

# Warehouse Building for Camso – Loadstar at Katunayaka

Project Management Theory & Practices

# Presentation Outline

- Project introduction
- Project life cycle
- Principles to manage warehouse construction project
- Processes to successfully manage the warehouse construction project
- Project management tools and techniques
- Documents for the successful project management
- Challenges and limitations
- Recommendations

# Project introduction

- Access Engineering was constructing the largest single roof warehouse of Sri Lanka Camso Loadstar.
- Project start – 01 Oct 2019  
Project completion – 31 Jan 2021
- Project location – Katunayaka
- Budget - Rs 2,821,774,769.37
- Aim of the project is to construct single roof warehouse for Camso Loadstar within the a year.
- The warehouse is 278 m. long, 137 m. wide with a ridge height of 22.7 m. The area of the facility is close to 36,500 sq. m., accommodating up to 50 loading bays with an office space of 3.000 sq. m.
- Project sponsor – Comso Loadstar Pvt Ltd  
Contractor – Access Engineering PLC



# Project life cycle

	Linear	Incremental (Scrum)	Adaptive (iterative)	Agile (evaluation )
<b>Definition</b>	Linear life cycle is set of related activities that follow each other in an order from developing initial concept to the deployment of an final outcome (PMI,2017).	Incremental or scrum project life means project deliverables are produced by set of iterations that sequentially add functionality within a determined time period. The project products and deliverable comprises the required and adequate capability to be completed only after the final iteration (PMI, 2017).	Adaptive or iterative life cycle means project scope is determined in the beginning of the project and project elements, cost and time estimations are adapted throughout the project process according to required changes (PMI,2017).	Agile or evaluation life cycle means project conducted based on structured sequence of stages that a project deliverable goes through as it conducts from start to end (Certwise, 2020).
<b>Suitable situation</b>	Highly structured, stable & predictable	Dynamic	Dynamic	Highly dynamic
<b>Activities</b>	Performed at once for the full project	Performed once for a given increment	Repeated until correct	Repeated until correct
<b>Delivery</b>	Single delivery	Frequent smaller deliveries	Single delivery	Frequent smaller deliveries
<b>Goal</b>	Cost management	Speed	Accuracy of solutions	Achieve customer value

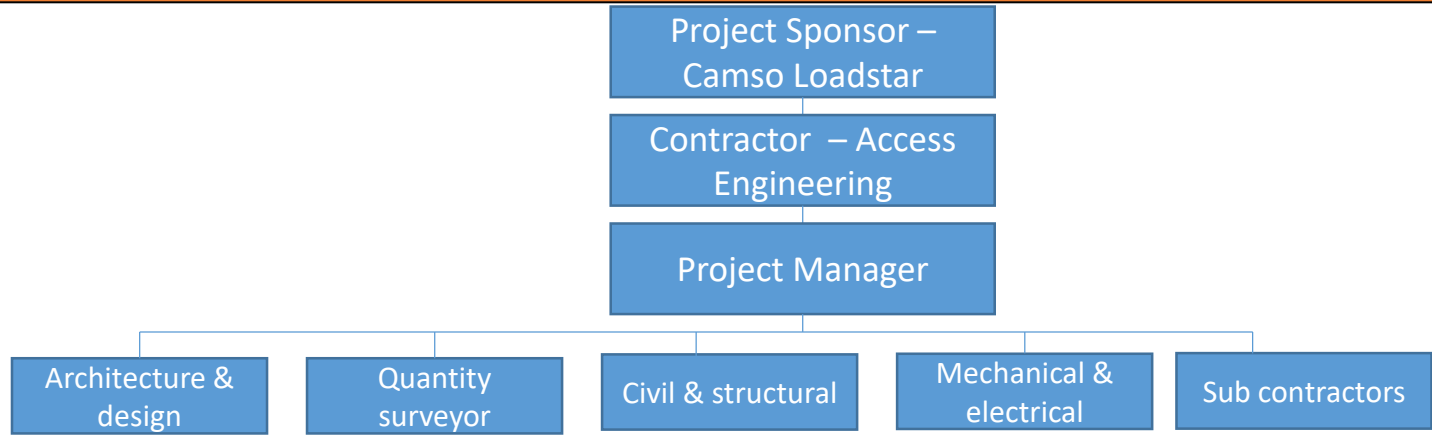
# Suitable project life cycle for the project

- Traditional methods can not be applied for the projects successfully in dynamic business environment (Wirkus, 2016).
- Adoptive or iterative is also agile method which generally use for IT related projects. However, adoptive life cycle has been successfully used for construction projects (Wirkus, 2016). .
- The application of adoptive approach was the results of Lack of detailed data on the possible construction costs, uncertainty of time consume to complete the project and meet exact customer requirements (Certwise, 2020).
- Iterative (Adaptive) life cycle can apply to warehouse construction project by dividing it sequences of phases and subprojects such as designing, warehouse floor, civil work, roofing, door & windows, plumbing work, electric work etc.
- Apart from the dividing project into iterations, following principles can be applied
  - Creating a timeline of the project tasks based on milestones.
  - Conduct ongoing risk management.
  - Conduct regular meeting with project team.
  - Collecting information and opinions of the stakeholders related to the solutions being developed in iterations (Wirkus, 2016).

# 7 Principles to manage the project

PRINCE2 principles	Description	Application to the project
<b>Continued business justification</b>	There need to be justifiable reasons to the initiate project, reasons should remain valid and justification is revalidated during the project life cycle.	<ul style="list-style-type: none"> <li>Once complete the project, this will offer state of art logistic facilities to the company.</li> <li>Conduct the feasibility studies at the beginning and when significant macro &amp; micro environment changes occurs.</li> <li>Conduct cost benefit analysis.</li> </ul>
<b>Learn from experience</b>	<p>When start the project – from previous and similar project, learning from others and seeking external experience.</p> <p>As the project progress – seek opportunities to learn and improve the project within project life cycle.</p> <p>As the project closes – Learned lessons should be passed to future projects.</p>	<ul style="list-style-type: none"> <li>Maintain lesson log book.</li> <li>Access Engineering is one of leading construction company in Sri Lanka which has more than 20 years experience in industry.</li> <li>Appoint project executives and project manager which have experiences in similar projects.</li> <li>Prepare the lessons report with identified issues and corrective action plans.</li> </ul>
<b>Focus on product</b>	<p>Focus on quality requirements of the product.</p> <p>Not compromising quality.</p>	<ul style="list-style-type: none"> <li>Maintain quality register.</li> <li>Access Engineering is accredited ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 standards for quality, environmental, and health and safety management systems.</li> <li>Quality planning and control tools and techniques</li> <li>Conduct quality circle meetings.</li> </ul>

# 7 Principles to manage the project cont..

PRINCE2 principles	Description	Application to the project
<b>Defined roles and responsibilities</b>	There are three primary stakeholders. Project sponsor, project manager and team managers.	 <pre> graph TD     A[Project Sponsor – Camso Loadstar] --&gt; B[Contractor – Access Engineering]     B --&gt; C[Project Manager]     C --&gt; D[Architecture &amp; design]     C --&gt; E[Quantity surveyor]     C --&gt; F[Civil &amp; structural]     C --&gt; G[Mechanical &amp; electrical]     C --&gt; H[Sub contractors] </pre>
<b>Manage by stages</b>	Project should be planned, implemented, reviewed and controlled stage by stage.	<ul style="list-style-type: none"> <li>Project is managed in the basis of different iterations such as architecture &amp; design, warehouse floor, concrete, reinforcement and formwork, civil work, steel building, roofing, MEP etc.</li> </ul>
<b>Manage by exceptions</b>	Project tolerances have been defined for project objectives to determine limits.	<ul style="list-style-type: none"> <li>Cost - + 10% contingency budget was allocated.</li> <li>Additional 3 months time allocated to complete the project.</li> <li>Tolerance levels and trigger point were defined for each identified risk.</li> </ul>
<b>Tailor to change</b>	Tailor to change according to project environment, risk, complexity, team capacity etc.	<ul style="list-style-type: none"> <li>Maintain issue register to capture and assess the issues and propose, decide and implement corrective actions.</li> <li>Change control approach was used to control the project.</li> <li>Project board/ executives is the change authority.</li> </ul>

# 7 Processes to manage the project

7 Processes	Application to the project
<b>Starting up the project</b>	<ul style="list-style-type: none"> <li>➤ Appoint project executive/ board and project manager.</li> <li>➤ Identify learned lessons of previous project.</li> <li>➤ Form the project management team.</li> <li>➤ Conduct feasibility studies.</li> <li>➤ Develop the business case.</li> <li>➤ Select the suitable project approach.</li> <li>➤ Assemble project brief.</li> </ul>
<b>Directing the project</b>	<ul style="list-style-type: none"> <li>➤ Approve project initiation.</li> <li>➤ Approve the project.</li> <li>➤ Authorize a management stage.</li> <li>➤ Authorize exception plan.</li> <li>➤ Provide directions to conduct the project.</li> <li>➤ Allocate resources and funds.</li> </ul>
<b>Initiating the project</b>	<ul style="list-style-type: none"> <li>➤ Agreeing the tailored requirements.</li> <li>➤ Develop risk management plan, change management plan, quality management plan and communication management plan.</li> <li>➤ Develop project plan.</li> </ul>

# 7 Processes to manage the project cont..

7 Processes	Application to the project
<b>Controlling the project</b>	<ul style="list-style-type: none"><li>➤ Approve work packages, review the progress of work package and received completed work package.</li><li>➤ Review the progress of management stage.</li><li>➤ Make a highlight report.</li><li>➤ Identify, evaluate issues and risks and corrective actions.</li></ul>
<b>Managing project deliveries</b>	<ul style="list-style-type: none"><li>➤ Accept, execute and deliver work packages.</li><li>➤ Conducts quality checkups.</li><li>➤ Creating check point report.</li></ul>
<b>Managing stage boundary</b>	<ul style="list-style-type: none"><li>➤ Plan out next management stage</li><li>➤ Update and adjust the project plan and business case.</li><li>➤ End of management stage should be reviewed and reported.</li><li>➤ Develop an exception plan.</li></ul>
<b>Closing the project</b>	<ul style="list-style-type: none"><li>➤ Prepare planned closure.</li><li>➤ Deliver products.</li><li>➤ Assess the project and record learned lessons.</li><li>➤ Benefit realization.</li></ul>

# Project Management tools and techniques

## User stories

Product description can be developed in the form of user stories. Project requirements were developed based on the collected user stories.

## MoSCoW prioritization

MoSCoW prioritization is widely used technique for managing user requirements.

**M****S****C****W****MUST HAVE**

Warehouse - 36,500 sq. m  
Office – 3000 sq. m  
Container yard  
Weightbridges  
Internal roads  
Fence

**SHOULD HAVE**

Waste water treatment  
plant  
Water treatment plant for  
drinking water  
CCTV system

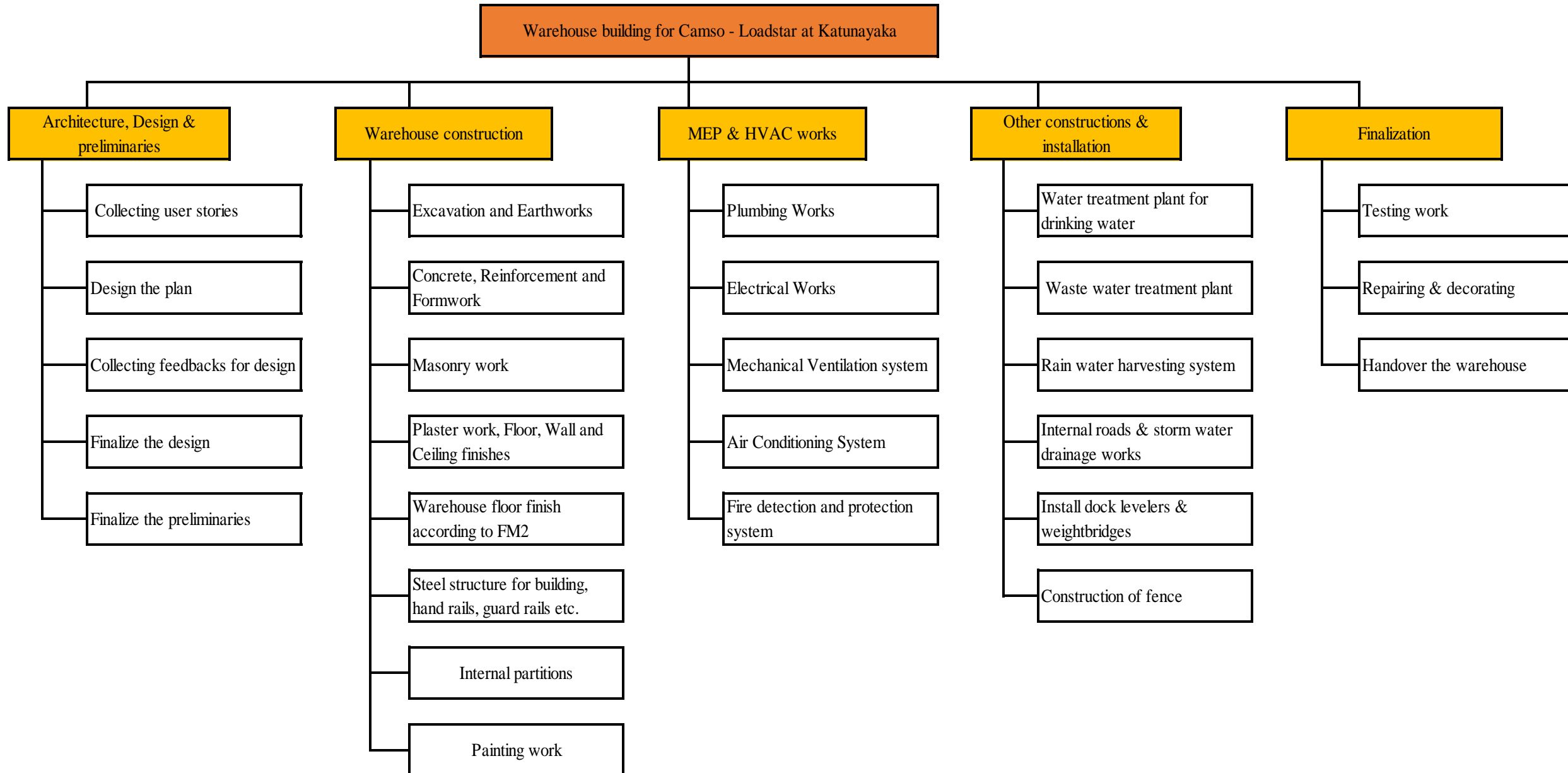
**COULD HAVE**

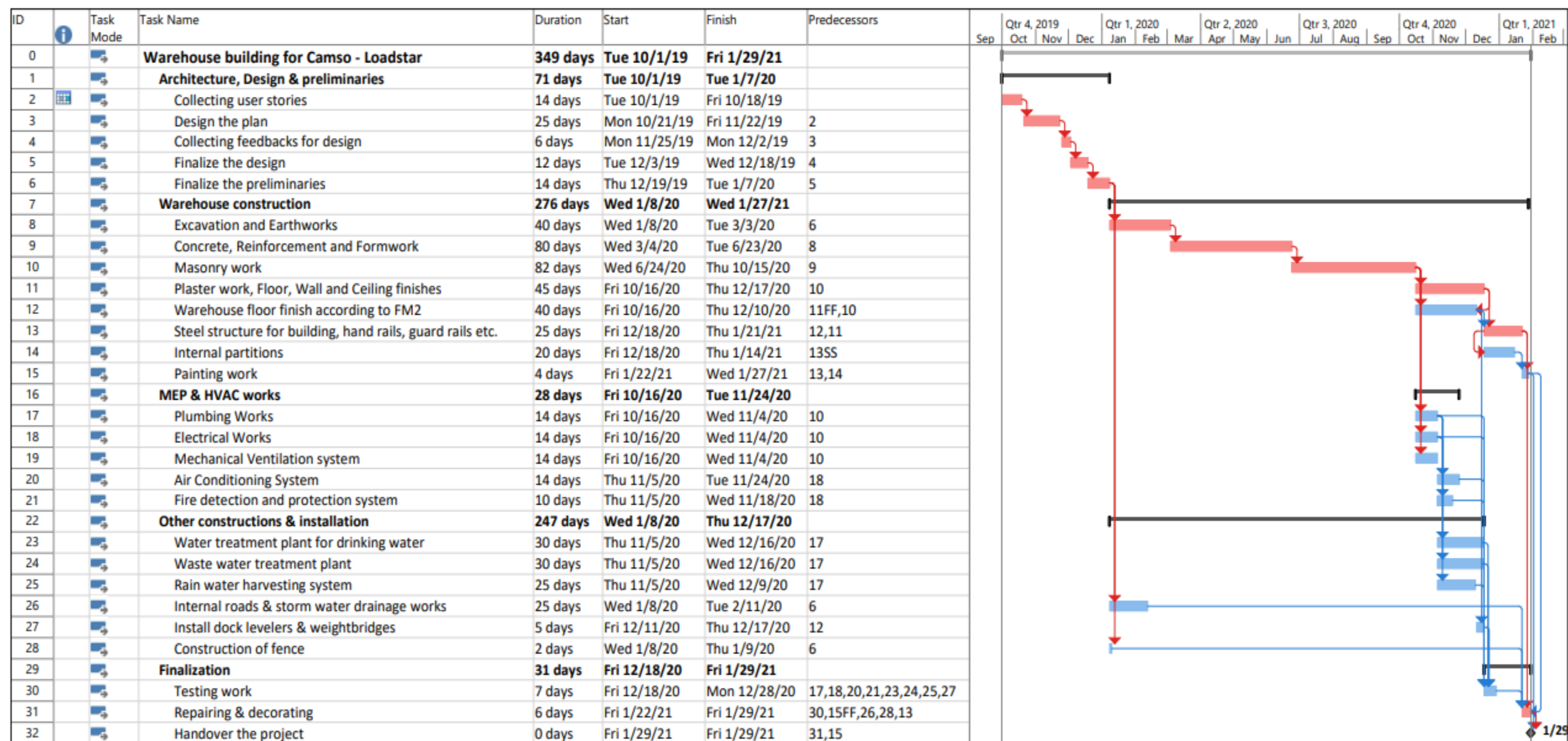
Air conditioning system  
Rain water harvesting  
system

**WILL NOT HAVE**

In-house value addition  
and multi-country  
consolidation services.  
Logistic education and R&D  
center.  
Business communication  
center.

# Work Breakdown Structure (WBS)





# Documents for the successful Project Management

## Business case

This is the document which includes the costs, benefits, possible disadvantages, risks associate with project. this use to justify the viability and test continuing viability (Axelos, 2017)

## Progress tracking documents

Highlight report – This provides summary of the management stage status of the project to project board/executives at intervals (Axelos, 2017).

Checkpoint report – This provides status of the work package at the frequency defined in the work package (Axelos, 2017).

## Quality register

This document provides summary of quality management action plans which are scheduled or have conducted and provides information to the end stage report. It gives an unique reference for each quality action plan and it is used as an indicator of the product quality (PMI,2017).

# Documents for the successful Project Management cont...

## Risk register

This document provides records of identified risks of the project including risk factors, risk evaluation, risk response strategies and responsibilities. This uses to identify and maintain threats and opportunities related to project (PMI, 2017).

## Issue register

This is the document which identifies and maintains information on all the issues that are being managed throughout the project life cycle. Issue register is maintained to capture and assess the issues and propose, decide and implement corrective actions (Axelos, 2017).

# Challenges and Limitations of managing the project

- Many project management methodologies including Adaptive (iterative) life cycle designed to software development projects. Thus, project life cycle should be adjusted according to nature of construction project.
- Project team members resist to change from traditional methodologies to modern agile methodologies.
- Complexity of methodology, time consuming to use tools and techniques and maintain documents.
- Lack of knowledge and awareness about the project management methodologies.
- Reluctant to adhere specific processes and principles.
- Project was conducted during Covid-19 pandemic. On time project completion was a challenge due to lockdowns and various disruptions.

# Recommendations

- Establish Project Management Office (PMO) to facilitate to project management process.
- Conduct training programs to improve awareness of team members regarding project management methodologies and tools and techniques.
- Apply modern project management methodologies for construction projects accordingly to improve agility.
- Use proper risk identification and assessment tools throughout the project life cycle.
- Implement project progress tracking system match with nature of the projects.

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Thank you

Any Questions ?