



Fig. 1 — Quaker Square Hilton under construction. The L-shaped complex of 36 concrete silos was reconstructed to form a first-class convention hotel.

Quaker Square Hilton

by Scott S. Pickard*

Abandoned concrete silos were reconstructed to form a new luxury convention hotel, by caustic-soda cleaning, diamond-blade concrete sawcutting, and casting in place new 7 in. (178 mm) thick concrete floors.

Keywords: concrete construction; concrete cores; cutting; silos.

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Adaptive reuse of concrete slip-formed silos had never been done before until the construction of the Quaker Square Hilton Hotel in Akron, Ohio. By creatively utilizing an L-shaped complex of 36 concrete grain silos 120 ft (37 m) high, caustic-soda cleaning of weathered concrete surfaces, diamond-blade sawcutting window and balcony openings, and constructing 8 levels of 7 in. (178 mm) thick cast-in-place concrete floors within each silo, an abandoned complex of concrete silos slated for demolition was turned into a first-class convention hotel (Fig. 1).

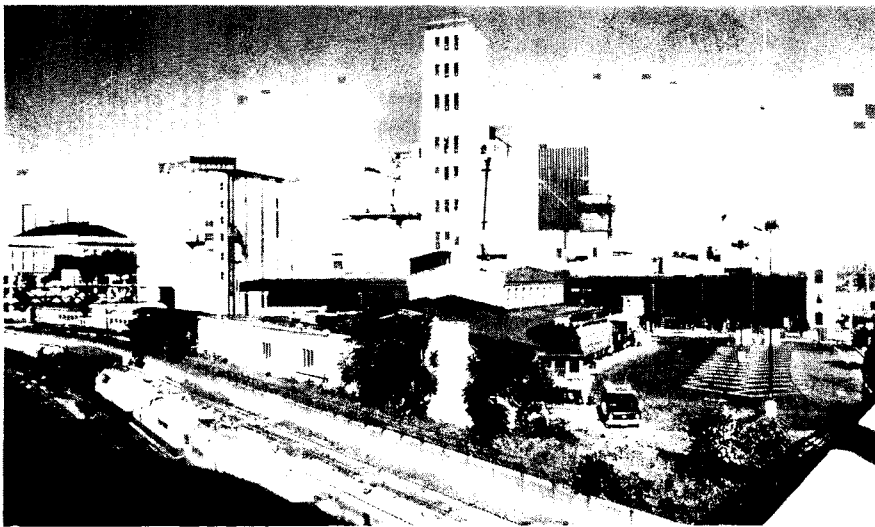


Fig. 2 — The original Quaker Square Cereal Factory complex included concrete grain silos, mill and warehouse facilities, and a train depot in the heart of downtown Akron . . .

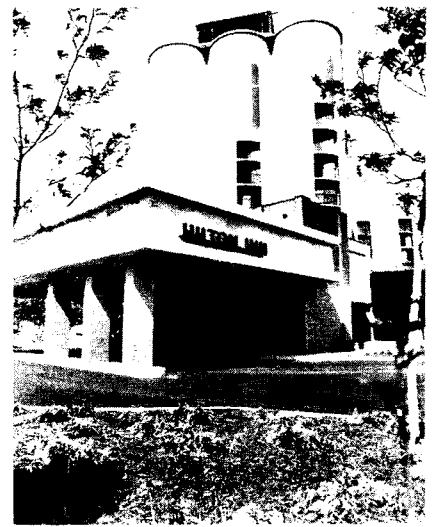


Fig. 3 — . . . which were restored to form a 160,000 sq ft (14,864 m²) mixed-use complex of offices, retail shops, restaurants, and complete convention hotel and banquet facilities.

Fig. 4 — The circular rooms have a 452 sq ft (42 m²) floor, 40 percent larger than conventional first-class accommodations.

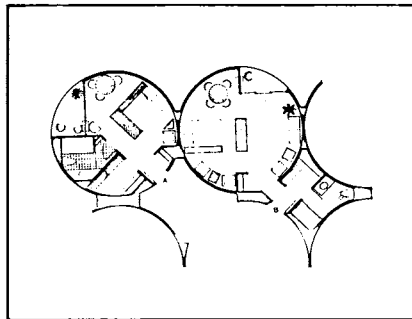
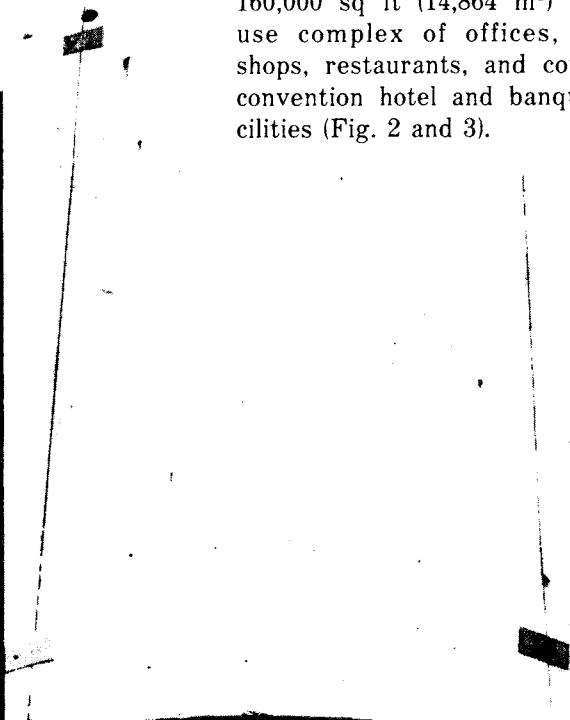


Fig. 5 — Overcutting was avoided by predrilling 4 in. (102 mm) diameter cores before intersecting two perpendicular diamond-blade sawcuts.



The project was the brainchild of Jay Nussbaum and Ted Curtis, AIA, president and vice president respectively of Quaker Square Associates. The hotel construction was the second major phase of a larger plan to renovate the abandoned concrete silos, grain mill, and train depot of the old Quaker Oats Cereal Factory in the heart of downtown Akron, into a 160,000 sq ft (14,864 m²) mixed-use complex of offices, retail shops, restaurants, and complete convention hotel and banquet facilities (Fig. 2 and 3).

Fig. 6 — Staked sections of 7 in. (178 mm) thick concrete silo wall that were sawcut and removed.



Fig. 8 — Below: Lower right-hand corner, a cast-in-place 7 in. (178 mm) concrete floor is visible through a sawcut opening in the silo wall.

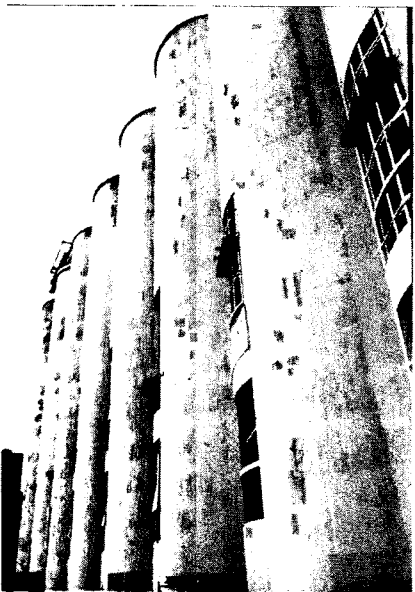


Fig. 7 — Left: Worker being hoisted up to prepare cut silo wall section for removal.

The \$7.2 million hotel is housed in 36 silos, 120 ft (37 m) tall, each silo having a 24 ft (7.3 m) inside diameter. Eight levels were constructed for a total of 144 rooms. Each circular room takes an entire floor in a silo, giving a 452 sq ft (42 m²) floor area that is 40 percent larger than conventional first-class accommodations (Fig. 4).

Before construction began, numerous tests were made on the concrete silos and the average concrete strength was found to be 6250 psi (43 MPa). The overall condition of the silos was unusually good, considering the 7 in. (178 mm) thick concrete cylindrical walls were slipformed in 1932.

The concrete walls were cut for window and balcony openings with a diamond-blade saw. To avoid overcutting, 4 in. (102 mm) diameter cores were first drilled before the intersection of two perpendicular sawcuts (Fig. 5).

The 7 in. (178 mm) thick concrete floor slabs were supported on 3 x 3 x 3/8 in. (76 x 76 x 10 mm) steel angle which was expansion shielded into the existing walls. Reinforcing consisted of No. 5 bars on 7 in. (178 mm) centers (Fig. 8-10).

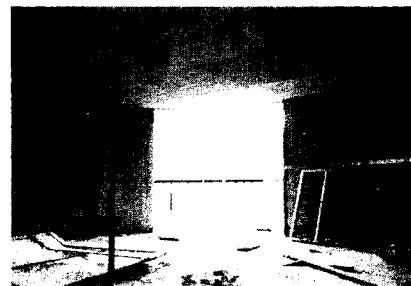


Fig. 9 — The cast-in-place floor slabs were supported on 3 x 3 x 3/8 in. (76 x 76 x 10 mm) steel angle and shored until the concrete reached adequate strength.



Fig. 10 — Foreground: Stockpiled No. 5 reinforcing bars for floor slab construction. Background: Worker prepares sawcut silo wall section for removal.



Fig. 11 — Aluminum studs prepare circular concrete silo walls for interior finishing.



Fig. 12 — Balconies were formed by framing off portion of interior circular silo space.

Adapting and reusing old America

"That was love at first sight," Ted Curtis was quoted as saying when giving his reaction to his first visit in 1968 to the famous Ghirardelli Square in San Francisco, where an 80-year old chocolate factory near Fisherman's Wharf was converted into a multilevel complex of fashionable shops and restaurants to become one of the city's most popular attractions.

Curtis and his partner, Harold Rasmussen, architects and planners from Cuyahoga Falls, Ohio, had been looking for the right opportunity to do the same type of thing in failing downtown Akron. While at the office of Akron's planning and urban renewal department on other business, the Director, Jim Alkire, had asked Curtis and Rasmussen, "Why don't you guys do something with the Old Quaker Oats Building?" And that's how it all got started.

After an inspection of the property Curtis was convinced that this was

the place to build something very special and unique, unlike anything Ohio or the country had ever seen. It took several years of complex financial packaging to turn these concepts into a project reality. He contacted businessman Jay Nussbaum of Akron whom Curtis credits with coming up with the financial plan to save the venture. "We worked for six straight months and many days and nights to come up with the necessary capital," Curtis said.

Curtis and Nussbaum started generating capital by sending a mailer to milling companies and were able to sell a great deal of the scrap iron, copper wire, and old motors. With this money they opened the first few shops.

From this risky beginning the project has snowballed to become a huge success for both Quaker Square Associates and downtown Akron.

Fig. 13 — The completed Quaker Square Hilton Inn.



Information for this article was supplied by Ted Curtis, AIA, of Curtis and Rasmussen Associates, Architects and Planners, Cuyahoga Falls, Ohio, architects, construction managers, and part owners of the hotel.