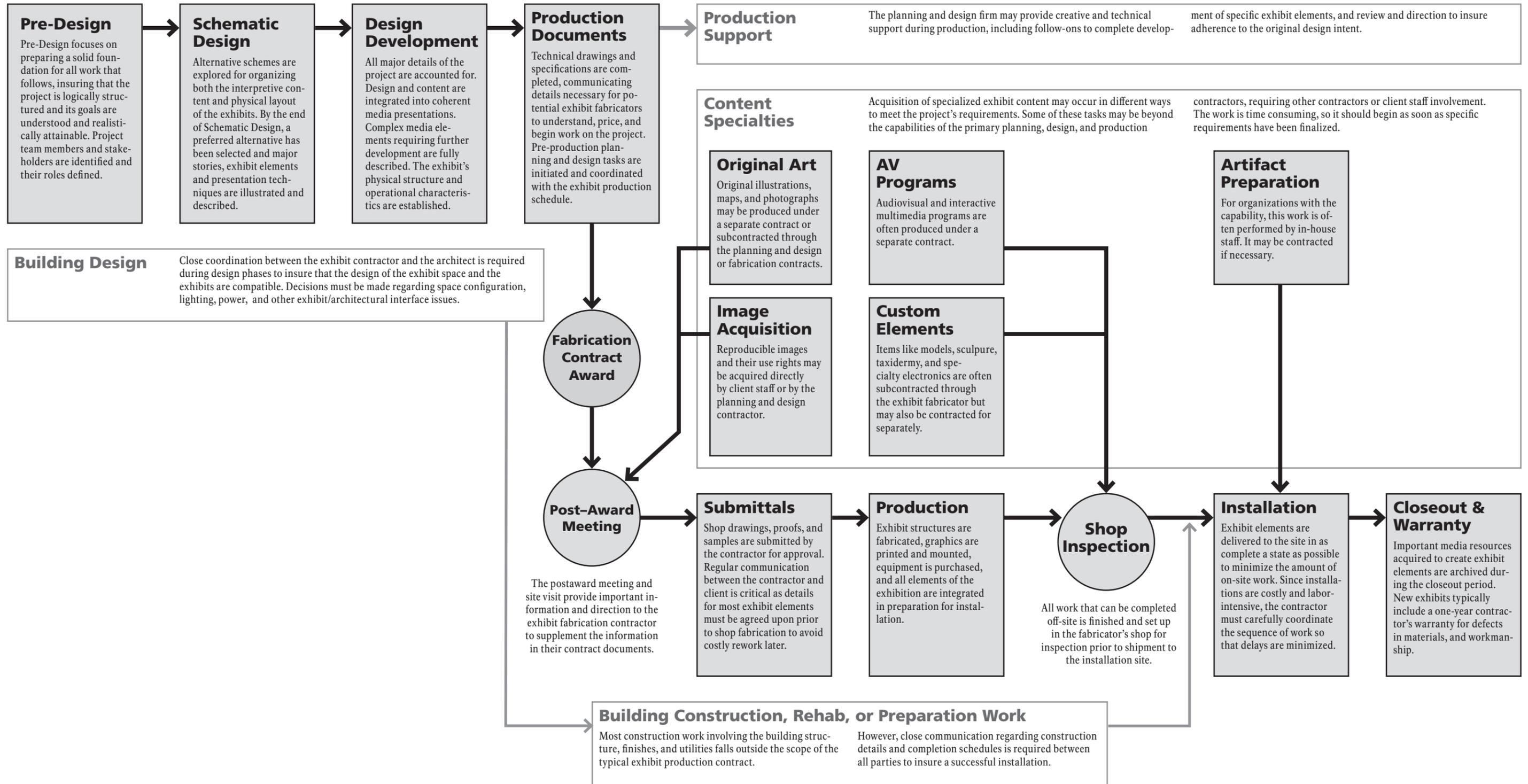




Museum and Visitor Center Exhibit Planning, Design, and Fabrication Process

Flowchart (For full requirements see NPS museum interpretive exhibit planning, design, and fabrication contracts and specifications)





Museum and Visitor Center Exhibit Planning and Design Process

Summary Description (For full requirements see NPS museum interpretive exhibit planning, design, and fabrication contracts and specifications)

Pre-Design

Pre-Design focuses on preparing a solid foundation for all work that follows, insuring that the project is logically structured and its goals are understood and realistically attainable. Project team members and stakeholders are identified and their roles defined. Pre-Design includes pre- and post- contract award phases:

Pre-Contract

- Scoping study at site (if required)
- In-house team reviews project status :
 - Planning documents
 - Goals and objectives
 - Budget, schedule, admin. requirements
- Project scope of work developed
- P&D contract is awarded

Post-Award

- Contractor reviews gov. furnished materials
- On-site orientation and planning workshop
- Identify existing media resources
 - Prepare resource package abstract.
- Develop project brief:
 - Project overview, including updated information and understandings
 - Identify interpretive themes and objectives
 - Analyze project goals, media budget, schedule, and all other known issues affecting the development and successful completion of the project
- Front-end evaluation (if required)

Schematic Design

Alternative schemes are explored for organizing both the interpretive content and physical layout of the exhibits. By the end of Schematic Design, a preferred alternative has been selected and major stories, exhibit elements and presentation techniques are illustrated and described. Schematic Design includes two sub-phases:

Schematic I

- Content research
- Resource package I (organized by themes)
- SDI report with design alternatives:
 - Bubble diagrams
 - Written description of exhibit scenes
 - Preliminary sketches
 - Class B cost estimates and life-cycle cost goals
- NPS value analysis process (if required)

Schematic II

- SDII report developing preferred alternative:
 - Content outline consisting of scenes and content groups
 - Floor plan with scenes and content groups identified
 - Conceptual elevations/renderings/visualizations
 - Universal design and accessibility approaches
 - Resource package level II organized according to scenes
 - Updated class B and life-cycle cost estimates for preferred alternative

Design Development

All major details of the project are accounted for. Design and content are integrated into coherent media presentations. Complex media elements requiring further development are fully described. The exhibit's physical structure and operational characteristics are established. Design Development includes two sub-phases:

Design Development I

- Draft DDI content outline (by content group)
 - Text titles and descriptions
 - Graphic layout drafts
 - Graphic style, typography, color, finishes
 - Major exhibit elements documented
- Draft DDI exhibit drawings
 - Detailed exhibit plan; arch. requirements
 - Content group elevations / visualizations
- DDI comprehensive report
 - Updated content outline with draft script
 - Updated exhibit drawing package
 - Material, color, finish sample board

Design Development II

- Draft DDII content & specification package
 - Content schedules
 - AV media treatments and equip specs
 - Specialty element reference packages
- Draft DDII graphic layout package with text
- Draft DDII exhibit drawings (plan elev. detail)
- Draft DDII class B and life-cycle cost estimates
- Update DDII documents per comments
- Formative evaluation if required

Production Documents

Technical drawings and specifications are completed, communicating details necessary for potential exhibit fabricators to understand, price, and begin work on the project. Pre-Production planning and design tasks are initiated and coordinated with the exhibit fabrication schedule. This phase includes these major tasks:

Production Documents I

- PD exhibit drawings
- PD content & specification package
 - Content Schedules and supporting material
 - Technical Specs/cut sheets for AV equip, lighting, exhibit specialties
- PDI graphic layout package
- Revised material and finish samples
- Class A production estimate and updated life-cycle cost estimate

Production Documents II

- Develop completion schedule
- Acquire/prepare production scans
- Proofread/correct production text
- Prepare production-ready files
- Revise exhibit drawings/content & specifications package as necessary
- Provide content data in database readable format
- Prepare Use-Rights Documentation Package with signed original content licenses

Production Support

Work in this phase includes creative and technical support during fabrication of the project, including Planning and Design Follow-ons required to complete development of specific exhibit elements, and Fabrication Support to insure adherence to the project's design intent. Specific tasks vary by project and may include:

Planning and Design Follow-ons

- Prepare all design and content revisions required for production.
- Create original graphic content including:
 - Original illustrations
 - Original photography
 - Original and adapted maps
- Provide creative direction to specialty contractors including:
 - Illustrators
 - Photographers
 - Model makers
 - AV and interactive producers

Fabrication/Installation Support

- Review and comment on exhibit fabricator's submittals including:
 - Shop drawings
 - Samples
- Participate in shop inspections
- Installation support including:
 - On-site art direction
 - Focusing of lighting fixtures
- Update content schedules/data fields
- Support summative/remedial evaluation



Museum and Visitor Center Exhibit Fabrication Process

Summary Description (For full requirements see NPS museum interpretive exhibit planning, design, and fabrication contracts and specifications)

Postaward

The Postaward Meeting and Site Visit provide important information and direction to the exhibit fabrication contractor to supplement the information in their contract documents. It is usually accomplished in one work day.

Typical Agenda for Postaward Meeting

- Conduct a general review of the project, including schedule.
- Review exhibit design. Discuss contractor concerns or questions.
- Provide government-furnished reference materials to contractor. Conduct a review of these references
- Contractor documents exhibit space by taking measurements, reference photographs, and notes on existing conditions. Potential problems are identified.
- Contractor inspects, measures, and takes reference photographs of artifacts to be mounted by the contractor.

Submittals

Shop drawings, proofs, and samples are submitted by the contractor for approval. Regular communication between the contractor and client is critical as details for most exhibit elements must be agreed upon prior to shop fabrication to avoid costly rework later.

Typical Submittals

- Fabrication details (shop drawings): These add required construction detailing not included in the original design drawings.
- Color and materials samples: There may be slight changes in colors and materials from the original design, associated with the fabrication drawings.
- Catalog Cuts: Manufacturer's information from printed or on-line catalogs.
- Graphic Proofs: Print-outs of digital graphics for review of text and visual effect of colors, photos and art. Proofs may be in a different output than the final media, or at a smaller scale. Consequently, other samples may be needed to check actual colors or other characteristics.
- Audiovisual technical drawings: Requirements for power and signal wiring and other technical details for AV equipment installation.

Fabrication

Most exhibit elements are fabricated either in the contractor's shop or by specialty subcontractors. Complex project management skills are required to coordinate production of graphics, 3-D structures, electronic media, lighting, and curatorial elements.

Typical Elements to be Fabricated or Purchased

- Preparation of production digital graphic files and output of digital graphics.
- Fabrication of structures, including artifact cases, panels, walls, platforms, information desks, benches, audiovisual kiosks, etc.
- Models, including scale models, sculpted or cast human figures, natural history models, taxidermy or freeze dried animals, architectural models, mechanical interactive exhibits.
- Fabrication of custom artifact mounting hardware.
- The contractor acquires audiovisual hardware and tests it in their shop, prior to installation.

Building Prep

Most changes to the building structure, finishes, and utilities fall outside the scope of the typical exhibit fabrication contract. However, detailed coordination between the exhibit contractor and those responsible for building prep work is required to insure a successful installation.

Typical Building Preparation Elements

- Demolition/removal of old exhibits or other furnishings.
- New finishes for walls, floors, ceilings, and trim work as required.
- Changes or additions to electrical circuits, outlets, conduit, fire alarms, emergency exit lights, security system, and other work requiring a licensed electrician.
- Changes or additions to room lighting, such as installation of track lighting for the exhibits.
- Preparation of space for audiovisual equipment closet; installation of conduit for audiovisual equipment wiring.
- Changes to HVAC system to increase capacity when needed, and to move vents, ducts, or thermostats to accommodate new exhibit structures.

Installation

During this phase, the goal is to deliver the exhibit elements in as complete a state as possible and minimize the amount of on-site work to be done. Installations are costly and labor-intensive. The contractor must carefully coordinate the sequence of installation so that delays are minimized.

Typical Work During the Exhibit Installation

- Minor building prep work not previously completed by others.
- Delivery of exhibits. Set up staging area for unloaded exhibit elements.
- Install large structures, such as platforms, walls, cases, etc.
- Install large graphic panels and murals.
- Install smaller graphics, AV equipment, models, interactive exhibits.
- Clean work site of debris and dust, clean artifact cases, install artifacts, perform all other conservation requirements, and seal cases.
- Aim and adjust lighting fixtures.
- Walk-through inspection of completed exhibits. Develop punch-list.
- Supply maintenance manual and train staff in exhibit operation and maintenance.
- Correct punch-list items.
- Photograph completed exhibition.

Closeout/Warranty

New exhibits typically include a one-year contractor's warranty for defects in materials and workmanship. A contingency fund may be established to resolve latent design defects. Important media resources acquired to create exhibit elements are archived during the closeout period.

Typical Work in the Closeout, Warranty Period

- Contractor submits a closeout package including all Government-furnished materials, and materials generated by the contractor to create the exhibits, such as digital layouts, and "as-built" fabrication drawings. A duplicate copy of the maintenance manual is included in the closeout package.
- Graphic source material is checked to verify completeness, and filed for future exhibit rehabilitation.
- Quality issues with the exhibits are addressed under warranty. Other exhibit enhancements may be accomplished through a contract modification.
- A project inventory, including technical and cost data, is prepared to facilitate entry of the new asset into the Facility Management Software System database.