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1. Glossary

1.1. Healthcare / Medical Facilities Terms

**Acuity Adaptable Patient Rooms:** Acuity adaptable patient rooms are intended to eliminate patient transfers by providing a comprehensive care combined staffing model where the flexibility is utilized real time, patient-to-patient. (Source: Brown & Gallant, 2006, p. 328)

**Ambulatory Care:** The examination, diagnosis, treatment and proper disposition of all categories of eligible inpatients and outpatients presenting themselves to the various ambulatory care specialty and/or subspecialty clinics. (Source: Glossary of Healthcare Terminology – DoD)

**Ambulatory Care Clinic:** A medical service that provides healthcare to scheduled and unscheduled outpatients in a hospital setting; emergency treatment walk-in evaluation; scheduled compensation and pension examinations; some specialty and sub-specialty services to hospitalized, nursing home and domiciliary patients; and, employee health services. (Source: [http://www.cfm.va.gov/tll/dGuide/dqambu02.pdf](http://www.cfm.va.gov/tll/dGuide/dqambu02.pdf))

Or

An entity or unit of a medical or dental treatment facility that is organized and staffed to provide medical treatment in a particular specialty and/or subspecialty; and holds regular hours in a designated place. (Source: Glossary of Healthcare Terminology – DoD)

**Atrium Space:** A floor opening or series of floor openings connecting two or more stories that is covered at the top of the series of openings and is used for purposes other than an enclosed stairway; elevator hoistway; escalator opening; or utility shaft used for plumbing, electrical, air conditioning, or communication facilities. (Source: [http://www.wbdg.org/ccb/DOD/UFC/ufc_4_510_01.pdf](http://www.wbdg.org/ccb/DOD/UFC/ufc_4_510_01.pdf))

In order to calculate the atrium space, please refer to the AIA document D101-1995.

**BENEFICIAL OCCUPANCY DATE (BOD):** The Beneficial Occupancy Date is the date on which beneficial occupancy is granted to the agency requiring use of the facility following construction. By mutual agreement the occupying agency will allow the construction agency access as required to complete remaining items of construction pursuant to the construction contract. (Source: [www.sam.usace.army.mil/cd/sad/dm1110-1-1/appendixa.doc](http://www.sam.usace.army.mil/cd/sad/dm1110-1-1/appendixa.doc))

**BENEFICIAL OCCUPANCY:** Occupancy of an uncompleted building, structure, or facility for its intended purpose under circumstances which are advantageous to the occupant and which produce relatively little interference with the builder in completing construction. Prior to occupancy by the using service, a written agreement among the contractor, construction agency, and the using service is provided listing deficiencies, remaining work and other conditions of occupancy that must be consummated. Beneficial Occupancy may be a contract requirement. (Source: [www.sam.usace.army.mil/cd/sad/dm1110-1-1/appendixa.doc](http://www.sam.usace.army.mil/cd/sad/dm1110-1-1/appendixa.doc))

**Best Value Source Selection:** "Best value" is a process used to select the most advantageous offer by evaluating and comparing factors in addition to cost or price. It allows flexibility in selection through tradeoffs which the agency makes between the cost and non-cost evaluation factors with the intent of awarding to the contractor that will give
the government the greatest or best value for its money. (Source: https://www.acquisition.gov/comp/seven_steps/step6_use-best.html)

**Building Footprint Area:** is the floor area of the entire building, which includes floor area occupied by rooms/spaces, walls, corridors, conveyances, mechanical/utility rooms, and shafts.

**Building Information Model:** An object-based digital representation of the physical and functional characteristics of a facility. The Building Information Model serves as a shared knowledge resource for information about a facility, forming a reliable basis for decisions during its lifecycle from inception onward. (Source: http://www.cfm.va.gov/til/bim/BIMGuide/terms.htm)

**Building Information Modeling (BIM):** A collection of defined model uses, workflows, and modeling methods used to achieve specific, repeatable, and reliable information results from the model. Modeling methods affect the quality of the information generated from the model. When and why a model is used and shared impacts the effective and efficient use of BIM for desired project outcomes and decision support. (Source: http://www.cfm.va.gov/til/bim/BIMGuide/terms.htm)

**Building Information Management:** Building Information Management supports the data standards and data requirements for BIM use. Data continuity allows for the reliable exchange of information in a context where both sender and receiver understand the information. (Semantic Interoperability) (Source: http://www.cfm.va.gov/til/bim/BIMGuide/terms.htm)

**Bridge:** A bridge is a structure built to span between two points to allow connections between different buildings or within buildings. Bridges can be covered or open depending on the architectural or functional requirements.

**Clinic:** A health treatment facility primarily intended and appropriately staffed and equipped to provide emergency treatment and ambulatory services. A clinic is also intended to perform certain non-therapeutic activities related to the health of the personnel served, such as physical examinations, immunizations, medical administration, preventive medicine services, and health promotion activities to support a primary military mission. In some instances, a clinic may also routinely provide therapeutic services to hospitalized patients to achieve rehabilitation goals; e.g., occupational therapy and physical therapy. A clinic may be equipped with bed for observation or patients awaiting transfer to a hospital and for the care of cases that cannot be cared for on an outpatient status, but that do not require hospitalization. Such beds shall not be considered in calculating occupied-bed days. (Source: http://www.wbdg.org/ccb/DOD/UFC/ufc_4_510_01.pdf) Synonyms: Medical Office Building, or Outpatient Clinic.

**CM at Risk:** A delivery system where the owner contracts separately with a designer and a contractor. The owner contracts with a design company to provide a facility design. The owner selects a contractor to perform construction management services and construction work, in accordance with the plans and specifications, for a fee. The contractor usually has significant input in the design process. (Source: CII- Project Delivery System Section Workbook Glossary)
**COBIE:** The model and facility data for the commission, operations, and maintenance of the project shall satisfy the Construction Operations Building Information Exchange (COBIE) requirements, and be submitted in compliance with the commissioning requirements. (Source: [http://www.cfm.va.gov/til/bim/BIMGuide/terms.htm](http://www.cfm.va.gov/til/bim/BIMGuide/terms.htm))

**Cold Shell:** Not habitable, no finishes, no walls (where it is possible to meet the fire rating without putting gyp board on the inside face of the shell area wall), where the area is on the ground level, no floor slab, no lighting, the space is not conditioned (sometimes there isn’t even a mechanical unit to support the build-out). (Source: Noah Kahn, KP)

**Connecting Concourse:** A corridor to connect various facilities or to provide access to a facility(s), but is not counted in the area of the facility itself.

**Contracting Officer Representative (COR):** A Department of Defense (DoD) term for a person in charge on DoD’s behalf for a contract. Synonym: Owner Representative.

**Davis-Bacon Act (DBA):** Enacted in 1931, the DBA is intended to protect communities and workers from the economic disruption caused by competition arising from non-local contractors coming into an area and obtaining federal construction contracts by underbidding local wage levels. The DBA, as amended, requires that each contract over $2,000 to which the United States or the District of Columbia is a party for the construction, alteration, and/or repair (including painting or decorating) of public buildings or public works shall contain a clause setting forth the minimum wages to be paid to various classes of laborers and mechanics employed under the contract. (Source: labor.gov)

**Dense Urban:** Project site is located in an area where built density is greater than or equal to 60,000 ft²/acre. (Source: LEED Handbook)

**Dry Lab:** A laboratory for making computer simulations or for data analysis especially by computers called also dry laboratory. Source: ([http://www.merriam-webster.com/medical/dry+lab](http://www.merriam-webster.com/medical/dry+lab))

**Difficulty factor 1:** All new projects or renovations, which have unrestricted access and normal working hours and are not affected by facility operations, hazardous material, or structural or seismic restraints. (Source: KP)

**Difficulty factor 2:** have some restricted access, such as the work area is located 200 to 300 feet from the nearest entry/exit and demolition materials must be transported, or the work area is restricted in size such as a utility closet or mechanical chase where movement is hindered, or new hospitals or MOBs on a tight urban site or existing campus with constricted working conditions. (Source: KP)

**Difficulty factor 3:** have restricted access, as listed in difficulty factor 1 and 2 as well as limited working hours that require overtime and/or shift labor that will affect the costs. (Source: KP)
**Difficulty factor 4:** have restricted access and limited working hours as listed in difficulty factors 1, 2, 3, as well as requirements for dust and sound barriers or other temporary construction to isolate the work from operating facilities. (Source: KP)

**Electronic Medical Record:** An EMR is a provider-based medical record that includes all health documentation for one person covering all services provided within an enterprise. It has a level of sophistication beyond a document management system. (Source: [http://www.emrconsultant.com/glossary](http://www.emrconsultant.com/glossary))

**Environmental Remediation:** removal of hazardous substance, pollutant or contaminants from environmental media such as soil, groundwater, sediment, or surface water for the general protection of human health and the environment or from a brownfield site intended for redevelopment. (Source: [http://en.wikipedia.org/wiki/Environmental_remediation](http://en.wikipedia.org/wiki/Environmental_remediation))

**Evidence Based Design (EBD):** the process of basing decisions about the built environment on credible research to achieve the best possible outcomes. (Source: [http://www.healthdesign.org/edac](http://www.healthdesign.org/edac)) Or

“The conscientious, explicit and judicious use of current best evidence in making planning and design decisions that advance the needs of patients, staff, families and organizations.” (Source: draft update of UFC 4-510-01)

**Facilities Management Service (FMS) Communications Systems and Equipment:** Microprocessor- or server-based systems and/or equipment that are outside the purview of information technology equipment (OIT), such as, but not limited to: Nurse Call and/or Code Blue (Blue); PACS; Television (Master Antenna [MATV], Community Antenna [CATV], Closed Circuit [CCTV] [for education] & Satellite TV [SATV]); Radio (Paging [Code Blue, Emergency & Routine]), Microwave, Satellite Ratio/Telephone & Radio Entertainment; Public Address (Overhead Paging, Mass Notification, and Intercommunications [Intercom]); Physical Security Management (Access Control, Motion Intrusion Detection, Duress and/or Panic Alarm & Security Surveillance Television [SSTV]); Patient, Staff and Asset Monitoring (Medical Telemetry, Patient/Staff Location, and Cardiac); Energy Management; Emergency (Fire Alarm/Mass Notification, Police, and Disaster). These systems and equipment shall be located in the FMS area of the Telecommunications Rooms and the Antenna Equipment Headend Room. Headend, host servers, or active equipment associated with archiving, packetized storage, or transport of confidential information generated by a FMS system shall be located within the OIT Equipment Area of the Main Computer Room, and will be serviced and managed by OIT. (Source: VA Website)

**Hazmat Remediation:** deals with the management and removal of hazardous material from an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. (Source: [http://www.epa.gov/wastes/laws-regs/state/revision/frs/fr175.pdf](http://www.epa.gov/wastes/laws-regs/state/revision/frs/fr175.pdf))

**Information Technology (IT):** The design, development, implementation, support and management of computer-based information systems, particularly software applications and computer hardware.
Information Technology (IT) Equipment: Any electronic digital or analog computer, with all peripheral, support, memory, programming, or other directly associated equipment, records, and activities.

Inpatient Care: The examination, diagnosis, treatment, and disposition of inpatients appropriate to the specialty and/or subspecialty under which the patient is being cared for as an inpatient to a hospital. (Source: Glossary of Healthcare Terminology – DoD)

Inpatient Hospital: A facility that provides inpatient care, where hospital stay has to be more than 24 hours. Inpatient care services provided to patients admitted to a hospital may include bed and board, nursing services, diagnostic or therapeutic services, and medical or surgical services. (Source: http://www.hospitalcompare.hhs.gov/staticpages/help/hospital-glossary.aspx?Choice=I )

Or
A health treatment facility capable of providing definitive inpatient care. It is staffed and equipped to provide diagnostic and therapeutic services in the fields of general medicine and surgery and preventive medicine services, and has the supporting facilities to perform its assigned mission and functions. A hospital may, in addition, discharge the functions of a clinic.

a. **Primary Care Hospital**: a type of inpatient hospital that offers basic services such as an emergency department and limited intensive care facilities. (source: http://www.justice.gov/atr/public/health_care/204694/chapter3.htm)
b. **Secondary Care Hospital**: generally offers primary care, general internal medicine, and limited surgical and diagnostic capabilities. (Source: http://www.justice.gov/atr/public/health_care/204694/chapter3.htm)
c. **Tertiary care hospital**: A provision by a large medical center, usually serving a region or State and having sophisticated technological and support facilities, of highly specialized medical and surgical care for unusual and complex medical problems. (Source: Glossary of Healthcare Terminology – DoD)
d. **Quaternary hospital**: typically provides sub-speciality services, such as advanced trauma care and organ transplantation. (Source: http://www.justice.gov/atr/public/health_care/204694/chapter3.htm)
e. **Critical Access Hospital (CAH)**: A type of small inpatient hospital, generally geographically remote facility that provides outpatient and inpatient hospital services to people in rural areas. (http://www.hospitalcompare.hhs.gov/staticpages/help/hospital-glossary.aspx?Choice=C )

Integrated Project Delivery Method: A project delivery method that integrates people, systems business structures and practices into a process that collaboratively harnesses the talents and insight of all participants to optimize project results, increase value to the owner, reduce waste and maximizes efficiency through all phases of a project. (Source: http://www.aia.org/groups/aia/documents/pdf/aiab083423.pdf )

Interstitial Space/Deck: The area in a building that contains structure and service systems only. When an entire floor area is dedicated to interstitial space, it will be termed as Deck. (Source: Instruction Sheet for AIA D101-1995)

Or
The area of load bearing surfaces located above or below occupied building floor that are not available for general occupancy often due to inadequate clear headroom and contain building mechanical or electrical systems predominantly serving the adjacent floors or to provide access to such systems. (Source: OmniClass_13_2010-06-24-3). Or Unfinished and unoccupied space between floors used for horizontal utility distribution systems, of sufficient size to accommodate workmen, and permit maintenance and alteration without interruption of activities on the floors. (Source: http://www.wbdg.org/ccb/DOD/UFC/ufc_4_510_01.pdf)

**Long-term Care Facility/Community Living:** A facility, like a nursing home, that provides a variety of services that help people with health or personal needs and activities of daily living (like walking, eating, and going to the bathroom) over a period of time. Most long-term care is custodial care, for which Medicare does not pay. (Source: http://www.hospitalcompare.hhs.gov/staticpages/help/hospital-glossary.aspx?Choice=L) Or That routine help with everyday activities such as eating, bathing and dressing necessitated because of chronic illness, disability or frailty. Long-term care is provided to individuals in their homes, in community settings or nursing homes; a part of the continuum of care. (Source: Glossary of Healthcare Terminology – DoD) Or Long-term care of individuals with long-standing, persistent diseases or conditions. Long-term care includes care specific to the problem, as well as other measures to encourage self-care, promote health, and prevent loss of function. Synonym: Community Living, and Chronic Care (Source: Glossary of US VA terms and definitions Disabled World)

i. **Residential:** A long term care facility developed as a residential facility served by certified nursing assistants. Residents receive care in small, self-contained homes organized to deliver individualized care, meaningful relationships, and better direct care jobs through self-managed team of direct care staff working in cross-trained roles. An example of such project is Greenhouse project, where a single residential unit houses 10 elders. (Source: http://thegreenhouseproject.org/about-us/frequently-asked-questions/)

b. **Institutional:** Housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. This group shall include, but not be limited to, the following: Residential board and care facilities, Assisted living facilities, etc. (Source: IBC Definitions.)

**LEED Certification:** LEED certification provides independent, third-party verification that a building, home or community was designed and built using strategies aimed at achieving high performance in key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. (LEED stands for Leadership in Energy and Environmental Design) (Source: http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1988)

**LEED Rating System:** LEED is a point based system where building projects earn LEED points for satisfying specific green building criteria. Within each of the seven LEED credit categories, projects must satisfy particular prerequisites and earn points.
The five categories include Sustainable Sites (SS), Water Efficiency (WE), Energy and Atmosphere (EA), Materials and Resources (MR) and Indoor Environmental Quality (IEQ). An additional category, Innovation in Design (ID), addresses sustainable building expertise as well as design measures not covered under the five environmental categories. The number of points the project earns determines the level of LEED Certification the project receives. LEED certification is available in four progressive levels according to the following scale: There are 100 base points; 6 possible Innovation in Design and 4 Regional Priority points. LEED Certified 40–49 points; LEED Silver 50–59 points; LEED Gold 60–79 points; LEED Platinum 80 points and above (Source: http://www.usgbc.org/ShowFile.aspx?DocumentID=3330)

**Mechanical Tunnel:** is a type of utility tunnel (utilidor) for mechanical services, installed by drilling or tunneling. For example reinforced concrete utility tunnels can house steam condensate, compressed air, central cooling water, power and communications. It does not allow for water, gas, sewer, or storm drain piping. *(Source: http://www.washington.edu/facilities/engr/fsdg/02G-U_Civil/14-2U_UtilTunnels&Trenches.pdf)*

**Medical Campus:** A single shared site under the ownership or management of a single entity with a collection of buildings associated with various medical purposes. *(Source: https://www.usgbc.org/ShowFile.aspx?DocumentID=10486)*

**Medical Office Building (MOB) / Outpatient Clinic (OPC):** An Outpatient Clinic is a freestanding ambulatory care facility that is physically separated but administratively attached to a medical center commonly referred to as a “parent facility”. It is usually located in a highly populated area so that a large concentration of patients may obtain primary, secondary, and in some cases tertiary outpatient health care services. *(Source: http://www.cfm.va.gov/til/space/SPchapter265.pdf)*

- **Office/Community Based OPC:** These types of facilities are full time/part time ambulatory care facilities, physically separate but administratively attached to the parent facility. Level of care in such facilities would consist of:
  - Initial assessment of patient needs;
  - Acute and chronic basic care of biopsychosocial needs;
  - Health promotion and disease prevention; and
  - Referral for other levels of care.

- **Institutional/Satellite OPC:** These types of facilities are offsite centers that deliver primary, secondary and some tertiary services in an outpatient setting.

- **Class A:** facilities are defined as “minor” in nature- often referred to as “lumps and bumps” minor procedures. They are the least invasive of all three classes, and can occur within a Business Occupancy clinic environment with no volume limitations. Per AIA Guidelines, “procedures are performed under topical and local infiltration blocks with or without oral or intramuscular preoperative sedation”.

- **Class B:** Class B facilities cover a group of procedures that can be defined as “intermediate” in nature. Depending on type of procedure and number of recovery patients, these procedures could occur within either a Business or
Health Care occupancy. With four or more recovery patients, these facilities would default to a Health Care occupancy environment. Per AIA Guidelines, these procedures provide for “minor or major procedures performed in conjunction with oral, parenteral, or intravenous sedation or under analgesic or dissociative drugs”.

- **Class C**: Class C facilities encompass major surgical procedures that always occur within a Health Care Occupancy environment. Per AIA Guidelines, this class provides for “major surgical procedures that require general or regional block anesthesia and support of vital bodily functions”.

### Surgical Procedures Separation by Occupancy type

<table>
<thead>
<tr>
<th>Business Occupancy</th>
<th>Institutional Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A procedures</td>
<td>Class B procedures</td>
</tr>
<tr>
<td>Class B procedures 3 or fewer recovery patients</td>
<td>Class B procedures 4 or more recovery patients</td>
</tr>
<tr>
<td></td>
<td>Class C procedures</td>
</tr>
</tbody>
</table>

Based on AIA 2006 Guidelines, Section A2.3.1 American College of Surgeons Surgical Facility Classes

**Negative Declaration**: is a document that states upon completion of an initial study, that there is no substantial evidence that the project may have a significant effect on the environment. (Source: [http://ceres.ca.gov/ceqa/flowchart/lead_agency/EIR-ND.html](http://ceres.ca.gov/ceqa/flowchart/lead_agency/EIR-ND.html))

**Open Book**: refers to the full disclosure by the Contractor of his accounts for the project. The Contractor is required to maintain a full record of particulars of the cost of performing the obligations under this Contract; and when requested by the owner, provide a summary of any of the costs, possibly including details of any funds held by the Contractor specifically to cover such costs. (Source: [http://en.allexperts.com/q/Construction-Law-914/2008/12/Open-book-philosophy.htm](http://en.allexperts.com/q/Construction-Law-914/2008/12/Open-book-philosophy.htm))

**Parallel Primes**: Owner contracts separately with designer and multiple prime contractors.

**Pebble Project**: is The Center for Health Design's main research initiative and aims to help any type of healthcare facility:
- Improve the quality of care for patients
- Attract more patients
- Recruit and retain staff
- Increase philanthropic, community, and corporate support
- Enhance operational efficiency and productivity

(Source: http://www.healthdesign.org/pebble)

**Performance Assessment System (PAS):** A web-based data collection instrument containing healthcare facilities benchmarking questionnaire and reporting programmed by CII information technology staff.

**Perinatal Care:** The care of a fetus or newborn given before, during, and after delivery from the 28th week of gestation through the 7th day after delivery. (Source: http://www.reference.md/files/D018/mD018743.html) It has three levels based on the type of care from basic care (level 1), specialty care (level 2), and subspecialty care (level 3). (Source: http://learning.mihealth.org/mediasite/infantmortalitysummit/Session103.pdf)

**Project Labor Agreement:** A pre-hire collective bargaining agreement with one or more labor organizations that establishes the terms and conditions of employment for a specific construction project. (Source: http://www.whitehouse.gov/the_press_office/ExecutiveOrderUseofProjectLaborAgreementsforFederalConstructionProjects)

**Physical Security:** Security concerned with physical measures designed to safeguard people, to prevent unauthorized access to equipment, facilities, material, and documents, and to safeguard against damage and loss. (Source: http://www.cfm.va.gov/til/PhysicalSecurity/dmphyseclsp_01.pdf)

a. **Mission Critical:** Facility that is required to continue operation during a natural or man-made extreme event or a national emergency.

b. **Life-Safety Protected:** Facilities which are required to protect the life safety of the patients, staff, and visitors in case of an emergency; although indispensable to the mission of VA, are not required to remain operational in a natural or man-made extreme event or a national emergency.

**Population served by the facility:** The population which the hospital was designed to serve in specific geographical areas.

**Reused Medical Equipment:** Medical equipment was already purchased as a part of another project or budget, and incorporated into current project. The costs for installation are included in this project.

**Rural:** A term used by the Census Bureau to classify places with small populations or unincorporated areas with population density less than 1,000 per square mile. (Source: http://www.census.gov/geo/www/GARM/Ch12GARM.pdf)

**Shared Incentives:** When the direct project costs, including profit and overhead and additional commonly agreed goals are met or exceeded the construction manager and various parties and the employer share the difference on the basis of some stipulated
percentage and this shared savings program is defined as shared incentives. (Source: [http://www.aia.org/groups/aia/documents/pdf/aiab083423.pdf](http://www.aia.org/groups/aia/documents/pdf/aiab083423.pdf))

**Shared Penalties:** When the direct project costs, including profit and overhead and additional commonly agreed goals are not met, the construction manager and various parties and the employer share the difference on the basis of some stipulated percentage and this shared loss program is defined as shared penalties. (Source: [http://www.aia.org/groups/aia/documents/pdf/aiab083423.pdf](http://www.aia.org/groups/aia/documents/pdf/aiab083423.pdf))

**Structural Upgrade:** Changes in building structure due to various reasons including change of use, the upgrade in code requirements, due to seismic related structural changes, etc.

**The OmniClass Construction Classification System:** is a classification system for the construction industry, developed by the Construction Standards Institute (CSI) and is used as a classification structure for electronic databases. As the basis of its tables, OmniClass incorporates other existing systems currently in use, including MasterFormat™ for work results, UniFormat for elements, and EPIC (Electronic Product Information Cooperation) for structuring products. (Source: Omniclass.org)

**The Space and Equipment Planning System (VA-SEPS):** is a database shared by the Army, Navy, Air Force, and VA as a tool, based on medical need, to determine the space and medical equipment necessary to support the requirements for space.

**Tiered Process:** is type of best value selection process in which a group of contractors are shortlisted based on qualifications and compete for the project based price providing the based value to an owner.

**Urban:** A Urban area is a continuously built-up area with a population of 50,000 or more. (Source: [http://www.census.gov/geo/www/GARM/Ch12GARM.pdf](http://www.census.gov/geo/www/GARM/Ch12GARM.pdf))

**Warm Shell:** Space is fully enclosed (without interior dividing partitions), conditioned, and meets exiting requirements. No equipment or IT is provided, floors are typically left as a slab, ceiling is either an open structure or the most inexpensive (throw away) lay-in ceiling tile available, minimal lighting, and code minimum power. Where it is designated as office occupancy, no interior partitions, floors are left slab, ceilings are inexpensive lay-in tile with inexpensive light fixtures providing code minimum light level and power for office space.

**Wet Lab:** a laboratory equipped with appropriate plumbing, ventilation, and equipment to allow for hands-on scientific research and experimentation—called also wet laboratory. (Source: [http://www.merriam-webster.com/medical/wet+lab?show=0&t=1333382069](http://www.merriam-webster.com/medical/wet+lab?show=0&t=1333382069))

### 1.2. General Terms

**Acquisition Strategy:** The acquisition strategy is a unique combination of delivery, procurement, and contracting methods that are applied to a given project defining the structure of the relationship between owner, Architect/Engineer (A/E) and the
construction contractor. Please refer to the page 4 of the following document for further detail.

**Figure: Acquisition Strategy**

![Acquisition Strategy Diagram](https://www.mhsworldclassfacilities.org/repository/getFile/1060)

**Addition (Add-on):** A new addition that ties in to an existing facility, often intended to expand capacity. Synonym: Expansion.

**Alignment:** The condition where appropriate project participants are working within acceptable tolerances to develop and meet a uniformly defined and understood set of project objectives.

**Alignment Thermometer:** The diagnostic tool developed by CII Research Team 113 to measure project team alignment, indicate areas needing focus, and help track team progress toward achieving alignment.

**Alliance Partner:** A participant in a long-term association with a non-affiliated organization, used to further the common interests of the members. The continued association is based upon mutual trust and the satisfactory performance of each participant, and the alliance as a whole, rather than a pure contractual obligation.

**As Built Drawings:** Drawings that are updated to reflect the difference between the Issue for Construction (IFC) drawings and the constructed facility.

**Automation/Integration (AI) Technology:** The Automation and Integration Technology practice addresses the degree of automation/level of use and integration of automated systems for predefined tasks/work functions common to most projects.

**Benchmarking:** Provides practical learning through comparing measurements or outcomes across industries, sectors, products or services. The essence of benchmarking is the process of identifying the highest standards of excellence for products, services or processes and then making the improvements necessary to reach those standards.

**Bill of Material (BOM):** A hierarchical list of components and materials, including their quantities from the material take off, that make up a facility.

**Brownfield:** The expansion, redevelopment, or reuse of property or facility which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Common examples are abandoned gas stations and dry cleaners, railroad properties, factories and closed military bases.
**Building:** Includes Communications Center, Courthouse, Dormitory, Hotel, Large apartment complex, Embassy, Office building, Hospital, Laboratory, Maintenance Facilities, Movie Theatre, Parking Garage, Physical Fitness Center, Prison, Restaurant, Nightclub, Retail Building, School, and Warehouse.

**Change:** A change is any event that results in a modification of the project work, schedule or cost. Owners and designers frequently initiate changes during design development to reflect changes in project scope or preferences for equipment and materials other than those originally specified. Contractors often initiate changes when interferences are encountered, when designs are found to be not constructable, or other design errors are found.

**Change Management:** Change Management is the process of incorporating a balanced change culture of recognition, planning and evaluation of project changes in an organization to effectively manage project changes.

**CM at Risk:** A delivery method which entails the construction manager to act as consultant to the owner in the development and design phases, but as the equivalent of a general contractor during the construction phase.

**Constructability:** Constructability is the effective and timely integration of construction knowledge into the conceptual planning, design, construction and field operations of a project to achieve the overall project objectives in the best possible time and accuracy, at the most cost-effective levels.

**Contingency:** All costs in contingency accounts including but not limited to normal contingency, allowances, reserves, indirect costs for schedule contingency, escalation, etc.

**Contract Method:** Contracting methods are identified by the terms in which they assign financial risk to the various entities and the delivery methods. (Firm Fixed Price, etc) (Source: https://www.mhsworldclassfacilities.org/repository/getFile/1060)

**Cost Escalation:** The provision in a cost estimate for increases in the cost of equipment, material, labor, etc., due to continuing price changes over time.

**Cost of Land:** The cost of land includes the purchase price of the land obtained for project use. It does not include the cost of preparing the land for use, such as soil remediation, demolition of existing structures, site preparation, etc.

**Cost of Quality Management:** The sum of those costs associated with quality deviation prevention and appraisal activities. Examples include:
- Quality System/Program Development
- Personnel Qualification Testing
- Formal Design Check/Review
- On/Off-Site Inspection
Delivery Method: Delivery methods refer to the Design AE firm and Construction Contractor organizational structure and the sequence in which these entities are acquired. (Design-Bid-Build, Design-Build, etc.)

(Source: https://www.mhsworldclassfacilities.org/repository/getFile/1060)

Design-Bid-Build: A traditional project delivery system in the construction industry where the owner contracts separately with a designer and a constructor. The owner contracts with a design company to provide "complete" design documents, and then solicits fixed price bids from construction contractors to perform the work. (CII: Project Delivery System Section Workbook Glossary)

Design-Build: An integrated delivery process which combines architectural and engineering design services with construction performance under one contract agreement.

Direct Cost of Field Rework: The sum of those costs associated with actual performance of tasks involved in rework. Examples include:
- Labor
- Materials
- Equipment
- Supervisory personnel
- Associated overhead cost

Evidence-based design (EBD): uses credible research to make design decisions.

Expansion: - A new addition that ties in to an existing facility, often intended to expand capacity. Synonym: Addition.

Fast Track: The process of dividing the design of a project into phases in such a manner as to permit construction to start before the entire design phase is complete. Also called phased construction.

Full-Time Equivalent (FTE): Represents the number of participants and the percent of time each is allocated to the project. For example, if one team member responsible for procurement works ½ time on the project, then the procurement contribution to the FTE measure is 0.5. Likewise, if two project controls specialists work on the team full time, they contribute 2.0 FTE.

Or
A work force equivalent to one individual working full time for a specific period, which may be made up of several part-time individuals or one full-time individual. This will include everyone working in the facility; military, civilian and contractor personnel. (VA Website)

Grass Roots (Green Field): A new facility from the foundations and up. A project requiring demolition of an existing facility before new construction begins is also classified as grass roots.
**Integrated Database:** An integrated database is a concept of organizing, storing, and managing all electronic data relating to a project in such a fashion that data is entered and stored once and then accessed and utilized by multiple users and applications. The users may include those involved with facility planning, design, procurement, construction, plant operations, and suppliers.

**Licensor:** An organization that gives another a license to use a specific process or technology. In many cases, the licensor provides preliminary or front-end, engineering service.

**Materials Management:** Materials management is an integrated process for planning and controlling all necessary efforts to make certain that the quality and quantity of materials and equipment are appropriately specified in a timely manner, are obtained at a reasonable cost, and are available when needed. The materials management systems combine and integrate the takeoff, vendor evaluation, purchasing, expediting, warehousing, distribution, and disposing of materials functions.

**Mechanical Completion:** The point in time when a plant is capable of being operated although some trim, insulation, and painting may still be needed. This occurs after completion of precommissioning. In some industries, mechanical completion may have the same general meaning as beneficial occupancy.

**Modernization:** A building or facility for which a substantial amount of the equipment, structure, or other components is replaced or modified, and which may expand capacity and/or improve the process or facility. Synonyms: Renovation, Upgrade/Infill/Shell & Core.

**Modularization:** Modularization refers to the use of offsite construction. For the purposes of the benchmarking data, modularization includes all work that represents substantial offsite construction and assembly of components and areas of the finished project. Examples that would fall within this categorization include:

- Skid assemblies of equipment and instrumentation that naturally ship to the site in one piece, and require minimal on-site reassembly.
- Super-skids of assemblies of components that typically represent substantial portions of the plant, intended to be installed in a building.
- Prefabricated modules comprising both industrial plant components and architecturally finished enclosures.

Modularization does not include offsite fabrication of components. Examples of work that would be excluded from the definition of modularization include:

- Fabrication of the component pieces of a structural framework
- Fabrication of piping spool-pieces

**Planning for Startup:** Startup is the transitional phase between plant construction completion and commercial operations, including all of the activities that bridge these two phases. Planning for Startup consists of a sequence of activities that begins during requirements definition and extends through initial operations.

**Pre-Project Planning:** Pre-Project Planning involves the process of developing sufficient strategic information that owners can address risk and decide to commit resources to maximize the chance for a successful project. Pre-project planning includes
putting together the project team, selecting technology, selecting project site, developing project scope, and developing project alternatives. Pre-project planning is often perceived as synonymous with front-end loading, front-end planning, feasibility analysis, and conceptual planning.

**Procurement Method:** Procurement is the means by which the facility is purchased or more accurately the selection process used to acquire the skill and resources needed. (Best Value Source Selection, Low Bid, etc) (Source: https://www.mhsworldclassfacilities.org/repository/getFile/1060)

**Product:** Refers to a grouping of goods or services produced by a facility.

**Project Budget at Authorization to Proceed:** This is the estimated cost for your company's portion of the project at authorization to proceed. If your contract had cost changes before authorization to proceed, then these changes should be included in the project budget. Do not include estimated costs for change orders received during project execution.

**Project Change Management:** Practices related to the management and control of both scope changes and project changes.

**Project Delivery and Contract Strategy (PDCS):** A structured process of evaluating and prioritizing owner’s objectives, reviewing and evaluating delivery methods and contract types, and then determining what is the appropriate delivery method and contract type for a project.

**Project Development Changes:** Changes required to execute the original scope of work or obtain original process basis. Examples include:
- Unforeseen site conditions that require a change in design / construction methods
- Changes required due to errors and omissions
- Acceleration
- Change in owner preferences
- Additional equipment or processes required to obtain original planned throughput
- Operability or maintainability changes

**Project Risk Assessment:** The process to identify, assess and manage risk. Generally, the project team evaluates risk exposure for potential project impact to provide focus for mitigation strategies.

**QA/QC:** Quality Assurance (QA) and Quality Control (QC); Planned and systematic actions necessary to provide appropriate confidence that a product or service will satisfy the quality requirements.

**Quality Management:** Quality Management incorporates all activities conducted to improve the efficiency, contract compliance and cost effectiveness of design, engineering, procurement, QA/QC, construction, and start-up elements of construction projects.
**Request for Information (RFI):** A process used to confirm the interpretation of a detail, specification or note on construction drawings or to secure a documented directive or clarification from the architect, engineer or owner that is needed to continue work.

**Renovation:** A facility for which a substantial amount of the equipment, structure, or other components is replaced or modified, and which may expand capacity and/or improve the process or facility. Synonyms: Modernization, Upgrade.

**Safety Tool Box Meeting:** A scheduled safety meeting used to provide employees with safety and health information regarding the project and work activities.

**Scope Changes:** Changes in the base scope of work or process basis. Examples include:
- Feedstock change
- Changed site location
- Changed throughput
- Addition of unrelated scope

**Team Building:** Team Building is a project-focused process that builds and develops shared goals, interdependence, trust and commitment, and accountability among team members and that seeks to improve team members problem-solving skills.

**Total Actual Project Cost:** This is the total actual cost of all work performed by your company, including costs attributable to work added or deducted by change orders.

**Turnaround/Shutdown/Outage:** The period during which a boiler, generating unit, transmission line, or other facility is shutdown and unable to perform its normal operations. The shutdown of a facility including for maintenance, inspection, testing, regulatory changes, or, in some cases, for refuelling is known as a planned shutdown. Turnaround is interchangeable with shutdown or outage depending on industry groups.

**Upgrade:** A facility for which a substantial amount of the equipment, structure, or other components is replaced or modified, and which may expand capacity and/or improve the process or facility. Synonyms: Modernization, Renovation.

**Visual Survey Technologies:** An object-based surveying technology with a graphical, interactive approach to importing, editing, and processing data.

**Zero Accident Techniques:** Zero accident techniques include the site specific safety programs and implementation, auditing and incentive efforts to create a project environment and a level of training that embraces the mind set that all accidents are preventable and that zero accidents is an obtainable goal.

**3D CAD modeling:** Computer aided drafting system that provides three-dimensional views for checking physical interferences in addition to providing two and three dimensional drafting capabilities.
2. Cost Definitions

2.1. General Definitions

**Actual Project Costs:** The total actual project cost should include all actual project costs (excluding the cost of land) from Programming/Front-end Planning through commissioning, including capitalized amounts expended for in-house salaries, overhead, travel, etc. Synonyms: Total Installed Cost.

**Budgeted (Baseline) Cost:** Budget amounts include contingency and correspond to funding approved at time of authorization. This is the original baseline budget, and should not be updated to include any changes since change data are also collected in the benchmarking questionnaire. Metrics definitions specifically address changes as appropriate. Budget amount should include all planned expenses (excluding the cost of land) from Front-end Planning through commissioning, including capitalized amounts estimated for in-house salaries, overhead, travel, etc. Clarification: This doesn’t include any costs beyond five (5’) feet of the building perimeter.

**Contingency:** Contingency allowance is the amount, or percentage, included in the project budget to cover unpredictable changes in the work or items of work. It serves three core purposes:

a. To account for errors and omissions in the construction documents
b. To modify or change the scope of the project
c. To pay for unknown conditions


2.2. Healthcare Facility Costs

**Artwork and plants:** artwork and plant costs include purchase price, commissions, shipping and framing costs. They also include costs for installation, plaques, and inventory. (Source: KP)

**Building Construction:** the actual construction cost of the building (up to 5 feet from exterior building line), including excavation, shoring, foundations, utility connections, structural components, mechanical and electrical, plumbing, fixed furniture and equipment provided by the contractor, installation of owner furnished, contractor installed equipment, earthquake mitigation of equipment and furniture, finishes, security, signage, contractor’s fee, general conditions, bonds, insurance and construction contingency. Exclude significant soil remediation, rock excavation. (Source: KP)

**CM Pre-construction fees:** The Pre-Construction Phase Fee is the total compensation payable to the CM for the performance of Pre-Construction Phase Services, terms of which are approved in advance and in writing by the Owner. (Source: TX State CM@Risk Contract Template)

**Commissioning:** (Inclusive of owner staff costs associated with these activities)
Labor and subsistence of personnel associated with commissioning the facility. This includes documented evidence of the physical completion of the facility, mechanical completion of equipment, installation and connection of utilities and the proof of systems operations. Co-ordination of Commissioning activities (with vendors where necessary) is a construction responsibility. Commissioning requirements include, but are not limited to:

- Installation Inspection
- Cleaning Inspection
- Access Inspection
- Instrument Loop Checks and Calibration
- Component Settings
- Utility Connections
- Start-up and Start-down Sequence Testing
- Alarm and Monitoring Testing

**Total Building Commissioning:** Commissioning is defined by the building industry as the process of verifying that all building systems perform interactively according to the design intent, and the systems meet the Owner’s operational needs.

**Professional fees** (A/E & Consulting Engineers) and Construction Management pre – construction fees: Inclusive of owner staff costs associated with these activities.


**Furnishings:** include purchase price for new, movable furniture, installation, tax, and freight. (Source: KP)

**Imaging equipment:** include purchase price, quality control, installation, electrical testing, tax and freight of all imaging equipment. Examples of imaging equipment are list below. (Source: KP)

- C.T.
- MRI
- Angiography
- Heart Cath
- Mammography
- Other radiographic equipment
- Ultrasound (e.g. General Diagnostic (cart & hand held), Cardiology, OB/Gyn, Urology, OR, Ophthalmic))
- Scintillation gamma cameras
- SPECT/CT
- PET
- PET/CT
- Linear accelerators
- Isotope treatment units
- Other imaging equipment (e.g. gamma knife, etc)
**Information Technology Costs:** All costs related to any electronic digital computer, with peripheral support, memory, programming, or other directly associated equipment, records, and activities that supports Healthcare Mission and allows archiving and/or packetized storage and transportation of confidential patient, staff or public information. IT equipment located with IT Equipment Area of the Main Computer Room is not permitted to actively process life safety data, nor any FMS systems Data (refer to Facilities Management Service (FMS) Communications Systems and Equipment). This cost does not include IT labor costs (cabling and pulling costs), which should be part of construction costs. (Include it with subcontractor costs). For further clarification, anything inside the closet should be part of the construction costs.

In the case that a project leases some IT equipment, the cost of purchase and installation, not the leasing cost, shall be input to PAS. This purchase cost should be available through the cost benefit analysis needed by an owner to make a buy vs. lease decision.

**Capital Medical Equipment:** Capital medical equipment includes all new (moveable and fixed) owner-furnished equipment and the installation of owner-installed and equipment vendor-installed equipment for new facilities (OFOI). Capital medical equipment costs include purchase price for equipment, costs for refurbishing equipment in lieu of purchasing new, tax, freight, and installation including quality control, calibration, electrical testing. The costs also include the purchase price, tax, and freight for built-in equipment that is installed by the general contractor. (Source: KP)

**Non-Capitalized Costs:** The cost of administration, operation, maintenance and marketing exclusive of equipment and facility costs. The few specific examples of these costs are salaries and wages, fringe benefits, travel, supplies and material, occupancy expenses, utilities, communications, photocopying, and printing, etc. The total cost of a project should exclude non-capitalized costs. (Source: www.dot.ca.gov/hq/MassTrans/Transit-Info-Terms.htm)

**Owner's miscellaneous:** Owner’s miscellaneous costs include Inspector of Record, testing lab, special inspections, design reimbursable costs, and permit and drawing reproduction costs. Also includes capitalized special events. (Source: KP)

**Professional fees (A/E & Consulting Engineers):** the cost which the owner pays for the professional service. It includes all professional fees for complete design services, preconstruction consulting services, and specialty consultants. (Interior designer, equipment planner, artwork consultant, etc.) Complete design services include all consultants required to provide complete basic services for design through completion of the project. The budget includes architectural/engineering services, biomedical physicists, interior design, equipment planning, graphic consultants, traffic studies, and asbestos surveys. The professional fees may also include pre-schematic design services such as master planning, assessments, and programming, or pre-construction services. (Source: KP)

**Project management and agent fees:** Labor and expenses associated with project management services.
**Site Development (Onsite):** All site development including but not limited to site preparation, improvements, utilities including all hardscape and softscape.

- **Hardscape:** Surface Parking is a component of the on-site development budget. Surface parking includes surface parking spaces, utilities from the property line to within 5 feet of the building, parking kiosks, curbs, gutters, site lighting, site signage, clearing, walkways, benches, etc.; Hardscape cost should be excluded from the project budget and cost.

- **Softscape:** Landscaping is a component of the on-site development budget. The guidelines include vegetation, irrigation. Softscape cost should be excluded from the project budget and cost.

**Site Development (Offsite):** All work required for the project outside of the property line, including but not limited to utility, roadwork, paving, etc. offsite development cost should be excluded from project cost.

**Total Installed Cost (TIC):** Total installed cost includes all costs of a project from inception (Programming/Front End Planning) to activation / move-in phase of the project.

**Cost to be excluded from TIC:**
- **Demolition:** Site, Civil, Structural, Architectural, Equipment, Piping, HVAC, Electrical, and Automation demolition.

- **Other Facilities:** TIC is for the facility being benchmarked, not TIC for the entire project, which may include other facilities (parking garages, CUPs, etc.).

- **Sitework:** Subsurface investigation, site clearing and grubbing, mass excavations, site dewatering, railroads, paving and surfacing, underground piping systems, tie-ins to existing systems, water distribution, firewater systems / distribution, wells and pumps, storm sewers and drainage, sanitary sewers, ponds, reservoirs, landscaping, fencing, signage, site substations, feeders, underground electrical (ductbanks) feeders, cathodic protection.

- **Spare Parts:** Excluded except for Startup spares which should be included in the construction and equipment categories above.

- **Connecting Concourse:** All costs related to connecting concourse should be excluded.
### 2.3. Phase Definition

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Start/ Stop</th>
<th>Typical Activities &amp; Products</th>
<th>Typical Cost Elements</th>
</tr>
</thead>
</table>
| **Programming/Front End Planning**                 | Start: Single Project Concept Adopted and Formal Project Team Established  | • Options Analysis  
• Life-cycle Cost Analysis  
• Project Execution Plan  
• Appropriation Submittal Pkg  
• Site Layout  
• Project Scoping  
• Procurement Plan (Basis of Design)  
• Arch. Rendering                                      | • Owner Planning Team Personnel Expenses  
• Consultant Fees & Expenses  
• Environmental Permitting Costs  
• Project Manager / Construction Manager Fees  
• Licensor Costs                                                                                 |
| **Typical Participants:**                          | Stop: Project Authorization                                               |                                                                                              |                                                                                                                                                        |
| • Owner Personnel  
• Planning Consultants  
• Constructability Consultant  
• Alliance / Partner                                                                                                             |                                                                                                                                                        |
| **Schematic Design:**                              | Start: Basis of Design (BOD) / Contract Award to A/E Firm                 | • Identify the most promising alternate.  
• General Scope  
• Conceptual Design based on BOD  
• Feasibility Analysis  
• Project Scoping  
• Procurement Plan  
• Arch. Rendering                                      | • Owner Planning/Management Team Personnel Expenses  
• Consultant Fees & Expenses  
• Designer Fees  
• Project Manager / Construction Manager Fees  
• Licensor Costs                                                                                 |
| **Typical Participants:**                          | Stop: Final Concept and Initial Budget Approval by owner                  |                                                                                              |                                                                                                                                                        |
| • Owner Personnel  
• Design Contractor  
• Constructability Expert  
• Alliance / Partner                                                                                                             |                                                                                                                                                        |
| **Detail Design (DD, C/D)**                         | Start: Start of Design Documents                                           | • Drawing, Model & Spec Preparation  
• Bill of Material Preparation  
• Procurement Status  
• Sequence of Operations  
• Technical Review  
• Definitive Cost Estimate                                      | • Owner Project Management Personnel  
• Designer Fees  
• Project Manager / Construction Manager Fees                                                                                       |
| **Typical Participants:**                          | Stop: Release of All Approved Drawings and Specs. for Construction (or last package for fast-track) |                                                                                              |                                                                                                                                                        |
| • Owner Personnel  
• A/E Contractor  
• Constructability Expert  
• Alliance / Partner                                                                                                             |                                                                                                                                                        |
<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Start/ Stop</th>
<th>Typical Activities &amp; Products</th>
<th>Typical Cost Elements</th>
</tr>
</thead>
</table>
| **Permitting** | Start: Submit First Permit | • First Review  
• Drawing, Model & Spec Modification  
• Second Review | • Owner Project Management Personnel  
• Designer Fees  
• Project Manager / Construction Manager Fees  
• Permitting Fees |
| Typical Participants: | Stop: All Necessary Permits Issued | | |
| • Owner Personnel | | | |
| • A/E Contractor | | | |
| • Construction Manager/ General Contractor | | | |
| **Bidding** | Start: Opening of Bid Period for Prime Contract | • Preparation / Invitation for Bids  
• Solicitation Provisions  
• Addendums  
• Submission, Modification and Withdrawals of Bids  
• Opening, Recording, Rejection / Award of Bids | • Owner Project Management Personnel  
• Designer Fees |
| Typical Participants: | Stop: Award of Prime Contract | | |
| • Owner Personnel | | | |
| • A/E Contractor | | | |
| • Interested Prime Contractors | | | |
| **Procurement** | Start: Procurement Plan for Engineered / Major Equipment | • Supplier Qualification  
• Supplier Inquiries  
• Bid Analysis  
• Purchasing  
• Engineered Equipment  
• Transportation  
• Supplier QA/QC | • Owner Project Management Personnel  
• Project/Construction Manager Fees  
• Procurement & Expediting Personnel  
• Engineered Equipment  
• Transportation  
• Shop QA/QC |
<p>| Typical Participants: | Stop: All Engineered / Major Equipment has been Delivered to Site | | |
| • Owner Personnel | | | |
| • A/E Contractor | | | |
| • Alliance / Partner | | | |
| • Construction Contractor | | | |</p>
<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Start/ Stop</th>
<th>Typical Activities &amp; Products</th>
<th>Typical Cost Elements</th>
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</thead>
<tbody>
<tr>
<td><strong>Construction</strong></td>
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<tr>
<td>Typical Participants:</td>
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<td></td>
</tr>
<tr>
<td>• Owner personnel</td>
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</tr>
<tr>
<td>• Design Contractor (Inspection)</td>
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<tr>
<td>• Construction Contractor and its subcontractors</td>
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<td></td>
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</tr>
<tr>
<td>Start: Notice to Proceed (Mobilization / Commencement of foundations or driving piles) – Continuous Substantial Construction Activity</td>
<td>• Set up trailers &lt;br&gt; • Procurement of bulks &lt;br&gt; • Issue Subcontracts &lt;br&gt; • Construction plan for Methods/Sequencing &lt;br&gt; • Build Facility &amp; Install Engineered Equipment &lt;br&gt; • Complete Punchlist &lt;br&gt; • Demobilize construction equipment</td>
<td>• Owner Planning Team Personnel Expenses &lt;br&gt; • Consultant Fees &amp; Expenses &lt;br&gt; • Environmental Permitting Costs &lt;br&gt; • Project Manager / Construction Manager Fees &lt;br&gt; • Licensor Costs</td>
<td></td>
</tr>
<tr>
<td>Stop: Beneficial Occupancy Date (BOD)</td>
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<tr>
<td><strong>Activation / Move-In</strong></td>
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<tr>
<td>Note: Not usually applicable to infrastructure or building projects</td>
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<tr>
<td>Typical Participants:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Owner personnel</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>• Design Contractor</td>
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<tr>
<td>• Construction Contractor</td>
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<tr>
<td>• Training Consultant</td>
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<tr>
<td>• Equipment Suppliers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start: Beneficial Occupancy Date (BOD)</td>
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<td></td>
<td></td>
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<tr>
<td>Stop: Patient Ready</td>
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<tr>
<td></td>
<td></td>
<td>• Testing Systems &lt;br&gt; • Training staff / doctor &lt;br&gt; • Documenting Results &lt;br&gt; • Hand-off to user/operator &lt;br&gt; • Operating System &lt;br&gt; • Functional Facility &lt;br&gt; • Closeout Documents &lt;br&gt; • Warranty Work</td>
<td>• Owner project management personnel &lt;br&gt; • Project Manager / Construction Manager fees &lt;br&gt; • Consultant fees &amp; expenses &lt;br&gt; • Nursing / doctor / staff training expenses &lt;br&gt; • Supplier fees</td>
</tr>
</tbody>
</table>
3. Space Definition

**Building Gross Square Feet (BGSF):** is the floor area of the entire building or project, which includes floor area occupied by rooms/spaces, walls, corridors, conveyances, mechanical/utility rooms, and shafts.
(Source: http://www.cfm.va.gov/til/sepsNTG.asp)

**Building Associated Spaces:**

<table>
<thead>
<tr>
<th>Space</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roof</td>
<td>A construct oriented more than 15º from vertical that Encloses the interior of a Building underneath from the exterior above, affording protection from the elements appropriate to the occupancy and the local climate.</td>
</tr>
<tr>
<td>Roof Terrace</td>
<td>An unenclosed horizontal Roof (other than a Plaza) with a Load Bearing surface intended for use along with other appropriate and required features such as railings.</td>
</tr>
<tr>
<td>Penthouse</td>
<td>Fully enclosed Floor area located on the Roof level of a Building that occupies less than all of the Roof.</td>
</tr>
<tr>
<td>Antenna Farm</td>
<td>Space designed to support communications antenna.</td>
</tr>
<tr>
<td>Heliport</td>
<td>Space designed to support the arrival and departure of helicopters.</td>
</tr>
<tr>
<td>Balcony</td>
<td>A horizontal extension of an adjacent floor outside the exterior enclosure of a building that is not a roof.</td>
</tr>
<tr>
<td>Deck</td>
<td>An unenclosed surface contiguous with a Building that is suitable for use by an occupant and supported by structure above the ground.</td>
</tr>
<tr>
<td>Pedestrian Travel Spaces</td>
<td>Spaces for travel by people on foot.</td>
</tr>
<tr>
<td>Sidewalk</td>
<td>A pathway constructed to support pedestrian traffic. Construction is of concrete, asphalt, paving blocks, gravel, or the like.</td>
</tr>
<tr>
<td>Pedestrian Way</td>
<td>A decorative path for travel by people on foot.</td>
</tr>
<tr>
<td>Pedestrian Bridge</td>
<td>Bridges that support walkway crossing of a river, underpass, or similar gap.</td>
</tr>
<tr>
<td>Footpath</td>
<td>Trail, which runs through a park or rural area, or which is a path of travel for recreation and/or transportation within a park, natural environment, or designated corridor that is not classified as a highway, road, or street.</td>
</tr>
<tr>
<td>Trail</td>
<td>A simple thoroughfare used for travel on foot or possibly by horse, bicycle or other simple device that is not a highway or associated with a highway</td>
</tr>
<tr>
<td>Gangway</td>
<td>An aisle or walkway between apartment buildings or houses, or any raised walkway or platform</td>
</tr>
</tbody>
</table>

(Source: http://www.omniclass.org/)

**Building Service Support Spaces:** Other building service space, such as space used for the building operator and custodian office, workshop and supplies. Some examples of specific areas are:
• Information Technology - Equipment Rooms
• Call Center
• Clinical Technology (Biomedical Engineering)
• Materials Services
• Communications/CBX Operators
• Medical Office Building Support Services
• Security Department

General examples in accordance with Omni-class are listed in the table below:

<table>
<thead>
<tr>
<th>Building Manager Office</th>
<th>Space for the property manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custodial Space</td>
<td>Room that contains sink(s) or mop sink(s) and is used by custodial services for custodial related activities.</td>
</tr>
<tr>
<td>Shop Area</td>
<td>A place where things are crafted</td>
</tr>
<tr>
<td>Access Chamber</td>
<td>Space that leads to prefabricated sewage system &quot;man hole&quot; structures</td>
</tr>
<tr>
<td>Areaway</td>
<td>A subsurface space adjacent to a building open at the top or protected at the top by a grating or guard</td>
</tr>
<tr>
<td>Service Space</td>
<td>Clear floor space in front of an appliance to assure adequate space for servicing.</td>
</tr>
<tr>
<td>Furred Space</td>
<td>Furred-out space is created when the floor layout must accommodate irregular wall surfaces or conceal mechanical obstructions.</td>
</tr>
<tr>
<td>Crawl Space</td>
<td>Unexcavated space that has restricted headroom and is not occupiable.</td>
</tr>
<tr>
<td>Attic Space</td>
<td>The space between the ceiling beams of the top story and the roof rafters.</td>
</tr>
</tbody>
</table>

**Circulation Spaces:** Spaces for circulation that provide or control access to and between other spaces within the facility, entry, and egress.

a. Primary Circulation Spaces: The direct path on a floor necessary for access to egress stairs, elevator lobbies, toilet rooms, refuge space, building lobbies and entrances.
b. Transitional Circulation Spaces: Space adjacent to the entry points such as lobbies.
c. Connector: A covered or enclosed bridge, walk-way, tunnel or other similar connecting element between two separate buildings.
d. External Circulation Spaces: Unenclosed corridors meeting circulation and exiting requirements of the local building code, and only when there are no fully enclosed corridors on a Floor that provide that function.
e. Secondary Circulation Spaces: A portion of a floor required for access to some subdivision of the floor that does not serve all occupants on a floor, and is not defined as primary circulation Space. (Door Setback)
f. Restricted Spaces: Space that is normally available for use but is set aside by regulatory authority, such as clear space requirements for electrical closets.
g. Refuge Spaces: An enclosed space that is protected from the effects of fire permitting a delay in required egress travel time.

**Clinical Laboratory Spaces:** Spaces used for testing of human biological specimens to determine health status, to diagnose disease, and to prepare blood and serum for patient use.

**Death Spaces:** Spaces such as morgue and autopsy are included in this category.

**Department Gross Square Feet (DGSF):** is the floor area within the boundaries of a functional department as define by a space planning criteria chapter, including floor area occupied by rooms/spaces, walls defining the spaces, and circulation corridors connecting the different rooms of the department. (Source: http://www.cfm.va.gov/til/sepsNTG.asp)

**Diagnostic Imaging Spaces:** Spaces used for examination of patients by devices which produce an image of tissue, bone, or biophysical structure excluding those used in cardiac diagnostic and interventional services, nuclear medicine services, and radiation therapy services.

**Diagnostic Imaging Support Spaces:** Spaces used in support of imaging equipment and personnel.

**Eye and Ear Healthcare Spaces:** Spaces used for diagnosis and treatment of conditions relating to sight, hearing, balance and related functions.

**Endoscopy/Gastroenterology Spaces:** Spaces used for examinations and treatments of the esophagus, lungs, stomach, digestive and associated anatomical structures using endoscopes and related systems.

**Environmentally Controlled Spaces:** Space with environments where such variables as humidity, temperature, pressure, sound, contamination are tightly controlled. These Spaces may be part of the research or production processes. Such as Anechoic Chamber, Hazard Containment, Temperature and pressure chamber, Data Center etc.

**Food Service:** The spaces that include cafeteria, café and food retail areas food and nutritional services.

**Functional Area:** The grouping of rooms and spaces based on their function within a clinical or clinical support service. Typical Functional Areas are Reception Areas, Patient Areas, Support Areas, Staff and Administrative Areas, and Residency Program. Major Functional Areas include the following:

a. Reception Areas: Accommodates the initial processing (eligibility, admissions, etc.) of all unscheduled outpatients. It is composed of all activities necessary to accomplish the tasks associated with medical evaluation and treatment.

b. Emergency Care: Accommodates the examination and treatment of all outpatients determined to be in need of immediate medical care.

c. Patient Areas: Accommodates the examination and treatment of all non-emergency outpatients, scheduled and unscheduled, and inpatients in a variety of medical/surgical disciplines.
d. Employee Health: Accommodates any examination, testing and treatment of VA employees.

e. Disposition Area: Accommodates activities such as travel pay, pharmacy, etc. for scheduled and unscheduled outpatients. Patients typically visit this area last before leaving Ambulatory Care.

f. Support Areas: Accommodates diagnostic support functions such as satellite X-ray, blood specimen collection, etc.

g. Staff and Administrative Areas: Accommodates administrative staff and professional staff whose primary responsibilities lie in emergency care and examination/treatment.

**General Examination Spaces:** Spaces used by multiple medical services for routine patient examinations.

**General Diagnostic Procedure and Treatment Spaces:** Spaces used by multiple medical services for specific diagnostic and treatment functions which are typically exclusive to those services.


**Healthcare Space:** Space which is used for services directly related to the health care and medical practice. Most uses are applicable to providing medical care to humans as well as veterinarian services for animals. Size of the space may vary according to the size of the patient however the functions would be consistent as in admissions, diagnostics, surgery etc.

**Heart and Lung Diagnostic and Treatment Spaces:** Spaces used for cardiac and pulmonary function diagnostic and interventional services.

**Inpatient Care Spaces:** Spaces used for overnight patient care.

**Laboratory Spaces:** Space that has built-in equipment, plumbing, and/or utilities for the qualitative and/or quantitative analysis of matter, experimentation, or the processing of materials, including wet and clean laboratories.
**Lecture and Classroom Spaces:** This space is synonymous with education and training spaces. And, more specifically spaces used for classes, lectures, symposiums, and speeches. (Medical staff education & Resident Program)

**Library:** Space in which literary, health education, health information health sciences, or reference materials (as books, manuscripts, recordings, or films) are kept for use but not for sale.

**Loading Dock:** A secondary building entrance space used to accommodate shipping and delivery of bulk materials to the structure. (Enclosed)

**Main Computer Room:** A room containing both primary information technology systems active equipment and passive backbone cabling distribution terminations. The Main Computer Room is one of the spaces located within the Computer Area functional area. The OIT IT and FMS IT systems housed in the Main Computer Room may include, but are not limited to: Voice over IP (VoIP), Voice (PBX), Data LAN, Wireless LAN, PACS, Digital Imaging, Asset Tracking/Management, Patient Monitoring Systems, Video Surveillance, Security Access, Nurse Call, MATV/CATV, Public Address, Fire Alarm, Mass Notification, and Overhead Paging. (VA Website)

**Medical Research and Development Spaces:** Spaces used for basic research on the nature and prevention of disease and injury. May involve use of animals and/or highly toxic or infectious matter which must be contained in special rooms or suites of rooms.

**Medical Services Logistic Spaces:** Spaces used for cleaning, sterilizing, packaging, stocking and distributing various types of supplies in a health care setting. Includes spaces used for receiving and holding soiled linens and receiving and distributing clean linens.

**Meeting Spaces:** Space specifically designed for groups of people to interact on an occasional basis having appropriate seating and other amenities to support this activity. Examples: Conference center, hospital conferences etc.

**Mental Health and Extended Care Spaces:** (Not in Omni-class) Spaces such as behavioral medicine, psychiatric health facility / inpatient mental health facility are included in this category.

**Office Spaces (Administration only):** Space in which business, clerical or professional activities are conducted. This category includes the following spaces:
- Administrative Suite
- Human Resources
- Nursing Administration
- Business Office
- Safety
- Quality (QA) and Infection Control
- Utilization Management

**Operating Room:** A room designed and equipped to perform a wide variety of operative procedures. This includes most types of surgical procedures but especially those involving administration of anesthesia, multiple personnel, recovery room access, and a fully controlled environment. The General Operating Room may also include endoscopic
surgery, which is defined as therapeutic surgical procedures using endoscopic equipment and requiring anesthesia support. (Source: DoD Space Planning Criterion)

**Pharmacy Spaces:** Spaces used to receive, prepare, compound, test and examine pharmaceuticals and to dispense them as requested for patient care.

**Planned Amenity / Support Spaces:** Spaces planned to be provided as a convenience offering occupants support beyond their business driven functional requirements. Examples:
- Gift Shop
- Staff Amenities/Lockers, Hospital
- Member Services
- Public Amenities
- Volunteer Services
- Reception, Centralized

**Procedure Rooms (PR):** a place specifically equipped and staffed for the sole purpose of performing procedures. (Source: www.aaos.org) See below: A typical VA-PR
Radiation Diagnostic and Therapy Spaces: Spaces used for examination and treatment of patients by devices which primarily use ionizing radiation or its byproducts (such as thallium). This section is limited to systems used for oncology and nuclear medicine.

Rehabilitation Spaces: Spaces used for physical and occupational/vocational rehabilitation, for designing, and for manufacturing dispensing and fitting orthotic and prosthetic appliances.

Sales Space: In relation to health care, spaces such as health store, gift shop or flower shop can be included in this category.

Surgical Spaces: Spaces used for surgical procedures and for direct support of surgical functions.
**Unimproved Shell:** The portion of a building that has been constructed with minimal enclosure for future use.

**Veterinary Spaces:** Spaces used for housing, treatment, training and other types of care for animals.
4. Bed Type

**Telemetry Bed:** are those technological equipped beds that provide heart monitoring.

**Bassinet:** An accommodation with supporting services maintained in the newborn nursery for infants live born in the hospital. (Source: DoD 6015.1-M pp 32)

**NICU (Neonatal Intensive Care Unit) Bassinet**
The term refers to a unit which is specifically equipped and staffed for the care and treatment of high-risk infants and those infants otherwise in need of intensive care. There are three levels of this equipment primary, intermediate (level II), and intensive (level III) care.


**Bed, Constructed:** A bed originally designed and constructed for the delivery of peacetime inpatient care in a Medical Treatment Facility (MTF); usually spaced on 8-foot centers (approximately 140 – 200 square feet) and furnished with suction, medical gas and nurse call capacity; meets standards applied by common hospital accreditation bodies. (Source: DoD 6015.1-M pp 33)

**Hospital Bed:** A bed for an adult or child patient. Bassinets for newborns in maternity units, beds in labor rooms, recovery rooms, and other beds used exclusively for emergency purposes are not included in this definition. (Source: [http://www.wbdg.org/ccb/DOD/UFC/ufc_4_510_01.pdf](http://www.wbdg.org/ccb/DOD/UFC/ufc_4_510_01.pdf))

**Bed, Inactive:** A constructed bed ready for inpatient care to include space, equipment, medical materiel, and ancillary support services but the bed is not staffed to operate under normal circumstances. Beds need not be set up, but must be able to be set up and activated within 72 hours. It includes constructed bed space occupied by another function that could be relocated to other existing space on a permanent basis and continue to operate assigned function (e.g., storage space, office space that could be consolidated, lounge and locker space). It does not include former bed space that has been permanently altered for other use or bed space that cannot be readily reconverted to active bed space.) (Source: DoD 6015.1-M pp 34)

**Beds, Licensed:** The number of beds that a hospital is licensed, certified, or otherwise authorized and has the capability to operate. That is, space equipment, medical materiel, and ancillary and support services have been provided, but the required staff is not necessarily available. Licensed beds equal the sum of operating beds and inactive beds. (Source: DoD 6015.1-M pp 35)

These beds are furnished with:

- Suction
- Medical gas
- Nurse call capacity
- Meets standards applied by common hospital accreditation bodies.

Or
The number of beds that a hospital is licensed, certified, or otherwise authorized and has the capability to operate. That is, space equipment, medical materiel, and ancillary and support services have been provided, but the required staff is not necessarily available. Licensed beds equal the sum of operating beds and inactive beds. (Source: UFC)

**Bed, Operating:** A constructed bed in a hospital that is currently staffed, equipped, set up and ready in all respects for inpatient care. (Source: DoD 6015.1-M pp 34)