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Current trends in Office Chairs

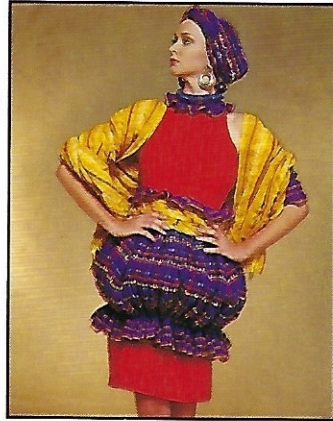
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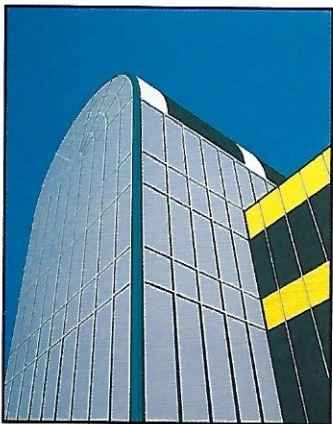
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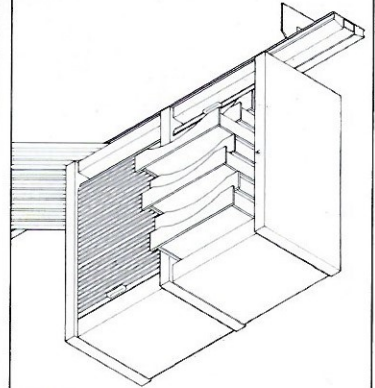
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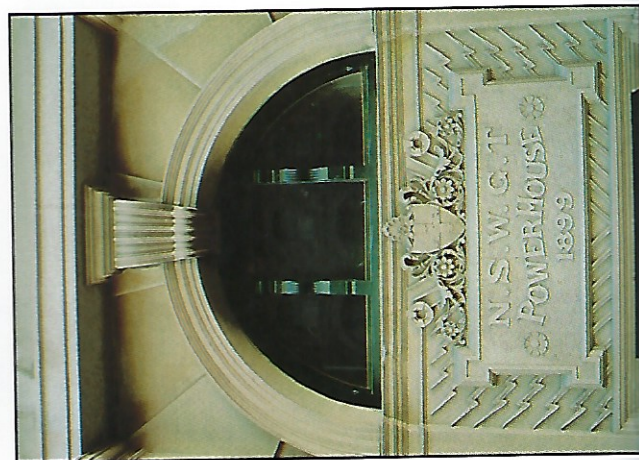


It has exhibits and curators, was born out of the old Museum of Applied Arts and Sciences, is devoted to science, technology, social history and decorative arts, but it is not a museum in the accepted meaning, an insight into our cultural perpetual sense of occasion, a 'hands-on experience', an insight into our cultural history through the technology and artefacts of several generations. What is it? This is the Powerhouse.

POWERHOUSE

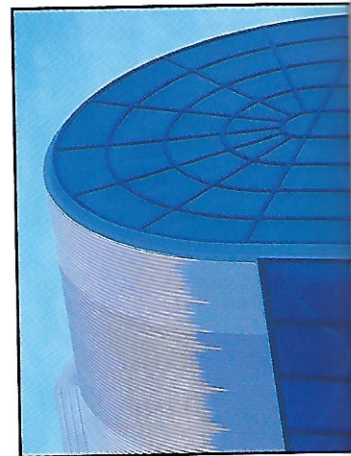


Perhaps the most significant Australian developments in providing insights into the applications of design skills, especially as they apply when coupled with technology and in the wider context of social history.



Photography

Greg Piper, Andrew Frolows, Peter Garrett, Jaime Plaza Van Roon, John Day, Geoff Friend, Roger Decker, James Gardiner-Hill, Colin Wood
Powerhouse Photographic Department



museum's activities has been, and will continue to be, restoration and conservation. While the fledgling Stage 1 has been open to the public with some modest exhibitions, the immediately adjacent workshop and conservation laboratory have been busy preparing both exhibition areas and items to go on show. The restoration, cataloguing and photographic recording has gone on unabated.

The germ of an idea

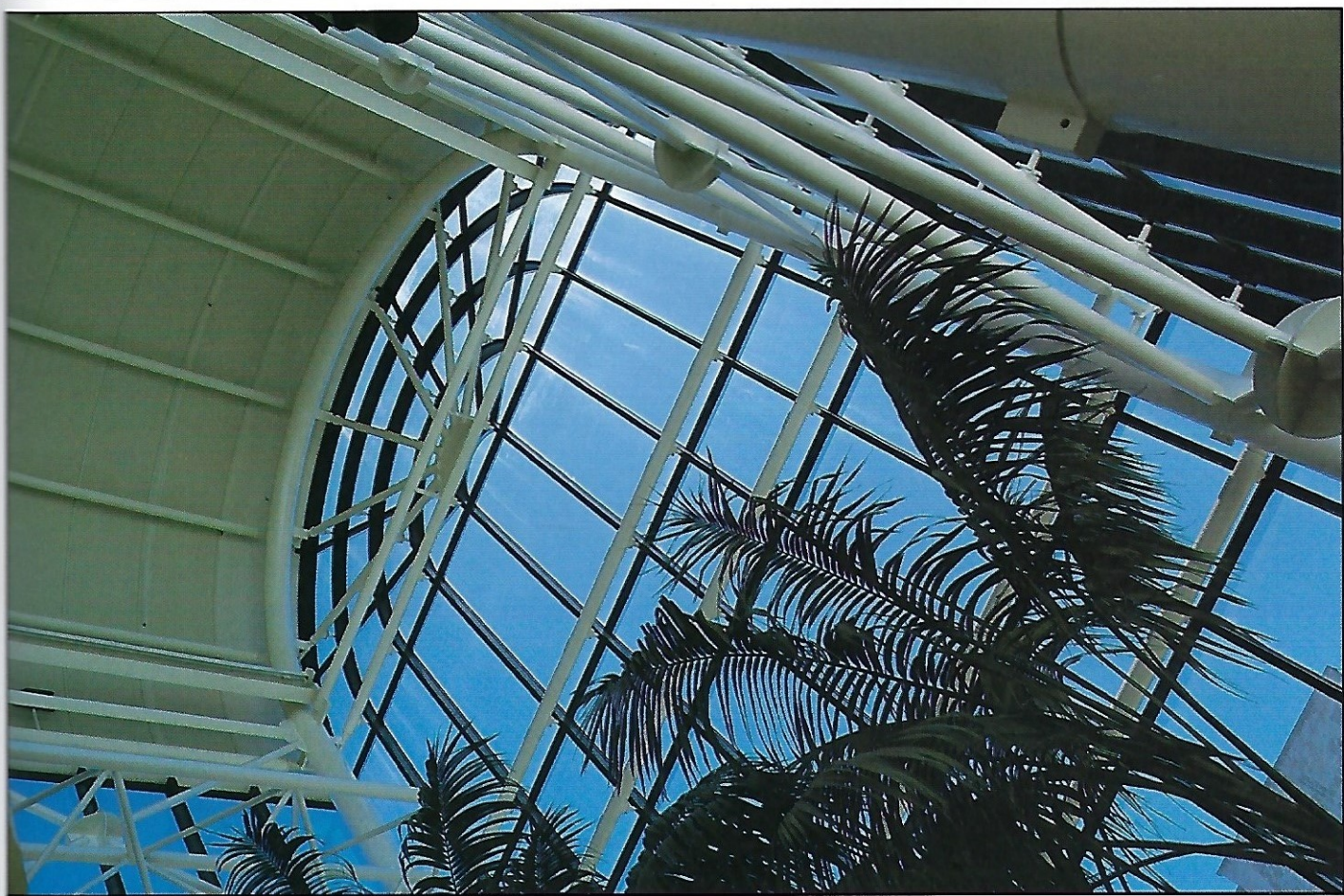
Born out of the old Museum of Applied Arts and Sciences, the Powerhouse has been hovering in the wings for the past 60 years. In 1978 the Director, Lindsay Sharp, and Lionel Glendenning, under the aegis of Neville Wran and Jack Ferguson, put together a feasibility study. Wran was enthusiastic and the scheme was under way. Part of it is housed in the old power station building which used to provide electricity for the city's tram network. The location, in inner city Ultimo, had become somewhat run down, and the site has been dramatically transformed.

The feasibility study contained more than the germ of what eventually came to fruition. 'Even in '78,' Sharp explains, 'we had the idea for a synthesis which is both a traditional science and technology museum, a science centre, a museum of decorative arts, a museum of contemporary crafts, a performing arts centre and a social history museum, a museum which is well-designed and integrated and a place where you can have a lot of fun.'

Lindsay Sharp is devoted to this unique approach. He is concerned with the concept of the 'live museum' rather than with the beautiful object in a case, what he calls 'art gallery display'. He feels the object should be appreciated in its wider context. 'You can still get the beautiful object,' he says, 'but you can also create a context where you show the craftsman or designer working on it. You can have photographs and graphics. You can have some text. You might have an audio visual supporting it. You might also allow the public (using a computer-based interactive) to actually design something of their own!'

A delicate balance

'I believe that there has to be a balance between the classic, elegant, minimalist



With the opening of the Powerhouse in Sydney, Australia now has a public institution that consummates the intimate association between science, technology and the decorative arts, an institution that is remarkable for many things, not the least of which is the fact that it was built mostly in line with the budget forecast (\$54 million and not a penny more), said the then Premier of NSW, Neville Wran). Projects like this are always potential political time bombs, and the siting of the museum alongside the Darling Harbour redevelopment can be regarded as both good and bad. However, the Powerhouse project was conceived ten years ago, before the bicentennial celebrations and the Darling Harbour scheme had been proposed.

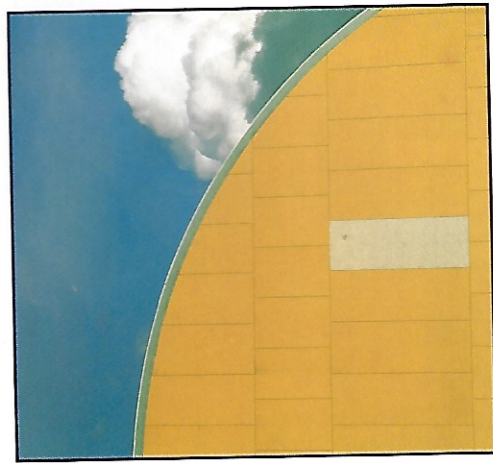
The Powerhouse is also serviced by the controversial monorail. Whatever is said about the monorail (what isn't said about the monorail?), it does stop at the door and will make access to the Powerhouse extremely easy for all.

Architectural triumph

The architecture is undoubtedly a triumph for the Principal Architect, Lionel Glendenning (NSW Public Works Department) and has grown naturally out of the Powerhouse's requirements, the proposed design being altered (sometimes drastically) as events took their turns. Glendenning originally proposed three alternatives, but delays probably worked in his favour to find the best solution. It was the rather constricting budget which forced a rethink on the total demolition of the Switch House. This was fortuitous as the final design combines past, present and future in harmonious synergy.

Some 400 staff are required for the Museum's five sites with public access: the Sydney Observatory, the Mint, the Hyde Park Barracks, the train and the Powerhouse itself. A massive recruitment campaign was undertaken in 1987 when almost two hundred of these positions were advertised at once. In addition to the custodial staff, there are scores of publishers, researchers, historians, marketing and retailing experts, guides, administration staff and, of course, designers. The project has, from the outset, consumed countless hours of designers' time.

One of the most important areas of the

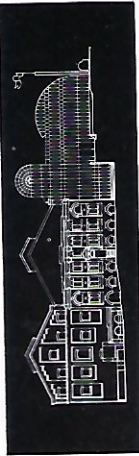


display and the full-blown, all-singing, all-dancing display', he says. 'You need both types. And you need the types in between. The Powerhouse will delight and enthral (and inform what Sharp describes as the 'passionate public who want to see and experience examples of good design and innovative ways of showing it'). It's not just the fact that you can have a beautifully designed telephone or automobile, but also that you can create environments. You don't just look at them. You use them. You play with them. You do all sorts of things. It's very important. There's an old Chinese saying which goes: 'I see and I forget, I do and I learn'. This sophisticated approach is, of course, complicated; it needs the talents of many specialist experts. Getting it right takes time.' This is one of the major lessons Sharp has learned during his directorship.

Time: the eternal luxury

'It's crucial to give yourself as much time as possible to refine and polish,' says Sharp. Adequate time allows you to look at your mistakes, to grieve over them but not to actually build them. Time is the greatest luxury (within reason) and the greatest necessity in any project.

Another lesson learned was the necessity to employ as much professional expertise as possible in well defined areas. Sharp explains: 'In our case we have benefited enormously from having acoustic engineers, lighting and electrical engineers, people who know about surfaces and people



are fitted in. Then, in descending order of magnitude, lighting and labels and the cases which house them are all related, one type to another, with considerations such as feeling and style.'

Design considerations naturally determined many of the major decisions that had to be made about the actual content of the museum and vice versa. As Sharp puts it, it was all a synergy. 'You can see how the content of the displays, the ideas and objects, determine the design as well as the spaces and the visual order.'

Aircraft went primarily into the Boiler House rather than the Engine House partly for aesthetic reasons. It may have seemed sensible to have the interactive displays in the upper Turbine House, but this would have proved to be too noisy. So all the noise and flashing lights (and their excited users) will be contained in a low ceiling area, partly boxed in. Human-nostalgic considerations came into play too. The 'up front' exhibition and an evocation of the 19th century Australian display techniques from the old Science and Technology museum (a museum of a museum) are very well put together.

All the better for the wait?

There were delays. To Sharp, with his belief in the virtues of extra time, this was advantageous. 'Government originally said that it should be finished by 1984, and if they had held to that it would have been a disaster,' He recounts: 'Then they realised in 1981 that they couldn't afford to do it by 1984. So after a year of making up their minds they decided to do it by 1988. But I believe that projects that take time are generally better than ones that don't. This delay led to cuts in the budget and, most significantly, a decision not to build a new building but to adapt the existing Switch House. This proved to be a 'wonderful building to use because it is so decorative and very robust. I think it is a stunning building and have grown to love it.'

Sharp also, it seems, was fortunate in his relationship with the government.



Dr Lindsay Sharp, Director of the Powerhouse, graduated from Oxford University, has extensive experience in research, museums, science and working at Ministerial Committee level.



Peter Root, Deputy Director of the Powerhouse, has a background in quantity surveying and has held several positions at the Powerhouse, most recently that of Project Director.

have been put together to ensure that our Japanese visitors get the most out of even a short visit. They are welcomed in their own language and given a guided tour, including the cafe and the Powerhouse shop where they can buy a memento of their visit. We want our visitors to encourage more of their fellow countrymen to visit us too. This welcoming attitude is to be extended to a wide variety of national and special interest groups. Special programs are being created for the handicapped and non-readers as well as such specialist groups as collectors of decorated porcelain.

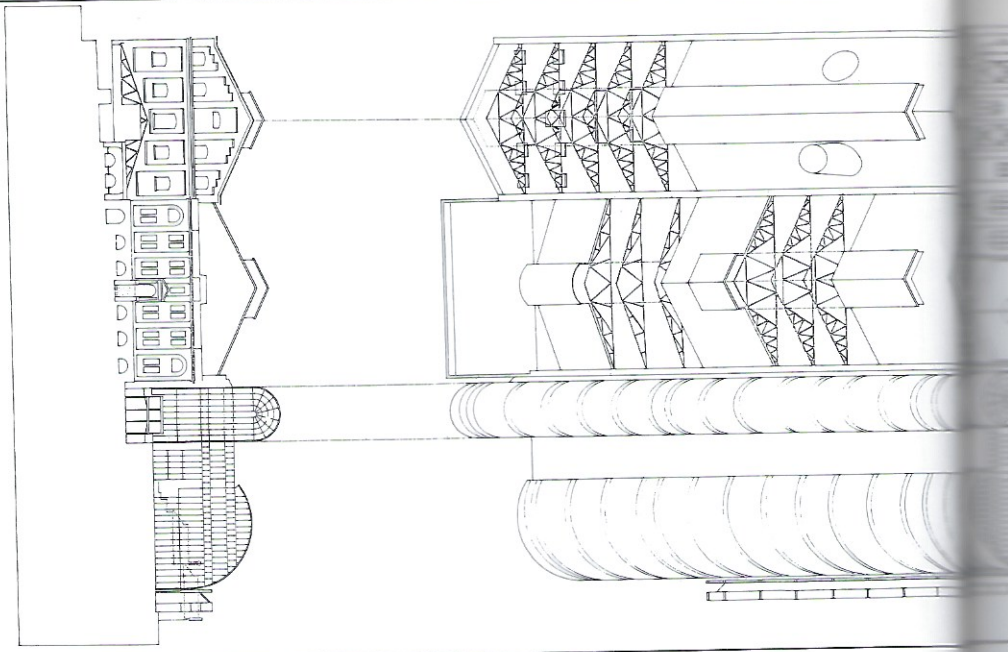
It will be possible to implement plans for such specialist programs because the museum's fundamental policy is decidedly people oriented. It is also very much of our time in that marketing, with all its sophisticated accoutrements, is a central part of future planning for the Powerhouse, as are community services and education programs. Sharp is quite straightforward about this businesslike approach. 'If we increase the numbers coming through the door and the quality of their experience, we will increase our income; we will increase our viability in terms of politics. It's very much entrepreneurial marketing. If visitors don't like it and we get only four hundred thousand and not two million, we have no leverage. So it can be the most wonderful building in the world, with the most brilliant objects, but objects only bring people in once; it's the experience, the involvement, that brings them back.'



Lionel Glendenning B Arch (Hons), Uni of NSW, M Arch Harvard, Principal Architect in the NSW Public Works Department, is a deputy member of the Heritage Council of NSW and a member of the Urban Design Advisory Committee which advises on architectural and Urban Design aspects of Sydney and NSW.



Richard A Johnson MBE ARAIA, B Arch (Hons) Uni of NSW, M Phil (London) Town Planning, Director of Denton Corker Marshall, interests and experience broadly based from exhibition design, interior architecture, architecture and urban design.



to advise us on how to structure the ticketing system. I realised about four years ago that delegation within agreed priorities is crucial; you can't do it all yourself. The idea of the great director, the great architect, the great designer doing it all on such a scale as this is a joke. And I've discovered the essential truth in the maxim that "God lies in the details."

The detailing (thanks to pooled expertise, rather than the intervention of the Deity) is, in fact, one of the Powerhouse's more attractive aspects, from George Freedman's fancifully coloured offerings for the theatre and richly colourful mouldings in the education room to the trompe l'oeil cloudscape murals gracing either end of the vast vaulted roof of the atrium.

Integration, order, scale and details

Grasp of the overall concept, rather than the minutiae of detail, is something that consultant designer and creator of the exhibition spaces, Richard Johnson (of Denton, Corker Marshall), has a firm grasp of. And the Director is generous in his praise of him. "With Richard Johnson we have created some marvellous spaces. Richard has been absolutely crucial in relating the displays to the building. If you have really big spaces and you've got lots of objects, some of which are very small, you have to create smaller contexts in which they are set. Within those big spaces you also want to provide human scale spaces in which human beings feel relaxed. It shouldn't be all grand and overpowering. The most difficult thing was to isolate the themes that will dictate the story-line into which all of the objects will fit. We developed five themes, with five or six specific exhibitions as segments within them."

At this point it was realised that the Powerhouse could end up as a design which would have been wonderfully rich in human terms, full of great objects, but lacking order in the classical sense (where a series of experiences are created by visually and physically moving through the objects) and Richard Johnson was brought in to achieve the almost impossible. "He has related the big scale to the smallest possible scale," says Sharp. "He went down in orders of magnitude. Starting from the basic building blocks, the 'most spatial forms' he grasped the essential perspective, and within the smaller spaces the objects

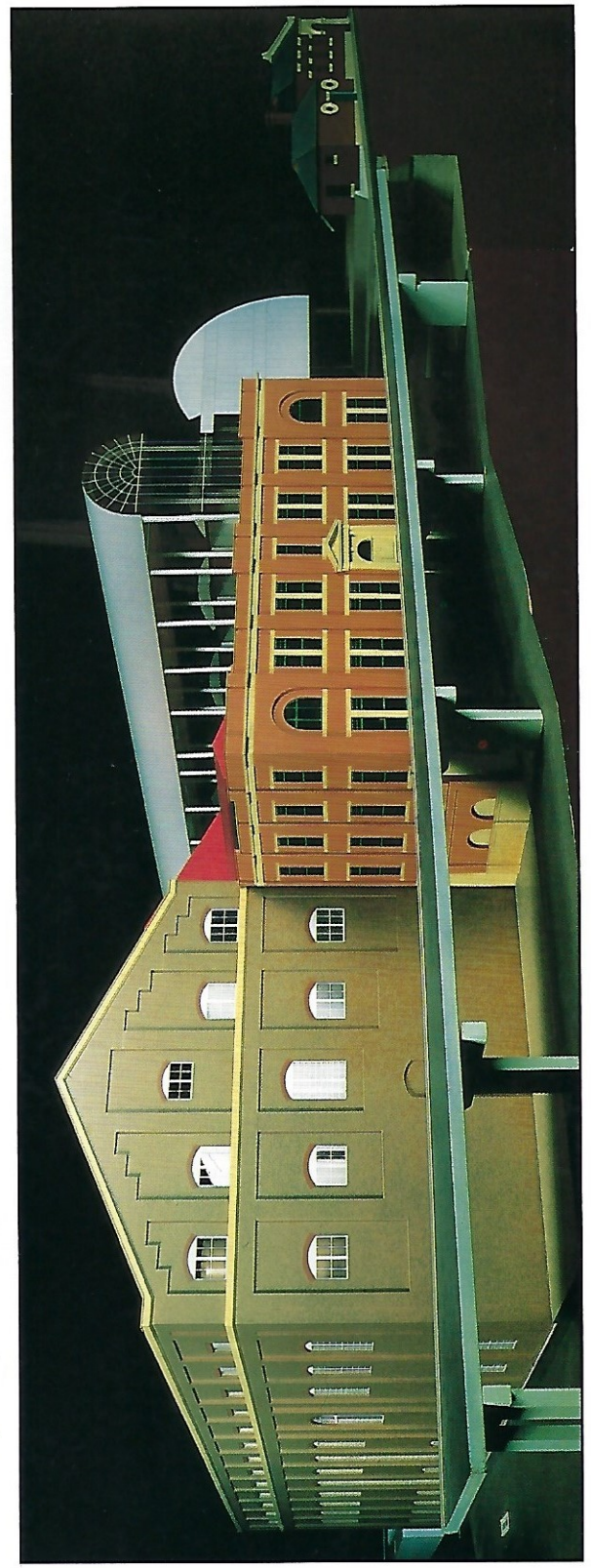
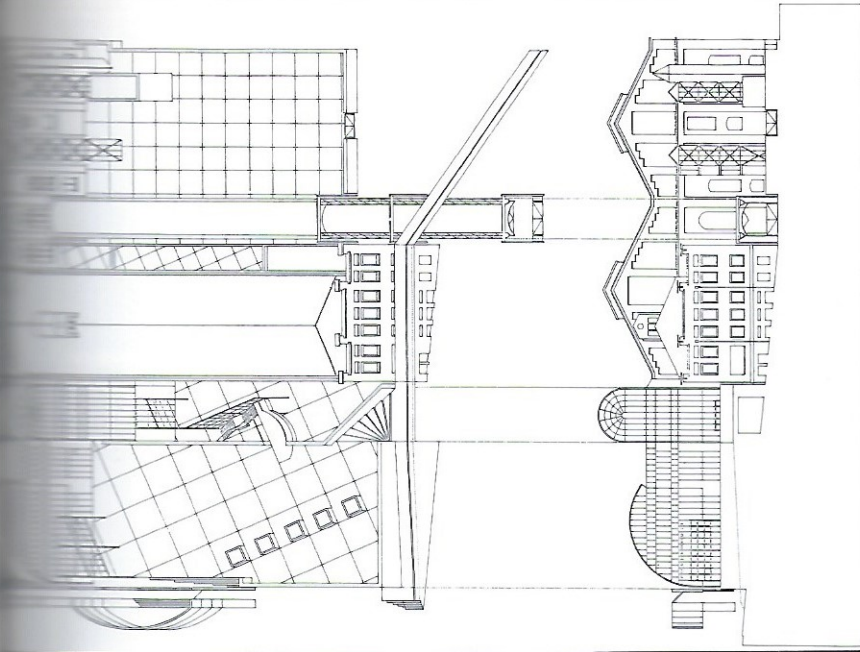
The whole project was one of Neville Wran's many inspired initiatives, and became an enthusiasm demanding superlative efforts by everyone working on the project. For example, throughout the several metamorphoses of the Switch House the Department of Works and the Museum's executives laboured together through late nights and weekends. There was a fair degree of amicability over a lot of practical problems such as getting the public up to the level of the ever-popular aircraft. "We created a whole series of mezzanine structures which gave us additional display space, provided a cafe and is spectacular." The public love this kind of display and, in keeping with contemporary museum practice, Sharp and his staff are giving due consideration to the varied needs of the Powerhouse's visitors, anticipated to be ultimately about 2 million per year.

Museum marketing

Lindsay Sharp elucidates on his approach to the customer. "There is yet another area which needs designing. It's not designing in the visual, functional, constructional sense. It's designing the public programs. For example, if you are Japanese, are in the museum for half an hour and don't speak English, it could be a meaningless experience. Programs

In order to carry this out, the staff numbers have been increased to 400, many of them on the management side; people of the calibre of Peter Root (the Project Director) who has project managed the display construction since the beginning and has championed the cause of good design in the Powerhouse. He is a pragmatic manager but also interested in, and sensitive to, the built environment. Root juggles the many elements of his complex task with apparent consummate ease but admits it's a tough job (what with the Museum's priceless content, the demanding requirements of acquisition, identification, research, conservation, storage and so on) but he is obviously heartened by the fact that he's involved in a 'major concept in a major building which will be one of the greatest projects ever in terms of public involvement.'

Root is clear-sighted about the future challenges, in that to keep the balance between the museum's many roles while maintaining the practice of museology, will require a continual watchful readjustment of the balance. Crucial, of course, is maintaining the high priority of design: Root is sanguine as he points out that the team has always found solutions that, though apparently simple, are, in fact, complex. But because they are well thought through they are positive.





1

- 1) Space technology is just one of the subjects that will capture the imagination of visitors to the Powerhouse.
- 2) Wedding dress c. 1834: Decorative Arts, Style.
- 3) Hooked on science. Heatstress, photoelasticity: Science, Technology & People, Experimentations.



2

- 4) Linda Jackson gown, silk taffeta: Creativity and Australian Achievement
- 5) The Powerhouse offers interactive exhibits that children are encouraged to touch: no 'hands off' signs here.
- 6) Portrait bust 'The Postmaster Schmelde' by J Kandler c.1739: Decorative Arts, Style.
- 7) Reschs 'DA' Dinner Ale poster, 1930s.
- 8) Table by John Smith: Decorative Arts, Style.



3

Themes and exhibitions

The Powerhouse will be the nation's prime location for visiting exhibitions in its relevant subject areas. It has its own permanent exhibitions; twenty-five of them ranging across decorative arts, social history, science and technology. The overall collection has been grouped into five themes.

Creativity and Australian Achievement

Looking at aspects of the nation's creativity, from heavy industry to jewellery.

Everyday Life in Australia

Emphasises social history. There are migrant experiences, Aboriginal history and the story of a truly Australian institution, the pub, Epiphema and nostalgia abound.

Science, Technology and People

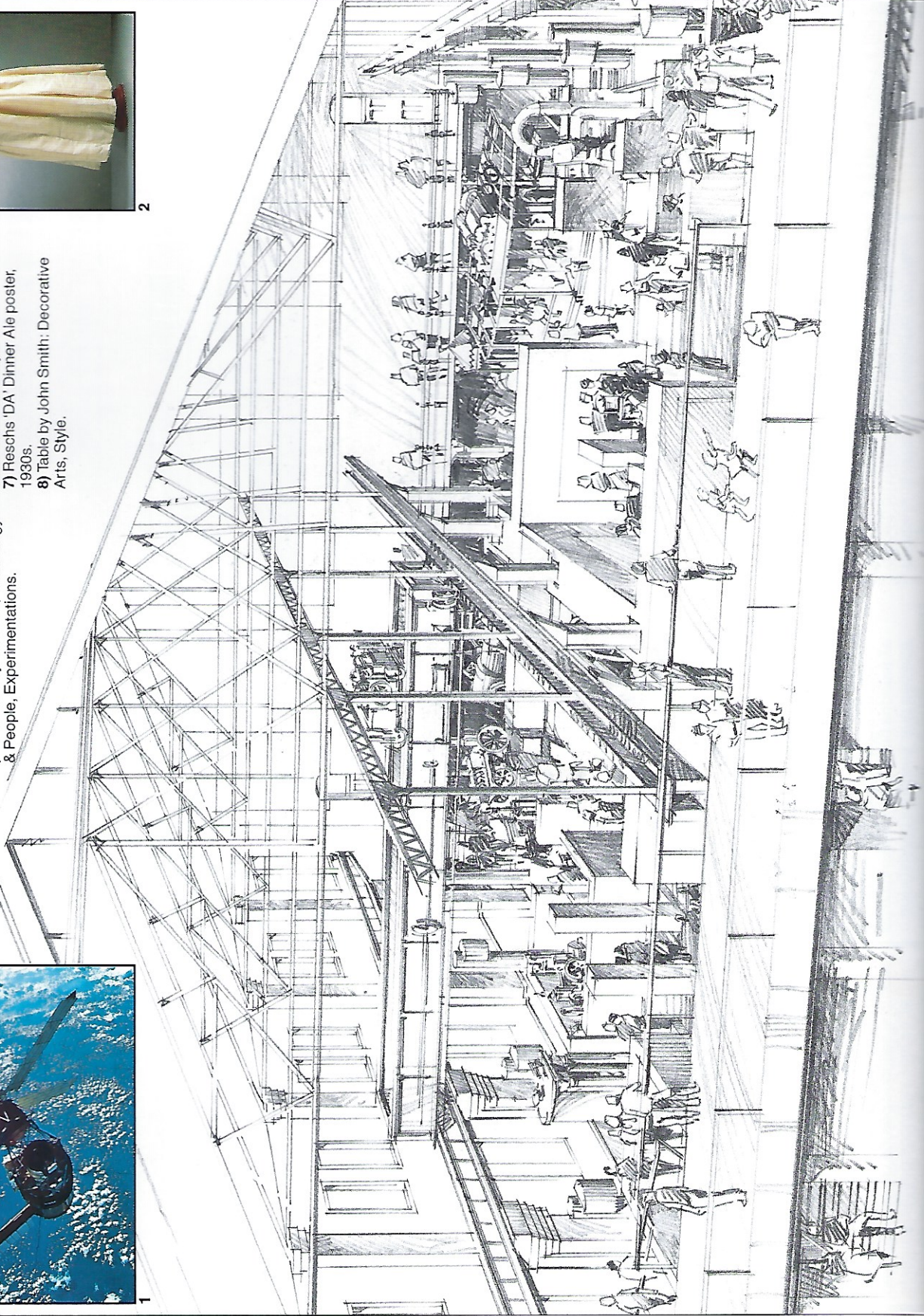
Demystifies science and illustrates its application to technology. Individual exhibitions include 'Mind and Body' (hands-on experience here!), 'Experimentations' and the 'Information Machine' (more interactive experience). Popular exhibits are the magnificent historic locomotives in the 'Steam Revolution' exhibition.

Art and Science (Applied Arts)

This has 'Style' (a 200 year survey), 'Take a Seat' (100 classic chairs), and regular exhibitions of Australian crafts.

Bringing People Together

This is about transport and communications. The museum's imaginative approach to display is used to great advantage with suspended 'Space' takes the visitor into other realms.





4

A focus on specialities

The exhibits are both bought and donated. The past four years have seen considerable expansion of the collection, particularly in the decorative arts. Some exhibits have been borrowed from the Art Gallery of NSW and some have even been swapped.

Sharp is quite adamant about concentration on the museum's areas of speciality: science, technology, social history, decorative arts and transport. All design related, of course, and each intended, in its own way, to become a 'centre of excellence', though the acquisitions are in no way intended to be a 'design' collection.

There is a substantial collection of Australianiana which has been built up over many years. For example, from 1900 Australian 'art and craft' furniture was being collected. This includes pieces which

show how Australian flora and fauna have been used to decorate functional tables and chairs. Sharp maintains that the collection is unique because, quite unknowingly, the collection developed as a history of Australian design.

The permanent collection of around 700,000 items is incredibly catholic. 'It covers almost everything', says Sharp, 'including, hundreds of thousands of stamps and coins, mostly housed in the museum's various stores in Alexandria, Redfern and Castle Hill.'

'We'll put roughly 12,000 objects in Stage 2 in the first year and within two years the public will have had a chance to see 20,000 objects altogether', says Sharp. 'We've got a whole swag of stuff, not all of it great but some of it very good. The focus that exists in a number of areas is again natural for a museum which is constantly involved in and about design. We might choose a theme, such as "Australian achievement, invention, innovation and design", as we have done with one of its features, the inventor of refrigeration.'

He was involved not only in inventing it but in *designing* it. The work had to fit in a large number of carcasses and it had to withstand the salinity of the sea. Again, there were the inventions of the Sunshine Header Harvester and the Transavia Airttruck. All of the things we show demonstrate an awareness of design. The giant steam engine by Matthew Boulton and James Watt was *designed* by them, it wasn't just engineered.'

There is a display called 'Take a Seat'; one hundred years of chair design. Chairs from all over the world: Australian, American, Swedish, Italian, chairs by Charles Rennie Mackintosh and so on. As Sharp explains, such an exhibition is a very good way of showing how designers look at things and make functional objects work in different ways, each looking totally different. 'We could have chosen teapots, we could have chosen beds, but chairs just seemed very, very clean. You put your backside down. You put your arms down. It holds you up. And each of the hundred chairs is so different. For example, compare a Bugatti chair with an Eames chair. Of itself that display is actually about design, though it's called "Take a Seat". Another display is called "Australian by Design". This is about contemporary design and will have a showcase role in that it will

show things for three to six months. We'll be dealing with scientific, technical, industrial and general design.'

With the Powerhouse we have an exhibition space for international and, very importantly, Australian design for an (ultimately enlightened) Australian public. There are many aspects of the Powerhouse, which directly or indirectly celebrate the new pride in Australia and its achievements. It is unequivocally Australian without any need for either chauvinism or false modesty. Here Australia has created something of international quality which is, at the same time, thoroughly Australian. It is not an ersatz version of the Pompidou in Paris or London's Victoria and Albert or anything else. It is very Australian. And that's the only way it should be. In 1988 we mature. It's enough, it's time and we should now stop pretending that it's got to be from New York or Milan. And I also hope that our industrialists and our governmental and commercial rulers realise that they simply must, by themselves or with designers, manipulate their environment in a positive way.'

This confident attitude is typical of the band of enthusiasts, from Neville Wran onwards, who are responsible for creating the Powerhouse Museum; a true symbol of Australia's coming of age.

Exhibition specialities

Richard Johnson's deliberate policy is to employ a wide range of designers, some exploring directions which he personally would not take. 'I think that's great, that's fantastic,' he says. 'Furthermore, if you think about the design disciplines and specialist skills that have gone into the creation of the building, I don't think there would be any other building which would encompass and integrate so many of the design skills.'

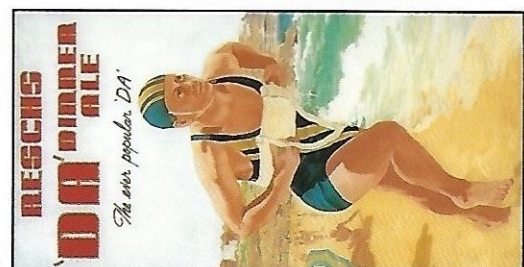
Lionel was talking about the theatrical set painters who painted the cloudscape. There are also audio and visual experts, there are sound experts, there are graphic designers, there are colour consultants, there are acoustic engineers, there are lighting design specialists, there are exhibition specialists, there are specialists in paint finishes, there are specialists in weaving special carpets. I could go on. Public buildings actually *demand* the coordination and contribution of all that amount of design, technical and artistic expertise.'



5



6



7



8

Facilities

The Powerhouse is more than just a lovely collection of objects; certainly more than just an information source. It is also a place where visitors can be entertained and nourished, spiritually as well as physically.

Cafes

At the top of the Switch House is an elegant brasserie with splendid views across the city. The members' lounge is on the mezzanine, from which visitors get a dramatic close-up of the suspended Catalina flying boat. In the south eastern courtyard there is a kiosk and the famous Harry's Cafe de Wheels for basic food at its most traditional. The courtyard is used for outdoor receptions and, in the summer, performances of music and dance.

Theatres

Performances of all kinds are found in the two theatres. Both are fully equipped for every sort of audiovisual presentation. The larger (300 seats) has a bar and quite outstanding abstract decor. There are also smaller rooms for seminars and workshops.

The shop

Part of the function of the large Powerhouse shop is to promote Australian craft. The scope of the museum being so wide-ranging, it naturally follows that the museum-related and Australian merchandise on offer adds up to a marvellous gift and souvenir shop.

Parties

Apart from in-house functions organised for Members of the Powerhouse, its restaurants, theatres and certain of the exhibition spaces can be used for private functions. The Powerhouse directorate hopes that the availability of such unusual and attractive spaces will help foster an awareness of design in the manufacturing and professional community.

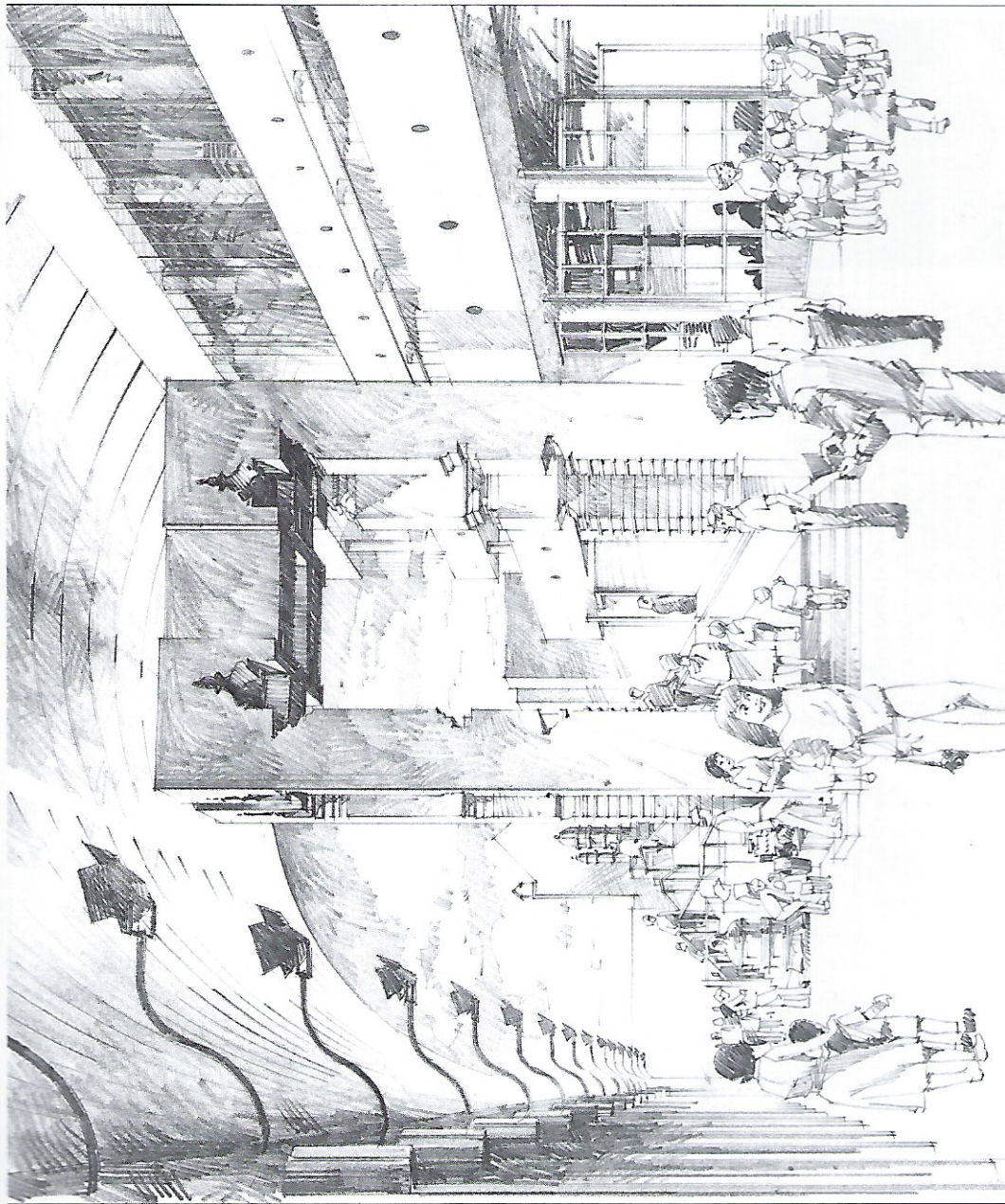
Colin Wood talks to Lionel Glendenning, the architect of the Powerhouse, and Richard Johnson, a consultant architect who worked as exhibition design coordinator. The discussion ranged over the origins of the project and uncovered the subtle inspirations and considerations behind the design.

How it came into being

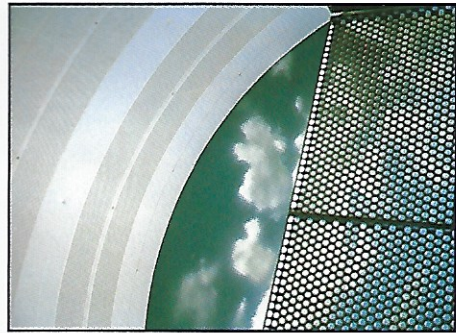
Where did it all start?

LG. The beginnings of the Powerhouse really lie with the Great Exhibition. In 1878 a building was very rapidly erected and Sydney had its own mini Crystal Palace, the Garden Palace, which burnt down shortly after and took the early collection with it. This building was rapidly constructed because it was mostly wood but it had a very interesting steel frame. So, in some ways, the beginnings of the Powerhouse are reflected in the present design solution.

There were many previous feasibility studies. My work began on the project picking these up with a sanguine belief that it was going to be this 'feasibility' which would produce the new project. Of course it wasn't, and I had the responsibility of looking after this particular 'client' before Neville Wran came to power in New South Wales. The Minister for Public Works at that time, Jack Ferguson, was an enlightened man from a strong working class background but very widely read and with a deep understanding of some of the then less fashionable urban issues, like conservation and retention of the character of the city. He had been instrumental in initiating a whole series of works like the Mint and Barracks restoration and the Elizabeth Farm project. I showed him the work done on the Museum of Applied Arts and Sciences. Parallel to that, Andrew Anderson and myself had been looking at the potential

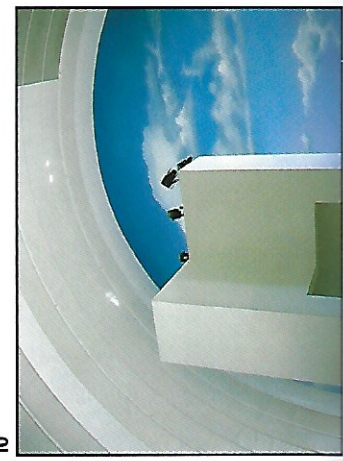


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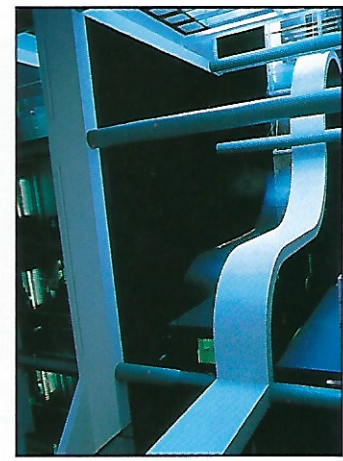


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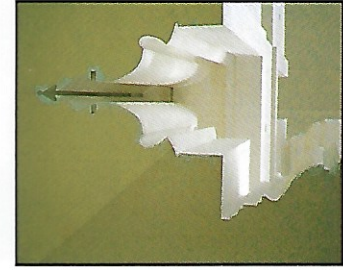
- 9), 11) Wran Building interior showing one of the cloud murals.
- 10) Wran Building interior. Illustration: John Haycraft and David Duloy, Ambler & Haycraft.
- 12) Piano curve: Wran Building.
- 13) Detail of exhibit under construction: Wran Building.
- 14) Mezzanine: Wran Building.
- 15) Axonometric and exterior detail: Wran Building and Atrium.



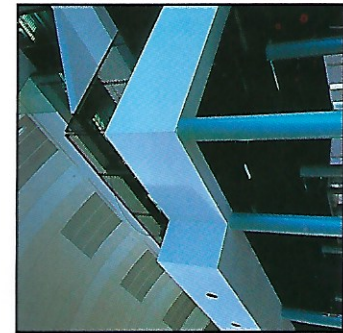
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of the markets area of the Haymarket in Sydney. Around '78, the Markets Authority had, as they have done in Paris, torn the heart out of the city, and moved the markets out to Flemington leaving the residual properties on the fringe of the heart of the city.

A number of options were suggested for the markets area. They considered the Powerhouse site, which was then a derelict property along the Western boundary of the Darling Harbour goods railway line. Three or four options, from total demolition through to reconstruction and intervention were developed.

Jack Ferguson became so interested in the work that he rang the Premier and said, 'I've got something I want to show you.' The Premier looked at the proposal, went round the site one afternoon with the Minister of Planning and Environment, and then called up and said, 'I want to develop it. What needs to be done?' Then, together with the museum (over a period of about five weeks) a document, which was the world's fastest feasibility study, was prepared; a study of what the museum felt they needed. On reflection I think it was a far-reaching document and it showed how one might develop the Powerhouse. The Premier became very enthusiastic and endorsed the project.

I then had an immediate go-ahead on conversion of the tram depot, which was the first stage of a five stage project over about five years which was due for completion in '85/'86. During the early stages of the contract it was decided that we should represent an element of the project in terms of display and exhibition; what was called a 'foretaste' of the great work to come. So a small exhibition space which is a converted element of the factory space, the Stage 1 exhibition area, was included. In late 1982 we finally got the go-ahead on what was then to be Stage 2 planned for completion in '88 as part of the bicentennial.

Is Stage 2 the entire site?

LG. Yes, previously we were going to break it up into three stages, but once we had all the various feasibility elements in place at the right sort of budget and timing, the government decided to make it a single project.

The vision and the brief

What brief were you given, or did you generate the brief yourself?

LG. I generated the Architectural Brief. There is always an evolutionary element in a Brief, but in this particular case Dr Sharp had a view, an evolving view of museums in that the *traditional* museum had pretty serious failings, particularly in its projection to the general public and he held that museums should change both their role and their ways of presentation; they should be dragged into the new age. At this time the traditional approach was beginning to be reconsidered. The question of balance is always an issue and we've tried through the physical resolution of the building to offer as much variety and flexibility as one can reasonably build into a physical structure. This has produced the opportunity for the museum to bridge the gap between the traditional style and the more radical, experimental, hands on, interactive type, of museum of today. It was those first ideas that generated the political interest and the strength of the ideas in the Brief that really carried the project for three of four years till we started to realise the physical element which obviously people can now see, so it's all more readily understood and thus convincing.

I supported the view that the museum shouldn't close off traditional options because there is an element of the museum, being realised in certain exhibitions, that are very traditional. There are parts of Richard Johnson's design work that will be very beautiful, but quite traditional approach to displaying objects, an aspect of the project I feel really good about. This spirit is reflected in the architecture in that I have retained the character of and modified and drawn out of the old architecture, the new architecture. In the same way, the exhibitions don't deny the traditional view of museums, that they embrace where it is appropriate.

A vision becomes philosophy

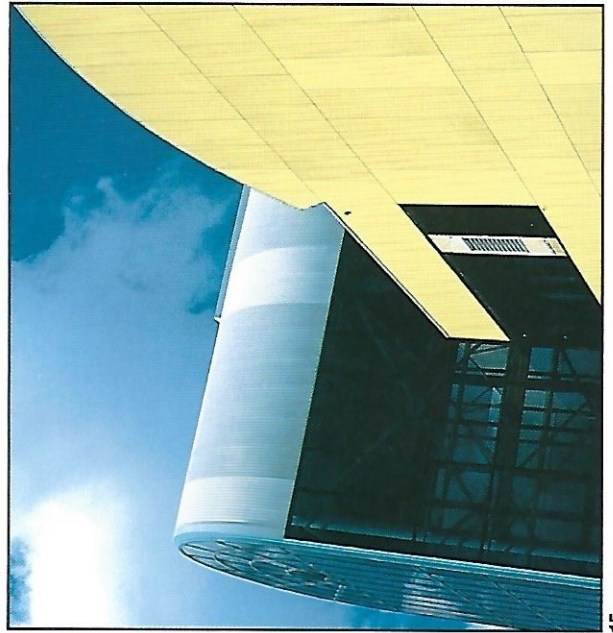
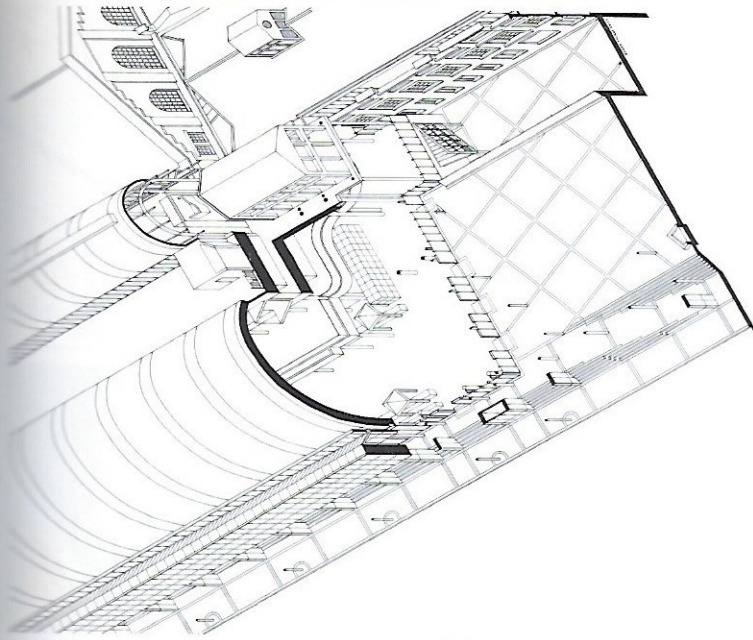
What is the underlying philosophy of the Powerhouse? What is its function?

LG. The bottom line is the beautiful dichotomy between observer and object; that magical sense of wonder that occurs when one comes face to face with the real object. In the feasibility study we talked about 'television', 'media' and 'image'; the fact that we have a society sated with television; the gap between self and reality. To give people reality was just about the biggest 'turn-on' that one could create. So that point at which interaction occurs between the observer and the object was what the museum is all about. It's really about that magic moment, that sense of wonder, that confrontation.

To do that I have tried to make the architecture very controversial, very powerful and yet very sensitive and responsive. There was, however, a period in the development of the exhibitions where the building was seen as both a threat and impossible to work with. And yet working with Richard Johnson I felt that here was an opportunity. It just needed someone capable of making that connection, as the connection had been made between the new and the old in the architecture.

How did the Powerhouse offer opportunities?

RJ. It is a contextual building, a graft of old and new. It offered a great variety of spaces, immense scale, some of the largest public spaces in Sydney, spaces within which to display quite a diverse range of objects. Some objects are so tiny they could be overwhelmed by the space while others fit comfortably within it. So the space was very assertive, quite constraining in some cases, but at the same time offered immense opportunities that a new museum would never offer. The collection is an old one and very diverse and includes some significant internationally recognised symbols. I tried to build up a discipline, a way of structuring the exhibition design, based upon the way a visitor sees and moves through the building. This 'vista perception' was necessary to understand the ideas, the collections and the buildings.



A philosophy of evolutionary controversiality

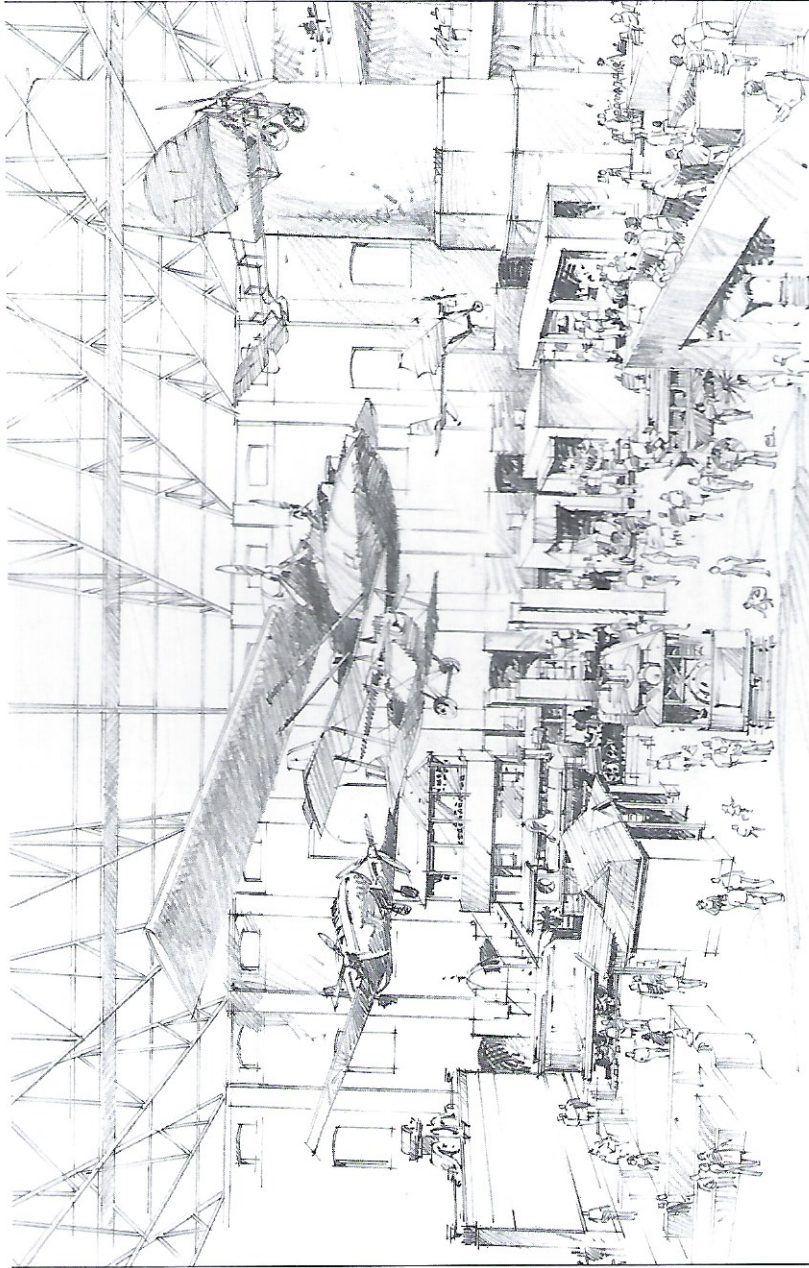
You have said that you tried to make the architecture controversial. In what way do you think it is controversial?

LG. Many architects, particularly those that work in the city of Sydney, have been what I call experimental. They simply job something into the city like an alien spaceship. It lands and exists at a moment in time. It doesn't draw its inspiration out of the city. It doesn't build upon any of the elements that go to make up the pattern of the city. My feeling about architecture is almost the reverse, in that I believe that there is a need to ensure that the city's patterns, the city's connections, the city's 'feel' are generated in the buildings, which may become the generator of new urban forms. It's not a very fashionable position but the ego trippers have been destroying the city. My feeling about architecture is that it's evolutionary not revolutionary and so the Powerhouse, for me, is a demonstration of my thesis that the most revolutionary architecture can be evolutionary, and that design by constraint, design in context, can produce far more powerful, far more exciting, far more successfully integrated solutions than those that represent the current prototype for the city.

Each of us has a pattern of the city that we carry in our mind, but in the last 20 or 30 years architects have built in this city a most unfortunate set of 'pattern breakers'. But the sort of thing that's emerging (and it's really lovely) is the reaction that most people have to the Powerhouse. It's one of identification; they feel good, they respond to a lot of the elements and in a subconscious way. Things like the vault; it could have been very crude but we built a powerful urban element into its colonnade which became almost a rhetorical verandah, a really overstated urban element which we all know and recognise. A colonnade.

How did you feel about the decisions firstly to demolish the Switch House and then to retain it?

LG. From its very beginning from 1898 the museum was built upon the guiding principle that the skin was enclosing the technology.



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My design processes at the Powerhouse are still continuing. Every day something happens that is part of the design process and, as you say, it should be a continuing thing. Design goes on and on; it's an endless process.

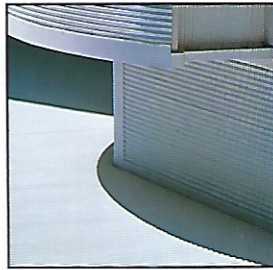
Richard, could you describe your function in this design process, just to sketch in where you fit in and what you have been doing?

RJ. I suppose that I have two roles. One is trying to give the exhibition design some cohesion as an overall activity. I am a consultant to the Powerhouse, giving an overview and some criticism and direction to all of the exhibition design. No one had really looked at the exhibitions as a whole or from a design point of view. Most particularly they hadn't focussed on the fact that the exhibitions must feed from, and be part of, what Lionel had already started; to grow and graft on to those things and

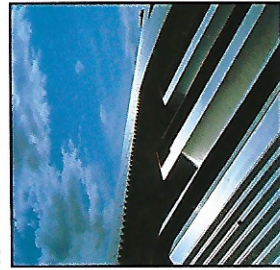
Getting through the building

How did you approach the problems associated with the circulation flow of a large number of visitors through the building?

RJ. First of all we had to understand how people will approach and enter the building, how they move through it, because some of the spaces are quite intimidating; big, grand, enormous volumes. The building is as it is because it evolved over such a long period of time. Like a city it has a sort of loose fit circulation, there's no classical route through it. You don't enter a central exhibition hall and then from that go into every exhibition gallery and then relate back to the hall. It's not that sort of a building. It's not that sort of a collection either, and that makes it actually much more interesting to people. But at the same time, every time we put another object, another statement, into



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16) The Catalina flying boat 'Frigate Bird II' is the aerial centrepiece of the theme 'Bringing People Together'.

Illustration: John Haycraft and David Duloy, Ambler & Haycraft.

17) Making ready to lift the Catalina flying boat 'Frigate Bird II' into position.

18) The aircraft were wrapped in plastic to protect them during construction.

19) Roof detail.

20) Floor detail.

21) Axonometric: the old and the new have been blended to reflect the nature of the place as well as its function.

22) Galleria under construction;

connecting the old with the new.

23) Turbine and Engine House during construction; originally built 1899-1902.

It was changed, it was adapted and I felt that I was part of that continuity. Such changes will go on. This is a beautiful aspect of museums; they have a life beyond all of us. So I am simply a part of a continuum and my modifications, adaptations and adjustments are simply at a small point in time in the total evolution. My modifications and adjustments to this building were done without some of the constraints that might apply in other projects where you might have to pay a greater heed to historical artefacts. My feeling was that I was dealing here with a skin that was scarred, broken and had lesions, was modified and had had band-aids. In effect, I've tried to recreate some of the feeling in the east facade with those black silhouettes which are the shadows of what was once there. I've tried to explain the broken nature of the facade which has had brick-in-fill. I've tried to give a sort of echo.

Richard, how do you react to this notion of the building as a continuum?

R.J. Interestingly, I see design at its most effective as a continuum. It never stops. The building can open and the design is still there operating. The designer sets it in train with the client and various other bodies and people that inspire or generate the ideas. Those ideas and concepts have started the design process, generated it. Lionel's carrying it through. Other people will pick up and work with it. But to be most effective it shouldn't stop. People must identify with it and understand it. The design process is not simply something that happens sitting at a drawing board doing a couple of drawings, although there is a tendency in the community to think of it that way.

Some other cultures understand this much better than us. There are heads of large multinational corporations that are fundamentally concerned with image. They understand design and they walk through their factory and office buildings once a week to make sure that the design process is maintained. This is one of the things that Lionel and I are both concerned about in respect of facilities in Australia like the Powerhouse. People have simply got to become aware that design is not some mystical process. It is something they should understand and want to keep, want to maintain and build upon.

exploit and add to what was already there rather than tussle against it. We at Denton Corker Marshall play another role too because the firm is doing the major exhibitions in two of the major spaces.

Which exhibitions are they?

R.J. Exhibitions entitled 'Recollections, The Australian Community and the Human Experience' in the west building and 'Australia by Design' and 'Australian Achievement' in the Turbine Hall. There are quite a number of designers involved on the exhibition design side from a number of different firms. The design department of the museum, Neil Burley Design and Desmond Freeman Associates are designing other major exhibitions.

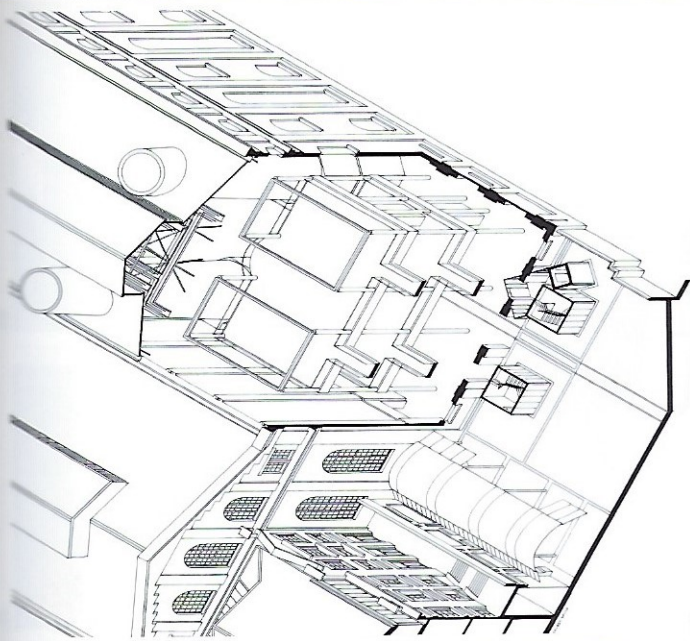
Black box or light cocoon

R.J. There is quite a lot of learned debate among museum people that the 'black box environment' is the way to go for museums. This project has firmly convinced me otherwise. There are black box situations in the Powerhouse, for individual exhibits, and they work quite well. But overall one must have a balance. One nice thing about the project became very evident as soon as I walked through the site on the very first day. I felt that here was a museum with a great range of diverse spaces, with a great diverse collection, with a whole range of thematic ideas that they wanted to project to the public. The architecture had responded to that diversity and contextualism and built upon the things that were already there and the exhibition design had to follow this lead.

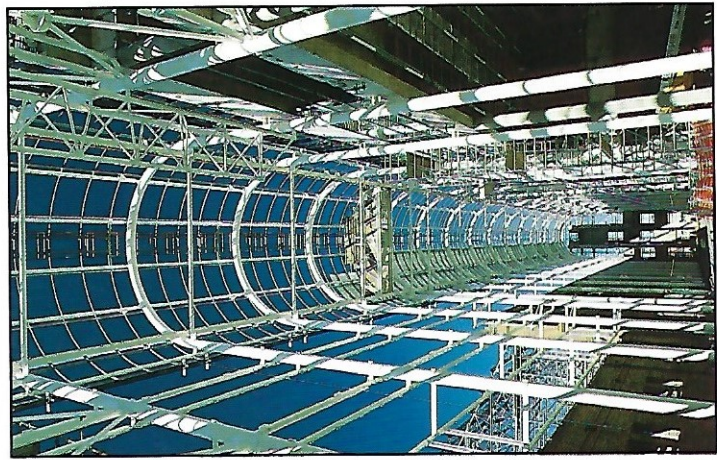
There were obvious constraints, there were also spaces that exhilarated because they had great shafts of natural light penetrating into them. From a museum point of view, some curators and others will tell you that it's impossible; that it just won't work and has to be blacked out. However, if museum design is generated by public perception, if visitors like the feeling of walking into a space just flooded with natural light, why blacken it out? Why not, more cleverly, look at the design opportunities presented and try and control the environment in another way by building shelters or cocoons for things that are light sensitive.

the Powerhouse, we could potentially confuse the reading of the building or the paths people have to take through it. So we have to understand this and give people as they enter some comprehension of the total space, and then of the gallery space, and each bit that's devoted to an exhibition. The visitors have to comprehend the space, and feel comfortable with it, before they can focus on the exhibits. They must know where they are, and not feel that they'll never find their way out the maze, it's surprising how many people are frightened in a big public space and that constrains the way they approach or explore a building and exhibits. So we have to make them comfortable and make sure that they aren't fatigued. In a building like this it's a much more important consideration because of its vast scale and its overall challenge.

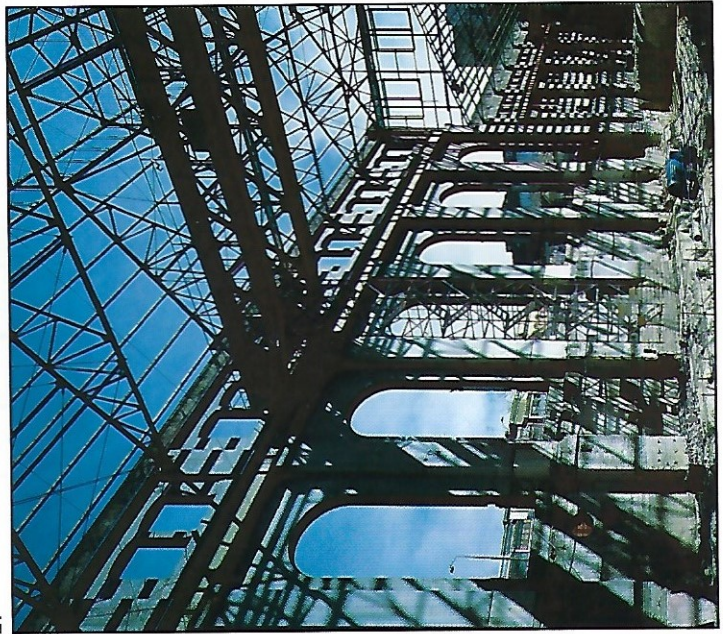
Not only is the architecture challenging, but the objects and the ideas are also challenging. We try to give a range of different experiences so that, if people are turned off by one particular thing, they can choose something else.



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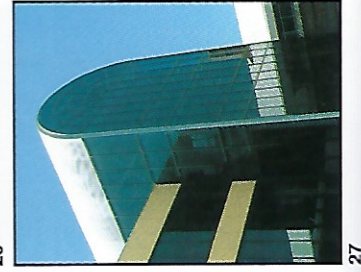
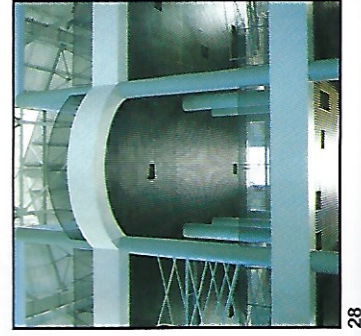
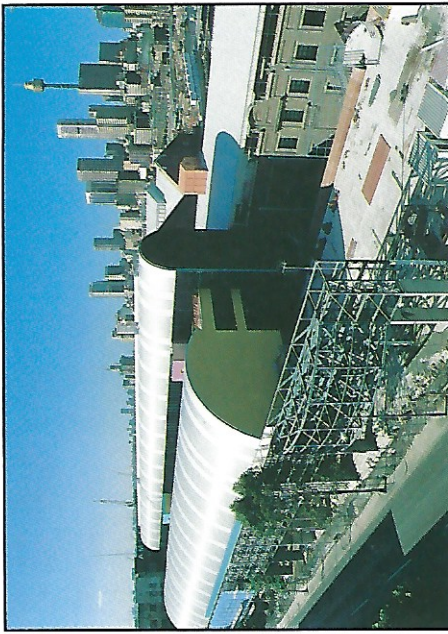
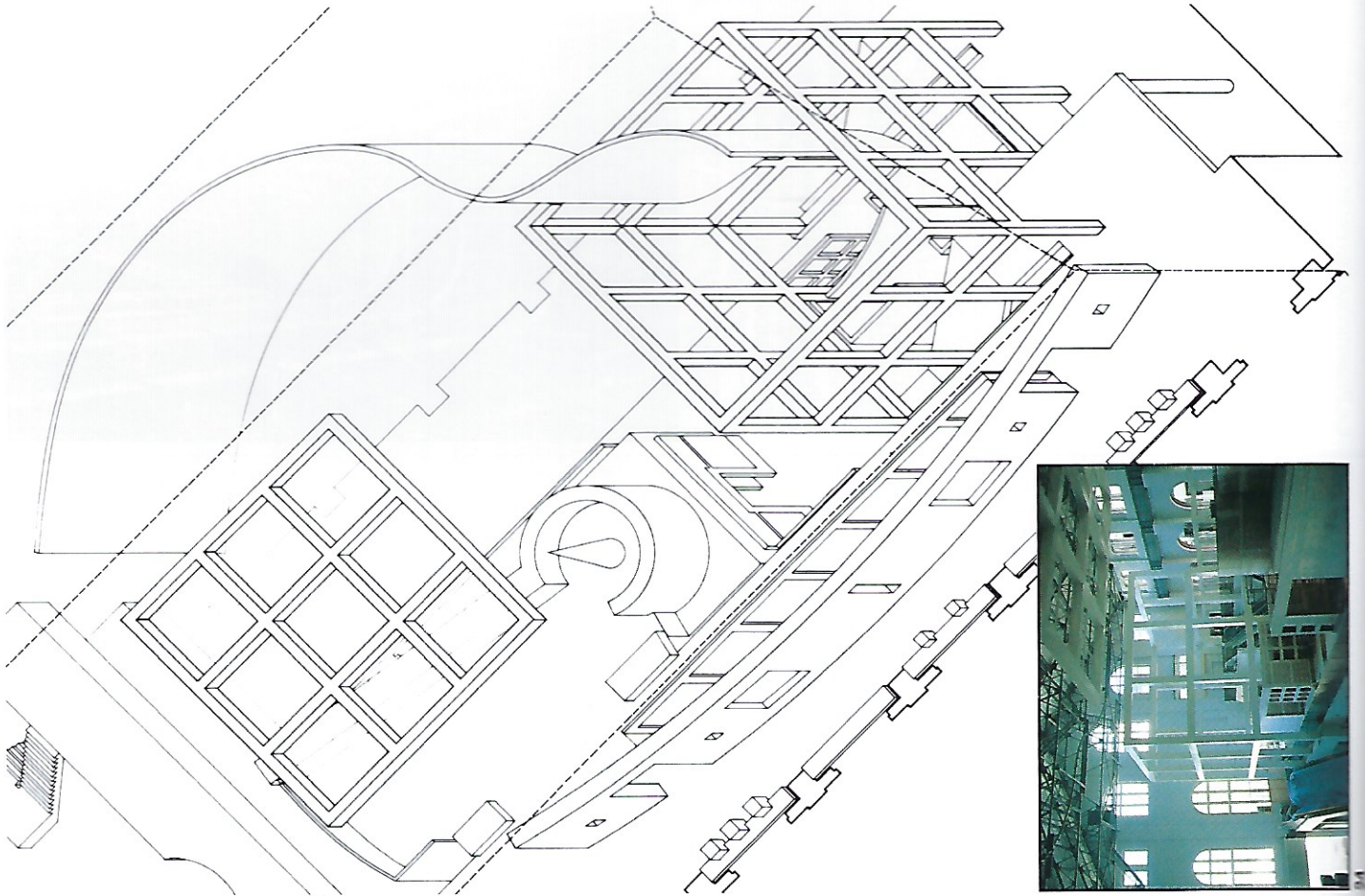
Interaction and stimulation

It seems to be very much a live museum rather than a dead one and a lot of it interacts. For example, you have fully operational steam engines. Did that produce any particular problems?

R.J. No, opportunities! And constraints that had to be understood. For example if the whole Powerhouse had been steam trains and huffing and puffing, with all the noise and excitement, then that would set up a relatively boring pattern. It might initially excite but it wouldn't sustain people's interest. One of the great things has been to attempt to arrive at a balance of content, space, experience, interactivity and classical presentation of an object for its own sake. It would be terribly wrong to have every exhibition with the same level of interactivity, or every single exhibition at the same level of excitement, noise or stimulation. There's got to be a balance. And just as your mood will change momentarily as you're moving through a visit, or it will change from one visit to another, your needs and demands of the Powerhouse will change. Every visitor needs change. They find their own way. They find their own special little spaces in what I see as the 'townscape' of the museum, just as we do in a town. And no two peoples' preferences are the same. We have placed what we call landmark objects in public spaces that will guide people through the museum.

Such as what?

R.J. Well the Boulton/Watt Engine is a major landmark structure. Once you see it you never forget it, and you know where it is in the Powerhouse. There are aircraft, there are small precious objects, exciting individual items that people will see and remember and know where they are. These are located at key points, generally with an axial approach to them so that people can see them from a distance and remember where they are and fit them to the structure of the circulation. Another thing that's happening is that we're putting in an electronic information system in the main foyer and every exhibition is identified by a stunning photograph of a key object within the collection. So we are identifying exhibitions and themes by key objects. Every exhibition



will have a poster on display in the forecourt, so people (before they enter the building) will know broadly what are the themes and what the content is going to be like. When they get in the Powerhouse, they are directed to a particular exhibition by the poster image which is incorporated into the electronic information system.

Who works out the placement of the exhibits? One person or a committee?

RJ: A lot of it was in place before I joined the project. Certain things have been changed since I came but, by and large, I wasn't part of some of the broad decisions that were made. Some of these were fairly easy decisions because the decorative art exhibitions, for example, really fit extremely comfortably into the Switch House and the major transport collections could go nowhere better than the Boiler Hall. So those key exhibits and their locations fell into place naturally. The more difficult decisions to make were with the more esoteric exhibitions like Creativity and Australian Achievement.

Flexible space

A lot of the exhibits, the steam engines and the planes for example, are very large and look almost 'immovable'. Is the exhibition space still flexible for growth and change?

RJ: Again it's like a town. It will evolve and details will change in an evolutionary way. That's how museums evolve. There's never sufficient money to redo the museum completely at any one point in time. That only happens once in a museum's life; only with new museums. So we've built in certain things that are less flexible than others in a hierarchy of broad elements to the fine grain. The most flexible are things like labels and text panels which are actually systematised to the point where the Powerhouse, on its own desk-top computer can produce another instant label that will fit a perspex container. And if some fact is wrong they can change it. Additionally in some exhibitions there are items that, for conservation reasons, must be on constant change-over. Such items might be on display for only a matter of weeks or months before they are changed.

Clouds, ships and planes

Two of the most striking things about the interior of the atrium are the end 'cloud' murals. Can you explain the relevance of those?

LG: There are two explanations. One is that I'm fascinated by the sky as a constant in the Australian environment. Sky with cloud is one of the great forgotten landscape elements. The other thing that I was struggling towards is that the sense of perspective that one has in Australia is different from what one might perceive in Europe and the Northern Hemisphere. It's that endless quality, that quality of a continuum of the vastness of a distant horizon. The sky and clouds were translated onto the wall by a contract painter who specialises in set design.

RJ: Those clouds are actually exploited in the exhibits in the west building. As you enter through a tower structure, attention is focussed on the Strasbourg clock with a cloud backdrop. It's the sort of item that stylistically would have been seen against a sky. In the middle ground there's a wonderful box kite of Laurence Hargreaves soaring up into the vaulted space. That's seen against the clouds. There's also the first major exhibition as you enter. It involves you up a long theatrical ramp, not only into the vault but up into the clouds. This creates an elevating experience of coming into a museum of concepts and ideas to explore and think about things on a different level to the everyday.

The magnificent seaplane is, I believe, the heaviest of the planes to be suspended in the museum, is this so?

LG: One of the bad things about this project is the emphasis on the longest, the thickest, the fattest; it's done more often than with any other museum. This is a bit worrying. Those sort of statistics are fine but they tend to be Madison Avenue views about what it's all about. There are nicer aspects to that aeroplane than its length, height and weight. Perhaps more important is that it explains to the uninitiated what an aeroplane is. For example, how the wing is articulated and separated from the engines and from the fuselage. Of course, it floats on water

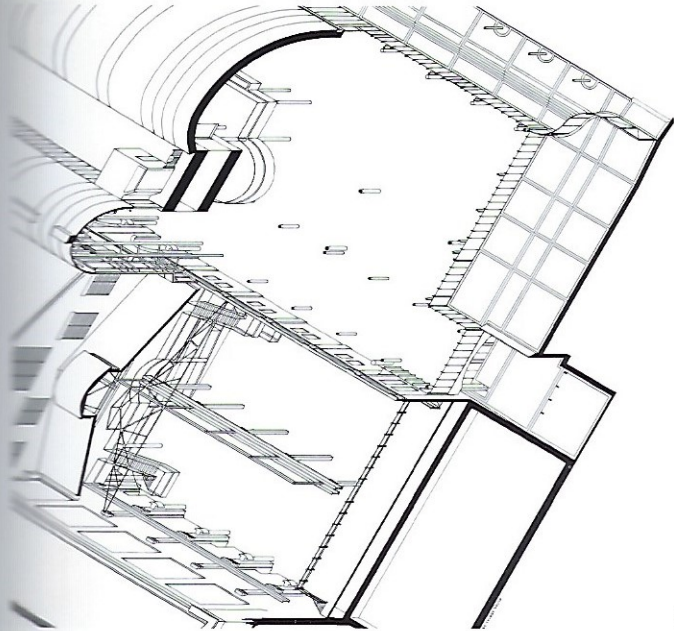
which gives it that wonderful under-belly which, viewed from below, is so critical. In every sense it's a marvellous prototype to be used as a major display element in that particular building.

The power of the Powerhouse

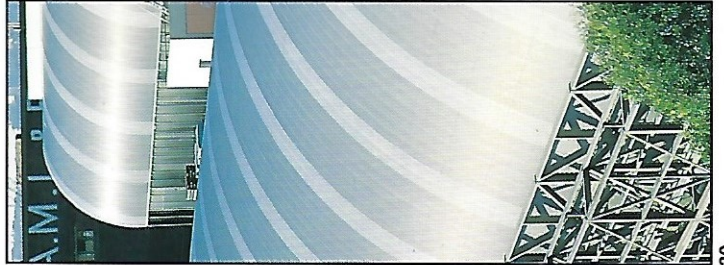
How far do you see the influence of the Powerhouse spreading?

LG: The other week I was talking to someone about design education which is, I believe, a total failure. It doesn't recognise the subtleties of conveying design ideas. Nor of carrying the design process through into territories that are as yet uncharted. Nor does it recognise how one deals with human nature and political pressures; the whole gamut of bureaucratic structures and the organisations we use to build our projects. The Powerhouse has been a very powerful demonstration of some of that essential multidisciplinary design approach. Richard and I used all sorts of skills to convey a design idea. It hasn't simply been: 'here's the presentation, let's build it'. The design work has been subjected to the most rigorous scrutiny, from curators through a whole gamut of museum specialists. What has emerged is a pretty powerful design message; a project that's unique and blazing new trails at a level that has never been achieved in this country, at least in this particular field. Trying to get within the minds of the staff plus all of the community influences that affect the Powerhouse, trying to get some conception across to those people of what design is actually doing for it and them; what the process is and what design does, is terribly critical.

Design has a voice on a whole range of issues in the Powerhouse. It is actually built into committee structures so that there are key people who have influence on a whole range of issues which normally the design community wouldn't believe was their turf. In fact, it is very definitely their turf because those committees have set up a direction, a concept and an approach in which design *must* be incorporated as one of their considerations. With the Powerhouse, design has achieved a credibility.

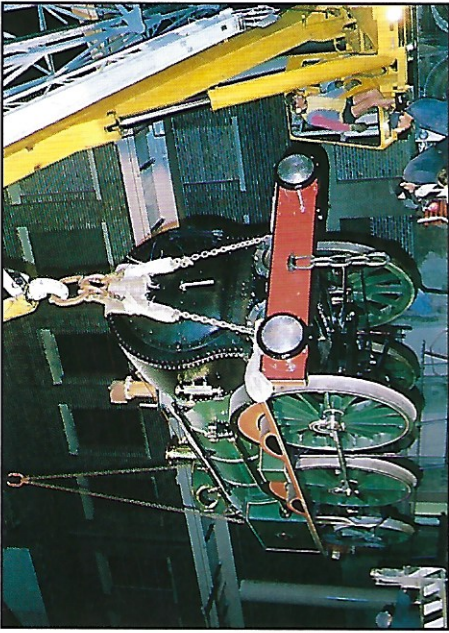


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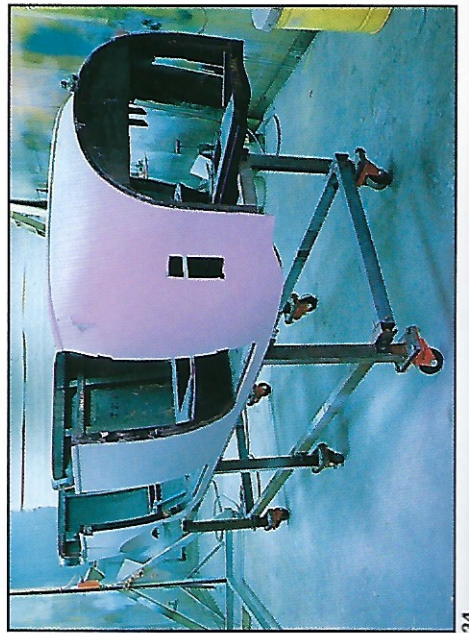
- 24) The Science, Technology and People exhibit takes shape.
- 25) The Harris Street frontage under construction.
- 26) Above the Boulton and Watt steam engine, construction inside the Galleria.
- 27) Exterior detail.
- 28) Interior spaces flow easily from one to another, and many exhibits can be seen from above.
- 29) Axonometric: Engine Hall and Wran Building.
- 30) Wran Building and Atrium roofs.



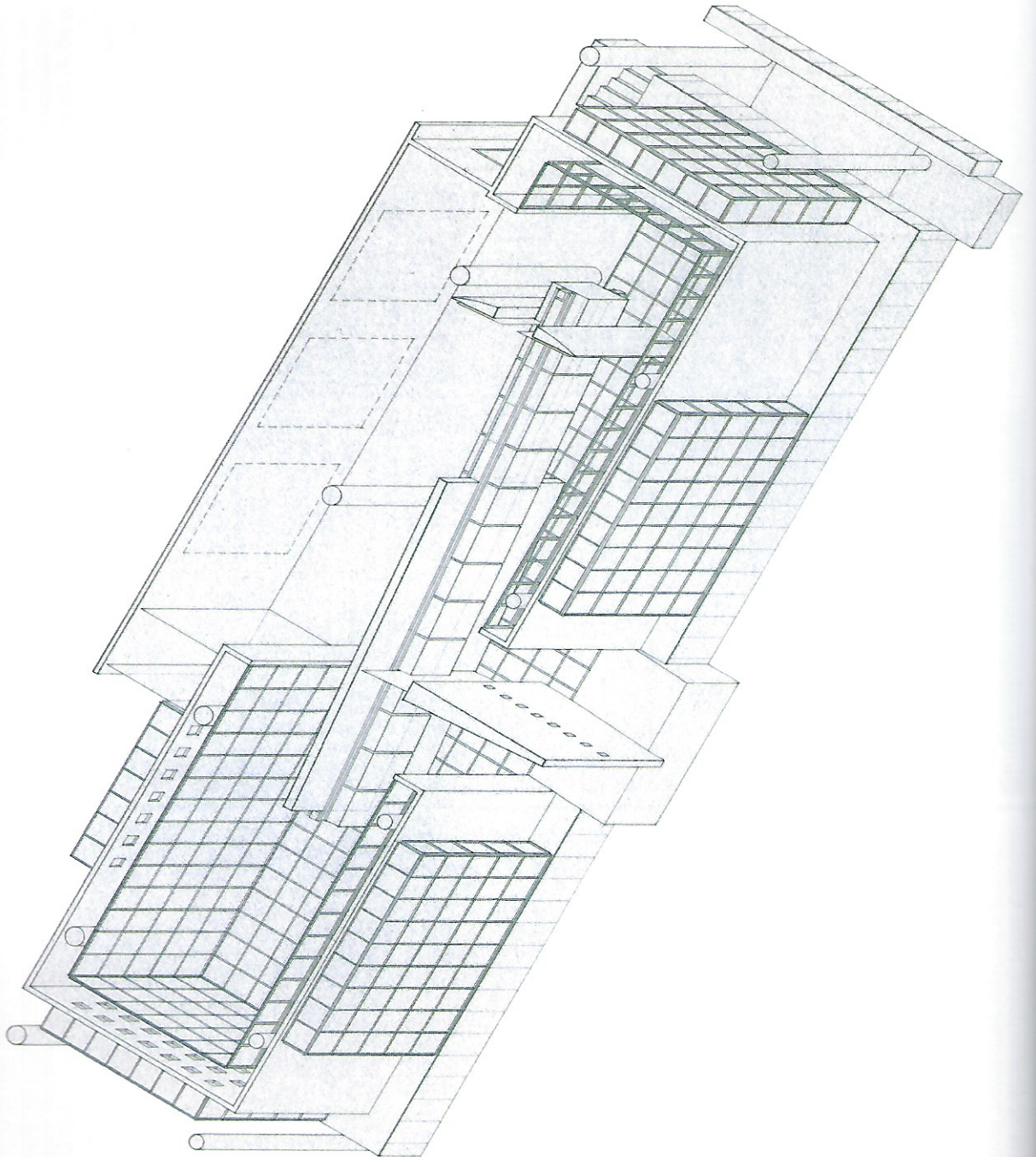
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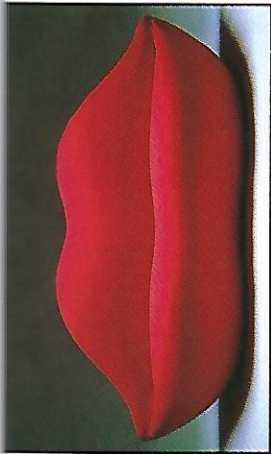


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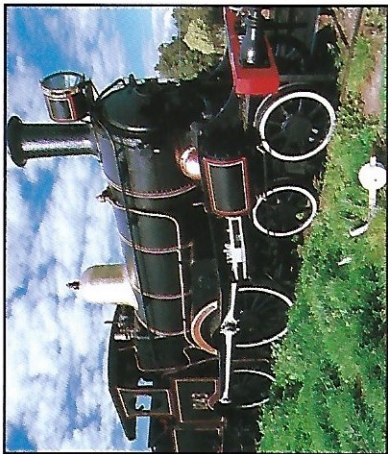


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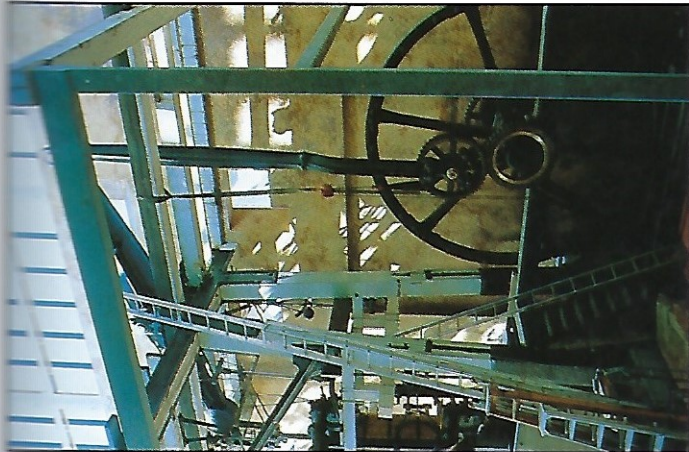
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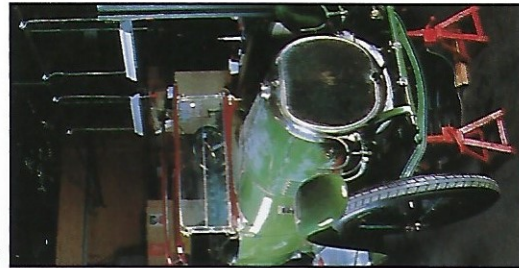
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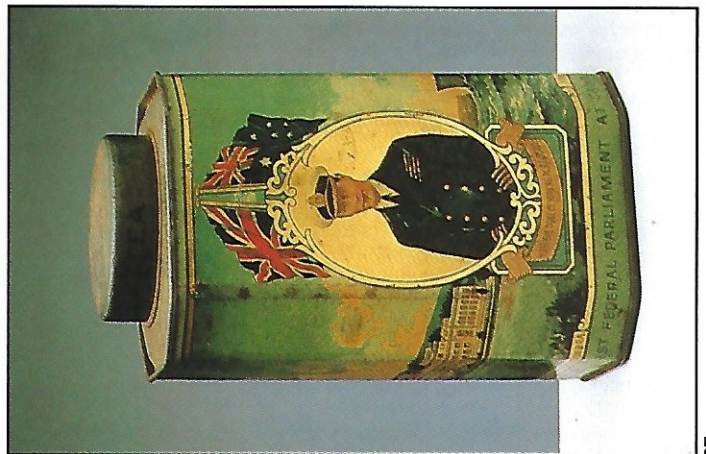
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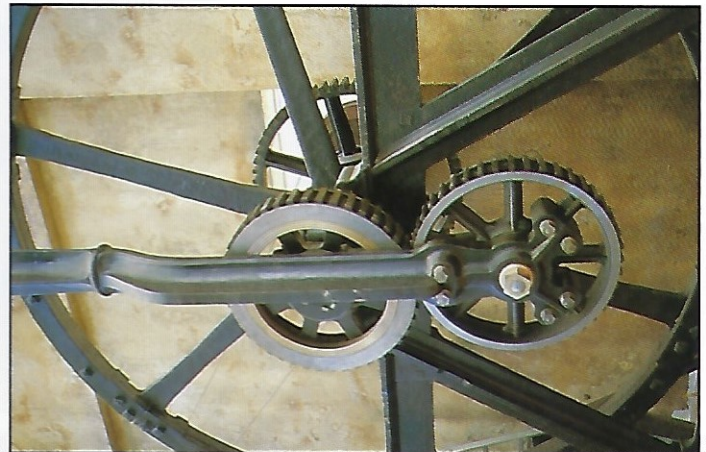
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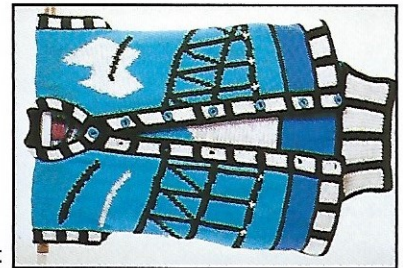
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- 31) Axonometric: The Human Experience, designed by Denton Corker Marshall.
- 32) Installation of Locomotive No. 1: from Creativity and Australian Achievements.
- 33) The Catalina flying boat arrived at 6am.
- 34) Restoration and conservation are important activities at the Powerhouse.
- 35) Studio 65 'Marilyn Sofa' (1970), from Take a Seat.
- 36) Locomotive 1243: from Bringing People Together.
- 37) Everyday Life in Australia 1927, Bushells tea tin.
- 38), 39) Shrouded for protection, Locomotive No.1 stands and waits for the platform to be built
- 40) . . . while the finishing touches are made to the rails.
- 41), 42) The Boulton & Watt steam engine sits silently waiting to work under the pressure of steam again.
- 43), 44) Restoration of the Sheffield Simplex (1913); from Bringing People Together.
- 45) Jenny Kee's Opera House coat (1980); from Creativity and Australian achievement.

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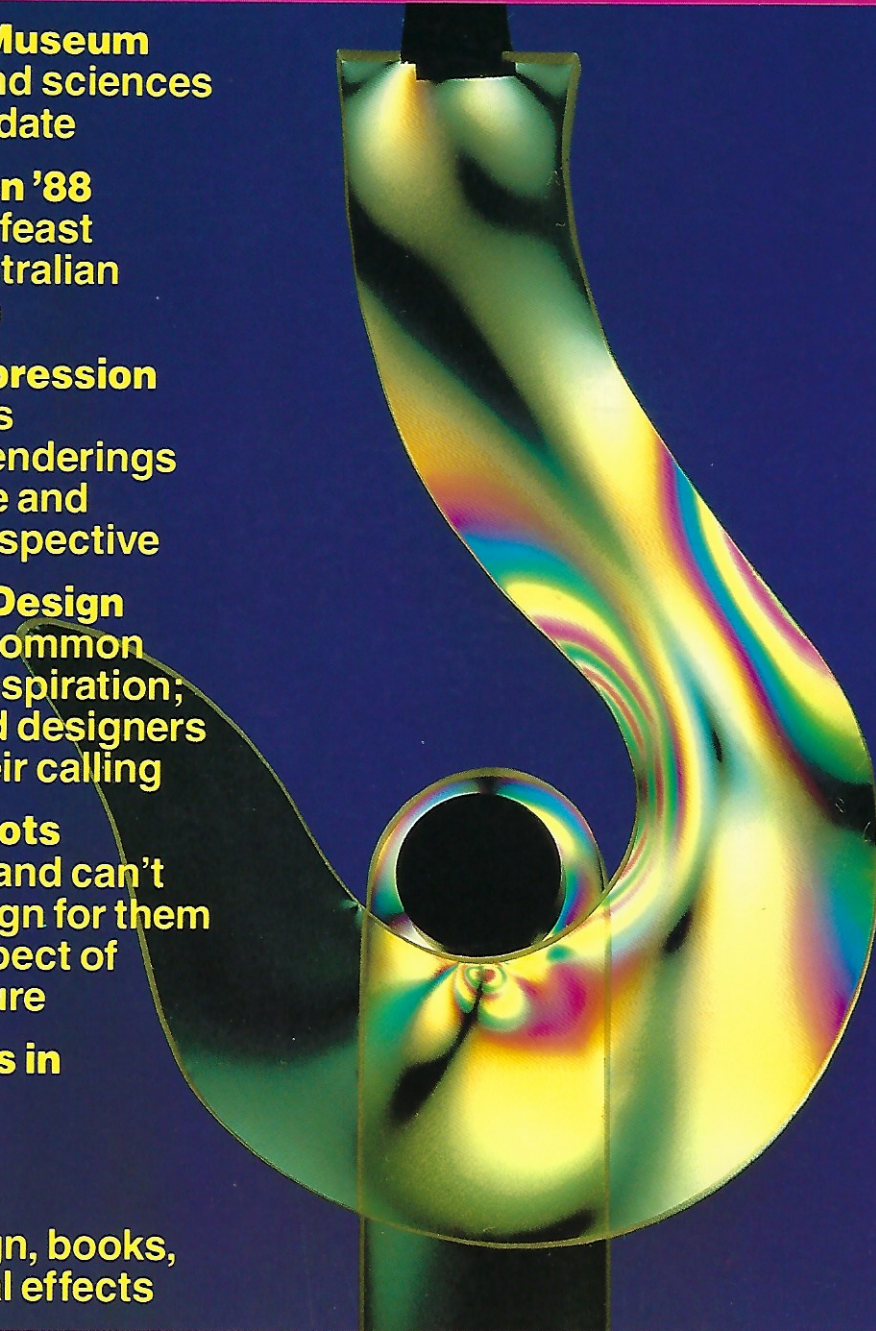
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