

Commercial buildings improvement guide

city of villages

A step-by-step guide for private owners and operators of commercial buildings in the City of Sydney to help cut energy, waste and water use through building upgrades.

Most commercial buildings can perform better

The business case for commercial building upgrades and tune-ups is well-established. Upgrades deliver significant operational cost savings, improve asset value and cut greenhouse gas emissions. For buildings that have been in operation for 30 years or more, tune-ups and upgrades are essential in just keeping business flowing.

Both in Australia and internationally, there is mounting evidence that when buildings perform better, the occupants perform better too. There is a clear link between reduced staff absenteeism and increased productivity in buildings with best practice indoor environment. With the cost savings a happy and healthy workforce can deliver for a business, tenants are actively seeking out high performing buildings.

Not every building can necessarily be best in class, but even small improvements can deliver big returns. With the immense amount of support from industry and government, reducing energy, water and waste in a building can provide easy wins for meeting the growing expectations of tenants.

What is this guide?

This is a six-step guide to upgrading buildings.

It has been compiled for building owners and facilities managers of B, C and D grade buildings.

Each step in the guide identifies:

- Why do it – some evidence of the business benefit
- Actions and considerations to be taken
- Who to talk to – parties to be involved at each step
- Resources available to assist with the process

If you would like more information or assistance with the guide please contact:

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Sustainability Program Team – Buildings**

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Real results

There's a growing body of evidence in Australia and the world that upgrading buildings, particularly in the B, C and D grades, has measurable benefits for the owners and tenants.

Cost savings

Quantifiable and guaranteed savings from energy, gas and water bills are made from upgrades. These can add up to hundreds of thousands of dollars a year in multi-storey office buildings.

Good returns

Energy efficiency upgrades have a well-recognised return on investment with higher performing buildings generally generating green premiums in asset value, along with reduced outgoings and vacancy rates.

Healthy

Staff are more comfortable, productive and absent less when buildings have better temperature control, more daylight and fresh air circulation.

Green

When organisations cut energy use they cut greenhouse gas emissions, the major contributor to climate change. Government incentives and market-based mechanisms can create extra revenue for businesses that reduce their emissions, on top of the savings on bills.

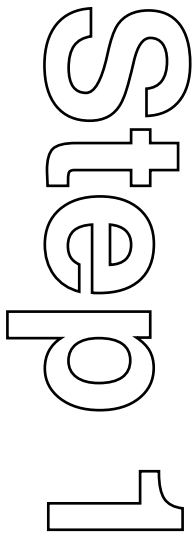
Preferred

Research and indices by the Australian Property Institute and Investment Property Databank have shown reduced vacancy and outgoings for office properties that have higher, trusted performance ratings like Green Star and NABERS (the National Australian Built Environment Rating Scheme).

Tenants are becoming more educated about what affects their outgoings, and are now actively looking for better building performance in their leases. The requirement for commercial buildings to disclose their energy efficiency at the point of sale or lease puts performance information at tenants' fingertips.

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Consideration

Why do it?

It is now proven that sustainable buildings deliver greater financial returns and have lower vacancy rates and greater value than non-sustainable buildings¹. Improving the efficiency and environmental performance of a building by upgrading can make an existing building more attractive to tenants, particularly now that Australia has the Commercial Building Disclosure program. This program enables tenants to more easily seek, compare and choose spaces based on their performance. Upgraded buildings generally perform better and have lower utility bills, reduced outgoings and provide protection against rising energy prices.

Actions to take

1.1 Understand your building

Talk with key stakeholders about how your building operates and any opportunities for improvement.

You may also have a number of in-house documents that can inform you about what is happening in the building, such as a maintenance log, issues register and building committee meeting minutes. Engaging with relevant stakeholders early is often the key to success for changing operations.

Questions to consider are:

- How old is your building and the major plant and equipment?
- Do you receive complaints from your tenants about the services in your building?
- Does your building comply with current Australian Standards?
- Does your major plant and equipment breakdown or require reactive maintenance?
- Are you having difficulties retaining and attracting tenants?
- Do you carry out routine maintenance on your building?

Who should you talk to?

Your building/facilities manager, maintenance contractors.

1.2 Understand efficient building advantages

Get the facts. Upgrading your building by replacing old plant and equipment can significantly reduce your building's operating costs and make it more appealing for potential tenants. For example, a lighting upgrade to a commercial office building in Parramatta is saving \$130,000 a year in energy costs². The Building Better Returns report found that a green premium exists in the Australian market in terms of reduced outgoings and vacancy rates.

Who should you talk to?

Government (federal, state, local), industry associations.

1.3 Understand your regulatory obligations

Under the Commercial Building Disclosure program requirements, owners are to disclose energy efficiency information when commercial office space of 2,000 square metres or more is offered for sale or lease. This includes a Building Energy Efficiency Certificate (BEEC) which is made up of a NABERS Energy star rating and a lighting assessment.

Commercial buildings have health and safety regulations, particularly for fire safety. When your annual fire safety statement is due, or when compliance with a fire safety order is required, are good opportunities to consider how you can improve your building's energy and performance efficiency. Some essential fire safety measures include exit lighting and alarms, which have efficient options to evaluate when upgrading. Other regulatory triggers and opportunities include maintenance to cooling towers, glazing and awnings.

Refrigerants are another consideration that may trigger upgrades or maintenance. Imports of chlorofluorocarbons (CFCs) have already ceased under Australia's agreement to phase-out ozone depleting substances. Controls are also in place on the import of the 'transitional' refrigerant (HCFCs and HFCs) gases known commercially as R22

and R123 which have a very high global warming potential. Almost all R22 will be phased out by 2016, with only very limited supplies available from then until 2030 for existing equipment servicing. If you require R22 refrigerant and costs are rising or the system is nearing end-of-life, this is also a good time to consider efficiency improvements in heating, cooling and ventilation (HVAC). Refrigerants can be replaced with natural alternative gases (by a licensed refrigerant handler), or a new system can be installed without these substances and lower energy demand overall.

Who should you talk to?

Government (federal, state, local), property manager, maintenance contractors.

1.4 Understand the latest requirements for government tenants

Government tenants often have their own sustainability targets and objectives covering their tenancies. If you have government tenants in your building, find out what these targets are. NSW Government tenancies greater than 2000 sqm are to achieve and maintain a minimum 4.5-star NABERS Energy tenancy rating by June 2017.

Federal and state government policies also include green lease requirements for government tenancies. Green leases have obligations on both tenant and owners to meet pre-agreed performance standards, which reflect how the base building and leased spaces contribute to overall performance. There are more resources and guides to green leasing listed in Step 6 – Maintenance and management.

Who should you talk to?

Tenant representative(s), government (federal, state).

¹ Building Better Returns by the Australian Property Institute and the Property Funds Association www.api.org.au/folder/news/building-better-returns-research-report

² Parramatta City Council Case Study of 10 Valentine Avenue www.parracity.nsw.gov.au/eua

Resources

Case studies

- Commercial lighting upgrade to 10 Valentine Avenue, Parramatta is saving \$130,000 each year www.parracity.nsw.gov.au/eua
- Upgrade to 388 George Street, Sydney with tenants in situ www.gbca.org.au/green-star
- Upgrade to 120 Sussex Street, Sydney delivered an 82 per cent internal rate of return to members www.lgsuper.com.au/sussexst
- Find out why tenants are choosing high performing buildings www.cityswitch.net.au/choose

Reports

- Building Better Returns*, setting the business case www.api.org.au
- Lessons and Tools from Existing Office Building Leaders* www.greencapital.org.au
- Low Energy High Rise Report* www.thewarrencentre.org.au
- Sustainability and the Valuation of Commercial Property* www.betterbuildingspartnership.com.au

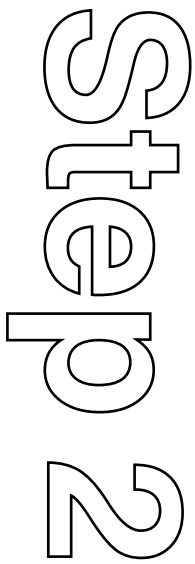
Commercial Building Disclosure www.cbd.gov.au

Find out more about the R22 phase out www.environment.gov.au/resources

Sustainable Property Guide, Section 3.9 and Worksheets 3.9A and 3.9B on Responsible Refrigerant Use www.environment.nsw.gov.au/resources

Understand your City of Sydney building health and safety obligations www.cityofsydney.nsw.gov.au/business

NSW Government Resource Efficiency Policy E2: Minimum NABERS Energy ratings www.environment.nsw.gov.au/government



Baseline assessment

Why do it?

Establishing a baseline measures how much energy and water your building uses and how much waste is generated. The process helps you to see trends and identify the equipment and practices that are driving consumption. Understanding this is essential for identifying opportunities for improvement. You can compare your baseline to industry benchmarks to see how your building performs compared to similar buildings. Once you know your baseline, you can plan and set targets for how you want your building to operate.

Actions to take

2.1 Collate energy, water and waste billing information

Your utility bills are the first source of information about how much energy and water your building uses and waste it generates. The measurements will be in kilowatt hours (kWh) for electricity, mega joules (MJ) for gas, kilolitres (kL) for water and tonnes (T) for waste. Gather this information from the last 12 to 24 (preferable) months of utility bills. If you use a Building Management Control System (BMCS, also referred to as BMS) or other performance tracking systems, usage data should be recorded in the system. If you don't have the data, contact your utility or contractor and request your building's usage data.

With all the information collated you will be able to see seasonal variation and trends. For example, if electricity use peaks in summer then the cooling system may be over-worked.

There are two types of baseline measurements for buildings:

Base building – common areas (foyers, corridors and stairs), lifts, parking areas and heating, cooling and ventilation (HVAC).

Whole building – leased areas (lighting and equipment) and base building. If your tenants are on a gross lease you will already have the usage data. If your tenants are on a net lease, you will need to request this information from each of your tenants.

For businesses that spend more than \$30,000 per year on electricity, retailers will likely offer specialised products and services, like negotiable electricity charges, tailored efficiency services, assistance with sub-metering, advice and technical assistance. Contact your retailer and/or compare offers and services for energy purchases when your contract is due for renewal.

When looking into energy purchase, your historical usage data will help you estimate and compare costs. Electricity contracts include a retail component and a network component (consisting of a network charge, consumption charge, and demand charge for large users). These are not all contestable. Some are fixed by regulation.

Metering is also open to competition. You don't have to rely on your retailer, you can investigate different solutions that will help you to monitor and operate your building more efficiently.

Who should you talk to?

Building/facilities manager, tenant representative (if looking at whole building), energy and water utilities, waste contractor.

2.2 Review your building maintenance

Building maintenance practices contribute to your energy and water usage and waste generation. Reviewing your building maintenance practices will help to identify areas that have increased maintenance requirements and may be in need of upgrading. For example, your chiller may be getting older, using more energy and requiring more regular maintenance. This may be a sign that a chiller upgrade should be considered.

Reviewing maintenance schedules can also highlight good practices, such as night-time cleaners turning lights off, regularly maintained HVAC, water and air leakage checks and window cleaning for daylight access.

Who should you talk to?

Building/facilities manager, maintenance contractors.

2.3 Conduct a building audit

A building audit combines your bill usage information and the results of an on-site assessment to establish a baseline of your building's performance. A full audit will identify a range of options to improve the performance of your building, ranging from heating and cooling improvements, equipment upgrades, lighting upgrades, improved daylight access and more. If you are establishing a baseline for your whole building, you will need to get approval from your tenants for access for the on-site audit combined with their billing data.

Consideration

Baseline Assessment

Action Plan

Financing

Implementation

Maintenance & Management

There are several ways to approach auditing.

Use a professional – Qualified sustainability/engineering professionals can measure building usage, recommend opportunities for improvement and assist with financing options.

Do it yourself – You can conduct parts or all of an audit with the right skills and experience in energy, water and waste management. There are a number of tools and resources that can help you with an audit.

Who should you talk to?

Property manager, building/facilities manager, government (state), technical service provider.

2.4 Benchmark your building's energy, water or waste usage

Benchmarks enable you to compare your building's usage with other similar buildings. The industry-accepted benchmarks in Australia are NABERS (the National Australian Built Environment Rating Scheme) for energy, water, waste and Sydney Water's benchmark for water.

NABERS expresses the performance of Australian buildings, tenancies and homes in an easy to understand star rating scale from 1 to 6 stars, reflecting actual usage from utility bills. A 6-star rating demonstrates market-leading performance.

You can conduct an unofficial rating for NABERS energy, water and waste by entering building usage and demographic information into the rating tools available on the NABERS website. An official rating undertaken by an accredited assessor means that the star rating is accurate and can be used publicly.

Green Star Performance is another way to assess your building's operation performance, providing a rating across nine impact categories including management, energy, water and indoor environment quality.

Who should you talk to?

Building/facilities manager, government (federal, state), NABERS accredited assessor.

Resources

The NSW Office of Environment and Heritage is a great place to start for establishing your building's baseline www.environment.nsw.gov.au/business

The *Sustainable Property Guide* provides practical tools and resources to integrate sustainability into asset management for the commercial property sector www.environment.nsw.gov.au

Download the associated worksheets to help establish a baseline:

- 3.5B Energy checklist
- 3.6B Water Saving checklist
- 1.2B Environmental Benchmarks

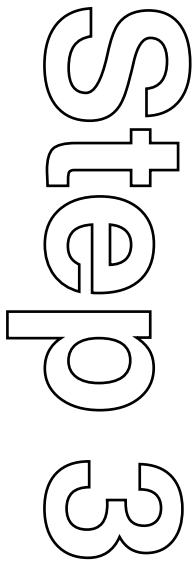
City of Sydney's Environmental Performance grants www.cityofsydney.nsw.gov.au/grants

Find out about NABERS. Use the NABERS rating calculators to conduct an unofficial rating or find an accredited assessor to conduct an official NABERS rating www.nabers.gov.au

Green Star Performance can help to identify opportunities for improvement www.gbca.org.au/green-star

Compare your water use to Sydney Water benchmarks for different business types, including commercial office buildings www.sydneywater.com.au

The Energy Efficiency Exchange provides information on assessment and tips for how to engage an assessor www.eex.gov.au



Action plan

Why do it?

Creating an action plan is an important part of planning for and managing the upgrade of your building. A plan sets out what will be done to improve the building, timeframes, responsibilities, budgets and resource needs. The plan becomes a point of reference and gives structure for reporting on progress.

Actions to take

3.1 Set targets for your building

Targets express what you want your building to achieve and the standards to which you want it to operate. Comparing your baseline building performance against the sector or local benchmarks (step 2.4) will help you set realistic targets for the operation of your building. If your building has a low baseline, for example 1 or 2-star NABERS rating, then a target to become 3.5 or 4 stars will represent a significant achievement. The difference made can be quantified and communicated to stakeholders, investors and tenants.

Who should you talk to?

Property or asset manager, technical service provider.

3.2 Agree what needs to be done

Review and agree to the actions identified in the audit and baseline assessment. Some of the actions could be undertaken immediately for little or no cost (i.e. changes to maintenance practices, turning equipment off when not in use, especially after hours) and others will require capital expenditure and will need to be considered with your capital asset plan, budgets and other funding options. The actions selected should aim to meet the targets set in step 3.1.

Who should you talk to?

Asset manager, facilities manager, technical service provider.

3.3 Review your business forecast plan and capital asset plan

Reviewing your agreed works with regard to your business forecast plan and capital asset plan enables you to embed the upgrade into your business processes. Planning timeframes should consider the logistics and practicalities of implementing the works, for example space and access requirements, impacts on tenants, or waste disposal. It is also an important part of the upgrade process as it helps you link your business planning with your financial planning. Ideally, performance upgrades would be incorporated into the capital asset planning process.

Who should you talk to?

Asset manager, chief financial officer or accountant.

3.4 Understand your council development application requirements

Some building upgrade works may require development consent from council. Consulting council in the planning stage on your proposed works and finding out any development application (DA) requirements will help to set action plan timeframes and limit delays. If a DA is required, prepare and lodge the application with council early, allowing time for assessment and communication with council's planning team.

Who should you talk to?

Local council's planning assessment unit.

3.5 Finalise your action plan

Compile your upgrade action plan, clearly setting your targets and objectives and the actions to be implemented to achieve these. Documenting your action plan will help you to manage implementation and track progress.

Who should you talk to?

Asset manager, chief financial officer or accountant, technical solution provider.

Resources

NABERS reverse calculators help determine how much energy/water to save to achieve a star rating
www.nabers.gov.au

The NABERS resources library has a number of excel calculators to quantify savings opportunities:
www.nabers.gov.au

- *Buying New Equipment Calculator*
- *Lighting Calculator*
- *Financial Report Calculator*
- *Cogeneration Calculator*
- *ESS spread sheet for Offices for making an application for certificates under the Energy Savings Scheme.*

The *Sustainable Property Guide*, action plan worksheets:

- *3.5 Energy Action Plan*
- *3.6 Water Action Plan*
- *3.6A Waste and Recycling Action Plan*

www.environment.nsw.gov.au/resources

Compare running costs for star rated equipment at Equipment Energy Efficiency

reg.energyrating.gov.au/comparator

Check if your proposed actions require development consent using City of Sydney's *Development Application guide*

www.cityofsydney.nsw.gov.au

Step 4

Financing

Why do it?

Various types of energy efficiency financing options are available that can improve the business case for up-front investment or make use of operational rather than up-front capital for upgrade works. Tradable energy savings certificates generated from electricity savings resulting from the works can reduce the upgrade costs even further. Australia is a world-leader in developing a new type of finance called environmental upgrade agreements. This finance is specifically designed for sustainability upgrades to existing buildings and allows the building owner to share the cost of the upgrade with tenants.

Actions to take

4.1 Business case

Like any business project, an upgrade will require a solid business case for approval. Building the business case for your upgrade includes calculating direct internal return on investment and payback periods. The business case should be built with input from financial and asset decision makers to tailor the decision-making criteria to your organisation's needs. You may wish to consider including less-tangible returns like brand benefit or attractiveness to tenants.

Who should you talk to?

Chief financial officer, accountant, asset manager, technical service provider, tenant representative (if whole building).

4.2 Capital expenditure planning

At this point, consider your funding options for the actions identified in your plan. Can they be funded through your capital expenditure planning or are other funding sources required and/or more beneficial?

Who should you talk to?

Asset manager, chief financial officer, accountant.

4.3 Consider other financing options

While conventional loans are available for building upgrades, a range of innovative new funding types and incentives are available to specifically support efficiency upgrades.

Environmental Upgrade Agreements (EUA) are contracts between a building owner, a lender and council. Under this contract, the lender advances funds to the building owner to complete the upgrade works and the loan is repaid through the council's existing rates collection process. Interest rates are highly competitive and 100 per cent finance and longer loan terms (10–20 years) are available. The EUA mechanism also allows for contributions from the tenants towards the cost of the upgrade, up to the value of the utility savings resulting from the upgrade. Tenant contributions usually range from 40–60 percent of the total financing costs and once the loan has been repaid, full operational savings are retained by both the building owner and tenants.

Operational leases reduce the risk of directly investing in an asset, removing the need for upfront investment capital and fast-tracking the potential to improve your business operations. The finance mechanism uses operational capital and provides flexible leasing arrangements, ensuring both property owners and tenants benefit from energy cost savings sooner. At the end of the lease term, the equipment, plant or lighting can be purchased for a residual, replaced or removed. Leasing provides the flexibility to upgrade equipment over time as technology improves. It is suitable for large and small projects plus a wide range of equipment upgrades including HVAC.

On-bill financing allows implementation of energy efficiency building solutions and equipment with no upfront capital expenditure and is offered by some energy retailers. The retailer can identify, specify, procure, install, commission, fund and guarantee energy efficiency improvement projects. If the guaranteed savings are not achieved, the retailer provides a cash rebate or installs additional energy saving measures. Available technologies include lighting upgrades, heating and cooling upgrades, chiller control upgrades, efficient

escalators and lifts, trigeneration, cogeneration, electric hot water replacements and real time energy monitoring. Repayments are made through utility bills, ownership is transferred on final payment and costs are fixed through an agreed repayment schedule.

Energy Saving Certificates (ESC) can be generated through the NSW Energy Savings Scheme. Once an energy efficiency project is implemented a certificate is issued to represent the savings that have been made. The certificates are required by energy retailers to meet legislated energy efficiency targets. The retailers pay the certificate creator for the certificates they generate based on a market rate. The income generated by certificates can improve the business case for upgrades – reducing payback times and increasing the internal rate of return. Certificate creation is highly regulated and eligible projects should establish the correct process and requirements before commencing implementation.

Energy Performance Contracting (EPC) is a model where decisions about which products and equipment to replace are made by a third party who delivers solutions and guarantees the resulting savings. This model avoids the need for upfront capital and in-house technical expertise. EPCs are well suited to businesses with low internal capacity to identify, prioritise and/or implement upgrade projects. A contractor is typically an Energy Services Company (ESCO) who can evaluate energy use, identify energy savings opportunities, provide engineering design and technical solutions for upgrades, manage the project from design to installation and monitoring, facilitate financing if required, train staff and provide ongoing maintenance services. An EPC can be combined with an operational lease, energy saving certificates and Environmental Upgrade Agreements. Tenants can also use an EPC for their own efficiency upgrades.

Who should you talk to?

Chief financial officer, accountant, Clean Energy Finance Corporation, financial institutions/providers, technical service providers, the Energy Efficiency Council, government (state, local).

Resources

Sustainable Property Guide, download 2.1A *Sustainability business case template* to help build the business case.

www.environment.nsw.gov.au/resources

The NSW Office of Environment and Heritage (OEH) runs business case training for energy efficiency projects www.environment.nsw.gov.au/business

A finance guide to selecting the best finance for your business is also available from the OEH www.environment.nsw.gov.au/business

The City of Sydney offers EUAs to building owners to upgrade their existing buildings www.cityofsydney.nsw.gov.au/eua

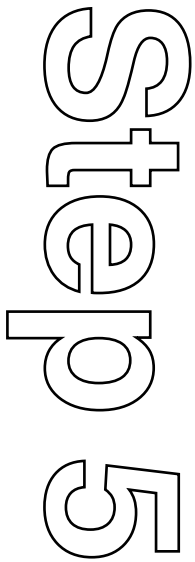
The Fifth Estate ebook on EUAs includes case studies www.thefifthestate.com.au

Clean Energy Finance Corporation offer a range of financing products specifically for energy efficiency upgrades www.cleanenergyfinancecorp.com.au

CitySwitch Green Office provides a comprehensive overview of financing options www.cityswitch.net.au/finance

See case studies of energy projects that have claimed Energy Saving Certificates under the Energy Savings Scheme www.ess.nsw.gov.au/Case_studies

Find out more about Energy Performance Contracts in the *Best Practice Guide to Energy Performance Contracts* www.eec.org.au



Implementation

Why do it?

Implementation includes engaging designers and other contractors, fitout design, sourcing materials, project management, construction and commissioning. It is the part of the project that ensures that your plans become reality, so it requires attention to service providers, their ability to meet project specifications and materials procurement. A project manager is required to ensure success of the upgrade by thoroughly researching the materials and equipment choices and ensuring they are correctly installed and commissioned.

Actions to take

5.1 Prepare upgrade works design and tender specifications

Ensure that the sustainability and performance targets are clearly defined and incorporated into the design, tender specifications and construction documents. You can do this through the design stage with architects and engineers and at tender stage when preparing your specifications. Tender specifications can also address procurement criteria and resource efficiency of the contractors while on-site.

The Energy Efficiency Council and Green Building Council of Australia recognise designers, contractors and suppliers that provide best practice solutions through accreditation. There are also a number of tools to help with procurement and supply chain choices – specifying products that will improve performance. Research into product trust marks and environmental specifications will help with choices at the design stage.

Who should you talk to?

Building/facilities manager, technical service provider.

5.2 Ensure any applications and permits are received

In the City of Sydney, development application approval is required for most development, including major refurbishments and demolition. Some internal upgrade works to non-heritage buildings may be carried out as exempt or complying development.

After development consent, a construction certificate is required for any buildings works. Other relevant permits relate to section 68 activities, public domain works, fire safety, cooling tower safety, and more.

Contact the City of Sydney's planning assessment unit directly for further information on **(02) 9265 9333** or refer to **www.cityofsydney.nsw.gov.au** for a full list of permits required.

Who should you talk to?

Local council planning assessment unit, asset manager, technical service provider.

5.3 Undertake the tender process

Go out to tender and manage the assessment and selection process with attention to sustainability criteria and performance goals. Once a tender is awarded, the project brief, project manager's brief and design consultant's brief should set out the performance goals and targets, and assign responsibilities for ensuring these are met. When appointing a project manager for the upgrade, their responsibility for ensuring specifications are met is particularly important.

Who should you talk to?

Asset manager, technical service provider.

5.4 Construct and commission works

The project manager oversees the contract and construction, installation and commissioning of the works. After the works have been completed but before sign-off, ensure that everything has been installed and is working correctly. Also ensure that you have received all of the relevant documentation and maintenance manuals to operate your building at its optimum. For example, how to operate lighting controls that include timers and sensors, automatic shades or blinds, or HVAC settings and set-points that require manual adjustments.

Who should you talk to?

Building/facilities manager, technical service provider, maintenance contractor.

Resources

See what permits and certificates are required by City of Sydney
www.cityofsydney.nsw.gov.au

See whether your upgrade works are considered exempt or complying works
www.planning.nsw.gov.au

Sustainable Property Guide worksheets can help with the tender process:

- 4.2A *Environmental Specifications building refurbishment and fitout projects*
- 4.2B *Environmental evaluation of project tenders*
- 4.5 *A Project completion sustainability report*

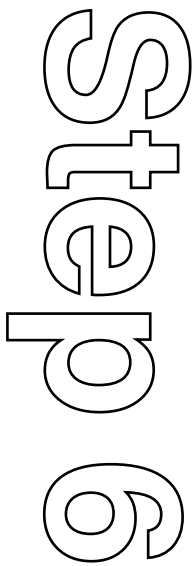
www.environment.nsw.gov.au

Green Building Council of Australia has tools to help with procurement and supply chain choices
www.gbca.org.au

Find product information or a professional to help with your upgrade, Energy Efficiency Certification Scheme
www.eec.org.au

The Ecospecifier database can help with selecting low-impact materials
www.ecospecifier.com

Good Environmental Choice Australia provides sustainable product certification for fittings and fixtures www.geca.org.au



Maintenance & management

Why do it?

Equipment and building maintenance is a vital part of management that helps to ensure that your building is performing optimally. How occupants use your building also impacts on overall building performance and can lead to increased usage and operating costs. For example, a 4.5-star NABERS rated building may operate at a lower star rating if it is not well maintained or if the tenants are not operating it properly. Proactive maintenance and management, working cooperatively with tenants, reviewing benchmarks and tracking performance are essential to make sure a building achieves, or even exceeds performance targets.

Actions to take

6.1 Building maintenance and management

Building user guides and maintenance plans are tools that can help you and your tenants operate your building at optimum levels.

Tenants contribute to the overall building performance and without collaboration they can work against the base building's systems. For example, tenant fitouts can disrupt the air balance and flow of the ventilation system, or staff working on weekends can trigger the whole building's HVAC system if it doesn't isolate floors or use timers. A building user guide provides instructions for operating a building effectively and efficiently, and should be provided to all tenants.

The guide should contain descriptions and operating instructions for all the systems worked by occupants, like shades and awnings, lighting controls and HVAC systems. The guide can set parameters such as scheduled time of operation, guidelines for out-of-hours use, contact details for reporting faults, metering information and targets. Providing and promoting these ongoing actions to tenants will contribute to overall performance.

A building maintenance plan sets out how your building is to be maintained and can also include direction for energy, water and waste efficiency. Assigning a position with the responsibility to implement the plan and training relevant staff in efficient building maintenance will ensure gains are preserved in the long term. The maintenance plan can also offer ongoing opportunities for better performance as equipment reaches its end-of-life or requires tune-ups. Facility managers and tenants can help identify problems, and quick resolution will help preserve the efficiency gains made from building upgrades.

Who should you talk to?

Building/facilities manager, tenant representative(s)
maintenance contractors.

6.2 Monitor your building

Ongoing monitoring will ensure that your building continues to operate efficiently. Monitoring your usage will also enable you to re-rate your building's performance (self-rated or officially), quantify the savings achieved from the upgrade works and measure progress towards your action plan targets and objectives.

Operators no longer have to wait for the monthly or quarterly bill to understand usage patterns – there is a rapidly evolving market for monitoring solutions available, including sub-metering, dashboards, building intelligence and predictive software solutions. Data can be monitored professionally by operations staff, and it can also be interpreted and shared with occupants. Some office buildings have live dashboards in the foyer displaying usage patterns for all visitors. Building owners should investigate options available to them for monitoring and communicating results.

Who should you talk to?

Building/facilities manager, maintenance contractors.

6.3 Engage with your tenants

Engaging with your tenants can go beyond standard operating practice and become an active collaboration to further improve the building's performance. The extra effort will maximise the benefits from an upgrade.

The new and growing area of best practice leasing, also known as green leasing, sets out responsibilities and agreed practice for owners and tenants to maximise building performance. These leases typically include performance targets (energy, water, waste) and information sharing and dispute resolution processes to ensure owners and tenants are communicating and have shared goals. The Better Buildings Partnership has found that two thirds of leases signed in Sydney CBD since 2013 include green lease clauses.

CitySwitch Green Office is a free sustainability program supporting office-based businesses to significantly improve day-to-day energy and waste efficiency. The program provides a growing network of over 700 members nationally with one-to-one support from an experienced program manager as well as free online resources, practical toolkits and regular education and networking events. Discounts on NABERS tenancy energy ratings are also available to members.

Encouraging the businesses that occupy your building to join the CitySwitch program will help to ensure the optimal performance of your building.

Who should you talk to?

Tenant representative(s), building/facilities manager, CitySwitch Green Office program manager.

Resources

Hear from facility managers about the benefits of managing and maintaining your building

www.youtube.com

The *Greening Your Building, A Toolkit for Improving Asset Performance* provides practical maintenance and management information for the operation of your building
www.melbourne.vic.gov.au/enterprisemelbourne

Up-skill through the NSW Energy Efficiency Training Program, including energy management basics, HVAC for businesses and energy efficient lighting short courses

www.environment.nsw.gov.au

The Better Buildings Partnership's Leasing Lifecycle Tool provides guidance on each stage of the leasing process www.betterbuildingspartnership.com.au

Encourage your tenants to join the free CitySwitch Green Office program to maximise the savings benefits from your upgrade by improving their energy and waste efficiency www.cityswitch.net.au

The *ESD Operations Guide for owners, managers and tenants* has detailed guidance for many aspects of maintenance

www.environment.gov.au

Maintenance & Management

Implementation

Financing

Action Plan

Baseline Assessment

Consideration