

BUILDING A HOUSE

Student name: Stoycho B. Kostov
Student ID: 1714522

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INTRODUCTION

Project Management refers to a detailed planning, organising and overall managing and controlling the implementation as well as execution of the overall project. It is a highly essential activity which is appropriate in context with enhanced and effective accomplishment of set activities at pre-set standards (Hornstein, 2015). The project below is based on development of a project management plan in context with building a house. It includes a detailed application PRINCE 2 Methodology and includes a stepwise development of the overall project of construction of the house.

PRINCE 2 METHODOLOGY

It is an effective project management framework which means ***PR***ojects ***IN*** Controlled ***E***nvironments. It is inclusive of several principles and processes which must be adopted by individuals which are associated with developing and executing a construction process.

The project development plan below is about building a house, which would be a basement, along with 5 rooms. This project requires a keen insight on the implementation of each resource and technique, which would be contributing in achieving a better as well as sustainable design of the house. Thus, it is required to essentially apply PRINCE 2 Technique in order to build an effective house.

Starting Up a Project (SU)

This is the very beginning of the whole project, which requires to set up a work frame for the construction of house to take place upon. It requires the project manager to lay down certain appropriate and effective layout of the project to develop a business case on which the construction would take place (Joslin and Müller, 2015).

There are certain essentials which takes place within this stage in the project management. These aspects are laid down below:

Appointment of the Project Management Team:

The first step in this stage is to appoint a project management team that would be undertaking the building of this house.

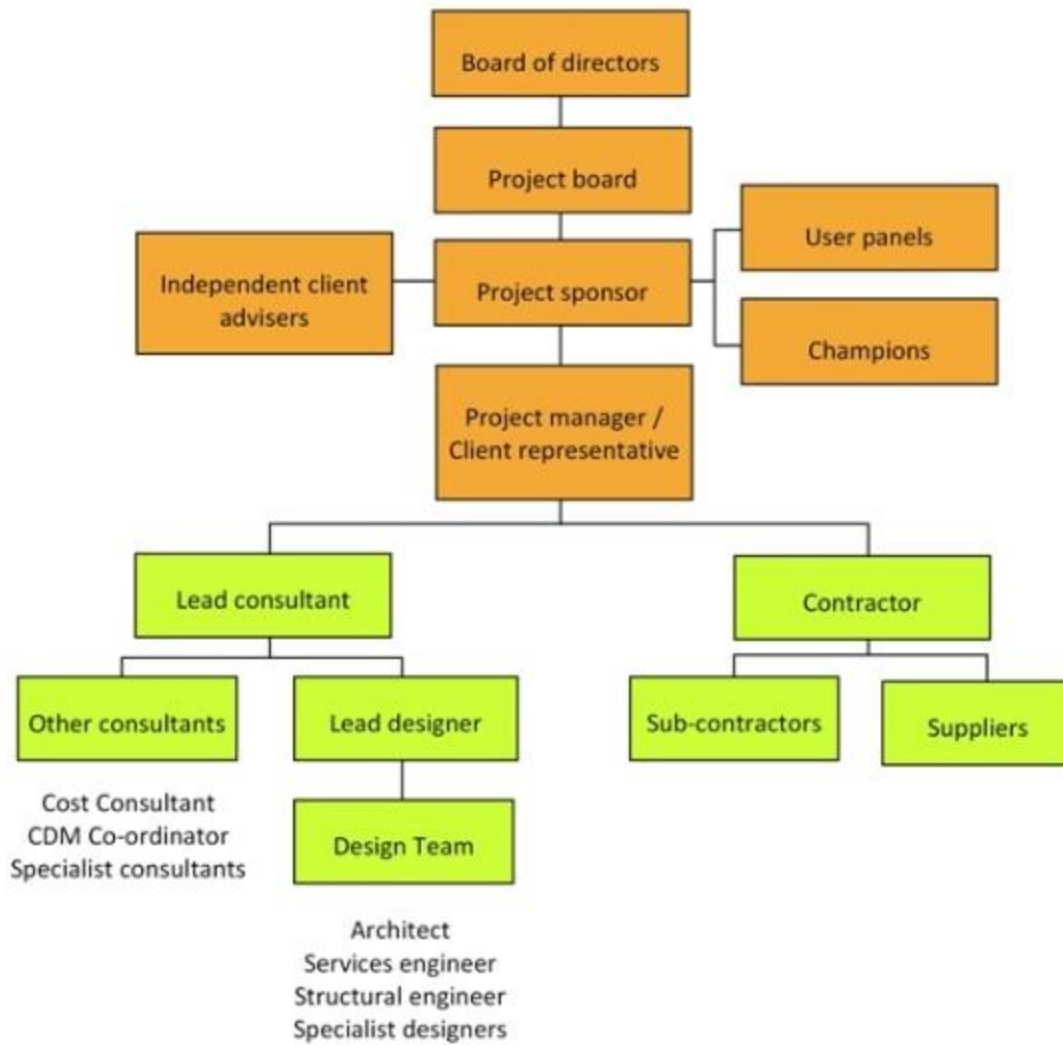


Illustration 1: Project Management Team

As showcased above, there are several individuals who would be undertaking the overall project of building the house. However, below are the key personnels who would be actively engaged in the construction process.

PERSONNEL	ROLES AND RESPONSIBILITIES
<i>Project Managers</i>	This entity is the most prime and important member of the overall project. They are responsible for carrying out the management of the complete project and regulate each resource for its optimum utilisation (Kerzner, 2017).

<i>Contractors</i>	These are the individuals who would be supplying the required raw materials like cement, electrical equipments, aluminium, etc., which would be used by the company in giving a sustainable design to the house.
<i>Lead Consultants</i>	This individual is responsible for heading up the design and construction department who would be working on building the project.
<i>Architects</i>	Another essential team members are the architects, who would be physically working on the sustainability and design of the building.

Development of a Business Case:

Another aspect associated with this step is preparation of a business case. A proper and effective business case for construction of the house is developed below:

STEPS	DESCRIPTION
<i>Summary</i>	A project management plan has to be developed concerning building a new house, with a basement and five rooms.
<i>Objectives</i>	The objective which the construction firm is willing to accomplish through building this house is to provide a sustainable, effective and essential design along with long term durability in the structure (Meredith and et. al., 2017).
<i>Research</i>	The firm would be undertaking both external and internal research for the construction project. As for secondary research, the engineers and architects of the company would be undertaking knowledge regarding the overall construction technique and equipments to construct the house. As for primary, geothermal analysis would be performed to understand the condition of the ground fit for construction.
<i>Funding</i>	The plan of this project is to generate funding through bank loans as it would be a viable option to generate such a high funding for the project.

Initiating a Project (IP)

The next step of the overall procedure calls for initiating the whole project. This is a very important stage which is to be considered by the project management team in order to provide a pathway for the whole building project (Klein, Biesenthal and Dehlin, 2015). There are several essential elements which the team would be accomplishing at this stage, which are discussed below:

Project Scheduling:

To successfully initiate the project, it is very important that a schedule is developed along with the activities and time required for the company to build the house in a sustainable manner. Below are the essentials of this stage:

ACTIVITIES	TIME
<i>Site Preparation and Grading</i>	3 Weeks
<i>Construction of Foundation</i>	2 Weeks
<i>Framing</i>	2 Weeks
<i>Development of Superstructure</i>	20 Weeks
<i>HVAC, Insulation and Drywall</i>	3 Weeks
<i>Painting and Electrical Finish</i>	2 Weeks
<i>Flooring, Plumbing and Finishing Installations</i>	1 Week

- Gantt Chart:

Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾
	Site Preparation and Grading	3 wks	Mon 9/2/19	Fri 9/20/19	
	Construction of Foundation	2 wks	Mon 9/23/19	Fri 10/4/19	1
	Framing	2 wks	Mon 10/7/19	Fri 10/18/19	2
	Development of Superstructure	20 wks	Mon 10/21/19	Fri 3/6/20	3
	HVAC, Insulation and Drywall	3 wks	Mon 3/9/20	Fri 3/27/20	3,4
	Painting and Electrical Finish	2 wks	Mon 3/30/20	Fri 4/10/20	5
	Flooring, Plumbing and Finishing Installations	1 wk	Mon 4/13/20	Fri 4/17/20	6

Illustration 2: Gantt Chart

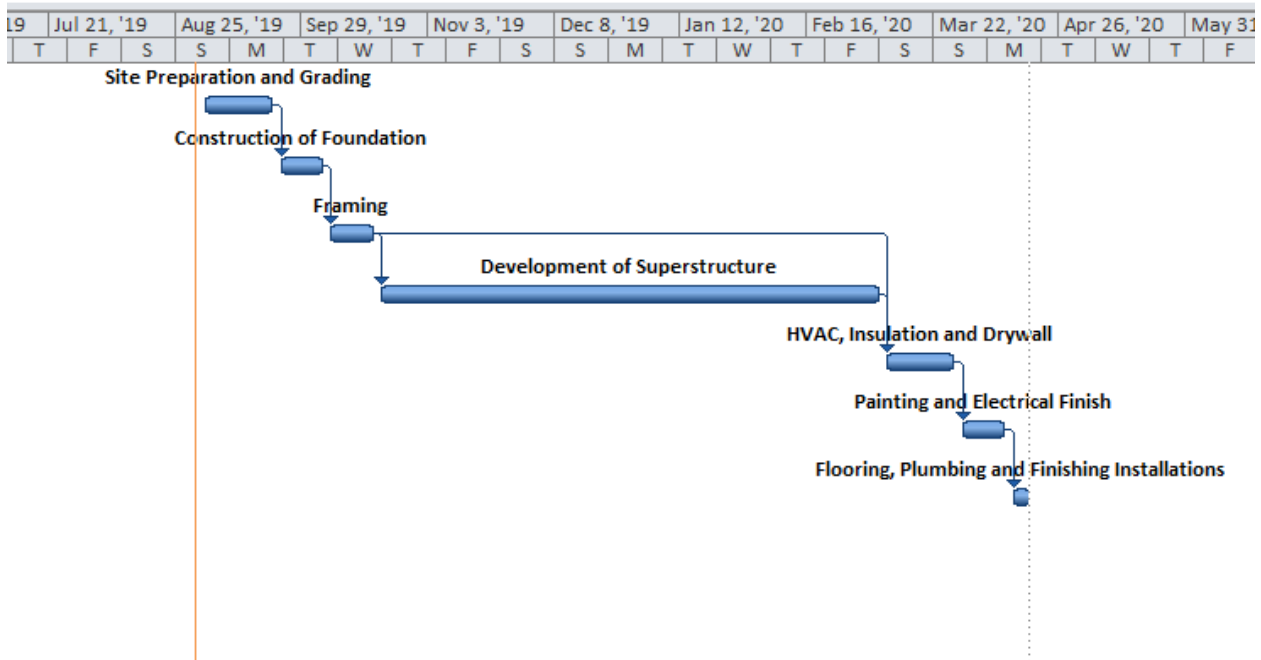


Illustration 3: Gantt Chart

- Critical Path:

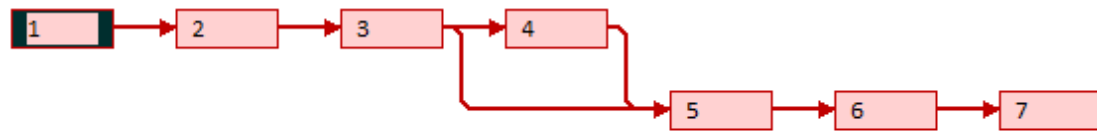


Illustration 4: Critical Path

Defining the Scope:

Another crucial aspect associated with this project is defining the scope of the whole construction plan (Samset and Volden, 2016). Thus, it is required by the project management team to define several aspects appropriately within this project that are discussed below:

- ***Requirements:***

There are several requirements which are associated with the overall project and that are very much needed to be defined at this stage for a smooth and essential execution later on. Some of the essential requirements of the project are described below:

- *Construction Documentation:* The very first requirement within building the house is all the associated documentation which are related to executing the project in a legally bound manner. Some of the essential documentation include site map, legal description of the project, architect information, legal contracts binding the project, official government permissions and client agreement form.
- *Budget Estimates:* Another crucial requirement of building the house project is the requirement of financial assets that would be used within the plan to execute the construction (Ramazani and Jergeas, 2015). The budget for this plan is mentioned below:

EXPENSES	AMOUNT (£)
Hard Construction Costs	
<i>Foundation, Drywall, Framing, Roofing, Flooring</i>	468000
<i>Plumbing, Security System, Electrical</i>	60000

<i>Furnishings, Equipment and Fixtures</i>	53200
<i>HVAC</i>	68000
<i>Landscaping</i>	14500
<i>Site Operations</i>	17000
Sub-total Hard Costs	680700
<i>Acquisition of Land</i>	66150
Soft Construction Costs	
<i>Engineers and Architects</i>	28000
<i>Salaries and Fees</i>	3900
Sub-total Soft Construction Costs	31900
<i>Contingencies</i>	14000
Total Expenses	792750

- *Stakeholders and Communication:*

Another essential element related to defining scope of the project is determination of stakeholders and ways to communicate them (Svejvig and Andersen, 2015). It is again necessary for the project management team to determine the individuals that are associated with building the house. Some of these individuals and ways to communicate them are described below:

STAKEHOLDERS	COMMUNICATION METHOD
<i>Suppliers and Contractors</i>	Letters
<i>Architects</i>	Telephones
<i>Client</i>	E-Mails
<i>Government Officials</i>	Circulars

Directing a Project (DP)

The next stage calls out for directing the project in an effective and essential manner. This stage requires to set up the human resources and provide them day to day roles and responsibilities under which they would be performing (Sánchez, 2015). Moreover, this stage also undertakes development of a project plan which would be showcasing the key deliverables from the project. This plan in association with building the house is discussed as under, which would be appropriately be contributing to the business case developed above:

<i>Cost</i>	The project management team estimates the overall cost to be around £800,000, which would be including all the activities like purchasing, hiring equipments, employing human resource and so forth (Walker, 2015). This would coincide with the funding option of Bank Loan which was mentioned in the case above.
<i>Communication</i>	The company would be adopting all sorts of communication like lateral, horizontal, vertical as well as linear communication in order to ensure appropriate and necessary flow of information during the research carried out by the project team and in the overall construction.
<i>Quality</i>	To ensure effective quality, the firm would be using techniques like Lean Production and Total Quality Management in the process of construction of the house. However, this stage also requires monitoring of standards, for which, Key Performance Indicators and Benchmarking analysis would be used (Todorović and et. al., 2015).
<i>Scope</i>	The scope at this stage would be quite effective as new technologies and equipments that would be used to execute the construction. Moreover, the firm would also be implementing techniques like Automation which would be reducing errors within construction.
<i>Project Deliverables</i>	There are several deliverables which would be provided by this project. For instance, the engineering reports would be informing about the current status and required construction aspects of the house.

	Moreover, design documentations would be weighing on the kind of design required by the clients. Another deliverable would be investigation report, that would be informing about the quality standards of the overall project, which in this case is building the house.
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Controlling a Stage (CS)

It is highly essential to appropriately controlling the project and measure as well as monitor the progress of each stage of the given project. It allows project managers to effectively and essentially enhance the scope of success and better management of the overall project. At this stage, controlling the project risks and quality standards is very important. Thus, it is essential to examine the risks within the overall project and to take corrective actions associated with the same. Thus, risk management plan within this stage is showcased as under:

RISK	SEVERITY	RISK OWNER	CORRECTIVE STRATEGY
<i>Safety Hazards</i>	HIGH	Project Manager	One of the most fatal risks which might be faced by the project management team is the hazards related to safety. In order to essentially mitigate the same, the strategy which must be developed would be a detailed training to the employees regarding several type of technological and fatal risks associated with

			working from different equipments. Moreover, a detailed assessment and analysis of the equipments is another strategy which must be adopted.
<i>Ineffective Technological Equipments</i>	MEDIUM	Project Sponsor	Another prime risk which might risk the durability of structure and finishing of design is absence of effective tools and machinery to work. Thus, the project sponsor must formulate contracts with renowned and accountable suppliers which provide the firm with top quality equipments and technologies to work with (Golini, Kalchschmidt and Landoni, 2015).
<i>Labour Shortage</i>	LOW	Lead Consultant	However lower this threat on severity, it might cause a serious delay to the whole

		project. Thus, in order to effectively cope up with the risk, the lead consultant must employ effective human resources that maintain the regularity of work. Moreover, effective recruitment and selection practices must be implemented in context with hiring apt and effective individuals only.
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Moreover, in terms of controlling the quality, there are several methods which would be implemented in order to ensure that the work is being done in a safe and effective manner. Some of the quality control techniques are discussed below:

Testing and Inspections:

The first and most appropriate technique used in this stage is testing and inspections. Several government officials would be contacted who would be coming and assessing the quality of material used in construction, methods utilised as well as equipments employed in building the house. The inspection could be on the grounds of safety, quality, reliability and feasibility

Key Performance Indicators:

Another appropriate technique which would be utilised within the same is KPI. Several indicators in terms of design and durability would be chosen, which would be showcasing the effectiveness in the project management.

Benchmarking Analysis:

This technique is associated with setting up several benchmarks to achieve to ensure utmost quality and feasibility in the structure and design of the new house (Fleming, and

Koppelman, 2016). This technique would be allowing the team to measure their success based on the benchmarks set before starting up the project.

Managing a Stage Boundary (SB)

Within this stage, the house building process would be appropriately divided into management stages, plus, the boundaries would be set on which the project performance would be reviewed. There are several stages which would be accomplished within this step. All these stages are discussed as under:

Next Stage Planning:

In this stage, the current project performance would be evaluated and alteration would be marked to be performed to keep up with the objectives of the project plan. This requires a detailed review of the project initiation documentations.

Updating Project Plan:

After calculation of actual results, project plan would be altered to suit the new criteria and alterations. These modifications could be on the terms of quality which is yet to be achieved, or the changes in cost, or the deliverables from the project.

Updating Business Case:

Current adaptations in the results would also embark certain changes in the business case in this stage, which would be inclusive of the risks, tolerance level and delivered benefits of the project.

Reporting Stage End:

At this step, authorisation from the project manager is very necessary and thus, each stage would be reported on terms of performance, general progress, current situation of risk, project forecasts and alterations in business case.

Exception Plan:

After the desired modifications are authorised, project management team would be developing an exception plan with the needed changes and would start progressing towards the same effectively.

Managing Product Delivery (MP)

In this stage, the project manager would be acting as a supplier, who would be working on the deliverables of the project. There are three effective steps of this stage, which must be followed by the manager, which are discussed below:

Accepting Work Packages:

This is towards the end of the whole project, where definite deliverables would be decided by the manager, along with the risk factors, constraints and resources. This stage also would be witnessing creation of a team plan where all the activities would be crafted for the human resources to carry out (de Carvalho, Patah and de Souza Bido, 2015).

Executing Work Packages:

This means a continuous execution, where all the plans would finally be executed. In this stage, the project manager would oversee that the work is being performed by the team as per the set standards and all the modified activities are being carried out appropriately.

Delivering Work Packages:

In this, the package could be referred to as the design and overall construction of the house. Thus, it includes accomplishment of the construction process, along with aspects like flooring, roofing, HVAC finishing and setting up of furnitures and furnishings.

Closing a Project (CP)

The last stage of overall house building project requires a definite closure to the construction of this house. A detailed evaluation is expected at this stage to make sure that the house has been built with utmost effectiveness and sustainability. Moreover, revisions would be performed to check as to whether the construction is at par with the plans and whether some modifications are to be done (Costantino, Gravio and Nonino, 2015). If not, the house would be declared available for the clients to move into, along with signing up of final documentation of finishing up the project of building a house.

CONCLUSION

Thus, it is concluded by the information above, that project management is quite essential in terms of appropriately enhancing the scope of success of a particular project. PRINCE 2 technique is very crucial to be implemented, which would be providing the project management team with a framework to work upon. Lastly, each stage of the process must be accomplished appropriately with regards to providing essential design and sustainability to the project, to ensure a complete success.

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