

Office Building Project



Group No: 37

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عدّ الحصى والرمل والثرى

وعلى آله وأصحابه ومن تبع هداهم

واهتدى

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في الوقت المحدد



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1. Strategy

1.1.Mission Statement

Our mission is to create a better future, improve life quality, and achieve remarkable results that meet our shareholder requirements by providing advanced, reliable, and practical engineering solutions and services for construction projects according to the highest safety and quality standards.

1.2.Vision Statement

Our vision is to be the leading organization for engineering and construction works in Saudi Arabia.

1.3.Strategic Objectives

1. Increase the annual profit by 15 percent by the third quarter of next year, estimated at SR 23 million.
2. Improving the organization's market reputation to be among the top 10 leading engineering companies in Saudi Arabia by the end of the year.
3. Achieve the highest levels of safety standards by applying the Saudi Building Code in whole construction and building works by 100 percent before finishing any project.



1.4.Key Performance Indicators (KPI's)

This section shows the performance measurement indicators, Lead or Lag. As mentioned in **Table 1:**

Table 1: Key Performance Indicators (KPI's)

Code #	Objective Strategy				KPI Group	Performance Level		
101	Increase the annual profit by 15 percent by the third quarter of next year, which is estimated at SR 23 million.				Financial Performance	<=69 %	70%-99%	100%=<
KPI Description						Accountable		
This scale allows you to identify if cost of generating revenue at the project is running over or under the expected baseline that was forecasted						Project Manager Amjad		
Lead Measure		Lag Measure	Equation Description					
1- Acquire new projects		Gross Profit Margin	Is the percentage of each dollar earned after costs have been subtracted $\text{Margin} = (\text{Total Profit}) - (\text{Total cost}) / 100$					
2- Resource allocation and rental		Cost Variance (CV)	Compare your Planned Budget vs Actual Budget at a given point in time. $\text{CV} = \text{Actual Budget} / \text{Planned Budget}$					
KPI Measures		Quarterly Targets (measured across three quarters to reach target goal at next year)						
Unit	Target Goal	Q1	Q2	Q3	Q4			
Percentage %	15%	5%	10%	15%	--			
Code #	Objective Strategy				KPI Group	Performance Level		
102	Improving the market reputation of the organization to be among the top 10 leading engineering companies in Saudi Arabia by the end of the year.				Financial Performance	<=69 %	70%-99%	100%=<
KPI Description						Accountable		
This metrics help in improving customer loyalty while reducing the change rate.						Project Manager Amjad		
Lead Measure		Lag Measure	Equation Description					
1- Monitoring customer satisfaction		Feedback Surveys	Asking customers about their experience on various channels.					
Code #	Objective Strategy				KPI Group	Performance Level		
103	Achieve the highest levels of safety standards by applying the SBC in whole construction and building works by 100 percent before finishing any project.				Processes Performance	<=69 %	70%-99%	100%=<
KPI Description						Accountable		
This project metric indicates whether you've committed to the highest level of quality standards or not and get quick overview of your performance.						Project Manager Amjad		
Lead Measure		Lag Measure	Equation Description					
1- Choosing the right materials		Missed Milestone Ratio	Calculated as: $\text{Number of Missed Milestones} / \text{Number of All Milestones}$					
2- Ensure Safety and Compliance lists		Percentage Of Tasks Completed	Calculated as: $\text{Number of competed Tasks} / \text{Number of All Tasks}$					
3- Check and closeout earlier								
KPI Measures		Targets measured across project life cycle to reach target goal before closure phase						
Unit	Target Goal	Initiation	Planning	Execution	Monitoring & controlling	Q4		
Percentage %	100%	10%	30%	90%	100%	--		



1.5. Project Charter

Table 2: Project Charter Model

PROJECT PLAN

Version:	1.1
Date:	09/01/2021

1. SUMMARY

Project Name	Jeddah Tower
Executive Sponsor	Gulf Engineers for Construction projects
Project Manager or Lead	Amjad Mohammed Ahmed
Project Start – End Dates	Project Start: 09/01/2021 Project End: 06/30/2023
Project Purpose	Constructing an office building tower – 30 floors
Budget /Resources	250 million Saudi Riyal
Approved Date	08/15/2021
Approving Body	09/04/2021

2. SCOPE

Purpose: constructing an office building tower consisting of 30 floors and a 2500-meter square located in AL Madinah Road in front of Hira mall, which will be providing a remarkable milestone for the headquarters of the leading companies in Jeddah.

Background (optional): to help provide a suitable environment for the companies and employees and assist in facilitating the transition process of companies to Jeddah as it is one of the goals of the 2030 vision.

Inclusion/ exclusion criteria: it will provide a car parking area, restaurants, gym, and it excludes the external space that will contract to another specialized company.



3. BENEFITS

- Acquisition and hosting of leading companies headquarters in Jeddah
- Achieving a yearly revenue of 20 million Saudi Riyal.
- Increasing the company assets in the region to reach a total of 2.5 billion Saudi Riyal.
- Providing an environmentally sustainable tower with achieving the required energy-efficient standards as per the international energy codes.

4. PERFORMANCE METRICS

Indicator	Baseline	Benchmark	Target	Rationale
Improving the contractor and tower materials	As per the Saudi building code	Ritz Carlton Jeddah hotel	Passing the required tests by excellent mark	Contributing to constructing a high-quality tower
Assuring the tower safety and reducing hazards	As per the Saudi code and OSHA standards	Damac Jeddah tower	Covering more than 80% of the tower same with safety procedures	Assuring the residence safety and increasing tower reliability



5. MILESTONES & DELIVERABLES

Deliverables	Main Tasks	Start	End
Tower designs and plans	Getting the final designs for the foundation and tower body.	09/05/2021	12/13/2021
Tower foundation	Completing tower foundation and preparing to start floor 1	09/01/2021	11/02/2022
MEP work	Completing the mechanical and electrical work for the entire tower	05/17/2022	08/31/2022

6. POTENTIAL ISSUES & RISKS

Issue / Risk	Description	Probability (H, M, L)	Impact (H, M, L)
Construction health and safety risks	Injure workers due to falling or physical hurting because of the height.	H	H
Flooding caused by heavy rainfall	Injury or death. Damage to buildings and infrastructure.	M	H
Time delays	Inexperienced earthworks contractor.	M	M

7. PROJECT BUDGET/ RESOURCES

The project budget by different private companies and investors will fund 250 million Saudi Riyal. Including Jeddah holding company, Falcon financial fund, and Mohammed Alghamdi in different proportions will acquire on specific determined dates.



8. Project Team		
Role	Name	Business Area
Projects led	Amjad Ahmed	Project management
Controlling	Mojahed Alali	PMO
Procurement Manger	Abdullah Ba Nkaita	Contracts and Procurement Office
Planning and Finance Manger	Amal Yahya	Planning and Finance Office
Implementation Manger	Anas Abdulrab	Implementation Office
Purchasing manger	Muhanad Almutrafi	Purchasing Office
Contracts Manger	Badr Albasiri	Contracts Office

9. AUTHORIZATION		
Approved by Project Sponsor	Gulf Engineers for Construction projects	Date: 09/03/2021
Approved by Project Manager	Amjad Mohammed Ahmed	Date: 09/03/2021



2. Governance, Structures and Processes

2.1. Organizational Structure

This section shows the organizational structure for the teams and units of the project. As mentioned in **Figure 1**:

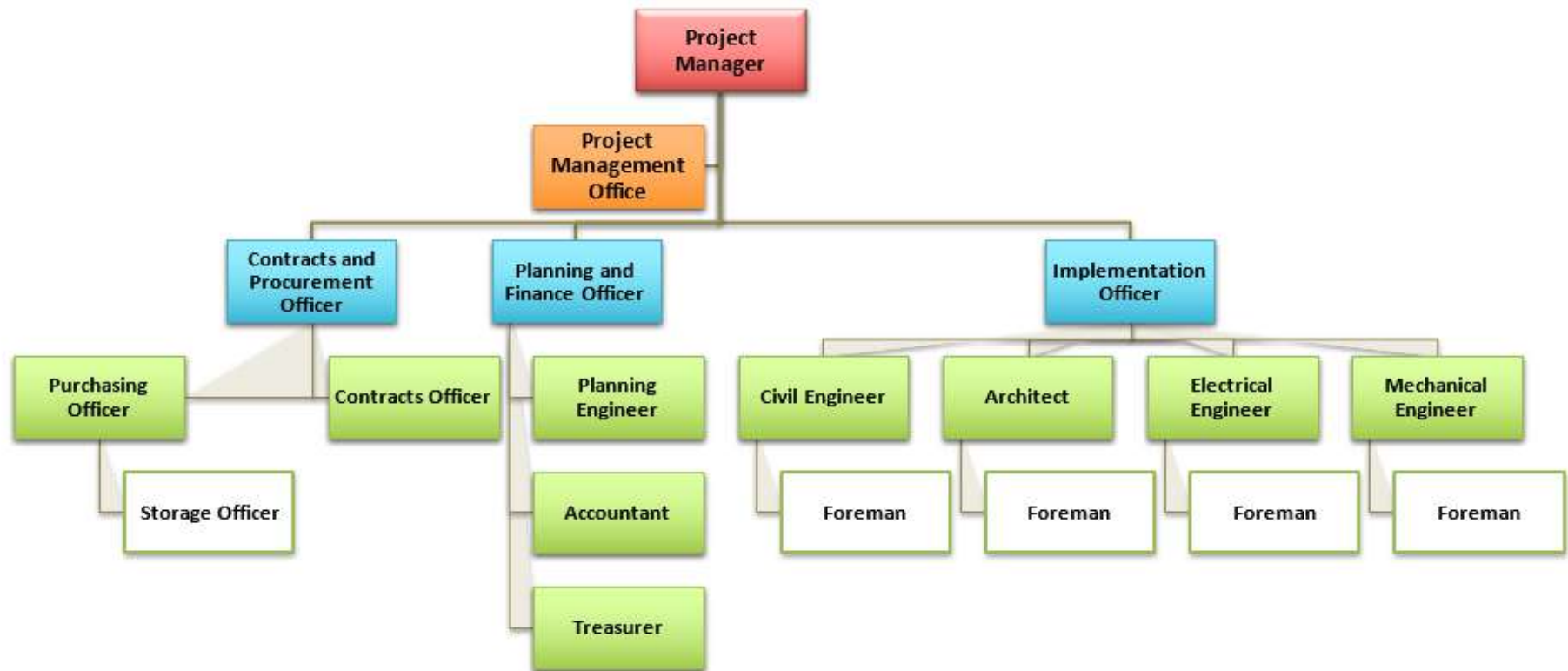


Figure 1: Organizational Structure



2.2. The Practical and Scientific Bases, Which Adopted in Developing the Structure

We relied on a hierarchical chart for this project. Everyone understands what's expected of them, their authority, and what they need to accomplish in a well-organized project. It offers the framework for a project's execution. A project would be in chaos without it. The structure of the project is known as the project organization. It's done independently, with specialists and employees from various divisions contributing. These people report to the project manager. Organizing a project is a method. It establishes a framework for making project-related choices. It determines how the project will be carried out, including its expenses, timelines, employees, and tools.

After that, the project stakeholders presented with the project organization. The way diverse tasks are split, resources are distributed, and units/departments coordinated in an organization is organizational structure. An organizational structure consists of a set of formal tasks assigned to individuals and departments. A formal reporting relationship and a design established to ensure effective coordination of employees across departments/units through authority, dependability, responsibility, and accountability. These are essential to developing organizational structures and workflow based on their clear understanding of all employees.

2.3. Project Office Model

2.3.1. The 3 Types of PMO

This model shows the 3 types of PMO. As mentioned in **Figure 2**:

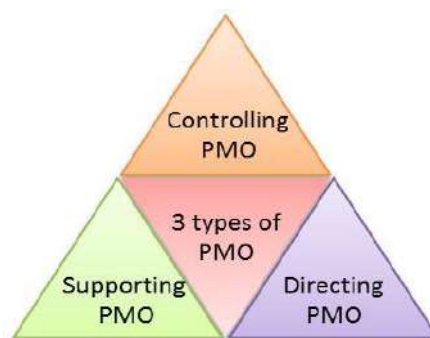


Figure 2: Project Office Model, Source by: (Bakkah Learning, 2021)



2.3.2. PMO Office (Controlling)

PMO Office's General Objective Providing a positive and supportive environment that follows the best international standards and systems in project management achieves the highest efficiency, effectiveness, transparency. It ensures that projects remain within the established scope, budget, and schedules and achieve the highest benefits and the least level of damage to society and the surrounding environment. In addition, it applies the requirements of health, safety, and environment in implementing projects, according to our project's strategic plan priorities and objectives, with a high level of efficiency.

2.3.3. PMO Office's Tasks

- Preparing a methodology and framework for the project management office in the company that is compatible with global methods in project management.
- Effectively managing and following up on current and new projects and initiatives, aligning them with the strategic plan, and applying the best quality, safety, and environmental requirements. With the ability to achieve comprehensive improvement on all businesses.
- Define the project governance structure, including the administrative processes, skills, roles, and project management responsibilities.
- Improving the ability to manage projects consistent and standard manner by standardizing project management procedures to facilitate work and optimize the use of resources.
- Raising the level of transparency by following a unified system applied to all projects.
- Assist and support the executive departments to ensure the completion of the project according to the contractual period, within the scope of work and the specified cost.
- Follow up on performance indicators and project completion.
- Follow-up and support on project outputs for all units associated with the secretariat.
- Preparing a unified methodology to follow up the project phases.



3. Compliance, Standards and Regulations

3.1. A Check Compliance Model

This section shows the check compliance model before delivering the project outputs. As mentioned in **Table 3**:

Table 3: Check Compliance Model

Project Name	Jeddah Tower	Owner	Amjad Mohammed Ahmed	Main Contractor	Gulf Engineers for Construction Projects	
Date	9/19/2021	Day	Sunday	Ref.		
Requirements				Compliance		
No.	Goal / Deliverable	Responsible	Details of Deliverables	Goal / Deliverable	Compliant (Yes/No/NA)	Remarks
1	Have deliverables been tested / reviewed?			Contractual agreements between owners, contractors, and subcontractors.	Yes	none
2	Are deliverables in line with requestor needs and expectations?			Insurance and bonding requirements.	Yes	none
3	Are all the project issues and corrective actions resolved / closed?			Safety regulations.	Yes	none
4	Were transition activities performed as planned?			Credit and background checks.	Yes	none
5	Are deliverables fully operational?			Wage and union payroll agreements.	Yes	none



3.2. Check List Model

This section shows the checklist model for the three stages of the project (Start- Plan- Achieve close). As shown in **Table 4, 5, 6 and 7:**

Table 4: Check List Model (Initiating)

Initiating Phase-Exit Checks				Date:	mm/dd/yyyy
% of Phase Compliance				0%	
#	Description	Answer	Score	Comments	
1	Has a Project Initiation Request been documented and approved?	No	0	<Add a justification here>	
2	Are the project context, scope, deliverables and expected outcomes documented?	No	0		
3	Has a Project Owner (PO) been identified?	No	0		
4	Are project benefits and success criteria documented?	No	0		
5	Are the benefits and success criteria measurable?	No	0		
6	Have all the key project stakeholders been identified?	No	0		
7	Are all the initial roles and responsibilities defined?	No	0		
8	Has the Project Steering Committee (PSC) been established?	No	0		
9	Have at least 4 alternative solutions been analysed e.g. using a SWOT analysis?	No	0		
10	Are major assumptions, constraints and risks identified?	No	0		
11	Have project synergies and dependencies been analysed?	No	0		
12	Has the project Total Cost of Ownership (TCO) been estimated in FTE and €?	No	0		
13	Are both requestor and solution provider costs included in the project TCO?	No	0		
14	Are project funding sources (budget lines) identified for each cost element?	No	0		
15	Have project savings been estimated in FTE and k€?	No	0		
16	Has a Business Case been documented and approved by the Project Owner (PO)?	No	0		
17	Is there a Project Manager (PM) assigned to the project?	No	0		
18	Are requestor needs documented and linked to project deliverables?	No	0		
19	Is project roadmap (start and end dates) for major milestones and deliverables documented?	No	0		
20	Is project approach / methodology identified?	No	0		
21	Are Risk, Issue and Decision Logs setup?	No	0		
22	Have the identified risks an associated response strategy been approved?	No	0		
23	Are major resources needed to execute the project identified as well as requirements detailed?	No	0		
24	Have security, document management and data protection constraints been assessed?	No	0		
25	Has a Project Charter been documented and approved by the Project Steering Committee (PSC)?	No	0		
26	Is the project currently delivering to schedule?	No	0		
27	Is the budget allocated sufficient at this point of the project?	No	0		
28	Is the project ready to proceed to the Planning Phase?	No	0		
Total score for compliance		0	0		



Table 5: Check List Model (Planning)

Planning Phase-Exit Checks				Date:	mm/dd/yyyy
		% of Phase Compliance	0%		
#	Description	Answer	Score	Comments	
1	Is the Stakeholder Matrix complete with all the relevant stakeholders' names and contact details?	No	0	<Add a justification here.>	
2	Are all project roles and responsibilities detailed?	No	0		
3	Is the project scope broken-down in manageable components that allow accurate estimation of resources, work effort and duration?	No	0		
4	Is it clear the link between project scope / deliverables and work packages / activities / tasks?	No	0		
5	Are project management and business implementation activities considered in the Project Work Plan?	No	0		
6	Are all the activities / tasks assigned to someone?	No	0		
7	Were all the activities / tasks and related effort validated by the task owner / domain expert?	No	0		
8	Are all project costs / effort estimated and detailed at task level?	No	0		
9	Are all project work packages, activities and tasks scheduled?	No	0		
10	Is the critical path identified?	No	0		
11	Are project performance indicators and metrics defined?	No	0		
12	Is the Project Work Plan baselined and approved by the Project Steering Committee (PSC)?	No	0		
13	Are all the communication items (e.g. meetings and reports) defined as well as their frequency?	No	0		
14	Has a Communications Management Plan been documented, as a separate document or included in the Project Handbook?	No	0		
15	Is the project management approach detailed and documented in a Project Handbook?	No	0		
16	Has an escalation process been documented and tailored to risk, issues and change management?	No	0		
17	Has a Project Change Management Plan been documented, as a separate document or included in the Project Handbook?	No	0		
18	Are the risk assessment thresholds defined, including the risk appetite?	No	0		
19	Is a Risk Management Plan documented, as a separate document or included in the Handbook?	No	0		
20	Is an Issue Management Plan documented, as a separate document or included in the Handbook?	No	0		
21	Is there a Change Log in place?	No	0		
22	Were quality requirements, assurance activities and metrics defined and approved by the Project Steering Committee (PSC)?	No	0		
23	Has a Quality Management Plan been documented, as a separate document or included in the Project Handbook?	No	0		
24	Are all the deliverables acceptance criteria, activities and metrics defined and approved by the Project Owner (PO)?	No	0		
25	Has a Deliverables Acceptance Management Plan been documented, as a separate document or included in the Project Handbook?	No	0		
26	Has a configuration management procedure been documented?	No	0		
27	Are the project management processes communicated to the Project Core Team (PCT) and to the major project stakeholders?	No	0		
28	Are all types of resources (people, software, infrastructure, facilities, outsourcers, materials, services,...) identified and their effort and period estimated?	No	0		
29	Are training needs identified?	No	0		
30	Has a Resource Plan been documented, as a separate document or included in the Project Handbook?	No	0		
31	Are all the activities that will be performed by the business/requestor side identified and estimated?	No	0		
32	Has a Business Implementation Plan been documented?	No	0		
33	Are the transition activities planned and agreed with the involved stakeholders?	No	0		
34	Is a Transition Plan documented?	No	0		
35	Are outsourcing activities and deliverables defined as well as evaluation criteria?	No	0		
36	Is there an Outsourcing Plan documented, as a separate document or included in the Handbook?	No	0		
37	Are all project plans approved?	No	0		
38	Is there a Project Handbook documented?	No	0		
39	Are all the major deviations from the Project Charter approved by the Project Steering Committee (PSC) / Appropriate Governance Bodies (AGB)?	No	0		
40	Is the project currently delivering to schedule?	No	0		
41	Are all resources available for the executing phase?	No	0		
42	Is the allocated budget sufficient at this point of the project?	No	0		
43	Is the project ready to proceed to the Executing Phase?	No	0		
Total score for compliance		0	0		



Table 6: Check List Model (Executing)

Executing Phase-Exit Checks			Date:	mm/dd/yyyy
% of Phase Compliance			0%	
#	Description	Answer	Score	Comments
1	Are resources and budget available to complete activities and to transfer deliverables to the requestor side?	No	0	<Add a justification here.>
2	Have activities been performed as defined and scheduled in the Project Work Plan?	No	0	
3	Were artefacts produced, updated and revised as planned?	No	0	
4	Were the quality assurance and control activities performed as planned?	No	0	
5	Have deliverables been tested / reviewed?	No	0	
6	Were outsourcing processes and outputs monitored and reviewed?	No	0	
7	Are tests results, issues and corrective actions documented?	No	0	
8	Are all major risks mitigated?	No	0	
9	Were security and data protection issues taken into account?	No	0	
10	Have all the approved changes been implemented?	No	0	
11	Are deliverables in line with requestor needs and expectations?	No	0	
12	Are all the project issues and corrective actions resolved / closed?	No	0	
13	Are all deliverables (including supporting deliverables such as documentation) ready to be approved by the Project Owner (PO)?	No	0	
14	Were transition activities performed as planned?	No	0	
15	Has required training been conducted?	No	0	
16	Were the relevant stakeholders informed about the delivery of projects outputs?	No	0	
17	Were project performance indicators and metrics captured and assessed?	No	0	
18	Were the business implementation activities performed as planned?	No	0	
19	Have all the communication items (meetings, reports,...) been implemented as planned?	No	0	
20	Did the Project Owner (PO) formally approve deliverables (final approval)?	No	0	
21	Are deliverables reviews and approvals documented and performed by the appropriate person (Project Owner, domain expert,...)?	No	0	
22	Are deliverables fully operational?	No	0	
23	Is there a formal transfer of responsibilities to the Project Owner (PO) and operations teams?	No	0	
24	Has a list of planned maintenance / operational actions been provided to the requestor / operations team?	No	0	
25	Was the transfer of responsibility announced to all stakeholders?	No	0	
26	Have all deliverables and artefacts been placed in the project repository, e.g. test results, sign-offs, training materials,...?	No	0	
27	Is project configuration management effective?	No	0	
28	Are operational/maintenance activities ready to start?	No	0	
29	Is the project ready to proceed to the Closing Phase?	No	0	
Total score for compliance		0	0	



Table 7: Check List Model (Closing)

Closing Phase-Exit Checks				Date:	dd/mm/yyyy
% of Phase Compliance				0%	
#	Description	Answer	Score	Comments	
1	Did a Project-End Review Meeting take place?	No	0	<Add here the justification for the answer given.>	
2	Were final project performance indicators and metrics assessed and compared to project baselines?	No	0		
3	Are project benefits and unachieved goals assessed and remaining benefits forecasted?	No	0		
4	Was client / requestor satisfaction assessed?	No	0		
5	In case some risks or issues couldn't be closed, are they re-assessed and follow-up actions recommended?	No	0		
6	Are follow-up actions assigned to people and a formal transfer of ownership performed?	No	0		
7	Were all the hand over activities to the operations mode performed?	No	0		
8	Are support and maintenance activities running as planned?	No	0		
9	Did all the relevant stakeholders give feedback on the overall project experience?	No	0		
10	Were lessons learned and post-project recommendations captured?	No	0		
11	Is the Project-End Report documented and delivered to the relevant stakeholders?	No	0		
12	Are project artefacts and other supporting documentation organised and archived in a central repository?	No	0		
13	Is project archiving following the EC internal policy for records management and archives?	No	0		
14	Were all the configuration management procedures completed?	No	0		
15	Were all the security management procedures completed e.g. copies of project data and restriction of project members access to systems and data?	No	0		
16	Was the project formally accepted by the Project Steering Committee (PSC) / Project Owner (PO)?	No	0		
17	Have project team members performance been assessed?	No	0		
18	Is the project team officially released?	No	0		
19	Have project costs stopped?	No	0		
20	Is the project ready to be closed?	No	0		
Total score for compliance		0	0		



4. Power and Interest

4.1.Stakeholders Register

This section shows the stakeholders' register and form groups for them. As mentioned in **Table 8**:

Table 8: Stakeholders' Register

Stakeholder Register								
Project Name		Office building	Project Manager	Amjad Abulrab			DATE	SEP 2021
#	Name	Designation	Role	Category	Interest	Influence	Comms requirements	Comms frequency
1	Abdullah	Director	Sponsor	Internal	H	H	- Vido conferencie - E-mail	Weekly
2	Amjad	Project Manager	Projects led	Internal	H	H	- E-mail - Phone - visual	Daily
3	Mojahed	PMO	Controlling	Internal	L	H	- E-mail - Phone	Daily
4	Abdullah	Contracts and Procurement Office	Procurement Manger	Internal	L	H	- E-mail - Phone	Daily
5	Amal	Planning and Finance Officer	Planning and Finance Manger	Internal	L	H	- E-mail - Phone	Daily
6	Anas	Implementation Officer	Implementation Manger	Internal	L	H	- E-mail - Phone	Daily
7	Muhanad	Purchasing Officer	Purchasing manger	Internal	L	H	- E-mail - Phone	Daily
8	Badr	Contracts Officer	Contracts Manger	Internal	L	H	- E-mail - Phone	Daily
9	all stuff	Projects stuff	Supervision and implementation	Internal	L	H	- E-mail - Phone	Daily
10	several companies	Customers	Tenants	External	H	L	- E-mail - Phone	Monthly
11	- National Water Company - Municipal - Electricity Company	Government	Support Services	External	L	L	- E-mail - Phone	Monthly
12	several companies	Sup contracts	Suppliers	External	L	H	- E-mail - Phone	Weekly



4.2.The Two Networks: (Strength/Interest) and (Influence/ Strength)

This section shows the two networks: (Strength/Interest) and (Influence/ Strength). As mentioned in **Figure 3**:

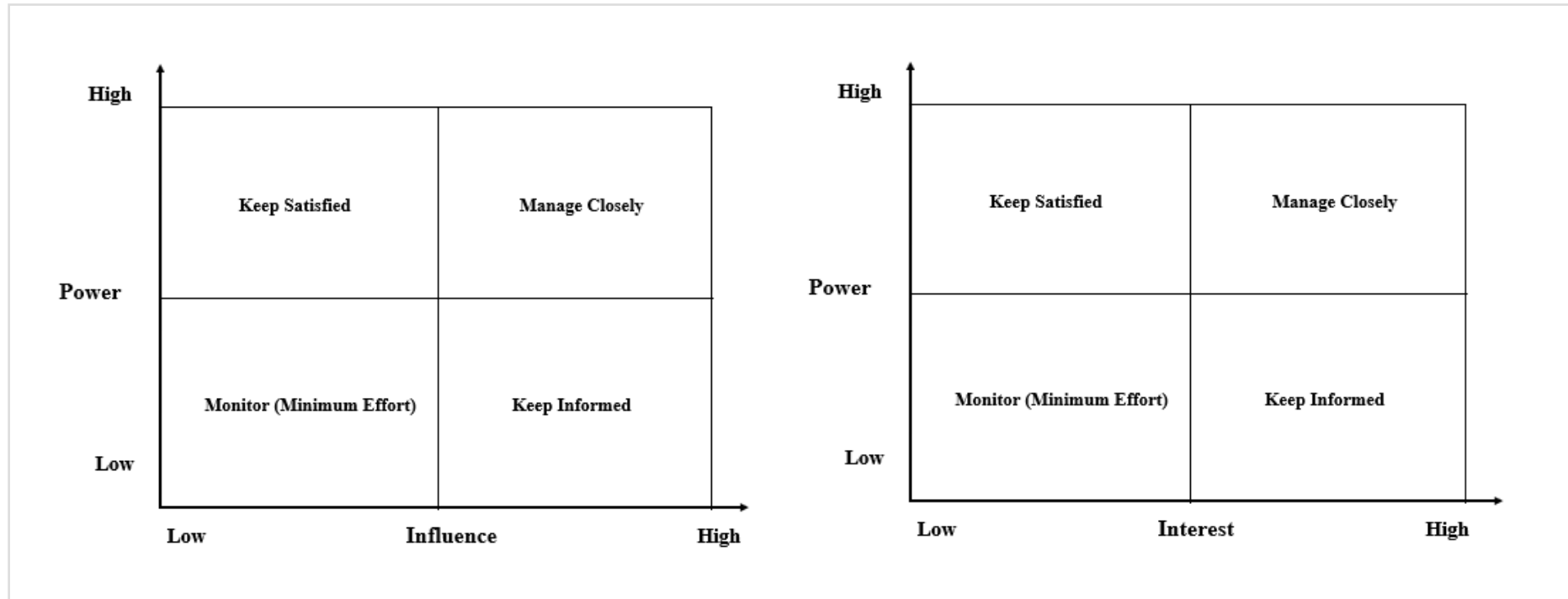


Figure 3: (Strength/Interest) and (Influence/ Strength), Source by:(Al-Muhaimid, 2018)



4.3. The Logical Diagrams for the Register of the Stakeholder

This section shows the logical diagrams for the register of the stakeholder. As mentioned in **Figure 4**:

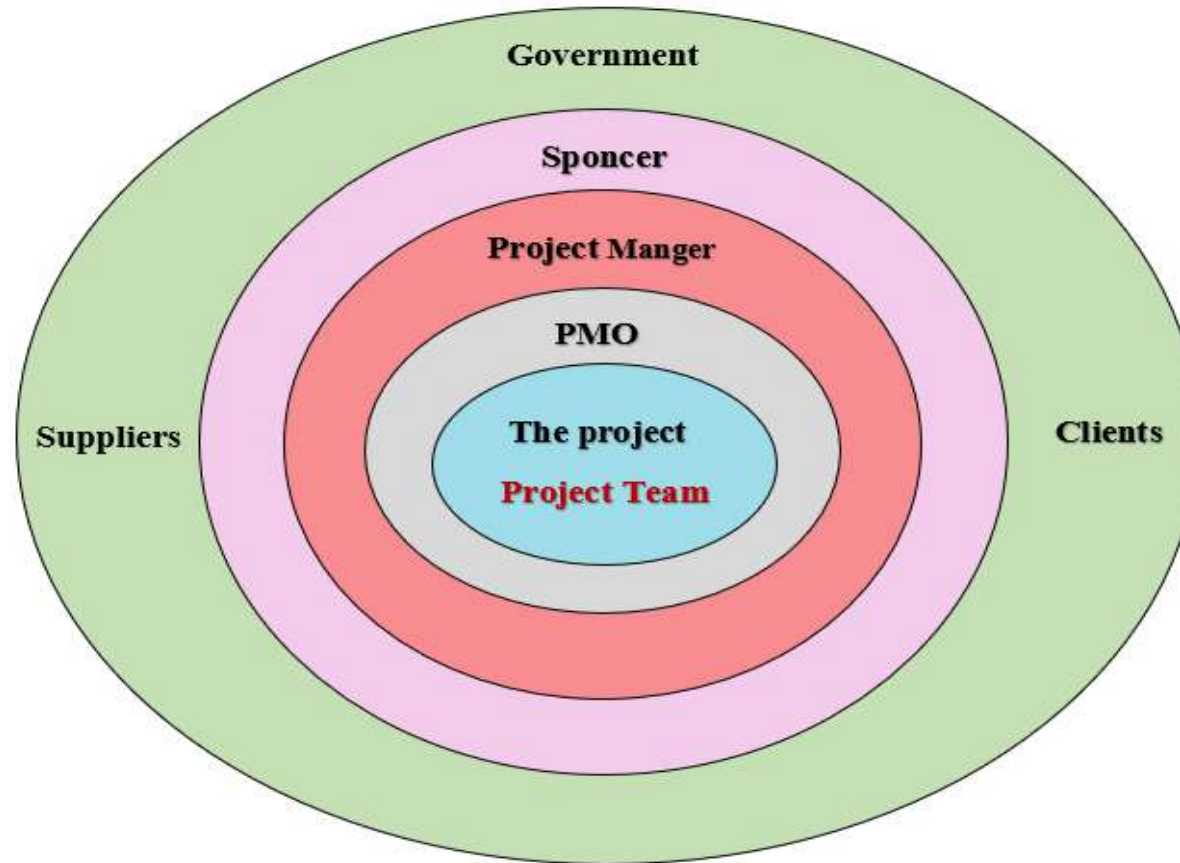


Figure 4: Logical Diagrams for the Register of the Stakeholder



5. Culture and Values

5.1. The Culture of the Organization

Culture can manifest in many ways, but it is bi-directional, both top-down and bottom-up. Culture may be key to attracting and retaining talent and overcoming labor shortages. As the construction industry strives to create more diverse and inclusive work environments, four areas will help grow a strong culture.

5.1.1. *Develop a Culture of Commitment to Every Aspect of Security*

Security is manageable and begins in the heart of your business. Discussions on the safety of the toolbox and the wearing of the helmet are essential, but that does not go very far. The right personal protective equipment (PPE) for all bodies (harnesses, gloves, etc.) is required to create a safe and inclusive environment. A one-size-fits-all solution doesn't work for everyone and taking action to show your employees that their safety is your number one concern creates confidence.

5.1.2. *Building a Diversified and Inclusive Workplace*

Diversity: Diversity is what we look like: race, ethnicity, sex, socioeconomic status, age, physical abilities, religious beliefs, political beliefs, or other ideologies.

Inclusion: is that authentic self – where a person can present themselves, shares a different point of view, and have mechanisms to do so effectively.

5.1.3. *Building a Learning Environment*

Lifelong learning drives you and gives you new perspectives. If you're not learning, you're not improving. It's essential to go outside your comfort zone and try something new. From presenting a webinar to participating in a conference, and networking, learning takes many forms. As well as find the most suitable method for you.

5.1.4. *Launch a Formal Sponsorship and Mentoring Program*

An important element of cultural change that promotes greater inclusion and safety is to foster interactions between individuals. That requires the creation of sponsorship and mentoring programs to find internal champions. By designating a champion, it will open the



door to possibilities and allow you to succeed. It's about getting a seat at the table and developing skills to help you succeed in the future.

5.2. Proposals that Can be Adopted to the Organization Values

5.2.1. *Organization's Values*

In light of the race of organizations to prove their identity and mission, that reveals their activity and effectiveness. The value dimension has become one of the most important pillars of success that underpins the strategic plans because it has a great role in activating the administrative process and improving labor productivity to ensure the growth of the organization and achieve its goals. That is why many scientific studies, both ancient and Modern, have focused on the importance of organizational and personal values in organizations and their impact on job performance and work efficiency.

Views on the definition of the concept of values varied according to different cultures and strategic objectives of institutions. "Francis and Woodcock have pointed out that values are beliefs about what is good or bad and what is important or unimportant" (Francis & Woodcock, 1995).

Al-Amyan (2002, p. 312) stated that "common agreements between members of the organization on what is desirable or undesirable in the workplace or work environment, in which these values guide the behavior of employees within different organizational circumstances, including: equality between employees, attention to time management, attention to performance, respect for others. Etc."

5.2.2. *Characteristics of Organizational Values*

- It is the basis of the components of a healthy human personality. The more values together are reflected on personality and vice versa.
- Being a guide in making decisions, and a benchmark for judging things.
- Combines proportionality, constancy and change variables.



5.2.3. *Evolution of Organizational Values*

The development of the stages of organizational values according to the development of managerial thought is manifested by:

Rational Stage: One of the values that prevailed over management thought is the individual should be treated as a machine and can be stimulated his performance through the material, which reflected in raising his efficiency and quality of his performance in the organization.

Emotional Phase: Managers realized that emotions play an important role in improving performance. So, this Phase took care of the human resource in the work environment and took into account the values of human relationships due to its positive results.

Confrontation Stage: This stage emerged due to of the strength gained by professional unions in the 1950s due to the loss suffered by large organizations following the chaos and disruption of some workers.

Consensus Phase: This phase was based on the principle of freedom of action when Douglas Macgregor's 1960 book "the human side of the Enterprise" appeared, which greatly influenced management thought through his theory of managers divided into (x, y). X-rated managers Judge workers as lazy, deceitful, and not like work, while y-rated managers view workers as positive, work-loving, and trustworthy (McGregor, 1960).

Management Phase with Objectives: As a result of previous situations, this phase has emerged, characterized by values based on participation between management and workers in terms of organizational processes to achieve compatibility between the organization's needs and workers.

Organizational Development Stage: A set of organizational values has emerged related to human relations and psychological aspects, namely, analysis of management ideas and using the scientific approach to draw up future plans.



Realistic Stage: This stage emerged as a combination of past development in organizational values. It led to emerge old ideas such as self-responsibility and opportunity (Francis & Woodcock, 1995).

5.2.4. Terms of Organizational Values

- To be tested and commitment among several alternatives shared by all personnel to avoid conflict and discord.
- To align with the ideas, trends, and values of employees to ensure adherence to them.
- Their number should be specific and clear away from ambiguity so that employees can realize them and achieve the institution's goals.
- To be consistent, unchanged, and not affected by situations and emergencies so that workers are keen to apply them on the ground.
- These values should enhance the performance of employees and have a direct impact on their attitudes and behavior according to the organization's objectives.

5.2.5. Organizational Values Tool Metrics

There is a measure of organizational values according to the classification (Francis & Woodcock, 1995). Where values are classified into 12 values through 4 groups, and each group has three values, which are as follows:

1. The values of the management of the organization are strength, elite, and reward.
2. The values of mission management are efficiency, effectiveness, and economy.
3. The values of Environmental Management are Defense, Competition, and investment of opportunities.
4. The values of relationship management are law and order, task forces, and Justice.



5.2.6. *Types of Organizational Values*

Classified values into four groups:

- Rational goal value: it relies on the principles of classical theories such as planning and attention to production.
- Human relations values: concerned with the human aspect of Human Resources Development.
- Open system values: the organization's reliance on the principle of flexibility in its resources and its conviction that it is a part of the external environment.
- Internal process values: the administrative activities carried out by the organization to manage information and control.

The subject of values is one of the most important trends of modern management and is not new to our local society, especially since its faith and culture adopts many values and principles that are part of its composition. However, Saudi Arabia's Vision 2030 has contributed to clarifying the organizational values that achieve its future vision and strategic objectives.

6. Self-Reflection and Self-Management

6.1. The “3” Personal Behaviors That Can Influence on the Project

Nowadays, with the evolving of project management science and continuous improvement. It becomes crucial to care about the technical part of management and take care of the team members and their behaviors, which will be reflected directly on the project performance and affect process effectiveness. Behaviors are mostly linked with habits as long as it's always happened spontaneously and instantaneously. And its results of different factors that affect human behaviors for a long time. Therefore, it will be dominant on the person and his acts, so we must expect to work with different personalities and take the benefits of positives of each type of personality.



There are three types of human behaviors: self-oriented, interaction-oriented, and task-oriented, and we can specify the character of each one of type of them, including positives and negatives in the following points:

1. Self-Oriented Behavior

- Healthy selfishness.
- Willingness to take risks.
- Courage to express beliefs, even ones that are unpopular and inconsistent with the majority's opinion.
- Self-confidence.
- Motto: if my ideas are implemented, we will achieve optimal results.
- Dominating discussions.
- High willingness to represent the team and its performance outside the team.
- A strong need for recognition.

2. Interaction-Oriented Behavior

- Ensuring that all members are involved.
- Facilitating cooperation and emphasizing common issues.
- Paying attention to the atmospheric changes in the team.
- Eagerness to look for compromise.
- Restoring harmony in a team is more important than achieving a good result.
- Underestimation of the importance of productive conflicts.
- Not paying attention to needs and negative feelings.

3. Task-Oriented Behavior

- A strong focus on completing tasks.
- Organization of work processes.
- Taking care of the flow of professional information.
- Accurate description and summarization of substantive issues.
- Ignoring relationships, dynamic group processes, and displaying affection.



6.2. Study Behaviors, Their Reasons, and How They Can be Eliminated

As we said that there are negativities in each type; for example, for the first type of self-oriented, it is known that they like to control and dominate the discussions once they participate in it and prevent and discourage other members from contributing and to preventing this from happening. The project manager should interfere to limit this from affecting the contribution process, determine a specific duration for this member, and then move to another member. Also, this type needs to be recognized. It's better than the project manager trying to show his gratitude for team members and illustrating how much members are contributing and their effect on the project success, and presenting physical awards for the special members, which will encourage the other next times.

The interaction-oriented type of people do not share their opinions and feelings with others, so they do not know what they are thinking about and therefore lose their points of view about the different aspects of the project. Also, they do not pay attention and value to other members' opinions. All of this could affect the effectiveness of the team and project performance either directly or indirectly. And the manager and members should encourage these members to express their opinions and share them about project items and mention what they think about what they should be doing.

Finally, the task-oriented people are oriented directly toward caring purely about their tasks without considering their relationships with other members. And do not care about building a constructive environment inside the team, which may reflect directly and quickly on the team performance. The project manager should help give him an idea about the importance of building good relationships between members and show him how that can do in conjunction with maintaining his focus on performing different tasks in a great way and complete fulfillment.

6.3. Professional Assessment Using SWOT Analysis

This method illustrates different aspects, including strengths and weaknesses from the inside and opportunities and threats from outside. As shown in **Figure 5**:



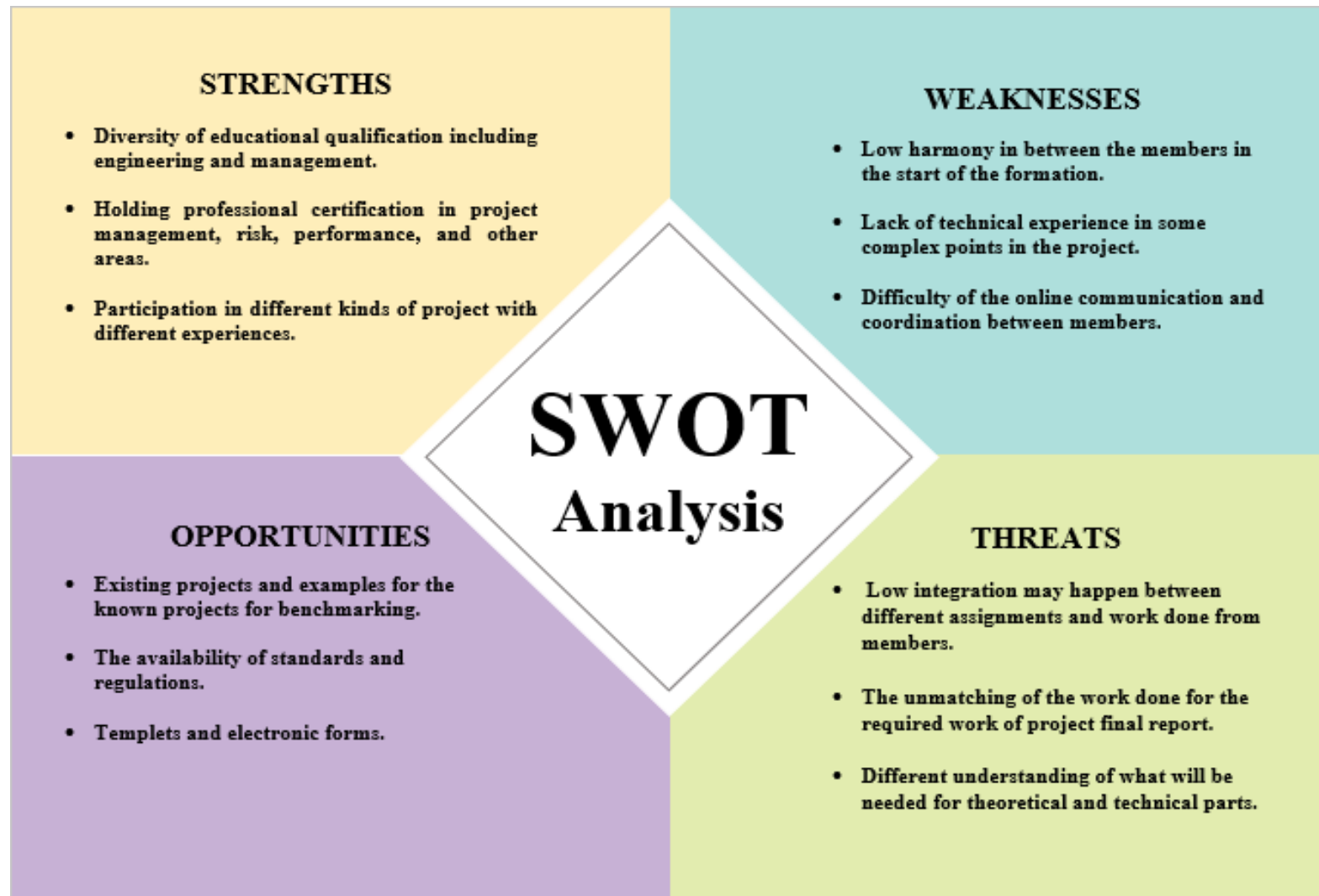


Figure 5: Assessment by Using SWOT Model



7. Personal Integrity and Reliability

7.1. The “3” Behaviors Contradict the Moral Integrity

Certainly, the construction industry is highly competitive and complex. We can confirm that most construction professionals were confronted with unethical (corrupt) behavior during their working years. These unethical practices occur in many ways at the individual, trade, and government levels. We will refer to three immoral behaviors:

- 1.** Bribes.
- 2.** Personal financial interests.
- 3.** Nepotism.

7.2. The Analyze the Financial, Social, and Technical Influence, of Such Behaviors on the Works of the Project and the Relationships

Corruption is not a local phenomenon, but a worldwide phenomenon that varies from one country to another and from one society to another. Corruption affects national investment as well as the rate of economic growth in terms of attracting foreign investors. On the part of the business owner, if they own a large business and have multiple projects. First, with respect to the financial impact, he will lose profits and his shares will go down.

Moreover, if there are sponsors, you will lose them without legal problems that you will be exposed to due to corruption. Second, in terms of social impact, you will lose respect for individuals and your position. Furthermore, the business or organization you own will lose your respect for your employees, and no one will respect you for what you have done. It had to do with the level of ownership of the institution or the business.



8. Personal Communication

8.1. Stakeholders Register

This section shows the stakeholders' register. As mentioned in **Table 9**:

Table 9: Stakeholders' Register

Stakeholder Register								
Project Name		Office building	Project Manager	Amjad Abulrab			DATE	SEP 2021
#	Name	Designation	Role	Category	Interest	Influence	Comms requirements	Comms frequency
1	Abdullah	Director	Sponsor	Internal	H	H	- Vido conferencie - E-mail	Weekly
2	Amjad	Project Manager	Projects led	Internal	H	H	- E-mail - Phone - visual	Daily
3	Mojahed	PMO	Controlling	Internal	L	H	- E-mail - Phone	Daily
4	Abdullah	Contracts and Procurement Office	Procurement Manger	Internal	L	H	- E-mail - Phone	Daily
5	Amal	Planning and Finance Officer	Planning and Finance Manger	Internal	L	H	- E-mail - Phone	Daily
6	Anas	Implementation Officer	Implementation Manger	Internal	L	H	- E-mail - Phone	Daily
7	Muhanad	Purchasing Officer	Purchasing manger	Internal	L	H	- E-mail - Phone	Daily
8	Badr	Contracts Officer	Contracts Manger	Internal	L	H	- E-mail - Phone	Daily
9	all stuff	Projects stuff	Supervision and implementation	Internal	L	H	- E-mail - Phone	Daily
10	several companies	Customers	Tenants	External	H	L	- E-mail - Phone	Monthly
11	- National Water Company - Municipal - Electricity Company	Government	Support Services	External	L	L	- E-mail - Phone	Monthly
12	several companies	Sup contracts	Suppliers	External	L	H	- E-mail - Phone	Weekly



8.2. The Personal Communication and the Effective Communication

8.2.1. *Personal Communication*

It is the process of exchanging information between certain people in the proper manner, which aims to enable the project manager and other members to communicate efficiently and effectively in different situations with individuals and diverse cultures, and includes various communication mediums like E-mails, presentations, calls, written forms, etc. (Al-Muhaimid, 2018).

8.2.2. *Effective Communication*

It is defined as the ability to convey understanding and meaning to another effectively and efficiently. So that the information received is as close to the intended meaning (Cervone, 2014).

8.3. The Shapes, Models, and Channels of the Personal Communication

8.3.1. *Shapes*

The communication shape is determined by the number of people involved. Accordingly, there are five shapes of personal contact: Interpersonal Communication - Group Communication - Mass Media Communication - Intercultural Communication - and Interpersonal communication, which is usually used in administrative transactions when two or more people communicate to exchange information, solve problems, and determine perceptions.

8.3.2. *Models*

The communication model provides a wholesome understanding of a system or structure. By helping people identify and understand the components and relationships of the communication process being studied, which are usually different from one project to another. and change according to the different phases of project life cycles. The essential sequence of communication model steps is represented in the following **Figures 6 and 7:**



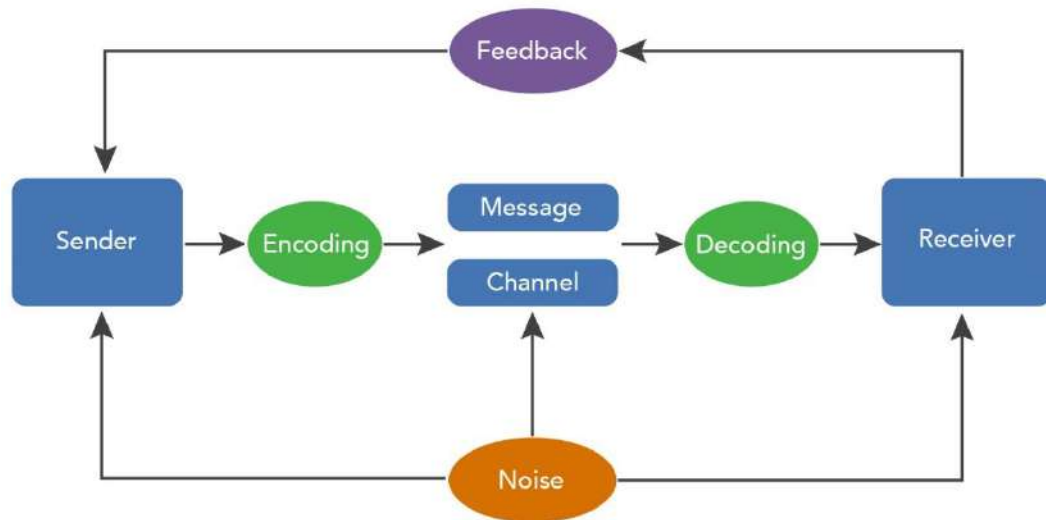


Figure 6: Communication Model (1)

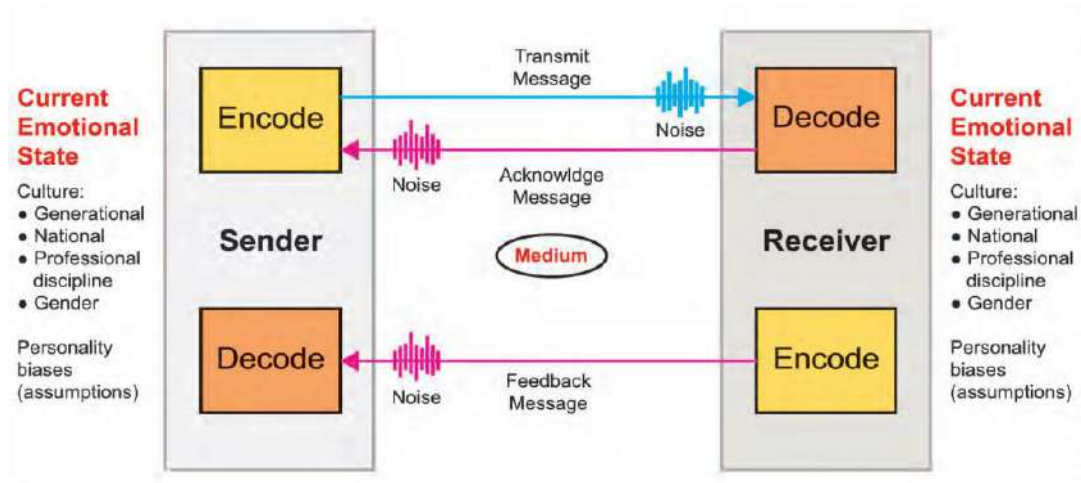


Figure 7: Communication Model (2)

8.3.3. Channels

A communication channel is a path through which messages must travel between sender and receiver. The organization will create verbal, non-verbal communication formal, informal channels, and with every increase in the number of team members, the number of communication channels increases, the level of complexity.



9. Relationships and Engagement

9.1. The Communication Matrix

A communication matrix with stakeholders includes an outline of what deliverables will be collected and how they will be filed, meeting times, and the medium will be used. As shown in **Table 10** below will identify the communications requirements for successful project management.

Table 10: Communications Matrix

Communication Type	Objective of Communication	Medium	Frequency	Audience	Owner	Deliverable
Kickoff Meeting	Introduce the project team and the project; review project objectives and management approach.	Face to Face	Once at start of the project	Project Sponsor Project Team Stakeholders	Project Manager	Agenda Meeting Minutes
Project Team Meetings	Review the status of the project with the team.	Face to Face	Every Monday at 9:00 A.M	Project Team	Project Manager	Agenda Meeting Minutes
Monthly project Status Meetings	Report on the status of the project to management.	Face to Face Conference Call	Monthly	PMO	Project Manager	Slide updates Project Schedule
Project Status Reports	Report on the status of the project, including activities, progress, costs, and issues.	Email	Monthly	Project Sponsor Project Team Stakeholders PMO	Project Manager	Project Status Report Project Schedule



9.2. The 3 Wrong Scenarios of Communication

1. When one of the employees or managers deliberately refuses to speak or work with someone on a particular task without providing reasons, this attitude is a passive-aggressive behavior at work.
2. If employees report the issue they are facing in the workplace. But their direct manager doesn't let them explain the problem in detail or respond to the complaints. The problem may be ignored, and the employees will likely feel resentment because their voices don't account.
3. The Blame Game appears when pointing the fingers between co-workers to avoid accepting fault by assigning that responsibility to someone else for a misdeed, failure, or undesirable outcome.

9.3. Stakeholders Assessment Matrix

This assessment matrix appears the project management team's stakeholder management status during the execution phase, which classifies the stakeholder into two types of current status (C), and desired status (D). This process facilitates tracking the actual engagement levels of stakeholders. As shown in **Table 11**:



Table 11: Stakeholders Engagement Assessment Matrix

Stakeholder	Unaware	Resistant	Neutral	Supportive	Leading
Director - Abdullah			C		D
Project Manager - Amjad				C	D
PMO - Mojahed				C&D	
Contracts and Procurement Office - Abdullah		C	D		
Planning and Finance Officer - Amal	C			D	
Implementation Officer - Anas		C		D	
Purchasing Officer - Muhamnd			C	D	
Contracts Officer - Badr		C	D		



10. Leadership

10.1. The Leadership Model Which is Preferred to the Project Leadership

"Best Leadership Style" in each management position in the construction industry. Because the project manager's leadership style affects the project's success, it is expected the individual project manager/CEO experiences will reflect the appropriate leadership style and support future study. To minimize a misunderstanding of leadership methods and harmonize responses. A description of the three main leadership patterns, authoritarian, participatory, and free, was provided to assess the effectiveness of each type of decision-making for each level of a management position, particularly the project executive, project manager, and supervisor.

1. Preferred Leadership Style for the Executive Project

Project executives have generally documented relationships with others, evidence of a combination of leadership focused on the president and subordinates and moving toward a more intensive participatory leadership style.

In participatory leadership, the leader provides a flexible and adaptive environment for employees in the decision-making process. Although the leader allows employees to be independent of decision-making, the problem identified by the leader is presented to subordinates. In other words, the leader involves the entire decision-making process and encourages the subordinate to propose solutions. In this way, the project executive can establish a mentoring relationship with all members of the company.

2. Project Manager's Preferred Driving Style

The results for most studies indicate that construction industry project managers are in positions that require a focus on control. So, their preferred leadership methods tend to be a president-focused authoritarian leadership style.

3. Supervisor's Preferred Driving Style

The third position analyzed was that of the supervisor. In contrast to the two higher management positions, the result of the survey indicates that the preferred leadership style of



the position tends more to be authoritarian. Executives tend to be authoritarian, while managers tend to like them to show more authoritarian leadership.

10.2. The Reasons for Which Such Model is Preferred

The traditional view of leaders who set goals, make decisions, and direct troops reflect an individual view and may change. Professionals, especially those in management positions in the construction industry, often need to deploy different leadership styles that reflect appropriate hierarchical views depending on the management position they hold within the company. Construction is a largely pre-planned activity aimed at reducing waste time and costs.

Some studies have revealed that project managers and supervisors tend to lead more authoritarian leadership methods for project management positions and a more participatory leadership style. Construction staff relies on advanced personal skills to deal with many stakeholders and departments they work with. These collaborations must also operate at different levels in the hierarchy and meet different performance requirements. Identifying the appropriate leadership methods for each management position is directly linked to performing at a high level and thus enjoying a successful career in the industry. Leaders are often slightly higher than their peers regarding legitimate authority, especially in the construction industry.

As a result, much of their leadership depends on influence and persuasion, not on power and orders. There are several alternative ways in which builders can act themselves to achieve the objectives of the project and succeed professionally. How leadership development programs can prepare and mentor qualified professionals as part of their ongoing leadership education.

10.3. The “5” Motivation Methods that are Compatible with the Nature of the Project

Each manager is not a leader, managing is sometimes an instinct, and it is not hard to acquire and master it. We will highlight five steps in motivating the team:

- 1. Appreciate Your Employees:** Building a successful business is respected and ethical. Treating your employees with respect and appreciation will result in reciprocity and practicality.



- 2. Motivate Employees:** If you want your employees to work hard and diligently, motivate them with financial rewards, if available, or holidays. In addition, an award for the ideal employee during the month is made through voting.
- 3. Praise for Good Work:** If a good employee works hard and receives neither thanks nor appreciation, they will lose their passion for the work. You should praise the employee for the good work they do in front of their colleagues to give them a boost to development and to make their colleagues work harder.
- 4. Taking Notes to Each Other:** The work does not succeed at one person work; it succeeds through an integrated team, as a single hand. You need to cultivate teamwork and collaboration between them. The success of the project also belongs to them.
- 5. Provide Employees with a Space:** Provide employees with space at work. We all have our ways of eating cake. If you want to invent freedom with your motto, do it. The most important thing is to do as he instructed.

11. Teamwork

11.1. RACI Model

This section shows the RACI Model for 3 Administrative Measures of the Project. As mentioned in **Table 12**:

Table 12: RACI Model

Activities	Roles						
	Project Manager	PMO	Procurement Manger	Finance Manger	Implementation Manger	Purchasing Manger	Contracts Manger
Risk Register	R	A	I	C	C	I	I
Licenses Tracking	R	A	I	I	C	I	C
Price Monitoring	A	C	I	R	I	I	I



12. Conflict and Crisis

12.1. The Conflict and Crisis

12.1.1. Conflict

It is essential to define and classify conflict and crisis, as this is key for devising any credible and effective response. Conflict is commonly of three major varieties: Interpersonal Conflicts, Internal conflicts, and External Conflicts.

- **Interpersonal Conflicts:** Interpersonal conflict involves conflict between two people, often due to mutual hatred or personal conflict.
- **Internal Conflicts:** Internal conflict arises between internal groups within the organization due to a difference in viewpoints or a difference in the decisions taken.
- **External Conflicts:** External conflict occurs between members of the organization and members outside the organization for financial or contractual reasons.

12.1.2. Crisis

The crisis is considered a critical and decisive moment related to the organization's fate and a problem that represents a severe difficulty for the decision-maker. For this reason, the crises expected to face the project classified to develop a comprehensive plan to confront these crises if they occur, which are as follows:

- **Financial Crisis:** Represented by the financial failure of the project and the lack of resources or the reluctance of banks to finance the project.
- **Internal Crisis:** It is represented in the emergence of disputes or problems within the individuals or crew of the project. It results in the suspension of the project's work in all its stages.
- **Local Crises:** Which result from natural disasters, wars, economic crises, or the rise in building materials and service fees.
- **Global Crises:** Crises that arise due to world wars or the spread of epidemics and diseases or any decisions that affect the state.



12.2. The 3 Expected Scenarios of the Conflicts Events in the Project

12.2.1. Scheduling Conflicts

One of the common conflicts inside any project is scheduling conflicts. It happens mostly in all projects and results in delays the entire timeline if it is not solved by applying the required procedures as soon as possible; as we know, all the activities are connected. That means we must be careful not to be in this situation; it results in a stressful environment inside the project and produces other conflicts in other areas related to this issue. In the end, scheduling conflicts can affect the final outcomes of the project and the planned revenue and profits.

12.2.2. Resources Scarcity Conflicts

This issue is important, and we should pay attention to it because it frequently happens inside projects due to the lack of efficient resources inside companies. It will be a source of disagreement and trust problems between employees if it does not eliminate from the start preparing for this situation earlier; it happens when the different departments disagree about the needed resources for their tasks, either human or equipment or any important resources.

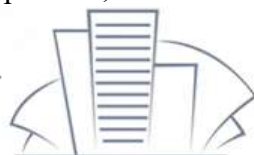
12.2.3. Uncertainty Conflicts

Since the project contains a lot of factors, especially in the beginning phase are surrounded by uncertainty, such as budgeting allocation, tasks assignment, and resources allocation, this will need extensive management. And will lead to a stressful environment due to the ambiguity and causing a lot of different conflicts between the stakeholder about various subjects. And need a collaboration of all the team to reach a more reliable and stable point.

12.3. The Optimal Strategies to Deal with Each Conflict

12.3.1. Optimal Strategy to Deal with Scheduling Conflict

We must address this conflict if it happens as soon as possible and communicate it to the stakeholders; about the current situation and the expected changes on the schedule. Also, to discuss what went wrong this time led to conflict and how to avoid it next time. Plan and determine the new dates of the different activities; if there is any change in coordination with the other stakeholders and responsible persons, then start applying it. This approach ensures



the communication and participation of all the responsible stakeholders in the process and getting their new buy-in.

12.3.2. Optimal Strategy to Deal with Resources Scarcity Conflicts

Identify our current situation according to the available resources and what we need now and expect the required resources in the project's future. Determine the prioritization of the tasks and prepare a list of the stand-by resources that may immediately join if they are needed. Also, using the new technologies available in this area can help in the management and planning the resource allocation and their expected solutions. In this way, we will have a clear idea about the current situation and a better idea about what we can do to avoid the problems and disagreements inside the project.

12.3.3. Optimal Strategy to Deal with Uncertainty Conflicts

The entire team needs to know the current project's situation and what needs to be handled first according to their importance. And ensure that there are no internal conflicts inside the team that may stand in front of the project progress. Then set an agenda for what is needed for now and set weekly and monthly goals than being clear about the specific roles. And responsibilities and following that by handling predetermined meetings to check the project status and progress.

12.4. Root Cause Analysis

This section shows the Root Cause Analysis for the 3 Expected Scenarios of the Conflicts Events in the Project. As mentioned in **Figure 8, 9 and 10**.



12.4.1. Fishbone Analysis for Scheduling Conflicts

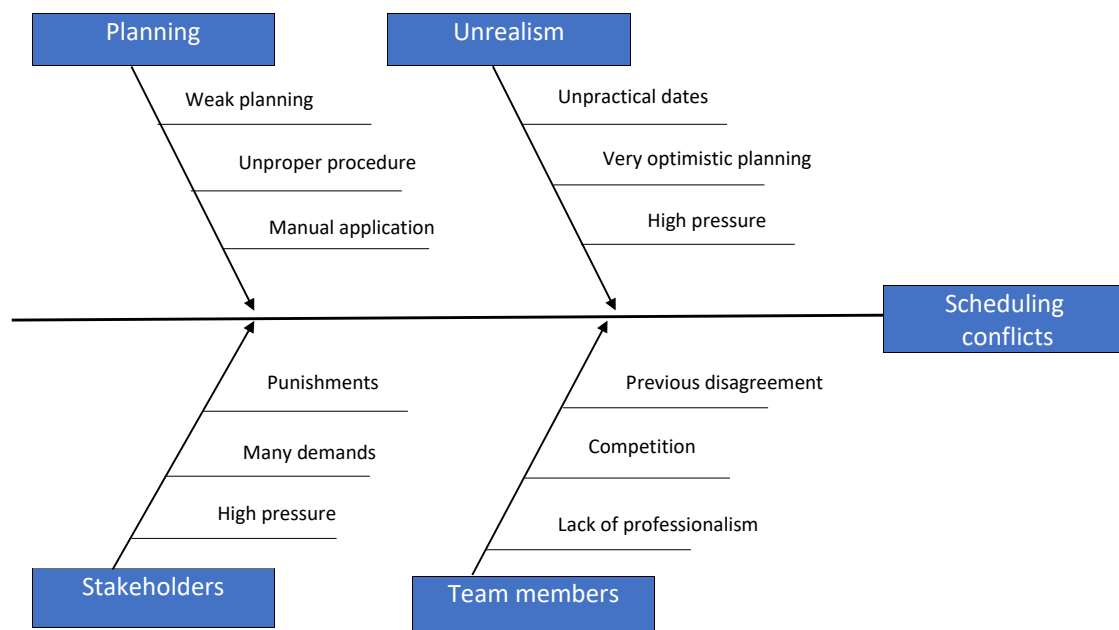


Figure 8: Fishbone Analysis for Scheduling Conflicts

12.4.2. Fishbone Analysis for Resources Scarcity Conflicts

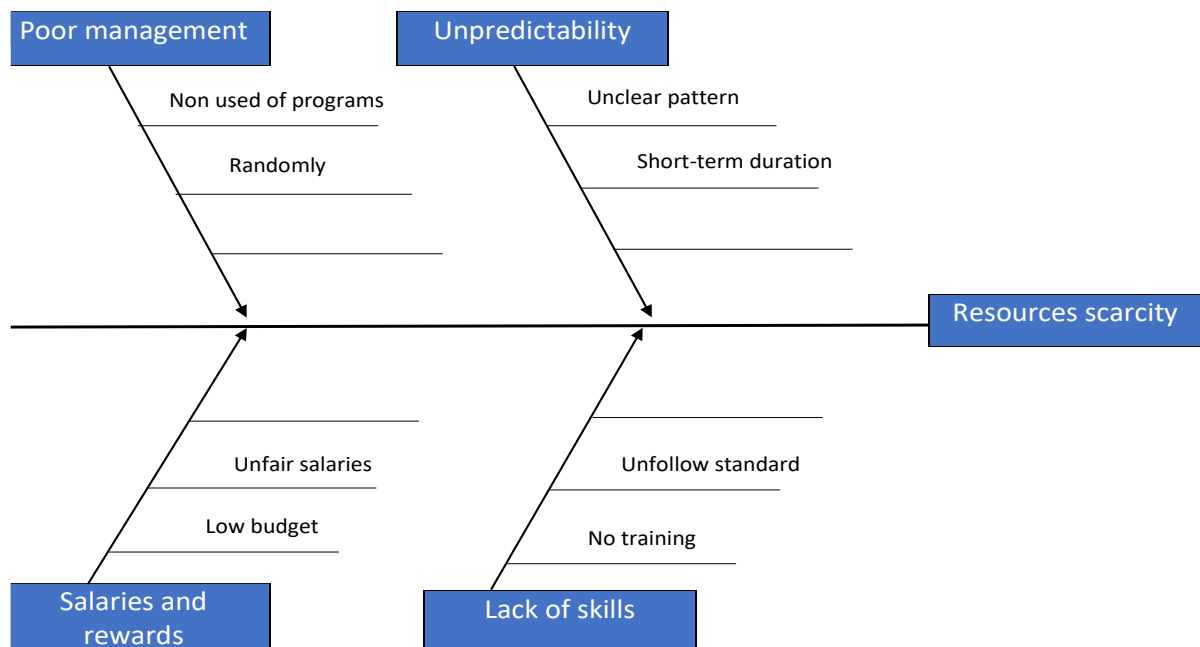


Figure 9: Fishbone Analysis for Resources Scarcity Conflicts



12.4.3. Fishbone Analysis for Uncertainty Conflicts

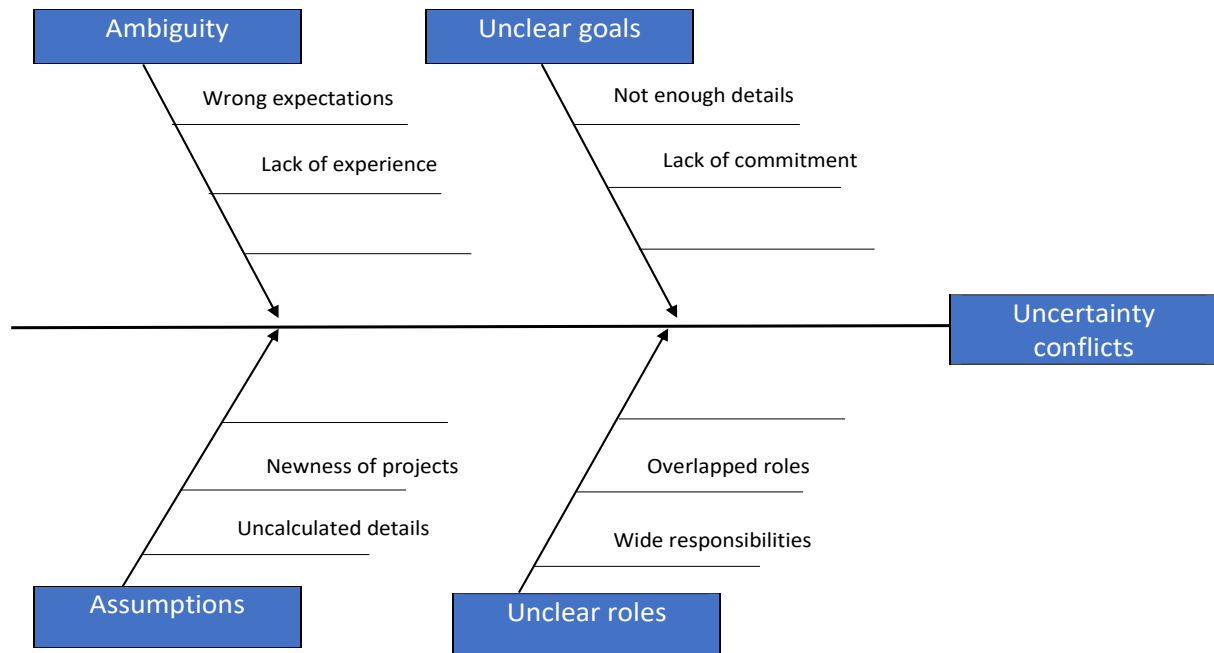


Figure 10: Fishbone Analysis for Uncertainty Conflicts



13. Resourcefulness

13.1. Distribute the Human Resources on the Functions

This section shows the distribute human resources on the functions. As mentioned in **Table 13**:

Table 13: Distribute Human Resources on the Functions

No	Job title	Responsibilities Tasks	Authority
1	Project Manager	• Responsible for the project's overall success as agreed by meeting scope, schedule, and budget objectives. • Improves Project Initiation document and project plan on high-level deliverables, schedules, and budget. • Establishes a detailed plan for the project and team and tracks progress against the estimated plan • Manages the change that happens in the scoping process. • Assigns tasks to members and monitors and tracks the progress, and ensures deliverables quality	Absolute power over the entire project
2	PMO	• Provides administrative support. • Identifies, develop, and consultant PM maturity. • Defines if a new project is fit for changing organization. • Linking project strategy to project execution. • Documents lessons learned for continuous improvement.	Limited authority
3	Contracts Officer	• Ensures attention to detail and accuracy. • Maintains and operates an accurate District-wide contract tracking and management system. • Assists in writing specifications for goods, the scope of work for services, and statements of work for complex projects. • Ensure appropriate performance standards, quality, and delivery. • Supervises and trains contracts staff.	Limited on contractors works
4	Financial Officer	• Develops a contingency plan during tough economic conditions. • Managed the accounting and financial departments with assets.	Limited on financial matters
5	Implementation Officer	• Leads technical project activities. • Manage engineering project trams using metric	Limited on engineering works
6	Procurement Officer	• Prepared Procurement Plan, bidding documents, procurement notices. • Prepared and processed purchase orders in an efficient manner.	Limited on purchases
7	Projects Stuff	• Ensure clear understanding of assigned tasks and estimate effort and time duration for assigned deliverables. • Report potential delays immediately and provide alternative plans. • Complete assigned tasks on time, on budget, and at specified quality • Attend all meetings.	Don't have authority



13.2. Influence of Conducting Crashing and Fast-Tracking Process on the Time Table

There are two schedule compression techniques:

1. Crashing

The PMBOK Guide, a 6th edition, defines crashing as a technique that shortens schedule duration at the lowest incremental cost by adding resources. A time-cost trade-off, also known as crashing, is the process of accelerating a project in order to reach an early completion date (PMBOK Guide, 2017). The involves of this technique is to accelerate the execution of the project by utilizing more resources. A crash in a project depends on assessing the cost-time trade-off, particularly for activities on the critical path (Pinto, 2007).

All of these initiatives reduce the project's timeline, with a cost associated, of course. Nevertheless, Pinto (2010) argues that “The most common method for shortening an activities duration involves the decision to increase project resources”, compared to working overtime. As mentioned in **Figure 11**:

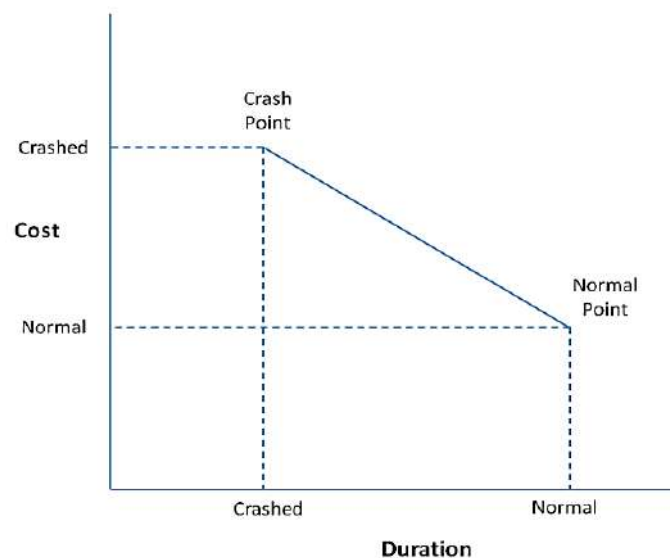


Figure 11: Time-Cost Trade-Offs for Crashing Activities, Source by: (Pinto, 2010)

In crashing, you review the critical path activities and look for tasks that can be completed early with extra resources, providing the highest compression with the least cost. Or, to put it differently, you insert labor, resources, anything that can make you speed up the process, crashing the activities. They show in **Figure 12** below:



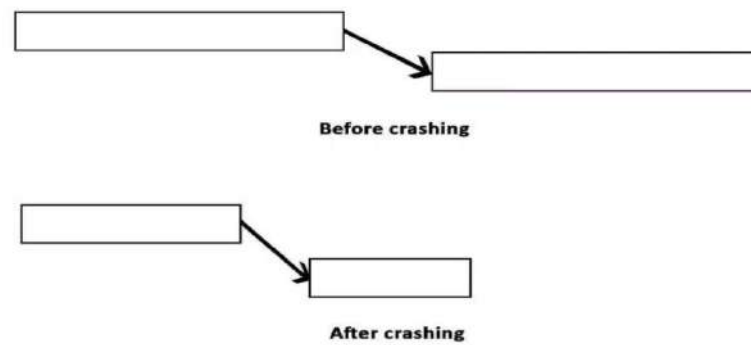


Figure 12:: Before and After Crashing Activities

2. Fast- Tracking

Fast-tracking is defined in the PMBOK Guide, 6th edition, as a schedule compression technique where activities or phases typically performed sequentially are performed in parallel for at least part of their duration (PMBOK Guide, 2017). A fast-tracking approach involves reviewing the critical path and identifying the vital activities. Afterward, you analyze and determine which tasks can be partially or entirely paralleled. Fast-tracking can dramatically reduce a project's time, but it can also increase the risks of rework and schedule delays.

Here to compress the schedule, the project manager uses fast-tracking because it does not cost more, and resources in this project are limited. However, it increases risk as activities overlap. Also, A clear example of that would be starting the activities of Electrical before the Framing activities are completed. They show in **Figure 13** below:

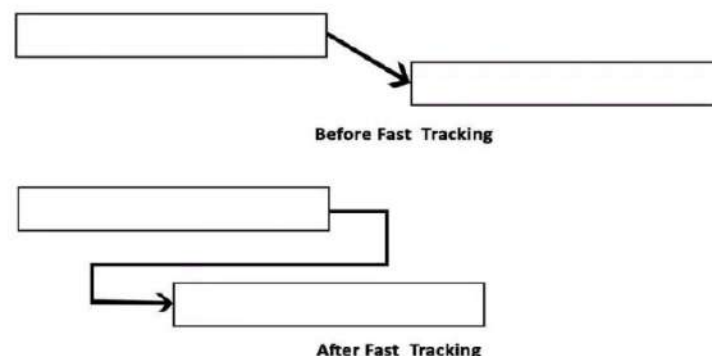


Figure 13: Before and After Fast-Tracking Activities



14. Negotiation

14.1. The General Rules for the Negotiation Process

The negotiating process is based on many different styles and tactics. The negotiation process includes five common processes, followed by the most successful negotiations:

1. Readiness: Identify your priorities from the negotiations and ask what you want to do following the discussion? Anticipate potential outcomes and state where you stand on all outcomes, positive or negative. If you expect negative results, come up with the answer. Also, plan out the features you will offer. Identify where, when, with whom, and under what restrictions negotiations will be conducted.

2. Information Sharing: Share your information with whom you are negotiating. Share your goals, vision, and interests. In exchange, no information about who you're negotiating with.

3. A Clarification: Once you have completed the information sharing, seek clarification if the image is not clear to you. Tell them your needs and objectives as well. Of course, the discussion should be quiet, and the objective should be for both sides to achieve a satisfactory result.

4. Negotiating and Problem Solving: This is the gist of the negotiating process. Let the two sides make the first offer. You should talk about the offer and propose offers tailored to your needs. And the bargaining process ends as you negotiate away from your emotions. Moreover, the flexibility of negotiating through concessions is not important for you. The ultimate objective is to achieve a win-win outcome.

5. Conclusion and Implementation: After completing the negotiating process, both parties should thank each other for discussing whether the outcome was positive or negative. Even if you fail to achieve a satisfying result, the most important thing is to maintain relationships. As well, there should be expectations for the implementation of the agreement. And it will be written into a written contract to follow up and make sure that is what both parties have agreed upon has been implemented.



14.2. The 2 Negotiation Plans

This section shows 2 Negotiation Plans. As mentioned in **Table 14**:

Table 14: 2 Negotiation Plans

	Owner's	Opposite
Assumptions	Identify the important priorities you expect to be accurate but not sure of them. These can be verified during the information sharing phase.	Provide measures to be taken by the other party. Also, ensure you correct any misconceptions.
Less Acceptable Arrangement	Figure out which concessions you can give up and which ones suit you. Be careful to share your expected trade-offs with the other party they should not know.	Guess their concessions so you can study their financial situation. Know their regulatory and compliance with nominations. Are there delays in the work they do in operations or plants?

15. Project Design

15.1. The Triple Constraint

With any project, there are limitations and risks that need to be addressed to ensure the project's ultimate success. The three primary constraints that project managers should be familiar with are time, scope, and cost. These are frequently known as the triple constraints or the project management triangle. Each constraint is connected to the other two; so, for example, increasing the scope of the project will likely require more time and money, while speeding up the timeline for the project may cut costs but also diminish the scope. This section shows the triple constraint. As mentioned in **Figure 14**:



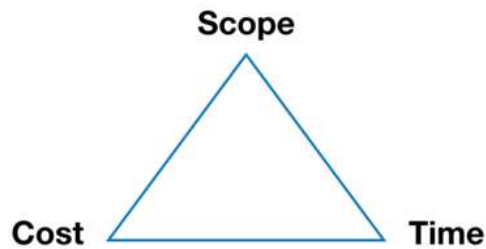


Figure 14: The Triple Constraint

Scope

- Lack of proper engineering practices leads to unnecessary scope change and baseline change which can affect the project's success.
- Changes in the project schedule can lead to the development of unknown knowns and unknown unknowns at a later stage of the project.

Time

- Time is the key component of any project or contract. It is very important that the project is executed within a time-bound schedule and is not rushed.
- The delay in commissioning a facility that caters to one specific state may have cost implications for the project as well as overruns. It is therefore critical that the project is monitored and controlled at all stages to avoid potential issues.

Cost

- The cost of any project is typically borne by the company treasury or borrowed from financial institutions. The future value of the money and its potential cost are both taken into account while estimating the project cost.

Due to scope vagueness and time constraints, projects are prone to cost overruns and delays. This is therefore being considered as one of the most critical factors in project management.



15.2. List of the Project Success Factors

- Comprehensive planning
- Strong collaborative teamwork
- Clear goals
- Utilize best practices
- Effective communication
- High project manager authority
- Utilize software, tools, and techniques
- Increased support from top management
- Controlling change processes
- Proper risk management
- Continued team motivation

15.3. Work Breakdown Structure

The work breakdown structure systematically divides the project content into tasks and subsections, and work items. It includes the work breakdown structure to many sub-levels subdivided incrementally. The detail required for the tasks reflects the structure for all deliverables and sub deliveries necessary to deliver the project outputs. And guide of what had was mentioned above; **Table 15** below illustrates the work breakdown structure in this project.



Table 15: Work Breakdown Structure for Jeddah Tower Project

WBS	Task Name	Duration	Start	Finish
1	JEDDAH TOWER	478 days	9/1/2021	6/30/2023
1.1	FOUNDATION WORK	118 days	9/1/2021	2/11/2022
1.1.1	EXCAVATE WORK	74 days	9/1/2021	12/13/2021
1.1.1.1	DIG WORK	49 days	9/1/2021	11/8/2021
1.1.1.2	LEVEL WORK	25 days	11/9/2021	12/13/2021
1.1.2	FRAMEWORK	25 days	11/9/2021	12/13/2021
1.1.3	CONCRETE WORK	44 days	12/14/2021	2/11/2022
1.1.3.1	POUR WORK	25 days	12/14/2021	1/17/2022
1.1.3.2	CURE WORK	19 days	1/18/2022	2/11/2022
1.2	EXTERIOR WORK	265 days	2/14/2022	2/17/2023
1.2.1	SIDING WORK	233 days	2/14/2022	1/4/2023
1.2.1.1	MASONRY WORK	120 days	2/14/2022	7/29/2022
1.2.1.2	PANELING WORK	53 days	8/1/2022	10/12/2022
1.2.1.3	TRIM WORK	60 days	10/13/2022	1/4/2023
1.2.2	FRAMEWORK	25 days	10/13/2022	11/16/2022
1.2.3	ROOF WORK	32 days	1/5/2023	2/17/2023
1.2.3.1	SHINGLES WORK	20 days	1/5/2023	2/1/2023
1.2.3.2	GUTTERS WORK	12 days	2/2/2023	2/17/2023
1.2.4	WINDOWS WORK	32 days	10/13/2022	11/25/2022
1.2.5	PAINT WORK	20 days	11/28/2022	12/23/2022
1.3	INTERIOR WORK	360 days	2/14/2022	6/30/2023
1.3.1	PLUMBING WORK	66 days	2/14/2022	5/16/2022
1.3.1.1	DRAINAGE WORK	36 days	2/14/2022	4/4/2022
1.3.1.2	HOT & COLD LINES WORK	30 days	4/5/2022	5/16/2022
1.3.2	ELECTRICAL WORK	77 days	5/17/2022	8/31/2022
1.3.2.1	ROUGH IN WORK	33 days	5/17/2022	6/30/2022
1.3.2.2	TEST WORK	24 days	7/1/2022	8/3/2022
1.3.2.3	APPLIANCES WORK	20 days	8/4/2022	8/31/2022
1.3.3	WALLS WORK	148 days	9/1/2022	3/27/2023
1.3.3.1	FRAMEWORK	49 days	9/1/2022	11/8/2022
1.3.3.2	INSULATION WORK	38 days	11/9/2022	12/30/2022
1.3.3.3	DRYWALL WORK	34 days	1/2/2023	2/16/2023
1.3.3.4	PAINT WORK	26 days	2/20/2023	3/27/2023
1.3.4	FLOORING WORK	69 days	3/28/2023	6/30/2023
1.3.4.1	TILE WORK	32 days	3/28/2023	5/10/2023
1.3.4.2	CARPET WORK	37 days	5/11/2023	6/30/2023



And the decomposition is the primary tool used in creating a work breakdown structure, by which the project and outputs are divided into smaller parts, and this process is repeated until the required level is reached. There are many levels of the work breakdown structure. Decomposition takes place in more than one way, and among the most common are:

- Decomposition from Top-Down
- Decomposition from Bottom-Up

In this project, we used Top-Down decomposition using structured works decomposition guides. As mentioned in **Figure 15**:

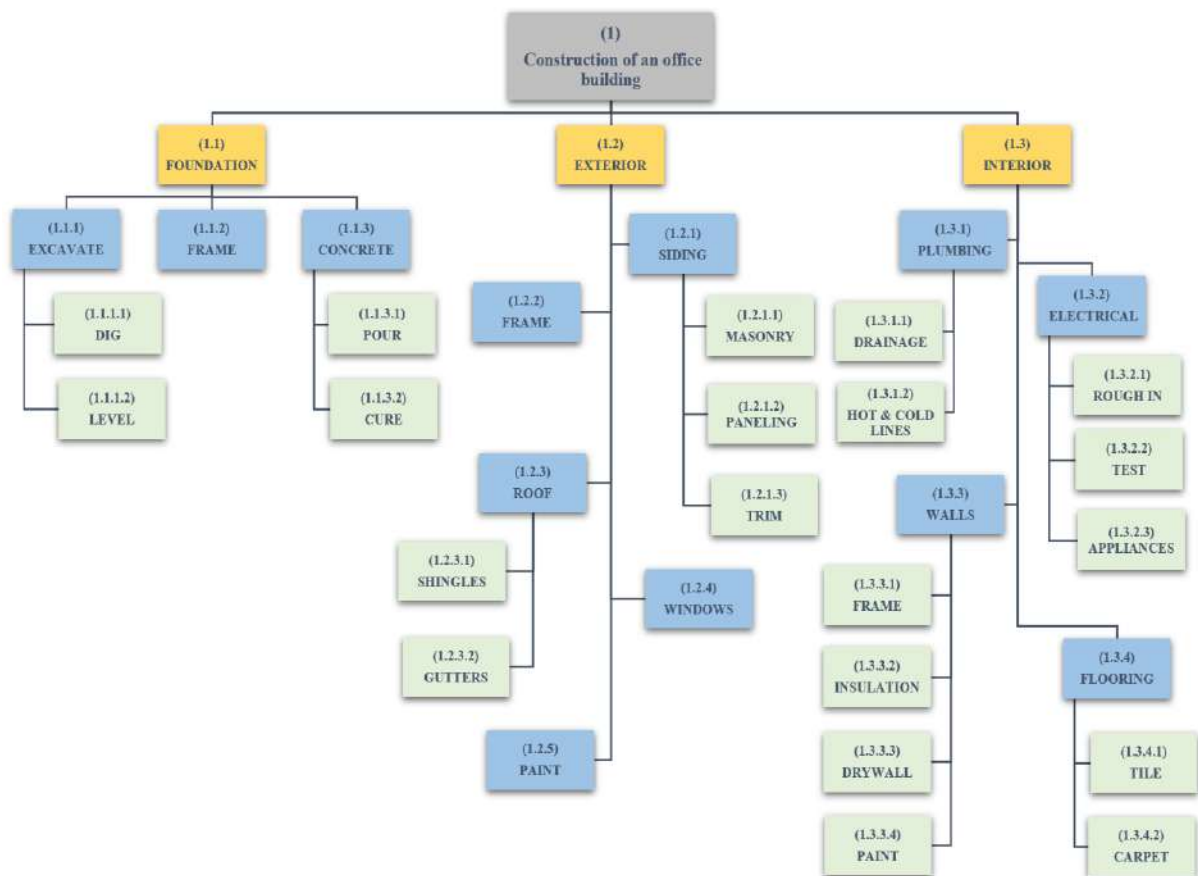


Figure 15: Work Breakdown Structure for Jeddah Tower Project



16. Requirements and Objectives

16.1. Requirement Traceability Matrix

The project requirements are connected to the outputs we have achieved through the requirements traceability matrix. This shows below in requirement traceability matrix. As mentioned in **Table 16**:

Table 16: Requirement Traceability Matrix

Requirement Traceability Matrix					
Project Name:	JEDDAH TOWER				
Project Description:	Constructing an office building tower consisting of 30 floors and a 2500-meter square located in AL Madinah Road in front of Hira mall, which will be providing a remarkable milestone for the headquarters of the leading companies in Jeddah.				
ID	Requirement Description	Project Objectives	Requested By	Deliverables	Test Cases
RT01	Obtaining building permit	To start constructing the tower	Sponsor	Complete	1001
RT02	Getting the final designs	Providing an environmentally sustainable tower with achieving the required standards	Architect	Complete	1002
RT03	Constructing a high-quality tower	Passing the required tests by excellent mark	Project Manager	In progress	
RT04	Residence safety	Covering more than 80% of the tower same with safety procedures	Project Manager	Not complete	
RT05	Increasing tower reliability	Covering more than 80% of the tower same with safety procedures	PMO	Not complete	
RT06	Provide a car parking area	facilitating the transition process and providing parking for companies and employees	Planning Engineer	Not complete	
RT07	Restaurants	provide a suitable environment for the companies and employees	Purchasing officer	Not complete	
RT08	Gym	provide a suitable environment for the companies and employees	Contracts officer	Not complete	



16.2. Requirement Collection Methods

1. Brainstorming

This method is used to get as many ideas as possible from the participants.

2. Document Analysis

This method is used by reviewing the existing and available documents and analyzing them.

3. Focus Group

This method is used by getting the feedback of gathered people and representatives.

4. Interface analysis

This is for software and can be done by humans or machines.

5. Interview

This method is used by meeting the key stakeholders and getting their requirements.

6. Observation

This method is used by observing users; an analyst can identify a process flow, steps, pain points, and opportunities for improvement.

7. Prototyping

This method is used by gathering preliminary requirements that you use to build an initial version of the solution.

8. Requirement Workshops

This method is done by involved parties collaborating to document requirements.

9. Reverse Engineering

This method is used when a migration project does not have access to sufficient documentation of the existing system.



10. Survey/Questionnaire

This method is used by forcing users to select from choices, rate something (“Agree Strongly, agree...”), or have open-ended questions.

16.3. The Hierarchical Structure Connected to the Strategy

This section shows the hierarchical structure of the objectives of the project connected to the strategy. As mentioned in **Figure 16**:

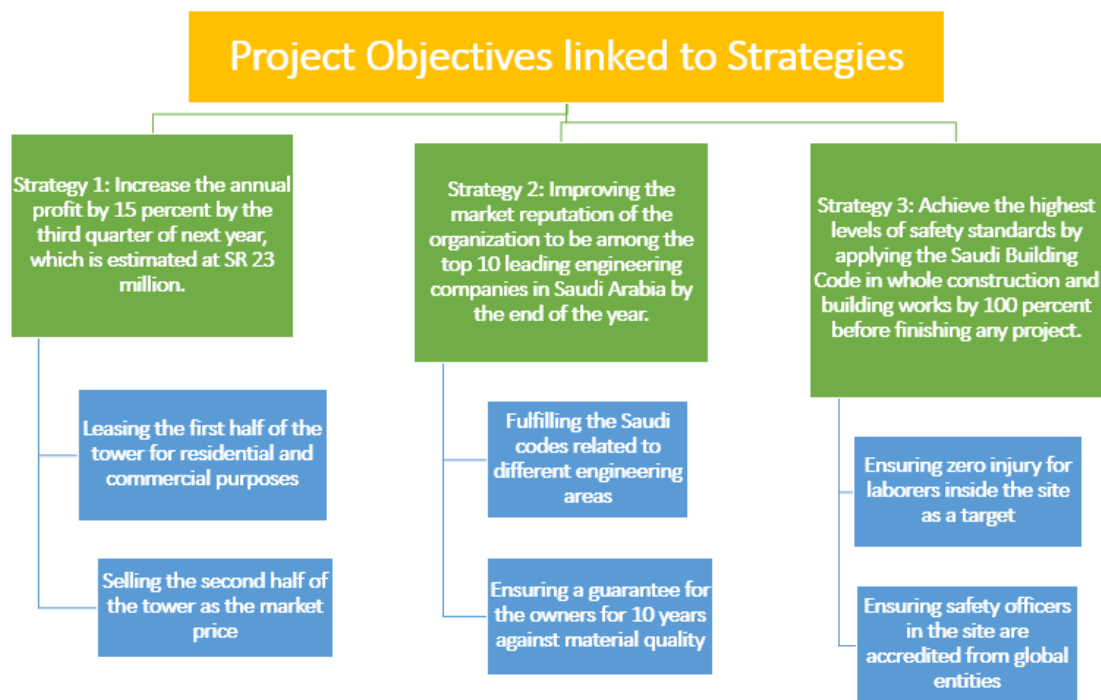


Figure 16: The hierarchical structure of the strategy



17. Scope

17.1. Scope Statement

Table 17: Scope Statement

Project Name	JEDDAH TOWER	Date	01/09/2021
Project Number	2030	Project Manager	Amjad Mohammed Ahmed

Project Description and How it Meets the Business Need

Purpose: constructing an office building tower consisting of 30 floors and a 2500-meter square located in AL Madinah Road in front of Hira mall, which will be providing a remarkable milestone for the headquarters of the leading companies in Jeddah. Background (optional): to help provide a suitable environment for the companies and employees and assist in facilitating the transition process of companies to Jeddah as it is one of the goals of the 2030 vision.

Project Benefits

1. Acquisition and hosting of leading companies headquarters in Jeddah
2. Achieving a yearly revenue of 20 million Saudi Riyal.
3. Increasing the company assets in the region to reach a total of 2.5 billion Saudi Riyal.
4. Providing an environmentally sustainable tower with achieving the required energy-efficient standards as per the international energy codes.

Project Requirements

1. Contributing to constructing a high-quality tower
2. Assuring the residence safety and increasing tower reliability

Project Deliverables

1. Tower designs and plans
2. Tower foundation
4. MEP work



Project Does Not Include

Inclusion/ exclusion criteria: it will provide a car parking area, restaurants, gym, and it excludes the external space that will contract to another specialized company.

Success / Acceptance Criteria

1. Improving the contractor and tower materials
2. Assuring the tower safety and reducing hazards

Estimated Project Schedule

Milestones	Estimated Date of Completion
1. Project Start	01/09/2021
2. Getting the final designs for the foundation and tower body	13/12/2021
3. Completing tower foundation	02/11/2022
4. Completing the mechanical and electrical work	31/08/2022
5. Project Completion	30/06/2023
Total Estimated Length of Project	

Human Resource Requirements

Personnel Type / Role	Quantity	Estimated Length of Time
1. Projects led	1	22 months
2. Controlling	1	22 months
3. Procurement Manger	1	22 months
4. Planning and Finance Manger	1	22 months
5. Implementation Manger	1	22 months
6. Purchasing manger	1	22 months
7. Contracts Manger	1	22 months

Project Constraints

1. Saudi building code
2. OSHA standards



Project Budget
250 million Saudi Riyal

Decision	
☒	Approved
☐	Rejected
☐	Approved with modifications
☐	Deferred
<i>Required Modifications</i>	
<i>Additional Comments</i>	

Approver's Printed Name: Amjad Mohammed Ahmed

Date: 03/09/2021

Title: Approved by Project Manager

Signature:



17.2. Scope Creep

Scope creep is uncontrolled expansion of the scope of a product or project without adjusting time, costs, and resources (PMBOK Guide, 2017). It is an unfortunate natural byproduct of the construction industry. To mitigate this issue, companies need to understand the concepts of scope creep and give examples for the construction industry. Scope creep is a phenomenon that occurs when a project or activity undergoes changes that may have little impact on its initial objective but have a significant impact on the overall project's budget and timeline. The term "scope" refers to any requirement in a contract, plan, or design document that deals with time, costs, materials, resources, or other constraints. The word "creep" connotes moving gradually towards something without intending to do so - which is how it typically manifests itself in the context of these projects.

A notable example of project scope creep is the Denver International Airport. The luggage handling system failed as a result of numerous parties' warnings being ignored. The projects were never completed by the deadlines that were scheduled. The keyholders were also excluded from decision-making, making this one of the world's most expensive scope crawls. The failure to prioritize features was the main cause of this project's scope creep. Remember that the entire project collapsed because the airport disregarded several warnings from various sources. The easiest method to avoid scope creep is to identify the critical components for delivering a successful final product and make them a priority.

17.3. Product Analysis Management

The application of management ideas to the production function in a factory is referred to as production management. This means that production management involves the planning, organization, direction, and management of the manufacturing process.

The construction production index is a business-cycle indicator that tracks monthly changes in building (residential and non-residential) and civil engineering production. The index, in its most basic form, depicts changes in construction volume as well as a price-adjusted change in the value-added to the economy by this sector. The indicator is approximated by numerous other measures because this statistical concept is not directly observable. The index is calculated mathematically as a Laspeyres volume index. Different data sources can be used to compute net construction output:



- Data on gross production after subtracting input from other industries.
- Turnover.
- Both labor and material input.

17.4. The Work Packages in Work Breakdown Structure

Each work package has limits that include the work, activity, duration, cost, and success criteria for this package. Represented at the lower level of the work breakdown structure; usually, the lower-level components are equal to 100% of the work scope of the higher level and include the work breakdown structure (Rule100%). And the activities in the work package it the tasks needed to complete the work package successfully.

Here shows the transformation of the work packages in work breakdown structure to activities. As mentioned in **Figure 17**:

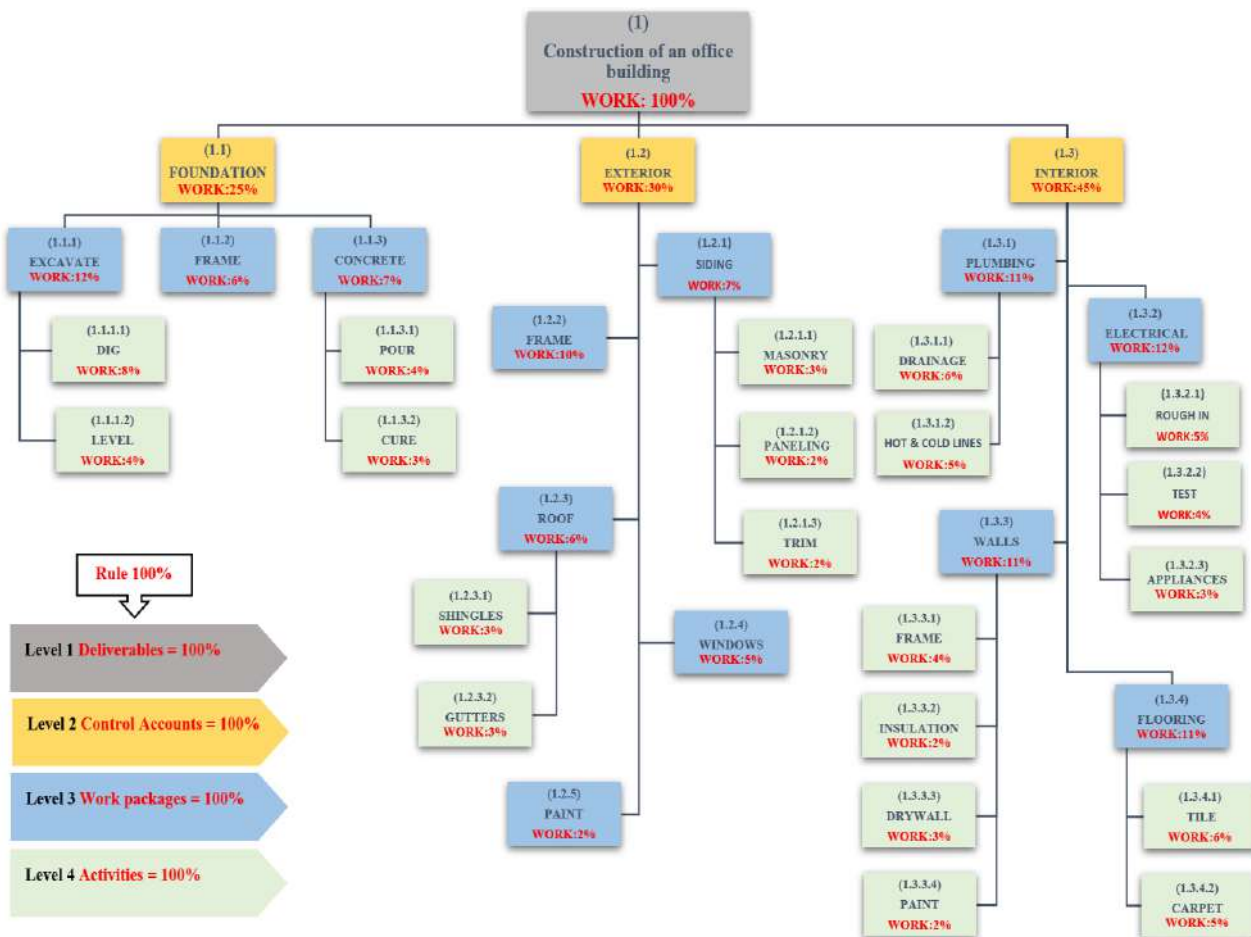


Figure 17: Work Breakdown Structure



18. Time

18.1. The Activities List

This section shows the activities list included in each work package in WBS. As mentioned in **Table 18**:

Table 18: Activity List

NO	Activity	Activity Description	Start Date	Number of Days
1	DIG WORK	Excavators work to dig a hole in the construction at a building site.	9/1/2021	49
2	LEVEL WORK	Bricklayer levels the foundation for a building by flattening newly poured concrete.	11/9/2021	25
3	POUR WORK	Laborer work pouring liquid concrete from cement mixer for floor construction.	12/14/2021	25
4	CURE WORK	Curing begins immediately after completion and pouring so that the concrete can achieve the required durability and strength.	1/18/2022	19
5	MASONRY WORK	They built masonry concrete blocks by filling cavities with concrete.	2/14/2022	120
6	PANELING WORK	Construction workers erected glass windows on the front of the building.	8/1/2022	53
7	TRIM WORK	Builders install edging around the window before installation.	10/13/2022	60
8	SHINGLES WORK	The roofing contractor uses TPO-PVC roof tiles to install the roof.	1/5/2023	20
9	GUTTERS WORK	Contractors install roof gutter parts.	2/2/2023	12
10	DRAINAGE WORK	The Laborers implement water and wastewater distribution networks.	2/14/2022	36
11	HOT & COLD LINES WORK	Implement safe, sustainable, and reliable plumbing systems without the corrosion or environmental problems associated with metal pipes.	4/5/2022	30
12	ROUGH-IN WORK	Architects create ducts, plumbing, and wiring to ensure space constraints and accessibility issues.	5/17/2022	33
13	TEST WORK	An experienced team of engineers conducts construction tests and various integrity tests.	7/1/2022	24
14	APPLIANCES WORK	Install heating, ventilation, refrigeration, air conditioning systems, equipment, and controls on construction.	8/4/2022	20
15	FRAMEWORK	Workers are commencing building shields for formwork at the construction.	9/1/2022	49
16	INSULATION WORK	Construction workers carry out work on plastering and insulation of walls of the building.	11/9/2022	38
17	DRYWALL WORK	Installation work of drywall Construction workers carries out the work to partition the inner wall at the construction site.	1/2/2023	34
18	PAINT WORK	Workers use paintbrushes, rollers, and sprayers to apply paint and other finishes to the surface.	2/20/2023	26
19	TILE WORK	The tile contractor performs detailed measurements, uses electric or mechanical tools to cut the tiles, then lays tiles to build.	3/28/2023	32
20	CARPET WORK	The laborer creates sketches of the room, and they shear the carpet to fit the area precisely, then use various tools to secure it to the ground.	5/11/2023	37



18.2. The Relationships Between the Activities

This section shows the Relationships Between the Activities. As mentioned in **Figure 18** and **Table 19**:

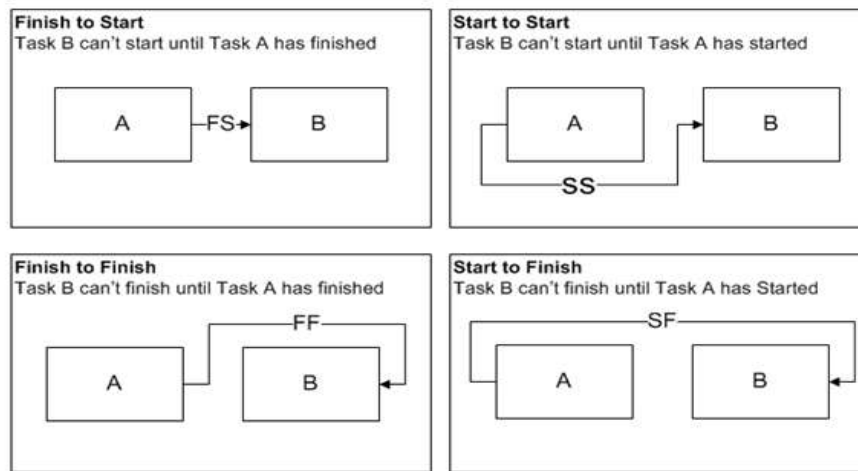


Figure 18: The Relationships Between the Activities

Table 19: The Relationships Between the Activities in the Project

ID	Activity Name	Duration	Predecessor	Relationship
A	DIG WORK	49 days	-	-
B	LEVEL WORK	25 days	A	Finish to Start
C	POUR WORK	25 days	B	Finish to Start
D	CURE WORK	19 days	C	Finish to Start
E	MASONRY WORK	120 days	D	Finish to Start
F	PANELING WORK	53 days	E	Finish to Start
G	TRIM WORK	60 days	F	Finish to Start
H	SHINGLES WORK	20 days	G	Finish to Start
I	GUTTERS WORK	12 days	H	Finish to Start
J	DRAINAGE WORK	36 days	D	Finish to Start
K	HOT & COLD LINES WORK	30 days	J	Finish to Start
L	ROUGH IN WORK	33 days	K	Finish to Start
M	TEST WORK	24 days	L	Finish to Start
N	APPLIANCES WORK	20 days	M	Finish to Start
O	FRAMEWORK	49 days	N	Finish to Start
P	INSULATION WORK	38 days	O	Finish to Start
Q	DRYWALL WORK	34 days	P	Finish to Start
R	PAINT WORK	26 days	Q, I	Finish to Start
S	TILE WORK	32 days	R	Finish to Start
T	CARPET WORK	37 days	S	Finish to Start



18.3. The Logical Diagram of the Project Activities and the Critical Path

This section shows the logical diagram of the project activities, and the critical path. As mentioned in **Figure 19** and **20**:

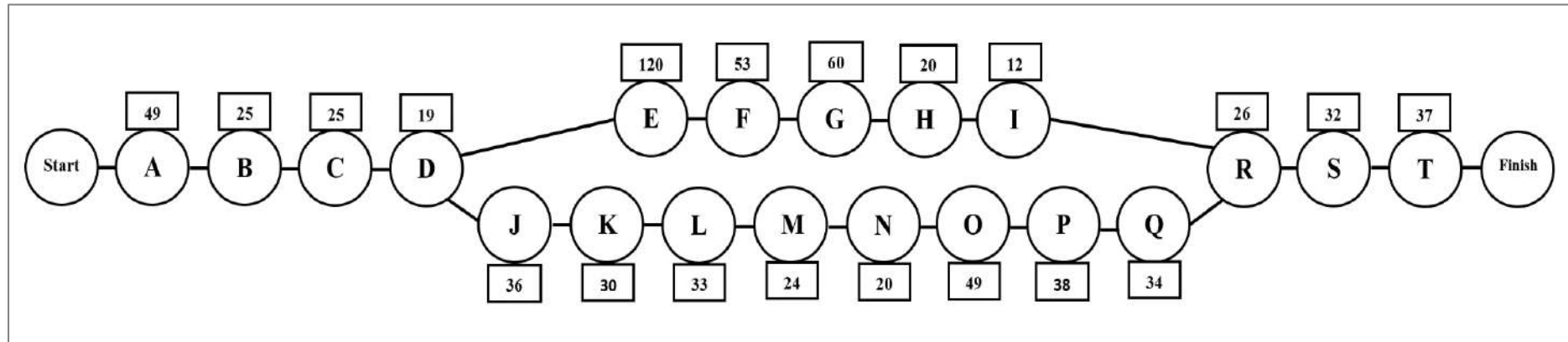


Figure 19: The Logical Diagram of the Project Activities

Start - A - B - C - D - E - F - G - H - I - R - S - T - Finish: $49 + 25 + 25 + 19 + 120 + 53 + 60 + 20 + 12 + 26 + 32 + 37 = 478$ Days

Start - A - B - C - D - J - K - L - M - N - O - P - Q - R - S - T - Finish: $49 + 25 + 25 + 19 + 36 + 30 + 33 + 24 + 20 + 49 + 38 + 34 + 26 + 32 + 37 = 477$ Days



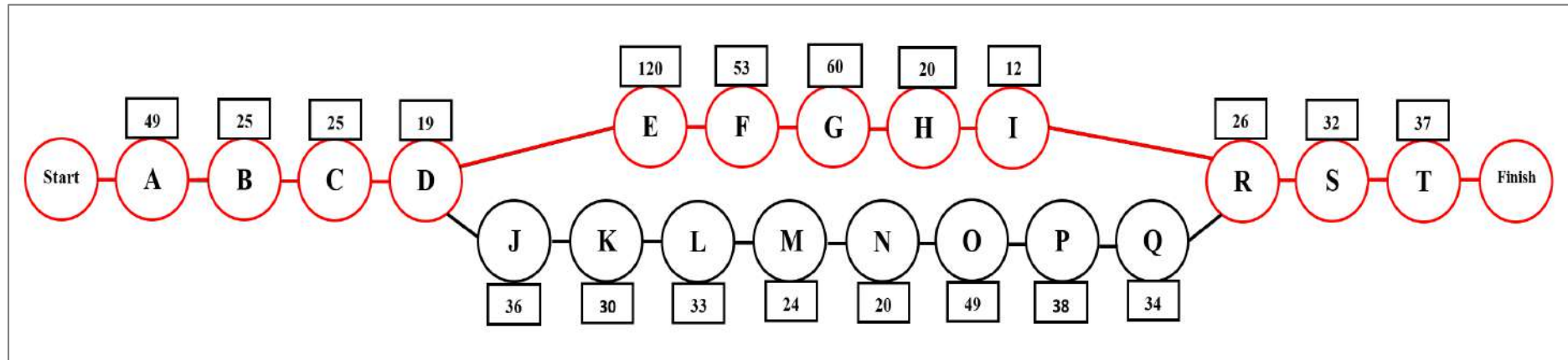


Figure 20: The Logical Diagram of Critical Path

The critical path is duration 478 Days

Start - A - B - C - D - E - F - G - H - I - R - S - T - Finish: $49 + 25 + 25 + 19 + 120 + 53 + 60 + 20 + 12 + 26 + 32 + 37 = 478$ Days



18.4. Gantt chart and Milestones Model

This section shows the Gantt chart and milestones model. As mentioned in **Figures 21 and 22**:

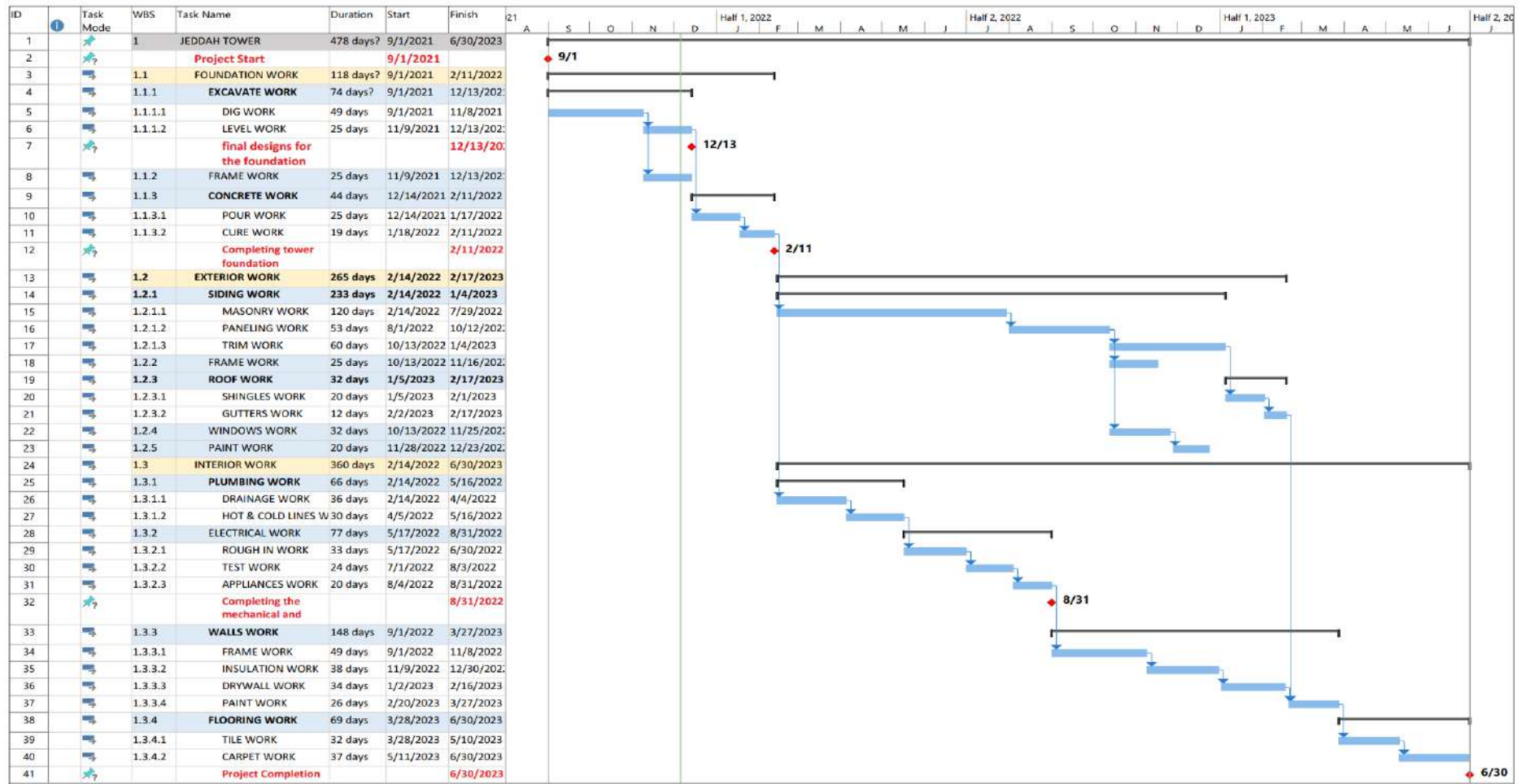


Figure 21: Gantt Chart (MS Project)



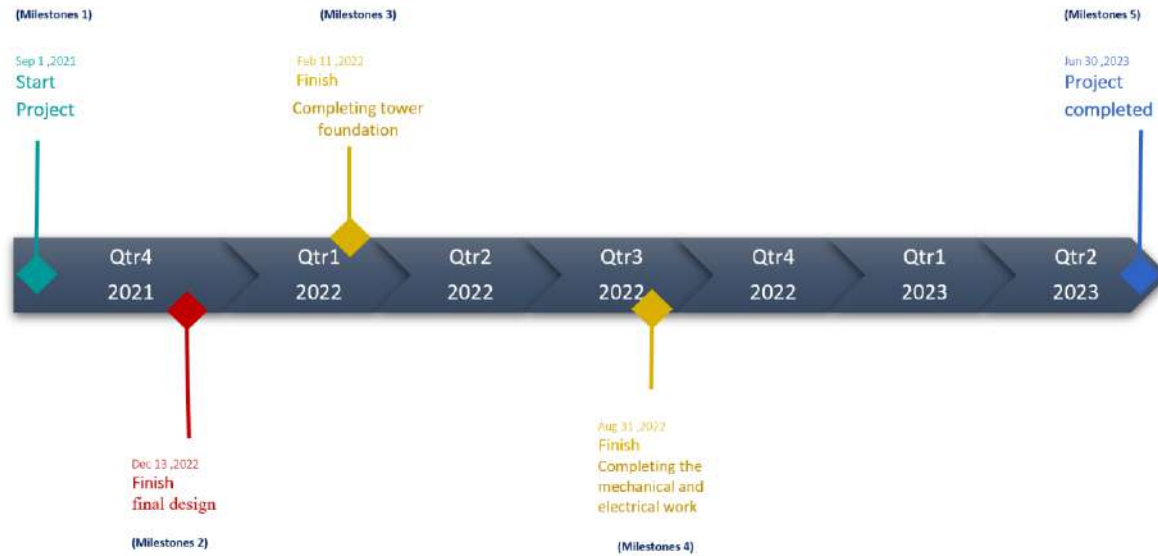


Figure 22: Milestones Model

19. Quality

19.1. Deming Model for Quality

The Deming model for quality is one of quality improvement methods, this Deming cycle is used to improve results through continuous improvement in four stages: plan - Do - check – Act (Al-Muhaimid, n.d.). This model shows the Deming cycle. As mentioned in **Figure 23**:



Figure 23: Deming Model, Source by: (Al-Muhaimid, 2018)

19.2. SIPOC Model, and Ishikawa for Project's Issue of Outputs

This section shows the SIPOC Model, and Ishikawa for one of the issues of the project outputs. As mentioned in **Table 20** and **Figure 24**:



Table 20: SIPOC Model

SIPOC Analysis					
S	I	P	O	C	
Suppliers	Inputs	Process	Outputs	Customers	
Builder	Mixing mortar using a spade	Choose and stack the tiles that will be adjacent to the work	Finished	Flat Owners	
	Trowel	Clean the laitance and, if necessary, apply mortar or concrete to the base surface	Floor		
	The edge is straight	Before you begin laying tile, make sure you have a good foundation		Companies	
	Level of spirit	Tap the tiles into place with wooden hammers	Surface		
	Cutter for tiles				

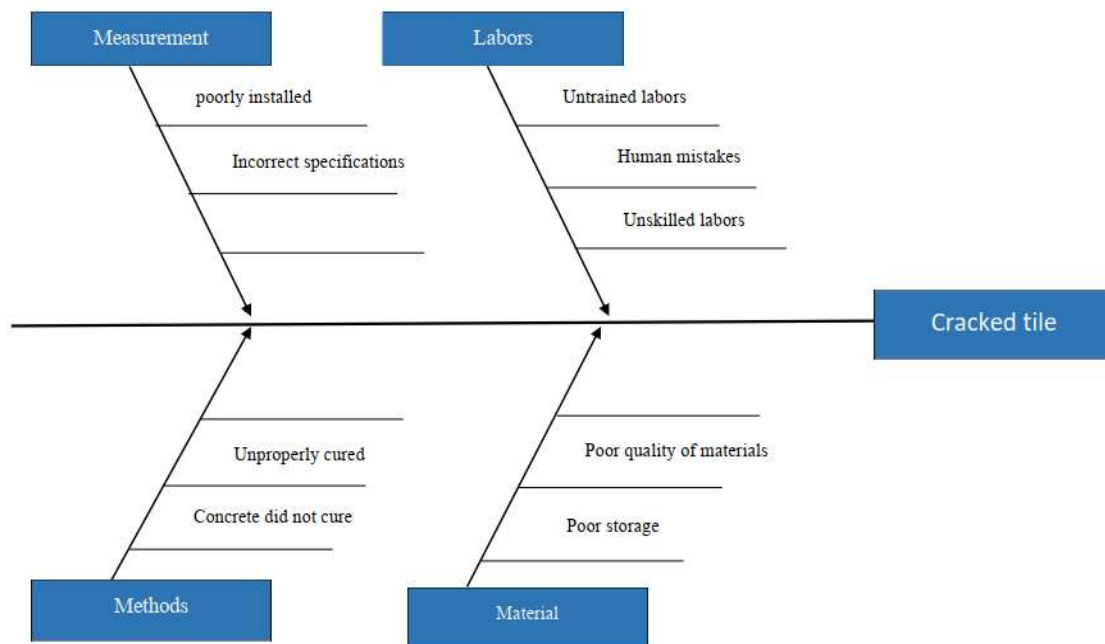


Figure 24: Ishikawa Diagram



20. Finance

20.1. The Cost Breakdown Structure

This section shows the Cost Breakdown Structure of the project. As mentioned in **Figure 25**:

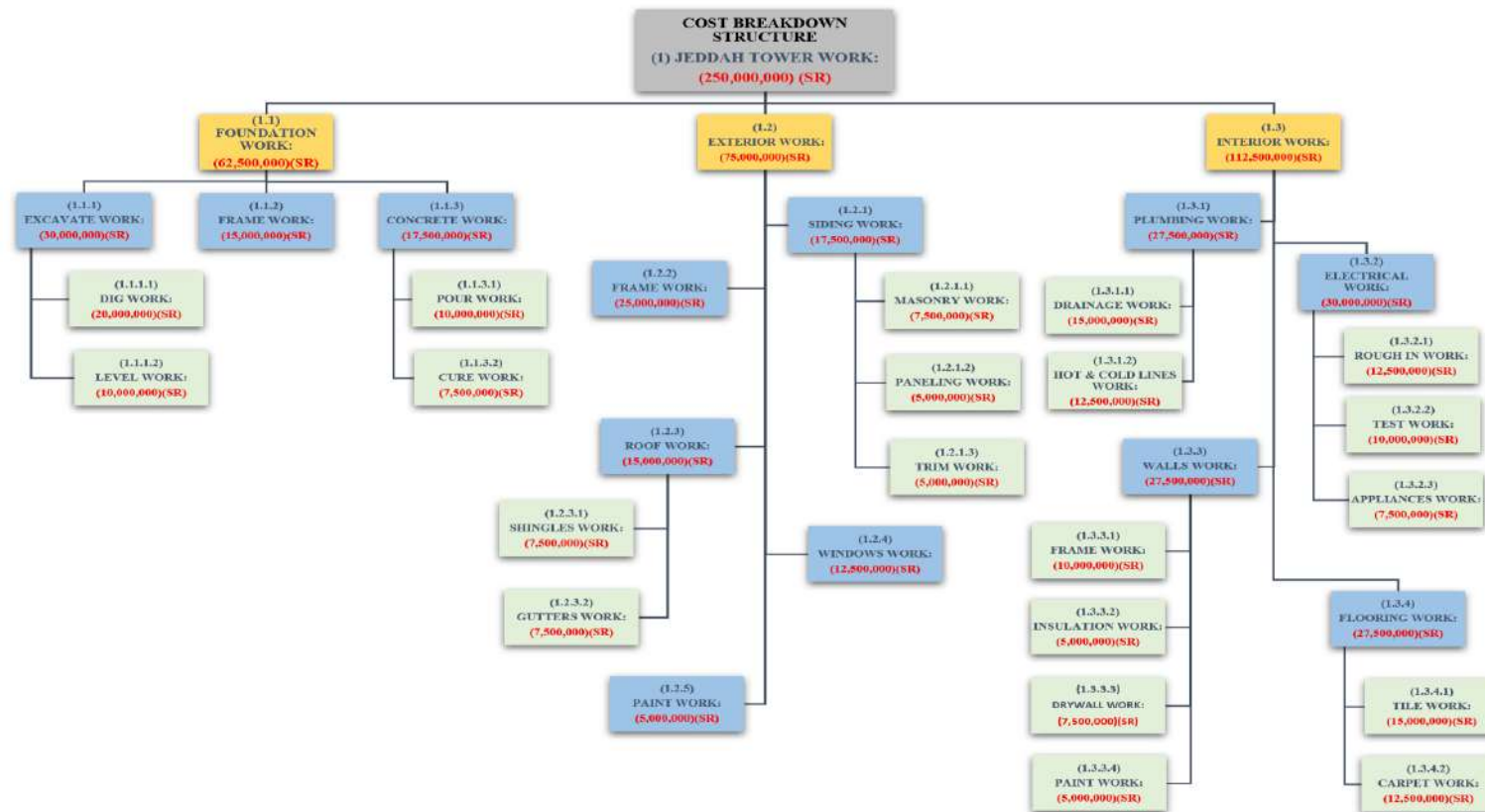


Figure 25: Cost Breakdown Structure



20.2. Earned Value Management

In this part, we will study the project performance depending on different parameters in order to evaluate the project performance and progress in terms of the earned value, time and cost. Knowing the project budget is 250,000,000 Saudi Riyal and after ending 20% of the project period and completing 50% of the outputs and after calculating the Earned Value parameters we will get the Earned Value management analysis as in **Table 21**:

$$EV = 50\% \text{ of } 250,000,000 \text{ SR} = 125,000,000 \text{ SR}$$

$$PV = 20\% \text{ of } 250,000,000 \text{ SR} = 50,000,000 \text{ SR}$$

$$AC = 120,000,000 \text{ SR (assumed)}$$

Table 21: Earned value management analysis

Earned value term	Value
Budget at Completion (BAC)	\$250,000
Earned Value (EV)	\$125,000
Actual Cost (AC)	\$120,000
Planned Value (PV)	\$50,000
Cost Variance (CV)	\$5,000
Schedule Variance (SV)	\$75,000
Cost Performance Index (CPI)	1.04
Schedule Performance Index (SPI)	2.50
Estimate to Completion (ETC)	\$120,000
Estimate at Completion (EAC)	\$240,000
Variance at Completion (VAC)	\$10,000

Depending on the values above, the performance and progress of the project in terms of cost is slightly under budget which is better than the plan. In term of time, the project is greatly behind schedule which means the team can repeat the planning phase and check again to finish the project earlier depending on the project progress.



21. Resources

21.1. Resource Leveling and Smoothing

21.1.1. Resource leveling

A technique in which begin, and finish dates are adjusted primarily based on resource constraints to balance the demand for assets with the available delivery (PMBOK Guide, 2017). Resource leveling often leads to changes in the original critical path, that resource constraints primarily drive it. When shared or urgently needed resources are only available at a specific time or in limited quantities, or they are over-allocated, for example, when resources are allocated to two or more activities at the same time, or when necessary, the resource balancing can be used to balance the resources Use is kept at a constant level.

21.1.2. Resource Smoothing

A technique for controlling the activities of a scheduling model so that the resource requirements do not exceed certain predefined resource limits (PMBOK Guide, 2017). In resource smoothing, in contrast to resource leveling, does not change the project's critical path and does not delay the completion date.

21.2. Distributing the Project Resources

This section shows the distribution methods of the project resources with job descriptions for each of them, based on the organizational structure mentioned in **Figure 1**.

21.2.1. Project Manager

We are looking for a Construction Manager who has to oversee the completion of the various construction projects.

You will plan and supervise building procedures, ensuring that they're performed on schedule and efficiently. A good Construction Project Manager should be familiar with all construction processes and procedures; and organize a team of specialists from many disciplines to obtain the best outcomes. An analytical mind and excellent organizational skills are required of the perfect candidate. The goal will be to ensure that all projects are completed on schedule, in accordance with specifications, and under budget.



Responsibilities

- Work with engineers, architects, and others to define the project's specs.
- Reach profitable agreements with external vendors by negotiating contracts.
- Ask the proper authorities for permits and licenses.
- Determine required resources (manpower, equipment, and materials) from beginning to end, keeping in mind budgetary constraints.
- To ensure that deadlines are met, Plan all construction operations and schedule intermediate phases.
- Acquire equipment and materials and check stock levels to address inadequacies as soon as possible.
- Assign responsibility to contractors and other employees.
- Supervise the work of workers, mechanics, and others as needed, and provide guidance.
- Establish a system for evaluating progress and preparing detailed reports.
- Ensure that all health and safety regulations are followed and that any problems are reported.

Requirements

- Familiarity with quality and health and safety standards.
- Proven expertise as a construction project manager.
- In-depth understanding of construction techniques, materials, and project management concepts.
- Expertise with Microsoft Office.
- Working knowledge of construction/project management software.
- Excellent communication and negotiating abilities.
- Excellent time management and organizational abilities.
- A team player with management skills.
- A BSc/BA in engineering, building science, or a related discipline is required.
- A PMP or comparable certification is a plus.



21.2.2. Project Management Office PMO

We are searching for a dedicated professional to join our team. The PMO Manager's responsibilities include overseeing project management personnel, managing day-to-day activities in the PMO, offering direction on PMO rules and processes, and coordinating with other department heads to design projects and programs. You must have great leadership and communication abilities to be a successful PMO Manager. Finally, a top-tier PMO Manager must be well-organized and capable of working under duress.

Responsibilities

- Defining, prioritizing, and developing initiatives in collaboration with other department heads.
- Setting deadlines, prioritizing activities, and assigning team members to specific deliverables are all part of project management planning.
- Financial data, such as project budgets, risks, and resource allocation, are analyzed.
- Executives receive financial reports and budget outlines.
- Overseeing the project's progress and ensuring that team members are doing their duties effectively and in accordance with the company's requirements.
- Creating new policies and processes for the project management office, as well as refining current ones.
- Continuously assessing projects to verify that they adhere to company requirements, budgets, and schedules.
- Documenting the project's conception, development, and execution, as well as the scope, budget, and justification, in detail.

Requirements

- A bachelor's degree in business administration, public administration, or a similar discipline is required.
- It may be beneficial to obtain a Project Management Professional (PMP) certification.
- A minimum of five years of industry experience is required.
- It may be desirable to have at least one year of supervising experience.
- Exceptional leadership abilities.
- Communication skills, both written and vocal.



- Paying close attention to the smallest of details and intricacies.
- Excellent technical and organizational abilities.
- Interpersonal and multitasking skills are essential.

21.2.3. Contracts and Procurement Officer

We are searching for a savvy procurement officer to supervise purchasing activities and guarantee that things acquired are both cost-effective and of excellent quality. Supervising employees, maintaining favorable supplier relationships, researching supply possibilities, approving purchases, and keeping proper records are all responsibilities of the procurement officer. You should have an analytical mind and keep up with product and service developments to be effective as a procurement officer. Finally, a top procurement manager should bargain and ensure that all purchases adhere to corporate policies effectively.

Responsibilities

- Managing and monitoring personnel as well as the purchasing department's duties.
- Developing strategies for purchasing equipment, services, and supplies.
- Following and enforcing the procurement policies and processes of the company.
- Purchasing things and services after reviewing, comparing, assessing, and approving them.
- Maintaining correct purchasing and pricing records while managing inventories.
- Maintaining and updating information about suppliers, such as qualifications, delivery times, product ranges, and so on.
- Maintaining positive relationships with suppliers and negotiating contracts.
- Identifying and assessing potential suppliers.
- Budgeting, cost assessments, and reporting are all tasks that must be completed.

Requirements

- GED/high school diploma.
- A bachelor's degree in accounting, business administration, or a related subject is preferred.



- 2+ years of procurement officer or similar experience is required.
- Knowledge of Microsoft Office and the ability to purchase the software.
- Communication and bargaining skills are second to none.
- Ability to think analytically and strategically.
- Experience in supervisory and managerial positions.
- The devil is in the details.

21.2.4. Contracts Officer

To join our team, we are seeking a responsible Contract Administrator. Your primary responsibilities will include preparing, negotiating, and reviewing various company contracts, such as acquisitions, sales, and commercial partnerships. A competent Contract Administrator will have a keen eye for detail and the ability to spot possible threats to our business. You should also examine contracts with the goal of lowering expenses and improving profits while maintaining legal compliance. Our ideal candidate has prior contract management experience and is knowledgeable about legal requirements and terms of service. Finally, you should confirm that all of our contracts match legislative standards and our company's objectives.

Responsibilities

- Prepare contracts for sales and purchases.
- Contract terms with internal and external business partners are negotiated.
- Existing contracts should be reviewed and updated.
- Managers and interested parties should be informed about the terms and conditions.
- Ensure that personnel are aware of and abide by corporate contracts.
- Examine the hazards associated with specific contract terms.
- Keep up with legislative developments and, when appropriate, consult with the legal department.
- Ensure that all contract deadlines and terms are satisfied (e.g., payments and shipping).
- Maintain a well-organized physical and digital record-keeping system.
- Create contract language guidelines for existing and new contracts.



Requirements

- Proven professional experience as a contracting officer, contract manager, or other related position Knowledge of legal contract requirements.
- Accounting procedures are something you should be familiar with.
- Exceptional writing abilities.
- Exceptional attention to detail and the capacity to recognize mistakes.
- Strong organizational and analytical abilities.
- Ability to work with people of various levels of seniority, including employees, managers, and external partners.
- A BSc in Business Administration is required; extra-legal qualifications are preferred.

21.2.5. Purchasing Officer

To join our growing team, we are looking for a well-organized purchasing officer. As purchasing officer, you'll be responsible for completing all responsibilities assigned by the purchasing manager, such as conducting research on potential vendors and suppliers, checking goods, and updating records. Pricing and transportation charges should be negotiable. And must be able to multitask and analyze items and vendors to be effective as a purchasing officer. Negotiation smoothly with a good eye for detail are desirable qualities in buying officers.

Responsibilities

- Conducting product research and identifying new vendors and suppliers.
- Buying and selling materials, goods, products, and services, as well as negotiating the best or most cost-effective contracts and arrangements.
- Inspections of inventory and rearranging supplies and stock as needed.
- Market research is done to stay on top of new trends and commercial prospects.
- Inspecting stock and quickly reporting any faulty products or irregularities.
- Maintaining and updating all orders, payments, and received stock records.
- Coordination with the delivery team and follow-up on any delays or rescheduled orders.
- Attending product launches and networking with industry people are two of my favorite things to do.



- Developing and maintaining professional relationships with clients, vendors, and suppliers.
- Assuring that every merchandise is properly packaged and delivered to the correct location on time.

Requirements

- It's possible that a bachelor's degree in business, logistics, or a similar discipline is necessary.
- Prior work experience in a similar capacity.
- Knowledge of the essential management software packages is required.
- Excellent writing and vocal communication, as well as negotiation abilities.
- Excellent planning and organizational skills.
- In a high-stress atmosphere, the capacity to recognize market patterns and make decisions.
- The ability to adhere to customer requirements.
- Excellent time management and networking abilities.

21.2.6. Storage Officer

We are searching for a well-organized warehouse manager to oversee inventory reception, dispatch, and storage in our facility. Picking, storage, receiving, dispatching, security, maintenance, cleanliness, and administrative functions will be overseen by the warehouse manager. You'll be in charge of supervising, training, evaluating, and rewarding employees. Also, charge of keeping the company's assets in good working order. To be successful in a fast-paced, dynamic setting, you must be able to multitask well and accomplish your obligations in a way that maximizes our earnings. Top candidates are committed, knowledgeable, and capable leaders.

Responsibilities

- Receiving, warehousing, and distribution operations are all under my supervision.
- Putting operational policies and procedures in place.
- Organizing and supervising security operations.
- Ensure that warehouse equipment is used efficiently and safely.



- Assuring the safety of employees.
- Staff motivation and discipline.
- Keeping accurate records of warehouse activity and maintaining documents.
- Maintaining awareness and understanding of fleet vehicle condition and location.
- When needed, assisting with delivery.

Requirements

- Experience in warehouse management of at least 5 years is required.
- Outstanding knowledge of warehouse management techniques.
- Inventory and inventory controls are well-understood.
- A valid driver's license is required.
- Ability to safely drive a forklift.
- Computer proficiency is required.
- Outstanding writing and verbal communication skills.
- Leadership, organizational, multitasking, and problem-solving abilities are exceptional.
- Strong interpersonal skills.
- Available to work a variety of shifts.

21.2.7. Planning and Finance Officer

We are looking for a financial officer who is analytical and qualified to join our team. You will be accountable for our company's financial health by handling our financial procedures in this job. Planning budgets, engaging in audits, tracking transactions, and preparing invoices will be among your responsibilities. To be successful in this position, you must have a thorough understanding of financial policies, procedures, and systems. Our ideal candidate will be a great communicator and have exceptional analytical and time management skills.

Responsibilities

- To ensure operational efficiency, create and implement financial policies.
- Budget preparation and planning are under your supervision.
- Keep track of all daily transactions and keep receipts.



- Ascertain those financial records are kept current with the most recent transactions and modifications.
- Assist with financial audits.
- Keep a close eye on all bank deposits and payments.
- Perform financial analysis regularly to find and rectify issues.
- Prepare invoices and balance sheets.

Requirements

- A bachelor's degree in finance, accounting, or another related discipline is required.
- A minimum of 5 years in a similar position is required.
- Financial regulations and accounting processes are well-understood.
- Outstanding time management and analytical abilities.
- Strong focus on the details.
- Excellent communication skills, both written and verbal.

21.2.8. Planning Engineer

We are looking for a well-organized self-starter who pays close attention to detail. Drawing up work schedules and budgets, delegating tasks, analyzing project specifications, and finding cost-effective ways to meet them, liaising with contractors and suppliers, managing resources, and communicating with surveyors, managers, and other engineers are all part of the day-to-day responsibilities. You should be able to evaluate data, prepare reports, and present to various audiences. To be effective as a planning engineer, you must possess a thorough understanding of the appropriate Engineering subject and the ability to anticipate difficulties. Outstanding planning engineers should pay close attention to the smallest details and be able to work under pressure.

Responsibilities

- Understanding project specifications and creating timetables and budgets that meet them.
- Negotiating the best costs with vendors and contractors.



- Observing current procedures, analyzing employee performance, and fixing any shortcomings.
- Monitoring and tracking the progress of the project, as well as writing reports.
- As needed, attend and schedule meetings.
- Delegating duties and ensuring that staff receives feedback are both important.
- All contract criteria must be understood and met.
- Working with managers, supervisors, and the rest of the team to communicate.
- Providing material and cost estimates after analyzing technical drawings.
- Assisting in the completion of all projects on time and within budget.

Requirements

- A bachelor's degree in engineering or a related field is required.
- The 3D modeling software experience is a plus.
- MS Office proficiency is required.
- Skills in planning and project management.
- Multitasking skills are excellent.
- A valid driver's license is required.
- Ability to think critically, analytically, and logically.
- A thorough awareness of safety procedures is required.
- The ability to concentrate under duress and achieve deadlines.

21.2.9. Accountant

To join our team, we are seeking an experienced construction accountant. You'll be in charge of handling the finances of numerous construction projects by developing precise budgets, reviewing supplier contracts, analyzing production costs, and double-checking invoice statements in this position. To be successful as a construction accountant, you must have a strong business sense and the ability to reduce production costs through effective accounting. Finally, a top-tier construction accountant is a meticulous and analytical thinker with a high level of financial correctness.



Responsibilities

- Developing a precise, cost-effective budget for the project in collaboration with the project manager.
- Performing accounting tasks such as creating invoices, predicting cash flow, and signing off on purchase orders throughout the project.
- Analyzing all transactions and factoring in unanticipated expenditures to the budget.
- For internal/external auditing and tax purposes, keep a record of all project finances.
- Cost analyses are prepared by assessing financial data and information from projects.
- Any financial risks or budgetary anomalies should be reported to management for evaluation.
- Researching market trends and forecasting price rises and decreases in the building industry.
- Developing and sustaining good vendor and supplier relationships.
- Keeping up with developments in the building and accounting industries.

Requirements

- A bachelor's degree in finance, accounting, or a related subject is required.
- Construction accounting certification is preferred.
- A minimum of three years of experience in either private or public accounting is required.
- Construction cost accounting and related financial procedures are well-understood.
- Accounting software, such as QuickBooks and NetSuite, is familiar.
- Construction industry experience is a plus.
- Strong analytical and mathematical abilities.
- A high level of accuracy and meticulous attention to detail.
- Good interpersonal and communication abilities.
- Multitasking ability and ability to thrive in a fast-paced atmosphere.

21.2.10. Treasurer

We are searching for a dependable Treasurer to oversee all financial parts of the company, from cash management to corporate finance. You will also be expected to report and



analyze pertinent data by senior management. We're looking for people with financial management experience and a strong commitment to following the rules. You should also be well-versed in financial planning processes and possess a good capacity to communicate and explain problems to upper management. And able to risk management and investments. The goal will be to safeguard the company's finances in order to ensure its long-term success.

Responsibilities

- Execute risk management (liquidity, interest rates, ventures, etc.).
- Assume control of the cash management process.
- Make investment decisions and manage the company's investment activity.
- Assist in the creation of financing plans.
- Keep in touch with banks and credit rating agencies.
- Incorporated finance advice is provided.
- Prepare budgets and keep track of spending.
- Legislation and policies that are relevant should be implemented.
- Reports on the current financial position and projections should be submitted.

Requirements

- Experience as a treasurer or in a related financial position.
- Financial legislation, regulation, and procedures are well-versed.
- Understanding of the financial markets, investment management, and financing methods.
- MS Office and financial management software are required skills (SAP, Oracle, etc.).
- Numbers and figures are second nature to you.
- Excellent interpersonal and communication abilities.
- Well-organized and trustworthy.
- Excellent decision-making and leadership skills.
- A bachelor's or master's degree in finance, accounting, or a related discipline is required.



21.2.11. Implementation Officer

We're searching for a dependable Building Manager who can plan and oversee construction projects in a timely and cost-effective manner. You will be in charge of project budgeting, organization, implementation, and scheduling.

Responsibilities

- From conception to completion, supervise and direct building projects.
- To plan deliverables and estimate costs, go over the project in detail.
- Oversee all onsite and offsite construction to ensure that all building and safety rules are followed.
- Work with construction workers and subcontractors to coordinate and direct their efforts.
- Choose your tools, supplies, and equipment, and keep track of your inventory.
- Perform in accordance with the terms of the contract.
- On a daily basis, check on the status of the project.
- Prepare job status reports for internal and external audiences.
- Prepare ahead of time to avoid issues and to address any that arise.
- Negotiate contract conditions, prepare contracts, and apply for permissions and licenses.
- Risks should be analyzed, managed, and mitigated.
- Ensure that high-quality building standards are followed and that suitable construction procedures are used.

Requirements

- Demonstrated construction management experience.
- Knowledge of construction management processes, techniques, and methodologies at a high level.
- Expert understanding of construction products, details, and applicable laws, regulations, and quality requirements.
- All aspects of the construction process are understood.
- Construction management software solutions are something you should be familiar with.



- The ability to plan ahead of time and see the "big picture".
- Competent in the management of conflicts and crises.
- Excellent time and project management abilities BS degree in construction management, architecture, engineering, or a similar profession Leadership and human resources management skills.

21.2.12. Civil Engineer

We are seeking a motivated, experienced civil engineer with extensive industrial expertise. In order to be successful, the ideal candidate must be able to divide their time between the office, on-site visits, and council meetings. To identify and solve engineering problems, the civil engineer must be a critical thinker with strong subject knowledge in mathematics and physics. In order to propose novel solutions and improvements to technological procedures, you must also have some amount of imagination. With their team, subcontractors, and clients. The successful applicant will be able to successfully express ideas, offer recommendations, and negotiate project specifics with team, subcontractors, and clients.

Responsibilities

- Creating intricate designs.
- Assessing feasibility and conducting site inspections.
- Creating and carrying out project plans.
- Conducting research and providing project estimates.
- Examining government rules and regulations.
- Safety protocols, production processes, and regulatory compliance are all monitored and optimized.
- Making suggestions or presenting different solutions to challenges.
- Liaising with clients and other professional subcontractors with confidence.
- Project management responsibilities (e.g., managing budgets, resources, and deadlines; acquiring and compiling quotes, etc.).



Requirements

- An Institution of Civil Engineers-accredited bachelor's degree in civil engineering or a related discipline is required.
- Professional engineer registration/licensure may be necessary.
- A minimum of 5 years of experience in the field may be required.
- Autodesk, AutoCAD Civil 3D, and MicroStation are examples of design software.
- Understanding of map-making and photo-editing tools.
- Strong analytical and critical thinking abilities, as well as a high level of calculation and design precision.
- Excellent time management abilities are required to meet project deadlines.
- To effectively manage a diverse collection of professionals working on a single project, you'll need leadership skills.
- Ability to coordinate many projects at the same time.

21.2.13. Architect

From the initial client briefing to the final stages of construction, we are searching for a creative and motivated architect to handle projects. Managing client connections, devising, and presenting design proposals, preparing drawings, specifications, budgets, and construction documentation, and managing project teams are all responsibilities of the architect. You should be able to take charge of your project, whether it's the design and construction of a new structure, an extension, alterations, or a restoration project, and meet the client's expectations. You should be able to perceive space in three dimensions, have a good understanding of building technology, and be successful in this profession. An exceptional architect will have great interpersonal skills, superb technical design skills, and the ability to produce functional, imaginative, and sustainable designs.

Responsibilities

- Meeting with clients to determine their requirements and needs.
- Taking charge of design projects from conception to completion.
- Creating and presenting project ideas is one of my responsibilities.
- Adapting designs and plans to meet the needs of the client.



- Drawings, plans, specifications, and construction documents are all things that need to be prepared.
- Conducting feasibility and environmental impact studies and generating reports.
- Following all safety laws as well as local planning regulations.
- Creating and sticking to budgets and schedules.
- Managing project teams and engaging with other specialists in the construction industry.

Requirements

- A bachelor's degree in architecture or a similar subject is required.
- Prior Architect experience is preferred.
- Technical drawing abilities are exceptional.
- Communication and project management abilities are essential.
- Microsoft Office and software packages such as AutoCAD, Revit, Adobe Creative Suite, Newforma, and others are required.
- Interpersonal and presenting abilities are strong.
- Understanding of building codes and regulatory requirements.
- Strong visualization and creative abilities.

21.2.14. Electrical Engineer

An electrical engineer is needed to design and implement sophisticated industrial, commercial, and residential electrical systems. You should be a certified professional engineer with substantial expertise as an electrical engineer to succeed in this position.

Responsibilities

- Electrical instruments, facilities, components, equipment products, or systems for industrial, commercial, or household use are designed, maintained, implemented, or improved.
- Operating computer-assisted design or engineering software and equipment to perform a wide range of engineering activities.



- Discussing present or potential engineering products or projects with customers, engineers, and others.
- Preparing electrical systems specifications, technical drawings, or topographical maps to ensure that installation and operations meet standards and client expectations.
- Performing a wide range of detailed computations to establish building, manufacturing, or installation norms or requirements.
- Guiding or managing installation, manufacture, construction, maintenance, documentation, support, or testing activities to ensure compliance with specifications, codes, or customer requirements
- Writing reports and gathering data for current and future electrical engineering projects and studies.
- Creating standards for electrical equipment and materials purchasing.
- Supervising or training members of the project team.
- Budgeting by estimating material, labor, or construction expenses.
- Upkeep of electrical equipment.
- Working with a number of different technicians.

Requirements

- An approved bachelor's degree in electrical engineering is required.
- Engineer with a professional license.
- You must have prior experience with or a desire to learn the relevant software.
- Electronic engineering-related codes are well-versed in.
- Design and calculating software expertise.

21.2.15. Mechanical Engineer

We are searching for a talented Mechanical Engineer to work on all aspects of the product, from research and development to design and manufacturing, installation, and final commissioning. The goal is to create mechanical components that are innovative and high-quality.



Responsibilities

- Complete a full product development lifecycle (design, develop, test prototypes, manufacture, and implement).
- Create systems and components that fulfill the needs and specifications.
- Create outlines for your designs.
- Methodically conduct experiments, analyze data, and interpret outcomes.
- Theoretical designs are put to the test and evaluated.
- Identify, formulate, and implement effective solutions to new issues.
- Examine the overall performance, dependability, and safety of the final product.
- To satisfy requirements and eliminate malfunctions, alter and adapt the design.
- Estimate the project's budget and scope.
- Solicit feedback from the operators.
- Prepare product documentation and reports.
- Develop new theories or methodologies through lifelong learning.

Requirements

- Mechanical engineering experience is required.
- Product lifecycle management (PLM), finite element analysis (FEA), and computational fluid dynamics (CFD) experience (CFD).
- Computer-aided engineering (CAE) and computer-aided manufacturing (CAM) expertise (CAE).
- Familiarity with engineering design and manufacturing tools in 2D and 3D (e.g., AutoCAD, ProE, or others).
- Knowledge of engineering analysis tools is required (ANSYS, Pro-Mechanical or similar).
- Knowledge of mathematical computing and analysis tools (MATLAB, Excel, LabView, etc.).
- Mechanics, kinematics, thermodynamics, materials science, and other key principles are well-understood.
- Ability to think creatively and critically.
- Ability to effectively express technical information in a clear and intelligible manner.
- Skills in technical writing.



- Engineer with a bachelor's degree.

21.2.16. Foreman

To oversee construction sites and ensure that timetables are followed, we are searching for an organized foreman with outstanding time management abilities. The foreman would collaborate closely with property owners and tenants to analyze their needs and change work orders as needed. To be a good foreman, you must have strong leadership abilities and project management expertise. A smart foreman distributes responsibilities to workers in order to meet deadlines and maintain safety standards.

Responsibilities

- Make and keep track of construction timetables.
- Recruit and manage employees.
- Communicate with landlords and tenants.
- As needed, place material orders.
- Ascertain that project is completed within the allocated budget.
- Ascertain that safety procedures are followed.

Requirements

- Prior supervising experience is required.
- Construction experience is required.
- Outstanding project management abilities.
- Interpersonal skills are important.
- Outstanding leadership abilities.



22. Procurement

22.1. The procurement execution process, and contractor selection

22.1.1. Procurement Execution Process

To prepare a procurement execution process, we need to start by defining the needed items and equipment we need to buy and procure, then determine how we will acquire and purchase these items, and finally, determine the date and schedule for the delivery time and location.

There are five steps to perform procurement systematically:

1. Requirement
2. Requisition
3. Solicitation - Selection
4. Contract Administration
5. Closeout

First Step: Requirement

This step must start about six months earlier than the second step of requisition.

- Determine the procurement and work plan prioritization.
- Perform an analysis to the market to have an idea about the market availability.
- Conduct a make vs buy analysis.
- Estimate the procurement plan investment cost.
- Estimate the delivery and implementation schedule.
- Get the required approvals to proceed.
- Prepare SOW statement of work and clearly define the work details.

Second Step: Requisition

- Ensure the correct specification of required items.
- Prepare evaluation criteria with clear description of each criterion.
- Prepare a mathematical method to evaluate the proposals and explain each point.
- Prepare the change management plan.
- Prepare the vendor and suppliers payment plan.



- Prepare solicitation package.
- Ensure the utilization of the standard solicitation document.

Third Step: Solicitation

- Provide the RFP request for proposals document to the medial or selective tendering.
- Answering the received questions in public forum.
- Prepare a presentation about the details for the vendors if needed.
- Form an evaluation team.
- Evaluate the received technical proposals.
- Evaluate the financial proposals to determine the suitable proposals.
- Provide the recommended selections to the responsible members.
- Sign the contracts and start issuing the procurement orders.

Fourth Step: Contract Administration

- Interpret the specifications.
- Monitor the product and service quality.
- Monitor warranties of the product.
- Direct the different change requests and monitoring them.
- Manage and resolve the contract disputes.
- Monitor the project completion by ensuring the completion of project requirement.
- Monitor and manage the contract risks.

Fifth Step: Contract Closeout

- Ensure meeting the acceptance criteria for the products and services.
- Approve and issue final payment.
- Update the contract records and documents.
- Archive and store the contract files and lessons learned.



22.1.2. Contractor Selection

Selection process for the contractors start with evaluation the different available contractors against the listed criteria and give a specific mark from 1 to 10 and calculating the total mark for each control to proceed the other procurement processes.

Technical Ability

- Experience
- Plant and equipment
- Personnel
- Ability

Financial Situation

- Financial stability
- Credit rating
- Banking arrangement and bonding
- Financial status

Management Capability

- Past performance and quality
- Project management organization
- Experience of technical personnel
- Knowledge management

Reputation

- Past failures
- Length of time in business
- Past owner and contractor relationship
- Other responsibilities

Health and Safety

- Safety
- Experience modification rating
- Management safety accountability
- OSHA incident rate



22.2. Scoring Model

This section shows the scoring model for the project. As mentioned in **Table 22**:

Table 22 : Scoring Model

REQUIREMENT SCORE						
CRITERIA	WEIGHT	M	N	R	Q	S
VALUE	30%	70	50	80	60	68
RISK	20%	65	75	25	55	75
DIFFICULTY	15%	50	30	30	10	50
SUCCESS	10%	30	50	10	20	46
COMPLIANCE	5%	45	95	25	35	25
RELATIONSHIPS	10%	20	30	25	60	30
STSKEHOLDER	30%	60	10	55	70	40
URGENCY	20%	25	25	25	15	35
WEIGHTED SCORES	100%	53.6	73.6	82.6	25.6	23.6



23. Plan and Control

23.1. Agenda- Invitation and Virtual Record of a Virtual Meeting

Table 23: Agenda

MEETING AGENDA

DAY AND DATE	START TIME	END TIME	LOCATION
Thursday, 11/25/2021	9:00 AM	11:00 AM	Zoom Online Meeting

MEETING CREATED

BY

MINUTE TAKER

Amjad Mohammed Ahmed	Two hours
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MEETING TITLE

General discussion

SUBJECT OF MEETING

Reviewing implemented the project.

	START TIME	DURATION	DESCRIPTION	PERSON / DEPT. RESPONSIBLE	END TIME
1	9:00AM	0:15	Take part in sure all teams join to Zoom online meetings by the link.	PMO	9:15AM
2	9:15AM	0:30	Reviewing the project in general and reviewing all items required to be implemented or supplied by suppliers.	PMO	9:45AM
3	9:45AM	0:15	Discussing implementation and supply plans, reviewing the project schedule, and clarifying critical activities.	Project Manager	10:00AM
4	10:00AM	0:30	General discussion, answering inquiries, terms of bidding by suppliers, and the date of submission of bids.	Contracts and Procurement Office	10:30AM
5	10:30AM	0:30	Signing the minutes of the meeting and the end of the meeting.	Project Manager	11:00AM

AGENDA PREPARED BY
SIGNATURE

DATE

AGENDA APPROVED BY
SIGNATURE

DATE

Mojahed Ahmed Alali	11/25/2021	Amjad Mohammed Ahmed	11/25/2021
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23.2. Performance Measurement Course Project Reports Submission

The different types of project reports will be mentioned below with the frequency of their submission frequency:

1. Project Status Report

To be submitted weekly or as needed due to a specific event to ensure the newness of the data and information presented in the report.

2. Time Tracking Report

To be submitted weekly or as needed due to a specific event. To ensure the full and continuous monitoring and controlling of the project timeline and correct in case of delays.

3. Variance Report

To be submitted weekly or as needed due to a specific event, to ensure practicality and enough time between the new and old report.

4. Executive Report

To be submitted monthly or as needed due to a significant event, to ensure its containing of the important issue and information during the entire previous month.

5. Resources Report

To be submitted daily or as needed due to a specific event. To ensure the availability of the workers and laborers all the time as needed.

6. Risk Assessment Report

To be submitted monthly or as needed due to a new risk noticed. To ensure the full knowledge of the current risks and get the required information in case of new risks.

For measuring the performance of the project, we have to perform the measurement process frequently, depending on the type of indication, some of them will be measured daily, weekly and monthly or as needed for a special event. The of the frequent measurement is to ensure the compliance of the project with the required predetermined goals and dates and have



full knowledge about the situation, which can help the project manager, members, and decision-makers in their work.

23.3. Change Request Model

This section shows the change request model. As mentioned in **Table 24**:

Table 24: Change Request Model

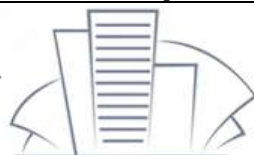
Project Change Request

Project Name	Jeddah Tower	Date Requested	11/15/2021
Project Manager	Amjad Mohammed Ahmed	Date Evaluated	11/28/2021
Requested by	Mojahed	Date Decided	12/02/2021
Decided by	Abdullah		

Change Request Identification	
Change Request ID	CH-2152
Change Title	Additional resources

Change Request Details	
Description	Additional resources are need for reporting
Justification	At the PMO meeting, it was discussed before to determine if this is necessary for the project to deliver reports on time.
Cause	Until we can get more analytics reports
Priority	Medium

Impact of change:	
Scope	Non-impact
Schedule	The Change Impact if additional resources are incorporated into the project schedule, the project delivery will be early, about two weeks.
Cost	The budget impact will increase to 250,000.
Quality	Non-impact
Risk	Non-impact
Project management	It was discussed before at the PMO meeting it will be helpful to deliver reports on time.
Alternatives (Options)	Option 1: Approve the change request, and additional resources are added to the project; the schedule impact can be minimized, but the budget impact will increase to 250,000. Option 2: Additional more hours to work to finish analytics and reports. Option 3: Deliver the project without the add additional more resources or more hours.
Recommendation	The project team recommends option 2



Decision/Rationale

- ☐ Approved
☒ Denied
☐ Place on Hold

Change Request Decision Signatures**Project Manager:** Amjad Mohammed Ahmed

Date: 12/02/2021

(Signature)

Decision Maker: Abdullah

Date: 12/02/2021

(Signature)



24. Risk and Opportunities

24.1. Risks (Threats) and Opportunities

Risks are an event or set of circumstances that may happen and have an impact. The strategy for managing project risks can be considered a structured plan consisting of Opportunities Management and Threats Management.

Opportunities are such as the occurrence of positive impacts on the project aims. A positive outcome may bring extra value to a project by improving. Project opportunities management is a set of techniques and tools to assist a risk manager in identifying and understanding possible improvements to the project objectives. Examples for opportunities companies run with internet usage for success:

- Engaging with other participants on the internet
- Online marketing and managing an online business.

Threats are viewed, such as the occurrence of negative impacts. And the strategy for project threats risk management refers to actions for identifying, analyzing, and lessening negative consequences that are risks. Examples for threats companies run with uncontrolled internet usage:

- Malware is such as viruses, infected files these days are downloaded from the internet.
- Phishing sites such as financial loss, after credit card or bank account details for immediate financial gain.



24.2. Risk Register

Table 25: Risk Register

Project Name:	JEDDAH TOWER
Project Manager:	Amjad Mohammed Ahmed

Date Created:	05/09/2021
Date Revised:	05/11/2021

ID	Risk	Potential consequences	Original risk			Proposed risk treatment	Residual Risk			Risk Owner	Risk Response	Risk Categories	Risk Type
			Probability	Impact	Risk Rating		Probability	Impact	Risk Rating				
Climate													
R01	Flooding caused by heavy rainfall	Injury or death. Destruction/damage to buildings and infrastructure.	Moderate	Extreme	High	Construction phase disaster plans, and facilities and infrastructure are designed to withstand extreme weather conditions and include early evacuation of personnel and equipment.	Possible	Minor	Medium	Amjad	Avoid	Climate	Threat
R02	Rain to fall during construction	Construction program delays	Likely	Major	High	Site secured and site personnel and equipment transferred to a safe refuge. Site remediation works post-event.	Likely	Moderate	Medium	Anas	Avoid	Climate	Threat
Land													
R03	Inexperienced earthworks contractor	Time delays	Moderate	Minor	Medium	Selection of experienced contractor with skillful personnel on website	Unlikely	Minor	Low	Badr	Mitigate	Land	Threat
Health and Safety													
R04	Public health and safety	Impacts on public health and safety during construction	Moderate	Major	Medium	Adequate signage and fencing to secure the site and prevent unauthorized access	Likely	Major	High	Mojahed	Share	Health and Safety	Opportunity



R05	Construction health and safety	Health and Safety impacts on construction workforce	Moderate	Major	Medium	Construction contractor to implement work health and safety measures	Likely	Extreme	High	Mojahed	Share	Health and Safety	Opportunity
R06	Construction health and safety risks	Injury or Loss of Life	Likely	Major	High	Construction contractor to implement health and safety measures.	Likely	Major	High	Amjad	Transfer	Health and Safety	Threat
Traffic and Transport													
R07	Traffic incidents with existing Road Users	Injury to existing road users	Moderate	Major	Medium	Haul routes and Site Traffic Management Plan	Rare	Moderate	Low	Mojahed	Mitigate	Traffic and Transport	Threat
R08	Noise associated with haul routes	Increased road noise	Very Likely	Minor	Medium	Site Traffic Management Plan	Unlikely	Moderate	Medium	Mojahed	Mitigate	Traffic and Transport	Threat
R09	Infrastructure Degradation and traffic	Damage to infrastructure	Moderate	Extreme	High	Remediation or repair to damaged infrastructure	Unlikely	Minor	Low	Amjad	Escalate	Traffic and Transport	Threat
Noise and Vibration													
R10	Vibration impact from construction equipment to nearby buildings	Structural damage to nearby buildings	Moderate	Extreme	High	Establish complaint hotline, preparation of construction noise and vibration management plan, vibration monitoring	Unlikely	Major	Medium	Mojahed	Escalate	Noise and Vibration	Threat



24.3. Qualitative Risk Analysis

This section shows the qualitative risk analysis. As mentioned in **Tables 26** and **27**:

Table 26: Qualitative Risk Analysis Matrix

		Impact				
		1 Trivial	2 Minor	3 Moderate	4 Major	5 Extreme
Probability	1 Rare	1	2	3	4	5
	2 Unlikely	2	4	6	8	10
	3 Moderate	3	6	9	12	15
	4 Likely	4	8	12	16	20
	5 Very Likely	5	10	15	20	25

Risk = Low Medium High



Table 27: Qualitative Risk Analysis

ID	Risk	Probability	Impact	Risk score	Risk Type	Risk Category
R01	Flooding caused by heavy rainfall	3	5	15	Threat	Climate
R02	Rain to fall during construction.	4	4	16	Threat	Climate
R03	Inexperienced earthworks contractor	3	2	6	Threat	Land
R04	Public health and safety	3	4	12	Opportunity	Health and Safety
R05	Construction health and safety	3	4	12	Opportunity	Health and Safety
R06	Construction health and safety risks	4	4	16	Threat	Health and Safety
R07	Traffic incidents with existing Road Users	3	4	12	Threat	Traffic and Transport
R08	Noise associated with haul routes	5	2	10	Threat	Traffic and Transport
R09	Infrastructure Degradation and traffic	3	5	15	Threat	Traffic and Transport
R10	Vibration impact from construction equipment to nearby buildings	3	5	15	Threat	Noise and Vibration



24.4. Risk Response Strategies

This section shows the risk response strategies. As mentioned in **Tables 28** and **29**:

Table 28: Risk Response Strategies

ID	Risk Description	Risk Rating	Risk Magnitude	Risk Response Strategies	Proposed Risk Treatment
R01	Flooding caused by heavy rainfall	15	High	Avoid	Construction phase disaster plans, and facilities and infrastructure are designed to withstand extreme weather conditions and include early evacuation of personnel and equipment.
R02	Rain to fall during construction.	16	High	Avoid	Site secured and site personnel and equipment transferred to a safe refuge. Site remediation works post-event.
R03	Inexperienced earthworks contractor	6	Medium	Mitigate	Selection of experienced contractor with skillful personnel on website
R04	Public health and safety	12	Medium	Share	Adequate signage and fencing to secure the site and prevent unauthorized access
R05	Construction health and safety	12	Medium	Share	Construction contractor to implement work health and safety measures
R06	Construction health and safety risks	16	High	Transfer	Construction contractor to implement health and safety measures.
R07	Traffic incidents with existing Road Users	12	Medium	Mitigate	Haul routes and Site Traffic Management Plan



R08	Noise associated with haul routes	10	Medium	Mitigate	Site Traffic Management Plan
R09	Infrastructure Degradation and traffic	15	High	Escalate	Remediation or repair to damaged infrastructure
R10	Vibration impact from construction equipment to nearby buildings	15	High	Escalate	Establish complaint hotline, preparation of construction noise and vibration management plan, vibration monitoring

Table 29: Risk Response

NEGATIVE RISK RESPONSES		POSITIVE RISK RESPONSES	
Avoid	High-priority threats, the project team acts to protect the project from its impact.	Exploit	Strategy for high-priority opportunities.
Mitigate	Action is taken to reduce the probability of occurrence.	Enhance	used to increase the probability and/or impact of an opportunity.
Transfer	Shifting ownership of a threat to a third party to manage the risk	Share	Involves transferring the ownership of an opportunity to a third party so that it shares some of the benefits.
Accept	No proactive action is taken, appropriate for low-priority threats.	Accept	No proactive action is taken. This strategy may be appropriate for low-priority opportunities.



25. Stakeholder

25.1. Stakeholder Engagement Assessment Matrix

This assessment matrix appears the project management team's stakeholder management status, which classifies the stakeholder into two types of current status (C), and desired status (D). This process facilitates tracking the actual engagement levels of stakeholders. As shown in **Table 30:**

Table 30: Stakeholders Engagement Assessment Matrix

Stakeholder	Unaware	Resistant	Neutral	Supportive	Leading
Director - Abdullah			C		D
Project Manager - Amjad				C	D
PMO - Mojahed				C&D	
Contracts and Procurement Office - Abdullah		C	D		
Planning and Finance Officer - Amal	C			D	
Implementation Officer - Anas		C		D	
Purchasing Officer - Muhannd			C	D	
Contracts Officer - Badr		C	D		



Conclusion and Recommendations

In this project, we presented the Jeddah tower project as a promising idea aimed to facilitate and positively contribute to the increasing demand these years on the offices for big companies as many of them transferring to Jeddah and Saudi Arabia generally as one of 2030 vision, the project located in AL Madinah road with 30 floors and planned to be finished in 22 months in the middle of 2023 and a total cost of 250 Saudi Riyal, the project followed the different Saudi codes in order to maintain high-quality deliverables and ensuring the owners and customers satisfaction. In order to improve the project, more evolving for the concept of the virtual offices may emerge as it has been required in a greater way, also to utilize the concept of agile in the planning and implantation to take its advantage where it needed to improve the project deliverables and improve the planning phase outcomes.



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