


**Introduction to Lean Construction**  
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**Lean Overview – Key Lean Tools 2 (5S, Collaborative Planning System/Last Planner System, Big Room Approach)**


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**S02.05: Key Lean Tools#2**

- Learning objectives
  - To introduce the Key Lean Tools: 5S, Collaborative Planning System (CPS)/ Last Planner® System (LPS), Big Room Approach

[Tools to be Covered Slide](#)



  
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In this section 2.05 we introduce a Key Lean Tools 5S, Collaborative Planning System which is based on the Last Planner System and the Big Room Approach.

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**Some Key Lean Tools**



Castiblanco et al (2019); Sakthiana et al (2015); Nirmulna and Sobhana (2020); Subhas Singh and Kaushal Kumar (2020); Richard Harris Anshu et al (2016); Anshu and Sureshram (2017)



  
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So to look at the other Key Lean Tools which are available, we have the Productivity Measurement System, Work Sampling, Value Stream Mapping, 5S, CPS and Big Room Approach.

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**5S**

- What is 5S?
  - An effective VM tool in Lean Management for improving workplace organization
  - Not just housekeeping, but a methodical and powerful tool to improve the working environment & improve **Efficiencies and Safety**.
  - 5S is a Visual Workplace! Part of Digitalization!
  - Also helps eliminate and reduce the effects of the 7 wastes of Lean at the site level -Project can be 10% to 30% more efficient than otherwise.
  - Compare your Site with what you may find in a Developed Country or that of an International Organization!

1. **Seiri: Sort**, Sifting, Clearing, Classify
2. **Seiton: Set in order**, Straighten, Simplify, Configure
3. **Seisou: Shine**, Sweep, Scrub, Clean and Check
4. **Seiketsu: Standardize**, Stabilize, Conformity
5. **Shitsuke: Sustain**, Self-discipline, Custom & Practice

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So, we now look at the 5S approach to start with. What exactly is 5S? It is an effective tool, a visual management tool in lean management for improving the workplace organization, is not only just housekeeping as some people may think but it is a methodical and powerful tool to improve the working environment and improve the efficiency and safety in the long run.

It is a visual workplace part of the digitalization approach which we have nowadays. It also helps in removing the and minimizing the 7 wastes of lean in the site and the project definitely can be at least about 10 to 30 percent more efficient if you practice 5S than otherwise.

If you look at you know the project sites which you have with in the developed countries or from well-established large companies at the typical project site you can look at the difference and that is mainly a result of having applied 5S. So, the 5S actually there are five major components, Sort, Set in order, Shine, Standardize and Sustain.

We will look at these in more in detail, basically only keeping only the item which are required for work in the immediate environment, removing the other ones and whatever

you are retaining them you have to keep them in the proper order, a place for everything and everything in its place and keep them in good working condition, well cleaned up and so on and then have a standard approach across the site in practicing the three S and then make it sustainable in the long run. So, these are the 5S's which we will see in much more detail later.

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Collaborative Planning System (CPS)/ Last Planner® System (LPS)

- CPS is Similar to Last Planner® System (LPS) of LCI, USA developed by Gregg Howell and Glenn Ballard
- Why "Last Planner"?- Frontline managers involved in Collaborative Planning
- The LPS is a *Production Planning System* designed to produce *predictable workflow* and rapid learning in programming, design, construction and commissioning of projects
- Advantages: Focuses on Certainty/ Reliability, Production orientation, inclusiveness, etc.,
- Proven system around the world!

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Now coming to the another tool very important tool called CPS which is the take off actually from the Last Planner System which was developed by Dr Glenn Ballard and Mr Greg Howell. So, here actually instead of only the planning manager and the planning team, we also involve the frontline managers as the part of the planning work and that is why it is called the Last Planner System.

And then we invoke collaboration between all the stakeholders on the site through the Big Room Approach and that is why it is called Collaborative Planning System. It is actually a production planning system and designed to produce predictable workflow, that is very very important to note, rapid good learning in how to do programming, design, construction and commissioning of projects.

All these actually can be properly done by a collaborative planning system. We focus on certainty and reliability, a project production orientation, inclusiveness or collaboration

that is the cornerstones and this system is practiced all over the world including in India very commonly very important one.

So what we do conventionally your CPM networks like Primavera or MS Project they cover a huge number of activities and the network is prepared much earlier, a bit too much granularity and then it is the methods are something which you thought about much earlier. The situation can keep on changing as the project unfolds.


so here, in CPS we have the main schedule which you make in the beginning with looking at the milestones from that we make a number of different phases, phase 1, phase 2, phase 3 and so on. Then, when you look at the current week in which you are planning the work, the current week's work would have been reviewed along with that we also look ahead window coverings say typically 6 weeks.

So, when you come to the sixth week, the sixth week work would have been reviewed at least 5 times earlier and we look at the constraints which can affect the work, which can happen in the sixth week at least 5 times and remove all the bottlenecks beforehand. So, in the sixth week our work should go through like a breeze and we get into a prediction system, we eliminate the uncertainties so the final week, the current week in which we are able to do the work very comfortably.

And then every day we check what has happened there, there is a metric called PPC, Plan Percent Complete which we use for checking the efficacy of our system and keep improving that all the time, that is the CPS part.

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**Big Room Approach**



- Multiple stakeholders *working together* closely to solve common problems *collaboratively*
- All empowered to give data/ take decisions → *Responsibility & Accountability*
- Speedy closures; all data is available; all concerned are collaborating
- Used for Look-ahead Plan (LAP) & Weekly work Plan (WWP) for CPS; Lean Design formulations; *Quick & Informed Decision making* with multiple stakeholders
- Nowadays *Virtual Big Room!*



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And finally we come to the big room approach, in the CPS when we are doing that look ahead planning or the weekly planning we need to get all the possible stakeholders, all the involved stakeholders in the same space called the Big Room. The frontline supervisors will do the essential planning but they need the inputs from the other stakeholders like for example, the resource suppliers, then the design people, the contractual people, the project manager and the planning manager and so on.

So, all the people are in the same space the same big room and they come to a shared understanding of how the project has to be run typically for example, the current week or the look-ahead planning. So, we have people in the same space either real space or virtual space depending on the period and they have to work collaboratively.


And the people in the room are people with responsibility and accountability, that means they are empowered people who can take decisions and make sure that they are properly followed. Since all the concerned people are in the same space, all decisions can be taken quickly just across the room because all data is available and all the concerned people are to available again.

So, we can make quick and informed decision making, that is possible with the Big Room Approach, that is really very useful, apart from the CPS we also can use it for finalizing your designs and for any other project planning where you have multiple

stakeholders, where you need to reach decisions quickly and today of course, in the COVID environment we also have the virtual big room. So, that was the basic thing about the Big Room, we also saw the CPS process and 5S, thank you.

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**Quiz**




1. Name the 5S's

**Sort, Set in order, Shine, Standardize, Sustain**

2. 5S tool can help in improving \_\_\_\_.

- a) Efficiency
- b) Safety
- c) Quality
- d) All of the above
- e) None of the above

**d) All of the above**



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**Supplementary Module**

Link (to read and contribute)  
<https://tinyurl.com/yfmc8ba>



Topics to be Covered Slide



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