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Planning & Design of Behavioral Healthcare Facilities

Insight into Today's Design of Behavioral Healthcare Facilities and A Look Into Future Applications

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BEHAVIORAL HEALTHCARE FACILITIES: THE CURRENT STATE OF DESIGN

In keeping with most districts of healthcare, the marketplace has seen a boom in the construction of Behavioral Healthcare facilities. Contributing to this increase is the paradigm shift in the way society views mental illness. Society is placing a heavier value on the need to treat people with serious addictions such as alcohol, prescription and elicit drugs. A large percentage of people suffering from behavioral disorders are afflicted with both mental and addictive behaviors, and most will re-enter communities and either become contributors or violators.

These very specialized facilities do not typically yield the attention from today's top healthcare designers and their quantity accounts for a small fraction of healthcare construction. However, Behavioral Healthcare projects are increasing in number and are being designed by some very prominent architectural firms such as Cannon Design and Architecture Plus. Many are creating state-of-the-art, award-winning contemporary facilities that defy what most of us believe Behavioral Healthcare design to be.

CHANGING THE WAY WE DESIGN BEHAVIORAL HEALTHCARE FACILITIES

As with all good planners and designers, A+D (along with facility experts) are reviewing the direct needs of patient and staff while reflecting on how new medicine and modern design can foster patient healing rates, reduce environmental stress, and increase safety. This is changing the face of treatment and outcome by giving the practitioner more time to treat because they require less time and resources to "manage" disruptive patient populations.

The face of Behavioral Healthcare is quickly changing. No longer are these facilities designed to warehouse patients indefinitely. And society's expectations have changed. Patients are often treated with the belief that they can return to their community and be a contributor to society. According to the ***National Association of Psychiatric Health Systems (NAPHS)***, depending on the severity of illness, the average length of stay in a Behavioral Healthcare facility is only 9.6 days.

What has changed?

Jaques Laurence Black, AIA, president and principal of New York City-based daSILVA Architects, states that there are two primary reasons for the shortened admission period:

1. *Introduction of modern psychotropic drugs that greatly speed recovery*
2. *Pressures from insurance companies to get patients out of expensive modes of care*

To meet these challenges, healthcare professionals are finding it very difficult to effectively treat patients within the walls of antiquated, rapidly deteriorating mental facilities. A great percentage of these facilities were built between 1908 and 1928 and were designed for psychiatric needs that were principled in the belief to “store” not to “rehabilitate.”

Also impacting the need for Behavioral Healthcare construction is the reluctance of acute-care facilities to provide mental health level services for psychiatric or addiction patients. They recognize that patient groups suffering from behavioral disorders have unique health needs, all of which need to be handled and treated only by very experienced healthcare professionals. This patient population also requires a heightened level of security. Self-harm and injuring staff and other patients are major concerns.

The Report of the Surgeon General: ***“Epidemiology of Mental Illness”*** also reports that within a given year about 20% of Americans suffer from a diagnosable mental disorder and 5.4% suffer from a serious mental illness (SMI) - defined as bipolar, panic, obsessive-compulsive, personality, and depression disorders and schizophrenia. It is also believed 6% of Americans suffer from addiction disorders, a statistic that is separate from individuals who suffer from both mental and addiction disorders. Within a given year it is believed that over one-quarter of America’s population warrants levels of mental clinical care. Even if these statistics were cut in half, it cannot be denied as a serious societal issue.

With a growing population, effectively designing in accordance with such measures is at the heart of public health.

UNDERSTANDING THE COMPLEXITY OF BEHAVIORAL HEALTHCARE DESIGN

Therefore, like Corrections, leading planners and designers specializing in Behavioral Healthcare are delving deeper to better understand the complexity of issues and to be the activist to design facilities that promote treatment and healing – and a safer community.

The following is a list of key design variables that are being studied and implemented:

Right-sizing

Today's Behavioral Healthcare facilities are often one-story single buildings within a campus size. Often debated by Clients due to costs, this design preference is driven by the demand for natural light, window views to nature for all patient areas, and outdoor open-air gardens "wrapped" within. All of this provides soothing qualities to the patient, reduces their anxieties, counteracts disruptive conduct and helps to reduce staff stress.

> "When you look at the program mix in these buildings, there's a high demand for perimeter because there are a lot of rooms that need natural light. Offices, classrooms, dining areas, community rooms, and patient rooms all demand natural light, so you end up with a tremendous amount of exterior wall, and it forces the building to have a very large footprint."
>
> – **James Kent Muirhead**, AIA, associate principal at Cannon Design in Baltimore,

These design principles are also believed to improve staff work conditions. Unlike a multi-story complex, at any moment staff can walk outdoors and access nature, free from visual barriers, and within a building that more accurately reflects building types that both patients and staff would encounter in their communities.

In addition to right-sizing for the overall building footprint, is right-sizing for internal patient and staff support area. Similar to the move we have seen in Corrections to de-centralize support spaces, Behavioral Healthcare is moving to decentralized nursing/patient units called "neighborhoods." With mental health facilities there is a large concern with distances and space adjacencies in relation to the patient room and patient support areas such as treatment and social spaces. ***Frank Pitts, AIA***, FACHA, OAA president of Architecture Plus, Troy, NY, advocates neighborhoods that average 24-30 beds arranged in sub-clusters, called "houses", of 8-10 beds. Thus, each neighborhood consists of three houses. Often these layouts will include a common area where patients congregate and socialize, with a separate quiet room so patients can elect to avoid active, crowded areas. In addition Pitts states, "There's a move away from central dining facilities. So, while facilities will still have a central kitchen, it's a whole lot easier moving food than it is patients." However, it is important for the facility to mimic normal outside daily life routines, so patients are encouraged to frequently leave their neighborhoods to attend treatment sessions, and outdoor courtyards.

Humanizing Materials & Color

In all facilities that play a role in rehabilitation, design strives to create spaces that humanize, calm, and relax. Behavioral Healthcare patients need to feel that they are in familiar surroundings; therefore, the architectural vocabulary should feel comfortable and normal. Since these facilities

are about rehabilitation (when possible) and encouraging patients to merge back into society, the facility should feel like an extension of the community. Their spaces should reflect the nature and architecture of the surrounding region and thus so, no two facilities should look too much alike.

"Our approach to designing these facilities is to view the facility as an extension of the community where patients will end up when they're released. Interior finishes also depend on geography because you want to replicate the environment patients are used to. You want to de-stigmatize the facility as much as possible."

– **Tim Rommel**, AIA, ACHA, OAA, principal with Cannon Design in Buffalo, NY

Therefore, materials and colors within these spaces want to feel familiar to one's region and everyday life. To soothe the psyche and rehabilitate, they want to feel soft and comfortable, yet visually stimulating. An interior that is overly neutral or hard in appearance is not appropriate. Materials should reduce noise, and colors should lift the spirit. This can help to create an environment in which the patient can learn, socialize, and be productive while easing anxieties, delivering dignity, and modifying behavior. As stated previously, behavioral studies advise the use of softer interior materials—like carpeting, wood doors and tile. Doing so translates directly to both patient and staff well-being, particularly staff safety, and makes for a nicer place to work. In addition, staff have more resources to "treat" instead of manage heated situations. When staff experiences are eased and satisfied, morale is boosted and life-saving rules and policies are more likely to be enforced.

Color is a vital design tool in providing a therapeutic environment, helps reduce tension, assist behavior modification and enhance resident and staff safety. **NORIX GROUP, INC.**

Norix Naturals Color Pallette

Staff-Focused Amenities & Happiness

While reducing staff stress and fatigue through a healing supportive environment seems like an obvious goal, there are relatively few studies that have dealt with this issue in any detail. More attention has been given to patient outcomes. However, many leading hospitals that have adopted therapeutic tenants into their newly built environments have seen vast improvement through their "business matrixes" and financial reporting.

In one example, the Mayo Clinic, a national leader in implementing healing design in its facilities, has reported a reduction of nursing turnover from a national annual average of 20% to an annual 3%-4%. In another example, when Bronson Methodist Hospital incorporated evidence-based design into its new 343-bed hospital, they cited their 19%-20% nurse turnover rate dramatically dropped to 5%.

Now, both the Mayo Clinic and Bronson Methodist Hospital have had to initiate a waiting list for nursing staff seeking positions. This converts to better-trained and qualified staff, and a reduced error rate. Therefore, more health facilities are investing in staff support areas such as lounges, changing rooms, and temporary sleep rooms. Within these staff spaces and in the hospital throughout, facilities are also recognizing the need for upgrade materials, better day lighting, and an interesting use of color: One soon realizes that the need of patients and staff are interwoven, each impacting positively or negatively the other.

Security & Safety

Without debate, self harm and harm to staff is one of the biggest concerns mental health facilities manage. Often the biggest safety and security concern is the damage patients can do to themselves. "There are three rules I had drummed in me," says ***Mark Hanchar***; Director of Preconstruction Services for Gilbane Building Company, Providence, R.I. "First, there can't be any way for people to hang themselves. Second, there can be no way for them to create weapons. Third, you must eliminate things that can be thrown." Hanchar says that the typical facility is, "a hospital with medium-security prison construction." This means shatter proof glass, solid surface countertops (laminate can be peeled apart), stainless steel toilets and sinks (porcelain can shatter), push pull door latches and furniture that cannot be pulled apart and used as a weapon. These are just to name a few.

Additionally, removing barriers between patients and nursing staff is a safety consideration. Frank Pitts, AIA, FACHA, OAA president of Architecture Plus, says what may be counter-intuitive for safety precautions, "Glass walls around nursing stations just aggravate the patients." Removing glass or lowering it at nursing stations so patients can feel a more human connection to nurses often calms patients. There is also discussion of removing nursing stations altogether; decentralizing and placing these care needs directly into the clinical neighborhoods and community spaces. Pitt says, "The view is that [nursing staff] need to be out there treating their patients."

Therapeutic Design Tenants

As medicine is increasingly moving towards ***"evidence-based" medicine***, where clinical choices are informed by research, healthcare design is increasingly guided by research linking the physical environment directly to patient and staff outcomes. Research teams from Texas A&M and Georgia Tech sifted through thousands of scientific articles and identified more than 600 – most from top peer-reviewed journals – to quantify how hospital design can play a direct role in clinical outcomes.

The research teams uncovered a large body of evidence that demonstrates design features such as increased day-lighting, access to nature, reduced noise and increased patient control helped reduce stress, improve sleep, and increase staff effectiveness – all of which promote healing rates and save facilities cost. Therefore, improving physical settings can be a critical tool in making hospitals more safe, more healing, and better places to work.

Today's therapeutic spaces have been defined to excel in 3 categories:

1. *Provide clinical excellence in the treatment of the body*
2. *Meet the psycho-social needs of patients, families, and staff*
3. *Produce measurable positive patient outcomes and staff effectiveness*

Considering the cost of treating mental illness, which is exceedingly high, and wanting facilities to have effective outcomes, a further practice of incorporating therapeutic design is increasing. The ***National Institute of Mental Health*** (NIMH) approximated in 2008 that serious mental illnesses (SMI), costs the nation $193 billion annually in lost wages. The indirect costs are impossible to estimate.

The estimated direct cost to clinically treat is approximately $70 billion annually and another $12 billion spent towards substance abuse disorders. In addition to the increased need of care and the boom in Behavioral Healthcare construction, it becomes an obligation to make certain that we as facility managers, architects, designers and manufacturers therapeutically plan and design these facilities.

Notably, in 2004, ***"The Role of the Physical Environment in the Hospital for the 21st Century:*** A Once-in-a-Lifetime Opportunity," published by Roger Ulrich P.H.D., of Texas A&M University, was released. In a culmination of evidence-based research, research teams found five design principles that contributed significantly to achieving therapeutic design goals.

The report indicates five key factors that are essential for the psychological well-being of patients, families and staff, including:

Access to Nature

Studies indicate that nature might have the most powerful impact to help patient outcomes and staff effectiveness. Nature can be literal or figurative – natural light, water walls, views to nature, large prints of botanicals and geography, materials that indicate nature and most importantly, stimulating color that evokes nature. Several studies strongly support that access to nature such as day-lighting and appropriate colorations can improve health outcomes such as depression, agitation, sleep, circadian rest-activity rhythms, as well as length of stay in demented patients and persons with seasonal affective disorders (SAD).

These and related studies continue to affirm the powerful impact of natural elements on patient recovery and stress reduction. Thus, it is clear that interior designs which integrate natural elements can create a more relaxing, therapeutic environment that benefits both patients and staff.

Positive Distractions

These are a small set of environmental features that provide the patient and family a positive diversion from “the difficult” and, in doing so, also negate an institutional feel. These can be views to nature, water walls, artwork, super imposed graphics, sculpture, music – and ideally all of these want to be focused on nature and, when applicable, an interesting use of color. Therapeutic environments that provide such patient-centered features can empower patients and families, but also increase their confidence in the facility and staff. This helps with open lines of communication between patient and caregiver.

Social Support Spaces

These are spaces designed partially for the patient but mainly for the comfort and socialization of family members and friends of the patient; therefore, family lounges, resource libraries, chapels, sleep rooms and consult rooms all play a role. When family and friends play a key role in a patient's healing, these spaces encourage families to play an active role in the rehabilitation process.

Sense of Control

In times when patients and family feel out of control, it is very healing for the facility design and staff to provide it back when appropriate. Although, this cannot always be done suitably in mental healthcare facilities. However, when applicable, these design features include optional lighting choices, architectural way-finding, resource libraries, enhanced food menus, private patient rooms and optional areas to reside in. A few well-appointed studies in psychiatric wards and nursing homes have found that optional choices of moveable seating in dining areas enhanced social interaction and improved eating disorders. When patients feel partially in control of their healing program and that the building features are focused to them, an increased confidence of the quality of care enters and tensions lower.

As with all therapeutic design, this allows the caregiver to use their resources healing in lieu of "managing" patient populations.

Reduce or Eliminate Environmental Stress

Noise level measurements show that hospital wards can be excessively noisy places resulting in negative effects on patient outcomes. The continuous background noise produced by medical equipment and staff voices often exceeds the level of a busy restaurant. Peak noise periods (shift changes, equipment alarms, paging systems, telephones, bedrails, trolleys, and certain medical equipment like portable xray machines are comparable to walking next to a busy highway when a motorcycle or large truck passes.

Several studies have focused on infants in NICUs, finding that higher noise levels, for example, decrease oxygen saturation (increasing need for oxygen support therapy), elevate blood pressure, increase heart and respiration rate, and worsen sleep. Research on adults and children show that noise is a major cause of awakening and sleep loss.

In addition to worsening sleep, there is strong evidence that noise increases stress in adult patients, for example, heightening blood pressure and heart rate. Environmental surfaces in hospitals are usually hard and sound-reflecting, not sound-absorbing causing noise to travel down corridors and into patient rooms. Sounds tend to echo, overlap and linger longer.

Interventions that reduce noise have been found to improve sleep and reduce patient stress. Of these, the environmental or design interventions such as changing to sound-absorbing ceiling tiles, are more successful than organizational interventions like establishing “quiet hours”.

CONCLUSION AND ADDITIONAL INFORMATION

The information contained in this excerpted report is intended as a guide for architects, specifiers, designers, facility planners, medical directors, procurers, psychologists and social workers which have a stake in providing improved facilities for behavioral healthcare patients. It is a portion of a report entitled “The Contributions of Color” authored by Tara Hill, of Little Fish Think Tank.

Ms. Hill was commissioned by Norix Group Inc., in 2010 to research the role color plays in the safe operation of correctional facilities and behavioral health centers. More in-depth information specifically about the psychological influence of color and behavioral healthcare facility design can be found by reading the ***full report***.

ABOUT THE AUTHOR

Tara Hill is a full-scope, state registered interior designer, and the founder and principle of ***Little Fish Think Tank***. Before founding Little Fish, Ms. Hill was an Associate + Senior Designer at HOK, and the Director of Interiors at Stanley, Beaman & Sears. She has implemented award-winning, innovative design solutions for commercial and institutional interiors.

Ms. Hill also has significant experience regarding the science and theory of color, both as a design tool and a promoter of healing.
She has conducted extensive research in evidence-based design regarding color and its profound impact on the human spirit.

Prior to her work with Norix, Ms. Hill developed the Healing Colors Collection for Corian® solid surfaces, by Dupont®, for the healthcare environment. ***www.golittlefish.net***

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