

TOTAL ENVIRONMENT CENTRE INC.

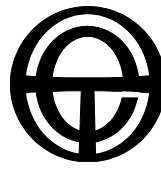
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13/12/07

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COMMERCIAL PROPERTY AND CLIMATE CHANGE TEC EXISTING BUILDINGS PROJECT FAQs

What is meant by the term 'existing buildings?'

The term 'existing buildings' is used to refer to buildings that were built without sustainability considerations in mind. 'Existing buildings' are to be contrasted with new 'green buildings.'

Why existing office buildings?

Up to 98% of Australian office floor space is comprised of 'existing buildings.' Replacing existing buildings with new 'green buildings will not achieve emissions reductions because the construction of new buildings generates significant levels of emissions. By one estimate, the most energy efficient buildings built today will not pay back their embodied emissions for at least 290 years. The most climate friendly buildings are not new 'green buildings' but existing buildings that have been upgraded to achieve substantial emissions reductions.

How much office space?

There is 15,765,271 m² of premium, A and B grade office space in Australia. The TEC project with five property trusts currently covers 1,325,000m². Workshops will be held with 15 other trusts in 2008 and we hope that the scheme will expand as they take the information and experience from the project, on board.

What have the property trusts undertaken to do?

They have pledged to achieve a base building portfolio average of 4.5 or better ABGR (first tier) or 4.0 or better (second tier) by 2012. Current best practice in Australia is three stars. Each property group's portfolio contains a number of buildings with different existing ratings. The trusts will also be working with tenants over several years to improve their energy efficiency and increase their use of zero emissions energy, leading to further reductions in emissions.

What is ABGR – Australian Building Greenhouse Rating?

Each office building can receive a star rating, according to how many kilograms of CO₂ per square metre, it produces per year. The rating tool is found at www.abgr.com.au, and is administered nationally by the NSW Department of Environment and Climate Change.

Why is this so important?

Emissions from the non-residential sector, of which office buildings are the largest contributor, are predicted to double from 1990 levels to 2010. This needs to be set beside the fact that in order to play its part in global efforts to avoid dangerous climate change, Australia will have to reduce emissions by at least 40% on 1990 levels by 2020, and effectively decarbonise by 2050. Replacing existing buildings with new 'green buildings' is not the answer. In order to achieve emissions reductions from the sector, existing buildings will need to be upgraded substantially.

What can a building do to improve its rating?

It can improve the efficiency of mechanical services (eg, air conditioning, boilers, chillers), lighting (eg, occupancy sensors), room temperature set points, insulation and layout changes to enhance access to daylight. Many measures have quick payback periods; and of course using less energy means saving money.

What is the difference between a base building and a tenancy?

The term 'base building' refers to those parts of a building that are used collectively by all tenants. This includes the Heating Ventilation and Cooling system (HVAC System) as well as lifts, and foyer lighting etc. The term 'tenancy' refers to those parts of a building that are used solely by a particular tenant. i.e lighting and computers on the floors used by a tenant. ABGR can be measured individually for base buildings and tenancies.

Is there a demand for greener buildings?

Yes, government agencies and the private sector are becoming climate conscious and want to reduce their environmental footprint. Many are specifying ABGR ratings for preferred offices.

What else is driving building upgrades?

Buildings are also being upgraded to guard against rising energy costs, to avoid future regulation, and because many in the industry feel that there is a moral imperative to do so.

How did you calculate that upgrading all buildings to 4.5 ABGR would be equivalent to taking almost all of Australia's heavy trucking fleet off its roads?

In 1999 the AGO released a paper that looked at the emissions profile of non-residential property (building classes 5-9). Unfortunately the AGO has not updated this paper so we are left to estimate the emissions profile of commercial property (offices).

AGO 1999 found that 8.5Mt CO₂e were attributable to offices. This was 27% of the 32 Mt CO₂e attributable to building classes 5-9. Assuming annual emissions growth of 1.5Mt per annum (consistent with AGO projection that emissions from building classes 5-9 would grow from 32Mt to 62Mt between 1990 and 2010), and making the conservative assumption that commercial property has retained its 27% share of emissions from building classes 5-9, then emissions attributable to office buildings currently hovers around 15.5Mt. (Emissions from building classes 5-9 would be around 57.5Mt today. 27% of 57.5 Mt is 15.525 Mt).

If we assume a market ABGR average of 2.5 for both base buildings and tenancies, and say that a movement of 1 ABGR star represents a 20% decrease in the emissions profile of office buildings then we can say that if all office buildings (base buildings + tenancies) were upgraded from the 2.5 average to 4.5, then the emissions profile of Australian office buildings would fall by 40%. 40% of 15.5Mt is 6.2Mt. In 2007, tail pipe emissions from Australia's heavy trucking fleet (Rigids + other trucks - light commercial vehicles) were estimated to be 6.8Mt. (BTRE, 2002)