

Design Brief: Construction

A CONSTRUCTION DESIGN BRIEF is a comprehensive written document for a project that establishes the project's scope, methods, and desired results. The principal of a design or construction firm, or a design and construction consultant, usually prepares the brief. The brief becomes more critical in a larger project, as it must effectively communicate the overall goals and desired results of a project to the stakeholders. Engineers, architects, and designers use descriptions in the brief to produce construction documents.



Objective:



Review construction design briefs and their components.

Key Terms:



building life cycle
deliverables
design brief

feasibility study
milestone
procurement

risk assessment
schematic drawings
stakeholder

Construction Design Briefs

A **design brief** is a written planning document that establishes the project's scope, methods (means), timeframe, and desired result (goal). An effective design brief is the most critical factor to ensure project success. It defines how the problem would be solved and includes the desired results and any constraints. It gives the designer direction and defines the specific goals or needs of the client. In short, a clearly worded and well-structured design brief saves time and money.

CONSTRUCTION DESIGN BRIEFS

A construction design brief is a technical document. In some cases, it is attached to the construction contract. The brief usually does not contain any construction-specific details. Design information in the brief may include **schematic drawings**, which are structural or procedural diagrams of a system, such as electrical or mechanical systems. Schematics may include drawings of the proposed project, general specifications and performance criteria for the completed work, site information, and unique circumstances, including technical requirements.

The principal of the construction firm usually prepares the brief or the task is designated to a design and construction consultant, depending on the scale of the project. There may only be a client and a contractor involved in developing the brief in a small-scale project. In contrast, a large-scale project may have several lead contractors, consultants, architects, engineers, and perhaps multiple representatives of the client.

A **contractor** is a person or a business that provides goods, materials, equipment, personnel, and/or services to a construction project based on the stated requirements at a specified price. Large-scale construction projects may have numerous contractors and subcontractors. A **subcontractor** is a person or a business that provides or assumes specific tasks or obligations of the primary contractor. For example, a subcontractor may install or provide the electrical, cabinetry, painting, dry-wall, plumbing, concrete, roofing, and/or HVAC elements of the building or structure.

The construction design brief becomes more important in a larger project. Engineers, architects, and designers produce a set of contract construction documents (specifications) that meet the design requirements of the brief. The construction company uses the brief to ensure that all the work meets programming requirements and functions as described.

Large projects typically have an overall project design brief. Several specific design briefs may accompany the overall brief and are developed between different parties: architect and fabricator and engineer or lighting contractor.

Each building trade would have a series of construction design briefs developed by the lead contractor, architect, engineer, or designer. These briefs are used for specific design elements in the construction project. They are much shorter and are specific to one portion of the design. They also describe desired results and/or material needs.



FIGURE 1. The scale and scope of a brief varies depending on the size of the project. A football stadium would have an extensive construction design brief. A residential home project would typically have a more concise construction design brief.

COMPONENTS OF A CONSTRUCTION DESIGN BRIEF

A construction design brief may be developed by a client and presented to a contractor or a construction company. It may be developed by a construction company and confirmed by a client. Some large institutions or big businesses develop their own construction design briefs for internal purposes to initiate a new project. As mentioned above, briefs may be created between various parties, including contractors, architects, engineers, and fabricators. More unique and more specific briefs are common on small-scale projects. Following are several important components of a construction design brief.

Project Title

The project title is the name given to the project and may include numbers or a numeric code. The name could be derived from the site location, the client or company's name, or the project type. A numeric code included in the title usually relates to the date or address. For example:

- ◆ Apartments Design Brief: Siting, Construction, and Services–12152012HarlemApt
- ◆ Companion Schematic Design Briefs: Studio Apartment–12152012HarlemStudio, 1-Bedroom Apartment–12152012Harlem1-BR, and 2-Bedroom Apartment–12152012Harlem2-BR

Brief Description

This section describes the purpose of the construction design brief and includes a statement of objectives and the functional requirements of the final project. It also serves as a construction team reference, which allows the team to execute the construction of the design by using the exact project specifications. The description states who developed the brief and who would use it.

Brief History

A short history of the design project is included, along with the brief's alpha version date and any revision dates. The history section lists the people who made the revisions, a short summary of those revisions, and who received a copy of the updated brief.



FIGURE 2. The brief description and history are very important components of the design brief. Some construction projects may include many individuals and companies. The number of individuals and companies involved in a project make it essential that every detail and specification is clearly documented and understood by all parties.



FURTHER EXPLORATION...

ONLINE CONNECTION: Construction Design Briefs

There are many different types of projects and many different construction design brief styles. You can produce real projects and activities with a very simple construction design brief style. Many projects use the same basic materials and problem-solving techniques. Access different types of design briefs at <http://www.cs.bsu.edu/homepages/kirkwood/resources/const/Talltower.htm>.

Outline or Table of Contents

The outline or table of contents lists each section or chapter of the brief with page numbers. Depending on the scope of the project, the outline may list the contents of each section or chapter with page numbers.

Project Appraisal Stage

Many construction projects consume large amounts of resources, time, and money. For large construction projects, a project appraisal section describes any feasibility study information; it may include consultants' work. A **feasibility study** is an analysis designed to determine the practicality of a plan or method. It considers factors such as legal, economic, technological, and scheduling. A feasibility study enumerates the positives and the negatives of the proposed project. In complex projects, the feasibility study may include a description of the building or facility, all the responsible parties, who reports to whom, how information is communicated, the form of the studies, who reviews the studies, and a full program description. The brief outlines what must be included in the study and who is responsible for each portion

Project Proposal Stage

Construction design briefs list all items that must be considered and finalized for the project proposal. This includes all necessary project operations, each function of the program, and each function's relationship to the others. For example:

- ◆ Square footage—The brief lists the total square footage required for the building or facility and a description of additional area surrounding the structure.
- ◆ Technical or building life cycle requirements—The brief lists and requests any specific technical or building life cycle requirements as well as the deadline to submit the project proposal. The **building life cycle** is the sum of all the required maintenance, repairs, and costs over the life of a construction project.
- ◆ Communication structure—The brief describes or lists any required communication structures. In larger projects with more people involved, the communication structure must be well organized and clearly stated.

- ◆ Risk assessment—The brief lists who is required to review the full project proposal. For most large-scale construction projects, a risk assessment is required to proceed with the design and construction. A **risk assessment** is a process that identifies the probability that a hazard (something bad) may occur and that estimates the likelihood of the hazard occurring based on standards and benchmarks. A report is generated that analyzes the probability that a “bad” event(s) may happen during the project and the associated dollar value, loss of time, safety issues, etc. the event(s) would have on the project.



FIGURE 3. Developers and contractors—as shown in this image of a high-rise building under construction—may have different interests and long-term plans for the project. It is wise to include any key concerns—life cycle cost and risk assessment—in the project proposal and construction design brief.

- ◆ Budget—A finalized budget is usually requested under the project proposal section.

Project Design Stage

The project design section describes all documents that must be updated and finalized before the design phase begins. It describes who is responsible for each phase of the design and the review process during each stage. Other concerns and requirements of the design (e.g., all functions, layout, and the circulation in and around the construction project) are listed. This section also states how payments are made or received as well as the procurement strategy.

Procurement is the acquisition of goods or services.

Project Particulars

The full scope of the construction project is described in this section. The criteria necessary for a successful project are listed. For example:

- ◆ The vision or strategic vision of the project is described here when required. Inclusion depends upon the scale and project type.
- ◆ The desired outcomes or goals of the project—to accomplish the vision—are also described.
- ◆ Assumptions pertaining to the construction process or timing are described.
- ◆ Constraints are described, including limitations of budget, space, and resources.

- ◆ External factors are described as well as their potential affect or impact on the project. External factors may include government regulations or reviews and, in some regions, the weather or surrounding topography.

- ◆ Deliverables are described. **Deliverables** are the quantifiable and tangible goods, products, and/or services provided during, and at the completion of, a project.

- ◆ Milestones are described. A **milestone** is a deadline or a time frame during which a specific phase of a project is to be completed or developed.

- ◆ Risks are described. The brief answers how identified risks would be managed and what steps to take if an escalation of the risk occurs.

- ◆ A managing structure is described. This managing structure includes the project director, the managing partner, the project leads, any professional associations or agencies, and all stakeholders.

- ◆ Stakeholders are described. A **stakeholder** is a person, a group, or an organization that has a vested interest and/or concern in a project. Often stakeholders are affected by the project's actions, objectives, and policies. Stakeholders may include government agencies, suppliers, owners, shareholders, employees, directors, creditors, unions, and the community. Typically, each person involved in the project is assigned a level of responsibility and accountability that helps control and guarantee project quality.



FIGURE 4. Many external factors can play a part in the success or failure of a construction project. External factors include weather conditions, such as buildings next to open water, or zoning and traffic patterns.

Summary:



A construction design brief is a comprehensive written document that establishes the project scope, methods, and desired results. The principal of a construction or design firm, or a designated design and construction consultant, typically write the design brief. The larger the project, the more critical becomes the construction design brief.

A construction design brief may be develop by a client and presented to a contractor or to a construction company. They may also be developed by a construction company and confirmed by a client. A stakeholder is a person, a group, or an organization that has a vested interest and/or concern in a project. Often, stakeholders are affected by the project's actions, objectives, and policies. Stakeholders may include

government agencies, suppliers, owners, shareholders, employees, directors, creditors, unions, and the community.

Checking Your Knowledge:



1. Describe the value of estimating the building life cycle.
2. What is a risk assessment?
3. What is included in a feasibility study?
4. What is a deliverable?
5. Who might be the stakeholders on a local hotel construction project?

Expanding Your Knowledge:



Construction companies use and respond to design briefs all the time. Interview a local contractor who builds projects that interest you. Take a trip to their offices and ask about the ways he or she uses design briefs.

Web Links:



Construction Brief Example

<http://ifnh.rutgers.edu/construction-brief.html>

Construction Briefs

<http://www.isopropertyresources.com/Training-Education/Construction-Briefs/Construction-Briefs.html>

Construction Study Guide Units

<http://constructionsite.org.uk/index.php?/content/view/150/>