

01 06.02.02



Cinemia **Screen Lounges:** Progress report on design

Progress and outline of research areas and design strategies to 06.02.2002

01.] **Acoustic damping and isolation** research and proposed design strategies.

In consultation with sound engineers Phillip Mckellar [Big Smoke, Sydney] and Jim Atkins [ABC Classical FM Radio] 6 primary strategies are proposed for the issue of acoustic isolation:

01.] Use a large number of small localized speakers in the lounge space in close proximity to the listeners. This reduces the output required to achieve acoustic clarity reducing noise leakage and enhancing sound quality.

02.] Employ a frequency dividing system to convert bass sound signal into vibration to enhance the immediate sense of the sound without additional acoustic amplification. This would be done by coupling the speaker voice coils directly to the lounge pod floor and seating modules. This technique is employed in high end VR pods and simulators.

03.] Float the lounge pods to prevent any vibration leakage to the surrounding building structure.

04.] Consult with Whise Precision Audio about sub base speaker systems, a company uniquely specializing in this area and employed in the construction the ABC Centre at South Bank.

05.] Consult with acoustic consultant Peter Brown on high absorption acoustic panelling

06.] Explore active damping technology as employed by Bose sound systems and some automobile manufacturers.

02.] **Ergonomic data**

Mario Loyo, Industrial designer, is undertaking research into ergonomic data from the automotive and furniture industries to address the optimal geometry for seating in the screen lounges. This will cover comfort and function for single seats and for multiple configurations. The range of multiple configurations will be explored. This information will be combined with group dynamic data. The ergonomic data will be presented as computer animations of figures in different positions and groupings

03.] **Interior materials and upholstery**

Veronica Saunders, Interior designer, is preparing a library of commercial grade upholstery fabrics. The materials are being selected for the seating and interior surfaces are being selected for strength, appeal and their contribution to the appropriate ambience. These will be combined with other surface materials from disparate sources to produce a rich yet durable interior that is clean, functional but not sterile. As the ergonomic data is assembled scale models and maquettes will be produced to test material strength, workability, durability and appearance along with forms and geometries. Full scale models will be built to test comfort and function. The interior materials and seating designs will be presented as material boards and models.

04.] **Lighting: Optical Fibre**

Kevin Poulton, leading lighting specialist and consultant, is providing data on using optical fibre cabling and a small number of light drivers to light the lounge interior spaces. This is being proposed to minimise the problems of maintenance and maximise lighting placement both for function and ambiance. This information will be presented as computer renders and full scale test mockups of component applications.

05.] **Social research: Group dynamics**

In consultation with Professor Peter Downton, former head of architecture at RMIT, we are compiling data on group dynamics with relevance to the screen lounge configurations and seating numbers to look at issues that may point to optimal arrangements or present problems. This information will be presented as computer animated line drawings.

06.] **Construction systems**

Research is being undertaken into construction techniques for the screen lounges. This will address form, modularity, cost, materials and ecological issues. So far visits have been made to New Zealand Yachts, the premiere New Zealand constructor of composite hulled yachts and wave piercing vessels and Alloy Yachts International, builder of the most advanced aluminium hulled boats in New Zealand. Areas of CAD, modular fabrication, curve and shape forming, material strength and workability were examined. Other construction industries to be examined are:

- 01.] Inflatable vessels
- 02.] Inflatable structures
- 03.] Caravan construction
- 04.] Bus construction
- 05.] Space frame construction in buildings, signage and display units
- 06.] Plywood vessel construction
- 07.] Fibreglass construction in building and furniture
- 08.] Fibreglass construction in small boats and cars

This information will be presented as drawings and photos.

07.] **External sensing systems**

Following on from our previous work in remote sensing systems [Hyde Park Barracks Convicts exhibition fit-out and Creating Culture at the new Parliament House in Canberra] we are investigating the range of remote sensing systems currently available that could contribute to the design of the screen lounge pods both inside and out. Such systems could be deployed to activate the pods in the presence of passers by and differently to logged users etc.

08.] **Air movement**

Studies will be conducted into ventilation options for the screen lounges. No details available as yet.