

PRESS INFORMATION

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WHAT MAKES A BUILDING “GREEN”?

“Buildings are one of the heaviest consumers of natural resources and account for a significant portion of the greenhouse gas emissions that affect climate change,” says Craig Hallowes, spokesperson for the Association of Property Unit Trusts (APUT). “We have a responsibility to ensure that the built environment contributes to a turnaround in global warming.”

According to the US Green Building Council (USGBC), on a worldwide basis, buildings account for 17% of fresh water withdrawals, 25% of the wood harvest, 33% of the CO₂ emissions and 40% of material and energy use (45% in China). This magnitude of consumption underlines the need for the built environment to adopt more sustainable practices as these levels clearly can't continue.

Enter the “green building”

To prevent further degradation of the environment, property developers are increasingly adopting sustainable building practices, which has led to the emergence of the green building.

A green building is a one that is energy efficient, resource efficient and environmentally responsible. It is a building which “significantly reduces or eliminates its negative impact on the environment and its occupants” (Green Building Council of Australia). Such a building can reduce energy consumption by as much as 70%, while having a dramatic impact on greenhouse gases and climate change (Green Building Council of South Africa).

Green building practices

The development of a green building starts with the selection of its location and the site planning. It continues with the building design and architecture with specific features incorporated to ensure the most efficient use of resources as well as being mindful of the type of materials used. And finally, the interior design and fittings as well as the management of the building are planned to utilise inputs efficiently.

The following factors are considered when developing a green building:

- Location
 - Fragile landscapes are avoided
 - Near mass transportation
 - Should not contribute to urban sprawl
- Site planning:
 - Use less surface water (ponds, porous paving)
 - Indigenous landscaping (uses less water)
 - More green space (small building footprint, minimal surface parking – less storm water run-off)
- Building Exterior
 - Careful orientation, screening and shading to reduce heat load
 - More use of natural light
 - Alternative energy systems (solar, wind etc)
 - Minimising glare
 - Green roofs
- Building Interior
 - Minimal materials, use of recycled materials and renewable resources
 - Flexible layouts (movable walls, raised floors)
 - Occupant controls heat and light (as opposed to large zone thermostats or light switches)
 - Abundant natural light and access to views
 - More fresh air
 - Plumbing fixtures to reduce water usage
 - Promotion of “green” practices (such as recycling)

When properly designed, buildings can result in reduced operating costs by increasing productivity and using less energy and water as well as reduced environmental impacts by, for example, lessening storm water runoff.

There are many different measures that can be taken to make a building more efficient in its use of resources. Some examples are given below.

Examples of specific elements of green buildings

Automatic taps	Operate using sensors to reduce water wastage. Water automatically stops running when your hands are moved from under the taps.
Toilet cisterns	Provide dual flow mechanisms
Shower heads	Low-water use shower heads reduce water consumption substantially
Waterless urinals	Use non-toxic chemicals instead of flushing, to save water

Grey water reused	Water from the showers and basins, and air conditioning cooler units is used to irrigate gardens as well as supplement the water used to flush toilets
Irrigation system	Via the internet, can adjust flow according to weather data
Storm water management	Storm water runoff minimised and rain water collected. Buildings increase surface runoff so that water does not percolate through the soil to the aquifer but is forced directly into streams or storm water drains, where erosion, siltation and even flooding can be major problems
Underground parking	Reduces the problem of surface runoff
Timed outages	Reduce operating hours of air-conditioners, garage exhaust fans and lighting
Fluorescent lights	Replace incandescent bulbs with energy-saving fluorescent ones
Motion sensors	Ensures the use of devices in the stairwells and alcoves only when needed. In workstation areas motion sensors detect when someone is present. When no one is present lights will fade down or switch off completely to conserve energy.
Passive cooling	Cooling a building without power consumption, e.g. air moving naturally through the building rather than being pumped. Uses only 10% of the energy needed by a similar conventionally cooled building
Lighting shelves	Light bounces off the top of the light shelf into the ceiling of the first floor offices. The overhang shades the window below it.
Deep window facades	Protect the windows from direct sunlight so less air conditioning is required
Green roofs	A roof of a building that is partly or completely covered with plants and soil, planted over a waterproofing membrane. They reduce heating (by adding mass and thermal resistance value) and cooling (by evaporative cooling) loads on a building. (Does not refer to container gardens.)
Renewable energy	Using technology for renewable energy (e.g.: solar power, wind energy)
Double glazed windows	Keep the interior temperature within a reasonable range. Less heating or cooling required
Certified wood	Certification verifies that the forests are well-managed and ensures

products	that certain wood and paper products come from responsibly managed forests
Regional materials	Local procurement means reduced transport costs

“While not all of these elements can be retrofitted to an existing building, the Property Unit Trust management companies are looking at as many ways as possible to enhance the sustainability of the buildings,” notes Hallows. “Retrofitting of existing buildings can, in fact, yield remarkable energy and resources saving results. In addition, new projects provide considerable scope for embracing green principles.”

“As an Association, we fully support the move to green buildings,” adds Hallows.

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