

Neuroscience Research in Correctional Environments

Research has demonstrated that correctional environments can have positive or negative impacts on inmate behavior, contributing to or inhibiting the achievement of facility operators' objectives – such as safety, security, order, freedom from assaults and destruction of property. These can be influenced by environmental factors such as crowding, space allocations, availability of resources, levels of noise, natural light, and other factors.

Agencies such as the National Institute of Corrections (NIC) and the National Institute of Justice (NIJ) have been supportive of research on correctional environments and programs – searching for “evidence-based” best practices. In recent years, the American Institute of Architects (AIA) has also heightened its interest in “evidenced-based design”. Architects clearly can contribute to good decisions being made during the design process – if the information is available, clear and convincing.

To help develop such information, NIC approved a “cooperative agreement” which is funding a pilot study of the application of neuroscience concepts and methods to correctional environments. The AIA has also provided financial and logistical support.

Specific topics that were considered for investigation included:

- The impact of daylight and views, including the level of luminance and means of control
- The effect of exposure to nature (e.g., views of greenery or water) on stress and aggression
- The impact of the size of space in which one is confined (and the number of people one shares it with), density, crowding, etc.
- The impact of ambient noise on stress and communications
- The effects of environmental design features on inmate-staff relationships
- The impact of color on perceptions

The eventual outcomes from this project are expected to be better, more evidence-based design decisions about correctional environment design and operations, more humane and effective correctional settings, and more satisfied clients of design services.

Phase 1 focused on defining an agenda for neuroscience research in correctional settings – specifically jails. For this purpose, the Academy of Architecture for Justice partnered with the Academy of Neuroscience for Architecture. A workshop was conducted bringing together neuroscientists, architects and correctional administrators.

Phase 2 entails the conduct of a specific research study. The study is evaluating stress, via heart rate variability, of jail intake staff before and after the introduction of nature into the booking area. The site is the Sonoma County Jail in Santa Rosa, CA. The jail booking area currently has no views of nature. Data was collected on a total of 12 officers (4 each shift). They were the same officer/same shift pre- and post-intervention, and the data was collected on typical Fridays and Saturdays. Additional post-shift measurements for each officer included a backwards digit span test, Perceived Stress Scale, staff shift survey and incident reports. Very large savannah image murals were strategically introduced into the booking area.

Phase 3 consists of analysis, documentation and dissemination of results.

Participants:

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Julian Thayer, PhD – Neuroscientist – analyzing data
John J. Sollers III, PhD – Neuroscientist – analyzing data
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