A PROSPECTIVE STUDY ON BUILDING QUALITY: ENFORCEMENT OF CONTROL IN THE AUSTRALIAN HOUSING INDUSTRY

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Objectives

- To identify the key elements and contributors to quality of housing in the Australian construction industry.

- To identify the key issues in current practice in relation to the enforcement of control in the Australian housing industry.

- To identify any areas for improvement in knowledge transfer that could improve quality of building, by reducing rework and wasteful practices and thus contribute to sustainability.
Quality is ‘fitness for purpose’
(Juran and Godfrey, 1999; Ho, 1995)

‘conformance to the requirements’
(Crosby, 1984)

The quality of the building is defined as the degree to which the design and specification meets the requirements for that building
(Clift, 1996)
Housing Quality Overview

- Housing industry is an important contributor to the Australian economy
- $30.9 billion (yearly expenditure)
- Represents 3.8% of GDP in 2006

(Mills et al. 2009)
Enforcement of Control

Building Legislations
- Building Code Australia
- Building Regulations 1994
- Building Acts 1993
- Australian Standard (AS)

Housing Asset Management
- Sustainable adaptation
- Life Cycle Assessment
- Asset Management Practices

Enforcement of Control
Governed by a series of regulations

Maintenance Practices
- Housing Standard Policy (Office of Housing)
- Construction and Maintenance Standard
Problem Statements

- Increase of the number of defects in the Australian housing sector i.e major rework in footings and water ingress.
  
  (Georgiou et al. 1999; Mills et al. 2009)

- Failure to meet display homes standards or architect’s specification requirement- this could influence a customer’s satisfaction level
  
  (Georgiou et al. 1999)

- Inadequate design information and poor site practices caused of housing defects
  
  (Illozor et al. 2004)
- Lack of expert knowledge and unfamiliarity with the building regulations  
  (Van de heijen et al. 2007)

- Inadequate knowledge transfer will hinder the quality of building in the Australian housing sector.  
  (Facilities Management of Association Australia, 2006)

- Construction firms do not have the necessary knowledge, interest or understanding of the industry  
  (Wong, 1996)
Housing Quality - Key Barriers

- Lack of attention in quality control
- Poor specification and poor of construction practice.
- Lack of interaction between the key players in industries and non effective communication
- Unsuccessful interfacing between organizations in industry
Housing Quality, a rising concern

- Poor specification and poor of construction practice
  - Illozor et al. (2004)
  - Baiche et al. (2006)

- Lack of attention in quality control
  - Illozor et al. (2004)

- Poor Quality Workmanship
  - Georgiou et al. 1999; Mills et al. 2009

- Unsuccessful interfacing between organizations in industry
  - Wong (1996)

- Lack of resources in construction firm to adopt modern principle of quality management
  - Karim et al. (2006)
Building better housings! The way towards knowledge transfer concept
Why it is important?

- Knowledge transfer is a continuing activity to educate people in industry
- Improve organization performance: sharing of information
- As a tool for promoting other techniques i.e value engineering management, supply chain management, partnering program, TQM to improve the construction industry and increase the sustainable practice in construction of housing.
Housing Quality: Knowledge Issues

- Lack of Communication and interaction
- Inadequate of information
- Inappropriate use
- Lack of integration
- Attitude and behaviour

Knowledge Transfer is a fundamental component in knowledge management approach.
Continuing cycle of knowledge

Knowledge could flow in the construction industry circle

Various Agency in the construction industry

Industry Players

Production of Information (sustainable information)
Supply of Information: Housing quality production

INEFFECTIVE IN TRANSFERRING INFORMATION in the PUBLIC and PRIVATE Agency

- Control
- Innovation
- Best Practice Guidance
- Audit & Appraisal
Transfer of Information

Information Supply

Information from the PUBLIC and PRIVATE agency

Control
Law and regulation information

Innovation
Through construction research and development

Best Practice
Through various techniques and method adopted in industry

Audit
To verify any procedures are being followed or any standards work process

* control element = policy, standard, guideline
* innovation element = research findings and product development
* best practice element = Supply chain, partnering program, value engineering
* audit and appraisal element = evaluation report, building audit report,
Need for Change

- Good multi-way communication channels
- Providing clear commissioning method statements in the early stages
- Integrate all parties in industry through an effective information transfer process
Knowledge Transfer Process

**Actors**
- Builders

**Public**
- ANZECC
- ABCB
- DENR
- APCC
- OOH

**Private**
- FMAA
- AIBS
- RICS
- CIOB

**Multi-communication**

**Knowledge Transfer Process**

**Control**
- Building Act 1993
- Building Regulations 1994
- Building Code Australia (BCA)
- Australian Standards (AS)

**Innovation**
- CSIRO
- Construction Working Group
- Australia Housing & Urban Research Institute (AHURI)
- Construction Industry Development Agency (CIDA)

**Best Practice**
- ABCB Research Programme
- Australia Procurement & Construction Research
- TQM, Supply Chain, Value Engineering, Partnering Program

**Audit/Appraisal**
- National Benchmarking & Best Practice Asset Management Programmed
- Australia Building Products and System Scheme
- Rating Tools - NABERS & ABGR

**Building Quality Output**
Conclusions

- The current practices in enforcing housing control in Australia are still inefficient with poor transference of knowledge to the builder due to lack of interaction between parties in the construction industry.

- Even with current initiatives implemented by the government aimed at improving housing quality, there is still a need for a knowledge transfer approach in an attempt to increase awareness among industry players and home owners.
Conclusions - cont’d

- Improve communication and interaction among the producers of housing.
- Provide more effective knowledge transfer mechanism.
- Education of the end user of the building on how to use, operate and maintain their building.
Therefore, the key elements and contribution to quality of housing in Australia could be achieved through a more effective knowledge transfer mechanism by adopting the proposed elements of ‘control’, ‘innovations’, ‘best practice guidance’ and ‘audit and appraisal’.
Thank you!