

Construction should just follow Manufacturing?

LEAN manufacturing is an approach aimed primarily at reducing times within the production system as well as response times from suppliers and to customers. Manufacturing has a well-established LEAN methodology and identifies the 8 wastes of LEAN as:

- Defects – rework & scrap
- Overproduction
- Waiting – wasted time waiting for the next step in the process
- Non utilised talent
- Transportation – unnecessary movements of products and material
- Inventory – excess products and materials not being processed
- Motion – unnecessary movement by people (e.g. climbing a ladder)
- Extra processing – higher quality than is required by the customer.

Simply adopting the manufacturing industry's LEAN methodology (which has been refined over 90 years) has the potential to deliver a system to larger construction companies that have the resources to implement such a system. It is highly likely that it will deliver little or no benefits to the rest of the construction sector. It is considered important that the construction sector develops its own specifically designed LEAN methodology. As a first assessment there are some wastes of LEAN in the manufacturing sector that are not as pertinent in the short term to the construction sector. These include over production, non-utilised talent and extra processing.

There are however at least 4 wastes of LEAN from the manufacturers system that, if addressed, will provide sector wide benefits in the construction industry. Those being:

- Defects – rework & waste material
- Waiting – wasted time waiting for the next step in the process
- Transportation – unnecessary movements of products, material and people
- Motion – unnecessary movement by people (e.g. climbing a ladder, travel to site)

Material waste (from poor design, offcuts, damage & theft) has clearly been identified as a significant issue in the construction sector and should also be considered as a foundation of Construction LEAN. Once the basics of LEAN are adopted in the construction sector then over time other "wastes" could be added to the construction sector's lean methodology. Construction companies that are already on their own LEAN journey and have the resources are always able to lead the way advance more complex LEAN processes.

Why Is LEAN Construction Important?

There is no debate that the construction sector is viewed as having low productivity, performs poorly when it comes to sustainability and a high level of business failure seems to be an accepted characteristic of the construction sector. These are not emerging issues but rather embedded short comings of the sector that have been observed and discussed over decades. These issues are regular topics of discussion at BRANZ, the Construction Sector Accord, NZCIC, MBIE, peak industries bodies and by government officials to name but a few. Specifically when it comes to material waste BRANZ has identified that 50% of waste to landfill comes from the construction sector.

The Impact of LEAN Construction

LEAN Construction will help change the behaviour of the construction sector so that industry leaders and the workforce are mindful of working productively and actively managing the reduction of the

waste of materials and time. Construction businesses, by addressing wasteful aspects of building, will be able to build faster with improved quality. Businesses that minimise waste material, move materials and the workforce more efficiently, and build better the first time will be, by default, more profitable and sustainable. In turn, construction businesses will be in a better position to invest further in technology and innovation and continue to make incremental improvements to the way they build. This behavioural change will lower costs and help with system resilience. Clients will also benefit from a construction sector that will be performing better than it currently does. Clients will be able to take possession of their homes and buildings sooner and seek less remedial work and therefore benefit financially. This addresses the cost of building. The behavioural change that this research is aiming to influence will have a direct impact on the environmental footprint of the construction sector. It will result in less waste going to landfill and less carbon emissions from more efficient transportation of materials and the labour force