



FACTORY CONSTRUCTION PROJECT



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Why factory construction and why not simple construction.

Most people know that in factory construction is faster than traditional, site built construction.

But there are several more advantages to in factory management

It is more affordable

It takes less time to build

Building material stay in Good condition

Best quality control



Project Description

- *We are working as Project Managers in Greentown China Holdings Limited, which is one of the famous domestic real estate enterprises.*
- *The company focus on development of urban housing quality products series, headquartered in Hangzhou, Zhejiang province. Greentown believes that the essence of real estate developers is the ideal life integrated service providers. Beautiful architecture, a better life, Greentown insisted for more people to provide more good houses.*



Implementation

The project is implemented in the following phases:

- *Site clearance Phase*
- *Foundation Phase*
- *Main plant Phase*
- *Ware house Phase*
- *Two dormitories and guard room Phase*
- *Sewage treatment station and boiler room*



Milestones, Deliverables, Requirement

Major Requirements:

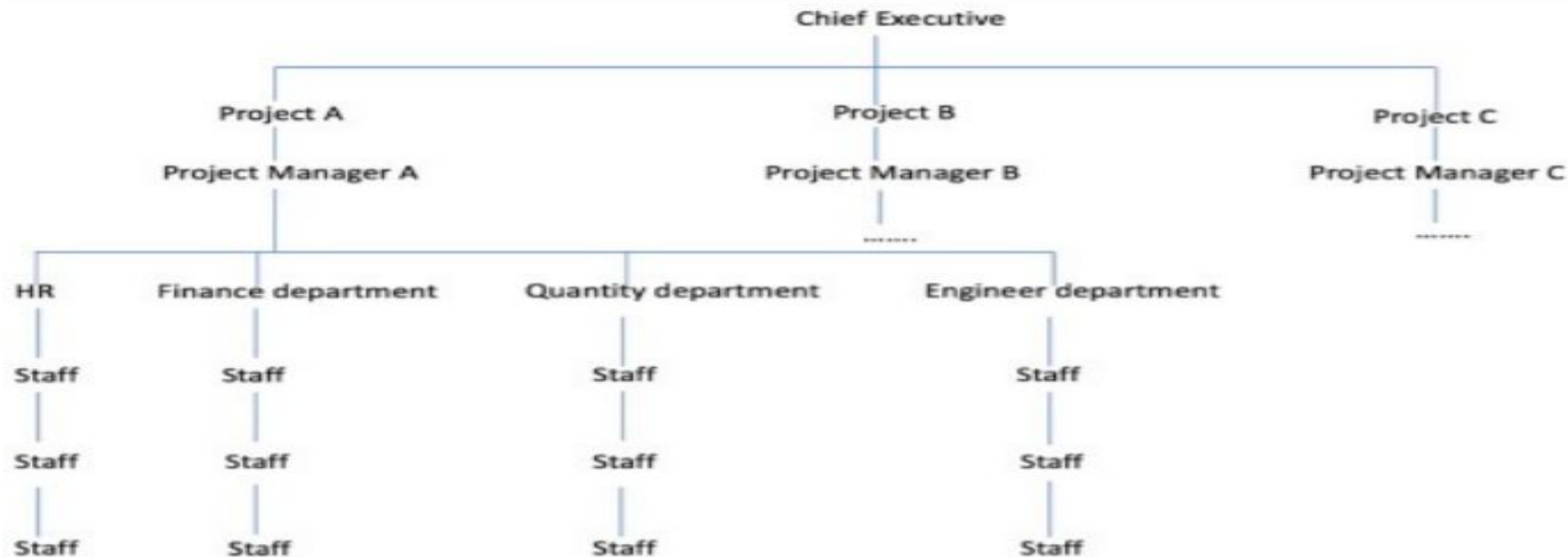
1. *Government clearance for the project, Machinery, Building materials*

Deliverables

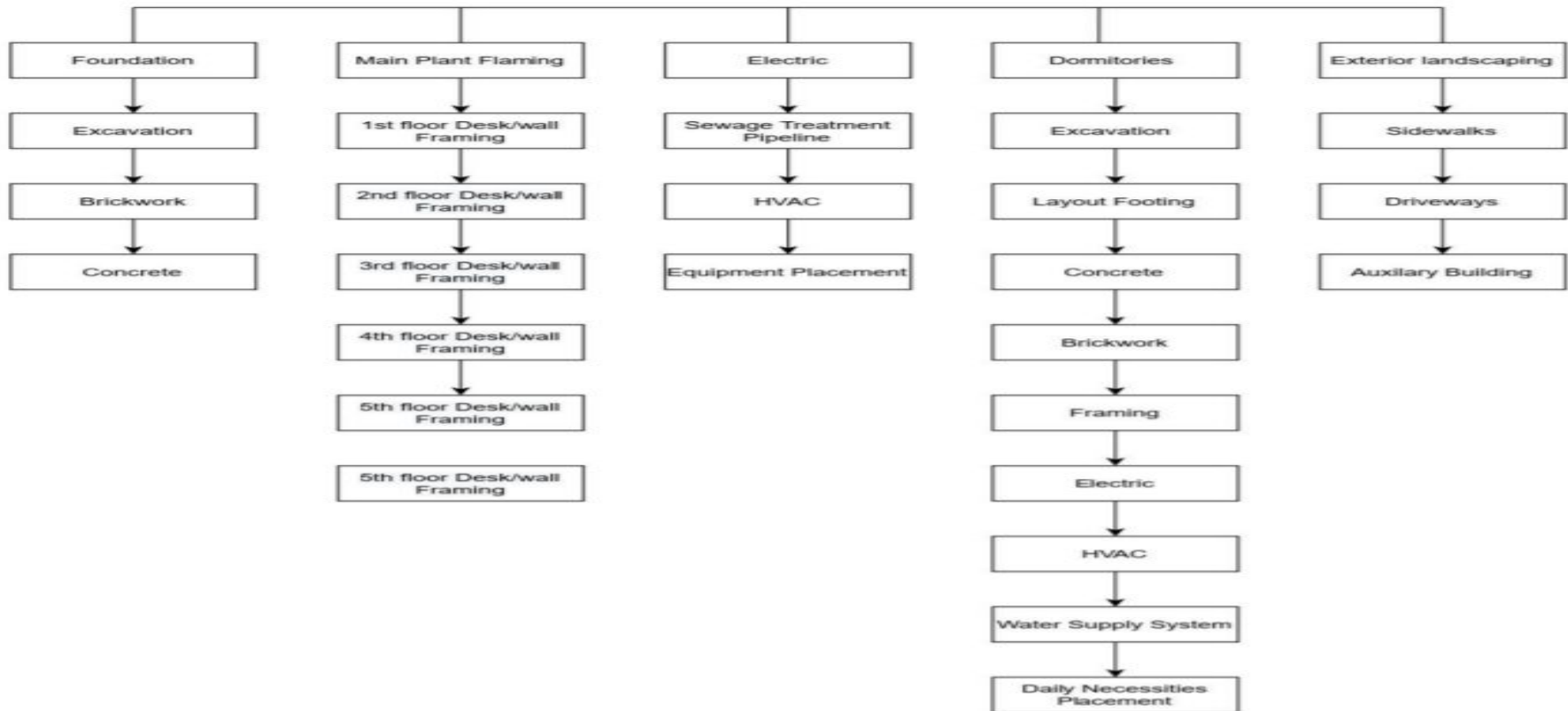
1. *646557 square feet, two finished dormitories and one guard room*
2. *A finished road system*
3. *Get the government permission about the project*



Project Team and Organizational Structure



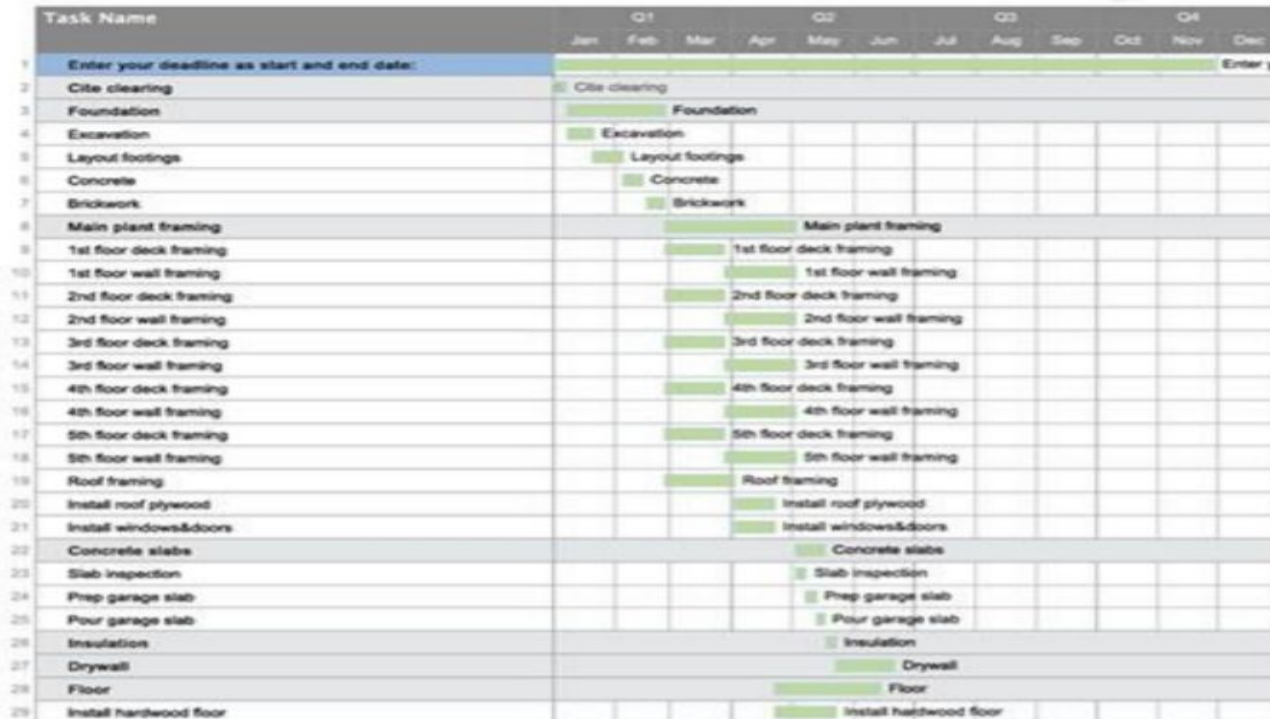
Work Breakdown Structure

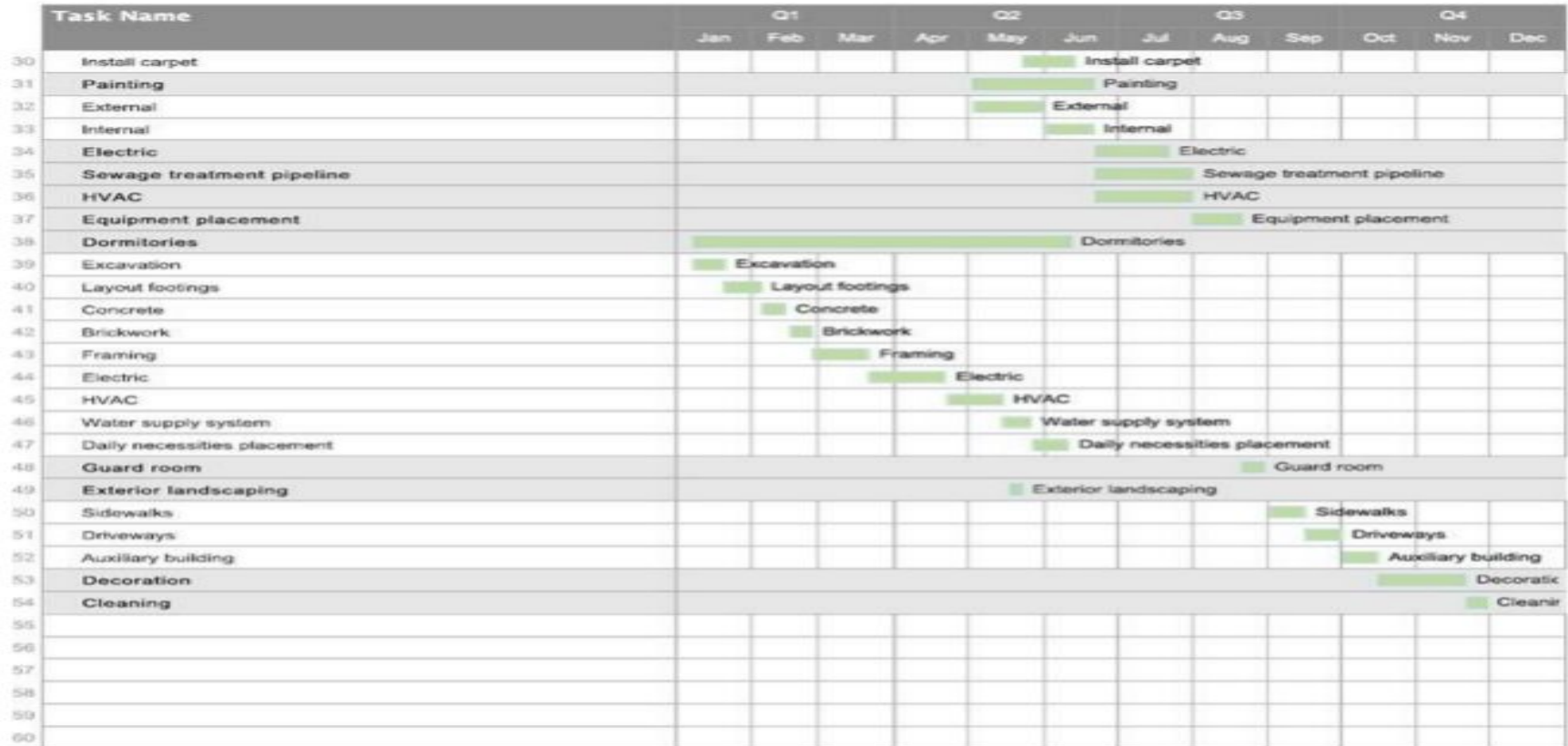




Gantt Chart

Gantt Project with Hard Deadline







As a Project manager, they are **responsible for planning, organizing, and directing the completion of specific projects for an organization** while ensuring these projects are on time, on budget, and within scope.



Project Objective

The following are the objectives of the project:

- *Each phase of the project must be completed without delay*
- *Low maintenance cost*
- *We should fulfill needs of each phase design*
- *The cost of project should not exceed the estimate budget, or we will not get profit*



Project Approach

Our project is building a brand-new factory for X Group, each stage of this project has its own independent sequence. Unlike the process of developing software which needs continuous product iteration, our construct project assumes that the project scope and goals will remain constant till project completion. Obviously, based on this assumption, our project manager plans and identifies project resources by traditional approach lays down the following project phases:

Project initiation: *it is the first phase in the project management life cycle, as it involves starting up this project. We should focus on defining its objectives or requirements of clients, scope, purpose and deliverables to be produced.*

Project planning and design: *This stage involves creating of a set of plans to help guide our team through the execution and closure phases of the project.*

Project monitoring and control: *The primary purpose of this phase is to compare and verify deliverables against the project plan and the customer requirements.*

Project execution: *The project plan is put into motion and the work of the project is performed. It is important to maintain control and communicate as needed during implementation.*



Project completion

This phase is on releasing the final deliverables to the clients, the accounting books were reconciled and closed, final reports written and distributed, terminating supplier contracts, releasing project resources, and communicating the closure of the project to all stakeholders. The last remaining step is to conduct lessons-learned studies to examine what went well and what didn't.

Risk Management



There are many potential risks involved with this project:

Cost Risk: *Price may raise during the process. And after that, we will go over budget. It is obvious that the customer wants to maintain the allotted budget. And X Group made it clear that they are willing to have the project delayed saving costs.*

Time Risk: *We made a commitment to finish the job within 11 months. However, there is a potential for setbacks and delays because of weather or other reasons.*

Work Quality: *We may hire contractors to do the job. We must make sure the contractors' work quality*

Contractor Risk: *The prime or general contractors are in the best position to assess the capacity of their sub-contractors, and therefore it is they who should bear the risk of not assessing the risk properly.*



Construction Risk: *The risks are involved in construction delay, changes in the work and construction technology.*

Technological risk: *Designing errors; lack of technologies; management errors; shortage of the qualified labor.*

Project member risk: *Issues such as team member turnover, staffing builds up, insufficient knowledge among team members, cooperation, motivation, and team communication issues may be problems in this project.*

Construction Site Risk: *Accident exposures in workplace are inherent the work and are best assessed by the contractors and their insurance and safety advisors.*



Budgeting

The project is divided into multiple parts, including one main plant, one warehouse, two dormitories, one sewage treatment station, one boiler and one guard room. We have used the parametric method to estimate our cost.

Item	Number of floors	Quantity	Area / m ²	Costs (Material and Labor)
Main Plant	1	1	17692.10	\$2, 638, 868
Warehouse	2	1	917.25	\$328,785



Budgeting

Dormitory No.1	6	1	2172	\$1,022,453
Dormitory No.2	6	1	2172	\$1,022,453
Guard Room	1	3	99.00	\$567,658
Sewage Treatment Station	1	1	48.40	\$621,236
Boiler Room	1	1	471.88	\$670,557
Total	18	9	53899.19	\$6,872,010



Budgeting

- *The estimated cost is a little lower than our budget because we want to setup a buffer of cost for unforeseen situations. Since each work element in the action plan is evaluated for its resource requirements, and then the cost direct costs for resources and machinery are charged directly to the project. Even though material resources and machinery may or may not be subject to overhead, labor is usually subject to overhead charges.*
- Financial report will be requested every month to compare the real cost and estimated cost so that we can see the variance in the cost. This could help in estimating the cost for the upcoming phase of the project better.



Project monitoring, auditing, review and evaluation

Project monitoring, auditing, review and evaluation are core management responsibilities which involve the collection, analysis, communication and use of information on the physical and financial progress of the project and the achievement of results. The ultimate purpose of these processes is making the project run efficiently.

Project monitoring is the systematic and continuous collecting, analyzing and using of information for management and decision- making.

Monitoring should focus on:

- *Physical progress*
- *Financial process*
- *The preliminary response by target groups to project activities*

The main purpose of reviews is to share information, make collective decisions and re-plan the continuation of the project as appropriate.



Project monitoring, auditing, review and evaluation

Project monitoring, auditing and evaluation basis

- (1) Economic evaluation methods and parameters of construction projects*
- (2) The existing national laws and regulations, documents and relevant taxation system*
- (3) Other relevant documents and information.*

Conclusion of the project monitoring, auditing, review and evaluation

According to the previous audit and evaluation, the project total investment return rate of 11.20% in the first-year production. These audit show that the project has good economic benefits, financial viability and a certain ability to resist risks. However, we still should monitor and review the performance of project when we carry out and correct any errors in time.



Quality issue/ Quality Management

Purpose of Quality Management

Purpose of Quality Management is that ensure the project construction process can be controlled, and ultimately ensure the quality of projects, to meet the requirements of national laws and the project desire. The quality management of this project includes three parts: Quality planning, Quality Assurance and Quality Records.

Organization planning

General manager determines the project manager of each project, to implement the project manager responsibility system, and equip them with the appropriate personnel to meet the project quality management needs.

Technical clarification

The project manager shall receive the process and construction documents and acquaint project construction and process. Related personnel should master the engineering and quality related requirements as well as put forward modification and optimization suggestions from the any angle of project.

Project quality planning

The project manager organizes relevant personnel, plan for the project quality and form the project quality planning book, according to the project requirements and technical disclosure.



Quality issue/ Quality Management

Quality Assurance

The project manager conducts the processes of quality assurance. These processes should include:

- (1) The related personnel use construction instructions, acceptance criteria, process standards and work instructions correctly.*
- (2) According to the project quality management plan, staff should prepare the raw materials and other essential materials.*
- (3) The project manager shall organize the project process monitoring and conduct inspection according to the test plan. Inspection and monitoring of the construction process include: Internal inspection of the process, technical review and the necessary statistical analysis activities.*
- (4) The project manager arranges the project progress reasonably. The project manager shall manage schedule of the construction team, subcontractors and other related employees to ensure that the project can be finished on time and the project have a good quality.*

Quality Records

The project manager sets up the quality management records in the quality management process. These records should include:

- 1. Project diary and special process records*
- 2. Quality supervision, inspection, rectification and review records*
- 3. Quality management related documents*



Constrains

Budget should not exceed \$ 7.5 million.

Construction period should within 11 months

Begin on 1 st January 2020 and it should complete before 30th November 2020



Thank You