

Articles

Sustainability is Survivability

Written by John Brodie.

Who ever heard of a sustainable Hospital? Tree hugging hysteria?

As we come to grips with climate change 'sustainability' has become the catch cry of the 21st century. About Time! This desire for a sustainable approach is going to change our health industry and the way we live.

It will affect our built environment. Our operational procedures. Our business philosophies. Our world.

What is sustainability?

"Profit plus Environment = Sustainability!" (John Brodie, 2003).

It is described by the World Commission on Environment and Development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Brundtland Commission, 1987).

Sustainability encapsulates an interrelated assortment of design and operational philosophies that offer proven measurable benefits to all people, commercial enterprises, the Built Environment and our environment.

Hospitals are one of the major beneficiaries of the sustainable approach.

Applying sustainability to new or refurbished hospital design as well as facility management, operations and maintenance will improve profits as well as patient and staff outcomes, occupant comfort and health.

Don't forget reductions in absenteeism, waste production and maintenance costs!

Why Sustainability?

Normal hospital operation consumes large amounts of resources and energy, and thus presents a great opportunity for savings from efficiency measures.

A better hospital is one that facilitates physical, mental, and social well-being, and productive behavior in its occupants.

A sustainable hospital has improved daylighting and reduced artificial lighting, non toxic interiors including elimination of items containing mercury, cross flow ventilation, natural heating and cooling where possible, water reuse where possible, waste reuse and improved connection with nature including views.

What is the evidence?

'Evidence-based research suggests that high-performance "green" hospitals can enhance clinical outcomes, improve staff recruitment and retention, reduce absenteeism, improve safety, promote a cleaner environment, and

improve community relationships and public image.' (Green Guide for Health Care, USA, 2004)

There is also a large amount of evidence detailing the benefits of improving Internal Environment Quality in Hospitals. Known as Sick Building Syndrome, (SBS) the Green Building Council of Australia, in a report from 2005, cited over 1000 reports from around the world attesting to the importance of SBS and its negative impact on the inhabitants of buildings.

The Environmental Protection Agency, USA, rates SBS as "one of the top 5 health issues of the 21st century". (EPA, 2003).

The EPA (USA 2005) indicates the internal building environment is 10-90% more toxic than the external environment! Surely important when people spend over 90% of time indoors! (CSIRO, 2005) .Especially sick people!

The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE Journal article by Bill Fisk, 2003,) details a "drop of between 23-76% in Acute Respiratory Illness in sustainable buildings."

Research also indicates the power of the window view and the restorative effects of viewing nature (Ulrich 1979, 1984, 1993, Verderber 1986) (See 1 below)

"Ulrich's 1984 (See 2 below) study of patients recovering from gall bladder surgery evaluated whether assignment to a room with a window view of nature might improve post-surgical outcomes. Patients with the nature window view had shorter post-surgical hospital length of stays, tended to have fewer minor post-surgical complications such as persistent headache or nausea, and received far fewer negative evaluative comments in nurses' notes (e.g. "patient is upset", "needs much encouragement to do breathing exercises").

Moreover, the wall view patients required far more injections of potent narcotic pain drugs (e.g. synthetic morphine equivalents) while the nature group took more oral doses of weak pain drugs such as acetaminophen". (From a study by Dr Michael Phiri, School of Architecture, University of Sheffield ,2004)

But what will sustainability cost?

The Green Building Council, Australia, 2005, (GBCAUS) says that the "average cost premium of building a new green building can be from \$AU 0.00 to around \$AU20/sq metre. They also indicate that "the return will be 10 times that cost over 20 years in energy savings alone." (GBC Australia, 2005, The Cost of Building Green.)

How do we implement sustainability?

Make the commitment to sustainability at project conception. Incorporate it early. This will provide most benefit. This applies to facility design or building works as well as business operational philosophies. Design team and client focus is consequently greatly increased, reducing costly design changes and side tracking while allowing valuable innovation and problem solving.

Do not make sustainability an addition to initial new or refurbished project cost. Otherwise it will become a variation and will always be the first cost to be trimmed.

The Future.

Imagine a Hospital that by virtue of its built environment aided the healing equation just by beinga healthy hospital! The Australian Hospital system could significantly benefit from a sustainable approach to the design and operation of new or existing facilities.

The benefits of increased profits combined with significantly improved healing outcomes surely provide the win/ win situation?

Is now the time?

1 Baird, C., L., and P., A., Bell, Place Attachment, Isolation and the Power of a Window in a Hospital Environment: A Case Study, Psychological Reports, Vol. 76, 1995, 847-850

2 Ulrich, R. S. (1984). "View through a window may influence recovery from surgery." Science 224: 420-421.