

STUDY TO SOLUTIONS VOL. III: HISTORICAL HOSPITAL BUILDINGS - SHOULD THEY BE REUSED?

Hobbs+Black Healthcare Research Initiative

Healthcare architects often face the question of whether or not an existing older building on a hospital campus can be re-used. Frequently the building in question is an original hospital building that was constructed in a by-gone era. This type of building may be free-standing with impressive detailing on a historically significant facade, or may be a building that has become completely embedded in prior additions and expansions to the point that the original building is no longer recognizable.

As the preservation of historic structures, sustainability, and adaptive re-use become broader public concerns, the question of demolition versus rehabilitation can become a heart felt topic within the local community and hospital staff. Sorting through the pros and cons of such issues is a complex process that involves both critical thinking and sensitivity to sentiments and emotions of those involved. Working without pre-conceived notions and remaining impartial and objective are of paramount importance to the design professional. The scope of this subject is actually so broad that this paper can only touch on a few important points. Some questions the architect, planner, or facility manager need to raise are:

WHAT APPROACH SHOULD BE TAKEN TO RE-USING A HISTORIC HOSPITAL BUILDING?

The Secretary of the Interior has established standards for evaluating historic resources located in historic districts. These standards and a detailed explanation for their use are available online at www.cr.nps.gov/hps/tps/standguide. While most hospital structures are located outside historic districts and therefore fall outside the purview of historic district regulations, the same general concepts can be voluntarily applied when asked to evaluate such a building. It should be noted that the Secretary of the Interior divides work on historic structures into four categories: preservation, rehabilitation, restoration and reconstruction. Of these four options, rehabilitation is the preferred approach because more latitude is given in repairing or replacing the existing historic fabric. Also, only rehabilitation includes an opportunity to “make possible an efficient contemporary use through alterations or additions.” A common misunderstanding is that additions to historic buildings should match or attempt to closely resemble the original structure. Actually, the Secretary of Interior’s standards for rehabilitation indicate that a false historic appearance should NOT be created and that additions, if absolutely necessary, should be clearly differentiated from the historic building.

Four Categories of Historic Structures:
 Preservation
 Rehabilitation
 Restoration
 Reconstruction

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CAN THIS BUILDING DIMENSIONALLY ACCOMMODATE THE INTENDED FUNCTIONS?

Many older institutional buildings were constructed prior to modern air conditioning and ventilation requirements. This fact alone created several generations of buildings with very low vertical floor to floor heights because little or no overhead ductwork was required when the building was originally constructed.

The dimensional requirements for overhead mechanical systems need to be carefully analyzed when assessing the possible re-use of an existing building. Similarly, the use of modern communication and other low voltage systems have expanded exponentially in the last few decades which has also placed additional demands on the available interstitial space. Does the building in question have an automatic fire suppression system? In most cases, significantly altered or renovated hospital buildings are now required by code to be fully sprinklered, which may require additional space above the ceiling. To thoroughly understand whether or not vertical dimensional criteria can be met requires a comprehensive code analysis, engineering studies that yield enough specific information to determine depths for overhead components and systems, and a strong understanding of vertical requirements for medical equipment and clinical uses.



In addition to vertical dimensional requirements, the building must also be weighed against other criteria:

Is the existing building code compliant, or can it be readily made code compliant?

Are the existing stairs adequate in width and in number?

Is the level of exit discharge compliant?

Will the building superstructure need to be fireproofed to meet the two hour requirement for I-2 occupancies?

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Previous Page: Henry Ford Hospital's original entrance is maintained to reflect the historic structure of the institution.

Above, left: The original entrance of Mercy Memorial Hospital.

Above, right: Artist's rendering of the major reconstruction of the new entrance at Mercy Memorial Hospital.

Does the existing column spacing work for the intended clinical spaces?

Many buildings constructed in the late 19th century or early 20th century have closely spaced or irregularly spaced columns that may impose additional constraints on medical planning efforts.

Is the existing superstructure capable of carrying the anticipated structural loading?

Obviously analysis by a registered structural engineer should be included in any significant alteration to an historic building. The availability of original structural design drawings is critical to this effort. If no such drawings are available, then alternative means of analyzing the existing structure may need to be pursued.

The outcome of such an assessment, or feasibility study, as outlined above may be very clear cut either in favor of saving

the building, or in removing the building. Examples of both outcomes are located in southeast Michigan.

At the Henry Ford Hospital in Detroit, Michigan, a successful effort has been made to maintain the original and update the original structure on an ongoing basis.

Conversely, at Mercy Memorial Hospital located in Monroe, Michigan, the original hospital building was deemed unusable and was recently demolished to make way for a major reconstruction program.

IS THE STRUCTURE RE-USABLE, BUT THE FACADE NEEDS TO BE REPLACED?

Reskinning of an existing hospital building may be a viable, and even desirable option, in some cases. The existing structure may be sound and re-usable, but the exterior facade may be thermally inefficient, leaking, or outdated. This situation, combined with budget and schedule constraints, may lead to the

logical conclusion to re-skin an existing building. The design options for the type of facade however may be limited by the structure itself which may not be able to withstand significant additional weight. In some cases, this may prohibit the use of heavy skin elements in favor of lighter materials. Reskinning can be an opportunity to update the appearance of an otherwise marginal or outdated facade, improve energy efficiency, improve natural day lighting, and complement an otherwise state-of-the-art medical campus. From a design perspective, replacing the facade can also be an opportunity to develop a more contextually consistent or complimentary theme throughout an existing healthcare facility. However, re-skinning an existing building would in most cases not qualify as a rehabilitation effort under the Secretary of the Interior's standards. An example of a recent proposal to re-skin an existing healthcare structure was recently developed for the Detroit Medical Center Sinai - Grace Hospital, as shown in the renderings above.

Another successful outcome of reuse and rehabilitation comes from a building located in Southfield, Michigan. In need of significant renovation, the original Great Lakes Rehabilitation Hospital had slipped into a state of disrepair and was in receipt of a number of violations from the State of Michigan. Most systems in the existing building had reached the end of their useful life and required replacement. Additionally, the exterior of the building was in need of refurbishing.

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Above: Facade improvements at the Detroit Medical Center's Sinai Grace Hospital in Detroit, Michigan.

The renovation addressed the entire existing facility from structure to all building systems, issues relating to code, and all building finishes, both interior and exterior. The existing site was improved for paving, lighting and landscape as well. The result has brought all systems, finishes and building conditions up to current standards and has made the Hospital a marketable entity, able to succeed in today's heavily competitive healthcare market.

IS THE FACADE VALUABLE, BUT THE SUPPORTING STRUCTURE UNUSABLE?

Conversely a much more challenging situation may exist when the opposite is true: the facade is a valuable piece of architectural history, but the superstructure is unusable due to dimensional limitations, deterioration, or structural issues. Rarely have such buildings had new superstructures installed behind existing facades. One option available to the design professional in this situation is to treat components of the original facade

as archeological relics, which are incorporated into the design of the new replacement facility. This type of "museum" approach has the potential to satisfy a wide range of otherwise conflicting interests. However, it should also be pointed out that this type of solution in most cases also would not qualify as a rehabilitation effort under the Secretary of the Interior's standards.

Long range facility master planning can be a vital tool in developing solutions that allow buildings of historic interest to remain intact. Through the planning process, less demanding clinical functions such as administration, physician office suites and the like can be located in structures that lack the physical characteristics needed for more intense medical uses. Careful analysis of engineering criteria, building code requirements and the demands of medical equipment can help yield solutions that are sensitive to healthcare providers, to the community at large, and to the built environment.

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Above, left: Great Lakes Rehabilitation, before the massive transformation into a state of the art rehabilitation and surgery center, now known as Oakland Regional Hospital (above, right).

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A Research Initiative by Hobbs+Black Associates, Inc. for the use and knowledge of healthcare providers. For more information on this subject or other Hobbs+Black Study to Solutions publications please contact Sue Stevanovic at 734.663.4189 or sstevanovic@hobbs-black.com

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