

WHO'S GOT THE EQUIPMENT?

AVOIDING PROJECT MEDICAL EQUIPMENT PURCHASE & INSTALL CONFUSION

One of the consistently challenging aspects of the design and construction of health care facilities is the coordination of the medical equipment to be installed within the building that houses it. Many factors contribute to the difficulty –

- There is a great variety in what we identify as “equipment” in a Medical Center; from a patient bed to things that sterilize, cauterize and visualize. A large project will have more than a thousand unique items, not including furniture.
- The nature of much of the equipment is complex and rapid changes in technology make it difficult to stay current.
- Required connections are engineering-intensive and can involve many types of utilities including filtered water, medical gases, special electrical power, data connections, etc.
- Even for similar items, installation requirements may vary by manufacturer.
- Responsibility for furnishing and installation vary widely among Contractor, Owner and Vendor and differ from project to project.

Tracking and managing the responsibilities and requirements for these items becomes an important aspect of a successful design, construction and commissioning process, and yet, all too often there is confusion regarding who provides this. Without a designated Equipment Leader/Coordinator on the team, an Owner is often left in the dark regarding what equipment is included in the construction documents and what is the Owner's responsibility. And all too often, misunderstandings discovered during construction add to cost and schedule delays.

What can be done to overcome this potential confusion? Understanding the customary roles of those involved in a project with respect to equipment is a first step. Later we provide a checklist to follow to insure that the project's medical equipment provision and installation is properly coordinated.

Roles and Responsibilities:

Architect, Owner and Contractor each bring their own perspective to this issue, based on their traditional roles and their common desire to limit exposure.

The *Architect* and the supporting engineering team may view a project's critical information only from the standpoint of the construction contract documents.

These documents describe the work to be performed by the building Contractor. As a result, the emphasis in a design process can become centered on what the Contractor needs to construct and not on what the Owner needs to open and operate. Architects who take this limiting approach, tend to encourage more Owner-furnished and installed items. Since the documents



Since the documents are not necessarily prepared for the Owner's instruction, notes such as "by others" and "by Owner" may remove the contractor from responsibility for the work, but inform little about the extent of the work the Owner is expected to provide. Knowledgeable health care design firms recognize their role in producing additional equipment documentation, which clarifies this interface with the building. This documentation includes graphical, specification and catalog detail approved by the Owner and referenced for the Contractor's use. A section is added in the specifications to provide detailed language regarding the Contractor's responsibilities for Owner-supplied equipment, including equipment installed by the Owner or its Vendors.

The *Contractor*, in a traditional design-bid-build delivery process, views the project strictly by the documents. What he sees in the documents is what the Owner gets – and nothing more. When the information is lacking, the change requests escalate. Clarifications and change requirements during construction insures the Contractor a comfortable retirement. To reduce problems, the documents must be complete and clear regarding equipment details. This places pressure on early decision-making for equipment selection - a difficult prospect for the Owner's medical personnel who want to hold off until the last minute to gain the latest developments in products and technology.

An *Owner*, regardless of sophistication and experience, expects to open with a fully functioning facility. The Owner recognizes that many items of the medical equipment will be purchased by the Medical Center and installed via staff or Vendors, in a building prepared to receive the equipment. Yet, it is the Owner's expectation that the A/E will make the building ready. Without assistance from the design team or others, an Owner does not usually have experience documenting the Owner-provided equipment or checking the drawings and specifications for accuracy and completeness.

Equipment Leader / Coordinator Checklist:

To put a project on a stable footing, make sure that the Equipment Coordination issue is addressed at the outset –

1. Decide at the time of A/E agreement who will take the lead on equipment; insure that this will include both Owner and Contractor items and meet the requirements below.
2. Name an Owner representative that will monitor this aspect of the process and can devote time to review documents, lists, etc. prepared for the project.
3. Verify that all fixed and major moveable items are documented in one accessible database indicating Contractor or Owner responsibility for purchase and install.
4. Verify that ¼" scale equipment floor plans are provided noting the equipment by unique numbering, including coded furnish/install responsibility.
5. Verify that room elevations show the placement of the equipment, including mounting dimensions, backing and outlets required.



6. Verify that a catalog of equipment cut sheets for reference by A/E and Contractor will be prepared and maintained throughout the project to completion.
7. Verify that contract specifications note the Contractor's responsibility with the respect to Owner furnished fixed as well as moveable equipment (Owner/Owner) with reference to lists and catalog.
8. Resolve outstanding unspecified equipment requirements by designing to a "similar to" unit and place holder.
9. Make sure the Equipment Leader / Coordinator is on board throughout the project up to the opening.

Conclusion:

The Equipment Leader / Coordinator role may be provided in several ways.

- The Architect can provide the service using a designated qualified staff member. This can be appropriate on small projects. The completeness of the service, including responsibility for the Owner's equipment should be spelled out in the Owner/Architect Agreement.
- The Architect can sub-contract with a qualified Consultant to fulfill the role. In this case, the Consultant's responsibility should be clear to the Owner in the A/E Agreement as encompassing the Owner's needs as well as those of the A/E.
- The Owner can contract with an independent Equipment Consultant. This must be declared at the time of negotiation of the A/E contract and provisions made to assure cooperation and coordination of the work with the A/E.

Regardless of who plays the role, the Leader/Coordinator must have the Owner's interests as his/her focus. Successful coordination of this potentially difficult aspect of a project will deliver a fully functioning facility *and* Owner satisfaction – a major benefit to A/E and Contractor as well.

TM Osborn has first-hand experience in this subject, providing leadership in this process in a variety of roles. In the past we have acted as the prime A/E, often providing equipment coordination as a value-added service; today we provide medical facility consulting on projects where Owners have engaged an equipment consultant; we also provide medical equipment consulting services directly to A/Es; and serve as space planning/equipment planning reviewers on major project peer review teams. With each project, our emphasis is always on ensuring a smooth occupancy via attention to the "equipment coordination" side of the design and construction process.

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