



Prefabricated Housing in Australia. Skill Deficiencies and Workplace Practice



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Executive Summary

Prefabricated housing for both internal and external structures has become a boom industry in Australia and across the world, based upon its relative affordability, the speed by which it can be erected and the ease by which it can be made to meet modern environmental considerations. In some countries (more notably the UK in recent times) the use of prefabricated technology has declined, in part because there is now a proliferation of new materials available and that applied research has not kept pace with building demands.

The technology has outstripped the current ability of the building and construction training industry to qualify and quantify the specific skill sets involved in the various processes. There are generic competencies relating to what might now be referred to as traditional prefabricated housing (eg tilt-up concrete slabs). In fact the emergence of more modern materials, coupled with environmental considerations, occupational health and safety issues, and affordability, require more specific options to link together the various roles. Although in part they are site-based, they have their genesis in a factory or workshop. The overarching argument is about where prefabrication as a concept begins and ends.

In the factories and workshops composite parts are assembled and packaged for transport to the erection site. Modern industry skills training has become much more site-based and increasingly reflects the economic trend towards a more commercial product.

The current housing affordability crisis, predicated on increasing mortgage interest rates, acute skill shortages in such trades as bricklaying and the finishing trades, shrinking availability of 'green-field' land development by State and Territory Governments, escalating costs of traditional building materials and the recent ten year long water drought have together brought about the need for innovative thinking to maximise the building product, so that it is more accessible to a demanding and at the same time educated public.

Prefabricated housing requires a unique blend of contributing skill sets along the entire Supply Chain, encompassing research (including design anthropology to create liveable habitats for human occupation), concept/idea development, designing and manufacturing component parts, through to fabrication and construction of the final dwelling.

Tradespeople involved on the factory or workshop floor must be able to create 'kitset' composite parts so that prefabricated housing componentry is easily transportable, safe to use, quickly erectable, and cost and environmentally efficient. They must also ensure that Federal Safety Commission standards are adhered to throughout the building procedure.

This report looks at skill deficiencies in the prefabricated housing sector of the Australian Building and Construction Industry, referred to in the United Kingdom as 'Modern Methods of Construction'¹ (MMC). There is a case to be made for delineation of prefabricated house building to become a discreet set of skills in its own right, or at least demarcated in a meaningful way as a manifest departure from traditional building and construction methodology. The reason being is that it adds another dimension to building. The substantive issue is in the need for awareness in three main areas of trade and para-professional development:

¹ MMC – new generation building methods based on new material and building techniques.

Executive Summary

1. Learners to understand and demonstrate an awareness of project planning and delivery as subordinate executors. Daly's observations and interviews reflected that the 'bigger picture' awareness impacted significantly in terms of project continuity and worker satisfaction. Workers also clearly understood site-based role demarcations and appreciated the reasons for these.
2. Learners to understand communication and engagement skills with specific attention paid to social and cultural considerations, so as to ensure that clients are appropriately engaged and responded to on-site.
3. Learners to understand the need for sustainable work practice and to apply this, especially in the context of prefabricated building materials and practices. Sustainable work practice is ultimately habit-forming, especially where diligence and proactive practice are positively reinforced.

It also identifies that certain deficiencies are super-ordinate to the core competency-based training approach of the Australian Qualifications Framework and are appropriately the domain of the employer rather than additional competencies to be added to already busy qualifications at trade and para-professional levels.