

# Leadership : Industry Integration & Engineering Collaboration

Towards helping engineering & other built-environment professions to rise and make a difference in the ecosystem - the problem of institutions

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# Who is the SACPCMP?

MINISTER OF  
PUBLIC WORKS

CBE

SACPCMP is established in terms of Act 48 of 2000

Section 25 of the Act 48 of 2000 allow for the recognition of voluntary associations

SACPCMP

The South African Council  
for the Project and  
Construction Management  
Professions

SACAP

South African Council  
for the Architectural  
Professions

ECOSA

Engineering Council of South Africa

SACLAP

South African Council for  
Landscape Architectural  
Professions

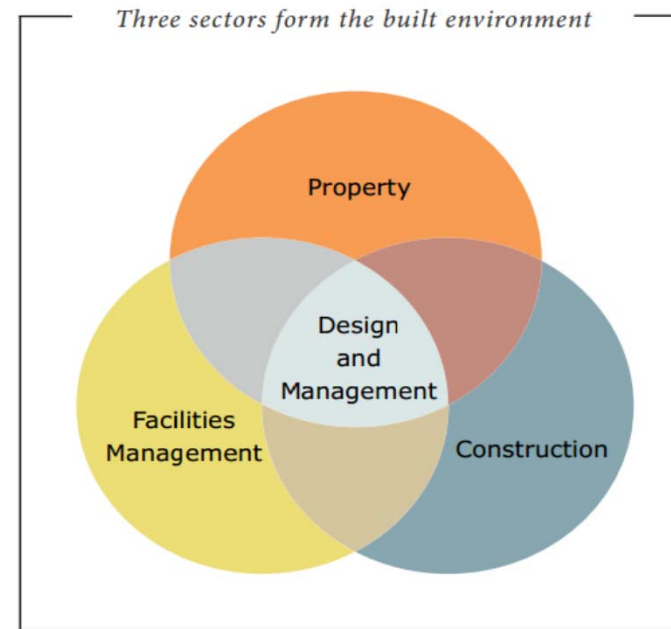
SACQSP

The South African Council for  
the Quantity Surveying  
Professions

SACPVP

South African Council for  
the Property Valuers  
Professions

- The **Built Environment** (BE) is a complex inter-disciplinary field with diverse epistemologies from across the spectrum of the arts and sciences (Chynoweth, 2006).
- The BE is delivered through **projects** where Built Environment Professions (BEPs), non BEPs and other intermediaries interact.
- BEPs are the centrepieces of built assets as they provide **technical and management functions** in projects.
- BEPs engage in projects through **complex temporary and ephemeral (creating impermanence) structures** where they work together to achieve **individual and collective goals** within a limited period (Chynoweth 2009; Jones & Lichtenstein 2008).



- Professional practice is a **network resulting from division of professional labour in the organisation of professional work** and engagement with other professionals including in other disciplines, non-professionals and clients in order to support interdependent work processes to deliver product or service (Freidson 1989).
- In the structuring of BE professional work:
  - temporarily collaborate and integrate their knowledge in their delivery of projects (McMurtry, 2013).
  - become interconnected and intertwined as they cannot deliver their functions independently (Abbott :1988; Bordass & Leaman: 2013);
  - Form an ecology of occupations to accomplish the tasks considered to be within their jurisdiction (Janda & Killip: 2010)

- BEPs are a unique product of **division of expert labour** in society (Johnson, 1972: 10).
- The Construction industry does not fully enjoy the benefits of **DoEL**, it suffers from **fragmentation** (Ove Arup, 1975; Alashwal and Abdul-Rahman, 2013; Hoffman and Henn, 2008; Nawi, 2013 Hindle, 1998,2001;2015). *Fragmentation* is caused by:
  - the proliferation of specialists, acting **independently**, with **separate identities** and being **territorially** defensive (Fairclough, 2002).
  - **lack of coordination and integration** which defeats the benefits of specialisation (Alashwal & Abdul-Rahman (2013).
- Fragmentation is not necessarily a problem but rather lack of **integration and coordination** of differentiated professions i.e. specialists (Bresnen & Marshall;2001; Tobin; 2015; Zürn & Faude 2013).
- Effective professional practice is therefore hindered by professionalisation as an institutional process.



# Professionalization problem

- The making of a profession has two key processes to it:
  - the constitution of a field of expertise or **discipline** as a self-contained, autonomous area of knowledge; and
  - A **division of labour**- the establishment and maintenance of the **boundaries** that differentiate the **professions** ( Fournier 2000),
- Professionalisation is a functional differentiation is concerned with two activities:
  - **decomposition of the whole** whereby the stability of a pre-existing entities breaks up into more specialised units; and
  - the **emergence** of recognisable new units which accounts for the existence of the whole” (Buzan & Albert, 2010: 318)
- “**Theory of total design**” (Over Arup;1975)

# Suffering from Specialisation

- Specialisation will always proliferate as external factors, such as technology, penetrate the sector **thus leading to knowledge growth beyond the existing professions** (Abbott, 1988; Hindle, 1988) and render some knowledge requirements obsolete (Gann and Salter 1999).
- Specialisation is characterised by **boundaries** that enable the knowledge areas and the work of the specialists to be identified. Most importantly specialisation is not only the element of differentiation **but also functional relationships between interrelated specialisation**, connected to the production of a common end product (Freidson, 1994:4).
- It is also an element of **identifying complementary elements** so that the **sum of specialists can complete a whole**.

**Fostering a need to redefine division of expert labour to refer to the relationship between the interrelated specialisation.**

# Interdependence

- Though professions are **differentiated**, they are also **inter -dependent** upon each other.
- Interdependence is “the extent to which a task requires organizational units to engage in work flow exchanges of products, information, and/or resources and where actions in one unit affect the actions and work outcomes in another unit” (Thompson, 1967:234)
- The extent of the division of labour is limited by the existence of interdependencies of the differentiated units to create a whole. **In other words the ability of the decomposed units to address the problems previously experienced by the whole is reliant upon the interdependence of the newly formed separately units.**
- However, differentiation creates problems of integration: where they differentiate, units need each other to survive (Allan, 1951).



# Integration and Collaboration?

- Specialisation results in division of activities or function but projects require **inter-professional collaboration and integration of specialists to make a whole** (Axelsson & Bihari Axelsson, 2006).
- Specialization in an ecosystem lead to a fragmentation according to body of knowledge and professional services (Miller & Ahmad, 2000). Central to the construct of interdependence of professions is the problem of coordination
- **Integration** refers to how those specialised roles and work units are linked together to create the goods and services of the BE.
- According to Willumsen *et al* **coordination** is a more structured form of **integration**.
- Following Lawrence and Lorsch (1967), the degree of integration should be related to the level of differentiation of services; a high degree of differentiation requires a high level of integration, and vice versa.

- Specialization and professionalisation in an ecosystem lead to a fragmentation according to body of knowledge and professional services (Miller & Ahmad, 2000).
- Fragmentation and specialisation require inter-professional collaboration and integration to make a whole (Axelsson & Bihari Axelsson, 2006). The specialisation resulting from division of labour results in division of activities or function (i.e., 'differentiation')
- If structural differentiation refers to how the operations of a system are divided into specialised roles and work units, then structural integration refers to how those specialised roles and work units are linked together to create the goods and services of the BE.
- Following Lawrence and Lorsch (1967), the degree of integration should be related to the level of differentiation of services; a high degree of differentiation requires a high level of integration, and vice versa.

THANK YOU

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