

Carpenter's Training Institute goes up in two days

By Lynne Wells
Contributing Writer

When the Carpenters Training Institute building in Paradise, Newfoundland is completed in just a few weeks, the building will house offices for a number of construction trade union organizations as well as training areas.

Project Management Services Inc. is the design-build contractor for the \$2.2 million building and it opted for a tilt-up design. J.W. Lindsay Enterprises Ltd., based in Dartmouth, Nova Scotia, was the structural sub-contractor for the project.

The building, 22,400 sq. ft. in total, is two-stories tall, with a small three-story section that will house a scaf-

folding training area for carpenters.

Lindsay President Laurence Smith says the job was a standard tilt-up project that saw the exterior walls lifted into place in two days this past August.

"We took two weeks to pour the panels, but they went into place in just two days."

Lindsay was also responsible for the foundation, floor slab and structural steel in the building.

Capital Ready Mix supplied the concrete for the job. A total of 347.3 cubic metres of concrete went into the foundation and slabs. Another 261.25 cubic metres of concrete were used in the panels. "It was a standard wall pour," he says.

According to Smith, the 40 foot tall panels weighed 82,930 pounds each, for a grand total of 383,000 pounds.

"On average, if a building is a tilt-up project, it will have twice as much concrete in as a tradition frame construction building," Smith says. "Tilt-up is good news for the ready mixed industry. This was our second tilt-up project in Newfoundland in two years, and we hope to do more in the near future."

The Newfoundland and Labrador Carpenters Union building in Paradise, NL is a tilt-up structure put up this fall by J. W. Lindsay Enterprises, Dartmouth, N.S. Concrete for the project was supplied by Capital Ready Mix Limited, St. John's, NL.



Adoption of evolving information technology revolutionizing entire architecture/engineering/construction industry

By Lloyd Waugh,
UNB & AEC Innovations Inc.

In 1980, estimators employed scales to take off quantities, paper to record the quantities, paper estimate forms, a hand calculator, a pencil and an eraser. CAD was widely adopted by designers (architects and engineers) in the 1980s. The IBM PC became a reality in 1982. Fax machines came on the market in about 1985 and were widely used by 1988.

By 1990, most accounting, secretarial and drafting personnel were using PCs and estimating software was spreading rapidly. The normal way to move information from one PC to another was to have the same version of the same program running on both computers and to carry a disk from one to the other.

Stand-alone software and databases (accounting, estimating) became widely adopted in the 1990s. The use of Web-accessible databases began to grow by the mid 1990s. The Web was first available in 1992. Major advances were made in CAD user interfaces and productivity. E-mail became common.

The AEC industry was recognized as an information intensive industry by 1999 and therefore an ideal place to implement Web-based technologies; approximately \$1 billion was invested to apply these technologies to the AEC industry. The dot-com gold rush ended with NASDAQ's crash in March 2000 and consolidation of remaining companies ensued; Web-based collaboration portals made their debut.

Web-based databases are now in widespread use. Advances in CAD interfaces led to the use of objects instead of lines - completely changing the design paradigm. Use of wireless and palm computing are growing rapidly, as is the development of tablet computers to fill the gap between laptop and palm computers. Maintenance staff at NB Power are now piloting ruggedized tablet computers. McDonald's restaurants are now offering Internet connections to customers in California.

The processing speed of computers has doubled every 18 months for almost 40 years and there is no end in sight. Information exchange stan-



Dr. Lloyd Waugh, P. Eng., president of AEC Innovations and professor of Civil Engineering at UNB-Fredericton, discusses his presentation to the Construction Specifications Canada-Atlantic Chapter meeting in Halifax on September 19 with former CSC Chapter and National president Burrteaux, and current Atlantic President Matthew Brunt.

dards such as IFCs and aecXML are maturing. Integration of hardware and operating systems has progressed to the point a person can seamlessly transfer information from one computer to another without worrying about compatibility (see <http://www.blis-project.org/index2.html> demos).

The technical barrier is disappearing for those who wish to exchange information from one Web-based system to another.

New technologies are adopted via a well documented cycle, which includes the following categories of adopters: innovators, early adopters, early majority, late majority and traditionalists (<http://www.internettime.com/itimegroup/elearning/mands.htm>).

Improved user interfaces for software are reducing the need for intermediaries, placing the designer or manager at the computer rather than a CAD operator or secretary.

The use of CINet has typically doubled each year since 2000 (CINet is electronic plans room software owned by AEC Innovations and operated by construction associations in New Brunswick and Nova Scotia).

In the 12 months prior to April there was a 56 per cent increase in CINet activity as users recognized advantages to accessing tender documents over the Internet. Two thirds of those who have access to CINet use it on a weekly basis. This type of increase in usage is common for a successful Web-based application.

Due to the fragmented and information intensive nature of the AEC industry, improved means of managing information is essential. At a presentation to the Design Construction Institute in Dartmouth in May, 40 per cent of attendees indicated they had tested or were in the process of testing web-based

• Ability to manage project documents and information via the Web;

• Ability to control who has access to what information; and

• Ability to manage project contacts and communications.

In addition, groupware such as FocalTrack can eliminate the need for courier and fax transmission of documents thereby saving money and time, and provide a single location of up-to-date information.

In summary, information technology is growing in importance for the AEC industry. Computer processing speed and Web activity will continue to grow exponentially for the foreseeable future.

In addition to my obvious identification of groupware as a rapidly advancing technology, I feel there are at least three other significant themes with sizable impact on our industry:

• Wireless technologies: cell phones, palm/tablet, GIS, wireless database entry and retrieval from the field.

• Workflow automation is a solution for companies wanting to combine manual, paper and computerized portions of their management/control systems into an integrated Web-based system.

• Augmented reality: the

use of wearable displays to superimpose drawings or images on our view of an under construction or completed facility (see <http://mcel.pacificu.edu/JAHC/JAHCV11/ARTICLES/bonnett/bonnett.HTML>).

Recommendations:

• Pressure decision makers to adopt systems adhering to information exchange standards so information will be seamlessly exchanged with other software applications without expensive manipulation or re-entry of data.

• Identify your current status of technology adoption relative to your competitors.

• Use technology as a competitive advantage.

• Allocate time and money for personnel training.

For further information on AEC Innovations Inc. software please contact Randy Morehouse at rtm@aecinnovations.com; for further information on the adoption of information technology in the construction industry please contact Jeff Rankin at rankin@unb.ca; for further information on wireless technologies please contact Irina Kondratova at irina-kondratova@nrc-cnrc.gc.ca; and for further information on augmented reality please contact John Bonnett at john.bonnett@nrc-cnrc.gc.ca. To contact me, e-mail me at waugh@unb.ca.

project management software/groupware. AEC Innovations has developed such a system, named FocalTrack, which is available for beta testing at this time and will be available for commercial use in 2004.

The following groupware characteristics were demonstrated at a CSC presentation:

Over 1,000,00 sq. ft. of Tilt-up Concrete in Atlantic Canada



In 1972, Lindsay laid the foundation for the tilt-up industry in Atlantic Canada. Continuous development of people and refinement of systems have given Lindsay a wealth of experience and proven record of excellence.

The Carpenter's Training Institute in St. John's is another example of how tilt-up construction can provide: 1) an opportunity for refinement of people skills in Newfoundland; 2) meaningful employment and training for the people of Newfoundland.

Lindsay
Engineers Contractors Managers

J.W. Lindsay Enterprises Limited
22 Fielding Avenue
Dartmouth, NS B3B 1E2
PH. (902) 468-5000 FAX (902) 468-3401

Otis Canada, Inc.
15 Hallett Crescent, Suite 104
P.O. Box 13335, St. John's, NL A1B 4B7

Elevator / Escalator • Installations
• Modernization
• Repair
• Service
• Otis and Non-Otis Equipment

Cathy Coady Tel: (709) 576-4734 Fax: (709) 576-0951
Sales Manager - NL E-mail: catherine.coady@otis.com

00183460