New research facility under construction

The CRC has commenced construction of a new research facility for program one. The facility site in Anne Street, Creswick, will be developed as a research park. The landscaped surrounds will include plantings of two species of correas, white peppermint gums, pincushion hakeas and peppercorn trees.

During May and June, site work included pouring the concrete slab and construction and erection of the LVL timber frame for the building.
“I am delighted that the survey confirms both a sizeable market in Australia [for bent wood components], and significant industry interest in CRC technology.”

From the CEO

So far 2004 has seen several important events for the CRC. Construction work has commenced at our new research site, which we anticipate becoming a centre of excellence for research in wood products processing and manufacturing. The completed facility will house our 300 kW microwave; its availability will provide a long-awaited boost to our research activities.

We continue to complete initiatives arising from our second year review. This newsletter reports on a survey of the Australian market for bent wood components, initiated by program manager Barbara Ozarska. I am delighted that the survey confirms both a sizeable market in Australia, and significant industry interest in CRC technology.

In addition, I welcome the appointment of Professor Bob Johnston as our new scientific advisor. Bob has a solid background in appraising research, and assessing its commercial suitability. His expertise and objective scrutiny will be enormously valuable as we identify how CRC technologies can deliver greatest value to our industry partners and develop customised applications to meet their needs.

New Scientific Advisor for CRC

Professor Bob Johnston (pictured) has been appointed as scientific advisor to the CRC. Professor Johnston will provide an independent scientific review of all CRC Wood Innovations research projects, co-opting further reviewers as required. His appointment follows a recommendation made by the second year review panel. Each project will be reviewed systematically and reported to the CRC Board.

Professor Johnston is experienced in appraising forest industry technologies and requirements. He is the former director of the Monash-based Australian Pulp and Paper Institute, current Education Manager with the CRC for Functional Communication Surfaces (Smartprint) and Professor Emeritus at Monash University Department of Chemical Engineering.

Exhibiting CRC research

**AusTimber**

Australia’s only international conference and exhibition for forest industries, AusTimber is held every four years. This year it was held in Albury, from 29 March–3 April. The exhibition displayed a wide range of harvesting machinery and sawmilling equipment and associated forestry products and services. The two-day conference covered forest operations, sawmilling, transport and farm forestry. Program One postgraduate Graham Brodie presented a paper on “Modelling Microwave Heating in Wood”. The CRC took part in the three-day exhibition with a display promoting the new CRC courses and research from Program One.

**CRC Association conference**

Program Two Manager Barbara Ozarska (pictured right) gave a presentation about international collaborations at the recent CRC Association meeting in Adelaide. Barbara presented her work with the international Innovawood network, of which CRC Wood Innovations is a founding member. Barbara’s involvement with Innovawood has led to collaborations with wood engineering schools in Switzerland and Germany, exchange of students and visits from international scientists.

**Melbourne University Research and Innovation Fair**

CRC Wood Innovations was invited to exhibit at the University of Melbourne Research and Innovation Fair, held at the Melbourne University Private building on Friday 7 May. Our exhibit (pictured right) featured two microwave applicators and a display of bent wood, and attracted interest from number of attendees—varying from potential new students to potential commercial partners.
“Forest products companies want their employees to progress their careers by gaining and using personal effectiveness and business skills. We aim to provide courses that enable students to learn these skills.”

Visitors to the CRC

World President of IUFRO
The World President of IUFRO, Professor Risto Seppälä of the Finnish Forest Research Institute (pictured below), visited the CRC in March. His visit to Australia involved meetings with the organisers and sponsors of the twelfth world IUFRO congress, to be held in Brisbane in May 2005. During his visit to the CRC he and Gary Waugh discussed activities of the Fifth Division Eucalypt Working Group and international issues in forest products research.

Institute of Wood Science seminar
In April, the CRC organised a seminar on timber frame construction for the Australian chapter of the Institute of Wood Science. Jim Coulson, international president of the Institute of Wood Science, spoke on the TF2000 project, and James Grandison, of Carter Holt Harvey Structural Products, provided a perspective of the use of timber framing in Australia.

The TF2000 project involved building a full scale six-storey timber frame building and conducting extensive tests to assess the construction process and the structural stability and robustness, fire safety, and differential movement of the building. The results were published as a book, Multi Storey Timber Frame Buildings—a design guide, available from the Building Research Establishment (BRE). The study set criteria for timber frame construction and performance for medium-rise buildings in the UK.

Jim’s seminar provided an overview of the planning and execution of the project, its outcomes and their relevance to the timber and construction industries.

Forestry University of Vietnam
During April, a group of senior researchers from the Forestry University of Vietnam visited the CRC. During their stay, they visited both Parkville and Creswick campuses, toured the CRC microwave facility and the Timber Training Centre, and visited the CSIRO Forests and Forest Products campus at Clayton.

As a result of the visit, the CRC is pursuing an opportunity to make CRC training courses available to students from the Forestry University of Vietnam.

Keeping the local community informed
Creswick residents are learning about construction of the new research facility and CRC research work through CRC communication initiatives.

Three issues of a monthly newsletter have been produced and distributed to residents living close to the new facility. Newsletters are also available through the local council offices. The newsletter provides updates about construction of the facility and promotes CRC research and educational activities.

The CRC has set up two information lines for residents to obtain information about construction works—one provides an update of works on a regular basis for the cost of a local call, and the second (to a mobile phone) is for people wanting more detailed information. As construction progresses, more communication activities are planned.

New training initiative for forest industry workers
CRC Wood Innovations has begun offering professional development courses for people employed in the forest products and pest management industries.

Students from the manufacturing and marketing sectors of the timber industry participated in the first course, “Leadership and managing teams” on June 22 and 23 at Creswick. The students came from timber processing and timber products companies in Queensland, NSW, Victoria and South Australia.

“We are delighted to have industry endorsement and support for the courses,” said Professor Peter Vinden, CEO of CRC Wood Innovations. “Forest products companies want their employees to progress their careers by gaining and using personal effectiveness and business skills. We aim to provide courses that enable students to learn these skills.”

Professor Vinden announced that the courses will be developed as part of an advanced diploma to be offered by The University of Melbourne this year. The advanced diploma includes two streams, Wood Products Management and Pest Management.

Information about course content and planned course dates for the next six months is available from the Advanced Diploma of Wood Management course manager, Phil Blackwell, on (03) 5321 4104.
Bent on commercial success

Australian furniture manufacturers are highly interested in using bent wood furniture components produced using CRC technology, a recent market research survey shows.

“The survey shows there is a significant Australian market for bent wood components produced using our microwave technology,” said CRC Program Manager Barbara Ozarska, who commissioned the research. “Furniture manufacturers are very interested in replacing machine-shaped components with bent components.”

Furniture manufacturers were surveyed about use of bent components in furniture making, including the sizes, shapes and timber species used most frequently and the types of furniture they are used in.

The survey was conducted by independent market researchers BFG Consulting Group and Graeme Cock and Associates, in collaboration with the Furniture Industry Association of Australia (FIAA), a participant in the CRC. More than one third of FIAA members responded to the survey.

Dr Ozarska says the survey has been valuable in assessing the market and identifying furniture manufacturing companies interested in collaborating with the CRC to bring the bending technology from the laboratory to the factory floor. The CRC will provide regular updates on the research to companies interested in being kept up to date about the bending technology.

“Because of the industry interest, we hope to further develop the microwave bending technology with furniture industry leaders,” said Dr Ozarska. “We anticipate constructing a prototype automated bending machine plant that could be used to supply manufacturers with bent components of different shapes.”

The survey indicates that the market is sufficient to make such a plant commercially viable. The CRC has commenced initial discussions with a CRC participant to locate the plant at their premises.

“Our bending research has used Australian hardwood species such as mountain ash and jarrah and the survey confirmed that these timber species are among the top four timber species used in Australian furniture manufacture, “ Dr Ozarska said. “As a result of the survey, we will extend our research to include blackwood, red gum, spotted gum and radiata pine as well.”

Last November, our second year review panel recommended that the CRC undertake market research to define the potential market for bent wood components.

Dr Ozarska says she was keen to tap the extensive experience of Graeme Cock in the furniture manufacturing industry. Graeme ran his own furniture manufacturing business for 30 years, and has recently finished a nine-year term as CEO of the FIAA.

At present, curved furniture components such as chair legs, backs and arms are manufactured by cutting the wood to curved shapes (machine-shaping), or by bending laminated wood to shape. The CRC technology involves use of a microwave to heat and soften solid wood prior to bending it.

Microwave softening is very rapid and efficient in comparison with existing softening methods, such as steam and chemical softening. For example, a 25 mm thick mountain ash stick can be softened in one and a half minutes in the microwave unit—30 times faster than if it was steam softened.

The microwave softening method offers greater flexibility in the bent shapes that can be produced, enabling furniture manufacturers to explore designs based on new bent-wood shapes. It also lends itself to automated manufacture, enabling a number of identical components to be made simultaneously.