"Nuts and Bolts": Facilitating a Fine Arts Construction Project from Concept to Completion

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INTRODUCTION

Contemplating an institutional construction project can be both exhilarating and intimidating. Individuals from artistic or academic backgrounds may lack extensive training and experience in such technical matters as engineering and construction management. Questions may abound: How does such a construction process begin? What strategies can contribute to a successful end product?

CASE STUDY

In early 2011, the University of Texas at Tyler began conversations regarding an expansion of the R. Don Cowan Center for the Fine and Performing Arts. Over the ensuing five years, the UT Tyler School of Performing Arts advanced this project from the loose concept stage to completion. The new *Center for the Musical Arts* facility opened in April 2016 to significant fanfare, including a Merit Award from the TEXO Distinguished Building Award review panel.

The project followed a generally conventional procedure, which can serve as a template for many different projects of various size and scope.

STRATEGIC PROCEDURAL COMPONENTS

1. Initial Project Planning

- How does an institution know if a new facility is necessary?
    - Accreditation self-studies can serve as an impetus to consider the question.
    - Consider your unit's mission, vision and goals. Is your mission statement current? How has it changed in the past? How is it likely to change in the future?
    - What are your current programs and degree plans? How will these change in the future?
    - How has your enrollment changed over the past decade? Does the unit aspire to grow in numbers? Is such growth realistic and desired? Will resources be available to support growth?
    - How does your current facility enhance your program? How does it limit your program? Does it effectively serve the unit's objectives, goals and aspirations?
    - How does your facility compare to other facilities at peer institutions? At aspirational institutions?

- Consider an external visit by a qualified consultant, either independently or as part of an accreditation process.
    - What are the applicable accreditation standards? Does your facility meet them? What would be required to come into compliance?
    - Would new construction or remodeling of existing buildings be more appropriate? Or some combination?
    - Does your institution have a campus master plan? How would an arts project fit into this?
    - At this point, casual conversations with upper administrators may be appropriate, even if these early ideas are ambiguous and inconclusive.
- Goals at this phase:
    - Engage stakeholders in an honest, objective assessment of your program and its needs.
    - Formulate a list of the strengths and weaknesses of your current facility.
    - Communicate current facility limitations to your upper administration.
    - Begin formulating an itemization of your unit's future facility needs.

2. Programming

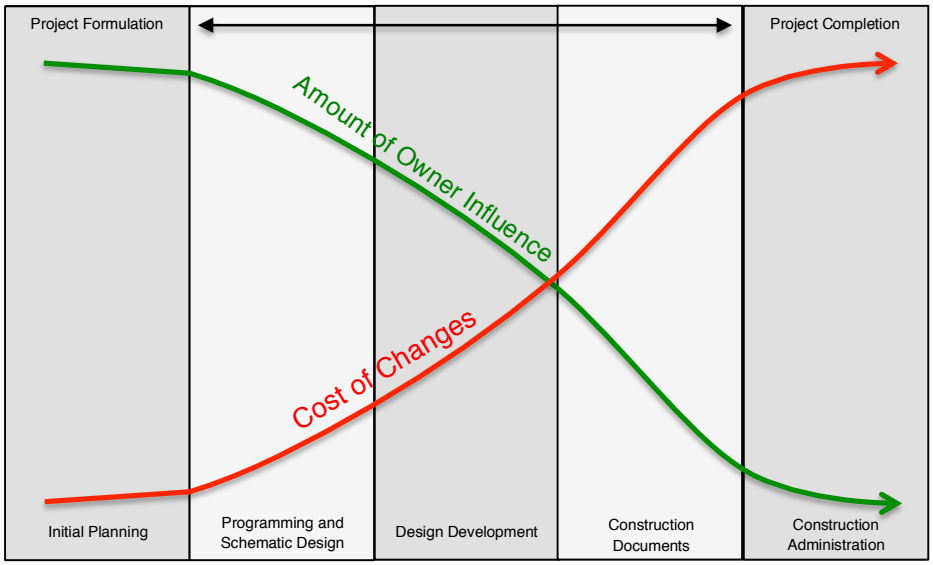
- After establishing a list of facility weaknesses and what needs to be addressed, the process moves to the "programming" stage.
- Programming may be defined as *the research and decision-making process that identifies the scope of work to be designed*.
- In this stage, stakeholders define the basic parameters of what should be included in the project.
- How does a unit know what structures/layouts would meet its goals and aspirations?
    - Site visits to comparable facilities can be helpful. How have these buildings performed? What are their qualities and shortcomings? Ask stakeholders at those institutions what they would have done differently.
    - What are the unique needs of fine arts facilities, in contrast to general purpose structures?
    - What are the general trends in facilities of this nature? What are the design attributes of recent structures? How will design features progress in the future?
- Prioritize the facility needs formulated in initial programming. What components are essential? What are the "must haves"? What specific aspects are indispensable in determining the success of a project?
- At this juncture, the project budget begins its emergence and evolution, as budgeting and programming are inherently connected.
    - What would be the general cost parameters to construct a building with the "must haves" in place?
    - How would the cost change to include all desired elements?
- In the process of **Schematic Design**, architects and designers may be engaged to create conceptual sketches.
    - These loose designs show possible ideas for structures that may meet programmatic needs.
    - Such sketches and floorplans can be presented to upper administrators, potential project donors, or other stakeholders.
- Goals at this phase:
    - Complete a prioritized list of elements to be included in the facility.
    - Formulate a general range of budgetary parameters.
    - Establish project goals and vision.

3. Design Development

- In the **Design Development** process, initial working sketches are refined, developed, and further realized into practicable designs.
- At this stage, stakeholders also begin to consider such issues as mechanical, structural, electrical, HVAC and fire suppression systems.
- In Fine Arts facilities, the DD process must give great attention to specialized needs, including:
    - Acoustical requirements for music or theatre
    - Ventilation and safety issues for visual arts
    - Lighting and space concerns for dance or theatre
- Influences, expectations, requirements and demands may come from many sources at this stage:
    - University system or state requirements

- Boards of Regents or Trustees
- Upper level campus administrators
- Campus facility management/physical plant personnel
- Environmental health and safety officers
- College/departmental administrators
- College/departmental faculty
- Students
- Donors
- Alumni
- Community members

- Successfully integrating the various (and sometimes competing) expectations requires a strong project champion to listen and channel all input points, assessing them for alignment with overall project goals.
- The owners and end users exert most of their influence on the final product during programming, schematic design and design development.
  - After design development, an owner's ability to influence the product decreases rapidly, and the costs of any changes increase rapidly (both financially and in potential time delays).
  - As a result, the astute, discerning management of the design development process is integral to overall project success.



- Goals at this phase:
  - Engage diverse constituents and project stakeholders, and yet move project forward in a timely fashion.
  - Make effective, strategic design decisions despite inevitable limits on budget.
  - Ensure that design elements meet essential needs and criteria devised in earlier stages.
  - Build support and approval for final design concept.
  - Arrive at a Construction Contract Limit (CCL) budget estimate.
  - Receive project approval from appropriate boards and administrators for the proposed design to move forward.

4. Construction Documents

- Upon satisfactory completion of Design Development, architects and engineers undertake completion of completely developed construction documents.
- At this stage, all plans are reviewed by appropriately credentialed professionals to certify compliance with building code, fire code, and other regulations.
- Documents undergo a thorough quality assurance/quality control process.
- A "display set" of plans can be made available for any stakeholders to review and examine.
- Goals at this phase:

- Complete a set of fully realized, ready-to-build construction plans.
- Effectively communicate final building plans to stakeholders.
- Finalize all substantive plan changes, as any additional changes in later stages may be prohibitively expensive.

5. Project Bidding

- Project bidding may vary significantly depending on institutional policies/procedures and state laws.
- Campuses may have preferred or institutional contractors, while others may openly publish requests for proposals.
- The total project budget should be within the CCL, including the necessity of a contingency budget.
- Bids may be sealed or unsealed, depending on institutional requirements.
- Panels review the proposals, utilizing formal grading rubrics:
  - The lowest overall bid may not be the winning bid.
  - Other considerations may include a contractor's experience with similar projects, reference letters, history of on-time deliveries, etc.
- Failure to meet CCL may necessitate revisions of plans and construction documents.
- Goals at this phase:
  - Select a qualified, capable building contractor.
  - Devise a construction schedule.
  - Finalize an official project budget.
  - Establish a formal groundbreaking date.
  - Sign all legal documents, finalize all necessary approvals, and procure a *Notice to Proceed* permit.

6. Construction Management

- Construction administration largely relies on the architects, engineers, contractors, and facilities management personnel.
- However, active involvement by the owner/end user (the "project champion") will play a vital role in management success.
  - What if unexpected problems arise? How will they be resolved?
  - How will stakeholders be apprised of progress, including construction milestones and schedule updates?
  - How can the unit continue to operate effectively during construction with minimal disruptions?
- Regular owner/architect/contractor (OAC) meetings ensure free flows of information and facilitate problem solving.
- Time-lapse photography and weekly schedule updates can inform constituents, and also serve a valuable archival role in documenting the process for institutional history and records.
- Goals at this phase:
  - Ensure that the building is built as designed, and meets project requirements and specifications.
  - Ensure that the project remains on schedule and on budget.
  - Publicize construction progress, and built enthusiasm for project completion and facility opening.
  - Provide close attention and oversight to quality control procedures.

7. Equipment Purchasing

- Budget for FF&E (fixtures, furnishings and equipment) may be included in the project budget, may be considered separately from the budget, or may be a combination of the two.
- Fine arts equipment may only be available from specialized vendors, and may require coordination with architects and engineers early in the process.
- Items for consideration may include:
  - Information technology, projectors, screens, cable drops, wireless access points
  - Office furniture
  - Lounge furniture

    - Vending machines
    - Lockers, cabinets, storage
    - Acoustical treatments
    - Musical instruments
    - Art or theatre supplies
    - Mirrors for dance studios
    - Chairs, risers, music stands
    - Library storage systems
- What items can be carried over from a previous facility? What should be replaced?
- What fundraising opportunities exist (e.g., nameplates on pianos, "selling" individual chairs, etc.)?
- How will scheduling/delivery of equipment take place?
- Goals at this phase:
    - Finalize an FF&E budget that enables the facility to meet established needs and expectations.
    - Engage stakeholder input while adhering to project priorities.
    - Finalize FF&E bids and budget.
    - Establish delivery and installation dates, and a quality control process.

8. Project Completion and Facility Opening

- Upon *Substantial Completion*, the project is defined as usable for its intended purpose, and a formal *Certificate of Occupancy* is issued.
- The date of Substantial Completion typically initiates the formal warranty period.
- Final completion is not issued until all final punch lists, walk-throughs and approvals are granted.
- How will the facility be tested to ensure that it is performing to specifications? How will deficiencies be remedied?
- Who will be responsible for warranty issues (contractor, subcontractors, others)?
- How can the facility opening be leveraged to maximize publicity and goodwill for the institution?
- What additional fundraising opportunities may be available (named spaces, etc.)? How will project donors be recognized?
- Goals at this phase:
    - Ensure that the completed project meets needs and expectations, and has been built as designed.
    - Perform final quality control checks.
    - Establish a ceremonial grand opening date (which may be substantially later than move-in date).
    - Establish a warranty review date.
    - Maximize publicity and fundraising opportunities.
    - Document the Grand Opening for archival purposes.

9. Reflection

- What will be the expected project lifespan? When will remodels be required?
- What will be done with vacated spaces? How can these spaces address the institution's future ambitions?
- How will the institution respond to future growth or evolving programmatic needs?

CASE STUDY CONCLUSION

The newly completed *Center for the Musical Arts* was presented to the public in a formal Grand Opening ceremony on April 12, 2016. Completed on budget and on time, the facility hosted its first classes at the start of the spring 2016 semester. The CMA features approximately 15,000 square feet of space, two large music rehearsal rooms (choral and instrumental), ten music teaching studios, storage space, an administrative suite and conference room, and student gathering areas.