

engage the distributed knowledge in a way that optimises those outcomes. As the findings listed here show, even in a small and simple context there are many opportunities for this to fail. Whilst the attempt to match flow with specific constraints within a single case study does not provide a generalised solution, we believe it does provide some evidence of the disruption caused by inappropriate understanding and that these inappropriate understandings include misalignment, personal (non-shared or siloed), implicit recognition of words related to understanding, and assumption. It seems that people within a traditional organisation like the case study company, are not aware that inappropriate understanding causes many of the problems they face. It also seems that once people become aware of lean practices they also become aware of the need to create a shared understanding because they try to identify root causes of difficulty and disruption. These lean practices seem to provide a system which actively and continually removes barriers and problems through a structured approach to work and learning. The shape and nature of the shared understanding not only needs to be created for each project but must be nurtured and refreshed along the project timeline especially as things change frequently and team members come and go, sometimes unexpectedly, for example as a result of illness and temporary cover. For this latter reason it equates to a flow or moving phenomenon.

We conclude that the social and technical parts of the lean construction system must operate together. We propose however, that a shared understanding is not the entirety of the social part of the system. Leadership and motivation are also significant but that these need to be engaged to foster and preserve shared understanding.

5 REFERENCES

- Andersen, L., (2016). "Design and Engineering – Material Order" Proc. 24rd Ann. Conf. of the Int'l. Group for Lean Construction, 21-23 July, Boston, MA, sect.1 pp. 83-92,
- Bertelsen, S, Henreich, G, Koskela, L, and Rooke, J. (2007) Construction Physics. Proc 15th Ann Conf. of the Int'l. Group for Lean Construction,, July 2007, Michigan, USA pp 13-26
- Liker, J. K. (2004). *The Toyota Way: 14 management principles from the world's greatest manufacturer*. New York: McGraw Hill
- Pasquire, C.L. (2012), *The 8th Flow - A Common Understanding*; Proc 20th Ann Conf. Of the Int'l Group for Lean Construction, July 2012, San Diego, USA
- Pasquire C.L. & Court, P.F (2013) *An Exploration of Knowledge and Understanding - the Eighth Flow*. Proc 21st Ann Conf. Of the Int'l Group for Lean Construction, July 2013, Forteleza, Brazil
- Ryle, G. (1963). *The Concept of Mind*, Penguin, Harmondsworth.
- Seymour, D. (1996). *Developing Theory in Lean Construction*. Proc 4th Ann Conf. of the Int'l. Group for Lean Construction, Birmingham, UK pp 1- 25.