

BUILDER FINDS MARKET IN AIR DOME CONSTRUCTION

A chance contract to erect an air dome in Wasaga Beach proved to be a turning point for Toronto builder Keith McEwen Associates. Used mainly as sports facilities for golf, tennis or soccer, McEwen has erected domes in Canada, the United States, Europe and India.

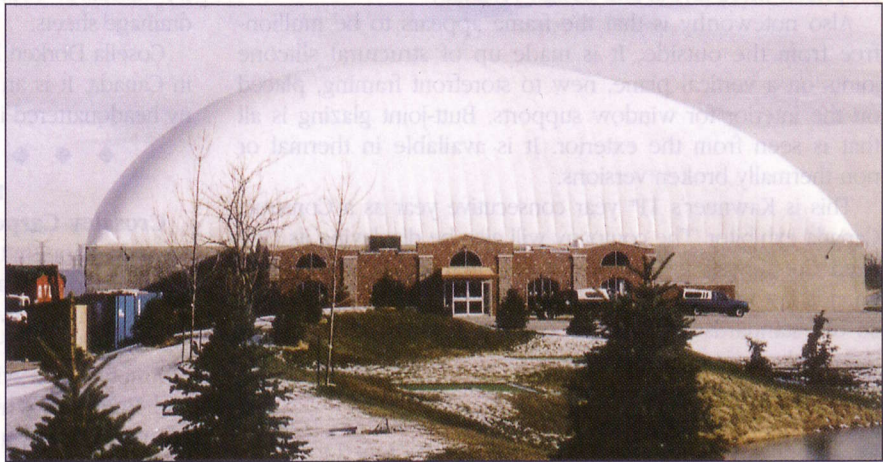
By Don Procter

When Keith McEwen was busy building Toronto landmarks for Ellis-Don Construction Ltd., he never thought that one day he'd be erecting golf domes for a living. "I played tennis in an air structure, but never saw myself building them."

But that is exactly what McEwen is doing today. His Guelph-based construction company, Keith McEwen Associates Inc., is erecting air domes, such as the one near Hwy 401 and McCowan Rd in Scarborough, and others around Canada, the U.S. and overseas. It is a dramatic shift in job responsibilities from his days at Ellis-Don where as senior project manager he oversaw the construction of such major contracts as St. Michael's Hospital, Toronto Western Hospital, and the striking downtown Toronto police headquarters.

The change didn't happen overnight. In 1991, McEwen left Ellis-Don, where he had worked for 17 years, to form Keith McEwen Associates, a small building company specializing in commercial and ICI contracts. Additions to schools and non-profit housing complexes in the Greater Toronto Area were typical jobs for the company back then.

One day a project which involved the erection of an air structure to serve as a gymnasium at a Wasaga Beach school came up. It was funded by parents of



Above: The Eaglequest Golf Centre in Vaughan, is one of approximately 60 air structures in the GTA.



Left: An interior shot of the Bay Terrace Tennis Club air dome in New York City.

the students and cost substantially less money than a similar conventional structure. The job proved a success and McEwen was hooked on air structures.

KMA became the sales representative for an air structure fabric manufacturer called Sopers, based in Hamilton. Through the job he met Ralph Farley, a founder of one of the first air structure companies and a true pioneer in the air dome industry.

McEwen teamed up with Farley to form one of the first full-service companies in the air structure industry. McEwen Associates Inc.'s service includes site planning, design, construction of clubhouses along with installation of the air structure.

Golf, tennis and soccer are the primary uses for air structures, but McEwen's company has also built basketball domes in New York and Boston. Overseas, the contractor has completed two air structures in India and one in Estonia.

For anyone wondering whether they

can afford an air structure, McEwen says they are substantially cheaper than conventional buildings. "I can build a golf dome for about \$10 a square foot which gives you totally uninterrupted covered space in excess of an acre." The average air structure is about 23,000-square feet and costs about \$280,000.

Air domes consist of a fabric membrane tied to a two-foot-wide by four-foot-deep concrete ring, serving as ballast. Inland the structures are designed to withstand windloads of up to 80 mph. In coastal regions they are specified for 100 mph and higher wind speeds. This is accomplished by adding steel cables over the barrel of the structure and securing them to concrete deadmen or earth anchors outside the concrete ring.

Calling air structures, "very safe," McEwen points out that they don't burn and if the fan system is disabled or the electrical power goes out and the back-up generator fails occupants have at least

30 minutes to get out before the average-sized bubble deflates. The bigger the dome the longer the deflation time.

Operational costs, which include lighting, heat and air conditioning are about \$1 per square foot a season, he says.

A 50,000 square foot dome, typically used as a golf driving range, can be held up by a 10 horsepower fan. If that sounds incredible, McEwen points out it doesn't take much air to hold up an "airtight" structure.

To raise the dome, is "just like blowing up a balloon," he says. The fan is encased in a box typically 12-feet by 16-feet which also has a heating fan for domes used in winter. It primarily heats recirculated air.

The blower system is installed either through the air structure itself or on a plenum beneath the grade beam.

The vinyl-coated polyester fabric is made by melting vinyl coats onto both sides of a polyester scrim mesh. The vinyl protects the fabric from the sun's harmful ultraviolet rays and offers clients different colour schemes.

McEwen Associates will install just about any type of flooring requested by the owner. Gymnasiums get a concrete slab, while an economical astroturf is usually laid for golf driving ranges.

Air domes are an underestimated alternative to conventional buildings, but that may be changing. "We're seeing our business expand fairly rapidly. Until last year we were buying our structures from other manufacturers, but we found we can't depend on that anymore so we have moved into the manufacturing end (through Farley Manufacturing) as well."

There are about 60 air structures in the GTA. Among the recent additions is a tennis court for the Granite Club and a golf dome in Vaughan. While the domes are usually destined to house sports facilities, they can also serve as warehousing, McEwen notes, pointing to an air structure purchased by E.D. Smith in Winona as an example.

Along with selling the product the company also leases and services the air structures. "If you only want them for a season that's fine with us." Servicing includes annual tune-ups of the blower system and lighting upgrades if required.

"We will also analyze your energy costs and suggest ways you can save money," he points out.

McEwen Associates also builds conventional commercial and ICI structures, but the future, says McEwen, is in air structures. Three years ago the company started out with four employees. Today it has 40 and is expected to double in the next three years because of the thriving dome industry.

Soccer is the most popular dome use these days. The contractor has designed and built soccer bubbles in Kingston and London, each featuring two soccer fields and another is under construction in Massachusetts. The domes cost about

\$450,000, four or five times less than a conventional structure would cost.

"It's really becoming popular," he says, "but we have to caution people wanting to buy one and start a golf dome or whatever because they need a population of at least a half a million people within driving distance to support it."

"If a person has access to land that's not going to bankrupt them, and has a good concept and a sufficient population base, we can help them build their dream for a reasonable price." ■



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