IGLC IRELAND 2019
INTERNATIONAL GROUP FOR LEAN CONSTRUCTION
DUBLIN | IRELAND | 1ST - 7TH JULY 2019

Not seeing the wood for the trees – A Gemba walk through a timber framed housing development

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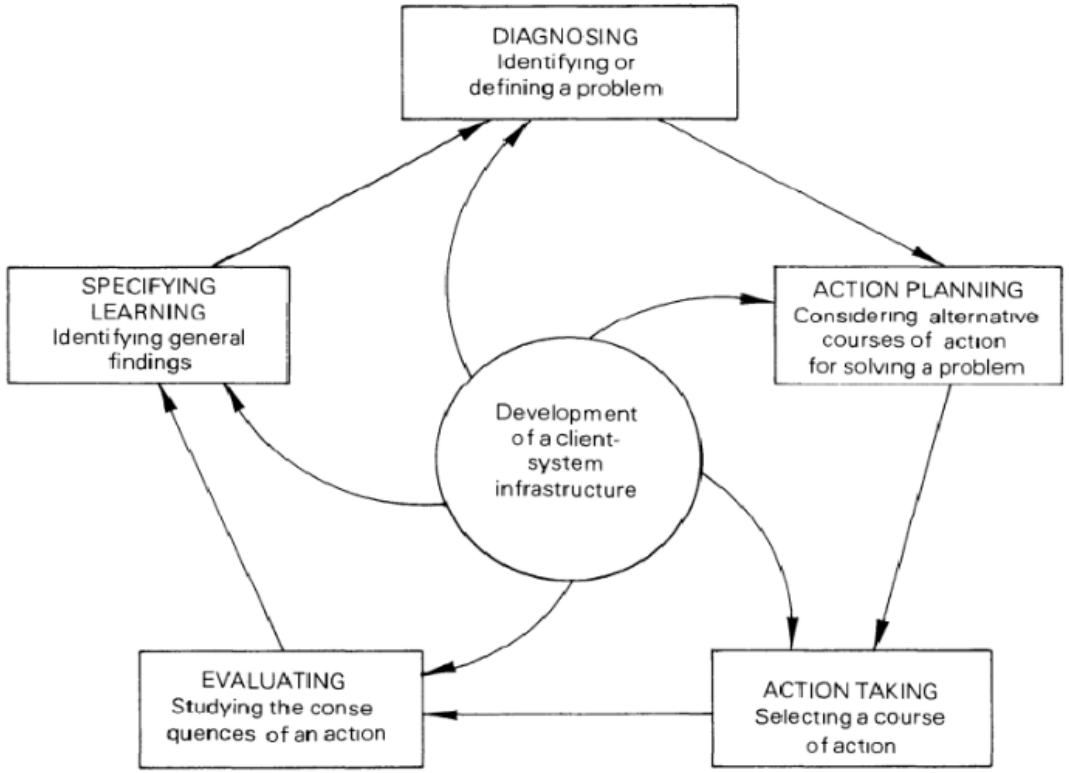
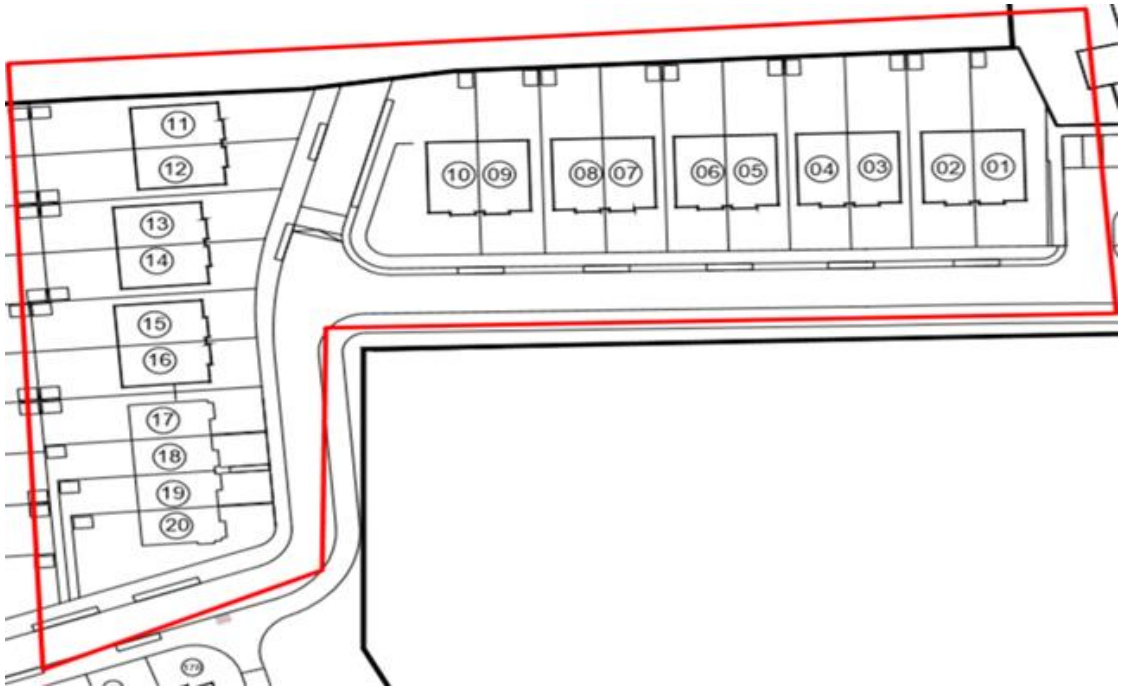
Introduction and research context

Research Philosophy



The Cyclical Process of Action Research - Susman & Evered, (1978, p588)

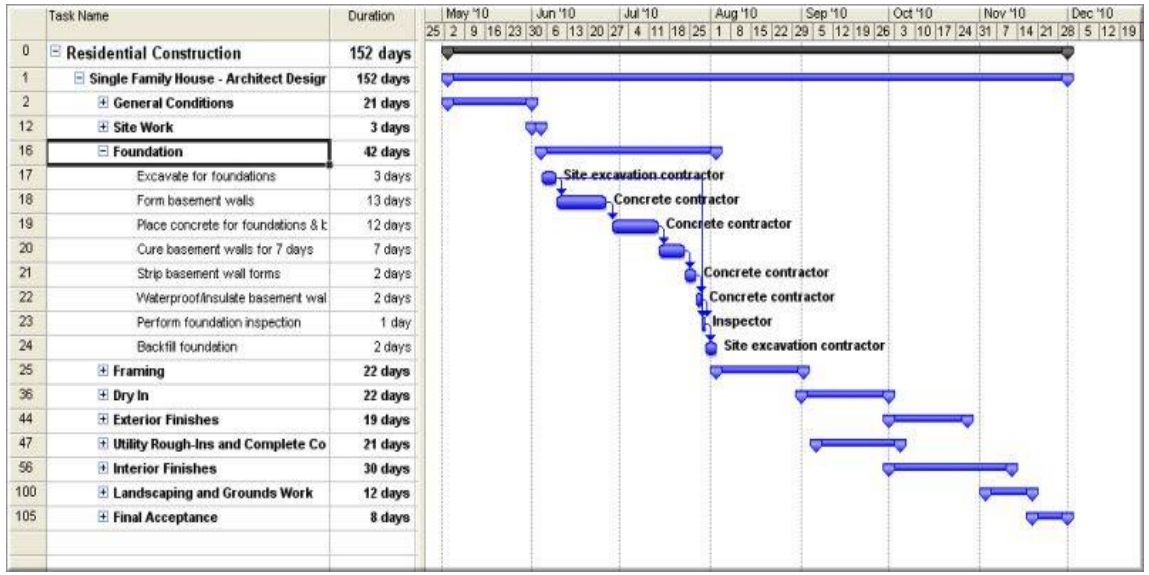
Case study project summary



- 200 dwelling timber frame housing estate
- 20 dwelling sample selected for Case Study
- A daily log kept of the type and duration of work carried out to each dwelling
- Records kept from “green field” up to de-snagging and sign off ready for occupation
- Study adapted by Conor Willis from his final year dissertation

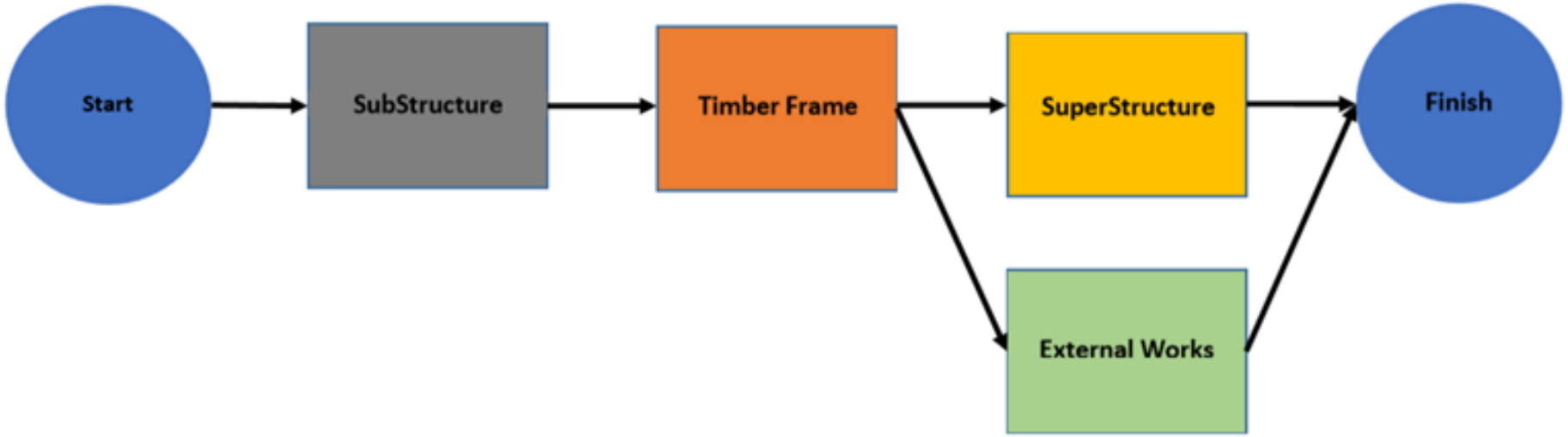
Gemba walk as a prelude to the case study

The case study “present” situation



- SME Contractor used a Gantt Chart as their principal method of time control on site.
- Gantt charts are the “norm” in terms of time management in both Ireland and the United Kingdom.
- Yet, significant evidence that most construction projects don’t finish on time.
- No evidence of Critical Path Analysis methods (CPM) being used behind the Gantt chart on this project.

What we did in the case study



Planned simplified version of the project Gantt chart

The original Contractors plan: completion of the 20 dwellings in 37 weeks. Actual time taken 47 weeks.

The Gantt chart gives NO insight to the causation of the delay

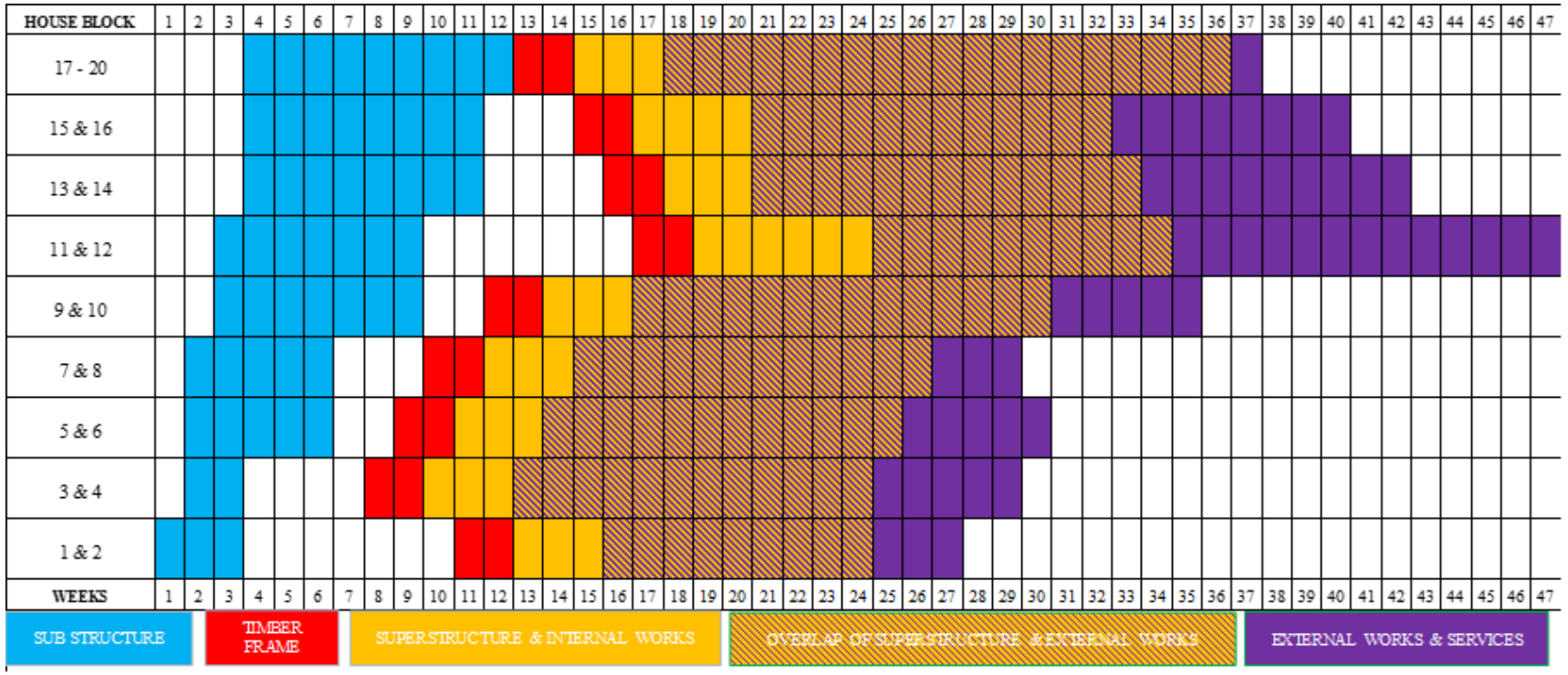
Actual timings of each housing block in case study

Here is the detailed data per block. Again, it says little about the reasons for the delays.

Table 1: Actual timings observed in tabular format

	Substructure		Timber Frame		Superstructure		Services & Ext. Works	
House	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**	**Start**	**Finish**
1 & 2	1	3	11	12	13	24	16	27
3 & 4	2	3	8	9	10	24	13	29
5 & 6	2	6	9	10	11	25	14	30
7 & 8	2	6	10	11	12	26	15	29
9 & 10	3	9	12	13	14	30	17	35
11 & 12	3	9	17	18	19	34	25	47
13 & 14	4	11	16	17	18	33	22	42
15 & 16	4	11	15	16	17	32	21	40
17 - 20	4	15	13	14	15	36	18	37

Same “actual” data presented in a Line of Balance format



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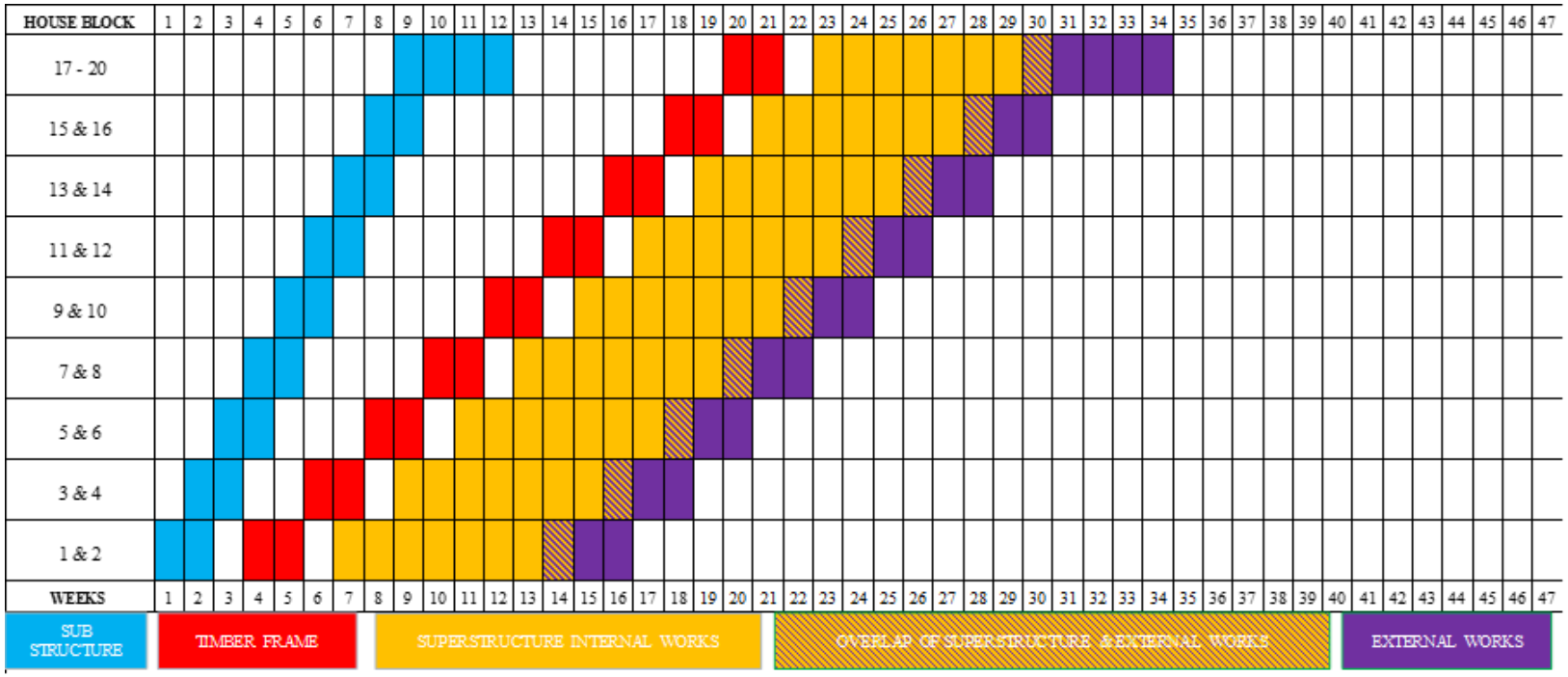
Our proposed improved situation

This Line of Balance shows a proposed “efficient” programme of works



Conclusions

- Current Irish time management approaches are poor, leading to wasteful process management
- Gantt charts and/or Critical Path Methods provide poor real time tools for the Site Manager
- It is important that data be collected from workplace inspections to better inform programming and time management. Post mortem investigations allow blame to be placed, but do little to improve the actual construction process. Go to the Gemba.
- Line of Balance provides a really useful, cheap and simple method of visualising time management flows on site
- Line of Balance is complementary to new time management methods and can help inform approaches such as Last Planner System

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Thank you and enjoy your visit to Ireland

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