

Construction and Building Management

Building design for a sustainable future



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Some basic guidelines to Construction and Building Management:

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- Building Users Guide
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Mandatory Requirements

Council's Best Practice Standard.

This fact sheet will assist you in making informed decisions about Construction and Building Management to help minimise building's impact on the environment.

Why is best practice Construction and Building Management so important?

In recent years the number of green buildings being constructed in Melbourne has steadily grown. Using environmentally sustainable design principles, these buildings have the potential to lessen their impact on the environment. However, practising sustainable site management and ensuring that green buildings actually operate as efficiently as their design intended, is vital for a complete project success.

Poor construction management, an ill-informed handover process, lack of effective and timely maintenance and lack of understanding of building services can lead to disappointing results. Higher than expected energy and water consumption and unforeseen construction waste generation can add to a building's environmental footprint.

In essence, environmental building design will only lead to a truly sustainable building if the project includes a sensible and well conceived construction management approach and an ongoing building management allowance, including:

- an early commitment to environmental targets
- a demolition and construction waste minimisation strategy
- an operation waste separation strategy
- regular tuning of building services
- sensible use of building services, such as heating and cooling devices
- preparation of a Building Users Guide.



Some basic guidelines to Construction and Building Management



How will best practice Construction and Building Management benefit me and those around me?

Thorough construction and building management may initially appear as a costly add on, but in reality, it will lead to major benefits for many stakeholders involved. Sensible construction management may lead to the following benefits:

- construction cost savings and financial security
- compliance assurance in regard to relevant regulations
- occupational health & safety (OHS) risk minimisation
- effective cooperation between trades
- overall process efficiency.

Effective and long term building management strategies may lead to the following benefits:

- security that building services perform in accordance with design specifications (building commissioning)
- assurance that buildings maintain performance throughout different seasons and occupancy changes (building tuning)
- maximised occupant amenity
- reduced utility costs
- minimised environmental footprint.

Sensible Construction Management

Construction and demolition can lead to significant impacts on neighbours and the environment. These arise from construction waste, energy and water use, traffic flow, air pollution and noise disturbance. In order to minimise these impacts, Council recommends committing to best practice environmental construction standards as early as possible. This may include the preparation of a project-specific Environmental Management Plan for large developments or the engagement of a building contractor with valid ISO14001 Environmental Management System accreditation.

Another important consideration during the construction phase is the prevention of stormwater pollution from construction sites which can cause significant harm to our creeks, rivers and Port Phillip Bay.

When stormwater runoff moves across exposed soil and surfaces, it picks up rubbish, debris and pollutants such as sediment, oil, pesticides and other toxins. Once they enter our waterways and Port Phillip Bay, these pollutants can be detrimental to aquatic life, wildlife, and human health.

Common stormwater pollution prevention strategies are either of structural or non-structural nature. Structural strategies include silt fences, sedimentation ponds, erosion control blankets, and temporary or permanent seeding, while non-structural strategies include picking up rubbish and debris, sweeping up nearby footpaths and streets, maintaining equipment and training site staff on erosion and sediment control practises.

“Once stormwater from construction sites enters our waterways and Port Phillip Bay, its pollutants can be detrimental to aquatic life, wildlife, and human”

It's worth noting that not only large-scale projects can lesson their environmental impact during the construction process, but smaller ones as well. Council encourages all planning permit applicants to adopt a recycling target for demolition and construction waste. A best practice target should be a minimum of 70% (by mass).

Some basic guidelines to Construction and Building Management



Professional's Green Accreditation Schemes

When choosing a designer, builder or specialised contractor, we recommend considering their green credentials. You may ask for past project experience, their view on individual sustainability initiatives and whether they have any green accreditations. Below is a list of common sustainability accreditation schemes:

Green Living Builders are accredited by the Master Builders Association. They provide competencies in designing, building, installing and maintaining environmental building solutions with a focus on small to medium sized residential buildings. Green Living Builders not only help their clients to meet Building Code of Australia (BCA) energy efficiency standards, but to set new benchmarks for sustainable design.

GreenSmart Builders are accredited through the Housing Industry Association (HIA) and are supposed to enhance residential projects through their environmental awareness and recognised skills for more sustainable building design and construction.

Green Plumbers have been trained in home water-efficiency products, heating and cooling appliances, hot water heating, solar hot water, water

conservation strategies and other emerging products and technologies. They are able to advise on initial investment and long term running costs of different appliances. Not sure where to start when renovating? Green Plumbers offer an environmental household inspection report that will assist in working out where best to start saving.

EcoSmart Electricians have been trained to advice on energy management, lighting strategies, solar systems and heating and cooling devices. Accredited through the National Electrical and Communications Association (NECA), EcoSmart Electricians can identify financial savings, reduce energy consumption and minimise occupant's overall impact on the environment.

Thermal Performance Assessors are either accredited through the Association of Sustainable Building Assessors (ABSA) or the Building Designers Association Victoria (BDAV). Accredited assessors have completed a short course in building thermal performance assessment through a registered training provider. Make sure you not only obtain a final rating for your permit application but use the modelling results in order to interpret an improved building design.

Green Star Accredited Professionals are accredited by the Green Building Council Australia (GBCA). They are recognised for their advanced knowledge, experience and competency with the Green Star environmental rating system.

“Working with contractors that have environmental skills and experience makes it much easier for us and our architect to implement our sustainable building design.”

Building Users Guide

As is the case with any technical product, a users guide or instruction manual should be provided with it. A building is no different. A 'Building Users Guide' (BUG) should be provided, especially in large commercial and residential developments. It can be provided in the form of a booklet, even in combination with up to date information on a website, or on digital screens in a building's entrance area. The provision of a BUG can substantially improve the building's environmental performance. It will assist:

- property managers in operating the building asset efficiently
- contractors to understand how to service and maintain particular building systems
- occupants to understand their ability to influence a building's internal amenities without minimising its overall environmental performance.

A BUG should be written in a non-technical style and outline a development's:

- key environmental strategies and targets
- concept and implementation of passive design strategies (e.g. use of flexible shading and night ventilation)
- building services controls (e.g. heating, cooling and hot water systems)
- potable and non-potable water supply
- onsite energy generation
- sustainable material choices
- pro-active maintenance regime
- fine-tuning strategy, especially for complex HVAC systems
- sustainable transport opportunities (including bicycle parking provisions, end of trip facilities and availability of public transport)

- waste minimisation and separation policies
- provision of sub-metering and the interpretation of the metering data
- environmental monitoring or participation in environmental reporting schemes
- building management and other building supply contacts.

Smaller developments should consider operational needs when including building services such as solar hot water or photo-voltaic panels and flexible shading elements or automated windows. While these installations will drastically improve the performance of a building, only regular maintenance will ensure long and efficient service.

Some basic guidelines to Construction and Building Management



Ongoing Building Management

Ongoing Building Management, including regular maintenance and tuning of building services, and providing a Building Users Guide is just like regularly servicing a car and driving it in accordance with road regulations. In both cases, the car and the building will deliver their best performance.

For developments that include considerable amounts of mechanical, electrical and hydraulic building services this is particularly the case. It is recommended to consider building tuning requirements and commitments at the early design stage of such a building.

It's important to note that inefficiently performing services, such as HVAC plants, may not only impact on indoor environment qualities but may also increase running costs, greenhouse gas emissions and disturb neighbouring properties.

Mandatory Requirements and Council's Best Practice Standards

Mandatory Requirements

You may be required to prepare an Environmental Management Plan and / or Construction and Operational Waste Management Plan as part of your planning permit application.

Ensure ongoing health, safety and amenity levels for equipment and safety installations in accordance with National Construction Code (NCC) requirements.

Council's Best Practice Standards

- Adopt a recycling target of at least 70% for all demolition and construction waste.
- Prepare a stormwater pollution reduction strategy for the building construction works.
- Commit to the preparation and availability of a Building Users Guide (BUG) and/or Building Operations Manual for large developments.

- Provide individual utility meters for all dwellings / non-residential areas.
- Provide sub-metering for all major common area services.
- For larger developments, engage ESD professional(s) on the project design team to provide advice from preliminary design through to construction
- For large developments, commit to regular fine-tuning of building services and their ongoing maintenance to ensure a building's maximum environmental performance.
- Undertake preliminary building energy ratings (e.g. NatHERS, JV3 etc)

Developments, which seek to vary from these best practice standards, must demonstrate how sustainable Construction and Building Management principles will be addressed.

Where can I find out more?

Green Living Builders

Master Builders Association
www.mbav.com.au

GreenSmart Builders

Housing Industry Association
www.tradebuild.com.au

Green Plumbers

www.greenplumbers.com.au

EcoSmart Electricians

National Electrical and Communications Association
www.ecosmartelectricians.com.au

Thermal Performers Assesors

Association of Sustainable Building Assesors
www.absa.net.au

Building Designers Association Victoria
www.bdav.org.au

Green Star Accredited Professionals

Green Building Council Australia
www.gbca.org.au

The resource efficient builder booklet

Master Builders Association
www.mbav.com.au

Guidelines for the Preparation of Environmental Management Plans

Department of Infrastructure, Planning and Natural Resources, NSW
www.nla.gov.au

Technical Manual Waste Minimisation

Your Home
www.yourhome.gov.au

Keeping our Stormwater Clean – A Builder's Guide

Melbourne Water
www.melbournewater.com.au

Reducing Stormwater Pollution from Construction Sites

Environment Protection Authority (EPA) Victoria
www.epa.vic.gov.au

1200 Buildings Program

City of Melbourne
www.melbourne.vic.gov.au

Other Fact Sheets in this series are also available to provide guidance on the 10 Key Sustainable Building Categories. For further information on Construction and Building Management, consider the Fact Sheets entitled:

- Energy Efficiency
- Building Materials
- Waste Minimisation
- Stormwater Management