

# Corrections Evolution

HOK's James Kessler has seen designs for correctional and justice facilities evolve due to new philosophies, design-build formats, and precast concrete techniques

— Craig A. Shutt



James Kessler, AIA, HOK

**D**esigning correctional facilities may seem like a thankless task, as the imposed limitations reduce an architect's capability to make an architectural statement and are seldom appreciated as much as other buildings are by their users. But James Kessler, AIA, senior principal and director of the Justice Focus Group at HOK in Washington, D.C., has spent his career working in a field others might avoid, but one that he finds interesting. He has seen it evolve to the benefit of all involved.

"It's a fascinating building type to work with," says Kessler, who has been designing correctional facilities since 1980. "It's a highly programmed type of structure that's like a small city. It has administration, healthcare, food service, visiting areas, housing, recreation, and other functions. It's interesting to me to see how much architecture can have a positive effect in this type of trying situation."

Kessler began his architectural career in 1976 after graduating with a Master of Architecture degree from Yale University. He began working at Caudill Rowlett Scott (CRS) in

Houston, Texas, and moved to HOK's Washington office in 1978. There, he worked on an un-built effort to redesign the Charles Street Jail in Boston after the courts declared its conditions "cruel and unusual." Ultimately the facility was moved elsewhere and the historic jail became a luxury hotel. But the work provided a wealth of experience and perspective.

"The design meetings were attended by the Mayor's representatives, attorneys for the inmates, attorneys for the City Council, the Sheriff's Office, and representatives for the Massachusetts Department of Corrections," he explains. "They were all a little wary of each other and concerned about whether their goals conflicted. It was challenging to design to meet all of their needs, but they all ended up happy with the solutions we proposed. That experience proved quite useful on many subsequent projects."

More projects arose as the need began to grow. HOK long had a strong

reputation in the area, beginning with its replacement design for Alcatraz in San Francisco, which became the Federal Administrative Maximum Facility in Marion, Illinois. Since the 1980s, Kessler has seen the firm's work expand and evolve as new ideas have been introduced.

## Quality vs. Cost

"It's interesting to me to understand the basic principles of corrections and how architecture can serve the needs of the staff, the administrators, and the prisoners," he says. "The goal is always to provide the highest quality while keeping both construction and operating costs as low as possible. It's also important to inject a feeling of hope for everybody in the system, which is an important part of incarceration."

Kessler benefited from "some great thinking" in the 1970s about correctional approaches, especially as it related to the concept of creating housing pods instead of laying



The Fairfax County Adult Detention Center expansion in Fairfax, Va., designed by Jim Kessler in 1990, was his first project to feature precast concrete. It stacked eight levels of precast concrete cells in two-unit modules on a two-story cast-in-place foundation. The building was erected quickly with modules erected as soon as they arrived at the site. Photos: Copyright Lee B Ewing.

cells out linearly, as was common at the time. By creating pods of cells around a day room and encouraging socialization in smaller groups, authorities could create a more normal environment while reducing operational costs.

"Prisons operate 24 hours a day, 365 days a year, and they're very expensive to operate," he notes. Operational expenses account for about 90% of 25-year life-cycle costs, with 10% going to capital costs. "Our goal is to build facilities that facilitate operation and minimize staff, reducing costs. Podular designs helped achieve that."

That approach tied in with another major breakthrough concept, Direct Supervision, in which a single staff member can supervise a large group of prisoners through the concept of mutual respect. This management style is facilitated by placing an open officers' station inside each pod. "Direct Supervision freed up our design concepts," he says. "With fewer restrictions on sight lines and adjacencies, it became easier to organize housing pods into different geometries and create new design expressions."

In more recent times, the podular approach has gone further, creating a more decentralized approach in which amenities such as exercise rooms, meal spaces, and other functions also are decentralized to the housing pods. "Pods are growing bigger as confidence in this system grows," he says. Pods have expanded from a common configuration of 24 to 48 cells to as large as 64 cells.



*The Prince William County Adult Detention Center in Virginia features a total precast concrete structural solution, including beams, columns, double tees and double-cell units. The building contains 92 cells and features laid-up brick on precast concrete panels on its exterior to blend with the neighboring buildings. Photo: Copyright Lee B Ewing.*

This new geometry has led designers to feature more precast concrete designs, since this material is particularly suited to a correctional facilities' unique needs. "We also do a cost evaluation based on the facility's configuration and goals for operation, siting, etc." he says. "We look for the best structural approach, and precast concrete has been the way we've been designing projects recently."

### **Precast Concrete Modular Cells**

In addition to its inherent durability, precast concrete offers high quality control and fast construction, he

explains. "Everyone says the future of architecture is in prefabricated components that can be manufactured under ideal conditions in plants and assembled at the site," he says. "Correctional and detention facilities are one of the most applicable building types for that approach due to the ability to take advantage of the repetitive elements inherent in this type of building."

The small, similar cells leverage precast concrete's capability to reuse forms and keep casting. "It's similar to apartments and other housing, except tenants want to personalize the design. With incarceration, the users



*A total-precast concrete structural solution was selected for the \$134.6-million, 1,032-bed Richmond Justice Center, which is now being constructed. It features quad cell units, double tees, columns, beams and exterior load-bearing architectural insulated sandwich wall panels. The panels are being cast with the use of form liners that hold thin brick which are embedded in the building façade to create a contextual and rhythmic design.*



*Kessler's work with HOK's Justice Group includes the recently completed McConnell Public Safety & Transportation Operations Center in Fairfax County, Va. The facility brings together several agencies to enhance the effectiveness of public-safety response, improve traffic-congestion management and respond and recover faster from major emergencies. The building features precast concrete architectural panels on its exterior, providing a dramatic look and resilience to natural and man-made disasters. Photos: Lee B Ewing.*

lose those rights and we can create stackable, orderly designs.”

Precasters leverage this capability by creating complete cell modules that can be stacked like building blocks. In many cases, these units can be outfitted in advance with furnishings so they're ready to hook up when they're placed.

Kessler's first precast concrete design, in 1990, was for the Fairfax County Adult Detention Center expansion in Fairfax, Virginia. It featured eight levels of stacked precast concrete cells in two-unit modules on a two-story cast-in-place foundation. The applied brick exterior was designed to fit into the urban neighborhood around it.

His work with precast concrete modules continues to this day, with the Richmond Justice Center now underway. “It will be precast concrete top to bottom,” he says, featuring quad cell units, double tees, columns, beams, and exterior load-bearing architectural insulated sandwich wall panels. The panels are being cast with the use of form liners that hold thin brick embedded in the surface to create a rhythmic design.

The modules are being cast in four-unit cells, which saves time and money. “Picks are expensive, so the more they can lift in one unit, the better,” he says of the 50,000-pound modules.

The components, from Tindall Corp., are being cast in the company's San Antonio, Texas, plant and shipped two per rail car to its Petersburg, Virginia, plant, where they are trucked to the site. “There are quite a lot of logistics involved in a project like that, but this approach offered the highest technical score and the lowest price.”

### **Design-Build Growing**

The project was undertaken as a design-build project, under Virginia's Public-Private Education Facilities & Infrastructure Act (PPEA), which allows local governments to create public-private entities to efficiently construct facilities. Kessler sees design-build projects as the wave of the future.

“We're seeing them quite a bit today, because they allow the architect and contractor the chance to work together before the design is finalized. We also gain the expertise of the precaster. He can help us understand what can and can't be done and what's expensive to do. That's not always obvious to the architect.”

Design-build projects can create closer cooperation and ensure everyone is working toward the same goal, he notes. “It takes down a barrier in the project and creates collaboration, rather than just linking us through documentation. It takes trust that we're

all working to provide quality and low cost, but that trust develops through the working relationship. It's not applicable to every project, or even every detention center, but it works very effectively in many cases.”

The best scenarios develop when the owner understands the scope of the project and can articulate all of the needs, he adds. “It produces great creativity and opportunities for effective design. If the owner states the goals clearly, design-build lets you achieve high quality at a low cost.”

His work extends into other justice facilities as well. For example, he's recently completed the McConnell Public Safety & Emergency Operations Center in Fairfax County, Virginia, a state-of-the-art 911 Emergency Communications Center and Emergency Operations Center. That building features architectural precast concrete panels on a steel frame, in a design configured to meet anti-terrorist requirements.

His designs in other areas do not mean he has lost enthusiasm for correctional facilities, he notes. “After a career of designing these structures, I'm always surprised at how different each one is in configuration and operational needs. That's what is so fascinating about this field.” 