

# CH<sub>2</sub> Setting a new world standard in green building design

## Design snap shot 08: People

### Summary

#### Introduction

This snap shot discusses the priority given to designing for people in CH<sub>2</sub> (Council House 2). It outlines the way this was integrated into the project, the costs and benefits and the final outcome.



Figure 1. Initial small workshop discussion during charrette

#### Drivers and objectives

The primary function of CH<sub>2</sub> is to house City of Melbourne staff and to provide a healthy and productive environment. As such, the building needs to be a comfortable and stimulating place to work in order to reduce sick days and aid in staff retention. Another main aspect of the people centred approach is the careful design of the interface with the public.

The City of Melbourne's vision for this project is:

- 1 Create a benchmark building for the City of Melbourne that:
  - embraces new ways of working
  - supports cultural change
  - is a showcase for environmentally sustainable design (ESD)
  - provides a healthy and stimulating work environment
- 2 Develop a new process for buildings that encompasses these broader requirements.

#### Benefits

- Healthier and more productive staff
- Staff retention
- Influence on staff and consultants to adopt ESD principles beyond the project
- Education and a sense of closer ties with the public
- Potential to inspire people to integrate more environmentally responsible behaviours

#### Outcomes

- A comprehensive design which has integrated technology and passive features to cater for and support a comfortable, safe and healthy work environment.
- An on-going creative interface with the public which communicates the principles of the building.

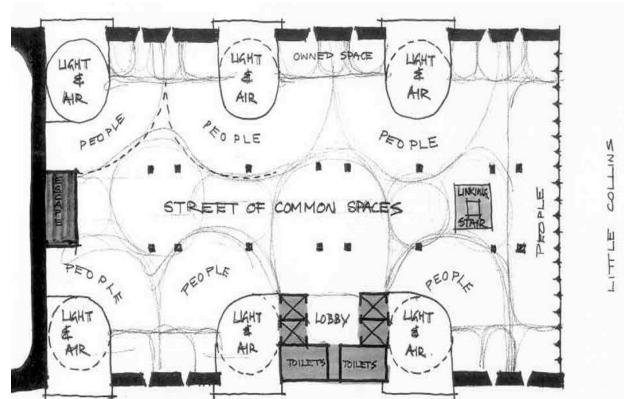


Figure 2. Sketch depicting the idea and planning for space and people for the original concept

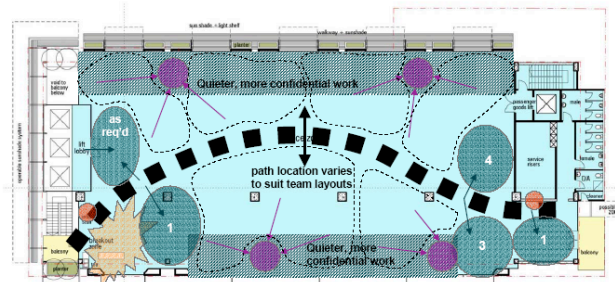


Figure 3. Initial schematic design

## Lessons

When people are placed as the primary driver for design this becomes of equal importance as aesthetics, etc. It incorporates thinking and research into what staff actually need.

Staff have been involved at various stages throughout the process, not just to inform the initial design but also follow the building development through regular updates. These actions prevent misunderstandings and ensure that there is continuity as the staff understand the building.

If an organisation is planning to build a new leading edge building which cannot house its entire staff, it is important to consider how to look after the needs of staff staying in the old accommodation.

## More detail

In the charette process one of the initial exercises was to map what issues were important to the City of Melbourne's staff, this resulted in a mind map below (Figure 4.). This became key to how the CH2 building was designed.

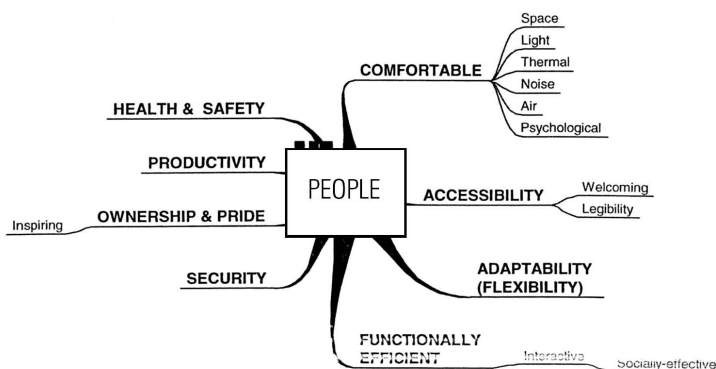


Figure 4. Initial mind map diagram developed during the Charrette (Evergen)

## The importance of comfort – design for user physiology

The building was designed first and foremost to be comfortable for the building users. The physiology of the building users and how they would experience the space was paramount in each design decision.

It's all about creating a sustainable work environment and I think that's been the focus... The really great thing about this project and the way the City of Melbourne has done it, as a building for people. **Stephen Webb, DesignInc**

From this starting point, the designers looked at what makes people comfortable. Having control over their environment is the first element. The second is that they do not feel too warm or cold. The latter is the most difficult to design for everyone has different levels of comfort, and some vary from week to week.

The design team looked at the types of heating and cooling which people find most comfortable. The result being a radiant heating or cooling system. For example radiant cooling is temperature which radiates from a cool surface, rather than being transmitted by moving air.

The AEC study which looked into this, showed that the use of chilled ceiling panels to radiate coolth generated consistently low PPD (Percentage People Dissatisfied) across the whole floor with an even lower percentage within the occupied zone, that is most people are happy with the temperature. This is indicated by the large amount of blue area in Figure 5.

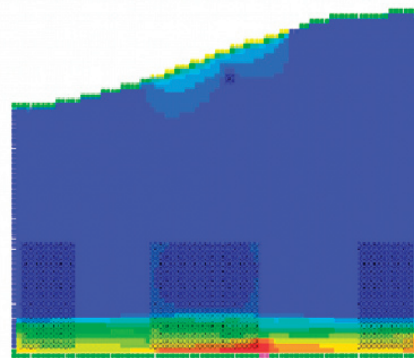


Figure 5. Occupant Comfort Levels (Predicted Percentage Dissatisfied) environmental design solutions computer study done for the placement of chilled ceiling elements (AEC)

## Indoor Environment Quality

Occupant comfort is very much influenced by Indoor Environment Quality (IEQ). For this reason the following features were targeted through design, and where possible written in to specifications:

- low emission materials;
- 100% use of fresh air;
- displacement ventilation;
- radiant cooling;
- extensive use of plants to remove toxins from the air;
- access to views and lighting-both adequate background lighting, task lighting and use of natural light.

## Fit-out

The process for designing the interior of the building involved DEGW Consultancy interviewing senior executives, workshops with staff, and a workplace performance survey. This formed the basis of many design concepts and also for assessment criteria when the Council sought expressions of interest from the market.

Using the diagram below, the Council discussed what the new accommodation should encompass:

## matching buildings to organisations

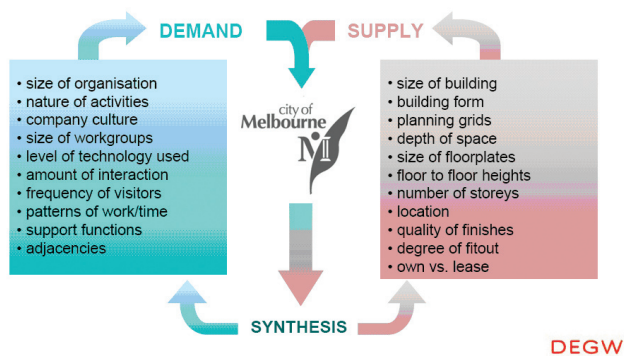


Figure 6. DEGW model matching building and organisational requirements

It became apparent through the interviews and questionnaire that:

- Through outsourcing, the Council's culture has changed considerably but further cultural evolution was still required to achieve the aims of the council
- The organisation's work practices are constantly evolving
- The current buildings did not support interaction and leader visibility, separating groups and limiting casual interaction
- All this resulting in the workplace environment's reduced effectiveness

A broader survey showed that:

- Office equipment (i.e. computers, faxes, printers, etc) is of the highest importance, and it is rated as performing very well
- The building is located in a suitable part of the City
- Meeting facilities across the board were performing poorly – that is were often empty
- The indoor environment quality pertaining to day lighting, decor and air freshness was under-performing

- Quality of the working environment was under-performing; in particular the ability to concentrate, foster high quality work and enhance productivity
- Communication with others and the ability to have confidential phone calls was difficult
- A lack of space for filing, storage and reference materials – though at CH2 the aim was to reduce this further, this was planned to be implemented with a change in systems and procedures to support this.

The SANE model (Figure 7, developed from DEGW research) describes space as private, privileged and public. It was a useful framework for developing zoning strategies throughout the building:

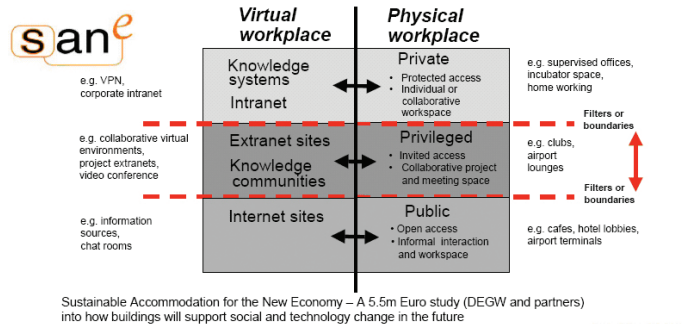


Figure 7. The SANE model

This also helped determine what the Council's strategy would be for their future accommodation. It took into account the flexibility and ability to adapt; an important aim for the City of Melbourne.

From the data collected DEGW developed some Key Performance Measures for the new environment:

- Comfortable temperature and air quality
- Control noise, allow for concentration
- Flexibility of physical space
- Provide more meeting spaces – informal & enclosed (well equipped)
- Colour, foliage, good quality environment
- Provide a 'human' contact point for the customer
- Co-locate the right groups together
- Improve on-line facilities
- Provide better amenities
- Acknowledge needs of working parents

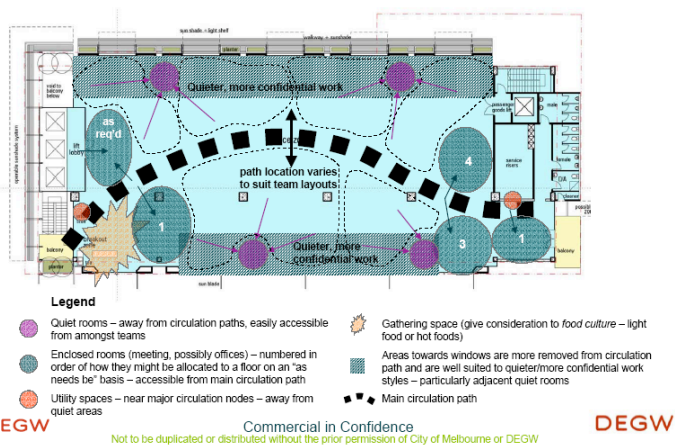


Figure 8. Space allocation plan (DEGW)

### Continued interaction with City of Melbourne staff

Throughout the planning and design stages, staff have been involved in the major decisions of fit out and interior design through appointed 'Accommodation Champions' and work area managers. The role was to represent their area of the organisation and pass on information about the building to their colleagues.

The expected activities of the Accommodation Champion will include being a focal point within the work area for staff and myself, for the gathering and dissemination of accommodation related information. To advise me of staff movement & minor branch structure changes, operational requirements of the branch, actively encourage storage consolidation and reduction; feedback to staff the progress of the workplace design; pre relocation preparation, also an avenue for staff to make suggestions and ask questions. **Kate Senko, CH2 Co-ordinator Interior Fit-out, City of Melbourne**

A meeting was held with the Accommodation Champions on storage issues. This included discussion of current storage needs, the procedure for doing an audit of the current space and type of storage used, and discussion of storage provision types. Taking the issue of the provision of lockers for staff, discussion centred around the amount of locker space required by the various staff roles and the problem of space availability. The idea of providing large lockers for those who use them daily for their work, while providing locker bags for those who cycled and exercised was floated. The Accommodation Champions were charged with the task to take the proposal back to their groups to find out if people would be happy with the solution.

### The "haves" and "havenots"

One of the main challenges faced by the City of Melbourne and the CH2 team is the fact that not all the staff will be able to move into the new CH2 building. 40% of the staff will be located in Commonwealth Bank and Town Hall Administration Buildings. An investigation into the potential of a second project on CH1 has begun. The aim of CH1 is to be a lighthouse project in the area of green refurbishment. The building will be aiming to achieve an equal level of comfort for those who do not move to CH2.

The exciting opportunity for this property is: what if we could take an old C-grade building and make it an A grade or even premium while getting a 6 Green Star rating! We would have the potential to affect the hundreds of other C grade buildings in the CBD! **Professor Rob Adams, Director, Design and Urban Environment, City of Melbourne**

### The public

#### The interface with the street

The building aims to educate and interact with the community and enhance the shopping experience in the surrounding area. Several strategies have been put in place to achieve these aims. The first is to have active connectivity with Bourke Street through the Tivoli shopping mall and with Swanston Street, by opening its main doors to the west. The second is to clearly articulate the building's green credentials at street level, for example, through the cascading shower towers to the south, recycled timber shutters and environmentally responsible materials in the shops, and educational materials in the foyer. Finally, there will be a vibrant café in the foyer to allow people to meet, greet and refresh themselves in an attractive and social environment.

The retail spaces are where the public will spend much of their time while at the building, and it is these spaces where the design team have least control. The retail industry and rapid interior furnishing churn to keep up with the latest fashion. Though not completely resolved, this inevitable tension will be addressed by cooperatively working with new tenants to fit out shops in an environmentally responsible manner and having green leases.



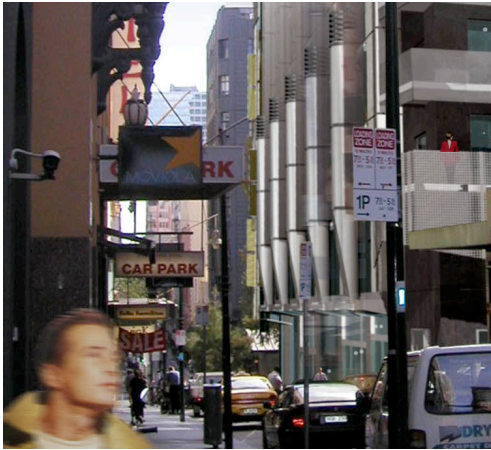


Figure 9. Image of the future façade of CH2 (DesignInc Melb)

Other features of the CH2 interface with the public are the semi enclosed stairwell to the western side of the building, which is still partly exposed. This means that those using the stairs have connectivity with activity on the street and access to external air. Similarly from the street there is a transparency and an opportunity in at least a small capacity to be connected to the Council's activities.

## Art

Three artists were commissioned to be part of the design charrette process, and to present their ideas for the incorporation of public art in the building. With inspiration from the building's interface with the external environment, and the role of biomimicry in the design of the building (see Snap Shot 11: Biomimicry), the artists used examples from nature to create an impressive artistic landscape. They used, and were inspired by black and white shells of the cockle (waste product of the mussel industry), charcoal (coloured tiles with the imprints of fossilised birch branches for the parking deck), crinkled paper, embroidery patterns and coral surfaces. The study of nature became the grounds for a symbiosis between art and architecture. The art provided a link between the mind and body, the seen and the unseen.

Artists were also involved in creating work that would convey to the public the nature of the CH2 building development, and will continue to contribute artwork to the interior of the building. The hoarding (barriers put up around the construction site) included many pieces of art inspired by the building, whilst incorporating the necessary street signage required for hoardings on building sites.

This is a good example of how an artist can add to the artistic vibrancy of the city by working on a feature that is necessary but often uninspiring. With Jones' input, CH2's hoarding has become a 93-metre cultural advertisement for the building and for Melbourne. **Cr Kate Redwood, Melbourne City Council**



Figure 10. Art used in the charrette process but also integral to the whole building process. Here, the art is a part of the fencing around the project June 2004 (Artist: Cara Jones)

## Legacy

Many of the people involved in CH2 – staff, consultants, contractors, engineers- have been inspired by CH2. One example is given below. Liz Hui would come into the office and in her own words:

...people would know I'd come from CH2 because I'd be on a high and start talking about – we could have natural light here, and if we use x we can save energy, and y we can save water.

I looked into what I can do at home, I'd like to look into solar panels and some retrofitting...CH2 has really inspired me. It's a fantastic project ...[a few months later]... Easy Being Green have come out to look at our house and when we get back from holidays, we will be installing a solar hot water system, a water tank and their energy tank...All this thanks to CH2... **Liz Hui, Acoustic Engineer, Marshall Day Acoustics**

CH2 is already starting a legacy which goes beyond the building and its staff and is already affecting others involved.