

# Globe Real Estate



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||| **ARCHITECTURE**

## Dawn of the prefab condo

A technique developed in B.C. will see a tower of condos built in six weeks, not six months, **CATHRYN ATKINSON** reports. The process, however, is 25 years in the making

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Optima, a three-tower development due to be raised later this year on derelict land in Whalley, will be the first pre-fabricated high-rise in the Lower Mainland to be built from high-tech customized modules. The modules themselves will be created in a 70,000-sq.-ft. automated factory in North Delta that was constructed using the same technology.



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Optima will be comprised of one-bedroom, two-bedroom and two level penthouses, and prices start at an almost forgotten amount for the B.C. realty market: \$140,900.

The complex is to be the showpiece of Vancouver developers International Hi-Tech Industries Inc. (IHI) and its president Roger Rached, whose family has put in half of the \$100-million so far spent to perfect the technology. Development of the technology to build it has taken 25 years.

"Buyers have already reserved the first tower and half of the second on the basis of the technology," the 45-year-old engineer said. "The system is a real investment that won't need replacing after 10 years. It will last 100 or 200 years."

Mr. Rached said what makes the Optima towers unique is the amount of engineering study that went into creating their customized pre-manufactured panels. When bolted together, he said, each high-rise would act as "one piece", and at just half the weight of conventional high-rises is better able to flexibly absorb the impact of seismic movements and winds of up to 300 kilometres per hour.

This is because each panel is composed of a light, rigid foam and fire resistant insulator covered with reinforced concrete and steel, and finished with a water-proof coating. Electrical and plumbing systems are integrated into the panel, which is almost fully soundproof.

And in what some consider to be the greatest innovation of all, Mr. Rached said that the ease with which the panels can be connected means that each 21-storey tower can be constructed in about six weeks, apart from the finishing work. In comparison, he said, more conventional high-rises can take from six months to a year to complete. Construction costs are, he added, expected to be considerably lower than that in the current real estate market.

George Fuji, manager of current planning for Surrey City Council, said Optima



PHOTOS BY JEFF VINNICK/THE GLOBE AND MAIL



**Minh Le, above, uses a crane to lift a truss inside of the International Hi-Tech Industries factory in North Delta, B.C. The company, headed by Roger Rached, left, has developed a new pre-fab condo technique and is in the process of building the first one inside its factory. An artist's rendering, right, of the finished product — the Optima Residential Complex, which will feature one- and two-bedroom units, and two level penthouses. Prices will start at an almost forgotten amount for the B.C. realty market: \$140,900. 'Buyers have already reserved the first tower and half of the second on the basis of the technology,' Mr. Rached says.**



had been well received there and had pass the third reading of its rezoning application. He added that the complex fit in with the council's urban renewal plans to provide more housing in Surrey, which is now British Columbia's fastest growing community.

"It is an innovative high-rise project that will help transform our city centre," said Mr. Fuji. "[IHI has] shown through the proposal that it is supportive of Surrey's long-term vision."

Omar Take is IHI's chief project officer and a senior architect at Tokyo firm Tange

Associates. To date, he said, several houses, warehouses, factories and even roads have been constructed in Canada and elsewhere using the same methods, including the company's show home on West King Edward Avenue in Vancouver.

But Optima, he added, would be their most important project yet and is attracting interest from around the globe.

"We have concentrated for the last 10 years on prototype projects. We've built 'floating' roads on the permafrost in Fort McMurray, Alberta, and also 8,000 square foot warehouses that can be put up in just

two days," he said. "The Optima will be the jewel of all our efforts and testing."

One client, Robin Surcess, purchased the light but tough concrete panels for use as a marina at the Cove Resort at Westbank in the Okanagan. They are due to be installed in July. He said IHI's panels won the competition for the work because they could be deployed faster than any other competing

bid, but added that he had been impressed by the "user friendly" technology.

"There's more of everything in them," he said, "more quality control because more thought has gone into making them."

IHI has its beginnings half way around the world in Beirut, Lebanon.



An artist's rendering of the interior of a typical condominium planned for International Hi-Tech Industries Inc.'s Optima Residential Complex.

## Attracting interest around the globe

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Mr. Rached grew up in a family of engineers who relocated en masse to Vancouver in 1988 to escape their homeland's civil war.

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He, his brother and two sisters followed their father, a professor of engineering at Beirut's American University, into the profession, and all eventually studied at Stanford University in San Francisco.

The family emigrated to Vancouver because they liked the city and

Canada's international reputation, and wanted to base their business in a city from which it would be easy to sell their products internationally. They also liked the proximity to San Francisco.

"We are very close to the city where we were technically raised, so to speak," Mr. Rached said.

He believes the automation of constructing the modules by using robotic assembly will also revolutionize the construction industry in a more general sense.

"Our target, ultimately, is to computerize the construction industry. When you factor in speed and cost of automation there is no comparison," he said. "Clients wanting high-rises around the world are waiting for the completion of the Optima to see how it can work for them."

*Special to The Globe and Mail*