**Understanding Challenges and Best Practices of the Construction Phases**

1. [Top Construction Phases Explained](https://www.rib-software.com/en/blogs/construction-project-phases#top-construction-phases-explained)
2. [How to Organize Construction Stages Effectively](https://www.rib-software.com/en/blogs/construction-project-phases#how-to-organize-construction-stages-effectively)
3. [Final Thoughts](https://www.rib-software.com/en/blogs/construction-project-phases#final-thoughts)

Construction projects come in all shapes and sizes. There are complex commercial projects that require big multidisciplinary teams to be completed, and there are small renovation projects that only require a small group of professionals to complete the scope. Regardless of their size and nature, all [construction project types](https://www.rib-software.com/en/blogs/construction-project-types) need thoughtful planning to define the necessary resources, budget, timeline, building permits, and other things. To do so, project stakeholders, led by the project manager, follow an organized process often divided into phases that guide the project’s development.

Each of these phases involves various tasks and processes that must be completed correctly to ensure the successful completion of the next phase and the achievement of the project expectations. Modern [construction software solutions](https://www.rib-software.com/en/) exist to assist companies in the building sector optimize each phase of their projects to ensure the highest quality and return on investment. However, the software also needs to be paired with a thorough understanding of how each phase works, the common challenges, and the key best practices to be followed for success. This RIB guide will tell you everything you need to know about the six construction project phases.

Let’s dive in!

**Top Construction Phases Explained**

Construction Project Phases

Dividing projects into phases can help organize everything to the smallest detail and ensure resources are allocated and spent efficiently. It also helps to ensure the project’s expected quality is achieved to keep the client happy. Let’s explore the top six construction stages below!

**1. Project Conception**

This stage, also known as pre-design or planning, is the first step of the project, where the initial scope and requirements are developed. At this stage, the project owner or client comes up with the idea for the project and hires a team of experts to determine whether it is feasible to build or not. This includes looking for a place to build, defining the size of the building, identifying building codes and regulations to be followed, and much more. This first phase is probably the most important one as it sets the foundation for all the coming ones. Making errors at this point can affect the entire project later. Therefore, efficient communication between stakeholders is key.

**Key activities:**

**Feasibility Study:** As its name suggests, a feasibility study helps the owner determine whether the project is feasible, should be adapted, or should be discarded completely. Feasibility studies cover five main areas:

* Technical feasibility, which evaluates the project site, potential risks, environmental factors, and more.
* Economic feasibility, which evaluates the financial viability of the project, often with a cost-benefit analysis.
* Legal feasibility, which evaluates and ensures that the project is compliant with regulations.
* Operational feasibility, which evaluates that the entire project can serve its intended purpose once it is completed.
* Scheduling feasibility, which estimates the time needed to complete the project, considering how the design, materials, budget, and other factors, can affect the schedule.

**Project Initiation Document (**[**PID**](https://prince2.wiki/management-products/project-initiation-documentation/)**):** Once the feasibility study is completed and the project is approved, the management team develops a PID. This document outlines all the important information about the project, including its scope, potential risks, key milestones, quality criteria, and more. A PID is used to get financing for the project, to assess progress based on the initial goals and requirements, and to keep every stakeholder on the same page about critical information for the project.

**2. Design**

Next in our breakdown of phases of construction is the design phase, where the architect and their team start to bring the building or structure to life based on the goals and objectives discussed with the owner. At this stage, preliminary cost estimates, timelines, and risk assessments are also carried out to ensure the design meets these requirements. During the design phase, the bidding process is also carried out.

**Design:** The design phase varies greatly depending on the nature of the project. Some of the common design-related activities include:

* **Conceptual design:** This happens in the early stages of a project; it involves rough sketches and diagrams to help stakeholders understand the owner’s vision.
* **Schematic design:** At this point, design and drawings become more detailed. The design team develops drawings to illustrate the project’s spatial layout and structure. It helps stakeholders visualize the building’s physical form.
* **Design development:** This design phase is much more detailed, where construction drawings, electrical layouts, plumbing plans, and HVAC are developed to provide technical information to guide construction and installation.
* **Contract documents:** This involves the generation of detailed documents, such as architectural, structural, electrical, and mechanical drawings. This documentation will guide the work of contractors and subcontractors.

**Bidding:** Just like design, the [construction bidding process](https://www.rib-software.com/en/blogs/master-construction-bidding-process) also involves different activities:

* **Selecting the delivery method:** The first activity in the bidding process is selecting the delivery method. This will define how the work will be completed and safeguard the interests of both parties. To learn more about this topic, check out our guide on [construction contract types](https://www.rib-software.com/en/blogs/construction-contracts-types).
* **Send invitations:** Once the delivery method is selected, the owner selects qualified contractors or construction managers and sends them invitations to participate in the bidding process. Sometimes, the owner trusts a specific contractor and personally invites them to the project.
* **Award the contract:** The owner decides which contractor to hire based on price, experience, and other factors, and agrees on the conditions of the contract. The responsibilities and payment methods will vary based on the type of contract chosen.

**3. Preconstruction**

Once the design and bidding are done, the [preconstruction planning](https://www.rib-software.com/en/blogs/preconstruction-planning) stage begins. This stage involves all tasks that need to be completed before construction begins, and it starts with the consolidation of a project team which often includes the contract administrator, the project manager, the superintendent, the field engineer, and the health and safety manager. At this point, communication channels are also defined to prevent misunderstandings and enhance collaboration.

**Key activities:**

**Preconstruction meetings:** During preconstruction meetings, all project stakeholders ensure that each process and task, along with their roles and responsibilities, is clear. These meetings ensure that everyone is on the same page to kick things off. Clear communication channels are also defined for this purpose.

**Risk management**: The GC must generate a [construction risk management](https://www.rib-software.com/en/blogs/construction-risk-management) plan that outlines potential risks and strategies to eliminate or mitigate them. Doing so avoids surprises during construction that can lead to budget and schedule issues.

**Scheduling:** The team generates a work breakdown structure that lists all the tasks to be completed to create a project roadmap. The WBS is turned into the final schedule with milestones for progress tracking.

**Site conditions:** At this stage, the contractor carries out site surveys to inspect the site conditions. It is common to find unexpected conditions during the inspection not included in the contract documents.

**Bill of Quantities (BoQ):** Another key activity that happens in the preconstruction stage is the generation of the [BoQ](https://www.rib-software.com/en/blogs/bill-of-quantities). This invaluable document lists the quality and quantity of work to be carried out by the general contract, which helps with accurate scheduling and cost control.

**Cost estimation:** After the site evaluation, the project team is in a position to generate a realistic [construction cost estimation](https://www.rib-software.com/en/blogs/construction-cost-estimation). The estimation includes costs related to labor, schedule, materials, equipment, and regulatory expenses.

**Safety plans**: [Construction site accidents](https://www.rib-software.com/en/blogs/construction-site-accidents) are not uncommon. Therefore, the team must implement safety strategies to ensure workers are informed and trained to tackle potential risks and prevent accidents.

**Final agreement:** After cost estimation and scheduling is complete, the parties enter a legal agreement that allows the contractor to build the project on behalf of the owner based on the specifications and requirements previously agreed upon.

**4. Procurement**

The [construction procurement](https://www.rib-software.com/en/blogs/construction-procurement-management) phase is the moment when the equipment, labor, and materials required to complete the project are sourced and arranged for transport. At this stage, the GC carries out a bidding process for subcontractors and defines contractual agreements with the selected ones. The complexity of this stage depends mostly on the nature and size of the project. When the GC already has a trusted network of suppliers, it can save money and time and simplify the process.

**Key activities:**

**Subcontractor bidding:** The general contractor prepares bid documents and sends out invitations to qualified subcontractors. Based on that, most bidders do their own [quantity takeoffs](https://www.rib-software.com/en/blogs/quantity-take-off-methods) and price their work based on the project’s specifications. The GC evaluates and compares the proposals and selects the most qualified subcontractors for the work.

**Sourcing and scheduling:** During the procurement process, materials are purchased, and their delivery is scheduled. This is of the utmost importance, as the delivery date needs to coincide with the work for which the materials are needed. Any delays in delivery can delay the whole project. During this stage, heavy machinery is also acquired or rented, and the transportation and arrival dates also need to be carefully synchronized with the different trades and works.

**5. Construction**

The construction phase of a project starts when the shovel first hits the ground. It is the moment when the project is finally brought to life by a team of construction professionals led by the general contractor. This is the moment when all the previous planning pays off, and every team knows what they need to do to ensure successful results. The GC manages teams on-site, ensures resources are spent smartly, and communicates progress to management using professional [construction reports](https://www.rib-software.com/en/blogs/guide-to-construction-reporting). The role of the GC at this stage is fundamental, as any mistakes in communication can cause delays or costly reworks. Therefore, people, materials, and equipment need to be perfectly in sync to stay on schedule.

**Key activities:**

**Building:** Contractors and subcontractors perform the work they were hired to do. At this point, setting clear communication and collaboration strategies is of utmost importance to ensure a smooth flow of work. Any miscommunication between trades can result in schedule delays, which is one of the biggest challenges of the construction phase.

**Reporting:** In addition to progress reports on the building process, the GC and construction manager report on budget, risks, compliance, and other aspects fundamental to successful completion. To do so, some key [KPI targets and goals](https://www.rib-software.com/en/blogs/kpi-targets-goals-examples) are defined to measure the success of different activities.

**Changes and variations:** As the construction phase advances, changes and variations in the scope of work are very likely to occur. When this happens, the construction team needs to assess the impact of these changes in terms of time and budget and get approval from the client to proceed. This process also requires updating key documentation to ensure all parties are informed.

**Cost to completion analysis:** Tracking ongoing expenses and comparing them to the expected budget. It involves a detailed evaluation of the remaining work against the remaining budget to understand if the project’s finances are going as expected. If any instances of overruns are identified, corrective measures are implemented.

**Workflow approvals:** As specific activities or items of work are completed, the GC can submit a request for approval to the owner, as previously agreed upon in the contract. These approvals ensure that the completed work meets the requirements before moving on to the next task or phase.

**Quality checks:** During this stage, the design team oversees [construction quality control](https://www.rib-software.com/en/blogs/construction-quality-assurance-vs-control). This involves checking the completed work to ensure it meets the quality requirements and specifications defined at the beginning of the project. Design professionals are also in charge of reviewing substitution requests, change orders, and submittals.

**6. Closeout**

The project closeout, also known as handover or post-construction, is the last of the construction project stages. It might sound like an easy process after all the hard work of the other phases, however, it still requires a lot of work and consideration, as any errors will affect the owner when the building is operating. Using professional [handover software](https://www.rib-software.com/en/rib-digital-handover) is a great way to ensure the process is error-free, agile, and efficient.

**Key activities:**

**Final inspection:** After construction is finalized, the project manager and owner do a final inspection of the work and compare it to the quality specifications set early on. Any incomplete work or issues are listed in a document called a punch list and delivered to the GC to fix or finalize the work with the pertinent subcontractors.

**Site cleaning**: Once all construction work is complete, the rentals are returned, any waste or unnecessary resources are moved, and the site is cleaned.

**Closing documentation:** The final process in this stage is to provide the owner with all the relevant documentation to operate the building. This includes manuals, as-built drawings, insurance, quality control inspections, commissioning, and more.