/Exit |
| 5 Practice cricket nets | |



- 5 Elevation
- 6 Evening view highlighting roof structure
- 7 Evening view
- 8 Roof connection details
- 9 Structure detail









National Tennis Centre

Design/Completion 1985/1987

Flinders Park, Melbourne, Victoria

Civil & Civic and Tennis Australia

24,000-spectator capacity

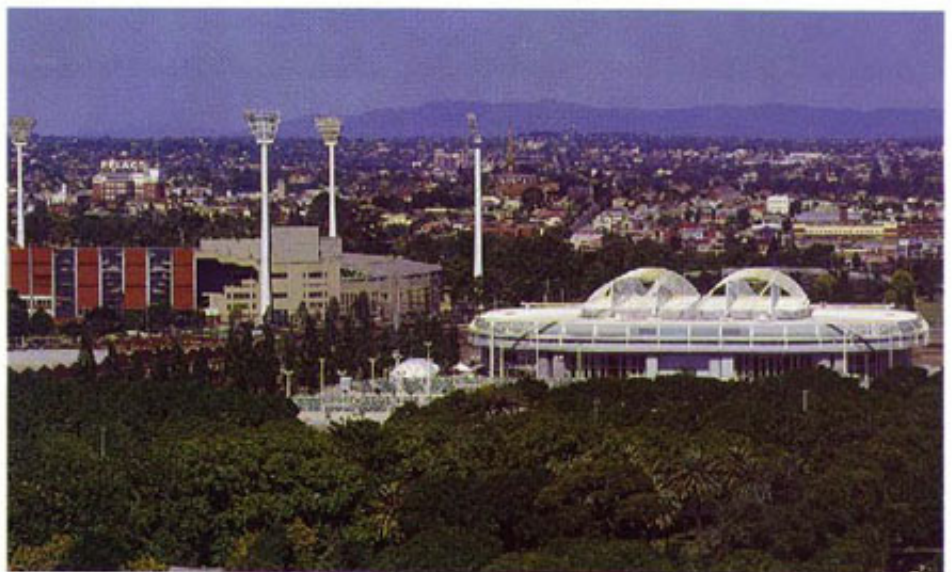
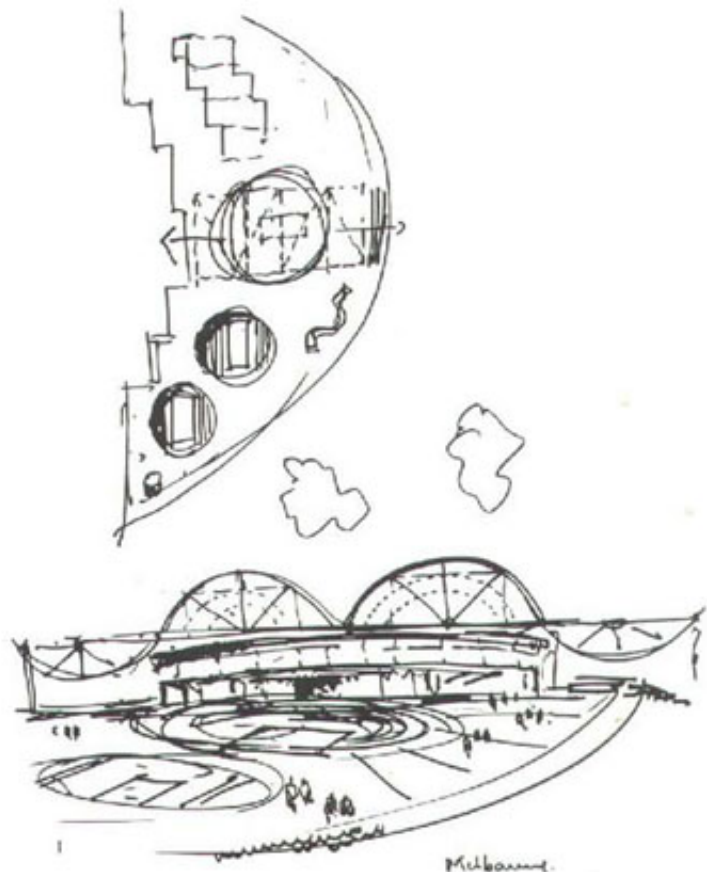
Concrete framed car-park, concourse and deck structure with structural steel roof

In association with Peddle Thorp & Learmonth

Designed during the same period as the Sydney Football Stadium as an Australian Bicentennial project, the Centre is Australia's grand slam tennis venue.

Its requirements included a 15,000-seat centre court with a movable roof, 6,000- and 3,000-seat match courts, an indoor tennis facility, public concourse and car parking. However, its contextual situation produced greater difficulties than its functional needs. The major factors were its siting adjacent to a prominent bend in Melbourne's Yarra River and the public parkland which the Centre partially absorbs.

The solution was to submerge all but the centre court into a podium which, with surrounding planted slopes, gives an impression of continuous parkland. The podium conceals the car parking and support facilities so that only the centre court remains prominent. The movable roof over this court is formed by two rolling sections, each spanning the arena with arched trusses that give the Centre its distinctive image.



- 1 Preliminary sketch
- 2 Aerial view of tennis centre from west
- 3 Centre court building viewed from match court 1
- 4 Roof structure detail
- 5 Night view



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- 6 Centre court roof, open
- 7 Detail of movable roof track
- 8 Centre court roof, closed
- 9 Aerial view
- 10 Night view of movable roof structure



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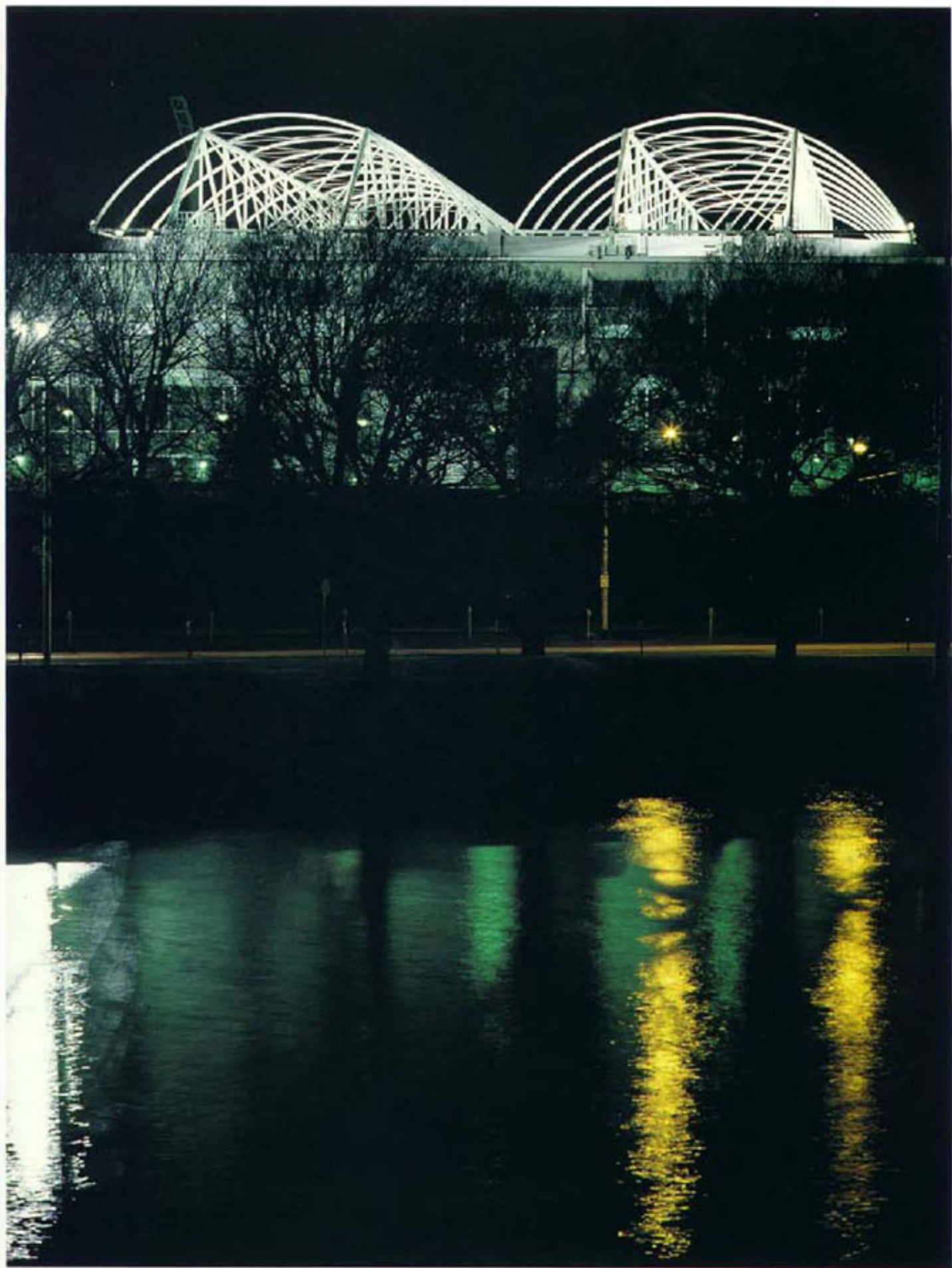
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Joondalup Sports Complex

Design/Completion 1992/1994

Joondalup, Western Australia

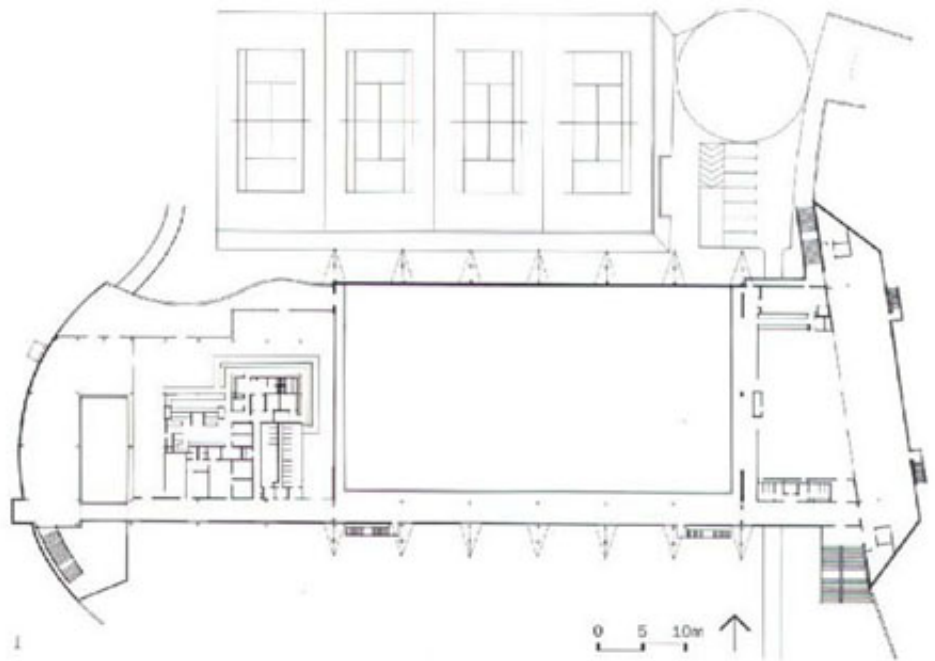
Landcorp

9,000 square metres

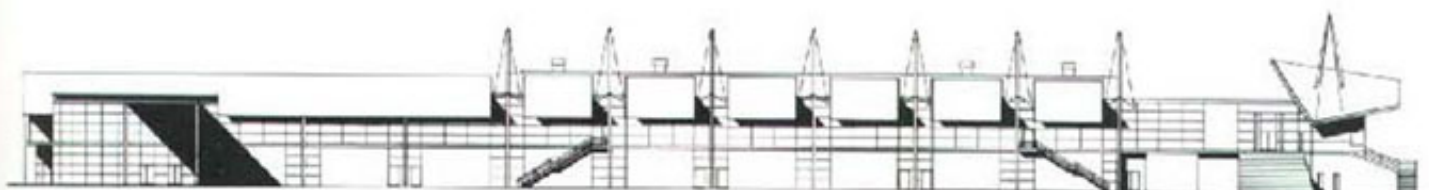
Reinforced concrete slabs, structural steel frame,
concrete block masonry, steel roof

This venue is a focus of the largest planned regional growth area near Perth. It is a facility both for major events and for community use and provides for a maximum number of indoor sports. Outside the complex are playing fields for football, hockey, athletics, tennis, netball and other sports in a 35-hectare reservation.

Unlike the more single-use venues designed on the eastern coast and expressed using strong structural consistency, the venue comprises a variety of forms which express its multiple uses. The main elements are an arched arena structure and a cantilevered arched canopy which will cover the outdoor stadium seating overlooking a playing field. Mildly referenced to "deconstructivist" principles, the structure is teased apart as a means of revealing interior space and, at the same time, humanising its scale.



- 1 Floor plan
- 2 View across sports oval
- 3 Southern elevation
- 4 Grandstand at northern end
- 5 Concourse elevation
- 6 Grandstand roof structure



Hotels and Resorts



- 80 Yulara Tourist Resort
- 90 Milton Park Hotel and Villas
- 92 Observatory Hotel
- 95 Laguna Quays Resort
- 100 Melbourne Casino and Hotel

Yulara Tourist Resort

Design/Completion 1981/1984

Ayers Rock, Northern Territory

White Industries and Northern Territory Tourist Commission

200 hectares

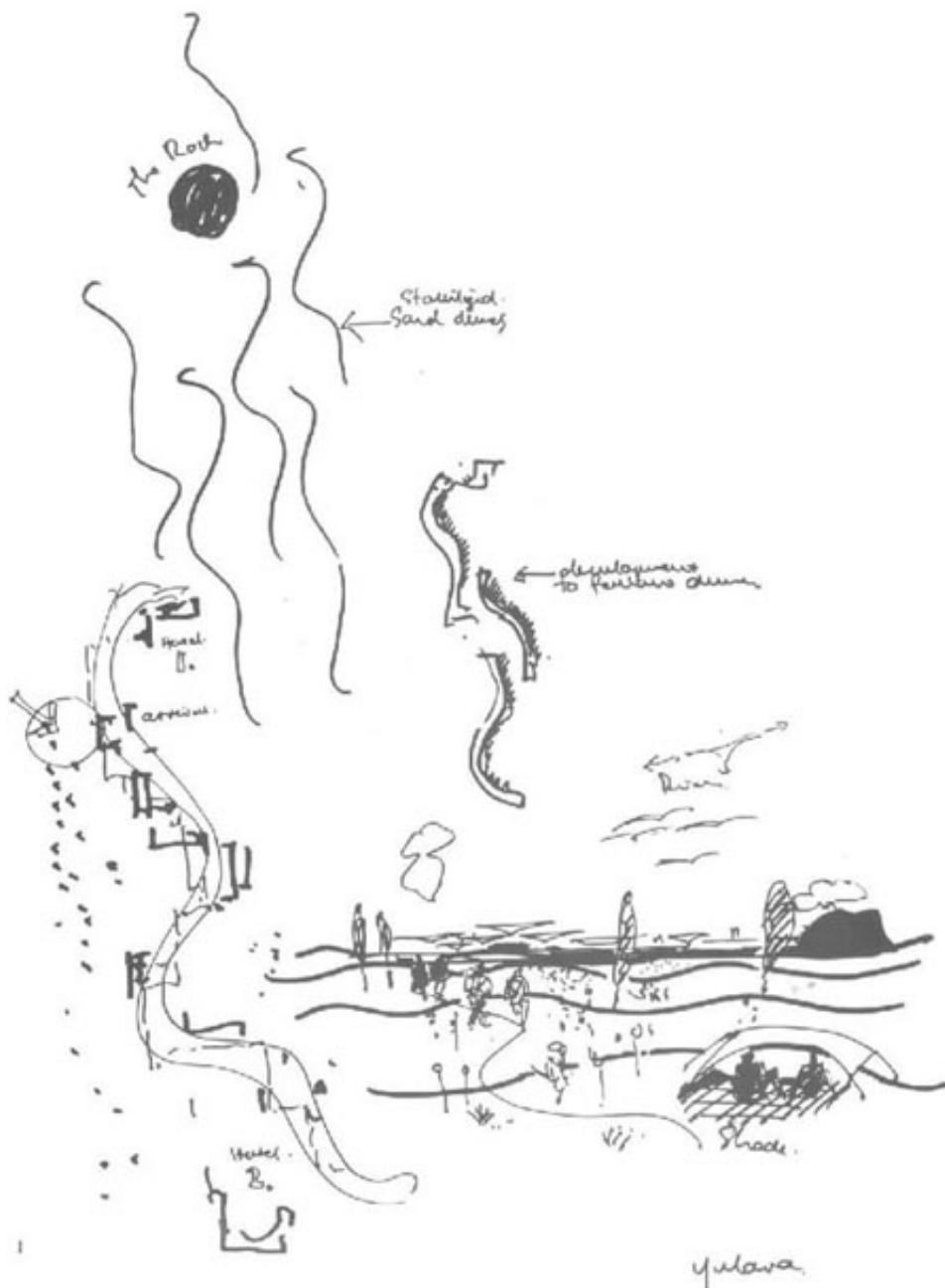
Steel framing, membrane structures and load bearing bagged and washed brickwork, steel roofing and fabric sails

Yulara was developed as an integrated village to prevent haphazard tourism establishments from diminishing the experience of Ayers Rock and Uluru National Park. Its location is a serpentine dune valley midway between the Rock and a lesser-known but equally spectacular formation known as the Olgas.

The village is horizontal and low scaled so that, from a distance, it is hidden below the dunes. This environmental integration is reinforced by allowing the desert to extend up to and into the village. The plan follows the meandering valley floor, with a pedestrian spine staggered through each component, providing continuous views.

The pedestrian spine provides a link between the hotels at either end of the resort, and accesses staff housing, community/visitor facilities, convenience and specialty shops, pools and courtyards.

Continued



- 1 Early concept sketches
- 2 Aerial view showing serpentine form within the desert dunes
- 3 The Olgas
- 4 Model



Outside the village are camping grounds (separated for a more natural ambience), Aboriginal and managerial housing, police and service stations, a ranger's house and a sewage treatment plant. This plant, the water supply services and solar energy systems are designed to create a self-sufficient town with minimal wastage and maximum recycling.

The buildings are designed to recall traditional desert architecture although colours are intensified to reflect the Australian desert environment.

Particularly effective are the hyperbolic-shaped fabric tents designed to shade courtyards and pedestrian walkways and as layered vaults for cooling internal spaces.



- 5 Early concept sketches
- 6 Aerial view with main township in centre
- 7-8 Resort accommodation set low to minimise impact on surrounding desert



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VISITORS' CENTRE

RESIDENTIAL FLATS AND MALL



SHOPPING FACILITIES

COMMUNICATIONS DISH



RESORT 2 CENTRAL FACILITIES

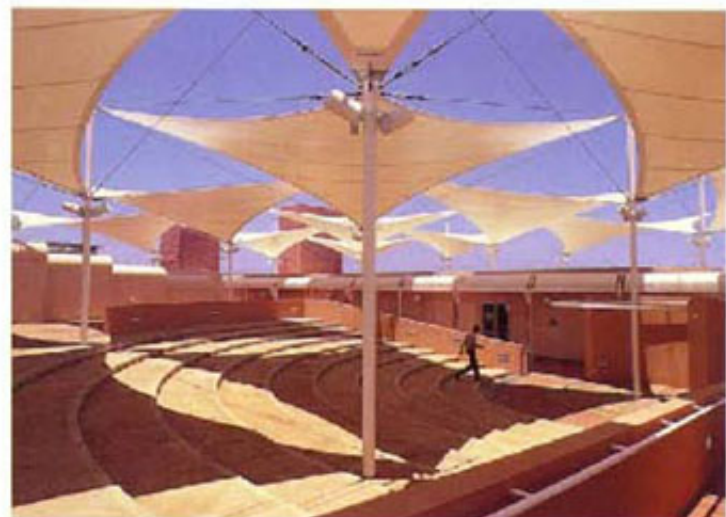
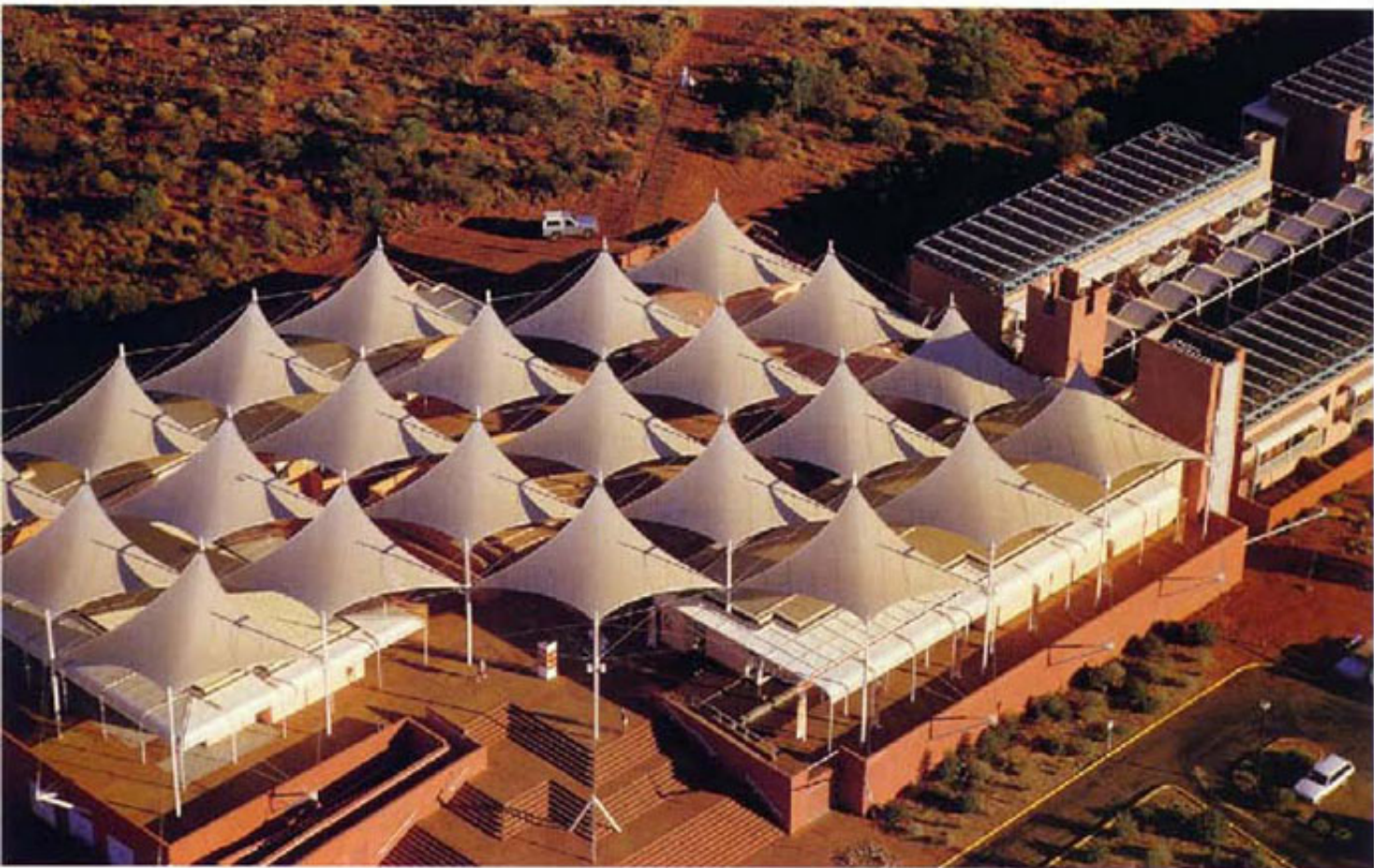
RESORT 2 ROOMS



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- 9. Cross sections
- 10. Distant view of visitors' centre
- 11. Aerial view of centre
- 12. Five-star hotel rooms
- 13. Amphitheatre at visitors' centre



- 14. Five-star hotel rooms
- 15. Resort accommodation set low to minimise impact on surrounding desert
- 16. Night view of five-star hotel pool
- 17. Saunas with Ayres Rock in background



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- 18 Fivestar hotel
- 19 Sails
- 20 Fivestar hotel
- 21-22 Dramatic contrast of sails and rock



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Milton Park Hotel and Villas

Design/Completion 1986/1989

Bowral, New South Wales

Drs White and Cooper

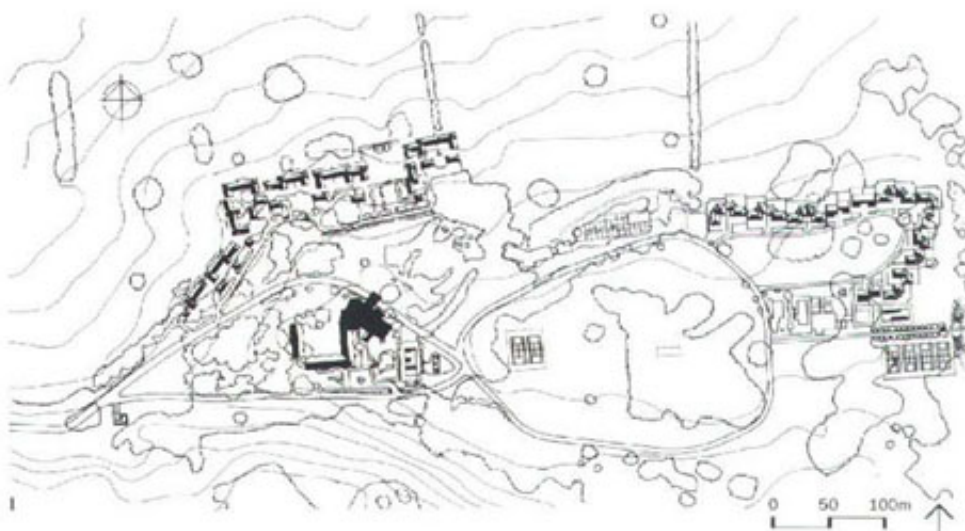
7,500 square metres

Concrete slabs, timber roof framing,
load bearing and bagged brickwork

Milton Park is one of the few historic estates remaining in New South Wales. Threatened with subdivision, the estate was purchased in 1984 by two doctors who recognised its potential for low-key tourism: proximity to Sydney, its renowned English gardens, and a large historic residence.

To finance conversion of the residence into a country hotel, a village comprising 20 units was planned at the edge of the gardens overlooking rural pastures. It combines elements of a traditional English village with echoes of the residence's sheer gables and chimneys.

A new accommodation wing containing 50 suites was extended from the residence to form a courtyard facing the gardens. Its architecture is closer to that of the residence, but it incorporates large window walls and mezzanines. The interior of the residence was extensively redesigned to create a flow of public spaces characterised by a combination of antique furniture and specially commissioned contemporary Australian artwork.



- 1 Site plan
- 2 New hotel wing
- 3 English garden extended into new courtyard
- 4 General view of village adjoining resort
- 5 Western end of resort village



Observatory Hotel

Design/Completion 1987/1992

Millers Point, Sydney, New South Wales

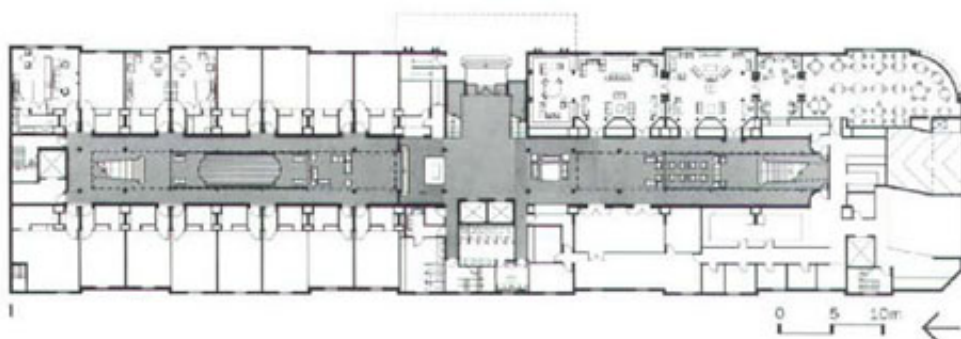
Nara (NSW) Pty Ltd

12,230 square metres

Reinforced concrete banded floor slab and columns,
rendered and painted with sandstone bands,
steel framed sheet metal roof

The Observatory Hotel is located in the historic Rocks precinct of Sydney where stringent controls on new building design are imposed. Its design borrows from a prevailing Georgian tradition, producing a recognisable relationship to its context. This theme extends inside the hotel to generate a boutique atmosphere.

A major difficulty in design development arose from the conflict between providing 120 suites of varied layout and the imposed three-storey height limit. This problem was partly overcome by forming an upper level of dormers and roof gables, disguising accommodation but producing a highly variegated roof-line. Another initiative was excavation of the site to incorporate the hotel guest facilities, a gymnasium and pool area.



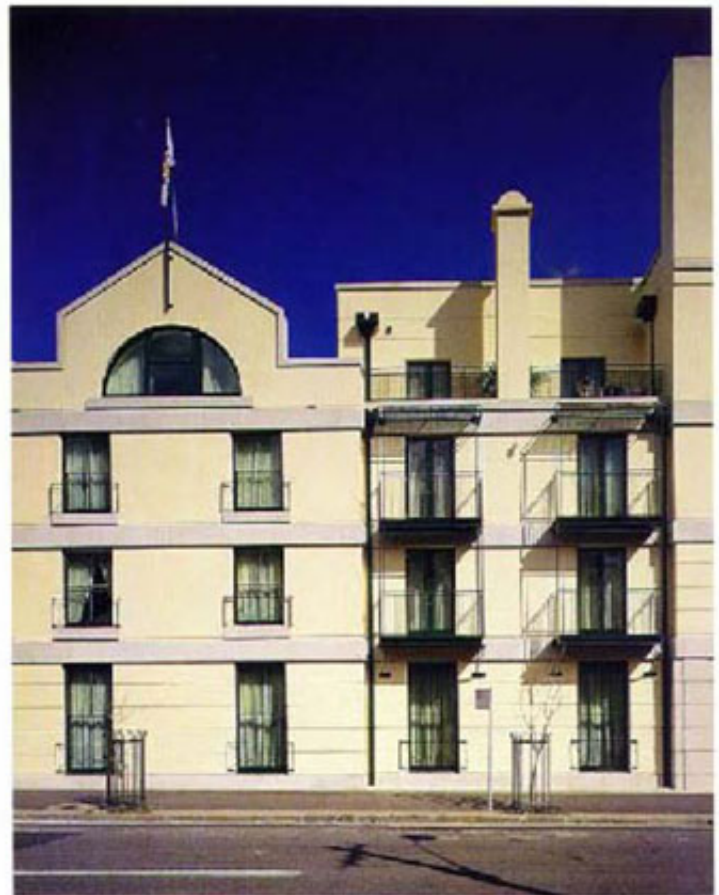
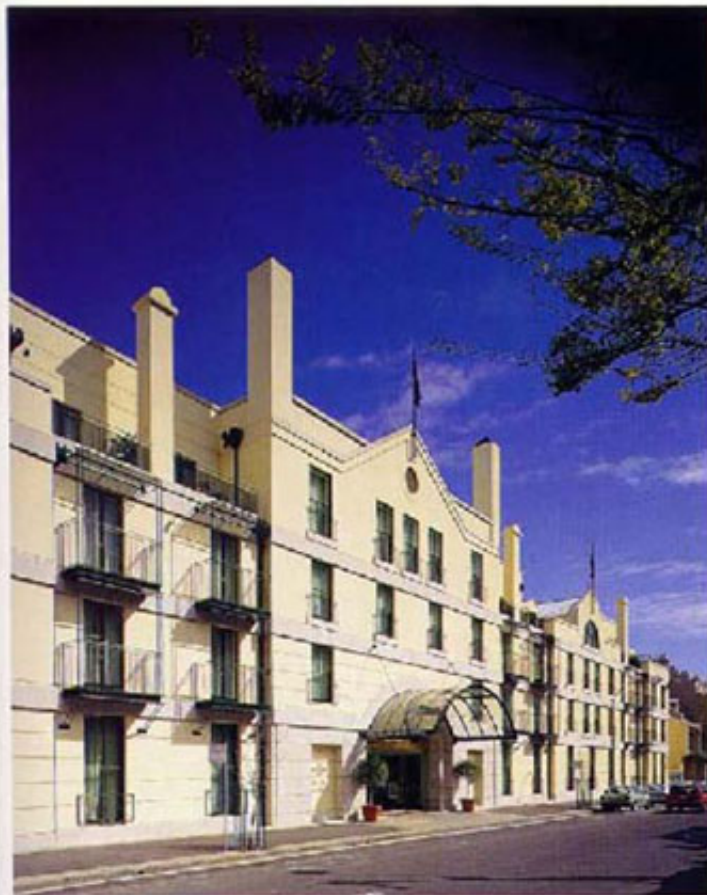
- 1 Ground-floor plan
- 2 Kent Street facade
- 3 Early concept sketch
- 4 Main entrance
- 5 Facade detail



3rd. Row Sketch



4th. Row Sketch





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- 6 Central atrium
- 7 Foyer
- 8 Indoor pool



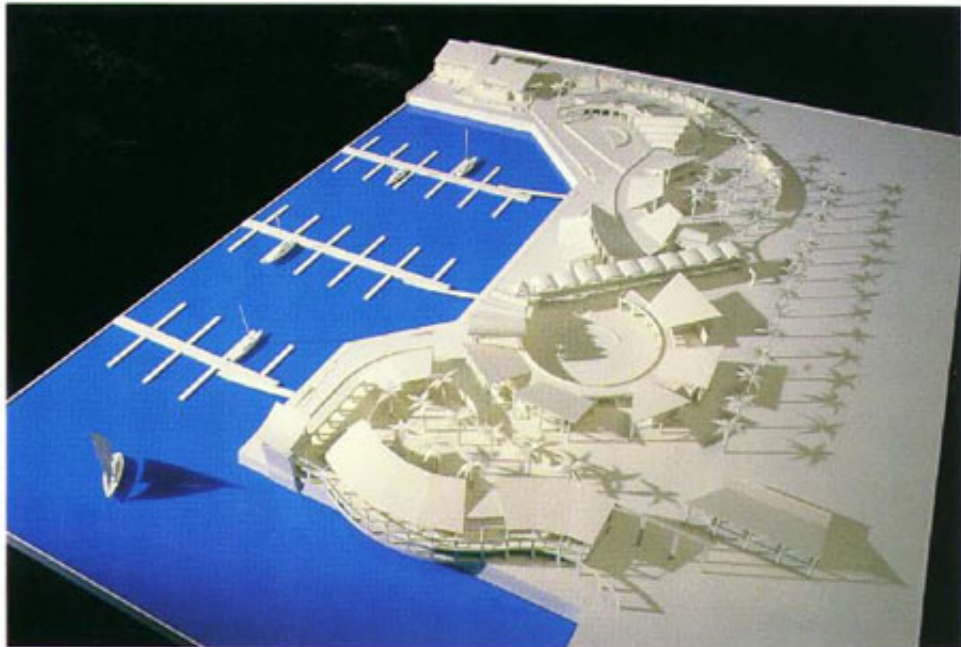
Laguna Quays Resort

Design/Completion 1990/1994
Repulse Bay, North Queensland
Aqua Del Rey International
1,800 hectares
Natural stone and timber

Laguna Quays is a mainland resort competing with well-known island resorts in the Whitsunday region. It is also an integrated resort community established under a special Act which allows a combination of resort and permanent residential community.

The resort includes a championship golf course, Golf Lodge Hotel comprising 60 suites and club house, a range of residential enclaves overlooking fairways, and a marina harbour. Future projects include a lagoon hotel, town centre and waterfront residential apartments.

The design uses exaggerated tile roofs propped back against walls to create a tropical effect. However, it is the broad concept of connected shaded and protected outdoor spaces that governs the master planning. These spaces contrast with a gridded remnant palm plantation and are woven through the plantation grid in fluid and undulating patterns. The resulting effect is a more relaxed but dramatic experience of a tropical architecture than occurs in the conventional island resorts.





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- 1 Model of proposal for future developments
- 2 Original marina village proposal
- 3 Golf Lodge roofscape
- 4 Golf course villas
- 5 Central roof structure of Golf Lodge Hotel

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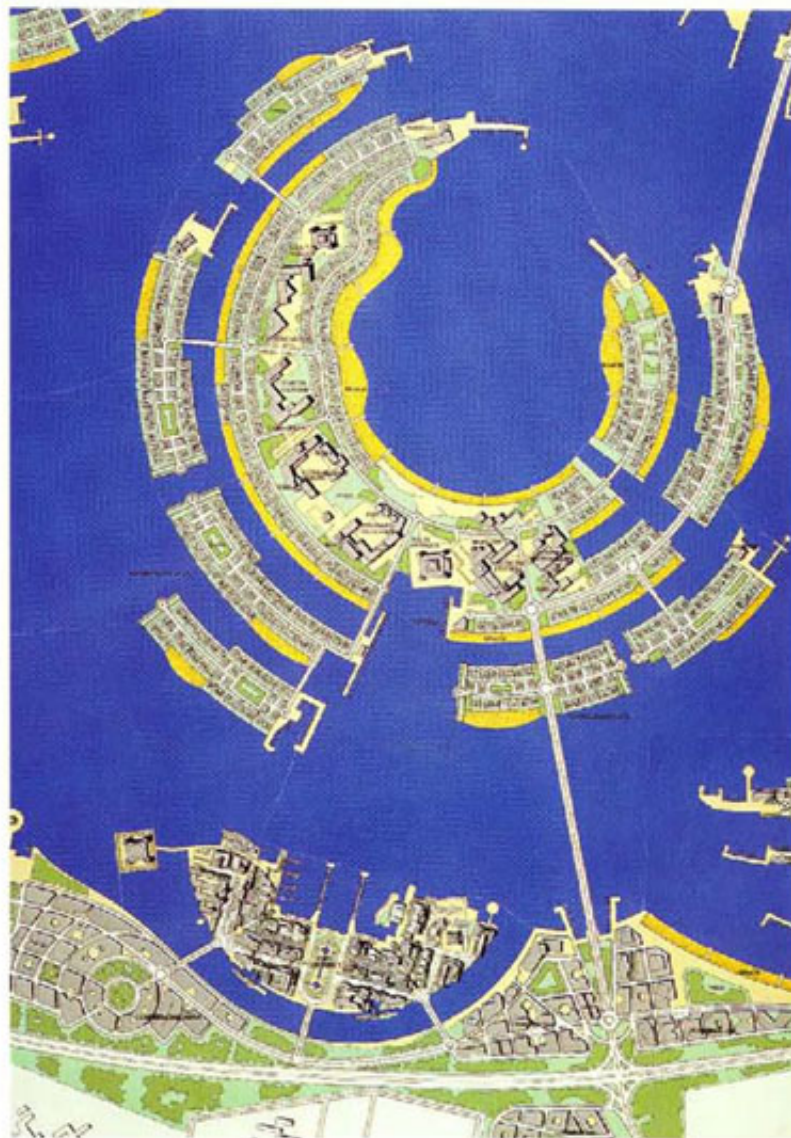
- 6 Golf Lodge Hotel
- 7 Golf Lodge Hotel entrance area
- 8 Golf course
- 9 Golf course and condominiums



- 1 Roof garden architectural concept
- 2 Sketch of initial concept
- 3-5 Model views of final proposal



Master Planning and Urban Design



- 104 Canberra National Convention Centre Precinct
- 108 Walsh Bay Redevelopment Plan
- 110 Bayside Development
- 112 Port Geographe
- 116 Kuwait Pearls Sea Cities
- 122 Pymont Urban Renewal
- 126 Newstead Tenerife Urban Renewal
- 130 Sudirman Central Business District
- 131 Second Crossing
- 132 Sydney 2000 Olympic Games Sports Facilities
 - Sydney International Aquatic Centre
 - Sydney International Athletics Centre

Canberra National Convention Centre Precinct

Design/Completion 1982/1989

Civic Centre, Canberra, Australian Capital Territory

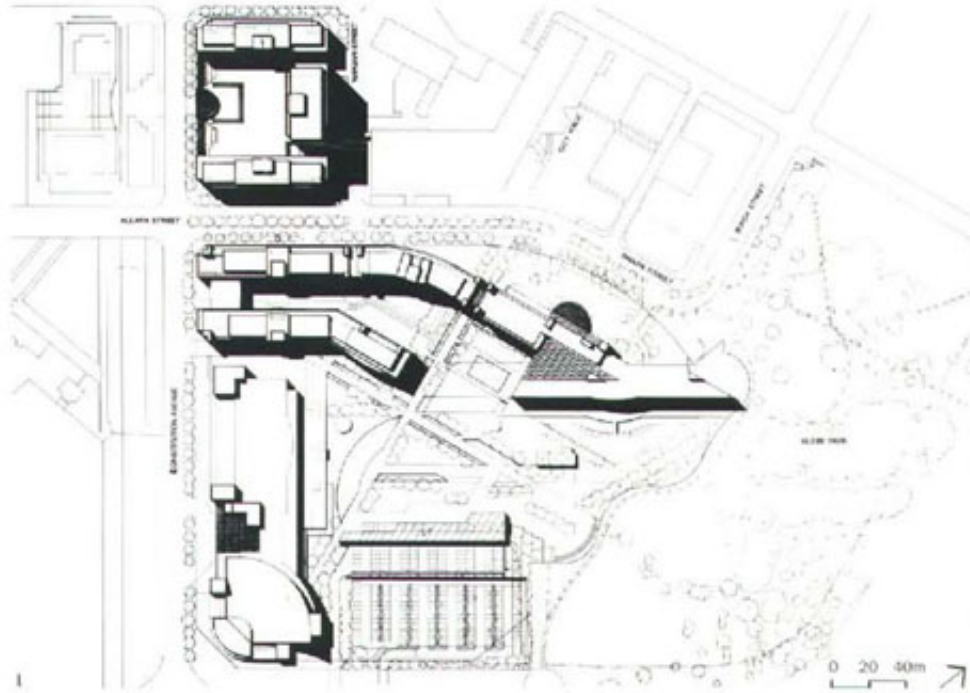
White Property Developments and National Capital Development Commission

9 hectares

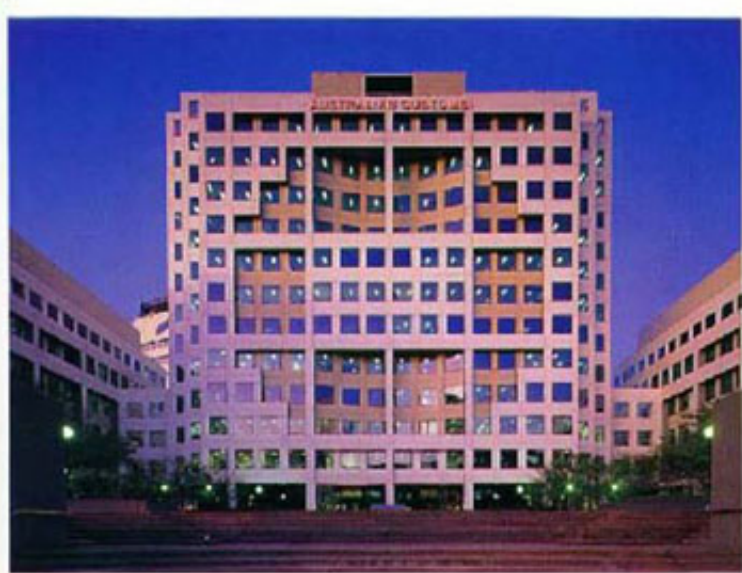
Offices, hotel, convention centre, casino and gardens.

This completed project was originally based upon the Tivoli Gardens in Copenhagen. As needs for large-scale buildings were recognised, a more urban scheme developed but the emphasis on gardens remained. These gardens now form a relaxed recreational environment comprising waterways, parterres and tree corridors which are linked to a historic park adjacent to the development.

The buildings are consistently treated to define the gardens, each building being associated with its own space. A major internal feeder road is similarly defined by creating a consistent architecture shaped to follow the route. The practice continued on the commission to design each building component, the precinct now being one of Canberra's most popular recreation venues.



- 1 Site plan
- 2 Early massing model used for building siting
- 3 Elevation
- 4 Convention and Exhibition Centre
- 5 Pedestrian space between office buildings
- 6 Major office building showing articulated facade
- 7 Hotel frontage to historic park







9



10

- 8 Wall of office buildings defining edge
- 9 Hotel atrium
- 10 Detail showing facade modulation

Walsh Bay Redevelopment Plan

Design 1986

Sydney, New South Wales

White Industries Limited

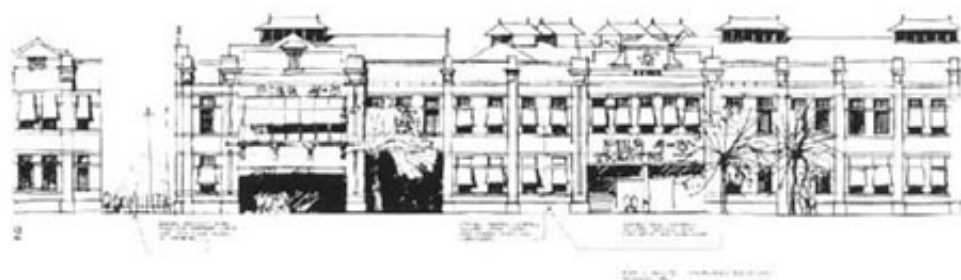
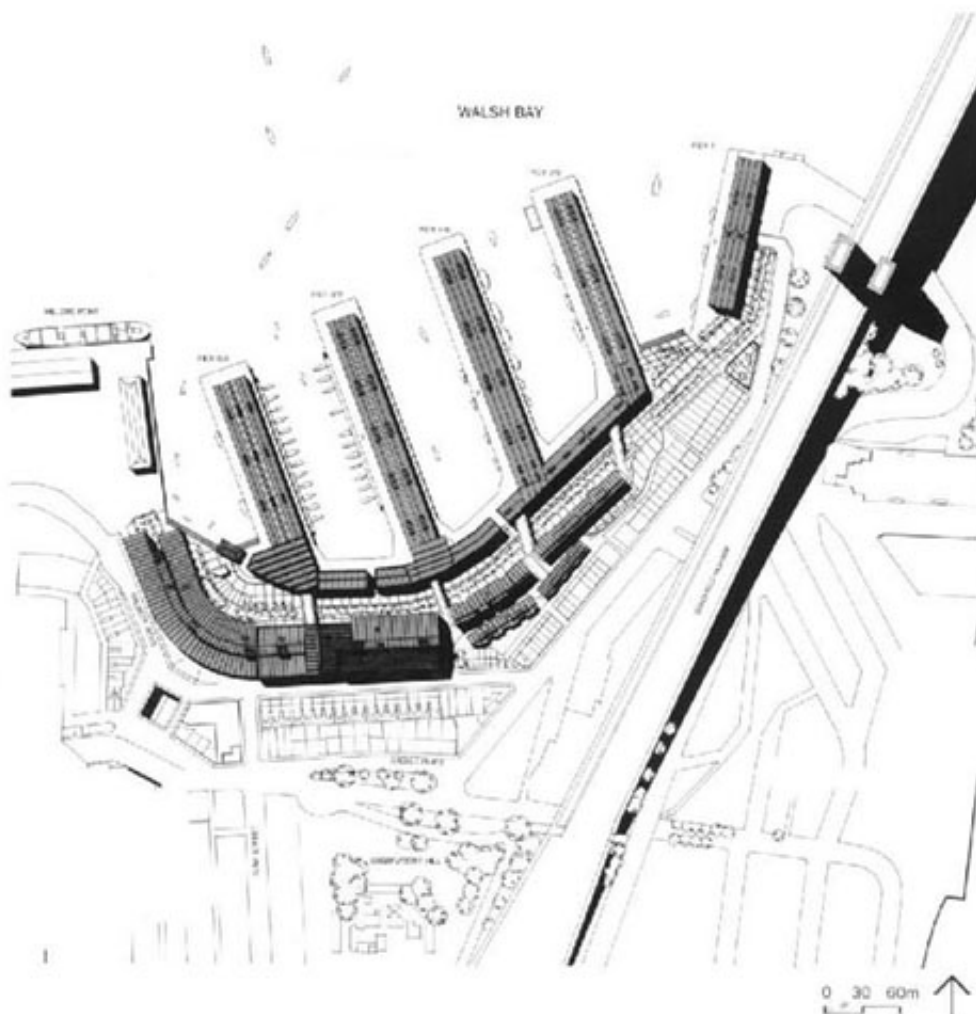
50 hectares

Master plan for redevelopment of urban foreshore, including five historic piers, dockland and urban housing

This redevelopment was proposed as part of the rejuvenation of Sydney's urban foreshore, along with Darling Harbour and Circular Quay. There were few limitations on the introduction of new uses, but very strict heritage controls.

A major problem with rejuvenating activity within defunct building envelopes is the creation of sufficient visual impact to attract public attention without losing historic integrity. This proposal intensively develops pockets of redundant open spaces and roadways so that little external alteration is necessary to existing buildings to create that impact.

The new architecture reinterprets existing themes into lightweight forms with a significant change from timber to steel structure, partly in recognition of nearby Darling Harbour and partly to maintain the integrity of the existing robust forms. The overriding theme is the retention and reinforcement of arguably the most distinctive historic maritime environment still remaining in Sydney.



- 1 Site plan
- 2 Concept sketch
- 3 Sections
- 4 Aerial view of model showing converted piers and new development.



SECTION THROUGH POTTINGER STREET AND EAST ELEVATION OF A1



SECTION THROUGH BOND STORES 3-4 AND EAST ELEVATION OF NEW

3



Bayside Development

Design 1986

Melbourne, Victoria

80 hectares

Hazama Gumi Limited

Master plan for renewal of dockland, incorporating a self-contained city with tourist and recreational facilities, marina development, hotel, retail and commercial elements, community and civic facilities, and service infrastructure

This scheme was prepared for a major urban renewal and redevelopment project in Melbourne, which encompasses virtually all of the redundant industrial land in the port as well as two long wharf piers projecting into the bay.

The proposal is unusual in that it increases the existing area of water. The proposal has a water-based theme, using a central canal as a major axis opening up into a pair of inner harbours. Comprising mixed commercial, residential, retail and entertainment facilities, the development is moulded around the harbours and waterfront promenades, the focus of which is a recreational island separating the two basins.

It is proposed to retain the wharf piers, one as an exhibition centre and one as a working pier, preserving its historic role. The new building forms have predominantly maritime themes appropriately derived from the existing port and from the landscape focus on water frontage.

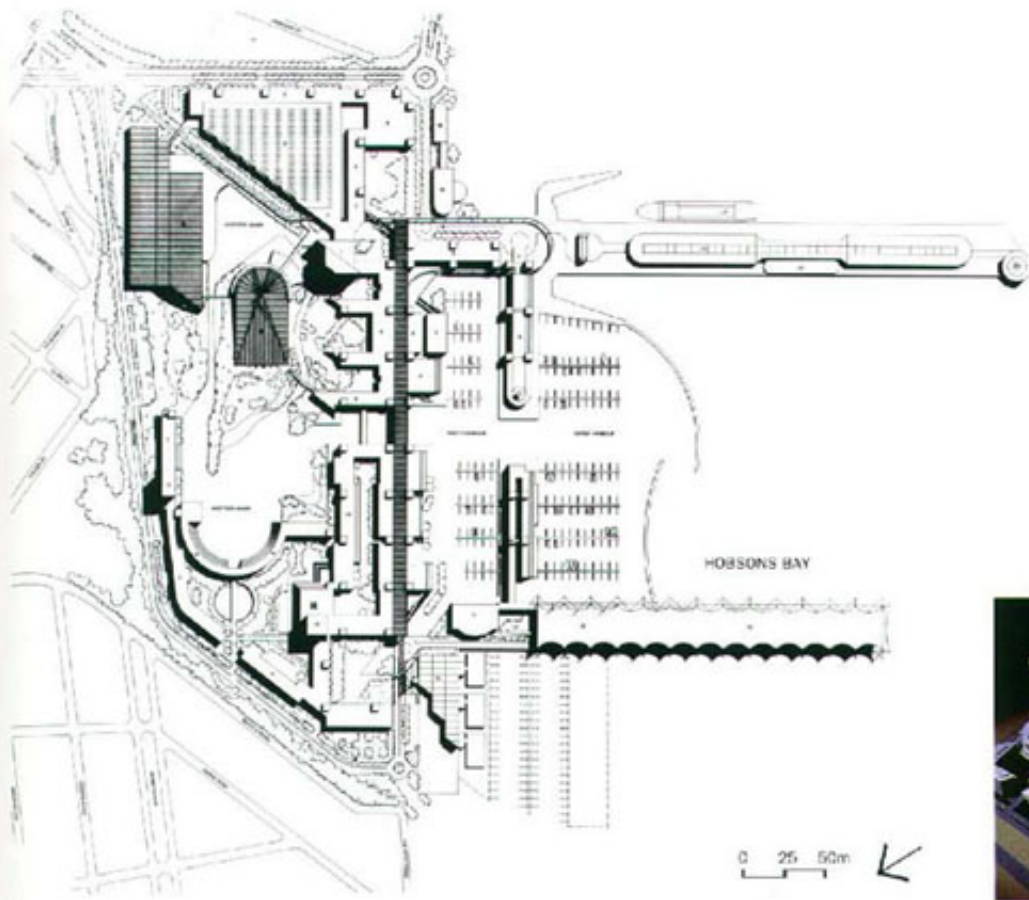


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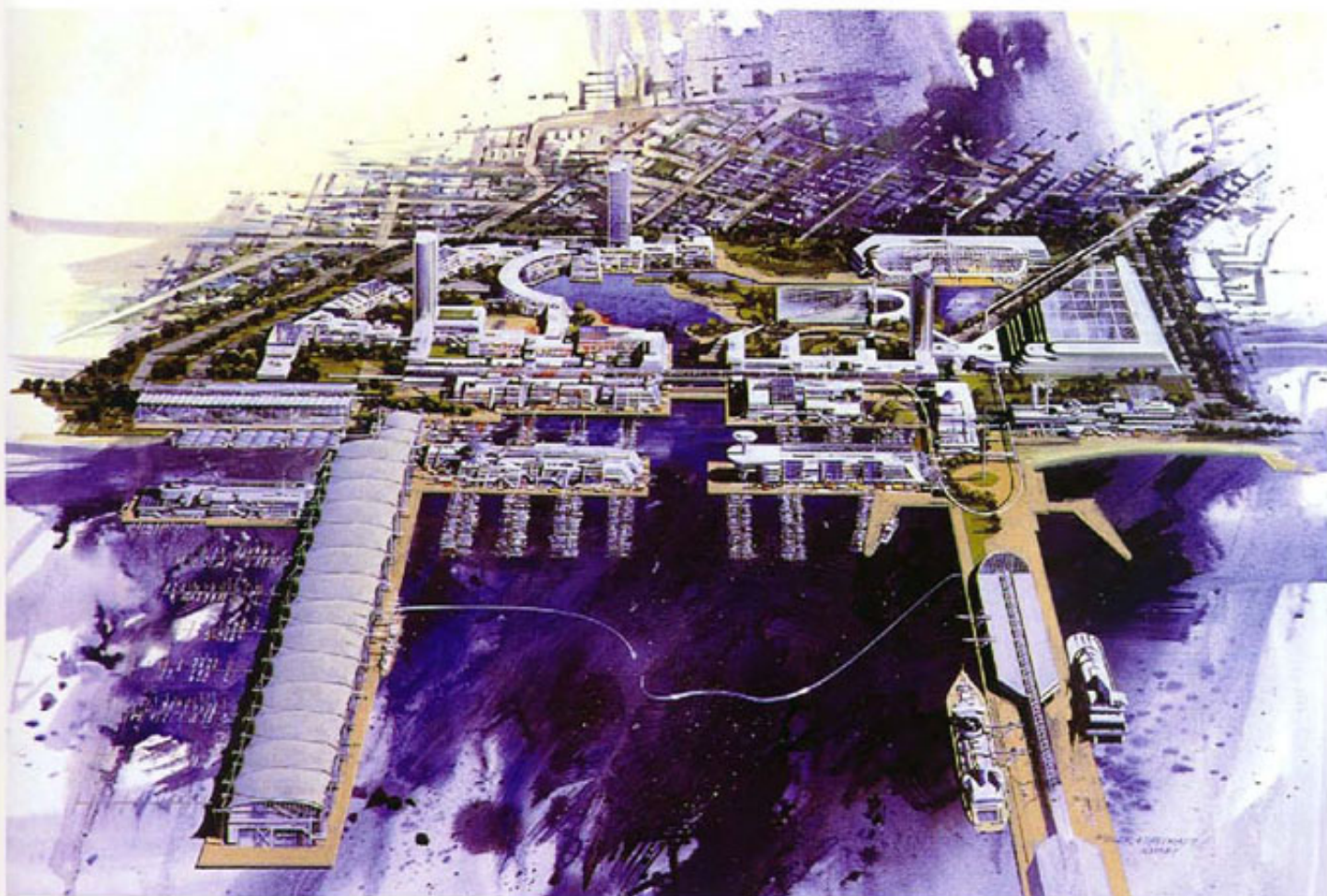
2

- 1 Aerial view of model showing inner harbours
- 2 Central tower
- 3 Site plan
- 4 Overall view of development
- 5 Perspective showing development from south



ROOF PLAN

- 1 Light rail station, high rise commercial
- 2 Aquatic entertainment/Summerworld
- 3 Aquatic training centre
- 4 People mover station
- 5 Carpark No. 1
- 6 Commercial & retail
- 7 Community facilities
- 8 Apartments
- 9 Hotel
- 10 Apartments
- 11 Yacht club
- 12 Exhibition centre
- 13 Aquarium
- 14 Serviced apartments
- 15 High rise apartments
- 16 Open space
- 17 P.M.A. workshops
- 18 Hovercraft terminal
- 19 Tavern
- 20 Renovated existing buildings
- 21 New buildings



Port Geographe

Design 1987

Busselton, Western Australia

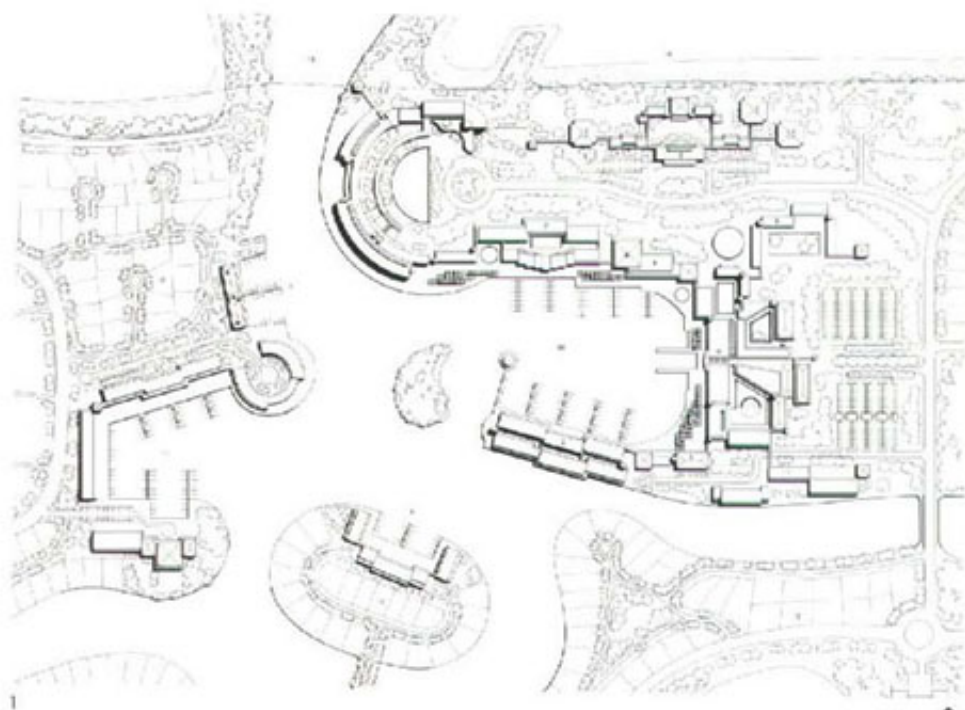
Interstruct Pty Ltd

1,800 hectares

Master plan for new resort township and wetland conservation area

The project strategy involved creation of a new resort township, with funds extracted from the development for conserving significant wetlands adjacent to the site. These wetlands, forming the Vasse Wonnerup Conservation Park, are remarkable not only for their extent and abundant wildlife but because they are inland tidal wetlands. Over time their narrow estuaries have silted up severely, altering the ecological balance of the marine environment.

The new township is planned to surround the least valuable lagoon, converting it into a marina and island residential precinct. Around the marina are proposed a town centre, two low-scale resort hotels, and visitor facilities. Reshaping of the lagoon will allow it to act as a major flushing outlet for the conserved wetland lagoons.



ROOF PLAN

- | | |
|---------------------------------------|---------------------------------|
| 1 250-room international hotel | 8 Yacht club and leisure centre |
| 2 Promenade apartments and townhouses | 9 Harbour split apartments |
| 3 120-room beachfront hotel/motel | 10 Boat harbour and marina |
| 4 Public tavern and restaurant | 11 Residential precinct marinas |
| 5 Town apartments | 12 Residential subdivisions |
| 6 Retail community and civic centre | 13 Estuary to Geographe Bay |
| 7 Quay apartments | 14 Beachfront |

0 50 100m ↑



- 1 Master plan
- 2 Preliminary concept sketch
- 3 Model showing inner harbour



- 4 Section of model showing town centre
- 5 Section of model showing river frontage
- 6 Aerial view of model



4



5



Kuwait Pearls Sea Cities

Design/Completion 1989/1990

Kuwait

Kuwait Pearls Real Estate Company

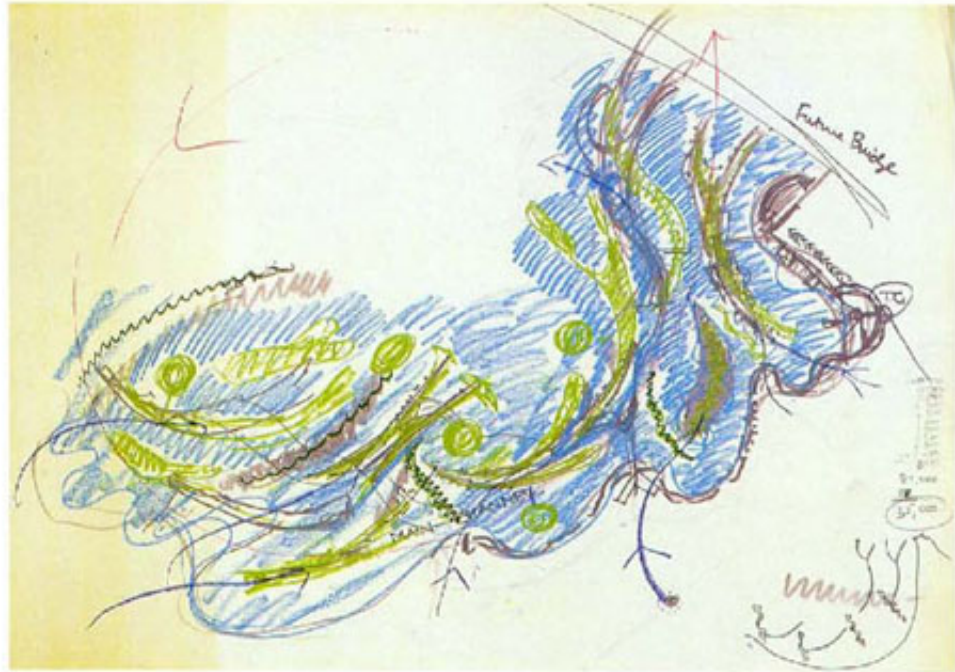
12,000 hectares

Master plan for the new cities of Shuwaikh and Khiran

The practice won first prize in a selected international competition that drew entries from Australia, North America and France. The competition was for the first two of ultimately six new water-based cities intended to solve housing shortages in Kuwait, and to generate tourism income.

The proposed city of Shuwaikh occupies a basin adjacent to Kuwait City. The scheme proposes 10 island developments of comparable scale, each self-sufficient in community and religious facilities, and having beach and canal frontages. The major commercial development stretches around the basin foreshore and is linked by bridges to the islands. The shapes and orientation of the islands, together with secondary mangrove islands, are planned to maximise filtration of sediment and to re-establish ecological balance.

By contrast, Khiran is proposed as a series of inland waterways achieving comparable residential water frontage. These waterways are connected to form a systematic flushing system.



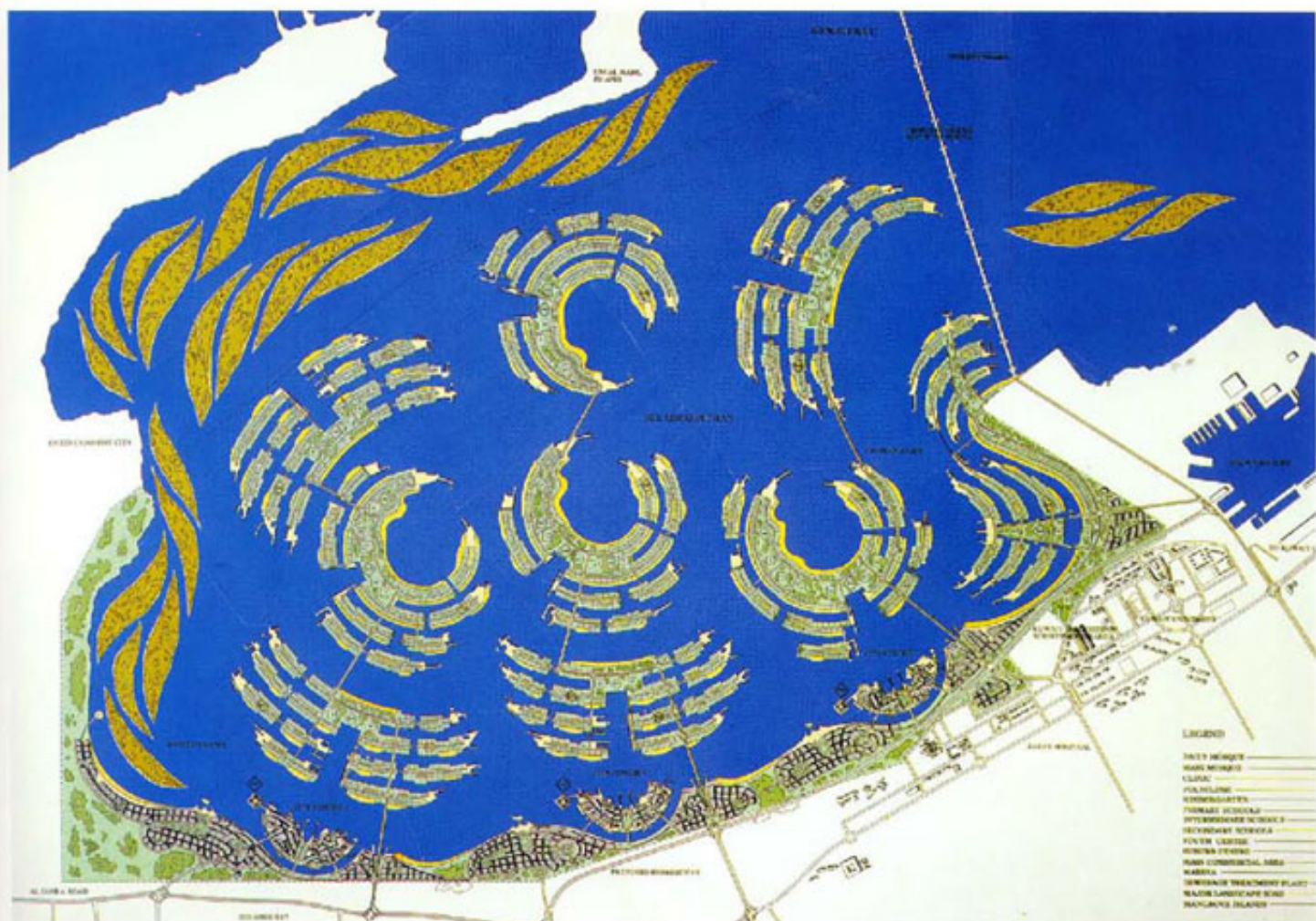
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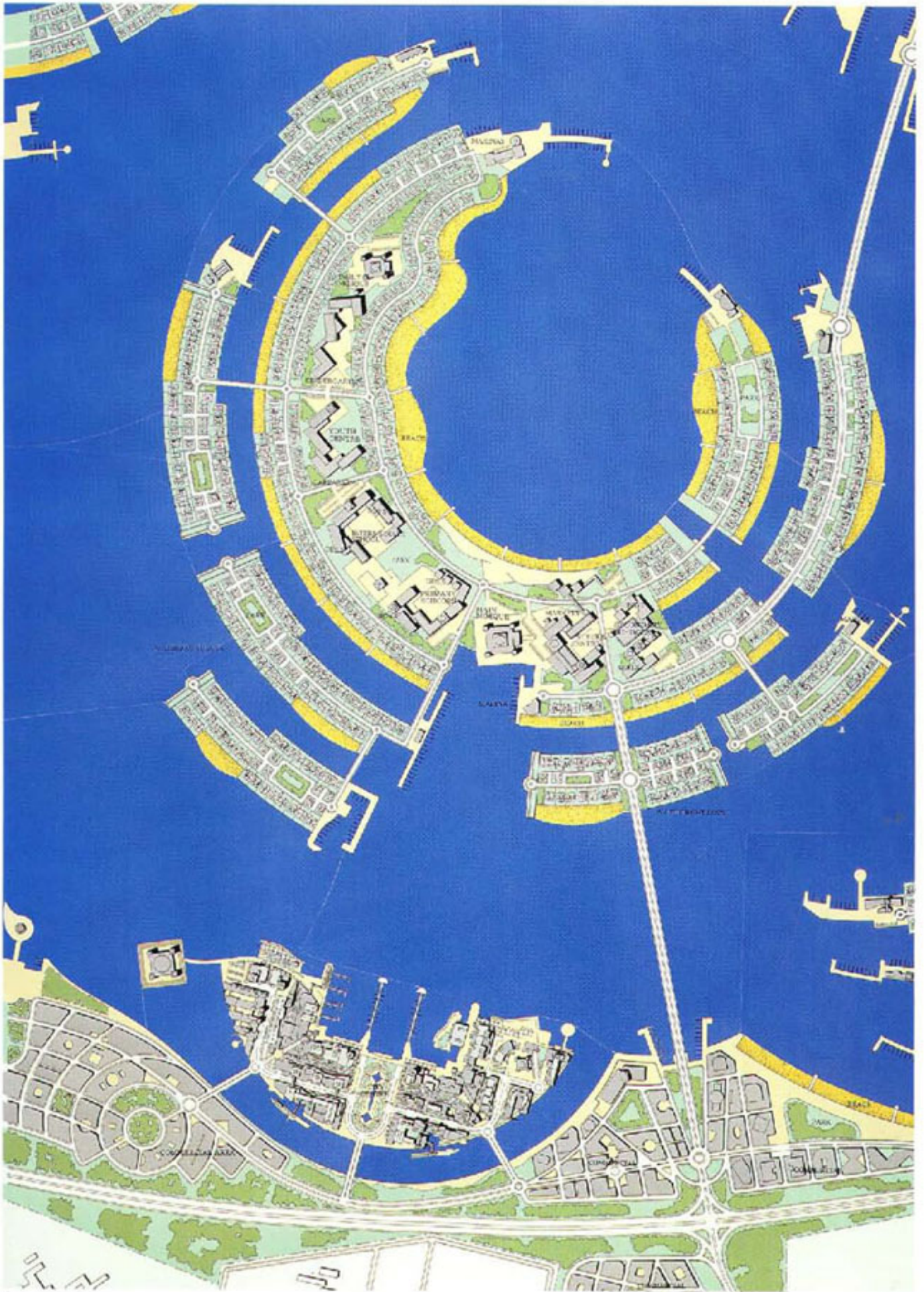


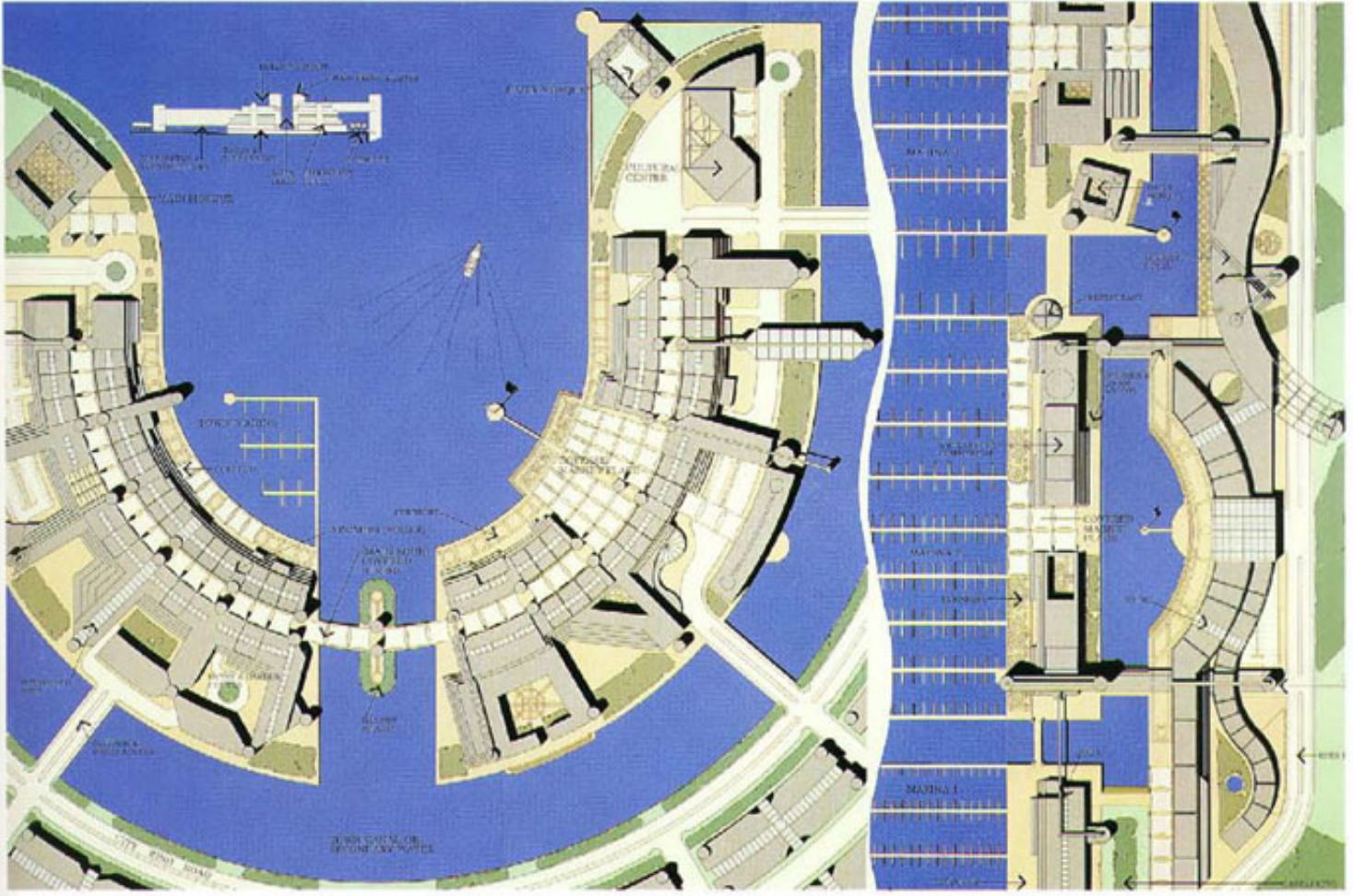
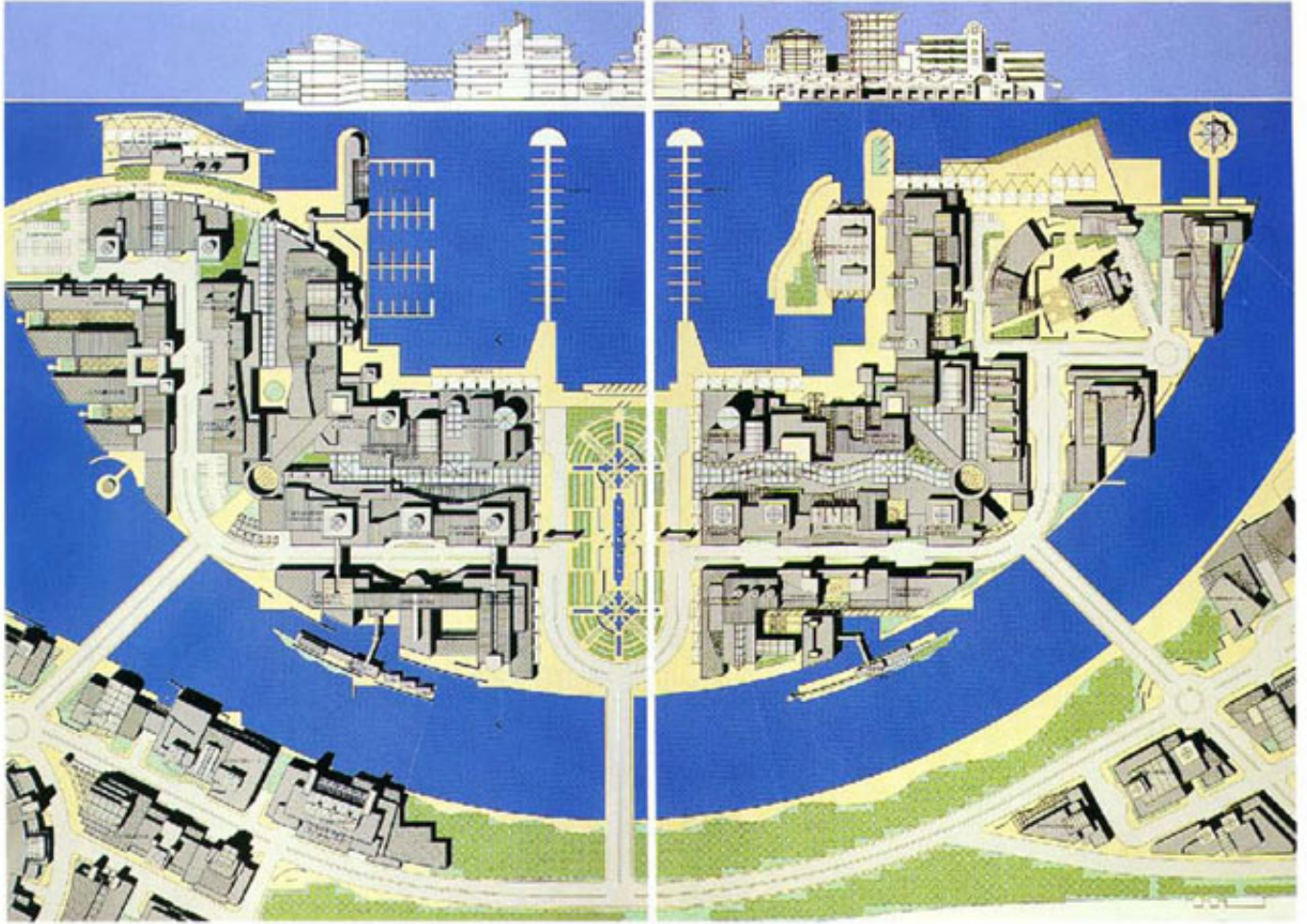
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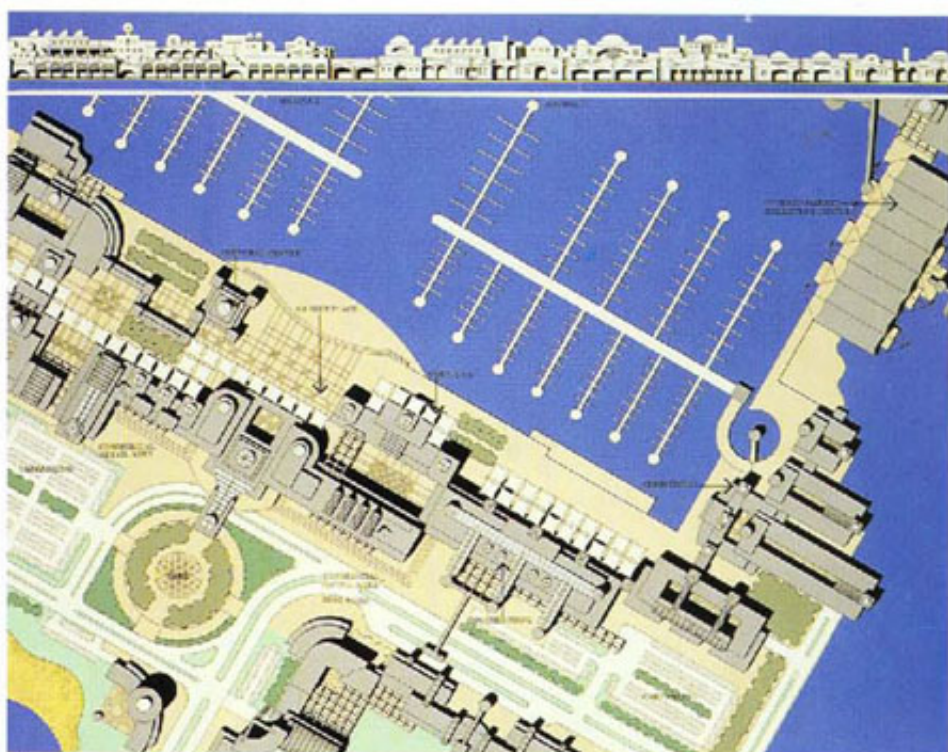
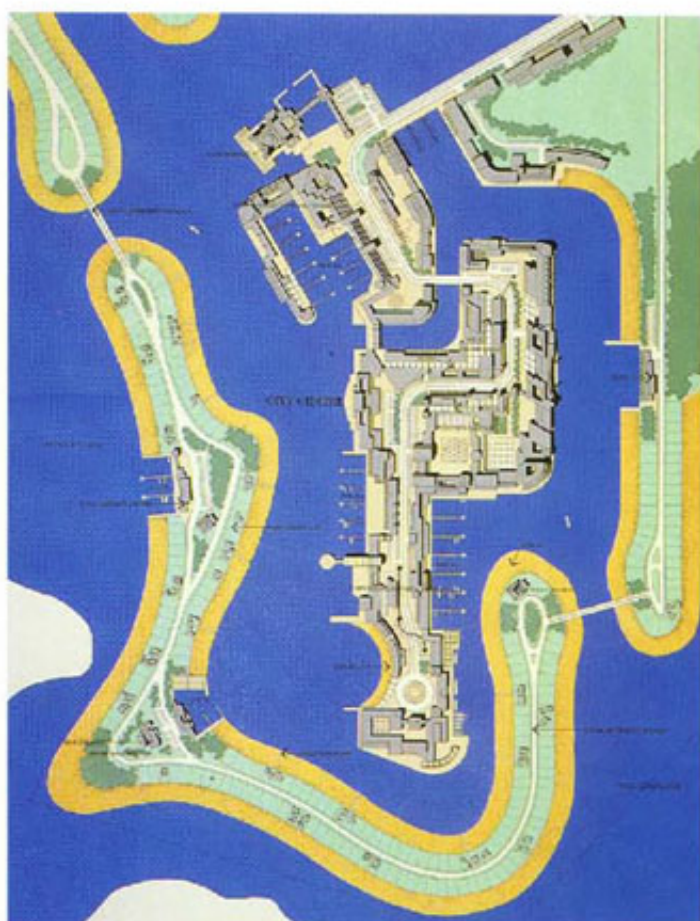


4

- 5 Shuwaikh island community
- 6 Shuwaikh coastal city centre type 1
- 7 Shuwaikh coastal city centre type 1
- 8 Shuwaikh coastal city centre type 2



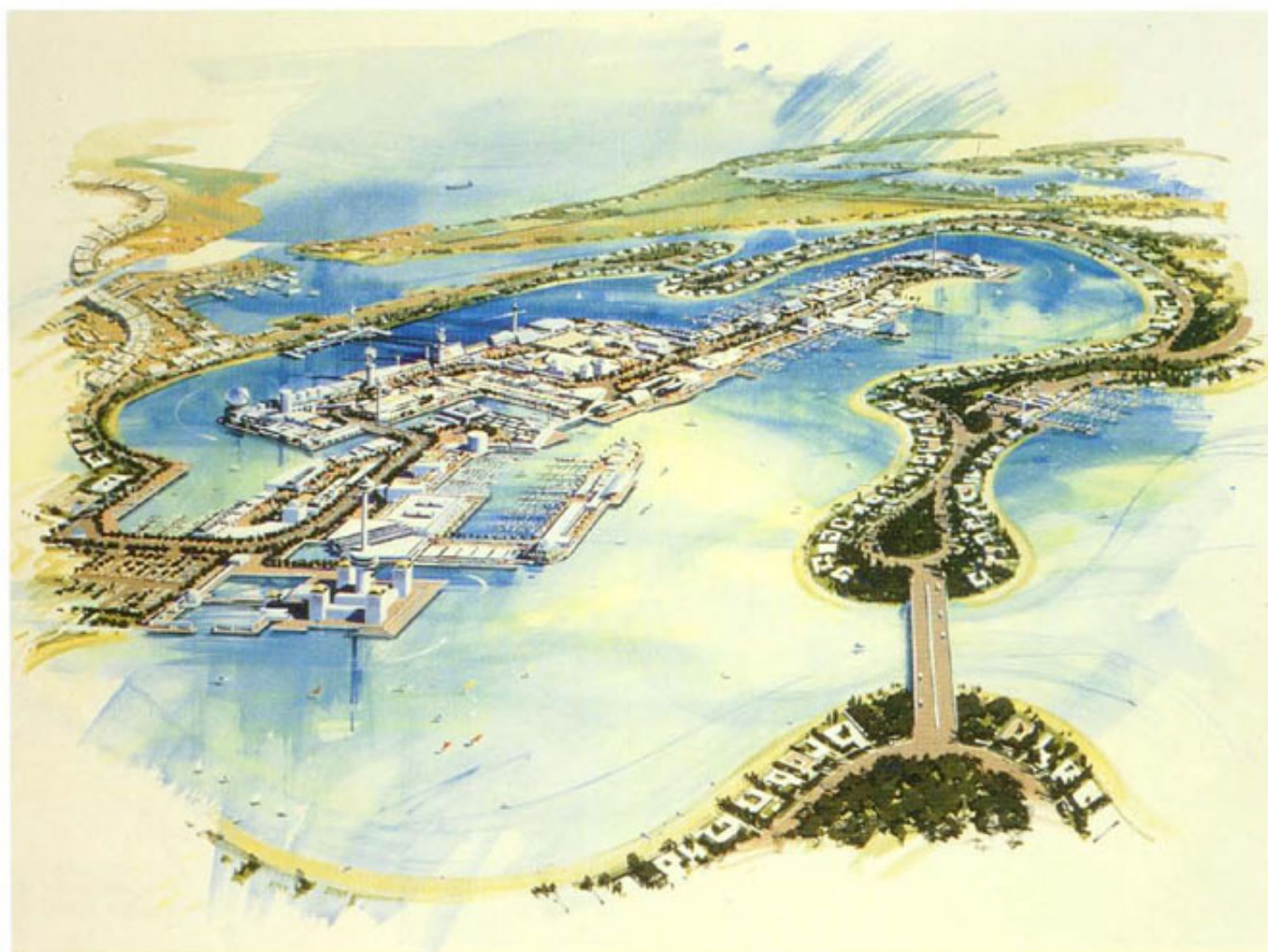




- 9 Khiran Master Plan
- 10 Khiran city centre plan
- 11 Early sketch for Khiran city centre
- 12 Khiran city centre studies
- 13 Perspective of a typical residential area
- 14 Aerial perspective of Khiran city centre



13



14

Pymont Urban Renewal

Design 1989/1993

Pymont Point, Sydney, New South Wales

City West Development Corporation/CSR and Lend Lease Developments

13 hectares and 12 hectares

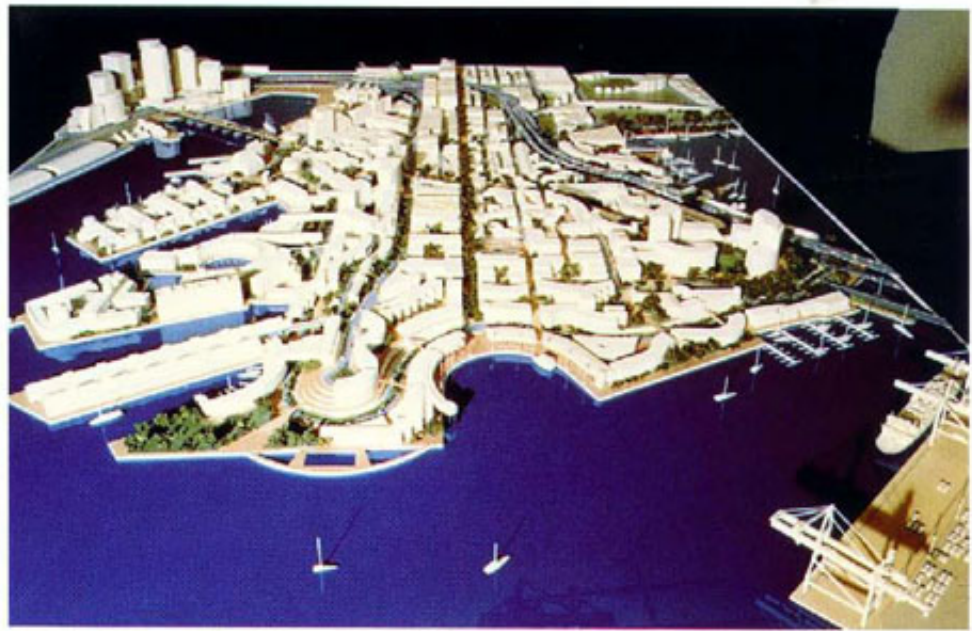
Urban renewal plan for mixed use waterfront redevelopment
Work for CSR in association with Devine Erby Mazlin

In 1989 the practice commenced a planning proposal for submission to government for the urban renewal of the Pymont Peninsula adjacent to Sydney's central business district and the Darling Harbour redevelopment. This scheme formed a precedent for a comprehensive strategy which is currently Australia's largest urban renewal undertaking.

The Pymont Point Master Plan is a major component of the redevelopment area being joint-ventured by its owner and a developer. The plan is for a medium-scale mixed use redevelopment of housing, shops, commercial buildings, community facilities and public recreation amenities. Major ingredients include retention of historic fabric for adaptation, pedestrian priority over vehicular movement, and a light rail link to the city centre.



- 1 Pymont/Ultimo Master Plan
- 2 Aerial view of existing environment on Pymont Point
- 3 Early concept sketch
- 4 Model of proposed Pymont Point development



- 5 Presentation master plan
- 6 Aerial view of Pyrmont Point Master Plan
- 7 Master plan model from direction of CBD
- 8 Model detail





Newstead Teneriffe Urban Renewal

Design 1992/1993

Brisbane, Queensland

150 hectares

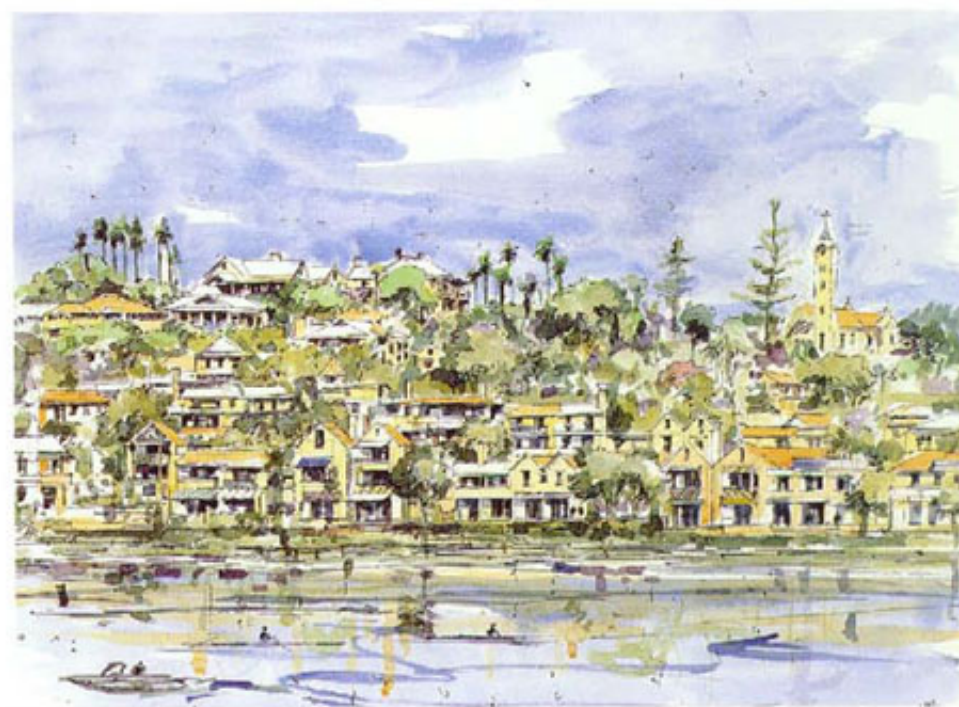
Urban Renewal Task Force, Brisbane City Council

Urban renewal strategy for mixed use waterfront redevelopment

This plan forms a principal component of the urban renewal strategy for inner Brisbane. It covers an area approximately 3 kilometres long and varying in width from 100 to 900 metres.

The strategy reinforces three precincts whose distinction has been blurred over years of industrial usage. The Newstead precinct has the largest area and is associated with a historic house and park; the proposal is for a predominantly residential mixed use redevelopment focused upon a mall which is to be linked to the city centre by light rail. The Teneriffe precinct contains Brisbane's historic wool stores, containing over 160,000 square metres of space to be converted into a tertiary arts precinct. The CSR precinct comprises a historic sugar refinery adaptable to an urban residential environment and an old powerhouse to be converted into a sports centre.

The basis of the strategy is to initiate public redevelopments as catalysts for communities to provide a wide variety of lifestyles.



- 1 Aerial view looking north
- 2 Proposed housing at Newstead on Brisbane River
- 3 Master plan
- 4 Proposed pedestrian mall at Newstead

LAMINGTON STREET PRECINCT



TENERIFE RIVERBENT PROJECT



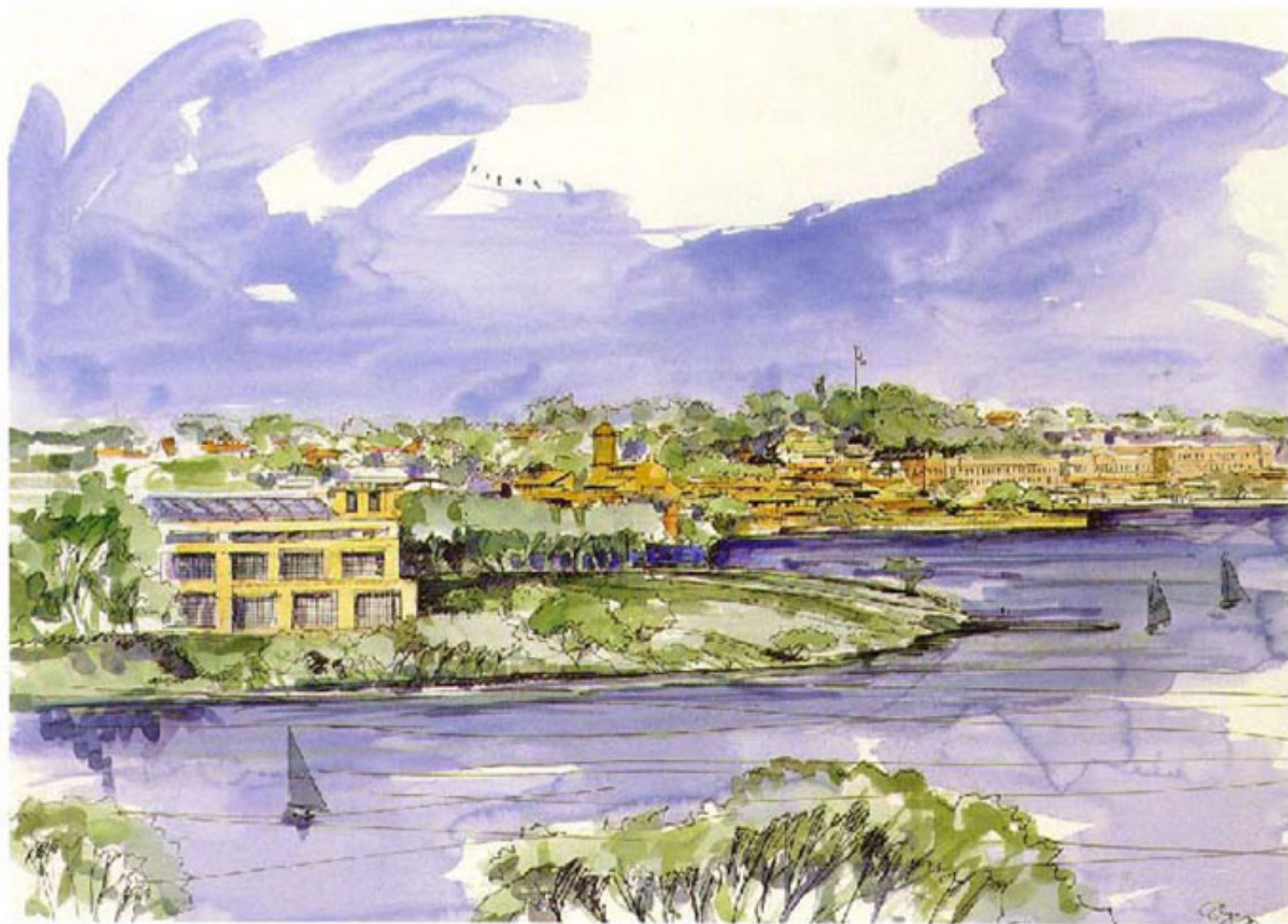
NEWSTEAD PRECINCT



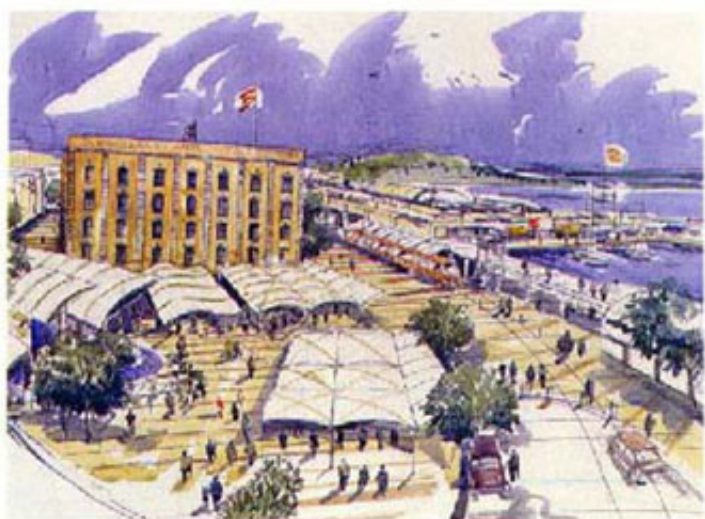
- 5 Proposed waterfront development at New Farm
- 6 View of New Farm peninsula
- 7 Proposed refurbishment of wool stores for tertiary campus
- 8 Proposed marina and village at Tenerife
- 9 Proposed market square at Tenerife



5



6



Sudirman Central Business District

Design 1992/1993

Jakarta, Indonesia

PT Danayasa Arthatama

43 hectares

Master plan for a new central business district

In association with Planning Workshop

In contrast to previous commercial sprawl across Jakarta, the Sudirman central business district is the first major city development to introduce detailed design controls and predetermined infrastructure.

The plan is based upon an internal ring-road system accessing all precincts, with predominantly commercial buildings inside and residential buildings outside the ring. The ring will provide for vehicular movement on ground and sub-ground levels, with a monorail loop elevated to first level. A secondary layer of space links provides continuous pedestrian links at grade which avoid conflict with the vehicular system.



1



2



3



4

- 1 Diagrammatic layout of buildings, spaces and main road infrastructure
- 2 Model showing example towers and relationships
- 3 Aerial perspective
- 4 Model for determining height and scale

Second Crossing

Design 1993/1994

Johor State, Malaysia

United Engineers (Malaysia)

10,820 hectares

Master plan for a new city

In association with Perunding Alam Bina

The proposed Second Crossing development is associated with a new link to be provided between Singapore and Malaysia. This new link is intended to alleviate traffic congestion on the existing causeway that links Johor Bahru with northern Singapore.

The new township of 400,000 people will be located around the Malaysian point of connection between the two countries. Employment initially will be based on technical industry but as the city grows a commercial orientation is anticipated.

The master plan focuses upon a new marina to be formed inside a shoreline of estuarial mangroves. Development will occur in stages, forming discrete commercial and neighbourhood precincts defined by existing conservation areas and new open space links.



1 Aerial perspective of Second Crossing township

Sydney 2000 Olympic Games Sports Facilities

Design/Completion 1991/1993

Homebush Bay, Sydney, New South Wales

NSW Government

600 hectares

Master plan for central sports facilities

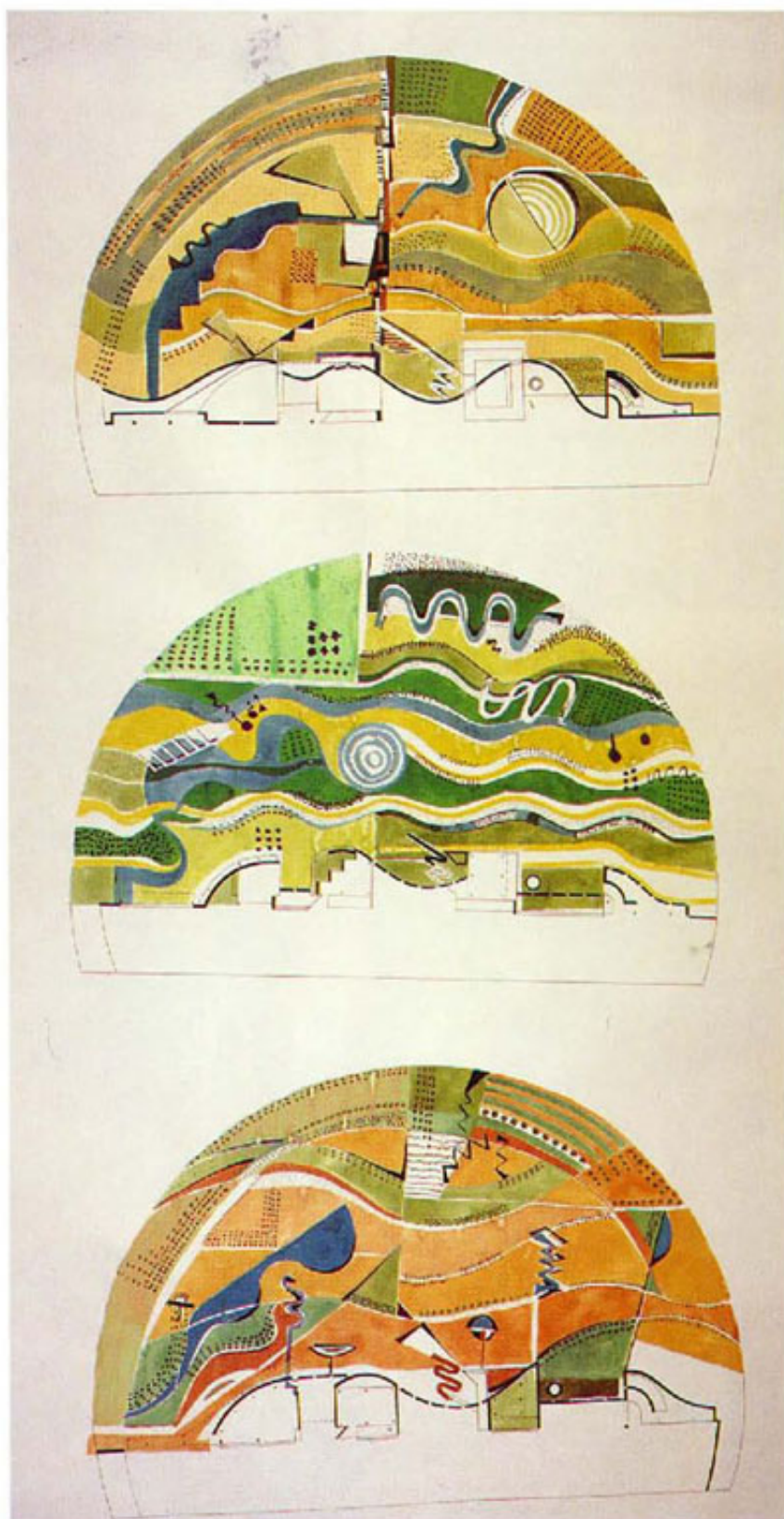
In association with Peddle Thorp

The Sydney 2000 Olympic Games development at Homebush Bay not only provides an opportunity to demonstrate Australia's sports architectural excellence but is a major urban renewal initiative aimed at revitalising the inner west of Sydney. The Sports Master Plan is the main component of a broad strategy which includes relocation of the city's showgrounds and development of urban housing to be partly used as the athletes' village for the games.

The most important elements are the 80,000-seat Olympic Stadium, the warm-up stadium to be known as the Sydney International Athletics Centre, and the Sydney International Aquatic Centre. While acting as the Olympic swimming, synchronised swimming and diving venue for the games, the Aquatic Centre is also a regional leisure complex featuring a free-form pool with river ride, a variety of water slides and an extensive beach.

The overall design concept is based upon creating a distinct relationship between landscape and roofscape. In plan, fluid patterns are generated which are reminiscent of classical Australian landscapes and of Aboriginal dream trails, without having literal reference. In section, the common theme is the expression of roof structure and either submerging of substructure into landscape or raising of landscape up against the buildings to reduce their scale.

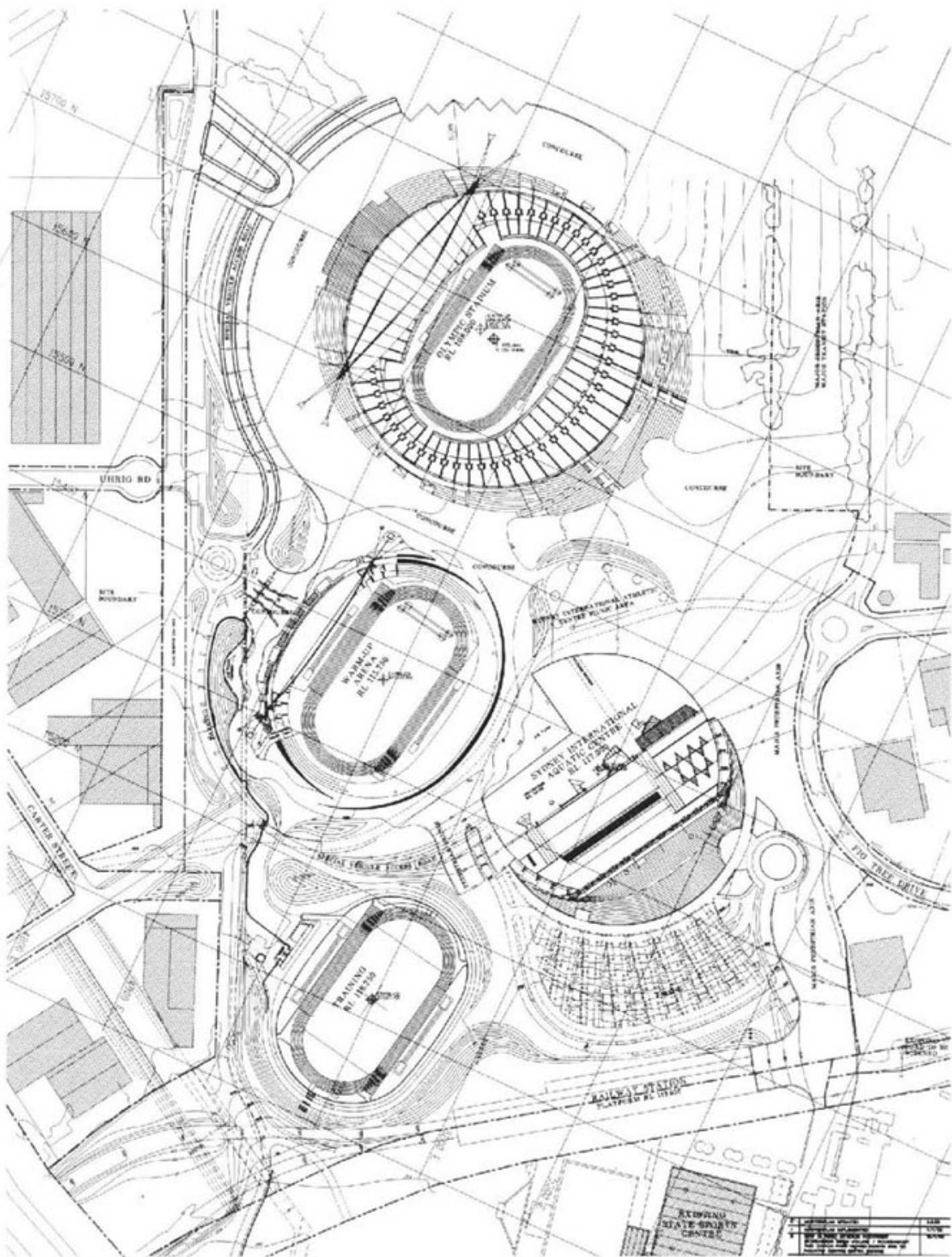
The distinctive elements of the Sydney International Athletics Centre are high masts at each end supporting catenary-shaped roofs via suspended cables. These masts also act as lighting towers avoiding the need for separate devices. A triangulated arched truss running the length of the Aquatic Centre creates an equally distinctive silhouette, and is provided to enable the eastern wall of the centre to be repositioned during the games for expansion from an initial 4,000 to 12,500 seats.



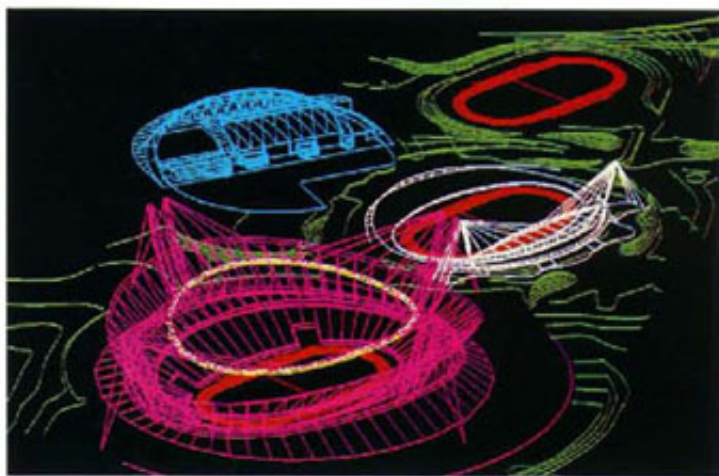
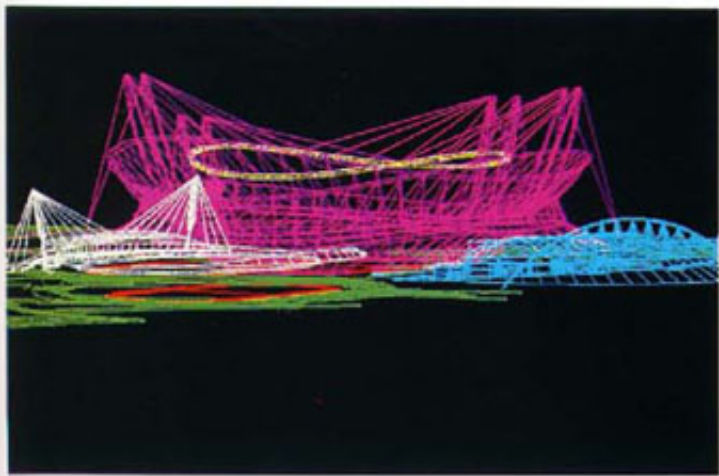
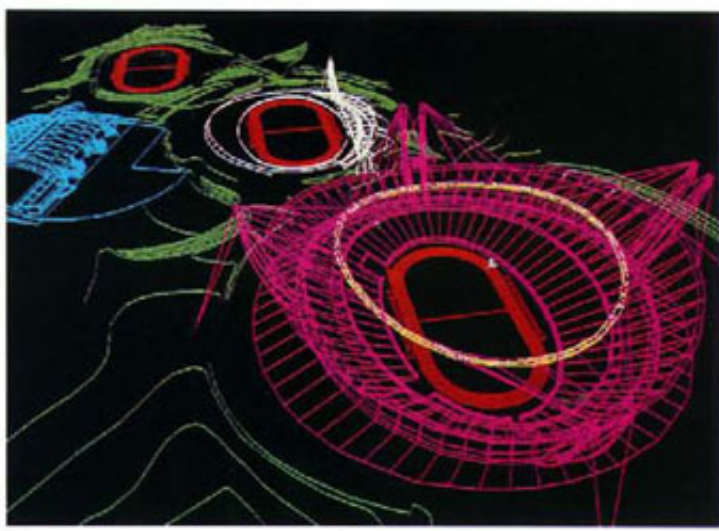
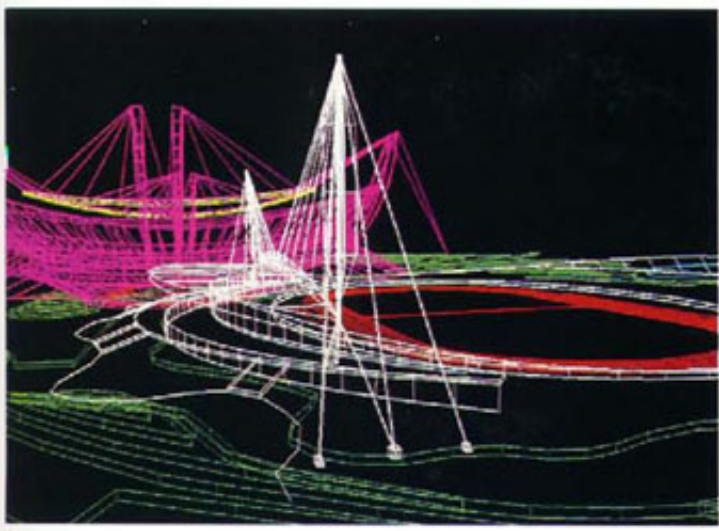
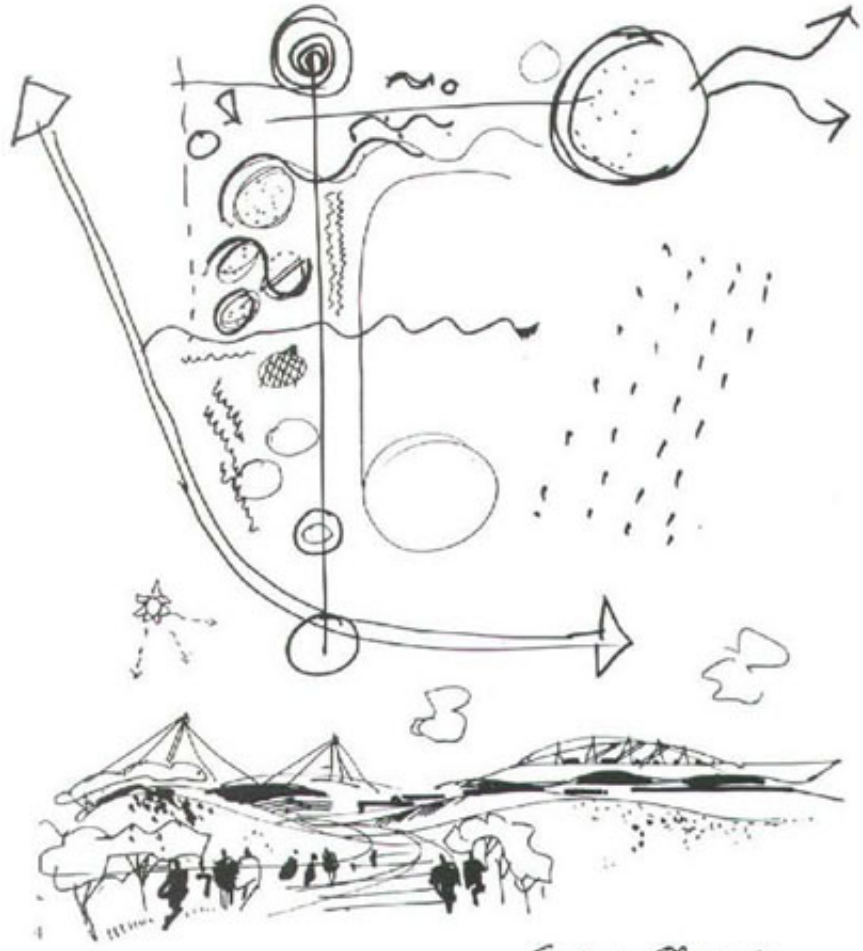
- 1 Conceptual study of landscape patterns
- 2 Painting of landscape concept for overall master plan

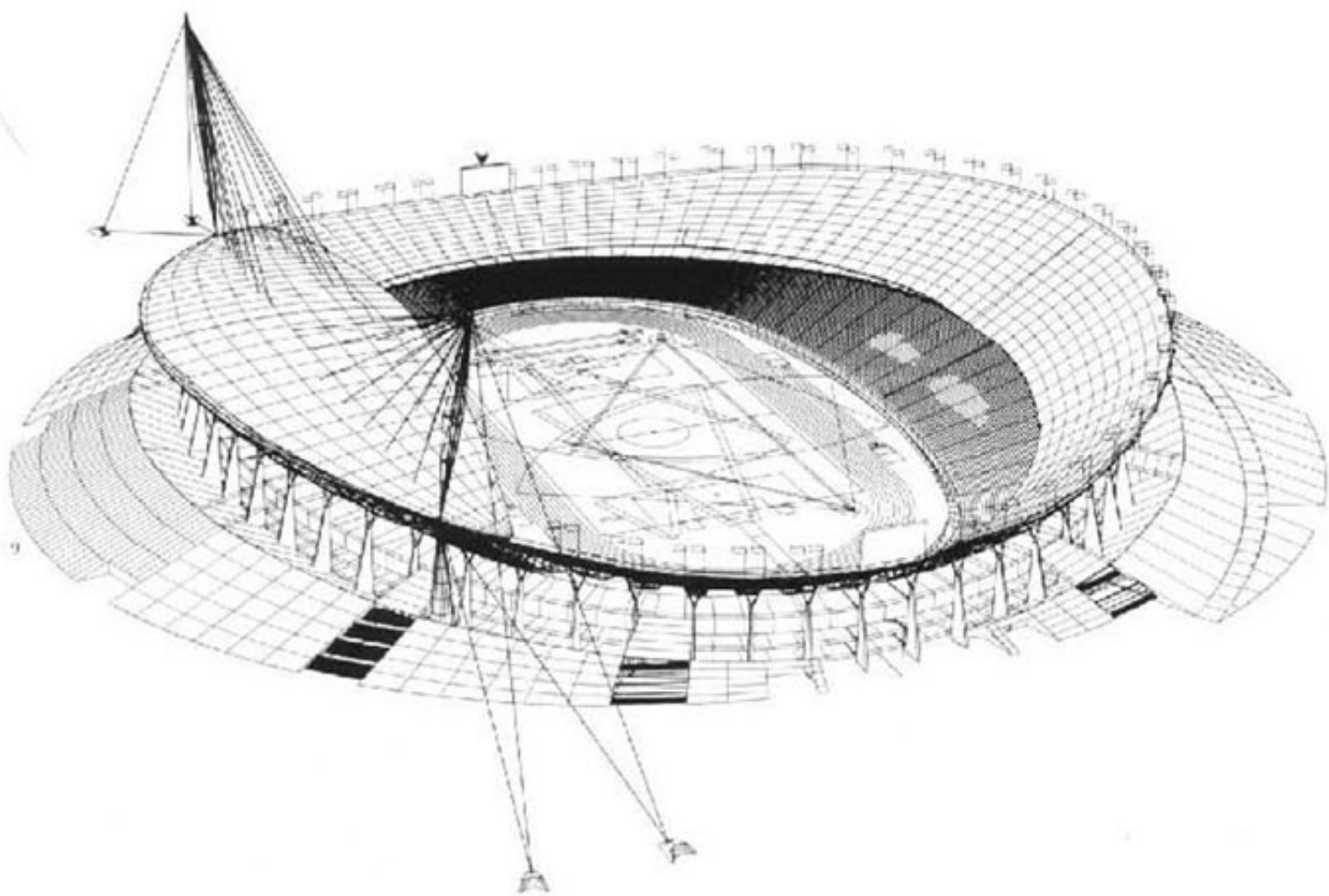


2



- 3 Site plan showing sports facilities
- 4 Preliminary sketch for Sydney International Athletics Centre design
- 5-8 Computer studies





- 9 Computer generated 3-D study of Olympic Stadium proposal
- 10 Cross section of Olympic Stadium concept
- 11 Early concept; perspective of entire Olympic complex at Homebush Bay
- 12 Perspective of Olympic Stadium with aquatic centre and athletics centre in background
- 13 Model of indicative scheme for Olympic Stadium



11



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Sydney International Aquatic Centre

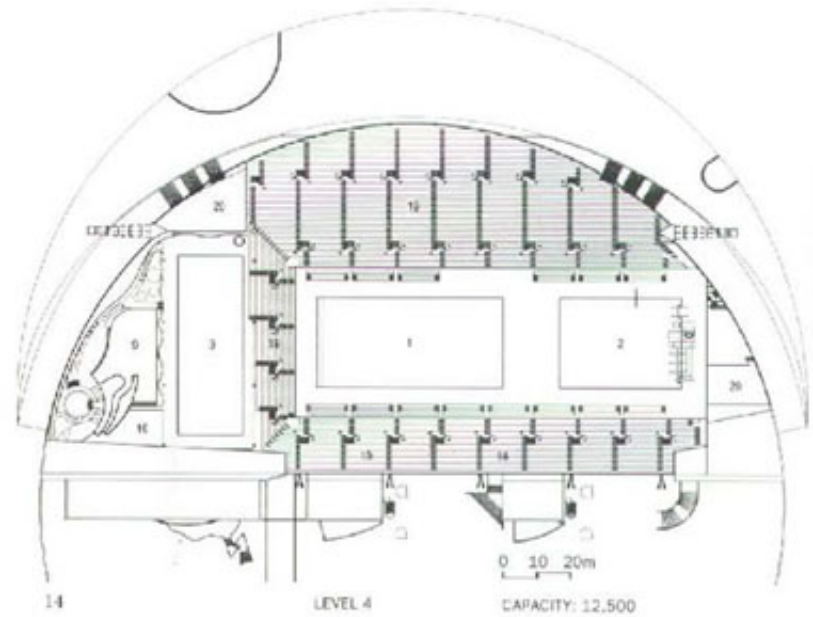
Design/Completion 1991/1994

Homebush Bay, Sydney, New South Wales

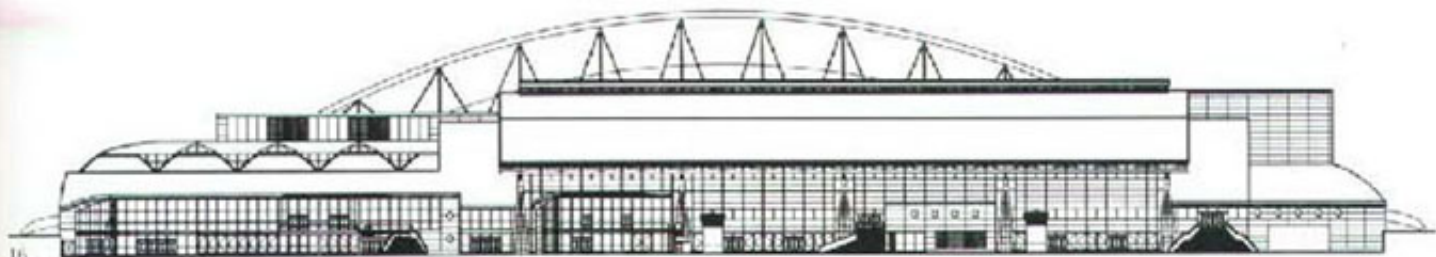
Civil and Civic

14,500 square metres

Steel structure, aluminium sandwich panel and glass walls, aluminium roof cladding



- 14 Aquatic Centre level 4 plan showing extended seating
- 15 Main Competition pool
- 16 Western elevation
- 17 Main entrance



Sydney International Athletics Centre

Design/Completion 1991/1993

Homebush Bay, Sydney, New South Wales

Civil & Civic for Public Works Department

8,500 square metres

Reinforced concrete banded platform, steel
framed stand, prefinished steel sheet roof



18 End view of Athletics Centre grandstand with landscape under construction

19 Sydney International Athletics Centre elevation

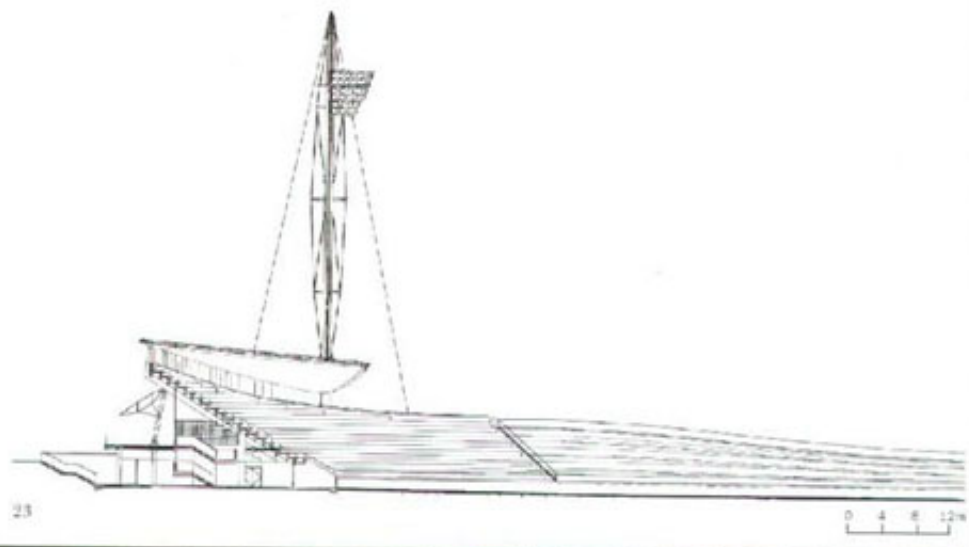
20 Sydney International Athletics Centre model

21 Sydney International Athletics Centre model

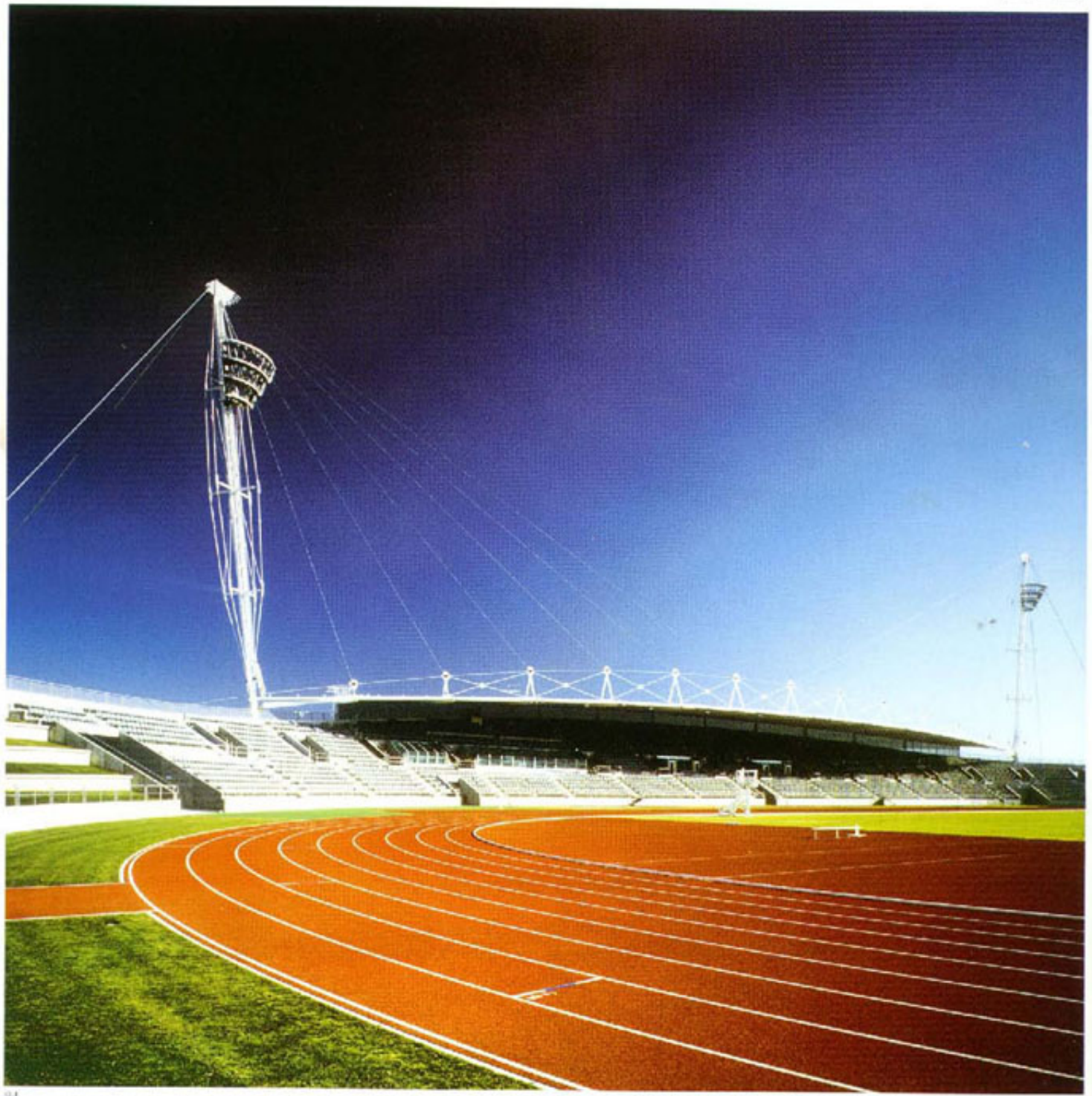
22 Sydney International Athletics Centre showing light masts



- 23 Grandstand section
- 24 Interior view of Athletics Centre
- 25 Mast structure and catenary of Sydney International Athletics Centre
- 26 Sydney International Athletics Centre and Sydney International Aquatic Centre at sunrise



23



24



25



26

Selected and Current Works

Education Buildings



- 146 C.B. Alexander College
- 150 Haymarket Campus, University of Technology
- 154 Macarthur Campus, University of Western Sydney
- 158 Haileybury College Chapel
- 162 Advanced Manufacturing Technologies Centre
- 166 OTEN Headquarters
- 168 New Technologies Building, Curtin University of Technology
- 170 Faculty of Design, Architecture and Building, University of Technology
- 172 Ourimbah Tertiary Education Precinct

C.B. Alexander College

Design/Completion 1963/1965

Total, Hunter Valley, New South Wales

Presbyterian Church of Australia

1,500 square metres

Exposed timber frame structure, load bearing brickwork and concrete tile roof

Located in the Hunter Valley north of Sydney, the college originated as a Presbyterian tertiary level Agricultural College serving a wider region. It was the first major commission for the association of Philip Cox and Ian McKay and was important in establishing the practice's design reputation for environmental sensitivity.

In its time, it represented a radical change from prevailing modernist institutional architecture. A return to a crafted architecture, and a rigorous assessment of qualities indigenous to the country, are hallmarks of the approach. This approach is essentially an adaptation of the principles of vernacular architecture to a large-scale complex. The principles include loose extendable planning, integration with landscape, use of local building materials and honest structural expression.

Continued



- 1 Site plan
- 2 View of courtyard
- 3 Dining room and chapel



The college comprises dormitory and teaching buildings with courtyards grouped around a central, open-sided quadrangle. Focus on the quadrangle is intensified by a spire over the college's chapel. This spire, and the roof of the Great Hall, involve intricate but robust bolted timber joinery paying homage to the grander vernacular of silos and barns of the region. The college is often exemplified as epitomising the Sydney School which had previously worked with similar principles in domestic architecture.



- 4 Covered way in typical courtyard
- 5 Great Hall roof structure
- 6 Chapel spire structure



Haymarket Campus, University Of Technology

Design/Completion 1980/1984

Sydney, New South Wales

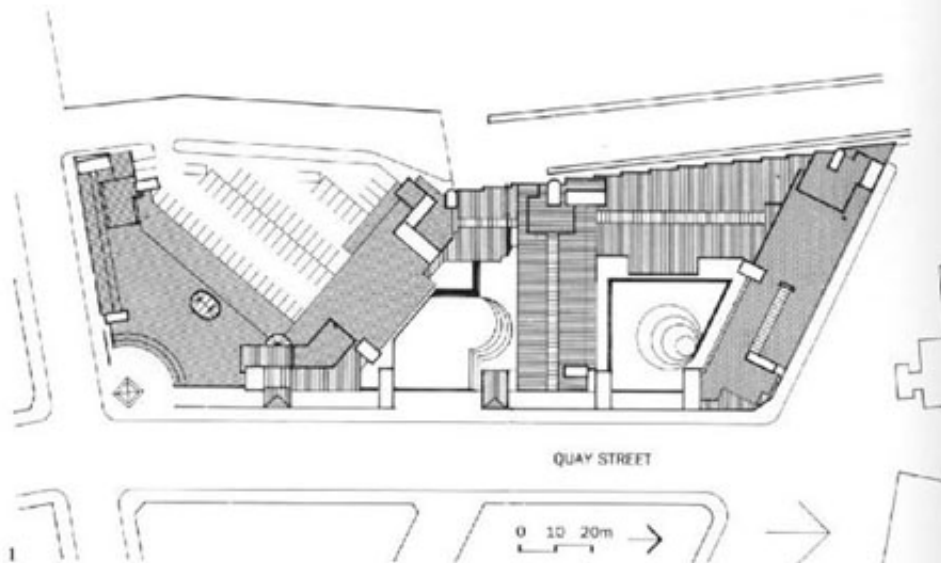
University of Technology

20,000 square metres

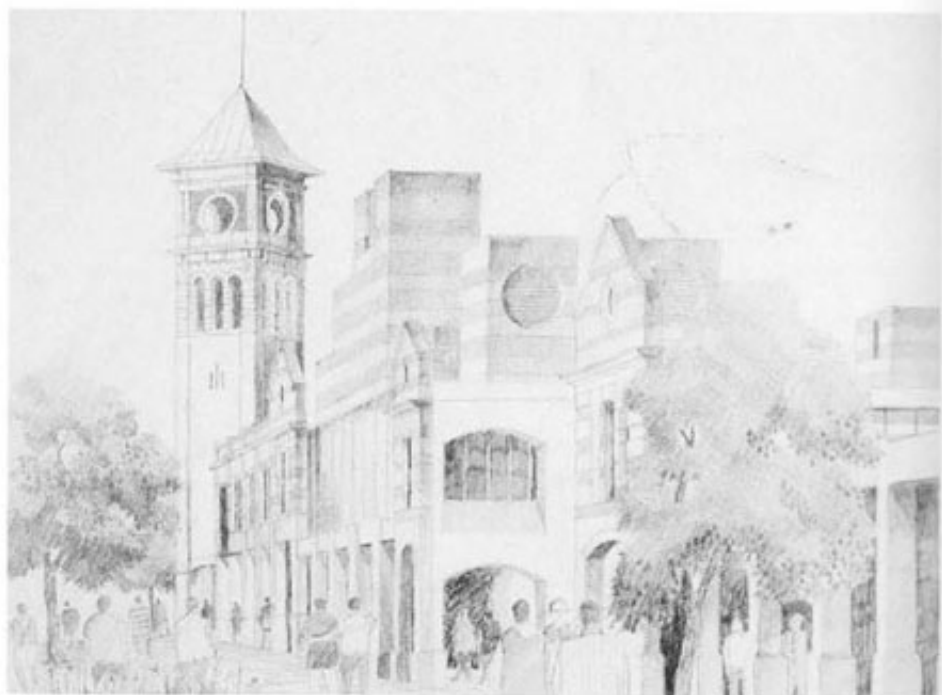
Reinforced concrete frame with waffle slabs and flat plate glass, banded face brickwork, aluminium framed windows, metal deck roofing

The University's Haymarket campus is near the main campus in the inner city. The main campus is principally a conventional modern tower. For the new precinct it was decided to produce a horizontally arranged series of schools, each identifiable by its courtyard. These identities are enhanced by retaining elements of a former market complex, the most significant being the campanile from which the building was detached to accentuate its focus.

The architectural vocabulary also depends upon historical elements. It includes "blood and bandage" brickwork, keyhole openings, pilasters and entablatures. Identity is reinforced by vertical massing of plant towers. As the campus originally backed onto industrial railway lines, the rear wall is made solid to prevent noise penetration into common lecture halls.



- 1 Detached campanile
- 2 Resource Centre
- 3 School of Law
- 4 School of Business
- 5 Common teaching spine
- 6 Teacher Training Wing
- 7 Railway corridor

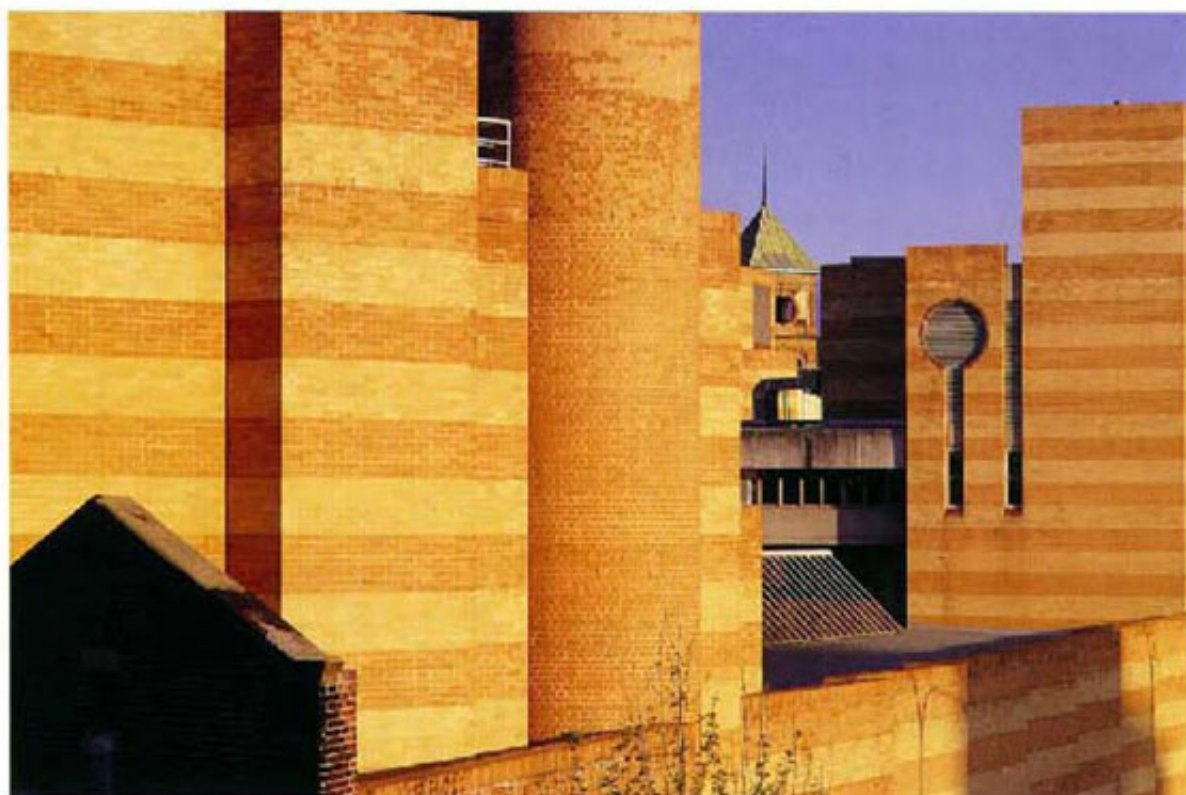


2

- 1 Site plan
- 2 Early perspective
- 3 Campus against Sydney city skyline
- 4 Detail of acoustic wall to railway



5

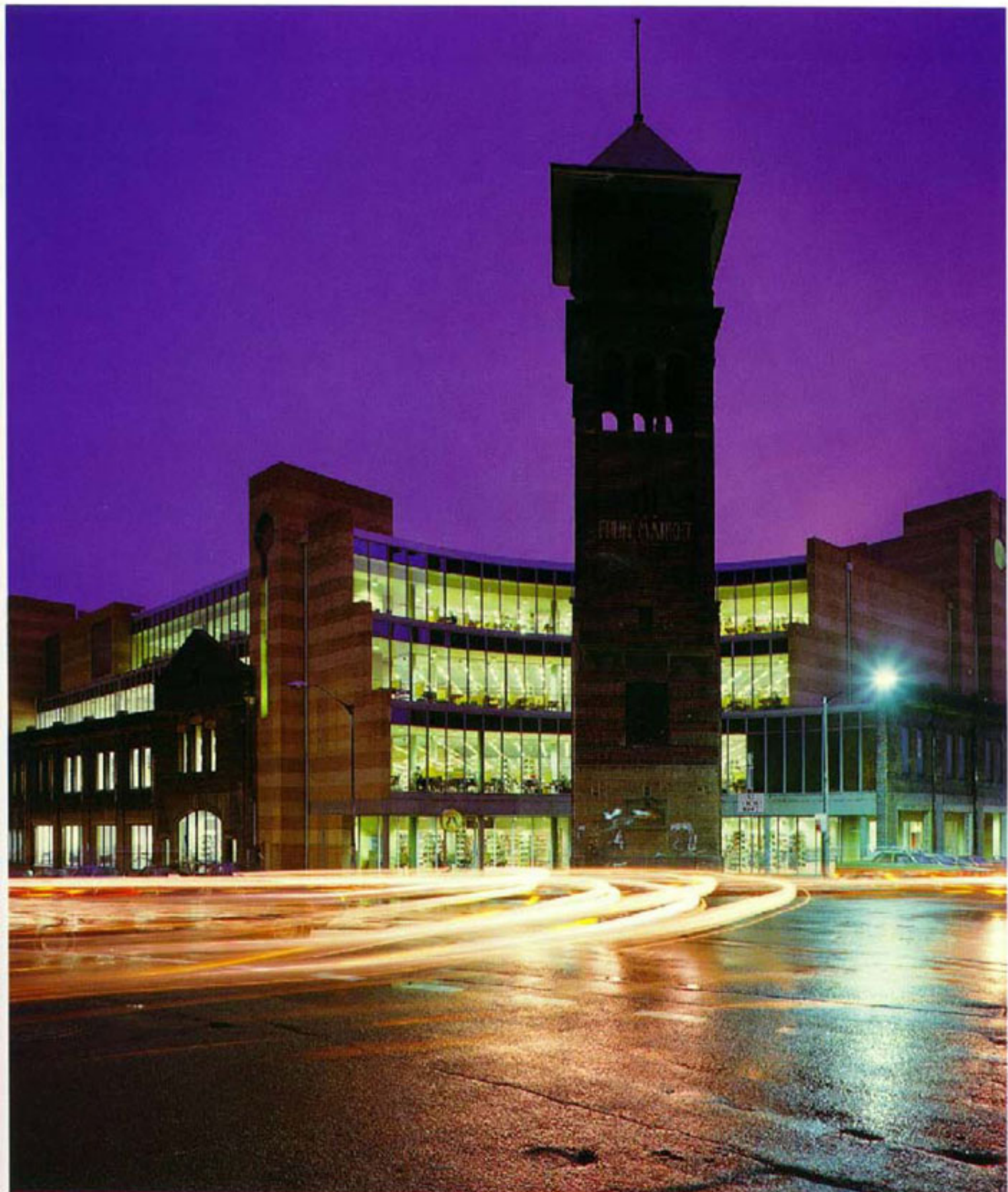


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- 5 Original campanile retained from the Flower Markets as campus focus
- 6 Original campanile at night



5



Macarthur Campus, University of Western Sydney

Design/Completion 1984/1988
Campbelltown, New South Wales
University of Western Sydney
Stage 1: 6,760 square metres
Stage 2: 7,060 square metres
Concrete slab, steel framed building with
concrete infill

The Macarthur campus is one of several widespread campuses in the university which were established to service rapidly increasing tertiary educational needs south-west of Sydney.

The site was a typical landscape of undulating former grazing land. On one side is a major suburban centre. A "town and gown" approach to the planning was adopted, with the common-use facilities such as library and cultural centre positioned close to the centre of the campus to foster community links.

The campus teaching facilities are distributed along a main ridgeline to provide the spaces with breezes and views. Central along the length is a formal quadrangle which is linked by open ways to a series of courtyards and outdoor teaching spaces. These spaces, interspersed between buildings, create a strongly articulated hillside architecture. Plant and gateway masses produce a castellated appearance, giving the campus an identity akin to traditional hilltown architecture.



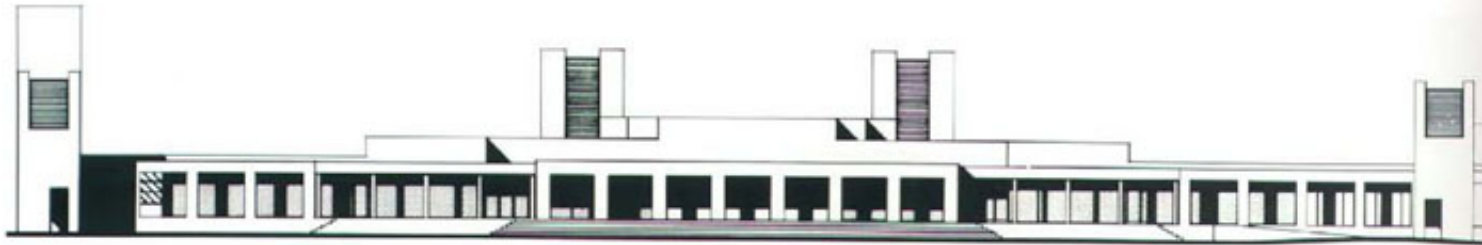
- 1 Model
- 2 Courtyard view
- 3 Teaching blocks
- 4 Student amenities buildings on lake



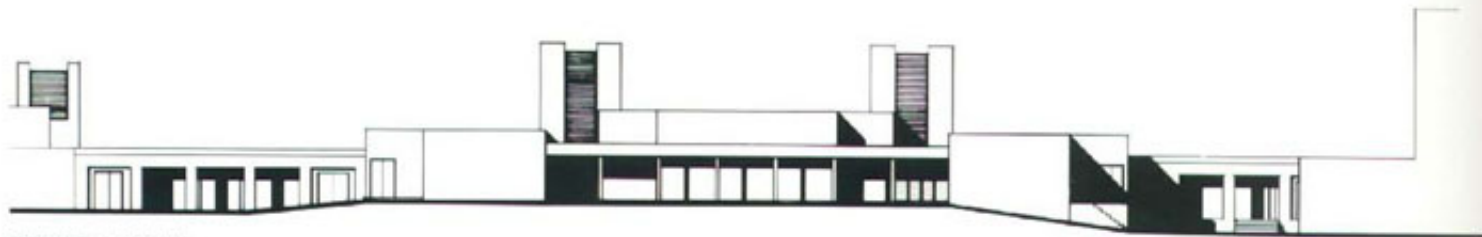
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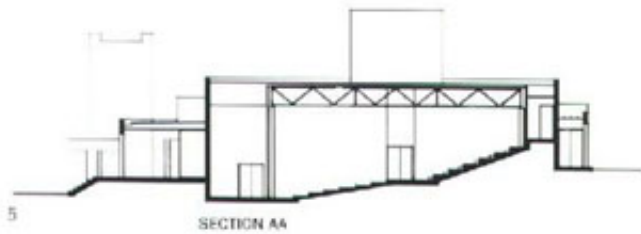
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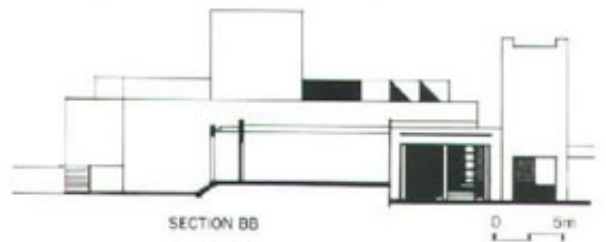
NORTH EAST ELEVATION



SOUTH WEST ELEVATION



SECTION AA



SECTION BB



6



7

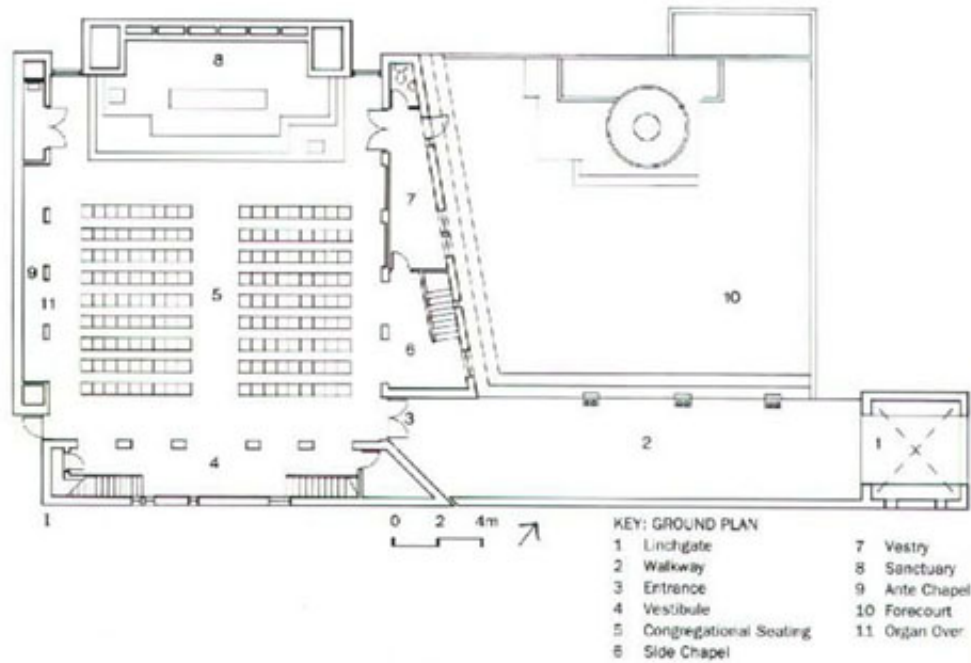


Haileybury College Chapel

Design/Completion 1985/1988
Keysborough, Melbourne, Victoria
Haileybury College
350 square metres
Load bearing brickwork on concrete slabs,
exposed timber trusses

The design of this chapel endeavours to create a new focus in a generally nondescript secondary school campus. A large expanse of flat landscape and some large, aged trees suggested that a powerfully massed building would provide this focus.

The design is loosely based on the image of a Norman "keep", using deep and variously shaped penetrations in masonry to cast dramatic light into the chapel interior. The light quality is further enhanced by stained-glass windows designed by noted Australian artist Leonard French.



- 2
1 Floor plan
2 Elevation facing existing school
3 Interior showing quality of light
4 Chapel viewed from existing school



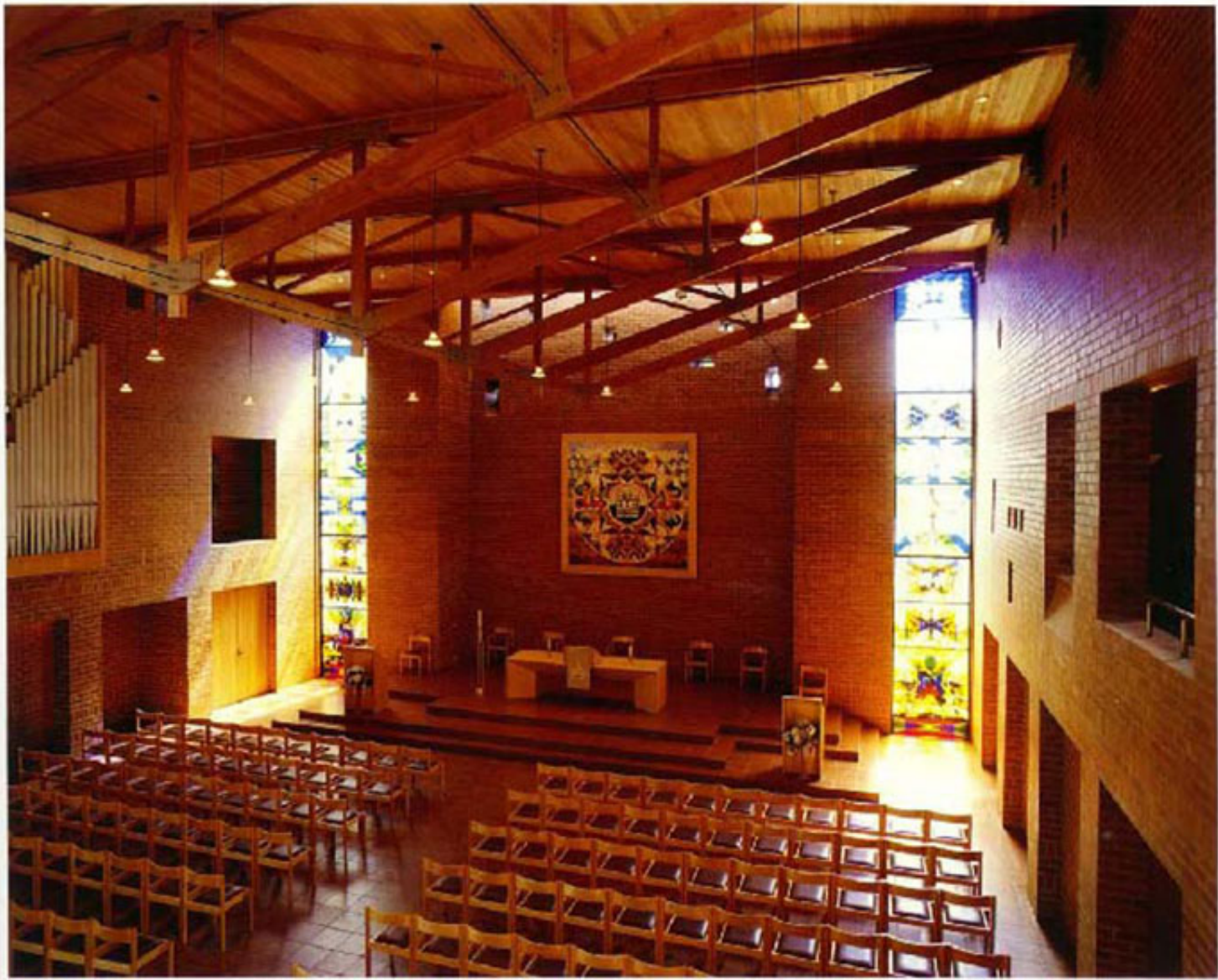
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4



- 5 Chapel courtyard
- 6 Interior showing quality of light



Advanced Manufacturing Technologies Centre

Design/Completion 1989/1993

East Perth Campus, Perth, Western Australia

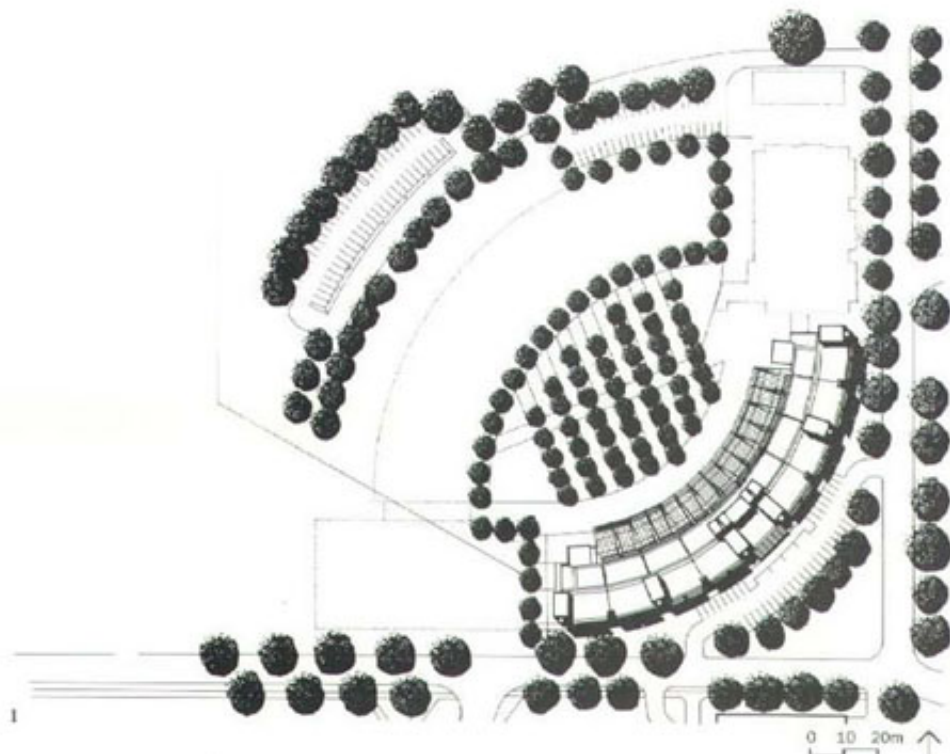
Department of Employment, Vocational Education and Training

8,750 square metres

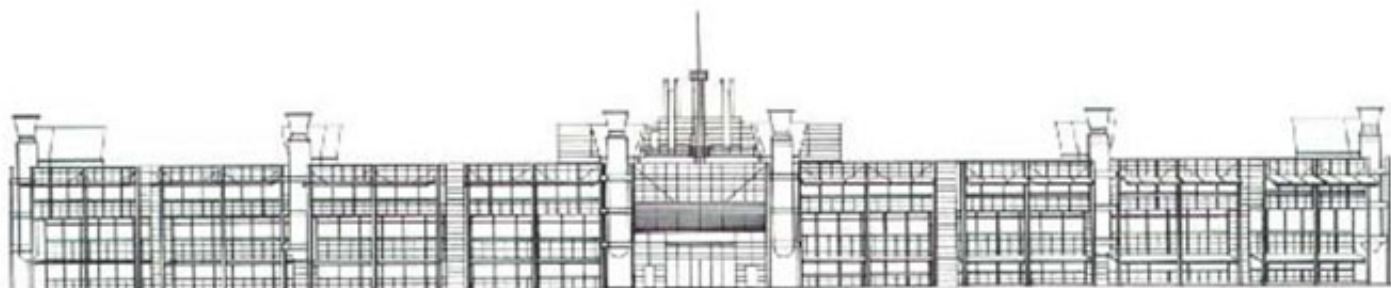
Flat plate concrete structure, steel framed roof, opaque lightweight aluminium panel roofing system, wall panelling

This new campus was established as the state's first tertiary campus to actively involve industry in the higher education process. Phase 1 of the project for a comprehensive tertiary institution comprises science and electronic engineering faculties. The main facilities are laboratories, offices and an exhibition space for product display to industry.

The architecture reflects the building's technological purpose, with its services, structure and passive energy control systems being clearly expressed. The building's curved planning is intended to create a rapport with the Phase 2 complex to be located opposite the technologies centre, enclosing a courtyard and external exhibition space.



- 1 Site plan
- 2 Internal courtyard elevation
- 3 Elevation
- 4 Entrance elevation



3



4

- 5 Interior
- 6 Facade detail
- 7 Main entrance
- 8 Entrance canopy detail
- 9 Interior



5



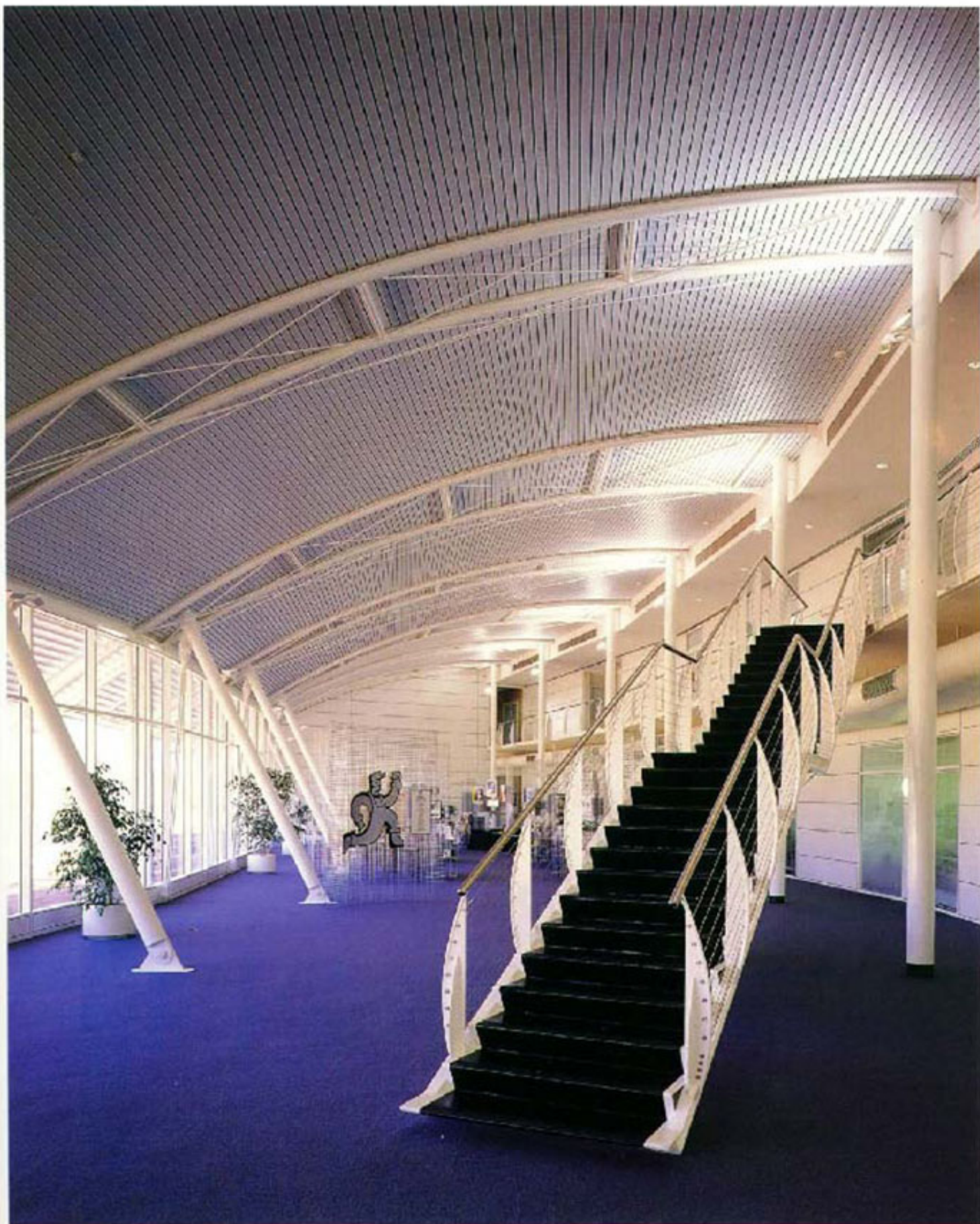
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8



OTEN Headquarters

Design/Completion 1991/1995

Strathfield, Sydney, New South Wales

NSW TAFE Commission and OTEN

10,500 square metres

Concrete frame slab floors, metal panel curtain walls

The Open Training and Educational Network broadcasts from the Strathfield College of Technical and Further Education to 60,000 students via satellite and video and is the largest multi-media distance learning educator in Australia and South-East Asia.

The campus is located in an inner western Sydney suburb on an awkwardly shaped infill site. The entrance is identified by the network's communication masts with an accompanying facade in scale with the adjoining buildings. Inside the campus, a series of courtyards and a double-height gallery interconnect activity zones, promoting the college's communication theme. These spaces are arranged to optimise solar access and the use of passive energy for environmental performance, while the metal cladding and glazed curtain wall are expressions of technological advancement.



1



2

- 1 Aerial view of model
- 2 Front facade
- 3 Main entry at night



New Technologies Building, Curtin University of Technology

Design/Completion 1991/1993

Bentley, Perth, Western Australia

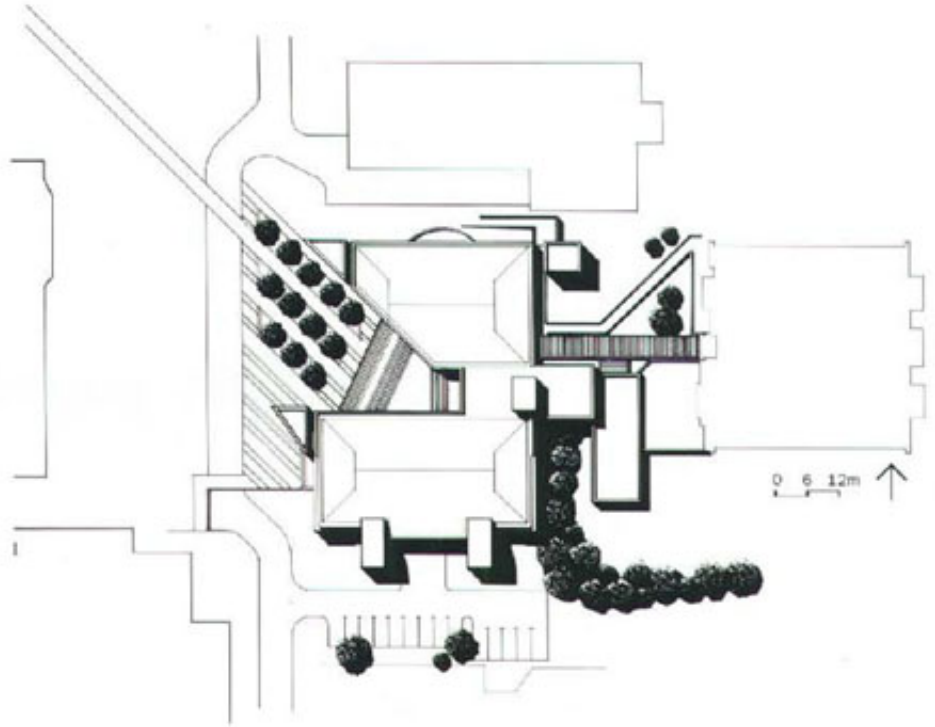
Curtin University of Technology

7,000 square metres

Reinforced concrete slabs and structure, brickwork, steel roof

Designed to accommodate computing science, mathematics and statistics departments, the New Technologies Building is sited centrally in an existing campus comprising uninspiring brick and concrete buildings. The design uses these existing materials in a new vocabulary of forms and elements to create an altered image of the campus.

The primary elements of this new fabric are modulated "blood and bandage" brickwork and varied openings.





3



4

- 1 Site plan
- 2 New Technologies Building in existing campus context
- 3 Entrance elevation
- 4 Front entrance way (under construction)
- 5 Side view (under construction)



5

Faculty of Design, Architecture and Building, University of Technology

Design/Completion 1991/1994

Sydney, New South Wales

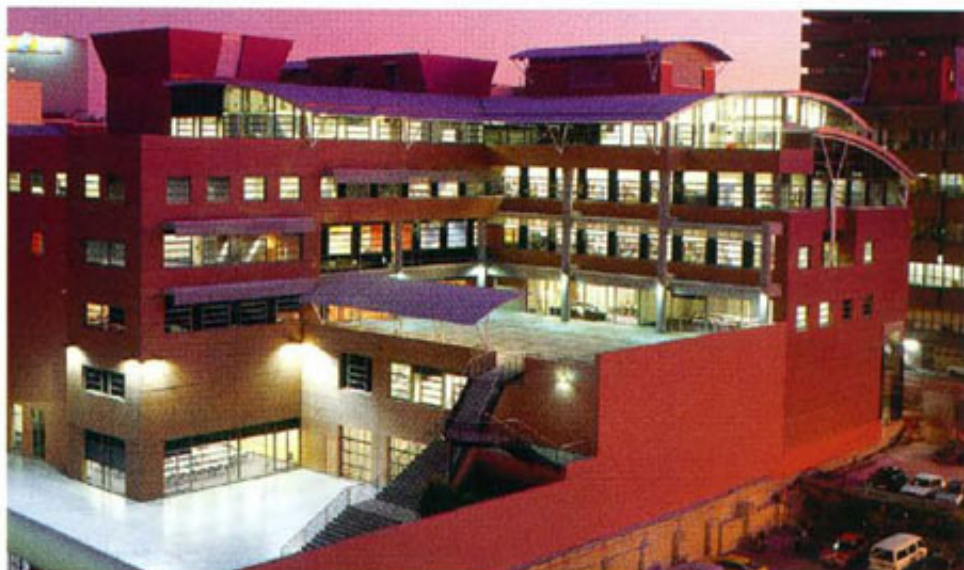
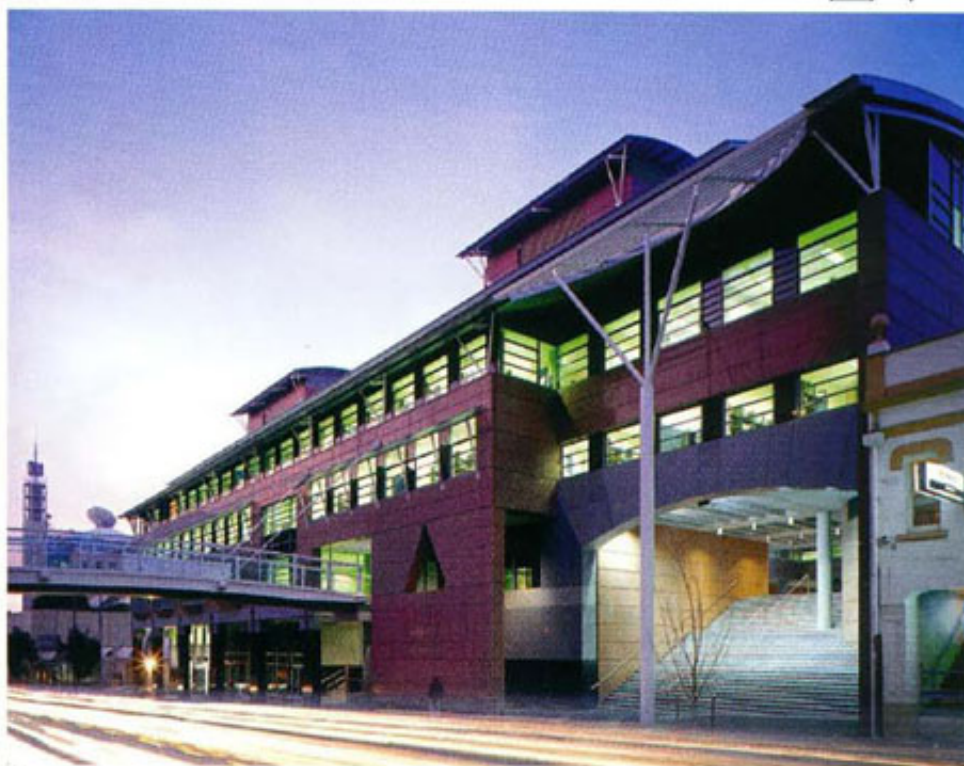
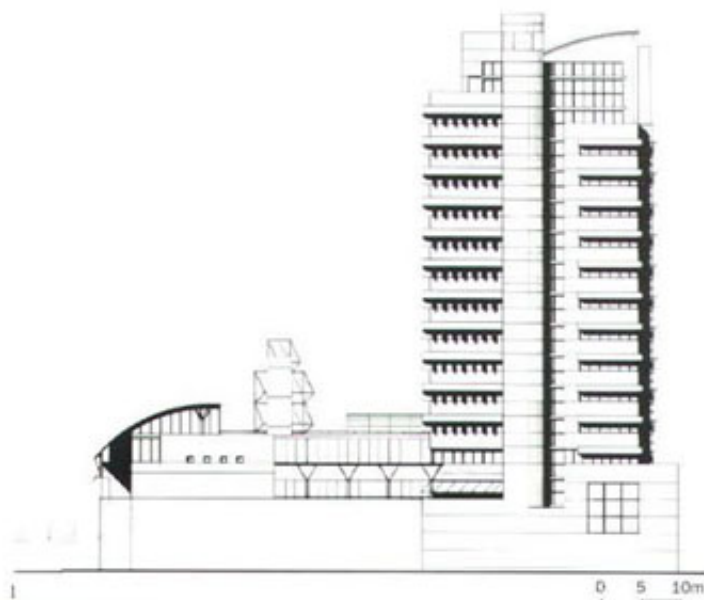
16,300 square metres

University of Technology

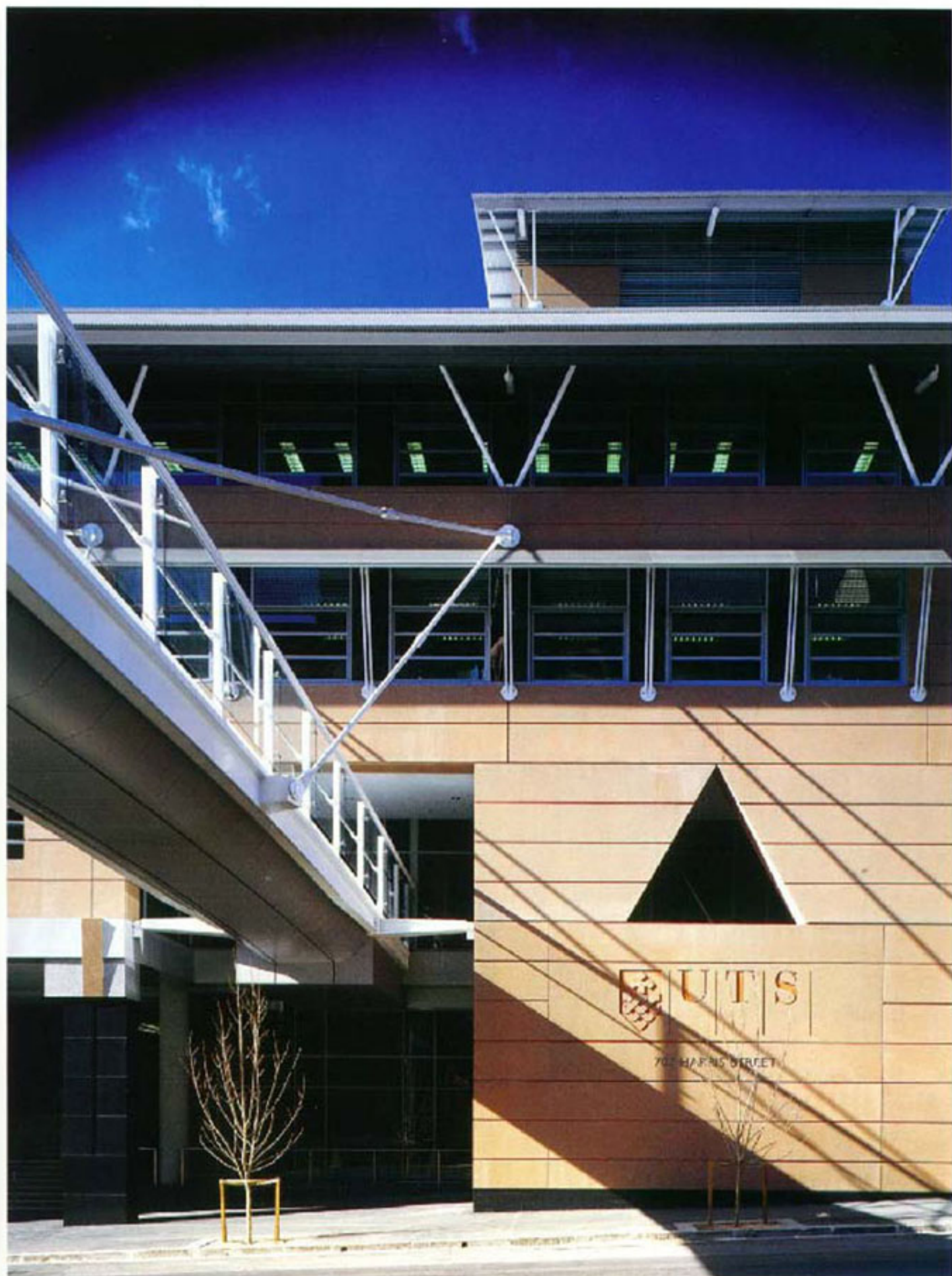
Reinforced concrete frame with one-way prestressed concrete band beams, exposed rib slabs to public areas; reconstituted granite cladding panels and structural steel curved roof arc with metal deck roofing

The faculty building is the first stage of a complex which will eventually include a tower providing leasable commercial space. The building is distinguished from the future tower by physical separation and horizontal scale.

The design of the faculty building is intended to complement that of the nearby Haymarket campus completed ten years earlier (see pages 150–153). It also reflects the scale and characteristics of old market buildings in the Haymarket precinct.



- 1 Southwest elevation
- 2 Harris Street elevation
- 3 Eastern elevation
- 4 Harris Street detail showing footbridge link to main campus



Ourimbah Tertiary Education Precinct

Design/Completion 1993/1996

Ourimbah, Central Coast, New South Wales

University of Newcastle and NSW TAFE Commission

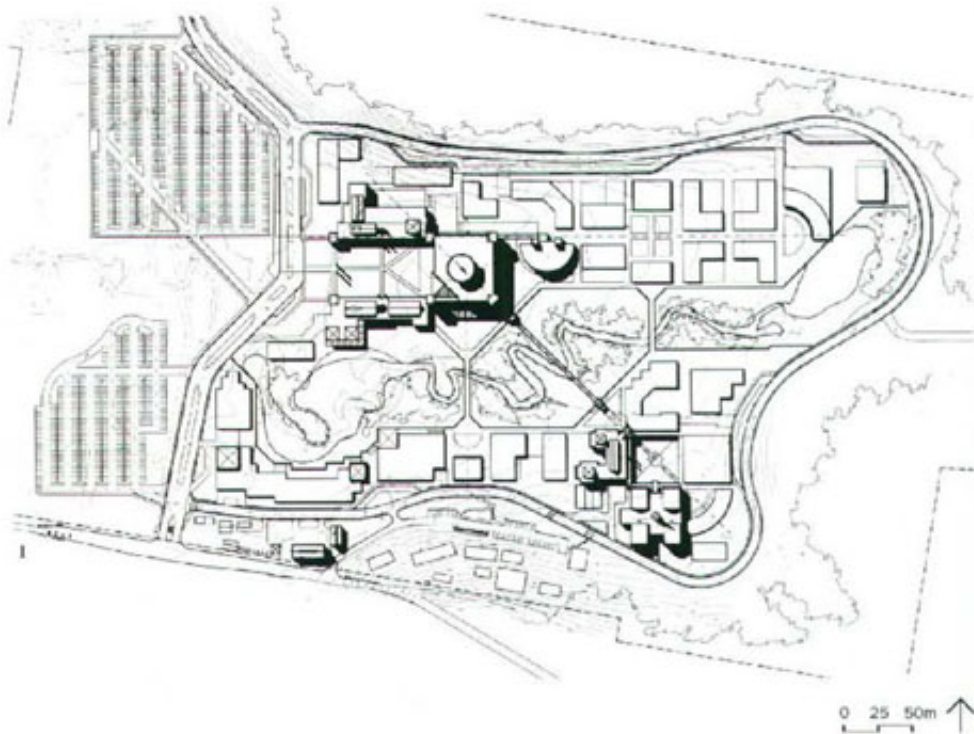
7 campus buildings and revised master plan

Masonry blockwork, metal sheet roofs and aluminium window walls

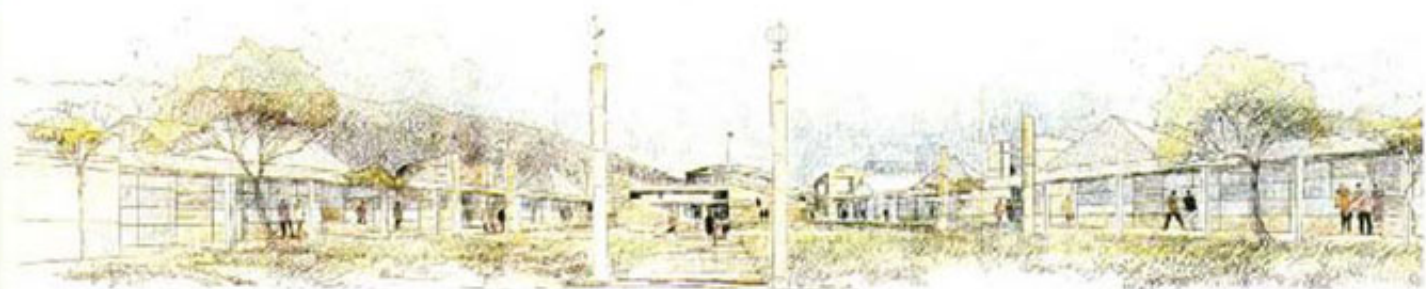
This precinct is a new concept in educational facilities whereby the University and the TAFE Commission share some buildings and facilities. The site is located approximately 50 kilometres north of Sydney, and consists of densely wooded hills with a wide creek winding through the centre.

The programme is accomplished by positioning the two-storey library in the centre of the site and locating squares on either side of the creek to be connected by an elevated pedestrian bridge. Other new buildings are single-storey so that the library building is accentuated.

The formality of the inner facing elevations is contrasted to looser forms on the outer edges facing toward natural landscape. These outer areas accommodate informal spaces while the inner squares accommodate campus gatherings and activities shared by all students and staff.



1. Site plan
2. Library interior
3. Main quadrangle showing library drum
4. View of main quadrangle



Housing



- 176 Forbes Street Housing
- 178 Brougham Street Housing
- 180 Golden Grove Street Housing
- 182 Illawarra Road Housing
- 184 Carrerons Cove Housing
- 186 Broome Street Housing
- 188 Walker Street Housing
- 190 Harper Street Housing
- 192 Moverly Green Housing
- 194 Goddard Street Housing

Forbes Street Housing

Design/Completion 1977/1979

Woolloomooloo, Sydney, New South Wales

NSW Department of Housing

1,200 square metres (16 dwellings)

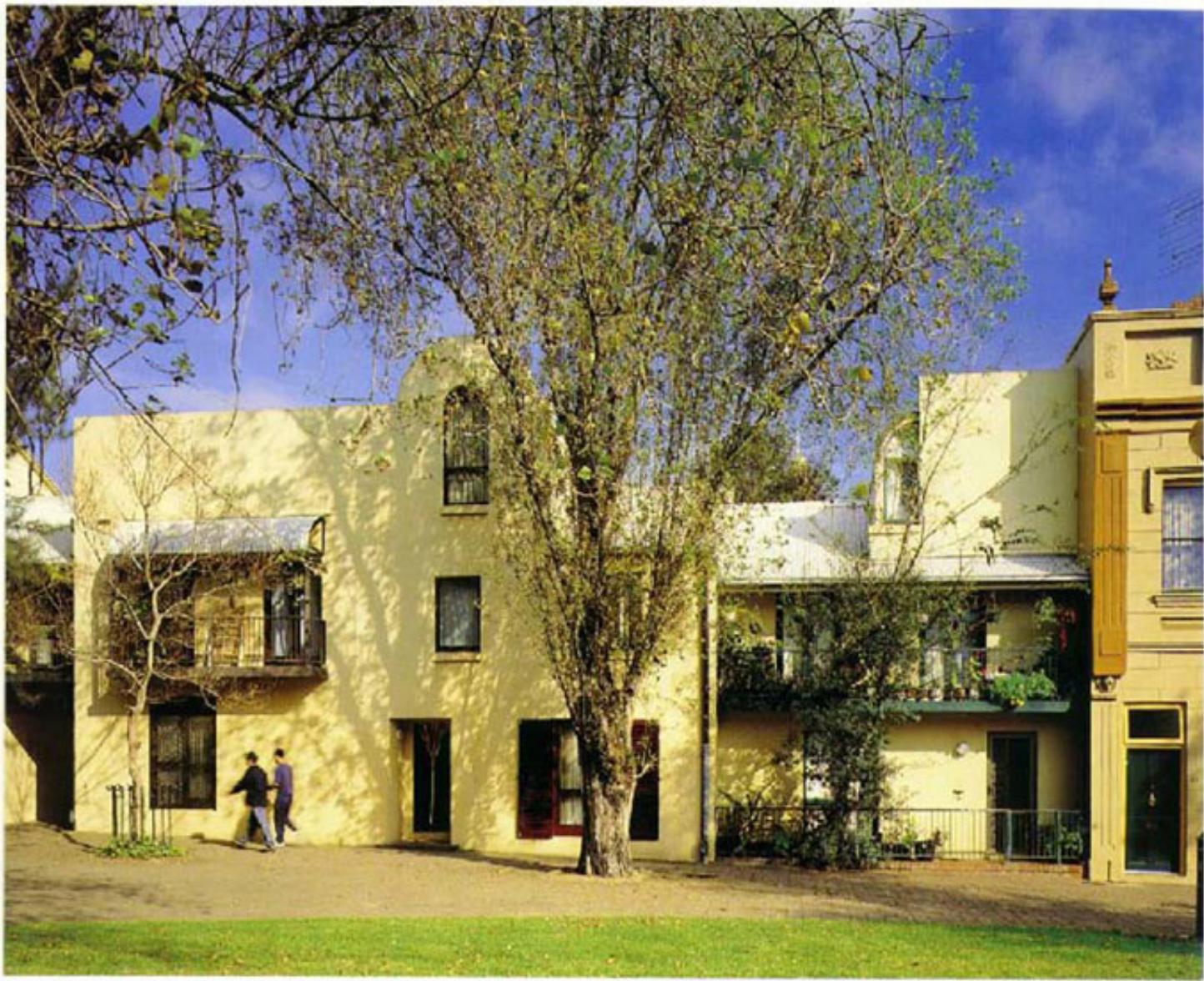
Load bearing brick with bagged and painted brickwork,
timber framed corrugated iron roofing

The redevelopment of the inner city suburb of Woolloomooloo was the subject of a major controversy in the late 1970s between developers and urban conservationists. The outcome was a master plan based upon retention of historic housing and a series of new infill housing and community projects shared by several of Sydney's prominent architects.

This small infill development along the major pedestrian corridor comprises two rows of attached houses, one consisting of three bedroom houses facing the mall, the other, two bedroom maisonettes facing the street. A cranked pedestrian walkway provides access for the mall houses to parking spaces incorporated into the maisonette dwellings.

The design elements, particularly the curved parapet dormer bedrooms, reflect traditional Woolloomooloo character without resorting to obvious mimicry. They help provide identity while producing more open interior spaces than in conventional terrace houses.





- 1 Ground-floor plan
- 2 Elevation to pedestrian mall
- 3 Northern end facing common
- 4 Relationship between existing and new buildings

Brougham Street Housing

Design/Completion 1979/1981

Woolloomooloo, Sydney, New South Wales

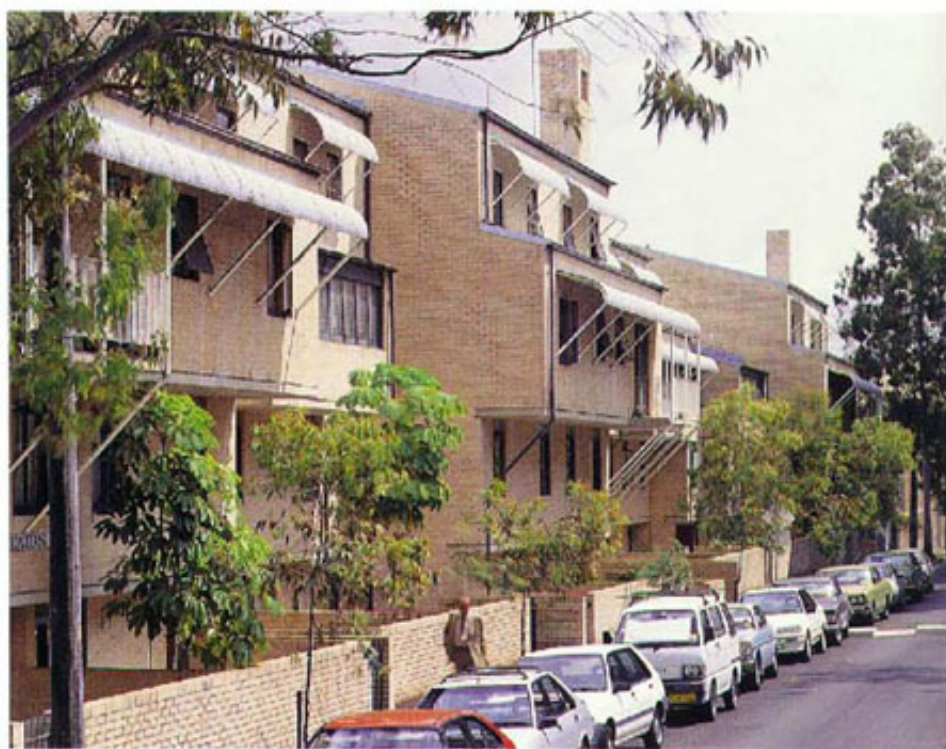
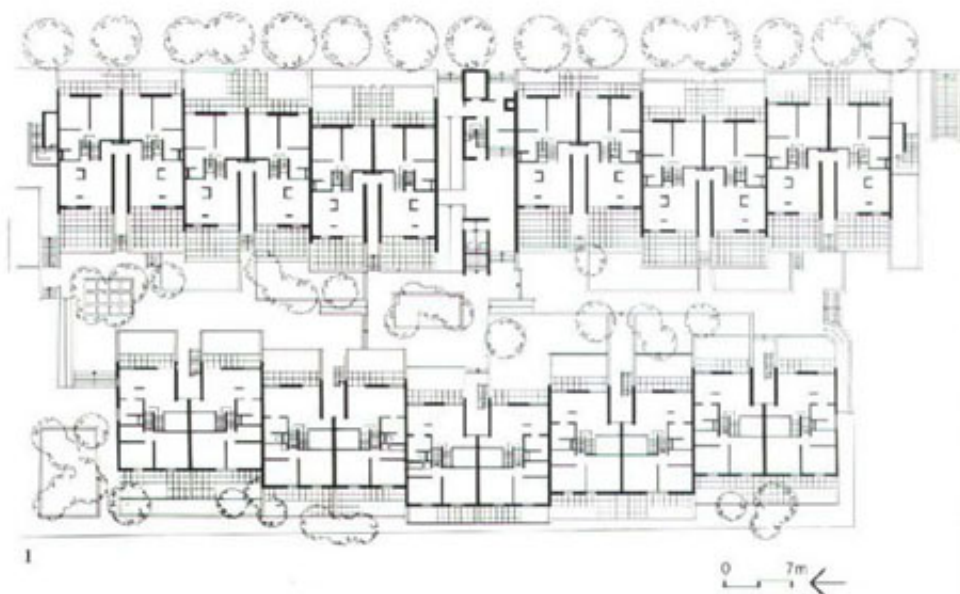
NSW Department of Housing

6,500 square metres (62 dwellings)

Reinforced concrete and load bearing brick with face brickwork and corrugated iron roofing

The Brougham Street project followed immediately after the Forbes Street housing, but its brief differed radically from the infill terrace themes predominant in Woolloomooloo. Here, the Housing Commission sought a higher density development with a widely varied mix of inhabitants: young single people, married couples, families and elderly occupants.

The solution is a variation on the much maligned "three-storey walk-up" which became a ubiquitous apartment model in postwar housing. In this case, the model is adapted to create an articulated "wall" and the orientation is turned inward to focus on a pedestrian street cut between two primary rows of buildings. This articulation is mainly achieved by expressing the different housing types and by staggering heights within a system of rolled roof forms.



- 1 Typical floor plan
- 2 View along Brougham Street
- 3 View of internal street
- 4 View along Brougham Street
- 5 Typical unit



3



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Golden Grove Street Housing

Design/Completion 1979/1986

Newtown, Sydney, New South Wales

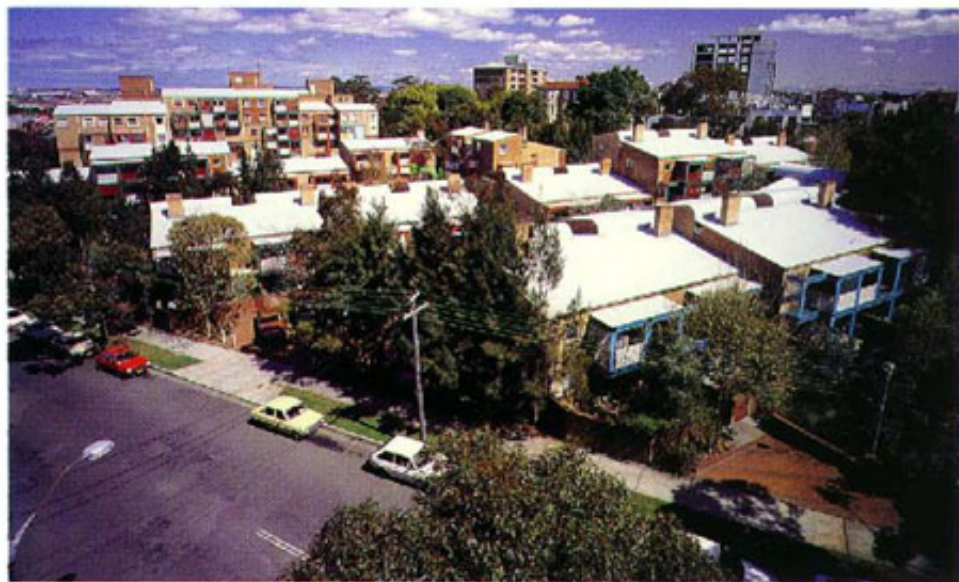
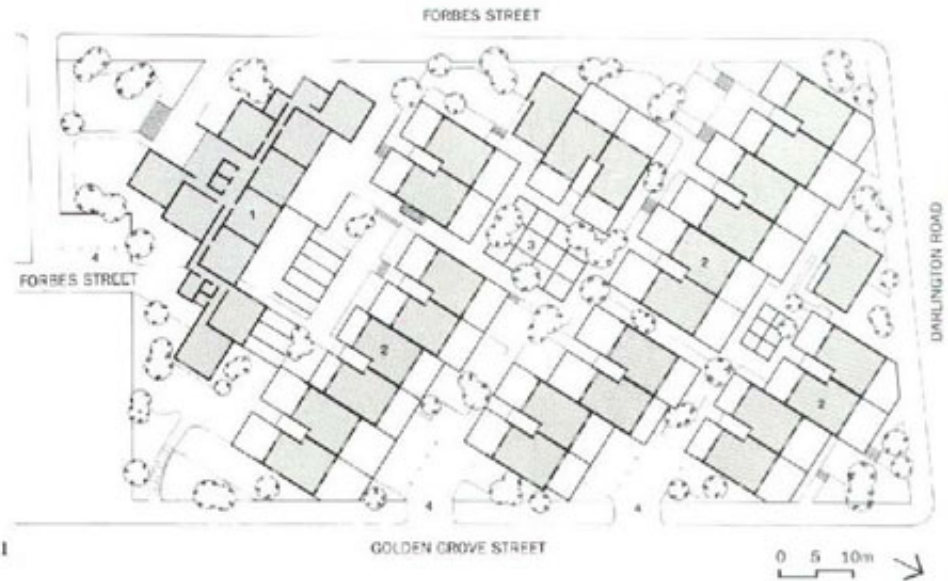
NSW Department of Housing

8,500 square metres (114 dwellings)

Load bearing brick on concrete slabs, face brick walls and precoloured corrugated zincalume roofing

Golden Grove Street Housing was one of the Housing Commission's earliest urban renewal developments outside the Woolloomooloo redevelopment. Its brief reflected the commission's desire to remove the stigma of "institutionalised" government housing, and it required a diverse mix of types ranging from aged to family housing.

The scheme places the aged housing in an articulated continuous building which forms a backdrop to terraced family houses set among a series of interconnected community spaces. There was intense debate regarding the planning, which is set diagonal to the street grid, but the purpose (to create identity and interesting spaces) has been vindicated by a development which integrates well into its urban environment.



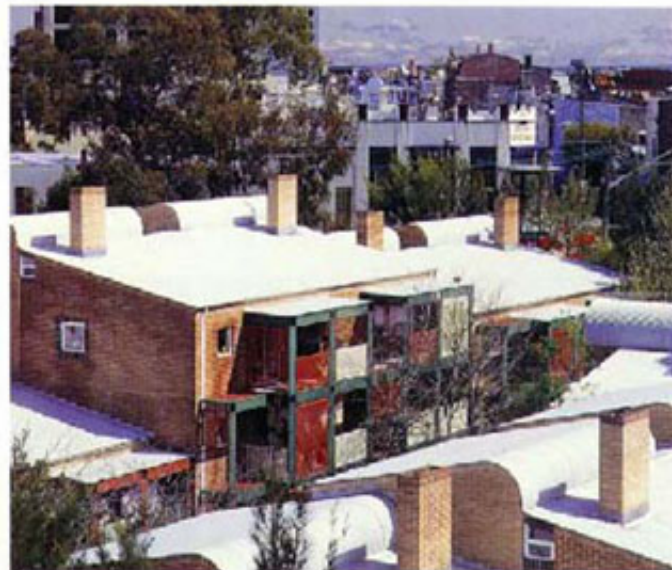
- 1 Site plan
- 2 Aerial view with aged housing in background
- 3 Internal landscaped area
- 4 Aged housing with family housing in foreground
- 5 Rooftops of family housing
- 6 View from central landscaped area



3



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Illawarra Road Housing

Design/Completion 1985/1987

Marrickville, Sydney, New South Wales

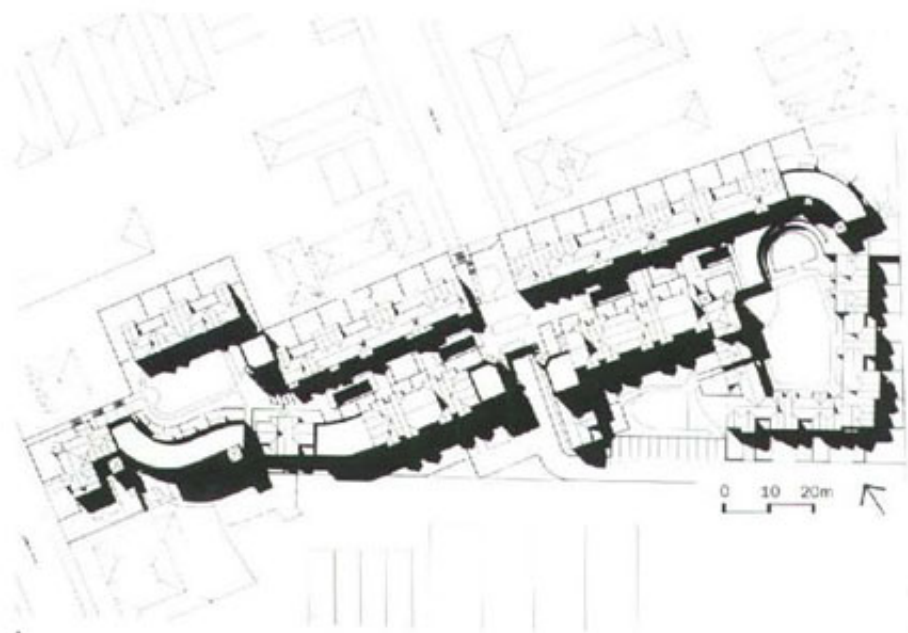
NSW Department of Housing

1.3 hectares (104 dwellings)

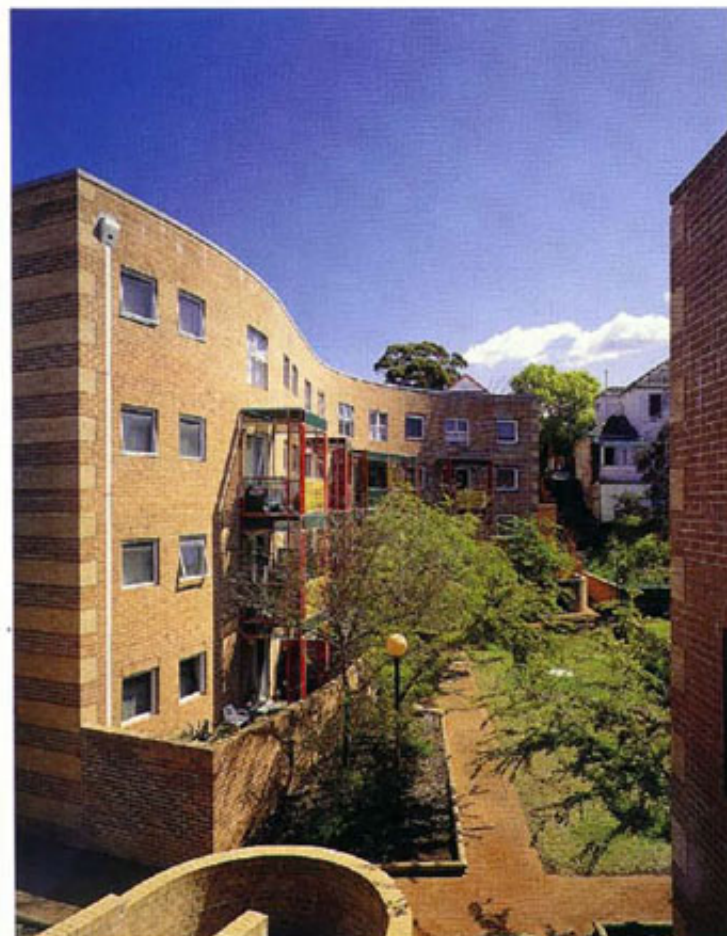
Load bearing brickwork on concrete slab, face brickwork and concrete tile roof

Sited on a main traffic distributor in Sydney's inner south, and backing onto a light industrial precinct, this housing is planned along an internal pedestrian street. Massing is increased at the ends and against higher existing development in order to buffer noise and to contain visual focus within the street.

The pedestrian corridor is diversified and reinforced by changing levels and by edges varied between staggered and curved walls. The levels provide legible transition from communal to semi-private and private spaces. Particular attention was paid to sunlight orientation and accompanying solar energy systems.



- 1 Site plan
- 2 View from courtyard
- 3 Internal pedestrian link
- 4 Working drawings of courtyard elevations
- 5 Serpentine building terminating western end of development
- 6-7 Units facing pedestrian street



Camerons Cove Housing

Design/Completion 1987/1989

Balmain, Sydney, New South Wales

Bond Corporation

5,700 square metres (38 dwellings)

Apartments: load bearing brickwork on concrete slab, metal roofing
Townhouses: brick veneer on concrete slab, corrugated metal roofing and some shingle

Part of an extensive private waterfront development, this project was designed to provide low-rise high-density housing. The house designs, in four basic variations, are kept simple and spare to reflect the character of neighbouring development.

Access to the dwellings is provided by two meandering pathways that act as communal meeting spaces and open up towards the harbour in a manner characteristic of early laneways in the area.



1



2

- 1 Detail
- 2 Site plan
- 3 Rear view showing massing from waterfront
- 4 Pathway through site
- 5 Street aspect



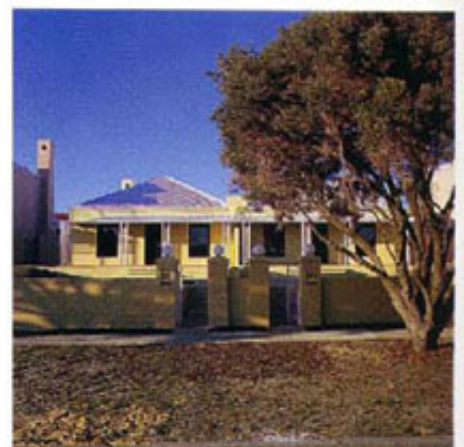
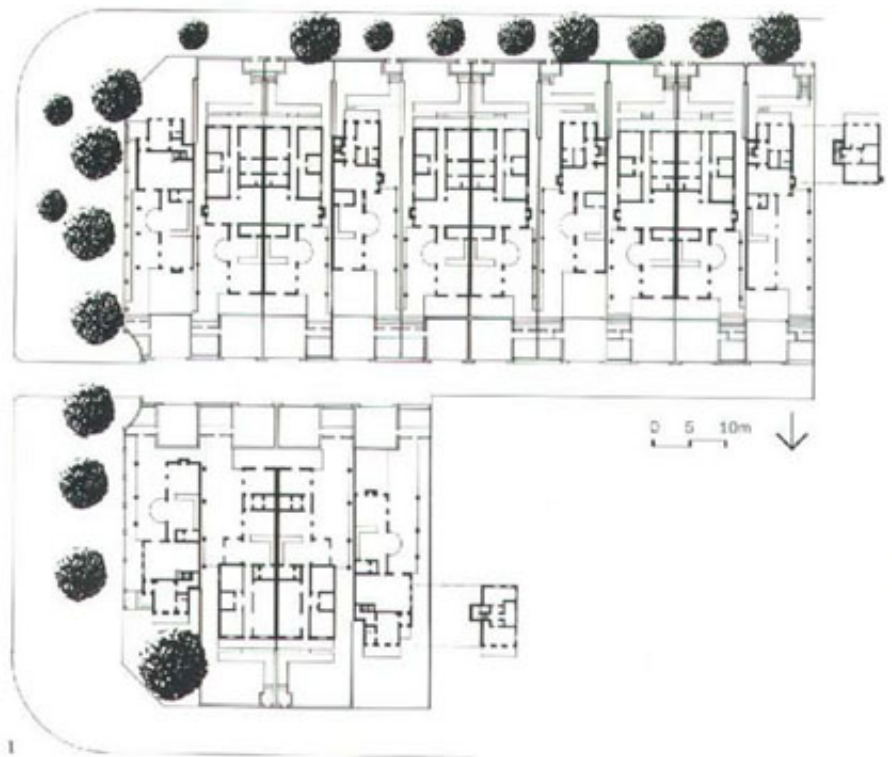
Broome Street Housing

Design/Completion 1988/1989
Cottesloe, Perth, Western Australia
Heytesbury Holdings Pty Ltd
7,740 square metres

Render finish masonry walls, structural steel balcony and veranda framing, coloured corrugated metal roof sheeting

Broome Street Housing comprises fourteen single residential houses in two streetfront rows. A single-storey and a two-storey type were developed to produce a variety of scale and character, the types being alternated for sunlight penetration into courtyards.

The housing proportions are slightly derivative of the historic housing which characterises the Cottesloe area, but they are consolidated on the site to produce a distinct identity.



- 1 Site plan
- 2 Streetscape
- 3 Single-storey housing
- 4 Elevation showing alternating one- and two-storey massing
- 5 Garden elevation
- 6 Corner house
- 7 Side street aspect





Walker Street Housing

Design/Completion 1988/1990

Waterloo, Sydney, New South Wales

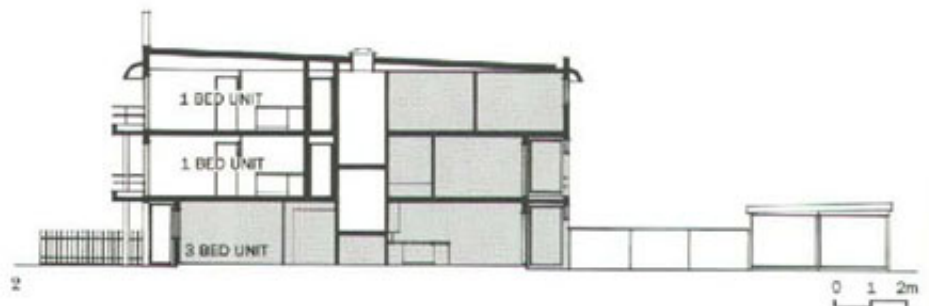
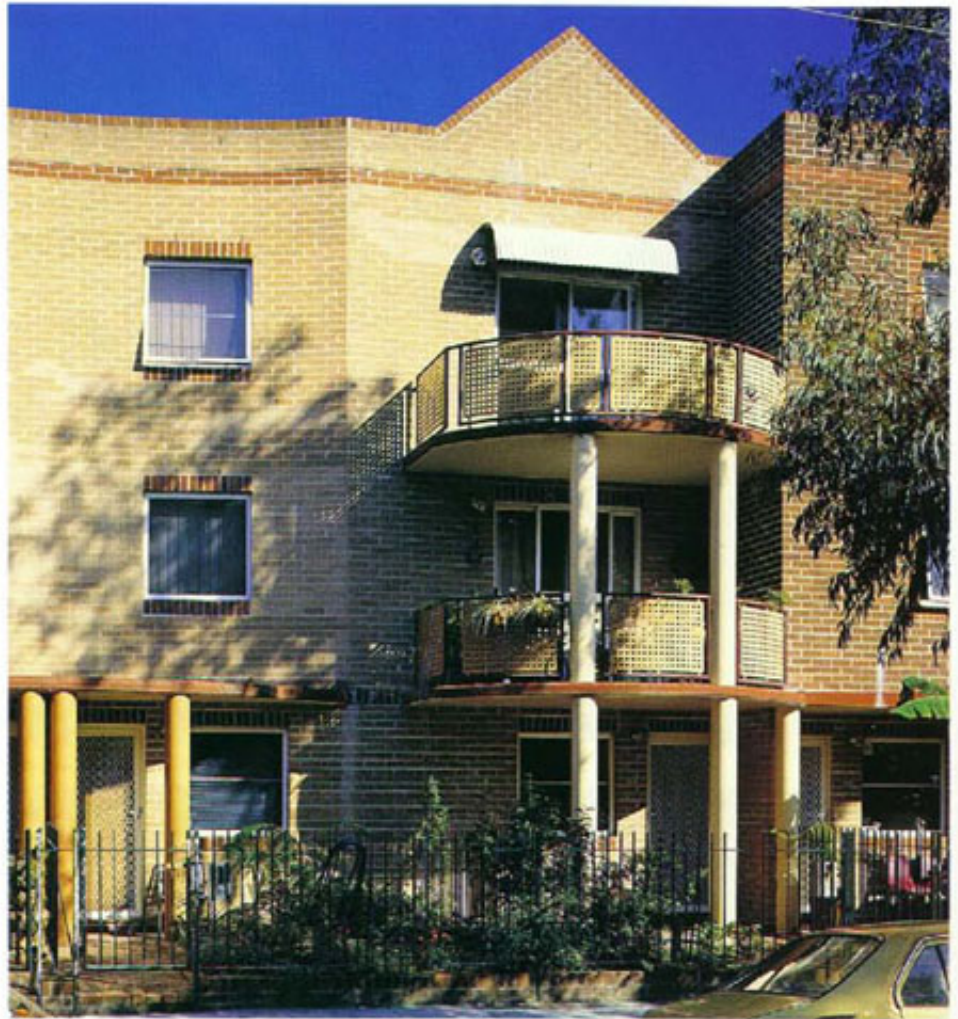
NSW Department of Housing

2,460 square metres (31 dwellings)

Pier and beam footings with concrete slab, load bearing brickwork and timber framed roofing

This infill development forms a section of an inner urban street containing traditional terraces and other new public housing projects. The design philosophy is based upon creating a character which is recognisable but contributes meaningfully to the streetscape.

All of the apartments overlook the existing street, and the street domain is enlarged by setbacks containing transitional space from public to private. The group entrances to the street are strongly expressed to optimise use of the small communal space available.



- 1 Balcony and common entrance
- 2 Section showing larger units with both street and rear access
- 3 Street elevation



Harper Street Housing

Design/Completion 1989/1992

Northcote, Melbourne, Victoria

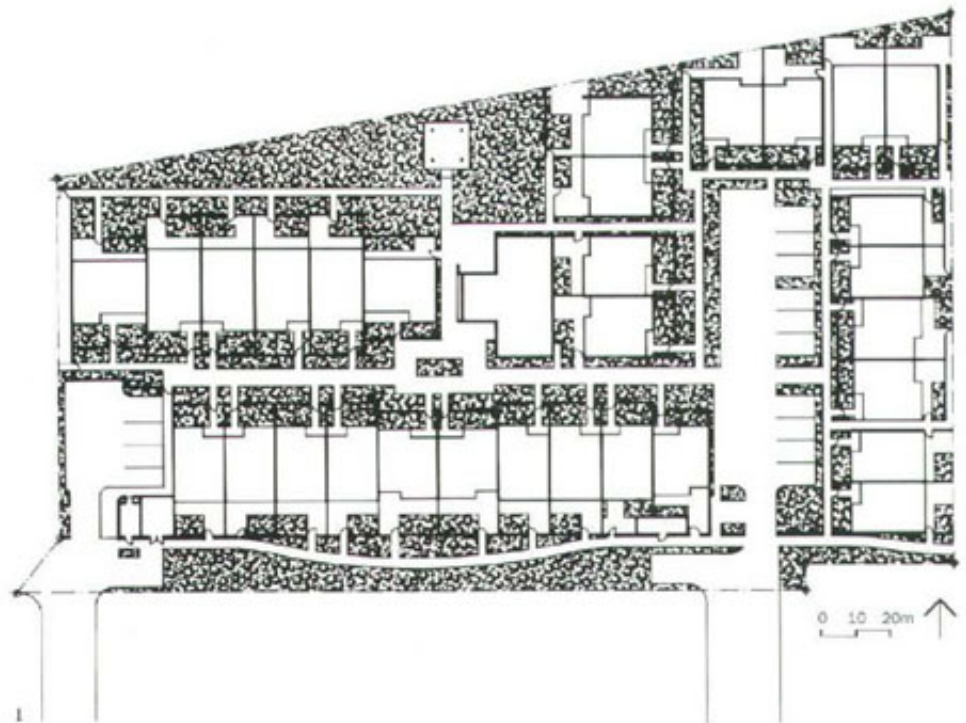
Department of Housing and Construction, Victoria

6,060 square metres

Face brickwork incorporating red, pink and cream bricks, unglazed terracotta steep-pitched roofing and tall chimneys concealing heater flues and plumbing vents

This 30-dwelling public housing development employs conventional and familiar forms to create a village-like quality for accommodation occupied mainly by elderly residents. This quality is reinforced by incorporating a pedestrian spine; car-parking is provided in communal groups at the peripheries.

The pedestrian spine is narrowed to promote interaction and to allow space for private gardens that are tended by the occupants.



- 1 Site plan
- 2 Detail
- 3 Pedestrian walkway
- 4 Courtyard housing

2



Moverly Green Housing

Design/Completion 1989/1993

Randwick, Sydney, New South Wales

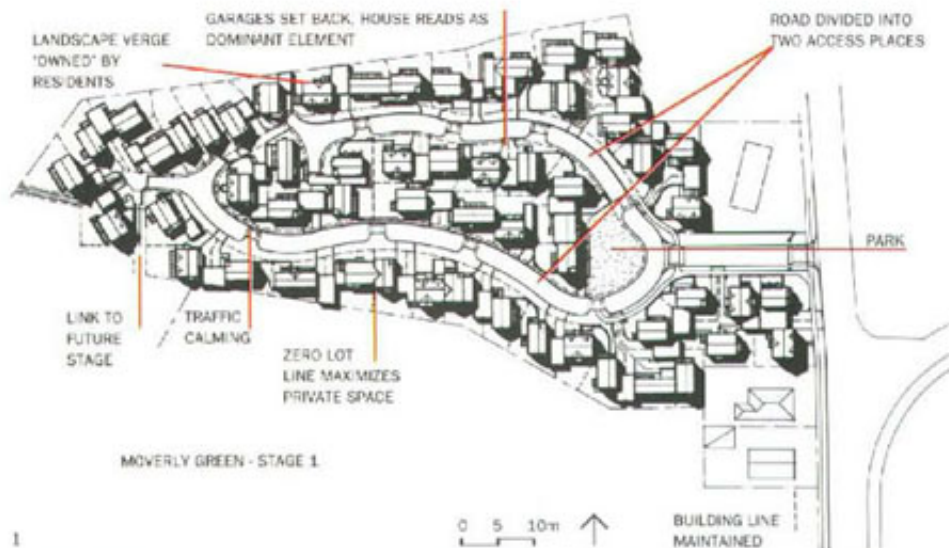
Defence Housing Authority

62,000 square metres

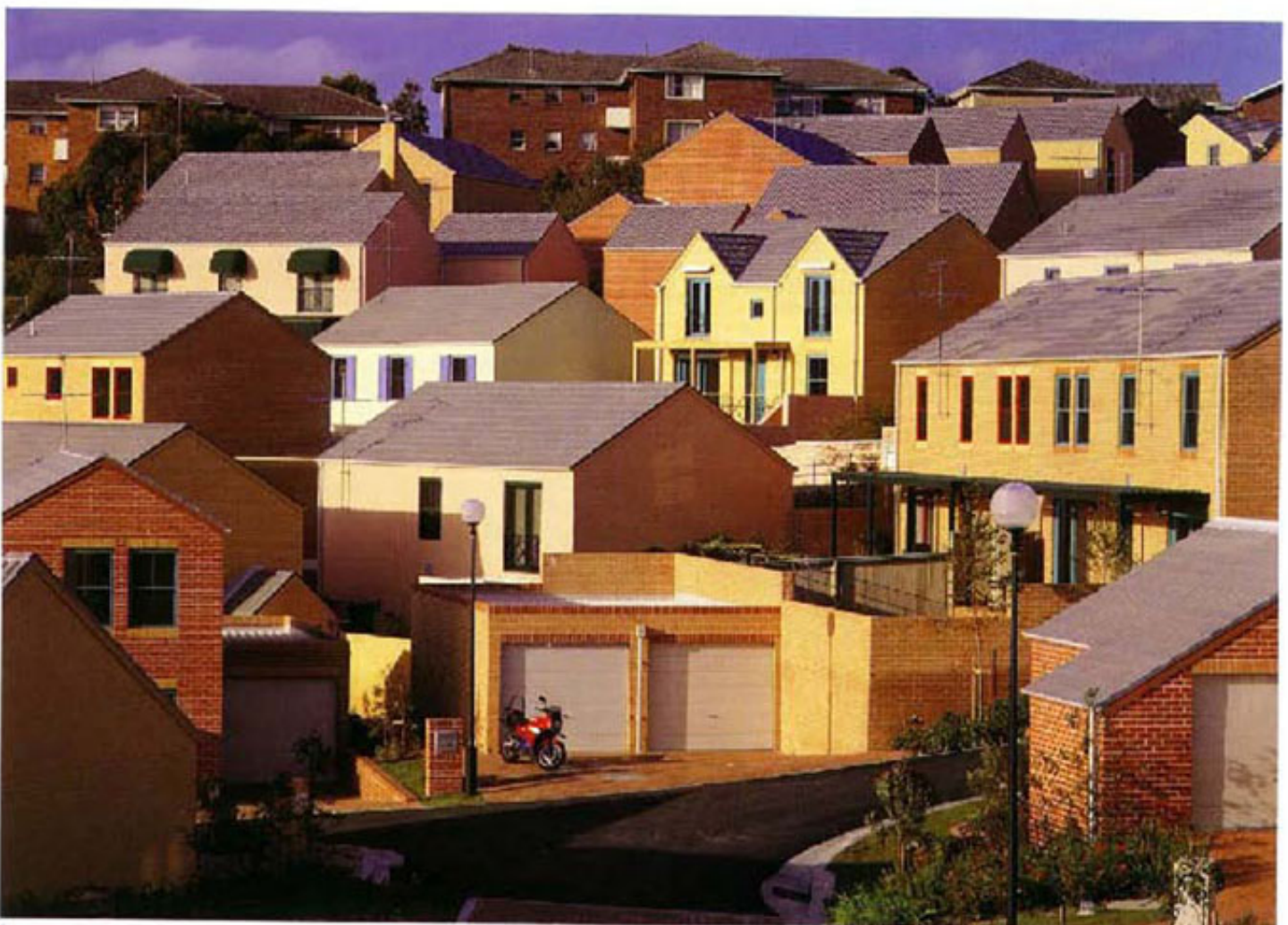
Brick veneer on concrete slab, face brick walls with concrete tile roofing

Moverly Green, comprising 159 dwellings, is one of the first tests of a new Australian Model Code for Residential Development (AMCORD) which was devised to produce a denser form of suburban housing without discarding the ideals of privacy and private open space. This code is being used widely across Australia and attempts to find a middle ground between conventional detached suburban patterns and tighter traditional attached urban terracing.

The housing is grouped into separated precincts of lightly attached houses. This grouping decreases the amount of space normally dedicated to roadway in the suburbs while increasing density (from the conventional 10 to 25 dwellings per hectare). In this project, the architectural treatment concentrates on developing elements familiar to the suburban context.



- 1 Stage 1 site plan
- 2 Entry courtyard showing shared car/pedestrian access
- 3-4 Typical streetscape
- 5 Hillside housing



Goderich Street Housing

Design/Completion 1989/1993

Perth, Western Australia

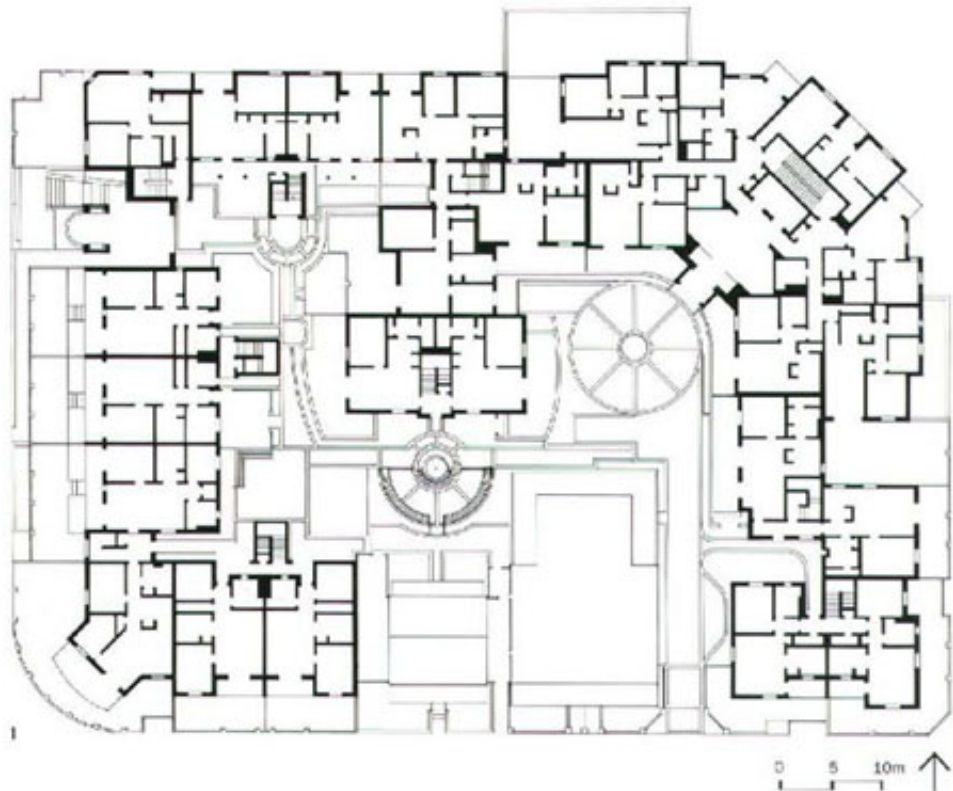
Homeswest-State Housing Commission of WA

6,000 square metres

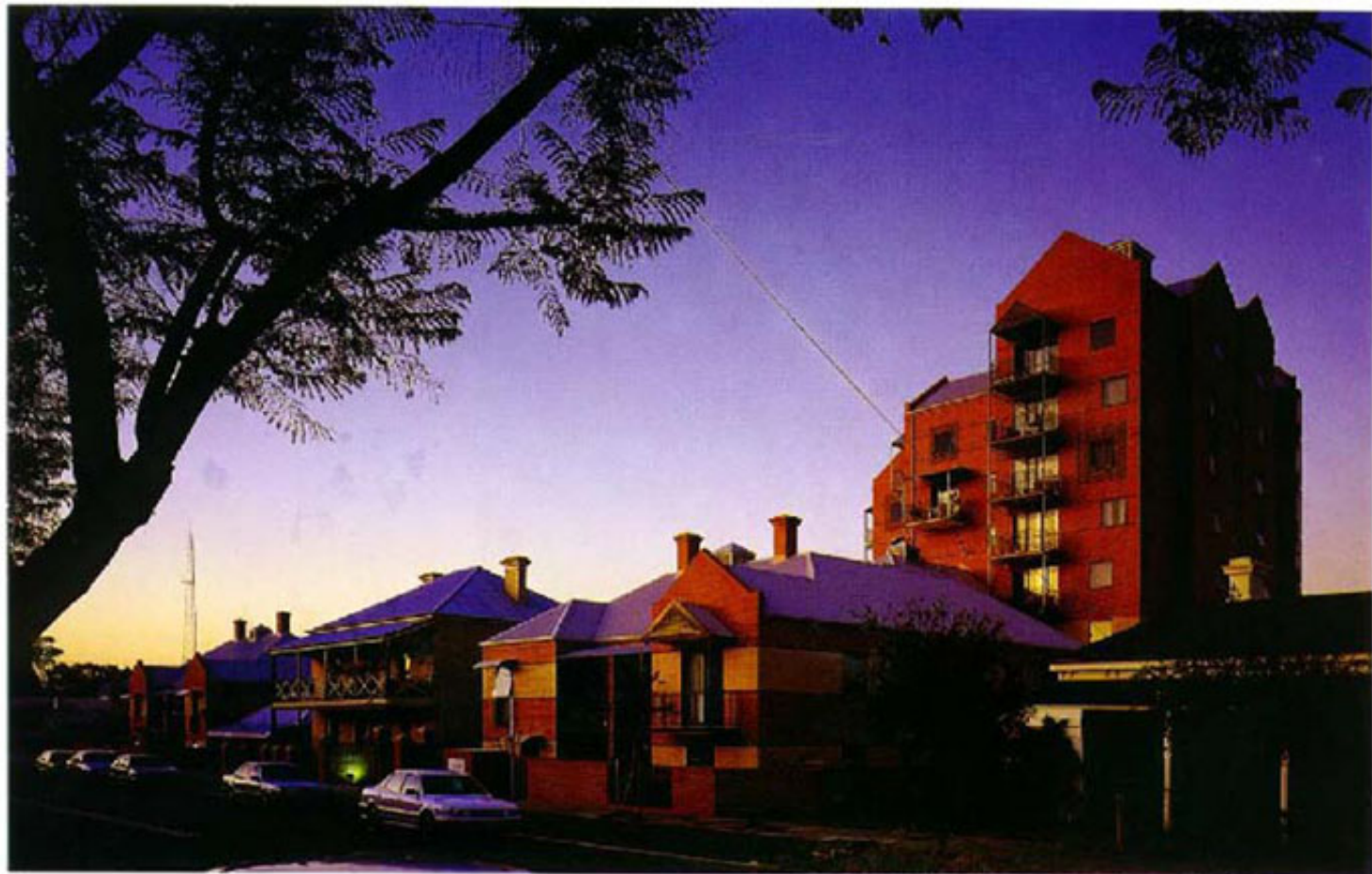
Load bearing brick masonry, reinforced concrete, clay engineering bricks, corrugated iron roof, steel balconies

This 100 dwelling public housing project comprises a series of street-facing two- and three-storey units backed by an eight-level apartment tower. Within the development area are two late 19th century heritage buildings which were restored, and which provide additional character.

The housing was designed to encourage a greater sense of community than occurs generally in retirement villages, and the variety of types was designed to offer a wide choice of living environments.



- 1 Site plan
- 2 North elevation
- 3 Restored heritage building in front of medium density development
- 4 Entry forecourt
- 5 Driveway entrance



3



4



5

Selected and Current Works

Houses



- 198 Chancellery and Embassy of the Republic of Ireland
- 200 Ocean House, Coogee
- 202 Beach House, Palm Beach
- 204 City House, Toorak
- 206 Country House, Launching Place
- 210 Ocean House, Palm Beach
- 214 City House, Kew

Chancellery and Embassy of the Republic of Ireland

Design/Completion 1975/1978

Yarralumla, Canberra, Australian Capital Territory

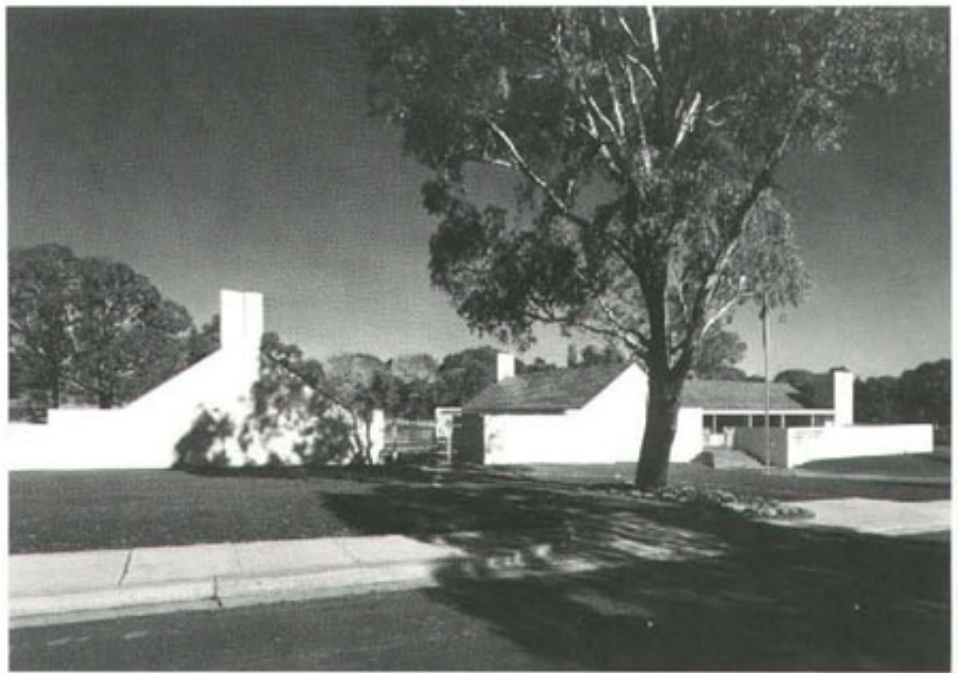
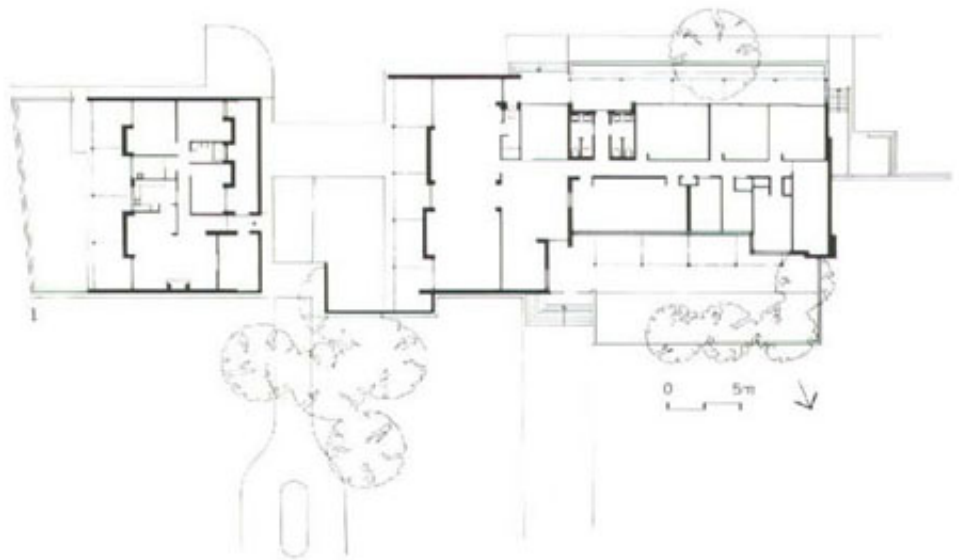
Republic of Ireland

900 square metres

Concrete slab, steel frame and brickwork

The embassy and chancellery are simple, domestically scaled buildings designed to reveal influences of both Australian and Irish vernacular architecture. Characteristics of the Australian influence include open, additive planning, contrasted vertical and horizontal massing, verandas and protected courtyard spaces. Whitewashed walls and close-cropped eaves reflect the Irish character.

In spite of these influences, the design is intended to have a lasting, non-stylistic quality contrasted with the overt foreign influences evident in nearby embassies.



- 1 Floor plan
- 2 Main entrance
- 3 Street elevation
- 4 Chancellery and embassy along street



Ocean House, Coogee

Design/Completion 1984/1987

South Coogee, Sydney, New South Wales

Mr and Mrs A. Cardy

450 square metres

Concrete slab, reinforced concrete frame and brickwork

This project involved extensive alteration to a rare Sydney "P & O" style ocean house built in the 1940s. Much of the original house had been compromised by later accretions and, despite its ocean front character, it was spatially confused and inward-looking.

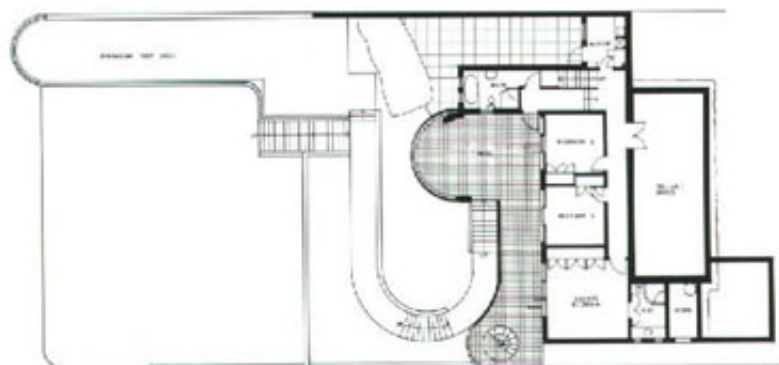
The task was to better relate the house to its external spaces while reinforcing its character and expanding its utility. This was achieved by adding a new storey, allowing existing uses to be freed, and by developing new elements on the cliff edge in order to distinguish external and internal space.

The project combines restoration and adaptation, its aim being to express and facilitate contemporary lifestyle needs without destroying historic integrity.

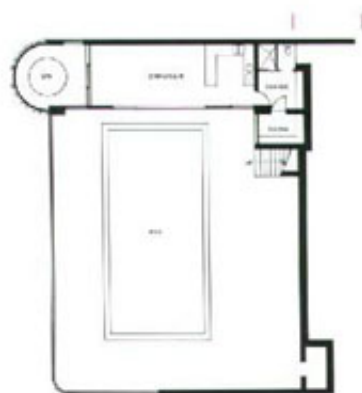


- 1 Cross section
- 2 Ocean elevation
- 3 Floor plans
- 4 New decks overlooking ocean
- 5 View from new upper storey to new pool and gymnasium

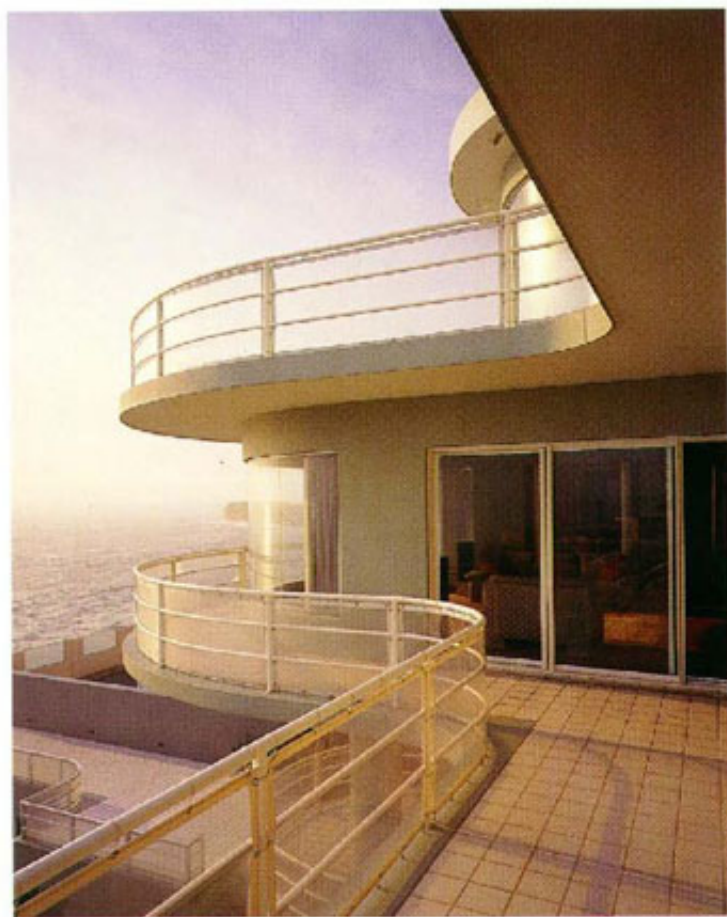
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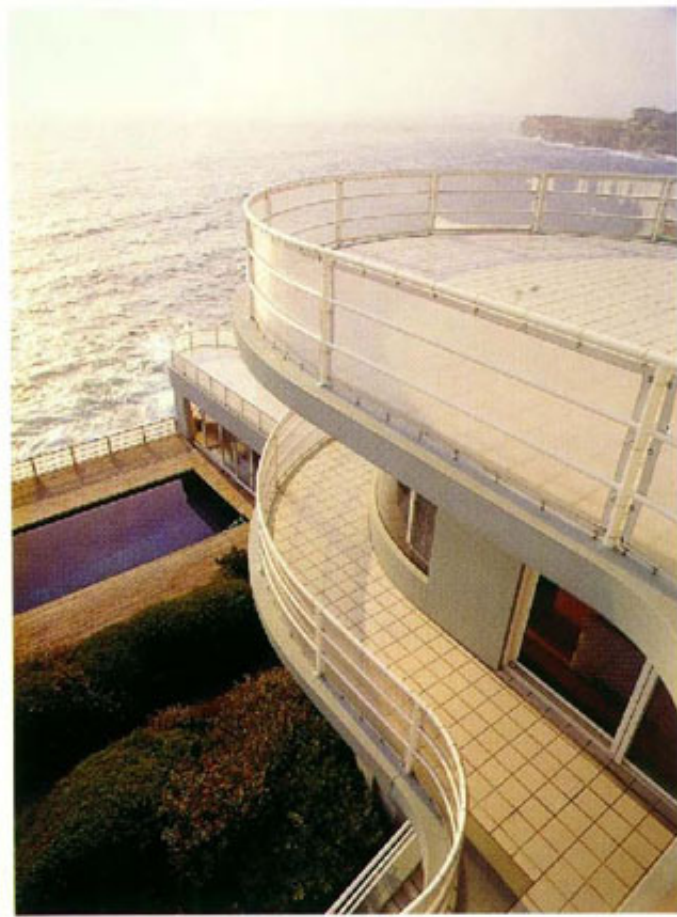
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Beach House, Palm Beach

Design/Completion 1986/1987

Palm Beach, Sydney, New South Wales

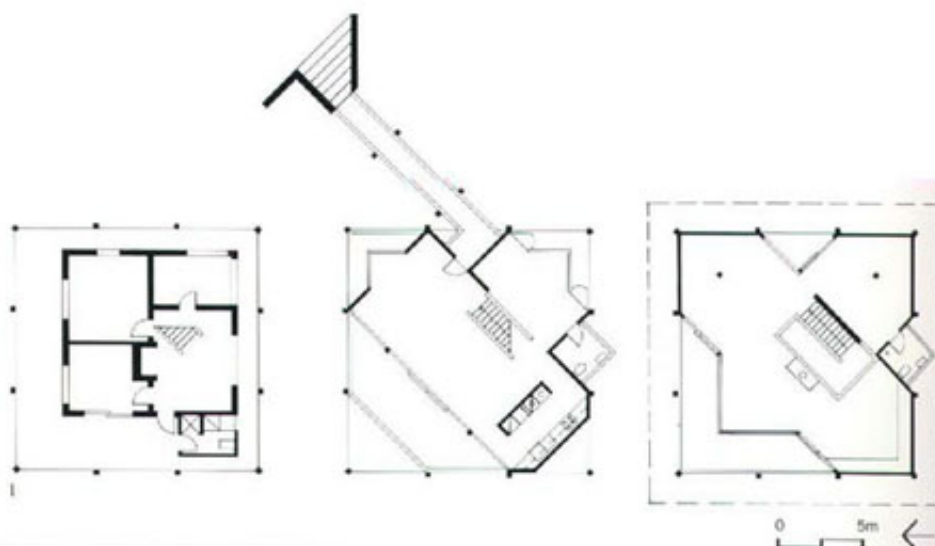
Cox and Richardson

300 square metres

Timber framed structure with timber cladding and terracotta tile roofing

The house is located in an area of traditional low-pitched, broad-roofed beach houses in Sydney's northernmost beach suburb. In the 1980s the suburb became sought after as an exclusive haven, and much of the traditional architecture was replaced by substantial modern houses.

The design attempts to reverse this trend. It retains an old masonry beach house as a base, overlaid by an expressed timber structure and new roof canopy. Orientation from old to new is altered to the diagonal in order to take advantage of prevailing breezes and expansive views, and to enhance spatial interest. The bolted structure is consistently expressed internally and externally. The walls function as lightweight screens, leaving spatial use undefined.



2



3

- 1 Floor plans
- 2 Middle-level dining area
- 3 Top-level living area
- 4 Elevated walkway to entrance
- 5-6 Veranda details



City House, Toorak

Design/Completion 1986/1988

Toorak, Melbourne, Victoria

Melbourne family

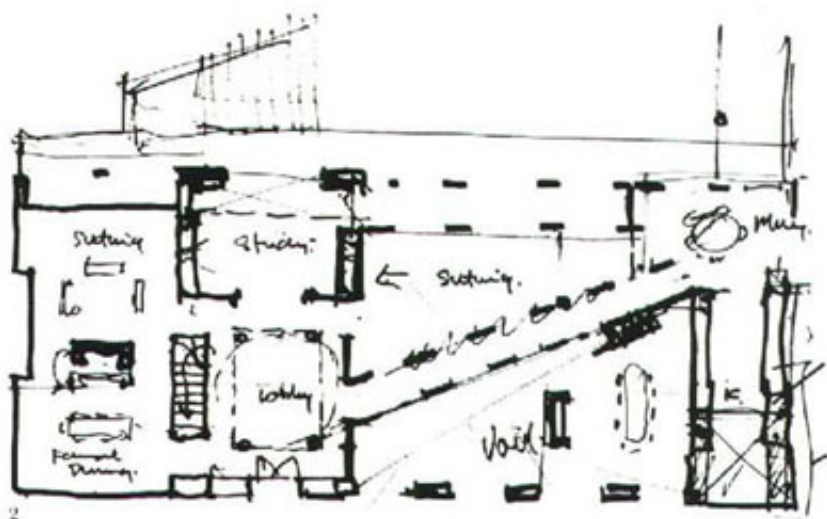
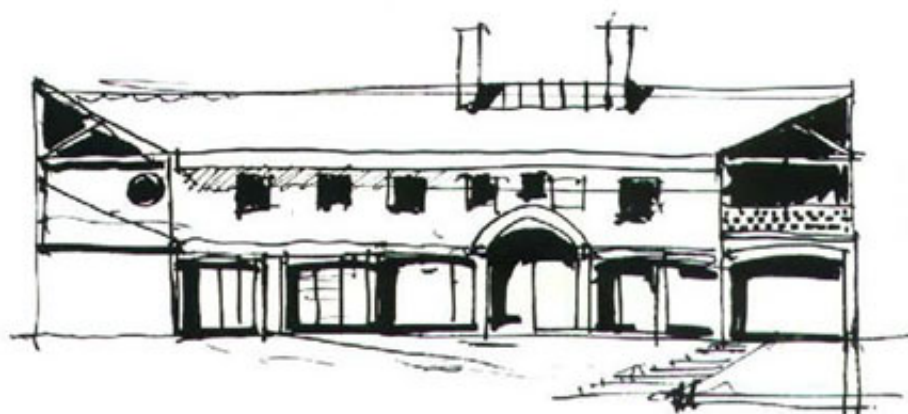
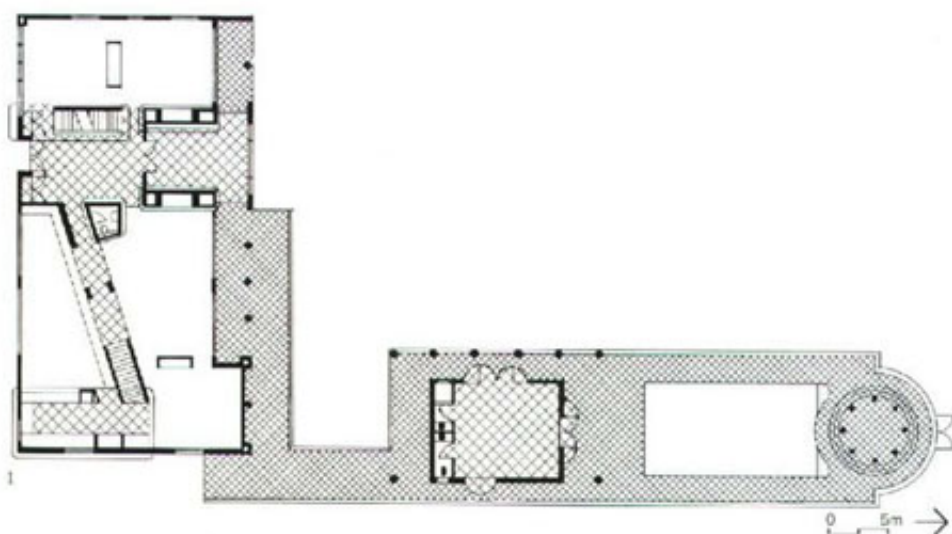
686.7 square metres

Concrete slab, load bearing brickwork and tile roof

As with much of the practice's housing, the house is located within a recognisable historic context. In this case the surroundings comprise large stately houses, mostly introverted and having a clear distinction between home and garden.

The house is a reflection of these forms, with conventional forms borrowed and rearranged. The traditional central gable is halved and relegated to the ends.

The portico is a simple refinement of convention but is shifted away from the typical central axis. The formal garden is retained but penetrated by a series of pavilions and a folly. The interior spaces are formally set out but serviced by an angled rather than a symmetrical hallway. The overall result is a house consistent with its context but sharing few of its restrictions.



- 1 Ground floor plan
- 2 Original concept sketches
- 3 Front entrance
- 4 Garden elevation
- 5 Pool and gymnasium



Country House, Launching Place

Design/Completion 1987/1988

Launching Place, Victoria

Melbourne family

930 square metres

Two-storey building with rendered brickwork supporting a first-floor concrete slab, timber frame, exposed timber trusses, terracotta shingle roof

This house is sited on a prominent hill towards the rear of a rural estate where it commands sweeping views. The house is both a retreat from city life and a place for guests to stay and be entertained. The design concept responds to these conditions in forming a series of pavilions that provide degrees of separation and variety of experience related to different visual aspects.

The arrangement of pavilions linked by verandas and breezeways is a consistent theme of Australian vernacular architecture. It produces an informality conducive to relaxed living and an impression of spaciousness and complexity.

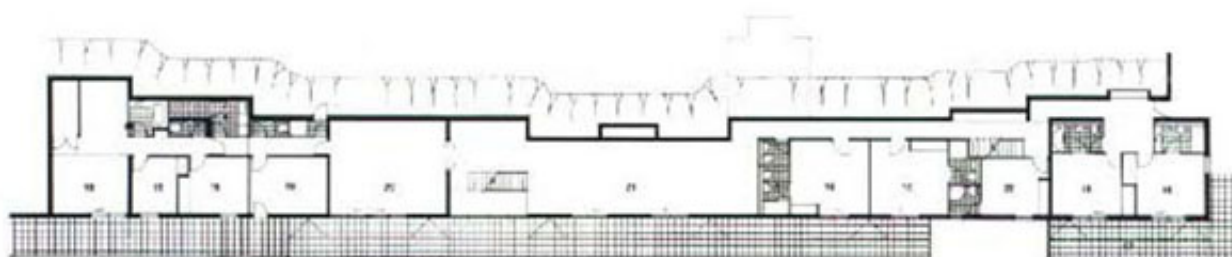


1



2

- 1 Front view
- 2 Rear view
- 3 Floor plan
- 4 Rear courtyard



LEGEND OF ROOM TYPES

- | | |
|-----------------|------------------|
| 1. Carport | 12. Garden |
| 2. Entry | 13. Living room |
| 3. Conservatory | 14. Deck |
| 4. Laundry | 15. Study |
| 5. Courtyard | 16. Bedroom |
| 6. Kitchen | 17. Terrace |
| 7. Dining room | 18. Sitting room |
| 8. Mud room | 19. Plant room |
| 9. Lodge | 20. Runous room |
| 10. Entry hall | 21. Gallery |
| 11. Fountain | 22. Bed sitting |







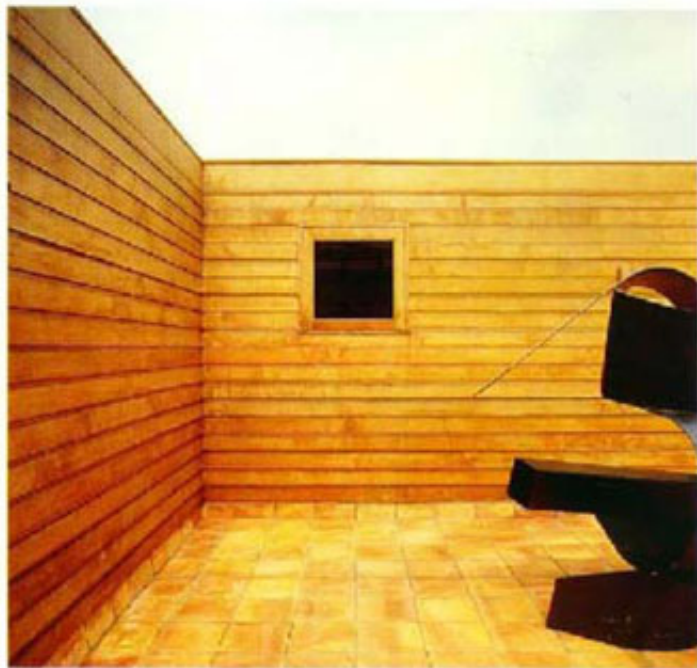
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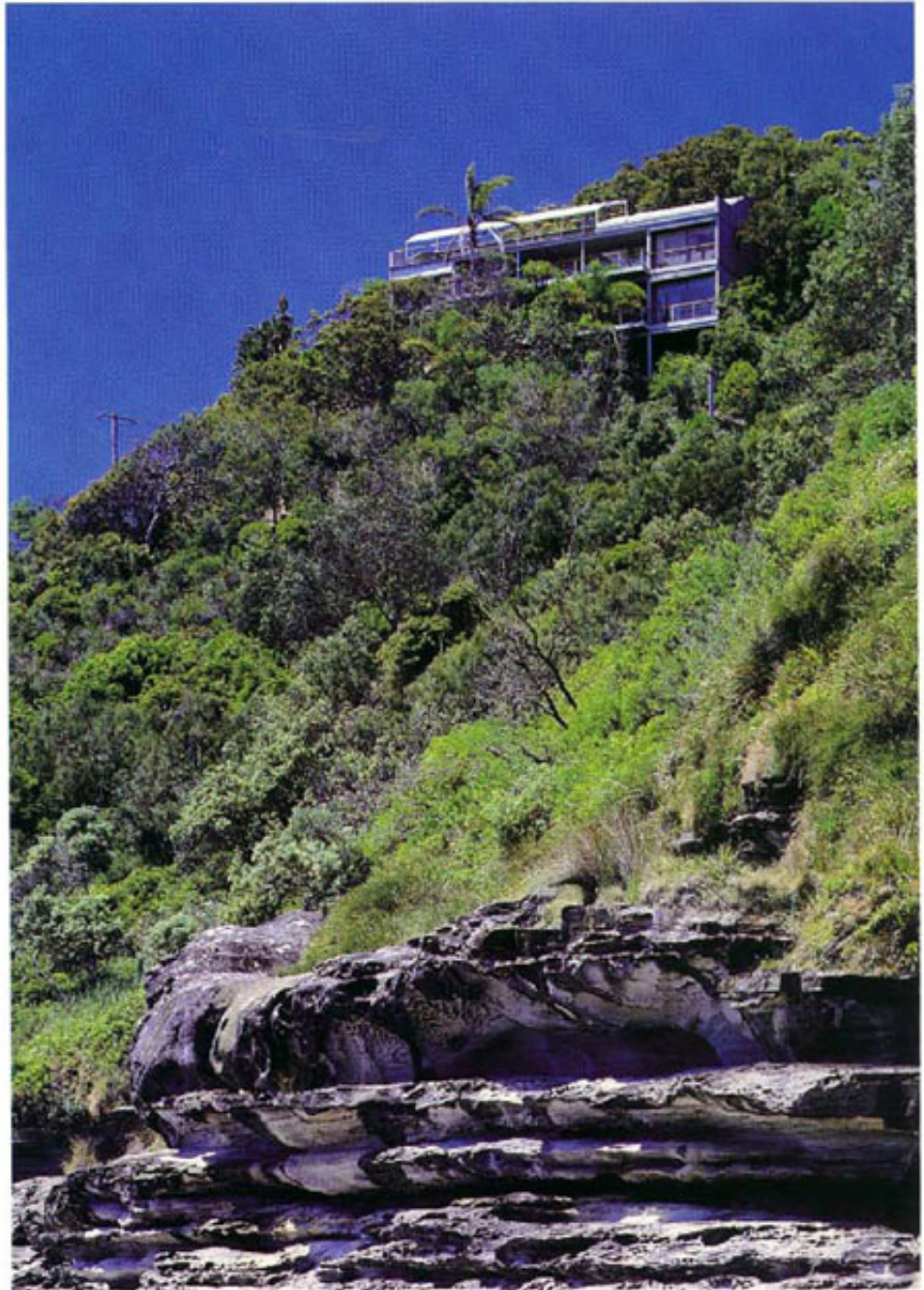
Ocean House, Palm Beach

Design/Completion 1988/1989
Palm Beach, Sydney, New South Wales
Louise and Phillip Cox
420 square metres
Steel and timber framing with vertical
stained western red cedar cladding

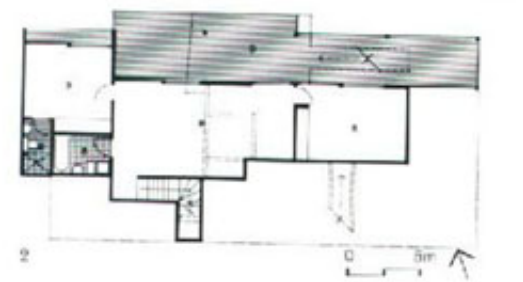
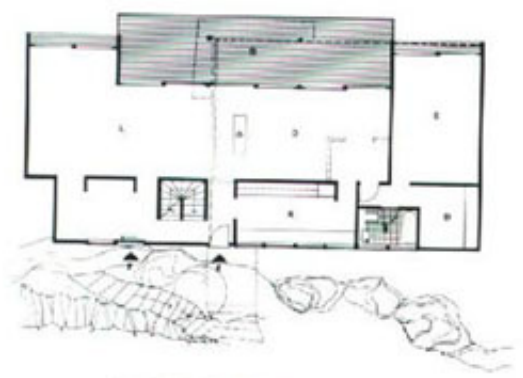
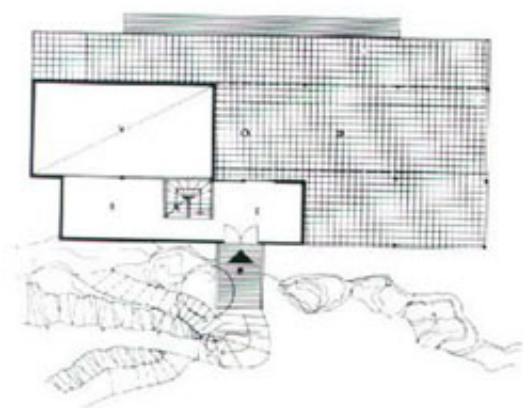
This house was designed for use as Philip Cox's weekend home following disposal of the earlier Palm Beach house. It is sited on the face of a steep cliff. Entry is necessarily obtained from a reserve above the cliff and design was restricted by codes requiring minimal visual impact from the reserve.

The solution was to incorporate a small entrance space into a roof-top deck that extends over most of the structure. The entrance space is linked to a curved section of roof that forms an atrium with sufficient height for a mezzanine overlooking the main living areas.

The building is partially supported from the cliff face, giving the impression of a cliff-hung structure. The spaces on each of two main levels are linearly arranged, accentuating that impression as well as providing each room with panoramic views.



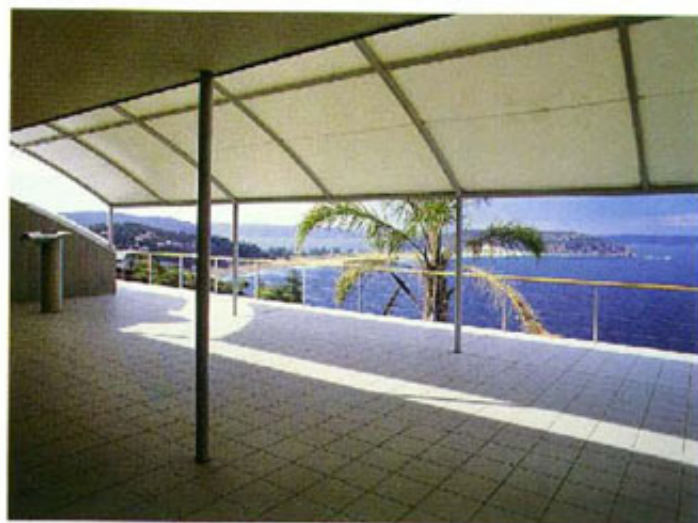
- 1 View from north
- 2 Floor plans
- 3 Upper deck looking east
- 4 Upper deck showing louvred glazed roof in foreground
- 5 Upper deck looking north west



3



4



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8



9

- 6 Gallery level
- 7 Upper deck
- 8 Elevation and section
- 9 View from pathway to entrance
- 10 Main living area
- 11 Main living area from gallery
- 12 Living room and dining room looking north
- 15 Living room and dining room looking south



10



11



12



15

House, Kew

Design/Completion 1989/1991

Melbourne, Victoria

Burne family

square metres

Concrete slab, load bearing brickwork, terracotta tiled roof
 Timber shingles above entry

The design of this inner Melbourne house derived from an existing Edwardian building on the property originally owned by Christian missionaries. The current owners required a house more closely linked with its gardens but were persuaded to retain the building as a component of the new residence.

The new building, set around a north-facing courtyard, is linked to the Edwardian building and contains a series of living and utility spaces culminating in a bedroom pavilion. This pavilion is the original residence across the courtyard. The eight-room Edwardian house was redesigned to provide living, dining, bedroom and ensuite for each of the four children. The entrance (located on a corner rather than symmetrically aligned to the courtyard axis) is a high, timber shingled conical roof clearly visible from the side and illuminated internally by a light fixture.



GROUND FLOOR PLAN

- | | |
|-----------------|-------------------|
| 1 Garage | 11 Bathroom |
| 2 Entry court | 12 Dressing |
| 3 Tennis court | 13 Master bedroom |
| 4 Entry | 14 Ante |
| 5 Formal living | 15 Billiards |
| 6 Gallery | 16 Powder room |
| 7 Kitchen | 17 Bedroom |
| 8 Family | 18 Sitting room |
| 9 Utility | 19 Ensuite |
| 10 Saucy/siding | 20 Bed/siding |



2

- 1 Plan
- 2 Central courtyard with restored Edwardian building on right
- 3 Axial view of central courtyard
- 4 Detail of courtyard entrance
- 5 Kitchen



3

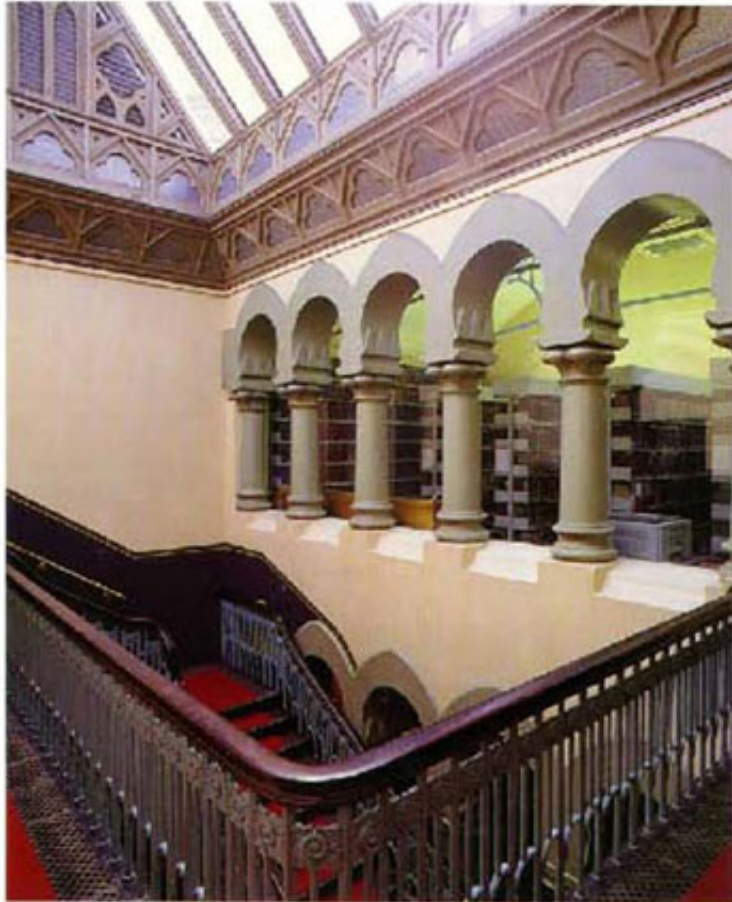


4



5

Restoration and Adaptation



- 218 Kingston Restoration
- 222 Old Supreme Courts Restoration
- 226 Garden Island Restoration and New Building
- 228 Tocal Homestead Restoration
- 230 No. 1 Kent Street Restoration and Adaptation
- 232 Swan Brewery Redevelopment

Kingston Restoration

Design/Completion 1968/1989

Norfolk Island

Norfolk Island Administration and Commonwealth Government

1,000 hectares

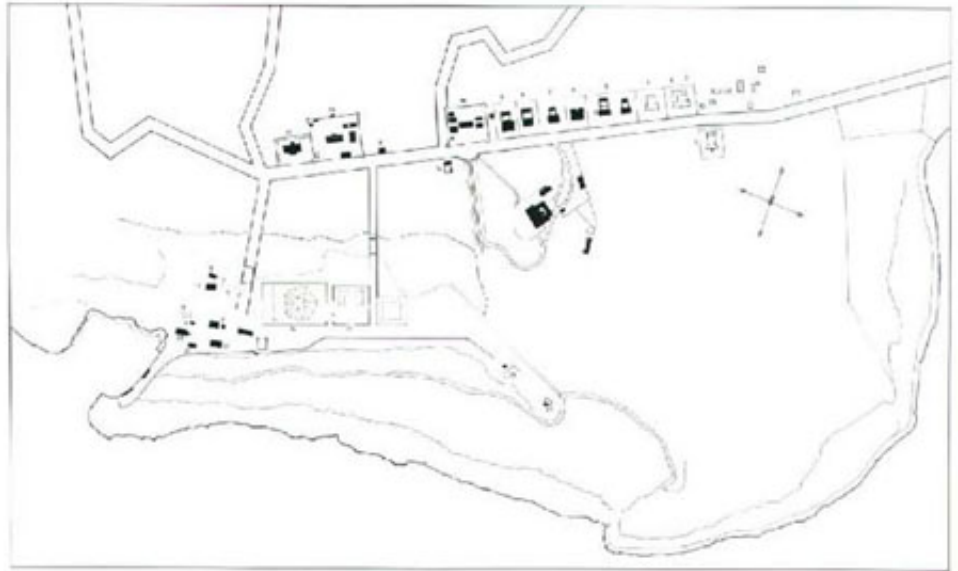
Stabilisation of ruins, restoration and reconstruction of Georgian military barracks and housing

The work undertaken on Norfolk Island involves the conservation and restoration of an entire penal settlement. The practice has been involved in most of this work over a period of 20 years.

Norfolk Island was first settled as a penal colony by the British in 1788. They left behind a legacy of Georgian military town planning and several fine individual buildings, but by 1968 these were in a state of serious decay. The reconstruction process involved three houses of the main street, Quality Row, being stabilised as ruins to provide a walk-through experience, and a further eight being restored for administrative and museum uses.

Two large military barracks were conserved and adapted for use as offices and even the small boatsheds and guardhouses have been carefully restored, many being architecturally outstanding.

The product of this work is a "living" museum where tourists, who provide most of the island's income, experience the conditions that prevailed in convict times.

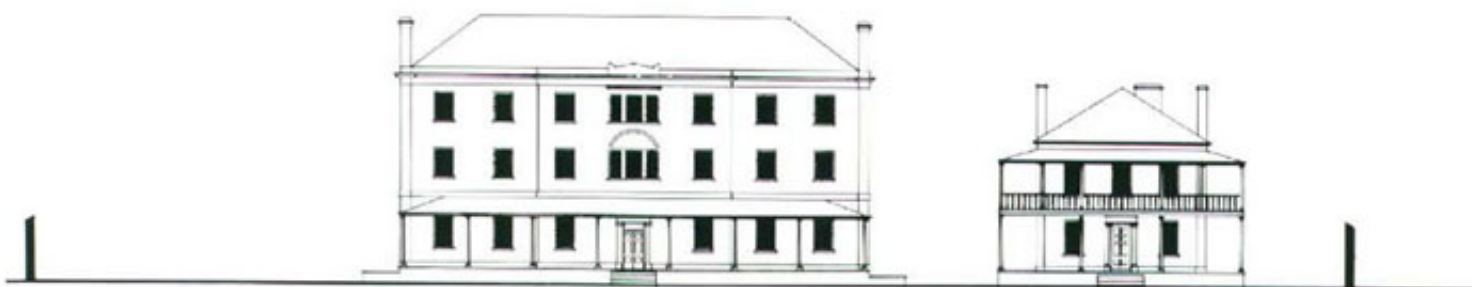
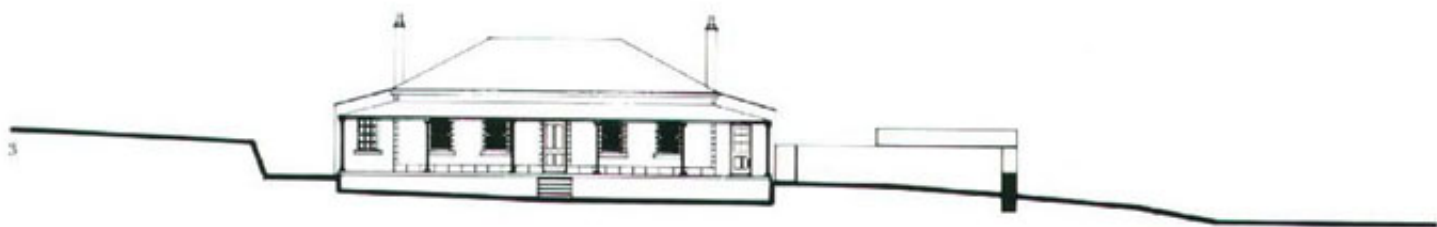


LEGEND

1-9 Quality Row	16 Convict Superintendent	23 Police Office
10 Old Military Barracks	17 Colonial Barragon	24 New Goal
11 Officers' Bath	18 Crankmill	25 Prisoners' Barracks
12 New Military Barracks	19 Bake House	26 Lime Kiln
13 All Saints Church	20 Bake House	27 Salt House
14 Quality Row	21 Engineer's Office	
15 Civil Hospital	22 Boat Shed	



- 1 Site plan
- 2 Quality Row, Kingston
- 3 No. 6 Quality Row: elevation
- 4 New Military Barracks and officers' mess
- 5 Old Military Barracks
- 6 Old Military Barracks
- 7 Police office
- 8 Quality Row residence

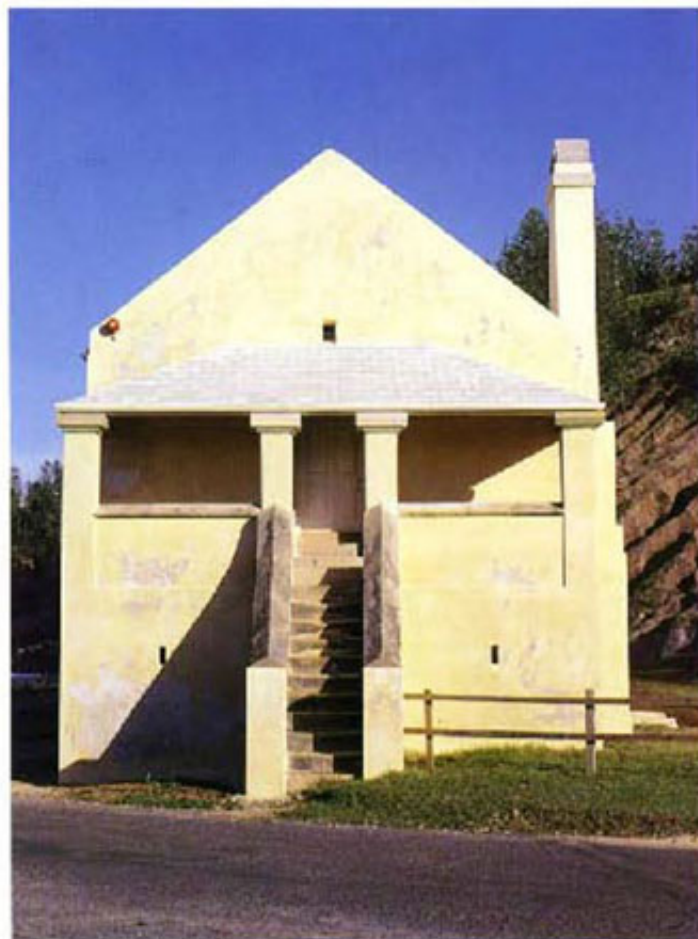




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15

Old Supreme Courts Restoration

Design/Completion 1974/1977

Sydney, New South Wales

NSW Government

3,000 square metres

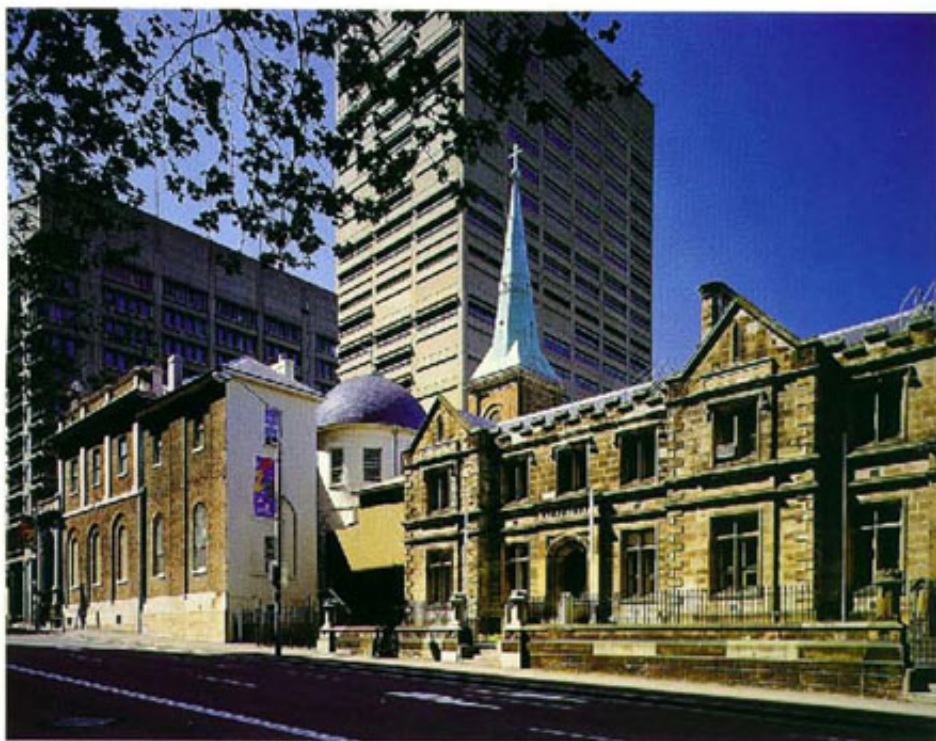
Restoration of historically significant buildings and interiors

In association with NSW Government Architect

Restoration of Sydney's Old Supreme Courts was a combined project with the NSW Government Architect, NSW Department of Public Works. The three separate buildings in the group, designed originally by some of Australia's most important architects, had been threatened with redevelopment. Subsequently it was decided that viable use could be maintained and a conservation management plan was prepared.

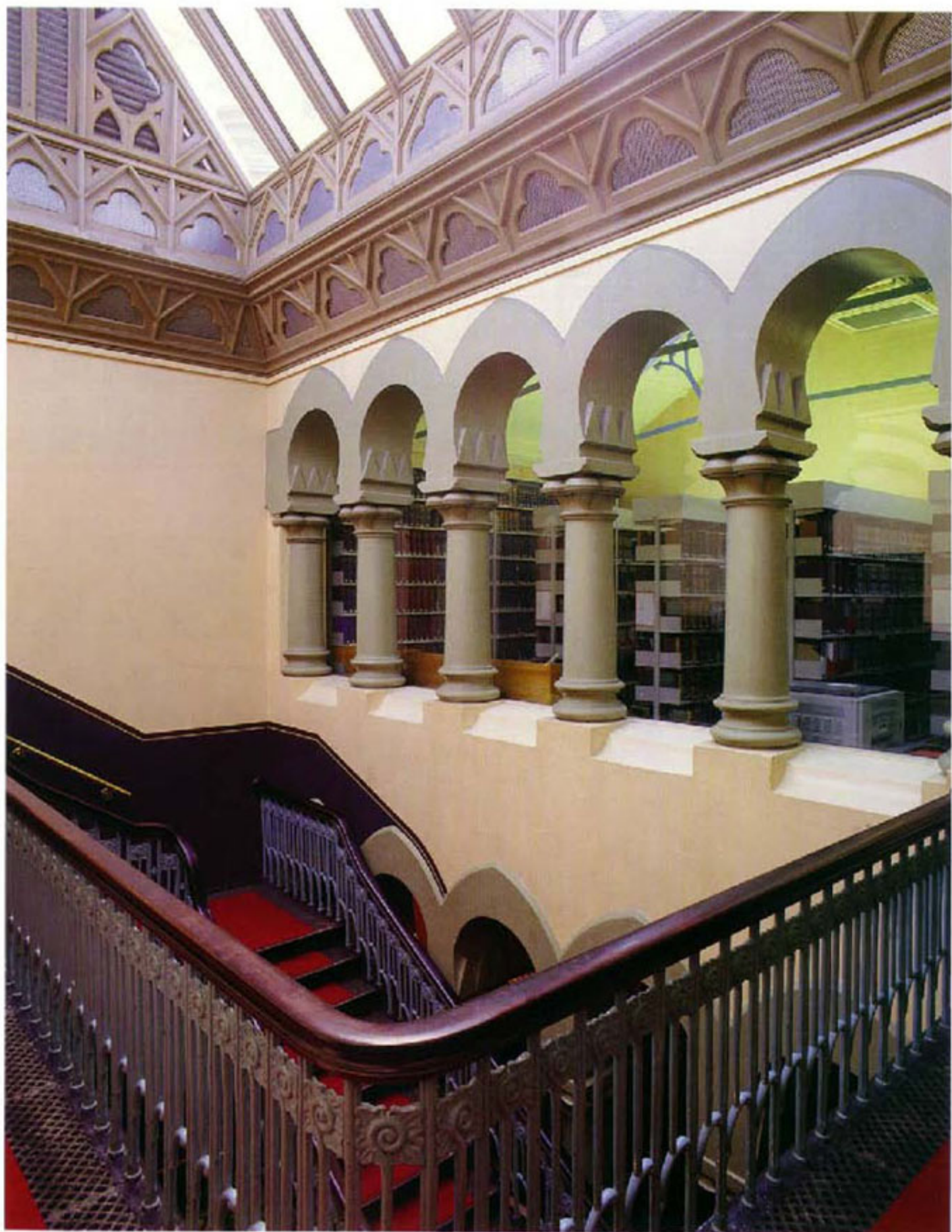
The restoration task was more difficult than usual because of the extent of accretions over time and the complexity of assessing which elements were of heritage significance. Several of the interiors had to be rebuilt. A team of researchers investigated original colour schemes and stencil designs by carrying out on-site scrapings.

Some outstanding interior spaces were recaptured, in particular the Banco Court, and the Stair Hall designed by Francis Greenway, Australia's first convict architect.

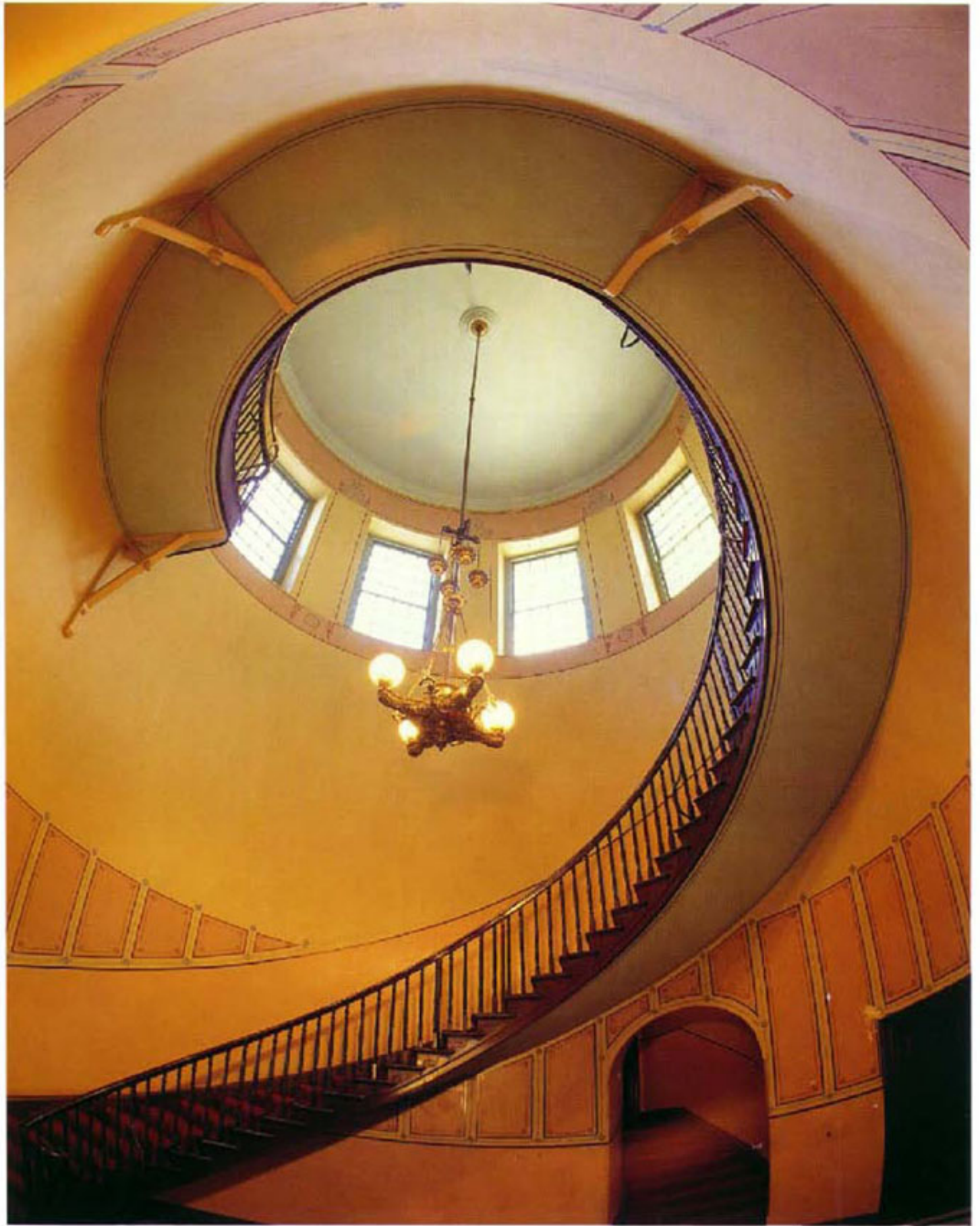




- 1 St James Road elevation (east)
- 2 Old Supreme Courts buildings
- 3 Elizabeth Street elevation
- 4 President's Court
- 5 St James Rakal (Banco) Court



- 6 Gothic staircase in old Registrar-General's building
- 7 Greenway staircase



Garden Island Restoration and New Building

Design/Completion 1980/1983

Garden Island, Sydney, New South Wales

Department of Housing and Construction

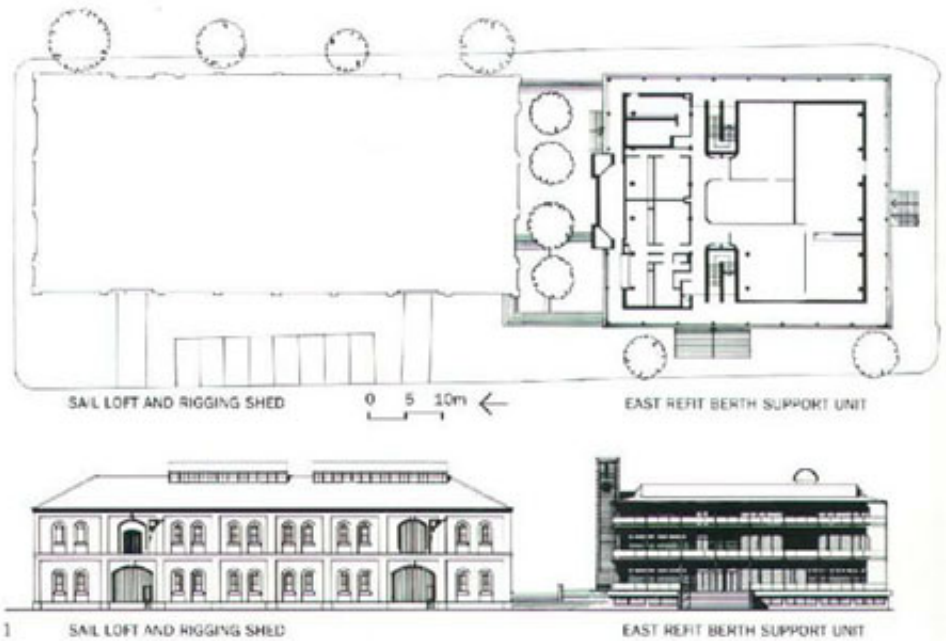
2,000 square metres

Restoration and adaptation of historically significant buildings

This project involved the restoration and rationalisation of a distinct group of buildings that formed Sydney's 19th century naval station. A master plan was prepared which demonstrated the need for a new administration and service building. This was designed in a simple three-storey structure with verandas and plant towers relating to adjacent historic buildings.

The restoration work involved conversion of an 1887 sails loft and rigging shed to administration spaces although substantial parts were restored to their former use and quality. Three other buildings were similarly restored.

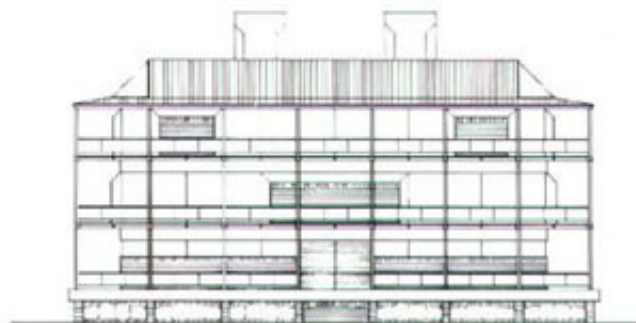
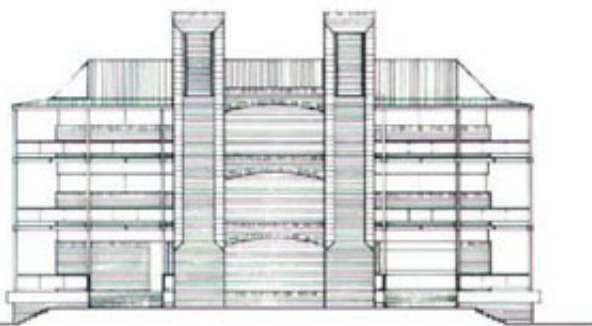
The group now stands as a prominent feature of the Sydney harbourfront.



- 1 Floor plan and elevations
- 2 Historic precinct with new building to the left
- 3 Elevations of new building
- 4 Restored warehouse
- 5 Relationship between new and old buildings
- 6 Internal staircase in restored building replacing original external stairways



2



Total Homestead Restoration

Design/Completion 1980/1993

Paterson, New South Wales

C.B. Alexander Foundation

1,500 square metres

Conservation of 19th century timber farm buildings
and an 1840 homestead

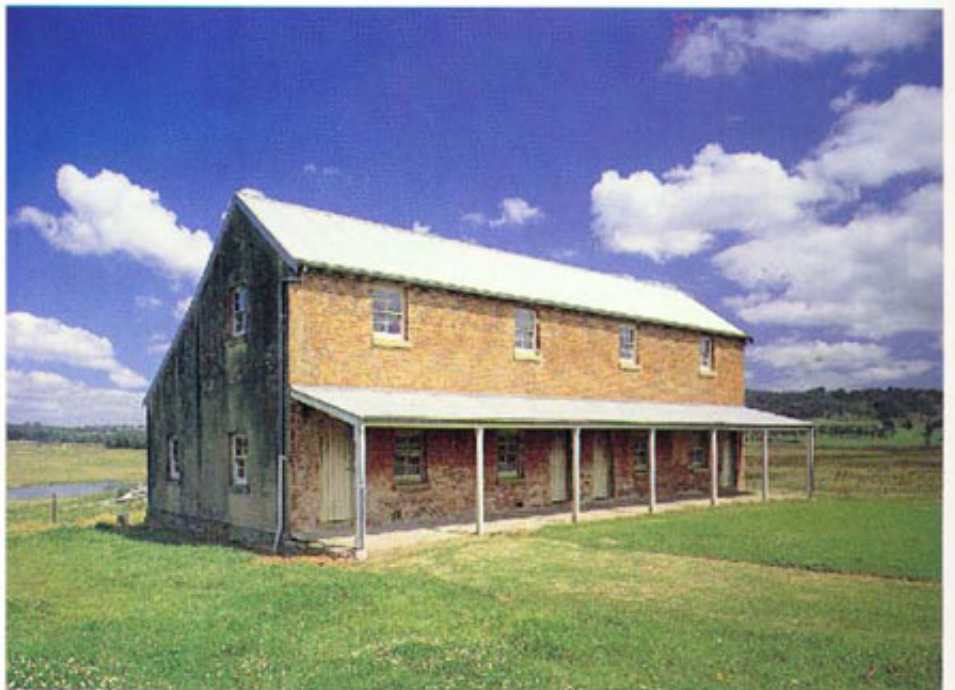
Total Homestead is a horse and cattle stud property in the Hunter Valley of New South Wales. It is located close to the C.B. Alexander Agricultural College previously illustrated.

The farm has a fine collection of designed and vernacular buildings, which include a barn (designed by the prominent historic architect Edmund Blacket), barracks, stables, a hayshed, a smithy and the main homestead.

The restoration work includes all of these buildings. It has been particularly satisfying to work on vernacular outbuildings of a kind which have been inspirational in much of the practice's contemporary works.



1

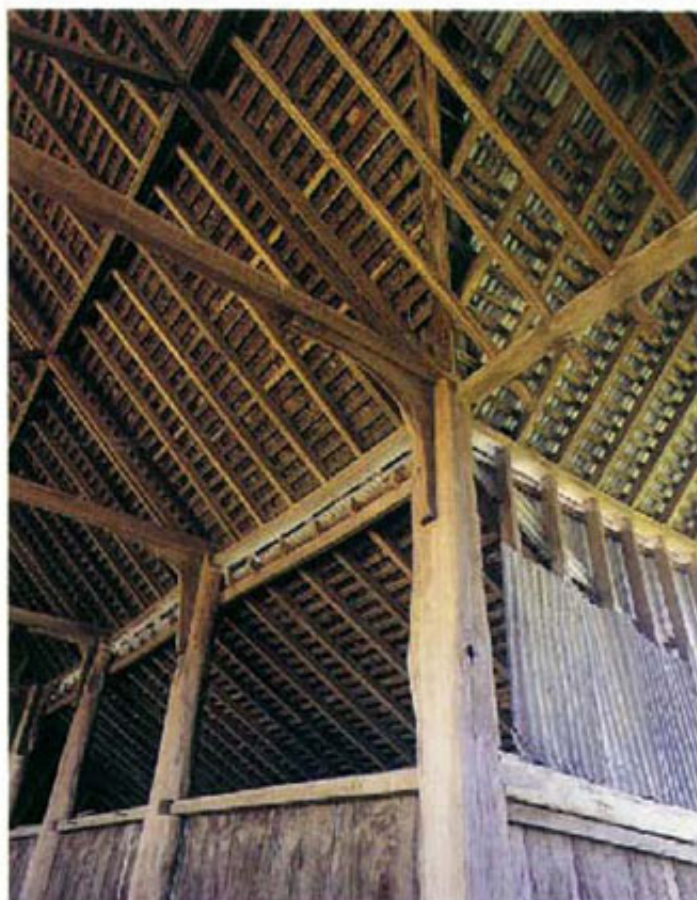


2

- 1 Total homestead
- 2 The barracks
- 3 Slaughterhouse
- 4 Detail of haunch
- 5 Blacket barn



3



4



5

No. 1 Kent Street Restoration and Adaptation

Design/Completion 1987/1989

Millers Point, Sydney, New South Wales

Multiplex Constructions

7,000 square metres

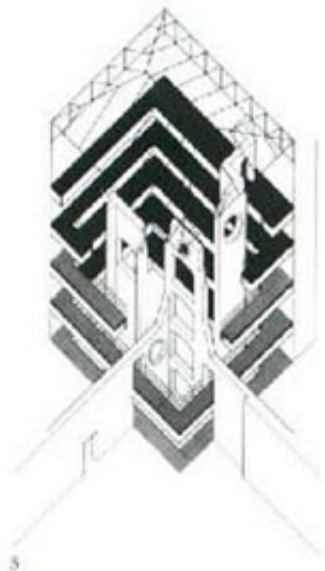
Restored exterior with revised interior spaces

This project is an exercise in adaptive re-use involving conversion of a well-known historic bond store into the headquarters of one of Australia's leading construction companies. The bond store had suffered severe fire damage early in the century and, while it had later been used, little had been repaired. With a fine exterior intact, the scheme involved opening up the interior to create an atrium. The continuous masonry walls crossing the interior were penetrated to form openings for bridges and controlled sunlight apertures.

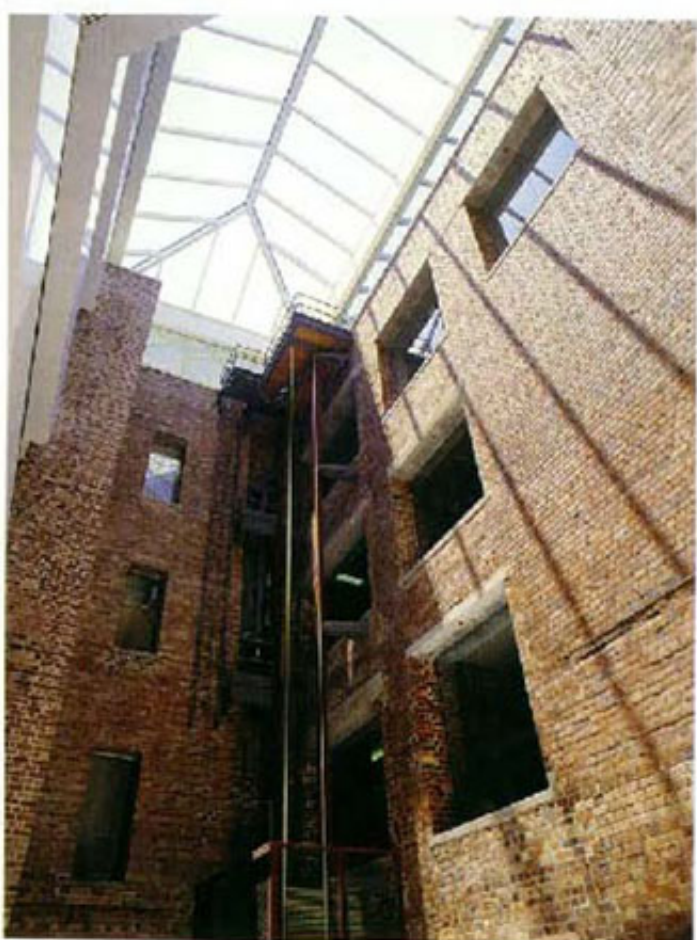
The atrium accommodates all vertical circulation and, with the remaining cross-walls, functionally organises the building into three distinct zones as required by the client. Advantage was taken of a historic proposal for a higher building to add an additional floor behind the existing parapets.



- 1 Plan showing restructuring into three zones using atrium space
- 2 Early elevation
- 3 Axonometric of revised interior space
- 4 Cross section through atrium
- 5 View from city
- 6 View from Windmill Street, Millers Point
- 7 Restored main entrance
- 8 Interior view showing new atrium and wall penetrations



- LEGEND
- 1 Entrance Angle Race
 - 2 Atm
 - 3 Office
 - 4 Chiller room
 - 5 Car park
 - 6 Flat room



Swan Brewery Redevelopment

Design/Completion 1992/1995

Perth, Western Australia

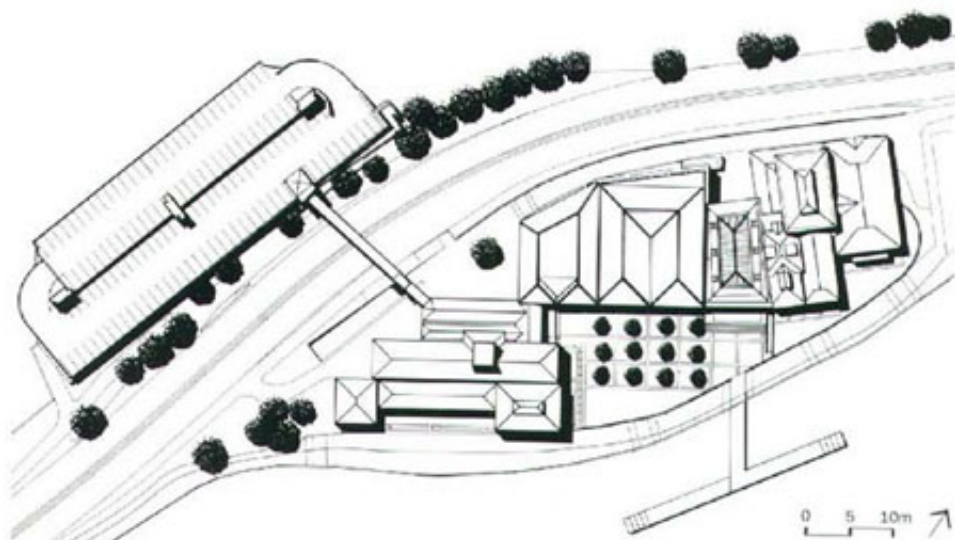
Bluegate Nominees Pty Ltd

12,000 square metres

Reinforced concrete slabs and structure, brickwork, tiled roof

This project will restore and adapt the most visible group of historic buildings on the Perth riverfront into an important civic and recreation complex. The historic fabric will be restored, with contemporary bridges and infill elements introduced for adaptation into restaurants, a theatre, specialty shops, offices and public amenities.

While the restoration work is meticulous and accurate, the design concept proposes to maintain the heritage fabric to represent a bygone era, with new work adding vitality without detracting from original qualities. The project will therefore demonstrate how historic integrity can be maintained while allowing the buildings to play an important and exciting contemporary role.



1



2



3

- 1 Site plan
- 2 Brewery against Perth skyline
- 3 Main building
- 4 Mounts Bay Road elevation
- 5 General view of brewery under restoration
- 6 Detail of restored brickwork
- 7 Brewery facade under restoration

