

Northern exposure

The new dental school at James Cook University in far-north Queensland has combined cutting-edge architecture with state-of-the-art facilities.
By **Kerryn Ramsey**

The first thing you notice about the James Cook University School of Dentistry in Cairns, Queensland, is the ultra-modern exterior of the building. It could be easily mistaken for an art gallery rather than a place of learning. Designed by the architectural firm, dwplsuters, they have created a visually stunning building that is also a state-of-the-art dental facility. Rather than a stark and utilitarian

look, the Dental School sits organically in its landscape. "Externally, the greens and yellows reflect the dappled colours of the rainforest leaves," says Geoff Street, Queensland managing principal of dwplsuters. "The strong vertical elements on the exterior of the building resemble the solid straight trunks of the trees in the rainforest creek that bounds the dental building site along the western side.

"The building was designed to have a glare-free level of natural light internally, which was achieved with drops of external screens over the windows

replicating the Queensland blinds that we used to see on old houses. These devices also act as debris screens during cyclones to protect the windows from damage," he says.

While the dental school at James Cook University (JCU) was established in 2008, this purpose-built building was not opened until the beginning of 2011. The original clinic had 15 chairs and the new building has added 84 chairs for students, and another four staff chairs.

"At the moment with third-, fourth- and fifth-year students, we run about





**Art gallery or dental school?
Only the big word 'Dentistry'
on the front gives it away.**

94 chairs a day," says Professor John Abbott, director of clinical dentistry. "We have 100 patients at each morning and afternoon session, five days a week. This means that between students, staff and patients, we have 250 people in the building every morning and afternoon. It's quite a business."

One of the major hurdles with the design of this unique project was the lack of a yard stick to go by. Not only did the dwplstuters architecture team visit the recently completed Oral Health Centre in Perth, Western Australia, they researched

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The dental simulation laboratory at JCU Dental school is state of the art.

at length the implications of incorporating the specialised equipment that the school would accommodate.

"We were also fortunate to have a very good team of university people to develop their brief with us," says Geoff Street. "The end result was extremely rewarding for all involved." The building houses an 80-seat dental simulation laboratory, prosthodontics and science laboratories, a dental clinic and student home group rooms.

The dental school at JCU is only the third school in Australia located outside a capital city. It's also the only dental school in Queensland that's located outside the metropolitan areas of the state's south-east. "We're in an area of considerable disadvantage and very poor oral health," says Professor Andrew Sandham, head of James Cook University's discipline of dentistry.

While they have been making headway with the 2000 people on the waiting list when the clinic opened, they also have a new hurdle to overcome. Cairns Regional Council started removing fluoridation from its water supply last March. "In Cairns, dental decay is probably the foremost problem compared to other parts of Australia," says Prof Abbott. "Nearby Townsville has fluoride in its water and you can see the difference in the teeth of the people from Townsville compared to the teeth of the people here in Cairns."

Another major concern is that Queensland health patients have been on the waiting list for such a long time, their teeth are in a state of collapse. "The common problems are too many missing teeth, ill-fitting dentures, and the need for a lot of root canal work and extractions. This whole area

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is in dire need of dental care," explains Professor Abbott.

Most dental schools have a range of clinics specialising in one area of dentistry, whether it's periodontics, oral surgery, prosthodontics or pedodontics. At JCU, the clinics are laid out in bays of eight chairs and in that bay, one student might be doing endodontics, another could be making a denture, one could be seeing a child, while someone else is doing perio. Whereas a normal university has every student seeing the same sort of case at the same time, JCU offers more of a general practice mode. This helps prepare the students



for their future clinical career. Last year, JCU had more than 1300 applications for the 80 places it offers. The five-year course starts with the basic didactic material but they also do practical skill development from year one all the way through to year four. In year five, the students go out on placements to Darwin, Katherine, Alice Springs, Mt Isa, Cairns, Townsville, Mackay or Proserpine. They are only back to base for about a month during that year.

There is also the optional elective to spend a month overseas in either Cambodia, Hong Kong or at a twinned university of Tromsø in Norway. A new elective placement is being developed in Sri Lanka for 2013.

“One thing that we really wanted to achieve was to have more indigenous students in the JCU dental program,” says Prof Sandham. “I am pleased that we met that goal. JCU now has 14 indigenous students, more than all the other dental schools in Australia combined.”

With the very first batch of graduations due in November this year, it's quite amazing to consider the number of people helped at JCU. Between February and December of 2012, they had 18,000 patient attendances. The need for such a facility is almost overwhelming.

The JCU dental school also stands as a beacon on how to do development right. With foresight, planning and an attention to detail, this architect-designed building is functional, efficient and improving the lives of students and patients alike. On top of all that, the entire project came in under budget.

“The most amazing outcome with this building, and a source of great pride for us, is how much it cost to construct,” says Geoff Street of dwplutters. “It came in at \$2900 per square metre. Comparable buildings in the south, where construction is cheaper, usually cost over \$5000 per square metre. The savings enabled the university to build a new stand-alone 120-seat interactive teaching and lecturing space—which we also designed—but that's another story for another day.” □