A Guide to workplace design requirements for NSW Government Agencies

The NSW Government Office Design Requirements were first released in July 1999 as part of the Government’s Office Accommodation Reform Program. These revised Office Design Requirements are now a web based tool that will continue to assist agencies to make better decisions about the effective and efficient planning of their office accommodation.
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Foreword

The NSW Government Office Design Requirements were first released in July 1999 as part of the Government’s Office Accommodation Reform Program. These revised Office Design Requirements are now a web based tool that will continue to assist agencies to make better decisions about the effective and efficient planning of their office accommodation.

The way we work has changed substantially over the past 30-40 years. Today we have mobile phones, blackberries, laptop computers, mobile broadband and ever changing technology to help us do our work. We can work where we need to, when we need to.

With the exception of entirely new, more recent fitouts, most workplaces tend to be an accumulation of many changes over a number of years to accommodate new demands like additional staff, reorganisations or new initiatives. Generally these workplaces are a poor fit for modern work practices.

Today, office work is more mentally challenging and workplaces need to be able to stimulate minds. Sometimes we need to work in teams and collaborate and other times we need quiet places where we don’t get interrupted. We need the technology that supports people in getting the job done without imposing obstacles or nuisances that can be distracting. Work is more dependent on social skills, more reliant on technological skills and much more mobile than it has ever been.

Workplace design needs to be able to support these changes and those that will continue to occur.

The workplace should be seen as one of the tools that help an organisation achieve its goals in the most effective and cost efficient manner while also having regard to its impact on the environment. Consider the environmental impacts in your procurement planning when undertaking your fitout project. In addition, workplaces should be planned and designed with sustainability considerations in mind to enable efficient use of resources such as energy, water and fit out material, effective waste recycling and to provide a comfortable and healthy indoor environment for staff during operations.

Workplaces today need to be adaptable. They need to accommodate up to three or four different generations of workers with differing expectations of the workplace and differing approaches to work. They also need to be able to respond quickly and cost effectively to change as a result of new projects, new structures or new initiatives.

Good workplace design is important for a number of other reasons including:

- Recruiting and retaining good staff
- Supporting productivity gains
- Achieving results
- Image
- Health and safety of staff
- Reduced impact on the environment

The role of the office in supporting the achievement of corporate goals will continue to evolve. It is now a place where social interaction can occur between staff while still giving them less formal workspaces, touchdown areas, meeting spaces, private areas, meal rooms and the necessary equipment and technology.
Application and use of the Office Design Requirements

The purpose of these Office Design Requirements is to assist Government agencies in ensuring that the workplaces they provide effectively and economically support their service delivery needs and comply with relevant standards and legislation.

These Office Design Requirements are to be adopted by all General Government Sector agencies and Public Trading Enterprises (excluding State Owned Corporations). Shareholding Ministers and Boards of State Owned Corporations are to note the requirements of the Office Design Requirements and encourage their organisations to adopt them as appropriate.

The document is divided into a number of sections to allow you to access degrees of detail on the various topics depending on your current knowledge on the subject, or status of your project. The key sections are:

- **Section two – The fundamentals**
  This details the essential requirements that all fitout projects need to meet. The specifics of your particular project will always call for different configurations; however the fundamental requirements of all projects can be found here.

- **Section three – The fitout process**
  This section provides a greater level of detail on the way that a typical project is conducted.

- **Section four – Reference material**
  This section contains a series of articles that describe many of the concepts contained within section two, in greater detail putting context to the requirements

- **Section five – Sustainability**
  This section is an executive summary of a separate document that discusses sustainability as it relates to office design.
The State Property Authority has been established by the NSW Government as a corporation with functions relating to the acquisition, management and disposal of Government owned property.

The Authority’s objectives as stated in the State Property Authority Act 2006 are to:

• improve operational efficiencies in the use of properties of government agencies, particularly generic properties (such as offices, warehouses, depots and car parks);
• manage properties of government agencies in a way that supports the service delivery functions of those agencies;
• provide advice and support within government on property matters; and
• operate at least as efficiently as any comparable business, consistently with the principles of ecologically sustainable development and social responsibility for the community (including the indigenous community).
• The Authority is the Government’s real estate services provider and is responsible for acquiring and managing Government’s generic and, by agreement, other property assets.
• To assist the State Property Authority to achieve its legislated objectives, the Government has approved a new property policy framework. The framework outlines the relationship between agencies and the State Property Authority in the acquisition, management, maintenance and disposal of property.

Key initiatives of the framework are:

• the immediate vesting (from 1 July 2008) to the State Property Authority of the ownership of all government owned office accommodation;
• the implementation of a commercial rental charge for all office accommodation vested in the State Property Authority;
• the transfer to the State Property Authority of management responsibility of all government leased office accommodation;
• the extension of the Government Leasing Service within the State Property Authority to include all lease renewals and new and existing lease negotiations for generic property in the Greater Sydney Metropolitan Area (as defined by the Department of Planning);
• regular and ongoing reviews by the State Property Authority of agency property portfolios to identify efficiencies to improve service delivery which will be monitored by the Government Asset Management Committee and reported to Government;
• the provision of information by all agencies for the generic property database, including the participation in surveys;
• review and endorsement of all proposed property acquisitions and disposals by the Government Asset Management Committee;
• the State Property Authority is Government’s preferred acquisition and disposal agency;
• the State Property Authority will be the lead agency for all multi-faceted property proposals that are interlinked by timing, location or use; and
• the Department of Premier and Cabinet, State Property Authority and NSW Treasury will work cooperatively with Government agencies and relevant unions to address any staffing and funding implications which may arise from implementation of the policy framework.
The following Government Property Principles outline details of the property policy framework as well as other considerations relating to property title, preferred office locations, provision of car parking, lease precommitments, sale and lease back proposals and fitout amortisation.

Operating Principles

Principle 1
All owned office buildings will be vested in the State Property Authority and lease arrangements will be entered into with tenant agencies through a Memorandum of Understanding. Agencies will not be compensated for the vesting of assets, but will receive budget funding for net rental payments. Normal operating costs will be funded by agencies from existing resources. The vesting of all owned office buildings will occur from 1 July 2008.

Principle 2
Agencies may vest in the Authority any or all of their non-generic owned property assets subject to agreement with the Authority and Treasury on resource and funding transfers associated with those properties. In some instances Government may direct that certain properties or agency portfolios be vested in the Authority.

Principle 3
The Authority will assume management responsibility for all leased office space and other leased property assets and sublease arrangements will be entered into with tenant agencies through a Memorandum of Understanding. Agencies will pay a management fee to the Authority in addition to the rent payable under the head lease.

A program will be established to transfer management of existing head lease responsibilities to the Authority.

Principle 4
The State Property Authority will conduct all lease negotiations (new leases, renewals and rent reviews) for property assets required by government agencies except where the Government Asset Management Committee determines otherwise.

Principle 5
Consistent with Operating Principle 4, negotiations for all proposed lease pre-commitments must be conducted by the Authority and in accordance with existing approval processes. All pre-commitments to acquire property or office space must be assessed and approved in accordance with the Working with Government Policy and Guidelines.

Principle 6
Any request to the Authority to acquire new property assets must be consistent with the agency’s Asset Strategy, supported by a business case and certification of funding availability for acquisition, rental and fitout, as appropriate. Where an office accommodation requirement exceeds 1,000m², agencies must provide the Authority with a facility plan for approval before the Authority can approach the market.

Principle 7
All proposed property acquisitions must be referred to the Government Asset Management Committee to consider the proposed acquisition strategy and determine the appropriate agency to complete the transaction. Normal Treasury requirements for acquisitions continue to apply. All proposed property disposals will continue to be referred to the Government Asset Management Committee for approval.

Principle 8
No General Government Sector agency will approach the market to acquire property assets, either by lease or ownership, other than through the State Property Authority, unless the Government Asset Management Committee determines otherwise.

Principle 9
All proposals that involve either sale and leaseback arrangements or amortisation of fitouts as part of lease arrangements must be referred to the Authority and will require Treasury’s specific approval.
Principle 10
All government agencies must immediately advise the Authority of any vacant, underutilised or no longer required office space or other property.

Principle 11
Car parking spaces that incur a cost to an agency should only be provided for official Government vehicles including vehicles supplied under salary sacrifice arrangements used for official business. There are circumstances where approval has been given by CEOs for the parking of private motor vehicles in official car spaces. These approvals have been given on the basis of the particular needs of the agencies concerned. Pending finalisation of a sector-wide policy in respect to these motor vehicles, existing approvals are to remain in force.

Principle 12
All agencies will enter into an agreed Memorandum of Understanding with the Authority for office space or other property assets it provides. If an agency fails to execute a Memorandum within a reasonable time, the Authority, subject to Treasury approval, may deem its execution and the terms of the Memorandum will be binding on the agency. For leased premises the term is to be consistent with the head lease. For government owned accommodation the term may be negotiated between the parties, but subject to a certain minimum term.

Principle 13
The Authority will enter into Service Level Agreements with agencies in relation to the provision and maintenance of owned or leased non-generic property assets that meet their service delivery requirements and deliver best value for Government.

Principle 14
Agencies are responsible for the provision of fitout, changes to existing fitouts and the makegood of premises provided by the Authority and no fitout, makegood or other alterations are to be undertaken without the Authority’s prior approval.

Principle 15
The Authority will conduct regular and ongoing reviews of agencies’ property portfolios, working with agencies to identify efficiencies to improve service delivery. The outcome of these reviews will be reported to the Government Asset Management Committee, which will monitor implementation.
Guiding Principles

Principle 1
The Government Asset Management Committee remains Government’s peak Chief Executive Body for considering all strategic asset management issues. The Committee’s terms of reference are broadened to include all assets including assets other than real property.

Principle 2
The title for all new property acquisitions where the responsible Minister does not have the legislative power to deal in property transactions is to be placed in the name of the State Property Authority. All property related leases (including office accommodation) will also be in the name of the State Property Authority.

Principle 3
Government agencies are to achieve the office space use targets determined by Government. Currently these are an average of 17m$^2$ per person across an agency’s office portfolio and 15m$^2$ per person for all new office space.

Principle 4
Government agencies are to actively pursue opportunities to share common resources or services consistent with Government policy or directives.

Principle 5
The preferred location for agencies in the Sydney CBD is in the southern sector or other sector where equivalent terms can be negotiated. No agency, however, will be provided with accommodation in the Sydney CBD Core unless approval has been obtained from the Government Asset Management Committee.

Subject to individual agency service delivery requirements, the preferred locations for government agencies in the Sydney Metropolitan Area are those centres consistent with the Department of Planning’s Sydney Metropolitan Strategy.

Government agencies will ensure that decisions on the location and fitout of office accommodation are consistent with planning for active living principles and sustainable travel options as referred to in the Premier’s ‘Why Active Living’ Statement, including the necessary infrastructure such as showers, lockers and secure bicycle parking.

Principle 6
All government agencies are to ensure that office accommodation complies with Government policy in relation to sustainability and energy conservation. The current policy is outlined in Premier’s Memorandum 2008-28.
Premier’s Memorandum 2008-28 - NSW Government Sustainability Policy

The NSW Government Sustainability Policy is helping Government save water and energy, reduce waste and greenhouse gas emissions, increase recycling and sustainable purchasing and become carbon neutral by 2020. The Department of Environment Climate Change and Water NSW (DECCW) is the lead agency implementing the Sustainability Policy. Visit www.environment.nsw.gov.au/government for more information.

Targets
Greenhouse gas emissions from building energy use
- State-wide target to return greenhouse gas emissions from building energy use to 2000 levels (1.5 million tonnes) by 2019/20, with interim targets of 1.74 million tonnes by 2010/11, 1.67 million tonnes by 2013/14 and 1.59 million tonnes by 2016/17.
- Agencies to continue to purchase a minimum of 6% GreenPower by 2010/11, with the exception of Area Health Services.

Water
- State-wide target to reduce total potable water consumption by 15% by 2010/11 (from 2005/06 levels).

Environmental performance of buildings
- Government owned or tenanted office buildings over 1000m² to:
  - obtain a NABERS rating (National Australian Built Environment Rating System) by 31 December 2008;
  - achieve and maintain a NABERS rating of 4.5 stars for energy and water by 1 July 2011, where cost-effective; and
  - where new or refurbished, achieve and maintain 2011 targets from 18 months of the first occupancy, where cost-effective.
- Tenanted buildings to include Green Lease Schedule in all new or negotiated leases or when exercising a lease option, where practical.
- The Government has also committed to set NABERS targets in Government office buildings for waste and indoor environment by 30 June 2009. Agencies will be advised of any requirements related to this commitment, once these targets have been set.

Cleaner Government Fleet
- Government fleet to achieve an average “environment performance score” of 12/20 by 2007/08 (new ongoing targets will be set in 2008).
- Government fleet to achieve a 20% reduction in greenhouse gas emissions by end 2007/08, based on 2004/05 performance (new ongoing targets will be set in 2008).

Waste, Recycling and Purchasing
- Agencies to purchase products and appliances where relevant, available and fit for purpose, with:
  - a minimum 4-star rating under the Minimum Energy Performance Standards Scheme (MEPS); and/or
  - a minimum of 4-star rating under the Water Efficiency Labelling and Standards Scheme (WELS) or Smart Approved WaterMark products and services (for outdoor use).
- A minimum of 85% of all copy paper purchased by NSW Government in 2014 to contain recycled content.
- Agencies, from the commencement of the 2008/09 financial year, to specify inclusion of at least one recycled content option as part of each publication quote sought.
Gateway Review System

Major office relocation and/or fitout proposals may be required to pass through the Gateway Review process to gain funding approval from Treasury (where an agency’s proposed fitout meets the space use target of 15m² per person and the benchmark fitout cost of $1,200 per m², a gateway review will not be required).

The Gateway Review System is a series of structured reviews that are held at key decision points (gates) in the procurement process.

The NSW Government has developed the System to help agencies improve their procurement discipline and to achieve better service results from their procurement activity.

A small team of experienced procurement practitioners that are not involved in the projects conduct the reviews. The teams assess the progress of projects against seven criteria: service delivery, affordability, value for money, sustainability, governance, risk management, stakeholder management and change management.

The results of each review are summarised in a report that provides a snapshot of the project’s progress. Where appropriate the reports will include recommendations to strengthen the project.

Government agencies are required to submit for Gateway Review all procurement proposals for projects that meet the following criteria:

* **Strategic Review**
  - Estimated total cost over $10 million and commencing in years 2 – 4 of the upcoming forward estimates period, or proposed for State Infrastructure Strategy publication or other public statement.

* **Business Case Review**
  - Estimated total cost over $1 million, if requested by Treasury.
  - All projects with an estimated total cost over $10 million and commencing in the upcoming budget year.

A comment on office planning

What is the big deal? Why do we need accommodation Office Design Requirements to tell us how to fit out spaces that have worked for over 100 years? The answer is because we are on the cusp of change in not only the way we work, but also in the way we interact with technology, each other, and our lives outside work.

In 1968 an American furniture company, Herman Miller, introduced the Action Office system, the world’s first open-plan modular system of panels and attaching components – a workstation. In the intervening years we also gained individual telephones on our desks and then personal computers, telex and facsimile machines have come (and gone) and now we have the internet, mobile phones and wireless technology. Technology is becoming available that genuinely allows us to work wherever and whenever we chose. Indeed we are almost at the point where interaction with, and management of each other is the only reason to be in the office at all.

And yet the vast majority of office interiors continue to be a combination of enclosed offices for senior executives, workstations of varying sizes for general staff, meeting rooms for occasional use, plus storage positioned where space allows. Just because technology allows work to be mobile, is that a valid reason to be so? And what of management? Can a workforce that may not have a permanent desk be successfully mentored, managed, and integrated into the broader culture of the agency?

The purpose of these Office Design Requirements is not to prescribe a specific way of working – that is up to the individual agency to resolve with assistance from appropriately qualified consultants. Rather these Office Design Requirements seek to make options available to you so that any reconfiguration or relocation project is optimising the benefits that new generation office design can bring to the efficiency and effectiveness of the agency and your workforce, improve the environment within which they work, and contribute positively to the NSW Government’s commitment to be carbon neutral by 2020 (Premier’s Memorandum 2008-28).

Implicit with this is the acknowledgement that the allocation of space, the characteristics of the space and its associated facilities be based on the business needs of the agency, including the work style needs of its various components, not status or grading of each officer per se. It may be that the nature of the work of a senior officer in a particular agency means that an individual office is indicated, but this should be driven by day-to-day activities not status. To that end it is now appropriate to consider accommodation types within the overall office plan based upon the function of the individual such as:

- Mobile Leader
- Interactive Manager
- Large format paper users
- Quiet concentrators
- Knowledge workers
- Supporters
- Mobile Field Worker
- Virtual/Phone Customer Support
- Information Processors
- Face-to-face Customer Support.

(Strategic Brief - McKell Workplace Opportunities Project, FINAL REPORT: 3RD AUGUST 2007, Authors: Chris Alcock, Steve Coster, Samantha Morley & Hayden Perkin of DEGW)
Section Two, The fundamentals

Within this website are tools, explanations, guidelines and mandatory requirements that collectively define a framework for the successful creation of all future office space for the NSW Government. Consistency of accommodation across government is a key objective of this document. It is recognised that accommodation and management styles evolve over time and so too will these Office Design Requirements. Every effort has been made, and will continue to be made, to ensure that these Office Design Requirements adapt to suit cutting edge accommodation solutions.

Certain principles of the initiative are required to be adopted within all workplace projects.

1. When considering a relocation project, especially in regional and remote locations, co-location with other agencies is the preferred or primary option. This should include shared use of central functional and facilities such as reception, utilities, and bulk storage.

2. Adoption of environmental good practice and adherence to the environmental policy document contained within these Office Design Requirements is a requirement of all workplaces.

3. The use of technology to reduce the requirement for personal travel is a requirement of all workplace designs. This can include simple solutions such as teleconferencing enabled phone systems through to tele-presence technology.

4. End-of-journey facilities for staff using non-motorised forms of transport to travel to and from the workplace are to be considered when selecting a site.

5. All agencies are strongly encouraged to consider alternative workplace strategies in the workplace, including a concurrent review of work practices. Open plan is to be considered that mandatory requirement for all general workspaces. Enclosed offices may only be provided based upon specific functional need. They may not be located on perimeter walls, and must be designed in a manner that allows for use as meeting room when otherwise unoccupied.

6. Desk sharing is encouraged where at all possible.

7. All agencies are strongly encouraged to review their storage practices as part of any workplace project with an aim of initiating an off-site archiving process.
**Mandatory requirements**

The design of every agencies fitout is subtly different, reliant upon the specific needs of that agency and the functions of the staff. As detailed within the section on reference materials, modern concepts of office design base solutions upon the functional requirements of the users rather than blanket adoption of hierarchical space standards. Suggested workpoint design options are provided within the workplace directions section.

To manage the overall portfolio of office space within the State, a number of key requirements have been prepared that are consistent with targets set by other states and the private sector. These include workplace density, cost of fitout and other issues that impact upon the quality of the space and staff amenity.

The criteria detailed below are required to be met by all applicable accommodation projects.

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<thead>
<tr>
<th>Requirement</th>
<th>Factor</th>
<th>Notes</th>
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<tr>
<td><strong>Workplace density</strong></td>
<td>Not to exceed 15m² per person in metropolitan and regional centres.</td>
<td>In certain circumstances, this benchmark can be exceeded. For example, small individual tenancies of fewer than 10 people might require more than 15m² per person and some tenancies in heritage buildings might require more space due to planning inefficiency or structural constraints.</td>
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<td></td>
<td>Not to exceed 14m² per person in CBD of Sydney. This is measured by dividing the NLA (excluding operational areas) by the total number of staff that can be accommodated at workpoints in the space at any given time. For call centre workplaces the measure is &lt;10m² per seat when measured at highest occupancy (shift)</td>
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<td><strong>Cost rate for new fitouts</strong></td>
<td>$1200 per m² (as of Oct 2009)</td>
<td>This rate includes the cost of fitout construction, alterations to building services and provision of workstations and loose furniture. It also includes professional fees, statutory charges but not GST. IT &amp; Communications cabling to workpoints is included but the cost of equipment is excluded.</td>
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<td></td>
<td>Note: This rate applies to metropolitan Sydney projects as a base rate. Multipliers are required for regional projects</td>
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<tr>
<td><strong>Cost of fitout per person</strong></td>
<td>$18,000 per person – conventional $12,000 per seat – call centre</td>
<td>Maximum cost rate for new fitout x Maximum workplace density = Maximum fitout cost per person</td>
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<td></td>
<td>Note: refer note above for regional centres</td>
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<tr>
<td><strong>Facility plan</strong></td>
<td>&gt;1000m²</td>
<td>Required to be submitted to SPA at every lease event. Contact SPA with a copy of your business case prior to commencement.</td>
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<td><strong>NABERS</strong></td>
<td>Achieve and maintain a NABERS rating of 4.5 stars for energy and water by 1 July 2011, where cost-effective Meet NABERS rating targets for waste and indoor environment when set</td>
<td>Applicable to office fitout &gt;1,000m²</td>
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<td></td>
<td></td>
<td>The Government has also committed to set NABERS targets in Government office buildings for waste and indoor environment by end 2009. Workplace projects will have to meet these targets when set.</td>
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<td><strong>Equality of access</strong></td>
<td>All workplaces are required to comply with AS 1428.2, providing equality of access to all staff.</td>
<td>Dispensation for base building or other unique non-compliances may be considered, subject to a detailed supporting document being prepared.</td>
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<td><strong>Workstation screen height</strong></td>
<td>Not to exceed 1350mm above finished floor level</td>
<td>This height allows for controlled line of sight when seated but retains an open plan environment when standing. Agencies are encouraged to consider lower screen where possible. There may be instances where higher screens are justified but these should be critically examined to ensure they are supported by functional need</td>
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<tr>
<td><strong>Enclosed offices</strong></td>
<td>Minimise and base allocations on functional need. Design must allow for use as a meeting room by general staff when vacant</td>
<td>The allocation of an enclosed office is determined by functional need rather than classification. These offices should provide maximum glazing so as to add to a general feeling of openness and be located in positions on the floors that do not restrict open planning solutions and access to natural light. Typically they will be located away from the perimeter of the building. They should be furnished with freestanding modular furniture similar to the general workpoint</td>
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<tr>
<td><strong>Storage</strong></td>
<td>Personal storage to not exceed 1 lin metre</td>
<td>Preference should be given to shared or centralized storage</td>
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<td><strong>End of journey facilities</strong></td>
<td>Secure bicycle storage for 5% of tenancy staff (or 1 bicycle park per 300m2 of NLA, whichever is higher) 1 shower (unisex) per 10 bicycle parking spaces provided</td>
<td>When not already provided within the selected building, consideration should be given to seeking inclusion of these facilities by the landlord</td>
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<td><strong>Sundry rooms</strong></td>
<td>Depending on the nature and size of your agency, some other function specific rooms or spaces should be considered. Examples include prayer rooms, first aid room (a requirement for staff numbers in excess of 200), breastfeeding rooms (details available at <a href="http://www.breastfeedingfriendly.com.au">www.breastfeedingfriendly.com.au</a>)</td>
<td>It may be possible for some of these rooms to be multi-use rooms – see section on Other Specialised Facilities</td>
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If the benchmark target of 15m²/person is bettered (i.e. less than 15m²/person is achieved), then more people are being accommodated in a particular area (than at 15m²/person) due to better planning or functional efficiency. Because more people are being accommodated in the area, then more workstations, furniture and technology are required. Consequently, the cost of fitting out that particular area will increase by the cost of
the additional workstations, furniture and technology. Therefore, the effect of achieving this better efficiency is an increase in the fitout cost rate per square metre compared with benchmark targets. However, the rate per person will not increase because the same amount of fitout, furniture and technology is being provided for each person. Every percentage point improvement in workplace density translates directly into a one per cent recurrent saving in rent and building services costs at no additional cost per person in fitout costs.

This strategy of bettering the target maximum workplace density can be applied to new fitouts and for rationalizing space in existing offices. Expert advice should be sought from your consultant team in the implementation of this approach in order to ensure that functionality is retained, legislative compliance requirements are met and a quality workplace is provided.

Other considerations when planning your space are:

• **Primary circulation** routes should ideally be 1.5m wide, with a single circulation route between the **core** and the perimeter preferred for greater efficiency.
• Public and back-office zones to be separated by a security point
• Open plan individual work places should have access to daylight and aspect (and have preference over enclosed offices and ancillary space)
• Quiet rooms, meeting spaces and storage should be adjacent to those staff who require access to them, and where possible co-located with other communal spaces such as utility zones
• Informal meeting areas should be centrally located to encourage interaction across the floor
• The layouts must support interaction and concentrated work
• Acoustic treatment to surfaces
• Layouts must be adaptable over time and be suitable for a variety of different business lines. Preference is given to mobile joinery and furniture over built-in and fixed items
• All workpoints should be considered as being available for **hot-desking** when not occupied
• Acoustic control and sound attenuation. You should find an appropriate balance between a level of background sound that gives the office “life” and not too noisy as to be disturbing
Appropriate space planning models

Innovation has presented an opportunity to make broad choices about how the office is to be designed. Where previously the choices were limited to size of workstation or who gets an enclosed office, in today – and tomorrow’s offices the choice is vast and is intimately connected to how your agency conducts its business.

In seeking to respond to agency needs for flexibility, responsiveness, and the free flow of information, all new Government accommodation projects will adopt one, or a combination of, the following space planning models.

1. Activity based planning. This principle can be said to draw its inspiration from the design of houses, and the recognition that most workers already spend less that 60% of their day sitting at their desk. Where in a conventional workplace, the user is static and the task comes to them; in activity based planning, the user is mobile within the office and will base themselves for the required period of time at a “station” specifically designed for that particular function. By example a quiet room for concentrated working, an open communal space for teamwork, a small individual desk for responding to emails, or a meeting room for discussion with external parties.

Depending on the choice of the individual agency, each staff member may, or may not have their own permanent workspace.

It is interesting to note that while this is not a new concept per se, it has only become viable as a space planning technique since the advent of mobile and virtualised technology. These innovations allow the worker to access their phone, emails, the network, etc from any computer. For more on this point refer to the section on the role of IT in office planning.

2. Universal planning. Unlike activity based planning which provides a suite of highly customised but shared workspaces; universal planning is strictly consistent in its nature and provides one (at best, or very few) size of work setting that is designed to provide all of the functional performance needs of the agency’s staff. The individual work setting will be larger than the smallest one found in a comparable activity based plan however there are some space use gains made through the highly regular nature of the planning.

Universal planning is a very effective planning technique for agencies that experience a high degree of churn and organisational change as the rearrangement of organisational groups can be achieved without the need for any change to the physical workplace.

3. Hotelling. Often mistaken with hot desking which is a non-bookable workplace, hotelling is the controlled and pre-arranged booking of specific work settings by individuals or groups in order to accommodate them for a given period of time. It is known as hotelling because of its similarity with the concept of booking a hotel room. A number of proprietary software systems exist for this purpose and the best are web-enabled allowing staff to make online bookings for space ahead of their arrival.

An office designed along hotelling principles may not appear to be any different from a conventional office; it will have a mixture of work settings including workstations, offices, meeting rooms and communal areas. However hotelling allows each space to be used for a greater proportion of the day. For example the number and size of meeting rooms can be designed so that they are used up to 80% of the time. With considered research and pre-planning it is possible to achieve usage ratios of up to 5:1 (5 staff to each workstation) although a 3:1 ratio is more realistic as a starting point.

source: byteSIZED guide to managing space, Unwired ventures Ltd, 2007

Hotelling at a ratio of 3:1 can result in a 66% reduction in the space required by any given part of an agency. However it is important to note that it does not suit individual functions that are static such as information processors, or technical staff.
Specific workpoint design options – the kit of parts

In order to both maintain a degree of flexibility and allow workspaces to be somewhat tailored to individual needs, careful consideration needs to be given to workplace furniture and space allocation. Keeping to a minimal number of different space standards, and a consistent and generic kit of parts, allows the straightforward relocation of people around the future premises – either by moving people rather than furniture, or by allowing people to take the kit of parts “extras” with them. The key is to allow flexibility to arrange team spaces in different ways.

The kit of parts available to agencies includes the following elements. Quantities of each element used are at the discretion of the particular agency, recognising that the overall fitout design must maintain adherence to the mandatory requirements outlined in under “mandatory requirements”.

Workpoints

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Footprint size (inc circulation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>standard workpoint &lt;br&gt; <em>either rectangular, freeform, bench type or 120 degree</em></td>
<td>The default workpoint. The configuration of this workpoint may vary but will typically be a work surface with a side return (either fixed or mobile) including 1 lineal metre of personal storage. Some floorplates or functions may suit a configuration of workpoint using a cluster of 120 degree desks. These are a single desk surface that wraps around the user rather than being a rectangle shape. Commonly used in call centre environments.</td>
<td>&lt;6m2</td>
</tr>
<tr>
<td>Single surface workpoint</td>
<td>Used for staff who are primarily working out of the building, or for paperless functions such as call centres</td>
<td>&lt;4.5m2</td>
</tr>
<tr>
<td>Large format workpoint</td>
<td>Where the user’s function requires a larger desk surface, for use with increased amounts or sizes of paper, an additional return maybe used</td>
<td>&lt;8m2</td>
</tr>
<tr>
<td>Workpoint with meeting table</td>
<td>Suitable for staff who have regular need for 1 on 1 meetings with other agency staff (non confidential). Care must be taken in locating these in spaces that do not disturb other staff</td>
<td>&lt;9m2</td>
</tr>
<tr>
<td>Enclosed office</td>
<td>Only provided to staff conducting regular confidential meetings, or managing decisions, initiatives and strategy at an agency level</td>
<td>12 – 15m2</td>
</tr>
</tbody>
</table>

Allocating individual workpoints

*Insert matrix diagram here (separate image)*

Whilst many requirements for independent working can be undertaken at the desk, additional day to day activities need to be supported by a variety of shared settings and team spaces. These are applicable to all conventional and emerging work styles such as activity based planning and cater for a wide variety of activities.
### Team work settings

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Footprint size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration hub</td>
<td>Centrally located, multi use space for working, socialising, eating and holding meetings. Should be an enclosed space on at least three sides to control disruption to other local workpoints</td>
<td>40 -60m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1: 60-80 staff</td>
</tr>
<tr>
<td>Open meeting table</td>
<td>Gathering space with screening to create a sense of privacy. Accommodates 2 -6 people to facilitate ad hoc discussions. Should be located near circulation paths</td>
<td>6-10m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1: 20-30 staff</td>
</tr>
<tr>
<td>Enclosed small meeting room</td>
<td>Bookable or non bookable meeting room for up to 4 people. Can be used to hold teleconferences and interviews. Note that rooms that are designed for over four people may require separate air conditioning which can add significant costs.</td>
<td>9-12m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:30-45 staff</td>
</tr>
<tr>
<td>Enclosed medium meeting room</td>
<td>Bookable or non bookable meeting room for up to 10 people. Can be used for external client meetings if located appropriately</td>
<td>20-24m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:40-50 staff</td>
</tr>
<tr>
<td>Enclosed large meeting room</td>
<td>Typically bookable large meeting room to accommodate 15-20 staff or visitors. Used for structured presentations or meetings. Consider collocating with operable wall if very large function spaces are required, rather than building one very large room</td>
<td>50m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:75-90 staff</td>
</tr>
<tr>
<td>Ad-hoc room</td>
<td>Typically used for short periods of time for activities that require privacy or concentration. Discreetly screened to avoid visual distraction. Accessible on a “first come” basis. Consider a variety of equipment options e.g. computer in some but not all</td>
<td>6-10m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1: 20-30 staff</td>
</tr>
<tr>
<td>Touch down workpoint</td>
<td>Reserved for staff visiting the office on a short term basis. Typically they will have a limited storage provision and will be clustered in groups. They must be left empty when vacated.</td>
<td>3-6m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:40-50 staff</td>
</tr>
<tr>
<td>Utility hub</td>
<td>A local support space that provides access to copying, faxing, printing, layout/collation and recycling. Typically collocated with collaboration hubs where possible to promote ad-hoc interaction</td>
<td>10-12m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:40-50 staff</td>
</tr>
</tbody>
</table>

A third group of work settings exist, being the public interface area such as reception, training, meeting, and hospitality spaces. The allocation and design of these spaces is based upon the specific needs of the agency. You should bear in mind, however, that these spaces are typically higher cost to fitout than workspaces and should be carefully reviewed. A suggested benchmark is that they should not account for more than 20% of the area occupied by the agency.

Other fitout considerations include:

| Indoor air quality | No toxic materials or materials with high level of VOC emissions (paint, adhesive and sealants, carpet and flooring) are integrated | Procurement planning for the fitout process should takes into considerations the impacts of the fit out materials on indoor air |
### Thermal comfort

For fully mechanically ventilated buildings, ensure that the base building ventilation systems work within the following parameters:

- Air velocity not more than 0.2m/s with no supply directed at occupants (unless they have direct control of the air flow e.g. displacement grilles, task air nozzles);
- HVAC system to have separate internal and perimeter zones that each provide independent heating, cooling air volumes.

Ensure the workplace achieves a high level of thermal comfort. Talk to staff to find out the temperature and humidity range that they are comfortable with.

### Daylight

Aim for 90% of the NLA has:

- a measured Daylight Factor (DF) of not less than 2.0% at desk height level (720mm AFFL) under a uniform design sky; or
- a Daylight Illuminance (DI) of at least 250 Lux.

Aim for 80% of the NLA has a direct line of sight to the outdoors, or into an adequately sized and day-lit atrium.

Ensure glare from daylight is reduced through appropriate use of blinds and screens that
- Eliminate all direct sun

Ensure staff have amenity to natural lights and external views and reduce glare.

---

Ensure that all engineered wood products used in the project (including exposed and concealed applications) have low formaldehyde emissions or contain no formaldehyde.

Ensure sources for pollutants from known areas such as print areas are separately ventilated.

Include indoor plants to assist in improving IAQ.

Maintain healthy level of indoor air quality through effective ventilation system and removal of pollutants from known sources.

Include indoor plants to assist in improving IAQ but ensure that the plants can be maintained without the need for chemical fertilisers and with low water usage.

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<table>
<thead>
<tr>
<th>Section Two, The Fundamentals</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Penetration;</th>
<th>Improve workplace amenity by avoiding low frequency flicker that may be associated with fluorescent lighting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Are controlled with an</td>
<td>Ensure that office lighting is not over designed.</td>
</tr>
<tr>
<td>automatic monitoring system</td>
<td>Ensure that artificial lighting with minimal energy</td>
</tr>
<tr>
<td>where possible;</td>
<td>consumption is used.</td>
</tr>
<tr>
<td>• Are equipped with a manual</td>
<td>Ensure environmentally-responsible end-of-life disposal</td>
</tr>
<tr>
<td>override function accessible</td>
<td>of lighting that contains mercury.</td>
</tr>
<tr>
<td>by occupants;</td>
<td></td>
</tr>
<tr>
<td>• Have a visual light</td>
<td></td>
</tr>
<tr>
<td>transmittance (VLT) of &lt;10%.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lights</th>
<th>Install high frequency ballast in fluorescent luminaries over a minimum of 95% of the NLA.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ensure that the lighting design has a maintained illuminance level of no more than 400 Lux for 95% of the office NLA as measured at the working plane (720mm AFFL).</td>
</tr>
<tr>
<td></td>
<td>Aim for lighting power densities for 95% of the NLA not exceeding 1.5 w/m² per 100 Lux at 720 mm AFFL with the default maintenance factor of 0.8.</td>
</tr>
<tr>
<td></td>
<td>Aim for individually switched lighting zones not exceeding 100m² for 95% of the NLA.</td>
</tr>
<tr>
<td></td>
<td>Consider suppliers that have a end-of-life take back policy</td>
</tr>
</tbody>
</table>

| Acoustics                      | Ensure noise levels do not exceed 40dB(A)LAeq within the workplace. |
|--------------------------------| Reduce distracting and/or high level noise from any internal or external sources through strategies such as: |
|                                | • Facade sound insulation |
|                                | • Use of materials and acoustic panelling that absorb noise |
|                                | • Noise control from HVAC systems |
|                                | • Use of white noise to mask any unwanted noise |

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure that office lighting is not over designed.</td>
</tr>
<tr>
<td>Ensure that artificial lighting with minimal energy consumption is used.</td>
</tr>
<tr>
<td>Ensure environmentally-responsible end-of-life disposal of lighting that contains mercury.</td>
</tr>
<tr>
<td>Energy</td>
</tr>
<tr>
<td>Waste</td>
</tr>
<tr>
<td>Material</td>
</tr>
<tr>
<td>System</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Water</td>
</tr>
</tbody>
</table>
Section Three, The fitout process

Getting started

The accommodation provided to your staff is a critical part of maximising the effectiveness of the agency. Even small changes in productivity achieved through well-designed office space can have significant impacts. For this reason it is vital that the accommodation provided matches the strategic goals of the agency in a way that is flexible enough to change as your organisation changes.

Typically there are two main reasons why you would consider undertaking a fitout. The first of these is because your current lease is due to expire and you are planning to relocate to new premises. The second is because organisational change means that the current office plan is no longer the optimum solution for the way your staff work. In this scenario you may well be staying in your current premises but there is a sound business case to support partial or whole reconfiguration of the layout. In this scenario, there is a tipping point where the potential benefits in increased agency performance outweigh the capital expenditure of the fitout itself.

In cases where the lease on your current premises is due to expire, or there is another external influence requiring you to consider a relocation, the process can take between 12 and 18 months, although you should be considering the initiation of the project up to two years before the end of the lease. In some cases where the decision is taken to move into a new building this may be even longer and can involve an integrated fitout.

There are six stages to a successful fitout project defined as

1. Feasibility - needs analysis and project definition, followed by the business case and funding approval
2. Concept - site selection and initial design concepts
3. Design - design development within agreed budgets
4. Pricing - competitive pricing from trades and suppliers
5. Construction - project management and site supervision
6. Finalisation - relocation and staff induction, and post occupancy evaluation

The State Property Division of the Land and Property Management Authority and the Department of Services, Administration and Technology can assist you in this process however the first steps need to be taken by you. This will form the basis of a needs analysis document or “roadmap” that defines what goals are to be set your organisation. Depending on the size of the agency this will include a comprehensive facility plan that will consider such things as business processes, service needs, client base, affinities of internal business groups, affinities with other organisations, and the strategic information that will be required by your consultant team. The facility plan should identify the preferred locations for the organisation and the ideal floorplate size to optimise operating efficiencies of the organisation. Greater detail on the preparation of the needs analysis is covered in the next section.

The first decisions to be made by you are:

1. Who is going to run the project from within your agency, and what is their level of authority?
2. What work types best suit the functions of your teams. This will inform your needs analysis and should be used when preparing an optimum blocking and stacking diagram
3. What are the positive and negative attributes of your existing accommodation?
4. What geographic location suits you best? Consider staff access to work, where your clients and suppliers are based, and whether an alternative location will provide new opportunities
5. How and when are you going to communicate with your staff about the project. It is vital that your staff are kept informed.
6. How are you going to manage the process of change?
### Building your team

In undertaking a **fitout** project, a great many different skill sets will be required. Some will be involved in specific aspects of the project such as the building trades or the **private certifier**; while others will be involved from the start right through to completion.

There is no hard and fast rule about which consultants and contractors will be required as the specifics of your project are unique. However the table below provides as guide for certain common project types.

*Items shown in grey are optional depending on needs*

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsible for</th>
<th>Reports to</th>
<th>Fitout &lt;500m²</th>
<th>Fitout &gt;500m²</th>
<th>Integrated fitout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project director</td>
<td>Overall strategy</td>
<td>Agency representative</td>
<td></td>
<td></td>
<td>a</td>
</tr>
<tr>
<td></td>
<td><em>This role is only applicable to projects in excess of 10,000m² and should be a separate appointment from the project manager</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset manager / agency representative</td>
<td>Arranging approvals under delegated authority including leases, fitout budgets, reporting to agency executive and ensuring goals are achieved. Ensures Govt policies are met</td>
<td>Agency executive</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>Tenant representative from SPA</td>
<td>Sourcing premises</td>
<td>Agency representative</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>Negotiating lease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Managing exit from existing premises</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Managing new premises</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project manager</td>
<td>Selection, engagement, and management of consultant team</td>
<td>Agency representative</td>
<td></td>
<td></td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>Programme (time)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cost plan (money)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tendering of works</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coordination with landlord</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior designer</td>
<td>Design brief</td>
<td>Project manager and/or agency representative</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>Interior design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Design documentation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quality during construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>May perform role of project manager on small fitouts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services engineer</td>
<td>Services brief</td>
<td>Project manager</td>
<td></td>
<td></td>
<td>a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>a</td>
</tr>
</tbody>
</table>
The appointment of consultants and contractors is subject to certain policies and procedures. These are defined within Department of Premier and Cabinet Circular 2004-17 and the State Contracts Control Board.
Purchasing Delegations. Further information is available from the NSW procurement office website which has a dedicated section on construction procurement.

In addition to the external project team it is important that an internal team is convened to provide direction and support to the consultants. The numbers of members of this team is dependent on the size and complexity of the project but in all cases they should be staff that have an appropriate level of authority, time to commit to the project, and a good understanding of the organisation. The best people for this role have a “big picture” view.
Selecting a suitable site

The commercial realities of Real Estate are such that the overarching reason (assuming all other service needs are equal) to select one site over another when considering relocation is going to be a financial decision. Real Estate costs are often said to be the second or third highest single cost to any agency and so making the optimum financial choice is paramount.

And yet negotiating a lease for a building that you may occupy for more than 10 years requires that a process of due diligence is undertaken to ensure that the final selection can meet the functional requirements of the agency. In effect the building evaluation process should seek to eliminate any shortlisted site that may have a functional shortfall so that the remaining sites can be truly evaluated on financial grounds alone. Your consultant team should be asking the question “why can’t we go there?”

Critically the first step in this process is to clearly understand what you need. This is best achieved through the preparation of a block and stack plan as part of a broader facility plan. For example, if your blocking suggests the optimum operational efficiencies are achieved when your agency is accommodated on one large floor plate, you can immediately exclude sites that are small plates requiring occupancy over multiple floors.

Space planning

In reviewing the relative merits of sites you should engage an interior designer to prepare test fit plans. These are not true reflections of any final designs, rather they are general arrangement plans that test the configuration of the building and floorplate to meet your specific needs. Factors that the designers will consider include access to natural light, column sizes and spacing, ceiling heights and quality, quality of base building finishes, and the provision of base building amenities. They will also be able to assess the statutory compliance of the proposed fitout and alert you to any potential shortcomings. They will be able to advise on required floor loadings for central storage and comment on positive and negative environmental attributes of the space.

Building services

The specifics of your agency’s function may require atypical services, such as uninterrupted power, or excessive cooling. Generally it is prudent to engage a building services engineer to inspect any shortlisted site in the same way as you would engage a designer.

Typical issues to be considered are:

Hydraulics.

1. To what standard does the base building fire hydrant and hose reel system comply? - The current standard is AS 2419.1-2005 but the 1994 version of this standard is also acceptable. Ordnance 70 is an old standard and should not be accepted.

2. What is the wet stack coverage to the floor? – a good benchmark minimum is 60% wet stack coverage to the floor.

3. Is a cold water provision available to the tenant floors? - A minimum 20mm cold water supply should be provided on each level for tenant connection.

4. Is base building hot water available for tenant use? - This is not common but is beneficial to the prospective tenant.

5. What is the floor structure of the building? - ideally this would be a conventional concrete slab as post tensioned slabs can cause issues with structural penetrations.

6. Is gas available to the site? - Most buildings do not have gas available to tenant floors but if it is provided to the building then there is an option to connect if desired.

7. Is there a trade waste provision to the tenant floor? - Some buildings will have a common grease arrester and will extend trade waste connections throughout the building for use by the tenant if so desired.

8. Is there a non-potable water supply available - when installing new toilet blocks, it is desirable to use non-potable water for flushing.
Mechanical.
1. What is the system type and the size of the control zones? Anything over 200 sqm per zone should not be accepted
2. What are the external and internal design conditions? Internal should not fall outside of 21.5 +/− 1.5 degree C
3. What is the allowance for tenant equipment/power? Anything below 10 W/sqm should not be accepted
4. Is there provision for tenant supplementary air conditioning? If condenser water is provided, what is the available w/m sq or L/s?
5. Is there provision for additional fresh air to the space? How much? - Anything below a minimum of 300l/s or 0.3 l/s /m sq should not be accepted
6. Is there any additional general exhaust available?

Electrical
1. What Electrical Supply is available to the tenancy? Anything below 20VA/sqm should not be accepted
2. What spatial provisions are available on the tenancy Distribution Boards? recommend 1 pole per 10sqm
3. Is there Lightning Protection in the Building? It is recommended but not mandatory
4. Is there Power Factor correction in the Building? It is preferred but not mandatory
5. Are there back-up Generators available to the tenancy? It is recommended but not mandatory
6. Are there back-up Generators available to the Base Building? It is recommended but not mandatory
7. Are there surge diverters protecting this floor? It is recommended but not mandatory
8. Is the metering private or Supply Authority, and who pays for this? either is acceptable but important to clarify for compliance with the NABERS scheme
9. What lux levels have the base building lighting been installed to? It is recommended to meet AS 1680 - min 320 lux average
10. Has daylight harvesting been incorporated into the Base Building layouts? It is optional but can have a significant impact on your energy reduction goals
11. Are there programmed lighting systems to the tenancy? It is optional

Communications
1. What Network providers are present within the building? A minimum of 1 is required
2. How many cable pairs are available to the tenancy? Anything below 1 pair per 10sqm should not be accepted
3. Is there Optic Fibre within the building? It is optional
4. Is there Mobile phone coverage to 100% of the accessible areas within the Building, including lift cars? This is not a requirement but you may find one service provider performs better than another
5. Is there Base Building provided MATV accessible to the tenant? (Analogue and Digital) It is recommended but not mandatory
6. Is there PAY TV accessible to the tenant within the building? It is optional
Security and access control

1. Is there 24 hours on site security? It is recommended to have a minimum of periodic control visits as part of the lease.
2. Is there CCTV at all entry points to the building? (If yes, is it monitored) It is recommended but not mandatory.
3. Is there an Access Control system within the building? (If so, what common areas are protected and when) It is recommended but not mandatory.
4. Is the Access Control system able to be connected to and expanded with new tenants? It is highly recommended but not mandatory.
5. Is the Access Control system and BMS systems interfaced? It is recommended but not mandatory.

Fire

1. Is there a Fire Engineered Solution in the building? If so caution should be taken to understand the detail implications of it. Fire Engineered solutions require complex statutory approvals to amend and may represent an unacceptable level of life safety risk to your staff.
2. Can the landlord provide the Fire Safety Schedule required information? This is mandatory.
3. Do any Fire Services require replacement or upgrade as part of new tenant works? Details are required for review by your consultants.
4. Is the hose reel and hydrant coverage sufficient for reasonable positioning of the fitout elements?

Locality

The final consideration when shortlisting sites should be the local area. Typical questions that you should be considering include:

1. Will our staff be safe travelling to and from work, at the times that they usually travel?
2. Are there adequate end-of-journey facilities available to encourage a healthy and active staff e.g. bicycle facilities, walking paths, etc?
3. Is the site serviced by public transport?
4. Are there good local amenities for staff such as shops, places of entertainment, restaurants etc?
5. Can our customers access the site easily?
6. Do you require signage and is it available?
7. Does the building’s presentation match your agency’s image?
8. Are the other tenants in the building, or local area, a good mix with your agency’s profile?
9. Is the landlord a reputable person or company that will continue to meet their obligations to you?
10. Does the building provide adequate equality of access for all staff and visitors, in accordance with DADHC policies?
11. Is there appropriate parking available for Government vehicles?
12. Is the building located in a flood zone?
Undertaking a needs analysis

Within the tools section of this document you will find a downloadable file that you can use to prepare your own needs analysis. Later on in the project, once your consultant team has been appointed, they will also be taking a brief from you, however use of the needs analysis tool provided will ensure that much of the key data you and they require will have been already gathered. This needs analysis tool is your opportunity to look at the “big picture” of what you need, not what you want. It should also not consider the detail of how. That comes later

A needs analysis defines the most appropriate workplace strategy for your organisation that supports business goals and objectives over a defined time and within certain financial parameters. It takes into account matters such as suitability of existing accommodation, agency objectives and business needs together with identified future changes, people issues, sustainability issues, technology and specific services issues.

Whenever major organisational changes are being planned, the needs analysis process should be used to review existing business practices. Major relocations occur infrequently and provide an ideal opportunity for organisations to streamline business processes and change cultures where necessary.

The needs analysis can provide a significant opportunity for your agency to take a fresh look at accommodation and maximise the potential provided by a new working environment. It is essential that sufficient time be incorporated into the program to allow adequate involvement of staff at all levels across the organisation so that a diverse range of ideas and opportunities can be identified and explored. This can take up to six months for large organisations who require a comprehensive facility plan.

It cannot be stressed enough that at this stage in the process, you are not looking for solutions. You are “crystal balling” the future and then exploring the strength and weaknesses of your existing accommodation relative to the way you think you should work. By way of an example, a great deal has been written on the changing population and the rise of the generation Y. Is your agency demographic changing and can the workplace be designed to attract and retain this generation of staff?

There are major risks if a needs analysis is not undertaken at this early stage. They include poorly defined project scope; no detailed understanding of work process; lack of stakeholder engagement resulting in poor data and possible push back at implementation; no identification of key project issues – organisational and cultural; potential timeline delays and budgetary penalties. From a sustainable perspective, it is important to ensure at the very start that an integrated approach to the project is adhered to. Click here for more information about Sustainability issues to be considered at the feasibility and planning stage.
Communicating with stakeholders

At the feasibility and early planning stage of the fitout project it is important to ensure that everyone is engaged in the project at varying levels. This is not only valuable from an inclusive position but will also assist in establishing where improvements could be made in the new property and of course where current practices are working well. Some strategies to consider include:

- The engagement of stakeholders in the process such as reporting current practices – how satisfied are occupants in their current location, what are the current strengths and weaknesses, are there any health issues, noise, thermal comfort, lighting issues?
- Planning an audit of current practices amongst staff, productivity levels and indoor environmental qualities will also help to gauge any improvements in staff health and/or productivity. Specialist consultants or some University research centres can assist in these types of audits
- Ensure that stakeholders are aware of the objectives made by the design and management team for peer review and provide a record of the design intent

The fitout process can take many months to complete, and at certain stages it can appear that there is not much happening. For example during the documentation phase most design decisions will have been made and the consultant team will be busy producing the documents required to enter into a building contract with the Head Contractor. After the intensity of the design stages when your staff will have seen many external people walking through the existing premises armed with drawings, this period of silence can be alarming.

It is, therefore, very important that a communication plan be put in place by your internal project team to ensure that the staff and your close business partners are kept informed of what is occurring in the project. The aim of the communication plan should be to provide information on the project as it develops. They can take many forms depending largely on the culture of the agency itself. Successful examples have ranged from formal documents such as a memo outlining events to a page on the intranet. By way of example, The Department of Human Services, and Community Services used a Concept Advisory Group on a project that provided input to the design process. The CAG assisted with communication with key stakeholders, and ensured PSA input. It is the responsibility of the agency representative to ensure that all groups are consulted including unions and community members where appropriate. Many companies in the private sector have used simple videos to show progress on site to great effect and another common tool is to set aside an area in your current office space as a “project room” where collateral created in the process can be displayed e.g. the presentation boards used by the design team hung on the wall, or the proposed general purpose chair made available for staff to test out. Where timeframe and scale of project allows you may even consider live testing of a workstation cluster.

The over-riding message of all communication must be to inform people of what is occurring on the project and how it will impact upon them. 100% consensus is difficult to achieve and so the most successful communication plans focus on what is occurring, with documented support of the project’s direction by the executive. FAQs and other opportunities for staff to ask questions are good places to start.

In simple terms it is best to tell what is being done, rather than ask what is wanted. Elements that can be included are a discussion on the tangible benefits to staff, the environmental initiatives being made, the location proposed, and how the project will affect the individual’s day to day activities.

Towards completion of the project there is another form of communication that will be required. In all projects where the accommodation solution is designed to assist in some form of organisational change it is likely that you will be asking your staff to work in new ways, and with new accommodation. The project team should be asked to prepare a document and/or presentation to key staff who in turn can communicate with the entire organisation on how the new spaces are to be used. One common example is the use of break-out spaces which are used to provide a space for informal meetings and adhoc communication between staff. In workplaces that have not had these space before it is important to communicate to the staff that it is okay to be in these spaces and that just because they are not at their desk, it doesn’t mean they are not working.

Providing staff training and education on the benefits of the new fitout and design and how to use it can be critical to a successful project, particularly where the built environment is requiring user control to maintain areas of thermal comfort for example or where the technological systems may be different or more complicated than staff are used to. Ensure this procedure is continued as part of the induction process for all new staff and reminder programs for all staff are completed on a regular (yearly) basis.
To assist staff in using the new fitout on a more continual basis, you can create a User Guide for staff to maintain health & comfort levels as well as maintain energy, waste and water goals and objectives for tenancy. You can also consider providing method for continual feedback and improvement from staff and other users.

Communication with stakeholders does not stop when the fitout process is completed – it goes beyond. A post occupancy survey is critical to not only ensure that staff are happy in their new environment but improvements can be made where they are not. But don’t rush into the survey – wait about 4-6 months, when people are more familiar with their surroundings and how they use them and that ‘new office honeymoon’ period has passed so you get more accurate answers. Include issues around health, safety, comfort, usability, social aspects, transport, accessibility, light, noise and thermal comfort. There are specialist consultants in this area who can assist you with this survey and how to analyse the results. Use this information to compare with the survey completed before the move or refurbishment. It is also important to provide regular reporting on fitout performance in terms of staff satisfaction, indoor environment quality, waste, energy and water efficiency performance for continual improvement and sustained maintenance.
Reporting on the project

It is often said that Real Estate is the second largest cost centre of any business or agency, behind staff. There are also many risks associated with the process of fitout can have serious impact upon the ongoing operation of the agency. These risks may take the form of expenditure over runs, delays, loss, and safety breaches to name a few.

As a consequence it is good practice to initiate a reporting procedure at the commencement of any fitout project that reviews and reports upon the progress of the project. The consultant team will be commissioned to manage and report upon the specific progress of the project however it is the responsibility of the agency’s nominated representative to report to the executive on the broader project issues.

A sample reporting template can be found within the tools section. This uses two methods to provide a simple yet effective means to report on the progress and any emerging issues of concern.

1. Traffic lights – by use of green, amber, and red colour coding it is possible to draw immediate attention to issues that are of concern
2. Risk mitigation – within each section of the report an analysis of the risks is required including mitigation strategies that have been proposed

Areas to be reported on include design, quality, programme, budget, resources, environmental outcomes, communication, IT, and a general overview. Other sections of the report also provide space to report on progress against milestones and any upcoming decision points that may require executive involvement.

Typically it is good practice to prepare the report on a monthly basis.
Capturing the opportunity for cultural change

Renewing the workplace can be a significant catalyst for organisational change. Equally, a new office environment is one of the most powerful tools to support organisational or cultural change. Four opportunities that present themselves in this process are

1. The opportunity to take a holistic perspective of the workplace that incorporates people, process and place

2. The opportunity to anticipate and plan for flexibility in the future, not just in the workplace arrangement but also in the organisational structure

3. The opportunity to change the mindset of your staff and show that the agency supports the change initiatives with tangible action

4. The opportunity to create a healthy workplace that is environmentally sustainable

It is important that the workplace change is considered one part of the development of the organisation and that the culture is actively managed to ensure synchronicity with the new workplace. The development of an integrated cultural programme designed to align with the new workplace will contribute to this priority. Such a programme would include focus on three key areas:

1. Development of education material and protocols governing behaviour and the use of the new spaces such as shared zones, quiet spaces, and individual workpoints, waste management, energy use and water use. It is important to educate staff about the impacts of their behaviour and encourage staff feedback on the new spaces

2. Leadership and performance management of mobile and task based work practices. Leaders must demonstrate support of new workspaces as there are inherent challenges relating to trust, ability, inclination and personality

3. Staff recruitment, reward and recognition as the workplace can be used as a tool to attract and retain staff

The new generation of workplaces now being developed present an opportunity for agency leaders to build teams that are working towards common goals, and a unified culture.
The role of technology in office planning

Whilst recent advances in technology have had a positive impact on 'traditional' work practices, the impact of these advances on more modern working arrangements (i.e. Hotelling, Hot Desking and Telecommuting) has been even more significant.

This section outlines some of the technologies that reduce the need for employees to have a defined, static work environment and hence, enable agencies to incorporate greater levels of innovation, flexibility and efficiency into their office design strategies. Technologies also have an impact on the energy efficiency of your operation and thus energy use should be one of your considerations while deciding which technology to adopt in your new workplace.

High Speed Broadband – Fixed line (residential) and mobile

Encompasses any technology that delivers high speed internet access to a residence (e.g. ADSL, Cable, Satellite etc)

<table>
<thead>
<tr>
<th>Recent Advances</th>
<th>Benefits</th>
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| • Improved Coverage  
• Increased Speed  
• Reduced Cost | For the Employee:  
• Allows the employee to access many (if not all) business and telephony systems from home, hence allowing the employee significantly more choice and flexibility.  
• Work/life balance improved  
For the Employer:  
• Greater levels of flexibility for the employee may result in lower office space requirements for the employer.  
• Provides contingency options to employers who experience workspace availability issues (e.g. disaster situations, higher than average workloads etc)  
• Reduction in absenteeism |

Corporate Wireless Network Technology

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<th>Recent Advances</th>
<th>Benefits</th>
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| • Improved Security  
• Improved Reliability | For the Employee:  
• Allows an employee with a wireless-enabled computer to work from anywhere within the wireless coverage area, encouraging interaction and collaboration;  
• Allows the employee to work from locations that are appropriate to the type of work they’re undertaking. For example, research might be best done in a ‘Quiet Room’, whereas customer surveys might be best done in a ‘front office’ environment.  
For the Employer:  
• A decrease in office space requirements though a reduced need to provide every employee with a permanently assigned work-space;  
• Greater workplace flexibility through allowing the employer to more easily relocate individuals or teams on a temporary or permanent basis.  
• Reduced cost of churn |
IP Enabled Telephony Systems

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<th>Recent Advances</th>
<th>Benefits</th>
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| • Functionality improvements | For the Employee:  
  • Allows the employee to access the advanced features of an organisation’s telephony system via any suitable network connection (e.g. from home via a broadband internet service). This allows the employee significantly higher levels of flexibility in where and when the chose to work.  
  • Work/life balance improved |
| • Functionality improvements | For the Employee:  
  • Provides various ‘contingency’ options to employers who experience workspace availability issues (e.g. disaster situations, higher than average work-loads etc) |

For the Employer:

‘Smartphone’ Technology

Smartphones are devices that enable employees to access key business systems from any location with mobile network coverage.

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<th>Recent Advances</th>
<th>Benefits</th>
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| • Functionality improvements  
  • Reduced Cost  
  • Improved Coverage | For the Employee:  
  • Greater flexibility and productivity through ‘connect anywhere’ email, Instant Messaging (IM) and in some cases, the ability to access business specific applications. |

Server Based Computing and Virtual Desktop Technologies

These terms encompass technologies that reduce the need for an employee to always use the same ‘client’ device to access an organisation’s business systems.

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<th>Recent Advances</th>
<th>Benefits</th>
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| • Functionality improvements  
  • Improved Security  
  • Reduced Cost | For the Employee:  
  • Greater flexibility through the ability of an employee to access their corporate ‘desktop’ from the device that is most convenient to them at the time.  
  • Significantly reduces the time and effort involved in moving employees as it is generally not necessary to relocate the computer with the employee i.e. the employee should generally be able to use any computer within an organisation to access their ‘desktop’  
  For the Employer |

For the Employer:  
  • Provides various ‘contingency’ options to employers who experience workspace availability issues (e.g. disaster situations, higher than average work-loads etc)
Unified Communications (UC) Systems

Software that simplifies and integrates multiple forms of business communication, generally allowing these systems to be accessed from a single source – usually through an email client.

**Recent Advances**
- Functionality improvements

**Benefits**
- For the Employee:
  - Allows an employee to access most (if not all) of their communication tools from any location. For example, an employee could view a fax on their ‘Smartphone’ whilst at a conference, or listen to a telephone voicemail from an internet cafe. This of course, allows increased levels of flexibility for the employee.

Electronic Document and Records Management Systems

Electronic Document and Records Management technologies allow organisations to store, search for and view documents and records electronically.

**Recent Advances**
- Improved Functionality

**Benefits**
- For the Employee:
  - Reduces or eliminates the need for an employee and the record(s) to be co-located, hence allowing the employee greater levels of flexibility

- For the Employer:
  - As records and documents are stored electronically, the physical records can generally be housed in cheaper accommodation (e.g. off-site). This results in employers having greater flexibility in how they utilise their accommodation assets.

Instant Messaging Solutions

**Recent Advances**
- Improved Functionality

**Benefits**
- For the Employee:
  - Encourages interaction and communication between two or more employees, regardless of location
  - ‘Presence’ functionality allows employees to quickly determine the availability and ‘status’ of their colleagues, without having to know where they are physically located. This can greatly improve the ability of an organisation to interact effectively.
  - Many Instant Messaging applications now include Video Conferencing capabilities. This can be particularly effective in bridging any geographical ‘gap’ that may exist between employees.
Collaboration Software

Collaboration software is a term used to describe individual pieces or suites of software that enable users to work collaboratively on a common task (e.g. a document, project, design etc).

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<th>Recent Advances</th>
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<tr>
<td>• Improved Functionality</td>
<td>For the Employee:</td>
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<td></td>
<td>• Allows employees to effectively collaborate on documents from disparate locations, hence allowing workers greater flexibility</td>
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Video conferencing / Telepresence

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<th>Recent Advances</th>
<th>Benefits</th>
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<tr>
<td>• Improved Functionality</td>
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<tr>
<td>• Access to greater bandwidth</td>
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<tr>
<td>• Immersive technology</td>
<td>For the Employee:</td>
</tr>
<tr>
<td></td>
<td>• Encourages interaction and communication between multiple large groups of employees, regardless of location</td>
</tr>
<tr>
<td></td>
<td>• Design of Telepresence systems allows for true collaboration and communication rather than feeling of remoteness. This can greatly improve the ability of an organisation to interact effectively.</td>
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<td></td>
<td>• Integration with common software (word, excel etc)</td>
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Managing the Alternative workplaces

There are many established benefits to implementing an alternative workplace strategy (AWS) including:

- Decreasing costs
- Decreasing waste through reduced remodelling
- Increasing space utilization
- Enabling 24/7 operation
- Reducing environmental impact by better use of space
- Responding to fluctuations in staffing and work volume with place/time flexibility
- Creating workspace that reflects tasks performed (e.g. teaming areas)
- Attracting/retaining talent via such approaches as telecommuting options and flexibility
- Securing best talent, not just local talent
- Increasing worker productivity
- Instilling work-life balance

Even for agencies that do not yet have a standard AWS programme in place, they may be implemented to varying degrees on an ad hoc basis. But creating a consistent agency-wide AWS programme will yield benefits on a much larger scale. For example, you may find that a typical staff member spends just 40 percent of the workday at their workstation. A well managed AWS programme is a way to capture cost savings across business lines by improving space utilization. And yet resistance to these strategies is common, rooted in fear of the unknown and a perceived loss of personal identity to the business.

Generally, rolling out an AWS programme requires instituting significant change, which may result in initial rejection of AWS ideas. Concerns about distractions and lack of privacy often top the list of objections. There is an equal level of fear common amongst managers. “How will I know my team are working if they’re not in the office?” is a common question.

Gaining buy-in and enthusiasm for an AWS programme may be a major undertaking, but it is far from impossible. To address common resistances, guidelines and suggestions are presented below:

1. **Align the AWS message with the agency’s mission.** In this way the AWS will have tangible relevance and integration with the organisation, rather than simply being a property based initiative

2. Spend the time necessary to **study how people work** before creating an AWS programme.

3. **Come to the table with meaningful data** such as financial information on AWS costs and projected savings.

4. Recognise that **no single approach is sufficient.** For example, work from home is not a stand-alone solution. Therefore, AWS might combine aspects of telecommuting, along with touchdown space for those who telecommute and teaming areas for when they are in the office.

5. **Get personal about the benefits of AWS.** Whether it is a new wireless laptop, superior client meeting facilities, more teaming areas or the flexibility to work from home, it is important to highlight the personal benefits of AWS.

6. It is critical to **establish a well-devised change management plan.** It also may involve training employees on how to work in their new environment and deal with issues that commonly arise. These issues may include respecting others’ privacy and space within an open-plan office, as well as managing distractions by utilizing quiet rooms or phone rooms.

7. **Adapt to meet specific business line and individual needs.** For example, you may be asking everyone to participate in hotelling but some employees are required to be in the office each day. These employees can have standing, longterm reservations that allow them to work at the same desk without interruption.
8. As AWS ideas are formulated, Property, IT and HR should all play integral roles as members of the planning team. By forging a partnership during the earliest stages of AWS planning, important synergies can be achieved. Disconnects among these three groups may ultimately weaken the potential benefits of AWS.

9. **Use change as a trigger to implement AWS.** Such changes may include lease expirations, construction of new buildings or refurbishments. Experience shows that even with a compelling business case, it is rare that a building is retrofitted if there isn’t another event, such as a lease expiration and relocation, to trigger change.

10. Finally, it is important to **continuously refine and improve the AWS programme.** After AWS is implemented, an occupier survey should be sent to business line leaders and end users. These surveys provide feedback on specific AWS elements that can be used to drive refinements.

While AWS is not a new concept, many Government agencies are just beginning to implement it in a consistent and structured way. It is likely that AWS will continue to gain momentum and play an increasingly central role in any occupancy plan, especially as we seek new ways to reduce costs, and as younger workers seek employers that offer flexibility and work-life balance.

Above all you must remember that managing according to “attendance” must be replaced by managing to “output”
Planning for flexibility

One of the first steps taken in designing your new office layout will be a detailed briefing process by your consultant team. This will delve into the way in which your agency operates and seek to align the design outcomes with the business processes and culture. While this process is vital, it is important also to recognise that your business functions, staff numbers, communications flows and almost all other aspects of your “corporate culture” are fluid. Things and people change, policies and Governments change and you will be expected to adapt accordingly – often without notice or funding.

For this reason flexibility must be built into the very basics of your design. AWS can assist this to a high degree but even in more conventional design approaches the integration of flexible planning must be encouraged.

Typically this flexibility will manifest itself in some of the following ways:

1. Either a reduced (ideally single) type of workpoint designed to suit all staff so that changes are simplified to moving people
   or
2. Reduced ownership of specific territory within the workplace so that customisation of the workplace does not occur. If groups are allowed to overtly customise their own space by use of fixed walls, signage, or other means it is increasingly difficult to enact change.
   or
3. Adoption of module sizing for all workpoint elements. For example a large workpoint is two times the size of a small one, and an enclosed office is four times the size. This module approach is vital to control the impact of churn.
4. A fitout that is “future proofed” meaning that the infrastructure has been designed to be scalable and easily changed allowing for adaptation. An example of this is the use of saturation cabling for data and power within the ceiling space so that terminated points are always available, negating the need for extensive in-ceiling works; or wireless infrastructure is adopted
5. Use of key and modulating design elements. By indentifying the difference between key elements (high value, long term assets such as workstations, joinery, and carpets) and modulating elements (lower value, easily changed assets such as fabric upholstery and paints) it is easy to refresh an office interior without undertaking significant cost or disruption.
6. While rare in Australia, many European and Asian countries use demountable partitions in office fitouts. These replace conventional plasterboard walls with structures that can be demounted and relocated many times in their life to adapt to a changing office landscape. The upfront cost may be higher than a conventional wall but over a typical 10 year life span the value is recovered many fold. There are also significant environmental gains to be made as a result of this reuse.
Other Specialised Facilities

There are a number of other specialised facilities that must be provided in certain workplace to ensure compliance with anti-discrimination legislation and Government policy. These include, but may not be limited to, the following facilities.

Breastfeeding Friendly Workplaces

The NSW Government currently promotes breastfeeding friendly workplaces through:

- The NSW sector wide women’s employment and development strategy, Making the Public Sector Work Better for Women 2008-2012 which recommends a number of actions agencies can pursue to support women in achieving a greater work-life balance, including seeking accreditation from the Australian Breastfeeding Association (ABA) as breastfeeding friendly workplaces. Information about this policy is available at [http://www.eeo.nsw.gov.au/women](http://www.eeo.nsw.gov.au/women).


In 2007 the NSW Government amended the Anti-Discrimination Act 1977 to make it an offence to discriminate against a person who breastfeeds and this includes the act of expressing milk. Government employers have legal obligations to ensure that female employees are not discriminated against on the grounds of sex, or a characteristic of sex, which now includes breastfeeding.

Basic requirements for employees who are breastfeeding

Breastfeeding women need to feel safe and comfortable in the workplace environment to help them physiologically relax for the effective removal of breastmilk.

A suitable space will include the following elements and it can be a space that is shared with other uses like a first aid room or a prayer room, with appropriate protocols and adaptable signage to avoid clashes in claims for private use of the area:

- Clean, private (lockable) room with comfortable seating, a low level table on which to place a breast pump and a powerpoint near the chair and table. It is inappropriate for breastfeeding employees to express milk in unhygienic areas such as a toilet / shower recess

- Access to facilities for washing hands and equipment.

- Access to a refrigerator for the storage of breastmilk.

- Access to facilities for the storage of breast pumps and other equipment.

The space allocated for expressing milk in a workplace will depend on the size and location of the workplace. Factors to consider will be the number of female employees of child bearing age (i.e. 16-44) and the length of time to walk to a suitable room.

Larger workplaces will have dedicated first aid space that can be readily adapted to meet the needs of breastfeeding mothers. Smaller workplaces will require more flexible solutions including sharing appropriate facilities with other organisations/agencies (for example, in rural locations). Ideally, it should take no longer than about 5 minutes from an employee’s work area to access a suitable space.

Further information about breastfeeding friendly workplaces can be obtained from the Australian Breastfeeding Association’s website at [http://www.breastfeedingfriendly.com.au](http://www.breastfeedingfriendly.com.au) or by email to [nswbfwa@breastfeeding.asn.au](mailto:nswbfwa@breastfeeding.asn.au).
First Aid Rooms

Agencies must provide first aid facilities that are adequate for the immediate treatment of injuries and illnesses that may arise at the place of work.

Clause 20 of the Occupational Health and Safety Regulation 2001 sets out the minimum first aid requirements for the sites or places listed below. It is important to note that the list represents minimum requirements only and that additional contents and numbers of first aid kits may be needed depending on workplace hazards and the type of injuries or illness that may occur.

- construction sites where 25 or more people work or other places of work where 100 or more people work - First Aid Kit A;
- construction sites where less than 25 people work or other places of work where less than 100 and more than 10 people work - First Aid Kit B;
- places of work (other than construction sites) where 10 or less people work - First Aid Kit C;
- places of work where more than 200 people work, or at a construction site where more than 100 people work. (See clause 20(7) of the Occupational Health and Safety Regulation 2001) - First Aid Room. This can be a multi-purpose room.

Clause 20(5) of Occupational Health and Safety Regulation 2001 details what each type of first aid kit must contain.

Agencies must ensure the first aid kit (if more than 25 persons employed) is under the control of trained first aid personnel.

If a first aid room is deemed necessary, the following factors should be considered in determining its location, layout and management:

- Location – the room must be readily accessible during working hours, and situated at a convenient distance from toilets, sink or wash basin equipped with suitable drainage and a supply of hot and cold running water, and a means of boiling water. It should also be close to motor vehicle access.
- Workspace – the room should be large enough to accommodate equipment and furniture, leaving enough space for people to administer first aid. Entrances and corridors must be wide enough to allow transport of injured persons supported by a stretcher.
- Work environment – the room should have a suitable floor covering so that it is easy to clean and maintain. It must also be well-lit and ventilated. It should have suitable heating and cooling.
- Signs – the room should be clearly identified with a recognisable first aid sign (white cross on a green background). A notice on the door should identify the person in charge, the person on duty, locations and phone numbers of the nearest first aiders and an emergency after-hours telephone number.
- Management – the room must be managed by appropriately trained first aid personnel. This person will be responsible for assessing requirements, maintaining facilities and equipment and ensuring the room is immediately accessible.

Further information is available from WorkCover NSW’s publication First Aid in the Workplace which is available from its website at http://www.workcover.nsw.gov.au.

Spaces for Observance of Religious Duties

The NSW Government is committed to valuing the culturally diverse nature of the public sector work force. As a result, when planning for new or additional office accommodation, agencies should give special consideration to the need for employees to observe religious duties while at work. Two matters may require special consideration:

- The provision of a "retreat space" for prayer and contemplative activity.
- Suitable facilities for religious ablutions.
Retreat Space

A retreat space is a room identified for use for prayer, meditation or contemplative activity. This space can also be used as a first aid room, a breastfeeding room or for small meetings, interviews, quiet reading, or activities of a similar nature when it is not required for religious observance. For further information on layout and design considerations agencies should refer to the [NSW Public Sector Personnel Handbook](#) (Chapter 5 Section 5-5).

Ablution Facilities

The Islamic religion requires Muslims to wash themselves in a prescribed way before prayers several times a day, and to adhere to prescribed standards of personal cleanliness. In ordinary workplace toilet and shower facilities, meeting all of these requirements may be difficult. In workplaces where the needs of Muslim employees need to be met, consideration to special ablution facilities should be given. Ideally a lockable cubicle for private ablutions should be provided. A shower cubicle is perfectly adequate in this respect, provided that it also contains a medium sized hand basin.
A word about storage

Storage is often one of the most emotive items amongst staff when designing a fitout. There is a tendency for staff to retain their own copies of documents and reference, typically as a result of lost confidence in the corporate records management systems.

Unless there are unique functional needs, such as large format paper styles that require adaptation; storage should be divided into three separate groups and space allocated accordingly.

1. Personal storage at the individual workpoint should be limited to 1 linear metre, with a preference given to less. This can be provided above bench (shelving) or below bench (drawers or shelving). A mobile pedestal unit should also be provided for personal belongings, which should be lockable and is included within the 1 linear metre storage allowance.

2. Team storage should be held in cabinets near to clusters of workpoints, accessible to all team members. Ends of clusters or as dividers between groups are common locations where the top surface can also be used for layout, or plants etc. Storage should not be lockable unless there is a specific need. A suggested allowance per person is 1.5 linear metres however this should be tested through analysis.

3. Central storage should be held in high density storage systems such as compactus (trade mark name of Dexion product) or similar, that is located in a central area, away from any one group. Care should be taken with load bearing capacity of the floor when locating such equipment. A suggested allowance per person is 1 linear metre however this should be tested through analysis.

Further information on this topic is available from the State Records Office
Security and access control

The level of security and access control required by each agency vary according to many factors. These may include location, times of operation, nature of the business conducted, amount of public interface, and sensitivity of the data held.

Most commercial buildings will have a base building system in place and it is preferable to extend this system to cover the security needs of the tenancy. Modern systems use credit card sized “proximity cards” that interface with “readers” on the various secure points and report back to a central computer. This controls access and also provides historical data on movements.

A general principle is to adopt three levels of secure access based upon the following:

1. **Public space** is accessible to staff, visitors and general members of the public without passing through security. Public areas typically include a reception desk zone and lobby/waiting areas. These areas should provide an intuitive entry from the street, an inviting, comfortable and professional lobby/reception space, and security provisions as appropriate for the facility. These spaces are the ‘front door’ or ‘face’ to the organisation, and should consistently present the agency’s professional image.

2. **Invited space** is accessible to staff and invited visitors only when accompanied by staff. These areas typically include a consolidated set of meeting spaces suitable for meeting with external visitors or clients without giving access to the private workspace itself. This space is an opportunity to focus design attention on a concentrated series of spaces that will regularly be used by visitors, to create a managed experience for visitors. It may or may not be physically secured from the public space.

3. **Private space** is accessible only to staff members and is physically secure from Public and Invited spaces (by way of proximity card security access points or similar). The general workspace areas, including most individual work points, internal meeting spaces, breakout spaces and kitchen/lunch rooms will exist within the secure Private space. Once inside the secure perimeter of this space, staff should be able to move as freely as possible throughout workplace without additional security access points or any other unnecessary physical barriers, to allow maximum accessibility and transparency across the organisation. In large, multi-story workplaces, this freedom of movement should include ease of vertical movement between floors by eliminating physical/security barriers at each level, providing open and accessible stairs as well as lifts, and creating visual connections between floors wherever possible.

Typical areas that should be secured include perimeter doors, main computer rooms, and unique facility rooms such as evidence rooms or central filing stores. However caution should be taken as each secure point can cost approximately $3,000.

Consideration should be given to the appointment of a security consultant when the function of the agency warrants.
What is sustainable development and why do we need to be concerned?

There is now overwhelming empirical evidence that the impacts of human endeavours, through current practice, has accelerated global warming and has caused countless damage to many ecosystems and life forms around the globe. This has led to in the worst case scenarios the extinction of species, deserts where there were once lakes, poisoning of human, animal and plant life and the forced displacement of many people, predominantly indigenous, across the world. Urgent action is now required worldwide to prevent further catastrophe. The Stern Review and Garnaut Report have provided evidence of what our economic and ecological futures could be if little or no action is taken.

To enable humans to continue to survive on this planet, we need to adopt a more sustainable approach to current practices. This approach needs to integrate ecological, social and economic systems in order to be successful. Sustainability has been commonly defined as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”, a definition developed by the Brundtland Report or Our Common Future by the World Commission on Environment and Development, in 1987. In 1990, Australian Governments agreed on this following as the definition for ecologically sustainable development in Australia:

“...using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.”

What has sustainable development to do with how we build and fit out a new office?

Ecological Issues

According to the most recent Australian Green Building Council report (Jones, 2008), “...the global building stock represents both the greatest challenge and the biggest opportunity in tackling rising energy use and Greenhouse Gas (GHG) emissions.” [GHGs are one of the major contributors for the impacts of climate change] “As the largest single contributor, buildings:

- Use 32% of [the] world’s resources in construction
- Use 40% of global energy (includes embodied energy)
- Generate 40% GHG emissions
- Consume 12% of water
- Make up 40% of waste to landfill”

As well the rate of churn, the rate at which products such as furniture, fixings and fittings are replaced, on average occurs every 5-7 years. This not only uses valuable resources and impacts on waste, but the embodied energy of the manufacture of these continually replaced items can outweigh the operational energy of the building over its life span. (Treloar, 1999)

Social Issues

The impacts of social issues can also be critical – especially when related to the health and productivity of the occupants. Studies have shown that one of the largest contributors to poor indoor air quality is from the products and materials found in our interiors. Harmful volatile organic compounds or VOCs emanating from these materials (such as formaldehyde) can result in a variety of health issues for occupants, some chronic and serious.

However social issues are not only contained within the walls of the building itself. Many products used in the building industry are manufactured in countries where cheap labour, means lower overheads and better financial returns. However the conditions of some of these manufacturing plants are well below world standards, exploiting children and poorer people for the wealth of others.

Economic Issues
Currently, the greater majority of the Earth’s countries function on financial economies. Some would argue that the current emphasis on global financial economies is misplaced and that rather than financial economies leading political and global decisions they should be a subset of an ecological economy, the true measure of our ability to sustain life on this planet. However, in this present era, financial economies play a major role and must be considered as a major part of working towards a sustainable future.

Life cycle costing is defined as “...a process to determine the sum of all the costs associated with an asset or part thereof, including acquisition, installation, operation, maintenance, refurbishment and disposal costs.” This is a term commonly used to integrate the financial impacts of sustainable decisions at each stage of the life of an asset.

What things do you need to know about to encompass sustainability in your office fitout?

Many of the important economic and social considerations of a new fitout have already been covered in other parts of this document – such as Workplace Directions and Process. This section will concentrate on the sustainable issues not yet covered, most of them concerning ecological or environmental issues and touching on other social and economic issues not yet mentioned.

General principles and areas of concern for a sustainable fitout

Integrated Design Principles

Also including -

- Management, Operation & Commissioning
- Financial considerations

The best solutions for a sustainable outcome occur when they are integrated from the very start of a project. This usually means the costs for doing so will also be less than when changes are made further into the project.

Other decisions such as the choice of suburb, building, floor or even or part of the building; the team you put together to manage and design the project and the brief and budget you allow for the project will all have significant impacts on the success of your sustainable fitout. Ensuring that sustainability is a consideration at this early stage will have major benefits.

Other considerations when ensuring an integrated design approach are the management, operation and commissioning of a project. A project should be managed to ensure the sustainable goals set by the team are met and not compromised, at each stage of the design process. The operation of the building should be able to enable those goals – flexible energy, water and waste systems such as systems that can change according to the needs of the changing tenants in a building – and the commissioning of the project after completion will ensure that the design and sustainable objectives are operating as they should.

Consider the life-cycle benefits as well as the long and short term financial gain or costs – life cycle costing. Some sustainable initiatives, for example, have a high upfront cost but over the duration of the fitout will payback that cost and perhaps even return a profit. Many energy solutions fall into this category. Other solutions may be cost effective upfront but be expensive in long term management or maintenance.

Social Sustainability

Also including -

- Indoor Environmental Quality – Occupant health, comfort & productivity
- Materials Selection

Issues of social sustainability associated with an office fitout are many, several of which are related to management rather than design or physical strategies. Social inclusion however, is an important design objective. One common form of inclusion, also supported by legislation, enables less abled people to access most, if not all, parts of a building. Other aspects could include designing for the elderly and parents with young children for example.

Social sustainability also addresses the ability for people to have easy access to public and private transport; pleasant exterior spaces and services such as postal services, food courts, childcare and gyms. These can be
important for social health and well being but can also be important to lower the ecological footprint of an employee i.e. the use of public transport.

The majority of an office employee’s time however is spent indoors. Ensuring the quality of this internal environment is superior is critical for the health, well being and productivity of an employee. The design of an office therefore needs to provide continual fresh air, natural light without glare, adequate lighting levels for required tasks, comfortable thermal conditions, adequate noise levels and healthy indoor air conditions.

Materials selection plays a major role in ensuring an office environment maintains a good indoor air quality. Many products contain materials which emit chemicals at low temperature levels, called volatile organic compounds or VOCs. Many of these VOCs are harmful to human health, reactions varying from mild allergies to chronic illness. Formaldehyde for example is a known human carcinogen and is contained in many products we place in the interior of our buildings. These types of materials should be avoided or replaced with low VOC emitting materials.

Managing Energy & Greenhouse Gases

Also including -

Transport

One of the biggest threats we face today is the impact of global warming. Our energy sources are the greatest human contributor of greenhouse gases, which cause the greenhouse effect and global warming. Buildings are one of the largest contributors to greenhouse gases (GHG), through the manufacture of building products and the construction and operation of buildings. When you add all of these together the construction industry contributes to 40% of the world’s greenhouse gases.

While adapting to renewable energy sources such as wind and solar are the best alternatives to reduce the impact of GHG, this is not always possible – particularly when leasing a tenancy – but not impossible as the Sustainable Energy Development Authority first proved in the late 1990’s. The next best thing is to reduce the energy required for the tenancy by asking where energy is being used inefficiently and how it could be made more efficient. This could be as simple as reducing the quantity of lights in a certain area to more complex computerised systems which can control the switching of almost all electronic items from lights to air-conditioning.

Transport also plays a major role in its output of greenhouse gases as most of our transport systems rely on fossil fuels. By considering options of how people get to work, the environmental impact of their mode of transport can be greatly reduced. The transport sector is NSW’s second largest source of greenhouse gas emissions. Car use is a significant contributor to this – transport emissions account for 15% of the total NSW emission and cars account for nearly half of this. Car emissions are a major source of air pollutants which coupled with an inactive lifestyle, may lead to respiratory and cardiovascular diseases and early mortality (Premier’s Why Active Living Statement)

Managing Waste, Reuse & Recycling

Also including -

Materials Selection

In Australia, construction and demolition waste makes up 33% of landfill. Office fitouts are churned on average every 5-7 years – replacing old products with new. Coupled with this, is the operational waste from offices, predominantly paper but increasingly mixed with toxic electronic waste from computers, printers, photocopiers etc. The problems associated with waste and the generation of waste is that increasingly we are having to move our landfills further and further from the source – increasing costs to transport it and increasing the potential of pollution through transport choice, toxic wastes, leachate and methane gas. Another problem is that we are disposing of, in the vast majority, valuable resources which could be reused and/or recycled to decrease the pressure on the use of virgin resources – particularly non renewable ones.

It is therefore important in planning and designing a new office fitout that waste management including reuse and recycling is included at every stage – design, construction, use i.e. day to day business operations and future demolition.

Materials play an important part in waste management and through careful selection can reduce the impacts of waste by for example selecting materials fit for purpose; in sizes or quantities which are standard for the
manufacturer; enabling materials to be taken apart for future reuse or recycling; are not mixed with other materials making separation difficult and/or the supplier has an extended producer responsibility system in place to take back products at the end of life.

Managing Water

In Australia, commercial buildings account for 10% of urban water consumption. While changing plumbing fixtures and other hydraulic systems within an existing tenancy may be difficult, it is important for tenants to be mindful of tenancies which have integrated water saving strategies. These could include water efficient fixtures; utilising stormwater runoff or recycled water as a water source; or use fixtures which don’t use water at all such as waterless urinals.

Landuse/Ecology

Some office buildings you are considering as a tenancy may be situated in areas which have sensitive ecological systems, particularly waterways. While you may have little say in how this is being managed, you can enquire on how the building’s landscaped areas have considered nearby ecosystems, so they are not damaged. Landscaped areas can also be a major use of water and this may also be a part of your evaluation for a prospective tenancy.

Air pollution

Also including -

- Ozone
- Materials selection

Air pollution in office tenancies generally occurs in the manufacturing of the materials and products selected and during construction. As well, as mentioned in Social Sustainability, materials can generate air pollution through the offgassing of VOCs, which can be harmful to humans in close proximity but are also general pollutants in the atmosphere.

Some products either in use or during manufacture use chemicals such as hydrofluorocarbons or HFCs or chlorofluorocarbons or CFCs. HFCs are known greenhouse gases and CFCs are ozone depleting substances. While the industry and governments have done much to reduce the use of CFCs, HFCs can be found in blowing agents for foams or in refrigerants for refrigerators or HVAC systems. Avoiding the use of these products and materials is preferable.

These principles and areas of concern can be greater or less important at each stage of the design and development process for an office fitout. Therefore, so it is clear what issues need to be addressed and when, sustainability issues have been divided into the different stages of the design of an office fitout –

1. Feasibility & Planning – needs analysis and space evaluation
2. Concept Design - site selection and building appraisal
3. Detailed Design - design brief & development
4. Pricing - Tender documentation & evaluation - competitive pricing from trades and suppliers
5. Construction or Contract Administration - project management and site supervision
6. Finalisation & Occupation – relocation, staff induction & maintenance
Rating Tools and Guides

Australian rating tools and guides available for commercial buildings include –

- National Australian Built Environment Rating Scheme (NABERS)
  
The National Australian Built Environment Rating System (NABERS) is a voluntary performance-based rating system for existing buildings that rates a building based on its measured operational impacts on the environment. It is managed nationally by the NSW Department of Environment, Climate Change and Water (DECCW) on behalf of federal, state and territory governments.

  NABERS can be used to measure a building’s operational energy and water efficiency, indoor environmental quality and waste recovery. The NABERS suite of rating tools measures performance on a scale from 1 to 5 stars, with 2.5 stars representing market median performance. A 5 star rating demonstrates market leading performance, while a 1 star rating means the building is performing well below median market practice and has considerable scope for improvement.

  For new buildings or new tenancies, building proponent can commit to design, build and commission the premises to achieve either a 4, 4.5 or 5 star NABERS Energy rating under the NABERS Energy Commitment Agreement. Commitment Agreements enable building proponents to promote the NABERS rating commitment throughout the design, construction and commissioning phase, and most importantly they provide a process to achieve measurable operational performance results.

  For more information about NABERS ratings, go to www.nabers.com.au.

- Green Building Council of Australia’s Green Star
  
  Green Star is a design tool aimed at reducing a range of environmental impacts in new buildings and fitouts. It is administered by the Green Building Council of Australia (GBCA) which is a national non profit organisation.

  Green Star ratings are scored on a scale from 1 to 6 stars (with full star increment). These ratings establish how the premises will perform under ideal circumstances based on design information and management processes. The scores are awarded on the basis of design performance in 9 categories: Management, Indoor Environment Quality, Energy, Transport, Water, Materials, Land Use & Ecology, Emissions and Innovation.

  The GBCA only certifies buildings that reach the following ratings:

  4 Star Green Star Certified Rating (score 45-59) signifies 'Best Practice'
  5 Star Green Star Certified Rating (score 60-74) signifies 'Australian Excellence'
  6 Star Green Star Certified Rating (score 75-100) signifies 'World Leadership'

  For more information about GBCA and Green Star, go to www.gbcaus.org.

- Property Council of Australia’s, A Guide to Office Building Quality
  
  A Guide to Office Building Quality provides two tools for classifying office building quality. These include a design specification for new office buildings and a quality matrix for existing buildings. The Guide classifies office buildings into grades – Premium, A, B, C or D Grade – according to criteria including size, design, configuration, environmental performance, location, communications, security, lifts, air-conditioning, mechanical, and other services and amenities.

  For more information, go to http://www.propertyoz.com.au
The full sustainability document is attached at the end of this report
Which workplace solution should I use?

1. Do staff spend extended time away from the office?
   - Yes: Do these staff know in advance when they are going to be in the office?
     - Yes: Hotelling solution
     - No: Hot desk solution
   - No: Do staff have varied functions and/or a high need for collaboration?

2. Do staff have varied functions and/or a high need for collaboration?
   - Yes: Activity based planning solution
   - No: Does your agency undergo organisational change regularly?

3. Does your agency undergo organisational change regularly?
   - Yes: Universal planning solution
   - No: Are there many different parts to your agency?

4. Are there many different parts to your agency?
   - Yes: Would it suit you to have multiple workplace solutions within the office?
     - Yes: Start again on a departmental basis
     - No: Combination planning solution
   - No: Combination planning solution
Which workpoint should I use?

- Is there a need for regular, highly confidential discussions at the desk?
  - Yes: Enclosed office
  - No

- Is there a need for constant meetings at the desk?
  - Yes: Workpoint with meeting table
  - No

- Is there a need for regular large format paper use at the desk?
  - Yes: Large format workpoint
  - No

- Is the employee regularly working from outside of the office?
  - Yes: Single surface workpoint
  - No

- Is this a mainly phone-based customer support role?
  - Yes: Single surface workpoint
  - No

- Standard workpoint
Workpoint selection matrix
Background

What does sustainability mean to workplace planning and design?

Office accommodation should perform in a way that supports the working patterns of the occupants and corporate aspirations while providing a comfortable and productive environment. The site location, building shape and orientation, selection of materials and thermal performance all have an impact on the environmental performance of the building.

A workplace which integrates sustainability considerations in its planning, design and operation can result in reduced running cost, more efficient use of resources and a healthier working environmental for its occupants. A growing body of research also shows that sustainable workplaces are associated with greater productivity and occupants’ satisfactions. This includes better staff recruitment and retention, lower levels of sickness and absence, and higher quality work.

It is, therefore, very important to plan and design your workplace to meet the following sustainability objectives:

• minimising environmental impact locally and globally
• using resources (energy, water, material etc.) more efficiently
• minimising waste
• maintaining the quality of the work environment for the health and comfort of the occupants
• choosing products carefully to ensure they are not harmful to the environment or to occupants health
• cost-effective from a long term, full financial cost-return point of view

What has sustainability to do with how we build and fitout a new office?

Activities associated with the use and operations of buildings over their life have an enormous direct and indirect impact on the environment. In Australia, commercial buildings account for at least 10 per cent of greenhouse gas (GHG) emissions (excluding emissions associated with building and construction), and these emissions have grown a remarkable 87 per cent between 1990 and 2006. Moreover, commercial buildings account for 10% of urban water consumption and construction and demolition waste makes up 33% of landfill. The rate of churn -- the rate at which products such as furniture, fixings and fittings are replaced -- occurs every 5-7 years on average. This not only uses valuable resources and creates waste, but the embodied energy of the manufacture of these continually replaced items can outweigh the operational energy of the building over its life span.

About 70% of NSW Government agencies predominantly occupy office buildings. The NSW Government, in its roles as buildings owner and major tenants in the commercial building sector, is committed to improve the environmental and sustainability performances of the sector by demonstrating leaderships through its own operations.

The NSW Government Sustainability Policy outlines how the Government will lead by example in sustainable water and energy use, reducing greenhouse gas emissions, waste and fleet management and sustainable purchasing. The policy, as detailed in Premier’s Memorandum 2008-28, requires

• all Government owned or tenanted office buildings over 1000m² to achieve and maintain a NABERS rating of 4.5 stars for energy and water by 1 July 2011, where cost-effective;
• all new or refurbished office buildings more than 1000m² to achieve and maintain 4.5 stars for NABERS energy and water ratings from 18 months of the first occupancy, where cost-effective.

The NSW Government has also committed to set NABERS targets in Government office buildings for waste and indoor environment (see NSW Government Sustainability Policy, page 6, for more details).

The most cost effective opportunity for your agency to achieve the State Government sustainability targets is to integrate sustainability considerations in your workplace planning and design as early as possible. You can lock in significant ongoing cost savings and improve employees’ satisfactions at little or no additional upfront cost if you plan and design for sustainability right from the beginning.
What do you need to know to encompass sustainability in your office fitout?

Integrated Design Principles

Also including -

- Management, Operation & Commissioning
- Financial considerations

The best solutions for a sustainable outcome occur when they are integrated from the very start of a project. This usually means the costs for doing so will also be less than when changes are made further into the project.

Other decisions such as the choice of location, building, floor or even part of the building, the team you put together to manage and design the project and the brief and budget you allow for the project will all have significant impacts on the success of your sustainable fitout. Ensuring that sustainability is a consideration at this early stage will have major benefits.

Other considerations when ensuring an integrated design approach are the management, operation and commissioning of a project. A project should be managed to ensure the sustainable goals set by the team are met and not compromised, at each stage of the design process. The operation of the building should be able to enable those goals – flexible energy, water and waste systems for example, that is systems which can change according to the needs of the changing tenants in a building – and the commissioning of the project after completion will ensure that the design and sustainable objectives are operating as they should.

Consider the life-cycle benefits as well as the long and short term financial gain or costs – life cycle costing. Some sustainable initiatives for example have a high upfront cost but over the duration of the fitout will payback that cost and perhaps even return a profit. Many energy solutions fall into this category. Other solutions may be cost effective upfront but be expensive in management or maintenance.

Managing Energy & Greenhouse Gases

Also including -

- Transport

Our energy sources are the greatest human contributor of greenhouse gases, which cause the greenhouse effect and global warming.

One of the greatest opportunities for GHG reduction in offices is to reduce the energy consumption in office buildings by asking where energy is being used inefficiently and how it could be made more efficient. This could be as simple as reducing the quantity of lights in a certain area to more complex computerised systems which can control the switching of almost all electronic items from lights to air-conditioning. Adapting to renewable energy sources such as wind and solar is another alternative to reduce the impact of GHG.

Transport also plays a major role in its output of greenhouse gases as most of our transport systems rely on fossil fuels. By considering options of how people get to work, the environmental impact of their mode of transport can be greatly reduced.

Managing Waste, Reuse & Recycling

Also including -

- Materials Selection

[In Australia, construction and demolition waste makes up 33% of landfill][4]. Office fitouts are churned on average every 5-7 years – replacing old products with new. Coupled with this, is the operational waste from offices, predominantly paper but increasingly mixed with toxic electronic waste from computers, printers, photocopiers etc. The problems associated with waste and the generation of waste is that increasingly we are having to move our landfills further and further from the source –
increasing costs to transport it and increasing the potential of pollution through transport choice, toxic wastes, leachate and methane gas. Another problem is that we are disposing of, in the vast majority, valuable resources which could be reused and/or recycled to decrease the pressure on the use of virgin resources – particularly non renewable ones.

It is therefore important in planning and designing a new office fitout that waste management including reuse and recycling is included at every stage – design, construction, day to day business operations and future demolition.

Materials play an important part in waste management and through careful selection can reduce the impacts of waste by for example selecting materials fit for purpose; in sizes or quantities which are standard for the manufacturer; enabling materials to be taken apart for future reuse or recycling; are not mixed with other materials making separation difficult and/or the supplier has an extended producer responsibility system in place to take back products at the end of life.

Managing Water

[In Australia, commercial buildings account for 10% of urban water consumption] While changing plumbing fixtures and other hydraulic systems within an existing tenancy may be difficult, you need to consider selecting buildings that have integrated water saving strategies when appraising and selecting a site for new tenancy. These could include water efficient fixtures; utilising stormwater runoff or recycled water as a water source; or the use of fixtures which don’t use water at all such as waterless urinals.

Landuse/Ecology

Some office buildings you are considering as a tenancy may be situated in areas which have sensitive ecological systems, particularly waterways. If you are evaluating such a building for a new tenancy, you can enquire on how the building’s landscaped areas have considered nearby ecosystems, so they are not damaged. Landscaped areas can also be a major use of water and this may also be a part of your evaluation for a prospective tenancy.

Air pollution

Also including -

- Ozone
- Materials selection

Air pollution in office tenancies generally occurs in the manufacturing of the materials and products selected and during construction. As well, as mentioned in Social Sustainability, materials can generate air pollution through the offgassing of VOCs, which can be harmful to humans in close proximity.

Some products either in use or during manufacture use chemicals such as hydrofluorocarbons or HFCs or chlorofluorocarbons or CFCs. HFCs are known greenhouse gases and CFCs are ozone depleting substances. While the industry and governments have done much to reduce the use of CFCs, HFCs can be found in blowing agents for foams or in refrigerants for refrigerators or HVAC systems. Avoid using these products and materials in your office fitout.

Social Sustainability

Also including -

- Indoor Environmental Quality – Occupant health, comfort & productivity
- Materials Selection

Staff and stakeholder engagement

Issues of social sustainability associated with an office fitout are many, several of which are related to management rather than design or physical strategies.
Social inclusion is an important design objective. One common form of inclusion, also supported by legislation, enables less abled people to access most, if not all, parts of a building. Other aspects of inclusion include designing for the elderly and parents with young children.

Social sustainability also addresses the ability for people to have easy access to public and private transport, pleasant exterior spaces and services such as postal services, food courts, childcare and gyms. These can be important for social health and well being but can also be important to lower the ecological footprint of an employee e.g. the use of public transport.

Indoor Environmental Quality

The majority of an office employee’s time is spent indoors. The quality of this internal environment is critical for the health, well being and productivity of an employee. The design of an office therefore needs to provide continual fresh air, natural light without glare, adequate lighting levels for required tasks, comfortable thermal conditions, adequate noise levels and healthy indoor air conditions.

Materials selection plays a major role in ensuring an office environment maintains a good indoor air quality. Many products contain materials which emit chemicals at low temperature levels, called volatile organic compounds or VOCs. Many of these VOCs are harmful to human health, reactions varying from mild allergies to chronic illness. Formaldehyde for example is a known human carcinogen and is contained in many products we place in the interior of our buildings. These types of materials should be avoided or replaced with low VOC emitting materials.

These principles and areas of concern need to be addressed at different stages of the design and development process for an office fitout:

1. Feasibility & Planning – needs analysis and space evaluation
2. Site selection and building appraisal
3. Detailed Design - design brief & development
4. Pricing - Tender documentation & evaluation - competitive pricing from trades and suppliers
5. Construction or Contract Administration - project management and site supervision
6. Finalisation & Occupation – relocation, staff induction & maintenance
NSW Government Sustainability Policy

Targets

Greenhouse gas emissions from building energy use

• State-wide target to return greenhouse gas emissions from building energy use to 2000 levels (1.5 million tonnes) by 2019/20, with interim targets of 1.74 million tonnes by 2010/11, 1.67 million tonnes by 2013/14 and 1.59 million tonnes by 2016/17.

• Agencies to continue to purchase a minimum of 6% GreenPower by 2010/11, with the exception of Area Health Services.

Water

• State-wide target to reduce total potable water consumption by 15% by 2010/11 (from 2005/06 levels).

Environmental performance of buildings

• Government owned or tenanted office buildings over 1000m2 to:
  - obtain a NABERS rating (National Australian Built Environment Rating System) by 31 December 2008;
  - achieve and maintain a NABERS rating of 4.5 stars for energy and water by 1 July 2011, where cost-effective; and
  - where new or refurbished, achieve and maintain 2011 targets from 18 months of the first occupancy, where cost-effective.

• Tenanted buildings to include Green Lease Schedule in all new or negotiated leases or when exercising a lease option, where practical.

• The Government has also committed to set NABERS targets in Government office buildings for waste and indoor environment by 30 June 2009. Agencies will be advised of any requirements related to this commitment, once these targets have been set.

Cleaner Government Fleet

• Government fleet to achieve an average “environment performance score” of 12/20 by 2007/08 (new ongoing targets will be set in 2008).

• Government fleet to achieve a 20% reduction in greenhouse gas emissions by end 2007/08, based on 2004/05 performance (new ongoing targets will be set in 2008).

Waste, recycling and purchasing

• Agencies to purchase products and appliances where relevant, available and fit for purpose, with:
  - a minimum 4-star rating under the Minimum Energy Performance Standards Scheme (MEPS); and/or
  - a minimum of 4-star rating under the Water Efficiency Labelling and Standards Scheme (WELS) or Smart Approved WaterMark products and services (for outdoor use).

• A minimum of 85% of all copy paper purchased by NSW Government in 2014 to contain recycled content.

Agencies, from the commencement of the 2008/09 financial year, to specify inclusion of at least one recycled content option as part of each publication quote sought.
Fitout Rating Tools and Guides

Australian rating tools and guides available for commercial buildings include –

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For more information about NABERS ratings, go to www.nabers.com.au.

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A Guide to Office Building Quality provides two tools for classifying office building quality. These include a design specification for new office buildings and a quality matrix for existing buildings. The Guide classifies office buildings into grades – Premium, A, B, C or D Grade – according to criteria including size, design, configuration, environmental performance, location, communications, security, lifts, air-conditioning, mechanical, and other services and amenities.

For more information, go to http://www.propertyoz.com.au
**Sustainability in the commercial fitout process**

1. **Feasibility & Planning - needs analysis and space evaluation**

**Integrated design**

It is important to ensure at the very start that an integrated approach to the project is adhered to. Sustainability issues to be considered at this stage can include the following -

a. When assessing spatial requirements, question the amount of space currently required for a certain activity – do we really need this? Is there perhaps a better way of utilising this space? Storage for example can take up valuable floor space – employing a specialist storage consultant at this stage may save a lot of money, not only in wasted rental fees but fixtures and fittings related to storage needs. (Government has set a space use target of 15m² per person for all new fitouts.)

b. Allow for expansion and retraction within the term of the lease when doing a space evaluation checklist – this will avoid costly, both financial and sustainable, unnecessary moves.

c. Project Team & Consultants – select the project team as early as possible and agree on the quality assurance of the documentation & coordination between design, construction & occupancy. This will help to assure a cost effective and sustainable outcome.

d. Setting sustainable objectives with the selected team is very important at this early stage to ensure a holistic decision, guaranteeing a building performance i.e. 4.5 Stars with NABERS and the objectives of an environmental management plan for example.

e. Establishing your spatial requirements, the project team and the sustainable objectives will provide you with a beneficial set of criteria for procuring or securing a lease on a sustainable property/tenancy. A consideration here will also be if the building has been rated by an accredited rating system such as NABERS or Green Star. (See Reference list Green Properties for more information)

f. In securing a likely property, it is a requirement of NSW government agencies and departments to include a Green Lease schedule in their negotiated leases. (See Reference list Green Leases for more information)

g. Carry out an audit on your existing tenancy’s current energy, waste and water usage. This will establish parameters and goals for target setting in the new property. This will be important to establish if any improvements have been made.

h. A whole-of-life approach must be taken when evaluating the environmental costs and benefits for space evaluation.

**Social sustainability**

At this stage of the project it is important to ensure that everyone is engaged in the project. This is not only valuable from an inclusive position but will also assist in establishing where improvements could be made in the new property and of course where current practices are working well. Some strategies to consider include -

- The engagement of stakeholders in the process such as reporting current practices – how satisfied are occupants in their current location, what are the current strengths and weaknesses, are there any health issues, noise, thermal comfort, lighting issues?

- Planning an audit of current practices amongst staff, productivity levels and indoor environmental qualities will also help to gauge any improvements in staff health and/or productivity. Specialist consultants or some University research centres can assist in these types of audits.
o Ensure that stakeholders are aware of the objectives made by the design and management team for peer review and provide a record of the design intent.

Energy

Undertake an energy audit to establish your current energy use. Specialist consultants can assist with these types of audits. This audit will also provide valuable information to set goals/objectives/targets for the new property and for briefing your energy consultants on the design team.

(See DECC, Sustainable Property Guide, 3.5 Managing Energy for more information)

Waste

Undertake a waste and recycling audit to establishing your current waste practices. Specialist consultants can assist with these types of audits. This audit will provide valuable information to set goals/objectives/targets for the new property and help determine what types of wastes are being generated to integrate systems in the new design.

Complete an internal audit of existing materials including predominantly furniture and fixtures but may also include wall materials, floor finishes and ceiling tiles. This list will be invaluable when deciding which elements will be reused, recycled or donated to charity. Listing elements contained in various areas or departments and designating if they are –

  o as new,
  o refurbishable (i.e. a chair which needs to be recovered),
  o repairable (i.e. broken component which can be repaired/irreparable,
  o should be relocated,
  o sent to auction,
  o donated to charity or
  o disposed

This will not only help the environment by reusing valuable materials and products, but can also save considerable sums of money (Máté, 2003). In an upgrade of the NSW Department of Industrial Relations, the department saved resources and money by reusing elements such as toughened glass panels, security card readers, chairs, aluminium wall studs, doors and door furniture, shelving systems, carpet and lighting systems, amongst others.

(See DECC, Sustainable Property Guide, 3.7 Managing waste & recycling for more information)

Water

Undertake a water audit to establish your current water use. Specialist consultants can also assist with this type of audit. This will also provide valuable information to the design team to establish a water conservation plan to reduce the demand of potable water.

(See DECC, Sustainability and Property Management, 3.6 Managing Water for more information)

(See DECC Sustainability & Management 3.4 for more information on audits and assessing sustainability performance)

2 Site selection and building appraisal

Integrated design

When making the final commitment to a site or tenancy ensure -

i. It is the best fit to your needs and there is allowance for flexibility to meet future needs.
j. The building owner’s commitments are in keeping with your own objectives.

k. The tenant’s commitments are objectives you can comply with.

l. That the Green Lease schedule is agreed upon at the start.

m. An audit of the building’s systems energy use, water use, waste disposal, and the indoor environment quality is compliant with existing NABERS/Green Star ratings if available.

n. It has the NABERS or Green Star certification as promoted and if available.

o. The building meets or will be improved to meet the requirements of the NSW Government Sustainability Policy.

p. The building reflects the sustainable goals and objectives of the department or agency, providing the market image required.

q. The maintenance and operation of the building meet your sustainability goals and objectives. Ensure that the building owner has a current sustainable/environmental management plan in place – i.e. low/no chemical cleaning; low/no VOC paint for public areas; reduced energy consumption for public areas etc.; there is an integrated waste management plan; and that the existing waste and cleaning contracts are compliant with your sustainable goals (The Green Lease Guide can assist with many of these areas – see Useful Information at end of this document)

r. A Building Management Committee which comprises of Landlord’s and Tenant’s representatives is or will be established. The BMC will communicate and monitor the building operations and performance to ensure the objectives of the performance of the property are adhered to throughout the lease

(See DECC Sustainability & Management 3.1, 3.2 & 3.3 for more information on assessing and acquiring property for sustainable performance)

At this point the design team will be finalised and all external consultants contracted. Ensure the designer and other consultants have experience in sustainable design fitouts and/or are accredited through GBCA/NABERS. Organising a design charette or sustainable workshop to discuss the objectives and brainstorming ideas is a good way of ensuring everyone on the team is clear about the sustainability goals and objectives. Use the template fitout brief in the Tool Section to brief the design team on your sustainable requirements for the fitout.

Social sustainability

Ensure the following are considered when making a final selection -

- Accessibility - Easy access to public transport and provisions that facilitate staff to use alternative forms of transport such as bicycle or walking.

- Usability – the mobility of physically challenged people (remember physically challenged people include pregnant women, the blind and deaf as well as those in wheelchairs) is not hindered and that areas within and surrounding the building are safe particularly out of office hours and at night.

- Cultural issues – are there any cultural issues which need to be addressed in the area particularly indigenous culture, cultural heritage, built heritage or natural heritage? This is may be an issue for a tenancy that occupies a whole building.

- Public space and services – does the property have access to public spaces such as parks and libraries? Does the property have access to services such as post, childcare, retail and food?

Indoor Environmental Quality

Superior indoor environmental quality (IEQ) is critical for the health and well being of the property’s occupants. To achieve a high quality indoor environment in a tenancy, much depends on the building shell and how this has been designed. When giving thought to the selection of a property in relation to IEQ the following are some points to consider –
Does the shape and orientation of the building allow maximum access to natural light and visual amenity to workspaces?

How is the building orientated? Will this have an affect on the thermal comfort of occupants? Will glare, too much daylight or reflection from neighbouring buildings, cause discomfort to occupants at different times of the day?

How does the placement of glazing affect access to natural light and visual amenity as well as thermal comfort? Large glazing areas can cause problems of glare, heat loss in winter (particularly on southern faces) and heat gain in summer (particularly unshaded northern and western faces)

If there are other tenants in the property is there any possibility of contaminated air, noise or hazardous fumes contaminating your tenancy through their business practices?

Are there any external noise sources such as freeways or noisy industries or internal noise sources from other tenancies or through building systems such as air conditioning? Can these be minimised?

How does the property accommodate strategies for superior indoor air quality? For example can the air conditioning system be separated from the rest of the building and allow separate ventilation of potentially polluting areas such as photocopier areas? Can glazing be opened for fresh air intake by the user? Do existing materials/finishes enhance good IAQ? (You may need to undertake an air quality assessment from an expert consultant in this area to test if any existing materials are contributing to poor IAQ? Do the building cleaning services use toxic free cleaning products? Is there evidence of mould or moisture damage – if so how has this been repaired? Is there evidence of toxic materials i.e. asbestos, lead (paint) or radon gas? If so can these be removed or separated from human harm?

Are parking areas ventilated and positioned to prevent fumes from entering the building?

Can the air conditioning system be separately zoned during construction/refurbishment?

Does the building provide the ability to integrate individual user control for thermal comfort, lighting levels, glare levels etc?

(See DECC Sustainable Property Guide, Sustainability and Property Management, 3.8 Managing Indoor Environmental quality for more information)

Energy

The Australian, State and Territory governments are proposing a new national regulation to give effect to a scheme for the mandatory disclosure of the energy efficiency of commercial office buildings at the time of sale or lease. This will enable the selection of buildings and tenancies in regard to energy efficiency easier in the future.

Until this regulation has been implemented you should seek properties which reinforce and enable energy saving strategies such as -

- Having an accredited NABERS Energy base building rating of 4.5 stars and above.
- Enhancing passive solar design principles through advantageous orientation (predominantly northern orientation in most circumstances) or accommodating for less favourable orientation (such as western facades) in its design (such as vertical external shading in this instance).
- Considering the affect of orientation on thermal comfort and implementing external shading where areas are too warm or utilising double glazing in areas which are too cool.
- Utilising glazing and natural daylighting to reduce the need for artificial lighting.
- Using renewable energy sources such as solar hot water.
- allowing tenancies to integrate the use of renewable energy solutions where renewable energy systems are not currently available.

It is important to be able to control the energy use of your tenancy separate from the whole building. Therefore the preferred property should have -
- HVAC and energy systems that have the capability for zoning, and sub metering, smart meters, the ability to select renewable/non renewable energy sources, HVAC management systems which are sensitive to external/internal temperature differences and are flexible to change and updating.
- Greenpower options for whole of building or per tenancy.
- A recent service and/or commissioning of the HVAC system. Enquire whether the existing system needs upgrading to a more energy efficient model for optimum energy efficiency.
- The ability to provide supplementary air conditioning requirements.
- Existing lighting systems with the latest energy efficient luminaries and lamps with multiple lighting zones, control and sensors to accommodate efficient after-hours lighting.
- HVAC system with refrigerants which are non ozone depleting (using CFCs) or contribute to greenhouse gases (HFCs).

Transport

The type of transport a person uses on a daily basis can be their greatest contributor to global warming. Therefore selecting a property which allows staff to use alternative forms of transport (and this could be a combination of types) will be important in selecting a tenancy.

Consideration should be given to -
- The availability of public transport nearby and links to other public transport systems/lines
- Cycling amenities – bike paths, storage, showers
- Walking amenities – footpaths
- Existing car pooling/public transport shuttle links
- Small car, motorbike and or car pooling parking facilities

Waste

Operational waste objectives are often hindered by the systems required to transport waste from the office to industrial compost, recycling plant, or reuse compound. More often than wanted it is taken straight to landfill. To ensure your waste objectives can be met check on -
- Existing services/operational management of the property. Does it have the ability for separation and storage including recyclables, reusables, compost, e-waste, construction & demolition waste and toxic waste – e.g. batteries?
- The available cleaning services - what are their responsibilities, how do they manage the current cleaning services with regard to waste?

Another sometimes overlooked form of waste is related to the base building existing materials and finishes. If the tenancy already has existing floor finishes, ceilings even walls and perhaps some custom built joinery, how much of these materials will have to be replaced to suit your needs – even though they may be brand new? To prevent this type of waste it is often best to select a tenancy which is just base building with no floor, ceiling or wall finishes, where possible. This way you can put in as little or as much as you require. For example some office fitout designs decide not to include a ceiling, suspending electrical and air conditioning requirements from the bottom of the slab. However where existing finishes etc have been left, ensure that you can reuse as much as possible or dispose of appropriately – such as recycling.

As well as considering existing materials and finishes of the new tenancy, consider how the reused materials, finishes, furniture etc from the old tenancy be adapted into the new.

Another consideration along the same lines is to look at reusing a whole building. What are the possibilities of adaptive reuse of a building not currently used as office space?
Water

The selected property should reinforce and enable water saving strategies. Check if the building utilises water saving strategies such as -

- water recycling and stormwater harvesting
- reduced water usage using water efficient products such as waterless urinals, water efficient taps/toilets with a minimum 4-star rating under the Water Efficiency Labelling and Standards Scheme (WELS)
- regular maintenance and reporting procedures for leaking water fixtures or products

To enable tenancies to monitor and facilitate water saving strategies ensure that tenancies can be or are sub-metered.

Landuse/ecology

Some office buildings you are considering as a tenancy may be situated in areas which have sensitive ecological systems, particularly waterways. While you may have little say in how this is being managed, you can enquire how the building’s landscaped areas have considered nearby ecosystems, so they are not damaged and or preserve any natural heritage. For example what has building management done to minimise the impact of water runoff from carparks into waterways? Landscaped areas can also be a major use of water and this may also be a part of your evaluation for a prospective tenancy

Does the tenancy have the ability to integrate landscaping within existing building – i.e. rooftop garden and/or have access to landscaped areas.

3 Detailed Design – design brief & development

Integrated design

Maintaining an integrated design approach will be an important part of the project from now on and keeping up the momentum. The design brief should now be finalised with the sustainable goals and objectives clearly defined and embedded. (See the see DECC Sustainability and Project Delivery 4 for more detail on writing a brief which integrates sustainable outcomes as well as the section Process from this document on writing a design brief)

Organising regular design charettes or meetings not only ensures everyone on the team agrees to the sustainable objectives of the project but maintains that same commitment throughout its development. The charettes or meetings are also a good place to continue to discuss ideas for maintaining or even improving on these objectives and are discussed by everyone on the team.

The management, operation & commissioning of a project is part of the integrated design approach and critical for the success of the operation of the design once complete. So ensuring the design of facility management plans, policy requirements and targets are integrated as much as possible as early as possible into the project will produce a superior product.

Documentation and commissioning clauses are also important to ensure the proper transfer of knowledge from designers to tenants or building managers for an efficient operation and maintenance process.

Social sustainability

Some aspects of the new design or tenancy may be worthy of integrating as a public awareness and education to not only the users of the office but also to the wider community. This can be done in many different ways such as brochures, web site links, internals signage, tours and so on.

It is easy to keep the design of the fitout concentrated on the physical needs and requirements of what is ultimately a very practical space. However it is also good practice to remember to create a design which ‘lifts the spirit’ as well as fulfils a practical brief.
Once staff and other stakeholders have been interviewed and discussions taken place to formulate and finalise the brief, it can be easy to lose sight of their need for continued involvement in the project as it builds momentum and hits critical points. So ensure continued stakeholder engagement throughout the process from employees, community and customers or outsiders with whom the organization engages.

**Indoor Environment Quality**

At this stage of the project the majority of the most critical decisions are being made on the design. Materials and products are selected and electrical systems decided. As these decisions are being made, it is important to ensure the quality of the indoor environment is maintained at a superior level while considering energy saving designs and initiatives.

The main consideration for a superior indoor environmental quality are:

- indoor air quality
- noise
- thermal comfort
- light
- office layout (this has been dealt with at length in the other parts of this guide)

Ensuring the fitout is designed to achieve a high NABERS indoor environment (IE) rating guarantees a superior standard, however some points to consider to ensure a superior indoor environmental quality are following.

**Indoor air quality**

- Ensure adequate fresh air intakes and ventilation of spaces – this can be achieved either mechanically (through an air conditioning system) or passively (through an open window).
- Minimise/eliminate VOC offgassing from materials, (particularly materials which contain formaldehyde such as many compressed timber fibre boards; and other potential VOC sources such as textiles, paints, adhesives and sealants) cleaning regimes and other internal and external sources.
- Ensure total VOC emissions within a space do not exceed standards or ratings you are trying to achieve.
- Include indoor plants to assist in improving IAQ but they should be maintained without the need for chemical fertilisers and low water usage.
- Ensure external sources of air/ particulate pollution do not penetrate internal areas through HVAC systems – i.e. from roads and parking areas or are tracked in from shoes. Introducing adequate doormats at entrances will assist in reducing any ‘walk in’ tracking.
- Ensure sources for pollutants from known areas such as print areas are separately ventilated.
- Monitor CO2 levels within indoor environments especially spaces close to car parks or major roads.
- Ensure that existing toxic materials – i.e. asbestos etc - are safely removed from site
- Ensure that no toxic materials or materials which contain toxic substances are integrated into the design

**Thermal comfort**

- Ensure thermal comfort levels for temperature and humidity are maintained appropriately for summer and winter conditions. For example it is unnecessary to have interiors so cold in summer that occupants need to wear extra clothing or so warm in winter they need to take clothes off.
- Provide individual control to users for thermal comfort, lighting levels and glare This may include temperature and/or lighting controls to individual areas or the ability for an individual to pull down a blind to reduce heat or glare or both.
Light

- Ensure staff have access to natural light and exterior views, without causing problems with glare or thermal comfort—allowing natural light into a work environment is good for many reasons—lets in light to reduce the reliance on artificial lighting levels, provides exterior views, provides warmth from the sun in winter and generally provides people with a good quality environment. Layout is important here to ensure that occupants are close enough to still gain access to natural lighting and that objects such as walls or high workstation screens do not block natural light.

- Set lighting levels (natural and artificial) according to relevant tasks and standards. You will find that the property industry expects a lux level of 400 although the Australian Standard code sets a minimum maintained illuminance level of 320lux for office work environments. The higher the lux level the greater the energy expenditure, so it is always good to try and save where possible. A lighting consultant can provide appropriate advice with these types of decisions.

- Reduce glare - Too much light can cause glare and a silhouetting affect on surroundings which can be very distracting and disturbing in a work environment. Blinds can be an effective way to control glare.

Noise

- Reduce distractive and/or high level noise from any internal or external sources through strategies such as:
  - façade sound insulation
  - internal partitioning (bearing in mind that these partitions do not also reduce access to natural light)
  - noise control from HVAC systems
  - the use of white noise — to mask any unwanted noise

Energy

Tenancy fitout must be designed to achieve a minimum 4.5 star NABERS Energy Rating under the NSW Government Sustainability Policy. (see the NABERS website, Sustainability and Property Management 3.5 for more detail)

Some strategies to minimise energy consumption include:

- Utilising passive solar design principles for thermal comfort and daylighting needs.
- Optimise use of natural light through features such as internal light sensors, reflective wall finishes or internal operable blinds.
- Integrating a building management system (BMS) to organise and control lighting and HVAC zones according to use and afterhours working times.
- Addressing the possibility of switching the Master Power Outlet off after office hours to automatically power off communal office equipment such as printers, photocopiers etc.
- Selecting electrical equipment to have highest energy efficiency rating — a minimum 4-star rating under the Minimum Energy Performance Standards Scheme (MEPS), as required under the NSW Government Sustainability Policy. Look for Energy Star rated equipment. (See Office Products – A guide to sustainable purchasing and use and Sustainability and the Supply Chain 5 for more information) and have a ‘sleep mode’ function when not in use.
- Selecting the latest and most energy efficient lighting systems/luminaries, office electrical equipment and kitchen appliances
- Reducing the demand for domestic hot water
- Integrating light and movement sensors to minimise lights and/or AC being left on when areas not in use
• When supplementary air-conditioning is proposed in the tenancy, make sure high efficiency equipment is used with controls that reflect the required usage periods

• Installing separate sub metering for all levels, tenancies and services for monitoring energy use

• Using NABERS Energy tools to model and benchmark the potential energy use in overall design and equipment selection

• Using NABERS Commitment Agreement to commit to a specific NABERS Energy rating (a min of 4.5 stars as required by the NSW Government Sustainability Policy).

  o Integrating a utility management plan in the design proposal to adopt best practice from the start

  o Avoiding energy wastage such as heat loss or gain and reducing peak demand

  o Assessing the possibility of integrating renewable energy sources for electrical and/or hot water needs

  o Ensuring windows are cleaned and glazing is upgraded for the most efficient and appropriate use

Embodied energy used to manufacture the furniture, fixings and finishes of an interior can also have a substantial impact on greenhouse gas emissions but is a more hidden factor. Research has shown that this can even outweigh the operational energy of a building over its life span when using energy generated from fossil fuels. Selecting products and materials with a lower embodied energy (renewable and recycled products are usually lower in embodied energy) and reusing products and materials helps to reduce the total embodied energy of a fitout.

Transport

While mandating how people get to work is not reasonable, you can encourage more sustainable transport options by -

  o Providing facilities for bicycle storage and showers.

  o Organising a ‘green’ travel plan for staff.

  o Ensuring proximity of the office to public transport nodes.

  o Selecting fleet vehicles that have the lowest petrol usage.

Under the NSW Government Sustainability Policy, all NSW Government agencies are required to use E10 blends (or other alternative fuels) where it is practicable, available and cost-effective. Motor vehicle purchasing requirements for all agencies require vehicles to be compatible with E10 blends, consistent with the Cleaner NSW Government Fleet Policy (see http://www.statefleetc.ogp.commerce.nsw.gov.au/Greening+the+Government+Fleet/Cleaner+NSW+Government+Fleet.htm).

The NSW Government Sustainability Policy also stipulates that agencies with fleets of 25 to 99 cars are required to have at least one petrol/electric hybrid fuel technology vehicle. For fleets comprising 100 or more vehicles, 1% of the fleet must be hybrid vehicles.

Materials

A section on materials has been singled out at this stage as materials selection can have the biggest sustainable impact in an office fitout through embodied energy, volatile organic compound emissions and waste.

To reduce the environmental and social impacts of material selection, integrate strategies which consider –

  • the most appropriate material according to its potential use and life span. Long life materials on a short life product, an office fitout, may not be the best solution particularly if cannot be reused or recycled.

  • the life cycle impact of the material from raw material extraction to end of life on the environment.
• the reduction of the embodied energy\(^1\) of a material when manufactured using fossil fuel sourced energy. The embodied energy of materials are hidden energy uses which can on occasion outweigh the operational energy of a product (See also What has sustainable development to do with how we build and fit out a new office? Ecological Issues in this document) While information concerning embodied energy can be difficult to obtain from suppliers and manufacturers, the availability of this information is growing.

• the reduction of the embodied water\(^2\) of a material. As with embodied energy, the production and manufacture of a product can also use a lot of water, not just in the use of water from fittings such as taps and toilets. This information can be even more difficult to obtain but is an equally important part of the life cycle of a product to consider.

• the use of non toxic substances in its manufacture and construction.

• the impacts on the ecology/biodiversity in its manufacture, use and disposal.

• the social impacts in regard to its manufacture – i.e. free trade, non use of child labour, etc.

• locally made and/or salvaged materials/products

Other strategies to reduce the sustainable impact of material selection could include the following

- Select materials which have been certified through a reputable and certified ‘green’ certification system. This can include materials as well as products, such as timber which has various certification schemes such as the Australian Forestry Standard or the Forest Stewardship Council (FSC) certified timber

- Develop guidelines for green specification for office and building materials based on the NSW Government Procurement Policy and Commonwealth Environmental Purchasing Guide

- Consider developing a materials matrix when comparing & selecting materials

- Reuse existing furniture, fittings, fixtures etc as much as possible -
  - Give existing furniture a facelift by reupholstering or repainting using appropriate materials and finishes.
  - Consider the flexibility of the design of the product/material for future disassembly, reuse and recycling.

- Select materials for durability, reuse and recycling.

- Provide for waste avoidance and the efficient use of materials by designing to suit manufactured sizes and or quantities.

- Preserve non renewable resources by minimising use and quantities as well as through reuse and waste avoidance.

- Select ‘eco’ preferred materials such as the use of renewable resources including reused and recycled materials.

- Select materials with low/no harmful VOC emissions.

- Ensure suppliers commit to product stewardship strategies – particularly when claims for recycling/reuse are made.

### Waste

The first considerations to reducing waste start in the design phase, by reducing what needs to be disposed of at the end of life. A key strategy here is to use less. Once the quantity of materials has been

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1 Embodied energy is the term used to calculate the energy required to produce a particular material or product from raw materials through to production, manufacture and distribution but does not include the energy it may need to operate or use during operation.

2 Embodied water like embodied energy is the water required to to produce a particular material or product from raw materials through to production, manufacture and distribution but does not include the water it may need to operate or use during operation.
reduced consider how materials/products are going to be reused or form new products through recycling for example. The last strategy should be considering materials as waste to be disposed of. Aim for a high NABERS Waste rating.

Some of the key strategies to reduce waste at this stage of the project will be in materials selection and how ‘waste’ systems are designed into the fitout for easy and efficient use. A common problem with waste management systems is that people don’t use them properly, either through ignorance or laziness. This human foible should be taken into account when designing a waste management system.

Some strategies to consider include -

- Asking the design team to design in waste avoidance.
- Asking the design team to design products to suit manufactured sizes and or quantities for efficient use of materials.
- Ensuring that collection points within the building are available (i.e. space can be provided to store waste products) and systems in place to collect sorted waste and recyclables during operation. These could include –
  - recyclables, reusables, compost, e-waste, construction & demolition waste, toxic waste – i.e. batteries, landfill.
  - ensure sorted waste receptacles are clearly marked/coded/signed.
  - the audit from the previous tenancy is used to guide the selection of sorted waste receptacles.
- Asking the design team to design for future disassembly and deconstruction for reuse and recycling at end of life.

(see NABERS website, Sustainability and Property Management 3.7, Sustainability and the Supply Chain 5 and Waste Reduction in Office Buildings for more information)

**Water**

For most tenancies, the ability to specify and/or change plumbing fixtures and fittings will not be possible. However where water saving strategies are possible (i.e. whole building tenancy), aim for a 4.5 Stars NABERS Water whole building rating. Employing water saving practices with staff is a good option, however, other strategies where possible could include -

- Reducing water wastage through reporting and fixing leaks and drips.
- Ensuring water efficient appliances are specified (use water using products or appliances with a minimum 4-star rating under the Water Efficiency Labelling and Standards Scheme (WELS)) or practices carried out in areas such as –
  - Kitchens and bathrooms
  - Cooling towers – where applicable
  - Fire sprinkler testing – where applicable
  - Interior landscaping
  - Exterior landscaping –where applicable.
- Maximising the use of recycled and reused water from sources such as storm/rainwater, grey water and blackwater wherever possible.
- Considering waterless products such as waterless urinals when appropriate.
- Considering NABERS Water ratings if occupying a whole building.
- Ensuring water is submetered for monitoring and performance improvement.

(see NABERS website, Sustainability and Property Management 3.6 and Water Efficiency Guide : office & public buildings for more information)
Landuse/ecology

There will be few opportunities for making any changes or impacts in this area which have not already been discussed. However at this design phase, and where it may be possible, considering landscaping solutions or even a rooftop garden or similar can be a good idea, to reduce rainwater runoff, increase roof insulation, and provide vegetation for local wildlife particularly birds and perhaps even food for local cafeterias, café, restaurants. However this will only be possible in few instances

(For more information see Sustainability and Project Delivery 4, Sustainability and Property Management 3 and ESD Design Guide for Australian Government Buildings)

4 Pricing – Tender Documentation & Evaluation - competitive pricing from trades and suppliers

During tender documentation and evaluation all decisions will have been made and designs will be costed and compared. It is important at this stage that prices/tenders are accurate and consistent with the specified products and materials are not substituted for cheaper and less ‘environmentally friendly’ alternatives for a lower price.

Ensure that the tender documentation clearly states the desired environmental performance levels of products, materials and fitout based on industry good or best practice. Where possible specify outcomes and the audit trail that will be required, rather than proprietary products.

Make sure the contract documentation, including plans and specifications, is written so as to achieve the project’s sustainability objectives. The design team leader or project manager should sign off tender documentation.

Consider tendering arrangements such as alliances or partnerships with subcontractors and suppliers or leasing contracts in which fitout elements such as carpets, workstations and partitioning are leased. A leasing contract should identify environmental standards to be met, including durability, recycled content, recyclability, low emissions, replacement and maintenance requirements.

Require tenderers to provide information on their past relevant environmental experience, regulatory environmental record, and capacity to commit to project-related environmental actions.

Provide opportunities for innovation such as encouraging tenderers to nominate alternatives e.g. environmentally friendly materials or construction processes.

Include a requirement in the tender for an outline Environmental Management Plan (EMP) with a strong focus on waste minimisation, energy and water use, recycling, pollution avoidance and noise control.

Check that contract documentation provides for commissioning and tuning to ensure that the performances targeted in the design and documentation are achieved in practice.

(See Sustainability and the Supply Chain 5 and Sustainability and Project Delivery 4.2 for more information)

5 Construction or Contract Administration and Commissioning - project management and site supervision

Now your project is being built. At this stage the critical concerns are how the site is being managed in the way it deals with any polluted air that may circulate through the rest of the building and how waste, water and energy usage is dealt with during construction.

Before works begin, ensure the head contractor, the project manager and others (as necessary) meet to confirm the approach to be taken to environmental management including work practices, compounds, material ordering and waste management. Make sure that all people involved understand what is expected of them, their responsibilities and outcomes that need to be reported.

These are some areas of concern and strategies to reduce impacts.

IEQ – Occupant health, comfort & productivity
Ensure air circulation has been separated from other areas of the building through pressurised zones or rerouting of AC - this way any polluting smells, VOCs or particulates are not circulated to other tenancies.

- Avoid the use of any toxic materials during construction – including materials used to clean others – such as paint solvents

**Materials**

- Ensure specified products and materials are not substituted for cheaper and less 'environmentally friendly' alternatives. Adhesives, paints and other less obvious materials can be substituted for others with high VOC content for example as it can be very difficult to detect a difference without being there when applied.

**Waste**

- Ask contractors and sub contractors to provide a construction waste management plan (WMP) and set waste targets
- Ensure demolition and construction waste is sorted for reuse and recycling
- Select products with less packaging waste and/or work with manufacturers/suppliers to reduce packaging waste
- Maximise the use of construction methods to reduce waste – encourage builders and contractors to suggest ways to reduce waste on site

**Water**

- Minimise the use of potable water in construction
- Maximise the use of reused/recycled water where available
- Minimise pollution of waterways through construction waste – i.e. paints

**Commissioning**

Comprehensive pre-commissioning, commissioning and quality monitoring should be required in the contract and performed by the appropriate contractors, suppliers and trades on site. NOTE: The Property Council of Australia (PCA) recommends the use of independent commissioning before occupation and upon completion of the HVAC and services package or works or the full contract. The PCA also advises tenants to test systems to check they are working as designed and to obtain a commissioning report before formal hand-over.

(For more information see Sustainability and Project Delivery 4)

**6 Finalisation & Occupation – relocation, staff induction & maintenance**

You are ready to move in! Celebrate your move and promote the positive strategies you have put in place to ensure a healthy, pleasant, productive and sustainable new office interior. However the work is not yet over as post occupancy is a very important stage to ensure all of the good things which have been in place are working properly and used correctly and continue to do so over years to come. It is also an important stage to document the process recognising things which worked well during the process and in the finished product and those which could be improved on next time and why and how. Continuing to monitor your new design for the next 12 months will assist in this analysis and provide important information on whether or not the design was successful in its objectives and targets. Compare your results with the audits and surveys you completed before the move or upgrade of your office fitout.

Following are some strategies to ensure any problems are resolved and the fitout is used and maintained as it should be:
Social sustainability and indoor environmental quality

This is the most important aspect of the project. If the occupants are unhappy, unhealthy and unproductive then the project has been a failure. Therefore a post occupancy survey is critical to not only ensure that staff are happy in their new environments but improvements can be made where they are not. But don’t rush into the survey – wait about 4-6 months, when people are more familiar with their surroundings and how they use them and that ‘new office honeymoon’ period has passed so you get more accurate answers. Include issues around health, safety, comfort, usability, social aspects, transport, accessibility, light, noise and thermal comfort. There are specialist consultants in this area who can assist you with this survey and how to analyse the results. Use this information to compare with the survey completed before the move or update.

Providing staff training and education on the benefits of the new fitout and design and how to use it can be critical to a successful project. This is of particular relevance where the built environment is requiring the user to control and maintain areas of thermal comfort for example or where the technological systems may be different or more complicated than staff are used to. Ensure this procedure is continued as part of the induction process for all new staff and reminder programs for all staff are completed on a regular (yearly) basis.

To assist staff in using the new fitout on a more continual basis -

- Create a Building/Tenant User Guide for staff to maintain health & comfort levels as well as maintain energy, waste and water goals and objectives for tenancy.
- Provide a method for continual feedback and improvement from staff and other users.

With your new low VOC and healthy environment, you do not want others bringing in chemicals and materials to undo this work. Therefore ensure maintenance and cleaning contracts include the use of low/no toxic VOC materials i.e. paints, sealants, adhesives, cleaning solutions.

(See also Sustainability and Property Management 3.8 for more information)

Energy

Integrating performance management and monitoring strategies is important for maintaining optimal energy use, while maintaining human comfort. (See also Management, Operation and Commissioning, on Page 21)

Some strategies to assist in maintaining optimal energy performance include -

- Undertaking annual NABERS Energy ratings to benchmark and monitor performance.
- Integrating energy into a utility management plan.
- Initiating a data sharing strategy with others (within same building and/or externally) for continual learning and improvement.
- Ensuring consistency and frequency of data for accuracy.
- Facilitating co-operation on reduction strategies from staff as well as system and facility managers.
- Continuing annual operational energy audits and ensuring energy use is within annual targets and or continues to be improved.
- Ensuring the maintenance, repair and replacement of equipment – making sure when equipment is replaced it is replaced with models of increased energy efficiency.

(See also Sustainability and Property Management 3.5 for more information)

Waste

As with energy, integrating performance management and monitoring strategies is important for maintaining optimal waste management. (See also Management, Operation and Commissioning on Page 21). However, education will be the most important ongoing issue to ensure a continual efficient waste management program.

Some strategies for ensuring an optimal waste management program include -
Including waste management strategies in a utility management plan.

Implementing a waste management educational program.

Encouraging participation from staff and implementing waste management and reduction strategies such as a staff reuse/recycling program for instance a bottom drawer amnesty, swap meet, etc.

Initiate a data sharing strategy with others (within same building and/or externally) for continual learning and improvement.

- Ensure consistency and frequency of data for accuracy.
- Facilitate co-operation on reduction & recycling strategies.
- Continue annual operational waste audits.

(See also Sustainability and Property Management 3.7 for more information)

Water

As with energy, integrating performance management and monitoring strategies is important for maintaining optimal water use. (See also Management, Operation and Commissioning, below). In areas controlled by whole of building management, ensure continual discussions for optimal water saving strategies.

Some strategies to assist in maintaining optimal water use performance include -

- Including water in a utility management plan.
- Initiating a data sharing strategy with others (within same building and/or externally) for continual learning and improvement.

  - Ensuring consistency and frequency of data for accuracy.
  - Facilitating co-operation on reduction & recycling strategies.
  - Continuing annual operational water audits.
- Ensuring the maintenance, repair and replacement of equipment.
- Monitoring and reporting water leaks.

(See also Sustainability and Property Management 3.6 for more information)

Management, operation & commissioning

The management, operation and commissioning of a new fitout is critical to ensure that all systems put in place are working as designed and continue to operate to the optimum capacities. The commissioning of a project ensures that all systems particularly energy and water systems are operating as designed. Facility managers and building managers are responsible for the ongoing maintenance and operation of the building and fitout to ensure this optimal operation continues throughout the life of the building/fitout.

Facility and building managers play a vital role here and it is important that they are also clear about the sustainable objectives of the department.

Some points to note in this process include -

- Ensuring the commissioning of systems is undertaken post occupancy to ensure all systems are working as designed -

  - Management of the commissioning process should be completed by a commissioning agent so the process is independent from any vested interests.
- Ensuring the fitout facilitates all required management plans, policy requirements, targets, etc.
- Providing regular reporting on fitout performance (staff satisfaction, IAQ, waste, energy and water) for continual improvement and/or sustained performance.
o Initiating and facilitating procurement, maintenance and supply contracts to comply to required government policies on sustainability or beyond.

o Ensuring that inbuilt flexibilities to reduce churn and or to extend the life of a fitout are maintained and upheld.

o Providing a maintenance building management system (BMS).

o Establishing a building management committee and providing a facilities and environmental management plan.

o Including sustainability initiatives in a Tenant Handbook – a document outlining various issues associated with using the tenancy and the building which could include things such as maintenance, water and energy usage, repairs, waste disposal, etc.

o Establishing a system to provide continual monitoring and reporting of performance and obtain annual ratings for NABERS Energy, Water (for whole building only), Waste and IE.

(See also Sustainability and Property Management 3.4 for more information)
Useful References

Sustainable Development

Green Properties and Design
  o DECC, Sustainability and Property Management 3 (not yet published)
  o Bowman, R., Wills, J., 2008, Valuing Green – how green buildings affect property values and getting the valuation method right, Green Building Council of Australia

Green Leases
  o DECC, Sustainability and Property Management 3 (not yet published)
  o Green Lease Schedule, Schedule D1, Australian Government, Department of the Environment and Water Resources, Australian Greenhouse Office
  o The Five Steps to improve energy efficiency and reduce CO2 emissions in rented office buildings - A guide for landlords and managing agents, May 2007, British Property Federation, UK

Green Procurement
  o Environmental Management, NSW Government Procurement Guidelines v2, September 2006
  o DECC, Sustainability and the Supply Chain, 5 (not yet published)
  o Office Products – A Guide to Sustainable Purchasing and Use, Resource NSW, 2002

Water
  o Water Efficiency Guide: Office and Public Buildings, October 2006, Department of the Environment and Heritage
DECC, Sustainability and Property Management 3 (not yet published)

DECC, Sustainability and the Supply Chain, 5 (not yet published)

DECC, Sustainability and Project Delivery, 4 (not yet published)


Waste


DECC, Sustainability and Property Management 3 (not yet published)


Energy


7 Simply the best – Successes in reducing waste and buying recycled by NSW Government Agencies, Waste Reduction and Purchasing Policy, Environment Protection Authority, January 2003