

A SYSTEMIC APPROACH TO SUSTAINABILITY*

By Ken Ricci, FAIA and Laura Maiello

Discussions of sustainable design typically center on the concept of a “carbon footprint,” defined by the World Wildlife Fund as “a representation of the effect human activities have on the climate in terms of the total amount of greenhouse gases produced (measured in units of carbon dioxide.)” In other words, a carbon footprint is the total amount of greenhouse gases produced by an individual, organization, or activity. So what does this have to do with jail facilities? Plenty. In the realm of design and construction, it’s possible to minimize a carbon footprint through Leadership in Energy and Environmental Design (LEED)-approved or “green” materials, or, more simply, by building smaller. And so, for detention facilities, sustainable design begins with the question: “How small -- rather than how large -- should we build our new jail?” By addressing this question, we are taking a key step toward sustainability.

**REDUCE THE LENGTH OF STAY**

Historically, many jurisdictions have had to expand jail bedspace capacity because of the growing inmate population and chronic overcrowding. The past few decades have seen unprecedented construction, and yet many of those jurisdictions are again overcrowded today, despite their larger capacities. This is not surprising, as research developed by the U.S. General Accounting Office shows that for every empty bed, the justice system will provide an occupant. In fact, the Bureau of Justice Statistics (2006) reports that there are more than 766,000 inmates currently held in local jails, compared to 560,000 ten years ago.

“Construction alone cannot solve the problem of jail overcrowding”

Clearly, construction alone cannot solve the problem of jail overcrowding. The jail is only one component in a larger criminal justice system comprising myriad agencies including, but not limited to, local law enforcement, the courts, prosecutor, probation, and parole. The policies and practices of each of these agencies directly influence both the number of individuals who are incarcerated and how long they stay. Since the jail is a captive of the larger criminal justice system, the only way that overcrowding can be successfully addressed is by changing policies and practices that affect jail use – not by building larger facilities. While a new jail may be required to address the security, life safety, and operational problems of an old and outmoded facil-

ity, the sustainable approach to jail construction involves building as small as possible without sacrificing public safety. This approach requires a paradigm shift from the “build bigger” method of coping with escalating jail population trends and a movement toward system-based, rather than facility-based planning, design and construction.

The most important variable in jail facility planning and design projects is the number of beds, because the size of the facility will influence site requirements, building footprint, operational and maintenance costs, and personnel resources. The first step, therefore, is to generate inmate population projections based on historical growth trends and current system practices. This is called the “baseline” projection, and it illustrates the number of beds that will be required in the future if all other variables remain the same.

Typically, the projections show that an increasing number of beds will be required on an ongoing basis if current practices continue -- a point not lost on elected officials and taxpayers alike. However, changes to current system functioning can result in significant bedspace savings, and this can be demonstrated empirically, as the following case studies illustrate.

REDUCE THE LENGTH OF STAY

One New Jersey county was able to reduce the number of beds required in its proposed juvenile detention center from 90 to 75 beds. This reduction resulted from the identification of system factors contributing to the use of secure detention, and then developing interventions. A review of current practices showed that many juveniles were spending long periods of time in detention awaiting court action because of the complexities in developing appropriate dispositional plans.

Representatives from human services, the courts, detention, juvenile prosecutor, local service providers and other key stakeholders agreed that establishing a multi-disciplinary team approach for these youth could help to expedite their cases and ultimately shorten

the length of stay. This, along with other system recommendations, was responsible for the overall decrease in facility capacity requirements. (Other recommendations included the implementation of a standardized intake process to control inappropriate admissions, expansion of alternatives to secure detention, and more timely transfer of adjudicated youth).

Recommendations like this don't have to wait until construction of the new facility; they can be implemented immediately. In this instance, not only did the county save capital costs of \$350,000 per bed; it also benefited from improved system functioning and enhanced services for youth – a win/win scenario.

CONTROL ADMISSIONS

Controlling length of stay is one way of reducing bedspace demand, as shown in the above example. Another way to manage future population growth is to reduce the number of admissions to the jail. This approach was used in planning a new jail facility for one New Hampshire county. Alternatives to secure incarceration existed for the sentenced population in the form of home detention and work release; however, no similar programs were in place for the pre-trial popula-

tion. As part of the planning effort, eligibility criteria were developed for a new pre-trial release program for Superior Court cases. Individuals who meet the criteria will be diverted into the program at the arraignment hearing instead of being sent to jail. Based on the potential pool of candidates for the program and the eventual implementation of the program in the District Courts, the planned bedspace capacity for the new jail will be reduced by about 4%.

EXPAND ALTERNATIVES TO JAIL

The third way to control overcrowding and reduce the number of beds required is to enhance existing alternatives to incarceration, or develop new ones. When the cities in one Washington State county were faced with developing a jail facilities system for their misdemeanor population (the county jail would no longer house them), projections indicated the need for over 1200 beds in the next twenty years. But implementing or expanding such jail alternatives as day reporting, work release, electronic home detention,

and pre-trial release, the cities reduced the baseline need by 12%, translating into 149 fewer beds being built. The impact of this bedspace reduction on land use, materials and resources is significant from a sustainability perspective as well as a fiscal one.

These are but three examples of how the systems approach allows jurisdictions to actively manage future population growth, rather than simply respond to it with more beds and larger construction projects.

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NOT JUST “HOW MANY” IN JAIL BUT ALSO “WHO”

Jails contain a diverse population ranging from low-level offenders sentenced to the county jail for relatively minor crimes to individuals awaiting court action on serious and sometimes violent offenses. Inmates also vary in their behavior and in special needs presented from both a programmatic and a security perspective. Modern jail operations suggest that newly admitted inmates be classified according to risk and need, not just according to their charge at entry. This is referred to as Objective-Based Jail Classification (OJC). According to the National Institute of Corrections, “OJC is a process of assessing every jail inmate’s custody and program needs and is considered one of the most important management tools available to jail administrators and criminal justice system planners. OJC systems use locally developed and validated instruments: one at intake and another after a period of confinement, which identify the level of risk and needs presented by an inmate so that appropriate housing and program assignments can be made. The data generated through the classification process can also be used for operational, management, and planning purposes.”

In this regard, objective-based jail classification can also support the sustainable approach to jail design and construction by identifying

SITE SELECTION

One of the most difficult challenges in modern jail design, which also affects sustainability, is site selection. Local officials are under tremendous pressure to relocate a new jail to an out-of-town location far from any dissenting voters. But modern jails belong downtown, next to the courthouse, for a number of reasons. First, placing the jail next to the courthouse allows for easy movement of prisoners for court appearances using a tunnel or a bridge. This reduces dramatically the number of vehicle trips required from a remote jail. It also means that the jail is likely to be closer to public transportation, a sustainable

those inmates who require a maximum-security cell and substituting medium-secure housing units and dormitories for the remainder of the population. According to research sponsored by the National Institute of Corrections, states adopting objective-based models have experienced reductions in the proportion of inmates assigned to maximum security and associated increases in minimum and medium levels of security. No associated increases in disciplinary problems or escapes have occurred.

The Department of Correction in one New York county is a case in point. The county was replacing its old antiquated penitentiary with construction of a new facility. Because the old 1912 facility was a linear design consisting of single cells along a double loaded corridor, DOC officials initially assumed that they needed all single cells in the new penitentiary. Working closely with jail security and administrative staff, a review of the inmate population (all low-level offenders serving one year or less) revealed that more than half of the population could be housed safely in dormitories instead, based on objective-based classification criteria. This resulted in a facility with a reduced building footprint, fewer plumbing fixtures, simplified construction and reduced costs.

design goal and a humane consideration for families, friends of the incarcerated, attorneys and other professional service providers.

Situating the jail downtown also allows for re-use of the old jail, bringing it up to date and conserving the embedded energy in the old facility. Typically, downtown buildings also have a smaller footprint than a one-story building out-of town, and they conserve land and have much less roof area, thereby reducing the amount of storm water run-off that has to be stored, treated and discharged.



SITE SELECTION CONT.

The new Denver Detention Center has two pre-trial courtrooms on the same floor as the intake housing area. Recent arrivals simply walk across the corridor to visit the courtroom for pre-trial activities. About 40% of those admitted are released within four days; most of these inmates will never have to use an elevator to go to court. And by locating the new jail downtown, the City will eliminate the current need for massive bus trips to process inmates from the current remote holding facility.

ENERGY SAVING

If an out-of-town facility is inevitable, it is at least possible to orient the new building to capture sunlight during winter and guard against heat gain in the summer by planning the main axis of the jail in an east/west direction. (See site plan for new Sullivan County jail.)

For example, an urban county in New Jersey located -- after a ten-year search -- its new

DAYLIGHTING

Using daylight to reduce the energy consumption of artificial illumination is key to a sustainable strategy, especially in a building that operates all day, every day. Using less artificial light reduces heat load, making for smaller air conditioning units, and reduces the electrical load. Bringing daylight into the correctional environment also reduces stress and lifts the spirits. Although research confirms the benefits of daylighting on student performance, on patients healing, and on worker productivity, there is no available current research that measures the effects of sunlight on the incarcerated. (The American Academy of Justice of the American Institute of Architects and the Neuro Science Research Initiative is moving to fund several studies in this area).

For correctional facilities, practical experience strongly supports the beneficial effects of



juvenile detention center in an industrial area with few nighttime or weekend neighbors. A new bus stop will be provided at the main entry to the site. The building itself is a thin building that wrapped around an outdoor courtyard in the shape of a square doughnut. The exterior of the building forms the secure perimeter and the courtyard created inside the square doughnut provides a daylight-filled corridor.

sunlight coming into housing area dayrooms, corridors and program space (see photo). In one county jail, the sheriff warned that none of his staff would work in a newly designed addition, which was based on the concept of normative design. But we introduced daylight and views into the dayroom, vibrant colors, excellent sightlines, climate control and acoustic dampening. The unit was subscribed by senior officers from opening day and has been a great success.



“Using daylight to reduce the energy consumption of artificial illumination is key to a sustainable strategy”

DAYLIGHTING CONT.

In one New Jersey juvenile detention facility, we designed a “thin” building, which is only one “room” deep. All spaces -- housing units, dining room, classrooms, administration -- are arranged along a common corridor and all have natural illumination from windows to the outside. The corridors are also lined with a continuous wall of glass. The housing units have a raked roof slanted up towards the south, creating a complete window wall of insulated “channel” glass that allows winter light in but is shielded from the hot summer sun (see drawing).

**SUCCESSFUL COMMUNITY TRANSITION**

The vast majority of offenders incarcerated at the local level will be returning to the community. Managing future jail population growth also means working to reduce the number of repeat offenders who return to jail. As such, detention facilities must be committed to providing an environment that is conducive to positive change and successful reentry, not warehousing. Reducing recidivism results in the need for fewer beds in the future, and subsequent facility expansion. But just as important, facilities that focus on successful reentry support the sustainability of people -- by helping them to live better lives in which they are more productive members of society.

The building can be seen as a tool that supports this mission. In detention facilities, environment cues behavior, and research has demonstrated that inmates respond better in a normative environment than a traditional cellblock. As described above, normative environments contain natural light, views, colors, natural (or at least normal) materials, personal space and control of some personal territory, along with the round-the-clock presence of a correctional officer to maintain order. These normative design features are directly compatible with those of sustainable buildings.

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SYSTEMIC APPROACH REQUIRES A COLLECTIVE COMMITMENT TO CHANGE

The justice “system” is complex and composed of many actors, many of whom are elected officials (e.g., judges, prosecutors, sheriff, county commissioners, et al). Changing philosophy, practices, policies and procedures is a task that has to be handled delicately and with the involvement and investment of the larger criminal justice community. Successful jurisdictions use a participatory approach that includes representation of all actors in the criminal justice system. The buy-in of system changes from key stakeholders is essential.

In the New Hampshire example, the County established a Criminal Justice Coordinating Committee with representation from all criminal justice agencies and the County Commissioners, and the County Attorney was intimately involved in the development of the proposed pre-trial release program. As such, he supported the recommendation and has become one of the biggest advocates for reducing the size of the jail accordingly. Without his endorsement, the program would not be successful, and the projected bedspace savings would not be achieved.

**SYSTEMIC APPROACH REQUIRES A COLLECTIVE
COMMITMENT TO CHANGE CONT..**

Counties that use the systemic approach merely as a paper exercise to reduce the project size and budget without the follow-up implementation will continue down the path of overcrowding. All criminal justice stakeholders need to be committed to change, and maintaining the size of the jail has to be a

universal priority. The recommended system changes have to be implemented, and they must be continued even after the new jail becomes operational. In short, the most effective approach is to view and manage jail beds as a scarce resource – a basic tenet of sustainability.

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