REPOSITIONING OF HOTEL FROM LUXURY TO ACUTE CARE

CRTKL

Cover: ***Hawthorn Suites Project Revere,*** *Altamonte Springs, FL*

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Hilton Hotel & Residences, Batumi
Batumi, Georgia

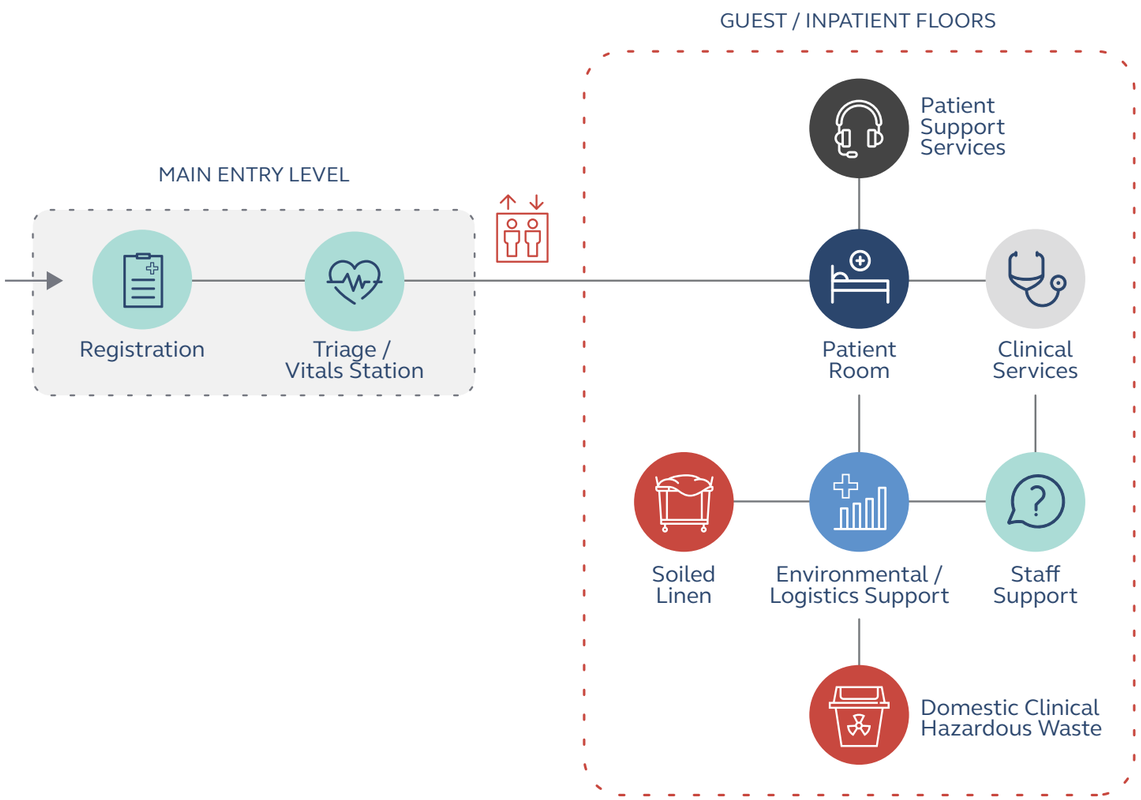
HOTEL/HOSPITAL ADAPTATION

Historically, adaptive reuse has been a strategy that follows a resilient and efficient re-use of our building assets. We are now faced with a pandemic that is challenging our resourcefulness to meet the surge of infected patients who we know are coming-- but cannot predict when. This is most apparent in the anticipated hospital bed shortage that will soon descend upon all communities. As an architectural practice that specializes in healthcare and hospitality, we have been exploring various solutions for a host of chemical, biological, radiological, nuclear and explosive materials (CBRNE) events with our clients. These have ranged from the expanded use of rooms in an existing hospital to building new accommodation through a modular approach and all options in between.

The pandemic that we are now facing is having a comparable impact on global communities as a CBRNE event. Similarly, the immediacy of a pandemic requires a multi-facetted, strategic approach that starts by anticipating the mitigating measures needed to hold any surge at bay. In the prevailing situation, one such measure would be the adaptation of hotels whose livelihood will be severely affected by the pandemic-- but whose format is most akin to inpatient accommodation found in hospitals. With little adaptation, hotels can be turned into additional inpatient rooms to absorb the surge of patients requiring nursing care. Here, we outline the principles that should be considered in the plan of the hotel to will make the adaptation a viable and efficient process.

HOTEL AS HOSPITAL

Hotels are one of the first businesses to feel the effects of the pandemic. Rapidly falling occupancy rates are a concern and with no immediate end in sight. Fortuitously, the basic characteristics of a hotel mimics a healthcare facility quite well: bedrooms with support functions including food service, environmental services, etc. If we are to adapt this building asset type, the first test will be to examine the flow through the hotel as it compares to a healthcare setting:



Following this, the actual floor plan and engineering provisions will be examined to determine if it is possible to accommodate all elements necessary to support the needed patient care functions such as:

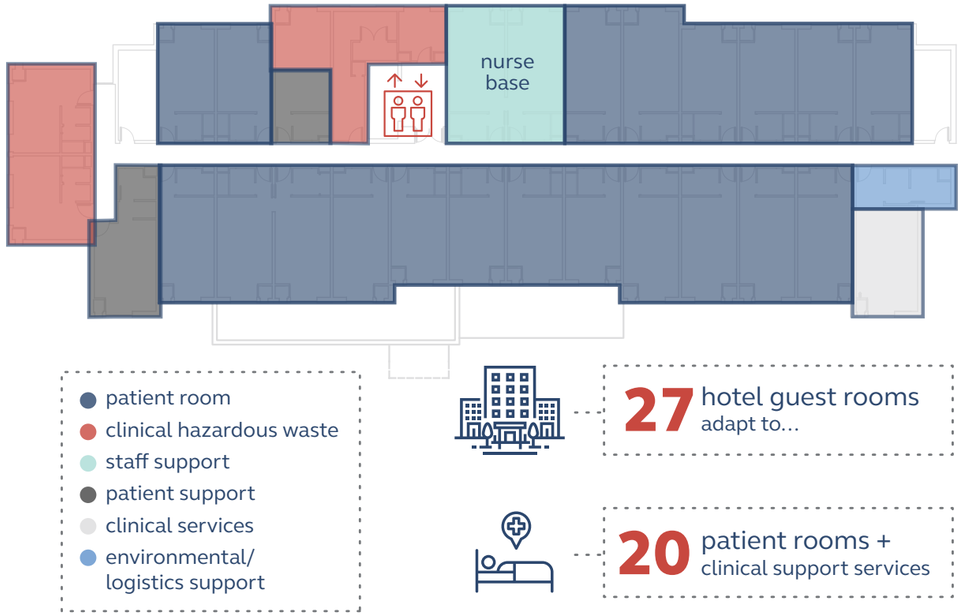
- Nurse Base including a meeting room
- Clean Utility/Medication
- Dirty Utility
- Waste Holding particularly hazardous waste
- Equip Storage would be helpful
- Elevators – can they accommodate stretchers
- Mobile X-ray – can the floor loading accommodate them (not essential but convenient)
- CT could be useful

Most hotel models can meet these requirements and more easily adapt for healthcare use in the short term.

In times of pandemics, the entry sequence needs consider the safety for patients, staff and visitors. Thus triaging, as well as registering, all before they enter the facility will be paramount to protect everyone. If the hotel/hospital is to receive non-infectious patients from surrounding hospitals to create more space in their facility to accommodate infectious patients, then the provision will be relatively simple protective measures-- as one would expect for non-infectious medical/surgical inpatient accommodation.

It would be a prudent measure to position a Personal Protective Equipment (PPE) station before entering any patient care area as part of the entry protocol.

In the alternative where the hotel/hospital were to accommodate a single disease group such as the case in a pandemic, the hotel/hospital would need to have stringent and incorruptible protocols for infection control. All persons entering the hotel/hospital would need to follow very rigid infection control guidelines to protect themselves as well as those they come in contact with thereafter. Having PPE stations, including clothes changing facilities, at all building entry points and entry points to the inpatient units (that is at each floor) will add to the protective measures. Likewise, all support staff would need to be required to follow the same protocols even in back-of-house support areas. Importantly, this facility will be intended for the infected patients requiring intermediate care. However, should the ICUs in the neighboring hospital become overrun by a patient surge, then the use of mobile bedhead units and ventilators along with the appropriate clinical protocols could provide life saving measures for those more dependent patients. It is important that this adapted facility work in concert with the existing healthcare facilities and draw from the skills and experience of the dedicated healthcare professionals.



ADAPTATION

The hotel's furniture and fittings will be more akin to a home setting than a hospital environment-- which will require the following adjustments:

Finishes:

- Check suitability of the existing conditions for infection control.
- Fabric curtains removed and replaced with types of window dressings that are of hospital grade materials
- Mattresses and frame removed and replaced with a hospital grade patient bed – any reuse of existing could be left as a local decision based on access to hospital grade equipment
- Walls and their finishes will generally suffice, but any wallpaper must be intact throughout and repaired where not intact.
- Ceilings can be largely left with special attention paid to any hidden ledges, coves, etc. for cleaning
- Wall protection would be a good addition but not essential

Engineering Systems:

- Overhauling the Mechanical and Electrical systems will not be practical in the timeframes encountered; a conditioned survey will be necessary to understand the constraints imposed by the existing systems
- Most corridors will be fed fresh air-- creating positive pressure relative to the bedrooms
- Each room is likely to have units for individual control and individual comfort; each unit should be cleaned, checked and have the required filters changed preferably with a HEPA type. If not possible, then a temporary HEPA might be fixed over the supply register
- Negative pressurized rooms to a standard expected in a hospital may not be possible but could the toilet/ shower room's extract ventilation be easily increased to provide some level of negative pressure
- Elevators: the 2014 codes for hotels require at least one elevator to be sized for gurney movement. If built before 2014, then will need to be determined if a larger elevator can be added either internally or externally
- WiFi will be needed throughout for communication and data collection from telemonitoring and other equipment
- Lighting will need to be upgraded; healthcare settings will require brighter lighting and true color rendering. LED bulbs may be used as a substitute considering its low voltage high output characteristics

Medical Equipment:

- Each room should have mobile gasses and vacuum
- Ventilators may need a higher voltage and provision of such electric supply in a specific room may be challenging; a separate generator may be considered to accommodate an isolated need
- WiFi-enabled equipment would be necessary for remote (tele-) monitoring which will be an essential tool for the staff to extend care for more patients
- If imaging equipment were desirable, then can the ground floor accommodate the weight of the equipment? Digital X-ray, Computed Tomography (CT) in particular
- Provide battery UPS systems for rooms with equipment that cannot tolerate power outages
- A Stat Lab accommodates rapid-in-place testing requiring same day results

Other items for consideration:

- Hazardous waste protocols – in addition to the clinical waste expected, all linen must be considered hazardous and processed accordingly
- How can the hotel/hospital be included within existing supply chains?
- How can existing service providers include the hotel/ hospital

HOTEL PROVIDED

1. Hotel Bed
2. Hotel Lounge Chair
3. Hotel Desk
4. Hotel Desk Chair
5. Hotel Plumbing Fixtures

MEDICAL EQUIPMENT

1. Physiologic Monitor
2. Digital Thermometer
3. IV Stand
4. Exam Light
5. WOW
6. Glove Dispenser
7. Ventilator Unit
8. Warming Unit Cart
9. Linen Hamper
10. Hypothermia Warmer
11. Wall Mounted Dispensers
12. Supply Cart
13. Waste Can
14. Bio-Hazard Waste
15. Cylinder Cart
16. PPE Station
17. Sharp Disposal
18. Hand Sanitizer
19. Overbed Table

ENGINEERING CHANGES

1. Add Emergency Back-up Power & UPS
2. Add Electrical Outlets
3. Add Privacy Curtains
4. Add HEPA Filters to HVAC Ducting

William P. Clements Jr. University Hospital at
UT Southwestern Medical Center
Dallas, TX

CONCLUSION

The adaptation makes use of the hotel's inherent characteristics that are similar to a hospital and its relatively immediate availability-- thus having a positive effect on stemming the start of a sick patient surge. This will give time for other alternative resources such as convention centers, gymnasiums, disused shopping malls, airline hangars and other such large space enclosures to be adapted and come online. This will further reinforce the provisions needed as part of a multi-facetted strategic approach. In total, all of these resources can be used in varying degrees to solve local problems encountered within that given context. The hotel/hospital will provide a useful addition to the arsenal needed for pandemic planning. After it has performed its civic duty, the hotel/hospital can return to be a hotel once again-- continuing its benefit to the community. This approach h will give resiliency to the system and effectiveness to the response.

Jim Henry, AIA, NCARB, EDAC

Senior Vice President

Jim Henry is leading both the wellness initiative and the global healthcare practice of CRTKL. His extensive portfolio brings nearly 20 years of architectural experience reflecting his commitment to designing physical environments that enrich lives and promote the humanistic principles he strongly values. Jim is an award-winning architect with recognition both in leadership and design. He strives to bring visionary leadership and design to every project opportunity. His ability to help deliver award winning projects that exceed the client's expectations are a reflection of his ability to connect big ideas and clients vision with his passion for great design.

Clay Markham, AIA, LEED AP BD+C

Senior Vice President

Clay leads the hospitality sector with a dynamic design and management approach to architecture, interior design and construction management. With nearly 40 years in the industry, Clay has worked extensively on international and domestic projects, allowing him to apply diverse market experiences to a variety of project types from single-use environments to large-scale master plans to mixed-use projects. His compelling designs and successful project delivery skills have resulted in award-winning projects for individual developers and owners as well as top-tier brands including Marriott International, Hyatt Hotel Corporation, and InterContinental Hotel Group.

Beau Herr, RIBA

Senior Vice President

Beau is a senior vice president with the CRTKL Healthcare Practice Group. He has a proven track record of successfully implementing facility planning and design with a diverse exposure to a variety of project types. He has been involved in project development throughout the world, including the development of the financial package and the design of medical facilities, and has experience in all phases of the design process.

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