



ISSUE

8

DESIGNING THE FUTURE
OF HEALTH CARE

Health & Wellbeing

Why is design crucial to healing?

Healing environment principles are informing design across the health and aged care sectors.

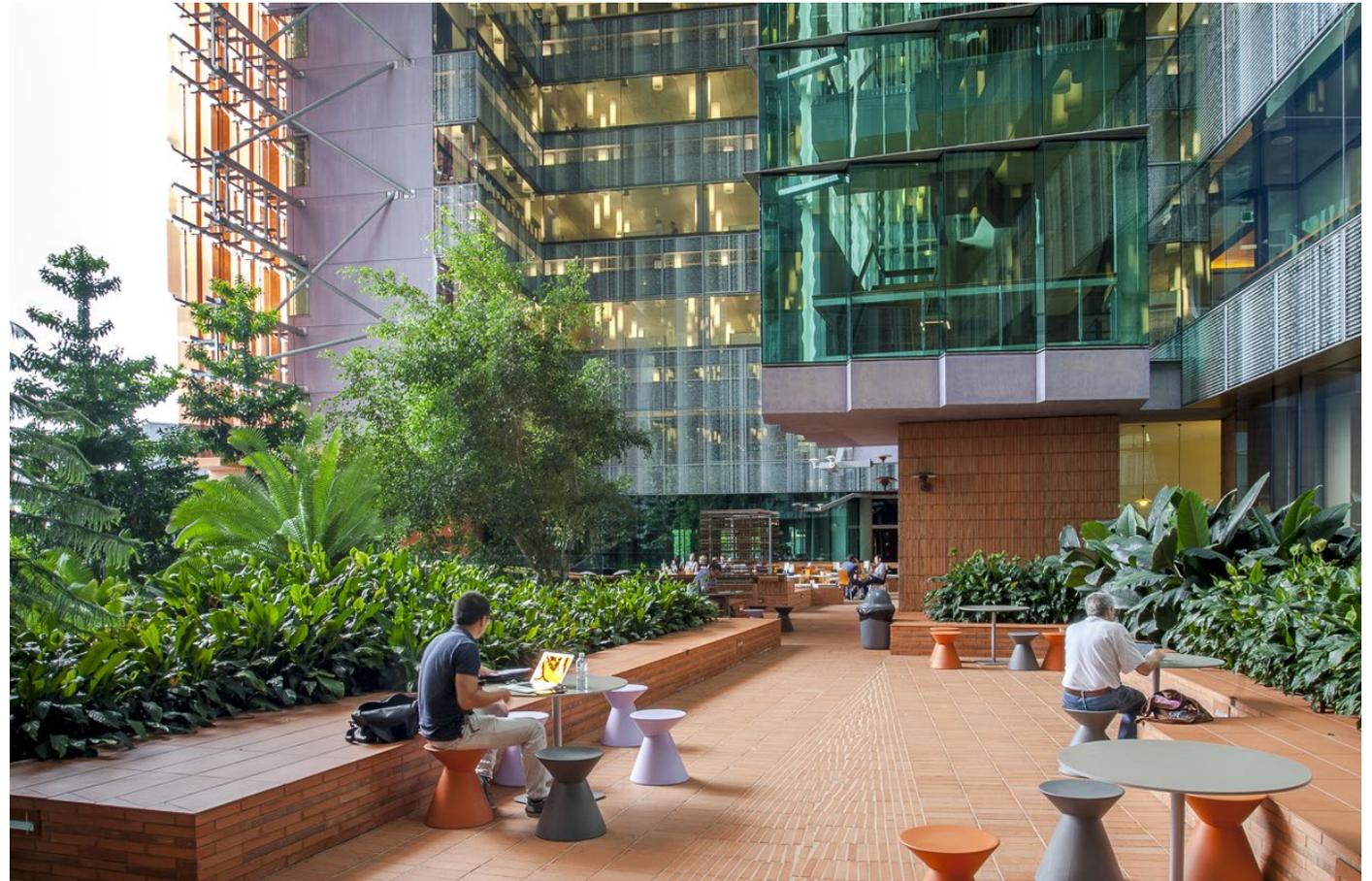
Healthcare spaces are increasingly utilising the healing environment principles of increased access to nature and landscape to benefit the wellbeing of patients, staff and visitors.

Landscape architecture draws the critical wellbeing aspect of greenery into spaces that are traditionally clinical and harsh. Architects and landscape architects are now working closely to design spaces that promote wellbeing, social opportunities and physical activity.

The following case studies detail how Wilson Architects have designed healthcare facilities to encourage wellbeing.



The landscaped courtyard and cafe at the entrance to the Caboolture GP Super Clinic is a welcome breakout space for patients, visitors and staff.



Translational Research Institute: the Outdoor Room delivers respite from the intensity of research and the courtyard cafe provides public space for the neighbouring Princess Alexandra Hospital staff and visitors.

CASE STUDY

CABOOLTURE GP SUPER CLINIC

Caboolture, Queensland

The GP Super Clinic program addresses the healthcare needs and priorities of the local community. The Caboolture GP Super Clinic's brief was to provide an easy-to-navigate, functional facility that supports wellbeing.

Wilson Architects' design approach focuses on the experience of the occupants and visitors using a Salutogenic approach – a method coined by professor of medical sociology, Aaron Antonovsky. This approach promotes wellbeing in healthcare, and focuses on factors that support human health, rather than on factors that cause disease.

Unlike institutional designs traditionally employed by clinics, the facility features vertical gardens, fish ponds and an atrium to foster strong connections between indoor and outdoor environments and encourage a feeling of healing and respite.

The clinic surrounds a courtyard, which is designed as a landscaped break-out space, and as an organising element for wayfinding and orientation. All waiting and circulation spaces present views of the landscaped courtyard, offering an outlook to nature, light and activity.



The facility is conceived for human interaction, promoting concepts of health and wellbeing, as well as de-institutionalising what are often seen as clinical and alienating places.

How can greenery and landscape support health and wellbeing?

The ability to integrate nature through gardens or views to gardens has been shown to reduce stress and improve the cohesion of mind, body and spirit.

An overall design concept that includes visually interesting leaf patterns and planting with textural and colour contrasts, helps to aid orientation and provide an

attractive, healthy environment. Greenery and landscape offers respite in an environment that is often highly stressful for patients, their loved ones and staff.

The use of greenery in healthcare is similarly effective with seniors. Patients with dementia often experience confusion in highly disorienting environments such as hospitals and aged care facilities.

Effective landscape design creates a space that helps to reduce stress in these patients, and evokes a sense of serenity, calmness and gentle engagement.

Evidence-based dementia design emphasises the importance of wayfinding, simplicity and familiarity, and engaging the senses with colour, touch, texture, smell and sound.



A café attracts local residents, cyclists and others to enjoy the landscaped atrium spaces.

Can landscape reduce running costs?

The green spaces work to reduce energy consumption, improve air quality and assist with water management. Meanwhile, the landscaping, ponds and café give staff a much-needed refuge from the stress of clinical work.

Utilising ground plants, trees and shrubs to connect internal and external spaces creates a sustainable, ecological order. Just like a building, landscape design needs maintenance for the space to remain usable.

It is important to use low maintenance plantings and features in the design to ensure it remains viable.

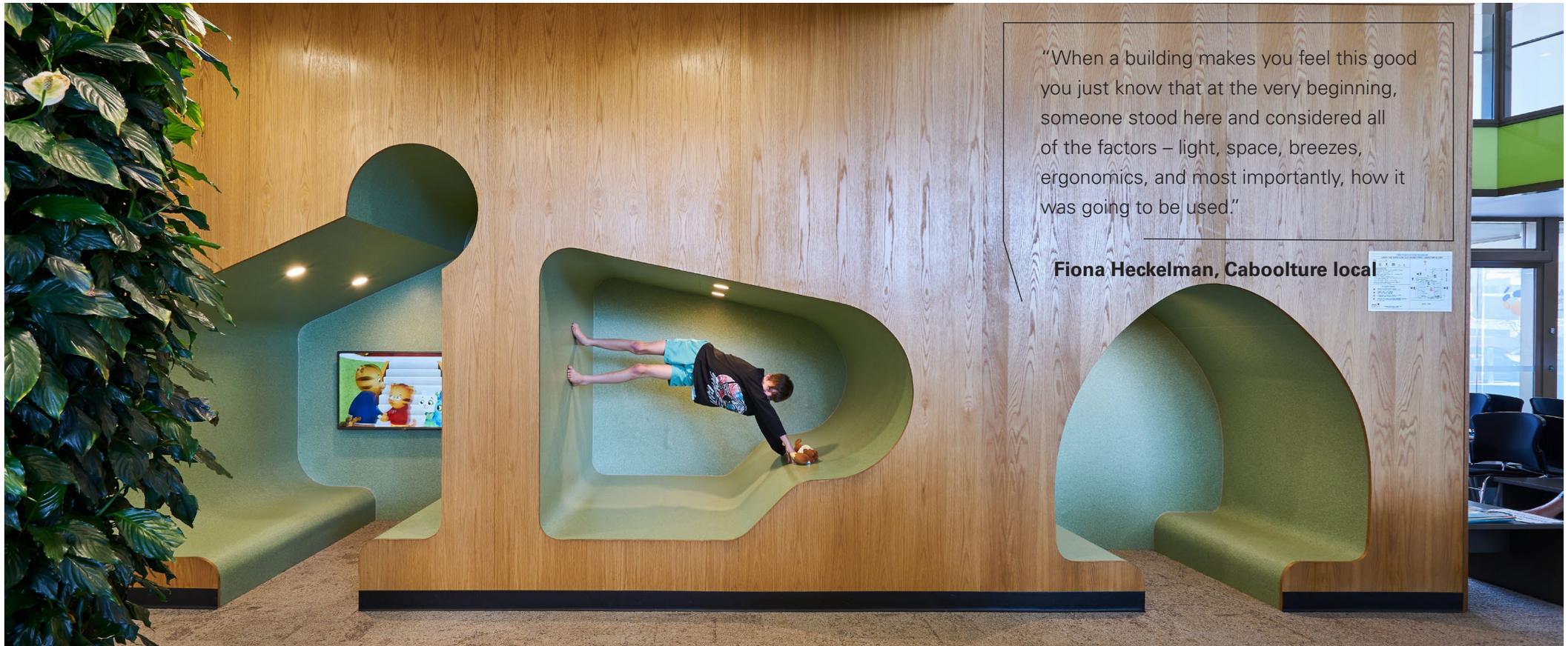
The importance of designing for the wellbeing of families

Healing environments ensure everyone feels welcome, including children and the elderly.

The clinic's playful curved seating opposite the cubby play spaces were designed specifically for parents and children waiting for paediatric consults, which usually

involve immunisations. The play and waiting spaces are separated from the main waiting areas to allow kids to explore, engage in play and be distracted from the clinical nature of their visit.

The cubby houses are clad in a timber veneer, while their interiors are lined with a flexible floor vinyl. These materials conform to the abstract curved shapes, and create lounging spaces designed to capture the imagination of young children.



The cubby play spaces were designed specifically for parents and children waiting for paediatric consults

INTENSIVE CARE UNIT (ICU) OF THE FUTURE – RESEARCH



Prototype workshop; setting up a mock ICU ward for the research project.

Wilson Architects, in conjunction with world-leading Critical Care Research Group (CCRG) and Lendlease, is currently undertaking research into the design of Intensive Care Unit (ICU) environments.

Studies show that up to 82% of patients suffer delirium while being treated in ICU departments. This in turn, leads to increased mortality rates and widespread distress.

Healthcare specialists have long understood the impacts of illness, age and physiology on a patient's intensive care recovery outcome. The importance of the ICU bedspace environment design is only now being explored.

What's involved in the research?

Together with our key partners, Wilson Architects has undertaken extensive audits of current ICU spaces to provide an understanding of the current ICU bedspace benchmark.

We are collecting data surrounding spatial analytics, clinic requirements and information around current technology used in the treatment of critically ill patients.

The research project team will measure existing environmental conditions, which are proven to effect the development of delirium (noise, light and temperature).

An integral part of the project will include conducting focus groups with former ICU patients and their families, to establish an understanding of the environmental factors they feel could be modified.

What will come of the research?

The project team will deliver a working ICU bedspace for the Prince Charles Hospital. This project will set the benchmark for future ICU bedspace design and explore the physical environment (light, acoustics, air quality etc.) alongside best practice in bedside care (use of technologies and care delivery).



CASE STUDY

TRANSLATIONAL RESEARCH INSTITUTE

designed in association with
Donovan Hill

The Translational Research Institute (TRI) is a state-of-the-art medical research and biopharmaceutical facility, which brings together four major research bodies – The University of Queensland, Queensland University of Technology, Mater Medical Research Institute and Queensland Health.

It includes four floors of laboratory research plus facilities for research support, administration and teaching. A bio-pharmaceutical manufacturing facility with fermentation capacity, led by Patheon, is adjacent to the main TRI building.

Translational Research Institute also provides a clinical trial centre for Phase II and III trials.

The TRI Clinic Research Facility (CRF) at the Princess Alexandra Hospital (PAH) is a controlled and safe environment to conduct clinical research on human patients. The CRF is a multi-purpose research centre housed directly across from the TRI in a hospital environment, with ready access to hospital facilities and emergency response teams.



TRI researchers are spending more time in their workplace than ever

 **40.7%**
more time in write up

 **21.7%**
decrease in time off site

Creating engaging workplaces for medical research staff

Our research shows that a positive workplace environment has a significant impact on researchers' wellbeing and productivity, and research outcomes.

In the past, architects focused on creating efficient functional spaces designed around research equipment, not people. These workplaces have failed to adapt to the demands of the highly collaborative style of current research and have become a liability.

TRI's design connects spacious laboratory and write-up areas to other research shared spaces through the extensive use of glass and effective space planning.

Shared circulation occurs along an arcade with transparent cross views.

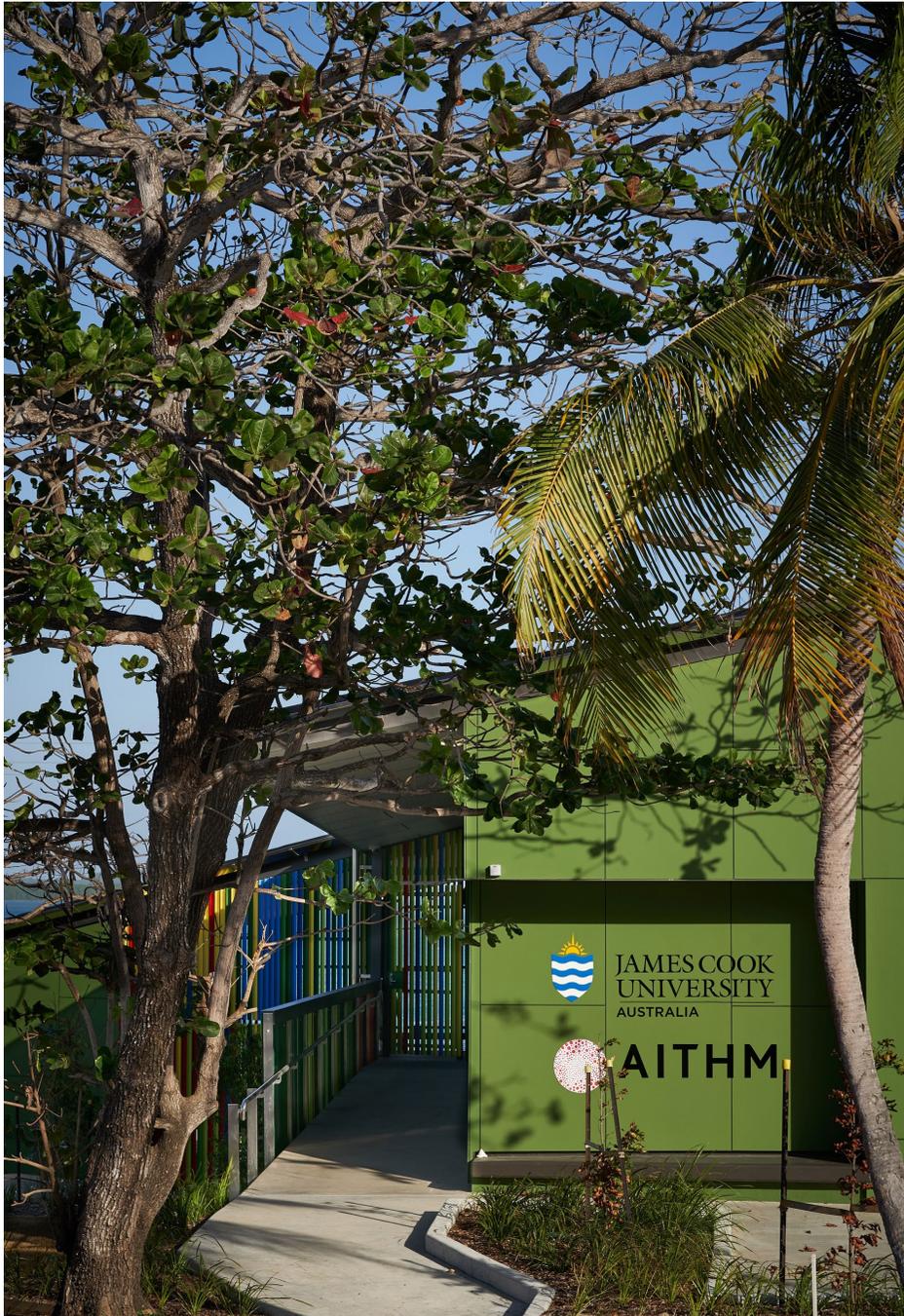
The memorable landscaped room contributes to the identity and workplace environment while adding significant space to the network of communal places. Strong visual connections to city views reinforce a sense of place within the hospital and city context and delivers respite from the intensity of research.

Write up workspaces connect to the laboratories with floor-to-ceiling glass maintaining views out of both workspaces at all times, including critical visual links to the courtyard, arcade and social spaces. The planning strategy enables scientists to move throughout

all laboratories across all floors without leaving the controlled environment.

Exterior and interior spaces are inextricably connected and their boundaries deliberately blurred. Despite the immense size of this facility, the diversity in work and social spaces have been calibrated to a human scale and encourage occupation and perambulation. The high quality finish throughout reflects the esteemed status of science.

The researches at TRI are consequently spending more time in their workplace than ever. There's been a 21.7% decrease in time spent by staff off site, with 40.7% of researchers spending more time in the 'write up' office space.



CASE STUDY

AUSTRALIAN INSTITUTE OF TROPICAL HEALTH & MEDICINE

James Cook University, Thursday Island

The Australian Institute of Tropical Health and Medicine (AITHM) established at James Cook University (JCU) encompasses three new facilities. These buildings are located in Townsville, Cairns and in the Torres Strait.

AITHM brings together the research capacity and expertise of a number of research centres and key research areas to enhance public health, biomolecular, clinical, translational, and health systems research.

Research undertaken within AITHM will be strongly focused on the health problems of most importance to tropical Australia and the tropics worldwide.

AITHM facilitates cross-disciplinary research activities, research incubation and innovation translation into real outcomes.

Combining health, research and community outreach

The Torres Strait is highly vulnerable to disease incursion and health security threats on Australia's northern border. This new facility focuses on researching infectious diseases such as tuberculosis, chronic diseases like diabetes and obesity, and parasites. AITHM provides an ideal platform for engaging and collaborating with the Torres Strait community to ensure the translation of these research findings.

The facility is also an outpost for AITHM in the Torres Strait. As such, it offers a base point for researchers visiting Thursday Island, where they are able to stay and perform basic laboratory tasks in preparation for returning to the mainland. The facility therefore needed to cater for short-term accommodation and act as a station for local staff.



AITHM Thursday Island provides short-term accommodation for visiting researchers and a station for local staff.



The tropics are about colour and light

The building is a direct response to, and expression of, a place that is both remote and sometimes extreme.

It leverages the sites context proximate to the intensity of the blue waters and flora of Thursday Island.

The exterior draws colours from nearby trees, flowers, the water and ground.

The building frames the views with coloured aluminium battens which provide balustrading, security to the bedrooms, and importantly glare control to moderate the light internally.

The site gently slopes towards the ocean, enabling the laboratories as well as the short term accommodation to make the most of the project's extraordinary views to the ocean.

Covered outdoor spaces were integral to providing collaboration and consultation zones that take advantage of the tropical climate.

It is clear this is a building that belongs to its place. The facility connects researchers to nature and creates a true sense of place, while being respectful to the local community.

Q&A

**Brent Hardcastle,
Associate,
Wilson Architects**



What are the main challenges health centres face when designing new facilities? How does Wilson Architects overcome those challenges?

A health centre's top concern is ultimately the wellbeing of their patients and staff. Wilson Architects' approach is to improve patient outcomes through better design. Landscape has always been fundamental to our architecture. We design spaces that seamlessly integrate with nature to promote healing and wellbeing.

What have you found to be the top design elements that can influence a person's health and wellbeing?

A patient's experience plays a significant role in the successful treatment of chronic disease. This includes everything from air and light quality, connection with nature, down to the materials used in the design of health places.

Salutogenesis is a term coined by Aaron Antonovsky, describing an approach

focusing on factors that support human health and wellbeing, rather than on factors that cause disease. More specifically, the "salutogenic model" is concerned with the relationship between health, stress, and coping.

Wilson Architects' research of best practice highlights the importance of providing a positive patient experience.

How can incorporating landscape into the design impact on, and promote, health and wellbeing?

Access to natural light and views to landscapes can have an important role in reducing the stresses associated with clinical patient care environments, which are all too often drab and disconnected from the outdoors. These places often need to accommodate families and young children, and breakouts to landscaped areas or play spaces can bring a sense of intrigue and delight in exploring nature and place.

Studies show that images alone of greenery are proven to produce a soothing effect in stressful situations. Blood pressure, brain activity, respiration rate, and the production of stress hormones all decrease.

Nature not only provides a distraction from pain and discomfort, but offers respite from the competing stimuli in our increasingly technology-focused lives.

Why is it important to consider staff and researchers' wellbeing, as well as a patient's, when designing a health project?

Creating a workplace which enables stimulation and wellbeing is just as important to staff and researchers in clinical workplaces as it is to the patient and visitor.

A thoughtfully-designed workspace results in increased productivity and a high level of staff morale. This in turn leads to higher staff retention.

Wilson Architects has been at the forefront of public architecture for over 100 years.

We are Australian award winners in medical and laboratory design and bring this expertise to all of our health projects.

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