

# advancing firefighter mental health and wellness through design

BY: TIM WILEY & AMBER GENTRY



In times of disaster, the first responder on the scene is often the firefighter. Every day, firefighters are faced with fatal injuries, hostile situations, life-threatening fires, and deadly accidents. These daily encounters are stressful and traumatic events that make firefighters increasingly vulnerable to a host of behavioral conditions including PTSD, depression, and anxiety. According to the University of Phoenix, 85% of all first responders surveyed have experienced symptoms related to mental health issues. A 2018 study by the Substance Abuse and Mental Health Services Administration suggests that firefighters are at greater risk of dying by suicide than in the line of duty. Nevertheless, the mental health of firefighters is often put on the back burner.

Although most departments have access to some form of behavioral health services, these resources are seldomly used. Why? According to the Ruderman Family Study, bravado on the job, embarrassment about needing help, stigmas regarding mental health in general, and feelings of isolation are all reasons firefighters choose to keep their symptoms hidden. It is perceptibly easier to “bury feelings” than face potential ridicule, judgment, or derision from peers.

As design professionals focused on health and wellness, we inspire fire departments to implement thoughtful design elements that create highly-functional stations and are conducive to the holistic well-being of their first responders. Firefighters can decompress and unwind in an environment that incorporates biophilic features, stress relief spaces, and social zones, boosting their mental health and providing a safe place to seek help if needed.

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## Utilize Daylighting and Nature

Daylighting plays a major role in determining our circadian rhythm, the natural internal process regulating the sleep/wake cycle. Disruption in the circadian rhythm can lead to poor sleep or insomnia, which directly impacts cognitive and physical functioning. A firefighters' irregular sleep schedule, coupled with anxiety, makes it difficult to get much needed rest between emergencies. To help minimize undue mental strain, fire stations typically require absolute darkness in dorm rooms. An alternative solution is to integrate wavelength-specific lighting, which replicates natural light hues and promotes melatonin production for deeper sleep. Productive resting periods lead to improved cognition and less fatigue. Natural lighting is also critical to normal daily function. Controlled daylight enhances function and performance, and is known to increase alertness, productivity, reaction times, and coordination. We believe elements such as vision glazing, clerestory windows, skylights, and glass walls should be considered in fire station design.

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## Include Stress-Relieving Zones

Stress is known to wreak havoc on the body. Interruptions to the cardiovascular, immune, digestive, and other systems can lead to serious health issues such as heart disease, high blood pressure, depression, and anxiety. First responders routinely deal with high levels of stress and trauma, so they must have places and outlets to unwind and relax. Most fire stations include fitness rooms, however, very few include additional spaces for meditation or reflection. “Science has shown that methods such as breathing techniques, meditation, yoga... when regularly practiced, can help people restore a sense of normalcy to neurological systems,” says Deputy Chief Mike Ming of Cal Fire. Creating designated space for meditation and relaxation not only allows for decompression after an arduous day, but reduces the stigma around seeking assistance for mental health. If budget constraints won't allow for designated meditation space, bunk rooms, media rooms, or saunas can serve dual functions.

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## Incorporate Social Zones

Camaraderie is the keystone of a functioning fire department. An open and supportive environment is known to alleviate symptoms of depression, boost immune systems, and foster empathy. Design that encourages group activities promotes healthy peer-to-peer relationships, which increases trust, and creates a safe place to ask for help. Limiting private space and expanding common areas, such as kitchens, community rooms, dayrooms, and media rooms, increases communication and reduces isolation. The design of minimalist bunk rooms with a smaller footprint is an effective tool for discouraging unnecessary seclusion. As a result, bunk rooms are zones specifically utilized for rest and recovery, creating increased opportunities for fellowship in the social zones.

While the physical demands and stresses of firefighters are well known, it is the lesser known and often ignored mental stresses that warrant additional focus. A firefighters' cognitive stability and psychological well-being deserve top priority and should be considered in the design of today's fire stations.

As design professionals, we have an obligation to protect the mental health of those who protect us. By incorporating daylighting, nature, stress-relieving zones, and social zones into fire stations, we can secure increased health and mental well-being for first responders.

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## about the authors



### **tim wiley**

RA, NCARB, LEED AP

Tim is the leader of emersion DESIGN's Civic Market. He is an expert in leading a team through existing conditions assessments, site planning, preliminary design, design development and construction documentation. Tim thrives on engaging the owner and the community to provide unique avenues for new facilities.



### **amber gentry**

NCDIQ, LEED AP

Amber has over 15 years of professional experience in interior design, with projects across several markets including civic and federal government, education, and hospitality. Being well-versed in both project management and design, she understands the importance of staying on budget to deliver high-quality work that exceeds the clients' expectations.

## References:

1. Majority of First Responders Face Mental Health Challenges in the Workplace:  
[https://www.phoenix.edu/about\\_us/media-center/news/uopx-releases-first-responder-mental-health-survey-results.html](https://www.phoenix.edu/about_us/media-center/news/uopx-releases-first-responder-mental-health-survey-results.html)
2. Disaster Technical Assistance Center Supplemental Research Bulletin:  
<https://www.samhsa.gov/sites/default/files/dtac/supplementalresearchbulletin-firstresponders-may2018.pdf>
3. The Ruderman White Paper on Mental Health and Suicide of First Responders:  
[http://dir.nv.gov/uploadedFiles/dirnv.gov/content/WCS/TrainingDocs/First%20Responder%20White%20Paper\\_Final%20\(2\).pdf](http://dir.nv.gov/uploadedFiles/dirnv.gov/content/WCS/TrainingDocs/First%20Responder%20White%20Paper_Final%20(2).pdf)
4. For Calif. Firefighters, 'mindfulness' can ease the deadly stress of their jobs:  
<https://www.firerescue1.com/health/articles/for-calif-firefighters-mindfulness-can-ease-the-deadly-stress-of-their-jobs-kUxcQf2W2GNv8RWR/>
5. Firefighters can ease one another's job stress, but loving spouses may increase it:  
<https://www.sciencedaily.com/releases/2019/11/191113153017.htm>