

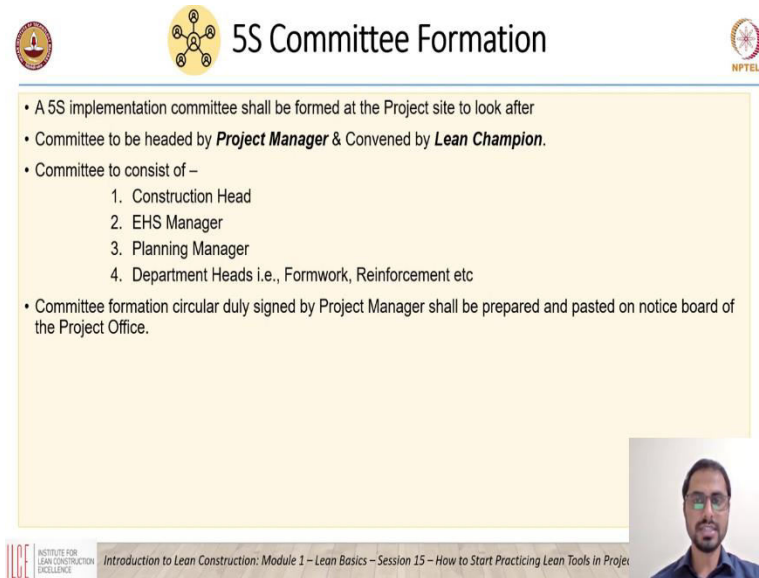
Introduction to Lean Construction
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How to Start Practicing Lean Tools in Project Sites-1: 5S

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Hi guys, this is Saurav Jha from L&T construction. I am going to explain about the 5S implementation at Project sites. So, the typical 5S implementation consists of five steps where in it starts with 5S committee formation, then the audit format preparation, then the team formation for your 5S Audit walk down. And during the 5S of audit walk down on what are the steps to be taken, and finally, the reports and compliances.

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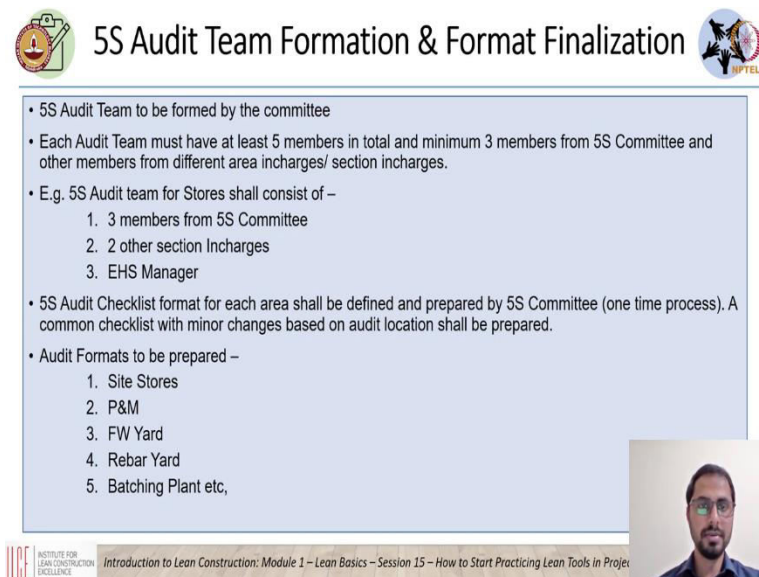
The slide is titled "5S Committee Formation" and features a yellow background. It includes a list of bullet points detailing the formation and composition of the 5S implementation committee. The slide is part of a presentation by the Institute for Lean Construction Excellence (ILCE) and NPTEL. A small video inset of the presenter is visible in the bottom right corner.

- A 5S implementation committee shall be formed at the Project site to look after
- Committee to be headed by **Project Manager** & Convened by **Lean Champion**.
- Committee to consist of –
 1. Construction Head
 2. EHS Manager
 3. Planning Manager
 4. Department Heads i.e., Formwork, Reinforcement etc
- Committee formation circular duly signed by Project Manager shall be prepared and pasted on notice board of the Project Office.

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Starting with 5S committee formation, it should be headed by project manager and convened by lean champion or the 5S champion at the project site. The committee should also consist of construction heads, EHS manager, planning manager and other department heads such as formwork or reinforcement. It is committee formation, once it is done should be duly signed by the project manager and it has to be pasted on the notice board on the project site where in each and every staff of the project site should be aware of the same.

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The slide is titled "5S Audit Team Formation & Format Finalization" and features a light blue background. It includes a list of bullet points detailing the formation and format of the 5S audit team. The slide is part of a presentation by the Institute for Lean Construction Excellence (ILCE) and NPTEL. A small video inset of the presenter is visible in the bottom right corner.



- 5S Audit Team to be formed by the committee
- Each Audit Team must have at least 5 members in total and minimum 3 members from 5S Committee and other members from different area incharges/ section incharges.
- E.g. 5S Audit team for Stores shall consist of –
 1. 3 members from 5S Committee
 2. 2 other section Incharges
 3. EHS Manager
- 5S Audit Checklist format for each area shall be defined and prepared by 5S Committee (one time process). A common checklist with minor changes based on audit location shall be prepared.
- Audit Formats to be prepared –
 1. Site Stores
 2. P&M
 3. FW Yard
 4. Rebar Yard
 5. Batching Plant etc,

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The next step would be 5S audit information. The 5S audit team which is going to have the walk down at site should consist three members from the 5S Committee which has formed at the beginning and then two other section incharges from different areas and the EHS manager other than these people, we can also have few more people depending on the requirement from site

After the 5S Audit team is being formed, there should there is also a requirement of 5S audit checklists to be prepared. These audit checklists are a typical Audit Checklist where in there could be some points which may not be relevant to each and every area. So, we can have this audit checklist form it prepared for site stores, P&M, FW yard, Rebar yard, Batching plant et cetera. And also for the building areas.


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5S Audit Checklist Format




LEAN Implementation Guideline										
5S Audit Checklist										
Name of Project:		Area Audited:								
Audit Date:		Reference: PQP/8.1.C/GL-01/F-07								
Auditor(s):		Auditee:								
		Scoring Legend	Green >=70%	Yellow 50% - 69%	Red <=49%					
		0=No Compliance	1=Very Little Compliance	2=Some Compliance	3=Significant Compliance	4=Total Compliance				
Determine what is needed and remove the rest			0	1	2	3	4	Comments/Actions to be taken	Action Taken	Verified Signature
SORT	Have all the unnecessary items (tools, machines, boxes, etc.) been removed from site?									
	Are tools and equipment located in the most convenient location?									
	Is the work area properly managed? - (fully up to date?)									
	Sub Total									
A place for everything and everything in its place.....No Searching!			0	1	2	3	4	Comments/Actions to be taken	Action Taken	Verified Signature
SET IN ORDER	Are walkways and work areas clearly defined and unobstructed?									
	Are personal belongings and Safety PPEs stored in designated areas?									
	Safety Equipments - Are all safety equipment in place and up to date?									
	Sub Total									




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So, typical 5S Audit checklist looks like this, wherein you will have place to fill the name of the project, area audited, audit date, for auditors and then reference this can be relevant to the reference format that has been followed at site. And then the auditees name. Here you can see for each S we have several points mentioned here, which are to be rated from 0 to 4 to 0 stands for no compliance and 4 stand for total compliance.


Other than that, right said we can also see where we have options of comments and action to be taken during the 5S audit walk down. The auditors can try down the points here wherein they want some improvement in each particular point is to be noted here.




5S Audit Checklist Format




		0	1	2	3	4	Comments/Actions to be taken	Action Taken	Verified Signature
SHINE	Cleaning and looking for ways to keep it clean.								
	Work Areas - Are they kept clean, tidy and neat?								
	Machines & Tools - Are they free from dirt, visible leaks and spillages?								
	Debris Bins - Are the properly maintained and emptied on regular basis?								
	Is anyone responsible for routine inspection/maintenance?								
Sub Total									
STANDARDISE	Determine what is needed and remove the rest.						Comments/Actions to be taken	Action Taken	Verified Signature
	Is everyone aware of their responsibilities and department flow with ease?								
	Is information to carry out daily work routine clear and in use?								
	Are improvement ideas being generated and regularly acted on?								
	Are the standards for the first 3S's clear and up to date?								
Sub Total									
SUSTAIN	Maintain high standards and constantly seek to improve.						Comments/Actions to be taken	Action Taken	Verified Signature
	Are checklists available and being used?								
	Have improvement suggestions from last month been acted upon?								
	Training - Is everyone adequately trained to carry out their job role?								
	Education - Can everyone in the area explain the benefits of 5S?								
Sub Total							Score	Difference	
Difference (+/-) - Compare this months score to previous month to see if improvements are being made									
Auditors Signature -							Auditee Signature -		






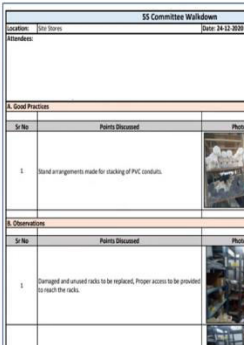
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5S Audit Walkdowns




- Frequency of Audits – Weekly once at initial stage and then it can be monthly once depending on the Audit Score.
- During the Audit –
 - 5S audit walkdown shall last maximum 30 minutes for each area
 - Proof / Photographs of the audit walkdown to be captured and record shall be maintained
 - 5S checklist shall be filled by all members of Audit team at the end of Walkdown
 - Convener shall collect the filled checklists and calculate average audit score
 - The Audit score in form of %age compliance shall be prepared and shared to all stakeholders during email
 - Along with the Audit Score, Audit report with list of compliance, responsible person and target date shall also be attached







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During the walk down there are several points that are to be considered in mind. The walk down should not last more than 30 minutes, it has to be quick where in all areas to be also considered

when the photographs to be taken for proof and the checklist filled by each and every member of the audit team should be collected. The average percentage score should be calculated by the Lean champion or maybe 5S champion, the audit score audit report and the compliances should be circulated through mail to all the stakeholders.


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5S Audit Walkdowns



- In subsequent audits – audit scores to be compared with last audit score of the same location
- Monthly Area wise 5S score to be displayed on notice board.
- Fixing of 5S display board at multiple location at site.
- Most important part is 5th S - **Sustain**
- Sustaining these practices would lead to habit change at project site and awareness among staffs pertaining to 5S and lean practices at large







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So, you can see the before and after effects of 5S audits. Also there are several points that are to be considered and kept in mind which are monthly area by service score to be displayed on notice board. And most important part is 5thS that is sustain. These practices would lead to habit change at site level or also the awareness. This would help in the betterment of site and also 5S implementation will be effort. Thank you.