

T O N N E S E N



EQUIPMENT ARCHITECTURE

Arizona Cat dealer, Empire Southwest, introduces equipment as sculpture in their main office remodel.

OWNERS

Empire Southwest president, Jeff Whiteman, sent a clear message to project designer Bill Tonnesen, when describing how he wanted his building to look. "When our customers visit us, they should know that we eat, sleep and breathe tractors and engines. This shouldn't look like a bank or an attorney's office," said Whiteman. Tonnesen delivered on that request.

Although the renovation of Empire Southwest's headquarters began as an interior mold abatement project, it quickly became an opportunity to rethink how the 30 year old building functioned, and the role it could play in communicating Empire's heavy machinery culture, on an emotional level, with customers and employees.



The original elevation was largely blocked by overgrown shrubbery, a stair tower, dark glass, and parked cars.

To accomplish his client's goal, Tonnesen created a machine-tech industrial motif throughout the facility. The first step was to gut the building to its core, and expose the building's interior structure permanently. Instead of replacing the acoustical ceilings, drywall and floor coverings, which had been identified as the source of the mold problem, the structural steel columns and beams were sandblasted and left exposed.

STONEHENGE

The original front building elevation was largely blocked by overgrown shrubbery, a stair tower, dark glass, and parked cars. (See black and white "before" photo). Tonnesen reconfigured the parking to relocate the parking stalls that had been directly in front of the

entry. He also extended the main entry sidewalk out toward the street, and flanked it with six, monumental Stonehenge-like sheep's foot compactor drums on concrete bases.

According to Empire's paving products manager, Russ Mosier, "The sheep's foot term is derived from the Roman practice of driving a heard of sheep up and down their earthen dams and roadways as they were being constructed. A sheep's foot is quite small and carries the weight of its body concentrated on a small area, resulting in a unit pressure beneath each foot of about 50 pounds per square inch."

WATER

Water is an essential element in heavy earth moving operations, and it



Six, monumental Stonehenge-like sheep's foot compactor drums on concrete bases flank the new entry sidewalk.

was incorporated into Tonnesen's design as twin, glassy pools at the main entry to Empire Southwest's corporate headquarters.

Following the sidewalk from the sheepsfoot monuments and the visitor parking, customers find themselves standing on a bar grate bridge over the collection basin from the spillways of the two pools. Rushing water offers a pleasant sound on a hot Arizona day.

On either side of the bridge are the pools themselves. At the bottom of each are matching D-10 Caterpillar dozer silhouettes, cut from stainless steel plate and sandblasted.

COPPER

In honor of Empire Southwest's long relationship with the mining industry,

copper ore rock mulch and boulders for new arid zone landscaping areas around the building was trucked in from customer Phelps Dodge's Morenci mine.

The copper ore materials have a unique green and black appearance that unifies the concrete and metal architectural finish materials with the surrounding landscaping and natural environment.

A dedication plaque, *EMPIRE since 1950*, is also cast copper and installed without a sealer.

MODELS

Notable features of the reception area are the four exquisite model displays flanking the reception desk. Each 50th scale display depicts a unique scene of Caterpillar equipment in action.

For example, one of the scenes depicts an accident in which a boulder appears to have crushed a service truck with a crowd starting to gather to inspect the damage, while an equipment log jam locks up the haul road.

The equipment, people, rocks, and water in each model have a super realistic quality. All the machines are coated in dust. Even the ground engaging tools are depicted in a worn condition.

PARKING

Attention to detail is evident throughout the project. Even the standard practice of painting handicap decals in accessible parking spaces was considered in a new light. The result was sandblasting the symbols, in keeping with the minimum materials philos-



Twin pools with stainless steel D-10 dozers spill water beneath an entry bridge. Copper ore was used for landscaping and parking symbols are sandblasted rather than painted.

ophy of the project.

"The sandblasted parking symbols contrast with the surrounding paving dramatically," Tonnesen said, "because we didn't screen tamp the concrete after screeding. Eliminating the screen tamp step allowed the aggregate to remain very near the surface."

Reconfiguring the parking lot had the additional benefit of generating a 40% increase in 10-foot wide spaces. "I can't stand nine foot wide parking spaces," commented Tonnesen. "It's probably the most common municipal stall size, but it's just too narrow."

BOARD ROOM

"I wanted the board room to be perceived as part of the lobby," said Tonnesen. "What makes this room work is the opening." It's actually a 12' wide door that, like the rest of the boardroom, is clad in 10 gauge steel plate.

When the door is open, it fits in the recess of an adjacent wall, allowing the boardroom to feel like an extension of the lobby. When the door is shut, a dry erase marker surface is revealed in the wall recess, and the boardroom becomes a private group workspace.

"Although the board room is used relatively infrequently," said Tonnesen, "it features what is probably our most interesting project component - the conference table." The table he refers to is a meticulous, 16-foot long, history of fuel injection systems, suspended in resin.

"We did a sample for the Whitmans," said Tonnesen, "that looked like the parts were suspended in oil, kind of a green color but without bubbles, very surreal."

The use of industrial materials for architectural finish work is a Tonnesen trademark, and the Empire boardroom

exemplifies that aesthetic. The apparently nondescript cabinets are clad in neoprene conveyor belt material. Trencher teeth were used as mechanical trim and labeled the "fish frieze" by Ross Burkhardt, the superintendent-craftsman who installed them.

The most striking component in the boardroom is certainly the antique bulldozer, no big deal in and of itself, except that it's been installed under your feet. Viewed through a glass floor, the machine sits in a luminous well. The dozer was spotted by Tonnesen on his first visit to the site, and declared a "must use".

GARDEN

The place where salvaged Cat equipment was used most obviously as pure sculpture was in a garden for employees, east of the main entry. Surrounding a simple turf rectangle are a variety of powerful equipment attachments that speak to Empire's history and Caterpillar's engineering prowess.

On the north side of the garden stand four towering sentinels made from Cat track roller frames. The east side features a dozer blade, rock bucket, and ripper set in copper ore. Protective awnings are supported by salvaged dozer stabilizer arms.

LIGHT

Tonnesen has long been a believer in the economic and emotional benefits of using daylighting in commercial work places. His plan for the Empire Southwest facility was no exception and included a number of strategies aimed at increasing the penetration of natural light in the work areas.

After the building shell was gutted, new windows and skylights were cut in at several locations on the building exterior. On the interior, many solid office walls were replaced with clear anodized window wall units. In addition, the dark bronze tinted glazing previously used on the building's exterior windows was replaced with glass tinted to a light evergreen color.

In order to control and optimize light levels within the space, operable louvers tied into a panja light control system were provided at the skylights.



Salvaged dozer stabilizer arms provide support for a garden awning structure. Site lighting bollards were designed for the Empire project and utilize fluorescent lamps in amber globes. Bill Tonnesen is pictured lower right.

DECORATORS

From the beginning Tonnesen, and fellow designer Nathan Morey, insisted that the selection of building materials be limited. "The fewer the better," said Tonnesen. Aside from Cat's trademark mustard yellow, the natural grays and silvers of concrete, sandblasted steel, galvanizing and aluminum keep the building monochromatic.

According to Tonnesen, "the Whiteman's let us coordinate furnishings, fixtures and finishes without introducing outside interior designers. We are

typically suspicious of any involvement by color coordinating decorators," Tonnesen said with a smile. "The two key components we needed to make this project fly were our friends Gary and Dennis Porter from Porter Brothers and the super talented Nathan Morey from DMJM. I have only half jokingly called him an architectural prodigy," said Tonnesen.

HAMMER

How does a designer terminate an entry procession that begins with a Stonehenge monument made out of



An antique bulldozer, on display in the original lobby, was installed under a glass floor in the new boardroom. It is surrounded on all sides by backlit glass walls. The floor joists are also glass.

sheepsfoot drums and reflecting pools with bulldozer designs on the bottom? At Empire Southwest, Tonnesen used an H180 hydraulic breaker (the largest hammer Caterpillar makes) mounted to a cast-in-place concrete wall.

The hammer was actually the last of a series of ideas presented to the Whitemans including an excavator with its stinger poised in the air like a dinosaur, and a dozer climbing up a wedge towards the sky. "With Empire's mechanics and shops as resources, we knew we could get a used machine, repair

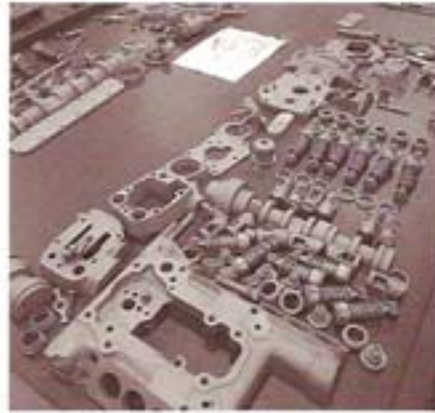
and repaint it's body, undercarriage and attachments, and use it as sculpture in a way that would be cost prohibitive if our client wasn't a dealer," said Tonnesen.

The wall on which the hammer is mounted is a statement of its own. The interesting pattern appears to have been carved into the concrete face of the wall. "Sandblasting the machine motifs we used on the floors was a bit more difficult on the walls with gravity working against us," admitted Tonnesen, "but I'm very pleased with their monumentality and timeless quality."

PORTERS

Tonnesen credits much of the project's success to the project's general contractors Dennis and Gary Porter. "Porter Brothers let us lead the way as design-build subcontractors in all the areas we felt were design sensitive."

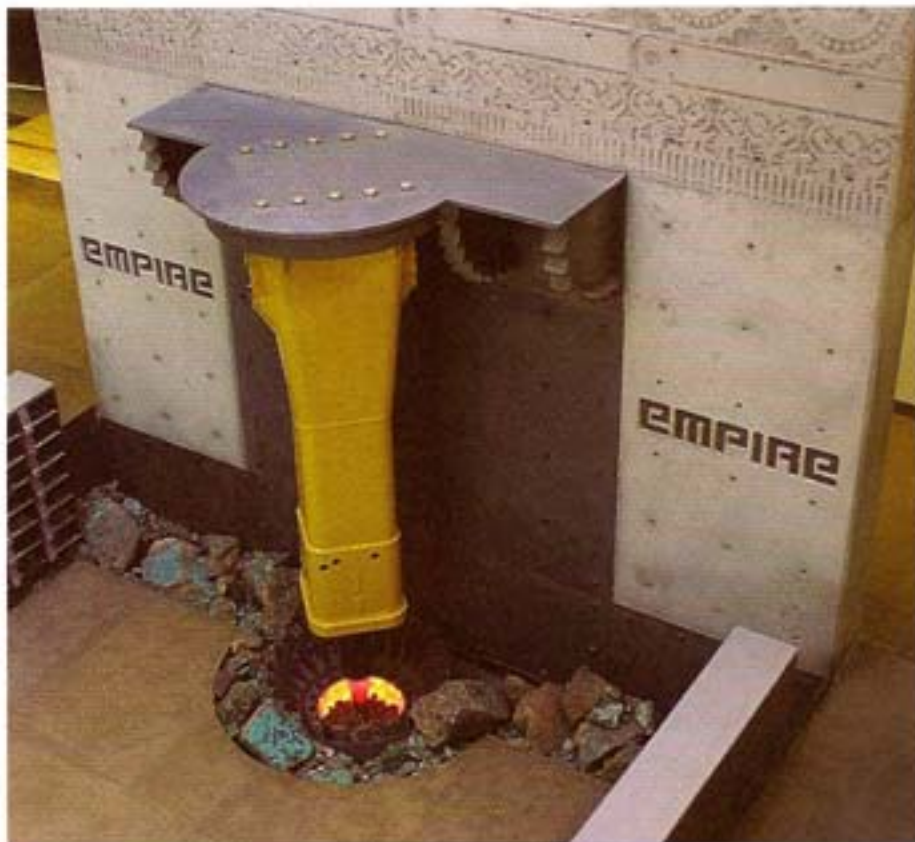
"Often," according to Tonnesen, "the architectural team on complex projects finds themselves at odds with the contractor. A set of drawings simply cannot address all the twists and turns a project takes, especially a remodel. Essentially it comes down to competing interests."



The board room conference table is 16 feet long and was fabricated as a 2" deep steel pan to display the history of Cat fuel injection systems. The pieces were placed at various levels during the process of filling the pan with epoxy resin. The center section houses power, data and microphones. Tennesen superintendent Ross Burkhardt (right), works with expert resin consultant Don Lindquist.



The rock ripper (above) mounts on the rear of a track-type tractor. The sculpture garden (below) also includes wheel compactors, a drive axle, a bulldozer blade and an excavator bucket.



This H180 breaker is the largest hydraulic hammer Caterpillar makes. The patterning above the mantel bracket on the cast in place concrete wall is sandblasted through a steel stencil.

says Tonnesen. "The designers are trying to preserve a vision while the contractor is trying to satisfy the owner and avoid scheduling and budget complications. The result is usually a watered down series of compromises."

"With Porter Brothers this just never happened," claims Tonnesen. "While they do protect the owner's interests, they treated us like clients as well. I think it's because they view themselves primarily as facilitators. They were never confrontational. They brought a combination of tremendous technical capabilities and good will to the table; they were great to work with." Porters was actually hired as the general first and then recommended Tonnesen who had also done their offices in collaboration with Idaho architect and friend Nelson Boren.

RECEPTION

The remodeled lobby at Empire Southwest is unlike any corporate visitor center in the world. For instance, the

receptionist's desk was made from a 16-cylinder diesel engine block.

The piston heads were removed and the block cut in half the long way. Tonnesen used concealed setscrews to align pistons outside their sleeves to support the glass transaction counter.

Elsewhere in the lobby, track rail links were welded together to create sentry soldiers in the lobby. Furniture areas have steel plate floors, which were attached only at the corners, creating an oddly comfortable rebound underfoot. And walls were paneled with riveted unfinished steel plate polished with car wax.

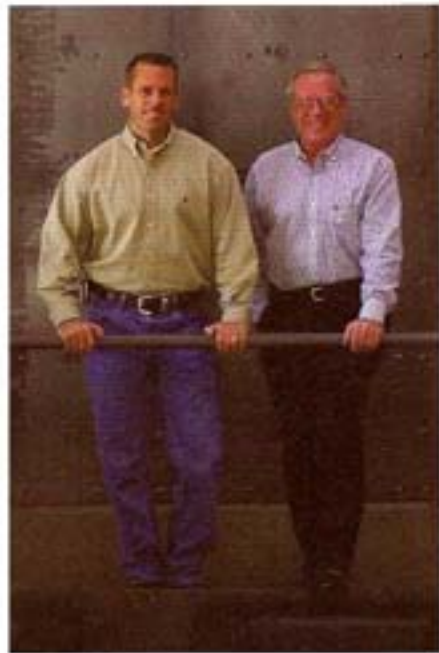
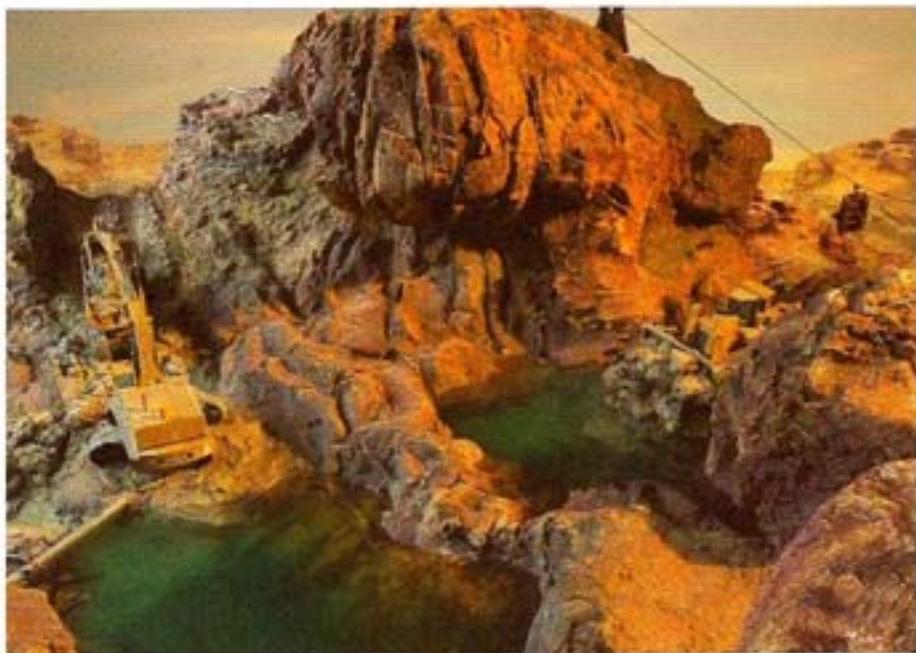
LOBBY

Visitors to Empire Southwest have the option of resting in a lobby at the foot of the H180 hammer. Information displays are located on either side.

In developing the information management system, Tonnesen recalled looking for equipment brochures during his first few visits to Empire. He was



Clockwise from upper left: Track rail links, 12 foot wide steel door, handrail with lifting hook, and a detail of the pistons that support the glass transaction counter at the receptionist's desk.



Empire's reception desk is a 16 cylinder engine block. The people (upper left) are looking into 3 x 3 foot glass cases (L to R: Randy Lamb, Bill Tonnesen, John Whiteman) that display 50th scale equipment models in surprisingly realistic environments such as the one pictured lower left. The company's history is featured in the lit steel display case. Third and second generation owners Jeff Whiteman and John Whiteman are pictured lower right.

directed to wooden pigeonholes with a baffling code system that left him pulling out the contents of each to determine its contents.

His high-tech/low-tech solution implemented in the new lobby was to duplicate each brochure cover in reduced size to be displayed under clear acrylic next to each slot, so that the contents of each bin could be discerned at a glance.

Elsewhere in the lobby, photographs

of customer's equipment are displayed as transparencies in backlit aluminum boxes. Specific equipment is identified with labels set in clear acrylic discs mounted to the concrete walls with valves and rocker arms. Stair railings curl around breaker points and terminate in lifting hooks.

REFLECTIONS

Reflecting on Empire Southwest's renovation project, from its humble

beginnings in mold elimination, to its final built embodiment of Empire's corporate culture, Jeff Whiteman, President believes an important lesson was learned. "Within every problem are the seeds of a greater opportunity. Our employees, Dennis Porter, Bill Tonnesen, and the entire team have created a striking facility."

For more information, call (480) 968-7895 or go to www.tonneseninc.com.

CREDITS

CLIENT.....EMPIRE SOUTHWEST

Project.....Main Office Remodel
Owners.....John Whiteman, Jeff Whiteman
Owners Representative.....Gale Plummer
Properties Manager.....Randy Lamb
Product Specialist.....Russ Mosier
Technical Advisor.....Danny Conrad
Information Systems.....Dave Wise
Weld Shop Managers.....Tom Haugen, Randy Pepper
Paint Shop Manager.....Bob Berry
Used Parts Manager.....Dennis McAllister
Machine Shop Manager.....Skip Schute
Equipment Logistics.....Rick Lotz

ARCHITECTURE.....DMJM-TONSESEN

Principle in Charge.....Steve Lichtenberger
Project Manager.....Pat O'Keefe
Design Lead.....Bill Tonnesen
Designer.....Nathan Morey
Structural Engineer.....Drottar-Priniski
MP & E.....Lowry Sorensen Willcoxson
Landscape Architecture.....Tonnesen

GENERAL CONTRACTOR.....PORTER BROTHERS INC.

Owners.....Gary Porter, Dennis Porter
Construction Manager.....Dawson Stewart
Superintendent.....Glen Washburn
Foreman.....Jason Freeman
Foreman.....Bruce Porter

SUBCONTRACTORS

Acoustic Ceilings.....TP Acoustics
Audio Visual.....Technology Providers
Board Room.....Tonnesen
Company History Display.....Tonnesen
Concrete.....Construction Zone
Concrete Patterns.....Tonnesen
Demolition.....BCS Enterprises
Electric.....Delta Diversified
Entry Bridge.....Tonnesen
Equipment Sculpture.....Tonnesen with Empire
Exterior Signage.....Tonnesen
Fire Protection.....Complete Fire Protection
Framing and Drywall.....Imperial West
Glass.....Milam Glass Co.
H.V.A.C.....Thomas Heating & Air
Handrails.....Tonnesen
Glass floor and Tractor Display.....Tonnesen
Interior Signage.....Tonnesen
Landscaping.....Tonnesen
Masonry.....Star Masonry
Millwork/Doors.....Meyer and Lundahl
Model Equipment Displays.....Tonnesen
Painting.....Johnson & Son Painting
Product Literature Displays.....Tonnesen
Receptionist's Desk.....Tonnesen
Resin Conference Table.....Tonnesen
Site Lighting.....Tonnesen
Structural Steel.....S & H Steel
Stucco.....Arizona Stucco Systems
Water Feature.....Tonnesen

T O N N E S E N

105 EAST 15TH STREET
TEMPE, ARIZONA 85281 USA
PHONE: (480) 968-7895
FAX: (480) 968-1987
WEB SITE: www.tonneseinc.com