US Army Corps of Engineers®

Assessment of Health Care Infrastructure and Services
Lyndon Baines Johnson Tropical Medical Center
Pago Pago, American Samoa
22-24 April 2019

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In response to a directive associated with the Consolidated Appropriations Act, 2019, the U.S. Department of the Interior, Office of Insular Affairs, requested the assistance of the U.S. Army Corps of Engineers (USACE), Honolulu District with producing a report to Congress addressing the condition of the Lyndon Baines Johnson (LBJ) Tropical Medical Center in Pago Pago, American Samoa and estimating the cost of renovating and modernizing the current facility, constructing a new facility, and whether a renovated facility will have sufficient capacity to meet American Samoa's needs.

The appropriations committee report language from Senate Bill 115-276 reads:

"American Samoa.--The Committee is concerned about the long term impact of Cyclone Gita on American Samoa, particularly as it relates to impending increase in the minimum wage and how that will impact American Samoa's economy and its ability to recover. Additionally, given the state of the Lyndon B. Johnson Hospital, the Committee directs the Office to provide information, within 90 days of enactment of this act, to the Committee on the condition of the hospital; the estimated cost of building a new hospital; the estimated cost of completing all renovations necessary to modernize the hospital; and estimates of whether a renovated facility has sufficient capacity to meet American Samoa's needs."

On 22-24 April 2019, the U.S. Army Corps of Engineers (USACE), Honolulu District (POH) and Huntsville Engineering Center (HNC) Medical Center for Expertise and Standardization (MX), along with the U.S. Army Health Facilities Planning Agency (USAHFPA) conducted a clinical mission review and facilities infrastructure assessment survey of the LBJ Tropical Medical Center (TMC). The LBJ Tropical Medical Center is a 50 year old single story 150,000 square foot (SF) facility, consisting of eighteen (18) buildings in a campus setting, which resides in a harsh environment of constant high temperature and humidity. Since its original construction, the facility has been repaired, renovated and expanded (an ongoing project will add an additional two story building).

The current infrastructure of the LBJ TMC hospital is in a state of failure due to age, environmental exposure, and lack of preventative maintenance. Extensive repair and/or replacement of facility sections is required to ensure compliance with hospital accreditation standards and to ensure the life, health, and safety of staff, patients, and visitors. While the facility structure has held up relatively well, it is not in compliance with current seismic and

wind requirements and retrofits would be expensive and disruptive. The electrical and mechanical systems are in poor condition and in need of immediate repair. Architectural deficiencies have led to mold and mildew growth in critical areas, exposing staff and patients to significant health risks. The nurse call system is inoperable in key locations, plumbing, water treatment and medical gas systems are all in failed or failing condition.

Based on an extensive review of clinical capabilities, the existing facility is incapable of providing enough space to meet the long term needs of the patient population. The facility is dependent upon funding from the Center for Medicare and Medicaid Services (CMS), further degradation of the infrastructure will result in non-compliance with standards and will result in denial of accreditation. LBJ TMC is the only full-service healthcare facility in the territory and further degradation of the plant infrastructure will hamper the delivery of care to American Samoa's population.

The following options are proposed for facilities infrastructure capital investment.

Option A: Repair the infrastructure of the current facility (150,000 SF) with no additional space expansion. The estimated construction cost is $161.4M. This involves retrofitting all infrastructure to meet current building code and hospital accreditation criteria, to include immediate deficiencies in the architectural, electrical, fire protection, mechanical, and structural systems. This however will require numerous utilities outages and interim life safety measures that could impact the delivery of immediate patient care services. While individual systems could be brought up to current code standard through such a repair, this does not address the existing clinical space deficiencies nor meet the future end-state of clinical services.

Option B: Construct a new multi-story hospital (150,000 SF) on a proposed site on the western side of the island. The estimated cost for a new hospital is between $325-390M. This would entail the construction of a new facility in compliance with current building code and hospital accreditation criteria. The site location for a new facility would require land transfer, upgrade to island infrastructure, and would increase travel distance from Pago Pago and the eastern side of the island, potentially impacting the delivery of immediate care. Further analysis is required to determine additional infrastructure costs. While individual systems can be repaired by replacement, this course of action does not address the existing clinical space deficiencies nor meet the future end-state of clinical services.

Option C: Construct a new multi-story hospital (150,000 SF) on the current LBJ campus. The estimated cost for this option varies from $375 to $425M, depending upon the course of phasing to ensure minimal disruptions to the current facilities and accessibility. This would entail the construction of a new facility in compliance with current building code and hospital accreditation criteria. This would require interim life safety measures and continual coordination with the existing operations to minimize impacts to clinical delivery. While individual systems could be

brought up to current code standard, this does not address the existing clinical space deficiencies nor meet the future end-state of clinical services.

Option D: Construct a new multi-story hospital (370,000 SF) on a proposed site on the western side of the island. The estimated cost for a new hospital is $700M. This would entail the construction of a new facility in compliance with current building code and hospital accreditation criteria. The facility would also be properly sized to support the clinical needs of American Samoa for the next 20-30 years. The site location for a new facility would require land transfer, upgrade to island infrastructure, and would increase travel distance from Pago Pago and the eastern side of the island, potentially impacting the delivery of immediate care. Further analysis is required to determine additional infrastructure costs.

Option E: Construct a new multi-story hospital (370,000 SF) on the current LBJ campus. The estimated cost for this option varies from $750 to $900M, depending upon the course of phasing to ensure minimal disruptions to the current facilities and accessibility. This would entail the construction of a new facility in compliance with current building code and hospital accreditation criteria. The facility would also be properly sized to support the clinical needs of American Samoa for the next 20-30 years. This would require interim life safety measures and continual coordination with the existing operations to minimize impacts to clinical delivery. A further site assessment is required to ensure space is available for a multi-story facility on the existing campus. This is the preferred option of the American Samoa Government.

Course of Action	**Estimated Construction Cost ($M)**	**Estimated Sustainment Cost/Year ($M) UFC 3-701-01 (FY18) ($8.03/SF X 211%) Cost Factor (American Samoa)**	**Risk to Clinical Delivery**
Option A: Renovate all failing infrastructure with no clinical expansion (150K SF Facility)	$161.4 (FY19 Funding), excluding swing space and other temporary infrastructure to retain services.	$2.5	Very high risk due to patient exposure to construction in active clinical areas.
Option B: Construct a new hospital with the same footprint (150k SF Facility) with no clinical expansion on a new location on the western side of the island	$325-390 (FY20-24 Funding)	$2.5	Low risk

Course of Action	**Estimated Construction Cost ($M)**	**Estimated Sustainment Cost/Year ($M) UFC 3-701-01 (FY18) ($8.03/SF X 211%) Cost Factor (American Samoa)**	**Risk to Clinical Delivery**
Option C: Construct a new hospital with the same footprint (150k SF Facility) allowing for no clinical expansion on the existing LBJ TMC site.	$375-425 (FY 20-24 Funding)	$2.5	Medium risk, new construction adjacent to existing facilities.
Option D: Construct a new hospital with a complete footprint (370k SF Facility) to fulfill future mission growth on a new location on the western side of the island.	$700	$6.3	Low risk
Option E: Construct a new hospital with a complete footprint (370k SF Facility) to fulfill mission growth on the existing LBJ TMC site.	$750-900 (FY 20-24 Funding)	$6.3	Medium risk, new construction adjacent to existing facilities

The state of current facilities infrastructure and the need for enhancement of clinical services to support the present and future health care needs of American Samoa support the replacement of the existing facility. Repairs to the infrastructure alone in the existing facility without properly supporting space expansion is not a complete solution and will introduce a higher level of risk to patients and staff with exposure to mold, dust, and other harmful contaminants during construction. Interim Life Safety Measures and enhanced Infection Control Management is critical now to ensure the life, health, and safety of patients, staff, and visitors.

Congressional Response
Assessment of Health Care Infrastructure and Services
Lyndon Baines Johnson Tropical Medical Center
Pago Pago, American Samoa

1. **Background.** On 22-24 April 2019, the U.S. Army Corps of Engineers (USACE), Hawaii District (POH) and Huntsville Engineering Center (HNC), along with the U.S. Army Health Facilities Planning Agency (USAHFPA) conducted a clinical mission review and facilities infrastructure assessment survey of the Lyndon Baines Johnson (LBJ) Tropical Medical Center (TMC) in Pago Pago, American Samoa. This survey was in support of the Office of Insular Affairs (OIA). The Committee of Appropriations, for the Department of the Interior (DOI), Environment, and Related Agencies, in the 2019 Appropriations Bill addressed specific concerns over the facilities conditions at the LBJ TMC. The exact concern as published in the appropriation committee language associated with the 15 February 2019 Bill signed by President Trump and as follows:

   "American Samoa.—The Committee is concerned about the long term impact of Cyclone Gita on American Samoa, particularly as it relates to impending increase in the minimum wage and how that will impact American Samoa's economy and its ability to recover. Additionally, given the state of the Lyndon B. Johnson Hospital, the Committee directs the Office to provide information, within 90 days of enactment of this act, to the Committee on the condition of the hospital; the estimated cost of building a new hospital; the estimated cost of completing all renovations necessary to modernize the hospital; and estimates of whether a renovated facility has sufficient capacity to meet American Samoa's needs."

   The LBJ Tropical Medical Center (LBJ TMC) is a 128-bed general acute care hospital, with an approximate footprint of 150,000 square feet, constructed into six (6) separate linear buildings connected by two primary corridors bisecting each, in a grid pattern. The facility was originally constructed in the mid 1960's and attained full operation in 1968. The facility is a single story concrete bent frame, sloped roof and wood framed structure which has undergone a number of minor renovations over the years. The facility is certainly approaching the end of its serviceable life cycle (50 years).

2. **Assessment Team Qualifications.** In order to meet the requirements of the above, the USACE assembled a team of subject matter experts. These individuals included senior architect and engineers from the USACE Medical Center of Expertise and Standardization (MX) under the Command of HNC along with specialized support for seismic analysis and cost estimation from HNC. The team also consisted of a senior clinical planner from the USAHFPA and a clinical and equipment field officer from that organization. All team

members have professional licensure and have established personnel competencies through direct participation in the Department of Defense Medical Military Construction (DODM MILCON) Program and the Department of Veterans Affairs Major Project Execution Portfolio. The individual team members are identified in Appendix A.

3. **Technical Approach.** The assessment team spent three days at the LBJ TMC with two critical focal areas. The technical team of architect and engineers conducted a complete facilities assessment of the LBJ TMC Complex to include interstitial areas and occupied clinical and administrative areas. The visual tour was an assessment of facilities compliance with governing building criteria, to include, but not limited to, compliance with such standards as recommend by the Centers for Medicare and Medicaid Services (CMS), the American Society for Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), the Facilities Guideline Institute (FGI) for Architectural Standards, and the National Fire Protection Association (NFPA). At the same time, the clinical planning team conducted staff interviews with the LBJ leadership and department leaders to assess current patient care delivery capacities, capabilities, and shortfalls that could support future clinical mission growth. This information was vital to developing a Plan for Design (PFD), a document that calculates building square footage to support clinical platforms, to assess the costs of a replacement facility.

   The Unified Facilities Criteria (UFC) 3-701-01, Department of Defense (DoD) Pricing Guide and UFC 3-730-01, Programming Cost Estimates for Military Construction were used as guidance in the development of estimated cost for new construction and renovations to modernize LBJ TMC. Unit cost reference in the determination of estimated cost included UFC guidance and table, PAX Newsletter 3.2.2 dated 30 May 2018, and Defense Health Agency (DHA) guidance. The three references provided a variation or range of cost.

   Individual assessment of the various fire protection, life safety, architectural, mechanical, electrical, and structural systems was evaluated and the current condition is discussed within each section. Currently small projects (<$5M) are ongoing to enhance clinical services and are not considered in this portion of the evaluation. Based on information gathered during interview and document examination, is was determined that the recent standalone construction (Mental Health Faculty) and “phased renovations” are being constructed for approximately $400-600/sf (dependent on space and clinical mission). These projects are small in nature when compared to the overall area of the hospital. Further major capital investments, to include repair of the existing campus infrastructure, will escalate the construction cost/sf. The use of temporary facilities to house services during major repair, the use of temporary equipment to support infrastructure replacement, projected escalation in materials costs, enhanced life safety and infection control containment, and enhanced project management will direct increased cost of future construction efforts.

The estimated current Plant Replacement Value (PRV) was calculated for the existing hospital based on a 150,000 SF Current Area. Based on the formulas provided in UFC 3-701-01 (2018 Version) the current LBJ TMC replacement value is $192M. This estimated PRV does not take into account the valuation of any current projects that are now ongoing at the facility to include the Operating Room and Intensive Care Unit Modernization that will increase square footage. Typically, when renovation cost exceed 70% of the PRV (approximately $140M for this analysis), new construction is programmed. The cost to repair the current infrastructure in the facility is 72% of the PRV.

4. **Response to Congressional Request.** After extensive site investigation and interview encounters with the entire staff of the LBJ TMC, the team has established the following conclusions in response to the request from the Committee on Appropriations under the leadership of the honorable Senator Murkowski:

   a. ***Condition of the Existing LBJ TMC Hospital.*** The current infrastructure of the LBJ TMC hospital is in a state of failure due to age and environmental exposure. This infrastructure assessment includes, but is not limited to the following.

   Architectural Observations. Overall assessment of current infrastructure: Fair

   - Architectural features such as the building exterior cladding, doors and wood windows are all in fair condition. Significant evidence of mold, decay, rot and/or deterioration of these exterior components was observed, primarily due to the corrosive nature of a tropical environment (humidity, moisture, etc.) and lack of maintenance. The standing seam metal roofing appears to be in fair condition, but is showing significant signs of wear. Excessive areas of surface rust, numerous areas of patch work to significant fastener replacement was observed throughout. Without adequate regional exterior construction and maintenance program, failure of components is inevitable, which can lead to leaky buildings, mold growth and infection control issues. The exterior facade requires major modernization or repair by replacement.

   - The building envelope is severely compromised with numerous penetrations, open joints, failed caulk/sealant to openings not sealed. In addition, the lay-in ceiling system is utilized as a horizontal barrier between the unconditioned space and the conditioned (occupied) spaces. Many locations have been observed where the ceilings were stained, warped or corroded from moisture infiltration or condensation. Air or water infiltration results in larger HVAC loads or the need for additional supply air for pressurization of spaces impacting HVAC equipment longevity, utility failures and maintenance costs. The building envelope requires major modernization or repair by replacement.

- The interior rooms, layout, construction and medical equipment are outdated and showing signs of significant wear. From obsolete multiple bed (3 bed per room) inpatient wards and OR/ LDR rooms to insufficient sterile processing layout; the size of these rooms are small and inadequate for patient care which does not meet current standards. Other issues observed were inefficient patient flow with department adjacencies and travel distances. The interior construction lacks life safety separation/smoke compartments, insufficient building or room pressurization and Sound Transmission Coefficient (STC) rating between spaces. This does not meet current code criteria to include the Facilities Guidelines Institute Standards (FGI) and the National Fire Protection Association Standard for Health Care Facilities (NFPA 99) and Life Safety Code (NFPA 101). The building equipment is antiquated which parts are hard to find, equipment is failing rapidly, beyond repair and pose significant safety risks to patients, staff and maintenance personnel. The team encountered 10-20 year old radiology equipment, compressors and other equipment located in confined spaces which do not have the proper maintenance clearances. Requires major modernization or repair by replacement.

- The hospital interior finishes throughout (floors, walls, base, doors, door frames, ceilings, corner guards, handrails, crashrails, etc.) are all in fair to poor condition showing signs of significant wear, damage and age. This critically affects the unique cleanability, durability, and maintainability of facility surfaces. The current state of the hospital's interior with the accumulation of harmful microorganisms along with dust and moisture, is directly impacting patient care and exposing them to a high risk of infection. Finishes must be modernized through repair by replacement.

Electrical Observations. Overall assessment of current infrastructure: Poor.

- The hospital's electrical power system is a combination of very old and relatively new equipment and wiring. A project (2007 drawings) provided new service transformers, switchgear, and panelboards. The entire facility's normal and emergency loads were to be transferred to this new system, but the project's scope did not include the transition. Only three wards – Dialysis, Maternity, and Mental Health – have been placed on the system to date. The remaining wards are still fed from the very old, hazardous distribution system. Replacement of the system is required to meet NFPA 70, National Electrical Code.

- There are two emergency generators – an old 900kW and a fairly old 600kW – that provide backup power to the old power system and the new power system, respectively. The 600kW generator was intended to be temporary, was installed outdoors, has experienced a great deal of degradation from the elements, and has reportedly had

performance problems. The two systems are completely separated, so each is susceptible to a complete loss of power if a generator did not start when utility power is lost. The new distribution system described above was built to accept multiple generators, but cannot be utilized in this way until the remainder of the hospital's loads are transitioned to the new system.

- Over the 50+ year life of the facility, many projects have made modifications to the branch circuit wiring systems (from panelboards downstream to equipment, lighting, and receptacles) in various areas within the hospital. In a great majority of the areas, however, the branch wiring and the equipment or outlets it serves is in very poor condition, and countless code violations exist. Modernization of the wiring systems is required in order to comply with NFPA 70.
- Nurse Call System: There is no Nurse Call system in the Operating Room Suite. The Nurse Call System in the Labor and Delivery Suite is inoperable. These systems must be replaced in compliance with NFPA 99.
- The hospital's main Telephone Rack and main Data Rack are relatively new and in adequate condition, but the telephone system horizontal cabling and data system horizontal cabling wire management is very poor. Old abandoned cables remain throughout the hospital, and the new and abandoned cables are routed without proper support or orderly grouping. There is a cable tray system only down the main corridors, but the number of cables greatly exceeds the tray system's capacity, and many of them are routed outside of the tray.

Fire Protection Observations. Overall system of current infrastructure: Fair.

- Overall, the level of life and fire safety in the facility is in fair condition. Approximately 95% of the facility is protected by an automatic sprinkler system with 50 PSI of water pressure constant through the hospital complex. Due to the recessed beam construction in some of the perimeter areas throughout the campus, sprinkler pendants are obstructed and do not meet the minimum coverages as defined by NFPA. Renovation of the Operating Room Building will provide total facilities coverage.
- The master fire alarm panel has reached life expectancy and needs replacement, to include replacement of notification devices, all cabling, and all imitation devices. The panel is approximately 20 years old and replacement parts to sustain the system are difficult to acquire. The current system had multiple troubles identified but remained operational. Failure to replace the system will result in continued degradation that will eventually impact the safety of building occupants and lack of compliance with NFPA 72, Fire Alarm Code.

- There was no defined separation of buildings with smoke or fire barriers. Upon inspection of the interior walls in the hospital structure separating the wards, the walls are constructed of 1-hour equivalent construction and the doors meet the criteria for smoke tight construction. However, there were numerous unsealed penetrations of these walls which would allow smoke migration between buildings in the event of a fire emergency. Smoke barriers must be repaired and maintained in compliance with NFPA 101.

- There was excessive storage in the hallways of the Dialysis clinic that blocked the emergency means of egress. This condition would be remediated with the introduction of space savers in the larger storage rooms or reduced stockpiling of supplies to ensure compliance with NFPA 101.

- There was no fire separation between the existing central utility plant and the adjacent laundry area. The plant is the location of the (2) diesel-powered boilers and other equipment that could promote the ignition of a fire. Without a proper 2-hour firewall separation between this high hazard area and the laundry area, a fire could propagate quickly putting building occupants at risk.

- There was no evidence of Interim Life Safety Measures in place to protect occupants in lieu of facilities deficiencies and ongoing hospital construction as required by accreditation agencies such as the CMS and Joint Commission. Additional safeguards to promote fire safety must be in place to support providing adequate levels of life safety to include but not limited to: additional fire drills, temporary smoke detectors, additional fire extinguishers, and additional training of staff in evacuation protocol in the event of a fire emergency.

Health Care Delivery/Clinical Observations.

- Configuration of Inpatient Units: The current configuration of the inpatient units is based on 1960's model of care. Of the inpatient units (Pediatrics, Maternity, Surgical, Medicine, Nursery/Neonatal Intensive Care Unit (NICU), and Intensive Care Unit (ICU), the Pediatric, Maternity, Medicine and Surgical units are configured for two or three patient beds in each room with one bathroom. Research supports that providing single patient rooms contributes to: shorter lengths-of-stay; fewer medication errors; lower rates of hospital-acquired infection; fewer patient transfers; increased privacy; less noise, therefore fewer sleep disturbances; more patient control; and higher patient satisfaction. Additionally, the cultural dynamic of the American Samoa includes frequent family member support/care giving on the inpatient units.

- The location of the nursing stations on Pediatric, Medicine, and Surgery is centrally located and offers limited visibility of the patient rooms. Research supports that

providing the proper combination of decentralized and centralized nurse centers within the patient care environment contributes to the following: reduction in errors when nurses are close to patients; decreased nurses' travel time/distance; increased nurses' time spent caring for patients/families; and improved job satisfaction for nursing staff. Lastly, the current location of the nursing stations is centrally located, but offers limited visibility to patient rooms. The lack of visibility to the patient rooms creates disadvantages for staff, limited already, to monitor patients and family/visitor activities.

- Inpatient rooms lack hand-washing sinks making compliance with hygiene and infection control procedures difficult if not impossible and may contribute to/or increase morbidity and mortality.
- The ICU, an open-bay unit, offers limited visual or auditory privacy for patient or family members. Research supports that an excessive or persistent noise within patient care areas contributes to the following: sleep disruption; confusion; impediment to healing; creation of stress and anxiety; potential increase in the use of prescription medications; and the possibility of increasing staff errors.
- The size of outpatient exam/treatment rooms limit patient care capabilities to support the patient population and family care-givers during appointments. The standard exam/treatment rooms in the current hospital ranged from 84 SF to 110 SF. These room sizes limit the medical staff capabilities to provide care due to the large bariatric patient population in American Samoa. Furthermore, multiple family members accompany patients for standard medical appointments limiting space to provide medical care in the exam rooms. The DoD and Veterans Administration size standard exam rooms range from 120 to 125 SF.
- Negative/Positive pressure isolation rooms are completely absent from the existing facility. The lack of these specific rooms make compliance with infection control and procedures impossible and may contribute to or increase morbidity and mortality.
- The morgue/autopsy suite is grossly undersized for the current workload demand. This department serves the entire population for American Samoa. The space for body storage is significantly limited by over 50%; while body preparation and viewing spaces are absent from the morgue.
- Physical therapy is significantly undersized to support both inpatient and outpatient operations. The clinic lacks adequate equipment and patient care spaces to support the physical therapy/rehabilitation mission.

- The pharmacy is the sole distributor for medication for all of American Samoa. The pharmacy lacks space for all compounding requirement and results in nursing staff performing compounding on the inpatient units. Compounding in the pharmacy minimizes if not prevents potential patient harm or death that could result from microbial contamination, chemical and physical contaminants; large content errors in the strength of correct ingredients and the mixing of incorrect ingredients. Furthermore, the pharmacy is significantly undersized to support the current mission for distributing medications to the entire population of American Samoa.
- The dental clinic is the sole provider for dental services for all of American Samoa. The dental clinic is undersized for specialty and general dental workload demand. The dental laboratory is inadequately sized to support prosthodontics.

Mechanical Observations. Overall assessment of current infrastructure: Poor.

- The central heating ventilation and air conditioning (HVAC) systems are in a failed condition with ramped mold, rust and decay, directly impacting patient care and exposing the most susceptible patients (surgical recovery, pediatrics, OB, etc.) to a high risk of airborne infection. Most buildings no longer have any functional outside air supply system and are far outside the required temperature and humidity standards. Several breakouts of nosocomial airborne infectious diseases have already occurred in the inpatient wards. The space conditions are in clear violation of Joint Commission criteria and the HVAC systems must be repaired through replacement.
- HVAC System failure has led to a lack of temperature and humidity control in most areas and most building have no functional fresh air supply. Even the newest air handling units (~2 years old) in Dialysis show evidence of mold and contamination of the airstream. The facilities must be upgraded with conditioned mechanical and plenum spaces as mentioned in the Architectural section requiring major modernization or repair by facilities replacement.
- The central mechanical systems (chillers, boilers, cooling towers, controls etc.) as well as many air handling units are directly exposed to the marine climate and have been operating for years with untreated make-up water which is known to be hard and aggressive towards the piping materials. Most all equipment and systems are showing advanced signs of corrosion and failure and are in need of replacement. These capital infrastructure systems must be repaired by replacement.
- The location of the central utility plant and particularly the location of the cooling towers is placing susceptible dialysis patient at direct risk of legionella exposure as it is within 10ft of the Dialysis outside waiting area. The two cooling towers must be repaired by replacement in new locations.

- The degraded building envelope and lack of continuous air barrier and vapor retarder allow excessive outside air and moisture infiltration. This is resulting in severe mechanical equipment degradation as well as higher HVAC loads, utility failures and maintenance costs. The existing 1960's building design was intended for passive cooling and open windows but cannot meet modern FGI and ASHRAE 170 criteria for temperature and humidity control and outside air filtration known to be critical for infection control and patient care.
- The medical gas systems are in a constant state of alarm (at the Local and Area Alarm levels) plus have no functional Master Alarm Panel placing patients at risk. The central medical gas systems (compressors, vacuum pumps, manifolds) are severely degraded due to direct exposure to the marine climate. The medical gas system must be repaired by replacement to ensure compliance with NFPA 99.
- A single vacuum system is being utilized to serve Medical Vacuum, Waste Anesthetic Gas Disposal and Dental Oral Evacuation, not meeting the pressure requirements of any individual system and posing a risk of fire due to the oxidizers in the presence of system contaminants. Combining Oral Evacuation with Medical Vacuum is not permissible and risks damage to the dry vacuum pumps with exposure to liquid and amalgam. Amalgam separation, required by Federal law, is not provided. Systems must be repaired to be in compliance with NFPA 99.
- The Medical Air System has not been functional for years resulting in a significant increase in the use of bottled oxygen to support patient ventilators and the use of non-medical grade air for some anesthesia machines which could pose a risk to the patient.
- The Dental Air system has no dew-point control and inadequate filtration placing patients at risk of exposure to a contaminated air stream.

Structural Observations. Overall assessment of current infrastructure: Fair.

- The overall structure is in fair condition, the roof is in fair condition with no evidence of sagging or structural failure and some water damage, the concrete frames are in fair condition exhibiting some cracking and spalling (structural deterioration of surface concrete), and the foundation appears to be in good condition with no cracks or differential settlement problems.

- The design of the facility is deficient and does not provide adequate resistance to the maximum anticipated seismic and wind loads for American Samoa as found in ASCE 7, the International Building Code, and the current version of UFC 3-301-01 as applicable.

In its current state, the concrete frames are insufficient to resist the maximum seismic event and the roof and windows are insufficient to resist the maximum wind event as defined in the aforementioned codes.

- As an emergency facility the ability for the hospital to not only remain standing, but also to maintain functionality is imperative. This is the only hospital for the island, and critical failure would lead to excessive loss of life.

b. Estimated Cost of Building a New Hospital.

The **Base** estimated cost of construction for a new hospital **similar in size to the existing facility** (150k SF) is estimated to be between **$250M-300M** based on current clinical operations and based on the current PRV and inflation cost factors associated with 5-year future construction costs. The estimate has no consideration for potential obstacles that could be present on the current site location, does not include facilities demolition, and would be for a more typical "clear" or "green field" construction using a design-bid-build acquisition strategy.

A green field option (Option B) was considered in a 2016 report provided by the facility on the western side of the island near the airport. A western location would be a hindrance for population near Pago Pago, lead to increased ambulance response time, and the potential for negative clinical outcomes. It should be noted that any green field site would need to include separate costs for land acquisition, site grading, enhanced utilities infrastructure to include a redundant power from the eastern island power plant, and civil work to include new roadways and parking areas. This external cost associated with construction outside of the structure of the facility will increase the base replacement cost by 30% to a new estimated **cost for a "green field" site to $325-390M**.

The current hospital is on Government owned land and could potentially require further land negotiations prior to construction and demolition. If a new hospital is to be built on-site, to be referred to as Option C, (and current services are to be operational during construction), then a phased design-bid-build acquisition strategy would likely be implemented. If this is the solution, then additional phased construction cost and time will be incurred, approximately up to 24 months in duration, and will increase **the estimated cost to replace the hospital on the existing grounds to a range between $375-425M** based upon the number of phases in the project, movement of personnel between old and new buildings, utilities upgrading and demolition of failing facilities. Optimization of phasing and efficiencies in the time associated with moving staff into new facilities will direct costs to the lower end of the scale.

Current operational funding for the hospital is provided primarily through Center for Medicare and Medicaid Services (CMS) reimbursement and is approximately $50M annually. Traditionally, operational funding has been inadequate to support optimal delivery of patient care. It is also important that any facility on the island be appropriately sized to respond to any mass casualty event, to include tsunamis, earthquakes, and man-made disasters. Based on interviews with the hospital Engineering staff it was also understood that annual maintenance and sustainment budget (including salaries, benefits, and small repair projects) is allotted is $2M annually but is often subject to reductions based on the level of reimbursement received. Based on the current facility, the space allocation, and calculations based on DoD guidance, it is estimated that sustainment cost for this facility would be approximately $2.5M annually for a 150,000 SF hospital in American Samoa (Cost Factor: 2.11). Enhanced sustainment funding is critical to avoid premature degradation of new facilities infrastructure.

c. Estimated Cost of Completing all Renovations Necessary to Modernize the Hospital.

The estimated renovation cost necessary to restore the hospital is $161.4M, referred to Option A; the rough order of magnitude calculation is provided in this section. These costs represent the amount to restore the facility infrastructure and do not consider exterior site modifications or additional square footage growth with the exception of the construction of a new Central Utility Plant (CUP). Based on the assessment of the current site conditions and the documents provided in support of this report, $161.4M renovation to modernize the hospital is basis of estimate for further cost development and the starting point for the remainder of this discussion. This cost does not account for space reprogramming and subsequent modernization to enhance clinical delivery.

The CUP has reached failing status. In order to properly replace all equipment and maintain operability of the hospital, a new footprint for a CUP must be initiated. This will pose significant phasing challenges and require additional cost to commission all new equipment. The replacement of the CUP is critical to ensure safe operation of the facility. Based upon the programming guidance in UFC 3-701-01, the replacement unit cost (RUC) for a CUP is $1,263/per square foot if scope can be determined during planning. Otherwise, 20% of Primary Facility PRV cost is historically used. Given the state of the current CUP and the synchronization of equipment replacement to retain facilities operability, the 20% PRV factor must be considered. This equates to a CUP replacement cost of $38M.

The roofing system is suspect in regards to is ability to withstand a cyclone event. The majority of the mechanical and electrical distribution systems through the hospital are attached to the roofing's structural support systems. A complete removal of roofing elements and full replacement of the roofing structure is required to eliminate unconditioned attic

spaces. The cost to replace the roof would be complicated by this and is estimated to be $20M.

The replacement of a fire alarm and upgrade to the construction of the 1-hour firewall barriers separating buildings in the hospital campus is estimated to be $10M. This figure also includes complete fireproofing of all unsealed penetrations.

The replacement of electrical systems, to include the 2 current generators reaching end of lifecycle and all subsequent main panels and subpanels, to ensure compliance with current National Electrical Code Standards throughout the 150k square foot facility is estimated to be approximately $15M, with a 30% phasing factor to ensure phasing to retain electrical operations, totaling $19.5M.

The installation of new cooling towers, air handling units, ductwork, and insulation to eliminate the mold propagation throughout the facility is complex under a renovation project without elimination of unconditioned above ceiling areas as mentioned in the discussion about the roofing system. The level of magnitude to replace the two cooling towers, failing air handling units, replacement of all ductwork, insulation, and complete commissioning of the system in order to ensure optimal climate control alone can be estimated at $35M, based on similar costs to replace these systems in other military hospitals; including a 30% phasing factor to ensure phasing to retain mechanical operations, the estimate to repair all HVAC systems is $45.5M.

The medical gas system is dependent upon an oxygen delivery service only utilizing cylinders at supply manifolds. These manifolds are at the end of lifecycle and need complete replacement in accordance with NFPA standards. Also, separate storage areas must be ensured to prevent the mixing of used and unused tanks. The cost to upgrade the oxygen system, to include removal and repair of all distribution piping, zone valves, and the replacement of medical air and vacuum systems throughout the hospital is estimated to cost $5M, including a 30% phasing factor for phased replacement, totaling $6.5M.

The patient nurse call systems are also approaching end of line cycle and need to ensure compliance with NFPA standards. The cost to replace the system, to include new distribution equipment is approximately $3M based on costs associated with replacement at similar military hospitals of these systems.

Plumbing systems to include hot water distribution, conditioning, and sanitary systems are also reaching end-of-lifecycle and must be considered for restoration. Replacement of these systems is estimated to be $3M, including a 30% phasing factor for phased replacement, totaling $3.9M.

Architectural systems are also reaching end-of-lifecycle and must be restored to assist in ensuring a clean environment. These restorations include but are not limited to ceiling grid

replacement to ensure smoketight construction, restoration and painting of corridor and room walls, Replacement of failing floor tile to include abatement. Replacement of these systems is estimated to be $10M, including a 50% phasing factor for hazardous material abatement and phased construction, totaling $15M.

Summary of Renovation Costs:

System	Estimated Cost ($M)
Central Utility Plant	$38
Roofing / Attic Crawlspace	$20
Fire Protection / Life Safety	$10
Electrical	$19.5
Mechanical	$45.5
Medical Gas	$6.5
Nurse Call	$3
Plumbing	$3.9
Architectural/Seismic	$15
TOTAL Replacement of Major Systems	**$161.4**

These replacement costs are representative of infrastructure only and equate to approximately 84% of the plant replacement value. The impact to clinical operations cannot be ignored in a renovation and the level of work required will require enhanced infection control safeguards and interim life safety measures that may incur additional costs. These renovation costs are with current space "as-is" and do not account for additional costs incurred to enhance clinical care delivery through additional space growth.

d. The Ability of a Renovated Facility to Provide Sufficient Capacity to meet the needs of American Samoa.

Based on the analysis of the current state of the facilities infrastructure and the limitations of the current footprint to provide optimal clinical delivery, a replacement facility is required to ensure modern healthcare delivery in lieu of renovation to the existing facility.

There are two courses of action for a replacement facility with clinical expansion capabilities on the island of American Samoa. The first option is a replacement facility to be constructed on a "green field" location (Western Side of Island), referred to as Option D, and the other option consists of location on the existing LBJ campus, referred to as Option E.

A Plan for Design (PFD) was constructed after extensive interviews with all staff to predict future requirements for clinical services on the island. Anticipated growth in combating the

epidemic of Type 2 Diabetes will spawn the need for facilities growth, along with enhanced infrastructure and inpatient space for single-bed patient rooms.

Based on the initial PFD, a new facility meeting all projected clinical needs will need to be approximately 370,000 Gross Square Feet (GSF) in area, supporting a staff operation of 750 personnel. The only way to achieve this vision will require 2-story construction on either site. This increase in square footage requires refinement of the projected cost analysis in Section 4b. A Department of Defense Form 1391, Request for Military Construction was prepared to project the cost of a 370,000 SF facility.

Based on the 30% escalation factor for a new site location as mentioned in Section 4b, the cost for a new 370,000 SF hospital on the western side of the island is $700 M. Based on the escalation range for construction of a new hospital on the grounds of the current LBJ TMC, the cost for a new 370,000 SF hospital is $750-900 M, dependent upon the number of phases. To eliminate risks and costs associated with the option to construct a 370,000 SF hospital on the existing site, the land currently occupied by the Public Health Department across from the existing facility is available for construction phasing. This land is approximately 3/4 acres in area. This land is under the control of the Government and the LBJ TMC. The Governor of American Samoa, the Director of Health, and LBJ leadership agreed to utilize this land if LBJ needs it for expansion. The Public Health Office of American Samoa currently has several other clinics to serve the public throughout the island and can initiate movement of services from this location at minimum on a temporary basis.

5. **Cost Summary of Renovation and Replacement Options.** The following table is a summary of items as requested by the Committee based on all options available to improving the quality of facilities and the quality of care to the citizens of American Samoa. These options ensure full compliance with applicable building codes and standards. These estimates include design, construction, and supervision costs required to complete facilities renovations or replacement, but does not include replacement and installation of new medical equipment and furnishings (see Medical Equipment and Furnishings below).

Course of Action	Estimated Costs ($M)	Risk to Clinical Delivery	Advantages	Disadvantages
Option A: Renovate all failing infrastructure with no clinical expansion (150K SF Facility)	• $161.4 (FY19 Funding), excluding swing space and other	Very high risk due to patient exposure to construction in active	Improves immediate infrastructure conditions.	Does not account for clinical space requirements and would create

Course of Action	Estimated Costs ($M)	Risk to Clinical Delivery	Advantages	Disadvantages
	temporary infrastructure to retain services. • $2.5/yr. sustainment (FY18 costs)	clinical areas.		numerous risks to clinical delivery.
Option B: Construct a new hospital with the same footprint (150k SF Facility) with no clinical expansion on a new location on the western side of the island	• $325-390 (FY20-24 Funding) • $2.5/yr. sustainment (FY18 costs)	Low risk	Provides a facility in full code compliance without working on an active care site.	Unknowns with island infrastructure capabilities, remoteness from eastern island, and does not account for clinical space requirements.
Option C: Construct a new hospital with the same footprint (150k SF Facility) allowing for no clinical expansion on the existing LBJ TMC site.	• $375-425 (FY 20-24 Funding) • $2.5/yr. sustainment (FY18 costs)	Medium risk, new construction adjacent to existing facilities.	Provides a facility in full code compliance.	Increased congestion on current site will require phasing. Does not account for clinical space requirements.
Option D: Construct a new hospital with a complete footprint (370k SF Facility) to fulfill future mission growth and clinical expansion on a new location on the western side of the island.	• $700 • $6.3/yr. sustainment (FY18 costs)	Low risk	Provides a fully compliant facility with clinical capacity.	Unknowns with island infrastructure capabilities and remoteness for eastern island patients.

Course of Action	Estimated Costs ($M)	Risk to Clinical Delivery	Advantages	Disadvantages
Option E*: Construct a new hospital with a complete footprint (370k SF Facility) to fulfill mission growth and clinical expansion on the existing LBJ TMC site.	• $750-900 • $6.3/yr. sustainment (FY18 costs)	Medium risk, new construction adjacent to existing facilities	Provides a fully compliant facility with clinical capacity.	Increased congestion on current site will require phasing and real estate acquisition.

* It is the preference of the American Samoan Government and LBJ Administration to pursue Option E as a complete, permanent solution to the delivery of health care services on the island for the next 50 years.

Equipment and Furnishings. The above estimates do not include equipment and furnishings costs. A comprehensive lifecycle analysis of equipment must be made upon the initiation of a course of action as listed above. The initial outfitting costs for new equipment and transition costs, to include moving and installation of equipment can be estimated to be 15-20% of the construction cost for the project. Equipment procurement planning should commence upon solicitation for construction of the new facility.

6. **Conclusion.** The state of current facilities infrastructure and the need for enhancement of clinical services to support the present and future health care needs of the territory, support American Samoa considering the replacement of the existing facility. Repairs to the infrastructure alone in the existing facility without properly supporting space expansion is not a complete solution and will introduce a higher level of risk to patients and staff with exposure to mold, dust, and other harmful contaminants during construction. The enactment of Interim Life Safety Measures and enhanced Infection Control Management is critical now to ensure the life, health, and safety of patients, staff, and visitors. Based on the criticality of the repairs to the existing structure, immediate repairs must be undertaken to address all infrastructure deficiencies unless an option is directed for a new facility. Immediate repairs to the life safety, electrical, mechanical, medical gas, and replacement nurse call systems should be considered as interim measures with an estimated cost of $80M while other courses of action are reviewed to provide an acceptable environment of care for the hospital population.

7. The United States Army Corps of Engineers and the United States Army Medical Command can provide technical support to include planning, design, construction, and patient care

delivery requirements to continue the partnerships with the staff of the Office of Insular Affairs and the LBJ Tropical Medical Center.

Appendix A:

Army Assessment Team Members, 22-24 April 2019:

Name	Office	Position
Mr. Brian Prediger, P.E., CHFM (GS-15)	USACE, MX	Team Leader, Fire Protection / Life Safety Engineer
Mr. Donald Schlack (GS-14)	USACE, POH	Onsite District Project Manager
Mr. David Braidich, P.E. (GS-14)	USACE, MX	Senior Mechanical Engineer
Mr. Charles Buchanan, P.E. (GS-14)	USACE, MX	Senior Electrical Engineer
Mr. Jeffrey Hoki, P.E. (GS-13)	USACE, HNC	Structural Engineer
Mr. Douglas Kohns, R.A. (GS-14)	USACE, MX	Senior Architect
MAJ William Lewis	MEDCOM, HFPA	Clinical / Equipment Planner
Ms. Mary Savitsky, MHA, MPA, PMP	MEDCOM, HFPA	Senior Clinical Planner
Mr. Kenneth (Todd) Wood, P.E.	USACE, HNC	Cost Estimation

Key:

CHFM – Certified Healthcare Facilities Manager
HFPA – Health Facilities Planning Agency
HNC – Huntsville Engineering Center
MEDCOM – U.S. Army Medical Command
MHA – Master of Health Administration
MPA – Master of Public Administration
MX – Medical Center of Expertise and Standardization
P.E. – Registered Professional Engineer
PMP – Project Management Professional
R.A. – Registered Architect
USACE – U.S. Army Corps of Engineers

Appendix B: Architectural

LBJ Tropical Medical Center – Architectural Facilities Condition Assessment 22-24 April 2019

Architectural Summary:
The LBJ Tropical Medical Center (LBJ TMC) is a 128-bed general acute care hospital, with an approximate footprint of 150,000 square feet, constructed into six (6) separate linear buildings connected by two primary corridors bisecting each, in a grid pattern. The facility was originally constructed in the mid 1960's and attained full operation in 1968. The facility is a single story concrete bent frame, sloped roof and wood framed structure which has undergone a number of minor renovations over the years. The facility is certainly approaching the end of its serviceable life cycle (50 years).

Building Exterior Finish: Architectural features such as the building exterior cladding, doors and wood windows are all in fair condition. Significant evidence of mold, decay, rot and/or deterioration of these exterior components was observed, primarily due to the corrosive nature of a tropical environment (humidity, moisture, etc.) and lack of maintenance. The standing seam metal roofing appears to be in fair condition, but is showing significant signs of wear. Excessive areas of surface rust, numerous areas of patch work to significant fastener replacement was observed throughout. Without adequate regional exterior construction and maintenance program, failure of components is inevitable, which can lead to leaky buildings, mold growth and infection control issues. The exterior facade requires major modernization or repair by replacement.

Building Envelope: The building envelope is severely compromised with numerous penetrations, open joints, failed caulk/sealant to openings not sealed. In addition, the lay-in ceiling system is utilized as a horizontal barrier between the unconditioned space and the conditioned (occupied) spaces. Many locations have been observed where the ceilings were stained, warped or corroded from moisture infiltration or condensation. Air or water infiltration results in larger HVAC loads or the need for additional supply air for pressurization of spaces impacting HVAC equipment longevity, utility failures and maintenance costs. The building envelope requires major modernization or repair by replacement.

Building Interior: The interior rooms, layout, construction and medical equipment are outdated and showing signs of significant wear. From obsolete multiple bed (3 bed per room) inpatient wards and OR/ LDR rooms to insufficient sterile processing layout; the size of these rooms are small and inadequate for patient care which does not meet current standards. Other issues observed were inefficient patient flow with department adjacencies and travel distances. The interior construction lacks life safety separation/smoke compartments, insufficient building or room pressurization and Sound Transmission Coefficient (STC) rating between spaces. This does not meet current code criteria to include the Facilities Guidelines Institute Standards (FGI) and the National Fire Protection Association Standard for Health Care Facilities (NFPA 99) and Life Safety Code (NFPA 101). The building equipment is antiquated which parts are hard to find, equipment is failing rapidly, beyond repair and pose significant safety risks to patients, staff

and maintenance personnel. The team encountered 10-20 year old radiology equipment, compressors and other equipment located in confined spaces which do not have the proper maintenance clearances. Requires major modernization or repair by replacement.

Building Interior Finishes: The hospital interior finishes throughout (floors, walls, base, doors, door frames, ceilings, corner guards, handrails, crashrails, etc.) are all in fair to poor condition showing signs of significant wear, damage and age. This critically affects the unique cleanability, durability, and maintainability of facility surfaces. The current state of the hospital's interior with the accumulation of harmful microorganisms along with dust and moisture, is directly impacting patient care and exposing them to a high risk of infection. Finishes must be modernized through repair by replacement.

Definitions

Minor Repair: Alterations with minimal impacts to patients and/or staff which can be done immediately with minimal costs

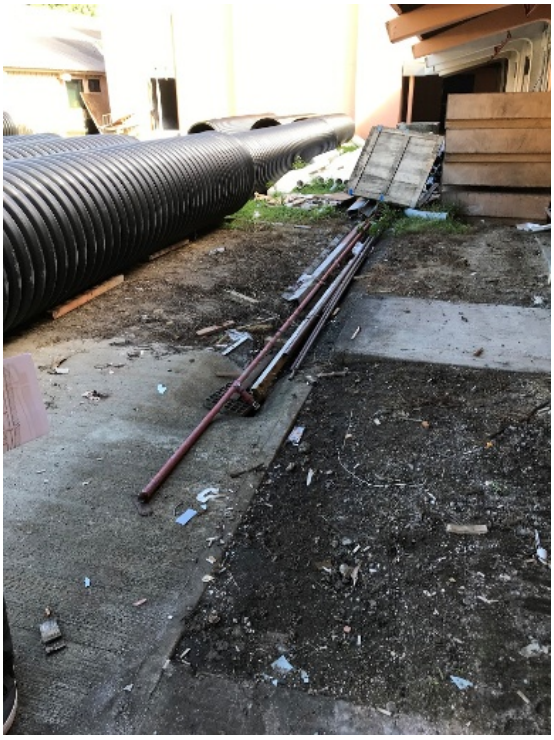
Major Repair: Alterations with major impacts to the facility, staff and patients with moderate to large improvement costs

Significant Repair: Alterations with extensive impacts to the facility, staff and patients with very large improvement costs

GENERAL SITE:

High point of the site is at northwest corner and slopes south and east. Approximately 4 to 6 feet drop overall across the site (HP to LP). Exterior courtyards are drained by concrete canals and catch basins within grassy areas to underground storm system.

Drainage Canals: Drainage canals over site are in GOOD condition, however some have build-up (dirt, debris, etc.) and/or blocked be deteriorating concrete culverts or parking/roadway material. While, other drainage canals have construction materials stacked in/over potentially blocking drainage flow. **MINOR Repair: This is general maintenance which can be cleaned and maintained or repaired. Construction material should be consolidated and strategically stacked, stored and placed to allow natural site drainage and prevent safety risks to patients. Site needs a dedicated contractor lay down area. These areas are typically fenced and secured. Conex shipping containers are ideal storage along with elevating materials off ground to prevent corrosion or contamination.**



Other Site Features: Site paving (roads, parking, bumpers, etc.) appear to be in good condition. Site railings, stairs are in good condition. Landscaping, trees, bushes, vegetation all appear to be well maintained. Current construction ongoing at front of facility replacing curbs/gutter and sidewalk which will better assist and improve the drainage down the main access road.

BUILDING EXTERIOR

Exterior Wall Construction Description: Main linear building walls are composed of a precast concrete stem wall with decorative volcanic rock wainscot, redwood framing with board & batten exterior finish, single pane wood framed fixed windows (openings), then redwood open box frame infill above horizontal concrete beams (between structural bents). Interior finish is GWB sheathing. Structural bent has leg which creates an 8 feet building overhang around perimeter. The edge of the roof aligns with the canals at grade to catch rainwater for natural drainage to underground storm system. The gable ends of the buildings also have a larger overhang (4 ft).

Exterior Decay/Rot/Deterioration: Some areas of the exterior wood (board & batten) paneling is in POOR condition showing significant signs of decay/rot/deterioration at corridors, bump-out locations and around the facility where the building exterior wall has been extended into the structural eaves/overhangs. Creating these short (8 to 12 inch) eave conditions which the water off the roof drops in close proximity to the vertical wall onto concrete slabs, splashing and soaking the bottom half of the wall. This decay has resulted over time. The paving at logistics area does not appear to have a positive slope away from the building. **SIGNIFICANT Repair: Removal and replacement of 35% of the building exterior may be impacted. Removal of exterior finish system full height, cut and remove lower section of wall and infill with concrete stem walls with stone wainscot similar to other portions of the hospital or CMU up at least 3 feet (bottom of window sill). Install a proper flashing, air barrier and new siding material, seal, caulk and paint.**

Exterior Envelope: The majority of the buildings have a significant amount of mold growth on the exterior wood surface which is in FAIR condition. American Samoa is located in a tropical extreme humid location. Although some of the mold may be located on the surface, other areas appear to be more significant. Mold feeds on organic materials, such as wood, paper, many fabrics, and even some types of glue. It literally eats away at these materials, causing them to rot

and fall apart. Outside mold does not always stay outside. It will eventually find its way thru the envelope and into the building.

Outside mold does carry health risks, but the risks are not as great as with inside mold. There were a lot of patients sitting, standing, and congregating outdoors near these areas. Although the concentration of mold will be less outside in the open air than it would be indoors. However, that doesn't mean exterior mold cannot lead to health problems. If someone does spend time outdoors in areas with significant amounts of mold, one's health will be at risk. Children are particularly susceptible to mold-related health problems.

This mold may be caused from the moist conditions/environment, low quality paint, from an inferior, damaged or missing vapor barrier or simply the exterior materials used. Another influence, could be negative pressure rooms located at/near the exterior wall drawing the moisture into the building. Buildings in general should be positively pressured. The Dialysis building, although a relatively newer renovation in 2017 is showing significant signs of mold at the exterior walls and under the canopy. Original drawings were very limited in regards to validation of the construction/components of the exterior wall. Without destructive investigation, it is impossible to confirm the cause, extent of the mold, or quality of evidence of an exterior envelope vapor barrier. **MAJOR REPAIR: Recommend a destructive investigation at severe areas by removing sections of the exterior finish to check extent of damage and envelope composition for repairs. The entire exterior of the facility should be sprayed with chemicals and power washed, then sealed, caulked and painted with a high quality mold resistant paint. Implement a mold prevention/ maintenance plan to clean the exterior regularly. Consider using materials less susceptible to mold than wood such as concrete, CMU, brick, stone, etc.**

Frieze/Transom/Top of Wall (Open): There are redwood framed openings above the horizontal concrete beams at the exterior walls which is in FAIR condition. The original building design intent appears to have been a passive approach to have these eaves open to transfer air in and thru the attic space. The majority of these openings (3 panels) are located at sides of administrative/business buildings. Some have screens for protection, some screens are damaged or the screens have been removed entirely (open). These openings allows insects, bugs (hornets, bees, ants, etc.) birds and other critters access into the attic or building. As well as all the hot/humid exterior outside temperatures to enter the attic space.

The only barrier between the attic space and occupied areas is the ceiling system (acoustical tile or gyp). These occupied spaces are typically conditioned by small DX units mounted to the walls. Lay-in ceiling tiles are warping along with corrosion on the grid system due to heat/temperature difference and moisture. These ceiling materials are not thermal or vapor barriers. Controlling the occupied temperature is very problematic which results in added maintenance and cost. Ceiling system components (tile, grid, gyp, etc.) are continuously being replaced, repaired or painted. **MAJOR Repair: Recommend closing off these transoms with screens at the administrative buildings and installing a proper horizontal barrier (Batt Insulation with vapor barrier) above the ceiling system. Recommend evaluating these buildings closer to design and create a project to seal up the exterior and provide the most efficient/effective mechanical system for these buildings.**

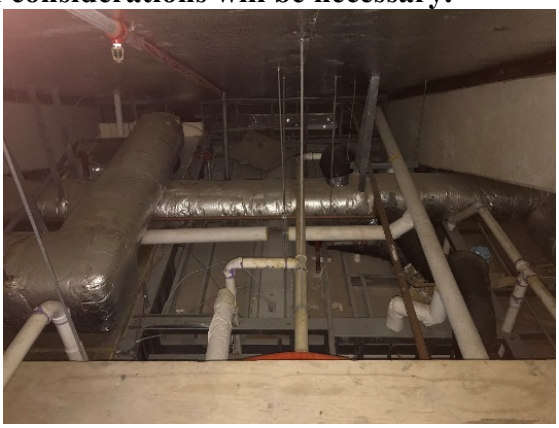
Frieze/Transom/Top of Wall (Closed) Vertical Air Barrier: The treatment/medical/hospital buildings typically have these openings at the top of the wall, above the beam, closed off with either windows, wood paneling matching existing (B & B) or by an interior wall (metal stud and interior gyp). These areas are in POOR condition which do not appear to have a vapor/air barrier or appropriate exterior wall construction provided to seal this area from moisture and air infiltration.

Dedicated AHU's are typically located within these attic spaces which serve each treatment/medical unit. With the exterior wall not properly sealed at these locations or proper separation between the occupied spaces below and attic, the cool air mixes with the hot humid air which generates moisture, condensation and mold growth within the attic.

It is vital to assure careful integration of different construction material/system interfaces within the façade/exterior wall in order to improve building performance and overall integrity of moisture, air, and thermal barriers. The building enclosure system plays a vital role in how much energy the building uses. It includes both the vertical (walls, windows and doors) and horizontal (slab & roof) system encasing the building (all six sides). The HVAC system and Building Envelope work together.

There are a number of related issues at the exterior and attic areas, with the air barrier being one of them. All of these related issues has resulted in widespread mold throughout the entire attic (top of ceilings, on support structure, on and within AHU systems, etc.). Which is a serious infection control issue. **SIGNIFICANT Repair: Recommend removing all of the existing walls above these horizontal beams and rebuilding with proper framing members, insulation, vapor/air barrier and exterior finish system. Seal, caulk and paint. The attic mold also needs to be addressed with possible remediation to a complete demolition. Please also see Mechanical Facilities Condition Assessment for additional evaluation and recommendations.**

Horizontal Barrier: Another major area of concern at the treatment/medical/hospital buildings, is that there is no horizontal barrier or physical separation between the attic area and actual treatment/ occupied conditioned space below with the exception of the lay-in or gypsum ceiling systems, which is in POOR condition. These materials are not thermal or air barriers. The DoD and DVA standards require AHU's be located in condition spaces. IBC and NFPA 101 require these different occupancies to be physically separated by a 2 hour rated barrier (IBC Table 508.4) for healthcare (I-2) and Mechanical (F). The center AHU platform also has a huge safety risk to maintenance personnel and patients below as there is no guardrail or protection at the edges prohibiting someone or something from accidently falling over and thru the ceiling. **SIGNIFICANT Repair: Recommend that either a rated vertical or horizontal barrier be installed within the attic separating the AHU space and occupied/conditioned space. This could be done horizontally with a concrete floor similar to an Interstitial Building System (IBS). Significant structural supports and design considerations will be necessary.**



AHU Access/Repair and Replacement: With the AHU's installed in the attic areas, physical access to these AHU is a huge challenge for maintenance staff. Access to these areas is at the gable ends of the building module/units thru a 4 ft x 4 ft double door opening approximately 16 feet above ground level. These doors do not have gaskets or seals and require a ladder for entering. The center building has this door opening located in the unconditioned corridor, which conflicts with utilities. If the AHU's need repair, filters, etc. facility staff must climb a ladder with tools, parts, etc. If the AHU needs to be replaced for any reason, it would have to be dismantled into pieces and removed thru the small door opening. **MAJOR Repair: Recommend installing a permanent galvanized open grate steel framed stairs (4 ft wide) system with a large steel grate platform at the top for access. The guardrail at the top could be removable with tie off (safety) brackets. A crane or lift (hoist) system could also be beneficial to remove equipment. SIGNIFICANT Repair: An alternative approach would be an enclosed elevator/lift system constructed at one end of the building while the other end can have a stair for egress. The center corridors would need to be connected to create one large open attic.**

Attic Lighting: The attic lighting is in FAIR condition which the areas are very dark, dim and do not appear to have sufficient lighting to meet foot candle requirements for DoD, DVA or commercial (National Electric Code) standards. This is a huge safety concern and would also be hard to maintain or repair the mechanical equipment, utilities or infrastructure due to limited light levels provided. **MINOR Repair: Recommend providing additional lights throughout attic spaces to properly cover each structural bay and attic AHU platform.**

Fascia damaged: The exterior building fascia, although in FAIR condition, has wood rot/decay/deterioration at multiple locations around the facility. These areas may have been damaged by equipment, during construction of adjacent buildings or lack of maintenance. **MINOR Repair: Recommend removing damaged fascia and replacing to include drip edge and paint. Regular maintenance of the exterior is paramount (caulking, sealing, paint, etc.).**

Exterior Wall Penetrations: There are numerous locations around the facility where utilities (sprinkler pipe, etc.) are penetrating the exterior wall/eave/frieze that are not sealed. These opening allow hot humid/moist air to enter attic or building. With the exterior wall not properly sealed at these locations the AHU or occupied space cool air mixes with the hot humid air which generates moisture, condensation and mold growth within the attic. **MAJOR Repair: Recommend sealing all penetrations with appropriate materials and vapor/air barrier to minimize air infiltration.**

Exterior Wood Windows: Exterior windows are generally in FAIR condition, constructed with single pane (fixed glass) wood framed systems primarily located on the original portions of the buildings. In areas that have been renovated or windows replaced, single pane aluminum framed horizontal sliding windows have been installed. Numerous wood window sills have rot/decay/deterioration which appear to be leaking and should be replaced. Windows that fail or improperly sealed can cause heat and humidity to seep in, resulting in a rise of temperature inside, which will cause air conditioners to work twice as hard to keep the environment cool. This also creates moisture issues that can lead to the growth of dangerous substances, such as mold. **MAJOR Repair: Recommend removing all of the existing windows (wood fixed and/or aluminum sliding) across the entire facility and install newer high efficient non-operable (Fixed) STORM Windows. Aluminum or vinyl windows are common, material is**

lightweight, strong, energy efficient and require little maintenance. Ensure that the window framing system are thermally broken systems which prevents the frames from conducting heat/cold and reduces condensation. Storm windows are very weather resistant and provide added protection to hurricanes or severe weather. The glazing should have a low coefficient rating, multi-paned and low emissive glass (low-e coating).

Exterior Doors: Exterior doors have a mixture of wood, hollow metal or fiberglass. Majority of the original building doors are wood which are in FAIR condition. Typical door frames are hollow metal. Exterior Wood exterior doors have rot/decay/deterioration at bottoms due to water & moisture. **MAJOR Repair: Recommend removing ALL wood doors and replace with galvanized hollow metal. Inspect frames as some have corroded and replace as necessary.**

Roof System: The roof construction is primarily standing seam metal roofing over 2 1/2x6 redwood tongue & grove decking. Overall standing seam metal roofing condition appears to be in FAIR condition with minor repairs, a number of patch work areas and extensive fastener replacement due to corrosion. The roof deck, although exposed in various areas throughout the facility such as at exterior eaves, corridors and some storage areas, is holding up very well as this species of wood has natural resistance properties to moisture, decay and insects. Solar panels have been installed primarily on one of the linear buildings (second building, east side which contains Peds Clinic/Med Clinic/Pharmacy, Eye/ENT and Laundry/Mechanical). The solar

system is mounted to the ribs of the metal roof system with the use of channels/ uni-strut which does not impede drainage. **Major Repair: Recommend that the standing seam metal roof system be completely removed, under structure be inspected (repaired as necessary) and fully replaced with a new system as it is approaching its useful life. (50 years old). Roofing system have significantly advanced with new technology and installation methods for high winds/ hurricane prone areas as well as materials. Alternative selections to consider are copper or zinc roofs which can often last over 100 years.**

STRUCTURAL SYSTEM

Foundation: Consist of reinforced concrete footing continuous around perimeter of buildings with perpendicular grade beams at each structural bent, 12 feet on center, bridged between longitudinal footings.

Framing System: Reinforced precast concrete "bent" frame systems are spaced 12 feet on center. Each linear building is based on a three module configuration, each 120 feet long by 48 feet wide, separated by a corridor section. The buildings are separated by a standard 60 feet open courtyard. Cast in place 10"x12" concrete beams are installed between the bents at approximately 7'-6" AFF to bottom. The roof is 2 1/2 inch T&G wood decking spanning between bents, staggered pattern. The bent also has an 8 foot leg that extends outward, creating

an eave or overhang. This overhang aligns with the concrete canals at grade so that the water flows off the edge of the roof straight down into channels for collection of rain water.

Structural Cracks: Significant cracks have been found at numerous beams between concrete bents in the horizontal direction on multiple buildings. These cracks appear to be similar in location (all at the top) about 2 to 3 inches down, but not uniform across all buildings.

See Structural Condition Assessment and detailed trip report in Appendix G for more detailed information.

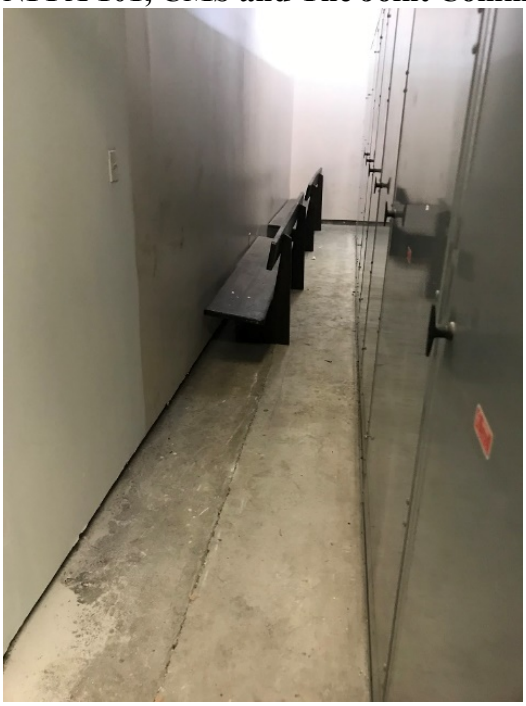
LIFE SAFETY

Mechanical Room Penetrations: Wall between Laundry (over 100 SF) and Mechanical room, which contains boilers, chillers, maintenance shops, etc. is required to be protected/ 1 hour rated per IBC (Table 509 Incidental Uses) and NFPA 101 (Chapter 8). There is a large opening where piping and other utilities pass. Opening and penetrations shall be protected by a tested system installed and maintained. Opening protection requirement established in IBC Section 705.8 may be applicable to the exterior side walls, both sides of the building at laundry, protected a certain distance away from the rated separation wall and open mechanical equipment. This would be to protect against fire spread at the exterior of the building where the openings are within close proximity to each other. **MAJOR Repair: Recommend sealing all penetration within rated wall between mechanical and laundry room with approved material (Example: Red Hilti bricks, caulk, etc.). As well as removing the exterior wall at sides of laundry room near mechanical area at least 2 bays in length and infill with rated wall construction. This also includes the void area above the horizontal structural beam. If the concrete stem wall exist at these locations, this can remain, with new infill above.**

Electrical Room Penetrations: This is the LBJ's facilities main electrical room (Switch gear/ATS, etc.) located between the mechanical area and generator room, which is required to be protected according to IBC and NFPA 101. There are multiple penetrations thru the main electrical room walls from conduit that are not sealed. Opening and penetrations shall be protected by a tested system installed and maintained. **MINOR Repair: Recommend sealing all penetration within rated wall between both the mechanical and generator rooms with approved material (Example: Red Hilti bricks, caulk, etc.).**

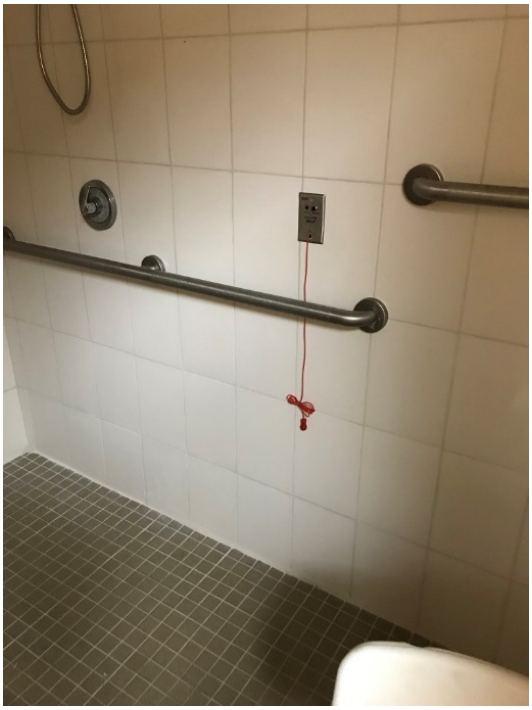
Chiller lines in Electrical Room: Chiller lines have been installed thru the main electrical room and wall penetrations are not sealed. DoD, DVA and National Electrical Codes prohibit pipes and other equipment foreign to the electrical equipment to be located in, enter, or pass through such spaces or rooms. **MAJOR Repair: Recommend that these chiller lines be removed and relocated, re-routed elsewhere and sealing all penetration within rated wall between both the mechanical and generator rooms with approved material (Example: Red Hilti bricks, caulk, etc.).**

Storage in Electrical Rooms: Main electrical rooms have items such as wood benches, boxes, medical equipment and other items being stored. **MINOR Repair: Recommend removing all items not associated with the Electrical room. Storage in Electrical rooms is prohibited per NFPA 101, CMS and The Joint Commission (TJC).**



Pull Station: Fire alarm pull station in generator room is NOT securely or properly mounted to wall. Wiring should be located in approved conduit, not exposed or looped around a nail. **MINOR Repair: Recommend installing device per NFPA 72 and conduit installation for survivability requirement per NFPA 72 and/or per DoD or DVA criteria.**

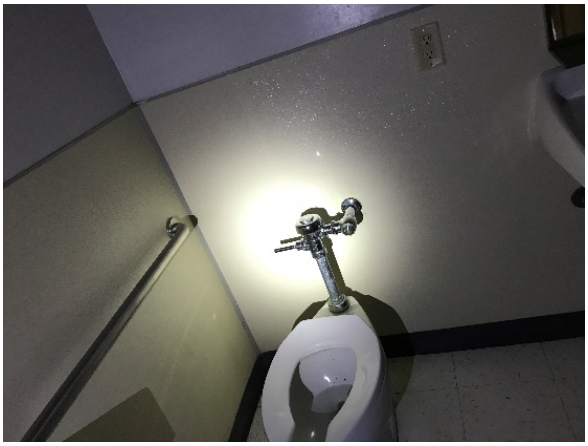
Nurse call: Pull switch/ chord is tied up and does not extend to the floor so it can be reached by a patient. **MINOR Repair: Recommend extending pull chord straight down and cutting so that the end of the chord is at a minimum of 1 inch off finish floor. See NFPA 99 Section 7.3.3.1.2.6. A pull chord shall be permitted to enable access by a patient lying on the floor.**

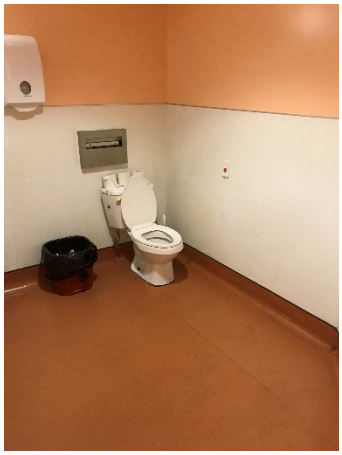


ARCHITECTURAL BARRIERS ACT (ABA) STANDARDS (ACCESSIBILITY)

Government and DVA facilities are required to comply with the Architectural Barriers Act Standards (ABA). The ABA document contains scoping and technical requirements for *accessibility* to *sites*, *facilities*, *buildings*, and *elements* by individuals with disabilities. The requirements are to be applied during the design, construction, *addition* to, *alteration,* and *lease* of *sites*, *facilities*, *buildings*, and *elements* to the extent required by regulations. UFC 4-510-01 Medical Facility Design as well as DVA PG-18-13 have additional more stringent requirements above and beyond this code.

Single Occupancy Toilet Rooms: There are a number of toilet rooms throughout the facility that do not comply with ABA standards as grab bars may not be provided or may be only on one wall (side or back), not both walls per code. **MAJOR Repair: Recommend installing code compliant grab bars to walls per ABA standards. Wall backing and other support structure may need to be added. Therefore, removal of drywall, replacement and painting may be necessary.**



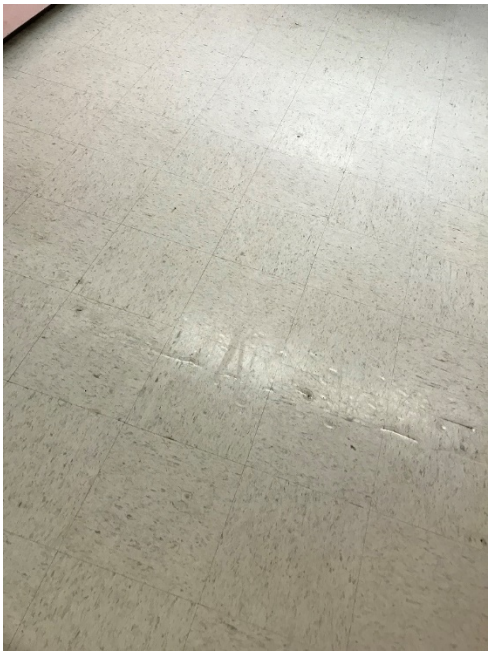


Public Toilets: Public toilet stalls do not have grab bars in compliance with ABA or even DVA criteria as PG-18-13 requires grab bars at all toilet stalls, both sides. **MINOR Repair. Recommend adding grab bars to both sides of toilet stalls as well as adjacent walls at corner units.**

ABA Clearances: The majority of the private/ public toilet rooms and rooms throughout the facility do not appear to comply with ABA clearances. **(1) Turning Space (Section 304):** 60 inch diameter turning space or "T" shaped space. **(2) Clear Floor or Ground Space (Section 305**): 30 inch by 48 inch minimum. **(3) Door Clearances (Section 404):** 18 inch latch side clearance front approach, pull side doors. As well as multiple other configurations established for hinge approach (push/pull sides), latch approach (push/pull sides), etc. **(4) Fixture Clearances (Chapter 6):** Clearance around a water closet 60 inch minimum measured perpendicular from the side wall and 56 inches minimum measured perpendicular from the rear wall. Lavatory and urinal clearance of 30 inch by 48 inch. **SIGNIFICANT Repair: Majority of the rooms throughout the facility are too small to accommodate ABA clearances as well as other space requirements (bariatric, etc.). Which would require major renovation work.**

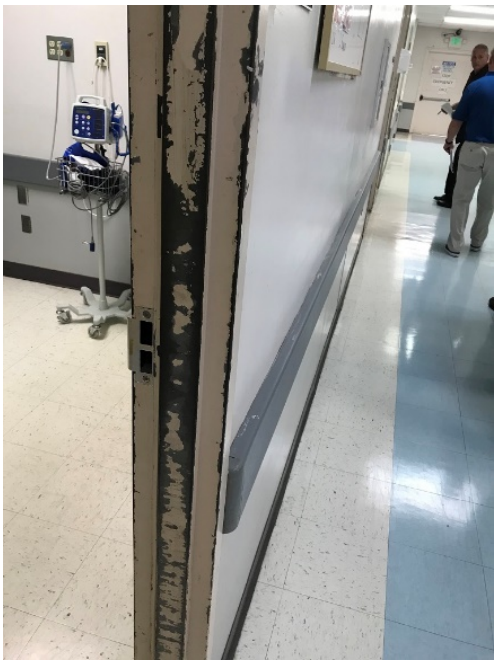
INTERIOR CONSTRUCTION & FINISHES

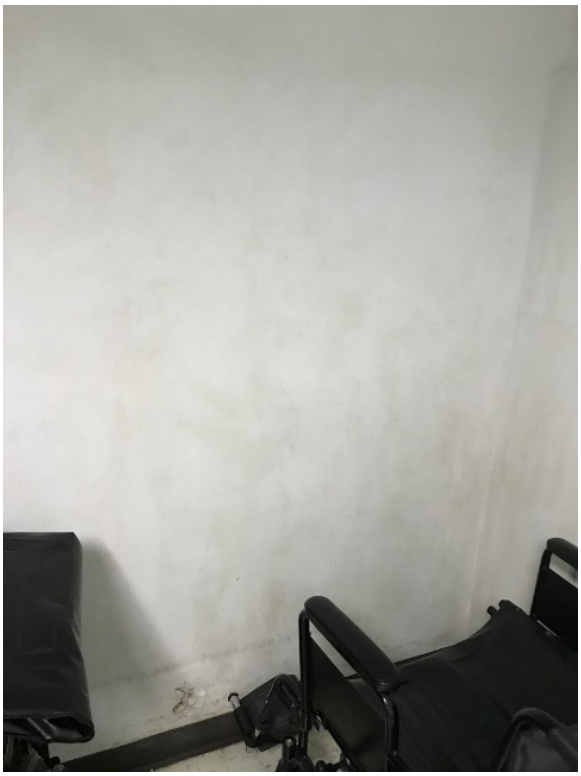
Floors: VCT or sheet vinyl are generally used throughout the facility. Condition is fair to poor but old, brittle and wearing excessively. Some areas have concrete slab divots projecting through the material. Rubber base in some areas delaminating off walls or missing. Harsh chemicals from disinfecting and housekeeping over time has severely impacted these finishes. **SIGNIFICANT Repair. Recommend complete removal of flooring and base throughout facility with the installation of new healthcare quality products. Grind high spots in concrete slab and/or use self-leveling floor compound to patch existing concrete slab prior to installation of new finishes. Ensure that the correct materials are used with respect to flexibility, durability, cleanability and maintainability with correct finish for the room's purpose.**



Painted Surfaces: Interior surfaces are in POOR condition. Walls and door frames are warn significantly providing no protective properties. As they are damaged, peeling or have mold growth. There are a number of other areas throughout the facility that have been patched which are not finished. Drywall mud has not been sanded, walls primed and not painted. Selection of interior construction and finishes must consider the need for aseptic environments. Use smooth, nonporous, seamless materials to minimize contamination and reduce housekeeping requirements. Smooth, seamless wall and floor coverings facilitate cleaning. Cabinetry should be designed and installed without gaps behind or underneath base units. At a minimum, these areas shall be designed for ease of housekeeping, with elimination of materials or surfaces that could harbor contamination and to minimize maintenance. Painted surfaces should be durable, cleanable and maintained on a continuous basis to include annual maintenance plans.
SIGNIFICANT Repair. Recommend chemically cleaning and painting all walls, doors and gypsum board ceilings throughout the facility. Areas where mold is found, perform in depth investigation as to extent, causes and treatment. Remove and replace drywall as necessary and finish.


PATIENT ROOM #1





Interior Doors: Interior doors are typically laminated, wood or metal with hollow metal frames. The majority of the frames are in FAIR to POOR condition. Numerous doors throughout the facility are damaged, chipped and/or delaminating. **MAJOR to SIGNIFICANT Repair: Recommend all interior doors throughout the facility be replaced. Frames in most of the openings could possibly be reused saving cost and impact/interruption to patient care. However, replace frames as necessary. Highly recommend the use of FRP doors with a continuous hinge due to the weight. These doors cost much more than typical solid core wood doors but are impact resistant and will probably hold up better to climate (humidity) and maintenance is very minimal as these doors will never need to be painted. They do come in a nice wood grain finish.**

Patient Care Ceilings: Majority of the ceilings in the actual treatment areas are lay-in/metal grid ceiling (2x4) system (corridors, rooms, etc.) with gypsum ceiling in soiled/clean utility, isolation ante rooms, alcoves, etc.

The overall ceiling systems are in FAIR condition. There are a lot of ceiling tiles throughout that are stained from leaks/moisture from the attic space above, buckled/warped, damaged, mold, rusted tracks to paint peeling. This may be a result in condensation from AHU's in attic space above along with the added humid/heat built up to lack of maintenance. **MAJOR Repair: Recommend replacing all of the ceiling tiles throughout the facility with more appropriate healthcare/health zone acoustical tiles or moisture resistant tiles would be a huge improvement. Most of the existing grid could possibly remain with a few replacement sections. This option is only a Band-Aid or a cosmetic repair. SIGNIFICANT Repair: Recommend removing the ceilings throughout the facility, install a horizontal barrier for separation between occupied area and mechanical space above, then install an entirely new grid and acoustical ceiling system. Which may include lights, diffusers, speakers, strobes, etc. Everything, bringing the ceilings and finishes up to code.**

Handrails: Handrails are in FAIR condition, which are required at both sides of the corridors to assist patients in healthcare facilities per FGI, ABA, DoD and DVA criteria. Some patient care areas only have handrails on one side, crash rail in place of handrails, while other areas don't have handrail at all or the handrails are old (wood), damaged and not continuous. Damaged handrails provide open areas for dust and other contaminations to harbor or collect. Handrail serve many purposes from assisting mobility, protection for the walls to aesthetics. Handrails shall be continuous, durable and cleanable. **MAJOR Repair: Recommend installing acrovyn handrails throughout facility. In high traffic areas wall protection can be installed below the handrails along with crashrails near the base, to protect the walls from rolling equipment damage. Corner guards should also be installed throughout the facility.**

MED GAS

Nitrous (N2O) med gas room #1: Located at Mechanical/CUP area, N20 manifold cylinder tanks and empty tanks stored in room do not have any type of restraints. These are prone to falling over which could result in serious injury (safety) or hazardous event (Life Safety). Also, gas storage rooms have a lot of other supplies (paint, etc.), junk, empty boxes, equipment and items stored. The only items that are allowed in these rooms are the items for which the rooms are design, function and purpose. Everything else must be removed and the rooms cleaned. This is a violation of NFPA 99, CMS and/or TJC. N20 storage room door was wide open and not secured. **MINOR Repair: Recommend installing proper racks with double restraints (top & bottom) or individual tank strap brackets (top & bottom) to hold tanks in the vertical position and to prevent them from falling over. The bottom strap is essentially for seismic events to prevent the tank from shifting outward. Also recommend removing all items that do not below or serve this rooms function. Comply with by providing a locked access door per NFPA 99, Section 11.6.5.5 which states that nitrous oxide cylinders shall be secured against unauthorized access.**

Med Gas Tanks storage: Med gas rooms do not have precautionary signage per NFPA 99, Section 11.3. Empty and full cylinders are stored within the same enclosure shall be segregated. Empty cylinder shall be marked to avoid confusion or delay if full cylinder is needed in a rapid manner. The majority of the full tanks are stored outside in bulk racks in close proximity to the building, which can be considered a hazardous situation, until they are needed for manifold install. Storage shall be planned so that they can be used in the order in which they are received from the supplier. **MINOR Repair: Recommend complying with NFPA Section 11.3 and**

Section 11.6.5 on segregation of tanks and labeling (empty and full tanks). The full containers had no identification indicating when they were delivered or order received. See NFPA Section 11.6.5.1. Recommend having a designed storage area outside away from the building that is secured for full cylinder tanks. Inventory and use as received. Also, full tanks may also need to be located within each med gas room, secured ready to be installed.

Oxygen (02) Med Gas Room: There are two rooms at Mechanical/CUP area, which the full tanks connected to the manifold have top restraint (chain) but not bottom. **MINOR Repair: Highly recommend a two strap approach as the top restraint is not always sufficient to secure the tanks. The bottom strap is essentially for seismic events to prevent the tank from shifting outward. Empty tanks have a rack system but no chains for restraint. Recommend installing chains (top & bottom) for each row and between each tank.**

NEW ADDTION/CONSTRUCTION

There is currently a new construction project at LBJ, which appears to be about 50% completed. The new addition is composed of three (3) new buildings (On-Call Suite (North), OR & Recovery Suite (Center) and Support (South)) wedged between existing hospital ward modules as well as a major renovation of interior spaces at the center of the existing facility. The entire project is composed of four (4) phases. **Phase 1:** The core and shell (structural system, exterior walls, roof, exterior doors, etc.) which has been erected. **Phase 2:** Currently underway, consist of two new Operating Room's (1 & 2), Recovery (Post-Op), Respiratory Therapy, admin and support spaces. Interior work with rough in utilities and interior partitions, along with the second floor AHU's and duct work installation. **Phase 3:** Demolition and Build-out of Operating Room's (3 & 4), Procedure Room, Pre-Op and support spaces. **Phase 4:** Demolition and Build-out of six (6) LDRP rooms and NICU (Level 2 & 3 Nursery area and 3 Infant Isolation rooms), admin and support spaces. As well as reworking radiology x-ray, ultrasound and toilet rooms.

General Observation: The design and construction appears to be in compliance with international building codes and healthcare standards. The quality of architectural construction/ workmanship and configurations and adjacencies of spaces (OR's, Recovery Bays, Nurse Station, etc.) is good with appropriate materials, straight/plumb walls, door sizes. However, with a few exceptions: The integration and separation requirements between new construction and existing, ABA compliance for single occupancy toilet rooms, mechanical platform exterior door accessibility and interim life safety measures and protection from phase to phase.

Building Fire Separation: The new OR/Recovery addition is constructed within the exterior open courtyards, between two original linear building modules. The main center section ties and integrates into the existing facility while the two flanked additions connect to the existing

corridors. The two building at each end has a 5 to 6 feet separation/areaway between the new exterior wall and existing. This separation/areaway is adjacent to existing patient rooms which require windows per code. The exterior walls of the new facility does not appear to be fire-resistant assemblies or constructed of non-combustible material (CMU, concrete, etc.). The new exterior wall composition (5/8 inch interior gyp, 6 inch metal studs, 3/4 or 1/2 inch exterior wood sheathing, vapor barrier, another layer of 3/4 or 1/2 inch exterior sheathing then board & batten siding) or exterior wall types (5.651/5.653 NR) are not listed on drawing AG701 Wall Schedule. The **International Building Code (IBC) Table 602, DoD UFC 3-600-01 and DVA Fire Protection Design Manual** establishes the minimum requirements to include any fire-resistance ratings for both load-bearing and nonload-bearing exterior walls based on fire separation distance. The required ratings are based on the fuel load, probable fire intensity of the various occupancy classifications and the physical separation between the exterior wall and the line used to determine fire separation distance. Table 602: Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance. Walls (ALL) less than 5 feet separation for occupancy group "I" or "B" require a 1 hour rated assembly. Walls (Others) less than or equal to 5 feet but less than 10 feet for Occupancy Group "I" or 'B" requires a minimum of 1 hour rated assemblies. The other issue is Opening Requirements found in **IBC Table 705.8**:
SIGNIFICANT Issue: Consult with AE/DOR on project to validate exterior wall construction and rating properties of materials. Changing a couple of the exterior wall components could potentially achieve the 1 hour rated construction required.

Alternative: The VA Fire Protection Design Manual, Section 2.2 (1) states that there are no requirements for separation or openings between VA buildings when both (all) buildings are fully sprinkler protected. Buildings that are sprinkler protected throughout are not considered to be an exposure hazard in accordance with NFPA 80A. However, not sure if this facility falls under DVA standards and/or criteria. This approach could be used to resolve this concern.

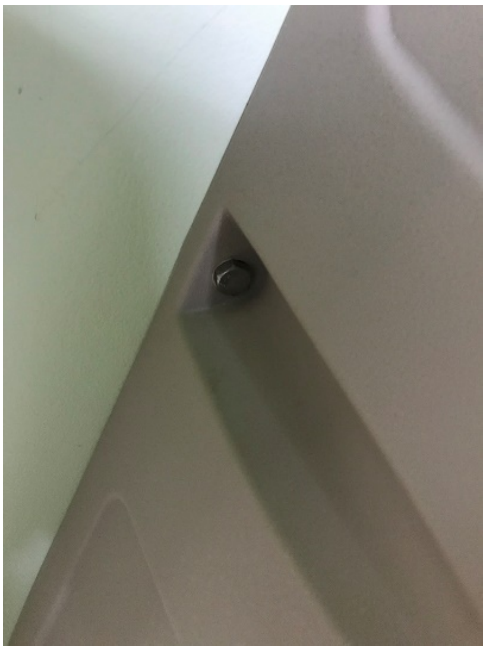
ABA Non-Compliance: A lot of the single occupancy toilet rooms seem to have conflicts with ABA door maneuvering clearances per Section 404.2 (pull latch side as well and overlap with fixtures). Manual doors and doorways and manual gates INTENDED FOR USER PASSAGE shall comply with 404.2.
Rooms appear to comply with ABA Section 603.3 Exception 2. Where the toilet room or bathing rooms for individual use and a clear floor space complying with 305.3 is provided within the room beyond the arc of the door swing, doors shall be permitted to swing into the clear floor space or clearance required for any fixture. Section 305.3. The clear floor or ground space shall be 30 inches minimum by 48 inches minimum. The following is a list of toilet rooms in question: ISO TLT 121, 145, 167b, 168b, 169b, 170b, 176b, 177 & 191b, TLT 003, TLT/DRESS 112 & 114, STF TLT 006, 148, 149, 152, 153 & 165, SHWR 50 & 154.
SIGNIFICANT Issue: Consult with AE/DOR on project to validate ABA compliance for new project design and construction. This may significantly impact room design and adjacent spaces.

BEHAVIROAL HEALTH/ MENTAL HEALTH BUILDING

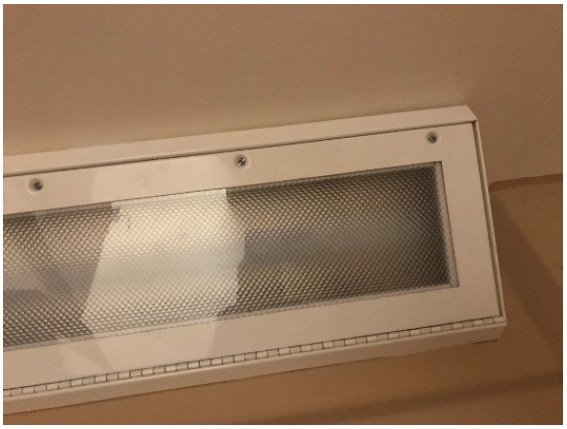
Free standing building which was constructed in 2016. Facility has both Out-Patient and In-Patient unit which has 10 private patient rooms and one seclusion room. Particularly in Behavioral Health care, it is essential to design a safe, functional, therapeutic, and aesthetically pleasing, non-institutional environment that "normalizes life" for patients, staff, and visitors. There are three "areas of concern" that must be considered when designing a BH environment: (1) Patient Safety – reducing risks for suicide/self-harm or harm to other patients; (2) Staff

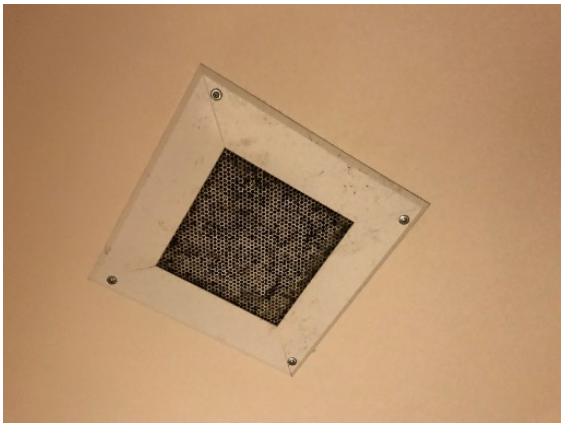
Safety – reducing risks or opportunities for patients to harm attending staff; and (3) Structural Resistance – reducing damage to facilities and preventing an increase in maintenance costs.

BH Tamperproof Fasteners – Patient Rooms: The furniture in BH patient bedrooms shall be minimized, heavily weighted or fixed to the floor, be non-breakable and contain no compartments for hiding. Mounting and fastening of equipment to avoid ligature risks or detachment from the wall. In-Patient room bed and wall units both have exposed hex head bolts or nuts. There are also Philip head screws used to fasten drain cap, shower tile floor transition cover and door stop. These fastening devices used are not anti-ligature and not compliant with BH standards. All fasteners should be tamper resistant or tamper proof type. **MINOR Repair: Recommend changing fasteners to meet BH standards. Minor item that can be done immediately with minimal cost.**

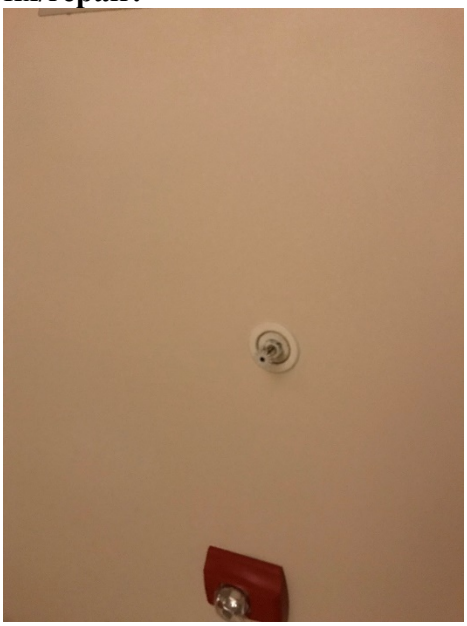


BH Tamperproof Fasteners - Seclusion Room: Seclusion Room has exposed Philip head screws used to fasten ceiling mounted diffuser grille and lights. All fasteners should be tamper resistant or tamper proof type. **MINOR Repair: Recommend changing fasteners to meet BH standards. Minor item that can be done immediately with minimal cost.**



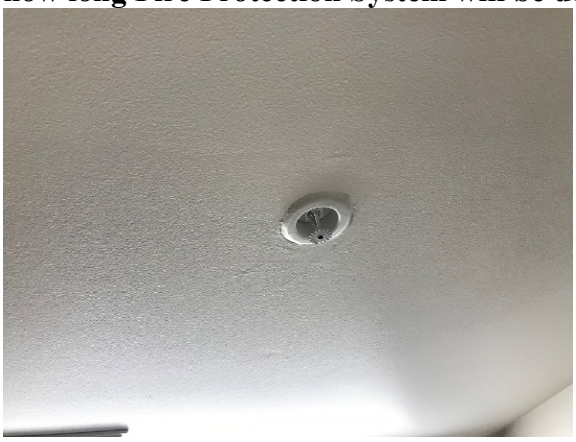


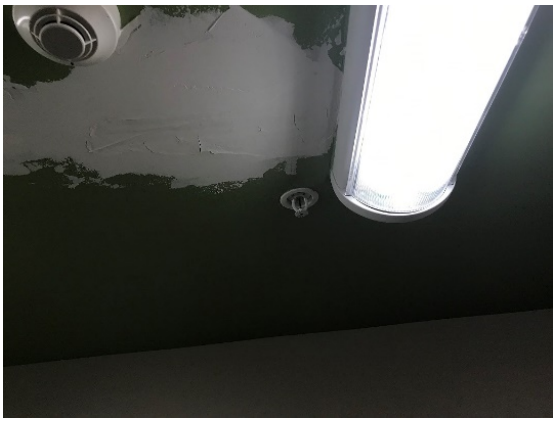
BH Sprinkler Heads - Seclusion Room: Sprinkler head is a standard (quick response) type which projects below the ceiling. Every effort shall be made to eliminate ligature points, sharp edges, and the potential to make weapons out of objects or materials. This is considered a ligature point which a patient can try to harm themselves or can break the filament causing the sprinkler to activate. **MINOR Repair: Recommend changing to a tamper resistant or tamper proof sprinkler head similar to in-patient private rooms. May need LS ILSM and Risk assessment in place depending on how long Fire Protection System will be down to fix/repair.**



BH Sprinkler Heads - In-Patient Area: Within the main open area of the In-Patient ward and exam room. Sprinkler heads are standard (quick response) type which project below the ceiling. Every effort shall be made to eliminate ligature points, sharp edges, and the potential to make weapons out of objects or materials. This is considered a ligature point which a patient can try to harm themselves or can break the filament causing the sprinkler to activate. **MINOR Repair:**

Recommend changing to a tamper resistant or tamper proof sprinkler head similar to in-patient private rooms. May need LS ILSM and Risk assessment in place depending on how long Fire Protection System will be down to fix/repair.





BH Fire Alarm Pull Station: There is a fire alarm pull station located at the front entry vestibule (sally port area) which is exposed and vulnerable to vandalism or even being activated by a patient upon entry. **MINOR Repair: Recommend adding a clear lockable protective cover/case over pull station with sloped top, anti-ligature style, or consider alternative device or relocation of pull station.**

BH Patient Room Doors – Sloped Top/ Collapsible: Doors are solid core wood doors that utilize a continuous hinge. Top of door is straight, flat and solid. Alternative door options for BH facilities are sloped top style or doors that have a top section that gives way/ collapses if weight is applied. However, this in-patient unit is monitored by staff and security guards 24 hours a day 7 days a week, therefore the doors are in compliance. **No Action**

BH Patient Room Doors – Swing: Patient room doors currently swing into each private room, they all have a continuous hinge and exposed door closer. For inpatient and outpatient settings, when solid doors are installed, they should be outward swinging or utilize double acting continuous hinges. A patient can barricade themselves inside preventing the door to open or if something happens to a patient, where they pass out or are un-conscious, they could fall against the door making it very difficult to push the door open. Pivot hinges and double swinging doors can still provide security necessary but allows staff in an emergency to swing the door in the opposite direction (out) for access. **MAJOR Repair: Recommend changing the door frames and doors to swing outward per BH standard requirements. Alternative option is to use frames with no-stops with pivot hinges to allow the door to swing in both directions. Hardware will need to be coordinated with his change.**

BH Med Gas – Patient Rooms: Facility has medical gases (Oxygen, Med Air, Vac) piped to each MH in-patient private bedroom. Med Gas outlets are NOT normally provided in BH/MH facilities. Medical gases shall only be permitted in locations per NFPA 99. Therefore, not sure of the reason and/or why it has been installed at these locations. However, the existing devices appear to be anti-ligature, tamperproof and the systems are not used/ turned off. Therefore, these do not pose any harm to the patients. **NO Action**

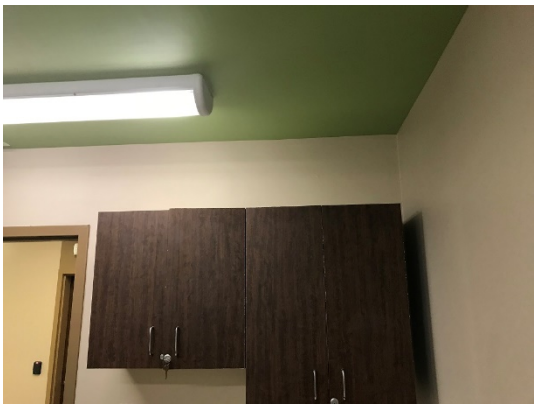
BH Nurse Call – Patient Rooms: Nurse Call stations are installed in each BH/MH in-patient private bedroom. Nurse call outlets are not required in psychiatric units, except for psychiatric seclusion ante/exam rooms where staff emergency call stations shall be provided, per NFPA 99 (Section 7.3.3.1.7). However, the existing Nurse Call pull stations appear to be anti-ligature and the systems have been deactivated/turned off/disabled. **NO Action**

BH Nurse Station - Security: There is currently no physical barrier between the nurse station and large open BH dining/ gathering open area. Patients could potentially grab a computer monitor, keyboard, phone, chairs which all could be used as weapons. The areas is also not secured, open access points which patients could potentially access this nurse station without consent. Located within this nurse station are alarm panels as well as security monitor which shows images of each private bedroom (Privacy/HIPPAA concern). BH standards should provide staff areas that promote team collaboration and HIPAA compliance while maintaining visibility and connection between the care team and patients. Design staff areas to provide an area of refuge (not used in the context of Life Safety Codes) for staff safety. Typically, nurse stations are designed with glass enclosures from top of transaction (42 inch high counter) up to ceiling/soffit above, enclosing this area with door access. However, this in-patient unit is monitored by staff and security guards 24 hours a day 7 days a week and patients and visitors are escorted. **No Action**

BH Windows and Glazing: Large glass windows at day room are currently tempered glass. When tempered glass breaks it shatters into very small shared pieces. Laminated glazing should be used in all patient accessible areas inclusive of interior window surfaces, and on the interior face of exterior windows in all inpatient BH Units. The thickness of the glazing will depend on the size of the opening. Typically, 7/16 inch is used in most applications. Laminated glazing is the preferred alternative to glass-clad polycarbonate glazing because it is more durable, not easily scratched and is less expensive. **MAJOR Repair: Recommend providing laminated glass per BH Standards.**

BH In-Patient Exam Room: Millwork or wall cabinets in exam room do not have either a closure panel to ceiling or sloped top. BH in-patient is considered healthcare which requires closure panels or sloped tops at wall cabinets. This would also be a patient safety

concern/consideration for BH. **MINOR Repair: Recommend providing a sloped top at wall cabinets.**



BH Exterior Light: Above the exterior mechanical room door, the light fixture is missing with the recessed junction box exposed to weather and tampering. **MINOR Repair: Recommend providing new anti-ligature light fixture or provide weather proof cover plate if light is not required at this location.**

BH Exterior Mechanical Room Door: Exterior door is a louver type which the horizontal louvers are busted or broken. The louver slats can be used as a weapon and door is not secured. Patient could gain access into room which contains a water heater, fire protection riser and other utilities. Door must be secured within In-Patient boundary. **MINOR Repair: Recommend replacing door and providing lock for security.**

BH Exterior Hose Bibb: There are a couple of hose bibs projecting 4 to 6 inches out from the exterior wall, located in the outdoor space for patients. This is considered a ligature point which a patient can try to harm themselves or can vandalize or break, causing serious flooding and building issues. **MINOR Repair: Recommend providing a lockable protective cover to be installed over hose bib, with a sloped top, anti-ligature.**

BH Outdoor Patient Area - Scaffolding: There is a scaffold set up in the outdoor secured patient area for maintenance access to the elevated attic doors. This equipment is open to patients and not secured. Careful consideration of the location and design of this outdoor space to reduce the risk of elopement, climbing, jumping, impalement and equipment placement are essential to operations and protection of patients. **MINOR Repair: It was noted that patients have tried to climb and/or escape on this equipment. Recommend removing this equipment entirely from outdoor patient area. If maintenance is necessary, the area can be blocked off and a ladder can be used for access. Otherwise, recommend creating a project to install a permanent ladder that as a security cage that is lockable and cannot be climbed from the exterior.**

BH Exterior Security Fence: The exterior security fence at the front of the building has an excessive gap at the bottom, approximately 12 to 14 inches, between the bottom horizontal railing and concrete. A patient has escaped thru this area previously. **MINOR Repair: Recommend providing a closure panel at the bottom to prevent elopements. Approximately 50 to 60 linear feet of fence.**

BH Out-Patient Toilet Shower: There is a toilet/ shower area for out-patients near the front entrance and waiting. This areas is separated from the adjacent corridor/waiting or clinic space area by only a shower curtain. Not much privacy. Both males and females use the toilet and when necessary will be required to shower. Privacy is of concern. **MAJOR Repair: Recommend providing a wall and door at this location. Fixtures and devices may want to be upgraded to anti-ligature.**

Appendix C:

Electrical Trip Report

Introduction

The USACE MX electrical engineer visited the site for 3 days to assess the condition of the existing electrical systems. The condition of the different portions of the facility's electrical systems for the hospital varies greatly from one area to another. Some significant sections of the power system have been upgraded in recent years, some are much older, and some are being modified presently. Several factors affect the reliability, safety, and efficiency of the systems, including age of equipment and wiring, the aggressive climate of American Samoa, poor building envelope in areas housing equipment, poor workmanship, inadequate maintenance, and lack of space.

This report will break down its description into the following parts, generally following the changes in system condition:

- Explanation of Old System and New System
    - Old System – Total backup, except for one chiller, but no code-compliant Essential Electrical System (EES)
    - New System – Total backup, with Non-Essential and Essential Electrical System Switchboards and Distribution between main electrical rooms and the wards/other areas
- Branch circuiting in wards/other areas
- Lighting
- Telecommunications
- Electrical Recommendations for Renovation or Replacement Project

Explanation of Old System and New System

A project – referred to herein as the "new project" that was constructed several years ago (drawings dated 2007) provided what was supposed to be an all-new upgraded utility service, standby power system, and distribution system. It included the following:

- Primary feeders from the utility (ASPA) into a pad-mounted primary switch
- Two Service transformers

- Two Service switchboards and Emergency switchboard
- Non-Essential and Essential switchboards

This new system was intended to replace the existing, or "Old" system, which consisted of the following:

- Primary feeders from the utility (ASPA) into a pad-mounted primary switch
- Two Service transformers
- A service-rated transfer switchboard and a service-rated main breaker for a single Chiller.
- A main switchboard that fed everything except Chiller #2.

From observation of the plans and the present conditions, and from discussions with the engineering/maintenance staff of the hospital, there seem to have been ***two significant problems*** with the project:

1) The two diesel generators that would accompany the new Emergency switchboard were labeled "FUTURE" and not provided by the project. The "Old" 900kW generator was to be connected to the new Emergency gear, and a 500kW temporary generator would also be connected to the new Emergency gear.
2) Despite the Single Line Diagram showing the entire system in its final state, notation was put on the plan drawings that none of the "Old" equipment was to be de-energized and demolished by the project. The "Old" system was to be "selectively demolished in phases at the sole discretion of and by the owner." This also prevented the "Old" 900kW generator from being connected to the new Emergency gear until "all hospital loads have been transferred onto the new distribution system."

The result of these two problematic decisions is that both systems are still energized, and none of the "Old" equipment has been demolished. There are now two pad mounted switches outside the generator room – one feeding the two old transformers in the generator room and the former main electrical room, the other feeding the two new transformers. **The hospital now has two independent systems, each backed up by one generator.**

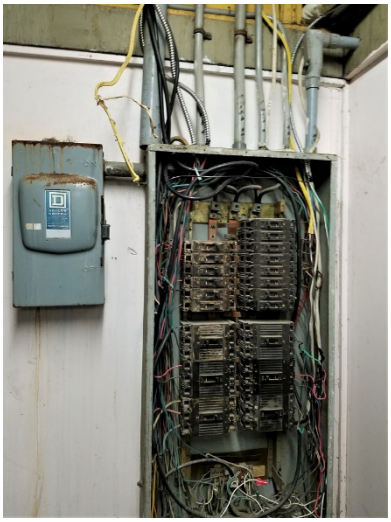
<u>The Old System</u>

The Old System was essentially a single 750kVA transformer that fed a transfer switch, which was also backed up by a 900kW diesel generator. The transfer switch fed over to a main switchboard in the old main electrical room that served the entire hospital. A second service transformer, rated 300kVA, was added later to power chillers. The main transformer, the service-rated transfer switch, and the generator still reside in the generator room, but are now accompanied by the new generator switchboard provided by the new project (see pictures below). The transformer limits access to the new generator switchboard, and one of the busways exiting the new switchboard is routed very close to the transformer.

Old Main Transformer and Old Service Transfer Board, with New Generator Switchboard Behind

The old main transformer, transfer switch, and main switchboard were all supposed to be demolished by the new project, but cannot be de-energized until the remaining load on them has been transferred to the new system. Observation of the old main electrical room confirmed that almost everything in the room is far past its reasonable lifespan. Countless code violations exist, and it is of major concern that this equipment still powers a great portion of the hospital, given its poor condition (see pictures below).

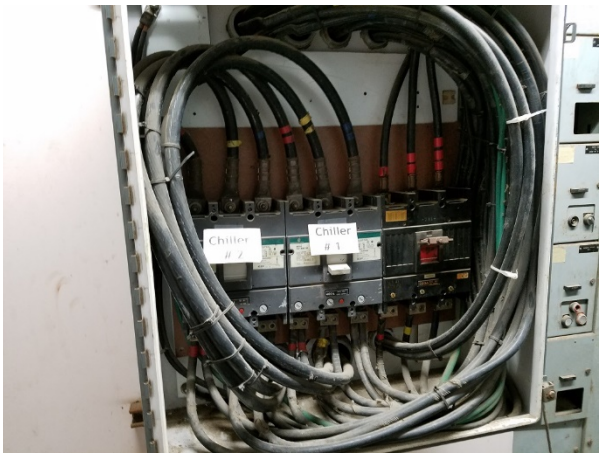


Old Main Switchboard and Panelboard in Old Main Electrical Room

The second service transformer serving the old system is a 300kVA unit that sits in the old main electrical room. It serves a stanchion-mounted main breaker that feeds only Chiller #2. The configuration has many code violations, and many others exist in this room. The feeder from the main breaker consists of two sets of conductors that terminate on two different breakers for Chiller #1 (since demolished) and Chiller #2 (still in use). These breakers sit in a dangerous open enclosure that has a third breaker fed by the old main switchboard, which also resides in this room (see pictures below).

Service Main #2 on Old System



Box Containing Breakers for Chillers 1/2 (demo'd)

As stated earlier, the old 900kW diesel generator provided standby power for the entire hospital by feeding the Emergency side of the service-rated transfer switch before the new system was added, and still provides it for a great portion of the facility. This generator has held up well, no doubt due in part to it being located indoors. One problem with that configuration, however, is that the Essential Electrical System that is required by code is not present. The Life Safety, Critical, and Equipment Branches all have different transfer times and require separation from each other and from Non-Essential wiring, among other requirements. This is well-known at the hospital, as the new system has provided for the EES; but the slow transition to that new system allows sub-standard, non-code-compliant wiring to remain in many portions of the hospital. A second problem with the original and present configuration of the old system is that there are single points of failure throughout the system. If any of these parts of the system failed, the entire part of the hospital powered by the old system would see a loss of power that could have catastrophic consequences.

The New System

The "new project" provided two new 1500 kVA 120/208V, 3-phase, 4-wire service transformers in a room with direct access from the exterior and interior, but the space was not ventilated; the temperature is very high, and the moisture has begun to break down the painted surface of the transformers (see pictures below).

The “new project” provided two new service-entrance switchboards in a new main electrical room in the existing Central Utility Plant (CUP) area between the old main electrical room and the generator room. Switchboard “MPA” was provided to feed the Essential Branch Switchboards - Life Safety, Critical, and Equipment branches. Switchboard “MPB” was provided to feed the Non-Essential switchboard, the new CUP Switchboard “CP-1,” and two future CUP switchboards. There are some problems with these two switchboards that need to be addressed as soon as possible.

- The ATS controller for the Life Safety ATS in SWBD “MPA” is not functioning, though it appears to be energized.
- The Emergency Tie Breaker in “MPA” is neither indicated as Open or Closed (supposed to be normally closed).
- The ATS controller for the ATS for CP-1 in SWBD “MPB” is switched into the Service Disconnected position, and the proper lamp is illuminated, but the screen still shows voltages of 118, 207, and 131.

New Service Transformers Already Showing Effects of High Humidity and Lack of Ventilation

The “new project” provided new Non-Essential and Essential distribution switchboards in the new main electrical room:

- Non-Essential Switchboard “NEB”
- Life Safety Switchboard “LSB”
- Critical Switchboard “CB”
- Equipment Switchboard “EB”

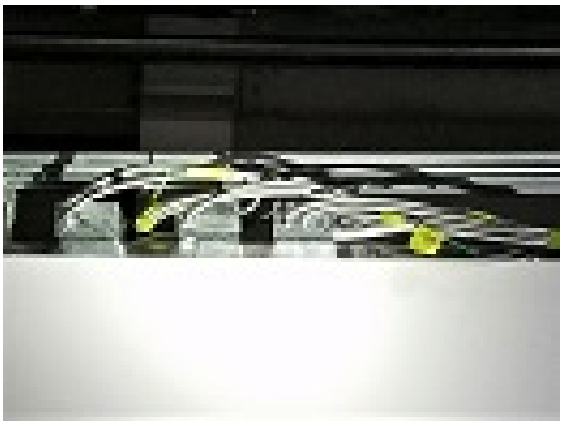
The “new project” provided Distribution Panels four locations in the East-West running corridor that spans from the Morgue to the parking lot, though the center of the hospital.. All areas of the hospital now have access to the Non-Essential and Essential Electrical Systems – when, and if, their ward or area is upgraded and provided with new branch circuiting. To date, the only areas that have been placed on the new system are the Dialysis, Mental Health, and Maternity wards. There is, however, a large ongoing construction project providing a new 2-story addition that will connect to the new system as well.

The “new project” provided a new Emergency Switchboard “EP” in the old generator room behind the old service transformer. This board appears to have been planned to be a paralleling switchgear for two new generators; but the final plans showed the two paralleled generators as “FUTURE,” and the board was drawn to show it connecting to the old 900kW generator and a temporary 500kW rental generator. However, since the old system will not be energized and dismantled until all loads are transferred to the new system, the 900kW generator has not yet been available to connect to this board. So the new 4000A Emergency Switchboard “EP” that feeds both Switchboards “MPA” and “MPB” is only backed up by a 600kW diesel generator. This “temporary” generator was placed outside of the generator room, subjected to the elements in a standard steel exterior enclosure. It has not aged well (see pictures below). Similarly to the old standby power system, the problem with the configuration of this system is that there are single points of failure – mainly a single generator in poor condition that is not sized for the growing load of the new system as new projects transfer load to it. **Perhaps the single greatest concern, electrically, is that this hospital does not have anywhere close to a proper, robust electrical system with a redundant normal power configuration tied to a redundant emergency power configuration.**


Temporary Diesel Generator that Supports the New System, Showing Effects of the Elements

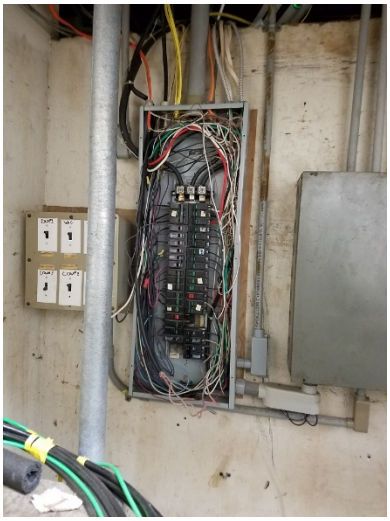
Branch circuiting in wards/other areas

Over the 50+ year life of the facility, many projects have modified to the branch circuit wiring systems (from panelboards downstream to equipment, lighting, and receptacles) in various areas within the facility. In most areas, however, the branch wiring and the equipment or outlets it serves is in poor condition and/or does not meet code or criteria. It is safe to say that, aside from the Dialysis, Maternity, and Mental Health areas that have been recently renovated or the areas that will be renovated by the ongoing project, the entire branch circuiting system needs to be replaced, including new devices throughout. There are even violations of both DoD and VA criteria in the ongoing project, though far fewer. There are far too many code violations to be itemized in this report, but a few pictures of common violations are shown below.

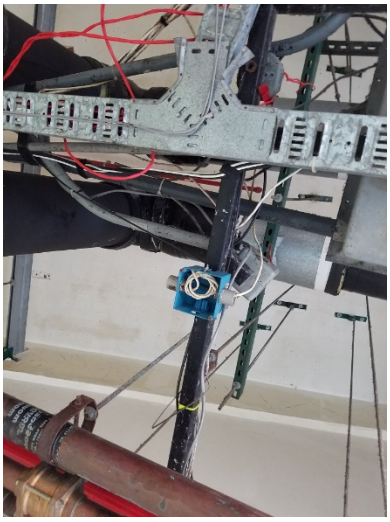



Metal-clad cable used extensively in ongoing project, not allowed by DoD or VA criteria

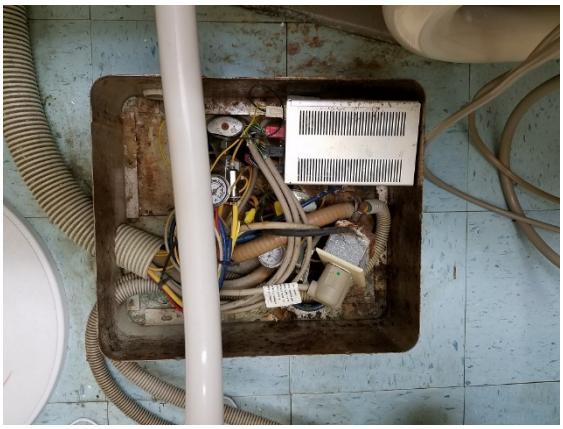
Typical open equipment with exposed wiring



Typical open equipment with exposed wiring and use of PVC conduit indoors




Typical corridor wiring and exposed wiring in a shower area




Utility services to base of a dental chair and starter sitting on floor in kitchen

Lighting

The age of the existing lighting fixtures vary similarly to other aspects of the electrical installation, but the present lighting source is almost completely fluorescent. The ongoing project is providing LED fixtures and automatic controls, which will greatly reduce energy usage, improve illumination levels, reduce fixture maintenance, and significantly reduce heat rejected to the spaces.

Telecommunications

A renovation within the last 10 years provided a new main Telephone Rack and main Data Rack in an air-conditioned IT room adjacent to the Fire Alarm room near the Lobby and Waiting Area. The backbone appears to be multimode fiber for the telephone system and single-mode fiber for the data system. Similarly to the branch circuit power wiring, the horizontal voice and data cabling from the telephone and data racks out to the devices needs to be replaced (along with new devices) in most areas besides the Dialysis, Maternity, and Mental Health areas that have been recently renovated and the Phase 2, 3, and 4 areas that will be renovated by the ongoing project. The telephone system cabling and data system cabling wire management is very poor. Old abandoned cables remain throughout the hospital, and the new and abandoned cables are routed without proper support or orderly grouping. There is a cable tray system only down the main corridors, but the number of cables greatly exceeds the tray system's capacity, and many of them are routed outside of the tray.

Electrical Recommendations for a Renovation Project OR a Phased Replacement Project

- Provide a new Emergency Power Supply System (EPSS), with two or more paralleled diesel engine generator sets of equal rating. The system shall be sized for 100 percent of the design load of the facility (non-essential and essential) plus 20 percent. Each generator shall be sized with the capacity to serve all non-sheddable loads (life safety and critical branches, medical air compressor, surgical vacuum pump, fire pump and associated loads, generator fuel pump, and other generator accessories) plus 20 percent.
- The Emergency Generator room shall be air-conditioned on a dedicated zone and well-insulated, with intake louvers and radiator fan exhaust louvers. Intake louvers shall be sized to have an airflow rate sufficiently low to prevent pulling rain into the room. The generator day tank(s) and fuel pumps shall be located in this room as well.
- If pad mounted service transformers are specified, they shall be either mounted outside of the building, or the transformer room shall be mechanically ventilated with thermostat.
- All electrical rooms shall be air-conditioned with dedicated thermostat.
- Existing equipment not to be re-used shall be disconnected and removed from the site, such as pad-mounted primary switches and associated conduits and temporary generator sets and associated fuel tanks, piping, and conduits.
- If the existing 120/208V, 3-phase, 4-wire service switchboards and main switchboards for Non-Essential, Life Safety, Critical, and Equipment switchboards are to be re-used, repairs shall be made to address the problems described herein, and the systems shall be fully commissioned. The commissioning shall include Integrated

Systems Testing for the Non-Essential and Essential Electrical Systems, the Emergency Power Supply System, the fire alarm and fire protection systems, and any mechanical system that supports the electrical and EPSS systems.

- If the existing 120/208V, 3-phase, 4-wire service switchboards and main switchboards for Non-Essential, Life Safety, Critical, and Equipment switchboards are NOT to be re-used, the new equipment provided to replace them shall be rated 277/480V, 3-phase, 4-wire.
- Provide new generator switchgear.
- Prohibit the use of metal-clad cable (MC Cable), which is not allowed by the DoD or VA criteria. All conductors shall be run in raceways.

Appendix D:

Fire Protection Trip Report

Fire Alarm System:

The current fire alarm system is a Notifier 2020 (circa 2000) with a master panel in the communications room and no remote panel operable. The system is capable of producing a general alarm throughout the hospital complex upon activation. There are no visual strobes.

Upon inspection, there were numerous troubles indicated, yet the system was operable. The system was under repair with technicians on-site working on the sprinkler system testing. The age of the panel and the scarce availability of repair parts promote replacement of the existing facility.

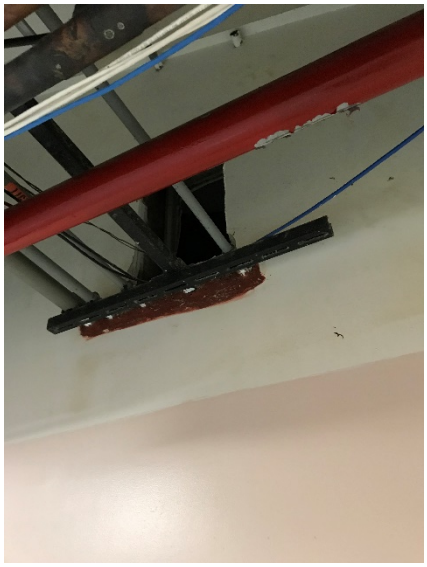
Recommendation: Immediate. Replace the current fire alarm system and all components with a sustainable system in compliance with NFPA 72, Fire Alarm Code.

Fire Rating of Existing Structures:

The current buildings that constitute the LBJ TMC campus are primarily 1-story structures with exterior construction consistent of maintaining a non-combustible fire rating. The roof is constructed of redwood under siding with wood framing.

Typical Roof Construction with Sprinkler

The exterior walls are concrete with redwood infill. Since the wood structure is observable on the exterior walls, the hospital complex is therefore classified as a Type V (000) combustible facility and cannot exceed 1-story in its current state with completed sprinkler coverage (NFPA 101: 19.1.6). Interior walls between building wards are constructed of a minimum (2) 5/8" sheet gypsum wallboard and are consistent with 1-hour smoke barriers. Corridor walls extend to the roofline and are subject to numerous unsealed penetrations.



Unsealed gap above conduit, Corridor outside of the Emergency Room Building

Multiple penetrations exist throughout the interior corridors that require sealant to ensure compliance with NFPA 101-2012, Chapter 19.3.6 (Corridor Construction).

Recommendation: Immediate. Ensure corridor penetrations are properly sealed to ensure corridor walls are smoketight. Ensure sealant systems are in compliance with Underwriters Laboratories Specifications.

Fire Suppression Systems:

The LBJ TMC Campus is provided with sprinkler protection throughout the 150,000 SF complex, with the exception of the Operating Room and Labor/Delivery Suite that have not been renovated since initial construction in 1968. Sprinkler risers are provided on the exterior of each building and are in compliance with NFPA 13, Sprinkler Code. The average residual water pressure is 50 psi, acceptable for a 1-story network of structures.

Existing Sprinkler Riser, Nutrition Care Building

Fire Pumps were noted near the water tank. It appeared that these were abandoned fire pumps that have been replaced with the installation of the building risers. The water distribution loop is a shared domestic/fire sprinkler system. If fire pumps are no longer required, as indicated by adequate pressure, these should be removed.

Recommendation. Immediate. Label fire pumps as not in use. If pumps are no longer required, remove.

Fire Pumps with Breaker Disconnected

Building / Fire Zone Separations:

It is important to note that the current facility consists of approximately 20 structures in a campus setting. Based on my assessment of the condition of patients throughout the facility, the campus was surveyed as a healthcare occupancy per the definition of NFPA 101, Life Safety and as such must comply with the requirements of Chapters 18 and 19.

A plan for horizontal evacuation must be developed by the facility to ensure the safe movement of patients in the event of a fire emergency. There are no smoke compartments within the individual buildings. Evacuation must be accomplished by horizontal transport from one building to another.

Exterior doors from the buildings were clearly marked and the staff had done a good job of keeping exits clear in the inpatient wards.

Exit Door from the Surgical Inpatient Ward in compliance with NFPA 101

An area of concern was storage in the Dialysis Building, where rear exterior exits were obstructed.

Rear of Dialysis Clinic with Combustible Storage in Corridor

The facility must ensure updated life safety drawings, indicating all smoke barriers and means of egress from the structures. This must also be educated with staff and vendors to ensure sustainment of the smoke barriers.

Recommendation. Immediate. Remove storage obstructions from egress corridors to ensure compliance with minimum corridor widths in accordance with NFPA 101, Life Safety Code.

Central Utility Plant:

There was no complete firewall separation of the central utility plant area and the adjacent laundry facility and other inpatient care areas. This lack of protection will result in catastrophic damage and loss of life in the event of fire in that area.

Lack of Firewall Separation in Central Utility Plant

Despite sprinkler protection, there is a large risk associated with smoke propagation throughout the facility as a result of unsealed penetrations and incomplete fire barriers.

Recommendation. Immediate, major repair required. Upgrade fire barriers around the central utility plant to provide a minimum 2-hour fire rated separation from the remainder of the facility to mitigate potential fire hazard and to ensure compliance with NFPA 101.

Also there was increased evidence of smoking around diesel storage areas and combustible storage / trash which could be the catalyst for a large fire event.

Area near Diesel Storage where Cigarette Butts were discarded

Fire Extinguisher Inspections:

For the most part, fire extinguishers were being inspected in compliance with NFPA 10, Standard for Fire Extinguishers. However, there were extinguishers in the central utility plant and in construction areas not properly inspected or mounted.

Unsecured extinguisher in central plant, not inspected on a 30-day cycle.

Immediate. Ensure all fire extinguishers are inspected on a monthly basis in accordance with NFPA 10.

Interim Life Safety Measures (ILSM) Matrix:

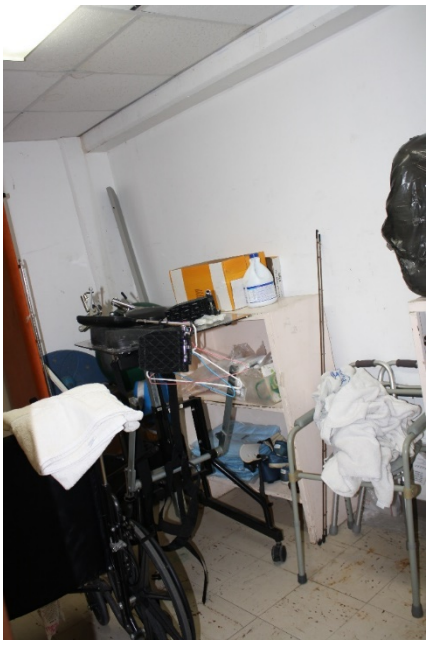
It is important for the facility to develop a decision matrix to enact additional measures of life safety. Upon the inspection there was no evidence of additional measures to protect patients in the event of a fire emergency. Listed below are sample ILSMs that can assist the facility in ensuring enhanced protection around construction areas and areas of known fire safety deficiencies.

- Additional fire drills (2 per shift) per quarter throughout the hospital.
- Daily inspection of all construction areas to ensure exits are not obstructed
- Additional fire extinguishers located throughout the construction areas
- When systems are decommissioned for periods of more than 4 hours, ensure the facility enacts a fire watch in affected areas.
- Prohibition of the storage of combustible materials

Appendix E:

Healthcare Delivery Trip Observations

Physical Therapy/Rehabilitation: This department provides evaluation, diagnosis, treatment, and rehabilitation for patients who have sustained trauma and/or illness, such as orthopedic injuries/surgeries and patients who have undergone an amputation. The professional staff employ multiple interventions to assist patients in rehabilitation, including strengthening activities, pre-prosthetic training, and gait training as examples. The lack of physical space and equipment to support this mission is significant.

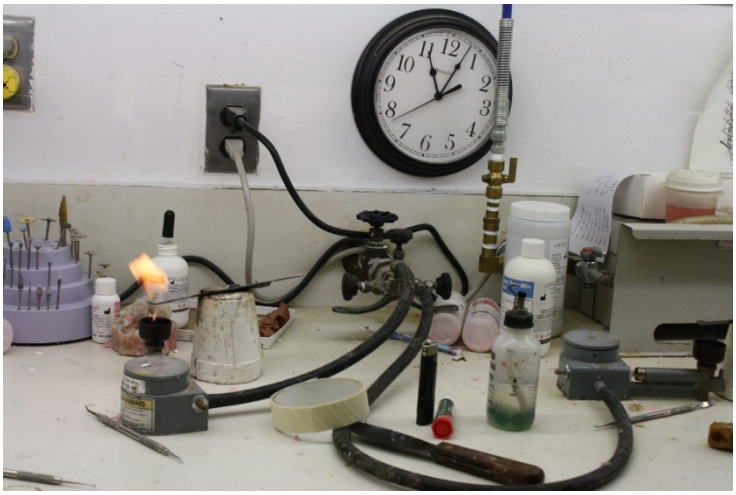


Physical Therapy Device/Equipment Storage

Physical Therapy Workroom

Dental Clinic/Prosthodontics Lab: The dental prosthodontics lab supports pouring impressions, model reduction and work space for minor appliance adjustments and repairs. It is equipped and used for the construction and molding of dental prosthetics and ceramics and requires special lighting and environmental controls. The clinic and lab are undersized for the current workload.

Flammable gas cylinder not secured to structure IAW OSHA Standard 1926; valve protection cap not in place, stored in same room as heating sources. Fixed furniture (broken counters & cabinets) and waste collection is not in compliance with infection control practices. Lacking storage for hazardous materials and chemicals. Insufficient space to meet ABA/ADA requirements.



Dental Work space has inadequate amount of power outlets and gas outlets. Gas outlet shut-off valves do not appear to be placed IAW NFPA 99 requirements. Work space is missing dust evacuation as required per UFC 4-510-01.

Evacuation hood not working impacting NFPA 101 and safety guidelines on operating open flames in a work space. Space does not appear to meet ABA requirements. Increased risk of personal injury and damage to prosthesis as a result of inadequate work space i.e. equipment and personnel are too close together and work is being done out of drawers.

Inpatient Units

Inpatient Unit – Three Patient Room - Research supports that providing single patient rooms contributes to many factors impacting morbidly, mortality, length of stay and health outcomes. Family member support/care giver presence on the inpatient units exacerbates space limitations in these rooms.

Intensive Care Unit: This open-bay unit offers limited visual or auditory privacy for patient or family members. One private patient room does not have Isolation/negative pressure capability.

Morgue/Autopsy: Space for body storage is significantly limited by over 50%; while body preparation and viewing spaces are absent from the morgue.

Morgue – Remains pending pick up for burial

Autopsy table surrounded by corpses on gurneys.

Morgue Refrigerators (capacity 6 corpses); corpse on gurney as the refrigerator is full.

Pharmacy: The pharmacy lacks space for compounding and results in nursing staff performing compounding in the inpatient units.

Pharmacy Single Compounding Unit

Pharmacy – stock/storage

Appendix F, Mechanical

LBJ Tropical Medical Center – Mechanical Assessment 22-24 April 2019

General Mechanical

Climate – American Samoa is a marine climate with extreme humidity and relatively constant temperature and dew-point throughout the year (mean dew-point all year is ~75 F, mean dry bulb temp ~82F). This leads to an extremely high latent load (336,000 btu/cfm/yr compared with 100,000 btu/cfm/yr for Honolulu) which must be meticulously addressed in the HVAC design as well as building envelope, piping insulation etc. There is no heating season.

Building Construction - The existing 1960's building design was intended for passive cooling with open soffits and above ceiling areas as well as operable windows for fresh air. Renovations have gradually added central HVAC and/or split system air conditioners to most spaces. However, the building envelope has been largely overlooked with many of the above ceiling areas still open to the exterior providing easy infiltration paths for outside air and moisture. In addition, the walls themselves likely have no air barrier or vapor retarder due to the construction standards of the time and therefore cannot support current HVAC criteria requirements. Central HVAC equipment has been retrofitted into the above ceiling areas on partial mezzanines without any space conditioning which creates the ideal conditions for condensation and mold on any surface or piping that is below the dew-point. Furthermore the limited areas above ceiling can't support air handling units which fully comply with current clinical space conditioning and outside air requirements and it severely impacts the ability of the staff to do regular maintenance.

Infection Control and HVAC

Multiple outbreaks of respiratory infections in the in-patient OB/GYN and Medical Wards have been reported. These events crossed space boundaries and were nosocomial which implicates the HVAC system as harboring, multiplying and transporting the infectious diseases from space to space. This system survey provides significant evidence to confirm that assumption. Extensive mold is present inside nearly all air handling units and many above ceiling areas where the HVAC equipment is located. The equipment mezzanine areas are not sealed off from the clinical areas, easily exchanging air and airborne contaminants. Most filters are overloaded, broken or missing entirely which enables outside contaminants and mold spores to enter the system as well as airborne bacteria and virus to freely circulate from space to space. These airborne pathogens are multiplied within the air handling units cooling coil and fan sections (where relative humidity is an ideal 90%) evident by the extensive mold and dirt. The systems are in clear violation of Joint Commission – Environment of Care criteria and it would be nearly impossible to remediate the mold from the buildings and systems without a complete building renovation including demolition of the building systems and building envelope (leaving only the structure intact).

Space temperature and humidity conditions were mostly non-compliant with commercial and gov't criteria (FGI/ASHRAE/DVA). High space humidity was frequently noted which has a direct correlation to airborne infection above 70% RH. Only the most recently renovated areas (e.g. Dialysis) appeared to

have the space temperature and humidity under control but even these units had mold growth in the air handling unit equipment which is most certainly being transported to the patient care areas.

Outside air supply systems were mostly non-functional which means odor and contaminant dilution cannot take place and CO2 levels are not controlled. This violates Joint Commission requirements and the specific ventilation requirements of FGI/ASHRAE 170 as well as DVA/DoD (UFC 4-510-01) standards. Furthermore, even when functional, the sizing of the outside air systems did not meet the above criteria.

The use of DX cooling to supplement (or replace) deficient central systems has helped to control space humidity in many areas however it has also introduced other infection control risks. Notably the presence of condensate pumps (serving the DX units) within clinical spaces (e.g. in the Operating Rooms) provides a perfect environment for pathogen and mold growth. The stand-alone residential grade humidifier (e.g the drain pan) in the Operating Room is also an infection control concern. Neither DVA nor DoD standards allow the use of direct expansion (DX) cooling terminal units in patient care areas due to the infection control risks that they brings.

The Staff voiced concerns about the lack of negative pressure in the Isolation Rooms however during the survey, the Isolation Rooms “spot checked” did have verifiable directional airflow in the correct direction. Contrarily, pressurization requirements in most other critical pressurization areas (e.g. Laboratories, sterile processing, etc.) were either not met (i.e. neutral pressure) or reversed from the required direction creating a potential hazard. No local pressure monitoring devices nor trending were present at any of the locations required by DVA or DoD criteria. Furthermore there is no building pressurization provided, which is a significant concern in this marine climate, where any infiltration though the building envelope will quickly establish mold.

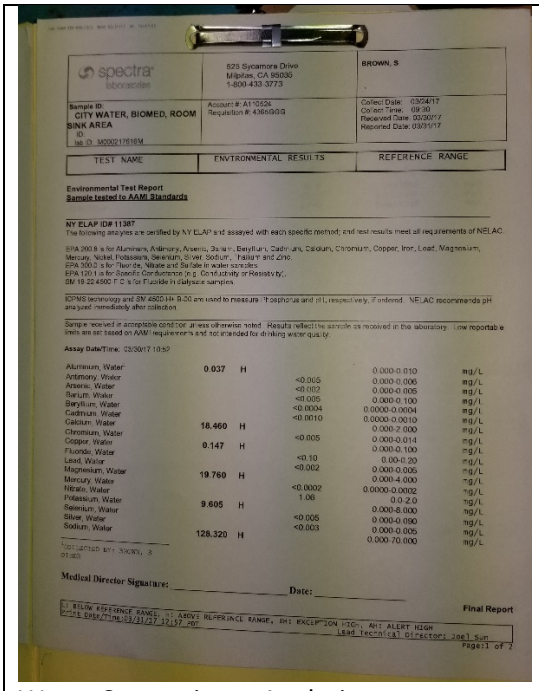
Central Utility Plant

Available Utilities – Available public utilities are electricity (~32 cents/kwh), water and sanitary. There is no natural gas available on the island. Diesel is the only available fuel for generators and boilers.

Water Supply – Domestic water is provided by ASPA (American Samoa Power Authority, which provides all Power, Water, and Sewer infrastructure services) via pumped well water. LBJ has a 120,000 gallon above grade on-site storage tank with domestic water boost pumps and fire pumps Domestic water boost pumps are a triplex Grundfos system with only 2 of the 3 pumps functional (each pump is 232 gpm at 150 ft hd). Fire pump system is a single packaged electric fire pump (400 gpm at 67 psi). The electrical disconnects for this packaged system were off at the time of the survey. Domestic/fire water is distributed in a combined system via a PVC distribution loop around the site. The arrangement of the combined domestic/fire water system (i.e. the fire pumps pressurize the same lines as the domestic water system) does not meet NFPA in regards to backflow prevention.

Chlorination was said to be provided by ASPA at each wellhead prior to injection into the island distribution piping. There is no additional chlorination or secondary water treatment at the tank or hospital. Distribution within LBJ is via 2" or 2-1/2" copper (new) or galvanized steel (original) piping branching off the PVC mains. Where recent renovations have occurred the shutoff valves within the buildings have been replace with stainless steel ball valves. Original piping systems still have the original gate valves, most of which have failed in the open position.

Available water quality testing was limited to Contaminant Testing in 2017. Results showed very high calcium content (18.5 mg/lit) and magnesium content (19.8 mg/lit) which results in a calculated $CaCO_3$ value of ~127 mg/lit or "HARD Water". Alkalinity and pH data was not available to quantify how aggressive the water is. However, the maintenance staff indicated it was very aggressive (presumably very acidic) and corrodes copper piping. Extensive visible damage to the fiberglass cooling tower which has been operating on untreated water for years supports this conclusion.



spectra laboratories
525 Sycamore Drive
Milpitas, CA 95035
1-800-433-3773

BROWN, S

Sample ID: CITY WATER, BIOMED, ROOM SINK AREA
Lab ID: M00021781 6M

Account #: A110524
Requisition #: 4365GQG

Collect Date: 03/24/17
Collect Time: 09:30
Received Date: 03/30/17
Reported Date: 03/31/17

TEST NAME	ENVIRONMENTAL RESULTS		REFERENCE RANGE	
Aluminum, Water	0.037	H	0.000-0.010	mg/L
Antimony, Water		<0.005	0.000-0.006	mg/L
Arsenic, Water		<0.002	0.000-0.005	mg/L
Barium, Water		<0.005	0.000-0.100	mg/L
Beryllium, Water		<0.0004	0.0000-0.0004	mg/L
Cadmium, Water		<0.0010	0.0000-0.0010	mg/L
Calcium, Water	18.460	H	0.000-2.000	mg/L
Chromium, Water		<0.005	0.000-0.014	mg/L
Copper, Water	0.147	H	0.000-0.100	mg/L
Fluoride, Water		<0.10	0.00-0.20	mg/L
Lead, Water		<0.002	0.000-0.005	mg/L
Magnesium, Water	19.760	H	0.000-4.000	mg/L
Mercury, Water		<0.0002	0.0000-0.0002	mg/L
Nitrate, Water		1.06	0.0-2.0	mg/L
Potassium, Water	9.605	H	0.000-8.000	mg/L
Selenium, Water		<0.005	0.000-0.050	mg/L
Silver, Water		<0.003	0.000-0.005	mg/L
Sodium, Water	128.320	H	0.000-70.000	mg/L

Environmental Test Report
Sample tested to AAMI Standards

NY ELAP ID# 11387
The following analytes are certified by NY ELAP and assayed with each specific method; and test results meet all requirements of NELAC.

EPA 200.8 is for Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, , Thallium and Zinc.
EPA 300.0 is for Fluoride, Nitrate and Sulfate in water samples.
EPA 120.1 is for Specific Conductance (e.g. Conductivity or Resistivity).
SM 18-22 4500 F C is for Fluoride in dialysate samples.

ICPMS technology and SM 4500-H+ B-00 are used to measure Phosphorus and pH, respectively, if ordered. NELAC recommends pH analyzed immediately after collection.

Sample received in acceptable condition unless otherwise noted. Results reflect the sample as received in the laboratory. Low reportable limits are set based on AAMI requirements and not intended for drinking water quality.

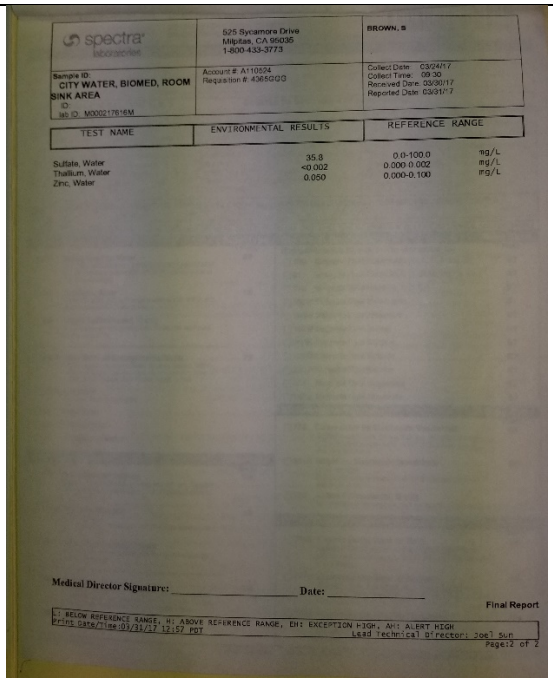
Assay Date/Time: 03/30/17 10:52

Medical Director Signature: _____ Date: _____

Final Report

L: BELOW REFERENCE RANGE, H: ABOVE REFERENCE RANGE, EH: EXCEPTION HIGH, AH: ALERT HIGH
Print Date/Time: 03/31/17 12:57 PDT
Lead Technical Director: Joel Sun
Page:1 of 2

Water Contaminant Analysis



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525 Sycamore Drive
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BROWN, S

Sample ID: CITY WATER, BIOMED, ROOM SINK AREA
Lab ID: M00021781 6M

Account #: A110524
Requisition #: 4365GQG

Collect Date: 03/24/17
Collect Time: 09:30
Received Date: 03/30/17
Reported Date: 03/31/17

TEST NAME	ENVIRONMENTAL RESULTS	REFERENCE RANGE	
Sulfate, Water	35.8	0.0-100.0	mg/L
Thallium, Water	<0.002	0.000-0.002	mg/L
Zinc, Water	0.050	0.000-0.100	mg/L

Medical Director Signature: _____ Date: _____

Final Report

L: BELOW REFERENCE RANGE, H: ABOVE REFERENCE RANGE, EH: EXCEPTION HIGH, AH: ALERT HIGH
Print Date/Time: 03/31/17 12:57 PDT
Lead Technical Director: Joel Sun
Page:2 of 2

120,000 gallon Domestic and Fire Water Storage

Pressure Tanks


Domestic Water Booster Pumps


Fire Water Booster Pump

Chilled Water – The CHW system consists of three ~120 ton York chillers (CH2 – 2001 era, CH3 – 2006 era, CH4 – 2006 era) with four primary pumps piped in parallel (not dedicated to a chiller) and four secondary chilled water pumps. There was a 4th chiller (CH1) that was removed some time ago. There is no DDC system so all chillers are manually sequenced. All 3 chillers were operating with all compressors running at an ambient temp of ~90 deg F and 90% RH however they were not fully loaded.

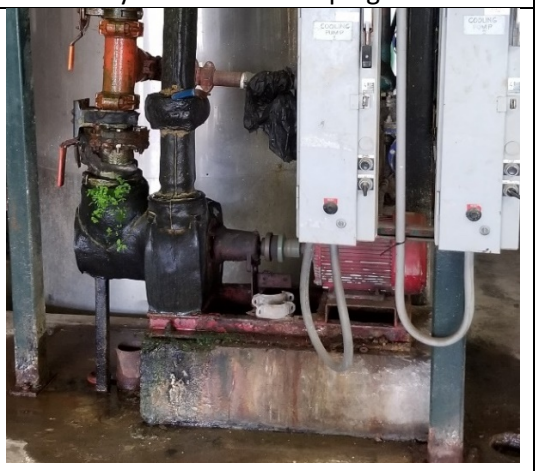
Chilled water supply set-point is 44 deg F however chiller loading appears severely unbalanced resulting in two of the chillers not meeting set-point. For example, CH3 has a supply/return temps of 43/53 but CH2 and CH4 had supply/return temps of 48/53. The compressors on CH2 were at 97% which infers the flow rate is above design flow rate and the compressors are a full loaded so the unit cannot meet the design supply water temp. (There is insufficient instrumentation and no DDC to provide further data.) The blended supply water temperature is likely ~46 to 47 degrees to the hospital (instead of the design supply water temp of 44) which will directly impact the ability of the AHU's to meet the latent load (i.e. remove moisture). Also, the chilled water valves were so badly corroded that correcting the balance issue may not be feasible without replacement of several valves.

All three chillers are currently operational but can be expected to be severely degraded internally. The chilled water system is leaking and requires frequent make-up water and there has been no operational water treatment for at least 3 years. Therefore severe internal corrosion and scaling of the tubes should be expected. The condenser water side will be even further corroded and scaled than the evaporator side due to typical makeup water rates in combination with the lack of water treatment. At a minimum, condenser and evaporator tubes will need replacement. Externally the chillers have been exposed to the corrosive environment which especially degrades the electronics.


Primary Chilled Water Piping


Secondary Chilled Water Piping


York Chiller


Primary Chilled Water Pump

Condenser Water – The condenser water system serving the chillers consists of 2 Marley fiberglass Cooling Towers (2009 era) located between the Central Utility Plant and the Dialysis Bldg. The location is very concerning as the cooling towers are only 20ft from the Dialysis Bldg and 10ft from an outside waiting area (where the dialysis patients complained to the team about the chiller noise.). The proximity of patient care areas to the cooling towers places patients at a direct risk of legionella and other waterborne pathogen exposure. The risk is further increased by the lack of water treatment. The cooling towers appear to be at the end of their useful life due to degradation of the fiberglass air intake grids which are degraded beyond repair. Inadequate water treatment and insufficient blowdown appear to be the main causes.


Eroded Fiberglass Honeycomb Intakes


Marley Cooling Towers

Steam - Steam is provided by two Columbia 50 HP (1725 lbs./hr.) diesel fuel fired boilers operating at 60 PSI. One Boiler is primary, the other is back-up. Steam is utilized to generate domestic hot water and provide steam for the Sterilizers. Boilers were installed in 2005 and are in poor condition. Corrosion from the marine environment is very evident. Furthermore, the water treatment system (softening) has not been functional for years which has certainly fouled the interior due to the very hard water.


COLUMBIA
LBJ 03408

HVAC

General – Most HVAC systems throughout the Hospital are in violation of Joint Commission – Environment of Care requirements to achieve the mandatory space conditions, pressurization, filtration and infection control as well as in violation of commercial and government ventilation standards (e.g. FGI/ASHRAE 170, DVA HVAC Design Manual, DoD UFC 4-510-01 etc.). Space temperature and humidity conditions were mostly non-compliant with commercial and gov't criteria (above 75F and 50% RH) except where local DX units were installed. Space humidity was frequently noted to be too high (particularly in the wards) which can have a negative impact on infection control when above 70% RH. Only the most recently renovated areas (e.g. Dialysis) appeared to have the space temperature and humidity under control.

Approximately half of the buildings (typically in-patient and critical care areas) are served by packaged air handling units installed in unconditioned above ceiling area (mezzanine) with some supplemental split system direct-expansion (DX) installed. The remainder of the buildings (Including Operating Rooms, Imaging, Clinics and Admin etc.) are only served by Split System DX systems with no outside air provisions. DX systems are prohibited by DVA and DoD criteria due to the lack of tight temperature control as well as reduced life cycle and higher infection control risk. The maintenance staff noted that the split-systems only last 3 to 5 years in the harsh environment.

A typical patient ward module (120' x 48') is served by 5 recirculating air treatment units (which include a fan, filters and cooling coils only) and a fresh air unit (fan and filter only) which brings unconditioned outside air directly into the return duct of each air treatment unit. There is no pretreatment of the outside air before passing through the first air filter to prevent filter wetting. There is also no reheat provided for most terminal units which limits the ability to meet the latent load without overcooling the space. Ducted return is provided. The size of the AHU's and outside air systems do not appear to meet FGI/ASHRAE 170 or DVA/DoD criteria for minimum total air changes or outside air change rates.

Most of the central systems are not functioning or are severely compromised resulting in little or no outside air being provided, little or no filtration of the air stream and serious infection control issues present (see detailed deficiencies in the building specific evaluations). Mold, dirt, rust, pipe leaks and uncontrolled condensate are prevalent inside and outside of most units and are even present on the newest AHU's (~2 years old). Routine maintenance of the HVAC systems is noticeably deficient. The HVAC systems were not fully designed to address the high humidity environment nor the extreme propensity for mold growth.

All recirculating air treatment units include a pre-filter section upstream of the cooling coil and fan. The fresh air units also include a filter section upstream of the outside air supply fan. There is no pre-conditioning of the outside air upstream of the filter. There is also no final filter in the AHU provided after the cooling coil and fan as required by ASHRAE 170 and DVA/DoD criteria. All filters present were in need of replacement and many were completely destroyed due to age and loading. It appeared that many filters had not been changed since original installation (5 to 15 years ago?). The lack of pre-conditioning of the high humidity outside air makes mold growth on the outside air filter inevitable. Also the lack of final filter in the AHU's allows any mold growing within the cooling coil and fan sections to be freely distributed to the clinical areas.

Many fans were not functional due to missing belts or failed motors having been removed. The maintenance staff indicated difficulties in getting replacement parts and filters (cited lack of funding) as well as difficulty in accessing the units in the mezzanine areas where they are only accessible by portable step ladder. Due to the exposure of these AHU's units to the unconditioned above ceiling areas, even regular maintenance could not have stopped (but only slowed) the equipment degradation.

The HVAC systems do not provide for building pressurization which is an important DVA/DoD design element to prevent warm/moist air from infiltrating into the building envelope system and patient care spaces. The lack of building pressurization in this marine climate has assuredly established mold within the building envelope.

Space Temperature Control is generally performed on a zone basis (thermostats were generally located in the hallway or common areas) which impacts unit operation as each AHU is influenced by the other. Furthermore this does not provide individual room temperature control for in-patients rooms which is required by DVA/DoD.

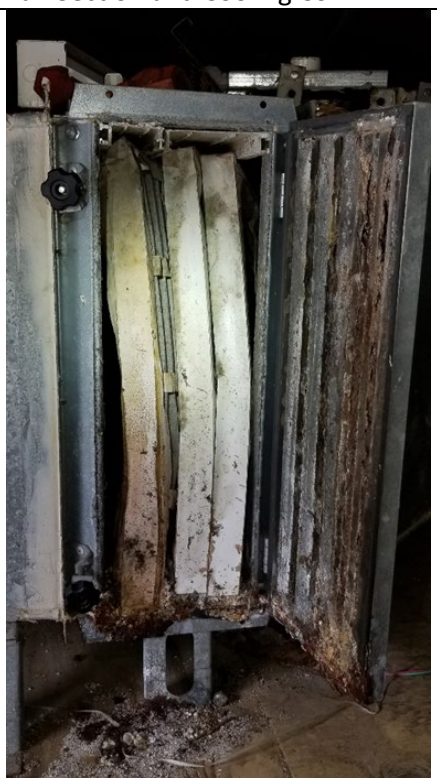
Surgical Ward (2000 era HVAC) - Condition of the HVAC serving the Surgical Ward (equipment located above the patient care areas on the mechanical mezzanine) is deteriorated beyond repair with extensive mold growth both inside and outside each air handling unit. The mechanical mezzanine area is unconditioned and exposed to the outside conditions and has no rated separation between the equipment area and the clinical spaces. The only separation between the mechanical area and the patient care area consists of acoustic ceiling tiles (ACT) and vented lighting which allow nearly unlimited vapor and air movement, exposing the patients to all the mold present in the mezzanine area. Condensation created by imperfections in the chilled water insulation also is a source of water and mold growth which was noted on the ceiling tiles as well. The HVAC is arranged as recirculating AHU's (qty 5) each with outside air ducted to the return side. There was no apparent provision for relief air. The outside air system consisted of an inline fan and filter banks. The filters were completely clogged and disintegrated. The recirculating AHU's are arranged in a draw-through configuration with 2 pre-filters and no final filter (i.e. filter after the cooling coil and fan) which does not meet FGI (ASHRAE 170) standards.

The mold is so prevalent throughout the AHU system and Surgical Ward building (e.g. inside and outside all AHU's, on diffusers, ceiling tiles, on the support structure, on piping insulation, etc.) that targeted mold remediation would be impossible and a complete renovation of the building down to the structure would be needed to address.

Air Handler – Surgical Ward

Fan Section and Cooling Coil

Air Handler – Surgical Ward



Outside Air Filters

Dialysis Ward (2017 era) – The conditions within the Dialysis wing were comfortable, perhaps the most comfortable area of the hospital. The area is served by two AHU's located on a mechanical mezzanine which appear to be in good condition from the outside but are showing significant mold contamination on the inside. The mechanical mezzanine is relatively well separated from the outside air conditions (building eaves have all been sealed) which has helped prevent condensation on the AHU's and chilled

water piping (as is prevalent in the Surgical Ward HVAC) but air can freely flow from the unconditioned mezzanine area to the clinical area through the normal gaps in the acoustic ceiling tiles and lighting.

The AHU's are draw-thru type with chilled water cooling coils. Terminal units are VAV with some electric reheat. Several deficiencies were noted in the AHU leading to the present mold conditions: Prefilter frames are in place but no filters were present. Merv 11 filters are installed but there is significant bypass around the filter bank rendering it useless. It is unclear if this was poor frame design or if the filters were replaced with an incorrect dimension. Bypass of unfiltered air is evident by the dust and debris on the inlet face of the cooling coil. There is also no final filter module incorporated after the fan/coil as is required by ASHRAE 170 and DVA/DoD criteria. An outside air duct is connected to the return duct work bringing in an uncontrolled amount of outside air likely only in response to any space exhaust.

Cooling coil carryover is present in the fan section. It is unclear if this is due to operation at higher then design velocities or inadequate distance between the coil and fan section (manufacturer's design issue). The cooling coil carryover in combination with the lack of filtration creates the perfect conditions for mold growth which is readily evident in the fan section. And the lack of final filter enables the mold spores to be freely distributed to the patient care areas which is especially concerning for these potentially immunocompromised patients.

Given that these AHU's have been in place for only 2 years, the interior condition is likely to rapidly degrade unless the units are remediated for mold and the filters are replaced and filter bypass eliminated.

Cooling Coil and Drain Pan

Air Handler – Dialysis Ward

 Fan Section – Mold Contaminated	 Air Filters – Merv 11 Filters installed. Prefilter frame present but no filter installed.

OB Ward (2008 era HVAC) – Similar HVAC condition and configuration to the Surgical Ward only slightly newer. There is a single fresh air supply serving the return side of each air treatment unit (qty 5). The outside air filters are completely destroyed from lack of regular replacement. The outside air fan is operational, however the air intake is 75% blocked on the outside (apparently it was a temporary measure for nearby construction that was never removed). Furthermore, the rust present within the outside air fan and duct demonstrates the high humidity environment. Mold is growing on the intake filter due to the constant high humidity of the intake air. Mold is further prevalent inside every AHU which is due to the lack of any functional filtration (presence of dust and outside contaminants) and cooling coil carryover. Cooling coil condensate is not draining properly, likely a trap sizing issue. All fan belts are either missing or in need of replacement.

The mechanical space is better isolated from the outside then the Surgical Ward (eaves are better sealed) resulting in less surface condensation but there is still significant mold and dust in the above ceiling area. The space communicates directly with the clinical space since the mezzanine is only a partial floor structure with no rated partition.

Typical air handling unit (OB Ward)

Outside air fan and filter

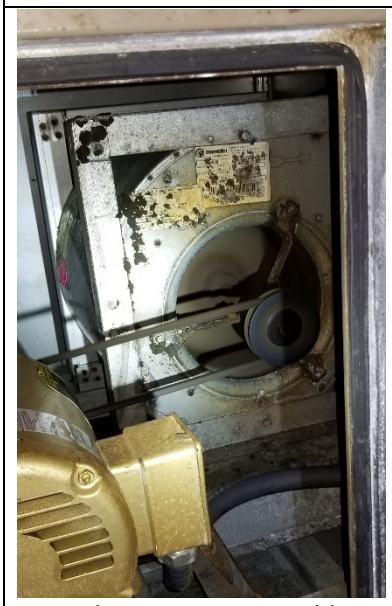
View of the ceiling from the mechanical mezzanine - no rated partition or barrier

Air handling unit – fan section – mold present

Medical Ward (2009 era) - Similar HVAC condition and configuration to the OB Ward.

Typical air handling unit (Medical Ward) – mold present


Air handling unit – fan not functional


Typical Fan Section – Mold present


Typical Cooling Coil Drain Pan – mold/biofilm present

Pediatrics Ward (2002 ERA HVAC) – Similar HVAC condition and configuration to the Surgical Ward.

Typical Recirculation Air Handling Unit (Pediatrics Ward)


Outside Air Filters


Outside air supply fan (motor missing).


Typical cooling coil and drain pan.

CMS (Central Sterilization) – Deficient HVAC is compromising the infection control requirements of this department and potentially the entire supply chain for surgery etc. A split system is being used to cool the department. The only operational central HVAC is an exhaust located in the sterilizer equipment room (back side of the autoclave). This area is (and should be) negative to the clean side however there is no functional supply or exhaust on the clean-side to maintain appropriate room pressurization. The exhaust on the equipment side is causing the entire department (including the clean-side) to be negative to the corridor when it is required to be positive. This allows for direct re-contamination of devices which have just been sterilized. Furthermore the sterilizer equipment room has uncontrolled steam condensate which is leading to a very humid and damp environment in this critical area. Also, this equipment area is not separated from the above ceiling plenum space, which is unconditioned. A non-functional washer-disinfector is also leading to compromises of the intended positive and negative areas.


Sterilizer – Loading / Unloading


Sterilizer Drain


Equipment Side of Sterilizers


Sterilizer equipment room open to unconditioned ceiling plenum

Operating Rooms (existing) – There is no central air conditioning or outside air serving the existing OR's which were constructed around 1968. Temperature and humidity control is provided only by a retrofitted split system (DX unit) mounted on the wall with condensate pump within each OR and a stand-alone residential grade dehumidifier. The dehumidifier drain pan must be manually dumped periodically. The presence of these dehumidifiers in the OR's is beneficial to keeping humidity under

control but also adds addition infection control risks with the presence of a condensate pan within this critical care space. The lack of any outside air or central exhaust is concerning not only due to CO2 and odor build-up but also due to the use of anesthetic gasses.

OR and ICU exhaust – A central exhaust system serves the OR's and ICU areas. There are three large exhaust fans (2 are operational). They discharge directly into a building alcove which is not permissible by code/criteria. Exhaust must be discharged above the building in coordination with air intakes and other exhaust placement.

Pharmacy – a glove box (primary engineering control) for sterile compounding is available (utilized mostly for preparation of infant formula) and performance certified regularly however the device is not installed in accordance with USP 797 for the placement of a primary engineering control within a pressure controlled and monitored environment as the space and HVAC capabilities are not available. Apparently other IV admixture processing occurs outside of the necessary environmental controls due to facility limitations.

Clinics and Admin – Most all clinics and administration type spaces are served only by split unit cooling and have no outside air provision which does not meet commercial, VA or DoD criteria. The split units are said to last only 2 to 5 years in the aggressive conditions which is consistent with the condition noted.

Typical Condensing Unit Installations.

Condensing Unit – Installed 2014

Autoclave – Hazardous biological waste ("red bag") items are processed at the hospital in a steam autoclave (Rotoclave - Tempico) where the waste is disinfected and sterilized. The unit is located in a stand-alone building but the large roll-up doors were wide open at the time of the survey apparently due to a lack of climate control. This compromises any designed for space pressurization. The lack of controlled space pressurization (negative) presents an infection control risk. Bio-hazard waste handling and processing is a highly regulated process that requires careful attention to infection control procedures and is not typically performed at a medical facility. The exposure of this equipment to the marine climate and the proximity of this process to the hospital (~30 ft from the kitchen/dining area) is very concerning.

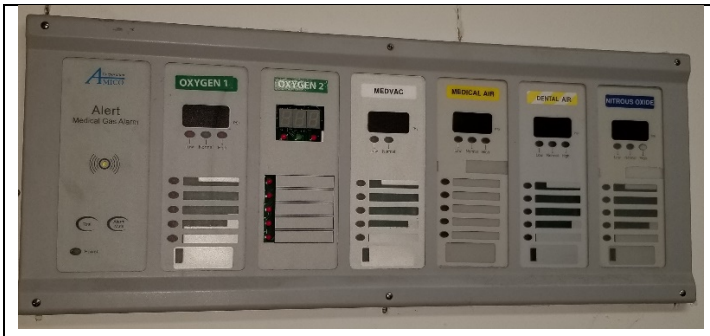
Rotoclave - Tempico

MEDICAL GAS SYSTEMS

General – Med gas producers are severally degraded due to environmental exposure. All med gas systems (vacuum pumps, dental air, oxygen manifold, nitrous oxide manifold) are located either in the open CUP or in rooms that are unconditioned and open to the outside. The corrosive impact has rendered all systems unrepairable. Numerous Joint Commission and NFPA 99 violations are present.

Medical gas inlets/outlets in several areas were said to be problematic including the wall outlets/inlets in the OR's which were said to be non-functional. Also in PACU the wall outlets/inlets leaked when connected and therefore bottled gases were being used instead.

Zone Valves and Alarming – Zone valves appear to be present where required by NFPA 99 however many zone valves are unlabeled for the gas nor the location that they serve (Joint Commission and NFPA 99 violation). Many Area Alarms are also unlabeled as required by NFPA 99. The Vacuum and Medical Air Systems are in constant alarm and so it is unlikely that any change of alarm condition would be noticed by the staff placing patients at high risk. The Master Alarm Panel (located in the supervised Communications Room) is not functional. NFPA 99 requires two master alarm panels in two separate locations for Category 1 Medical Gas Systems including notification of the local alarms (equipment alarms) which are not even routed to the master alarm panel.



Master Alarm Panel

Typical Zone Valves and Area Alarms in Patient Wards

Med Gas Panels in the Operating Rooms.

Waste Anesthetic Gas Disposal (WAGD), Medical Vacuum (MV) and Oral Evacuation (OE) – All three systems are being served by a common vacuum system. The Amico Vacuum Pumps (era 2015) at the CUP indicate an operating pressure of 8 to 9 in hg but in the wards, the pressure monitors indicate significantly higher pressures 12 to 13 in hg. The source of the discrepancy is unknown. The vacuum pumps were also both in "system fault" although there was no specific visible local alarm. Also, all vacuum Area Alarms were in alarm for low vacuum pressure. This is due to the fact that the Medical Vacuum is required to be at 15-19 in Hg but the system is operating at 8-9 in Hg apparently due to the use of the single system to serve WAGD and Oral Evacuation in addition to Medical Vacuum.

The use of a dry medical vacuum system for Oral Evacuation is prohibited by commercial and DVA/DoD standards as Oral Evacuation is a lower pressure wet-system with mandatory central liquid separation and amalgam separation. Liquid separators are present in each DTR and manually drained periodically which introduces a "dirty" process within the patient care area. Furthermore the local separator requiring manual waste disposal likely does not capture all the liquid and solids risking damage to the vacuum pumps. Also, amalgam separator are not being provided as required by U.S. law and DVA/DoD criteria.

DVA and DoD criteria does not recommend combined WAGD and MV systems due to risk of fire from the presence of oxidizers in the WAGD system (DoD generally prohibits the combining of these systems for the same reason). Furthermore, the pressure requirements are significantly different (6 in hg for WAGD and 15 in hg for MV). Utilizing the higher MV pressure for WAGD places the patient airway at risk.

The Amico Vacuum pump has been installed on a wooded shipping pallet which is subject to decay.

<table>
<tr>
<td> 
Medical Vacuum Pump (operational)</td>
<td> 
Old Medical Vacuum System (abandoned)</td>
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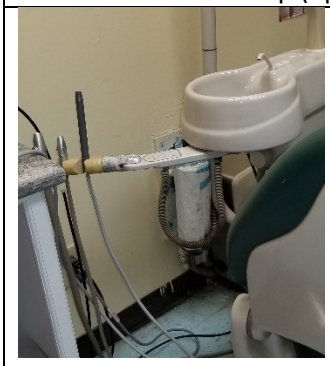
<tr>
<td> 
Chairside Liquid-Separator in each DTR</td>
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</table>

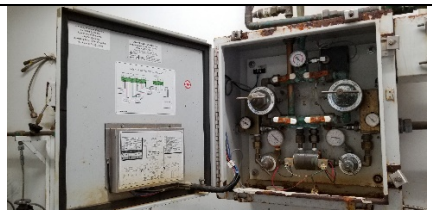
Medical Air (MA) – No medical air is currently available. The old MA compressors are beyond their useful life and disconnected. The lack of medical air provides additional logistical challenges to the Hospital due to a large increase in the need for bottled oxygen to support ventilators as well as and the use of non-medical grade air for some anesthesia machines which could pose a risk to the patient.

 Old Medical Air Compressor	

Oxygen – There are two oxygen manifold rooms. One within the CUP and another nearby. The manifold room in the CUP is valved off and in alarm. The manifold controller appears to be degraded beyond repair. Notably the system pressure is indicated to be 95 psi but the relief valve (set at 75psi) is not relieving. The degradation of the controller is a direct result of environmental exposure. The system needs to be installed in a humidity controlled environment. The second oxygen manifold is functional and appeared to be serving the system at the correct pressure (50-55 psi). The second oxygen system was apparently intended to serve a Hyperbaric Chamber (as a separate system) but was interconnected to the main oxygen system, resulting in one system. The Hyperbaric chamber is apparently not used. Cylinders were often found unrestrained.

Functional Oxygen Manifold

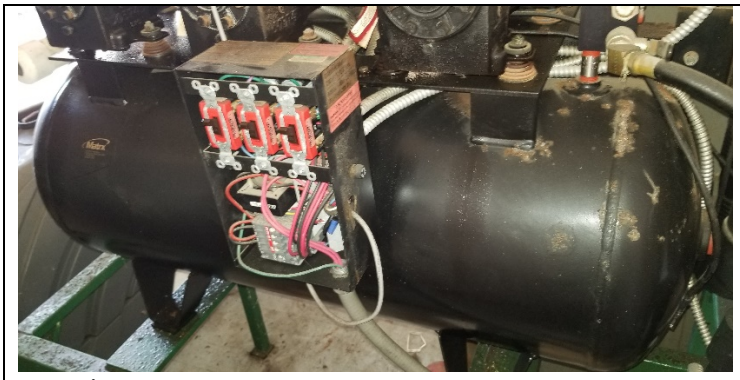

Non-Functional Oxygen Manifold


Non-Functional O2 Manifold

Nitrous Oxide – There is a central NO2 manifold with automatic changeover valves however the control system appears corroded beyond repair and the gauges don't work. Bottles are unrestrained. The NO2 system is also apparently not routed to all points of need. The Dental Department noted that NO2 is not piped to their area so they use portable bottles instead.

Nitrous Oxide Manifold

Dental Air – Served by a triplex system with a single receiver tank. Compressors appear very old but are functional. Many critical NFPA 99 requirements are not being met. The compressors are not oil free. The air intake is not from a clean source and is inadequately filtered. There is also no air dryer for dew-point control. This combination of inadequate filtration and dew-point control creates a high risk of system contamination placing the patient at risk with the contaminated air being delivered near the breathing zone. Furthermore the air source is drawn from the compressor room instead of from the outside or other clean/filtered source.


Dental Air Receiver

Dental Air Compressors

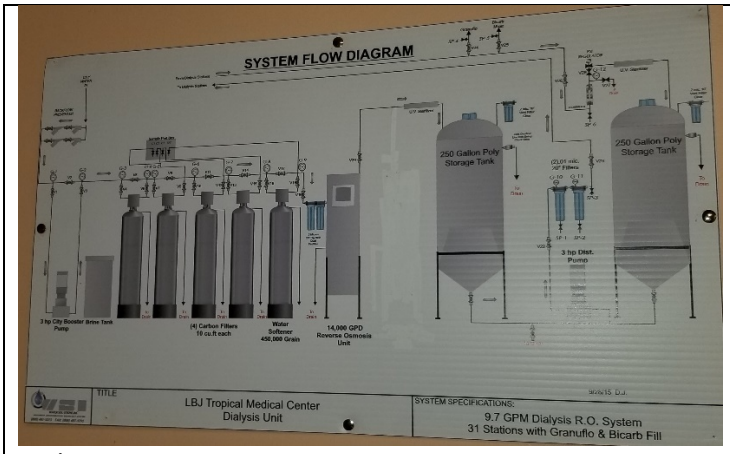
Nitrogen – served with local bottles only.

PLUMBING

Domestic water is said to be chlorinated by ASPA at the well sources. No water quality test was available to validate potability although some water test data (contaminant testing) was available related to the dialysis water treatment system installed. There is no chlorination monitoring or secondary water treatment (e.g. chlorination, copper/silver ionization etc.) provided after the 120,000 gallon storage tank, which is concerning as the dwell time will allow the residual chlorine from the source water to dissipate before it enters the distribution. It is likely that little or no chlorine residual is present within the hospital. Also, the available test data showed the water to be very hard (and facilities indicated it is also aggressive to copper). With no functional water softener, the fixtures show noticeable mineral deposition. As most of the domestic water system is constructed of copper (including the new OR building) it is likely that the piping distribution system is in very poor condition. The sample piece of main piping (photo below) supports this presumption with heavy tuberculation noted.

Domestic hot water is generated by steam at the CUP and distributed to the hospital. It was indicated that the generation temp and supply temp is 140 deg C however the team was not able to specifically locate any fixtures where the hot water was being delivered. In one instance, the hot water fixture was opened and after 5 minutes only lukewarm water was present which implies there is no function hot water recirculation system as required by DVA/DoD criteria for legionella prevention.

Dialysis has an extensive pure water generation system that is new and appears to be in very good condition and code compliant with the required backflow prevention etc.



Dialysis Water Diagram

RO System


Dialysis Water Treatment


Sample Points

NEW CONSTRUCTION

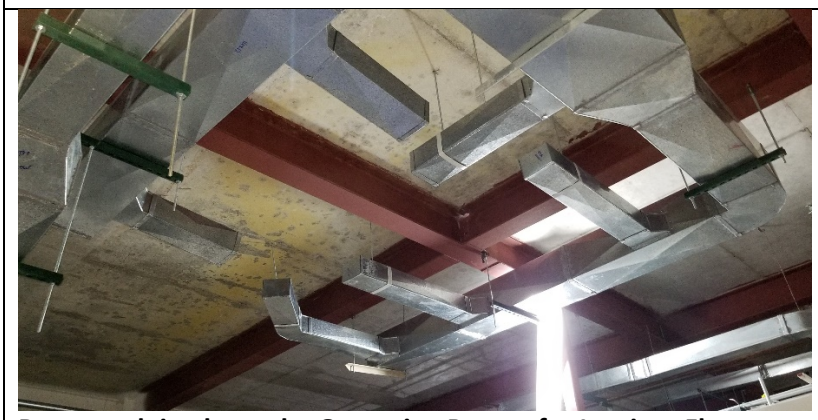
Operating Room (Phase 2) – The progress of the Operating Room Addition (Phase 2) appears to be about 50% complete based on visual observation. Rough-in of the utilities is well under way. In general, the design and configuration of the space appears to be based on current national healthcare standards. The quality of the mechanical construction is fair with materials and systems following installation

standards on an inconsistent basis. E.g. some of the ductwork is protected from dust and debris and other elements are not protected. Medical gas piping is of the correct materials and is being brazed appropriately but not all the piping is being kept sealed nor under nitrogen purge as required by NFPA 99. Also, similar to the existing construction style, the air handling units are being installed on a mezzanine area with no easy access to the equipment (ships ladder only) and without an established 2 hour separation between the mechanical space and patient care areas. Given the large size of filters and replacement parts, the lack of access will impact system operations and ultimately indoor air quality (as is demonstrated in the two year old Dialysis Wing).

However, the most concerning issue is that the construction of Phase 2 has enclosed the existing air intakes for the air handling units which serve the existing operating rooms and LDR's. The construction implementation appears to only provide a new means of to serve these areas once the new HVAC system is operational. The result is that these 2 existing AHU's are drawing "outside air" from within the construction area. The filters are completely loaded and access doors are opened resulting in unfiltered construction air being delivered to these existing critical care locations. Furthermore, this makes the new construction area highly negative bringing in outside air, humidity and mold spores. New construction (and especially healthcare) must always be kept positive to not permit mold or other air borne contaminants from establishing themselves within the new building.

New Air Handling Units.

Uncapped/Unpurged Med Gas Lines



Duct rough in above the Operating Rooms for Laminar Flow Diffusers.

Existing AHU air intakes pulling from the new construction area.

MECHANICAL RECOMMENDATIONS

Any new construction (or renovation) must fully address critical design elements and feature to mitigate the harsh climate and meet infection control requirements. The following is an abbreviated list of critical design features that must be incorporated:

1. HVAC must comply with all Tropical design criteria (e.g. UFC 3-440-05N) and be designed for the most stringent 1%/99% weather data.
2. Dedicated outside air systems must be utilized to control latent heat (condensate) removal before it enters the recirculating units. Outside air units from the air intakes through the cooling coils must be constructed of stainless steel.
3. Air must be pre-treated before passing through any pre-filters to avoid filter wetting (and mold). This can be achieved by incorporating a small bypass duct to mix conditioned air with the outside air.
4. Cooling coils should be provided with ultraviolet filtration to limit mold growth on the coils and drain pans.
5. DX (split systems) should be avoided.
6. All equipment (HVAC, Med gas, plumbing etc) must be installed in a conditioned (dew-point controlled) environment.
7. The central plant and all HVAC equipment must be installed in weather protected and conditioned (or humidity controlled) environments.
8. Water treatment must be provided for all make-up water systems as well as domestic hot water.
9. Maintenance access to mechanical spaces must be provided.
10. Building pressurization must be incorporated.
11. Building envelope design must control moisture and outside air infiltration.
12. Insulation of all piping must be carefully installed to ensure no uninsulated pipes or components.
13. Condensate drainage must be addressed to ensure drain pans readily drain water (i.e. appropriate trap design). Condensate drain pans must be stainless.
14. Site considerations must address all exhaust and intake locations including the cooling tower, diesel boiler exhaust autoclave emissions etc.

Appendix G:

Structural Trip Report

General Structural
Facility dimensions/layout

- The hospital layout consists of 5 parallel wings roughly 385 feet long and 48 feet wide as shown in Figure 1.
- The wings are oriented approximately in the north/south direction and each wing consists of three 120’ long by 48’ wide modular bays with a 12 foot wide east/west hallway corridor intersecting and connecting all wings.
- The center module of wings 2 and 4 are connected to the center module of wing 3 with additional modules. There is a current construction project that will connect wing 1 with wing 2 at the center module.

Figure 1: Site Layout

Superstructure

- The primary structural system for the modular bays is precast concrete bents spaced at 12’ on center through the length of the bay. The bents are composed of two precast halves that are joined at the ridge by a cast-in-place section as shown in Figure 2. The precast bents are connected to each other by cast-in-place tie beams at the eave bend and

by a ridge beam at the top where the two halves connect. Sheltered eaves are created with 8' projections of the bents extending opposite of the ridge.

  - The bents and connecting beams are constructed with 3,000 psi concrete and reinforced with 40 ksi steel.
  - The connections between the bents and the tie beams as well as the connection between the two precast half bents at the ridge are not sufficiently reinforced to be considered moment connections, and should be considered pin connections.
  - The dimensions for the tie beams at the bents are 12"x12" and longitudinal reinforcement is four #9 bars at the corners. The ridge beam is also 12"x12" but the longitudinal reinforcement is four #5 bars at the corners. Both the tie beams and ridge beams are reinforced with #4 stirrups spaced at 12" except at the ends which have two stirrups spaced at 3".
  - The bents are connected to the structural slab by a single #5 rebar hairpin tie and rests in a depression in the cast-in-place footer. The design drawings show that the base of the bent columns are restrained by the 6" structural slab and the top 2" of the foundation, however this condition could not be confirmed in the field, and the column base restraint conditions should be considered pinned.
  - The exterior infill walls between the concrete bents is 2' tall precast concrete stem walls with redwood framing and windows above. These walls do not provide sufficient shear resistance to be considered shear walls.

- The roof is composed of 2-1/2" thick by 6" wide tongue and groove wood decking overlaid with 3/8" plywood spanning the full distance between bents. The decking is screwed to a 4"x6" nail plate with 4" screws and the nail plate is bolted to the bents at 4' centers with 5/8" bolts. The decking is covered with standing seam metal roofing of an unknown thickness.

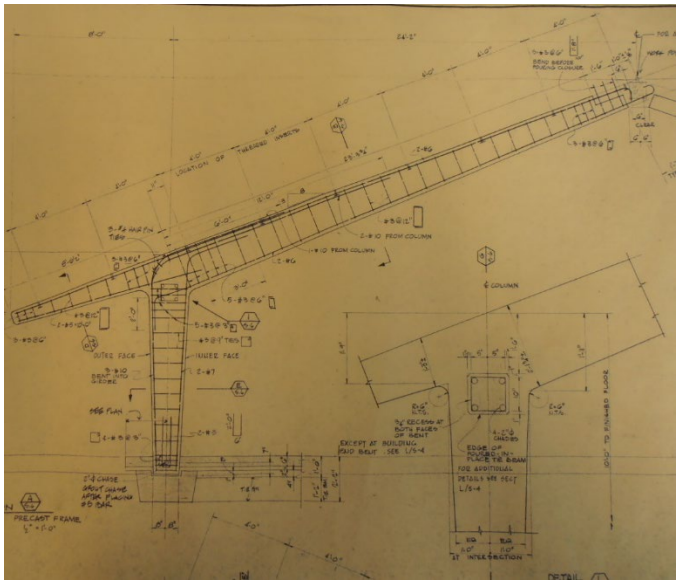


Figure 2: Concrete bent, typical construction.

Foundation

- The buildings are supported by a continuous strip footing around the perimeter of the building. The strip footings are connected at the bents by tie beams spanning the width of the building.
    - There are two typical footing details shown on the design drawings. The lighter of the two are typical of the perimeter of the buildings and the heaver footings support the Y shaped bents that support the roof at corridors 2 and 3 and the module that connects them.
        - Typical light footings are 1'6" deep, 3' across at the top, and 2'6" across at the bottom with uniform taper. They are reinforced with four #7 bars at top and bottom.
        - Typical heavy footings are 1'6" deep, 3'6" across at the top, and 3' across at the bottom with uniform taper. They are reinforced with four #8 bars at top and bottom.
    - The tie beams are 14"x14" and are reinforced by four #6 bars longitudinally and #3 stirrups spaced at 12".
- In 2013 GLHN Architects & Engineers, INC. conducted a Geotechnical survey and report characterizing the soil profile at select locations of the LBJ hospital campus.
    - Per the geotechnical report, the hospital is constructed on approximately 8 feet of medium to course sand over a layer of alluvium of unknown thickness. The

alluvium layer is composed of a low plasticity silty sand with some clay and gravel.

- Ground water was encountered between 6.6 and 6.9 feet in all boreholes.
- The allowable soil bearing pressure is 2,000 psf for strip footings less than 3 feet wide and 2500 psf for isolated footings up to 8 feet wide.

Existing conditions

Roof

- The roof decking is in overall good condition with no evidence of sagging or other structural failure. The decking is exposed from the bottom and some signs of water infiltration through the roof, manifest by discoloration, can be seen at various locations. None of the observed roof leaks appeared to cause deterioration of the structural properties of the decking.
- The roof is the primary structure used to support the mechanical, electrical, and fire suppression utilities (Figure 3).

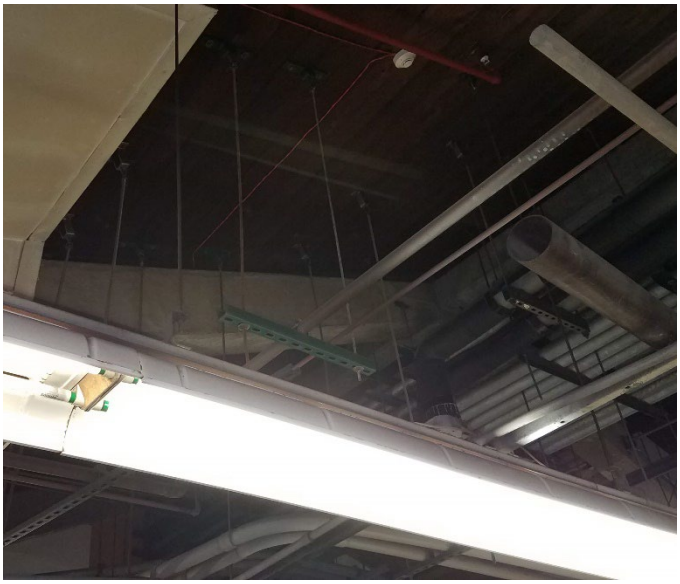


Figure 3: Utilities hung directly to roof decking.

Concrete superstructure

- Some cracking and spalling is evident on the concrete bents and connecting tie beams (Figure 4, Figure 5). The spalling is most prevalent on the tie beams and none was observed on the concrete that is protected from the harsh environmental conditions.

- The cracks and spalling appear to be the result of corrosion induced deterioration. The cracks run longitudinally along the member and no transverse cracking was observed.
- The spalling exposed the aggregate used in the concrete which appeared to be volcanic rock which is much less durable resulting in lower strength concrete.

Figure 4: Concrete spalling at bent tie beam, typical.

Figure 5: Concrete spalling at bent, typical.

- The precast stem walls were in excellent condition except for one location. The Stem wall on the East side of the kitchen is significantly deteriorated (Figure 6). It was observed that the dish draining racks were located on this wall and no protection was provided for the concrete wall. The constant exposure to water with inadequate concrete cover for the reinforcement is the most likely cause of this concrete deterioration.

Figure 6: Concrete spalling at kitchen stem wall.

Equipment

- Most mechanical and electrical equipment is pad mounted on concrete. However there is some mechanical equipment located on mezzanines in the attic spaces of some wings. None of the equipment nor any of the utility lines associated with the equipment had adequate seismic restraints to resist lateral forces.

Foundations

- Destructive testing was not performed on the foundation and no exploratory holes were dug to examine the foundation. However, there was no visible cracking of the exposed foundation or the immediately adjacent slab, and there was no apparent differential settlement observed.

Limitations

Design

- As is evident from the deterioration on many of the exterior concrete members, the design used to construct the facility did not adequately protect against environmental impacts. The evolution of requirements to protect concrete reinforcement has significantly improved from the time the hospital was built. There are a number of

precautions that should be used in the design of a critical facility in the harsh climate conditions present at LBJ Hospital.

  - Concrete cover for all reinforcement should be increased by 50%-100% from what was specified on this facility for all members, and epoxy coated rebar should be used due to the salt spray and wet environment for this location.
  - Although not verified deficiencies, there is no discussion of maximum water cement ratio or air entrainment both of which can have significant impact on the corrosion rate of concrete reinforcement.

- American Samoa is in a moderate seismic area requiring design consideration of elements to resist the resulting lateral load. Although the hospital has successfully resisted all seismic events during its existence, the current design of the facility lacks sufficient design characteristics to resist the anticipated maximum seismic event required by ASCE 7 and the International Building Code (IBC) as modified in the latest version of UFC 3-301-01. As an emergency facility the ability for the hospital to not only remain standing, but also to maintain functionality is imperative. This is the only hospital for the island, and critical failure would lead to excessive loss of life.
  - To bring the current structure to a condition that will provide adequate lateral resistance for the design seismic event will required significant effort. Some options include addition of lateral bracing and/or shear walls, adding additional moment frames that adequately tie into the existing structure, or retrofitting the existing framing with fiber reinforced polymer (FRP) wraps. These options will require extensive structural analysis as well as an upgrade to the existing roof diaphragm to transfer lateral loads to the appropriate resisting system.
- American Samoa is classified as a high wind environment requiring type IV structures like the hospital to resist maximum wind speeds of 170 mph without failures under the current IBC and UFC. The structure itself is in no danger of failure due to wind pressures. Typically, reinforced concrete structures are very resistant to wind failures. However, the components and cladding for this facility are a serious cause for concern.
  - The hospital has approximately 8’ eaves which will result in significant uplift pressure at the edges of the roof. To further exacerbate the issue, many of the eaves are open to the attic space at the top 18” of the wall which will also add to the wind uplift pressure.
  - The design drawings of the roofing system show that the roof decking is attached to nailers by one #18 (0.294” diameter) screw with a maximum of only 1.5” of embedment at each nailer. The screw layout ensures only on screw every 6” for the 12’ tributary width of the nailer. The nailers are attached to the concrete bents with 5/8” bolts at 4’ on center meaning that each bolt must resist 48 ft^2 of the resultant uplift pressure during a wind event.

- The infill walls are composed of precast concrete panels and redwood framing. The framing is clad with board and batten siding. Drawings were not available to confirm how the siding was attached and destructive testing was not performed. The ability of the siding to withstand a maximum wind event is unknown.
- The windows for this facility are a mixture of single pane aluminum windows and wood framed single pane windows. While the mounting method for the windows was not confirmed, the glazing of the window did not appear adequate to withstand the anticipated wind pressures for the LBJ Hospital location.

Materials

- Materials at the LBJ Hospital site are limited. The soils found on site were dredged and pumped from the adjacent bay and consist of coral sand and shells. The sandy soil makeup combined with the high water table causes concern with possible liquefaction of the soils in a seismic event. Areas of spalled concrete showed that at least some of the aggregate used for this project is volcanic rock which does not conform to ASTM C33 and may yield concrete with undesirable properties. For any new construction, aggregate should conform to ASTM C33.

Recommendation

The needed renovations and upgrades for LBJ hospital to be structurally sound are present throughout the structure and would require extensive effort. Due to the extremely high cost to perform the major renovations, and the inadequacy of the existing space needed for health care services, replacement of the current LBJ Hospital with a new structure is the preferred structural solution. However, if replacement is not feasible, the following actions to bring the hospital to an acceptable level of structural integrity are required.

Minor efforts

- Patch cracking beams and columns to reduce further spalling and deterioration of the existing concrete and reinforcement.
- Minimize hanging of equipment and utilities from roof decking. This includes migrating the existing utility supports to a structural component or system as well as minimizing the use of the roof decking for new supports during future work.
- Provide lateral/seismic support for utilities and equipment. Retrofit all existing pipe racks/utility supports need with adequate lateral support against seismic forces. Add adequate anchorage and seismic restraint to all existing equipment and any equipment that will be installed in the future. Adding adequate support to some items may require structural upgrade to the system that is providing current support.

Major efforts

- Upgrade roofing to more adequately transfer lateral roof loads to the framing system and prevent uplift during catastrophic wind events. The existing roof needs to be retrofitted to provide more substantial anchorage to the framing system and replace the existing deteriorating standing seam metal roof.
- Upgrade concrete frames to provide adequate resistance during catastrophic seismic events. This upgrade could include addition of lateral bracing and/or shear walls, adding steel moment frames with appropriate anchorage to the existing structure, or retrofitting the existing framing with fiber reinforced polymer (FRP) wraps. All of these systems will also require structural analysis of the existing foundation and subsequent upgrade if the foundations lack the capacity to resist the additional reaction forces from the seismic resisting system.

Appendix H:

Cost Estimations Based on DD1391 Request for Military Construction Formula

Basis of Estimate for Pseudo DD1391 Development

The Association for the Advancement of Cost Engineering International's (AACEI) Recommended Practice Number 56-R-08 establishes a Cost Estimate Classification System for buildings and general construction industries. Based on AACEI guidance, the estimates developed for each of the concepts is classified as a Class 5 estimate, based on the Maturity Level of the Project Definition Deliverables.

Unified Facilities Criteria (UFC) 3-701-01 and UFC 3-731-01 were used as guidance used in development of estimated cost for new construction and renovations to modernize the facility. Unit cost reference in the determination of estimated cost included UFC guidance and table, PAX Newsletter 3.2.2 dated 30 May 2018, and Defense Health Agency (DHA) guidance. Three references provide a variation or range of cost.

Base Unit Cost was determined by UFC guidance for determining the Facility Unit Cost ($476.33/SF) and applying basic adjustment to the Facility Unit Cost. An Area Cost Factor of 2.11 was applied to adjust cost to reflect the specific geographic area. A cost escalation adjustment of 1.103 was applied based on an assumed Budget Guidance year of 2022. A Technology Updating Adjustment of 1.1 was applied based on the DoD Basic Category (500) for Hospitals and Medical Facilities. A Design Contingency Adjustment of 1.1 was applied based on a Pre-Concept, Medium technical complexity level. Based on these assumptions and calculations, a Base Unit Cost of $1,341.38/SF was determined and used for entry into the PC-Cost estimating software. The software then calculates an Adjusted Unit Cost based on a Cost Growth Factor (1.02) determined by escalation computations and a Site Sensitivity Factor based on site conditions (such as labor, housing, and material availability. The parameters entered for Site Sensitivity Factors are discussed below.

Based upon the programming guidance in UFC 3-701-01, the replacement unit cost (RUC) for a Central Utilities Plant (CUP) is $1,263/per square foot if scope can be determined during planning. Otherwise, 20% of Primary Facility PRV cost is historically used. The DD1391 form uses the RUC and assumes the size of the CUP to be 20% of the Primary Facility footprint.

Cost associated with Special Foundations construction were included due to soil makeup combined with the high water table causes concern with possible liquefaction of the soils in a seismic event.

Sustainability/Energy Measures unit cost were calculated as approximately 2% of the Primary Facility unit cost and Antiterrorism Measures were calculated as approximately 1.5% of the Primary Facility.

Site Sensitivity Factor Computation Tab in PC-Cost software

Adjustment for Normal Site Conditions

Labor Availability set to "Extremely Below Normal" due to the lack of skilled labor available on the island.

Housing Availability set to "Slightly Below Normal" due to the limited availability of hotels or housing on the island.

Material Availability set to "Substantially Below Normal" due to the limited availability of materials, the remoteness, and transit/shipping times.

Adjustment for Local Site Peculiarities

Inadequate Parking set to "Yes" due to current site location

Congested Work Area set to "Yes" due to current site location and the assumption that new construction will be on the present site.

Total Site Sensitivity Factor equals 1.226

Appendix H-1:

Cost Estimate for Option A (Repair, 150K SF)

PC-Cost Detailed Report
Basis of Estimate:
Concept Complete:
Design Complete:
Prepared By:
Office: Phone:
Current Working Estimates For Budget Purposes
Fiscal Year: 2020
LBJ Renovation to Modernize
Medical Location(s) OCONUS, OC
1.00
05/02/2019
05/01/2019
Date Printed:
Date Revised:
Hospital
Type of Construction: NPM New Permanent
Estimate Name:
Project Title:
Location:
Area Cost Factor:
0.00 %
0.00 %
Name and Address of AE:
Catcode Description UOM Quantity Unit Cost
Total Cost
($000)
Primary Facility 161,400
00005 Sustainability/Energy Measures LS (161,400)
Central Utility Plant LS 38,000.0
Roofing/Attic Crawlspace LS 20,000.0
Fire Protection/ Life Safety LS 10,000.0
Electrical LS 19,500.0
Mechanical LS 45,500.0
Medical Gas LS 6,500.0
Nurse Call LS 3,000.0
Plumbing LS 3,900.0
Architectural LS 15,000.0

Supporting Facilities 0
Estimated Contract Cost 161,400
Contingency 5.00 % 8,070
Subtotal 169,470
Supervision, Inspection, and Overhead 6.50 % 11,016
Design/Build - Design Cost 4.00 % 6,779
Page 1
Current Working Estimates For Budget Purposes
Fiscal Year: 2020
LBJ Renovation to Modernize
Medical Location(s) OCONUS, OC
1.00
05/02/2019
05/01/2019
Date Printed:
Date Revised:
Hospital
Type of Construction: NPM New Permanent
Estimate Name:
Project Title:
Location:
Area Cost Factor:
Catcode Description UOM Quantity Unit Cost
Total Cost
($000)
Project Cost 187,265
Project Cost (Rounded) 187,000
Start Date 01 Mar 2021
01 Mar 2022
01 Mar 2023
3058
3119
3182
Construction Dates
Midpoint Date
Completion Date
1.0000 U.S. DOL
0.00 %
Project Incrementally Funded: No
Currency Exchange Rate:
Percent of Supporting Costs to Primary Costs:
Explanation of Data Developement:

Other Comments:

Appendix H-2:

Cost Estimate for Option B (150K SF Hospital, Green Field)

PC-Cost Detailed Report
Basis of Estimate:
Concept Complete:
Design Complete:
Prepared By:
Office: Phone:
Current Working Estimates For Budget Purposes
Fiscal Year: 2022
LBJ Replace Current with New
Medical Location(s) OCONUS, OC
1.00
05/02/2019
05/01/2019
Date Printed:
Date Revised:
Hospital
Type of Construction: NPM New Permanent
Estimate Name:
Project Title:
Location:
Area Cost Factor:
0.00 %
0.00 %
Name and Address of AE:
Catcode Description UOM Quantity Unit Cost
Total Cost
($000)
Primary Facility 267,256
51010 Inpatient Hospital/Medical Center SF 150,000.00 1,684.99 (252,748.5)
Admin/Clinical Space SF 150,000.00 1,368.21 205,231.5
Central Utilities Plant SF 30,000.00 1,263.00 37,890.0
Special Foundations SF 150,000.00 64.18 9,627.0
00005 Sustainability/Energy Measures LS (3,750)
Sustainability/Energy Measures SF 150,000.00 25.00 3,750.0
88041 Antiterrorism Measures LS (6,000)
Progressive Collapse SF 150,000.00 20.00 3,000.0
Antiterrorism Measures SF 150,000.00 20.00 3,000.0

80800 Building Information Systems LS (4,000)
Building Information Systems LS 4,000.0
Supporting Facilities 18,700
Electric Service LS (11,000)
Overhead to Power Station LS 11,000.0
Water, Sewer, and Gas LS (5,500)
Water/Sewer LS 5,500.0
Page 1
Current Working Estimates For Budget Purposes
Fiscal Year: 2022
LBJ Replace Current with New
Medical Location(s) OCONUS, OC
1.00
05/02/2019
05/01/2019
Date Printed:
Date Revised:
Hospital
Type of Construction: NPM New Permanent
Estimate Name:
Project Title:
Location:
Area Cost Factor:
Catcode Description UOM Quantity Unit Cost
Total Cost
($000)
Supporting Facilities (Continued)
Paving, Walks, Curbs, and Gutters LS (1,100)
Site Work LS 1,100.0
Storm Drainage LS (1,100)
Storm Drainage LS 1,100.0
Estimated Contract Cost 285,199
Contingency 5.00 % 14,259
Subtotal 299,458
Supervision, Inspection, and Overhead 6.50 % 19,464.8
Design/Build - Design Cost 4.00 % 11,978.32
Project Cost 330,901.12
Project Cost (Rounded) 332,000
Start Date 01 Mar 2022
01 Mar 2023
01 Mar 2024
3119

3182
3244
Construction Dates
Midpoint Date
Completion Date
1.0000 U.S. DOL
7.00 %
Project Incrementally Funded: No

Appendix H-3:

Cost Estimate for Option D (370k SF, Green Field)

PC-Cost Detailed Report
Basis of Estimate:
Concept Complete:
Design Complete:
Prepared By:
Office: Phone:
Current Working Estimates For Budget Purposes
Fiscal Year: 2022
New LBJ Hospital Future Mission Growth
Medical Location(s) OCONUS, OC
1.00
05/02/2019
05/01/2019
Date Printed:
Date Revised:
Hospital
Type of Construction: NPM New Permanent
Estimate Name:
Project Title:
Location:
Area Cost Factor:
0.00 %
0.00 %
Name and Address of AE:
Catcode Description UOM Quantity Unit Cost
Total Cost
($000)
Primary Facility 582,381
51010 Inpatient Hospital/Medical Center SF 370,000.00 1,536.84 (625,315.5)
Admin/Clinical Space SF 370,000.00 1,368.21 506,237.7
Central Utilities Plant SF 74,000.00 1,288.26 95,331.2
Special Foundations SF 370,000.00 64.18 23,746.6
00005 Sustainability/Energy Measures LS (3,750)
Sustainability/Energy Measures SF 370,000.00 25.00 7,400.0
88041 Antiterrorism Measures LS (6,000)
Progressive Collapse SF 150,000.00 20.00 3,000.0
Antiterrorism Measures SF 150,000.00 20.00 3,000.0
80800 Building Information Systems LS (4,000)

Building Information Systems LS 4,000.0
Supporting Facilities 18,700
Electric Service LS (11,000)
Overhead to Power Station LS 11,000.0
Water, Sewer, and Gas LS (5,500)
Water/Sewer LS 5,500.0
Page 1
Current Working Estimates For Budget Purposes
Fiscal Year: 2022
New LBJ Hospital Future Mission Growth
Medical Location(s) OCONUS, OC
1.00
05/02/2019
05/01/2019
Date Printed:
Date Revised:
Hospital
Type of Construction: NPM New Permanent
Estimate Name:
Project Title:
Location:
Area Cost Factor:
Catcode Description UOM Quantity Unit Cost
Total Cost
($000)
Supporting Facilities (Continued)
Paving, Walks, Curbs, and Gutters LS (1,100)
Site Work LS 1,100.0
Storm Drainage LS (1,100)
Storm Drainage LS 1,100.0
Estimated Contract Cost (655,565.5)
Contingency 5.00 % 32,778.3
Subtotal 688,343.8
Supervision, Inspection, and Overhead 6.50 % 44,742.3
Design/Build - Design Cost 4.00 % 27,533.8
Project Cost 760,619.9
Project Cost (Rounded) 765,000
Start Date 01 Mar 2022
01 Mar 2023
01 Mar 2024
3119
3182

3244
Construction Dates
Midpoint Date
Completion Date
1.0000 U.S. DOL
3.21 %
Project Incrementally Funded: No

PROGRAM FOR DESIGN

LBJ TROPICAL MEDICAL CENTER V1.00

MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Projected Year: 2021 Midpoint Year: 2023

1391 Processor ID: 91884
DMIS ID: 0075 State: MO
Facility: L. WOOD ACH
Installation: FT. LEONARD WOOD
Project Funding Source: OP - Other Procurement

Project Created: 16 Aug 2016 03:26PM ET by Paul Brye
Space Plan Last Edited: 03 May 2019 09:25AM ET by Mary Savitsky

Contents List Created: 13 Jan 2017 01:14PM ET by Paul Brye
Contents List Last Edited: 27 Apr 2019 05:50PM ET by Mary Savitsky

Report Generated: 03 May 2019 09:25AM

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 1 - COMMON AREAS

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LOB02	Lobby, Vestibule	870	870	1	1
1	LOB03	Lobby, Main	640	640	1	1
1	LOB04	Lobby, Seating	420	420	1	1
1	RECP3	Reception / Information	100	100	1	1
1	SRE01	Storage, Equipment	120	120	1	1
1	LAC01	Lactation Room	100	100	1	1
1	OFA04	Office, Chief Patient Experience	100	100	1	1
1	OFA04	Office, Contact Representattive	100	100	1	1
1	OFA04	Office, Contact Representattive	100	100	1	1
1	OFA04	Office, Contact Representattive	100	100	1	1

FA Totals: **Room Qty:** 10 **Net Area:** 2,650 **Gross Area:** 3,180

Department: 1 - COMMON AREAS

Functional Area: 2 - COFFE SHOP GRAB AND GO

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	BX000	Coffee Shop Grab and Go	300	300	1	1
1	BX000	Grab n Go Vending	30	30	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 330 **Gross Area:** 396

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Department: 1 - COMMON AREAS

Functional Area: 3 - EMPLOYEE SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LR002	Central Locker, Staff Male Changing	240	240	1	1
1	LR002	Central Locker, Staff Female Changing	240	240	1	1
1	TLTM2	Central Locker, Staff Male Toilet	200	200	1	1
1	TLTF2	Central Locker, Staff Female Toilet	200	200	1	1
1	SHWR1	Central Locker, Staff Male Shower	120	120	1	1
1	SHWR1	Central Locker, Staff Female Shower	120	120	1	1
1	SL001	Staff Lounge	300	300	1	1
1	SL001	Staff Lounge	300	300	1	1
1	SL001	Staff Lounge	300	300	1	1

FA Totals: **Room Qty:** 9 **Net Area:** 2,020 **Gross Area:** 2,424

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Department: 1 - COMMON AREAS

Functional Area: 4 - PUBLIC TOILETS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTF2	Public Toilet, Female	240	240	1	1
1	TLTM2	Public Toilet, Male	240	240	1	1
1	TLTU1	Toilet, Family	75	75	1	1
1	TLTF2	Public Toilet, Female	240	240	1	1
1	TLTM2	Public Toilet, Male	240	240	1	1
1	TLTU1	Toilet, Family	75	75	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 1,110 **Gross Area:** 1,332

Department: 1 - COMMON AREAS

Functional Area: 5 - BUILDING SERVICE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1

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Department: 1 - COMMON AREAS

Functional Area: 5 - BUILDING SERVICE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	COMC1	Telecommunications Room	130	130	1	1
1	JANC1	Janitor Closet	40	40	1	1
1	JANC1	Janitor Closet	40	40	1	1
1	JANC1	Janitor Closet	40	40	1	1
1	JANC1	Janitor Closet	40	40	1	1

FA Totals: **Room Qty:** 24 **Net Area:** 2,760 **Gross Area:** 3,312

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Department: 1 - COMMON AREAS

Functional Area: 6 - CONFERENCE ROOMS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CRA01	Conference Room, Small	300	300	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 300 **Gross Area:** 360

Department: 1 - COMMON AREAS

Functional Area: 7 - SECURITY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Security, Checkpoint	50	50	1	1
1	WRCH1	Security Workroom, Satellite	190	190	1	1
1	COM03	Security Monitoring, Satellite	60	60	1	1
1	OFA04	Office, Supervisor Lead Guard	100	100	1	1
1	OFA04	Office, Supervisory Guard	100	100	1	1
1	SSC01	Storage, Lost and Found	30	30	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 530 **Gross Area:** 636

Dept Totals: **Room Qty:** 58 **Net Area:** 9,700 **Gross Area:** 11,640

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Department: 2 - ADMINISTRATION

Functional Area: 1 - EXECUTIVE OFFICES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTU1	Toilet, Staff	75	75	1	1
1	WRC01	Waiting	60	60	1	1
1	CRC01	Conference Room, Command	200	200	1	1
1	OFC01	Office, CEO	140	140	1	1
1	RPR01	Copy / Office Supply	100	100	1	1
1	SRS01	Storage	60	60	1	1
1	FILE1	Storage, Documents	100	100	1	1
1	OFM01	Office, Executive Leadership	120	120	1	1
1	OFM01	Office, Executive Leadership	120	120	1	1
1	OFM01	Office, Executive Leadership	120	120	1	1

FA Totals: **Room Qty:** 10 **Net Area:** 1,095 **Gross Area:** 1,533

Department: 2 - ADMINISTRATION

Functional Area: 2 - PUBLIC AFFAIRS (PA)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA03	Cubicle, PAO	50	50	1	1
1	SRSE1	Storage, Photography equipment, portable back drop	50	50	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 100 **Gross Area:** 140

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Department: 2 - ADMINISTRATION

Functional Area: 3 - SECURITY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Chief Security	120	120	1	1
1	WRC03	Subwaiting	50	50	1	1
1	KEY01	Access Control / ID Badging	100	100	1	1
1	COM03	COMMUNICATIONS, SECURITY, CENTRAL ALARM	50	50	1	0
1	WRCH1	TEAM COLLABORATION	120	120	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 440 **Gross Area:** 616

Department: 2 - ADMINISTRATION

Functional Area: 4 - QUALITY MANAGEMENT (QM)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	FILE1	Storage, Documents	100	100	1	1
1	OFA05	Office, Shared, Patient Safety/Risk Manager	100	100	1	1
1	OFA05	Office, Shared, Performance Improvement (PI).CMS	100	100	1	1
1	RPR01	Alcove, Copier / Printer	60	60	1	1
1	OFA05	OFFICE, Shared Off Island Referral and Infection Control	120	120	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 480 **Gross Area:** 672

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Department: 2 - ADMINISTRATION

Functional Area: 5 - PATIENT REGISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Manager	100	100	1	1
1	OFA03	Cubicles, Registration Clerks	200	200	1	1
1	FILE1	Storage, Documents	100	100	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 400 **Gross Area:** 560

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Department: 2 - ADMINISTRATION

Functional Area: 6 - RESOURCE MANAGEMENT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, CFO	100	100	1	1
1	OFA03	Cubicles, Billing	350	350	1	1
1	FILE1	Storage, Documents	120	120	1	1
1	OFA04	Office, Shared	120	120	1	1
1	OFA03	Cubicles, Accounting & Cash Management	150	150	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	RPR01	Alcove, Copier / Printer	60	60	1	1
1	OFA03	Cubicles, Billing	350	350	1	1
1	OFA03	Cubicles, Accounting & Cash Management	150	150	1	1
1	OFA03	Cubicles, Accounting & Cash Management	150	150	1	1
1	OFA03	Cubicles, Accounting & Cash Management	150	150	1	1
1	OFA03	Cubicles, Accounting & Cash Management	150	150	1	1
1	OFA03	Cubicles, Accounting & Cash Management	150	150	1	1
1	OFA03	CUBICLE, Collections	60	60	1	0
1	OFA03	CUBICLE, Collections	60	60	1	0
1	OFA03	CUBICLE, Collections	60	60	1	0
1	OFA03	CUBICLE, Collections	60	60	1	0
1	OFA03	CUBICLE, Collections	60	60	1	0
1	OFA03	CUBICLE, Collections	60	60	1	0
1	OFA03	CUBICLE, Collections	60	60	1	0

FA Totals: **Room Qty:** 20 **Net Area:** 2,495 **Gross Area:** 3,493

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Department: 2 - ADMINISTRATION

Functional Area: 7 - HUMAN RESOURCES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Div Dir Human Resources	100	100	1	1
1	OFA04	Office, Credentialling	100	100	1	1
1	OFA03	Cubicle, Civilian Personnel	200	200	1	1
1	FILE1	Storage, Documents	100	100	1	1
1	RPR01	Copier, HR	120	120	1	1

FA Totals: **Room Qty:** 5 **Net Area:** 620 **Gross Area:** 868

Department: 2 - ADMINISTRATION

Functional Area: 8 - CLINICAL OPERATIONS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA03	Cubicles, Call Center	250	250	1	1
1	OFA04	Office Off Island Referras	100	100	1	1
1	RPR01	Alcove, Copier / Printer	60	60	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 410 **Gross Area:** 574

Dept Totals: **Room Qty:** 53 **Net Area:** 6,040 **Gross Area:** 8,456

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Department: 3 - LABORATORY

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC01	Waiting	200	200	1	1
1	RECP1	Reception	50	50	1	1
1	TLTU1	Toilet, Specimen Collection	75	75	1	1
1	TLTU1	Toilet, Specimen Collection	75	75	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 400 **Gross Area:** 520

Department: 3 - LABORATORY

Functional Area: 2 - SPECIMEN COLLECTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LBVP2	Phlebotomy Multi-Station	180	180	1	1
1	SRS01	Storage, Bulk	120	120	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 300 **Gross Area:** 390

Department: 3 - LABORATORY

Functional Area: 3 - CORE LABORATORY WORK AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LBSS1	Specimen Accessioning, Processing and Distribution	120	120	1	1
1	LBSS2	Specimen Shipping / Receiving	120	120	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 240 **Gross Area:** 312

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Department: 3 - LABORATORY

Functional Area: 4 - CLINICAL CORE LAB (OPEN CONCEPT)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LMCH2	Clinical Lab, Chemistry	240	240	1	1
1	LMU02	Clinical Lab, Urinalysis	120	120	1	1
1	LMHI2	Clinical Lab, Hematology	300	300	1	1
1	OFA03	Cubicle, Hematology	50	50	1	1
1	OFA03	Cubicle, Chemistry	50	50	1	1
1	OFA03	Cubicle, Certification Station	30	30	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 790 **Gross Area:** 1,027

Department: 3 - LABORATORY

Functional Area: 5 - BLOOD BANK

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LMBB1	Blood Bank, Blood Product Storage / Testing and Issuance	270	270	1	1
1	SRE01	Storage, Clean Equipment	120	120	1	1
1	OFA03	Cubicle, Blood Bank	50	50	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 440 **Gross Area:** 572

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Department: 3 - LABORATORY

Functional Area: 6 - MICROBIOLOGY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LMM03	Microbiology Clinical Lab	360	360	1	1
1	OFA03	Cubicle, Microbiology	50	50	1	1
1	LMAB1	ASIP (TB) Lab	360	360	1	1
1	OFA03	Cubicle, ASIP	50	50	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 820 **Gross Area:** 1,066

Department: 3 - LABORATORY

Functional Area: 7 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	UTMW1	Pathological Waste Holding	120	120	1	1
1	SRR02	Storage, Refrigerated, Freestanding	60	60	1	1
1	SRF02	Storage, Freezers, Freestanding	60	60	1	1
1	SRS01	Storage, Bulk	120	120	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 360 **Gross Area:** 468

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Department: 3 - LABORATORY

Functional Area: 8 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Clinical Laboratory Manager	100	100	1	1
1	OFP01	Office, QA	100	100	1	1
1	OFA03	Cubicle, Data Entry	50	50	1	1
1	OFA03	Cubicle, Data Analysis	50	50	1	1
1	RPR01	Copy / Office Supplies	100	100	1	1
1	FILE1	Storage, Lab Records	120	120	1	1
1	TLTS1	Toilet / Shower, Male	75	75	1	1
1	TLTS1	Toilet / Shower, Female	75	75	1	1

FA Totals: **Room Qty:** 8 **Net Area:** 670 **Gross Area:** 871

Department: 3 - LABORATORY

Functional Area: 9 - AUTOPSY SUITE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LBMR1	Refrigerator	120	120	1	1
1	LBAR1	Laboratory, Autopsy	300	300	1	1
1	JANC1	Janitors Closet	40	40	1	1
1	TLTS1	TOILET/SHOWER, Unisex	75	75	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1

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Department: 3 - LABORATORY

Functional Area: 9 - AUTOPSY SUITE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBMR1	Refrigerator	120	120	1	1
1	LBTS1	LABORATORY, TISSUE STORAGE	150	150	1	0
1	FILE1	FILE, GENERAL USE	120	120	1	0
1	UTMW1	UTILITY, MEDICAL WASTE HOLDING	90	90	1	0
1	LBBP1	LABORATORY, BODY PREP	120	120	1	0
1	LBBV1	LABORATORY, BODY VIEWING	120	120	1	0
1	TLTS1	TOILET/SHOWER, STAFF	75	75	1	0
1	LR002	LOCKERS, CHANGING	120	120	1	0

FA Totals: **Room Qty:** 21 **Net Area:** 2,530 **Gross Area:** 3,289

Dept Totals: **Room Qty:** 54 **Net Area:** 6,550 **Gross Area:** 8,515

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Department: 4 - RADIOLOGY

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	50	50	1	1
1	PLAY1	Play Waiting	120	120	1	1
1	WRC01	Waiting	200	200	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 370 **Gross Area:** 555

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Department: 4 - RADIOLOGY

Functional Area: 2 - GENERAL RAD PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SRLW2	Alcove, Stretcher	60	60	1	1
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	WRL01	Inpatient Holding	90	90	1	1
1	TLTU1	Toilet, Patient	75	75	1	1
1	XDR01	General Radiology	300	300	1	1
1	DR001	Cubicle, Gen. Rad. Patient Dressing	80	80	1	1
1	DR001	Cubicle, MMG Patient Dressing	80	80	1	1
1	OFA03	Cubicle, Mammo	120	120	1	1
1	XDM01	Mammography	150	150	1	1
1	XDUS1	Ultrasound	180	180	1	1
1	TLTU1	Toilet, Ultrasound Patient	75	75	1	1
1	USCL1	Cleaning Room, Transducer	120	120	1	1
1	DR001	Cubicle, U/S Patient Dressing	80	80	1	1

FA Totals: **Room Qty:** 13 **Net Area:** 1,440 **Gross Area:** 2,160

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Department: 4 - RADIOLOGY

Functional Area: 3 - GENERAL RAD SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA03	Cubicle, Supply	50	50	1	1
1	OFA03	Cubicle, QA	50	50	1	1
1	XVC01	XRAY, viewing QC	120	120	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	SRE01	Storage, Equipment	120	120	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 550 **Gross Area:** 825

Department: 4 - RADIOLOGY

Functional Area: 4 - GENERAL RAD STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFDR1	Office, Radiologist	100	100	1	1
1	RPR01	Copy / Office Supply	100	100	1	1
1	TLTU1	Toilet, Staff	60	60	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 260 **Gross Area:** 390

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Department: 4 - RADIOLOGY

Functional Area: 5 - COMPUTED TOMOGRAPHY (CT) PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTU1	Toilet, Computed Tomography (CT) Patient	60	60	1	1
1	XCTC1	XRAY, CT Control	120	120	1	1
1	XCTS1	Scanning Room, Computed Tomography (CT)	360	360	1	1
1	XCTC2	System Component Room, Computed Tomography (CT)	150	150	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 690 **Gross Area:** 1,035

Department: 4 - RADIOLOGY

Functional Area: 6 - MAGNETIC RESONANCE IMAGING (MRI) PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTU1	Toilet, MRI Patient	60	60	1	1
1	XMRF1	Ferromagnetic Detection	30	30	1	1
1	XMRS1	Scanning, MRI	480	480	1	1
1	XMRC2	System Component Room, MRI	240	240	1	1
1	XMRC1	Control Room, MRI	100	100	1	1
1	SRS01	Storage, MRI	90	90	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 1,000 **Gross Area:** 1,500

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Department: 4 - RADIOLOGY

Functional Area: 7 - CT / MRI SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRL01	Inpatient Holding	90	90	1	1
1	RCA04	Alcove, Blanket Warmer	30	30	1	1
1	LCCL3	Alcove, Linen Clean	90	90	1	1
1	SRLW1	Storage, Wheelchair	30	30	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	LCSL3	Alcove Linen Soiled	30	30	1	1
1	UCCL1	Utility, Clean	120	120	1	1
1	USCL1	Utility, Soiled	90	90	1	1
1	SRE01	Storage, Equipment Room	120	120	1	1

FA Totals: **Room Qty:** 9 **Net Area:** 630 **Gross Area:** 945

Department: 4 - RADIOLOGY

Functional Area: 8 - CT / MRI STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office, Private RAD Chief	100	100	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 100 **Gross Area:** 150

Dept Totals: **Room Qty:** 45 **Net Area:** 5,040 **Gross Area:** 7,560

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Department: 5 - PHARMACY

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC01	Waiting	310	310	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 310 **Gross Area:** 388

Department: 5 - PHARMACY

Functional Area: 2 - PHARMACY DISPENSING

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	PHOD1	Dispensing Window	30	30	1	1
1	PHOD1	Dispensing Window	30	30	1	1
1	PHOD1	Dispensing Window	30	30	1	1
1	PHOD1	Dispensing Window	30	30	1	1
1	PHOD1	Dispensing Window	30	30	1	1
1	PHOD1	Dispensing Window	30	30	1	1
1	PHOD1	Dispensing Area, Prescription Holding and Staging	120	120	1	1
1	OFDC2	Prescription Consultation	120	120	1	1

FA Totals: **Room Qty:** 8 **Net Area:** 420 **Gross Area:** 525

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Department: 5 - PHARMACY

Functional Area: 3 - PHARMACY STAFF WORKSTATIONS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	PHOD1	Workstation, Pharmacist	30	30	1	1
1	PHOD1	Workstation, Pharmacist	30	30	1	1
1	PHOD1	Workstation, Pharmacist	30	30	1	1
1	PHOD1	Workstation, Pharmacist	30	30	1	1
1	PHEV1	Workstation, Pharmacy Technician	30	30	1	1
1	PHEV1	Workstation, Pharmacy Technician	30	30	1	1
1	PHEV1	Workstation, Pharmacy Technician	30	30	1	1
1	PHEV1	Workstation, Pharmacy Technician	30	30	1	1
1	PHEV1	Workstation, Pharmacy Technician	30	30	1	1
1	PHEV1	Workstation, Pharmacy Technician	30	30	1	1
1	PHEV1	Workstation, Pharmacy Technician	30	30	1	1
1	PHOD1	Workstation, Order Entry and Validation	30	30	1	1

FA Totals: **Room Qty:** 12 **Net Area:** 360 **Gross Area:** 450

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 5 - PHARMACY

Functional Area: 4 - PHARMACY STORAGE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SSV01	Vault Storage, Controlled Substance	210	210	1	1
1	PHBS1	Pharmacy, Storage, Bulk, Medication and OTC	120	120	1	1
1	PHBS1	Storage, IV Fluids / Supplies	200	200	1	1
1	PHBS1	Storage, Non-Injectables	200	200	1	1
1	UTC01	Receiving, Trash Holding	90	90	1	1
1	PHBS1	Receiving, Breakdown Room	120	120	1	1
1	JANC1	Janitor Closet	40	40	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 980 **Gross Area:** 1,225

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AMERICA SOMOA

Department: 5 - PHARMACY

Functional Area: 5 - STAFF & ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office, Shared	120	120	1	1
1	RPR01	Copy / Office Supply	60	60	1	1
1	LR001	Lockers, Personal Property	30	30	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0

FA Totals: **Room Qty:** 8 **Net Area:** 525 **Gross Area:** 656

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Department: 5 - PHARMACY

Functional Area: 6 - IP PHARMACY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MMCR2	Cart Holding Storage	30	30	1	1
1	PHIV1	Preparation Work Area, Extemporaneous Compounding	60	60	1	1
1	PHEV1	Workstation, Prescription Validation / Check	30	30	1	1
1	PHUD1	Prescription Assembly Area, Manual Pick Station and STAT Special Orders	240	240	1	1
1	OFA03	Automated Dispensing Unit Control Center, PC / Printer	60	60	1	1
1	PHR01	Pharmacy, Prescription Assembly Robotics/Automation	120	120	1	1
1	PHMP1	Preparation Work Area, Repackaging	120	120	1	1
1	PHEV1	Workstation, Pharmacy	120	120	1	1
1	PHBS1	Working Inventory, Non-Injectables	120	120	1	1
1	PHBS1	Working Inventory, IV Fluids / Supplies	120	120	1	1

FA Totals: **Room Qty:** 10 **Net Area:** 1,020 **Gross Area:** 1,275

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AMERICA SOMOA

Department: 5 - PHARMACY

Functional Area: 7 - IP PHARMACY COMPOUNDING SUITE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	PHIV1	Compounded Sterile Preperation (CSP) Non-HD	120	120	1	1
1	NMLA1	Compounded Sterile Preperation (CSP) Anteroom	120	120	1	1
1	PHIV1	Compounded Sterile Preperation (CSP) - HD	120	120	1	1
1	PHEV1	Receiving, Documentation Station, HD	30	30	1	1
1	PHIV1	Receiving Breakdown HD	150	150	1	1
1	SRHM1	Storage, Hazardous Drug	90	90	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 630 **Gross Area:** 788

Department: 5 - PHARMACY

Functional Area: 8 - IP/OP PHARMACY SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	FILE1	Storage, Scripts and Invoice	100	100	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 100 **Gross Area:** 125

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Department: 5 - PHARMACY

Functional Area: 9 - IP/OP PHARMACY STORAGE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	PHEV1	Receiving, Documentation Station, Non Hazardous	30	30	1	1
1	UTC01	Receiving, Trash Holding	90	90	1	1
1	SRHM1	Storage, Flammable/Hazadrous Material	90	90	1	1
1	PHBS1	Receiving, Breakdown Room Non-HDs	270	270	1	1
1	SRHM1	Storage, Non-Hazardous Waste Holding	60	60	1	1
1	SRS01	Storage, General	120	120	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 660 **Gross Area:** 825

Dept Totals: **Room Qty:** 59 **Net Area:** 5,005 **Gross Area:** 6,256

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 6 - MEDICAL RECORDS/ HEALTH BENEFITS & PATIENT ADMINISTRATION

Functional Area: 1 - PATIENT SERVICES ADMINISTRATION (PAD)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC01	Waiting, PAD Administration, PT Affairs, ROI, Medical Records	120	120	1	1
1	RECP1	Reception	50	50	1	1
1	OFA03	Cubicle, PAD Admin Assistant	50	50	1	1
1	OFA03	Cubicle, Pt Affairs Clerks	150	150	1	1
1	OFA04	Office, Medical Records Administrator (Supervisor, In and Out Patient Records)	100	100	1	1
1	OFA04	Office	100	100	1	1
1	RPR01	Copy / Office Supply	100	100	1	1
1	SRS01	Storage General	60	60	1	1
1	WRC01	Waiting, Admission, Discharge	60	60	1	1
1	PAIA1	Admissions / Dispositions Patient Interview	60	60	1	1
1	PAIA1	Admissions / Dispositions Patient Interview	60	60	1	1
1	PAIA1	Admissions / Dispositions Patient Interview	60	60	1	1
1	CASH1	Cashier	60	60	1	1
1	OFA05	Office, Treasurer/Account Tech	100	100	1	1
1	OFA04	Office, A&D	100	100	1	1
1	PAIA1	Admissions / Dispositions Patient Interview	60	60	1	1

FA Totals: **Room Qty:** 16 **Net Area:** 1,290 **Gross Area:** 1,742

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 6 - MEDICAL RECORDS/ HEALTH BENEFITS & PATIENT ADMINISTRATION

Functional Area: 2 - MEDICAL RECORDS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Reception, Records Transaction	30	30	1	1
1	RECP3	Reception, Records Transaction	30	30	1	1
1	OFA03	Cubicles, Release of Information	150	150	1	1
1	OFA05	Office, Shared Inpatient/Outpatient Supervisors	100	100	1	1
1	MRS02	Med Records	1,000	1,000	1	1
1	OFA03	Cubicle, Outpatient/Inpatient Records Clerk	600	600	1	1
1	OFA03	Cubicle, Records Lead	50	50	1	1
1	OFA03	Cubicle, Coders	50	50	1	1
1	OFA05	Office, Shared Supervisor/Lead Coders	100	100	1	1
1	OFA03	Cubicle, Medical Records Transcriptionist	50	50	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	OFA03	Cubicle, Coders	50	50	1	1
1	OFA03	Cubicle, Coders	50	50	1	1
1	OFA03	Cubicle, Coders	50	50	1	1
1	OFA03	Cubicle, Coders	50	50	1	1

FA Totals: **Room Qty:** 15 **Net Area:** 2,435 **Gross Area:** 3,287

Dept Totals: **Room Qty:** 31 **Net Area:** 3,725 **Gross Area:** 5,029

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 7 - EMERGENCY

Functional Area: 1 - EMS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	COM02	Dispatch, Ambulance	120	120	1	1
1	OFA04	Office, Ambulance Service Captain	100	100	1	1
1	CRA01	CONFERENCE ROOM, SMALL/EOC	240	240	1	0
1	DUTY1	On-Call Room, Ambulance Service	120	120	1	0
1	SRSE1	Storage, Ambulance Equipment	120	120	1	0
1	TLTS1	Toilet / Shower, On-Call	75	75	1	0
1	TLTS1	Toilet / Shower, On-Call	75	75	1	0
1	LR002	LOCKERS, CHANGING	120	120	1	0
1	LR002	LOCKERS, CHANGING	120	120	1	0
1	JANC1	JANITOR'S CLOSET	60	60	1	0
1	CRA01	CONFERENCE ROOM, SMALL/EOC	240	240	1	0
1	IPKO1	KITCHENETTE	120	120	1	0
1	LOB05	Vestibule, Ambulance Entry	120	120	1	0
1	SRLW1	Alcove, Wheelchair	30	30	1	0
1	SRLW2	Alcove, Stretcher	60	60	1	0

FA Totals: **Room Qty:** 15 **Net Area:** 1,720 **Gross Area:** 2,494

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Department: 7 - EMERGENCY

Functional Area: 2 - ED RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LOB05	Vestibule, Emergency Department	120	120	1	1
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	NSTA5	Security / Alarm Station	60	60	1	1
1	RECP1	Reception	100	100	1	1
1	PLAY1	Play Waiting	120	120	1	1
1	TLTU1	Toilet, Unisex	75	75	1	1
1	WRC02	Waiting, Isolation	120	120	1	1
1	TLTU1	Toilet, Unisex	75	75	1	1
1	WRC01	Waiting	540	540	1	0

FA Totals: **Room Qty:** 9 **Net Area:** 1,240 **Gross Area:** 1,798

Department: 7 - EMERGENCY

Functional Area: 3 - TRIAGE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTU1	Toilet, Patient	75	75	1	1
1	OFDC2	Family Consult Room	120	120	1	1
1	EXRG4	Screening Room, Triage	150	150	1	0
1	EXRG4	Screening Room, Triage	150	150	1	0

FA Totals: **Room Qty:** 4 **Net Area:** 495 **Gross Area:** 718

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 7 - EMERGENCY

Functional Area: 4 - TREATMENT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	NBCD3	Anteroom, Decontamination Shower	120	120	1	1
1	NBCD2	Decontamination Shower	120	120	1	1
1	EXER1	Treatment Room, ED	150	150	1	1
1	EXER2	Treatment Room, ED Airborne Infection Isolation (AII)	180	180	1	1
1	TRGM1	Procedure Room	180	180	1	1
1	EXER1	Treatment Room, ED	150	150	1	1
1	BRNP6	Anteroom, Secure Holding	75	75	1	1
1	OPMH4	Secure Holding	120	120	1	1
1	TLTP2	Toilet, Secure Holding Patient	40	40	1	1
1	EXER1	Treatment Room, ED	150	150	1	1
1	EXER1	Treatment Room, ED	150	150	1	1
1	TLTU1	Toilet, Patient	75	75	1	1
1	EXEB1	Treatment Room, ED Bariatric	180	180	1	1
1	TLTB1	Toilet, Bariatric	75	75	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	EXER2	Treatment Room, ED Airborne Infection Isolation (AII) (Min)	180	180	1	0
1	EXRG8	Treatment Room, ED OB / GYN	150	150	1	0
1	EXER1	Treatment Room, ED	150	150	1	0
1	EXER2	Treatment Room, ED Airborne Infection Isolation (AII)	180	180	1	0
1	TLTU1	Toilet, ED Airborne Infection Isolation (AII) Patient	75	75	1	0
1	OFDC2	Family Consult Room	150	150	1	0
1	EXER1	Treatment Room, ED	150	150	1	0
1	EXER1	Treatment Room, ED	150	150	1	0

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Department: 7 - EMERGENCY

Functional Area: 4 - TREATMENT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	EXER1	Treatment Room, ED	150	150	1	0
1	EXER1	Treatment Room, ED	150	150	1	0
1	EXEB1	Treatment Room, ED Bariatric	180	180	1	1
1	EXEB1	Treatment Room, ED Bariatric	180	180	1	1
1	EXEB1	Treatment Room, ED Bariatric	180	180	1	1

FA Totals: **Room Qty:** 28 **Net Area:** 3,865 **Gross Area:** 5,604

Department: 7 - EMERGENCY

Functional Area: 5 - TRAUMA / RESUSCITATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	ORSA1	Scrub Area	60	60	1	1
1	TRET4	Trauma / Resuscitation Room (Level III / IV)	360	360	1	1
1	SRSE1	Storage, Trauma / Resuscitation Room (Level III / IV)	90	90	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 510 **Gross Area:** 740

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Department: 7 - EMERGENCY

Functional Area: 6 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	NSTA1	Nurse Station	240	240	1	1
1	WRCH1	Team Workroom/Charting	240	240	1	1
1	OFA03	Cubicle, Provider Admin	200	200	1	1
1	MEDP1	Medication Room	120	120	1	1
1	RCA04	Alcove, Blanket Warmer	30	30	1	1
1	LCCL3	Alcove, Clean Linen	30	30	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	IPK01	Alcove, Nourishment	60	60	1	1
1	SRSE1	Storage, Equipment	120	120	1	1
1	SRGC2	Storage, Gas Cylinder	60	60	1	1
1	SRS01	Storage, Medical Supplies	150	150	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	XRM01	Alcove, Portable Imaging	30	30	1	0
1	SRS01	Storage, Mass Casualty	120	120	1	0

FA Totals: **Room Qty:** 15 **Net Area:** 1,640 **Gross Area:** 2,378

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Department: 7 - EMERGENCY

Functional Area: 7 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SL001	Lounge, Staff	180	180	1	1
1	SRPB1	Storage, Patient Belongings	60	60	1	1
1	OFA04	Office, Department / Chief	120	120	1	0
1	OFA05	Office, Shared	120	120	1	0
1	OFA03	Cubicle	60	60	1	0
1	TLTU1	Toilet, Staff	75	75	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	TLTU1	Toilet, Staff	75	75	1	0

FA Totals: **Room Qty:** 10 **Net Area:** 870 **Gross Area:** 1,262

Dept Totals: **Room Qty:** 84 **Net Area:** 10,340 **Gross Area:** 14,993

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 8 - LABOR AND DELIVERY (L&D) / OB-GYN

Functional Area: 1 - L&D/OBU FAMILY / VISITOR AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTS1	L&D/OBU Toilet / Shower, Family / Visitor	60	60	1	1
1	SL001	L&D/OBU Lounge, Family / Visitor	150	150	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 210 **Gross Area:** 315

Department: 8 - LABOR AND DELIVERY (L&D) / OB-GYN

Functional Area: 2 - L&D/OBU TRIAGE PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	NSTA1	Nurse Station, Triage	120	120	1	1
1	LDEP1	Exam / Triage Room	180	180	1	1
1	TLTU1	Toilet, Exam / Triage Room Patient	75	75	1	1
1	XRM01	Alcove, Portable Ultrasound	30	30	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 405 **Gross Area:** 608

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 8 - LABOR AND DELIVERY (L&D) / OB-GYN

Functional Area: 3 - L&D/OBU PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	BRAR1	Anteroom, LDRP Airborne Infection Isolation (AII) Room	70	70	1	1
1	LDRP3	LDRP, Airborne Infection Isolation (AII) Room	360	360	1	1
1	SRSE1	Equipment Room, Isolation LDRP	120	120	1	1
1	TLTS2	Toilet / Shower, LDRP Room Isolation	60	60	1	1
1	SRSE1	Equipment Room, LDRP	120	120	1	1
1	MEDP1	Medication Room	120	120	1	1
1	NSTA3	Monitoring Station	60	60	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 910 **Gross Area:** 1,365

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Department: 8 - LABOR AND DELIVERY (L&D) / OB-GYN

Functional Area: 4 - L&D/OBU UNIT SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RCA04	Alcove, Blanket Warmer	30	30	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	NCWD1	Nourishment Room	120	120	1	1
1	NYFS1	Storage, Breast Milk	60	60	1	1
1	SRSE1	Storage, Equipment	240	240	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	MEDP1	Medication Room	120	120	1	0
1	SRLW2	Alcove, Stretcher	60	60	1	0

FA Totals: **Room Qty:** 9 **Net Area:** 870 **Gross Area:** 1,305

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Department: 8 - LABOR AND DELIVERY (L&D) / OB-GYN

Functional Area: 5 - L&D/OBU STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office,Leadership	100	100	1	1
1	RPR01	Copy / Office Supplies	100	100	1	1
1	TLTU1	Toilet, L & D Staff	60	60	1	1
1	LR002	Locker / Changing Room, Female Staff	120	120	1	1
1	TLTS1	Toilet / Shower, Female Staff	60	60	1	1
1	LR002	Locker / Changing Room, Male Staff	120	120	1	1
1	TLTS1	Toilet / Shower, Male Staff	60	60	1	1
1	DUTY1	On-Call Room	120	120	1	1
1	TLTS1	Toilet / Shower, On-Call Room	60	60	1	1
1	SL001	Lounge, Staff	120	120	1	1
1	OFA04	Office, Private	120	120	1	0
1	SL001	Lounge, Staff	120	120	1	0

FA Totals: **Room Qty:** 12 **Net Area:** 1,160 **Gross Area:** 1,740

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AMERICA SOMOA

Department: 8 - LABOR AND DELIVERY (L&D) / OB-GYN

Functional Area: 6 - WELL-BABY NURSERY (LEVEL I) AND NICU LEVEL 3-4

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	NYAR1	Gowning Station	60	60	1	1
1	NYNN1	Nursery, Level 1	240	240	1	1
1	NYIR1	Isolation Room	180	180	1	1
1	NYPR1	Procedure Room	180	180	1	1
1	NYNN1	NURSERY, LEVEL 3-4	240	240	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 900 **Gross Area:** 1,350

Dept Totals: **Room Qty:** 39 **Net Area:** 4,455 **Gross Area:** 6,683

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Department: 9 - SURGERY

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFDC2	Consult / Education Room	120	120	1	1
1	TLTU1	Public Toilet, Unisex	75	75	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 195 **Gross Area:** 312

Department: 9 - SURGERY

Functional Area: 3 - INTERVENTIONAL PROCEDURES RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	DR001	Cubicle, Patient Dressing	60	60	1	1
1	TLTU1	Toilet, Patient	75	75	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 135 **Gross Area:** 216

Department: 9 - SURGERY

Functional Area: 4 - INTERVENTIONAL PROCEDURES (PAIN)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	ORPP1	Single-Station Room, Anesthesia Procedure	180	180	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 180 **Gross Area:** 288

Department: 9 - SURGERY

Functional Area: 5 - INTERVENTIONAL PROCEDURES SHARED SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MEDP1	Medication Room	120	120	1	1
1	UCCL1	Utility,Clean	120	120	1	1
1	WRCH1	Interventional Procedures Team Room	120	120	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 360 **Gross Area:** 576

Department: 9 - SURGERY

Functional Area: 6 - INTERVENTIONAL PROCEDURES (ORAL SURGERY)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	DNTS1	Dental Treatment Room (DTR), Oral Surgery	180	180	1	1
1	SRE01	Storage, Equipment / Supplies, Dental	100	100	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 280 **Gross Area:** 448

Department: 9 - SURGERY

Functional Area: 7 - INTERVENTIONAL PROCEDURES (GI/ENDO)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SRE01	Storage, Equipment / Supplies, Endo	100	100	1	1
1	UCCL2	Utility, Scope Wash, Clean	120	120	1	1
1	USCL2	Utility, Scope Wash, Soiled	120	120	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 340 **Gross Area:** 544

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Department: 9 - SURGERY

Functional Area: 8 - PRE-OPERATIVE HOLDING / PHASE II RECOVERY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	DR001	Cubicle, Patient Dressing	60	60	1	1
1	LR001	Lockers, Patient Personal Property	30	30	1	1
1	DR001	Cubicle, Patient Dressing	60	60	1	1
1	SRLW1	Storage, Wheelchair	30	30	1	1
1	NSTA1	Nurse Station	120	120	1	1
1	MEDP1	Medication Room	120	120	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	TLTU1	Toilet, Patient	75	75	1	1
1	RRIR1	Airborne Infection Isolation (AII) Room, Pre-Operative Holding / Phase II Recovery	180	180	1	1
1	RCA04	Alcove, Blanket Warmer	30	30	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1
1	JANC1	Janitor Closet	40	40	1	1

FA Totals: **Room Qty:** 12 **Net Area:** 895 **Gross Area:** 1,432

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Department: 9 - SURGERY

Functional Area: 9 - ANESTHESIA PROCEDURES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	ORPP2	Multi-Station Room, Anesthesia Procedure	240	240	1	1
1	NSTA1	Nurse Station	120	120	1	1
1	OFA03	Cubicles, Anesthesia, CRNA	60	60	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 420 **Gross Area:** 672

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 9 - SURGERY

Functional Area: 10 - SURGICAL PROCEDURES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA03	Cubicle, Supply Tech	50	50	1	1
1	ORSA1	Scrub Sink	60	60	1	1
1	ORGS1	Operating Room (OR), General	660	660	1	1
1	ORSA1	Scrub Sink	60	60	1	1
1	ORGS1	Operating Room (OR), General	660	660	1	1
1	ORCC1	Clean Core, Sterile Supplies	240	240	1	1
1	ORSR1	Sterile Processing	120	120	1	1
1	MEDP1	Medication Room	120	120	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	ANCW1	Workroom, Anesthesia Clean	120	120	1	1
1	OROS1	Operating Room (OR), Orthopedic	660	660	1	1
1	OROE1	Storage, Orthopedic OR	120	120	1	1
1	OROE1	Equipment Room, Orthopedic OR	180	180	1	1
1	ORDA1	Decontamination / Clean-up Area	180	180	1	1
1	SRGC2	Storage, Gas Cylinder	60	60	1	1
1	ORGS1	Operating Room (OR), General	660	660	1	0
1	ORGE1	Equipment Room, General OR	180	180	1	0
1	ORGS1	Operating Room (OR), General	660	660	1	0

FA Totals: **Room Qty:** 18 **Net Area:** 4,820 **Gross Area:** 7,712

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 9 - SURGERY

Functional Area: 11 - PHASE I RECOVERY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RCA04	Alcove, Blanket Warmer	30	30	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	XRM01	Alcove, Portable Imaging	30	30	1	1
1	MEDP1	Medication Room	120	120	1	1
1	RRSS1	Multi-Station Room, Phase I Recovery	420	420	1	1
1	NSTA1	Phase I Recovery, Nurse Station	60	60	1	1
1	WRCH1	Team Collaboration Room	200	200	1	1
1	XVC01	Viewing Room, Picture Archiving and Communication System (PACS)	120	120	1	1
1	SRSE1	Storage, Equipment	120	120	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1

FA Totals: **Room Qty:** 10 **Net Area:** 1,250 **Gross Area:** 2,000

Department: 9 - SURGERY

Functional Area: 12 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	UCCL1	Utility Room, Clean	120	120	1	1
1	SRGC2	Storage, Gas Cylinder	60	60	1	1
1	USCL1	Utility Room, Soiled	90	90	1	0

FA Totals: **Room Qty:** 3 **Net Area:** 270 **Gross Area:** 432

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 9 - SURGERY

Functional Area: 13 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office, PACU OIC / NCOIC	100	100	1	1
1	OFA05	Office, shared	200	200	1	1
1	SL001	Lounge, Staff	120	120	1	1
1	LR002	Locker / Changing Room, Female Staff	120	120	1	1
1	TLTS1	Toilet / Shower, Female Staff	75	75	1	1
1	LR002	Locker / Changing Room, Male Staff	120	120	1	1
1	TLTS1	Toilet / Shower, Male Staff	75	75	1	1
1	DUTY1	On-Call Room	120	120	1	1
1	OFA05	Office, Shared	120	120	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0

FA Totals: **Room Qty:** 13 **Net Area:** 1,290 **Gross Area:** 2,064

Dept Totals: **Room Qty:** 72 **Net Area:** 10,435 **Gross Area:** 16,696

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 10 - KITCHEN

Functional Area: 1 - DINING

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	FSCD1	FOOD SERVICE, CAFETERIA DINING ROOM	1,500	1,500	1	0

FA Totals: **Room Qty:** 1 **Net Area:** 1,500 **Gross Area:** 2,100

Department: 10 - KITCHEN

Functional Area: 2 - SERVERY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	FSSL5	Servery Area	2,800	2,800	1	0

FA Totals: **Room Qty:** 1 **Net Area:** 2,800 **Gross Area:** 3,920

Department: 10 - KITCHEN

Functional Area: 3 - KITCHEN FOOD PREPARATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	FSRC1	Storage, Refrigerated PTS Chill Box	100	100	1	1
1	SRR02	Storage, Refrigerators, Freestanding	60	60	1	1
1	SRR02	Storage, Refrigerators, Freestanding	60	60	1	1
1	FSFP3	Food Preparation and Production	1,200	1,200	1	0
1	ICE01	Ice Machine	30	30	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 1,450 **Gross Area:** 2,030

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 10 - KITCHEN

Functional Area: 4 - KITCHEN PATIENT TRAY SERVICE/DIETETICS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Diet Tech Supervisor	100	100	1	1
1	OFA03	Cubicle, PT Tray Call Center & RD (Diet Techs)	200	200	1	1
1	SRS01	Storage, Forms & Literature	50	50	1	1
1	FSCS1	Holding Area, Clean Tray Cart (Cook / Chill)	20	20	1	0
1	FSCS1	Holding Area, Food Cart (Hot / Cold)	20	20	1	0
1	FSPT1	Tray Assembly, Straight Line	525	525	1	0
1	SRR01	Walk-in Refrigerator, Tray Carts	120	120	1	0

FA Totals: **Room Qty:** 7 **Net Area:** 1,035 **Gross Area:** 1,449

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 10 - KITCHEN

Functional Area: 5 - KITCHEN SANITATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	USDD1	Detergent Dispensing Room	60	60	1	1
1	CWSH1	Cart Wash Area, Manual	120	120	1	0
1	FSCS1	Holding Area, Soiled Tray Carts	20	20	1	0
1	FSDW1	Dishwashing	250	250	1	0
1	FSPW1	Pots / Pans Washing	200	200	1	0
1	FSRH1	Holding Area, Clean Pots / Pans	40	40	1	0
1	JANC1	Janitor Closet	60	60	1	0
1	SRE01	Storage, Cleaning Products & Supplies	120	120	1	0

FA Totals: **Room Qty:** 8 **Net Area:** 870 **Gross Area:** 1,218

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 10 - KITCHEN

Functional Area: 6 - KITCHEN RECEIVING AND STORAGE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	DOCK1	Loading Dock, Soiled	80	80	1	1
1	DOCK1	Loading Dock, Clean	80	80	1	1
1	MMRP1	Receiving Area	160	160	1	1
1	SRR01	Storage, Walk-In Refrigerator, Dairy	180	180	1	1
1	SRR01	Storage, Walk-In Refrigerator, Vegetables	240	240	1	1
1	SRR01	Holding, Refrigerated Waste	120	120	1	0
1	SRS01	Storage, Dry Food	120	120	1	0
1	UTC01	UTILITY, TRASH COLLECTION	90	90	1	0
1	SRR01	Storage, Walk-In Refrigerator Meat	120	120	1	0

FA Totals: **Room Qty:** 9 **Net Area:** 1,190 **Gross Area:** 1,666

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 10 - KITCHEN

Functional Area: 7 - KITCHEN STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Reception Desk	50	50	1	1
1	OFA04	Office, Inpatient Nutritonist	100	100	1	1
1	OFA05	Office shared,	100	100	1	1
1	SSS01	Secure Storage, Count Room and Safe	100	100	1	1
1	OFA03	Cubicle	75	75	1	1
1	OFA03	Cubicle	75	75	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 500 **Gross Area:** 700

Dept Totals: **Room Qty:** 37 **Net Area:** 9,345 **Gross Area:** 13,083

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 11 - STERILE PROCESSING DEPARTMENT (SPD)

Functional Area: 1 - DECONTAMINATION (SOILED WORK AREA)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CSCR1	Soiled Transition / Drop-off	180	180	1	1
1	OFA03	Decon recieiving workstation	60	60	1	1
1	CSDE1	Decontamination Work Area, Small	360	360	1	1
1	CWSH1	Manual Wash-Up	120	120	1	1
1	USDD1	Storage Room, Detergent and Water Treatment	60	60	1	1
1	LR002	Lockers / Changing Room, Unisex	40	40	1	1
1	TLTS1	Toliet/Shower Unisex	60	60	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 880 **Gross Area:** 1,144

Department: 11 - STERILE PROCESSING DEPARTMENT (SPD)

Functional Area: 2 - PREPARATION AND ASSEMBLY (CLEAN WORK AREA)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CSIA1	Clean Workroom, Instrument Set Assembly, Small	360	360	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 360 **Gross Area:** 468

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 11 - STERILE PROCESSING DEPARTMENT (SPD)

Functional Area: 3 - STERILIZATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CSSS1	Sterilization Area, Small	240	240	1	1
1	CSCQ1	Cart Return	30	30	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 270 **Gross Area:** 351

Department: 11 - STERILE PROCESSING DEPARTMENT (SPD)

Functional Area: 4 - RECEIVING, STORAGE AND DISPATCH

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MMRP1	Receiving, Breakout and Inspection Room	120	120	1	1
1	SRS01	Secure Storage	120	120	1	1
1	ORSS1	Storage, Sterile Consumables	270	270	1	1
1	ORSS1	Storage, Sterile Durables	180	180	1	1
1	CSCQ1	Case Cart Assembly	120	120	1	1
1	OFA03	Case Cart Dispatch Workstation	50	50	1	1
1	OFA03	Cubicle, Supply Tech	50	50	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 910 **Gross Area:** 1,183

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 11 - STERILE PROCESSING DEPARTMENT (SPD)

Functional Area: 5 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RPR01	Copy / Office Supply	100	100	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 100 **Gross Area:** 130

Dept Totals: **Room Qty:** 18 **Net Area:** 2,520 **Gross Area:** 3,276

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 12 - MEDICAL CLINIC

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	50	50	1	1
1	CLSC3	Patient Education	120	120	1	1
1	WRC01	Waiting	200	200	1	1
1	PLAY1	Play Waiting	120	120	1	1
1	EXR11	ALCOVE, HEIGHT / WEIGHT	50	50	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 540 **Gross Area:** 756

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 12 - MEDICAL CLINIC

Functional Area: 2 - EXAM PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	EXRG6	Exam Room, Airborne Infection Isolation (AII)	180	180	1	1
1	TLTU1	Toilet, Airborne Infection Isolation (AII)	75	75	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	OFA05	Office, Nurse Case Manager, Shared	100	100	1	1
1	EXTH1	Telehealth Room	120	120	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	TLTB1	Toilet, Bariatric	75	75	1	1
1	EXRG6	Exam Room, Airborne Infection Isolation (AII)	180	180	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1

FA Totals: **Room Qty:** 10 **Net Area:** 1,255 **Gross Area:** 1,757

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 12 - MEDICAL CLINIC

Functional Area: 3 - CLINIC SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	MEDP1	Medication Room	60	60	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	SRE01	Storage, Equipment	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 450 **Gross Area:** 630

Department: 12 - MEDICAL CLINIC

Functional Area: 4 - TREATMENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OOHR1	Observation / Hydration	120	120	1	1
1	TRGM1	Treatment Room, General	180	180	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 300 **Gross Area:** 420

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 12 - MEDICAL CLINIC

Functional Area: 5 - INFUSION THERAPY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OPCT1	Infusion Therapy Station	120	120	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 120 **Gross Area:** 168

Department: 12 - MEDICAL CLINIC

Functional Area: 6 - STAFF AND ADMININSTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Clinic Chief	100	100	1	1
1	RPR01	Copy / Office Supply	50	50	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 150 **Gross Area:** 210

Dept Totals: **Room Qty:** 26 **Net Area:** 2,815 **Gross Area:** 3,941

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 13 - PHYSICAL THERAPY (PT)

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	50	50	1	1
1	WRC01	Waiting	200	200	1	1
1	PLAY1	Play Waiting	120	120	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 370 **Gross Area:** 500

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 13 - PHYSICAL THERAPY (PT)

Functional Area: 2 - PT PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTS1	Toilet / Shower, Female Patient	75	75	1	1
1	LR002	Locker / Changing, Male Patient	120	120	1	1
1	TLTS1	Toilet / Shower, Male Patient	75	75	1	1
1	ICE01	Alcove, Ice Machine/Water Fountain/Bottle Filler	30	30	1	1
1	PTGL1	Gait Lane and Parallel Bar Area	180	180	1	1
1	PTEA1	PT Exercise Area	1,105	1,105	1	1
1	PTTC1	Multi-Station Treatment Area, PT	240	240	1	1
1	SRE01	Storage, Equipment PT	120	120	1	1
1	LCCL3	Alcove, Clean Linen	30	30	1	1
1	RCA01	Alcove, AED	30	30	1	1
1	PTPR1	Private Treatment Room, PT	150	150	1	1
1	PTEM1	EMG Room	150	150	1	1
1	RCA02	Alcove, Portable Patient Lift	30	30	1	0

FA Totals: **Room Qty:** 13 **Net Area:** 2,335 **Gross Area:** 3,152

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 13 - PHYSICAL THERAPY (PT)

Functional Area: 3 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	RCA02	Alcove, Portable Patient Lift	30	30	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 270 **Gross Area:** 365

Department: 13 - PHYSICAL THERAPY (PT)

Functional Area: 4 - STAFF & ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RPR01	Copy / Office Supply	50	50	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	OFA04	Office, Clinic Chief	120	120	1	0

FA Totals: **Room Qty:** 3 **Net Area:** 245 **Gross Area:** 331

Dept Totals: **Room Qty:** 23 **Net Area:** 3,220 **Gross Area:** 4,347

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 14 - OB-GYN CLINIC

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	50	50	1	1
1	WRC01	Waiting	200	200	1	1
1	PLAY1	Play Waiting	120	120	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 370 **Gross Area:** 500

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 14 - OB-GYN CLINIC

Functional Area: 2 - PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CLR05	Classroom, Women's Health	240	240	1	1
1	EXR11	Alcove, Height / Weight	50	50	1	1
1	LDAT2	Antepartum Testing, Multi-Station	540	540	1	1
1	TLTU1	Toilet, Antepartum Testing Patient	75	75	1	1
1	EXRG6	Exam Room, Airborne Infection Isolation (AII)	180	180	1	1
1	TLTU1	Toilet, Airborne Infection Isolation (AII)	75	75	1	1
1	TLTB1	Toilet, Bariatric Patient	75	75	1	1
1	SRLW2	Alcove, Stretcher	60	60	1	1
1	TROB1	Procedure Room, GYN	180	180	1	1
1	XDUS1	Ultrasound Room	180	180	1	1
1	TLTU1	Toilet, Ultrasound Patient	75	75	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	TLTB1	Toilet, Bariatric Patient	75	75	1	1

FA Totals: **Room Qty:** 17 **Net Area:** 2,555 **Gross Area:** 3,449

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 14 - OB-GYN CLINIC

Functional Area: 3 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	USCL2	Utility, Soiled Scope Wash	120	120	1	1
1	UCCL2	Utility, Clean Scope Wash	120	120	1	1
1	MEDP1	Medication Room	120	120	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	SRSE1	Storage, Equipment	120	120	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 720 **Gross Area:** 972

Department: 14 - OB-GYN CLINIC

Functional Area: 4 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Clinic Manager	100	100	1	1
1	RPR01	Copy / Office Supply	50	50	1	1
1	OFA05	Office, shared	120	120	1	1
1	OFA05	Office, Provider, Chief	100	100	1	1
1	WRCH1	Collaboration Room	120	120	1	1
1	TLTU1	Toilet, Staff	75	75	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 565 **Gross Area:** 763

Dept Totals: **Room Qty:** 33 **Net Area:** 4,210 **Gross Area:** 5,684

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 15 - ENT / EYE

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	150	150	1	1
1	WRC01	Waiting	420	420	1	1
1	PLAY1	Play Waiting	120	120	1	1
1	CLSC3	Patient Education	120	120	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 810 **Gross Area:** 1,094

Department: 15 - ENT / EYE

Functional Area: 2 - OPHTHALMOLOGY PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	EYVS1	Vision Screening Room	120	120	1	1
1	EYEL1	Ophthalmology Eye Lane, Full	240	240	1	1
1	TREY2	YAG Laser Room	180	180	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 540 **Gross Area:** 729

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 15 - ENT / EYE

Functional Area: 3 - OPTOMETRY PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC03	Sub-Waiting, Dilation	30	30	1	1
1	EYFD1	Fitting and Dispensing, Eye Glass	120	120	1	1
1	EYVS1	Vision Screening Room	120	120	1	1
1	EYEL1	Optometry Eye Lane, Full	240	240	1	1
1	EYEL2	Optometry Eye Lane, Electronic Folded	120	120	1	1
1	TLTU1	Toilet, Patient	75	75	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 705 **Gross Area:** 952

Department: 15 - ENT / EYE

Functional Area: 4 - AUDIOLOGY PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA03	Cubicle, Audiology Tech	50	50	1	1
1	PEHS3	Audiometric Booth, Diagnostic, Single Patient	240	240	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 290 **Gross Area:** 392

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 15 - ENT / EYE

Functional Area: 5 - ENT PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	EXEN1	Exam, ENT	150	150	1	1
1	EXEN1	Exam, ENT	150	150	1	1
1	TREN1	Treatment, ENT	175	175	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 475 **Gross Area:** 641

Department: 15 - ENT / EYE

Functional Area: 6 - CLINIC SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	UCCL1	Utility Room, Clean	150	150	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	SRSE1	Storage, Equipment	150	150	1	1
1	UCCL2	Utility, Scope Wash Clean	120	120	1	1
1	USCL2	Utility, Scope Wash Soiled	120	120	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 660 **Gross Area:** 891

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AMERICA SOMOA

Department: 15 - ENT / EYE

Functional Area: 7 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Chief Optometry, Chief ENT	100	100	1	1
1	OFA05	Office, Shared	120	120	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	RPR01	Copy / Office Supply	50	50	1	1
1	OFA04	Office, Chief Optometry, Chief ENT	100	100	1	1

FA Totals: **Room Qty:** 5 **Net Area:** 445 **Gross Area:** 601

Dept Totals: **Room Qty:** 29 **Net Area:** 3,925 **Gross Area:** 5,299

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Department: 16 - MENTAL HEALTH CLINIC

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	50	50	1	1
1	WRC01	Waiting	200	200	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 250 **Gross Area:** 350

Department: 16 - MENTAL HEALTH CLINIC

Functional Area: 2 - PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	EXRG1	Exam Room	150	150	1	1
1	TLTU1	Toilet, Patient	75	75	1	1
1	EXRG1	Exam Room	150	150	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 405 **Gross Area:** 567

Department: 16 - MENTAL HEALTH CLINIC

Functional Area: 3 - CHILD AND ADOLESCENT SERVICES PATIENT AREA (CAFBHS)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	PLAY1	Play Waiting	120	120	1	1

FA Totals: **Room Qty:** 1 **Net Area:** 120 **Gross Area:** 168

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Department: 16 - MENTAL HEALTH CLINIC

Functional Area: 4 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFDC1	Office, Mental Health, Chief	120	120	1	1
1	RPR01	Copy / Office Supply	50	50	1	1
1	OFA05	Office, Shared	120	120	1	0

FA Totals: **Room Qty:** 3 **Net Area:** 290 **Gross Area:** 406

Dept Totals: **Room Qty:** 10 **Net Area:** 1,065 **Gross Area:** 1,491

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 17 - MEDICAL SUPPLY

Functional Area: 1 - LOGISTICS STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC03	Sub-Waiting	60	60	1	1
1	OFA03	Cubicle, Administrative Assistant	50	50	1	1
1	OFA04	Office, Logistics Director	100	100	1	1
1	OFA04	Office	100	100	1	1
1	CRA01	Conference / Training Room	240	240	1	1
1	RPR01	Copy / Office Supply	100	100	1	1
1	FILE1	File Room	100	100	1	1
1	SL001	Staff Lounge	200	200	1	1
1	OFA04	Office, Safety Manager	120	120	1	1
1	OFA05	Office, Shared, Safety Specialist	120	120	1	1

FA Totals: **Room Qty:** 10 **Net Area:** 1,190 **Gross Area:** 1,488

Department: 17 - MEDICAL SUPPLY

Functional Area: 2 - MATERIEL SERVICES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	DOCK1	Loading Dock, Clean	200	200	1	1
1	DOCK1	Loading Dock, Soiled	80	80	1	1
1	SRHM1	Storage, Hazardous Materials	120	120	1	1
1	OFA03	Workstation, Warehouse Receiving	180	180	1	1
1	MMRP1	Receiving / Processing	560	560	1	1

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Department: 17 - MEDICAL SUPPLY

Functional Area: 2 - MATERIEL SERVICES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTU1	Toilet, Delivery Staff	60	60	1	1
1	MMRP1	Material Staging	540	540	1	1
1	SRCH1	Materiel Handling Equipment Charging	120	120	1	1
1	MMGS1	Storage, Medical Material	1,665	1,665	1	1
1	SRR01	Storage, Refrigerator, Walk-In, Clean	200	200	1	1
1	MMCR1	Holding Area, Carts	100	100	1	1
1	MMCR2	Holding Area, Cart Restocking	50	50	1	1
1	TLTU1	Toilet, Staff	60	60	1	1
1	SRGC1	Storage, Empty Gas Cylinder	240	240	1	1
1	SRGC1	Storage, Full Gas Cylinder	240	240	1	1
1	MMGS1	Storage, General Warehouse	3,280	3,280	1	1
1	RPR01	Copy / Office Supply	100	100	1	1
1	RECP3	Customer Service Receiving	50	50	1	1
1	OFA05	Office, Material Handlers	100	100	1	1
1	OFA05	Office, Material Handlers	100	100	1	1
1	OFA04	Office, Supervisor, Warehouse	100	100	1	1
1	OFA04	Office, Supervisor, Supply	100	100	1	1
1	OFA03	Cubicle, Supply Item Mgr	250	250	1	1
1	SRE01	Storage, Equipment	590	590	1	1
1	TLTU1	Toilet, Staff	60	60	1	1

FA Totals: **Room Qty:** 25 **Net Area:** 9,145 **Gross Area:** 11,431

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AMERICA SOMOA

Department: 17 - MEDICAL SUPPLY

Functional Area: 3 - EQUIPMENT MANAGEMENT BRANCH (EMB)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Reception / Work Order Area	50	50	1	1
1	OFA04	Office, Biomedical Officer	100	100	1	1
1	OFA04	Office	100	100	1	1
1	OFA04	Office	100	100	1	1
1	OFA03	Cubicle, Contracting PBO	350	350	1	1
1	RPR01	Copy / File Supply Office	100	100	1	1
1	BMER1	Respiratory, Workstation, Biomedical Electronic Repair	300	300	1	1
1	BMER2	Workstation, Mobile Diagnostic Imaging Equipment	300	300	1	1
1	BMER1	Workstation, Biomedical Electronic Repair	1,500	1,500	1	1
1	BMCW1	Workarea, Biomedical, Common Work	720	720	1	1
1	SRPS1	Storage, Parts	660	660	1	1
1	OFA04	Office, Shop Foreman	100	100	1	1
1	OFA03	Cubicle, Procurment Specialist	50	50	1	1
1	SRCH1	Equipment Charging Room	300	300	1	1
1	SRE01	Repaired Equipment	360	360	1	1
1	BMRA1	Receiving, Equipment	360	360	1	1
1	TLTU1	Toilet, Staff	60	60	1	1
1	LIBV1	Reference Library	200	200	1	1

FA Totals: **Room Qty:** 18 **Net Area:** 5,710 **Gross Area:** 7,138

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Department: 17 - MEDICAL SUPPLY

Functional Area: 4 - LINEN CONTROL

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Workstation, Reception / Distribution	50	50	1	1
1	OFA03	Cubicle	50	50	1	1
1	LCCL1	Storage, Medical Attire	200	200	1	1
1	LCFA1	Cart Assembly, Clean Linen	120	120	1	1
1	LCCL1	Storage, Clean Linen	430	430	1	1
1	RCA02	Alcove, Linen Scale, Clean and Dirty	75	75	1	1
1	LCSL1	Holding, Soiled Linen	430	430	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 1,355 **Gross Area:** 1,694

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Department: 17 - MEDICAL SUPPLY

Functional Area: 5 - ENVIRONMENTAL / HOUSEKEEPING SERVICES (EVS)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Supervisor	100	100	1	1
1	OFA03	Cubicle, Assistant Chief and QA	100	100	1	1
1	OFA05	Office, Shared Contractor	100	100	1	1
1	SRCH1	Equipment Charging Room	180	180	1	1
1	SL001	Lounge, Contractor	180	180	1	1
1	LR001	Locker, Personal Property	60	60	1	1
1	TLTU1	Toilet, Staff	60	60	1	1
1	SRS01	Storage, Contractor	120	120	1	1
1	SRSE1	Storage, Equipment and Supplies	620	620	1	1
1	SRE01	Storage, Housekeeping Cart	235	235	1	1
1	UTMW1	Medical Waste Collection Room	250	250	1	1
1	UTC01	Trash Cart Room	450	450	1	1

FA Totals: **Room Qty:** 12 **Net Area:** 2,455 **Gross Area:** 3,069

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Department: 17 - MEDICAL SUPPLY

Functional Area: 6 - FACILITY MANAGEMENT (FM) STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception / Work Order Area	100	100	1	1
1	OFA04	Office, Facility Manager	100	100	1	1
1	OFA03	Cubicles, FM Staff	500	500	1	1
1	PMCC1	Plant Maintenance Control Center	120	120	1	1
1	PMWS4	Workbench and Worktable, Sign Shop	300	300	1	1
1	PMWS2	Workbench and Worktable, Locksmith Shop	150	150	1	1
1	PMCF1	CADD / File Room	240	240	1	1
1	TLTU1	Toilet, Staff	60	60	1	1
1	RPR01	Copy / Office Supply	100	100	1	1

FA Totals: **Room Qty:** 9 **Net Area:** 1,670 **Gross Area:** 2,088

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 17 - MEDICAL SUPPLY

Functional Area: 7 - FACILITY MAINTENANCE TRADES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Reception / Work Order Area	50	50	1	1
1	OFA04	Office, Mainentance Contractor Supervisor	100	100	1	1
1	OFA05	Office, Shared, Maintence Contractor Supervisors	100	100	1	1
1	OFA05	Office, Shared, Maintence Contractor Supervisors	100	100	1	1
1	OFA03	Cubicle, Facility Maintenance Trades	50	50	1	1
1	PMCW1	Floor-Mounted Tools / Equipment, Multi-Use Shop	200	200	1	1
1	SRHM1	Storage, Multi Use Shop, Flammable	60	60	1	1
1	SRE01	Storage, Multi Use Shop	460	460	1	1
1	PMWS1	Workbench and Worktable, Multi-Shop	380	380	1	1
1	SRSE1	Equipment Receiving	150	150	1	1
1	SRE01	Storage, MEP Shop	260	260	1	1
1	SRE01	Storage, Building Shop	260	260	1	1
1	SRHM1	Flammable Storage, Paint Shop	130	130	1	1

FA Totals: **Room Qty:** 13 **Net Area:** 2,300 **Gross Area:** 2,875

Dept Totals: **Room Qty:** 94 **Net Area:** 23,825 **Gross Area:** 29,781

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 18 - ORTHOPEDIC CLINIC

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC01	Waiting	180	180	1	1
1	PLAY1	Play Waiting	120	120	1	1
1	RECP1	Reception	50	50	1	1
1	CLSC3	Patient Education	120	120	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 470 **Gross Area:** 635

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Department: 18 - ORTHOPEDIC CLINIC

Functional Area: 2 - ORTHOPEDICS / PODIATRY PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTB1	Toilet, Bariatric	75	75	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	XVC01	Viewing Room, Picture Archiving and Communication System (PACS)	90	90	1	1
1	EXRG1	Exam Room, Orthopedic	120	120	1	1
1	EXRG1	Exam Room, Orthopedic	120	120	1	1
1	OPCR2	Cast Room, Multi-Station	360	360	1	1
1	EXRG1	Exam Room, Orthopedic	120	120	1	1
1	EXRG1	Exam Room, Orthopedic	120	120	1	1
1	WRC03	Sub-Waiting, Pre-Procedure	60	60	1	1
1	DR001	Cubicle, Patient Dressing	60	60	1	1
1	TROR1	Procedure Room, Orthopedics and Podiatry	180	180	1	1

FA Totals: **Room Qty:** 11 **Net Area:** 1,455 **Gross Area:** 1,964

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Department: 18 - ORTHOPEDIC CLINIC

Functional Area: 3 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	SRSE1	Storage, Equipment	120	120	1	1
1	ICE01	Alcove, Ice Machine	30	30	1	1
1	SRCS1	Storage, Splint and Crutch	120	120	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 510 **Gross Area:** 689

Department: 18 - ORTHOPEDIC CLINIC

Functional Area: 4 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office, Chief, Ortho	100	100	1	1
1	RPR01	Copy / Office Supply	60	60	1	1
1	WRCH1	Team Room	120	120	1	1
1	WRCH1	Team Room	120	120	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 400 **Gross Area:** 540

Dept Totals: **Room Qty:** 25 **Net Area:** 2,835 **Gross Area:** 3,827

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 19 - GENERAL SURGERY CLINIC

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Reception (Clerk)	50	50	1	1
1	WRC01	Waiting	200	200	1	1
1	PLAY1	Play Waiting	120	120	1	1
1	CLSC3	Patient Education	120	120	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 490 **Gross Area:** 686

Department: 19 - GENERAL SURGERY CLINIC

Functional Area: 2 - GENERAL SURGERY PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	EXRG4	Screening Room	150	150	1	1
1	EXB01	Exam, Bariatric	150	150	1	1
1	TLTB1	Toilet, Bariatric	75	75	1	1
1	DR001	Cubicle, Patient Dressing	80	80	1	1
1	WRC03	Sub-Waiting, Post-Procedure Patient	80	80	1	1
1	TRGS1	Treatment, Minor Procedure	180	180	1	1
1	TRGS1	Treatment, Rectal Exams	180	180	1	1
1	EXB01	Exam, Bariatric	150	150	1	1
1	EXB01	Exam, Bariatric	150	150	1	1
1	TLTB1	Toilet, Bariatric	75	75	1	1

FA Totals: **Room Qty:** 10 **Net Area:** 1,270 **Gross Area:** 1,778

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Department: 19 - GENERAL SURGERY CLINIC

Functional Area: 3 - GENERAL SURGERY/DERMATOLOGY SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	MEDP1	Medication Room	120	120	1	1
1	SRSE1	Storage, Equipment	120	120	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	SRLW1	Storage, Wheelchair	30	30	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 510 **Gross Area:** 714

Department: 19 - GENERAL SURGERY CLINIC

Functional Area: 4 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, General Surgery Chief	100	100	1	1
1	OFA05	Office, General Surgery Provider, Shared	100	100	1	1
1	RPR01	Copy / Office Supply	100	100	1	1
1	TLTU1	Toilet, Staff	75	75	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 375 **Gross Area:** 525

Dept Totals: **Room Qty:** 24 **Net Area:** 2,645 **Gross Area:** 3,703

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Department: 20 - CARDIOLOGY / PULMONARY CLINIC

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	50	50	1	1
1	WRC01	Waiting	120	120	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 170 **Gross Area:** 230

Department: 20 - CARDIOLOGY / PULMONARY CLINIC

Functional Area: 2 - CARDIOLOGY PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	EXRG4	Screening	120	120	1	1
1	EXR10	Exam / Consult	120	120	1	1
1	EXB01	Exam Room, Bariatric	150	150	1	1
1	TLTB1	Toilet, Bariatric	75	75	1	1
1	EXRG1	Exam Room, Cardiology	120	120	1	1
1	EXRG1	Exam Room, Cardiology	120	120	1	1

FA Totals: **Room Qty:** 6 **Net Area:** 705 **Gross Area:** 952

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Department: 20 - CARDIOLOGY / PULMONARY CLINIC

Functional Area: 3 - CARDIOLOGY DIAGNOSTICS / TESTING

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OPPE1	Echocardiograph Room	120	120	1	1
1	OPEC1	EKG Room	120	120	1	1
1	OPPE2	Stress Echocardiograph / PFT Room	240	240	1	1
1	OPHM1	Holter Monitor Room	120	120	1	1
1	OPPM1	Pacemaker, ICD Interrogation	120	120	1	1
1	SRE01	Storage, Pacemaker Equipment	60	60	1	1
1	OPTM2	Tilt Table Testing	120	120	1	1
1	TRGM1	Procedure Room	180	180	1	1

FA Totals: **Room Qty:** 8 **Net Area:** 1,080 **Gross Area:** 1,458

Department: 20 - CARDIOLOGY / PULMONARY CLINIC

Functional Area: 4 - PULMONARY FUNCTION LAB

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OPPF1	Pulmonary Function Room	120	120	1	1
1	OFA04	Office, Sleep Study RT	100	100	1	1
1	SRGC2	Storage, Gas Cylinders	60	60	1	1
1	SRE01	Storage, Equipment	120	120	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 400 **Gross Area:** 540

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Department: 20 - CARDIOLOGY / PULMONARY CLINIC

Functional Area: 5 - CARDIOLOGY/PULMONARY SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	SRLW1	Alcove, Wheelchair	30	30	1	1
1	MEDP1	Medication Room	120	120	1	1
1	NT001	Pneumatic Tube Station	15	15	1	1
1	SRE01	Storage, Equipment	120	120	1	1
1	UCCL1	Utility Room, Clean	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 525 **Gross Area:** 709

Department: 20 - CARDIOLOGY / PULMONARY CLINIC

Functional Area: 6 - CARDIO/PULMONARY STAFF & ADMIN

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Cardio Provider	100	100	1	1
1	OFA05	Office, Shared	100	100	1	1
1	WRCH1	Team Collaboration Room	120	120	1	1
1	RPR01	Copy / Office Supply	100	100	1	1
1	OFA05	Office, Shared, Resp. Supervisor	100	100	1	1
1	LR001	Lockers, Personal Property	30	30	1	1
1	TLTU1	Toilet, Staff	60	60	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 610 **Gross Area:** 824

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Dept Totals: **Room Qty:** 34 **Net Area:** 3,490 **Gross Area:** 4,712

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Department: 21 - INPATIENT BEHAVIORAL HEALTH (IPBH)

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	LR001	Lockers, Visitors Property	60	60	1	1
1	OFDC2	Consult / Education Room	120	120	1	1
1	BHVS1	Vestibule, Inpatient Behavioral Health	90	90	1	1
1	RECP3	Reception	60	60	1	0

FA Totals: **Room Qty:** 4 **Net Area:** 330 **Gross Area:** 495

Department: 21 - INPATIENT BEHAVIORAL HEALTH (IPBH)

Functional Area: 2 - ADMISSIONS / TRIAGE PATIENT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFDC2	Interview Room	120	120	1	1
1	EXRG1	Exam Room	120	120	1	1
1	SRPB1	Storage, Patient Belongings	60	60	1	1
1	TLTB1	TOILET, BARIATRIC	75	75	1	0
1	TLTB1	TOILET, BARIATRIC	75	75	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 450 **Gross Area:** 675

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Department: 21 - INPATIENT BEHAVIORAL HEALTH (IPBH)

Functional Area: 3 - PATIENT CARE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	NSTA1	Nurse Station	150	150	1	1
1	WRCH1	Charting / Team Room	150	150	1	1
1	BRNP6	Anteroom, Observation Room	60	60	1	1
1	BRNP5	Observation Room	120	120	1	1
1	TLTP2	Toilet, Observation Room	75	75	1	1
1	BRNP2	Bedroom, Behavioral Health (Double Occupancy)	240	240	1	1
1	TLTP3	Toilet / Shower, Inpatient Behavioral Health Patient	75	75	1	1
1	BRNP2	Bedroom, Behavioral Health (Double Occupancy)	240	240	1	1
1	TLTP3	Toilet / Shower, Inpatient Behavioral Health Patient	75	75	1	1
1	BRNP2	Bedroom, Behavioral Health (Double Occupancy)	240	240	1	1
1	TLTP3	Toilet / Shower, Inpatient Behavioral Health Patient	75	75	1	1
1	BRNP2	Bedroom, Behavioral Health (Double Occupancy)	240	240	1	1
1	TLTP3	Toilet / Shower, Inpatient Behavioral Health Patient	75	75	1	1
1	BRNP2	Bedroom, Behavioral Health (Double Occupancy)	240	240	1	1
1	TLTP3	Toilet / Shower, Inpatient Behavioral Health Patient	75	75	1	1
1	DAYR1	Activity Room	600	600	1	1
1	IPK01	Kitchenette	60	60	1	1
1	PTES1	Exercise Room	120	120	1	1
1	OFDC2	Quiet Room	120	120	1	1
1	BRNP5	Seclusion Room	120	120	1	0
1	LAUN2	Laundry, Patient	120	120	1	0

FA Totals: **Room Qty:** 21 **Net Area:** 3,270 **Gross Area:** 4,905

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AMERICA SOMOA

Department: 21 - INPATIENT BEHAVIORAL HEALTH (IPBH)

Functional Area: 4 - UNIT SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	UCCL1	Utility Room, Clean	120	120	1	1
1	SRSE1	Storage, Equipment	120	120	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	JANC1	Janitor Closet	60	60	1	1
1	MEDP1	Medication Room	60	60	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 450 **Gross Area:** 675

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AMERICA SOMOA

Department: 21 - INPATIENT BEHAVIORAL HEALTH (IPBH)

Functional Area: 5 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFDC1	Office, BH Provider	120	120	1	1
1	OFDC1	Office, BH Provider	120	120	1	1
1	OFA05	Office	100	100	1	1
1	CRA01	Conference Room	200	200	1	1
1	RPR01	Copy / Office Supplies	60	60	1	1
1	MRS01	Storage, Patient Records, FIxed	60	60	1	1
1	OFA04	Office, Private, Case Man or Social Work	120	120	1	0
1	SL001	Lounge, Staff	120	120	1	0
1	DUTY1	On-Call Room	120	120	1	0
1	TLTS1	Toilet/Shower, On-Call	60	60	1	0

FA Totals: **Room Qty:** 10 **Net Area:** 1,080 **Gross Area:** 1,620

Dept Totals: **Room Qty:** 45 **Net Area:** 5,580 **Gross Area:** 8,370

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AMERICA SOMOA

Department: 22 - INFORMATION MANAGEMENT DIVISION (IMD)

Functional Area: 1 - CUSTOMER SERVICE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC03	Waiting	120	120	1	1
1	CLR03	Classroom, Computer Training	240	240	1	1
1	SRS01	Storage, Computer Training	60	60	1	1
1	OFA03	Workstation, Tech Support	50	50	1	1
1	OFA03	Workstation, Tech Support	50	50	1	1
1	OFA03	Workstation, Helpdesk	50	50	1	1
1	OFA03	Workstation, Helpdesk	60	60	1	1

FA Totals: **Room Qty:** 7 **Net Area:** 630 **Gross Area:** 819

Department: 22 - INFORMATION MANAGEMENT DIVISION (IMD)

Functional Area: 2 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Chief IMD	100	100	1	1
1	OFA03	Cubicles, Clin Systems	250	250	1	1
1	SSS01	Storage, Secure	120	120	1	1
1	TLTU1	Toilet, Staff	60	60	1	1
1	TLTU1	Toilet, Staff	60	60	1	1

FA Totals: **Room Qty:** 5 **Net Area:** 590 **Gross Area:** 767

Department: 22 - INFORMATION MANAGEMENT DIVISION (IMD)

Functional Area: 3 - COMPUTER AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CMP01	Server Room	450	450	1	1
1	CMP04	Server Room Support Equipment	120	120	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 570 **Gross Area:** 741

Department: 22 - INFORMATION MANAGEMENT DIVISION (IMD)

Functional Area: 4 - COMPUTER SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SRSE1	Storage, IT Equipment	240	240	1	1
1	BMWS1	Workroom, Equipment Configuration / Repair	525	525	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 765 **Gross Area:** 995

Department: 22 - INFORMATION MANAGEMENT DIVISION (IMD)

Functional Area: 5 - TELECOMMUNICATIONS SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	COM04	Headend / Service Entrance Facility Room	120	120	1	1
1	COMC2	Service Entrance Facility	100	100	1	1

FA Totals: **Room Qty:** 2 **Net Area:** 220 **Gross Area:** 286

Dept Totals: **Room Qty:** 18 **Net Area:** 2,775 **Gross Area:** 3,608

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Department: 23 - EDUCATION AND TRAINING

Functional Area: 1 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRCH1	Instructors Workroom	120	120	1	1
1	FILE1	Storage, Training Records	60	60	1	1
1	TLTU1	Toilet, Staff	75	75	1	1
1	OFA05	Office	100	100	1	1

FA Totals: **Room Qty:** 4 **Net Area:** 355 **Gross Area:** 479

Department: 23 - EDUCATION AND TRAINING

Functional Area: 2 - EDUCATION AND TRAINING (PROVIDERS AND STAFF)

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CLR01	Classroom, Table with Chairs	400	400	1	1
1	LIBV1	Medical Reference	120	120	1	1
1	SRSE1	Storage, General	270	270	1	1
1	TLTM2	Toilet, Public Male	240	240	1	1
1	TLTF2	Toilet, Public Female	240	240	1	1

FA Totals: **Room Qty:** 5 **Net Area:** 1,270 **Gross Area:** 1,715

Dept Totals: **Room Qty:** 9 **Net Area:** 1,625 **Gross Area:** 2,194

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AMERICA SOMOA

Department: 24 - CHAPEL

Functional Area: 1 - CHAPEL AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RAA01	Chapel Altar	100	100	1	1
1	RABS1	Chancel	100	100	1	1
1	RAS01	Chapel	500	500	1	1

FA Totals: **Room Qty:** 3 **Net Area:** 700 **Gross Area:** 840

Dept Totals: **Room Qty:** 3 **Net Area:** 700 **Gross Area:** 840

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AMERICA SOMOA

Department: 25 - DENTAL CLINIC (320)

Functional Area: 1 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC01	Waiting	240	240	1	1
1	RECP1	Reception	50	50	1	1
1	MRWK1	Records Distribution / Signing	60	60	1	0
1	PLAY1	Playroom	100	100	1	0
1	OFDC2	Consult Room	120	120	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 570 **Gross Area:** 798

LBJ TROPICAL MEDICAL CENTER V1.00
MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 25 - DENTAL CLINIC (320)

Functional Area: 2 - GENERAL DENTISTRY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTB1	TOILET, BARIATRIC	75	75	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTC1	Dental Treatment Room (DTR), Comprehensive Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0
1	DNTG1	Dental Treatment Room (DTR), General Dentistry	150	150	1	0

FA Totals: **Room Qty:** 12 **Net Area:** 1,725 **Gross Area:** 2,415

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MEDICAL CENTER OIA REPORT
AMERICA SOMOA

Department: 25 - DENTAL CLINIC (320)

Functional Area: 3 - SPECIALTY DENTISTRY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	DNTP1	Dental Treatment Room (DTR), Prosthodontics	150	150	1	1
1	RCA01	Alcove, Crash Cart	30	30	1	1
1	DNTE1	Dental Treatment Room (DTR), Endodontics	150	150	1	0
1	DNTS1	Dental Treatment Room (DTR), Oral Surgery	180	180	1	0
1	SRLW1	Alcove, Wheelchair	30	30	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 540 **Gross Area:** 756

Department: 25 - DENTAL CLINIC (320)

Functional Area: 4 - DENTAL RADIOGRAPHY

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	DNXS1	Dental Radiograph, Extraoral Panoramic / Cephalometric	180	180	1	0
1	XVC01	Viewing Room, Picture Archiving and Communication System (PACS)	120	120	1	0

FA Totals: **Room Qty:** 2 **Net Area:** 300 **Gross Area:** 420

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Department: 25 - DENTAL CLINIC (320)

Functional Area: 5 - DENTAL LABORATORIES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA03	Shipping and Receiving, Dental Laboratories	60	60	1	0
1	DNPL3	Laboratory Full Service, Dental Prosthodontics	480	480	1	0
1	DNPC2	Laboratory Full Service, Porcelain / Ceramics	180	180	1	0
1	DNMS1	Storage, Dental Models	60	60	1	0

FA Totals: **Room Qty:** 4 **Net Area:** 780 **Gross Area:** 1,092

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Department: 25 - DENTAL CLINIC (320)

Functional Area: 6 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SRS01	Storage, Dental Supplies	150	150	1	1
1	USCL1	Utility Room, Soiled	90	90	1	1
1	LCCL4	Linen Room, Clean	90	90	1	1
1	LCSL2	Linen Room, Soiled	90	90	1	1
1	DNSC4	Dental Instrument Decontamination, Medium	240	240	1	0
1	DNSC5	Dental Instrument Sterilization, Medium	120	120	1	0
1	DNSC6	Dental Instrument Storage, Medium	120	120	1	0
1	SRSE1	Storage, Equipment	120	120	1	0
1	SRGC2	Storage, Gas Cylinder	60	60	1	0
1	SRHM1	Storage, Chemical / Corrosives	60	60	1	0
1	MECH1	Dental Equipment Mechanical Room	120	120	1	0

FA Totals: **Room Qty:** 11 **Net Area:** 1,260 **Gross Area:** 1,764

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Department: 25 - DENTAL CLINIC (320)

Functional Area: 7 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Department / Clinic Chief	120	120	1	0
1	MRS01	Storage, Dental Records	60	60	1	0
1	OFA04	Office, Private	120	120	1	0
1	OFA05	Office, Shared	120	120	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0
1	OFA03	Cubicle	60	60	1	0

FA Totals: **Room Qty:** 8 **Net Area:** 660 **Gross Area:** 924

Dept Totals: **Room Qty:** 47 **Net Area:** 5,835 **Gross Area:** 8,169

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AMERICA SOMOA

Department: 26 - PEDIATRIC CLINIC (303)

Functional Area: 1 - EXAM ROOM CALCULATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	CALC1	Number of Exam Rooms	0	0	1	0
1	CALC1	Number of Exam Rooms	0	0	1	0
1	CALC1	Number of Exam Rooms	0	0	1	0
1	CALC1	Number of Exam Rooms	0	0	1	0

FA Totals: **Room Qty:** 4 **Net Area:** 0 **Gross Area:** 0

Department: 26 - PEDIATRIC CLINIC (303)

Functional Area: 2 - RECEPTION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	WRC01	Waiting	150	150	1	0
1	PLAY1	Playroom	120	120	1	0
1	RECP1	Reception	50	50	1	0

FA Totals: **Room Qty:** 3 **Net Area:** 320 **Gross Area:** 432

Department: 26 - PEDIATRIC CLINIC (303)

Functional Area: 3 - EXAM PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	EXR11	Alcove, Height / Weight	50	50	1	0
1	EXRG4	Screening	120	120	1	0
1	EXRG1	Exam Room, General	150	150	1	0
1	EXRG6	Exam Room, Airborne Infection Isolation (AII)	180	180	1	0
1	TLTU1	Toilet, Airborne Infection Isolation (AII) Patient	75	75	1	0
1	TLTU1	Toilet, Patient	75	75	1	0
1	EXR10	Exam / Consult	120	120	1	0
1	TLTU1	Toilet, Airborne Infection Isolation (AII) Patient	75	75	1	0
1	EXRG6	Exam Room, Airborne Infection Isolation (AII)	180	180	1	0

FA Totals: **Room Qty:** 9 **Net Area:** 1,025 **Gross Area:** 1,384

Department: 26 - PEDIATRIC CLINIC (303)

Functional Area: 4 - TREATMENT PATIENT AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TRGM1	Treatment Room, General	180	180	1	0
1	TLTU1	Toilet, Patient	75	75	1	0
1	OOHR1	Observation / Hydration	120	120	1	0

FA Totals: **Room Qty:** 3 **Net Area:** 375 **Gross Area:** 506

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Department: 26 - PEDIATRIC CLINIC (303)

Functional Area: 5 - SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MEDP1	Medication Room	90	90	1	0
1	SRE01	Storage, Equipment	120	120	1	0
1	UCCL1	Utility Room, Clean	120	120	1	0
1	USCL1	Utility Room, Soiled	90	90	1	0
1	SRLW1	Alcove, Wheelchair	30	30	1	0
1	RCA01	Alcove, Crash Cart	30	30	1	0

FA Totals: **Room Qty:** 6 **Net Area:** 480 **Gross Area:** 648

Department: 26 - PEDIATRIC CLINIC (303)

Functional Area: 6 - STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Clinic Chief	120	120	1	0
1	RPR01	Copy / Office Supply	50	50	1	0
1	WRCH1	Team Collaboration Room	150	150	1	0

FA Totals: **Room Qty:** 3 **Net Area:** 320 **Gross Area:** 432

Dept Totals: **Room Qty:** 28 **Net Area:** 2,520 **Gross Area:** 3,402

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AMERICA SOMOA

Department: 27 - NURSING UNITS (410)

Functional Area: 1 - MEDICAL-SURGICAL UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRAR1	Anteroom, Airborne Infection Isolation (AII) Medical-Surgical Bedroom	70	70	1	0
1	BRIT1	Bedroom, Medical-Surgical Airborne Infection Isolation (AII)	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TRGM1	Procedure Room	180	180	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA1	Nurse Station	180	180	1	0
1	NSTA3	Monitoring Station	240	240	1	0
1	WRCH1	Team Collaboration Room	180	180	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRIT1	Bedroom, Medical-Surgical Airborne Infection Isolation (AII)	290	290	1	0
1	BRAR1	Anteroom, Airborne Infection Isolation (AII) Medical-Surgical Bedroom	70	70	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0

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Department: 27 - NURSING UNITS (410)

Functional Area: 1 - MEDICAL-SURGICAL UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0

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Department: 27 - NURSING UNITS (410)

Functional Area: 1 - MEDICAL-SURGICAL UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0

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Department: 27 - NURSING UNITS (410)

Functional Area: 1 - MEDICAL-SURGICAL UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0

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Department: 27 - NURSING UNITS (410)

Functional Area: 1 - MEDICAL-SURGICAL UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0

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AMERICA SOMOA

Department: 27 - NURSING UNITS (410)

Functional Area: 1 - MEDICAL-SURGICAL UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Medical-Surgical Bedroom	75	75	1	0

FA Totals: **Room Qty:** 126 **Net Area:** 19,160 **Gross Area:** 28,740

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Department: 27 - NURSING UNITS (410)

Functional Area: 2 - MEDICAL-SURGICAL UNIT SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MEDP1	Medication Room	120	120	1	0
1	NCWD1	Nourishment Room	120	120	1	0
1	SRSE1	Storage, Equipment	120	120	1	0
1	UCCL1	Utility Room, Clean	120	120	1	0
1	SRGC2	Storage, Gas Cylinder	60	60	1	0
1	RCA01	Alcove, Crash Cart	30	30	1	0
1	USCL1	Utility Room, Soiled	90	90	1	0
1	USCL1	Utility Room, Soiled	90	90	1	0
1	RCA01	Alcove, Crash Cart	30	30	1	0
1	UCCL1	Utility Room, Clean	120	120	1	0
1	NCWD1	Nourishment Room	120	120	1	0
1	MEDP1	Medication Room	120	120	1	0
1	MEDP1	Medication Room	120	120	1	0
1	NCWD1	Nourishment Room	120	120	1	0
1	UCCL1	Utility Room, Clean	120	120	1	0
1	RCA01	Alcove, Crash Cart	30	30	1	0
1	USCL1	Utility Room, Soiled	90	90	1	0

FA Totals: **Room Qty:** 17 **Net Area:** 1,620 **Gross Area:** 2,430

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Department: 27 - NURSING UNITS (410)

Functional Area: 3 - MEDICAL-SURGICAL UNIT STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office, Shared	120	120	1	0
1	RPR01	Copy / Office Supply	60	60	1	0
1	SL001	Lounge, Staff	120	120	1	0
1	TLTU1	Toilet, Medical-Surgical Staff	75	75	1	0
1	TLTS1	Toilet / Shower, Medical-Surgical Staff	75	75	1	0
1	TLTS1	Toilet / Shower, Medical-Surgical Staff	75	75	1	0

FA Totals: **Room Qty:** 6 **Net Area:** 525 **Gross Area:** 788

Department: 27 - NURSING UNITS (410)

Functional Area: 4 - ICU / CCU FAMILY / VISITOR AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SL001	Lounge, Family / Visitor	120	120	1	0
1	TLTU1	Toilet, Family /Visitor	75	75	1	0
1	OFDC2	Consult Room	120	120	1	0
1	TLTS1	Toilet /Shower, Family / Visitor	75	75	1	0

FA Totals: **Room Qty:** 4 **Net Area:** 390 **Gross Area:** 585

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Department: 27 - NURSING UNITS (410)

Functional Area: 5 - ICU / CCU PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	BRIC1	Bedroom, ICU / CCU	290	290	1	0
1	BRII1	Bedroom, ICU / CCU Airborne Infection Isolation (AII)	290	290	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA1	Nurse Station	180	180	1	0
1	WRCH1	Team Collaboration Room	180	180	1	0
1	NSTA3	Monitoring Station	60	60	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0
1	BRII1	Bedroom, ICU / CCU Airborne Infection Isolation (AII)	290	290	1	0
1	BRIC1	Bedroom, ICU / CCU	290	290	1	0
1	BRIC1	Bedroom, ICU / CCU	290	290	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	NSTA3	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0
1	BRIC1	Bedroom, ICU / CCU	290	290	1	0
1	BRIC1	Bedroom, ICU / CCU	290	290	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0
1	BRIC1	Bedroom, ICU / CCU	290	290	1	0
1	BRIC1	Bedroom, ICU / CCU	290	290	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0

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Department: 27 - NURSING UNITS (410)

Functional Area: 5 - ICU / CCU PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, ICU / CCU Bedroom	75	75	1	0

FA Totals: **Room Qty:** 25 **Net Area:** 3,825 **Gross Area:** 5,738

Department: 27 - NURSING UNITS (410)

Functional Area: 6 - ICU / CCU SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MEDP1	Medication Room	120	120	1	0
1	NCWD1	Nourishment Room	120	120	1	0
1	UCCL1	Utility Room, Clean	120	120	1	0
1	USCL1	Utility Room, Soiled	90	90	1	0
1	SRSE1	Storage, Equipment	120	120	1	0
1	SRGC2	Storage, Gas Cylinder	60	60	1	0
1	RCA01	Alcove, Crash Cart	30	30	1	0

FA Totals: **Room Qty:** 7 **Net Area:** 660 **Gross Area:** 990

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Department: 27 - NURSING UNITS (410)

Functional Area: 7 - ICU / CCU STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office, Shared	120	120	1	0
1	RPR01	Copy / Office Supply	60	60	1	0
1	DUTY1	On-Call Room	120	120	1	0
1	TLTS1	Toilet / Shower, ICU / CCU Staff	75	75	1	0
1	TLTS1	Toilet / Shower, ICU / CCU Staff	75	75	1	0

FA Totals: **Room Qty:** 5 **Net Area:** 450 **Gross Area:** 675

Department: 27 - NURSING UNITS (410)

Functional Area: 8 - PEDIATRIC UNIT FAMILY /VISITOR AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	SL001	Lounge, Family / Visitor	180	180	1	0
1	TLTU1	Toilet, Family /Visitor	75	75	1	0
1	OFDC2	Consult Room	120	120	1	0
1	TLTS1	Toilet /Shower, Family / Visitor	75	75	1	0

FA Totals: **Room Qty:** 4 **Net Area:** 450 **Gross Area:** 675

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Department: 27 - NURSING UNITS (410)

Functional Area: 9 - PEDIATRIC UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRIT1	Bedroom, Airborne Infection Isolation (AII)	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	TLTU1	Toilet, Patient	75	75	1	0
1	DAYR1	Day Room	300	300	1	0
1	TRGM1	Procedure Room	180	180	1	0
1	OFA03	Workstation, Caregiver	30	30	1	0
1	NSTA1	Nurse Station	180	180	1	0
1	NSTA3	Monitoring Station	60	60	1	0
1	WRCH1	Team Collaboration Room	180	180	1	0
1	OFA03	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	BRIT1	Bedroom, Airborne Infection Isolation (AII)	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	OFA03	Workstation, Caregiver	30	30	1	0
1	OFA03	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	OFA03	Workstation, Caregiver	30	30	1	0

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Department: 27 - NURSING UNITS (410)

Functional Area: 9 - PEDIATRIC UNIT PATIENT CARE AREA

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA03	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	OFA03	Workstation, Caregiver	30	30	1	0
1	OFA03	Workstation, Caregiver	30	30	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	BRMS1	Bedroom, Medical-Surgical	290	290	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0
1	TLTS2	Toilet / Shower, Pediatric Bedroom	75	75	1	0

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FA Totals: **Room Qty:** 46 **Net Area:** 7,055 **Gross Area:** 10,583

Department: 27 - NURSING UNITS (410)

Functional Area: 10 - PEDIATRIC UNIT SUPPORT

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MEDP1	Medication Room	120	120	1	0
1	USCL1	Utility Room, Soiled	90	90	1	0
1	SRSE1	Storage, Equipment	120	120	1	0
1	NCWD1	Nourishment Room	120	120	1	0
1	UCCL1	Utility Room, Clean	120	120	1	0
1	SRGC2	Storage, Gas Cylinder	60	60	1	0
1	RCA01	Alcove, Crash Cart	30	30	1	0

FA Totals: **Room Qty:** 7 **Net Area:** 660 **Gross Area:** 990

Department: 27 - NURSING UNITS (410)

Functional Area: 11 - PEDIATRIC UNIT STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA05	Office, Shared	120	120	1	0
1	RPR01	Copy / Office Supply	60	60	1	0
1	TLTS1	Toilet / Shower, Pediatric Unit Staff	75	75	1	0
1	TLTS1	Toilet / Shower, Pediatric Unit Staff	75	75	1	0

FA Totals: **Room Qty:** 4 **Net Area:** 330 **Gross Area:** 495

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Department: 27 - NURSING UNITS (410)

Functional Area: 12 - DIALYSIS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	JANC1	JANITOR'S CLOSET	60	60	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0

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Department: 27 - NURSING UNITS (410)

Functional Area: 12 - DIALYSIS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	RDC02	RENAL DIALYSIS Station	120	120	1	0
1	TLTU1	TOILET	75	75	1	0
1	TLTU1	TOILET	75	75	1	0
1	RDC01	RENAL DIALYSIS, AIRBORNE INFECTION ISOLATION	150	150	1	0
1	RDC01	RENAL DIALYSIS, AIRBORNE INFECTION ISOLATION	150	150	1	0
1	RDC01	RENAL DIALYSIS, AIRBORNE INFECTION ISOLATION	150	150	1	0
1	RDC01	RENAL DIALYSIS, AIRBORNE INFECTION ISOLATION	150	150	1	0
1	NSTA1	NURSE STATION	120	120	1	0
1	NSTA1	NURSE STATION	120	120	1	0
1	MEDP1	MEDICATION	120	120	1	0
1	RCA04	ALCOVE, WARMER, BLANKET / FLUID	30	30	1	0
1	RDP01	RENAL DIALYSIS, STORAGE	120	120	1	0
1	RDWT1	RENAL DIALYSIS, SUPPORT, REVERSE OSMOSIS/Mixing	600	600	1	0
1	RDWT1	RENAL DIALYSIS, SUPPORT, REVERSE OSMOSIS/Mixing	600	600	1	0
1	RDP01	RENAL DIALYSIS, STORAGE	120	120	1	0
1	RDP01	RENAL DIALYSIS, STORAGE	120	120	1	0
1	UCCL1	UTILITY, CLEAN	120	120	1	0
1	USCL1	UTILITY, SOILED	90	90	1	0

FA Totals: **Room Qty:** 43 **Net Area:** 5,970 **Gross Area:** 8,955

Dept Totals: **Room Qty:** 294 **Net Area:** 41,095 **Gross Area:** 61,643

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Department: 28 - LOGISTICS (520)

Functional Area: 1 - LOGISTICS STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Logistics Director	120	120	1	0
1	WRC03	Sub-Waiting	60	60	1	0
1	WRCH1	Team Collaboration Room	120	120	1	0
1	RPR01	Copy / Office Supply	120	120	1	0
1	OFA03	Customer Research Area	60	60	1	0
1	FILE1	File Room	120	120	1	0

FA Totals: **Room Qty:** 6 **Net Area:** 600 **Gross Area:** 750

Department: 28 - LOGISTICS (520)

Functional Area: 2 - MATERIEL SERVICES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception	120	120	1	0
1	OFA04	Office, Supervisor	120	120	1	0
1	DOCK1	Loading Dock, Clean	200	200	1	0
1	DOCK1	Loading Dock, Soiled	80	80	1	0
1	UTMW1	Holding, Medical Waste	180	180	1	0
1	MMRP1	Material Staging	360	360	1	0
1	MMRP1	Receiving / Processing	460	460	1	0
1	SRE01	Holding, Outbound Equipment Room	480	480	1	0
1	MMCR1	Holding Area, Carts	40	40	1	0

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Department: 28 - LOGISTICS (520)

Functional Area: 2 - MATERIEL SERVICES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MMGS1	Storage, Medical Material	2,720	2,720	1	0
1	MMGS1	Storage, General Warehouse	2,470	2,470	1	0
1	SSV01	Storage, Vault	130	130	1	0
1	SSC01	Storage, Secure	480	480	1	0
1	MMCR2	Holding Area, Cart Restocking	30	30	1	0
1	MMGS1	Storage, Contingency	280	280	1	0
1	SRHM1	Storage, Hazardous Materials	120	120	1	0
1	SRGC1	Storage, Full Gas Cylinder	240	240	1	0
1	SRGC1	Storage, Empty Gas Cylinder	240	240	1	0
1	TLTU1	Toilet, Delivery Staff	60	60	1	0
1	OFA03	Workstation, Warehouse Receiving	60	60	1	0
1	OFA03	Workstation, Warehouse Receiving	60	60	1	0
1	OFA03	Workstation, Warehouse Receiving	60	60	1	0
1	OFA03	Workstation, Warehouse Receiving	60	60	1	0

FA Totals: **Room Qty:** 23 **Net Area:** 9,050 **Gross Area:** 11,313

Department: 28 - LOGISTICS (520)

Functional Area: 3 - AUTOMATED / MANUAL TRANSPORT CARTS

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	MMCR1	Cart Queing and Dispatch Area	100	100	1	0

FA Totals: **Room Qty:** 1 **Net Area:** 100 **Gross Area:** 125

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Department: 28 - LOGISTICS (520)

Functional Area: 4 - BIOMEDICAL EQUIPMENT MAINTENANCE

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	FILE1	File Room	120	120	1	0
1	LIBV1	Reference Library	120	120	1	0
1	RECP1	Reception / Work Order Area	60	60	1	0
1	BMRA1	Receiving, Equipment	150	150	1	0
1	RPR01	Copy / Office Supply	120	120	1	0
1	SRE01	Equipment Holding Area	200	200	1	0
1	BMCW1	Workarea, Biomedical, Common Work	240	240	1	0
1	BMWS1	Workstation, Biomedical Repair	150	150	1	0
1	SRE01	Outgoing Equipment	150	150	1	0
1	OFA04	Office, Biomedical Officer	120	120	1	0
1	BMER1	Workstation, Biomedical Electronic Repair	150	150	1	0
1	SRCH1	Equipment Charging Room	100	100	1	0
1	TLTU1	Toilet, Staff	75	75	1	0
1	BMER2	Workarea, Mobile Diagnostic Imaging Equipment	150	150	1	0
1	SRPS1	Storage, Parts	300	300	1	0

FA Totals: **Room Qty:** 15 **Net Area:** 2,205 **Gross Area:** 2,756

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Department: 28 - LOGISTICS (520)

Functional Area: 5 - LINEN CONTROL

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP3	Workstation, Reception / Distribution	60	60	1	0
1	OFA04	Office, Private	120	120	1	0
1	LCCL1	Storage, Medical Attire	100	100	1	0
1	LCCL1	Storage, Clean Linen	100	100	1	0
1	LCSL1	Holding, Soiled Linen	100	100	1	0
1	LCFA1	Cart Assembly, Clean Linen	100	100	1	0
1	LCCL5	Washer & Dryer Room	800	800	1	0

FA Totals: **Room Qty:** 7 **Net Area:** 1,380 **Gross Area:** 1,725

Department: 28 - LOGISTICS (520)

Functional Area: 6 - FACILITY MANAGEMENT STAFF AND ADMINISTRATION

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	RECP1	Reception / Work Order Area	60	60	1	0
1	OFA04	Office, Facility Manager	120	120	1	0
1	TLTU1	Toilet, Staff	75	75	1	0

FA Totals: **Room Qty:** 3 **Net Area:** 255 **Gross Area:** 319

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Department: 28 - LOGISTICS (520)

Functional Area: 7 - ENVIRONMENTAL / HOUSEKEEPING SERVICES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	OFA04	Office, Private	120	120	1	0
1	SRSE1	Storage, Equipment and Supply	250	250	1	0
1	LR001	Lockers, Personal Property	30	30	1	0
1	TLTU1	Toilet, Staff	75	75	1	0
1	SRE01	Storage, Housekeeping Cart	120	120	1	0
1	UTMW1	Medical Waste Collection Room	165	165	1	0
1	SRCH1	Equipment Charging Room	120	120	1	0

FA Totals: **Room Qty:** 7 **Net Area:** 880 **Gross Area:** 1,100

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Department: 28 - LOGISTICS (520)

Functional Area: 8 - FACILITY MAINTENANCE TRADES

Qty	Room Code	Room Name	Unit Area	Net Area	Const Phase	Const Type
1	PMWS2	Workbench and Worktable, Locksmith Shop	150	150	1	0
1	SRE01	Storage, Grounds Maintenance,	270	270	1	0
1	PMWS4	Workbench and Worktable, Carpentry Shop	300	300	1	0
1	SRE01	Storage, Building Shop	380	380	1	0
1	PMWS3	Workbench and Worktable, Grounds Maintenance	270	270	1	0
1	PMWS0	Workbench and Worktable, Plumbing Shop	150	150	1	0
1	SRE01	Storage, MEP Shop	200	200	1	0
1	OFA04	Office, Supervisor	120	120	1	0
1	SRSE1	Equipment Receiving	100	100	1	0
1	PMCC1	Plant Maintenance Control Center	120	120	1	0
1	RPR01	Copy / Office Supply	120	120	1	0
1	WRCH1	Team Collaboration Room	240	240	1	0
1	TLTU1	Toilet, Staff	60	60	1	0
1	PMWS7	Workbench and Worktable, HVAC Shop	150	150	1	0
1	PMWS8	Workbench and Worktable, General Mechanical Shop	150	150	1	0
1	PMWS9	Workbench and Worktable, Electrical Shop	150	150	1	0

FA Totals: **Room Qty:** 16 **Net Area:** 2,930 **Gross Area:** 3,663

Dept Totals: **Room Qty:** 78 **Net Area:** 17,400 **Gross Area:** 21,750

Bldg Totals: **Room Qty:** 1370 **Net Area:** 198,715 **Sum of Dept Gross Area:** 274,946 **Gross Area:** 369,802

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Department Area Summary (NSF/GSF)

Department	Total NSF	Total GSF
1 - COMMON AREAS (NTG Factor: 1.20)	9,700	11,640
2 - ADMINISTRATION (NTG Factor: 1.40)	6,040	8,456
3 - LABORATORY (NTG Factor: 1.30)	6,550	8,515
4 - RADIOLOGY (NTG Factor: 1.50)	5,040	7,560
5 - PHARMACY (NTG Factor: 1.25)	5,005	6,256
6 - MEDICAL RECORDS/ HEALTH BENEFITS & PATIENT ADMINISTRATION(NTG Factor: 1.35)	3,725	5,029
7 - EMERGENCY (NTG Factor: 1.45)	10,340	14,993
8 - LABOR AND DELIVERY (L&D) / OB-GYN (NTG Factor: 1.50)	4,455	6,683
9 - SURGERY (NTG Factor: 1.60)	10,435	16,696
10 - KITCHEN (NTG Factor: 1.40)	9,345	13,083
11 - STERILE PROCESSING DEPARTMENT (SPD) (NTG Factor: 1.30)	2,520	3,276
12 - MEDICAL CLINIC (NTG Factor: 1.40)	2,815	3,941
13 - PHYSICAL THERAPY (PT) (NTG Factor: 1.35)	3,220	4,347
14 - OB-GYN CLINIC (NTG Factor: 1.35)	4,210	5,684
15 - ENT / EYE (NTG Factor: 1.35)	3,925	5,299
16 - MENTAL HEALTH CLINIC (NTG Factor: 1.40)	1,065	1,491
17 - MEDICAL SUPPLY (NTG Factor: 1.25)	23,825	29,781
18 - ORTHOPEDIC CLINIC (NTG Factor: 1.35)	2,835	3,827
19 - GENERAL SURGERY CLINIC (NTG Factor: 1.40)	2,645	3,703
20 - CARDIOLOGY / PULMONARY CLINIC (NTG Factor: 1.35)	3,490	4,712

21 - INPATIENT BEHAVIORAL HEALTH (IPBH)(NTG Factor: 1.50)	5,580	8,370
22 - INFORMATION MANAGEMENT DIVISION (IMD) (NTG Factor: 1.30)	2,775	3,608
23 - EDUCATION AND TRAINING (NTG Factor: 1.35)	1,625	2,194
24 - CHAPEL (NTG Factor: 1.20)	700	840
25 - DENTAL CLINIC (320) (NTG Factor: 1.40)	5,835	8,169
26 - PEDIATRIC CLINIC (303) (NTG Factor: 1.35)	2,520	3,402
27 - NURSING UNITS (410) (NTG Factor: 1.50)	41,095	61,643
28 - LOGISTICS (520) (NTG Factor: 1.25)	17,400	21,750
Totals:	198,715	274,946

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Building Area Summary And Net to Gross Factor Breakdown

Current Building Factor applied to this Project: 1.35

	Circulation	Mechanical	Electrical	Half Areas	Walls & Partitions	Flexible Areas	Building GSF
Current	15.00	15.00	2.00	1.50	0.00	1.00	369,802

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Report Parameters

Sorted By: Uncompressed to match selection tree

(END OF REPORT)