

GETTING THE PROJECT YOU WANT

LUKE BOUCHARD, AIA – FACILITIES DIRECTOR, ENTERPRISE BANK

NEIL GORDON – CEO, DISCOVERY MUSEUM

NEIL'S PROJECTS



- Boston Children's Museum
- Expansion and Renovation 10,000 sgft
- \$50M
- Completed 2007

NEIL'S PROJECTS



- Discovery Museum, Acton
- Expansion and Renovation, Outdoor Playscape
- \$9M
- Completed 2018

Prestige New Construction



Major Additions



- Interior Space Planning
- Exhibit Construction



- Major Building Upgrades
- Deferred Maintenance



Accessibility Upgrades



- General Maintenance
- Keeping the Lights On



RECOGNIZING NEEDS VS WANTS

- Needs:
 - Environmental comforts (keeping the heat on)
 - Safety Related Items
 - ADA Accessibility
 - Space that meets the needs of the team
 - Space that meets the needs of the program
- Wants:
 - Everything else!

RECOGNIZING NEEDS VS WANTS - EXAMPLE MEASUREMENTS OF SUCCESS

- Visitor WOW
- Maintain Operations During Construction
- Integrate Exhibits with Design
- Complete Project on Time
- Meet Financial Goals
- Create Team Camaraderie
- Achieve Project Objectives
- Delight Board and Donors

THE CONSTRUCTION PROCESS

- Planning and Design Phase
 - Identify Delivery Method
 - Programming your needs every space counts!
 - Scoping limits of work need to draw the line somewhere.
 - Design Narrative Written expectations for all critical design items.
 - Ask questions until you understand.
 - Your consultants time is valuable come prepared.
 - Understand Necessary Owner's Consultants
 - Geotech, Wetlands Scientists, Commissioning Engineers, Special Inspectional Services, Hazardous
 Material Abatement Contractor.....

THE CONSTRUCTION PROCESS – EXAMPLE DESIGN GOALS

- Boston Children's Museum
 - Consolidate and renovate exhibitions on few floors
 - Extract the visitor circulation from the exhibitions
 - Build a new traveling exhibitions gallery
 - Enhance and increase tenant space
 - Make Museum's entrance easier to find from all points
 - Create a group entrance with storage and orientation space

THE CONSTRUCTION PROCESS

- Procurement and Permitting Phase
 - Award Construction Contract Standard Documents vs Custom Forms (or contractor's own agreement)
 - Understand project schedule realities Once a project is awarded, expect between 30-45 days until the project begins.
 - Contractor Awards Sub Contracts.
 - Initial material approvals (shop drawings and submittals)
 - Permitting
 - Beware the AHJ (Authority having Jurisdiction) Be prepared for surprises in the permitting process.

THE CONSTRUCTION PROCESS

- Construction and Occupancy Phase
 - Submittals, Samples, and Mock Ups What is going into the project?
 - Owner's Change Orders and "Scope Creep" Don't be your own worst enemy.
 - Speak up If something doesn't look right, or you have concerns, communicate with the contractor.
 - Commissioning Does everything work right?

THE CONSTRUCTION PROCESS – EXAMPLE PROJECT ORG CHART



THE CONSTRUCTION PROCESS – EXAMPLE DECISION-MAKING TOOL



THE CONSTRUCTION PROCESS – EXAMPLE TYING FUNDRAISING AND PROJECT PHASES

		Can	npaign and Construction Milestones			
Key Benchmarks						
Campaign Milestone*			Construction Milestone	Approxin	nate Cost/risk	
					Phase	Cumulative
Seed Funding Obtained:		5%	Conceptual Drawings	\$	20,000	\$ 20,000
Cumulative pledged:	\$	350,000				
Pledges of x% of goal:		10%	Authorize Schematic Design	Ś	150.000	Ś 170.000
Cumulative pledged:	\$	700,000		· · · ·		,
Cumulative Pledges of x% of Goal:	ć	30%	Authorize Design Development	Ş	215,000	\$ 385,000
cumulative pledged:	Ş	2,100,000				
Cumulative Pledges of x% of Goal:		60%	Authorize Construction Drawings	\$	275,000	\$ 660,000
Cumulative pledged:	\$	4,200,000				
Cumulative Pledges of x% of Goal		70%	Authorize Ridding	ć	150.000	\$ 810.000
Cumulative pledged:	\$	4,900,000	Autonize bloding	Ŷ	150,000	\$ 810,000
	-					
Cumulative Pledges of x% of Goal:		80%	Authorize Construction Begin	\$	5,190,000	\$ 6,000,000
Cumulative pledged:	\$	5,600,000				
Cumulative Pledges of x% of Goal:		95%	Construction Complete	Ś		\$ 6,000,000
Cumulative pledged:	\$	6,650,000				
Cumulative Pledges of x% of Goal:	¢	100%	Operating Reserve in place	\$	1,000,000	\$ 7,000,000
cumulative pledged:	Ş	7,000,000				

- Should be one of the first decisions made during the planning process.
- Different projects and different owners have different needs.
- Ask yourself and your team:
 - What services do we require?
 - How flexible are we on costs?
 - How flexible are we on schedule?
 - How much input do we want to have?

- Design Bid Build
 - Advantages
 - Traditional and Understood
 - Lower Initial Cost (?)
 - Requires Less Owner Experience
 - Allows for Owner to fully engage design process
 - Disadvantages
 - Time intensive
 - Requires complete and coordinated drawings (not good with unknowns)
 - Can create a negative atmosphere between parties



- Construction Management (At-Risk)
 - Advantages
 - Able to handle complex and extensive coordination
 - Allows for a project to "fast-tracked"
 - Can bring contractor into design process
 - Allows ability to see cost during design
 - CM review of design can potentially reduce costs (constructability)
 - Disadvantages
 - May not be effective in small projects
 - More services = More costs
 - Typically more administrative



- Design Build
 - Advantages
 - Work with a single entity (one agreement)
 - Single entity is responsible for any errors
 - Allows for a project to "fast-tracked"
 - Great for simple projects
 - Disadvantages
 - Requires preparation of detailed project requirements ahead of agreement
 - Potentially less design services
 - Architect works for builder and not owner



- Begin with the right project team.
 - Who is capable of representing your non-profit?
 - Board Members, internal staff, or volunteers with construction industry experience?
 - If not, buy those services with the project.
 - Who is the decision maker for your non-profit?
 - May or may not be your representative.
 - Empower them to make decisions.

MINIMIZE THE IMPACT – EXAMPLE DECISION MAKING HIERARCHY



• Construction Inflation has been accelerating since great recession. Budget accordingly!



• Changes – They only get more expensive as you go!



- Communication is Key
 - Formal meetings should be insisted on, with well kept minutes.
 - Where possible, task one person internally with communications. This will prevent dual messaging or misinterpretations.
 - Communicating with all shareholders keeps them involved in the process and understanding of changes.
 - Always keep the line of communication open between Owner, Design, and Contractor.

MINIMIZE THE IMPACT – EXAMPLE COMMUNICATING LOGISTICS AND EXPECTATIONS



Temporary Walls and Protection



- Plan for the unexpected Be aware of potential pitfalls before construction begins:
 - Zoning Can you (legally) do what you want to do?
 - Hazardous Materials know your building.
 - Asbestos Be very suspicious of materials between 1900 & 1970.
 - Encapsulation is OK!
 - Poor Soils Don't forget the Geotech.
 - Code Requirements Be aware of triggering additional improvements.
 - Winter Conditions Understand their extent.

NEIL'S LESSONS LEARNED

Practical Advice

- Develop comprehensive budget and schedule early in the project.
- Hire a design team that is experienced in your building type.
- Engage a preconstruction advisor, preferably one that is capable of building your project.
- Develop contingencies based on an assessment risk.
- Invest money during design/preconstruction to explore existing conditions.
- Allow sufficient time for the design process.
- Minimize owner changes by involving the owner's internal team early.
- Focus on a forward-looking cost projection.
- Single point of contact to facilitate communication and decision-making.
- Hire legal counsel that is experienced in the construction industry.

- Achieve Project Objectives
 - Establish and Verify Clarity of Project Goals
 - Have key decision-makers pay attention during design
 - Confirm understanding of key decision-makers during value engineering process
 - Enforce constant contact with Key Users / Museum Staff
 - Touch Base / Oversee Daily Construction Choices

THANK YOU!

• Questions?