

Association of Researchers in Construction

**ARCOM Doctoral Workshop**  
**on**  
**Skills, Training and Development**  
**in the Construction Industry**

School of the Built Environment  
Northumbria University

30 November 2005

Workshop convenor: Dr. Paul Stephenson  
Workshop chairpersons: Dr. Paul Stephenson  
Dr. David Greenwood



# TABLE OF CONTENTS

	<b><u>PAGE</u></b>
<b>Contents</b>	<b>i</b>
<b>Programme for the workshop</b>	<b>ii</b>
<b>An introduction</b>	<b>iii</b>
Recognising the importance of “tacit” skills of the construction worker in a knowledge environment Chaminda Pathirage, Dilanthi Amaratunga and Richard Haigh (University of Salford)	1
Research and development, skills requirements, and achieving excellence in construction Udayangani Kulatunga, Dilanthi Amaratunga and Richard Haigh (University of Salford)	7
Training needs in the management of human resources for knowledge management Anthony Olomolaiye and Charles Egbu (Glasgow Caledonian University)	12
Towards a qualitative career development agenda Joseph G Kappia, Andrew R J Dainty and Andrew D F Price (Loughborough University)	17
The relationship between skills and productivity Mohamed S Abdel-Wahab, Guy Hazelhurst, Andrew Dainty and Stephen Ison (Loughborough University)	28
Skills for community-based action in the process of delivering housing market renewal Rozilah Kasim (University of Salford)	35

## Programme for the workshop

Time	Description	Speaker
0930 – 1000	Arrivals and welcome	Professor David Fleming
<i>Presentation of working papers</i>		<i>Chair: Dr. Paul Stephenson Sheffield Hallam University</i>
1000 – 1025	Skills requirements, research and development in achieving excellence in construction	Udayangani Kulatunga University of Salford
1025 – 1050	Training needs in the management of human resources for knowledge management	Anthony Olomolaiye Glasgow Caledonian University
1050 – 1115	Recognising the importance of tacit knowledge skills of the construction worker in a knowledge environment	Chaminda Pathirage University of Salford
1115 – 1130	<i>Break</i>	
1130 – 1155	The relationship between skills and productivity	Mohamed S Abdel-Wahab CITB/Loughborough University
1155 – 1220	Skills for community-based action in the process of delivering housing market renewal	Rozilah Kasim University of Salford
1220 – 1300	<i>Lunch and networking</i>	
<i>Perspectives from Practitioners and Academic Experts</i>		<i>Chair: Dr. David Greenwood Northumbria University</i>
1300 – 1325	Keynote presentation	Professor Linda Clarke Westminster University
1325 – 1350	Shift towards direct employment: challenges for the future	Hugh Price Sir Robert McAlpine Ltd.
1350 – 1415	Towards a qualitative career development agenda	Joseph Kappia Loughborough University
1415 – 1430	<i>Break</i>	
1430 – 1455	Developments with ConstructionSkills: Skills and productivity observatories	Simon Murray CITB
1455 – 1520	Employer's perspective of skills, training and development	Dave Brown Frank Haslam and Milan Ltd.
1520 – 1535	Skills definition and measurement: challenges from a USA perspective	Dr. Mike Pappas University of Texas at Austin
1535 – 1600	Open Discussion	All participants
1600	Summary and close	

# AN INTRODUCTION

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## CONTEXT OF THE WORKSHOP

The focus for this doctoral workshop is on skills, training and development in the construction industry. Over the last decade, there is increasing emphasis on the issue of skills in the UK construction industry. In part, the skills debate was ignited by the Latham (1994) report, which led to a number of skills reviews (Construction Industry Board, 1998; Clarke and Wall, 1998). Academics and commentators engaging in the skills debate have proposed numerous reasons for the skills shortage, including the employers' lacklustre attitude towards training due to the growth of the self-employed (Winch, 1998) and the failure of the industry to attract young people into the industry (Dainty *et al.*, 2000).

The skills debate has grown significantly in various directions. The knowledge economy (CEC, 2000; known as the Lisbon strategy), for example, resulted in the burgeoning interest in the lifelong learning agenda. Furthermore, the necessity of the knowledge worker has brought the issue of vocational skills training to the fore (see Tomlinson, 2004). Indeed, the threat of vocational skills shortages on the sustainability of UK construction appeared to be mitigated by the influx of migrant labour (RICS, 2005). Still, Dainty *et al.* (2004) questioned industry-level statistics and suggested a need to view the problem at the regional/local level. More recently, regional skills and productivity observatories could potentially serve to steer the industry away from the problem.

The concept of skills development is complex. This workshop brings together doctoral students researching, and practitioners concerned about, this area to contribute to the ongoing debate. The workshop has attracted huge interest not only within the UK, but also from the global community from Australia, Hong Kong and the USA. This proceeding is a compilation of six working papers produced by the doctoral candidates presenting at the workshop, representing current research projects in the UK addressing this core theme.

## THE WORKING PAPERS

The first three papers deal with the broad area of knowledge management. Pathirage, Amaratunga and Haigh (2005), for instance, recognise the rising importance of the knowledge worker and focuses on the shift of the construction industry towards more knowledge-intensive work. Furthermore, Pathirage *et al.* (2005) they identified the essence of tacit knowledge in construction workers and suggested that construction should shed the "reputation for its dominant culture of command and control" to embrace softer Human Resource Management (HRM) models to manage the knowledge worker.

Kulatunga, Amartunga and Haigh reinforces Fairclough's (2002) challenge of demanding greater research and development activities (and opportunities) for construction organisations, reiterating the rhetoric of such activities on innovation and increased competitiveness. In their paper, Kulatunga *et al.* (2005) lamented upon the lack of skilled people to undertake research and development as they considered

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mechanisms to boost the recruitment and retention of researchers for the long-term sustainability of the research base for the UK construction industry.

Olomolaiye and Egbu (2005) explores the link between HRM and knowledge management by investigating the opinions of over 90 senior managers with regards training needs that will enable managers to effectively overcome knowledge sharing barriers. Olomolaiye and Egbu (2005) echoed Pathirage's *et al.* (2005) assertion that the construction industry relies on traditional command and control approach; and by a similar token, Olomolaiye and Egbu (2005) also recommended for a greater awareness of how HRM, especially soft HRM, could contribute to knowledge management.

Shifting the focus away from knowledge management, the latter three papers deal with the notion of skills development in construction. Kappia, Dainty and Price (2005) explored the concept of career development for blue-collar workers. Following a review of career development literature, Kappia *et al.* (2005) describes a qualitative approach to understand what is meant by career development and its associated drivers and impediments for craft labour.

Abdel-Wahab, Hazelhurst, Dainty and Ison (2005) provide a descriptive paper explaining ongoing research within an Engineering Doctorate (EngD) programme. The research is a collaborative programme with the Construction Industry Training Board (CITB) in the UK aimed at investigating the relationship between skills and productivity. Abdel-Wahab *et al.* (2005) recognise the difficulties with productivity measurement and skills definition as they report on how current work at the CITB could address these challenges.

Finally, Kasim (2005) introduces the contemporary initiative of Housing Market Renewals (HMR) in the UK to support efforts in regenerating urban areas. Through a single case study of HMR in the Northwest of England, Kasim (2005) found that HMR could potentially be hampered by a lack of skills, both in terms of hard, technical skills specific to HMR and softer, more generic people and community-based skills.

## **SYNTHESIS**

From the working papers compiled in this proceeding, a number of cross-cutting themes have emerged. The papers appear to highlight the importance of HRM in not only addressing the issues of skills, training and development in the construction industry, but also the role of HRM in securing the long-term future of the sector. Unquestionably, the papers presented various perspectives on the concept of skills thereby emphasising the challenge of skills definition (Abdel-Wahab *et al.*, 2005). Nonetheless, consensus is reached on two fronts. First, there is a recognition that the construction industry must move away from traditional, hard HRM models of "command and control" (Pathirage *et al.*, 2005; Olomolaiye and Egbu, 2005). Indeed a shift towards softer HRM (e.g. integrated teamworking) is also necessary if we want to recruit and retain high quality graduates and postgraduates to undertake research and development in the industry (Udayangani *et al.*, 2005). Second, the papers also allude to the significance of more generic, softer skills needed deliver improved performance (Kasim, 2005). Finally, the importance of vocational skills development should not be missed, as Kappia *et al.* (2005) remind us of the value of career development for craft labour.

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# RECOGNISING THE IMPORTANCE OF “TACIT” SKILLS OF THE CONSTRUCTION WORKER IN A KNOWLEDGE ENVIRONMENT

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Construction knowledge workers and their tacit knowledge skills in particular are still considered to be relatively unexplored. Hence, proper understanding and management of this resource is of immense importance for better performance of the industry as a whole. The paper stresses the value of the knowledge worker and their tacit knowledge skills in construction and highlights the importance of skills, training and development of construction workers. Selecting right human resource policies and ensuring knowledge supportive culture are highlighted as two dimensions in construction knowledge worker development. This paper argues that this provides a valid basis to embrace the concept of knowledge worker and the importance of tacit knowledge skills at all levels within construction organisations.

**Keywords:** construction industry, knowledge worker, tacit knowledge skills

## INTRODUCTION

As highlighted through a number of government and academic reports (Latham, 1994; Egan, 1998; Fairclough, 2002), the construction industry is a sector of the economy which faces many challenges, especially in terms of performance. Yet, with the shift of businesses from an asset-centric to a knowledge-centric environment, it is increasingly being acknowledged that Knowledge Management (KM) can bring about the much needed innovation and improved performance the construction industry requires (Webb, 1998; Egbu *et al.*, 1999, Carrillo *et al.*, 2000; Kamara *et al.*, 2003). Against this background of the knowledge economy, what people do with their knowledge, termed as tacit knowledge, is considered to be the real driver for the performance of the industry. Therefore, as a labour-intensive industry, the construction worker and their tacit knowledge has become more relevant to sustaining business performance than traditional physical capital (Drucker, 1992; Scarbrough & Swan, 1999), and is considered as a critical factor in determining a construction organisation's ability to remain competitive.

The importance of the construction worker and their tacit knowledge is highlighted through the industry's reliance on skills and the capacity to bring different skills together effectively (Drucker & White, 1996). Accordingly, the concept of the knowledge worker has long been important to construction organisations (Green *et al.*, 2004). Further, due to the intrinsic characteristics of the industry, construction employs an extremely diverse range of people from a wide range of occupational cultures and backgrounds, including unskilled people, managerial and professional positions, and carries the challenge in managing people effectively to ensure

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organisational success. In this context and in order for the Construction Industry (CI) to achieve best value, there is an emerging importance placed on effectively developing the knowledge worker and their tacit knowledge skill base. Accordingly, this paper aims to explore the importance of managing and developing the construction knowledge worker and their skill base in view of enhancing the performance of construction organisations.

## **KNOWLEDGE WORKER IN CONSTRUCTION**

It is argued (Robinson *et al.*, 2001; Egbu & Robinson, 2005) that the CI, although known for its highly tangible products such as buildings and other structures, is increasingly now recognised as a provider of services, placing more emphasis on knowledge. Hence, CI has already entered to a knowledge economy where it is perceived as one of the knowledge based value creating sectors of the economy. Moreover, people are known to be the key to success in a knowledge economy, whom termed as knowledge workers. There are a wide range of professionals involved in CI, working as an inter-disciplinary team in delivering the construction products. People are recognised as possessing knowledge, skills and know-how, having the ability to create knowledge and value, and collectively retaining organisational memory. What people do with their knowledge is the real driver for competitive advantage in the knowledge economy (Quintas, 2005). As highlighted by the UK Government's Competitiveness White Paper (DTI, 1998), one of the two distinct tasks envisaged for organisations within the knowledge driven economy is to encourage and support employees in developing their skills and qualifications on a continuous basis. The UK CI employed 19,130 workers per £1 billion output (total of 1,599,000 workers) in 2003 (Green *et al.*, 2004), hence considered to be one of the labour intensive sectors of the economy. People are an organisation's most valuable asset and this is especially true in relatively low-tech, labour intensive industries such as construction (Green *et al.*, 2004).

The rediscovery of the importance of employees' knowledge coincided also with a popularisation of the idea of the 'knowledge worker'. The importance of the construction worker is highlighted by the fact that industry relies on skill and on the capacity to bring different skills together effectively (Druker & White, 1996), thereby the concept of the knowledge worker has long been important to construction organisations (Green *et al.*, 2004). In recent years, with the growth of the service sector, this emphasis placed on the construction knowledge worker has gradually increased. Further, construction employs extremely diverse range of people from a wide range of occupational cultures and backgrounds, including people in unskilled, craft, managerial and professional positions, challenging to manage knowledge worker effectively to ensure organisational success. Much of this individual knowledge is unknown to others and unmapped and unrecorded. As Sheehan *et al.* (2005) asserts in construction,

“Some 80% of the useful knowledge is tacit and cannot be written down”.

The CI is characterised by a wealth of experiential knowledge, yet employees retire or leave the organisation, potentially taking tacit knowledge and a potential source of competitive advantage with them.

As Rezgui (2001) cited, there are few key reasons that limit current approaches of KM in the CI. Among the key factors for these limitations are:

- Much construction knowledge, by necessity, resides in the minds of the individual working within the domain.
- The intent behind the decisions is often not recorded or documented.
- The individuals who have knowledge about the project are likely to leave for another project at the end of the construction stage; hence their input is not captured.

All these three limitations indicate the direct correlation with the human factor in the CI and stress the importance of the concept of knowledge worker which has long been central to CI performance. Further, both Sheehan *et al.* (2005) and Rezgui (2001) stress the point that much knowledge possessed by knowledge workers being tacit in nature particularly in CI. Accordingly, the following section outlines the nature and the importance of the tacit knowledge skills and its presence in construction as a knowledge based industry.

## **TACIT KNOWLEDGE & ITS IMPORTANCE IN CONSTRUCTION**

Within the last few decades, there has been an increasing interest in the tacit dimension of knowledge, which is perhaps hardest to manage, as it cannot be formally communicated and is often embedded within human beings. As Herrgard (2000) suggests, tacit knowledge is obtained by internal individual processes like experience, reflection, internalisation or individual talents. While highlighting the importance of tacit knowledge, Tiwana (2000) defines it as know-how that is stored in people's heads which is personal, acquired mainly through education, training and experience. In a similar sense, Saint-Onge (1996) describes tacit knowledge as an individual's intuition, beliefs, assumptions and values, formed as a result of experience. It is from these beliefs and assumptions, which make up an individual mindset that decisions are made and patterns of behaviour developed. Thereby, in working life one can easily find many examples of tacit knowledge such as intuition, rule-of-thumb, gut feeling and personal skills, all based on individual experiences.

Within construction, the type of knowledge varies considerably, yet gains increase concern on tacit knowledge as a labour intensive industry. In the context of construction, examples of tacit knowledge skills include estimating and tendering skills acquired over time through hands-on experience of preparing bids, understanding the construction process, interaction with clients/ customers and project team members in the construction supply chain, as well as understanding tender markets (Egbu & Robinson, 2005). Tacit knowledge of the workers has been clearly highlighted in many research carried out in the CI. A research carried out within structural design firms (Al-Ghassani, 2003) showed that about 80% of knowledge used during concept design stage is tacit compared to about 20% of explicit knowledge. Specially, Engineers, Architects and other professionals within the CI are not in a position to 'cut and paste' best practice (Kamara *et al.*, 2003) from the past due to the unique and the complex nature of the construction projects. They have to draw on the past to find solutions for the future. Tacit skills evolve from these shared practices and experience which need to be developed and managed for the project and the organisational success. As such, developing and managing tacit skills more effectively offers construction organisations a possible mechanism for improving their performance in times of greater competition.

As Grant (1996) asserts, the source of competitive advantage in dynamic environments is not knowledge that is proprietary to the organisation, because the value of such knowledge erodes quickly due to obsolescence and imitation. Rather, sustained superior performance is determined by non-proprietary knowledge in the form of tacit individual knowledge. Tacit knowledge can form the basis of competitive advantage because it is both unique and relatively immobile. Yet, because that knowledge is possessed by individuals and not the organisation, a critical element of sustained competitive advantage is the ability to integrate the specialised and tacit skills of the individuals. As such, this highlights the importance of tacit knowledge towards organisational performance when developed and managed properly. Having established the importance of the knowledge worker, tacit skills and its relationship to the performance, succeeding section discusses development and the management of knowledge worker and their tacit knowledge.

## **DISCUSSION**

As Harman and Brelade (2000) contended, KM to be effective, must encapsulate the idea that it is through the acquisition of knowledge by individuals and their willingness to apply their knowledge for the benefit of the organisation that competitive advantage is achieved. Davenport (1998) further highlights this issue by asserting “the most dramatic improvements in KM capability in the next ten years will be human and managerial”. Invariably, the management of tacit knowledge is intrinsically linked to the development of people (Egbu *et al.*, 2001) and to the processes that facilitate knowledge generation, distribution and sharing between related individuals and workgroups. This stresses two aspects or dimensions in tacit knowledge management:

- Developing people or the knowledge workers with the right human resource policies
- Ensuring knowledge supportive and conducive environment or culture within the organisation

An increasing number of individuals do work which is knowledge based and the concept of knowledge worker needs to embrace these individuals who can be found at the all levels within organisations. A major aspect of managing tacit knowledge in a knowledge-based economy is giving to knowledge worker the power that arises from the ability to solve the critical contingencies facing the organisation. It means that knowledge worker will increasingly be able to determine that they are developed and managed in ways acceptable to them. This highlights the necessity of managing knowledge worker with flexible, employee centred approaches based on consensual models (Harman and Brelade, 2000). Yet, Construction as an industry which has a reputation for its dominant culture of command and controls consistently emphasises and correlates with the hard model of human resource management. Also the culture of subcontracting and self employment marginalises the importance of people management and thereby reflects and reinforces the dominant industry receipt of hard human resource management. As such it is an urgent matter for the CI to move towards the softer approach based teamwork from hard model of human resource management to enhance the collective efforts. Further, the ignorance of the knowledge worker and their skills within the construction context has contributed to a great extent for the under performance of the industry as lamented by many authors. As Egan (1998) asserted;

“...much of construction does not yet recognise that its people are its greatest asset and treat them as such. Too much talent is simply wasted, particularly through failure to recognise the significant contribution ..... We understand the difficulties posed by the fragmented structure of the industry, but construction cannot afford not to get the best from the people .....” (para 17: p14).

As contended by Nesan & Holt (1999), the issue of the critical role that employees play in fostering an effective construction business has often been overlooked. According to Cooke-Davies (2001: 185), “*it is people who deliver the projects and not processes and systems*”, which gains increased validity in the context of construction, as a labour intensive industry.

As the second dimension, the KM environment needs to reinforce the acquisition, use and sharing of individual tacit knowledge. Therefore, significant effort should be directed towards exploiting non-IT techniques such as communities of practice to facilitate person-to-person and person-to-organisation interactions (Robinson *et al.*, 2001). Communities of practice within which individuals share common work experiences and problem agendas provide a social context within which knowledge may be created and effectively shared. Several authors (for Eg, Augier and Vendelo, 1999; Koskinen, 2003), have repeatedly highlighted the importance of interaction, integration and involvement of knowledge workers through social networking within an organisation. Social interaction of employees cultivates a knowledge sharing culture based on shared interest, thus encouraging continuous knowledge generation through the evolution of a community of practice. This will involve an understanding of individuals and teams and a willingness to be open to new ideas and personal development. As such managing tacit knowledge in a knowledge environment, corporately through human resource policies and procedures will be judged by its ability to develop knowledge workers to enable them to apply their knowledge for the benefit of the organisation.

## CONCLUSIONS

The construction is a knowledge based industry, where knowledge has become the driving force to bring critical competitive advantage. For the CI to perform successfully with the challenges of the knowledge economy it has to embrace the concept of knowledge worker and a knowledge culture at all levels within organisations. The paper stressed the importance of knowledge worker and their tacit knowledge skills in construction, examined the development and management of knowledge worker. This provides a valid basis for more empirical studies centred on knowledge worker and their tacit skills in the CI.

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# RESEARCH AND DEVELOPMENT, SKILLS REQUIREMENTS, AND ACHIEVING EXCELLENCE IN CONSTRUCTION

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The contribution from R&D to the development of the construction industry is immense as it leads the path to enhance the effectiveness of construction organisations and to raise the international competitiveness through technological advances and managerial developments. Further, R&D acts as a valuable input for the construction organisation by developing new products, materials, advanced construction processes, to meet the customer requirements and to address the economic, environmental and resource constraints. One of the essential inputs for successful R&D has been identified as skilled personnel. However, lack of skilled people particularly graduates and post graduates in the construction industry have led to a skills shortage to develop R&D activities. Further, lack of skilled people in construction organisations has resulted in reducing the absorption capacity and thereby the outcomes of R&D activities are not properly absorbed and put into practice. Therefore, skills shortage in the construction industry has been seen as the greatest threat to the long-term stability of the UK research base. Accordingly, the aim of this presentation is to visit the reasons behind the skills shortage in R&D organisations. Further, it will review the factors that can be contributed to success of the R&D personals and to identify the ways of managing them for the future advantage of the organisation.

**Keywords:** recruitment and retention, research and development, skilled people

## WHY R&D IS IMPORTANT TO THE CONSTRUCTION INDUSTRY

The built environment should be accessible and comfortable for all, durably enjoyable, efficient and flexible to changing demands, and available and affordable (European construction platform, 2005). According to Fairclough (2002), the construction processes, desirability, cost, sustainability and utility of finished products have an effect on the quality of life of the general public. Therefore, Fairclough (2002, p30) argues that the “Construction industry has a key role to play in society in providing a better built environment”.

The challenges placed upon construction industry are forcing the industry to change its traditional approaches to design, construction, refurbishment, and maintenance (Fairclough, 2002). These challenges are setting new targets and creating new scope for designers, engineers, manufacturers, contractors, technologist, and researchers (Fairclough, 2002). Further, these challenges demands innovation and effective research and development (R&D) activities for construction organisations to compete in the market and to meet the social needs (Laing, 2001). At the same time the

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industry is under tremendous pressure both internally and externally to re-examine its activities and to improve its performance and reach the excellence standards (Anumba *et al.*, 2000). Accordingly, the following section describes the role of R&D in achieving the construction excellence.

## **ROLE OF R&D IN ACHIEVING EXCELLENCE IN CONSTRUCTION**

### **EXCELLENCE IN CONSTRUCTION**

According to Oakland (2002) business excellence is “achieving world-class performance’. There are different ways and means of achieving the “world class performance” or the “excellence”. The main themes behind the construction excellence can be summarised as follows (European construction platform, 2005; OGC, 2003, Fairclough, 2002; Respect for people working group, 2002; DCMS, 2000; Egan, 1998, Latham, 1994):

- Better value for money;
- Client satisfaction;
- Comfortable, healthier and safer environment;
- Respect for the people asset and skills development of the construction work force;
- Deliver quality products, services and facilities;
- Efficient and effective construction processes;
- Improved project performance, and;
- Meeting the sustainable goals.

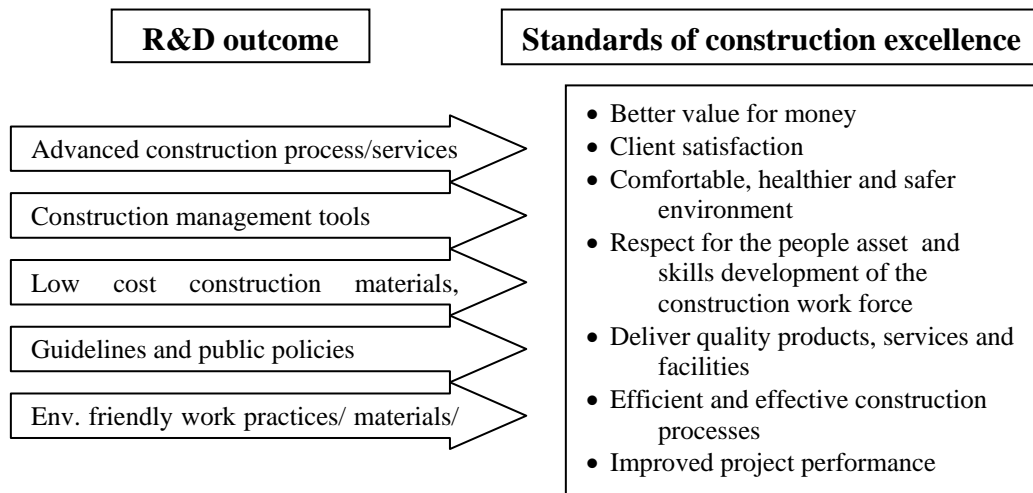
### **ROLE OF R&D AND CONSTRUCTION EXCELLENCE**

Construction research varies from highly technical studies of properties of materials to “soft” research such as management relationships (Courtney, 1999). According to Fairclough (2002), construction research takes two forms; to develop new products and processes and to provide the capabilities needed to absorb lessons and ideas from elsewhere. By evaluating the requirement and various categorisations of construction R&D, the outcome can be divided into the followings (DTI, 2004; Hampson and Brandon, 2004; Fairclough, 2002; Fraser and Fraser, 2001; Courtney, 1999):

- Development of advanced construction processes and services;
- Development of construction planning and management tools;
- Development of low cost construction materials, products;
- Development of environmental friendly work practices and construction materials and products, and;
- Development of guidelines and public policies.

The above outcomes of R&D activities able to deliver quality and environmental friendly products and services via incorporating improved construction processes, materials, and products. Further, such developments will address the aspirations and needs of the construction stakeholders and provide a better built environment. Accordingly, the construction excellence standards will be properly met by effective R&D activities as shown in Figure 1.





**Figure 1:** Evaluation of R&D outcome against the construction excellence standards

The above section highlighted the importance of R&D in achieving the construction excellence standards. Is the construction R&D equipped with the necessary resources to bring about the excellence in construction? The section below will look into this matter with particular reference to the availability of human resources within the construction research base.

### **DOES THE CONSTRUCTION RESEARCH BASE HAVE CAPABLE R&D PROFESSIONALS? ARE THE NUMBERS SUFFICIENT ENOUGH?**

In construction, to get involved in high quality research, organisations require resources such as necessary equipment, adequate funding and skilled individuals (Seaden, 2002). Among these resources, Roberts (2002) state that success of R&D is highly dependent upon the availability and talent of scientists and engineers. Accordingly Fairclough (2002) raised several questions:

“Is the construction research base in a fit state to tackle the most critical issues of the 21<sup>st</sup> century? Does it have the right people, the right organisation, the right vision? Does it have the right skills?” (Fairclough, 2002, p.17).

These are some key issues which the construction industry has to answer.

Lack of skilled people particularly graduates and post graduates in the construction industry have lead to a skills shortage in supporting R&D activities (Fairclough, 2002). Lack of skilled people in construction organisations has further resulted in reducing the absorption capacity and thereby the outcomes of R&D activities are not properly absorbed and put into practice. Fairclough (2002) states that the supply of professional skills does not match with the demand which requires to facilitate and maintain a healthier built environment. This skills shortage in the construction industry has been seen as the greatest threat to the long-term stability of the UK research base.

One of the main reasons behind the skills shortage in the construction research base as well as in the construction industry as whole can be considered as lack of respect for the people factor (Respect for people working group, 2002). According to Egan (1998) “construction does not yet recognise that its people are the greatest asset and treat them as such”. The negative attitude and lack of respect has failed to recruit and

retain the talented personnel to the construction organisations (Respect for people working group, 2002).

The above section revealed that the UK construction research base is suffering with a skills shortage negatively affecting the R&D activities. The below section will look into the measures which the construction industry can adhere, in terms of attracting and retaining higher calibre employees to its research base.

## **HOW COULD CONSTRUCTION RESEARCH BASE ATTRACT AND RETAIN RESEARCHERS?**

It has been identified that construction research takes time to provide benefits. Thus, project by project recruitment of researchers hinders the development of in depth research skills. Further such recruitments affect the job security of the employees. Therefore, it is essential to provide longer term focus and ensure more certainty of employment for those who engage in R&D activities (Fairclough, 2002).

The career development plans for R&D employees should be flexible enough to accommodate the expectations and changes encounter at different stages of their careers (Chen *et al.*, 2004). For instance, at the “exploration” stage, a researcher would expect to settle down to a stable professional field where as at the “establishment” stage, the employees are ambitious, keen to improve their knowledge. During the “maintenance” stage, they have gained experience and considerable amount of knowledge and looking forward to direct the subordinates. Failing to address these different needs would result negatively in attracting and retaining R&D employees to construction organisations (Chen *et al.*, 2004).

Since scientists and engineers are with high demand right across the economy and employers, competitive conditions of employment should be offered to attract them (Roberts, 2002). Accordingly, the employers should improve the attractiveness of the jobs they offer, by providing attractive starting salary packages and by providing competitive salary progressions (Roberts, 2002). Moreover, providing opportunities for career development of R&D personnel via facilitating time and resources to engage in higher education will motivate the employee as well as give an opportunity to stay in line with the subject matter (Roberts, 2002). Further, to attract and retain the R&D employees, organisations can show clear career development plans and has to provide adequate training and development to enhance the professional skills.

Fairclough (2002) suggest several ways to meet the skills shortage in the UK research base:

- By providing excitement for researchers by defining programmes of work in terms of quality of life issues and sustainability, rather than traditional narrow construction and engineering problems;
- Encourage centres of excellence, and provide certainty of work in longer term programmes to allow research centres to plan manpower and resources;
- Demand more people interchange between industry and academe;
- Help to facilitate the development of a high profile generalist construction qualification which will attract the best young talent interested in a career in construction.

## CONCLUSIONS

Along the way towards achieving a better built environment and excellence standards in the industry, R&D plays a significant role acting as a driver for innovation to develop advanced construction products, processes etc. However, a shortage of skilled people has been identified as one of the main barriers towards delivering effective and efficient R&D activities. This presentation discusses the way to attract and retain higher calibre researchers to the industry's research base. Providing clear career development plans, attractive and competitive salary scales, opportunities for higher education, providing challenging roles, adequate training, and development have been identified as some of the important ways of attracting and retaining talented people to the construction research base.

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# TRAINING NEEDS IN THE MANAGEMENT OF HUMAN RESOURCES FOR KNOWLEDGE MANAGEMENT

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Knowledge management (KM) has already become an indispensable tool in many industries and construction is gradually catching up. But the construction industry, it has been noted, is seemingly hostile to knowledge sharing and there is a need to develop the skills of line managers on how to motivate their subordinates to participate in knowledge sharing initiatives so as to improve organisational performance. The extent to which organisations will be willing to co-operate in this process is likely to depend a great deal on the nature of human resource management (HRM) practices available within the organisation. This paper details the results of a research project, which canvassed the opinions of over 90 managers, both at the strategic and tactical levels, within the construction industry. Postal questionnaires were used to elicit the opinions of Directors, Managers and HR experts on the training needs that will enable managers to effectively overcome knowledge sharing barriers in their organisations. The result shows that the current level of awareness of HRM contributions to KM is very low and managers need to be trained in order to improve their understanding of how HRM contributes to KM for organisational performance improvements. This paper also sheds some light on key managerial preferences that should be considered in designing training events for managers. The paper aims to contribute to an approach which can deepen the understanding of managers that any organisation that wants to continue enjoying the competitive edge through their know-how would be increasingly dependent on the workers who supply such know-how. Some of the training needs are the development of knowledge sharing culture, trust building and gaining employees' commitment towards knowledge sharing. These should assist in making the combined knowledge and experience of an organisation accessible to employees, who are responsible for using it prudently for the good of the organisation.

**Keywords:** human resource management, knowledge management, knowledge sharing, training

## INTRODUCTION

Knowledge Management (KM) is enjoying a boom as the latest management panacea for organisational effectiveness, sustenance and source of competitive advantage (Hlupic *et al.*, 2002). Effective KM ensures people with needs can find people who can meet those needs within the organisation (Gourlay, 2001). These knowledgeable people have untapped pools of knowledge, know-how and best practices, which most organisations, especially construction organisations, have thus failed to employ or even recognise (Ahmed *et al.*, 2002).

It could be argued that the critical analysis of KM influence in the construction industry has at best been superficial, and at worst non-existent. In particular, the interplay between KM and human resource management (HRM) is yet to be fully

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investigated. Storey and Quintas (2001) suggest that for KM to be effective, employees must be willing to share their knowledge and expertise. The key challenge to KM is changing the attitudes of managers towards knowledge sharing (Lin and Lee, 2004).

This is because in the knowledge-economy, employees would need to be managed differently and managers cannot rely on the traditional, “command and control” approach, which is based on scientific management approach that the role of managers is to “think” and employees must “do” (Taylor, 1911). Rather the manager must utilise the employees’ knowledge, gaining their involvement in not only “how” but “what” must be done (Storey, 2001). However, if the manager is to become the facilitator of the team’s knowledge-sharing capacity, then this change in the manager’s role will also impact on his/her individual training needs.

## **MANAGEMENT AND TRAINING NEEDS FOR KNOWLEDGE SHARING**

The lack of awareness concerning the links between KM and HRM, as evidenced in extant literature, is surprising given the often discussed importance of employees in KM. Construction organisations rely on their employees to transform information into knowledge. Indeed, there is the possibility that employees might not wholesomely accept any knowledge sharing initiative if the culture of the organisation is hostile to knowledge sharing.

Increasing the level of managerial awareness of HRM contributions to knowledge sharing by providing training for managers is one of the most important interventions to nurture the organisational culture that is conducive to knowledge sharing (Hwang, 2003). This is because senior managers are in a strong position, due to their autonomy, prestige and power, to promote knowledge sharing mechanisms in business environments and cultures. Ulrich *et al.* (1993) are of the opinion that training managers can also contribute towards improving the necessary HRM critical skills needed in responding to competitive challenges such as developing systematic knowledge sharing within the organisation.

But there is little evidence of construction organisations providing formal training to their managers in understanding the role of HRM in facilitating successful KM outcome. This lack of training and development is a negative factor influencing effective knowledge sharing within many organisations. Evidence from the literature suggests that management training is particularly pertinent to organisational performance and survival. The content of such training would normally be within a systematic training approach that identifies training needs and develops appropriate human resource development (HRD) strategies. If management training needs are not correctly analysed, the implementation of any training strategy is bound to fail or be of little impact in the training episode.

## **METHODOLOGY**

A postal questionnaire was used to ascertain from respondents; their degree of agreement on the level of management training needs necessary for understanding the impact of people’s issues in KM on organisational performance, using a four-point Likert scale (with 4 = very high impact, to 1 = no impact). Keeping the number of response options as small as possible allows the respondents to make a useful choice from among the listed informative answers (Scheaffer *et al.*, 1996). The

questionnaires were mailed to the population of 1000 managers of 580 UK construction organisations. Managerial-level employees were selected because they were likely to be familiar with multiple aspects of their organisations.

The findings of the questionnaire were then analysed using SPSS version 13.0. One hundred useable responses were received (a response rate of 10%). Whilst this is a fairly low response, it was considered adequate considering the very detailed nature of the questionnaire and it provided a comparatively large and reasonable survey sample. The data obtained also allowed targeted research objectives to be met.

While all the respondents agreed that managers should be trained to understand the contributions of HRM to KM, only two (2.06%) of the managers (see Table 1) have attended management courses directly geared towards improving their understanding of HRM contributions to KM within the last two years.

**Table 1:** Attendance of management training courses on HRM’s Contributions to KM

	<b>Frequency of response</b>	<b>Valid %</b>
None	95	97.94
1 – 2	2	2.06

Two (2%) managers stated that their organisations have attempted (though unsuccessfully) to measure how HR issues, associated with KM, contributes to organisational process improvement (see Table 2).

**Table 2:** Measurement of HRM’s contribution to KM

	<b>Frequency of response</b>	<b>Valid %</b>
Yes	98	99.0
No	2	2.0

There is general consensus among all the respondents that evaluating how HR issues associated with KM contribute to organisational process improvement is an area which they found the greatest challenge. The implication of this is that there is a need for formal training programmes in this particular area.

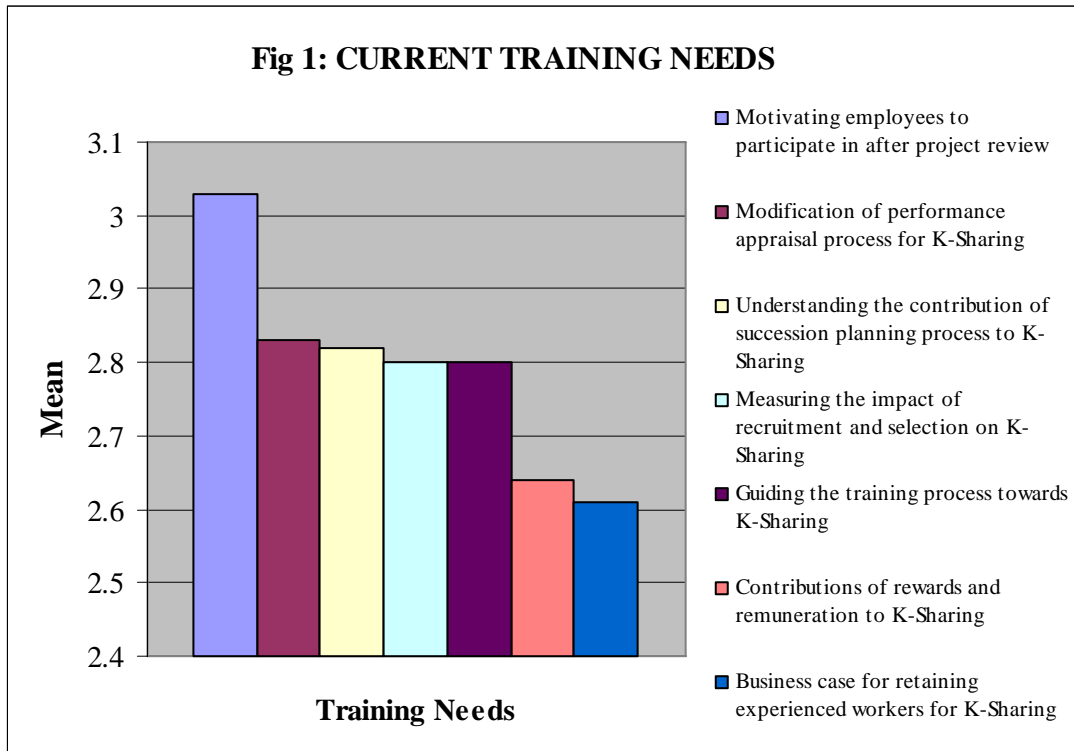
The seven top management training needs are presented in Figure 1 in decreasing order of importance. Motivating employees to participate in after project review is ranked highest in terms of need for training. For most organisations, lessons learned in previous projects are lost because completed projects are sometimes not reviewed. This partly due to the nature of the industry which uses both core and peripheral workers, and moves to new projects immediately one project is completed. It could be argued that it is not that employees do not want to participate in this process but organisational pressure couple with ‘blame’ culture of the organisation can prevent employees from participating in after project review.

Performance appraisal and succession planning for knowledge sharing were ranked second and third respectively. Recruiting and selecting candidates, who are willing to share knowledge, were ranked fourth. The training programme also received high weighting by managers.

Rather surprisingly, the contributions of rewards and remuneration to knowledge sharing improvements received low rating. The literature indicated that employees needed to be appropriately rewarded for participating in any knowledge sharing

activities. Such reward should not only be monetary but it should include recognition – promotion and praise.

Although making business case for knowledge sharing has been considered as an important skill for knowledge sharing, the need for training in this area is a low order need when compared to performance appraisal. It might be important for managers to justify, both in terms of cost and meeting organisational needs, the reasons for retaining a highly skilled and knowledgeable worker in a turbulent business environment like the construction industry.



**MANAGEMENT TRAINING PREFERENCES**

There is also a need to explore the preferences of managers on the delivery and methods of management training geared towards improving the understanding of managers of the contributions of HRM to KM for organisational performance improvements. The identification of these preferences should assist in providing suitable courses for managers.

Table 3 shows the results of the cross-tabulation of responses from participants in the questionnaire survey on their preferences concerning training provider, duration of course, time of year and place of training

The cross-tabulations of responses show that seventy-five (75.8%) managers would rather attend in-house training courses to external course, most especially during winter for the duration of one day and the training should be provided by their professional associations. In-house courses, whether the training staff used is from within the organisation or external sources, are deemed cheaper than external courses and can be geared towards meeting unique organisational needs.

**Table 3:** Managerial preference on methods and delivery of training

<b>S/No</b>	<b>Preference Assessment</b>	<b>N</b>	<b>Percent</b>
	Professional Associations * 1 Day * Winter * In-House	75	75.80%
	Professional Associations * 1 Day * Autumn * In-House	74	74.70%
	Management Consultants * 1 Day * Winter * In-House	74	74.70%
	Management Consultants * 1 Day * Autumn * In-House	74	74.70%
	Further Education Colleges * 1 Day * Winter * In-House	74	74.70%

The preference for the winter period, against summer and spring, as time to attend training programme could be due to the fact that many managers take their annual holidays during the spring and summer.

The data analysis also shows that manager, due to their workload which does not allow them to be away from work more than absolutely necessary, prefer shorter courses to longer courses. The analysis of data shows that three-quarter of the respondents prefer one-day training. It is doubtful if such short duration would allow managers to receive the 'optimum' amount of training needed.

The preference for professional association as a training provider can be attributed to efforts by managers to earn continuing professional development (CPD) points.

## CONCLUSIONS

KM activities can produce tangible results and improve performance but the major problem is how managers could convince, coerce, direct or otherwise get employees within construction organisations to share their knowledge. This might create different demands on managers' existing skills, thereby requiring new training for managers. There is little evidence of construction organisations providing formal training to their managers in understanding the role of HRM in facilitating successful KM outcome. This lack of training and development is a negative factor influencing effective knowledge sharing within many organisations. The content of such training would normally be within a systematic training approach that identifies training needs and develops appropriate human resource development (HRD) strategies. The management training needs identified how managers can motivate employees to participate in after project review, appraise employees' participation in knowledge sharing and how managers can successfully recruit candidates with positive attitudes towards knowledge sharing. Other management training needs are the understanding of the contributions of rewards and remuneration to knowledge sharing improvements and how to make business case for knowledge sharing. The managers indicated that they would prefer to attend such training courses in-house, during winter for the duration of one day and the training should be provided by their professional associations. The preference for professional association as a training provider can be attributed to efforts by managers to earn continuing professional development (CPD) points. The next steps in this research is designing and evaluating the training programme.



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# TOWARDS A QUALITATIVE CAREER DEVELOPMENT AGENDA

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Of the research of the trade and craft population to date, the greater part has utilised quantitative methods. This contributes to documenting trade and craft processes and behaviour patterns rather than explaining what contributes towards it. Current thought is that the concepts of careers and career development amongst craft workers could be better investigated using more qualitative methods. This paper describes an ongoing qualitative study which aims to discover how trade and craft careers unfold developmentally. A rationale is presented for the utilisation of qualitative methods, a research design is developed and an outline of preliminary findings is presented.

**Keywords:** Careers, Career Development, Trade and Craft Operatives, Qualitative Methodology

## INTRODUCTION

Aside from the products of the construction world (built assets), the most visible aspect of the industry is often its trade and craft population. Several authors consider people as instrumental to project delivery, rather than systems and processes (Lechler, 1998; 2000; Cooke-Davies, 2002). Hence by focussing on the career needs of its people the construction industry may fulfil the dual purpose of enhancing productivity and retaining its key employees. However the blue collar career perspective is very rarely acknowledged (Leibowitz *et al.*, 1992; McDonald *et al.*, 2002; Milman, 2003), indeed it is questioned whether organisations subscribe to the belief that blue collar employees have or even want “careers” (Thomas, 1989; Loscocco, 1990). This pathology is considered true in the field of construction management were in practice there is an over-reliance on financial incentive programs to the detriment of career orientated initiatives (Olomolaiye *et al.*, 1998); compounded by the fact that the majority of research devoted to career development has focused on professional and managerial employees (Kappia *et al.*, 2003; 2004).

## AIMS

The principle aim of this paper is to recommend a methodological approach for investigating the work related perspective of trade and craft workers. The contribution and value of the research will be to offer an understanding of the context in which trade and craft careers emerge, and to highlight areas of potential improvement in terms of career development policy. A synopsis of the literature is presented; the data gathering technique is outlined; and preliminary findings of the work in progress are introduced.

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## **THEORETICAL PERSPECTIVES**

In broad terms “Careers” are often taken as comprising three components: i) the individual ii) the employer and iii) inter-play of both (Parsons, 1909), which Baldwin (1992) would refer to as a relational schematic involving the cognitive processing of social information. Underlying the notion of the career is the assumption of upward directionality (Jennings, 1971; Hall, 1986; Arnold, 1997; Arnold *et al.*, 1998); this fundamentally imbues the early/traditional theories of career development (cf. Super, 1957). However assumptions are made that labour markets are perfect (Wright 1981) and rational systems reward vertical career mobility equally (Thomas, 1988). In reality, career development and progression often require significant changes in qualification, labour market position and/or organisation (Arnold, 1997; Arnold *et al.*, 1998). As well as choice and individual effort, opportunity guides progression (Gottfredson and Becker; 1981), while economic history, social class, organisational structures, and labour market segmentation often serve jointly to limit such opportunities (Thomas, 1988; DeSimone *et al.*, 2002). Blue collar workers often find themselves on negative opportunity strata (Leibowitz *et al.*, 1992; McDonald *et al.*, 2002).

## **CONTEXTUAL SALIENCE**

This scenario is reflected within the construction sector, where fragmentation perpetuates inadequate commitment to the component parts of career development, that of education and training. This becomes challenging as Schein (1978) claimed that career development programs can have an increased bearing on corporate and personal productivity, creativity, and long-term employee tenure. Comparatively Schein suggests career development programs that fail to satisfy the needs of the required group will ultimately reduce productivity and the level of identification the employee has with their employer, ultimately leading to turnover. The link to experiences in the construction sector is compelling. A militating factor threatening the well-rehearsed performance improvement challenges (cf. Latham, 1994) are: high attrition rates of both new recruits and qualified craft professionals; 40 per cent of trainees leave education before completion of a professional trade standard (CITB, 2004a; 2004b); with some regions reporting attrition rates as high as 50 per cent (Mackenzie *et al.*, 2000). Further reports proclaim 20 per cent of plumbers; 25 per cent of those qualified in wood trades and approximately 50 per cent of electricians work outside the construction industry (Ruiz, 2003). With competition for key skilled and un-skilled personnel being high across all industrial sectors, career development emerges as one of the most critical workforce issues. Attaining a greater understanding of the careers of trade and craft workers will serve to inform the industry’s career development policy. In doing so it is possible to enhance the productivity of workers and reduce attrition rates. The challenge is to apply research that is fit for this purpose.

## **IDENTIFYING AN APPROPRIATE METHODOLOGY**

The parameters of choice for the methodology where that it:

- allowed participants to be examined within their social context;
- allowed the researcher to get close to the population;
- allowed for unique sensitivities to be observed;

- facilitated understanding of the holistic nature of the population;
- allowed for any patterns of chronological behaviour to be observed;
- allowed participants to express critical, historical and interpretative thinking;
- allowed for the sampling of emotions towards career in the sector; and
- allowed for the unique dynamics of the industry to be observed.

In essence it was the “how and why” of industry, organisational and individual action that needed to be observed. From a review of the literature it was observed that these conditions could be met through the adoption of a qualitative research design. While there are many various techniques associated with this research paradigm, they all stem from the belief that reality is psychologically, socially as well as objectively constructed. Qualitative research is essentially an inductive approach to theory generation. The focus tends to be on dynamic processes, with the aim of explaining, rather than predicting, phenomena (Taylor and Bogdan, 1984) and essentially concerned with understanding rather than measuring (Bryman, 1988; Strauss and Corbin, 1990).

#### **META-LEVEL PERSPECTIVE**

However the study of careers encompasses both qualitative and quantitative dimensions (e.g. process, time and structure). Essentially a rapprochement is required combining both paradigms. This therefore increases the complexity of the investigative process since both “soft” and “hard” data are necessary for a complete career analysis. A false dichotomy is often assumed between qualitative and quantitative approaches and in reality seldom do studies wholly exemplify the ideal criteria characteristics of either paradigm (Creswell, 1994).

#### **RATIONALE TOWARDS QUALITATIVE APPROACH**

The gamut of attempts to understand the labour market and productivity problems have tended to rely on quantified demand forecasts (Dainty *et al.*, 2004). Invariably, these dominate research agendas and influence researchers to adopt a quantitative approach although these approaches often fail to capture the complexity of human action and emotion. For instance many studies have sought to establish what turns on the primary production generators inside workers (Olomolaiye and Price, 1989), adopting quantitative approaches in the process. Olomolaiye *et al.* (1998) describes trade and craft productivity as: skills, qualifications, training and experience; innate physical and mental ability; and the intensity of application of both skill and innate ability to the production process. As such, productivity relates to the physical, social, psychological actions of employees. However while it is possible to measure physical action in quantifiable terms; social and psychological actions are less quantifiable and unpredictable. In an examination of labour productivity, Radosavlevic and Horner (2002) conclude that productivity is not normally distributed and are based on chaotic systems. As such basic statistical diagnostics are either non-applicable or misleading. Characteristics of quantitative methods is that while they may easily measure quantifiable aspects of productivity, human emotion that often govern social and psychological actions are immeasurable in quantifiable terms.

In order to devise an effective career development program – so enhancing productivity – the perspectives of the individuals concerned must be understood. This includes the social, political, economic, physical and cultural milieu which serves as

barriers or enablers to the contingent career development processes (Vondracek *et al.*, 1986). The work in progress aimed to develop understanding of the context in which careers emerge within the sector. Of particular interest were the technical, social and economic structures that may influence and filter individuals into different occupational sectors. This paper reports on the particular data gathering strategy utilised in the phase two research process.

## RESEARCH METHOD

A methodology was desired capable of examining how the trade and craft career unfolds. Key to the research is the expressions of meaning and values in the trade and craft career dynamic. The aim was to develop what has been termed a “Rich Portrait” (Gilmore and Carson, 1996). In this respect an approach to the data collection process was preferred that followed qualitative paradigmatic traditions.

As is the case with much research, particular problems associated with data collection are in gaining physical access to respondents in their work environment, maintaining access and creating sufficient scope during the interview process to fully address the research aims and objectives (Saunders *et al.*, 2000). Request for access and co-operation may fail to interest due to: lack of perceived value; or the sensitive nature of the research and concerns for confidentiality. Access may also be limited in terms of ability to meet specified participant targets (Saunders *et al.*, 2000).

In order to combat these problems, a particular strategy was adopted:

- using existing contacts within the research group;
- utilising personal and social networks;
- providing a clear account to organisations of project aims, objectives and type of access required;
- establishing credibility with intended participants;
- identifying benefits to the organisation and wider construction communities; and
- using appropriate and suitable language.

In addition to these factors, organisations (or individuals) may not be prepared to participate if there are any cost implications of “down time” during lengthy interviews. As such a compact interview schedule was facilitated using an “interview content checklist” following the example in Raiden *et al.* (2003) (Figure.1).

Following the gathering of biographical information respondents were encouraged to provide narrative accounts according to five principal questions beginning with “describe your career history since leaving school”. The checklist comprised *probe cells* which were used to mark responses according to specific themes.

Principal questions and probe cells could be marked off as and when responses corresponded to the checklist items. Aspects of the narrative account were explored using directive probes i.e. “How was that important to you?”, or “Why is that important to you?” The interview material was tape-recorded, transcribed verbatim, analysed, coded using NVivo and a summary statement matrices produced.

<b>Age:</b>				<b>Record No:</b>	ICC -		
<b>Sex:</b>				<b>Date:</b>		<b>Time:</b>	
<b>Marital Status:</b>							
<b>Ethnicity</b>							
<b>Employment Status:</b>	Employed			Self-Employed		Temp	
<b>Current Occupation:</b>							
<b>Designated Trade:</b>							
<b>Length of Service in Current Occupation:</b>							
<b>Length of Service With Current Organisation:</b>							
<b>Length of Service in Construction Occupations:</b>							
Organisation Size				No. of Direct T&C Employees			
Construction Sector							
<b>1. Could you describe your career history since leaving school?</b>							
<b>Antecedents</b>							
Career Decision				Influences		Alternate Choice	
Career Choice				Career Search		Fantasy Career	
<b>Current</b>							
Education				Duties			
Training				Responsibilities			
Skills							
<b>Indicators</b>							
Evidence of Horizontal Development						Career Prototype	
Evidence of Vertical Progression							
Relative No. of Career Moves							
<b>2. Do you think you have fulfilled your career ambitions?</b>							
Prior Expectations				Satisfaction			
Prior Aspirations				Subjective Assessment of Development			
Career Development				Developmental Objectives			
Career Management				Goal Attainment			
<b>3. What career development have you been encouraged to do?</b>							
Individual				Considerations of higher			
Organisation				Potential barriers			
Industry				Enablers			
<b>4. How could this have been improved?</b>							
Suggestion Offered							
<b>5. What are your further career ambitions and intentions?</b>							
Commitment				Reaction Strategies			
Motivation				Entrapment Scenario			
Intention to Leave							

**Figure 1:** Qualitative research tool – “interview content checklist”

## **FINDINGS AND DISCUSSION OF QUALITATIVE VERSUS QUANTITATIVE METHODS**

The interview schedule helped to focus the discussions on exploring the perceptions of careers, personal career development needs and preferences. It also helped to detail industry wide protocols, organisational procedures, managerial practices and how these corresponded with the needs of the individual. The *probe cells* which contained the issues and topics formed the basis for the coding structure although many added themes emerged. During this process interviews also yielded complex demographic data. Being essentially quantitative in nature it was essential to input some of this data into a more suitable formats, the statistical package SPSS was also used.

Although the average length of the interviews was approx 14.5 minutes the schedules provided structure for the discussions and helped to ensure all the topics were covered. They also allowed for the issues to be explored flexibly and the order of the questions to be modified according to each respondent's style and interview situation. In addition, the schedules proved useful in tracking the interviewees' thought processes. The directive probes were useful in determining interviewee's; preference; view of importance; links between consequences/values of actions; but critically, about opportunities within the sector; and personal motivations. The combined process aided the determination of what attributes participants used to discriminate, why particular attributes were important, but critically helped the process of sampling emotions.

As Creswell (1994) suggestion implies research can never truly associate to one paradigm or the other. The extrapolation of both quantitative and qualitative results often negate a subscription to one paradigm or the other. Typically, when faced with this challenge, researchers argue for multiple data collection methods whereby methods are combined as and when deemed appropriate (Bryman, 1988). However, while quantitative data is uni-dimensional, qualitative data is unique in that it can be analysed and interpreted both qualitatively and quantitatively. This allows for correlations and/ or grouping to be made amongst all data sets i.e. job role or age to emotion. Through inductive phenomenological research a richer, deeper and process-based set of data is gathered (Taylor and Bogdan, 1984; Bryman, 1988, Strauss and Corbin, 1990). This is a critical advantage for qualitative data and means that analysis can be conducted into the "What", "How" and "How Many" in relation to careers. That is, an approach that integrates the interpretation of qualitative data with statistical analysis of that data.

## **PRELIMINARY FINDINGS OF THE WORK IN PROGRESS**

From the data respondents perceptions were grouped as Driver/Enabler's or Barrier/Impediment's relating to career development (positive or negative). While the parameters of this paper do not allow for a comprehensive detailing of findings, the nature of each factor is presented as a theme below:

### **Drivers/Enablers**

*Structured Progression Factors – Employer with an established career development policy (DLO's and MNC)*

*Employer Initiative: Employer with a career driven focus (SME)*

**Employee Initiative** – Individual action towards career development

**Industry Initiative** – Industry wide career development programmes

**Element of Chance** – Circumstance, opportunism and/or serendipity;

**Dead Men's Shoes** – a component of this was vacant or the impending vacancy of roles within the organisation

**Redeployment** - a necessary shift in work role due to physical stressors or circumstantial element (i.e. maternity as found in the case of two female respondents)

### **Barriers/Impediments**

**Apathy**– a lack of a career development focus on the part of the individual

**Allocation of Resources** – A focus on operational activities leading to a limited value placed on career development

**External Funding Issue** – lack of industry driven support for further or higher education

**Institutional Issues** – No suitable course availability

**Access** – limited access to education

**Competitive industry variables** – financial constraint on the part of the employer

**Commitment to work role** –Time constraints due to intrinsic nature of the industry or duties and responsibilities of the work role

**Accessibility** – bureaucratic structures that hinder access to further education and training

**External Commitments** – family and social commitments that do not support career development

**Applicability** – Further training and education do not correspond to current work role

**Streaming** – restriction of individuals to certain work roles and perceived limits to progression through stratified hierarchy

It may be noted that components are either individually, organisationally or industry derived as suggested in Baldwin (1992) relational schematic. In this research the inter-dimensional script (how the individual perceives themselves in relation to the industry/organisation dyad) suggests factors do operate negatively on blue collar opportunities. The presence of more impediments to career development point to



factors reported in the literature that opportunity guides progression, rather than psychological variables of choice and effort (Gottfredson and Becker; 1981). Further barriers found suggest that organisational structures and labour market segmentation also play their part in the process (Thomas, 1988; DeSimone *et al.*, 2002). This also confirms what is currently known about the industry and the wide spread neglect of career development resources. However it is accepted that often respondents were limited in their recognition of some of the available resources and initiatives (for instance CITB) and therefore the data must be squared against existing research and industry wide contextual data.

## CONCLUSIONS AND IMPLICATIONS FOR FURTHER RESEARCH

This paper argues for a greater emphasis on qualitative methods in construction management research and outlines the theoretical basis for investigating trade and craft careers. From the preceding discussion and resulting analysis the paper finds that a qualitatively based methodology is suitable for exploring the unique dimensions of career development at trade and craft level. While ultimately this involves the combined use of quantitative and qualitative analysis procedures, the qualitative processes is more suited to addressing immeasurable facets of construction productivity. Methodologies that allow for increased contextual insights and greater understanding of the internal and external forces affecting the trade and craft career should thus be promoted.

An over-arching rationale is that the industry must remain at a level of functional efficiency. In order to meet the demands of its customer base it must retain a human resource pool of skilled employees. Maintaining skilled workers requires a comprehensive account of its workforce composition, knowledge of factors which affect a shift in its composition, and the ability to predict environmental forces impacting upon it. The research in progress aims ultimately to categorise individualistic and industry wide perspectives on trade and craft career development, identifying the gamut of factors which facilitate or inhibit the career mobility process at this level.

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# THE RELATIONSHIP BETWEEN SKILLS AND PRODUCTIVITY

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The UK construction industry needs to increase its productivity to compete internationally and to be able to survive. Therefore, understanding the impact of training and skills development is vital for the CITB-ConstructionSkills, as it is committed to playing a key role in promoting and facilitating the training of sufficient people to ensure the development of a world-class construction industry. The research and development team is providing strategic intelligence and policy advice to the directorate of skills strategy. This involves liaising with employers in the industry to establish current/future skill requirements, and establishing productivity improvement opportunities. In addition, making the business case for skills alongside productivity is essential to persuade employers to engage in training. This raises the issue of measuring productivity, as a means of understanding deficiency in skills. So, the research aims to investigate the *relationship between skills and productivity* in order to support future policy development. Moreover, CITB-ConstructionSkills should not only respond to the short-term needs of the industry, but rather be in a position to support its future needs.

**Keywords:** ConstructionSkills, EngD, labour coefficients, productivity, skills

## INTRODUCTION

The UK construction productivity lags behind other industrial countries, including US, France and Germany. For example, UK productivity is lower than that in the US by 12% (Pearce, 2003). Also, a comparative study between UK, Germany, and Netherlands found that the proportion of labourers/unskilled workers in the German and Dutch construction industries has declined significantly, whereas in Britain it has risen (Clarke and Wall, 1996). Therefore, it is recognized that part of the UK productivity gap could be explained by lower skills profile in the UK and more specifically at intermediate level qualifications. This brings in the importance of the development of the skills base in the economy to act as a support for closing this gap. Felstead *et al.* (2002) highlighted that different levels of skills are associated with different levels of workforce productivity and thus providing an explanation to economy growth. It follows that a prosperous and productive construction industry should help in providing good support for economic development. Arditi and Mochtar (2000) reaffirms that “the output of the construction industry constitutes one-half of the gross capital and 3 – 8% of the gross domestic product (GDP) in most countries, productivity improvement in the construction industry may have a significant impact on improving GDP.”

This short paper sets out the progress to date on the EngD research which aims *to investigate the relationship between skills and productivity*. Due to the industrial

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context of the research, three discrete projects are undertaken for the CITB-ConstructionSkills, which would be aligned with the scope of the EngD. This is essential to maintain the theme of the doctorate throughout. A discussion of the EngD scope is laid down followed by a brief discussion of each of the three projects. It has to be noted that the research methods identified below are only provisional and would be more refined through liaising with both industrial and academic supervisors.

## **EngD SCOPE**

### **AIM**

To establish empirically the relationship between skills investment and worker productivity in order to develop policy options for inducing productivity gains in the future.

### **OBJECTIVES**

1. Establishing robust definitions for key terms relevant to the research, namely; skills, training, and productivity.
2. Review critically the existing evidence supporting the links between skills development and improvements in productivity across a range of sectors.
3. Compare the productivity and performance of a range of disparately skilled operatives in order to establish the value of skills to operative performance.
4. Examine the relative performance of organizations which invest in training against those who do not.
5. Provide an evidence base to support the definition of the business case for investment in training and skills development within the construction sector.
6. Prepare a report detailing advice to CITB-ConstructionSkills on ‘skills-related’ policy options for enhancing performance of the construction sector.

## **RESEARCH METHODOLOGY**

Objectives 1, 2 will be achieved through an in-depth literature review supplemented by discussions with key industrialists and academics. Objective 3 will be achieved through observations and measurement of a stratified sample of highly skilled and lesser skilled operatives. Objective 4 will involve comparing the relative performance of firms with differing levels of training investment. Objective 5 will comprise a synthesis of all the literature data collected as a part of the study in order to articulate a robust business case for training and investment in skills. This will be further developed through a series of case study exemplars of firms which invest in the skills of their workforce. Policy options (Objective 6) will be derived from a study of industry opinions collected in relation to the research findings.

## **BARRIERS TO ESTABLISHING THE RELATIONSHIP BETWEEN SKILLS AND PRODUCTIVITY**

### **PROBLEM OF DEFINITION**

It has to be noted that multiple definitions/proxies exists for both productivity and skills, e.g. skills are often used synonymously with training, yet it has to be remembered that training is one route to skills acquisition (Tamkin *et al.*, 2004). Also, productivity definition is very much a land mine and in that respect it is important to have a consistent definition of terminologies in order to establish a clear and robust correlation between skills and productivity (see Abdel-Wahab *et al.*, 2005). The

factors affecting construction productivity remains as an area of debate and part of the problem is explained by having non-standard terminology. Therefore, loose definitions for productivity and skills were adopted in the research to map out all possible links between the two parameters. This was not only limited to the construction industry, but also other industries were considered (e.g. automotive) to give additional insights into the nature of this relationship.

### **NATURE OF THE CONSTRUCTION INDUSTRY**

The construction industry involves activities that are diverse, distinct, discrete, and dispersed. This adds to the complexity when attempting to study and research the construction industry. Therefore, a macro-productivity indicator is not appropriate to accurately capture and reflect the realities of the industry. However, it could be useful to develop a productivity indicator for various sub-sectors in different regional basis e.g. house building or infrastructure projects in North East as opposed to the South East. This may prove useful in guiding further enquiry at the firm/project level.

Furthermore, the fragmentation of the construction industry is a real challenge for gathering reliable and consistent data for studying the 'real' effect of skills on productivity. Then, the interrelation various factors problem that affect productivity is real challenge - endogenous and exogenous factors. Flanagan (2003) pointed out that one problem with measuring construction productivity is that it has multiple factors, and these complicate any diagnosis of problems inherent in the industry. He also noted that since the metrics for several of these factors are mutually exclusive, partial measurements will not be able to offer meaningful insights into the larger productivity puzzle.

It is, however, possible to examine several factors that influence productivity in concert. These include the skill base and culture of the workforce; technology advances; the size, scope, and type of project; the site conditions and other factors pertaining to the physical environment; the design integration of the project; and the labour/capital ratio.

### **CONCLUSION**

These are challenging issues associated with establishing a relationship between skills and productivity. However, further scrutiny of the existing body of knowledge is a good starting point to identify patterns in the literature, where implicit/explicit relationships could be explored. This is an important step towards clearer understanding of the existing body of knowledge and identifying gaps – on which to base further research. Similar patterns in the literature or recurring themes were highlighted by the same colour code to help in understanding the correlation between various skills indicators/proxies and productivity. These will be briefly discussed below:

- The workforce skills across the supply chain are important for passing on productivity gains on site
- Poor management skills are a major cause for productivity problems
- Workforce mobility and self-employment represent a real constraint on developing skills given the current workload in the industry. This represents a potential for poor productivity levels.
- Qualification could not act as a reliable measure/proxy for skills in relation to productivity improvements.

## **A COMMENTARY ON CONSTRUCTION PRODUCTIVITY – EngD1**

### **RESEARCH BACKGROUND**

The output of the construction industry has consistently increased since the recession in the early 1990s with a slow down in 2000. There are various factors that interplay in shaping these levels of output, such as, technological change and increased demand. The focus in this research will be on the change in the composition of human resource operating within the industry. The assessment will rely on a trend analysis of educational attainment and training expenditure, as proxies for approximating the change in the skills base of the industry. This will provide an explanation or evidence of how the industry coped with the change in output and its response in terms of educational attainment and engagement in training to support the growth in the industry. For example, given the decrease in number of applicants in construction related degrees; what effect this would have on the industry? Therefore, it is vital to ensure that the industry has adequate human resource capacity to support its current level of output and future growth, whilst achieving optimum productivity levels.

### **RESEARCH AIMS**

1. Examine historical trends in educational attainment, training expenditure, output, and productivity.
2. Establish the potential relationship between educational attainment, training expenditure, output and productivity.
3. Determine whether the consistent increase in the Constructing Excellence Dti productivity measure over the past five years could be attributed to the change in the skills base of the construction industry.

### **PROGRESS TO DATE**

Phase one of the projects, which includes data gathering, is complete and this is essential for carrying out objective 1 & 2. Then, phase two will comprise analysis and further scrutiny of the existing to come up with an interim report for the SSDA. However, it was concluded that that the data gathered is the best available time series in light of the existing statistical sources. Also, further work was identified as an essential part of the EngD research. This will be discussed below.

### **MICRO-LEVEL ANALYSIS**

Results from the first two objectives will be used to guide further enquiry at the micro (firm or project) level in the future. A simple way to explore this would be to ask employers what productivity benefits they derive from investing in their workforce. The evidence of improvements which accrue from training investment would undoubtedly be broader than straight output improvement but would enable collection of some prima facie evidence of how the two things were connected. This may also enable examining the spin off benefits of a better trained workforce (e.g. improvements in behaviour and attitude, interfacing between trades etc - these are known as 'externalities' or external benefits which accrue from the investment in skills). These may actually amount to much more than just the output productivity improvement. Although this would initially yield cross-sectional data, given that there is still three more years in the research, a time series could be built up for this (keeping consistent measures) which would render the study more interesting in the long term.

## CONSTRUCTIONSKILLS FOOTPRINT - EngD2

### PURPOSE

This project sets out the problem of defining ConstructionSkills (CS) footprint. There are two issues need to be addressed: the overlap with other Sector Skills Councils (SSCs) footprints and the evolving needs of the construction industry. This to ensure that CS is well positioned to meet the industry's challenges upfront and respond to the skill-needs of emerging activities that would fall within its remit as a SSC. This would be achieved through proactive engagement with other SSCs along with a better understanding of the needs of a construction project.

### PROGRESS TO DATE

Currently, there is a study undertaken (by a colleague at CITB) to analyse the CS interfaces with the Skills for Business Network and SSDA. The report produced would be a good mapping exercise to assess the engagement of CS across the network and how far this reflects the existing overlaps with other SSCs. Also, a proposal was developed for defining the scope of work to be done

### PROPOSED FUTURE WORK

Given that the status of CITB-CS as SSC and the developing skill for business network with new SSCs joining, it is essential to maintain/manage the boundaries of its footprint. This is vital to provide CITB-CS with focus and better scope for its policies that would help in supporting the industry productivity performance. Moreover, this would provide a basis for liaising with other SSCs for supporting collaborative action. Then, the following is proposed:

- a) Producing a framework for defining the boundaries of construction to understand more closely the skills needs of the industry, whilst retaining the SIC definitions for coherence across the network. This may require a paradigm shift by emphasising construction as “project-based economic activity, with its arrangements and disposal of resources induced by those projects and borrowing across technological bases, almost unpredictably” (Groak, 1994). The *output might be a research paper* reviewing the literature in order to come-up with such a framework drawing from various studies and concepts relating to the definition of the construction industry (e.g. Ive and Gruneberg, 2000; Morton, 2002 and Ofori, 1990).
- b) Liaising with other SSCs to agree on a common framework for addressing these overlaps. This may require working closely with researchers in other SSCs (especially EU, Asset and Summit skills). An event may be held in London (as suggested by Guy before) to discuss how other SSCs go about defining their sectors. Also, whether the SIC coding system restricts defining their sectors as it is the case with CS or not. The ultimate goal is to ensure that the footprint definitions of various sectors serves as a robust means for articulating the skills-needs across the skills for business network.

Therefore, the next logical step might be to map the Standard Occupational Classifications (SOCs) onto the SICs footprint, but this will rely on occupations as a sole skill indicator. Nevertheless, this exercise would help to guide in the process of understanding the occupational structure of the industry and accordingly informing policy on current/future requirements of the construction industry within the CS-SSC



remit. *The output here again might be a research paper* to come up with a framework for a better understanding of the sector occupational needs.

## LABOUR COEFFICIENTS – EngD3

### RESEARCH BACKGROUND

A ‘skills and productivity’ regional observatory model is being launched for accurately forecasting the demand and supply of workforce in the construction industry. A bottom-up approach, based on regional intelligence, makes the model more dynamic and responsive to the factors shaping the industry’s output. Then, further research is necessary to fill the knowledge gaps in the model and support more robust results. The BRE has figures (coefficients) for the man-hours required per £1000 contract value in different industry sub-sectors (see table below – housing & private industrial as examples). These could show the variability of labour input along time. Therefore, new estimates for labour coefficients are being developed guided by output/employment data to produce a time series based on data from the DTI. The original figures from the NEDO report were based on 2-assumptions for productivity (0% increase or 3% increase). Finally, the coefficients will be fed into the economic model to come up with estimates for the demand and supply of the workforce in construction. Note that the new coefficients are based on 22 occupations with respect to SOC2000 and not only operatives as with the old coefficients in the NEDO report.

	Housing	Private Industrial
Carpenters	7.7	6.2
Bricklayers	10.0	4.9
Painters	5.4	3.3
Electricians	1.6	3
Plumbers	2.6	1.3
Plasterers	3.9	0.5
Heating & Ventilation	0.3	2.9
General labourers	17	15.2
Total operatives	56.4	49.6

### RESEARCH PROGRESS AND PROPOSED FUTURE WORK

A literature review was conducted to understand the rationale behind the development of the labour coefficients (NEDO report), which would feed into the observatory model. It is envisaged that a scoping study will be carried out to come up with a research proposal which would help to provide useful data that may be incorporated in the model (e.g. robust estimates for productivity levels. The ultimate goal is that the more accurate the forecasting becomes the more prepared would be CITB ConstructionSkills in terms of responding to the new challenges facing the construction industry. Note that the scope of work will be refined through further meetings between both industrial and academic supervisors.

## SUMMARY AND CONCLUSIONS

This short paper introduced the three main projects within the scope of the EngD programme. It has to be noted that it will be a real challenge to maintain the themes of the doctorate as well as meeting the expectations of the industrial sponsor. However, it is anticipated that the doctorate would provide robust research findings in order to support the operations of CITB-CS in meeting its obligations to the construction industry –as a SSC. An integral part of this is to establish a robust relationship between skills and productivity to generate policy options for CITB-CS. Hopefully, this would help in inducing productivity gains in the future and support the development of world-class construction industry.

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# SKILLS FOR COMMUNITY-BASED ACTION IN THE PROCESS OF DELIVERING HOUSING MARKET RENEWAL

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The purpose of this paper is to discuss the extent to which the present skills practice fits within the context of Housing Market Renewal initiative in supporting the benefits of the existing and future community within the Pathfinder areas. Housing Market Renewal (HMR) initiative is one of many strategies in the Sustainable Communities Plan (2003), introduced by the UK Government to deal with the housing market failure via tackling low demand and housing abandonment across England. This paper is centred on three key themes: the HMR and the Sustainable Communities Plan, an exploratory case study at the Elevate East Lancashire Pathfinder and the skills that are to be acquired by the key participants involved in the process of delivering HMR. The findings suggest that the problem of housing market failure is not only an issue of the physical condition of housing but also other non-physical intervention factors such as social deprivation, economic and environmental issues that cause housing to become unpopular and deteriorate. The recent protests by the local residents within the Pathfinder schemes in the North West of England indicate a gap between the government's intentions and community expectations. The conflict between the aspirations of the local community and the objectives of the HMR suggests that the participants involved in the process of delivering HMR need to focus on skills necessary for community-based action. The paper builds on established literature and generates debate on the additional skills that need to be acquired by the relevant participants involved in the process of delivering HMR.

**Keywords:** community-based action skills, Housing Market Renewal (HMR), sustainable communities

## BACKGROUND TO RESEARCH

The UK government's HMR programme is a new opportunity to tackle the substantial problems of housing demand decline in some parts of North and Midland of England. The government introduced the programme shortly after the publication of the report on *Empty Homes* by the Transport, Local Government and the Regions Select Committee in March 2002. The committee suggested three main recommendations and one of them that called for urgent actions to tackle the increasing problems of low housing demand and abandoned homes is as below:

Radical intervention is needed in some inner urban areas where the housing market has collapsed to make them attractive to a broad range of existing and potential residents. The housing market renewal approach needed to achieve this must be on a large, conurbation-wide scale. It will take a long time and so must be started as soon as possible and will require significant additional funding, of the order of hundreds of millions of pounds per annum.

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After the report's publication, the government announced the creation of nine HMR Pathfinders (Pathfinder) in the North and Midlands of England. These Pathfinder areas are: Birmingham/Sandwell, East Lancashire, Hull/East Riding, Manchester/Salford, Merseyside, Newcastle/Gateshead, North Staffordshire, Oldham/Rochdale and South Yorkshire. These areas would receive funding of £500 million over three years. No specific targets were announced for the policy at that stage but the overall aim was: *To provide lasting solutions for communities blighted by derelict homes through investment and innovation* (ODPM, 2002).

Details of the HMR initiative were first announced as part of the ODPM's Sustainable Communities Plan in February 2003. The broad objective for the programme was for Pathfinder strategic plans to *entail radical and sustained action to replace obsolete housing with modern sustainable accommodation, through demolition and new building or refurbishment. This will mean a better mix of homes and sometimes fewer homes* (ODPM, 2003). The programme has now been operating for two years. A study by CPRE (2004) has revealed that housing market failure is not only central to the physical condition of housing but also about non-physical interventions factors such as social deprivation, economic and environmental issues that cause housing to be unpopular. It follows by a recent study by Nevin (2004) that summarised the causes of low demand in Pathfinder areas as:

- *Housing stock obsolescence* – the housing in low demand areas is no longer attractive to existing or potential residents because tastes, aspirations and income levels have changed;
- *Surplus housing stock* – many areas in the north (and to a lesser extent the midlands) have more houses than households, partly because of the depopulation of urban areas as the more affluent residents opted to move out to the suburbs or further field to rural areas; and
- *Unpopular neighbourhoods* – a range of factors, including high levels of crime, poor environment and a concentration of deprivation lead to an area being seen as unattractive both to its existing population and to prospective residents

Nevin (2004) further concluded that these three main factors have contributed to the neighbourhood abandonment and housing market failure. Any HMR programme should be designed in a way to address these factors through specific interventions. Meanwhile, the aspirations of local community also need to be investigated as the latest protest by the local residents on the scale of clearances within the Pathfinder scheme in the North of England (Clover, 2004; Ungoed-Thomas, 2005) suggesting a gap between Pathfinder intentions and community expectations. Proposals for the compulsory purchase and demolition of thousands of unfit houses within the Pathfinder areas have been claimed by the local residents as creating forced migration and preventing the creation of sustainable communities. The protestors want actions that encourage people to continue to live and work in the Pathfinder areas and not to be forced to move elsewhere. The conflict between the aspirations of the local community and the objectives of the Pathfinder suggests that local residents are unclear about some of the terminology, options and possible outcomes that are being put forward by the Pathfinder in their areas. It highlighted the need for generic guidance or skills on how local community should be consulted and engaged in each stage of HMR delivery process.

The shortcomings of necessary skills to manage regeneration schemes were first noted in the *Urban Task Force* report in 1999. The report proposed the setting up of regional resource centre for addressing skills shortages and good practice in urban professionals. Five years later, the government responded to the issue and appointed

Sir John Egan to head a task force into skills for sustainable communities. As a result of Egan's report, the government announced at the Sustainable Communities Summit 2005, the Academy for Sustainable Communities that to be established in Leeds. This Academic will give priority to training in the broad range of skills and expertise that are required for delivering sustainable communities.

This paper aims to look at what are the additional skills that need to be acquired by the relevant participants involved in the process of delivering HMR. The research to date has included a review of the considerable body of literature relating to the knowledge and skills necessary for delivering HMR and creating Sustainable Communities. The exploratory pilot case study at the Elevate East Lancashire, one of the HMR Pathfinders in the North West of England has been conducted. It seeks insights of relevant participants involved in the 'real life' situations of delivery process and draws attention to the issues and complexities of shortcomings skills for community engagement in the HMR. Findings from both literatures and exploratory pilot case study are necessary to form a conceptual framework for identifying additional skills need to be acquired by those key participants involved in the process of delivering HMR. The main research focus that emerges from this work is centred on the question: *what are the additional skills and competences that need to be acquired by the relevant participants involve in the process of delivering HMR?*

## **NATURE AND EXTENT OF SKILLS NEEDS IN THE PROCESS OF DELIVERING HMR**

### **OVERVIEW OF THE EXISTING PROFESSIONAL PRACTICE**

A review of the existing professional skills and competences is perceived by the researcher to be essential to understanding current professional practices and how the professional bodies cooperate with the present and future demand of the regeneration skills. The researcher also needs to explore the extent to which professional practitioners recognise the need for soft and people-based skills development in addition to technical competencies.

A review of the existing models of professional competences indicated that the professionals have recognised the important of the generic skills such as *working with others, communication, problem solving* incorporated into their professional practices. These models of professional development works and approaches can be found in: *The UK occupational standards models* (cited by Cheetham and Chivers, 1996); *The job competence model* (Mansfield and Mathews, 1985); *The reflective practitioner approach* (Schon, 1983); *Meta-competencies* (Reynolds and Snell, 1988 and Nordhaug, 1990); *Core skills* (Cheetham and Chivers, 1996) and *Ethics and values* (Eraut et al, 1994).

The most recent model of professional competences developed by Cheetham and Chivers, (1996 and 1998) is mainly influenced by the models as described above. The model has four core components of professional competences, which each are made up of a number of sub-groups or constituents. These are: *Knowledge/Cognitive competence; Functional competence; Personal or behaviour competence* and *Values/ethical competence*. Kennie and Green (2001) have also developed the model of professional competence framework for the RICS based on four components descriptors of professional competence which combine: *Technical Competence; Cognitive/Problem Solving Competence; Business Competence* and *Ethical/Personal Behavioural* (which is core to the previous three areas) *Competence*.

Study the existing models as described above suggests that each of the models and approaches has its own strength and weakness within the context of their own professions. However, the purpose of this paper is to study the ability of the existing models to deal with the demand of skills in the process of delivering HMR.

Understanding the existing models of professional competences also leads to the identification of shortcomings skills that need to be acquired in order to deliver HMR and create Sustainable Communities. This can be realised by reviewing the extensive literature on skills needs for delivering Sustainable Communities and in particular HMR.

### **SKILLS NEEDS IN THE PROCESS OF DELIVERING HMR**

Skills are important in achieving the objectives of HMR as well as creating sustainable community. An active engagement from all participants involved in the delivery process and plays an essential role in making local communities attractive, safe places to live and work. This approach requires additional skills and new ways of working to those participants involved. But *why do relevant participants need a new approach in delivering HMR?* Local residents are very clear about what they want from their communities but, in many places the current approach fails to deliver what people want. For example protest by the local residents on the scale of the clearance and compulsory purchase of thousands of unfit houses within the East Lancashire Pathfinder area have been claimed as creating forced migration and preventing the creation of Sustainable Communities (Clover, 2004; Ungood-Thomas, 2005). The local residents want actions that encourage people to continue to live and work in the pathfinder areas and not to be forced to move elsewhere. The conflict between the aspirations of the local community and the HMR Pathfinder suggests that the relevant professionals involved need a new approach in addition to their technical expertise that enable them to understand exactly what people want from their own communities. Meanwhile, a study by CPRE (2004) in East Lancashire and Merseyside Pathfinder areas reveals that housing market failure is not just about the physical aspects of housing but is also about non-physical factors such as social deprivation and bad image that cause residential environment to decline. These non-physical aspects of housing within the social, economic and environmental context are very important in tackling low occupancy and empty houses. Thus in the process of delivering HMR, the relevant participants need to acquire not only the core, harder and technical skills, but also other skills that are more *generic, softer, people and community-based skills*.

Increasingly, skills and competencies for community engagement and people-based skills development have been recognised as one of the crucial education and training needs for sustainable development. A recent study by Hartley (2002) for the local authorities' officers has proven that a culture shift is needed to move from being a professionally driven, paternalistic organisation towards one which aims to empower individuals, groups and communities and build their capabilities. A number of key skills that were seen as important are: *Putting people at their ease; Learning to think about services from a user's perspective; Listening to interests as well as voices; Recognising the different pace and processes of community groups and individuals; Capacity building; Managing conflict and difference; Managing expectations; Influencing skills; Detailed local knowledge; Professional skills; Maintaining a strategic focus and Working constructively with councillors*.

Egan (2004) highlighted that the successful delivery of sustainable communities depends on the skills/competencies necessary to support the delivery process. The

author further concluded that lack of skills and knowledge in regeneration is a perceived barrier to the delivery of sustainable communities. The author further lists out the generic skills, behaviour and knowledge that are considered essential for delivering Sustainable Communities. Studies by the Turner and Townsend Group (2004), suggests that society has not necessarily been well served by the existing professions operating in the built environment. The professions are either unwilling or unable to *engage with communities*; knowledge about ‘*what works*’ is, inconsistent and poorly managed; the skills and knowledge relating to strategic planning, project management, urban design, *community engagement* and partnership working necessary for the development of successful sustainable communities are absent. The Neighbourhood Renewal Unit and ODPM (2002, p33-34) have also recognised the importance of skills for working with the community as part of professional and practitioners’ core skills development. Their regeneration-learning framework for neighbourhood regeneration suggests professionals need to address three key different audiences of residents, professionals and civil servants and policy makers when dealing with regeneration.

The need for the additional skills for sustainability delivery is unquestionable. The weight of evidence suggests that skills for community-based action are increasingly important for the sustainability agenda and Housing Market Renewal.

### **COMMUNITY-BASED ACTION SKILLS IN THE PROCESS OF DELIVERING HMR**

The Government has promoted the idea of community strongly (e.g. by encouraging community involvement), making it a key requirement of urban regeneration programmes, a driver of local government reform and a key feature of its Strategy for Neighbourhood Renewal (Brickell, 2000). The author further emphasised that the Government’s overall approach to community regeneration is failing because of its inability to engage communities in a dynamic, entrepreneurial and widely inclusively way. But, this raises the question of what is the community that the relevant participants need to get involve and engage with in the process of delivering HMR? As defined by Poplin (1979) community is “the place where people maintain their homes, earn their livings, rear their children and carry on most of their life activities”. Long and Hutchins (2003) define community as “a grouping of up to several thousand households, whose occupants share common experiences and bonds derived from living in the same locality”. Thus, community consists of the persons or people living within the same geographical area, carrying on their social interactions and activities with one or more common ties and shared values. This is the community that needs to be engaged by the relevant participants involved in the process of delivering HMR.

Secondly, why do the relevant participants need to engage with the community in the process of delivering HMR? According to the Sustainable Communities Plan (2003), communities need to be sustainable over the long term: “people continuing to want to live in the same community, both now and in the future” (Long and Hutchins, 2003). Only local people know what the best is for them and can help creating communities they feel proud of and to become much more involved in how local areas are run.

Lastly, how do relevant participants engage with the local community in the process of delivering HMR? This new approach no doubt becomes a challenge to the relevant participants involved in the process of delivering HMR. To be effectively delivering HMR, the local community need to be engaged in significant issues such as participatory planning for public space. Within the Pathfinder areas, communities

have different ethnic backgrounds, faiths and cultures. Only the local community know what their common value is. By allowing local people to be involved and participate in the process of delivering HMR can the conflict between the government objectives and local community aspirations and interests be prevented. The key objective is how the relevant participants strengthen community involvement in the process of delivering HMR. These are the skills that need to be addressed by the relevant participants involved during the process of delivering HMR.

## THE EXPLORATORY PILOT CASE STUDY AT THE ELEVATE EAST LANCASHIRE

An exploratory pilot case study has been undertaken at East Lancashire Pathfinder area, one of four areas in the North West, England from February 2005 to August 2005. The East Lancashire Pathfinder, is also known as ‘Elevate’ focuses on parts of five separate Local Authority areas: Blackburn with Darwen, Burnley, Pendle, Hyndburn and Rosendale. The current population of those wards which lie either partly or wholly in the target area is 256,335, approximately 50 per cent of the total population of the constituent Local Authority areas. This accounts for over 100,000 households out of 186, 000 for the sub-region (Audit Commission, 2004). This particular Pathfinder is chosen as a case study for this research project as it has been the focus of community protests who claimed that the project is not for their benefits and interests (Clover, 2004). The aims of this exploratory pilot study are: *to study and understand the process of delivering HMR; to identify main participants that involve during the process and to share their common experiences and issues along the delivery process of HMR.*

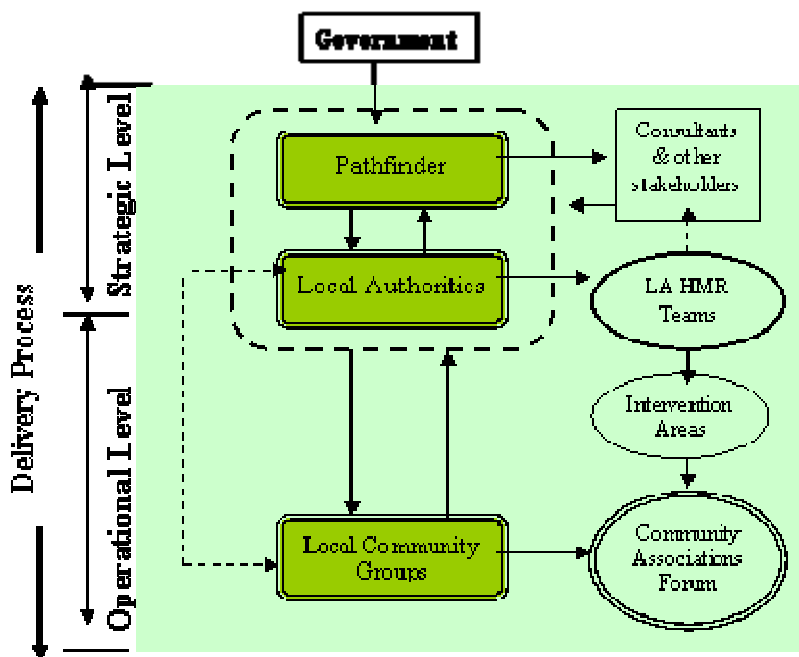
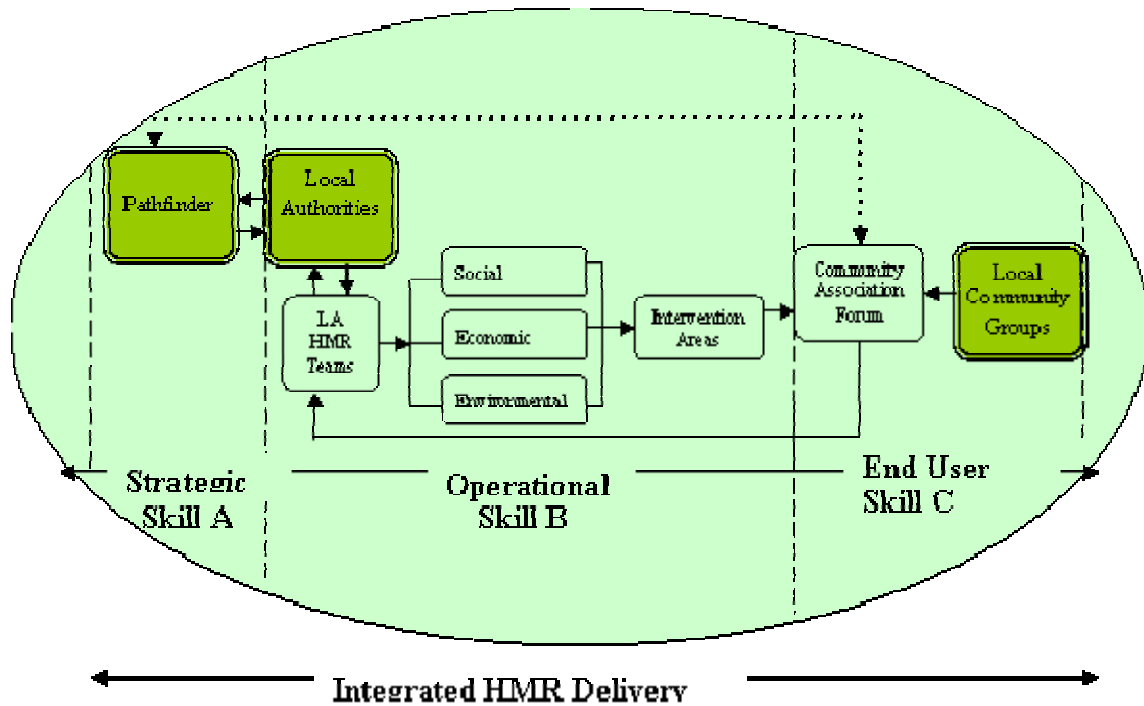


Figure 1: Three key participants of the East Lancashire Pathfinder in the process of delivering HMR.

Initial findings showed that there are three main participants that play an important role in the process of delivering HMR. The Diagram in *Figure 1* describes the delivery process of HMR that involves three major participants in three different levels of community-based action skills and competencies. They are: *Elevate East*



*Lancashire Pathfinder* – a funding organisation for East Lancashire Pathfinder area; *Local Authorities* – Pathfinder’s agents to deliver HMR and *Local Community* – groups of local residents comprise of different communities background within the Pathfinder areas. These three groups of participants have been chosen as the key stakeholders in the process of delivering HMR as they have to work together all along the delivery process of HMR. For the purpose of this study, this paper needs to investigate skills that are required for each of the identified participants as shown in *Figure 2* in the process of delivering HMR.



**Figure 2:** Community-based Action Skills and Competencies from the perspective of three key participants in the process of delivering HMR

There is no doubt that to deliver HMR effectively, relevant participants have to acquire skills and competencies for community-based action as an addition to their existing practices. These multiple responsibilities and diversified skills are across *social, economic and environmental* context of Sustainable Communities. This paper needs to investigate:

- Skill A: Skills and competencies need to be acquired by the employees of Pathfinder organization necessary to deliver HMR
- Skill B: Skills and competencies need to be acquired by the Local Authorities’ HMR teams necessary to deliver HMR
- Skill C: Skill and competencies need to be acquired by the Local Community Groups’ leaders necessary to participate and involve in the process of delivering HMR that are developed for their benefits and interests.

## FURTHER RESEARCH

Delivering HMR and Sustainable Communities require not only the technical skills and competences but also a broad range of generic skills, behaviour and knowledge. There is a clear need to focus on skills and competencies for community engagement within the three dimensions of society, environment and economy in the context of Sustainable Communities. These additional skills are required by the relevant professionals in the process of delivering HMR. Although professional practitioners do recognise these people-based skills it is not clear whether they consider those skills are necessary for their employees interacting among themselves within an organisation or for their employees interacting with the customers/clients.

The next step of this study is to conduct an empirical phase. This is to investigate the validity of the proposed model with the relevant participants involved in the process of delivering HMR. The insights of experienced participants will be sought out on whether they have recognized the need for additional skills and competences and the extent which these skills are required. It is hoped that through this work it may be possible to develop new paradigms for the relevant participants' development which help improve the existing process of delivering HMR.

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