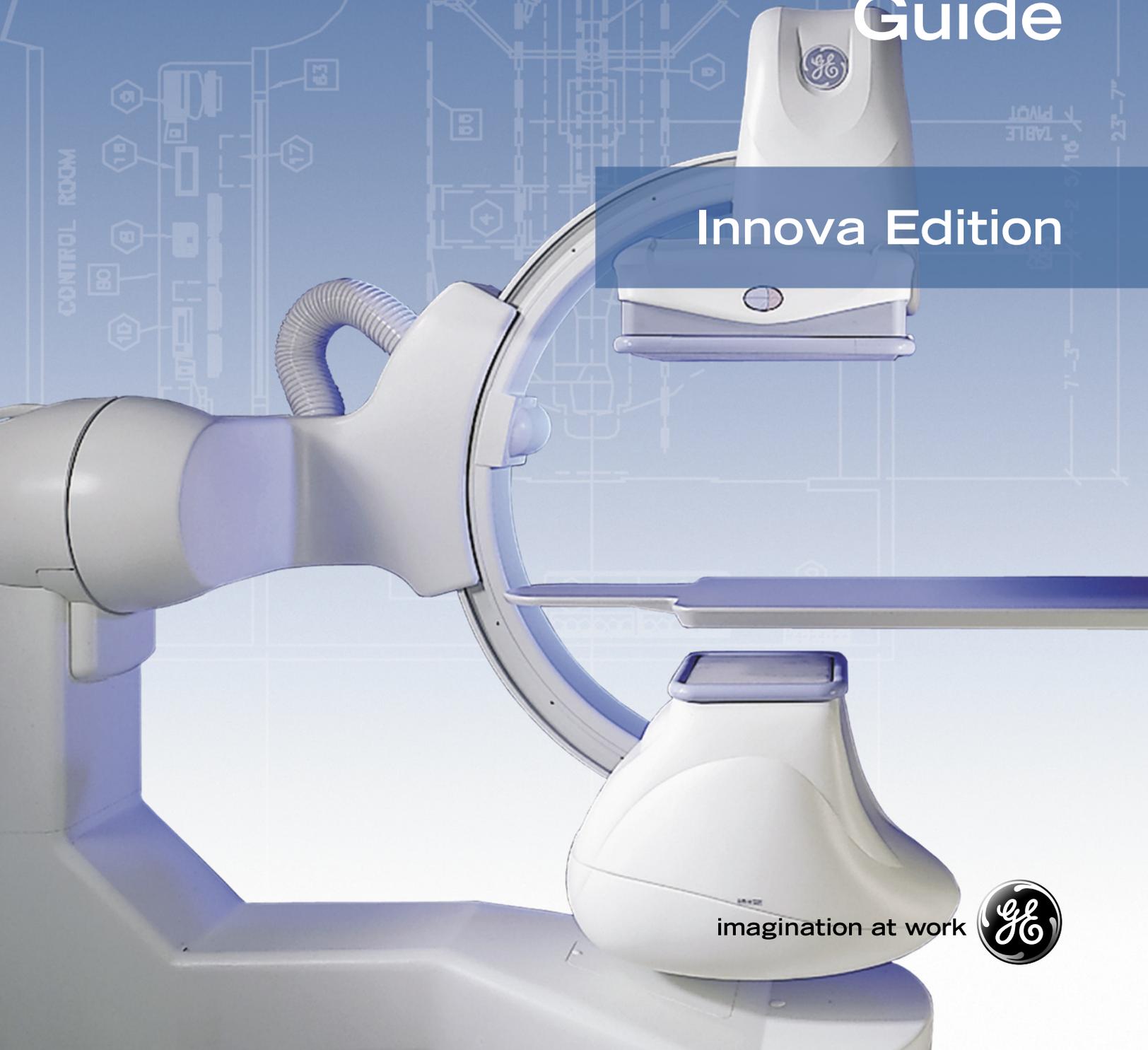


# Site Readiness QuickStart Guide

Innova Edition



imagination at work





# Site Readiness QuickStart Guide

## Innova Edition

Your site specific plan and design requires the use of the full set of planning information and specifications found in GE Healthcare's Pre-Installation Manual (PIM) and the GE Healthcare's Final Installation Drawings for your Innova System.

General Electric Company reserves the right to make changes to this document and features shown herein, or discontinue the document at any time without notice or obligation. The information contained in this document is GE Proprietary Information. It is property of GE and shall not be reproduced without the express written consent of GE. Contact your GE Representative for the most current information.

© 2004 General Electric Company. All Rights Reserved.  
GE Medical Systems, a General Electric company,  
going to market as GE Healthcare.

03-9236 07/04 Printed in USA

imagination at work



Internet – [gehealthcare.com](http://gehealthcare.com)  
GE Healthcare  
P.O. Box 414, Milwaukee, Wisconsin 53201 U.S.A.



## Use of this Guide

---

This Site Readiness QuickStart Guide is intended to provide an overview of key process steps, scheduling, resources, and critical items needed for preparing your site for delivery and installation of your Innova System. This Guide is applicable for all GE Healthcare Innova Systems.

You can utilize this Guide with your facilities team, System users, architects, engineers, contractors or others involved in the design and construction of your site. The Guide is written for multiple levels of interest and detail; each section is more detailed as you proceed through the Guide. Some material content is repeated in multiple sections for completeness of information within a section.

The Site Readiness QuickStart Guide contains the following sections (with targeted audiences):

- **Overview** (Intended for all team members)  
Overview of the Site Readiness process
- **Process Flow** (Radiology Director, System Users, Facilities, Architect, Engineer, Contractor)  
Map of Site Readiness process steps  
Example of a typical schedule
- **Process Details** (Architect, Engineer, Facilities Department, Contractor)  
Details for process step tasks
- **Critical Items** (Architect, Engineer, Facilities Department, Contractor)  
Overview information on critical site requirements, unique to an Innova System, and features needed at your site
- **Assessment List** (All team members)  
List of critical items required prior to equipment delivery

Your GE Healthcare team is here to help. Your Installation Specialist is your GE focal point. Please contact your Installation Specialist with any questions.



Table of Contents

# Site Readiness QuickStart Guide

Innova Edition

- Overview ..... 7-14
- Site Readiness Process Flow ..... 15-21
  - Site Readiness Assessment ..... 22-24
- Site Readiness Process Details ..... 25
  - Site Selection ..... 26-27
  - Select Construction Team ..... 28
  - Preliminary Floor Plan ..... 29-30
  - Preliminary Project Plan ..... 31-32
  - Final Installation Drawings ..... 33-34
  - Construction Drawings ..... 35-38
  - Plan Review / Permits ..... 39-40
  - Pre-Construction Review Meeting ..... 41-42
  - Construction ..... 43
  - Site Ready ..... 44
  - Innova System Delivery..... 45-48
  - Installation and Calibration ..... 49
  - Applications / First Patient ..... 49
- Critical Items ..... 51-64
- Assessment List..... 65
- Glossary of Terms..... 73



This icon will signify Safety related items throughout this document



## Congratulations on your new Innova System!

Installation of your new GE Healthcare Innova System requires that your site is prepared to satisfy the product's unique specifications. Our mutual goal is to prepare a quality site for delivery and installation of your System in a timely manner.

GE Healthcare has extensive experience assisting customers in preparing their sites for System delivery and installation.

This Guide is intended to give you an overview of the Site Readiness process required for preparing your site for delivery and installation of your Innova System and contains the following:

- Site Readiness Process Flow
- Typical Project Schedule
- Support Provided by GE Healthcare
- Summary of Critical Items
- Assessment List of Site Readiness Requirements for Delivery

In addition, your site specific plan and design requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM) and Final Installation Drawings for your Innova System.

Please contact your GE Installation Specialist if you have not yet received a copy of the GE Healthcare Pre-Installation Manual (PIM) or, alternatively, you can view and download it electronically via this link:

Please contact your GE Installation Specialist if you have not yet received a copy of the Pre-Installation Manual or you can view and download the manual electronically from the following link. An electronic version of this Site Readiness QuickStart Guide is also available at this link:

<http://www.gehealthcare.com/company/docs/index.html>

An electronic version of this Site Readiness QuickStart Guide is also available at this link.

**Your GE Healthcare team is here to help. Your Installation Specialist is your GE focal point. Please contact your Installation Specialist with any questions.**

## Project Team

---

This Guide is intended for both experienced and inexperienced customer teams. Please share this Guide with your facility team members, potentially consisting of:

- Senior Management
- Project Manager
- Architect and Engineer team
- Construction team
- Information Technology Representative
- System Users
- Other personnel affected by the project

Your team's involvement is critical to the success of your project's design and construction process. It is very important to identify your specific team members and start team meetings early in the project in order to develop a quality floor plan and a clear and realistic schedule.

A well-developed and executed plan and project schedule helps to minimize the possibility of delays in System delivery and installation thereby potentially avoiding:

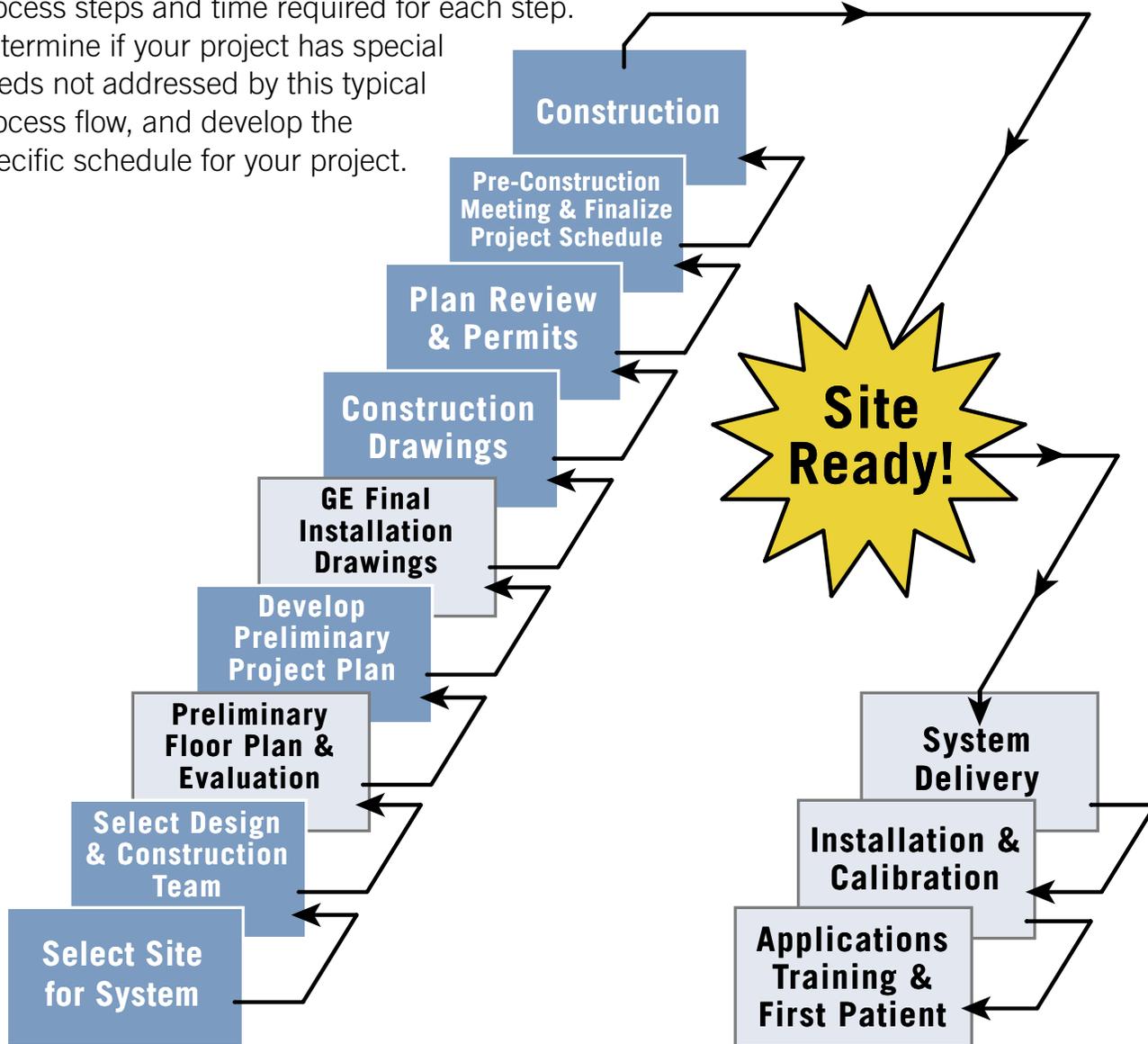
- Lost revenue (loss of scheduled patient exams)
- Off site storage fees for delivered equipment (at customer expense)
- Cost overruns for construction (potential customer expense)

We have frequently observed that the capabilities of the customers' project architect and contractors are critical factors to the overall success of the project. At your request, GE Healthcare can provide a list of architects, designers and contractors in your area that are familiar with medical construction projects (Associates Program). You may contract directly with them or with any other qualified contractors you select, or request that GE Healthcare provide construction-related services for additional fees (and additional contract terms) based on a mutually agreed scope of work.

Process Flow

An understanding of the process steps by team members supports the creation of an objective schedule. In order to do this, ALL team members should have a good understanding of the steps in this process.

This Guide describes the typical Site Readiness process steps and time required for each step. Determine if your project has special needs not addressed by this typical process flow, and develop the specific schedule for your project.



QuickStart Here!

Customer Primary (GE Secondary)
  GE Primary (Customer Secondary)

## GE Healthcare Support

**Your Installation Specialist**

GE Healthcare provides support through your Installation Specialist. This support for your Site Readiness process will be provided through the following primary activities:

- Assist in assessing your site for location of your Innova System
- Assist in developing a preliminary site layout of your Innova System
- Provide site design specifications for your architect and engineer to utilize in the design of your site as found in the GE Healthcare Pre-Installation Manual (PIM) for your Innova System
- Provide your architect and engineer with support to interpret the specifications
- Provide GE Healthcare Final Installation Drawings
- Provide supporting information to your contractor(s) for schedule development and construction planning
- Assist in monitoring completion of Site Readiness Assessment for your System
- Assist in the coordination of delivery and installation activities

**Your Installation Specialist is your  
GE Healthcare Focal Point**

## GE Healthcare Support

---

### **There are additional ways GE Healthcare can support your Site Readiness effort. GE can:**

- Provide contacts for Architecture / Design - Build firms with expertise in siting Innova Systems (Associates Program). If requested, the selection of contractors is your decision
- Provide consulting support contacts for your design and construction teams
- Provide Design-Build services for management of your project for an additional fee (and additional contract terms)
- Provide consulting service contacts for improving your facility workflow, operational processes and productivity

## Key Responsibilities (This is not a comprehensive list of responsibilities)

---

### **Customer**

- Focus communications among team members
- Review your GE Healthcare Terms and Conditions of Sale
- Complete site-specific construction items prior to Innova System delivery – Refer to the Assessment List
- If de-installing, consult your GE Installation Specialist
- Ensure your representative is on site for acceptance and inventory of the equipment at time of delivery

### **Architect / Engineer**

- Develop overall preliminary plan for customer site, and coordinate with GE Healthcare Installation Specialist
- Develop construction drawings and specifications
- Coordinate site design with GE Healthcare Pre-Installation Manual and Final Installation Drawings, ensuring all requirements are met
- Comply with applicable code requirements
- Coordinate plan review and approval process for permits
- Communicate with GE Healthcare Installation Specialist - questions and changes

### **Contractor**

- Develop and communicate construction schedule to entire team
- Obtain construction permits
- Own the construction schedule, ensure delivery dates are met
- Build the site...manage sub-contractors...deliver a quality site
- Coordinate / communicate all issues with architect, engineer and GE Healthcare Installation Specialist
- Arrange for inspections
- Ensure Site Readiness Assessment is complete prior to delivery
- Coordinate Innova System delivery
-  Ensure all safety requirements are met and site is secure

## Getting Started

---

GE Healthcare recommends using the Site Readiness QuickStart Guide with your team as you work through the Site Readiness process to 'build a home' for your new GE Healthcare Innova System. This Guide is available electronically at the link below \*.

Contact your GE Healthcare Installation Specialist with any questions or needs.

GE Healthcare looks forward to supporting you with an on-time delivery and installation for your new Innova System.

**Please start the following critical processes:**

(if you have not already)

**Obtain the GE Healthcare  
Pre-Installation Manual from your  
GE Installation Specialist\***

— — —

**Select the potential location(s)  
for your new Innova System**

— — —

**Retain an architect or qualified designer  
knowledgeable in medical design,  
construction and installations**

\*Documents are available in print (from your GE Installation Specialist) or by electronic media at the link below:

<http://www.gehealthcare.com/company/docs/index.html>



## Process Flow

---

This Process Flow section provides you with a high level map of the entire process from site selection to delivery and installation of your Innova System.

An understanding of the process steps by team members supports the creation of an objective schedule. In order to do this, ALL team members should have a good understanding of the steps in this process.

This section describes the typical Site Readiness process steps and estimated durations of each step in order to support this need. You will need to determine if your project has special needs not addressed by this typical process flow, and then develop the specific schedule for your project.

The actual duration of your overall schedule will depend on the configuration of your GE Healthcare order and the needs for your site preparation.

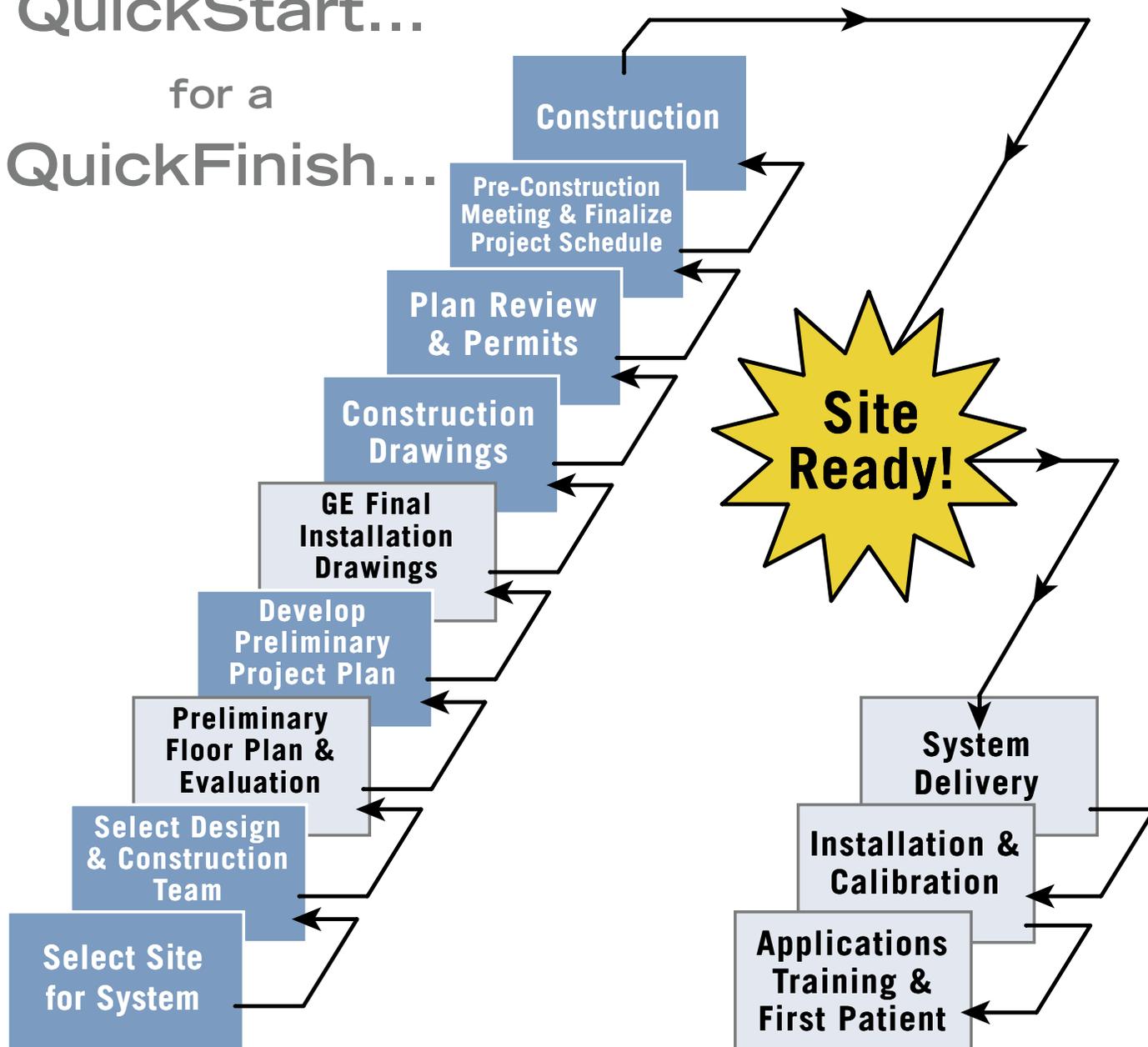
Also, your site specific plan and design requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM) and Final Installation Drawings for your Innova System.

Please contact your GE Installation Specialist if you have not yet received a copy of the GE Healthcare Pre-Installation Manual (PIM) or your Final Installation Drawings. You can also view and download the PIM electronically via this link:

<http://www.gehealthcare.com/company/docs/index.html>

An electronic version of this Site Readiness QuickStart Guide and examples of typical Equipment drawings are also available at the link above.

# QuickStart... for a QuickFinish...



QuickStart Here!

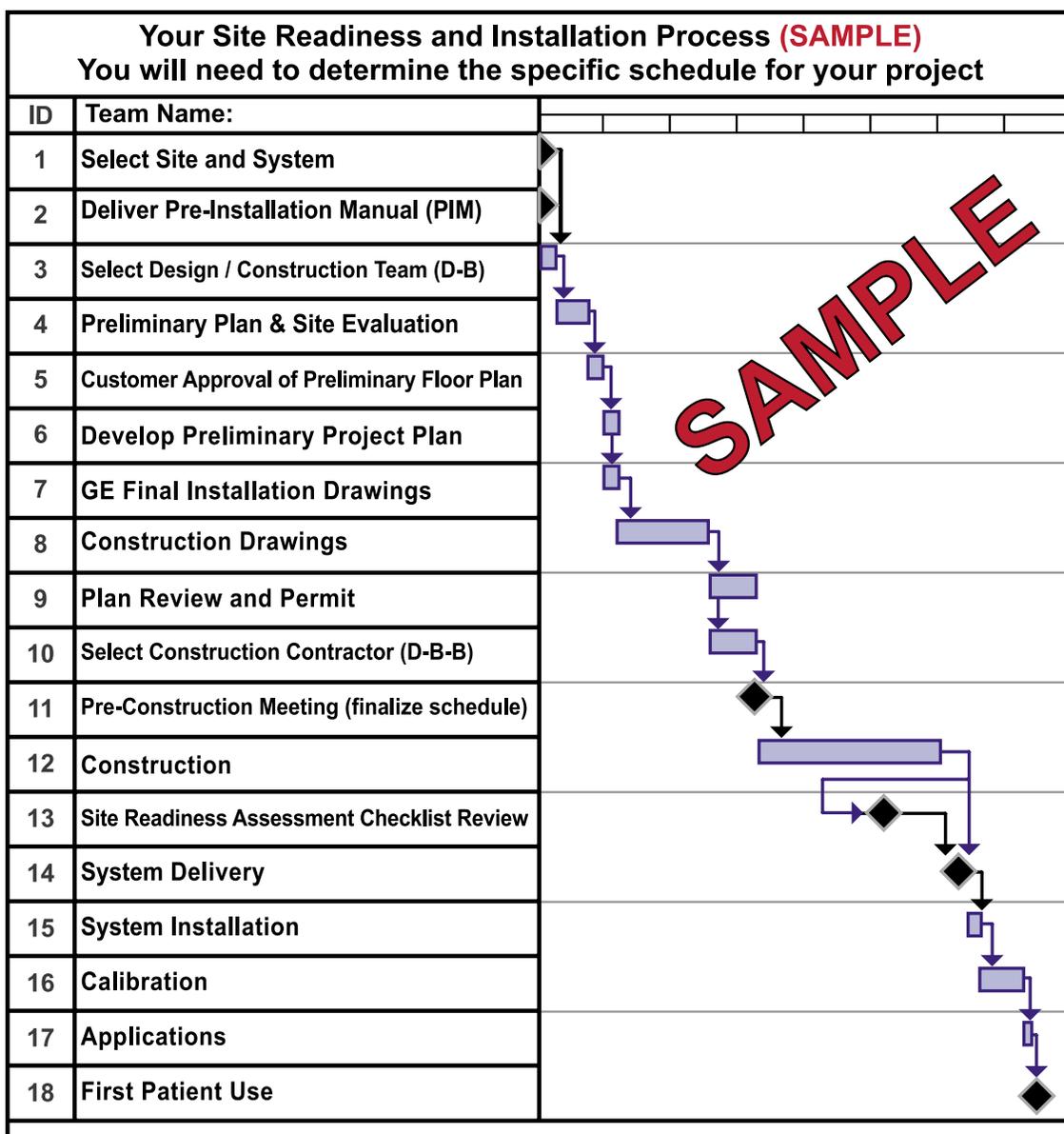
■ Customer Primary (GE Secondary)    ■ GE Primary (Customer Secondary)

Schedule

A Gantt chart is a tool commonly used for developing and tracking project schedules. Some tasks are dependent and require completion of preceding tasks before they can begin. The Gantt chart provided below is a sample schedule. The arrows show succession of tasks. The tasks shown are typical for most projects.

The duration of each task will depend on the type of project and specific needs for your site.

Your site development team will need to collaborate to determine tasks needed and duration of each task in order to create the optimal schedule for your project.



This portion of the Process Flow section outlines further task descriptions for each step. Additional details are outlined in the Process Details section.

Note: This is not a comprehensive list of tasks or requirements in the Site Readiness process. You must work with your team to define all the specific scope and tasks for your site.

Select Site for System

Cycle Varies

- Finalize Innova System type configuration to be installed
- Determine if New Facility, Addition, Renovation, Replacement, or Modular Building
- Gather Innova System end user inputs
- Discuss siting needs with customer and GE Install Specialist
- Facility Planning involvement is necessary
- GE Healthcare Pre-Installation Manual (PIM) and typical drawings provided by GE Installation Specialist
- Determine if Certificate of Need (CON) is required

Select Design & Construction Team

Cycle 1 - 3 weeks

- Select architect or qualified designer as early as possible
- Review GE's Associates Program for potential suppliers
- Decide on Design-Build (D-B) or Design-Bid-Build (D-B-B) approach
- Conduct Pre-Bid Meeting
- Consider Innova experience as main criteria
- Hire your riggers (if needed)– verify their experience

Preliminary Floor Plan & Site Evaluation

Cycle 1 - 2 weeks

- Team Collaboration
  - GE Healthcare Installation Specialist, Account Manager and Field Engineer
  - Customer Team
- Perform Site Evaluation specific to your Innova System type
- Perform Broadband (highspeed internet) connectivity assessment
- Discuss ceiling/ lighting customer requirements & design
- Discuss archival system
- Review Innova delivery route and access point (e.g. elevator capacity, is rigging needed)
- Select location and room configurations
- Customer approval of Preliminary Floor Plan
- Review Hemodynamic system requirements (if re-using current system or a new customer acquired system)

Customer Primary (GE Secondary)
  GE Primary (Customer Secondary)

**Develop Preliminary Project Plan**

Cycle included in preceding

- Use architect for input
- Define your project scope
  - Unique elements for Innova System configuration
  - Construction requirements
  - User inputs are critical
- Finalize schematic floor plan of the entire project
- Develop preliminary written project schedule to establish objective first use date
- Reach agreement and commitment by the Team
- Begin application process for X-ray License

**Final Installation Drawings**

Cycle 1+ week  
(Depends on Innova System configuration and options)

- Need customer approval of Preliminary Floor Plan
- GE Healthcare Installation Specialist coordinates
- Final Installation Drawings reviewed by customer and GE Installation Specialist
- AutoCAD files provided by GE Healthcare (or prints)
- GE Healthcare Final Installation Drawings are NOT your construction drawings

**Construction Drawings**

Cycle 3 - 7 weeks

- Conduct site design kick-off meeting
- Utilize GE Healthcare Pre-Installation Manual & Final Installation Drawings for Construction Drawings
- GE Healthcare Installation Specialist support
- Facility Planning / Landlord involvement is critical
- Your architect / engineering team is responsible for code & regulatory compliance
- Finalize System delivery route & access point (Rigger – if needed & Installation Specialist input)
- Hold periodic team review meetings

**Plan Review & Permits**

Cycle Varies

- Required approvals and permits vary per location
- Bid construction if D-B-B
- Potential customer risk for schedule impact
- Permits to close street or sidewalk for delivery
- Transportation permits for modular buildings

Customer Primary (GE Secondary)
  GE Primary (Customer Secondary)

**Pre-Construction Meeting & Finalize Project Schedule**

Cycle < 1 week

- Team collaboration
- Pre-Construction Review:
  - Critical that contractor, all suppliers and subcontractors are present
  - Critical Path events
  - Long Lead Items
  - Shop Drawings for Construction Fabrication
  - Project Schedule: focus on Exam, Control & Equipment Rooms
- Schedule commitment from entire team (this is critical)
- Coordinate project schedule with rigger (if required)

**Construction**

Cycle 2 – 14 weeks (Site dependent)

- Communicate status updates to GE Installation Specialist
- GE Healthcare Installation Specialist support for Q&A
- Complexity of project drives project cycle
- Critical Path items monitored and completed (i.e. Radiation Protection, HVAC, Power, etc)
- Monitor Site Readiness Assessment
- Long lead items monitored and completed (e.g. MDC)
- LC Base Plate levelness is critical
- Conduct required inspections
- Hold completion date: focus on Exam, Control & Equipment Rooms
- Confirm System delivery route & rigging (if needed)
- Broadband (highspeed internet) connection scheduled
- Hold periodic project team review meetings



**Site Ready!**

- Site Readiness Assessment complete (can be found in Assessment section of this Guide)
  - GE Healthcare Installation Specialist support
- Hold completion date: focus on Exam, Control & Equipment Rooms
- Complete the construction punch list
- Finalize delivery dates and times
- Verify Broadband connection / IP address

Customer Primary (GE Secondary)
  GE Primary (Customer Secondary)

System Delivery

Cycle < 1 day

- Final schedule notification to rigger (if required)
- GE Installation Specialist or Field Engineer support
- System delivery
- Unpacking / staging space required
- Verify loading dock availability
- Delivery route cleared and available

Installation & Calibration

Cycle 3 - 4 weeks  
(Depends on Innova System configuration and options)

- Mechanical Installation of Innova System
- Calibration by GE Healthcare Field Engineer
- Clean environment is necessary
- Install archival system
- Connect to Broadband (highspeed internet)
- Pull Hemodynamic cables (if applicable)

Applications Training & First Patient

Cycle < 1 week

- GE Healthcare Applications Specialist scheduled for on site training
- Review TiP Pre-Training materials provided by GE
- Select staff to participate in training
- Physician available during training
- Ancillary personnel support available to allow technologist participation
- TiP Education Center classes scheduled for technologists, if applicable
- Appropriate patient loads scheduled
- Identify mix of exam types appropriate to the practice

Customer Primary  
(GE Secondary)

GE Primary  
(Customer Secondary)

## Site Readiness Assessment

---

The Assessment checklists at the end of this Guide should be used by your project manager and your GE Healthcare Installation Specialist to determine if your site is ready for delivery of your Innova System. It is your project manager's responsibility to maintain the project schedule and communicate any changes.

These checklists are provided to give a summary of Innova specific items for you and your design and construction teams. GE Healthcare recommends using the Assessment checklist for guidance in planning your design and monitoring your build effort.

A comprehensive Pre-Installation Checklist is found in the GE Healthcare Pre-Installation Manual (PIM) and the Final Installation Drawings.

You can view and download the latest version of the GE Pre-Installation Manual electronically via:

<http://www.gehealthcare.com/company/docs/index.html>

Failure to provide any of the items by the agreed upon delivery date MAY result in:

- The inability to deliver the Innova System on the requested date
- Storage and re-delivery fees for the Innova System (at customer expense)
- Delay in System installation
- Rework or re-scheduling of contractors
- Delay in System availability for patient exams and earning revenue

**Thank you for your diligence in making sure the Assessment checklist is complete on time. Contact your GE Healthcare Installation Specialist with questions.**

## Assessment for System Delivery

---

**The following is an Assessment checklist of critical items that must be accomplished prior to the delivery of your new GE Healthcare Innova System:**

Note: This Assessment is available in checklist form in the 'Assessment List' section at the end of the document

- LC Base Plate level and meets specifications (may be an early delivery item)
- Table Base Plate level and meets specification (for Omega to Elegance Upgrade Only)
- Room construction must be complete with primer paint and must be dust free
- Ceiling and lighting fixtures installed and operational



- Lead shielding installed
- Phone line and phone for personnel communication installed and operational
- Broadband (highspeed internet) connection operational (or alternate 2<sup>nd</sup> phone line)
- Permanent power and lighting for the entire suite must be installed and operating (24x7)
- MDC installed and operational (if required)
- Perform required local inspections, where applicable
- Environmental conditions must meet specifications per the GE Healthcare Pre-Installation Manual (PIM)
- HVAC system installed and operational
- Conduits and raceways with dividers for System installed
- Delivery route must be mapped and cleared



- Site must be secure so Equipment and personnel will be safe
- Trash bins and dumpsters on site and accessible



## Process Details

---

The pages of this section contain additional information to explain the process steps outlined in the Process Flow section.

In addition, your site specific plan and design requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM) and Final Installation Drawings for your Innova System.

Please contact your GE Healthcare Installation Specialist if you have not yet received a copy of the PIM or, alternatively, you can view and download it electronically via this link:

<http://www.gehealthcare.com/company/docs/index.html>

Note: The page header process blocks in this section use the color scheme established in the Process Flow section.

 Customer Primary  
(GE Secondary)       GE Primary  
(Customer Secondary)

## Site Selection

There are several ways to accommodate your GE Innova System as a fixed installation at your site.

Some examples are the following:

- New Facility
- Building Addition
- Renovation
- Replacement of existing Innova System
- Leased Space
- Modular Building



New Facility



Renovation



Building Addition

## Site Selection (continued)

The specific site you select influences the complexity, schedule and cost of the project. Your GE Healthcare Installation Specialist will help you identify the best potential locations for optimal performance. GE Healthcare's Innova System generally incorporates three rooms (Exam, Control and Equipment) and connects to the rest of the site through the IT connections.

All siting needs should be shared between the Customer (including the end user, department administrator and facilities representative) and the GE Healthcare Installation Specialist.

Some questions to consider:

- What type of GE Innova System did you acquire?
- Will the Innova Exam Room need to be a sterile environment?
- Is the Innova System to be located at your existing facility, new independent clinic, medical office building, or leased space?
- Is there potential future expansion into the surrounding area?
- Is the location appropriate for Innova System weight, size, fringe field from adjacent MR Systems and other specific requirements in the Pre-Installation Manual (PIM)?
- What suite design provides the most efficient workflow for your staff and flow of patients (including proximity to other facility functions)?
- Is space available in your existing building to renovate?
- Are you replacing an existing Innova System (in existing room)?
- Is independent clinic 'constructed on site' or a modular building?



Leased Space



Building Addition

## Selecting Your Design and Construction Team

Selecting the right design and construction team is important to the outcome of your project. Each GE Innova System has unique and specific site preparation requirements. The design and construction professionals that you hire should refer to the site planning information that is provided by GE for your specific product.

When assessing the design professionals' and the contractors' qualifications, it is a good idea to consider the amount of experience they have with respect to site renovation, design and construction for an Innova System installation.

At this time you can decide on whether you will use the Design-Build approach or the Design-Bid-Build approach for your project:

### **Design-Build (D-B)**

For D-B you will be looking for a contractor that has design capability or a design team with construction capability. You will enter into a contract with only one company for all of the services. This method will eliminate the need for a bid cycle after construction drawings are complete. The D-B company will generally have a single point of contact for your project manager.

### **Design-Bid-Build (D-B-B)**

For D-B-B you will enter into a contract with the design teams as well as the general contractor. This approach may require additional project management from your staff to provide coordination among all of the parties where the Design-Build approach usually has only one single point of contact. This method will create the need for a bid cycle after construction drawings are complete.

Organizations similar to the American Institute of Architects (AIA), have various documents to use for questioning and qualifying the potential architects or contractors. Once you review the qualifications and select one or more companies to bid, they should be invited to a pre-bid meeting at the project location. This meeting will focus everyone on the scope and preliminary schedule of the project.

At your request, GE Healthcare will provide a list of suppliers (Associates Program) in your area that can provide these services, but final choice of contractors is yours.

**It is the customer's responsibility to evaluate potential design professionals or contractors for services.**

## Preliminary Floor Plan and Site Evaluation

---

Your GE Healthcare Installation Specialist will assist in gathering the necessary information to prepare a preliminary plan. Your site will need to be evaluated to determine placement of lead shielding (refer to the Pre-Installation Manual). You may need to review more than one location and room configuration to obtain the optimal location for your new System.

Some inputs / questions to consider:

### **Team Collaboration**

Identify your Site Review Team. For an effective site design, obtain all team and user inputs for work flow, patient flow, and facility layout.

### **Site Evaluation**

The selection of the exam area should be based on the following considerations:

- Room size (arm / table movement & patient loading)
- Floor loading capacity, as per your System's Pre-Installation Manual (PIM)
- Easy access to Emergency Off button
- Influence of the surrounding rooms
- Doctor's view, path from scrub area, sterile vs. non-sterile

**All specifications can be found in your GE Healthcare  
Pre-Installation Manual (PIM).**

## Preliminary Floor Plan and Site Evaluation (continued)

### **Site Evaluation (continued)**

The System delivery route and access point need to be reviewed. Review the site to determine where floor support should be placed along the delivery path during the delivery and installation of the System. If using an elevator or elevator shaft, check weight capacity and dimensions. Your structural engineer should design any required shoring.

This is also a good time to discuss the ceiling and lighting design requirements with your GE Installation Specialist, System users and your architect. Design requirements and special instructions must be discussed before room drawings are complete. This will allow for specific direction to be given to your architect.

**Consult your GE Healthcare Installation Specialist for questions concerning any collision or interference problems or the evaluation of your site.**

### **Ceiling Design considerations:**

- Lighting (Standard room lighting and surgical lighting)
- Ceiling mounted monitors
- Ceiling mounted medical gases
- Radiation Shield and Track Assembly
- Consideration to the design, travel and interference of ceiling fixtures
- 2-way voice intercom
- Other Ceiling fixtures

It is important to ensure access to the fluorescent light fixtures to allow the replacement of the light bulbs.

**You will receive the Preliminary Floor Plan from your GE Healthcare Installation Specialist.**

**We recommend that you review the plan with your entire Team.**

**In order for the GE Healthcare Final Installation Drawings to begin, you must provide written approval of the Preliminary Plan to your GE Installation Specialist.**

## Develop Preliminary Project Plan



Early project planning enables on time project execution.

The earlier you develop the plan, the earlier you can identify when your Innova System will be available for patient use, as well as any potential risks to your project and schedule.

Early in the process your team should:

### **Develop a preliminary project work scope and floor plan:**

- Get input from your architect, builder, facilities team, and end users (i.e. technologists) of the equipment, landlord (if applicable), etc.

**Inputs from the end user are critical at this time in the process**

- Review and consider unique elements for the installation of your new Innova System detailed in the GE Healthcare Pre-Installation Manual (PIM) and typical drawings.

### **Develop a preliminary project schedule:**

- The standard durations and dates for the major project work scope elements and events should be considered when developing your preliminary project schedule. The standard cycle times can be obtained from your supplier (i.e., HVAC, etc.)
- Your GE Healthcare Installation Specialist will assist you in preparing the initial project schedule for your site.

**The sample schedule (Gantt chart) in the Process Flow section of this Guide reflects many of the tasks you need to consider.**

## Develop Preliminary Project Plan (continued)



### **Develop a preliminary project schedule (cont.):**

- A written project schedule, even though it is preliminary, will help you establish an objective “first-use” date for your GE Healthcare Innova System.
- Identify the construction plan review, approval and permit processes so the correct durations can be included in the project schedule.
- Identify any required or potential zoning changes that are needed. Time required for such changes must be included in the project schedule.

### **Determine your construction costs:**

- These will vary based on type of construction, location and complexity.
- Any cost estimates should be obtained from your architect or contractor once your work scope and a preliminary or schematic floor plan are defined.

The scope and project schedule planning, along with your preliminary site layout, becomes the basis for your design and construction teams’ detailed planning of your project.

Use the scope and project schedule to obtain the required agreement and commitments by your entire Team, so your GE Healthcare Installation Specialist can accurately plan your System arrival date.

## Final Installation Drawings



Once approval of your Preliminary Plan is received, your GE Healthcare Installation Specialist will assist you and the GE installation design team to prepare the Final Installation Drawings, customized for your site.

The GE Healthcare Final Installation Drawings along with the Pre-Installation Manual (PIM) contain the detailed information your design and construction teams need to create their construction drawings and specifications.

### **Some key points to emphasize are:**

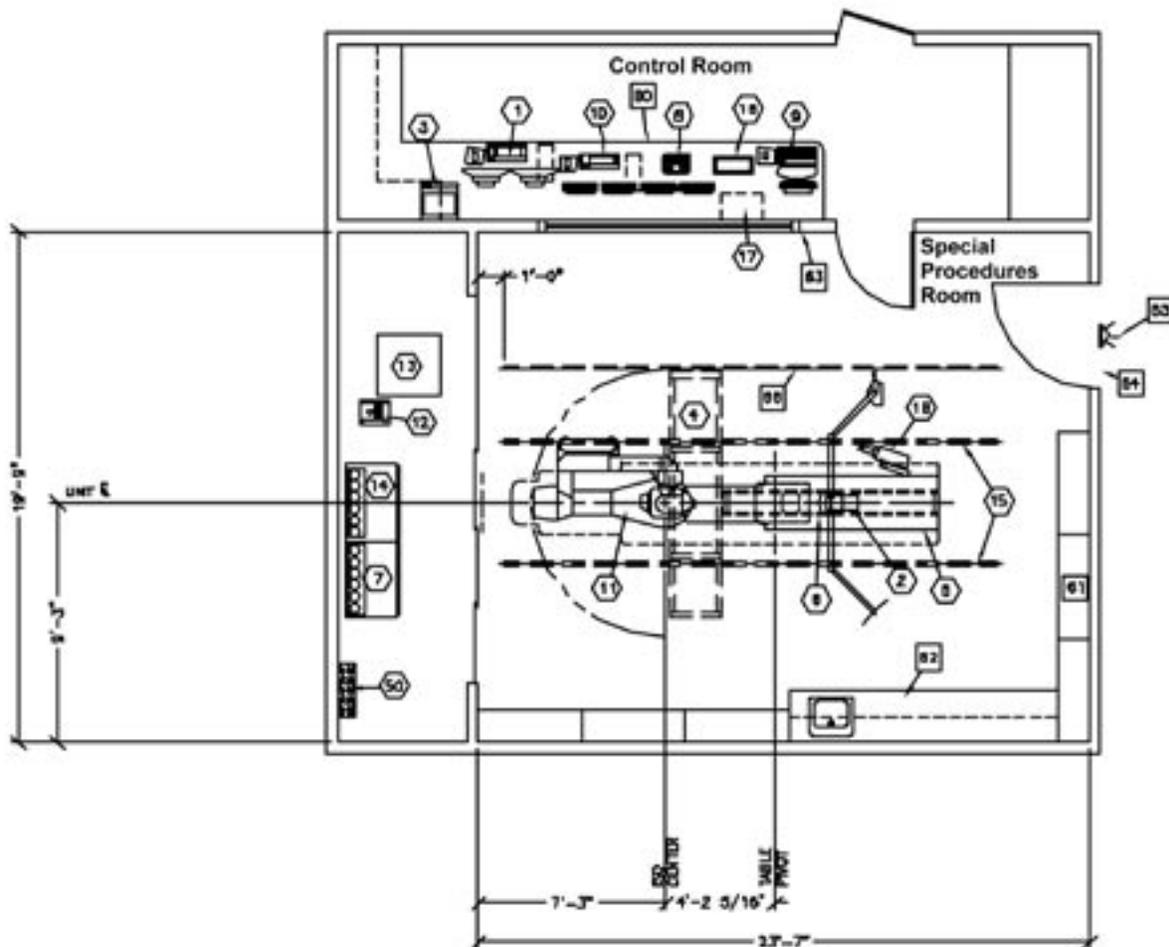
- GE Healthcare provides the drawings in AutoCAD format, for your design team's convenience. Hard copy drawings are also available.
- The Final Installation Drawings are not construction drawings. Your architect and engineers must create the necessary set of construction drawings and specifications for your site that meet local, state and national requirements.
- Your architect, engineer and contractor must carefully review and understand the requirement details in the GE Healthcare Pre-Installation Manual. Make sure your team has the latest revisions of the GE Healthcare documents.
- Coordinate any design changes with your GE Healthcare Installation Specialist. The Installation Drawings may need to be revised to accommodate any design and construction changes.

Final Installation Drawings (continued)

It is imperative to enlist an architect, engineer and contractor team with experience in medical facility design, construction and installation of Innova Systems.

Through our GE Healthcare Associates Program, your GE Installation Specialist can assist with contacts for contractors and design professionals in your area. If requested, the final selection of contractors is your decision.

The GE Healthcare Final Installation Drawings are not construction drawings.



Sample Portion of GE Final Installation Drawing

## Preparing Construction Drawings



The construction documents describe in detail exactly what is needed to prepare your site for the installation of your GE Healthcare Innova System. Proper and accurate planning at this stage will reduce issues during the Construction phase of the process.

It will be helpful for you to conduct a design kick-off meeting to get everyone focused on the project scope and schedule. Hold this meeting at the project site, if possible, to help facilitate any discussion around existing conditions. Invite the architect, engineers and contractor (if D-B) to this meeting, along with your facilities team. Your GE Healthcare Installation Specialist can attend these meetings to help answer any questions.

During the Design phase, consult the hospital or clinic staff, facility planning department and/or landlord (if applicable), to ensure any special requirements are met and any internal reviews and approvals are obtained.

The construction documents usually consist of design drawings and written specifications. Check with the local authorities responsible for the plan review and permit process, to determine if the drawings need to be sealed by licensed professionals. The responsible authorities may include the local planning and building departments, state planning and building department, or state department of health.

### **GE Healthcare Installation Drawings:**

The GE Final Installation Drawings are not construction drawings. Your design team will need to utilize the GE Final Installation Drawings and Pre-Installation Manual (PIM) during the Design portion of the process. The requirements need to be interpreted by your design professionals in order to meet any site specific constraints and any applicable building code requirements.

Your GE Healthcare Installation Specialist is available to answer any questions regarding the GE Installation Drawings. Please notify your GE Installation Specialist whenever the site undergoes and design changes, so revised Installations Drawings can be provided.

## Preparing Construction Drawings (continued)



### **GE Healthcare Installation Drawings (cont.):**

The GE Final Installation Drawings only detail the Innova System related needs for the Exam, Control and Equipment Rooms. Your architect determines the patient flow and other functional needs such as: dressing and waiting rooms, stretcher prep / hold / recovery areas, toilets, scrub area, viewing rooms, lighting, electrical outlets, etc.; as your specific site requirements dictate.

### **Building Codes and Regulatory Compliance**

The design team has the responsibility to meet all applicable building codes and ensure regulatory compliance, including the Americans with Disabilities Act (ADA), State Health Department requirements, and any other regional specific design guidelines, regulations or requirements.

Note: Particular regional requirements, such as seismic anchoring in California, may also apply. If needed, your GE Healthcare Installation Specialist can supply supporting information for seismic calculations.

The American Institute of Architects (AIA) Academy of Architecture for Health, along with assistance from the U.S. Department of Health and Human Services issues the document: “Guidelines for Design and Construction of Hospital and Health Care Facilities”.

This AIA document is very useful during the Design process. These guidelines are used by many health departments and the Joint Commission for the Accreditation of Healthcare Organizations (JCAHO) as a reference or standard when reviewing and approving plans and when surveying, licensing, certifying, or accrediting completed facilities. Copies are available from the AIA.

## Preparing Construction Drawings (continued)

### **Critical Design Elements:**

The following list of design element requirements often generates questions. Although, what follows is not a comprehensive list of all the design elements, it does contain items that require design team attention.

The requirements for these items can be found in either the site specific GE Final Installation Drawings, or the Innova Pre-Installation Manual.

- LC Base Plate levelness (may be an early delivery item)
- Table Base Plate level and meets specification (for Omega to Elegance Upgrade Only)
- HVAC for the Innova Scan suite - refer to design requirements in the GE Pre-Installation Manual
- Recommended room sizes and ceiling heights
- Clearances for Innova System delivery and service
- Floor loading and protecting floors (e.g. masonite) during the Innova delivery process
- Staging areas for unloading and rigging (if required)
- System anchoring
- Access flooring, ductwork and dividers for cable routing between the Exam, Control and Equipments Rooms
- GE Equipment cable length
- Junction box, electrical duct, raceway size and alternates
- Power feeder requirements with specific power regulation and grounding requirements. (See Critical Items section)
- Lead Shielding
- Main Disconnect (MDC) and Uninterruptible Power Supply (UPS) - if one is required
- Personnel telephone on 1<sup>st</sup> Phone line
- Broadband (highspeed) internet connectivity (or 2<sup>nd</sup> phone line)
- Network connectivity
- Sterile room requirements, if required
- Ceiling design
- Hemodynamic system requirements (i.e. Mac-Lab, Combo lab)

## Preparing Construction Drawings (continued)



### **Delivery Concerns for the Design Team:**

Finalize the Innova System delivery route during the Construction Drawing phase of the process. Make note of any doors to remove and floors to protect or reinforce on the Innova System delivery day. The weight capacity and dimensions of elevators to be used for delivery should be reviewed; and, if necessary, the elevator manufacturer should be consulted for any solutions needed.

Identify and reserve staging areas for construction materials and the delivery of the Innova System, both inside and outside the facility.

### **Plan Review and Approval:**

Once the construction documents are complete, they will need to be submitted for review to the planning department of the authority having jurisdiction for issuing permits for your location.

Your design team is responsible to meet all construction code and Innova System requirements. The design team has the responsibility to coordinate any plan reviews and necessary follow-ups with the planning department.

Note: Some jurisdictions require specific reviews during the Construction Drawing phase of the process.

## Plan Review and Permits

---

Once your architect(s) and engineers have completed the construction drawings and specifications, the drawings and specifications will need to be submitted for review to the planning department of the authority having jurisdiction for issuing permits for your location.

Your design team has the responsibility to prepare construction drawings and specifications to meet all applicable city, county, state, health department and/or national codes and regulations, as well as the specifications listed in the GE Healthcare Pre-Installation Manual (PIM).

This part of the process has high potential for project schedule impact. GE strongly recommends that you hire architects and engineers with experience in the medical field, and specifically Innova installation projects.

The project schedule contains many tasks that have the potential to create delays or require improvements, and the plan review cycle is one of them.

**The GE Healthcare Final Installation Drawings are not construction drawings and should not be used for permits.**

If you are using the Design-Bid-Build approach for your project, this period of Plan Review would be a good time to bid the construction work. The bidding process can take several weeks, depending on the complexity of the project, and this usually fits within the Plan Review cycle.

## Plan Review and Permits *(continued)*



The duration of the Plan Review process varies depending on your location and type of construction, potentially ranging from days to months. Plan review for projects in hospitals can take longer than projects in a commercial setting.

These review processes may require multiple stages of review at different completion percentages of the drawings and specifications. During the review process, follow-up submission and review may be required and this may impact the project schedule.

Once the plans have been reviewed and approved, your contractor will be able to obtain the appropriate permits.

There are some situations and jurisdictions where demolition permits are available. This allows for start of the on-site work prior to the actual construction, possibly improving the project schedule.

Your contractor must schedule inspections throughout the construction process. The authority having jurisdiction may require a final inspection. When the inspection is satisfactorily completed, a certificate of occupancy is issued. In some situations, the certificate of occupancy may be required before you can scan the first patient with your Innova System.

In addition to the necessary building permits, you may need to obtain a permit to close portions of the street or sidewalk to accommodate System delivery vehicles. Also, if you are using modular buildings for your site, you may need transportation permits. You must determine the permit requirements for your specific site and situation.

## Pre-Construction Review Meeting



Once you obtain the permits, you are ready to begin construction. Early planning, agreement and commitment by all your project participants will help focus on the common goal of an on-time delivery and installation.

A pre-construction review meeting, at the project location, is a critical step to getting the entire team focused. This meeting is a team collaboration and should include your representative, facilities or landlord representative (if applicable), the design team, the contractor's project manager and superintendent and your GE Healthcare Installation Specialist.

We recommend including the following in your review meeting:

- Review the Site Readiness Assessment checklist, found in the Assessment List section of this Guide, which contains the list of tasks to be completed prior to delivery of the Innova System.
- Finalize the construction schedule. Recommend: focus on completion of the Innova Suite in order to meet delivery dates.
- Set delivery dates for the Innova System and any early delivery items.
- Review the construction and delivery plan with your site team to determine the impact to any of the site operations or services during construction, delivery and installation for your new Innova System.
- Review the scope of the project, and its impact on project schedule durations.
- Highlight critical path events and long lead items, such as lead shielding, structural reinforcement and environment.
- Identify roles and responsibilities for the shop drawings and submittals review process, in order to avoid schedule delays.
- Review the ceiling design with your GE Installation Specialist and architect.

## Pre-Construction Review Meeting (continued)



Review meeting outline (cont):

- Review the GE Healthcare Final Installation Drawings and construction drawings in detail with all sub-contractors to check for any issues (e.g., delivery requirements, corridor widths, etc).
- Review and identify the Innova System delivery route. Will you need riggers or laborers to move the System components (on transport dollies) into the facility? If a local street access permit is required, arrange to obtain one for the projected delivery date.

The contractor is responsible for establishing the schedule and adherence to it. Use this meeting to make sure all project participants commit to the current project schedule. If the parties cannot reach a consensus during this meeting, schedule a timely follow-up meeting to ensure an on-time delivery.

Publish the final written project schedule and distribute it to all members of the project team, including the GE Installation Specialist. The project schedule determines the start of the manufacturing process, at GE, for your new Innova System.

The customer project leader should plan and hold regular project team meetings to review project progress and issues. This is a key element to ensuring success of the project.

**If there are any questions please contact your  
GE Healthcare Installation Specialist.**

## Construction



The construction at your site is managed by your design and construction team. If you are using the Design-Build method, you will most likely have a project manager and superintendent managing all aspects of the project.

If you are using the Design-Bid-Build approach, you will probably have a separate contact for the design and construction aspects of the project and will need someone to manage the interaction between them.

Construction related items to remember:

- Monitor Site Readiness Assessment checklist periodically
- LC Base Plate levelness is critical
- Table Base Plate levelness is critical (for Omega to Elegance Upgrade Only)
- GE Installation Specialist is available for Q&A
- Project complexity influences schedule times and risk
- Inform the GE Installation Specialist on design changes relative to the Innova System and associated Equipment
- Confirm System delivery route and scheduling of the rigger (if needed)
- Coordinate installation of Broadband (highspeed) internet connection
- Unistrut meets requirements given in the GE Pre-Installation Manual

Project schedule related items to remember:

- Provide critical status updates to the GE Installation Specialist
- Governmental Inspections (permits, department of health, etc.)
- Hold completion date, and focus on Exam, Control and Equipment Rooms

**Contact your GE Installation Specialist when issues or changes in the design, floor plan, or project schedule occur.**

## Site Ready for Delivery!

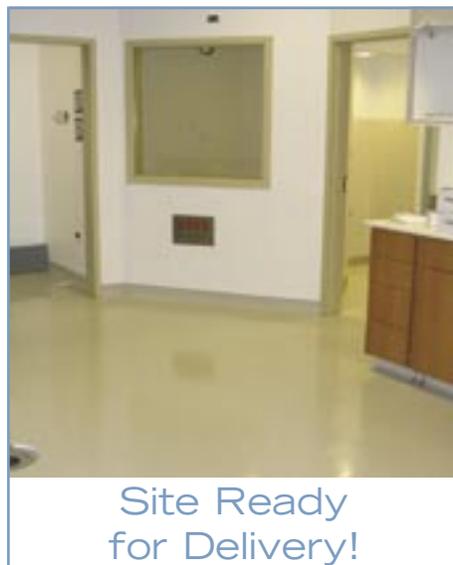
The Site Readiness for the Innova System delivery is coordinated among you, your contractor and your GE Installation Specialist. Use the Site Readiness Assessment checklist, located in the Assessment List section of this Guide, to monitor the Site Readiness. You and your contractor need to confirm the Site Readiness schedule no later than 2 weeks prior to the scheduled Innova System delivery date. The GE Healthcare manufacturing department requires this confirmation to coordinate the manufacturing integration and shipment of the System.

The GE Healthcare Pre-Installation Manual contains a comprehensive, Innova System specific Pre-Installation Checklist.

GE Healthcare needs the following information from you:

- Confirmation of final System delivery date
- Completed Site Readiness Assessment

Contact your GE Installation Specialist concerning issues



## Innova System Delivery

The Innova System's delivery includes all of the Innova System equipment/electronics for the Exam, Control and Equipment Rooms. The delivery is coordinated among you, your contractor and your GE Installation Specialist. Final communications should be done to ensure that the loading dock is available, the delivery route is cleared for System delivery, the cath lab room is cleared of all contractor equipment, and the networking requirements are finalized with the GE Healthcare Field Engineer. There are other preparations beyond Site Readiness that are coordinated by your GE Installation Specialist.

These include:

- Scheduling GE Healthcare early delivery items
- Scheduling specific day of System arrival
- Scheduling of riggers, if necessary
  - (Hiring rigger is the responsibility of Customer; GE Installation Specialist assists in planning)
- Clearing of delivery pathways
- Identifying space for staging the delivered Equipment
- Receipt and Sign-off of shipment
- Obtain any required delivery permits or street use permits

Contact your GE Installation Specialist concerning issues

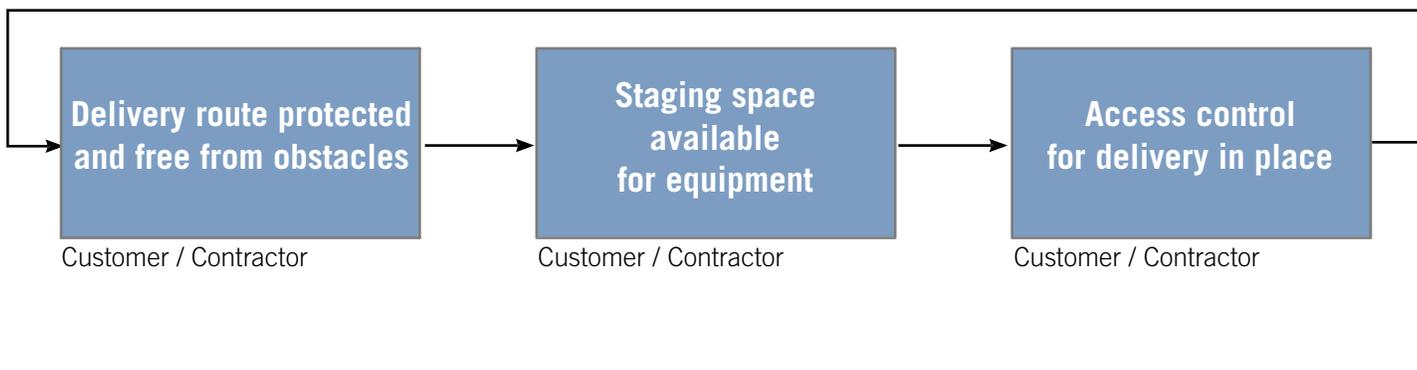


Innova Delivery from Truck

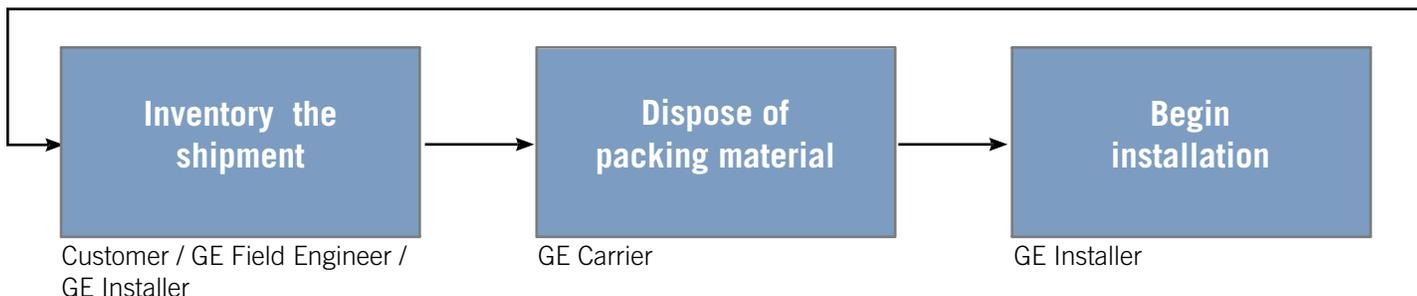
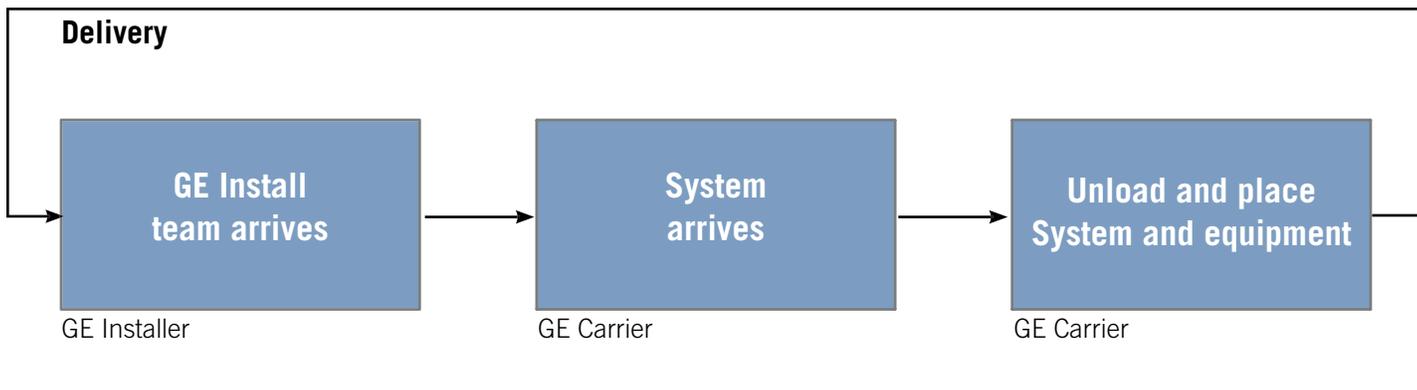
Innova System Delivery (continued)

The following flow chart illustrates the sequence of events prior to, and during, the delivery of the Innova System components.

**Preparations**



**Delivery**



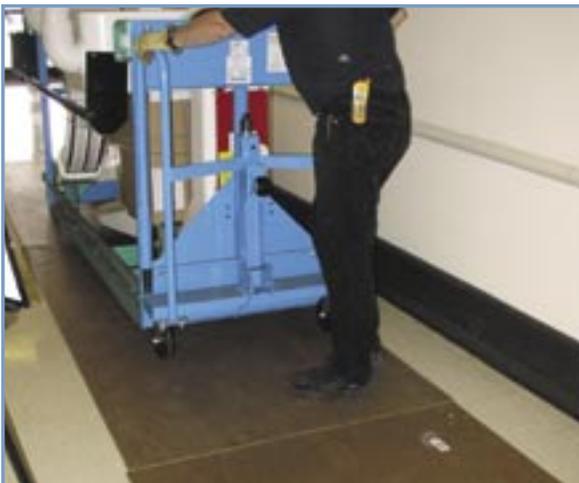
Innova System Delivery (continued)



Equipment Staging Area



Equipment Staging Area



Masonite Boards for Floor Protection



System Delivery with Dollies

Innova System Delivery (continued)



Delivery Through Doorway



Equipment Delivery



Completed Room

## Installation and Calibration

Once the System arrives at your site, a team of GE Installers will arrive to install and connect the System components. A GE Field Engineer is assigned to calibrate and test your Innova System to GE Healthcare specifications.

Your Broadband (highspeed internet) service needs to be operational during this phase of your installation. This enables the enhanced diagnostic and applications support capabilities for your System and its operation. Broadband connections are strongly recommended.

Schedule any applicable acceptance testing by your team to immediately follow the System calibration and testing phase. If you require in-house testing of the System, make sure you wait to schedule applications training until you complete the in-house testing phase. Coordinate the testing schedule with your GE Installation Specialist and GE Field Engineer, to prevent delays and last minute cancellations.

## Application Training and First Patient

GE Healthcare's TiP "Training in Partnership" clinical Applications training offerings enable you to optimize your GE System at its highest performance. The GE TiP Applications team will contact you to set up your training.

Multiple Training Choices are designed in the TiP program and can be obtained from your GE sales representative. The "Partnership" is your level of engagement in the training process along with GE Healthcare's commitment to training.

Customers who plan and allow for the recommended time to train radiology technicians and Radiologists have the highest satisfaction and efficiency in the use of their new System. Your teams' level of engagement and dedication to the training process plays a key role in the use of your new System.

All of our TiP offerings provide "Continuing Education" (CE) credits to your staff if they follow the recommended training curriculum. These offerings will optimize image quality and improve productivity. For more information on TiP Applications, please visit:

<http://www.gehealthcare.com/education/tip/index.html>

**Now you are ready to exam patients!**



## Summaries of Critical Items

---

This section contains Summaries of Critical Items to optimize the delivery and installation of your new Innova System.

These are provided to give a high level summary of Innova specific items to you and your design and construction teams.

Your site specific plan and design also requires the use of the full set of planning information and specifications found in the GE Healthcare Pre-Installation Manual (PIM) and Final Installation Drawings for your Innova System.

Please contact your GE Installation Specialist if you have not yet received a copy of the Pre-Installation Manual (PIM) or, alternatively, you can view and download the PIM electronically via this link:

<http://www.gehealthcare.com/company/docs/index.html>

## Broadband and Network Connectivity

---

“GE Healthcare Remote Services Broadband”

**EQUALS**

A Secure Virtual Private Network (VPN)  
Over Your Highspeed Internet Connection

### **Broadband Highlights**

- High productivity, decreased costly downtime
- Proactively addresses security
  - Customer controlled and auditable
  - Secure encrypted transactions
- Improved speed and reliability vs. modem
- Single Point Access – reduce telecom costs
- All IP-based products are compatible
- Virtual applications assistance and training
- Remote diagnosis

Your GE Installation Specialist can start you on the path to Broadband. You will need to provide the name of your facility Information Technology contact person to your GE Installation Specialist. This will initiate the GE Healthcare Headquarters process to assist you in getting ready for Broadband connectivity at the time of System Delivery.

### **If Customer is not Broadband or VPN ready**

- GE Healthcare can provide service for a fee to set-up and connect
- If Broadband will not be provided, you have the responsibility to provide a dedicated analog phone line for modem use.

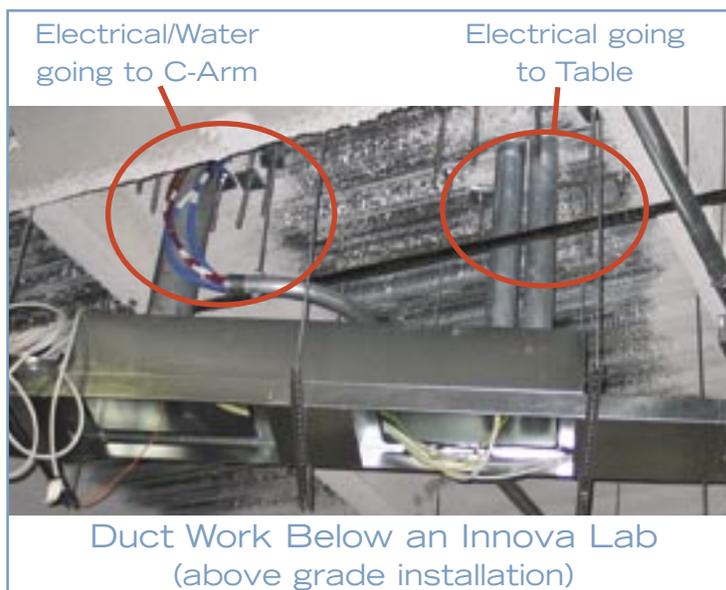
## Room Preparation

**Innova Positioner Base Plate & Electrical/Water Interface Kits**

To ensure proper Innova C-Arm installation, the Base Plate must be completely level. A base plate kit will be sent. This kit includes a template for the contractor to use for coring and/or drilling the mounting holes. It is the customer's responsibility to have the holes drilled and keep them clean. The attachment method and special considerations should be identified at this time as well. The customer should then coordinate activities with the GE Installation Specialist, structural engineer, and the Mechanical Install team. The Mechanical Install team will pour grout on the prepared floor to ensure levelness and provide clearance for installation. The Mechanical Install team will then install and torque the mounting hardware; if there are any exceptions to the room drawing requirements.

An electrical/water interface kit will be furnished to keep the electrical cables and water cooling hoses separated. You must select from either a Cable Conduit On-Grade Kit or an Inner Base Plate Sleeve Kit based on your equipment anchoring plans. Both of these interface kits are designed to support the Innova Positioner Base Plate. Consult with your GE Healthcare Installation Specialist for the kit that will best suit your particular electrical/water routing method. It is the customer's responsibility to install one of these kits and connect it to the separate electrical/water raceway / conduit system designed for this suite.

More detailed information can be found in the GE Healthcare Pre-Installation Manual (PIM).



## Room Preparation (continued)

**Elegance Table Base Plate**

The Elegance Table Base Plate should only be used when initially installing an Omega 5 Angio table and then swapping out for the Elegance tilting table. This will allow for the tables to be swapped out without changing raceways, conduits or mounting. The Table Plate must be level and flush with the finished floor. This Table Plate is NOT needed if an Elegance Table is being installed initially or if an Omega 5 table will not be swapped out.

**Room Size**

Accurately measuring room size is critical in siting your new GE Innova System. Usually three rooms are needed in your Innova Suite: Exam, Control, and Equipment Rooms. It is important to remember the space needed to swing the C-Arm, move the table and load the patient. Please refer to the Pre-Installation Manual (PIM) for room specifications.

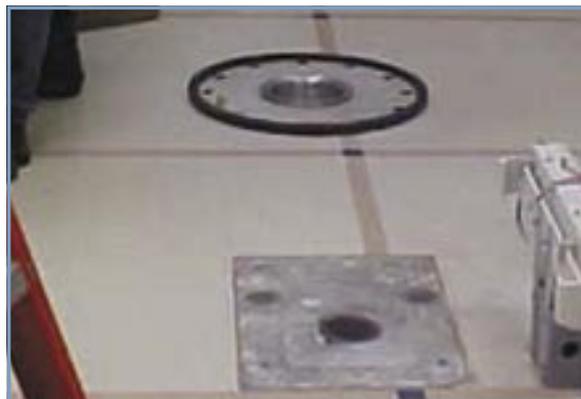
**Unistrut**

Proper measuring of the Universal Grid and the Unistrut is critical to proper structural steel placement. Please refer to the Pre-Installation Manual (PIM) for measurements and specifications.

More detailed information can be found in the GE Healthcare Pre-Installation Manual (PIM).



Elegance Table  
Base Plate



Innova Base Plate  
& Omega 5 Table  
Contact Area

## Mechanical / Electrical Infrastructure

Your Innova System has specific power, cooling and HVAC requirements. Specifications are given in the GE Healthcare Pre-Installation Manual for power supply, HVAC, and environmental conditions. These services must be available at the time of the Innova System delivery.

Procurement and installation lead times for these items average 8-10 weeks; check with your supplier. Your GE Installation Specialist can assist with interpretation of environment requirements and provide contacts for equipment sources.



Main Disconnect Panel (MDP) or Power Distribution Box (PDB)



Cabinet in Equipment Room

## Room Shielding / Background Radiation

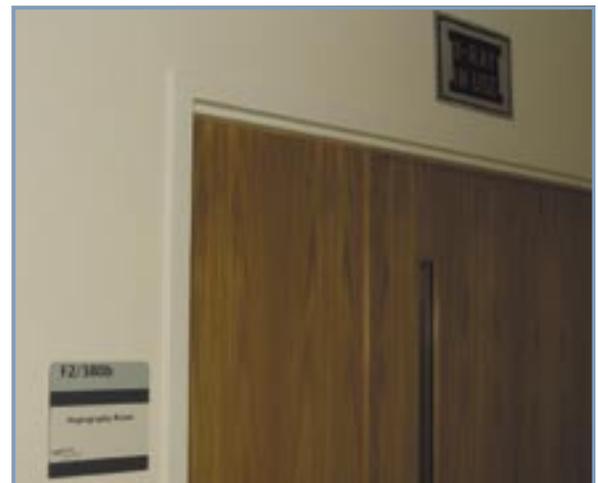
Appropriate barriers such as walls and lead shielding must be installed to protect staff and other patients from unnecessary exposure to X-ray radiation.

Please refer to your System's Pre-Installation Manuals (PIM) for details on shielding requirements and proximities to other rooms.

**"X-ray in Use" lights are required at X-ray rooms**



"X-ray in Use" Light



Door Signage

## Power and Grounding

---

Innova projects can involve extensive electrical work. The Innova System requires that electrical raceways, conduits, dividers and/or access flooring be installed for the cables that interconnect the various system components.

The GE Final Installation Drawings for your site will show a diagram of these interconnects. The interconnect diagram describes the cable lengths provided with the system. The GE Healthcare Pre-Installation Manual (PIM) gives the minimum plug pulling diameter for each cable and cross-sectional area for cable groups. It is important that this information be considered during the design and layout of the raceway and junction boxes. Alternate solutions should be discussed with your GE Installation Specialist.

Diagnostic imaging equipment has become increasingly sensitive to power quality and proper electrical grounding. This sensitivity is influenced by the increased speed and complexity of the System electronics. In order to assure optimal System performance and avoid issues related to image quality and reliability, it is extremely important to meet the power requirements of the diagnostic imaging equipment.

The wire size of the power feeder conductors must be carefully determined by the electrical engineer to ensure that the GE Innova System will operate as designed. Most GE Final Installation Drawings contain a feeder table chart listing the recommended wire sizes for each of the conductors. The wire sizes listed may exceed the National Electrical Code (NEC) requirements, however, the sizes in the chart must be followed to ensure that an acceptable level of impedance is achieved.

There are often other questions regarding the following list of critical design elements during the design and construction phases of the process. Although this is not a comprehensive list of all potential items, your electrical engineer and electrical contractor will need to focus on these.

- Design to meet current version of the GE requirements and NEC for your site
- Proper grounding materials along the ground path
- Ensure dividers are laid properly
- Proper ground and neutral bonding
- Size of ground wire
- Ground and circuit conductors run in the same conduit
- Single ground in the facility
- Ensure that wire termination connections are tight
- Ensure wires are terminated properly
- Keep water and electrical cables separate

## Accessories

With Innova Systems, there are often accessories that may influence the site preparation for your System. Although this is not a comprehensive list of all accessories available, it does contain some that require your design team's attention.

The requirements for these items can be found in either the site specific GE Final Installation Drawings or the Pre-Installation Manual (PIM) for your specific Innova System.

- Surgical lamps
- Injectors
- Radiation shields
- Patient monitoring
  - Junction box aside table
  - Equipment in Control Room
- Medical gases
  - Can be mounted aside from table, ceiling, wall
- Hemodynamic systems (i.e. GE's Mac-Lab)



Med Gases  
Under Table



Injector

Mac-Lab, CardioLab I.T.

For computerized patient monitoring in an Innova Lab, the Mac-Lab / CardioLab I.T. system is GE's Hemodynamic, Electro Physiologic information system. Connectivity between the Innova and I.T. system enables bidirectional communication for complete and accurate clinical data reporting.

Please refer to your Mac-Lab / CardioLab I.T. Pre-Installation Manual (PIM) for system requirements and specifications.

If the optional workstation is not purchased, adequate space must be provided by the customer for the I.T. system installation. It is also important to identify power and network requirements for the I.T. system.

The keyboard, mouse, monitors, printer and computer must be located in close proximity to the integrated electronics box for power and communication connectivity, due to the limited cable lengths.



Installed, Optional Work Station



Installed, Optional Work Station

### Mac-Lab, CardioLab I.T. (continued)

There are many components involved in the I. T. system. Although this is not a comprehensive list, it does identify key items to consider.

- Conduit from Control Room to patient table for Tram and or Amp cables
- Tram and or Amp require isolated power at the patient table
- Isolated power for audible indicators in patient area
- If acquired, space and conduit needed for RMOT
- Remote system monitor placement
- Space for servers outside of control and patient area
- Special 30 amp twist-lock outlet for UPS (NEMA L5 - 30P)
- Static I.P. Addresses for all servers and acquisition systems
- Fulfill VPN or other remote service requirements
- 100 mb connectivity between servers and workstations

Below are some of the the backend components that complete the Mac-Lab / CardioLab I.T. system.



Server Rack



CVIS Server



Rack Mounted UPS

Gallery of Additional Site Readiness Pictures



Detector Shipping and Packaging



Delivery Crate



Unistrut

Stationary Rails

Bridge Rails

Gallery of Additional Site Readiness Pictures



X-ray Hand Switch; Injector;  
Emergency Power Off  
(Left to Right)



Caulk Protection



Cath Lab Cabinets



Surgical Light

Gallery of Additional Site Readiness Pictures



Emergency Off and Remote Lighting

Detector Conditioner



X-ray Tube Chiller

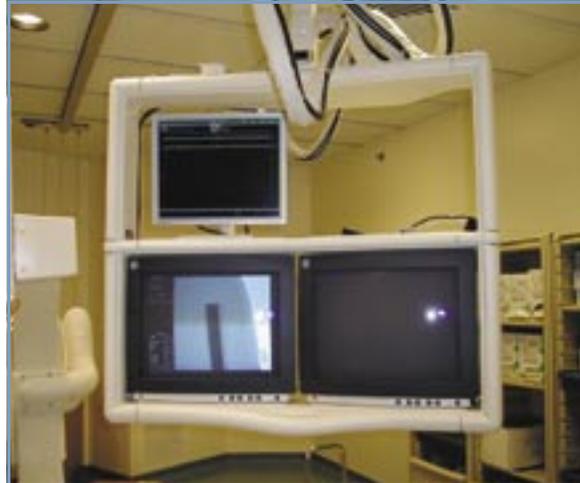


Med Gas Available on Wall

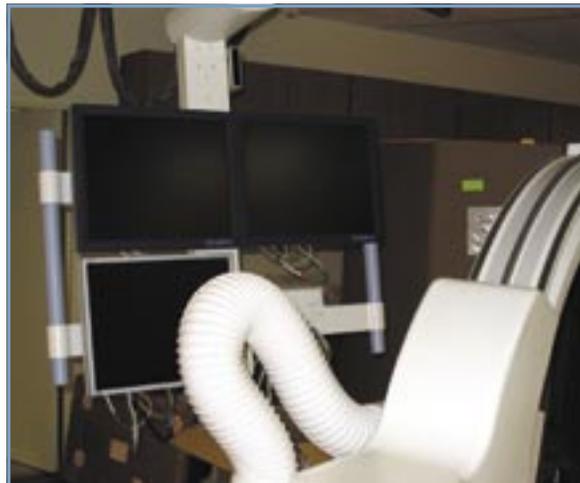


Med Gas

Gallery of Additional Site Readiness Pictures



Analog (CRT)  
Monitors



Flat Panel  
(LCD) Monitors

Site Readiness Assessment for Innova System Delivery

**Critical items to be completed before delivery**

**Check when complete**

**Notes / Issues / Action Plan**

Construction complete with primer paint and must be dust free

LC Base Plate / grout level and placed

Lead shielding installed

Table Base Plate, placed and level (for future Elegance upgrade only)

Main Disconnect Panel (MDP) installed, power connected and available

Personnel phone line and phone installed and operational

Broadband (highspeed) internet connection (or alt. phone line) operational

X-ray license required on site

Unistrut and ceiling support structure installed and complete

Perform required local inspections

HVAC installed and operational for Equipment Room at a minimum

Conduits / dividers / raceways / plumbing installed

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.











Site Readiness Assessment for Innova System Delivery

**Critical items to be completed before delivery**

**Check when complete**

**Notes / Issues / Action Plan**

Construction complete with primer paint and must be dust free

LC Base Plate / grout level and placed

Lead shielding installed

Table Base Plate, placed and level (for future Elegance upgrade only)

Main Disconnect Panel (MDP) installed, power connected and available

Personnel phone line and phone installed and operational

Broadband (highspeed) internet connection (or alt. phone line) operational

X-ray license required on site

Unistrut and ceiling support structure installed and complete

Perform required local inspections

HVAC installed and operational for Equipment Room at a minimum

Conduits / dividers / raceways / plumbing installed

For detailed description of requirements for each item, refer to the GE Pre-Installation Manual (PIM) for your product.



## Terminology/Acronyms

---

A/E.....	Architect and Engineer
AIA.....	American Institute of Architects
AW.....	Advantage Windows OR Analysis Workstation
AutoCAD.....	Computer program to create drawings
CON.....	Certificate of Need
CT.....	Computed Tomography
D-B.....	Design-Build
D-B-B.....	Design-Bid-Build
FDG.....	Fluorodeoxyglucose, (isotope)
GE.....	General Electric Company
Guide.....	Site Readiness QuickStart Guide
HVAC.....	Heating, Ventilation and Air Conditioning
IP.....	Internet Protocol
MR.....	Magnetic Resonance
NEC.....	National Electrical Code
NRC.....	Nuclear Regulatory Commission
PACS.....	Picture and Archiving Communications System
PET.....	Positron Emission Tomography
Innova.....	Positron Emission Tomography with Computed Tomography
PIM.....	Pre-Installation Manual
Q&A.....	Questions and Answers
System.....	Scanner and all accompanying electronics
TiP.....	Training in Partnership
UPS.....	Uninterruptible Power Supply
VPN.....	Virtual Private Network





General Electric Company reserves the right to make changes to this document and features shown herein, or discontinue the document at any time without notice or obligation. The information contained in this document is GE Proprietary Information. It is property of GE and shall not be reproduced without the express written consent of GE. Contact your GE Representative for the most current information.

© 2004 General Electric Company. All Rights Reserved.  
GE Medical Systems, a General Electric company,  
going to market as GE Healthcare.

03-9236 07/04 Printed in USA

imagination at work



Internet – [gehealthcare.com](http://gehealthcare.com)  
GE Healthcare  
P.O. Box 414, Milwaukee, Wisconsin 53201 U.S.A.