Arch 464
ECS
Spring 2008

Name_____

Quiz #2

# "The Quonset Goes Green"


*Entry (north) elevation of the office complex.*

For this problem you are the water use consultant for Hodgdon Powder Company, the owners of a new headquarters designed by Kansas City, MO-based El dorado Architects. Hodgdon's CEO, Tom Shepard, is not satisfied with the water conservation strategies employed by the design team. The completed building and site has parking for 8 staff and 20 guests, an undeveloped site with a designated garden space, and a hardscape systems of paved paths and an entry court that connect the buildings and parking. Your role is to suggest greener alternative for water use and treatment on the site.

**Context.** The site is a level prairie with several mature trees near the town of Herington, Kansas. The plans for the site include two parking areas, the garden area, and three office units around an entry courtyard. Herington, has a temperate climate with about 30 inches of rain each year. The building is connected to city water supply and sewers.

**Description.** *Architectural Record* described the project in its February 2008 issue. The text of that description is on page 2 of the quiz.

**READ THE ENTIRE QUIZ BEFORE YOU BEGIN!**


*West elevations with undeveloped garden in foreground.*

*All photos and drawings:* Architectural Record *02:08.*

From *Architectural Record 02:08*:

**By Russell Fortmeyer**

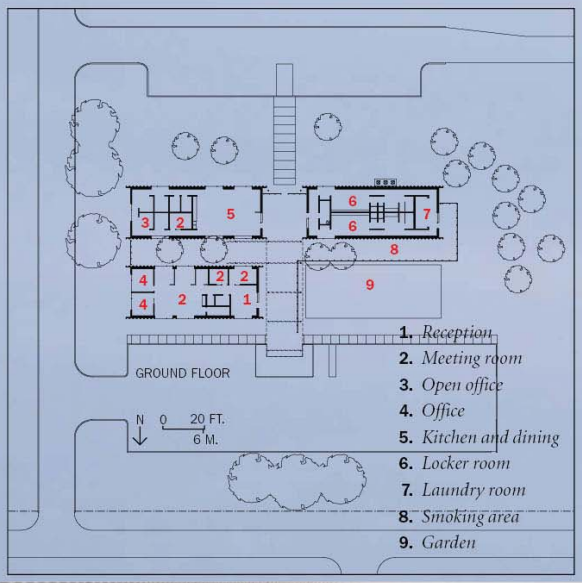
It wasn't image consciousness or architectural publicity that convinced the board of the Hodgdon Powder Company to hire an architect to design its new production facility's administration building near Herington, Kansas. It was the employees. Tom Shepherd, the C.E.O. of the Overland Park, Kansas–based gunpowder company, says he took one look at the original proposed Butler building for the facility's staff and he knew it would not be a pleasant place to work. "I took a little risk," Shepherd says, noting that much of his staff initially resisted the idea of open offices. "And I learned a great deal."

For starters, Shepherd says, the building, which opened on September 2007, designed by Kansas City, Missouri–based El dorado Architects, looks nothing like what he imagined when he described his company's needs to the architects. The team at El dorado split the simple, 8,500-square-foot program—reception, meeting space, offices, dining, and locker rooms—into three separate buildings oriented around outdoor circulation spaces and a garden of native plants. Josh Shelton, a principal at El dorado, proposed using the Quonset hut system—a pre-engineered structure—to the company after he saw similar examples for nearby airplane hangars and rural agricultural buildings. "The Quonset hut is already such a beautiful section of corrugated ribs, so we did not want to mess with this elegant system," Shelton says. "We created a compound of sorts that brought indoor and outdoor spaces together, peeling away a series of spanning ribs to create an overhead canopy." It's merely coincidental, Shelton says, that the project could be read by some as looking like a double-barreled shotgun in plan.

But the simplicity of this design conceals just how much the contemporary appearance of the buildings disturbs local conventions. For there are really only two competing strains of small industrial architecture in Kansas: house or barn. In many cities and towns, you will see purpose-built, brick-clad houses of dubious scale that operate as administration buildings for family-owned companies. If not a house, then you will see a pre-engineered, metal box of a building, like a barn with small windows, filling the same role. This anonymous architecture blankets America. Herington, which is 1½ hours north of Wichita, bordering the state's rolling Flint Hills region, is certainly no exception.

A Kansas farmer would most likely refer to a larger Quonset hut used for agriculture as a "round-top." You see these types of buildings sprinkled through the countryside, in various sizes, because of their material efficiency—the walls and roof are condensed into a single, self-supporting structure. But a Quonset hut certainly introduces a particular set of design problems. El dorado collaborated with the hut's fabricator, Steelmaster USA, to work out the size, span, and details of the galvanized-steel hut. Shelton says they first had to develop a scale figure to determine that the slope of the hut would begin at about shoulder height for an average person. This put the peak of the ceiling at 17 feet, with a 3-foot concrete-stem-wall base. Sean Slattery, AIA, project architect for El dorado, says the firm spent much time on the details of connections—the casings around the windows, in particular—since the firm is well-known for working with pre-engineered building systems. The ends of each hut are clad in cedar slats with conventional aluminum storefront doors and windows. The buildings' interiors were kept minimal—a white corrugated-metal ceiling conceals spray-on foam insulation, floors are sealed concrete, and custom furniture, designed and built by El dorado, is finished in light Baltic Birch plywood. Shepherd, the C.E.O., says the majority of his employees are happy in their new offices. "My guess is there are people who just don't like design," Shepherd says. "I may not choose it for my house, but I can appreciate it." ■

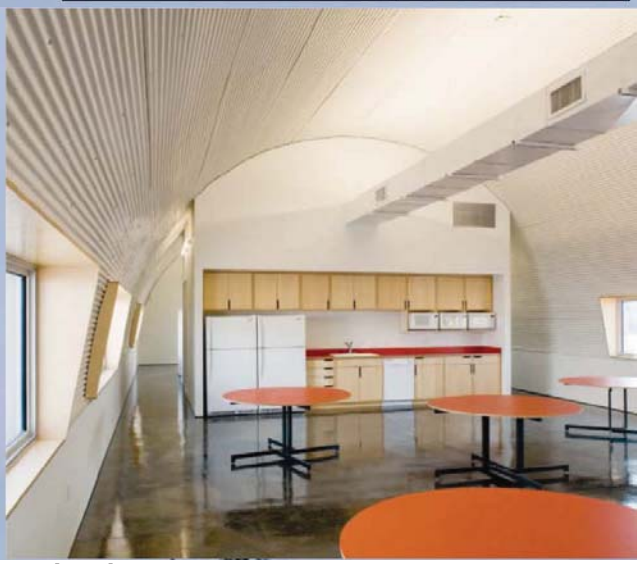
PHOTOGRAPHY: © MIKE SINCLAIR




**Project:** *An Office for Hodgdon Powder Company*
**Architect:** *El dorado Architects—Josh Shelton, principal; Sean Slattery, AIA, project architect; Brady Neely*

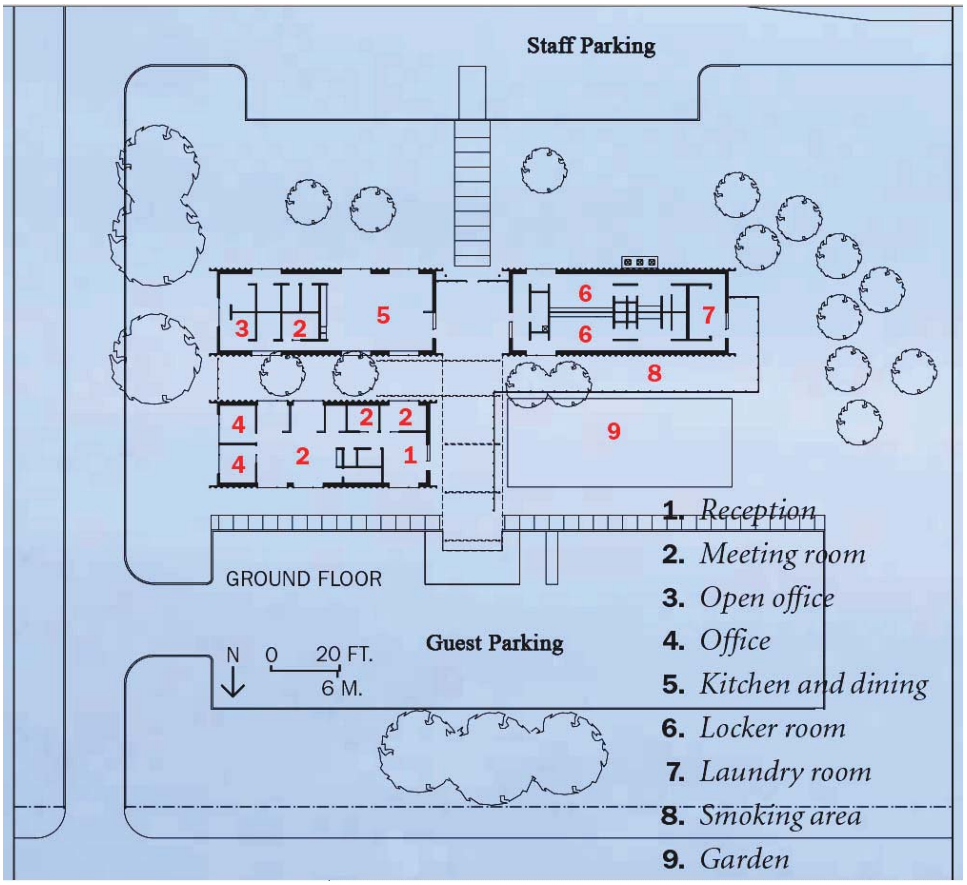
**Sources**
**Storefront system:** *Manko*
**HVAC:** *Trane*
**Paint:** *Sherwin Williams*
**Ceiling:** *Una-Clad*

**ONLINE:** To rate this project, go to architecturalrecord.com/projects/.



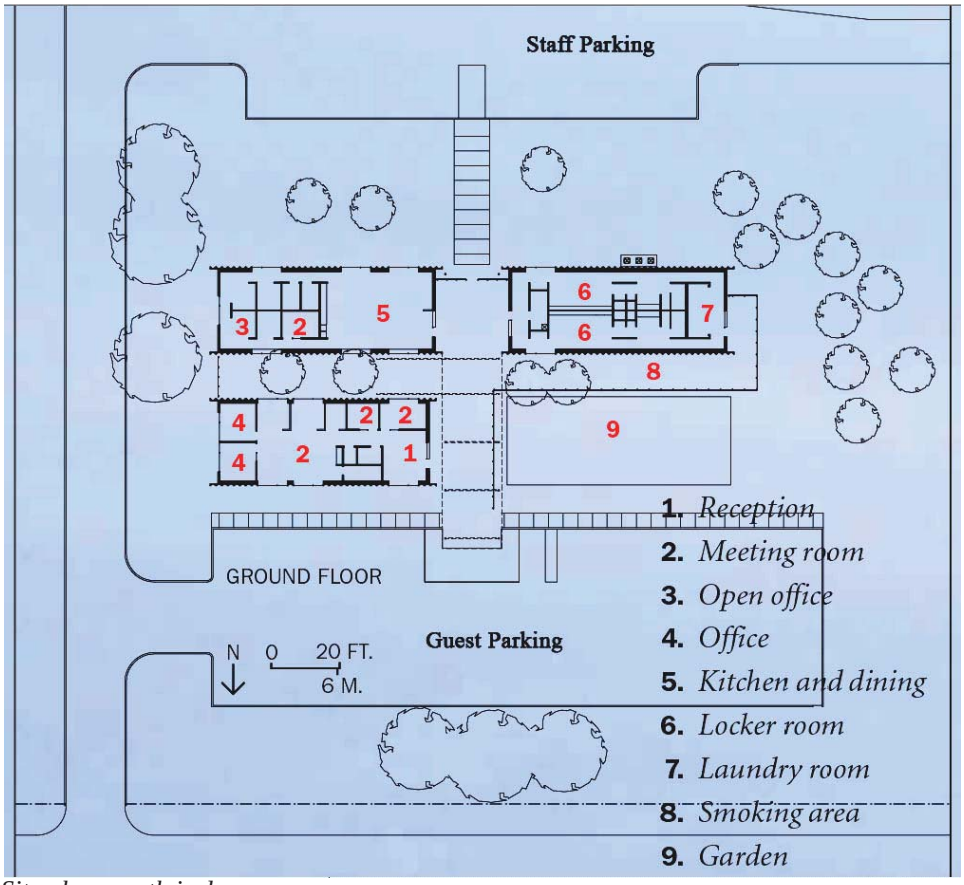
*Views of entry court and dining hall. Note that South is up in site plan above.*

*3 pts.* 1. **Describe three** strategies the architects could have planned to employ (but didn't) to manage stormwater. On the plan below **show** how each impacts the site plan. **Critique each** for its merits, aesthetics, and limitations on this site.




*Site plan; north is down.*

*3 pts.* 2. **Describe three** strategies the architects could have planned to employ (but didn't) to manage gray and black water. On the plan below show how each impacts the site plan. **Critique each** for its merits, aesthetics, and limitations on this site.




*Site plan; north is down.*

*4 pts.* 3. **Propose and diagram an integrated water plan for the site, from supply to discharge. Note the role in water conservation and quality assurance for each element in your plan.**