

Better Sleep *for* Behavioral Health

Healthy sleep patterns can facilitate mental and emotional well-being of the crew.

By Paul Erickson

For decades, firefighters have been all too familiar with the following scene: It's 1:42 a.m., and the alarm tone goes off overhead. Lights come on in a dazzling glare, and groggy comrades are startled awake and tumble out of their bunks. Everybody fumbles to get into their clothes and gear before stumbling down the hallway to the bay, trying to get oriented while listening for the details of the call. After 45 minutes or an hour (or two), the crew returns to the station and somehow attempts to get back to sleep. If the call involved trauma, that might be a hopeless cause. In any event, if the firefighter is able to return to sleep, another alarm might ring at any time and the process begins again.

The midnight call remains a daunting challenge to firefighter health and well-being in numerous ways. The anatomical shock to the system that's created by sudden loud tones and bright lights causes heart rates to race instantaneously to dangerous levels, raise blood pressure, and, over time, increase risks of a heart attack and life-threatening heart disease. Fortunately, such shocks have been ameliorated in recent years by the development of ramped alerting systems that reduce the audible and visual shocks to the human body.

However, disruption to natural sleep patterns and misalignment with regular circadian rhythms of day/night cycles in recent years strongly were linked to mental and emotional health. Sleep deprivation, disruption and disorders variously were linked to impulsive behavior, anxiety, depression, paranoia and increased suicide ideation. Sleep deprivation also can compromise one's concentration, creativity, decision-making and problem-solving abilities. According to "Sleep and Mental Health" by Harvard Health Publishing, Harvard Medical School, "Although scientists are still trying to tease apart all the mechanisms, they've discovered that sleep disruption—which affects levels of neurotransmitters and stress hormones, among other things—wreaks havoc in the brain, impairing thinking and emotional regulation." Although historic fire station culture has evolved over time and gear no longer is stored at the bedside, much of the response scenario that's described above remains a reality for modern firefighters. Embedded in this group experience and narrative is the once ubiquitous and still common group bunkroom. In the last 10 years, architects and fire departments across the country have embraced evolving bunkroom design concepts to provide improved sleep, health and well-being for firefighters. A quick comparison of two fire stations in and near Washington, D.C., illustrates different approaches.

Group bunkroom

Scenario 1 involves Engine Company 16, which is a historic multistory station that was designed in 1932. It serves as first-

due to the White House. A recent modernization updated the entire facility and provided expanded sleeping, toilet and locker areas for the 14-person crew. Staying with the department's tradition, the District of Columbia Fire and Emergency Medical Services Department desired that the crew bunkroom be outfitted with low privacy walls for a pair of bunks in each sleeping bay and that separated toilet/shower/locker rooms be provided for men and for women. The station is improved in many ways, but firefighters still are subjected to elevated levels of sleep disruption. When an alarm goes off, the entire crew is woken, whether they are needed to respond or not. Snoring and midnight trips to the restroom also disrupt sleep for others.

Private bunkroom suite

Scenario 2 involves Arlington Fire Station 8 in Arlington, VA. It is a replacement for a 60-year-old outdated and undersized station. The new station design features 12 private bunkroom suites. Each consists of a single-user bunkroom; a small, dedicated locker room; and a private, single-user restroom. The private bunkroom incorporates a ramped alerting system, so each member can set the tone to be activated in his/her room for only those calls that require response. This eliminates unnecessary sleep disruptions. Further, snoring and midnight restroom trips by others are eliminated. When the morning shift arrives, the separation between the bunkroom and locker/restroom allows the arriving member to store clothes for the day and use the restroom without disrupting the member who is asleep in the bunkroom. An additional benefit for behavioral health is the capability of the private bunkroom to serve as retreat or rehabilitation space, where meditation or private reflection can occur after a traumatic incident.

Although these two solutions reflect opposite ends of the design spectrum for bunkrooms, the importance of creating an environment at the station that facilitates healthy sleep patterns for mental and emotional well-being of the crew has become a central part of holistically healthy fire station design in service to those who serve others.

About the author

Paul Erickson, FAIA, is the president of LeMay Erickson Willcox Architects. Throughout his more than 40-year career, Erickson has been recognized consistently as one of the Commonwealth of Virginia's most acclaimed architects. He managed and designed award-winning projects and served the profession as: an active leader of the Virginia and Northern Virginia chapters of the American Institute of Architects (AIA); a juror for prominent design competitions; and a speaker at national conferences. In 2014, the AIA's Northern Virginia chapter presented him with the Award of Honor, which is the chapter's highest award. In 2017, Erickson was elevated by National AIA to Fellowship, which is the organization's highest membership honor.