

WELCOME

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Medical Equipment 101 - A Primer

Tuesday, June 23, 2015

12:00 pm – 1:30 pm ET

11:00 am – 12:30 pm CT

10:00 am – 11:30 am MT

9:00 am – 10:30 am PT



Presenter

Steven Juett, PE

Senior Associate Vice President
RTKL Associates



Emerging Professionals Education Series – HC 101

Date	Topic
June 23, 2015	Medical Equipment 101 - A Primer
July 29, 2015	Healthcare 101 – FGI Primer

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Emerging Professionals Education Series – HC 101

The Academy of Architecture for Health wants to cultivate interest and career development in this specialized field. HC 101 Series sessions are web-based 90 minute seminars by nationally recognized experts tailored to provide budding healthcare design professionals with conceptual and practical primer-level knowledge.

The HC 101 Series is a cost effective option for those lacking the time and money to attend a conference or other Academy event.

Series topics include: Master planning; Programming; Ambulatory care; Clinical support services; Emergency; ICI-acute care; Imaging; Long-term care; Maternal care; Mental health; Surgery.



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Course Description

This is a primer on Medical Equipment and Architecturally Significant Equipment. We will focus on fundamental programming steps leading to identifying needed equipment, issues with relocating of existing equipment, and essential dimensional and utility service considerations. We will review the essential elements of a manual of architecturally significant equipment and come to understand how it is used by the various involved parties. We will cover definitions of typical technical specification terms and acronyms like OFOI, CFCI, Group I Medical Equipment or Architecturally Significant Equipment.



Learning Objectives

1. Discuss the fundamental programming steps leading to identifying needed equipment.
2. Identify essential elements of a manual of architecturally significant equipment and how it is used by the various involved parties.
3. Lead a discussion within the firm on issues with relocating of existing equipment.
4. Recognize definitions of typical technical specification terms and acronyms .



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1.5 HSW LU (AIA continuing education)

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- **in the Chat box** at the conclusion of the live presentation;
- **in the follow-up email** you will receive one hour after the webinar.



Presenter



Steven Juett

Associate Vice President,
Director of Clinical
Systems Planning,
RTKL Associates

Steven Juett, PE - Registered Biomedical Engineer, Associate Vice President & Director, Clinical Systems Planning - RTKL Associates.

Perioperative clinical systems including Hybrid Operating Theaters & Smart OR systems are a current special interest.

His work on Wireless Medical Telemetry Service including FCC law proposals to secure the RF spectrum for public health garnered awards from the American College of Clinical Engineers and FDA.

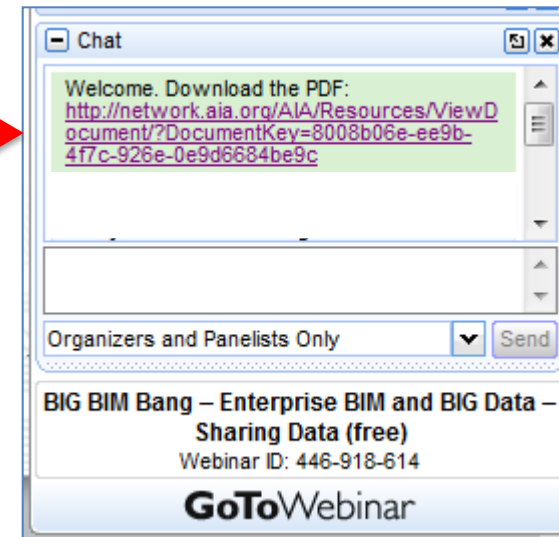
Mr. Juett is a frequent presenter and published author on medical equipment integration and healthcare communication systems.



Questions?

Submit a question to the moderator via the chat box.

Content related questions will be answered during the Q&A portion as time allows.



Medical Equipment 101 - A Primer



Presenter

Steven Juett, PE

Senior Associate Vice President, RTKL Associates



RTKL HEALTHCARE TECHNOLOGIES

Medical Equipment Planning

Presented by: Steven W. Juett, PE

June 24, 2015



THE AMERICAN INSTITUTE
OF ARCHITECTS





Agenda

- Planning & Design
- Planning Tools
- Reports and Documents
- Procurement
- Construction Administration
& Installation Coordination
- Questions

Approach



PLANNING & DESIGN



- Functional Planning
- Budget Development
- Capital Strategic Equipment Planning
- Technology Assessment
- Design Meetings
- Equipment Selections
- Architectural, MEP Specifications
- Drawing Coordination
- Budget Finalization

PROCUREMENT



- Procurement Schedule
- Budget Management
- Validation / Procurement Specifications
- Vendor Evaluations
- Bidding & Quotations
- Cost Analysis
- Purchase Order Issuance
- Tracking & Expediting for Delivery

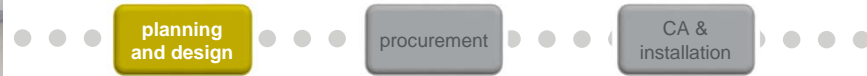
CONSTRUCTION ADMINISTRATION & INSTALLATION COORDINATION



- Pre-Installation Construction Coordination
- Delivery & Installation Management
- Dock Deployment
- Training & Commissioning

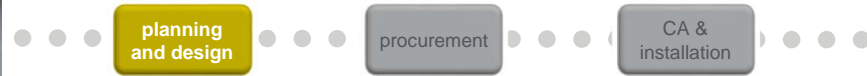
planning & design





Preliminary Planning

- Project kick-off meeting with owner and design team
 - Communication protocol
- Discuss project strategies and alternatives
 - Phasing and available funding
- Discuss strategy for Equipment Cost Estimate
 - High dollar items (Imaging equipment, Lasers, Central Sterile)
- Establish critical-path equipment selections
- Establish existing equipment criteria and capital equipment strategy
- Develop Equipment Budget for Funding
 - CON – Certificate of Need
 - Baseline Equipment List & Cost Estimate

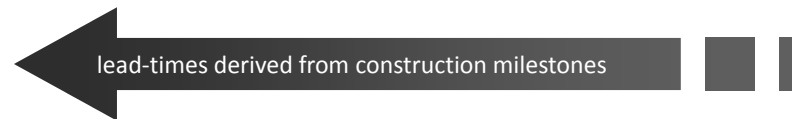


Preliminary Planning

- Develop Activity/Milestone Schedule for equipment deliverables
- Develop a project Responsibility Matrix
- Perform Existing Equipment Review (Asset Survey – Pre Procurement)
- Program Refinement (Owners - Business Plan Driven)
 - Square foot plan per functional space
 - Count of each functional space
 - Adjusted Program (total space plan)
- Develop preliminary equipment list
- Incorporate existing equipment into list
 - Inventory
 - Capital Equipment Strategy Planning (CESP)



Design Critical Path – Equipment Schedule



User decision
(Validation / Planning Team)



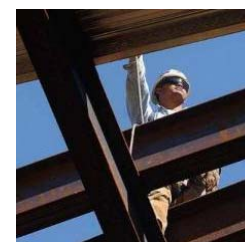
Bidding & negotiations
(Procurement Team)



- Site-specific drawings & specifications
- Submit addendum to design team
- Arch, MEP, structural updates
(Construction Admin Team)



Ordering & delivery
(Procurement Team)



Construction milestone
(Construction Admin Team)



Responsibility Matrix – Equipment Planner deliverable

EQUIPMENT CATEGORY	ASE	Plan / Specify / Budget	Drawings	Purchase	Placement / Delivery to Location	Install
ANESTHESIA MACHINE	X	EQ	EQ	Owner	Vendor	Vendor
AUDIOVISUAL SYSTEMS - Conf Rms, Education, Class Rooms,		LV/IT	LV/IT	Owner	Vendor	Vendor
AUTOMATED TRANSPORT SYSTEMS - Pneumatic Tube		Architect	Architect	GC/CM	Vendor	Vendor
BEDS, CLINICAL	X	EQ	EQ	Owner	Vendor	Vendor
BOOMS & EQUIPMENT COLUMNS - Boom, Ceiling Column	X	EQ	EQ	Owner	Vendor	Vendor
CASEWORK - Custom, Standard, Lab / Rx, Computer/Keyboard		Architect	Architect	GC/CM	GC/CM	GC/CM
CLOCKS - Discrete, Battery/Plug-in, Elapsed Timers,	X	EQ	EQ	Owner	GC/CM	GC/CM
DATA EQUIPMENT - Switches, Mainframe, Network		LV/IT	LV/IT	LV/IT	LV/IT	LV/IT
DATA EQUIPMENT - PC's		LV/IT	LV/IT	LV/IT	LV/IT	LV/IT
ENVIRONMENTAL SERVICES EQUIPMENT - Carts, Cleaners /	X	EQ	EQ	Owner	Owner	Owner
FIRE PREVENTION EQUIPMENT - Blankets, Extinguishers,		Architect	Architect	GC/CM	GC/CM	GC/CM
FOOD SERVICE EQUIPMENT - DIETARY - Hoods, Walk-Ins,		Architect	Architect	Owner	Vendor	Vendor
IMAGING EQUIPMENT - All Modalities (i.e. Rad, Cath, Portable,	X	EQ	EQ	Owner	Vendor	Vendor/LV/
IMAGING EQUIPMENT - Shielding, Lead, Magnetic, RF		Architect	Architect	GC/CM	Vendor	Vendor
INSTRUMENTS, SURGICAL - Instruments, Power Tools, Battery		Owner	Owner	Owner	Owner	Owner
INTEGRATED OR SYSTEM - Routing, Video, Music, Room	X	EQ	EQ	Owner	N/A	Vendor
LAUNDRY SERVICE EQUIPMENT - Dryer, Washer, Residential	X	EQ	EQ	Owner	GC/CM	GC/CM
MEDICAL GAS/VACUUM SYSTEM - Primary System (piping)	X	MEP	MEP	GC/CM	GC/CM	GC/CM
MONITORING EQUIPMENT - Telemetry Antenna, Transmitter /	X	EQ	EQ	Owner	Owner	Vendor
NURSE CALL SYSTEM		LV/IT	LV/IT	GC/CM	N/A	Vendor
OCCUPATIONAL THERAPY EQUIPMENT	X	EQ	EQ	Owner	Owner	Owner
OFFICE MACHINES - Calculators, Registers, Fax, Copy,		LV/IT	LV/IT	Owner	Owner	Owner
OPHTHALMIC EQUIPMENT - Slit Lamp		EQ	EQ	Owner	Owner	Owner
ORTHOPEDIC APPARATUS		EQ	EQ	Owner	Owner	Owner



planning
and design

procurement

CA &
installation

Preliminary Planning

Architecturally Significant Equipment (ASE)

- Permanently affixed to the building
- Hard connection to plumbing or mechanical system
- Equipment requiring data and/or cabling connections
- 120 volt electrical power that draws 5 amps or greater
- 208 volts or greater voltage
- Weight over 400 pounds
- Equipment of an unusual size impacting room or casework design
- Equipment weight or mounting requires structure or anchorage
- State and local code impact
 - Seismic, fire, lighting, warning, clearance



Equipment Groups

Medical Equipment Categories

- Group 1 – Fixed to facility: Requires utility connections ASE
- Group 2 – Moveable equipment with utility requirements ASE
- Group 3 – Mobile equipment: No significant construction impact
- Group 4 – Instruments
- Group 5 – Furniture
- Group 6 – IT, Computers, Printers for business processing ASE
- Group 7 – Technology, Security, Nurse Call, AV ASE



Group 1



Group 2



Group 3



Group 4



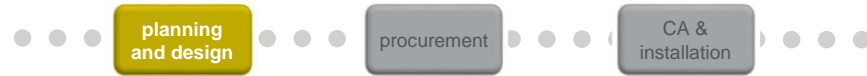
Group 5



Group 6

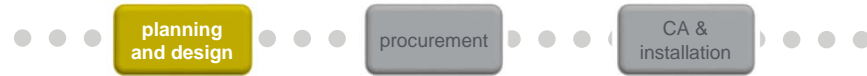


Group 7



Schematic Design

- Conduct design development user group meetings
 - Share/ Identify critical-path equipment selections
 - Present best practices and sample layouts/configurations to spur discussion
- Update equipment list and cost estimate based on user group meetings
 - Progressive process of refinement
 - Develop 2D equipment placement drawings
 - Coordinate technical specifications between the Architect and MEP subcontractors
 - Engage Vendors to provide guidance and coordination between design team and vendors
- Perform a detailed drawing review for accuracy
- Develop equipment cost estimate, discuss strategies and alternatives

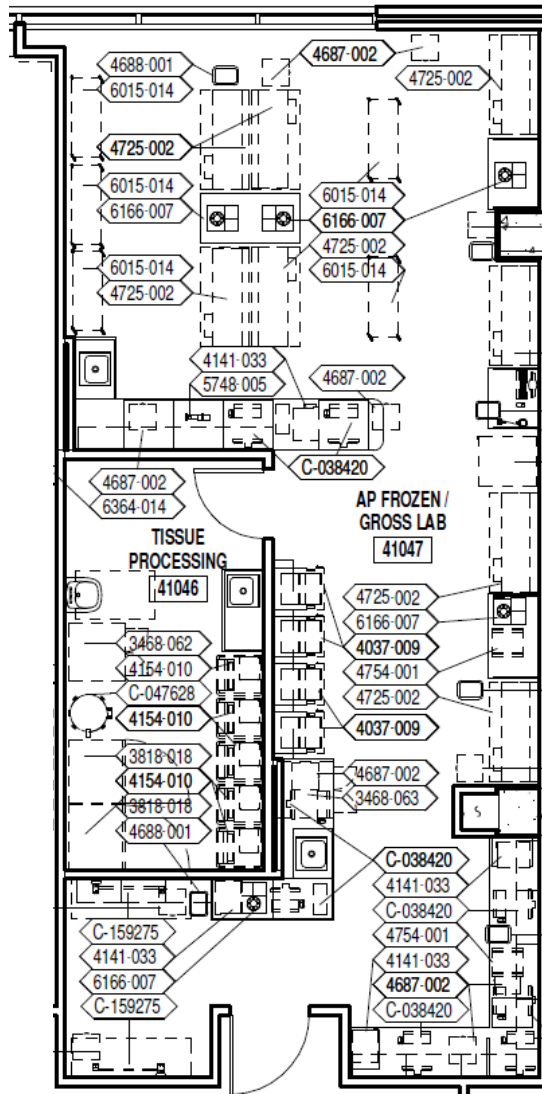


Design Development

- Conduct design development user group meetings
- Coordinate with architect/ design team on specifications and equipment layout drawings
- Review updated SD equipment list and cost estimate with owner
 - Discuss cost-savings alternatives and budget analysis
 - Incorporate adjustments as necessary
- Update equipment list and cost estimate based on user group meetings and owner feedback
- Submit DD-phase Architecturally Significant Equipment (ASE) document
 - Locations, utility data, dimensions, clearances
 - Specifications
 - Delivered and coordinated with the architect
- Obtain owner sign-off

planning tools





planning
and design

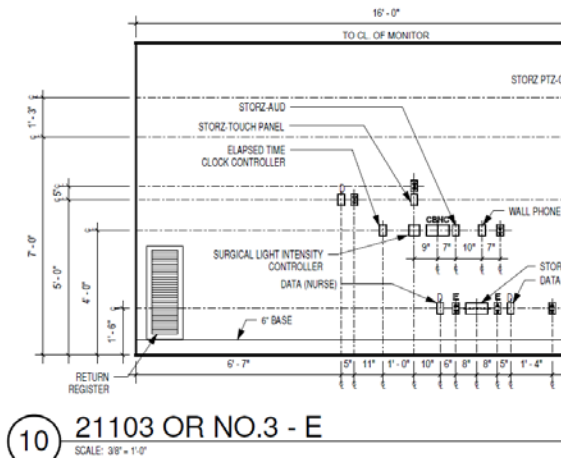
procurement

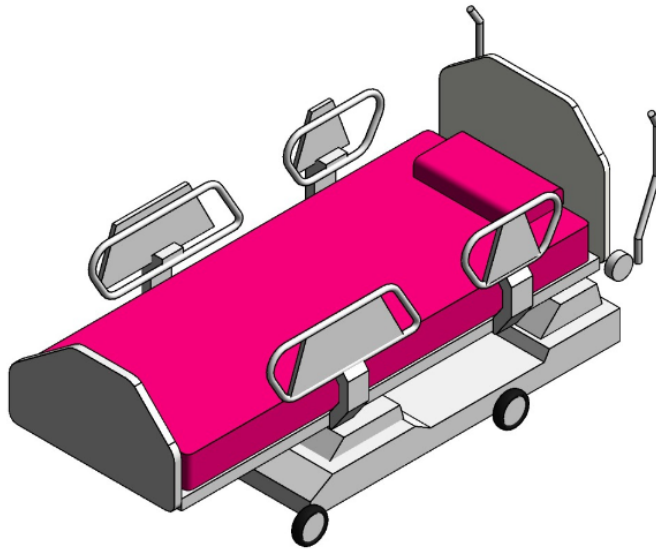
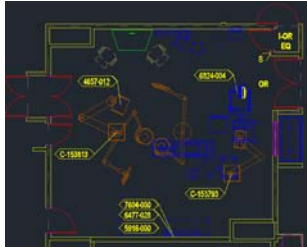
CA &
installation

CAD / 3D / BIM / Tools

• CAD

- Architectural 2D drawing tool
- Floor Plan Equipment Placements
- Elevation Equipment Placements
- Equipment Identifier – CAD ID tag
- Architectural backgrounds for vendor drawings





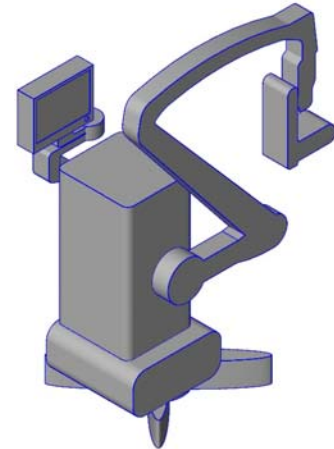
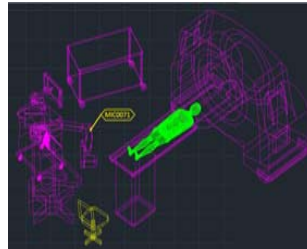
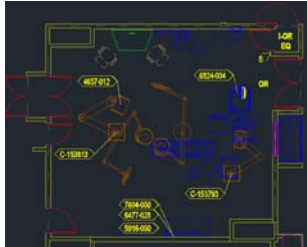
planning
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CAD / 3D / BIM

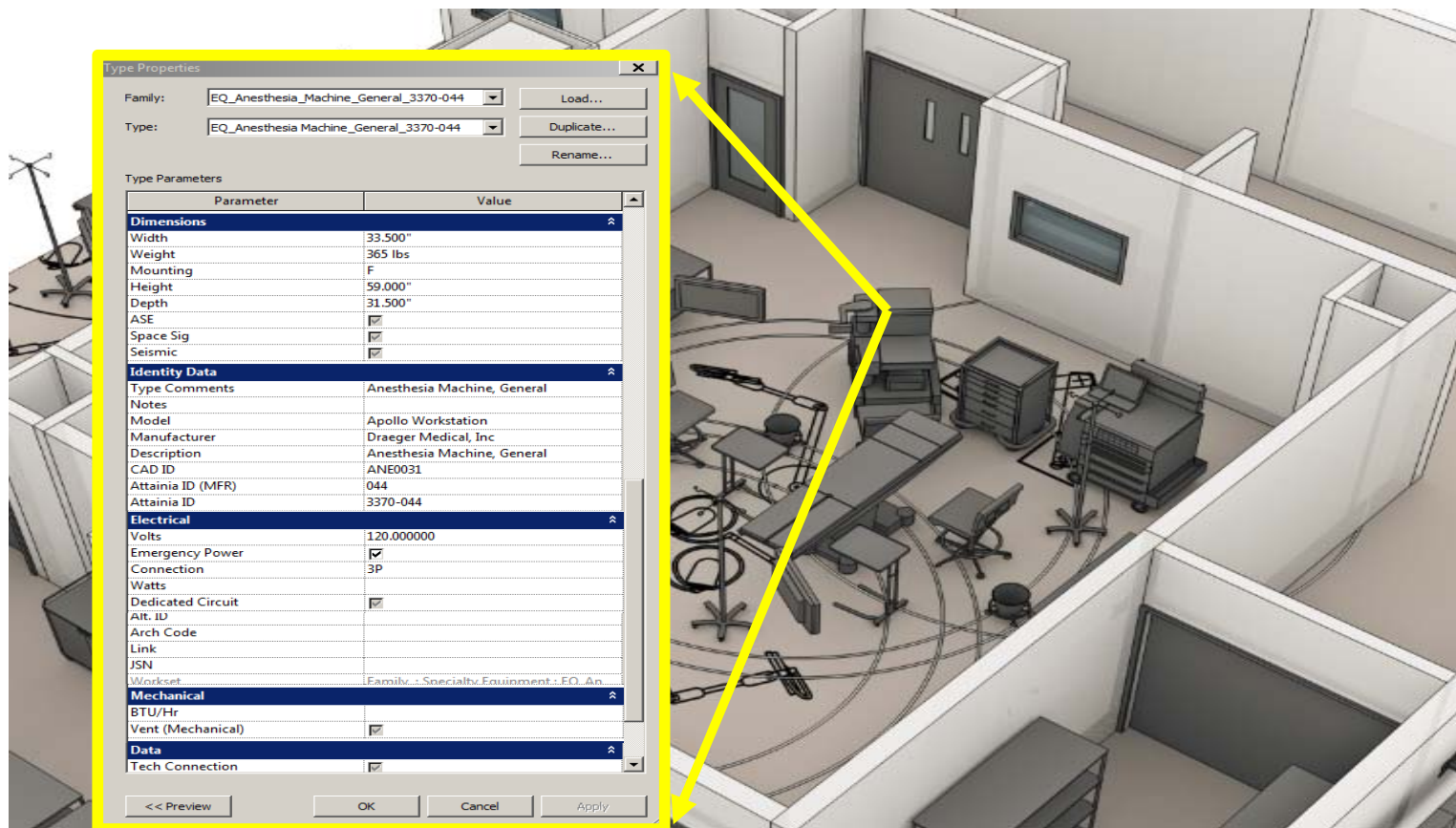
- CAD
 - Architectural 2D drawing tool
 - Equipment Placements
 - Equipment Identifier – CAD ID tag
- **3D - REVIT**
 - Architectural 3D drawing tool
 - Integrated with template rooms and designs
 - Matched with equipment ID tags
 - Dynamic REVIT links to specifications

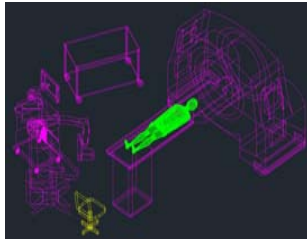
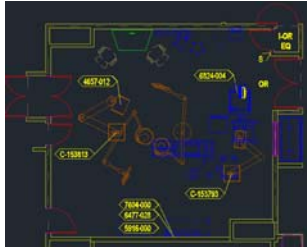


CAD / 3D / BIM

- CAD
 - Architectural 2D drawing tool
- 3D - REVIT
 - Architectural 3D drawing tool
 - Integrated with template rooms and designs
 - Matched with equipment ID tags
 - Dynamic REVIT links to specifications
- **BIM**
 - Building Information Modeling
 - Cross discipline design tool



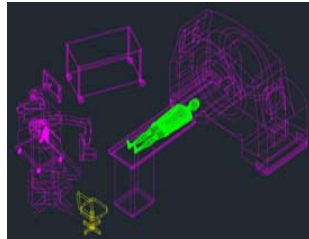
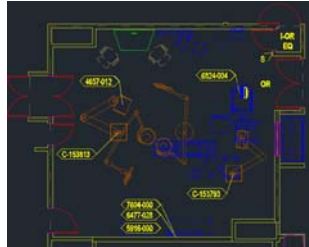




CAD / BIM / REVIT

- CAD
 - Architectural 2D drawing tool
- BIM
 - Building Information Modeling
 - Cross discipline design tool
- REVIT
 - Architectural 3D drawing tool
 - Integrated with template rooms and designs
 - Matched with equipment ID tags
 - Dynamic REVIT links to specifications
- **Rendering**
 - Drawing support
 - Executive Presentation





Support Documentation

- Deliverables
 - Budget Summary
 - Architecturally Significant Equipment (ASE)
 - Equipment List – Room by Room
 - Group 1 & 2
 - Specifications – Cut Sheets
 - Vendor Drawings
 - Project Management
 - Reports for all Groups and/ or a Specific line Item
- Supplemental Reports
 - Summary List – Bill of Quantity (BOQ)
 - Equipment – Location Summary
 - Export to Excel worksheets

reports and documents





Reports / Budget

Department		Currency: Dollar (US)	
	Percent	Working Budget	
Equipment (E):		38,701,342.68	
Deductions (D):			
Discounts	0.000	0.00	
Re-use	0.000	0.00	
Deductions Subtotal		0.00	
Equip Subtotal (E-D):		38,701,342.68	
Additions (A):			
Freight	2.500	967,533.57	
Installation	3.000	1,161,040.28	
Storage	0.582	225,427.00	
Fees	0.000	0.00	
Tax*	0.000	0.00	
Inflation	2.000	774,026.85	
Contingency	0.000	0.00	
Additions Subtotal		3,128,027.70	
Other Funds (O):	0.000	0.00	
Wkg Budget(E-D+A-O):		41,829,370.38	
Approved Budget:		0.00	
Variance: Unfav/(Fav):		41,829,370.38	



Reports / Equipment List (Room by Room)

Room By Room Detail Report

Department: Surgery

Building:

Currency: Dollar (US)

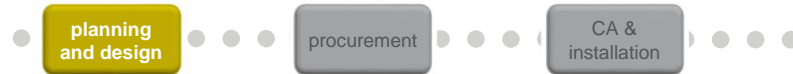
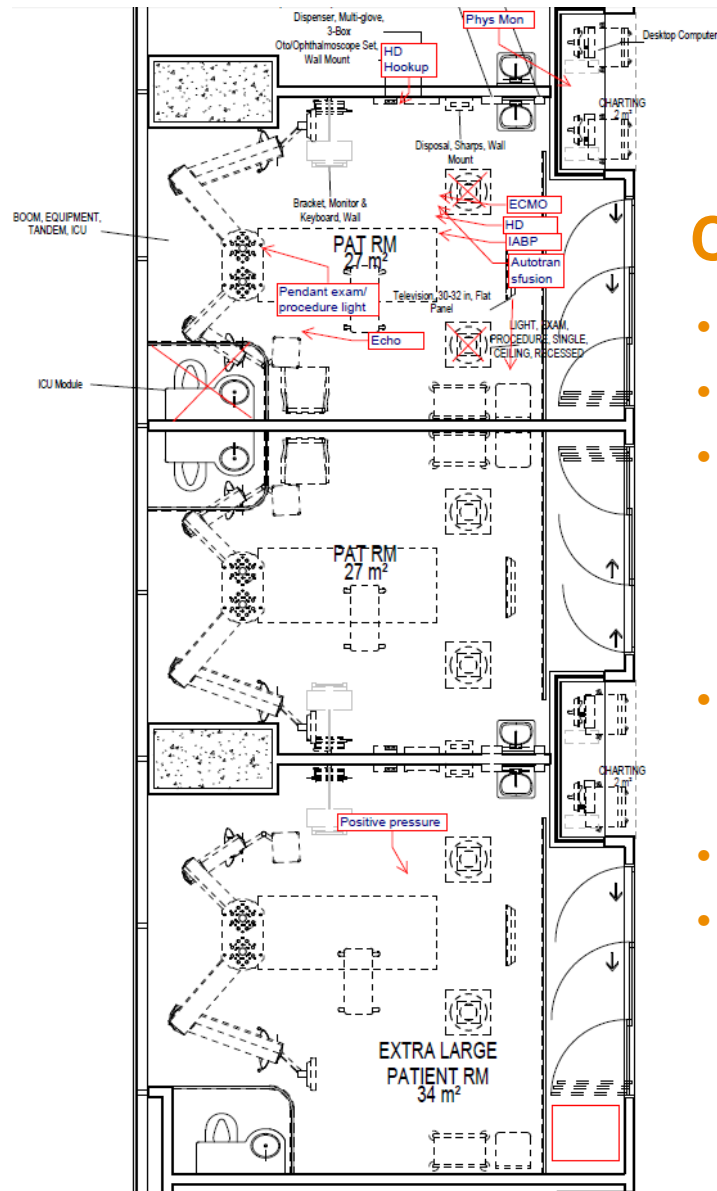
Atta ID CAD ID	Alt ID Item ID	Qty F/I AC	Description Model Item Notes	Manufacturer Vendor	Funding Source Cost Center Budget Name	Item Status Custom 1 Custom 2	Unit Cost Opt Subtotal	Item Tax Opt Tax	Price Type Total Config
Room: Alcove, Scrub			Room#: 3006B	Room Sign:	Area/Phase: Target Occupancy				
Comments:									
5316-036 CWA0009		1 O/C 2	Cabinet, Warming, Dual, Freestanding 5624 (24" Deep, Pedestal Base)	Getinge USA - Infection Control () Getinge USA - Infection Control ()	Project Unassigned	Draft (New) Unassigned	12,124.00	0.00	List 12,124.00
5694-006 SHL0281		2 O/C 1	Shelving, Solid, Wall Mount P-830-SS (30"W) Vascular OR	Pedigo Products () Pedigo Products ()	Project Unassigned	Draft (New) Unassigned	124.00	0.00	List 248.00
4335-003 SNK0035		1 C/C 1	Sink, Scrub, 2-Bay, Stainless Steel Flexmatic w/ Timer [CE12] Vascular OR	STERIS Corporation (CE122301) STERIS Corporation (CE122301)	Project Unassigned FY2013 Project	Draft (New) Unassigned	12,162.00	0.00	Vendor 12,162.00
6478-067 STE0412		1 O/C 1	Sterilizer, Steam, Cabinet Amsco 400 20x20x38 Prevac Cabinet	STERIS Corporation () STERIS Corporation ()	Project Unassigned	Draft (New) Unassigned	64,980.00	0.00	List 64,980.00
Room Total :							89,514.00		
Room Qty :							1		

Room: OR 10 - CV Hybrid Room#: 3133 Room Sign: Area/Phase: Target Occupancy

Comments:

3370-045 ANE0032		1 O/O 2	Anesthesia Machine, General Apollo Workstation (Base Unit) Checking on age	Draeger Medical, Inc () Draeger Medical, Inc ()	Project Unassigned FY2013 Project	Draft (Existing) Unassigned	0.00	0.00	Estimate 0.00
3389-007 ATU0007		1 O/O 2	Autotransfusion Unit, General autoLog Review with Kathlene	Medtronic - Structural Heart (ATLG110)	Project Unassigned FY2014 Capital	Hold Unassigned	25,000.00	0.00	List 25,000.00

Atta ID Alt ID Item ID	CAD ID	Qty F/I	Description Model Spec Remarks / Item Notes	Manufacturer / Vendor	Arch Sgs Spat. Sgs	Department Room Name Room #	Item Status Arch Code Custom Code	Water		Vacuum		(lbs) Mounting Max Weight Ship Weight	(in) Width Depth Height	Electrical/Mechanical		
								Cold Not Treated	Drain Steam Gas	Dental Medical Vent	Volts Amp Hz			Plug BTU/hr Ded. Circ.	Type Data Cnct. Energ. Pwr.	
3370-045	ANE0032	1	Anesthesia Machine, General O/O Apollo Workstation (Base Unit) Checking on age	Draeger Medical, Inc () Draeger Medical, Inc ()	Yes No	Surgery OR 10 - CV Hybrid 3133	Draft (Existing) 2 Unassigned	No No No	No No Yes	No No No	M 365 735	33.50 31.50 59.00	120 1.7 60	Type B (NEMA 5-15) N/A No	No No Yes	
3389-007	ATU0007	1	Autotransfusion Unit, General O/O autoLog Overall height includes IV pole	Medtronic - Structural Heart (ATLG110) Review with Kathlene	No No	Surgery OR 10 - CV Hybrid 3133	Hold 2 Unassigned	No No No	No No No	No No No	M 70 85	13.00 9.00 66.00	110 1.6 60	Type B (NEMA 5-15) N/A No	No No No	
3441-048 C262549	BRD0314	1	Board, Patient Transfer Device O/O HIGHTEC ROLLBORD - Standard 35"L when folded.	Samarit Medical Industries Inc (440.0100) Samarit Medical Industries Inc. (440.0100)	No No	Surgery OR 10 - CV Hybrid 3133	Draft (New) 3 Unassigned	No No No	No No No	No No No	S 6 6	20.00 70.00 2.00	N/A N/A N/A	N/A N/A No	No No No	
3708-132	MED0236	1	Dispenser, Medication, Host O/V (Main) OmniRx TT Color Touch G4 Weight reflects drawers empty, actual weight will vary depending options and accessories specified. Manufacturer recommends emergency power be provided with connections to red plugs. Includes built-in UPS (90-250VAC, 50-60Hz, 1A). G4 Wireless communication between the cabinets and the OmniCenter is accomplished using Intel's Centrino Advanced N-620 for Desktop adapter. Omnicell also still supports the Asus PCE-N15 adapter. See cutsheet for space and electrical requirements. With stand with casters	Omnicell, Inc (MDA-FRM-006)	Yes Yes	Surgery OR 10 - CV Hybrid 3133	Draft (New) 2 Unassigned	No No No	No No No	No No No	C 133 175	30.00 27.00 28.25	115 1.3 60	Type B (NEMA 5-15) 443 No	Yes Yes Yes	



Construction Documents

- Finalize equipment list and specifications
- Finalize REVIT equipment layouts
- Perform detailed construction drawing review with the Architect, MEP consultants and vendors
 - Integrated coordination meetings
 - Ensure equipment locations, utilities and technical requirements are included
- Submit final Architecturally Significant Equipment (ASE) document
 - Incorporates final equipment decision by owner
- Submit updated cost estimate
- Obtain owner sign-off

1. This drawing is a technical drawing of a wiring diagram for a Philips Zone Power system. It shows the connection of a 4400 Series 25 kVA UPS to a Universal Transfer Switch (UTS) and a Battery Cabinet (BC). The diagram includes details for structural allura (AD7) and adaptation (P) for the floor plate.

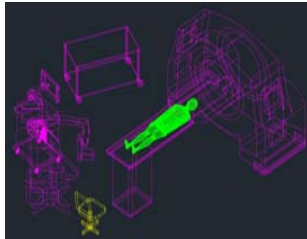
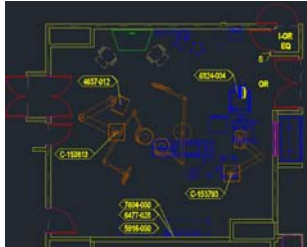
Detail - Structural Allura F02
 (Not site)
 This detail shows the structural allura (AD7) and adaptation (P) for the floor plate. It includes dimensions for the floor plate, the allura, and the adaptation. The allura is shown in two views: a top view and a side view. The side view shows the allura is 15'-0" high and 12'-4" wide. The top view shows the allura is 12'-4" wide and 15'-0" high. The adaptation (P) is shown in a cross-section view, showing the floor plate, the allura, and the adaptation. The floor plate is 1'-0" thick and 1'-0" wide. The allura is 1'-0" high and 1'-0" wide. The adaptation is 1'-0" high and 1'-0" wide.

Detail - AD7 Adaptation P
 (Not site)
 This detail shows the AD7 Adaptation P for the floor plate. It includes dimensions for the floor plate, the adaptation, and the floor plate. The floor plate is 1'-0" thick and 1'-0" wide. The adaptation is 1'-0" high and 1'-0" wide. The floor plate is 1'-0" thick and 1'-0" wide.

Planning Issues and Considerations
 N.E.C. requires a clear floor space of 3'-0" (915mm) in equipment and 3'-6" (1070mm) in front electrical equipment. Verify all applicable codes with the architect.
 Acoustic noise levels for UPS is 60dB (1" scale @ 1 m equipment closet). Verify with customer requirement.
 Potential collision of noted door with equipment.
 Patient loading may be difficult. Verify with customer.

IMPORTANT NOTES:
 1. Do not run DC Battery Conductors in same conduit as Auxiliary Control and Shunt Trip cables.
 Size of the wires is based on conduit run length shown on E3 sheet, the size of the wire will need to be increased for longer runs.
 Conductors, destinations, and number of conduit runs will vary from system to system. Consult individual site plans for detailed conduit schedule.
 Contact Philips Zone Power Specialist for detailed wiring diagram.

Diagram - Standard Connection - 4400 Series 25 kVA UPS with UTS and Kn



Coordination

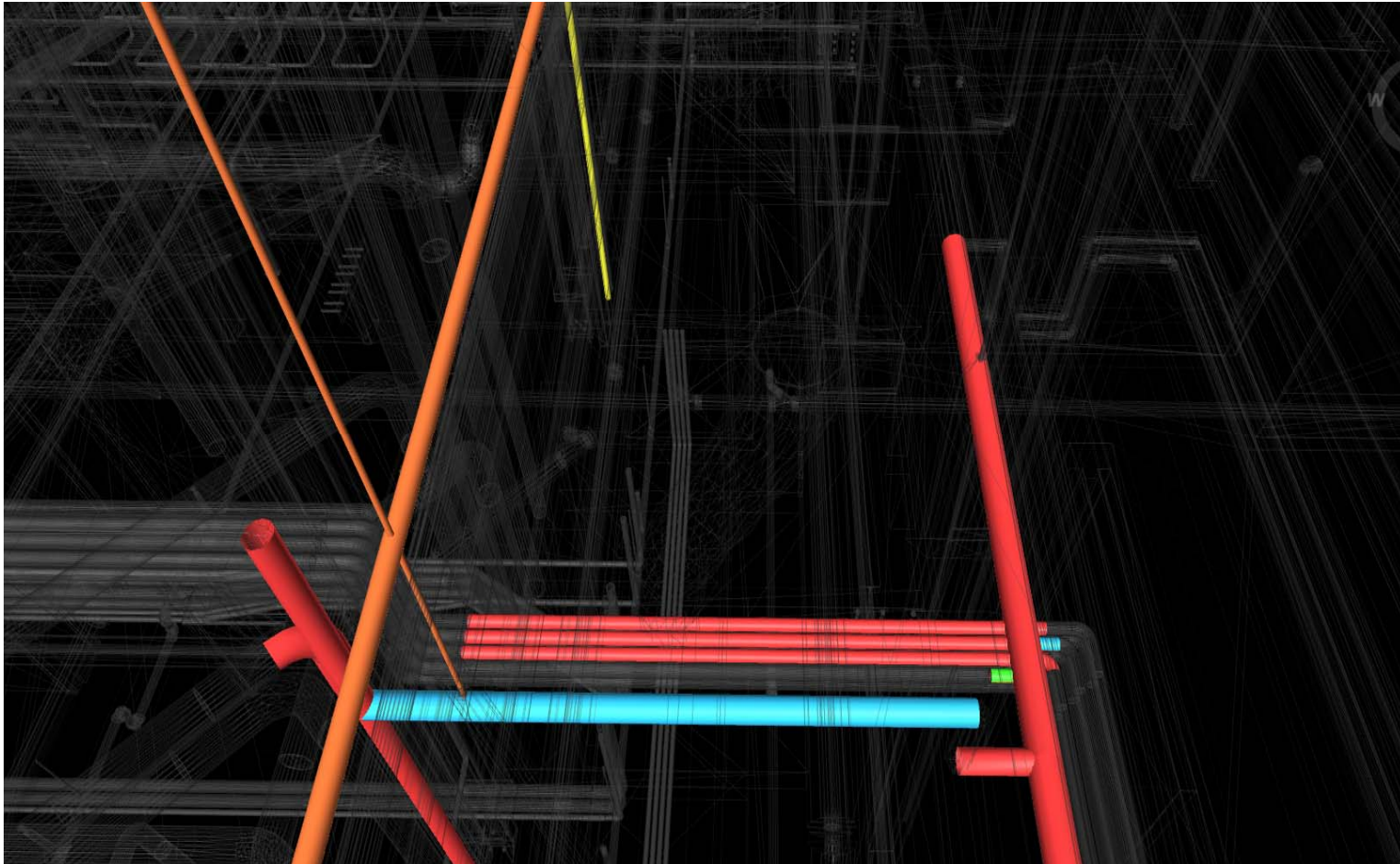
- Clash Detection
 - Mechanical
 - Electrical
 - Plumbing
 - Structural Beams
 - Medical Equipment
- Color Coded clash identification
 - Trade assigned Colors
 - Electrical – **Orange**
 - Plumbing – **Blue**
 - Clash detected – **Red**
 - Clash Resolved – **Green**

CLASH DETECTION

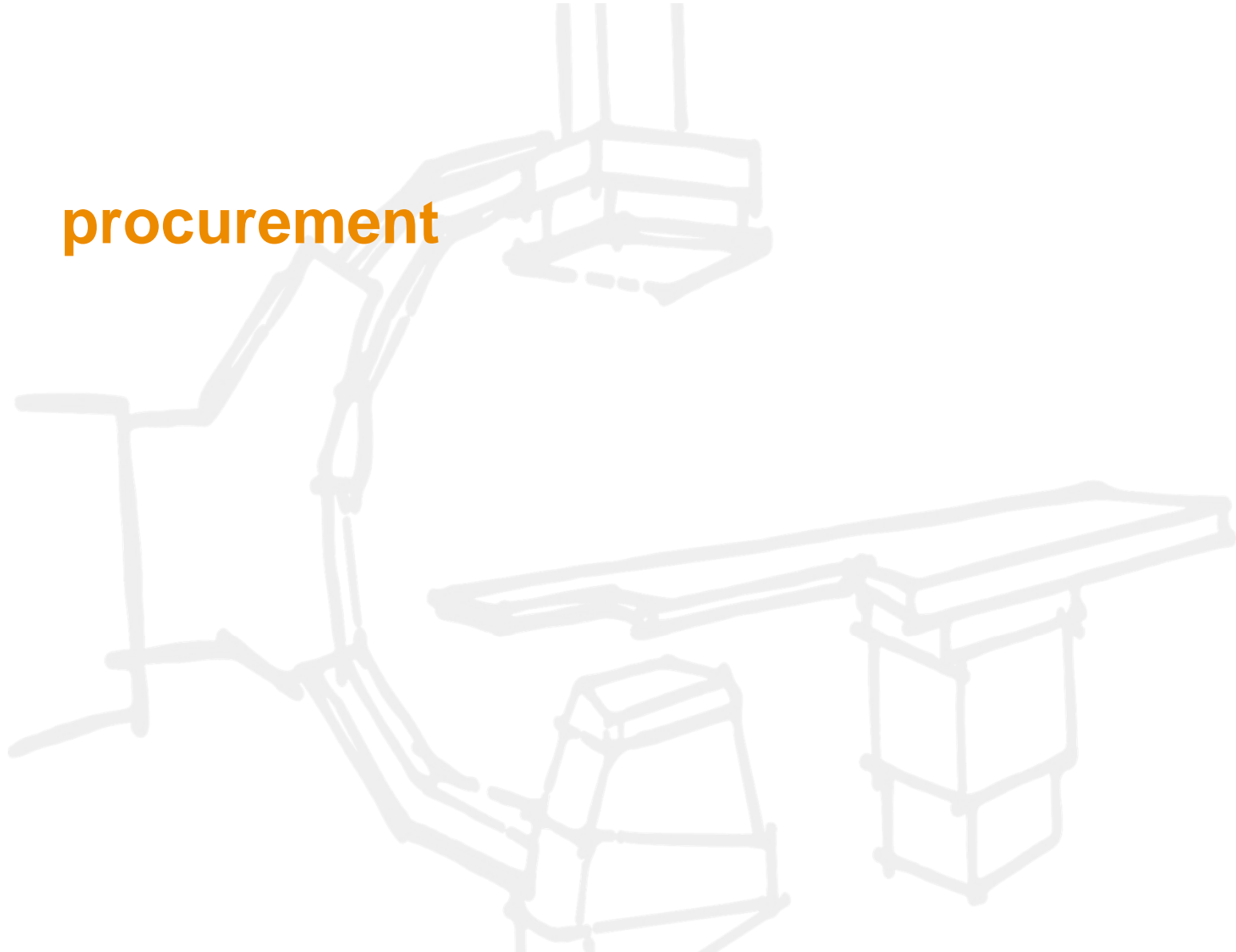
planning
and design

procurement

CA &
installation



procurement





Procurement Critical Path – Equipment Schedule



User decision
(Validation / Planning Team)



Bidding & negotiations
(Procurement Team)



- Site-specific drawings & specifications
- Submit addendum to design team
- Arch, MEP, structural updates
(Construction Admin Team)



Ordering & delivery
(Procurement Team)



Construction milestone
(Construction Admin Team)



Medical Equipment Validation

- Comprehensive education of validation process
 - Establish validation timeline and coordinate user schedules
 - Assign facilitators / champions for equipment
- Conduct equipment validation meetings to finalize a procurement-ready equipment list
 - Review actual need, manufacturer, model, quantity and status
 - Contractor impacted equipment
- Establish a comprehensive change process
 - Involve all parties (owner, contractor, architect, equipment planner)

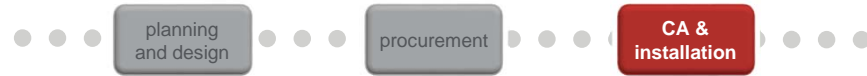


Procurement

- Determine and understand client's procurement process
- Detailed quote / RFP process
 - Expert negotiations – pricing, terms and service warranties
 - Evaluate existing contracts (pricing and terms)
 - Leverage GPO contracts (Group Purchasing Organization)
 - Leverage buying power across all projects
 - Provide detailed bid analysis
- Create capital purchase requisitions for client approval
- Submit client generated PO's to the vendor
- Track and expedite orders for on-time delivery

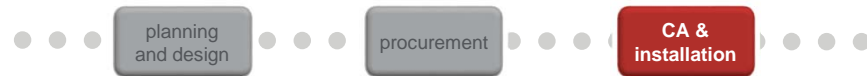
construction administration & installation coordination





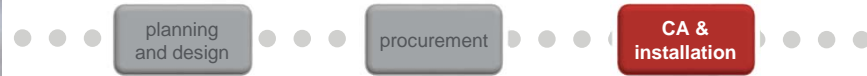
Construction Administration

- Perform pre-installation site inspections
- Synchronization of equipment delivery and installation with the construction schedule
- Provide on-site coordination between owner, contractor, architect, MEP trades and vendors
 - Installation oversight
 - Vendor walk-through
 - Respond to Requests for Information (RFI's)
 - Coordinate and review site-specific shop drawings
 - Submit field observation reports
- Establish a change order process with owner
 - Communicate changes with architect and contractor
 - Provide ASE addendums



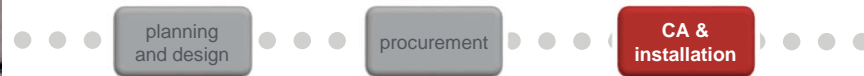
Deployment Coordination

- Master deployment schedule
 - Create
 - Coordinate
 - Analyze relational impacts
 - Clinical engineering, IT, transition planning, training
- Oversee and direct all aspects of the building load out
 - Dock management
 - Waste management
 - Risk management
 - Throughput maximization
 - Building protection oversight
- Site readiness
- Seamless contractor coordination



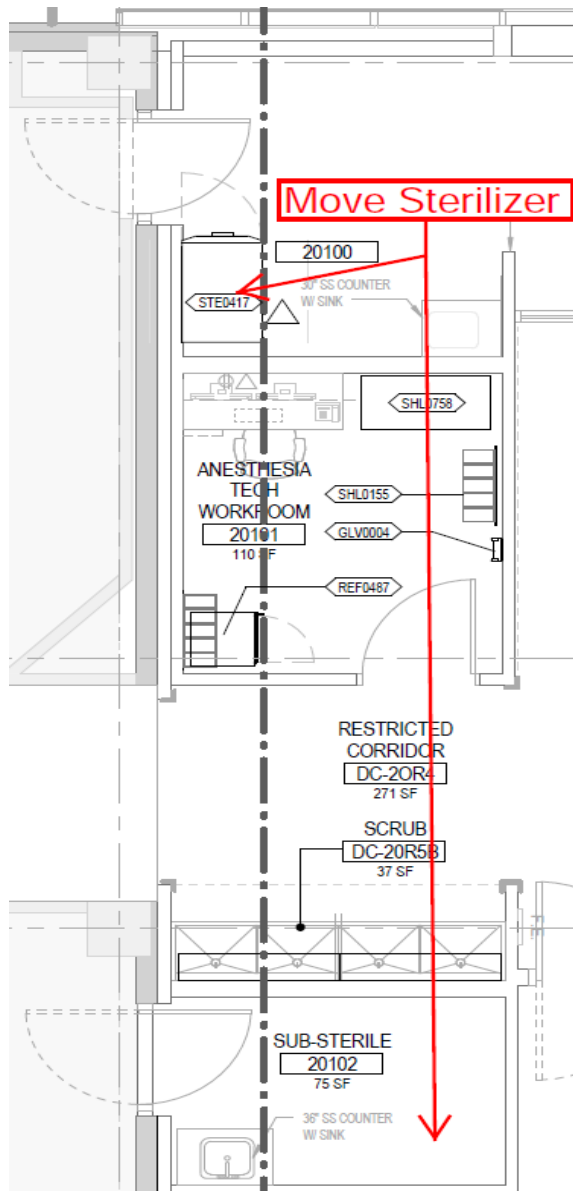
Installation Coordination

- Develop an installation schedule to coincide with the construction schedule
- Work with client to determine warehousing options
 - Warehouse RFP
 - Hospital owned warehouse
 - No warehouse – direct to site
- Assist with the selection of an equipment installation / relocation firm
- Receiving oversight
 - Manage warehouse deliveries and receiving documentation
 - Resolve receiving discrepancies



Installation Coordination

- Installation oversight
 - Provide oversight of the equipment installation / relocation firm
 - Coordinate delivery and receipt of OF/CI equipment with contractor
 - Create project specific installation work flow
 - Coordinate deliveries from the warehouse to the site
 - Interface with transition planning team
 - Coordinate installation with necessary parties (Bio-med, IT, Materials Management)
 - Coordinate final placement of equipment
- Create equipment punch list and resolve open issues
- Final owner walk-thru and sign-off



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Equipment Relocation

- User request (after construction submittal)
- Equipment Change Request (ECR) process
- Medical Equipment Database edit – price check
- Drawing update
- MEP - RFI, Change Request
 - Plumbing
 - Steam, Vent, Water, Drain
 - Mechanical
 - HVAC
 - Electrical
 - Power, Lighting, Low Voltage control panel
 - Data – watch for new requirements



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Connected Medical Equipment?

Connected Medical Equipment (CME) includes all types of clinical equipment that have some level of ability to push and pull data, video, images and alerts to the Electronic Health Record and many other connected systems.

Planning is an essential piece of the process for integration to occur between and among specific technology systems. CME planning includes both the physical and data integration requirements along with cost estimates for components and services.



Transition planning?

- Occupancy Planning
- Personnel Preparedness
- Move Management

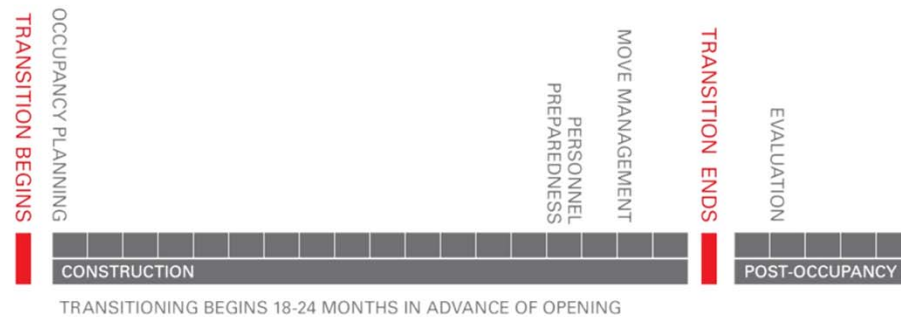


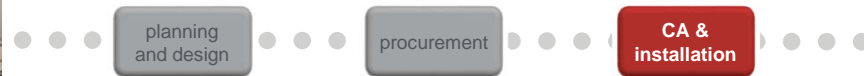
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Summary – Value Points

- Having a comprehensive Responsibility Matrix early in the project
- Establishing a BIM management process
- Addressing Connected Medical Equipment (CME)
- Involving Biomed / IT / Supply Chain early in the process
- Leveraging an Integrated Project Team including hospital planning and procurement staff
- Equipment selection and validation prior to procurement
- Strategic on-site participation
- Seamless contractor coordination

questions?

