PURPOSE BUILT

TOOLKIT 1.0

Planning for Impact

A guide to impact-driven design

Purpose Built

Capital projects often bring lasting benefits to nonprofit organizations and the people they serve. Given this opportunity, foundations grant more than $3 billion annually to construct or improve buildings in the United States alone.[1] Each capital project affects an organization's ability to achieve its mission—signaling its values, shaping interaction with its constituents, influencing its work processes and culture, and creating new financial realities. While many projects succeed in fulfilling their purpose, others fall short of their potential. In most instances, organizations fail to capture and share lessons learned that can improve practice.

To help funders and their nonprofit partners make the most of capital projects, The Atlantic Philanthropies and the S. D. Bechtel, Jr. Foundation commissioned *Purpose Built*—a multi-faceted study by MASS Design Group, a nonprofit architecture and research firm. In 2015 and 2016, MASS conducted interviews, reviewed literature, and examined a diverse set of completed projects around the world; each project was supported by one of the above funders.

The ATLANTIC *Philanthropies*   S. D. BECHTEL, JR. FOUNDATION STEPHEN BECHTEL FUND   **MASS.**

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1 *Foundation Center, Foundation Maps data based on grants made in the United States, 2006-2015.*

Purpose Built Series

The study generated a set of core principles as well as tools for those considering or conducting capital projects. See the full *Purpose Built* series online at **www.massdesigngroup.org/purposebuilt**.

Introducing the Purpose Built Series is an overview of the study and its core principles.

Making Capital Projects Work more fully describes the *Purpose Built* principles, illustrating each with examples.

Planning for Impact is a practical, comprehensive tool for those initiating capital projects.

Charting Capital Results is a step-by-step guide for those evaluating completed projects.

Purpose Built Case Studies report on 15 projects to illustrate a range of intents, approaches, and outcomes.

Planning for Impact

Best results occur when a project is built with purpose—grounded in a clear and strategic mission that informs design decisions, with a scope that matches what its organization can afford to build, operate, and maintain. *Planning for Impact* is a prospective tool that serves as a guide to help funders and nonprofits looking to invest in or evaluate capital infrastructure strike the right balance between a project's mission, design, and feasibility. The tools follow this structure to help a project team navigate decision making throughout the process.

Often the scope of work associated with completing a capital project is limited to *Design* and *Construction*. However, a *Purpose Built* process goes beyond this, recognizing five phase necessary to achieve a successful capital project—*Visioning, Planning, Design, Construction*, and *Occupancy*. The *Visioning* phase ensures the mission of the project is aligned with an organizational mission and positioned to achieve greater results. *Planning* highlights considerations necessary to ground the project mission in reality and prepare the organization to lead the process and anticipate the end result. The *Design* phase provides guidance for aligning the mission of the project with the project's form, fabrication, and function. *Construction* includes items for an organization to assess as the project is implemented. Lastly, as capital projects continue to evolve, the *Occupancy* phase provides resources to evaluate the success of the project in the short and long term and adapt the end result as necessary.

Capital projects are almost always complex and complicated; *Planning for Impact* aims to both convey this reality, and provide tested and informed methodologies that simplify and untangle the process. Our team hopes that future projects will benefit from this research effort—fulfilling their inherent potential to help nonprofits achieve new and sustainable levels of impact.

Introduction

How is it organized?

*Planning for Impac*t is organized by five major phases: *1. Visioning, 2. Planning, 3. Design, 4. Construction,* and *5. Occupancy.* Each phase is defined by three key topics and their respective bodies of work.

- *A. Mission* guides organizations through activities that focus on the needs and desired outcomes for both the organization and the project.
- *B. Design* focuses on aligning the built project with these identified goals.
- *C. Feasibility* helps organizations undertake typical steps necessary to plan and implement the project.

Each of the topics is described in more detail in the following pages. Some of the sections will have associated worksheets found in the Appendix to help guide the process.

How should it be used?
Planning for Impact is intended to be used throughout the duration of a capital project. Prior to beginning a *Purpose Built* project, read through the tool in its entirety. Familiarize yourself with the whole process as steps are cumulative and may develop and iterated from one phase to the next.

Contents

1. VISIONING

When initiating a major capital project, organizations will make modest time and resource investments that will inform their decision making. This phase is intended to help organizations and their boards align their mission and needs with potential project design ideas and initial feasibility assessments. Work conducted during this phase will be revisited, iterated, and further developed during following phases of the project, as appropriate. The phase will conclude with a *Decision to Proceed* and the creation of a *Development Pitch* that synthesizes the vision for the capital project.

1. VISIONING

1A. MISSION

What is our mission?

In addition to helping organizations articulate their mission, this body of work seeks to align the potential project with organizational goals and the needs of the local context. Important stakeholder groups are identified for continued engagement in future phases.

Organization's Mission
❑   Articulate organization's vision and mission

Needs Assessment
❑   Assess existing facility and program needs
❑   Consider existing actors and trends
❑   Plan for stakeholder engagement ⧉

Outcomes-Based Design ⧉
❑   Identify project mission and goals
❑   Consider theory of change
❑   Identify indicators and criteria

1B. DESIGN

How could a capital project support our mission?

At this stage, organizations might be considering a number of different design interventions, each varying in scope, scale, feasibility, and potential impact. This body of work will help an organization identify the right project to best achieve and amplify its desired impact.

Project Definition
❑   Charrette project options
❑   Scope potential project(s)

1C. FEASIBILITY

Are we ready? What would it take for us to be ready?

This body of work will help organizations anticipate key preparation and decision-making considerations necessary to implement capital projects as well as understand what it would take to be ready to pursue a major capital investment.

Organizational Readiness
❑   Assess organization's financial health ⧉
❑   Assess staff and board capacity ⧉

Project Feasibility
❑   Create preliminary cost estimates ⧉
❑   Consider potential funding sources
❑   Review comparable projects

Key Activities & Deliverables

❑   **Decision to Proceed**

❑   **Development Pitch**

Key Activities and Deliverables

Decision to Proceed

During this phase—before investing significant time and resources in following phases—organizations will assess whether or not a major capital project is feasible and strategically aligned with their mission and vision for impact. If an organization's leadership decides that they are not yet ready, this phase and body of work will help the team identify points of weakness and priorities to strengthen.

Development Pitch

A *Development Pitch* is a short document that synthesizes the need, vision, and strategy for the capital project. Through a presentation or pamphlet format, it tells a cohesive narrative about an organization's history and identified needs, builds the case for the project, and outlines an implementation strategy. The pitch can be used to align stakeholder visions, develop internal buy-in, and generate donor interest.

1A. MISSION

Organization's Mission

☐ **Articulate organization's vision and mission**

Creating, articulating, testing, and communicating a unified vision and mission is crucial for every organization. If an organization does not yet have a mission statement, the process of crafting one can provide an opportunity for various stakeholders to coalesce around a single idea. A clear organizational mission is necessary to help frame and guide the goals of a project, and ensure that investments are made that help advance an organization's vision.

Questions to Consider

- What is our organization's mission?
- Is our mission clear and communicable?
- Do all stakeholders understand our mission?
- What is the long-term vision for our organization?

Needs Assessment

☐ **Assess existing facility and program needs**

Organizations should take careful stock of their current and historic infrastructural, programmatic, and operational needs in order to scope the vision for a new project properly. Most capital projects are initiated based on an identified need; this

process will help define the full scope of that need. Depending on the size of the organization and their space requirements, the organization might decide to employ a design professional or another outside consultant for this study.

Questions to Consider

- What are our needs?
- How are our programs or impact limited by our space or facilities?
- What are the driving forces behind these challenges?

☐ **Consider existing actors and trends**

Leveraging research conducted by other organizations can save time and money and help ensure that your project is aligned with larger community needs. Often, the government or other organizations will be working to address the same or related issues—research these organizations and projects, and be on the lookout for opportunities to partner or collaborate.

Questions to Consider

- How do our programs and goals align with or complement other interventions in this sector?
- Who are potential partners?
- Where are there gaps in what others are doing? Where is there overlap?

☐ **Plan for stakeholder engagement**

Organizations will typically seek to invest in a project because of a pressing need, such

as a lack of space or aging infrastructure. However, input from various stakeholders can identify less obvious and equally important needs and priorities. During this phase, organizations should brainstorm the range of potential stakeholders who are affected by their programming and will be impacted by a new project. It is important to understand the stakeholders and identify appropriate exercises and methods for engagement.

Questions to Consider

- What populations will be directly and indirectly impacted by our work?
- Who should we engage to create additional buy-in for the project?
- Are there marginalized populations that we should specifically target for inclusion in the process?

Resources

- *Field Immersion Methodology* (p. 53) 🗐
- See the *Life Sciences Building, University of Western Cape* case study report for an example of how a "super user" communicated and navigated the concerns of multiple faculty departments. 🗐

Outcomes-Based Design

❏ Identify project mission and goals

In addition to responding to immediate needs, such as providing office or lab spaces, organizations have the opportunity to leverage capital projects to amplify the achievement of their mission. A single,

clear idea can help focus efforts and align decisions. Major projects can serve as powerful symbols, raising expectations or catalyzing momentum, and organizations should not be afraid to ask: what more can design do?

Capital projects and their implementation processes will also have impact outside of the organization and will occur whether they are intended or not. The 360° impact of a capital project affects a wide range of stakeholders (i.e., users, staff, community, and sector), are diverse in their topics (i.e., environmental, educational, economic, health, and emotional), and occur at different phases of the process. This phase provides an opportunity to identify and prepare for potential 360° impact.

Questions to Consider

- How will the project affect the organization's ability to achieve its mission?
- What additional impact is important to our organization and stakeholders?
- What potential negative impacts do we need to recognize?
- How might we achieve impact during the implementation process?

Resources

- *Outcomes-Based Design* (p. 38) 🗐
- See *Making Capital Projects Work* for examples of how capital projects can amplify impacts beyond the building. 🗐
- See *The Summit Bechtel Reserve* case study for an example of how community and environmental impact

were addressed through the design and construction process.

❏ Consider theory of change

A theory of change model articulates key factors and assumptions necessary to achieve impact. The organization should conduct a theory of change exercise for the project, being sure to identify the assumptions, and risks associated with each step. This exercise will help organizations prioritize design decisions and establish criteria for evaluation.

Questions to Consider

- What will need to happen for the project to be a success?
- Which steps are within our control, and which are not?

Resources

- *Outcomes-Based Design* (p. 38) 🗐
- Glennerster, Rachel & Takavarasha, Kudzai. "Chapter 5: Outcomes." *Running Randomized Evaluations: A Practical Guide*. Princeton, NJ: Princeton University Press. November, 24 2013.

❏ Identify indicators and criteria

Based on the findings from the initial needs assessment and theory of change, project teams should create a framework that articulates the goals of the project, identifying metrics that help track progress and plan for evaluation efforts. These indicators and criteria will inform a baseline assessment during the *2*.

Planning phase and can help the project team check-in on how the design and construction processes are progressing.

Questions to Consider

- What categories of impact are most important to our project?
- What indicators or metrics best represent our desired impact? Our project mission?

Resources

- *Outcomes-Based Design* (p. 38) 🗐
- *Metrics Database* (p. 57) 🗐

1B. DESIGN

Project Definition

❏ Charrette project options

Organizations should consider and compare potential project ideas, and understand how each might support the organization's mission. This is an opportunity to consider many options (ranging from leasing an additional space to developing an entirely new campus) and to discuss which option aligns best with the organization's goals. Keep in mind that it may be important to revisit this step many times over the course of the project.

Questions to Consider

- How will the project support our mission?
- Do we need a major capital project?
- What alternatives are worth considering?

Resources

- *Field Immersion Methodology* (p. 53) 🗐

❏ Scope potential project(s)

In addition to identifying what types of projects are possible, organizations should begin to think about what type and size of project is appropriate. Considering current space usage and deficits, organizations should think beyond their immediate needs to plan for the future. Ultimately, organizations will identify rough gross square footages that can be used in preliminary cost estimates to test feasibility (see *1C. Feasibility: Create preliminary cost estimates*).

Questions to Consider

- What size project should we build?
- Should we build everything at once, or should we build in phases?

Resources

- National Institute of Building Sciences. "Design Guidance." *Whole Building Design Guide*. 2016. https://www.wbdg.org/design/design-recommendations.

1C. FEASIBILITY

Organizational Readiness

Capital projects require organizations to make major investments in time, staff, and finances. Before the decision can be made whether to invest in a project, each organization should assess its readiness to proceed. In addition to including a financial and staffing assessment, the organization should review its strengths and weaknesses, as well as identify potential opportunities and threats it is currently facing or that it might face in the years to come.

Resources

- SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats). http://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/swot-analysis/main

❏ Assess organization's financial health

Even before considering a major capital investment, team members should feel confident that the organization is financially healthy. While an organization's financial staff or a consulting financial management firm will be able to evaluate its financial health more rigorously, the *Financial Health Worksheet* will help provide a quick, "back-of-the-envelope" calculation using standard indicator metrics. If an organization's metrics suggest poor financial health, it does not necessarily mean that it cannot invest in a project—it merely serves to raise a flag that additional focus and financial preparation should be prioritized before moving forward.

Questions to Consider

- How have we performed historically?
- If there are any places of concern, is there a reasonable explanation?

- How can we guard against similar economic risks?

Resources

- *Financial Health Worksheet* (p. 44)
- See *The California Academy of Sciences*, *The Exploratorium*, and *The Simpson Center for Girls* case studies for examples of how capital projects affected organizational financial health.

❑ **Assess staff and board capacity**

Organizations should develop an understanding of the roles necessary to complete a capital project and to identify which of these can reasonably be filled with existing staff. Be aware that time and capacity demands on project teams can be quite burdensome, and some gaps in expertise are inevitable—some roles may be better filled from outside the organization.

Questions to Consider

- What expertise does our staff and board have?
- Do our staff and board have enough time and resources to take on the additional responsibility?
- Where are there gaps? Which roles should we fill externally?

Resources

- *Project Team Worksheet* (p. 50)

Project Feasibility

❑ **Create preliminary cost estimates**

During this phase, organizations should generate preliminary cost estimates to help clarify the scope of the potential project and to test financial feasibility. Using information generated from the initial needs assessment, team members or design consultants will typically use project comparisons to inform initial estimates. For example, costs per square foot, per bed, per office, etc., can be used to calculate overall project costs. One common pitfall to avoid is assuming the bricks and mortar cost of construction represents the whole of the development costs—they don't! See the *Capital Project Budgeting Worksheet* for additional information for how to generate project estimates.

Resources

- *Capital Project Budgeting Worksheet* (p. 47)

❑ **Consider potential funding sources**

A variety of sources are available to fund projects, such as earned income, capital campaigns, loans, bonds, and tax credits. While future phases will include additional iterations on a financial feasibility study, in this phase, organizations should begin brainstorming potential sources and the cost and effort required to generate funds.

Questions to Consider

- Would our current donors be interested in supporting a capital campaign?
- Are there major funding sources that our organization or project can leverage (e.g., Historic Tax Credits, selling an existing asset, etc.)?
- Do we have the resources to run a capital campaign?

Resources

- Walker, Julia. *Nonprofit Essentials: The Capital Campaign*. Hoboken, NJ: John Wiley & Sons. 2005.

❑ **Review comparable projects**

Each project will confront challenges and opportunities similar to those that other organizations have faced in the past. Researching these analogous projects by reaching out to contacts is a great way to learn from past experiences.

Questions to Consider

- Are there organizations of similar sizes or missions that have undergone a capital project recently?
- Who are thought leaders or innovators in our field?

Questions to Ask Others

- What unforeseen challenges arose during your project?
- What worked well? What did not?
- Do you have any major lessons learned that you could pass on?

2. PLANNING

When organizations decide to pursue a capital project, ideas that were once visions need to be developed and refined to increasingly detailed levels of resolution. During this phase, organizations will conduct a variety of stakeholder engagement and design planning activities to prepare to undertake a capital project. Coupled with feasibility check-ins, the goal of this phase is to enable leadership to make informed decisions, garner support for the project, and provide a foundation for impactful design.

2. PLANNING

2A. MISSION

Do we understand our needs?

This body of work will guide organizations in conducting primary research that will further refine priorities and needs in order to ensure all stakeholders are thoughtfully incorporated into design decisions and project processes.

Needs Assessment
- ❑ Conduct stakeholder engagement 🗐
- ❑ Conduct baseline assessment 🗐❷

Outcomes-Based Design Revision 🗐
- ❑ Articulate project mission and goals
- ❑ Refine theory of change
- ❑ Develop indicators and criteria

2B. DESIGN

How can the design have impact?

This body of work will build upon the previous phase and assist organizations and their consultants in defining the design vision and recalibrating the project objectives to meet the needs and opportunities identified through the engagement process.

Design Brief
- ❑ Define the program
- ❑ Conduct precedent research
- ❑ Define design characteristics

Site
- ❑ Define site selection criteria
- ❑ Conduct site feasibility studies
- ❑ Conduct site analysis

2C. FEASIBILITY

How do we do it?

This body of work will assist organizations and their consultants in iterating and developing a feasible implementation and operations plan for the proposed project.

Organizational Preparation
- ❑ Plan for change management
- ❑ Forecast organization's financial health

Project Preparation
- ❑ Build the project team 🗐
- ❑ Prepare a project budget 🗐
- ❑ Prepare a project schedule
- ❑ Conduct capital campaign feasibility study
- ❑ Select project delivery method
- ❑ Prepare project logistics

Key Activities & Deliverables

❑ **Design Brief**

❑ **Development Package**

❑ **Implementation Plan**

Key Activities and Deliverables

Design Brief

The *Design Brief* consolidates information about project goals and serves as a critical resource for the design team. It should summarize the needs identified through the literature review and stakeholder engagement process and define a desired framework of impact. Specific space requirements, adjacencies, and square footages should be noted in detail. Including precedents can help communicate design strategies that may be applicable to the project.

Development Package

A *Development Package* articulates the need and vision for a major capital project in order to generate support from potential funders. It should synthesize information from the *Design Brief* and *Implementation Plan*, articulating why a building is important, why the organization is poised to undertake the project, what potential impact the project could have, and what remaining steps are necessary. The package may take the form of a presentation or pamphlet and may include visualizations or renderings of the potential project.

Implementation Plan

An *Implementation Plan* lays out the critical staff and key decisions necessary to complete a major capital project. Synthesizing the activities completed during this phase, the document will align the project with the organization's long-term strategy and development planning. It should consist of a description of the project team (in-house, external, and the decision-making structure for the project), a fundraising plan, an assessment of the organization's financial readiness, a strategy for organizational growth, a strategy for evaluation, and logistical strategies for achieving impact during the *3. Design, 4. Construction,* and *5. Occupancy* phases of the project. The organization can expect to make changes to these strategies as the project evolves.

2A. MISSION

Needs Assessment

☐ **Conduct stakeholder engagement**

Having planned for stakeholder engagement in the previous phase, organizations should proceed to hold meetings and workshops to understand the needs of a variety of stakeholders better.

Questions to Consider
- Have we articulated the right needs?
- Are we bringing an objective eye to the perceived needs?
- What are each stakeholders' needs? How will they be affected by the project?

Resources
- *Field Immersion Methodology* (p. 53) 🗐

☐ **Conduct baseline assessment**

Indicators and criteria that were initially developed through the *1. Visioning* phase will be researched more in depth in this phase. Data collected before significant work is completed is considered baseline information and will provide organizations with key information about their work and the population they serve. Collecting baseline data serves two purposes. First, it helps organizations understand and articulate the nature of their needs. Second, it can help to track identified metrics that represent the impact of the projects and programs over time. The

baseline assessment might consider secondary data about the context and mission, such as census data or organizational performance metrics.

Questions to Consider

- What metrics of change are important to our organization? To our donors?
- What metrics are feasible to collect?
- What can we learn by collecting data now?
- How will we plan for continued data collection?

Resources

- *Outcomes-Based Design* (p. 38) 🗐
- *Metrics Database* (p. 57) 🗐
- *Charting Capital Results* 🗐

Outcomes-Based Design

❑ **Articulate project mission and goals**

Organizations should reconsider and refine their project mission, goals, and potential 360° outcomes based on information gathered from the stakeholder engagement and baseline assessment. Because a large amount of data will be uncovered in this phase, initial projections and brainstorming may need significant refinement. Project teams should prepare documentation that can guide future check-ins during the remainder of the project process.

Question to Consider

- Is our project mission aligned with the identified needs?
- Are our 360° impact goals aligned with the identified needs?
- What information have we uncovered that might change our original projections?

Resources

- *Outcomes-Based Design* (p. 38) 🗐

❑ **Refine theory of change**

Organizations should reconsider and refine their theories of change based on information gathered from the stakeholder engagement, needs assessment, and baseline assessment. As the team approaches and begins the *3. Design* phase, it is critical to articulate how decisions will lead to outcomes and impact.

Questions to Consider

- Is there new information that verifies or refutes any of our assumptions?
- Is our logic still sound based on what we know now?

Resources

- *Outcomes-Based Design* (p. 38) 🗐

❑ **Develop indicators and criteria**

Organizations should periodically review and refine identified indicators and criteria to ensure that the process is proceeding as planned. The *3. Design* and *4. Construction*

phases have inherent opportunity to leverage desired impact—planning for this impact early-on will help guide activities and anticipate outcomes.

Question to Consider

- What elements of our design and construction process will lead to desired or undesired outcomes? How can we anticipate these effects?
- How will we test the design before construction to ensure that it will achieve what we want?
- What outcomes will we measure to let us know if we're achieving the desired impact?

Resources

- *Outcomes-Based Design* (p. 38) 🗐
- *Metrics Database* (p. 57) 🗐

2B. DESIGN

Design Brief

See 2. Planning: Key Activities & Deliverables for a description of the Design Brief. The creation of the Design Brief will be informed by the activities below.

❑ **Define the program**

A capital project program lays the groundwork for many design decisions by identifying the types, sizes, and characteristics of spaces that the project will provide. An early investment of resources in programming is critical to aligning the goals of key stakeholders and setting a clear direction for the project.

The program will be informed by system and equipment technical requirements, as well as stakeholder input. Remember that—in addition to typical front-of-house spaces—there will also be back-of-house support spaces, such as storage and equipment rooms. Employing a design professional can help ensure that the appropriate amount of space is allocated for each program. This exercise will also help the organization plan for procurement needs, such as acquiring furniture, equipment, and art that may fall outside of the scope of work for the design team. Organizations will find it helpful to define and verify program decisions with relevant stakeholders.

Question to Consider

• What types of spaces are needed to achieve our mission?
• What priority would we assign the stated programs or elements? Are there elements that can wait to be implemented?

Resources

• Pena, William M. & Parshall, Steven A. *Problem Seeking: An Architectural Programming Primer*. 5th ed. Hoboken, NJ: Wiley. 2012.

❑ **Conduct precedent research**

Organizations should, along with their design professionals, consider a variety of comparable projects or precedents. Researching precedents can help organizations think about what they want

and don't want, provide inspiration for new ideas, and facilitate communication of design ideas between the client and architect. Additionally, precedents offer the project team an opportunity to tap into a wealth of knowledge about what has worked or not worked well in the past.

Questions to Consider

• Which existing buildings can we learn from?
• In comparable precedents, what works well and what does not?

Resources

• See *The Exploratorium, Life Sciences Building, University of the Western Cape, Marymount University Hospital and Hospice, and Science and Engineering Centre, Queensland University of Technology* case studies for examples of how teams examined precedents to inform the design of their projects. 🗗

❑ **Define design characteristics**

In addition to defining program spatial requirements, organizations should define the qualities and characteristics of the spaces in and around the building. These qualities will be communicated to the architect through the *Design Brief* and inform the user experience of the capital project.

Questions to Consider

• How do we want the space to look and feel like?
• What are the unique design qualities

of those spaces that will best meet our stated needs?
• How can the quality of space lead to the desired impact?
• What design qualities will affect changes in behaviors or attitudes?

Resources

• For example, for a hospice, the program document may describe a requirement that the spaces feel warm, welcoming, open, bright, and nonclinical where possible. See the *Marymount University Hospital and Hospice* case study for more information. 🗗

Site

❑ **Define site selection criteria**

Prior to selecting their site, organizations should determine the most important and desirable site characteristics.

Questions to Consider

• What site characteristics will align with or amplify our project mission and goals?
• What adjacencies are desirable or undesirable (think about public transportation, civic spaces, related or unrelated programs, and surrounding community)?
• How will we grow in the future?
• If we move, how might the users and surrounding community from our old location be impacted?

Resources

• See the *Constitution Hill Precinct*, The

Exploratorium, The Simpson Center for Girls, and *Northern Ireland Council for Voluntary Action* case studies for examples of how site selection factored into the decision to build new capital projects. 🗇

❑ **Conduct site feasibility studies**

Once potential sites have been identified, organizations should work with design professionals to analyze the feasibility of the sites with regard to factors such as access, proximities, environmental conditions, and local zoning ordinances.

Questions to Consider

• Does the site meet our selection criteria?
• Does the site meet our current needs?
• How much space does it provide for future expansion?

Resources

• See T*he Simpson Center for Girls, The Exploratorium,* and *Marymount University Hospital and Hospice* case studies to see how feasibility studies influenced the design process. 🗇

❑ **Conduct site analysis**

The design team should analyze the site(s) to understand any existing conditions that may affect the design. For example, considerations of climate may inform building ventilation strategies, analysis of solar paths may affect building orientation and window placement, and the immediate surrounding context may affect where building entrances or public and private spaces are located on-site.

Question to Consider

• What site conditions will affect the design?
• What are the unique opportunities and limitations of the site(s)?

2C. FEASIBILITY

Organizational Preparation

❑ **Plan for change management**

No matter how big or small, new capital projects will affect organizations' cultural health. The beginning of a capital project process is an opportunity to change an organization's workflow and culture for the better. Organizations should consider how a new space will influence user actions, interactions, emotions, and perceptions. Additionally, throughout the process, leadership and staff will change, new skills and capabilities must be developed, and staff or stakeholders may be uncertain and resistant. It is important that organizations prepare to match the change in facilities with a strategy for managing the change in their culture, values, people, and behaviors.

Beginning in this phase, change management strategies, such as the creation of new systems or processes, will be examined and then revisited throughout the duration of the project implementation process. By engaging leadership and key stakeholders early in the process, organizations can create shared ownership of the project and help mitigate many of the issues that arise once the project is complete. Staff and constituent engagement can help project teams identify opportunities for improvement, and build new strategies and systems to support the organization as it transitions to a new space.

Questions to Consider

• What parts of our organizational culture do we want to keep and what do we want to leave behind?
• How can we instill a sense of ownership among our stakeholders?
• How will our organization change as a result of this capital project?
• What systems, processes, or strategies will we need to change?

Resources

• See *The California Academy of Sciences, The Exploratorium*, and *Northern Ireland Council for Voluntary Action* case studies for examples of how organizations managed cultural changes. 🗇
• *Field Immersion Methodology* (p. 53) 🗇

❑ **Forecast organization's financial health**

Major capital investments have financial implications for organizations during each phase of the development process and throughout the lifetime of the facility. In this phase, financial staff and consultants should be planning for the long-term financial impact of the entire development

process on the organization.

Questions to Consider

- How will our operations and maintenance costs change?
- Are our anticipated future revenue streams realistic?
- What external economic factors might impact our future financial health?

Project Preparation

☐ **Build the project team**

Organizations should build their project team based on assessments of in-house time and expertise. Any external hires, such as the design team, should begin to be brought on board at this time. Organizations should be sure to create a clear line of communication and decision-making system that takes into account organizational relationships with boards, advisors, and outside consultants. These relationships will vary depending on the project delivery method.

Resources

- *Project Team Worksheet* (p. 50) 🗐
- "You and Your Architect: A Guide for Successful Partnership." Washington, DC: American Institute of Architects. 2007. http://howdesignworks.aia.org/pdf/You_and_Your_Architect.pdf.

☐ **Prepare a project budget**

Organizations should engage design professionals to generate a total project

cost estimate, which will be refined as the design is developed over the course of the project. The *Capital Project Budgeting Worksheet* can help organizations consider unanticipated costs and escalation factors. This guide is intended to provide organizations with the knowledge necessary to have budget conversations and ask the right questions of consultants and design professionals.

Resources

- *Capital Project Budgeting Worksheet* (p. 47) 🗐

☐ **Prepare a project schedule**

In this phase, organizations should prepare a more detailed timeline that highlights key tasks and milestones for the project. This schedule will inevitably evolve over the course of the project and should be revisited frequently. Internal management and organizational tasks should be considered, as well as outside tasks, which will vary from project to project, but may include steps such as financing, design, construction, permitting, and transitioning. The organization should consult with design and construction professionals when completing this task. Project schedules are often created and organized using a Gantt chart, which lay out the schedule according to a predefined hierarchy of tasks.

Questions to Consider

- What are the key steps to completing this project, and how long will each take?

- What needs to happen first? What can happen concurrently?
- Who can help us determine realistic timelines?
- Where are there unknowns? Where do we need to provide for time contingencies?
- What external considerations do we need to take into account while scheduling?
- Does the project need to open by a certain date?

Resources

- Mubarak, Saleh A. *Construction Project Scheduling and Control*. 3rd ed. John Wiley & Sons. 2015.

☐ **Conduct capital campaign feasibility study**

Before embarking on a capital campaign, organizations should get a sense of fundraising feasibility in order to set an appropriate target goal. Organizations might consider partnering with financial management firms to generate the capital campaign feasibility study, which will additionally lay out a fundraising strategy and time frame. If the total project development costs are not feasible to raise in a capital campaign, organizations can look to find additional sources of funds as considered in the previous phase.

Questions to Consider

- Do we have the staff time and resources required to complete our capital campaign?
- Do we need outside fundraising help?
- How long will it take? At what point

should we decide to move forward with the project?
• Is the amount we can raise commensurate with what we hope to do?

Resources

• "Nonprofit Finance 101." Nonprofit Finance Fund. 2015. www. nonprofitfinancefund.org/nonprofit-finance-101.
• Walker, Julia. *Nonprofit Essentials: The Capital Campaign*. Hoboken, NJ: John Wiley & Sons. 2005.

❑ **Select project delivery method**

Project delivery method refers to the contractual relationship between teams of owners, designers, and builders in order to complete a project. The structure of the project team significantly affects the project schedule, budget, and quality. Different methods (traditional, construction management, design-build, and integrated project delivery) can be distinguished by a variety of factors, such as their decision-making systems, distribution of liability, and project incentives. It is important for the organization to seek guidance when selecting the appropriate project delivery method; the specifics of each organization's in-house capabilities, financial situation, schedule, and scope mean that there is no one-size-fits-all answer. Selecting the right delivery method and contract structure can help align incentives and priorities across team members.

Resources

• "Creating Excellent Buildings: A Guide for Clients." London, UK: CABE. 2003.
• American Institute of Architects. *The Architect's Handbook of Professional Practice*. 15th ed. Edited by Linda C. Reeder. Hoboken, NJ: John Wiley & Sons. 2014.
• See the *Science and Engineering Centre, Queensland University of Technology, Translational Research Institute*, and *Mission Bay Campus, University of California, San Francisco* case studies for examples of how project delivery methods were structured. ⧉

❑ **Prepare project logistics**

Several administrative requirements need to be completed early in the process, as they can have implications on the scope, budget, and schedule of the project. For example, zoning or deed restrictions can significantly affect what can be built on a site, and the application for special permits or variances may affect the project schedule. Additionally, the application for certifications such as United States Green Building Council LEED or Living Building Challenge™ will affect the project team and budget. A design professional can help an organization determine what limitations and administrative requirements may exist and will assist with the applications and approvals as necessary.

Questions to Consider

• Are there any internal requirements necessary for the project to proceed?
• Are there any governmental approvals necessary for the project to proceed?

3. DESIGN

While the design team will take responsibility for a majority of the work to be completed during this phase, organizations play a critical role in making key decisions and checking in on the progress through a series of design reviews to ensure the project's form, function and fabrication method is aligning with the identified project mission. Organizations will additionally continue to refine operation and financial preparations in support of the project.

3. DESIGN

3A. MISSION

Is the design poised to meet our intended impact?

As the design develops, project teams should periodically revisit project goals to ensure that design, quality, cost, and timeline decisions are furthering the project mission and intended impact. This body of work will assist organizations in refining the impact indicators and criteria identified in previous phases as well as tracking impact metrics that occur during this phase.

Outcomes-Based Design ⎙
- ❑ Check-in: project mission and goals
- ❑ Check-in: theory of change
- ❑ Check-in: indicators and criteria

3B. DESIGN

What is the design?

*In this body of work the **Design Brief** developed in the 2. Planning phase will be translated into an actionable set of design drawings and documents for construction. Under the leadership of the design team, organizations should be prepared to respond to design ideas and make design decisions that are aligned with the project objectives.*

Project Development
- ❑ Develop the design of the capital project
  - SD: schematic design
  - DD: design development
  - CD: construction documentation

3C. FEASIBILITY

Is the design within our scope and budget?

Organizations should continue to re-evaluate the budget, schedule, operational assumptions, and implementation plans that have been made in previous phases. While organizations might be pressed to value engineer in order to cut escalating costs, make sure decisions are carefully balancing mission, design, and feasibility.

Organizational Preparation
- ❑ Check-in: change management
- ❑ Check-in: financial health ⎙

Project Preparation
- ❑ Check-in: project team ⎙
- ❑ Check-in: project budget ⎙
- ❑ Check-in: project schedule
- ❑ Check-in: capital campaign
- ❑ Check-in: project logistics

Key Activities & Deliverables

> ❑ **Design Review Meetings**

> ❑ **Design Documentation**

Key Activities and Deliverables

Design Review Meetings

The design team should meet with key stakeholders and decision-makers regularly throughout the design process. The appropriate level of frequency for the meetings will vary per project and by stakeholder group. Core project team members will likely meet more frequently than other stakeholder groups, such as community or board members, while some stakeholder groups will identify a representative to be more involved in the week-to-week decisions. When agreeing upon this schedule, it is important to strike a balance between providing the design team ample time to make progress between meetings (i.e., allow enough time between meetings) and addressing necessary decisions in a timely manner to keep the project moving forward (i.e., meeting regularly enough to address issues as they arise).

Questions to Consider

- What interval of meetings works best for our organization and design team?
- How will the design be shared and approved with decision makers?

Design Documents

During this phase, the design team will generate a series of design drawings and documents that will ultimately serve as the basis for construction. At the end of each phase of design (and at more frequent intervals, if specified), the design team will review these drawings with the project team to ensure that the design is on track. These drawings should be evaluated against the identified mission and goals established in the previous phases. At the end of this phase, the design team will provide a bid set of drawings, which will serve as the basis for the contract between the contractor and client.

3A. MISSION

Outcomes-Based Design

☐ **Check-in: project mission and goals**

During the design process, organizations should periodically meet with the design team to confirm that the design stays aligned with the mission and goals it aims to achieve. When potential negative impact arises, the project team should work together to identify mitigation strategies.

Questions to Consider

- Is there new information that changes the project's potential impact?
- How can we mitigate against or counteract potential negative impact?

Resources

- *Outcomes-Based Design* (p. 38) 🗐

☐ **Check-in: theory of change**

Organizations should reconsider and iterate the theory of change as necessary as the design progresses.

Questions to Consider

- Are there elements of our design that change our existing theories?
- Is our logic still sound based on what we know now?

Resources

- *Outcomes-Based Design* (p. 38) 🗐

❑ **Check-in: indicators and criteria**

Organizations should track the activities during this phase that are leading to impact. A participatory design process, for example, can improve the design and give agency to those involved in the process. As these activities are underway, track and catalog relevant metrics to ensure that you are on track and will be able to report back to stakeholders.

Questions to Consider

- What activities during this phase might be leading to impact?
- How will we track and catalog these metrics?

Resources

- *Outcomes-Based Design* (p. 38) 🗐

3B. DESIGN

Project Development

❑ **Develop the design of the capital project**

The design process has several phases, including: schematic design (SD), design development (DD), and construction documentation (CD). During schematic design, initial ideas are proposed and tested. Additionally, the design team typically researches zoning and jurisdictional requirements during this phase. During design development, the selected proposal is fleshed out and refined, with coordinated structural, electrical, mechanical, and plumbing systems. During

the construction documentation phase, the architect prepares a set of drawings and specifications (contract documents) that serve as the basis of a contract between the client and the contractor, ultimately defining the building in detail. These drawings include specifications for materials, fixtures, and construction details. The owner should be expected to provide authorization and approval to progress to each following phase.

The chosen design professional will lead this process and regularly check-in with the organization's project manager, according to a set meeting schedule (see *3. Design: Design Review Meetings*). The design team should frequently reference the project's programming document and impact criteria as it develops the project design.

This body of work will address every scale of the capital project, from larger master planning activities, site work, and landscape plans to detailed lists of furniture, fixtures, and equipment (called an FFE). An organization's architect or chosen design professional will guide this process and communicate expectations.

Question to Consider

- Do we understand the design?
- Does the design reflect our mission?
- Have we communicated the desired intangible qualities of our project?
- Can we verify that our intent and goals are achieved?
- Do we have stakeholder buy-in regarding the final design?

3C. FEASIBILITY

Organizational Preparation

❑ **Check-in: change management**

Decisions made during the *3. Design* phase will have direct impact on an organization's culture and operations. For example, staff that were previously overcrowded in a shared open office may feel disconnected when they move to a new, larger facility and are separated by different floors. Without redesigning systems and processes to match this spatial change, communication and productivity may suffer. As the design develops, organizations should revisit their change management strategies to adapt their systems and processes as necessary.

The stakeholder engagement process conducted in the *2. Planning* phase will help build ownership of the project throughout the organization. Additionally, continued communication throughout the *3. Design p*hase is important to ensure that stakeholders are brought along through the process as decisions are developed. One challenge is that organizations and stakeholders often have difficulty understanding design drawings; the scale, orientation, and spatial implications of the design can be confusing. To mitigate this, additional services can be requested of the design team. The creation of scale models, renderings, or mock-ups can help ensure that the design is understood before it is approved.

Questions to Consider

- How can we effectively communicate design decisions to our stakeholders?
- How will the design change the way we work?
- What systems or processes need to be developed to match this change?

❑ **Check-in: financial health**

As the design develops, organizations should continually balance their organizational and operational health expectations with the scope of the project. Understanding ongoing cost implications will help inform life cycle cost benefit analyses and design value decisions.

Questions to Consider

- What external economic conditions might affect our projections?
- How can the building serve as an asset to the organization?

Organizational Preparation

❑ **Check-in: project team**

Many team members should be fully brought on during this phase. Approval processes and decision-making systems may need to adapt to reflect changing team dynamics. Periodically review the project team, line of communication, and decision-making process to ensure that team members are operating efficiently and effectively.

Resources

- *Project Team Worksheet* (p. 50) ⧉

❑ **Check-in: project budget**

As the design progresses, the project budget will achieve higher levels of refinement. Construction cost estimates in early design phases are often based on typical costs per square foot, and shift to a more detailed pricing of each component and material in the later stages of design (i.e., design development and construction documentation). The organization will likely make several decisions regarding "value engineering," which seeks to maximize value related to cost. The organization should pay particular attention for decisions that will have long-term implications, both on cost, as well as project mission. Design professionals can lead the analysis of life cycle costs and benefits, and the design team will typically engage a cost estimator or quantity surveyor to prepare construction estimates based on materials and labor.

Questions to Consider

- Are we on budget? Why or why not?
- Do we need to adjust the scope?
- Which design decisions will have long-term impact implications? (Think about decisions that affect operations costs—such as HVAC equipment, material quality, maintenance, etc.—as well as decisions that affect internal operations or external relationships with the surrounding community.)

Resources

- *Financial Health Worksheet* (p. 44) ⧉

❑ **Check-in: project schedule**

As the design is refined, revisit the schedule frequently to track progress to ensure an on-time completion, and make adjustments as necessary.

Questions to Consider

- Are we on time? Why or why not?
- Do we need to adjust the project timeline? How will this affect our budget?

❑ **Check-in: capital campaign**

Depending on the time frame for the capital campaign, organizations frequently continue fundraising through the phases of *3. Design, 4. Construction,* and into *5. Occupancy*. Organizations, in partnership with financial consultants, might set target amounts at which point they will start construction, even before the full amount is raised. In this phase, the project team should make sure to continue balancing the scope of the project and vision with identified funding (see *2C. Feasibility: Conduct capital campaign feasibility study*).

Questions to Consider

- Are we reaching our milestones? Why or why not?
- How does our fundraising status affect the design?
- How might the design be leveraged to affect our fundraising strategy?

Resources

- See *The California Academy of Sciences, Marymount University Hospital and Hospice*, and T*he Simpson Center for Girls* case studies for examples of how organizations undertook capital campaigns. 🗐

❑ **Check-in: project logistics**

There will be a series of administrative requirements and approvals that need to be addressed throughout the project implementation process. In this phase, organizations can rely on a design or development professional to assist with necessary logistics, including reviews by regulatory agencies, such as the building department, fire department, or Department of Health.

Questions to Consider

- What approvals are required for the project to continue?
- How will necessary approvals affect our design or schedule?

4. CONSTRUCTION

In this phase, the construction of the capital project is both started and completed. It is important to know that many unforeseen issues can arise that may require a re-evaluation of the project budget, schedule, and scope. Organizations should expect to continue communications with the project team at regular intervals to ensure implementation of the design aligns with the intended project objectives.

4. CONSTRUCTION

4A. MISSION

What impact does the construction process have?

This body of work will assist the organization in tracking and measuring the potential impact identified in previous phases.

Outcomes-Based Design ⧉
- ❑ Check-in: project mission and goals
- ❑ Check-in: theory of change
- ❑ Check-in: indicators and criteria

4B. DESIGN

How do we ensure impact through the building process?

Many critical design decisions are still being made in this phase that can affect the project's impact. This section will assist organizations in understanding their role through construction.

Project Implementation
- ❑ Construct the capital project
- ❑ Catalog record drawings

4C. FEASIBILITY

Is the design within our scope and budget?

This body of work will help organizations navigate unforeseen issues and prepare for the operational and organizational changes that will occur once the building is completed.

Organizational Preparation
- ❑ Check-in: change management
- ❑ Check-in: financial health ⧉

Project Preparation
- ❑ Check-in: project team ⧉
- ❑ Check-in: project budget ⧉
- ❑ Check-in: project schedule
- ❑ Check-in: capital campaign
- ❑ Check-in: project logistics

Key Activities & Deliverables

❑ **Groundbreaking**

❑ **Progress Review Meetings**

❑ **Project Completion**

Key Activities and Deliverables

Groundbreaking

A *groundbreaking ceremony* is typically held to celebrate the transition into the *4. Construction* phase. It is an opportunity to raise awareness of the project, to recognize donors or other important stakeholders, and can be leveraged to generate support for ongoing capital campaign efforts or excitement among stakeholders and community members.

Project Completion

At the completion of the *4. Construction* phase, the finished project will be handed over to the organization. Organizations should expect to work with their design and construction teams to complete a variety of administrative tasks before occupancy and during the transition (see *4-5C. Feasibility: Project logistics*).

Progress Review Meetings

Organizations should expect to meet with the design and construction team periodically throughout the *4. Construction* phase. Although many decisions about the project will have been made in earlier phases, unexpected conditions on-site or shifting priorities may mean that design adjustments will be necessary, and organizations should have a representative available to make decisions about these changes in a timely manner. Before construction begins, identify who should meet with the design and construction teams and when.

Questions to Consider

• Who will be responsible for decision-making during the construction phase?
• How often should progress review meetings be held?
• How will decisions be made, and who will make them?
• How will we ensure that construction activities are aligned with our mission and goals?

4A. MISSION

Outcomes-Based Design

☐ **Check-in: project mission and goals**

The project team should periodically refer to the stated mission and goals to ensure that the construction process is leveraged to achieve additional impact and to mitigate potentially negative impact.

Resources

• *Outcomes-Based Design* (p. 38) 🗐

☐ **Check-in: theory of change**

Organizations should reconsider and iterate the theory of change as necessary during the *4. Construction* phase.

Questions to Consider

• Has anything changed that will affect our anticipated outcomes?
• Is our logic still sound based on what we know now?

Resources

• *Outcomes-Based Design* (p. 38) 🗐

☐ **Check-in: indicators and criteria**

As opportunities for impact during the construction process are identified and planned for, the organization may want to collect data related to the process in order to track progress. This information may include the number of local workers trained, the funds invested in local

businesses, or the amount of energy that construction processes require.

Questions to Consider

- What metrics are important to our construction process?
- What can we learn by collecting this data?
- How will we collect this data?

4B. DESIGN

Project Implementation

❑ Construct the capital project

During this phase, the contractor will lead the construction of the project. This will involve activities such as coordinating subcontractors and completing approval processes, permitting, inspections, and material procurements. As the construction project progresses, the client and design team should have regular check-ins to track progress and address unexpected circumstances as they arise (see *4. Construction: Progress Review Meetings*).

Questions to Consider

- Is construction progressing as expected? Why or why not?
- Have any circumstances changed that require a revised design?
- Will any on-site changes affect the achievement of our mission and goals?

❑ Catalog record drawings

The finished project may vary slightly from the construction documents. There are several reasons why an organization may request a set of drawings that shows the actual conditions of the completed structure (i.e., governmental requirements, maintenance cost-savings, space-planning logistics, etc.).

Questions to Consider

- Are we required to commission record drawings?
- Would it be to our benefit to commission record drawings?
- What level of detail should we require in these drawings?

4C. FEASIBILITY

Organizational Preparation

❑ Check-in: change management

In this phase, organizations should revisit the change management strategies developed in previous phases and adapt the systems and processes as necessary to reflect any changes in the project scope or design. Additionally, the *4. Construction* phase can be an opportunity for an organization to test out these new systems and processes before completion of the capital project to ease the transition into the new space.

It is also important that communication continue with leadership, stakeholders, and funders by providing updates on the project construction. This can happen through field reports, open houses, or tours of the construction project. Sharing progress can help mitigate concerns or reservations regarding the move and generate excitement about the new project.

Questions to Consider

- How can we effectively communicate the project process with our stakeholders?
- What change management strategies can we implement now while the project is under construction?
- Have any changes in project scope or design occurred that will impact our change management strategy?

Resources

- See *The California Academy of Sciences* case study for an example of an organization that leveraged its transition period to test new programs and installations.

❑ Check-in: financial health

Decisions will continue to be made that affect the trade-off between one-time construction costs and an organization's long-term health and operations. Revisit financial projections and assumptions to adjust and prepare for the impact of opening day and beyond.

Resources

- See the previous phases' *C. Feasibility* section for preceding steps regarding

organizational financial health.
- See the *Constitution Hill Precinct, Exploratorium, The Simpson Center for Girls, The Summit Bechtel Reserve,* and *West Campus Residential Initiative, Cornell University* case studies for examples of financial realities that became known after opening day.

Project Preparation

❑ **Check-in: project team**

Organizations should periodically review the project team structure, line of communication, and decision-making processes to ensure that team members are operating efficiently and effectively.

Resources

- *Project Team Worksheet* (p. 50) 🗏

❑ **Check-in: project budget**

As construction progresses, decisions may be made which will alter both up front and recurring costs. At this point, changes will typically be submitted via change orders from the contractor, and decisions made depending on the selected project delivery method. The team should balance mission, operational, and financial factors when making decisions in order to plan accordingly for long-term impact.

Resources

- *Capital Project Budgeting Worksheet* (p. 47) 🗏

❑ **Check-in: project schedule**

As construction progresses, the team should frequently revisit the schedule to track progress for an on-time completion or make adjustments as necessary.

Questions to Consider

- Are we on time?
- How might a changing schedule affect other elements of our organization?
- How might we need to adapt to a changing schedule?

❑ **Check-in: capital campaign**

Continual work will need to be conducted to maintain financing streams and relationships with funders. Frequently, organizations will prepare regular progress updates to committed funders, which can also be used to leverage support. Organizations should also consider major events such as the groundbreaking and *ribbon cutting* as opportunities to engage additional outside parties.

Questions to Consider

- Have we met our milestones?
- How might our capital campaign need to adjust?

❑ **Check-in: project logistics**

As the project progresses, organizations will be responsible for certain administrative tasks such as applying for building services (gas, electric, water, etc.), approving change orders, or obtaining insurance coverage to protect the organization against various types of losses during the construction project. Organizations should seek assistance from design professionals, financial advisors, or legal counsel as necessary.

Questions to Consider

- For what tasks are we responsible?
- Do we need assistance in completing those tasks?

5. OCCUPANCY

In the *5. Occupancy* phase, organizations transition into their new facility and will begin to see the impact that the completed project has on the organization and its surrounding community. This section will assist an organization in tracking outcomes as well identifying potential adjustments to amplify positive impact.

5. OCCUPANCY

5A. MISSION

Is the capital project achieving its purpose?

Now that the construction of the project is complete, this body of work will help the organization conduct an assessment to understand the outcomes of the project and if it has achieved its intended impact. For further guidance, organizations should refer to the Purpose Built retrospective tool titled, Charting Capital Results.

Outcomes-Based Design 🗍
- ❑ Check-in: project mission and goals
- ❑ Check-in: theory of change
- ❑ Check-in: indicators and criteria

Case Study Impact Report
- ❑ Conduct case study evaluation 🗍

5B. DESIGN

Do we need to adapt the design?

Typically, not everything in the building will operate as planned. This body of work will assist organizations in assessing the functionality and use of the space and in determining whether or not they need to make any modifications to the design itself or to the way that it operates in order to meet their intended outcomes.

Project Adjustments
- ❑ Assess spatial functionality and adapt as necessary

5C. FEASIBILITY

Can we sustain, operate, and maintain the capital project?

This body of work will assist the organization in evaluating the accuracy of its project projections, as well as plan for the transition and ongoing operational and maintenance needs of this new asset.

Building Transition
- ❑ Manage the move to the new facility

Organizational Preparation Check-in
- ❑ Check-in: change management
- ❑ Check-in: financial health 🗍

Project Preparation Check-in
- ❑ Check-in: project budget 🗍
- ❑ Check-in: capital campaign
- ❑ Check-in: project logistics

Key Activities & Deliverables

- ❑ **Ribbon Cutting**

- ❑ **Operations Plan & Manual**

- ❑ **Case Study Impact Report**

Key Activities and Deliverables

Ribbon Cutting

Holding a *ribbon cutting* ceremony to open the project publicly is a great opportunity for organizations to celebrate their work, and to communicate the value of the project to users, donors, and other stakeholders. Other similar events may include topping out ceremonies, which can be held when a building's highest beam is installed.

Impact Report

After allowing time for impact to manifest, organizations should invest in a retrospective impact evaluation. See *Charting Capital Results* for guidance on how to conduct a capital project impact assessment. (p. 36) 🗋

Operations Plan and Manual

It is important for organizations to understand how to operate and maintain their new asset after the project is completed and handed over. While facility managers and relevant staff should be trained during the transition to use systems, equipment, and furniture, an *Operations Plan and Manual* can help capture learning and set standards. Members of the design and construction teams will likely be most knowledgeable about these systems and can help guide the creation of the manual.

5A. MISSION

Outcomes-Based Design

☐ **Check-in: project mission and goals** 🗋

It takes time for all organizations to adapt and become comfortable with a new space after a major capital investment. As daily operations are transitioned from the project team to the organization's operations team (see *5C. Feasibility: Manage the move to the new facility*), organizations should create time to review the desired mission-aligned outcomes and ensure they do not lose sight of the big picture. Frequently, funders or other partners will require a report-back; use this opportunity to catalog and synthesize the impact metrics that were identified throughout the process.

Questions to Consider

- Is our project achieving the types of outcomes that we anticipated?
- Which of our partners require a final report?
- How will we communicate our outcomes?

Resources

- *Outcomes-Based Design* (p. 38) 🗋

☐ **Check-in: theory of change**

As the organization settles into a new system and process of operations, the ways in which outcomes are achieved might also need to adapt. Organizations

should use this opportunity to refer back to and update the theory of change.

Questions to Consider

- Did anticipated outcomes occur? Did anything unanticipated happen? Why or why not?

Resources

- *Outcomes-Based Design* (p. 38) 🗋

❑ **Check-in: indicators and criteria**

Organizations should continue to track indicators and criteria after a capital project is complete. Some projects may require this data collection due to reporting needs. The metrics can influence decision-making regarding organizational operations or priorities, and can be used to inform impact or process evaluations.

Resources

- *Outcomes-Based Design* (p. 38) 🗋

Case Study Impact Report

❑ **Conduct case study evaluation** 🗋

Organizational leaders should consider both how to generate internal learnings for continuous improvements as well as how to capture lessons that can be shared externally. While all organizations face resource and time limitations, making time to reflect back—whether it is one, two, five, or 20 years later—is an important element of the capital project process. External evaluation teams can provide additional

expertise. The *Purpose Built* team has generated a retrospective toolkit, Charting Capital Results, to assist with organizations looking to assess both their process and impacts.

Questions to Consider

- What assessment time-frame is appropriate?
- What external partners should we engage?
- Who is our audience? How will our research be shared?

Resources

- *Charting Capital Results* 🗋

5B. DESIGN

Project Adjustments

❑ **Assess spatial functionality and adapt as necessary**

As users begin to adjust to their new space, the project team should solicit feedback to understand what is working well, what could be improved, and if any adjustments would be beneficial. These modifications may be as simple as rearranging furniture or as complex as adding new equipment or new space to the building. If these modifications cannot be completed within allotted contingencies, organizations may need to find additional resources. Ultimately, these upfront costs may lead to cost savings down the road.

Questions to Consider

- How is the design having desired impact?
- How is it creating undesired impact?
- What changes could improve how the building functions?
- How much will it cost? Can we afford it?

5C. FEASIBILITY

Building Transition

❑ **Manage the move to the new facility**

Moving people, furniture, and equipment takes time and can be costly. The facility's maintenance staff should have an operations plan in place and an operations manual to reference. It is critically important to adjust the budget for the move and take appropriate steps to minimize disruption during and after the move.

Consider completing a test run of the facility before the full move-in. In some cases, organizations might be able to leverage the transition period to amplify impact. For example, for major renovations, organizations can utilize the move to a temporary facility to test new layouts, equipment, or processes that will then be implemented in the final project. Keep in mind that it will take time for staff to adjust to their new environment and to manage the change in organizational culture that comes from a new space.

Questions to Consider

- What will it take to move?
- How can we minimize disruption before, during, and after the move?
- What training is necessary?
- How might we leverage this transition time to amplify impact?

Resources

- See the *Marymount University Hospital and Hospice* case study for an example of an organization that planned well for the transition to the new facility. ⬚

Organizational Preparation

☐ Check-in: change management

In this phase, the processes and systems that were developed in previous phases will be implemented. Organizations should continue to communicate with stakeholders and building occupants after the transition to the new space to evaluate how the capital project is creating organizational changes and if additional systems or processes need to be developed to support this change.

Questions to Consider:

- How is the capital project changing our organization?
- Are the systems we developed to manage this change working?
- How do we collect and evaluate issues that arise from stakeholders?
- What new processes and systems need to be developed to address these issues?

☐ Check-in: financial health

During the *4. Construction* phase, many scenarios that impact the organization's financial health might occur, such as changes in cost, market forces, or operational capacity. Organizations should be periodically re-evaluating their financial health, especially after the new project has opened. As operating costs and budgets are updated, organizations will need to reassess their ability to sustain future one-time and recurring expenses and may need to make corresponding shifts in expected income or revenue generating strategies.

Resources

- *Financial Health Worksheet* (p. 44) ⬚

Project Preparation

☐ Check-in: project budget

At the completion of the project, the actual operating costs of the building may differ from forecasted operating costs—this is expected. Some facilities with newer technologies and maintenance contracts might even take several months or years before facility managers can fully understand and anticipate annual operations costs. These budgets should be assessed, resolved, and updated periodically after the building opens.

Resources

- *Capital Project Budgeting Worksheet* (p. 47) ⬚

☐ Check-in: capital campaign

Organizations should continue to maintain relationships with funders after the construction is complete. The *ribbon cutting* ceremony can provide an opportunity to invite funders and partners to celebrate the completed project and to support ongoing fundraising efforts, as applicable. Frequently, funders might require final reports. Organizations should also consider internally assessing the capital campaign in order to inform future fundraising efforts.

☐ Check-in: project logistics

After the completion of a capital project, the facility will be turned over to the organization. This process will include activities such as completing the final payment and transferring warranties, maintenance contracts, and other documentation. Once this is complete, the organization will then take over the responsibility for the operation of the building; however, the work of the contractor is often under warranty for one year after this date to correct mistakes or make repairs if deemed a requirement under the contract.

Questions to Consider

- What is required in order to close out the project?
- Who within the organization is responsible for managing and storing the documentation?

PURPOSE BUILT

Planning for Impact

Appendix

OUTCOMES-BASED DESIGN (OBD)

The OBD is an iterative process that helps project teams align design responses with relevant needs. The following pages will help organizations identify project goals (both mission-aligned and 360°), develop a theory of change, and identify indicators and criteria.

The OBD is a non-linear process, and it's okay to go back. In fact, it's designed to provoke a dialogue that results in clarity. When conducting the OBD, use sticky notes or dry-erase boards to help with the iterative process.
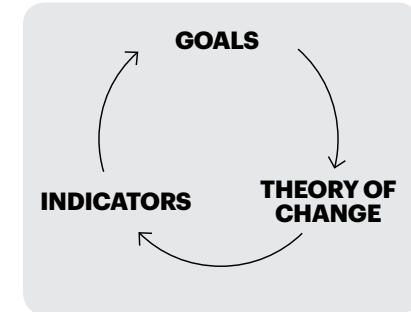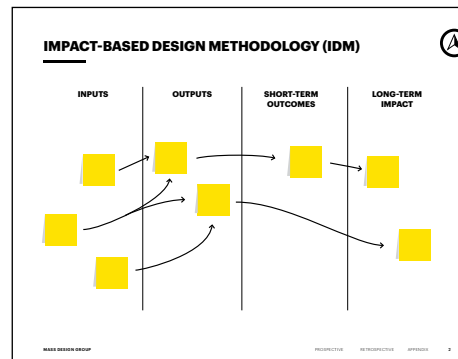

MISSION AND GOALS
What are our mission and goals?
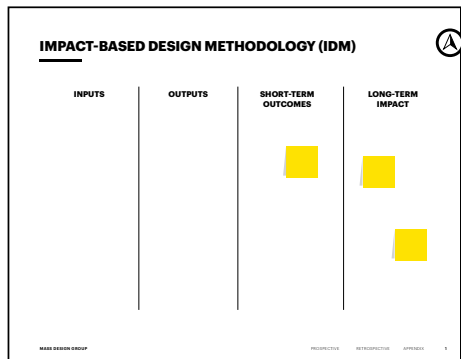
To begin, organizations will brainstorm goals for the capital project. Consider goals that are aligned with the organization's mission, and look for opportunities to amplify impact that capital projects may have.
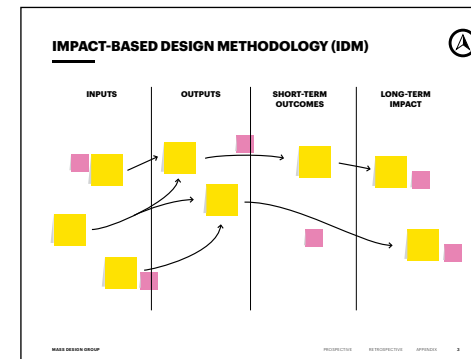
THEORY OF CHANGE
How do we achieve our desired outcomes?

Next, brainstorm how capital projects can lead to impact, and identify the steps necessary to achieve the organization's goals. Think about how the project could have direct impact, as well as how it could change behaviors and mindsets.

INDICATORS AND CRITERIA
How do we evaluate our progress?

Then, identify indicators that will help demonstrate if the project is successful. Consider both outcome indicators and process indicators, paying close attention to any areas where there are risks or uncertainty in the theory of change.

What are our mission and goals?

Buildings aren't just shells for the activities and programs they contain, but play an active role in helping organizations advance their missions, operate more effectively, and build capacity. Beyond this, capital projects can inspire confidence and create broader momentum for change.

Consider the questions below while identifying project goals. Think about how they can align with organizational mission and identified needs in order to amplify positive impact. Finish this step by addressing the broad range of (often unintended and sometimes negative) impact that capital projects ultimately have.

A. Identify mission-aligned impact goals

- What is the organization's mission statement?
- Why is it important?
- What are the end goals?

B. Consider opportunities identified in the needs assessment

- What are the additional needs that stakeholders have articulated?
- Which of these can the project address?
- Which can help amplify the mission?

C. Use the 360° worksheet to think about additional impact your project may have–both intended and unintended

- What are the opportunities to amplify positive impact?
- Where should we mitigate negative impact?

Reduce infant mortality rates

Increase literacy rates

Build economic capacity

Reduce unemployment among women

Minimize energy use onsite

*Increase community's access to green space*

How do we achieve our desired outcomes?

Buildings can lead to impact in a variety of ways. Not only do they affect an organization's ability to directly achieve their mission, but they also can affect behaviors and perceptions.

Brainstorm the steps necessary to achieve the project's goals, and think about how each relates to the next. Note any assumptions and risks in these critical pathways to impact.
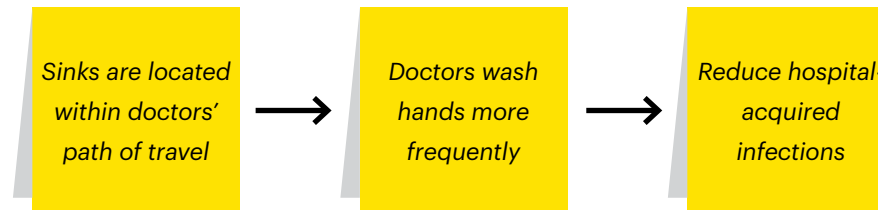
A. Identify opportunities for direct impact

- How will the capital project directly lead to impact?

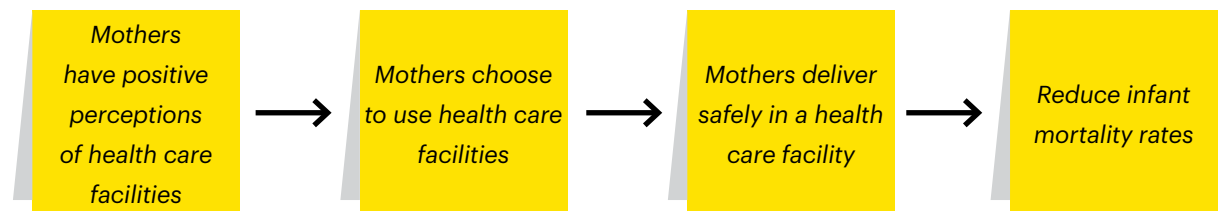*Wards are well ventilated* → *Reduce hospital-acquired infections*
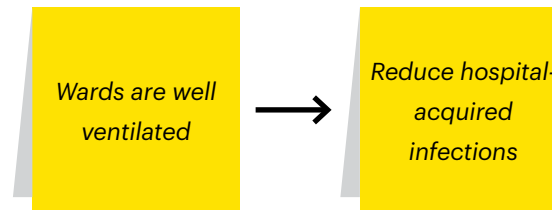
B. Identify opportunities for behavior change

- How does the built environment influence behavior?
- How might changes to behavior lead to our identified goals?

Sinks are located within doctors' path of travel → *Doctors wash hands more frequently* → *Reduce hospital-acquired infections*

C. Identify opportunities for symbolic impact

- How does design affect the way people think?
- How could changed perceptions or attitudes lead to impact?

Mothers have positive perceptions of health care facilities → *Mothers choose to use health care facilities* → *Mothers deliver safely in a health care facility* → *Reduce infant mortality rates*

How do we evaluate our progress?

Identifying metrics can help organizations track progress and plan for evaluation efforts, enabling them to improve their work and report back to funders. If things aren't going as expected, indicators at different steps in the theory of change model can help organizations identify where to intervene.

Consider the following types of indicators, and identify which are the most important to follow up on. See the *Metrics Database* sample for examples of health metrics and evaluation strategies.
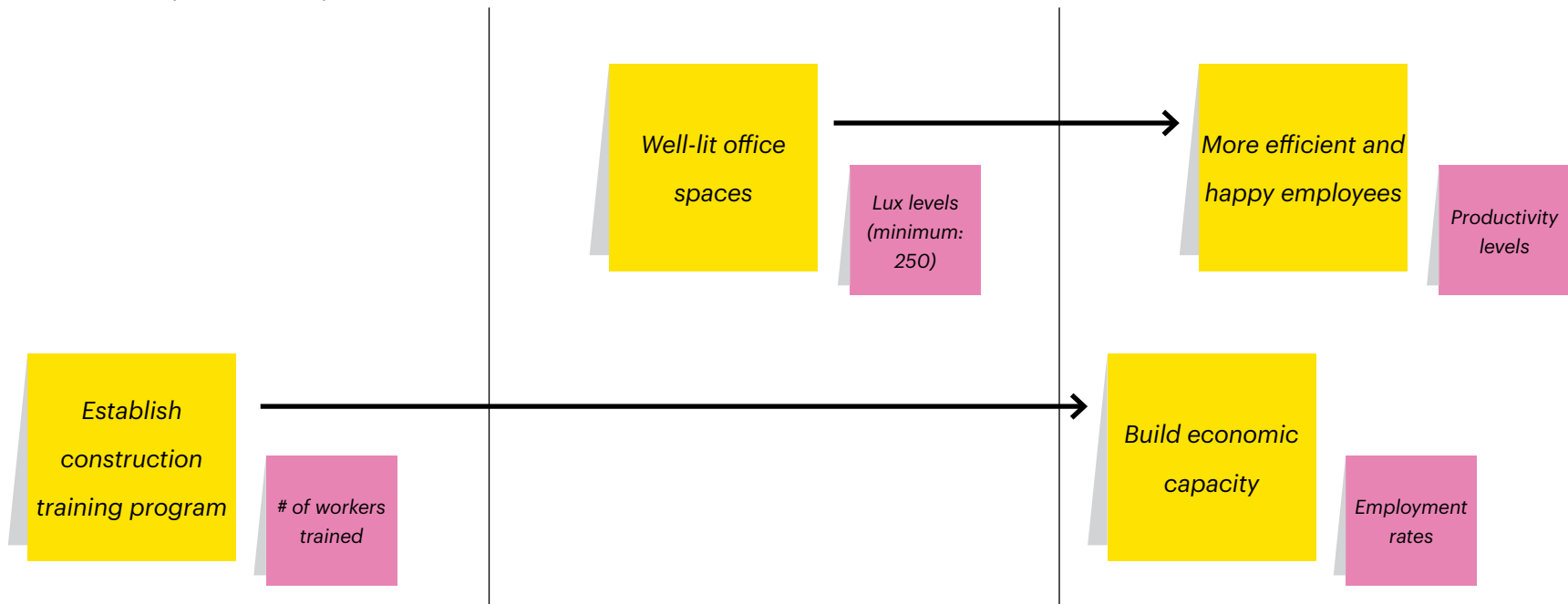
A. Identify process indicators

- How will we know if our process is leading to impact?
- What activities should we be completing to ensure that we've planned for impact?

B. Identify design indicators

- What design qualities do we need in order to lead to impact?

C. Identify impact indicators

- What indicators will tell us if we have achieved our goals?
- Are they specific, observable, and measurable?

Well-lit office spaces

Lux levels (minimum: 250)

More efficient and happy employees

Productivity levels

Establish construction training program

# of workers trained

Build economic capacity

Employment rates

OUTCOMES-BASED DESIGN WORKSHEET (OBD)

INPUTS	OUTPUTS	SHORT-TERM OUTCOMES	LONG-TERM IMPACT

360° WORKSHEET (OBD)

The **360° worksheet** helps project teams consider a range of potential stakeholders and categories of impact. Not every cell needs to be filled out, but the document should be used as a guide to ask questions that are often unconsidered.

	Environment	Economy	Education	Emotion	Health
End User					
Organization					
Sector					
Community					
Region					

$

Major capital projects are significant time and resource investments for any organization. The set of indicators listed below and calculated in the downloadable Excel file provides a helpful barometer of an organization's financial health.

NET INCOME

Net Income = Total Revenue – Total Expenses

Net income, informally referred to as the "bottom line," shows an organization's fiscal surplus or deficit in a given year. A positive net income means that an organization is able to cover its expenses and contribute to its net assets.

Healthy organizations typically have reliable revenue and consistent surpluses. If your historic net income seems volatile or consistently negative, consider the root causes. Unhealthy indicators don't necessarily mean you shouldn't pursue a capital project, but organizations should show an ability to respond to negative events or trends.

REVENUE MIX

Revenue mix shows the proportional breakdown of each category of income for an organization. A diverse mix of revenue can help organizations be prepared to handle financial risks or challenges when they arise. If your organization is primarily dependent on a single or a few sources of revenue, consider the reliability of these resources in the future. Remember that capital projects can strain sources of revenue–for example, funders who contribute to a capital campaign may decrease their giving in the future (this is also known as donor fatigue). On the other hand, capital projects can also serve as an asset for the organization–some funders may specifically fund portions of capital campaigns, and capital projects can also bring in additional sources of revenue, like ticket sales.

NET ASSETS

Net Assets = Total Assets – Total Liabilities

Net assets is an indicator of the fiscal worth or value of an organization. While there is no strict rule for the relationship between net assets and capital projects, project budgets are generally correlated with the size of the organization (as evidenced by net assets or annual operating budgets). Because major capital projects require significant investment in time and resources, organizations will likely be building their net assets prior to committing to a new project. Capital projects, once completed, will add to the net assets of an organization.

A NOTE ABOUT DATA

» Most of the metrics included in this guide and the downloadable worksheet can be calculated from information included in an organization's 990 tax forms. In some cases, additional data will be required. Typically, additional information will be found in an organization's audited financials.

» The revenue mix utilized in this worksheet comes from 990s, which provides a summary of revenue mix in four categories. Organizations may consider looking at a more detailed breakdown, depending on their business models.

$

DEBT RATIO(S)

There are a few indicators used to benchmark an organization's ability to manage its debt obligations.

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\text{Debt Coverage Ratio} = \frac{\text{Net Revenue}}{\text{Scheduled Payments}}$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Organizations should work with their financial staff to determine which indicator or set of indicators is appropriate.

The debt ratio shows the proportion of an organization's assets that are liabilities. When the debt ratio is low, organizations have more capacity to take on additional debt, and may be more ready to support a capital project through financing.

The debt coverage ratio (or debt service coverage ratio) shows an organization's ability to meet its short-term debt obligations. If an organization is unable to consistently meet its short-term debt obligations, it might not be ready to take on a major time and resource

investment. The debt coverage ratio requires inputs that are not required for 990s; thus, audited financial or other sources must be used to generate this metric.

Similarly, the current ratio compares assets to liabilities that are expected to be acquired or paid within a fiscal year. A current ratio of 1.0 or higher means that an organization will receive more than it owes over that fiscal year. Unlike the debt coverage ratio, the current ratio can be calculated from the 990s.

Major capital projects will likely require organizations to take on short-term or long-term debt. Organizations should be able to manage their existing debt and prepared to manage future debt projections.

MONTHS OF CASH

Months of cash is a metric that calculates how long an organization would be able to operate with curent cash reserves if no additional income were generated and no long-term assets were converted to cash. While the appropriate proportion of cash reserves varies by organization (generally, three to six months of reserves is considered healthy), the indicator gives a general measure of liquidity for the organization.

Months of cash shows an organization's ability to manage unanticipated short-term risks.

IMPLICATIONS OF CAPITAL PROJECTS

» As organizations prepare to undertake capital projects, they should be realistic about projections for changing revenue and expenses. You may consider creating best and worst case scenarios and identifying opportunities to adapt financial operations and funding in the future.

» The same benchmark indicators can be used to assess organizational financial health in the years leading up to and after a capital project. Several years after a project is completed, organizations will be able to pinpoint more specific indicators for consideration.

FINANCIAL HEALTH WORKSHEET

This page provides instructions on how to use the downloadable Excel file: *Purpose Built Financial Health Worksheet*.

The downloadable Microsoft Excel file contains one sheet of inputs.

The first column identifies where the data can be found in the 990s or if the user needs to pull data from another source, like audited financials.

Users can enter up to 25 years of data.

The file automatically creates relevant graphs with the identified financial indicators of interest.

The file identifies which cells will contain user input (white cell with light blue text), and which cells contain preset calculations (yellow cells).
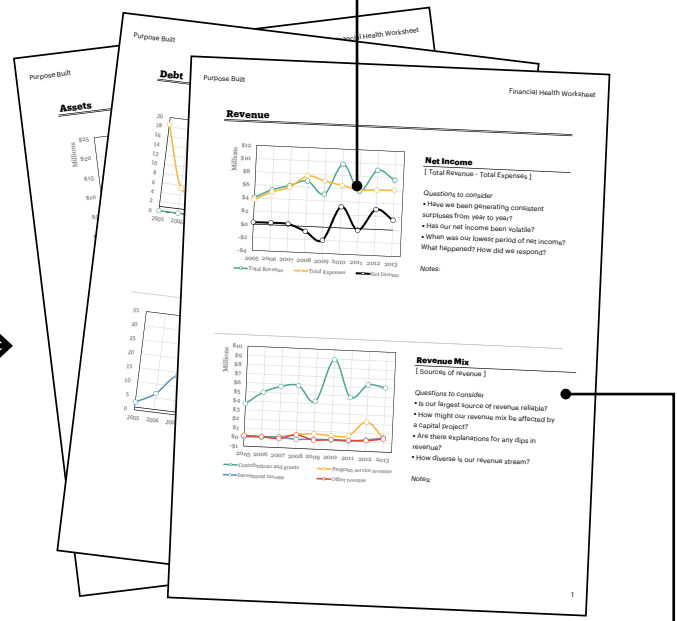
Each graph is supported by questions for consideration and space for notes for the user.

$

The capital project budgeting process helps organizations understand the financial feasibility of implementing their visions, and also serves to provide fiscal accountability through the completion of the project.

INTRODUCTION

This working guide is intended to serve as a resource for organizations as they prepare initial project estimates. In most cases, organizations will need to work with their design professionals, contractors, or other individuals familiar with capital projects in order to develop more confident estimates.

BUDGET CONSIDERATIONS

Generally, cost estimation considers hard, soft, and site costs.

- Hard costs refer to the "brick and mortar" of the project and represent the cost of construction–buildings, interiors, landscapes, structures, and the labor required to build and install.

- Soft costs are development costs incurred by organizations when completing capital projects. They include items such as design and management fees, taxes, and insurance, as well as costs incurred due to financing, moving, and internal staffing.

- Site costs cover line items such as land acquisition, demolition, titles, insurance, and land surveys.

When creating project budgets, remember that hard costs typically only make up one-half to two-thirds of total project costs.

Because many elements of capital project processes are hard to predict accurately, every project should include contingencies. The owner, designer, and contractor will all incorporate a contingency allowance that ranges and changes, depending on the phase of the process. Organizations should also include contingencies in operating estimations for after the project is complete.

HOW TO

Use this guide to understand the big picture of project costing and to familiarize yourself with sometimes unanticipated cost categories. Remember that every project is different, and your project might differ significantly from typical project cost structures.

Please note: this worksheet only considers the cost of project development. Funding and financing resources will vary, depending on the project and your organization, and should be examined during the capital campaign.

FACTORS THAT AFFECT COST

» Location, location, location. Depending on the site for the desired project, acquisition costs will vary widely, and costs for items such as material and labor transportation will also differ.

» Decisions made regarding the quality and characteristics of the facility will greatly affect total development costs. Keep in mind that investments in higher quality materials or more efficient equipment will often result in significant savings over the lifetime of a capital project. Pay attention to energy saving design strategies, resilient materials and building systems, and low maintenance design strategies.

» Economic conditions during the construction period can affect the cost of materials. Major events like Hurricane Katrina and the September 11 attacks affected the availability of materials such as concrete and steel, causing a steep rise in development costs.

» Don't forget that additional organizational staff may need to be hired to manage day-to-day operations if existing staff are focused on the capital project.

VALUE ENGINEERING

» Several times throughout the design process, organizations will need to make "value engineering" decisions to maximize the value to cost ratio. Be sure to carefully balance desired impact and project feasibility when making these decisions.

$

Capital project development and ongoing budget line items vary and can catch organizations off guard, especially if they are undertaking projects for the first time. This page provides examples of the wide variety of costs associated with capital projects.

1. VISIONING

- ☐ Project needs assessment _____
- ☐ Capital campaign feasibility study _____
- ☐ Fundraising consultants _____
- ☐ Event and communication costs _____
- ☐ Creation of visual material _____
- ☐ Design consultants _____
- ☐ Other_____ _____
- ☐ Other_____ _____

2. PLANNING

- ☐ Stakeholder engagement _____
- ☐ Site and building programming _____
- ☐ Feasibility studies _____
- ☐ Site selection and land purchase _____
- ☐ Site survey and geotechnical report _____
- ☐ Attorney's fees _____
- ☐ Other_____ _____
- ☐ Other_____ _____
- ☐ Other_____ _____
- ☐ Other_____ _____

3. DESIGN

- ☐ Architectural services _____
- ☐ Consultants _____
- ☐ Interior design services _____
- ☐ Landscape design services _____
- ☐ Cost estimation _____
- ☐ Owner participation _____
- ☐ Other_____ _____
- ☐ Other_____ _____

4. CONSTRUCTION

- ☐ Construction administration fees _____
- ☐ Construction management fees _____
- ☐ Owner representation onsite _____
- ☐ Soft costs (permits, insurance, etc.) _____
- ☐ Mobilization (starting or stopping) _____
- ☐ Utilization and site access _____
- ☐ Site work and landscaping _____
- ☐ Contractor and building construction _____
- ☐ Furniture, fixtures, and equipment (FFE) _____
- ☐ Commissioning _____
- ☐ Other_____ _____

5. OCCUPANCY

One-time costs

- ☐ Operate in interim facilities _____
- ☐ Lost revenue due to transition _____
- ☐ Transition to new facilities _____
- ☐ Impact evaluation _____
- ☐ Other_____ _____

Recurring costs

- ☐ Equipment replacement and repairs _____
- ☐ Facility alterations and repairs _____
- ☐ Equipment and system operations _____
- ☐ Taxes and levies _____
- ☐ Maintenance costs _____
- ☐ Insurance _____
- ☐ Ongoing financing _____
- ☐ Security _____
- ☐ Energy _____
- ☐ Other_____ _____

REMEMBER!

» Be sure to include internal staff time and contingencies for each phase of the design process.

1. VISIONING

> *1C-Feasibility*
> ❑ **Create preliminary project cost estimates**

In the **1. Visioning** phase, "ballpark" cost estimates will be prepared, typically using project comparison or area estimation methods to calculate hard costs.

- Project comparison estimation identifies a similar building typology (e.g., hospital, office space, school, etc.) and compares unit costs (e.g., cost per bed, cost per employee, cost per student, etc.).

- Area or volume estimation uses historical data and generates estimates using cost per square foot or cost per cubic foot calculations.

These estimates are less accurate than those that will be produced in future phases. They will, at most, generate estimates that are within 15-20 percent accuracy. When calculating a total project development cost estimate, remember that hard cost estimates are only a portion of the total development costs.

This estimate should be used to test project options and alternatives and will be iterated throughout the project duration. While there are no rules of thumb for what individual organizations can undertake, make sure you understand the financial implications of this major investment.

2. PLANNING

> *2C-Feasibility*
> ❑ **Prepare a project budget**

During this phase and before the design is created, organizations will refine their project budget estimates. The further refinement of the needs assessment and **Design Brief** (see the full **2. Planning** phase) will provide additional clarity regarding the program, quality, and characteristics for the new space. Organizations should also have a better idea their soft costs, such as staff and consultant needs, at this point. This developed project budget will help inform constraints on the project design's scope and capital campaign feasibility.

3. DESIGN

> *3C-Feasibility*
> ❑ **Check in: budget**

As the design develops, the project team will be able to generate more accurate cost estimates based on "assembly and systems" and eventually "unit price and schedule"– this means that costs are estimated by conducting an analysis of the materials, labor, and equipment needed to construct the capital project. Typically, a cost estimator or quantity surveyor will be engaged as design documents near completion.

4. CONSTRUCTION

> *4C-Feasibility*
> ❑ **Check in: budget**

The project's financial staff will receive regular updates on the progress of construction and its adherence or divergence from the stated budget. Any changes to the budget should be appropriately planned for and responded to by designated members in the organization. Make sure there is clarity of decision-making via the project delivery method structure (see *2c. Feasibility: Project Preparation*).

5. OCCUPANCY

> *5C-Feasibility*
> ❑ **Check in: budget**

As organizations transition into and operate the new facility, updates will be made to the final project costs and eventual ongoing operating budget. Because operating costs can be estimated incorrectly, organizations should be sure to include a contingency plan if ongoing costs are higher than expected.

The Project Team is the group of people responsible for completing a capital project.

The individuals who make up the project team will vary depending on the size, scope, and complexity of each project and organization. Effective teams typically consist of a core project team, decision-makers, advisors, designers, and implementers. No matter how the team is structured, organizations should specify clear lines of communication and systems for decision-making to help the project progress smoothly and efficiently.

The chart below lays out typical project roles and responsibilities. Depending on the project, many roles may be filled by one individual or a single role might be completed by a group. The chart is intended to illustrate the breadth of knowledge and experience of a team that will help bring projects to completion. Use this chart as a starting place to identify which project team roles can be feasibly filled with existing staff, and where expertise and capacity should be sought externally.

CAPITAL PROJECT CORE TEAM	EXPERTISE	RESPONSIBILITY	PHASE				
			1	2	3	4	5
Project Team Chair (Project Manager)	Organization	Represents the organization's interests and coordinates the internal communication and decision-making within the team and to the board.	●	●	●	●	●
Financial Manager	Budgeting, Finances, CFO	Determines the project budget and expenses. Communicates financial matters to the core team and the board.	○	○	○	○	○
Capital Campaign Manager	Fundraising, Development	Coordinates the fundraising effort for the project.	●	●	○	○	○
Owners Representative or Construction Manager (dependent on project delivery method)	Capital Project, Architecture, Construction	Can manage the project through design and construction on behalf of the organization and provide advice on matters related to design and construction decisions as they relate to time, cost, and quality.		○	●	●	●
In-house Architect, Facilities Manager, and/ or Facilities Dept.	Facilities, Systems, Maintenance	Provides operational and maintenance expertise during design and assumes responsibility for the new systems once construction is complete.		○	○	○	●
Community Liaison	Community Relations	Engages community members (internal and/or external) to understand their priorities. Communicates the organization's plans.	○	●	○	○	

PROJECT TEAM WORKSHEET p. 2 of 3

KEY

● Primary Involvement

○ Secondary Involvement

CAPITAL PROJECT DECISION-MAKERS	EXPERTISE	RESPONSIBILITY	PHASE				
			1	2	3	4	5
Board of Directors (Advisory Board)	Varies	Approval of project vision, scope, and budget. Additional roles or responsibilities depend on expertise.	○	○	○		
Organizational Leadership	Varies, CEO, President	Approval of design concluding each phase and communication to the board.	●	●	○	○	○

CAPITAL PROJECT ADVISORS	EXPERTISE	RESPONSIBILITY	PHASE				
			1	2	3	4	5
Volunteer	Architecture	Advises the organization in design matters such as defining the design vision, reviewing architectural solutions, and value engineering. Recommended if other team members do not have design expertise.		○	●	○	
Volunteer	Engineering, Construction	Advises the organization in design matters. Recommended if other team members do not have expertise related to the capital project scope such as complex building systems or construction technology.		○	●	○	
Volunteer	Consulting, Finance	Provides the organization with consulting and/or financial expertise. Supports the Financial Manager in projecting the capital project expenses, modeling operating expenses, and conducting cost-benefit analysis.	○	○	●		
Thematic Expert	Varies	Provides specialized perspective on requirements and recommendations for design, operations, and/or management.		●	○		
Stakeholders	Organization, Sector Experts, Users, Community	Provides the organization input on the needs and potential outcomes of a capital project.	○	●	○	○	

PROJECT TEAM WORKSHEET p. 3 of 3

KEY

● Primary Involvement

○ Secondary Involvement

DESIGN TEAM	EXPERTISE	RESPONSIBILITY	PHASE				
			1	2	3	4	5
Lead Design Professional	Architecture, Planning, Landscape	Leads the project design process and coordinates with design team consultants to develop drawings and other documentation that determine the scale, relationships, and character of the entire project with respect to architectural, landscape, structural, mechanical, and electrical systems, materials, and other elements as appropriate.	●	●	●	●	●
Consultant	Programming, Architectural Design	Determines the project scope and space requirements by systematically evaluating the values, goals, and needs of stakeholders.	○	●			
Consultant	Landscape Architecture	Determines the size, character, and materials for the outdoor environment of a project and provides drawings and documentation for construction.		○	●	○	
Consultant	Planning, Urban Design	Provides services to the project related to strategic thinking, policy recommendations, and sustainability.	○	●	○		
Consultant	Engineering	Provides basic engineering design services related to the project such as structural, mechanical, civil, electrical, and fire protection.			●	○	
Consultant	Specialty	Provides specialty services as required by the project type such as lighting, acoustics, security, cost estimation, building codes, and energy modeling.			●	○	

CONSTRUCTION TEAM	EXPERTISE	RESPONSIBILITY	PHASE				
			1	2	3	4	5
General Contractor	Construction Management	Coordinates and manages the construction of a capital project.			○	●	○
Subcontractors	Individual Trades	Hired by the general contractor to complete a specific scope of work (plumbing, painting, etc.) within the construction project.				●	

FIELD IMMERSION METHODOLOGY (FIM)

A variety of methods can be used to collect feedback from project stakeholders. Common approaches include focus groups, semi-structured interviews, and structured questionnaires, which are each described in more detail on the following pages.

FOCUS GROUP

Focus groups are facilitated group discussions that can be used to gather feedback from multiple stakeholders simultaneously. Unlike individual interviews, they give participants an opportunity to listen and respond to others' perspectives. Focus groups can be used to gain consensus on project goals, identify complex issues or tradeoffs, and build support and understanding around project needs.

SEMI-STRUCTURED INTERVIEW

Semi-structured interviews are open conversations that are guided by a set of prepared questions. They can be used to engage targeted individuals to gain insight into ideas they have for the project, issues they anticipate, and new opportunities that might arise as a result of the project. Semi-structured interviews are useful in eliciting a range of perspectives, clarifying needs, and defining short- as well as long-term goals.

STRUCTURED QUESTIONNAIRES

Structured questionnaires are form-based surveys that can be distributed to large groups to gather feedback and data on preidentified topics and questions. They can be helpful in providing a sense of the overall priorities and concerns of the group and also be leveraged to make stakeholders feel included in the project.

FOCUS GROUP

Focus groups are facilitated group discussions that can be used to gather feedback from multiple stakeholders at the same time.

OVERVIEW

Focus group discussions are a useful forum for generating feedback and ideas. Unlike individual interviews, they allow a facilitator to gather many points of view quickly and give participants an opportunity to listen and respond to others' perspectives.

More specifically, focus groups can be used to understand general perceptions within a group, identify needs and opportunities, and gain consensus on goals and priorities. Since participants will voice different viewpoints and perceptions, focus groups also help create an open dialogue and build support and understanding between stakeholders.

However, because they occur in a collective setting, focus groups are not useful for gaining a detailed understanding of personal perceptions or collecting private information.

HOW TO

In advance, the facilitation team should identify learning objectives for the activity and prepare a discussion guide that includes primary questions and potential follow-up questions that address the learning objectives.

A lead facilitator should steer the group discussion by posing open-ended questions to elicit feedback and responses from participants. The role of the facilitator is to manage the pace of the conversation and ensure that all participants have the opportunity to make a contribution. He or she does so by working through the thematic questions, prompting participants to clarify what they say, asking others to respond, and keeping the group focused on the topics.

A second team member should be designated as a note taker to record the discussion and document key ideas or takeaways throughout the conversation.

Not everyone may feel comfortable voicing their opinion, especially if it goes against the status quo or conflicts with someone in a greater position of influence. The facilitator's role is to negotiate these dynamics, either by verbally balancing opposing viewpoints in or organizing multiple focus groups to accommodate different stakeholders.

At the conclusion of the session, the facilitator should recap key points and thank participants for their contributions. Notes and takeaways should be synthesized afterward.

TIME
60-90 min

MATERIALS

Pre-prepared questionnaire

Voice recorder

Pens, paper, or sticky notes for participants to record ideas

TIPS

01 It's typically best to keep focus groups under 12 people.

02 Be aware of social dynamics when determining which individuals should be in a group.

03 Create multiple ways for people to participate, so that conversation isn't dominated by the most outspoken personalities.

04 Make it easy for people to come by selecting a convenient meeting location and time. In some cases, consider compensating participants for their time.

05 Be aware of the different motivations, perspectives, and biases that people bring.

06 Make sure to document key points and takeaways throughout the discussion, and back up your notes by tape recording the discussion.

SEMI-STRUCTURED INTERVIEW (FIM)

In semi-structured interviews, prepared questions are used to prompt open-ended discussions with individual respondents.

OVERVIEW

A semi-structured interview typically involves a standard questionnaire that can be used to facilitate conversations with a targeted set of individuals. The team may already have some ideas about important research questions or the nature of an issue or problem, and can query respondents further in order to set a research agenda or gather data for analysis.

Semi-structured interviews are used to collect thematic data, personal perspectives, and anecdotes detailing the characteristics of a situation or experience. They are especially useful for understanding processes, factors that produce a particular condition, and perceptions and beliefs about needs and opportunities.

HOW TO

Interviews need to be slightly tailored to each individual respondent. If a standard questionnaire is being used, the interview team should identify the topics or questions most pertinent to each respondent in advance and make sure to prioritize those during the interview.

To facilitate the discussion, begin by having the interviewee provide a short synopsis of their role and background, which will help to confirm the topics they are best positioned to address. Throughout the conversation, the interviewer should provide prompting questions, and the interviewee should do most of the talking. It's not necessary to cover questions in any predetermined order; the questionnaire should be considered a guide to make sure that the conversation touches on the range of highlighted topics overall.

If possible, having two people on the interview team is ideal, as it allows for higher quality conversations and more accurately recorded information. One person should be responsible for leading the discussion; and the other should be responsible for taking notes and highlighting important points or anecdotes.

At the conclusion of the discussion, the interviewer should ask if the interviewee has anything else to add or recommendations for other people to interview.

Make sure to synthesize notes promptly after each interview, referring back to the audio recording if quotes or more detailed transcriptions are required.

TIME
45-90 min

MATERIALS

Pre-prepared questionnaire

Voice recorder

Extra paper and pens

TIPS

01 Familiarize yourself with interviewees' roles and backgrounds in advance, and prioritize questions appropriately.

02 Make sure to ask permission to record the conversation.

03 Ask follow-up questions to draw out more detailed information or feedback.

04 Don't ask yes or no questions, which are close-ended rather than open-ended (unless a yes or no response is needed).

05 If you're unclear about a response, repeat back what you think you heard and ask the interviewee to validate.

06 Avoid judging or commenting critically on what interviewees have to say.

07 If detailed documentation is needed, make sure to budget for transcription of audio recordings.

STRUCTURED QUESTIONNAIRE (FIM)

Structured questionnaires can be used to survey large groups to gather responses to pre-identified topics and questions.

OVERVIEW

Structured questionnaires are form-based surveys that are distributed to large groups, typically 20 or more. Unlike semi-structured interviews, which provide a loose guide for more open-ended conversations, structured questionnaires prompt respondents to give short or close-ended answers to a standard set of questions.

Responses can be collated and analyzed to gauge preferences and concerns across a population or measure trends related to an issue or problem. This methodology is useful for conducting a high-level "scan" that reflects collective opinions, but does not yield in-depth responses or explanations.

HOW TO

Structured questionnaires can take many forms and have varying degrees of rigidity. They can range from qualitative (prompting respondents to provide short answer responses) to quantitative (with multiple choice responses that get collated afterward); anonymous to non-anonymous; and very brief to more involved. Distribution methods also vary. They can be carried out in-person (by a team of data collectors conducting standardized interviews) or digitally (with a computer form that is distributed and returned).

In selecting a respondent group, think about the population you want to represent and target. Make sure to set aside time to develop and refine the questionnaire and plan a method for distribution. It's important to carefully strategize what questions are asked and how they're sequenced and phrased. Consider testing the questionnaire for clarity and usefulness through sample interviews before the larger survey is conducted.

After data is collected, make sure to take into account what individuals have participated and responded. The data should be compiled, summarized, and analyzed by a trained data evaluator. Qualitative and quantitative questionnaires require different evaluation methods, but both will yield insights that should be verified and explained through more in-depth interviews and conversations.

TIME

5-30 min

MATERIALS

Pre-prepared questionnaire

TIPS

01 Be judicious with the number of questions and how they're ordered. Ten well-considered questions can often yield more insights than 30 questions.

02 Think carefully about how questions are phrased, and make sure they're not influencing people's answers.

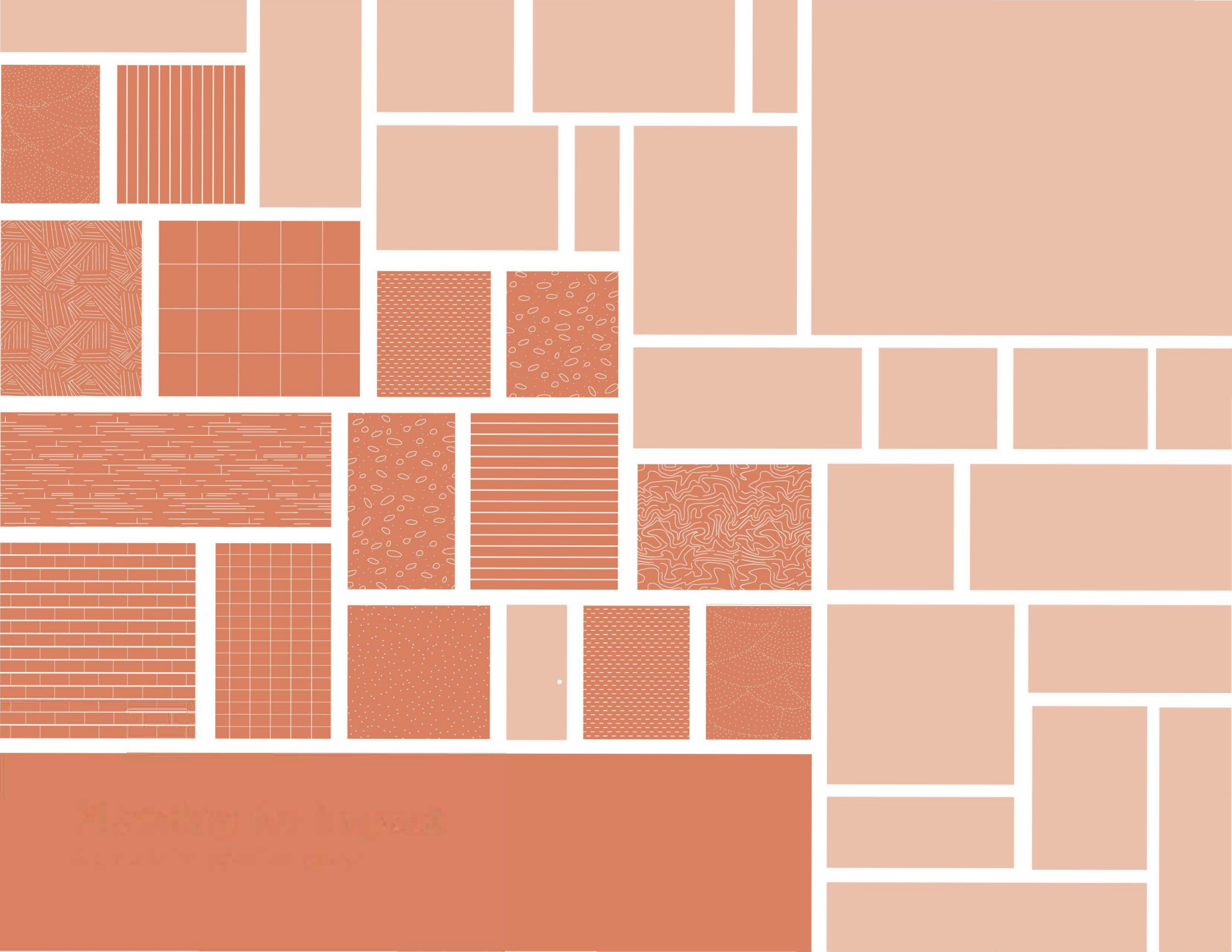03 When analyzing responses, be critical about what data you think indicates a condition or trend.

METRICS DATABASE (Sample: Full version coming in version 2.0)

The following catalog identifies metrics than can be used to evaluate
the performance of a particular project.

CATEGORY	METRIC	MEASUREMENT	REFERENCE
Health Outcomes	**Patient satisfaction** *Degree to which an individual regards a provider's health care service, product, or the manner in which the service or product is delivered as useful, effective, or beneficial.*	**Surveys** • Scores of Likert type scales or subscales calculated • Percentage of "excellent responses" • Percentage of patients who are dissatisfied • Score of a single question of patient satisfaction	Donahue, L. "A Pod Design for Nursing Assignments: Eliminating Unnecessary Steps and Increasing Patient Satisfaction by Reconfiguring Care Assignments." *American Journal of Nursing*, 109:11 Supplement TCAB (2009), p. 38-40. Kline, T. J., Baylis, B. W., Chatur, F., Morrison, S. A., White, D. E., Flin, R. H., & Ghali, W.A."Patient Satisfaction: Evaluating the Success of Hospital Ward Redesign." *Journal of Healthcare Quality*, 29:3 (2007), p. 44-49. Ko, H. H., Zhang, H., Telford, J. J., & Enns, R. "Factors Influencing Patient Satisfaction When Undergoing Endoscopic Procedures." *Gastrointestinal Endoscopy*, 69:4 (2009), p. 883-891. Krueckeberg, H. F., & Hubbert, A. "Attribute Correlates of Hospital Outpatient Satisfaction." *Journal of Ambulatory Care Marketing*, 6:1 (1995), p. 11-43.
	Nosocomial infection *An infection that is acquired in a hospital as a result of medical care; also called hospital-acquired infection.*	**Medical record analysis** • Percent of NIs per 100 admits/discharges • Number of NIs per 1,000 patient days • Number of hospital-acquired infections per patient • Risk of infection–percent of susceptible patients infected	Barnes, R. A., & Rogers, T. R. "Control of an Outbreak of Nosocomial Aspergillosis by Laminar Airflow Isolation." *Journal of Hospital Infection*, 14:2 (1989), p. 89-94. Ben-Abraham, R., Keller, N., Szold, O., Vardi, A., Weinberg, M., Barzilay, Z., & Paret, G. "Do Isolation Rooms Reduce the Rate of Nosocomial Infections in the Pediatric Intensive Care Unit?" *Journal of Critical Care*, 17:3 (2002), p. 176-180. Crimi, P., et al. "Microbiological Surveillance of Hospital Ventilation Systems in Departments at High Risk of Nosocomial Infections." *Journal of Preventive Medicine and Hygiene*, 47:3 (2006), p. 105-109. Swoboda, S. M., Earsing, K., Strauss, K., Lane, S., & Lipsett, P. A. "Electronic Monitoring and Voice Prompts Improve Hand Hygiene and Decrease Nosocomial Infections in an Intermediate Care Unit." *Critical Care Medicine*, 32:2 (2004), p. 358-363.
	Length of stay *Period of time during which a patient is confined to a hospital or other health facility.*	**Medical record analysis** • Actual days **Surveys** • Patients' perceived days	Tran, T. P., Schutte, W. P., Muelleman, R. L., & Wadman, M. C. "Provision of Clinically Based Information Improves Patients' Perceived Length of Stay and Satisfaction with EP." *American Journal of Emergency Medicine*, 20:6 (2002), p. 506.509.

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