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This is an electronic, author-formatted version of an article published in Building Research and Information, 34 (3). pp. 246-256, May 2006. The definitive version in Building Research and Information is available online at:

<http://dx.doi.org/10.1080/09613210600635176>

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# Valuing Labour

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## Abstract

The British construction labour process rests on casual, self-employment, output-based pay, rigid trade divisions, low levels of training and a sharp divide between operative and professional/technical skills. Skill shortages beset the industry and their solution focuses not on employment regulation and a comprehensive industry-wide training scheme but on importing the necessary skilled labour. The paper shows how qualitatively differently construction labour is valued in Britain compared with other leading European countries. These rely on higher skill levels, based on knowledge gained through the training process and on a more stable and collectively negotiated structure of training provision and employment. In Britain, in contrast, labour is not valued according to the knowledge it incorporate but according to an individual's ability to fulfil the task in hand, Training is geared to meeting individual employers' immediate needs, qualifications are not a prerequisite for entry, and labour is rewarded for its product not for its potential. The paper pinpoints the key features of the British system that give rise to concern and concludes by outlining the ways in which the British system needs to change for any sustainable development of the construction process.

## **Introduction**

There is something rather off-putting about the concept of ‘human capital’, as though labour is no different from fixed capital in the form of machines and factories or from finance capital as represented in stocks and shares. Indeed the International Labour Organisation has always reasserted the fundamental principle that ‘labour is not a commodity’ (e.g. ILO 1944). It is not the intention here, however, to debunk the key notion of human capital theory that there is equivalence between a worker’s investment in ‘human capital’ and a certain quantity of goods and services. Rather, the intention is to address a more critical weakness of the ‘human capital’ approach: to place the individual worker at the centre and to ignore the social reality within which he or she inevitably acts. It is in effect to argue that, in reducing the worker to a mere stock of capital, we end up with a very one-dimensional analysis whereby training, work experience or worker mobility are all just regarded as part of the accumulation of capital, evaluated in terms of qualification and wage levels.

The theory of human capital, first fully expounded by Gary Becker, regards education as an investment like any other and human capital as a worker’s capacity to perform services that have value (Becker 1994). As defined in the Pearce Report, human capital is: ‘the stock of knowledge embodied in the relevant labour force and the health status of that labour force’ (Pearce Report 2004: 33). The ‘stock of knowledge’ is in turn seen to be increased by: enlarging the labour force, a better trained and educated labour force, and a labour force keeping pace with technological change. It is on this basis that, in assessing the contribution of labour to sustainable development in construction, the report concentrates on: problems of skill shortages and increasing

the labour force, in particular given its ageing nature; its health as reflected in accident and fatality rates; and its efficiency as measured through labour productivity comparisons. The critical question raised though is whether an evaluation of the position of construction labour which is confined only to those factors critical to human capital theory is reliable.

Human capital theory shares with neoclassical economic theory a focus on the relation between the worker and the firm. It also shares the assumption of economic rationality on the part of individual workers, who are held responsible for changes in their stock of available human capital. This means that, in assessing the skills or human capital of the workforce, these are regarded as a form of property of the individual worker and as associated with the activities of the work process identifiable with particular firms. The social structures forming and constraining the quantity and quality of labour are neglected (Maurice et al 1986). This implies a narrow concept of skills - and indeed of labour - one which ignores all the complexities of skill formation at the social level of the labour process and at firm and site levels (e.g. Bresnen et al 2005a; Rooke and Clark 2005). The result of adopting such a narrow definition is therefore likely to be a distorted assessment of skills supply and of the overall position of labour.

The purpose of this paper is to assess how far this is the case. The Pearce Report invites complacency in assessing that 'in terms of available skills, there is a fairly strong profile' and that labour productivity as comparable to that in France and Germany (Pearce Report 2004: 35). Educational standards in the British construction industry are also regarded as comparable with other sectors, such as transport and agriculture, though it is conceded that these are lower than for public administration,

finance and energy/water and that a decline in those entering construction-related university degrees, the accident record and skill shortages give rise to concern. When wider structural factors are considered however and labour is regarded not as passive but as a dynamic and driving force in the development of production, a far more worrying picture of the situation of building labour in Britain emerges. Indeed the tendency of employment, skills and training policy to bow down to employer demand as shaping labour supply and to regard market rather than social factors as all-determinant contributes to a downward spiral of deterioration out-of-tune with the general needs and development of building labour. It is also a policy which, though in tune with human capital theory, is out of tune with the process of skills formation in other European countries. There, the reproduction of skills takes place through a dynamic relationship between the state, its vocational education organisations and industry, comprised in most European countries of the social partners (trade unions and employers' institutions).

## **The situation of building labour**

### *The employment structure*

When we look at the general development of building labour in Britain, the first and most striking aspects are that the division of labour and numbers employed appear to have remained unchanged for over thirty years (Table 1). In 1970 1.8 million were employed in the construction industry and now, according to the Labour Force Survey there are 1.9 million, of whom approximately 1.6 million are covered by the quarterly survey carried out by the Department of Trade and Industry (DTI 2004). Over the

same period the employment of administrative, professional, technical and clerical (APTC) staff has remained constant at approximately 17%. 75% of the workforce is in manual occupations, 25% in non-manual, almost half of which is composed of office staff (CITB 2004). In contrast, in a country such as West Germany the workforce has declined by 62% in the same period and the proportion of APTC has risen very considerably, from 10% to 22% of the workforce, with the more abstract and technical nature of construction work (DTI 2004; Die Deutsche Bauindustrie 2005; Clarke and Herrmann 2006a).

**Table 1: Employment in the UK construction industry '000s**

	<b>Total</b>	<b>Directly employed operatives</b>		<b>Self-employed</b>		<b>APTC</b>		<b>Trainees*</b>	
	<b>No. 000s</b>	<b>No. 000s</b>	<b>% of total</b>	<b>No. 000s</b>	<b>% of total</b>	<b>No. 000s</b>	<b>% of total</b>	<b>No. 000s</b>	<b>% of total</b>
1970	1802	1170	65	405	22	333	18	84	4.7
1980	1696	975	57	495	29	346	20	69	4.1
1985	1492	725	49	470	32	297	20	49	3.3
1990	1703	668	39	718	42	317	19	46	2.7
1995	1375	436	32	621	45	238	17		
2000	1508	578	38	545	36	248	16		
2003	1622	629	39	611	38	267	16		
<b>% change 1970-2003</b>	-10%	-50%		+51%		-20%			

\* Figures for trainees were discontinued by DoE in 1989 for 1990 is therefore that for 1989.

The figures exclude those in public authority Direct Labour Organisations.

*Source:* Department of the Environment (DoE), *Housing and Construction Statistics*, HMSO; Department of Trade and Industry (DTI), *Construction Statistics Annual*

Alongside this virtual stagnation in the division between manual and non-manual labour in Britain, divisions into trades have also remained relatively unchanged and traditional. The industry embraces at least 50 different skilled occupations and numerous professional occupations with the largest group of manual workers (19.8% of the total workforce) in the wood trades, above all carpentry and joinery with approximately 260,000 employed. Carpenters are followed by two other traditional trades, bricklayers (9.4%) and painters and decorators (6.7%), and these together with roofers (4%), floorers (2.8%), and plasterers and dryliners (2.6%) make up 47% of the manual trades. Plant operatives (5.7%) and other civil engineering operatives (6.5%) together constitute a significant and growing part of the manual workforce (CITB 2004).

One explanation for the traditional and relatively unchanging character of the construction labour force in Britain is the very high degree of self-employment, particularly in the south-east. This goes together with casual and insecure employment and the use of 'labour-only' subcontractors working to often tight output targets and prices. Though falling in the past few years from a level of 47% in 1996, self-employment still accounts for 38% of total manual employment (Table 1) – a rate almost three times higher than for other leading continental countries (Briscoe 2004). It has helped to fossilise existing divisions in its concentration in traditional trades, in

particular plastering (67%), painting and decorating (62%), bricklaying (57%), plumbing (43%) and plastering (58%), the wood trades (54%), and to a lesser extent electrical work (25%) (DTI 2004; CITB 2004). In contrast, fewer than one in ten (8%) non-manual workers are self-employed (CITB 2002).

This high percentage of self-employed manual workers is attributable to tax and insurance incentives offered by government to contractors to employ in this way through a special certification (CIS – Construction Industry Scheme), amounting to an employment subsidy and unique to the construction sector. It is a system often dubbed ‘bogus’ self-employment because those self-employed are to all intents and purposes in a legal sense ‘employed’. It has also been subjected to considerable criticism from both employers’ organisations and trade unions due to the devastating and long-term impact it has had on training and casualisation of the industry (Harvey 2002; Winch 1998). As a result the government has attempted to make the system less attractive and will bring in a new scheme in April 2007.

Self-employment together with extensive subcontracting, in particularly labour-only subcontracting, has contributed to extreme fragmentation. The industry includes about 170,000 private contracting companies of which about 40% are private one-person firms and over 93% have fewer than 13 employees though these account for only 38% of direct employment and 24% of private contractors’ work done (DTI 2004). Firms employing over 600, in contrast, account for 20% of employment and 25% of work done, and have significantly declined in number, as have the medium-sized firms. The pervasiveness of small firms, on which the productive capacity of British construction



largely rests, is a key obstacle to development as these tend to rely on traditional practices and to have neither the capacity nor the will to innovate.

The firm structure in Britain contrasts strongly with continental countries such as Germany where the medium-sized firms continue to play an important role, including in training. In Britain too a high proportion of output, rather than being carried out directly, is subcontracted, estimated at about 65%, or more than double that in other leading European countries (e.g. Clarke and Herrmann 2004a; Ive and Gruneberg 2000; Bosch & Zühlke-Robinet 2000). Much of this subcontracting is to small firms and is of a qualitatively different nature from that in, for instance, Germany because it is on the basis of traditional trade divisions and through labour-only subcontractors who in turn rely on self-employed labour. In Germany subcontractors do not provide only labour but are specialist in nature, built on highly trained, directly-employed workforces and with good training records.

A human capital approach, whilst recognising that a high proportion of small firms may adversely affect efficiency through economies of scale and reduce transaction costs, yet inevitably also ignores the structure of employment at the root of the fragmentation. This is because, though firms are seen to convert workers' attributes to capital, they are regarded as economically rational and neglected as concrete entities (Maurice et al 1986). Disparities in the employment structure, for instance between those directly and self-employed, are regarded as market effects - as isolated segments or even anomalies. Human capital theory therefore provides no frame of reference to study the ways in which labour is socialised into the production system through the structures of employment, wage relations, skills and training. In focusing on the

relation between the individual worker and the firm too, it ignores the complex social setting shown to be so critical to the operation of firms and sites (Bresnen et al 2005a; Rooke and Clarke 2005).

There are many ways in which the problematic nature of the employment structure is manifest. The most glaring is the acute skill shortages everywhere reported.

Construction output is expected to increase for the next four years at an annual growth rate of between 2% and 3% and to meet this it is estimated that over 80,000 new recruits will be required each year, including nearly over 16,000 managerial and office staff, 12,000 in the wood trades, over 6,000 plumbers and nearly 6,000 bricklayers (CITB 2004). The vast majority of these new recruits are needed to replace the existing workforce and the remainder to meet expected increases in construction employment. Yet, everywhere skill shortages are reported for the industry. According to the CITB 34% of firms in 2003 reported difficulties in recruiting carpenters, 27% bricklayers and 15% plasterers and professionals; 30% too claimed they had to refuse contracts because of the skill shortages (CITB 2003a). In addition, 50% of employers reported problems with the skills of new recruits and 20% had skill problems with the existing workforce. Skill shortages are especially acute in the housebuilding sector where up to 50% of firms are experiencing difficulties in recruiting these same occupations (Clarke & Herrmann 2006b). From other surveys conducted by the Construction Confederation and the Federation of Master Builders (FMB), it is apparent that the situation may be even worse than evident from the CITB survey; the FMB State of Trades Survey of 2002, for example, found that the proportion of building firms reporting difficulties hiring subcontractors (41%) had risen (FMB 2003). At the same time, the number of vacancies has dramatically

increased in most regions, doubling in Britain as a whole between 2000 and 2004. (DTI 2004).

Another critical problem of the employment structure is its fragmented, casual and insecure character. Those directly employed generally but not always have permanent contracts, though for operatives these are on a different and more insecure basis from those for staff, most being weekly rather than monthly paid. In firms relying on the self-employed holding CIS certificates, employment is by its nature casual though it can be regular and even long term. As for dismissal, the industry often continues to operate on a 'hire and fire' basis, particularly with respect to new recruits and the self-employed, simply tried out for a day or two and then only retained if required. This results in a highly fragmented process where the control of materials and labour is separated and the level of investment low, whether in labour (through training) or in machinery and equipment. The inflexible nature of the employment structure is also indicated by low levels of part-time work. The proportion of those working part-time varies with occupation, being still low but far higher with the professions such as architects (10.2%) than with skilled occupations such as carpentry and joinery (4.3%) and even more so labouring and less skilled occupations classified as 'construction operatives' (3.3%) (ONS 2004a).

Another peculiarity of employment in the industry, which it shares with its west European neighbours, is its overwhelmingly white, able-bodied, male workforce. Male workers dominate the industry in both manual occupations, where they constitute 99.7% of the private-sector workforce and females 0.3%, and non-manual, where males constitute 70% and females 30% (CITB 2002 and 2004). There is also a

lower proportion of women among the self-employed, 1.5%, compared with 12.7% of those directly employed (DTI 2004). All in all women constituted 10.1% of the construction workforce in 2004 (ONS 2004b). The only occupational group in the private sector of the industry with more females than males is administrative staff (68% female and 32% male), accounting, too, for 78% of the total female workforce (CITB 2002). Those women who are employed in construction are concentrated in particular occupations. For manual work the most popular occupation in the private sector is painting and decorating (3% of all painters are women), followed by floorers and wall tilers (1.4%), and carpentry and joinery (1%) (ONS 2004a). On site proportions of non-manual are similar to those for manual occupations, with only 0.7% of site supervisors and 0.4% of site managers female, although the proportion of site supervisors is slightly higher (2.5%) (CITB 2002).

In terms of ethnicity the composition has, according to Labour Force Survey figures, also seen little change, although, unlike gender, non-white employment has risen from 1.5% in 1992 to 2.4% in 2004 (ONS 2004b; Byrne et al 2005). 8% of the working population are from ethnic minority groups, so their participation in construction is significantly less than for the overall economy.

The industry therefore remains extraordinarily exclusive and this appears to go together with its casual and unregulated employment structure. Research has indicated that the more open, casual and informal the forms of recruitment, the more social networks came into play as a powerful social form of exclusion (Clarke & Herrmann 2006b, Beck et al 2003, Royal Holloway 2002). Other features of the industry too may act as forces of exclusion, including its relatively low status, hard working

conditions, and long working hours, as well as the persistence of a 'macho' work culture, discrimination and harassment, and lack of equal opportunity policies

### *Wage relations*

The employment structure is premised on and reflects the nature of wage relations in the British construction industry. The wage structure remains strongly craft-based, that is, based on the output of labour rather than its potential as reflected in qualifications and training. Most characteristic of this structuring is that pay is largely on an individual basis; even when the collective agreement is applied, this refers only to those employed at skilled craft level and below. Pay is also not directly related to qualifications or even status: the skilled craftsman may be paid the same or more than the foreman on site or the quantity surveyor. Instead pay levels, in particular at site level, relate both to experience and performance on the job in hand. This means that the pay, for instance, of a skilled carpenter may vary considerably both within a firm and across sites (Clarke and Wall 1998; Clarke and Harvey 1996). Piece rates, bonus systems and piece work denote the current preoccupation with rewarding output and performance rather than time and quality. The lack of a direct relation between pay and qualification and the individual and unregulated character of the pay structure are well suited to so-called 'self-employment'. They also mean that career progression is not founded on moving up a clearly graded structure; indeed there is little incentive to progress from skilled operative to foreman.

Wage rates not only vary from contract to contract but also according to type of firm and region; in the south-east they are generally high, for instance for carpenters and

joiners. The increasing use of east-European labour in the construction industry represents an attempt to reduce wages and at the same time to combat skill shortages and avoid a greater commitment to training (e.g. Building magazine 21.3.2003). Often high wage rates may also go together with long hours of work, including Saturday and Sunday overtime working. Average weekly hours for construction workers in 2002 were 45.7, including an average 5 hours of overtime (DTI 2004). Long hours in themselves represent skill shortages and tend to go together with the extensive use of self-employment, casual labour, labour-only subcontracting and agency work.

An important reason for the individual and output-related nature of the wage system is the weakness to regulate and the fragmentation of social partner organisation, that is the trade unions and employer associations in the construction industry. The trade unions represent a declining proportion of employees, with trade union density estimated at 17%, having fallen from 26% in 1995 (DTI 2005). There are four main unions with members in construction: UCATT (Union of Construction and Allied Technical Trades) with an estimated membership of 110,000, many employed in local authorities; TGWU (Transport and General Workers Union); GMB, with about 20,000, many in building materials companies; and AMICUS which represents some of the more skilled workers including – traditionally – electricians and plumbers. There is no longer any clear difference between these as to which occupations each recruits and they therefore compete with each other for membership and have little formal cooperation.

The employers on their part are represented through the Construction Confederation, which acts as an umbrella body ensuring that government, the media and other

important opinion-formers hear the voice of the industry. Formed in 1997 but with a history stretching back more than a hundred years, the CC comprises seven member federations: the British Woodworking Federation (BWF), the Civil Engineering Contractors' Association (CECA), the House Builders' Federation (HBF), the Major Contractors' Group (MCG), National Contractors' Federation (NCF), the National Federation of Builders (NFB) and Scottish Building. These in turn have more than 5,000 member companies, accounting for over 75% of industry turnover ([www.constructionconfederation.co.uk](http://www.constructionconfederation.co.uk)). In addition to the CC, there is also the Federation of Master Builders representing many of the small builders. Just as with the unions, which represent only a small part of the workforce, so the employers associations too tend to represent the larger firms rather than the myriad of small firms in the industry.

The main collective agreement, the Working Rule Agreement (WRA) for the Construction Industry, covers only 20% of employees in the industry (DTI 2005). It is signed on the employers' side by the Construction Confederation, the National Federation of Roofing Contractors and the National Association of Shopfitters and, on the trade union side, by UCATT, the TGWU and GMB. Both sides constitute what is known as the Construction Industry Joint Council (CIJC), which also annually negotiates pay agreements. The agreement is still divided, despite attempts at regrading, between labourers (General Operatives), skilled operatives and craft operatives. Negotiated pay rates for manual workers have improved relatively, and now stand at 822p per hour for the craft rate, a little below the average earnings per hour of 876p, excluding overtime (CIJC 2005; DTI 2004).

The WRA contains peculiarities in particular for civil engineering work which continues to be structured around the core person of the labourer, with 'plus rates' awarded for different activities. These reward narrow applications of skills and accord with the low or non-existent levels of training to be found in civil engineering occupations (Rooke and Clark 2005). They also fail to collectively recognise the wide range of skilled activities undertaken by the labourer or general construction operative, including concrete work, plant operation, drain laying, and steel fixing - activities falling within the remit of skilled construction occupations in other leading European countries. A further feature of the collective agreement is the relatively underdeveloped social wage, that is the range of social benefits, compared with other leading European countries. There is a Holidays with Pay Scheme, encompassing a holiday fund, entitlement to accident and death benefits, and a pension scheme but this covers only a small proportion of the workforce. In general, social protection in the construction industry is limited and a large proportion of workers receive few if any benefits. Often too employment legislation, such as the Working Time Directive, is not implemented and there are many employment tribunal cases taken by self-employed workers in search of holiday pay. In contrast, in a country such as Belgium, industry social funds cover bad weather, time off between Christmas and New Year, supplementary unemployment and sickness, sickness reimbursement to small firms, early and supplementary retirement, loyalty stamps, assistance for accidents and fatalities and for vocational training (*CLR News* 2000)

### ***Skill and training structures***



If the wage and employment structures are intricately linked and at the same time structurally and institutionally supported and reinforced, so too are training and skill structures in the industry. One reason why skill shortages are not simply resolved by increasing recruitment into training is that this relies on employer demand or willingness to take on trainees and provide work experience; no compulsion is placed on firms. It is in neglecting skill formation that the true weakness of the human capital approach is exposed. For skill formation is central to the structuring of labour markets; indeed, the French 'societal effect' school posited education and training systems as key to differences in labour organisation (Rubery and Grimshaw 1998; Maurice *et al.* 1986). Marsden has qualified the role accorded to labour market institutions in his distinction between production and training approaches, the latter associated with continental systems such as in Germany, depending on transferable and general skills which require most institutional intervention in the labour market (Marsden 1999). He suggests that institutions and hierarchies differ qualitatively with respect to the type of skill and labour market.

In terms of improving skill formation, the British construction industry has a poor starting point. There is a relatively high proportion of untrained workers in the construction labour force many of whom - echoing the persistence of a craft system - continue to be classed as labourers. Others pick up some of the skills of a trade informally and are gradually taken on and paid as tradespeople or classed as plant operatives following a short plant-specific training course (Clarke and Wall 1998). The Construction Industry Training Board (CITB ConstructionSkills) estimates that only 46% of the workforce has National Vocational Qualification (NVQ) Level 3 or

its equivalent, compared with about double this proportion in Germany (CITB 2004, Richter 1998).

Levels of construction training too in Britain leave much space for improvement.

Numbers of first year entrants for 2003/4 stood at 48,744, of who only one third were serving some form of apprenticeship with a firm (although the figure was much higher in the North-East, Scotland and the South-West), with the remainder on a college-based training route. Most of those undertaking training, especially on the college-based route, are adults over 18 and their numbers have been rapidly increasing, from 21,350 in 2000/1 to 27,596 in 2003/4, to account for 56% of the whole intake (DTI 2004). The drop-out rate from college courses is however higher than 40% for those in the main building trades, many students being unable to cope with the demands of NVQ level 2 because they may lack basic numeracy and literacy skills and struggle with the theoretical aspects (FEFC 2001; CITB 2004). The real difficulty with the college-based route is however to find employment subsequently and obtain the necessary work experience and this is also a factor that clearly contributes to high drop-out rates.

The overall proportion of construction trainees, although it has risen, also remains very low compared with numbers in other leading European countries. Trainees represent an estimated 4% of the total manual construction workforce in Britain, whereas in Germany the rate is about 7% (CITB 2004; Die Deutsche Bauindustrie 2005). Nor has intake become any less exclusive. Ethnic minority trainees in 2002/3 accounted for 4% of total first-year trainees, a decline from 2000/1, when there were 5%. A similar decline also occurred in the number of female first-year trainees, from

4% of trainees in 2000/1 to 3% of trainees in 2002/3 (CITB 2004). Overall the proportion of women and ethnic minorities in training at craft and technician levels is higher than the proportions in employment and they are also far more likely to enter the college-based route than the employer-based route. This indicates that many who do train in construction are not subsequently able to enter and work in the industry. Most significant of all has been the serious decline in technician training, contrasting strongly with the rise in employment and training in technical occupations in other leading European countries.

As well as a relatively low level of training provision in Britain, what does exist is restricted to certain occupations. Carpentry and joinery represents by far the most important trainee occupation, with nearly 30% of all first-year entrants in 2003/4 (DTI 2004). 63% of employees work in the main building trades (wood trades, bricklaying, plastering, roofing, painting, and flooring), whilst 71% of trainees are concentrated in these areas. Plant operators, scaffolders, maintenance workers and many in the civil engineering sector, although they represent 16% of the workforce, receive virtually no training, with trainees representing only 6% of all trainees and these likely to be mainly on short courses (CITB 2004). The concentration of trainees in traditional trades has long been a characteristic of the industry and denotes its very traditional character.

Another difference between Britain and countries such as Germany lies in the quality of skills. Together with the craft nature of the labour process has gone an atomised notion of skills as physical attributes associated with carrying out particular tasks and specific to the needs of individual firms. NVQs have involved breaking down

occupations into competencies, often narrowly prescribing tasks and entailing a loss of general and theoretical knowledge in the curricula and deterioration in the transferability of skills (Steedman 1992). Indeed, instead of a belief in knowledge, including theoretical and technical knowledge, as the underpinning of any practice, there has been increased emphasis on learning-by-doing. In Germany, an increasingly skilled labour process has meant that without qualifications it is increasingly difficult to work on a construction site. It has also gone together with the requirement that all trainees acquire the equivalent of NVQ Level 3, as originally envisaged too for the British construction industry when the NVQ scheme was established; now there is a general acceptance of the equivalent of NVQ 2 as the skill level. Unlike Germany or the Netherlands too, there is no clear and comprehensive progression route from apprenticeship to intermediate levels or beyond; there is even an increasing problem in moving from NVQ Level 3 to higher national level due to a lack of underpinning knowledge, the dramatic decline in the training of intermediate occupations and a consequent reinforcement of the old divide between manual and non-manual labour.

In this way, the industry has remained trapped in a 'low skills equilibrium' and relatively indifferent to formal qualifications even though there is increasing recognition of the need for more abstract and social skills and technical knowledge (Brown 2001; Rooke and Clark 2005).

### ***Structural effects.***

The social structures within which the construction industry is embedded produce their own effects in terms of health and safety and productivity. These are flagged up

in the Pearce Report but, when other factors are considered, appear far more critical than indicated. Statistics from the 2001 Census, for example, on those in employment with a limiting long term illness show clearly that the proportion of those with a limiting long term illness is lower for those employed in professional occupations such as architects (5.2%), than for those in skilled construction and building trade occupations (6.7%), and even more so than for labourers in building and woodworking (10.1%). The industry is not only exposed to the vicissitudes of the weather and seasons, but can be one of the most hazardous and unhealthy workplaces as evident from the fact that the fatal and major injury rate is three times higher for construction than for all industries and the rising rate of reported injuries twice as high. Given that injuries incurred by those who are self-employed may well not be reported, the real rate is likely to be much higher. Enforcement notices issued by the Health and Safety Executive (HSE) have also dramatically increased since the mid 1990s, indicating widespread abuse of safety regulations (DTI 2004).

As well as the dangers posed to skill formation and the health of the workforce the industry also compares unfavourably in terms of output with other countries. The level of building investment per inhabitant is very low compared with elsewhere, being, for instance 63% of the level in the Netherlands (Die Deutsche Bauindustrie 2005). Labour intensity too is comparatively very high and labour productivity relatively low (Briscoe 2004). Indeed, at a micro project level we have found – in contrast to the Pearce Report – that labour productivity compares very unfavourably with northern European countries (Clarke & Wall 1996; Clarke & Herrmann 2004b; Pearce 2004).

## **Forces of change?**

From examination of the social context in which labour in construction operates in Britain, a number of obstacles to the development of a sustainable labour force are apparent. Examples of how these might be overcome are provided from other European countries, and from these and from more advanced sectors of the British construction, such as the engineering construction industry, we can begin to gauge the direction of future developments.

In terms of skill formation, all the evidence shows that more advanced building techniques generally require a higher professional input, higher levels of skills overall on site and less labouring work. We would expect, given the development of the production process, in particular greater mechanisation and use of prefabrication, that heavy physical, labour-intensive labouring work would gradually be replaced by more logistical, planning and coordination activities so that the proportion of manual staff employed decreases at the same time as the proportion of non-manual staff increases with the more abstract nature of work. Research has backed this up, showing that team skills are sought by all employers and that operatives are required to have flexible skills, a sufficiently wide skill base to undertake a range of tasks, organising ability to set out the work and organise materials, a high standard of work, and a good attitude in order to deal with customers (Beck et al 2003; Clarke & Herrmann 2006b; Bresnen et al 2005b). Skill demands, therefore, are in general relatively high, corresponding with changes in the construction process, whereby greater precision is required in, for instance, installing prefabricated components, more abstract skills for planning, setting out and reading drawings and specifications, and greater technical

knowledge in order, for instance, to overcome new health and safety problems on sites. There appears therefore to be a mismatch between the skills required and the actual qualification of the British construction workforce. A key problem with the system in overcoming this is the lack of relationship between college and work and the difficult bridge or transition from education to employment.

At the same time as skill requirements have been changing however individual employers have shown increasing reluctance to take on trainees, described as the “employers’ retreat” (Keep 2002). This has also occurred as large firms have abdicated responsibility for direct employment and hence for training and the proportion of small firms has increased, so that most trainees are dependent on these to offer training places. There are a variety of reasons for this ‘retreat’ and it is not unique to the British situation. One may be a reliance on advanced technologies unsuitable as a learning environment for trainees because of safety risks and potential damage to valuable materials and equipment by those with no experience or knowledge. A second is that most firms are small, rely on self-employment and do not have the time or capacity to train. Another is that, even should they go to the expense and effort of training, they are then exposed to the danger of having trainees poached on completion, given unregulated wage structures where employers are prepared to pay more to obtain the skills they acquire. And a final reason is that they may have very specific skill requirements, unsuitable for providing trainees with the range of skills associated with a particular occupation. In this situation, the question posed is whether the apprenticeship model based on the individual firm can and should continue to be upheld as the main model of vocational learning?

In Britain, the amount of formal training that construction trainees receive is generally much lower proportionally than in those European countries with what Marsden has termed a 'training approach' (1999). The problem is that those who attend college on a full-time basis acquire more transferable skills than those on the apprentice work-based route but may be deficient in specific, work-based skills. We may assume that skilled workers are, in the course of their careers, going to encounter a wide variety of cognate but individually different tasks and skills formation should be adequate to enable them not only to perform those that are currently within the technical capacities available to their occupation, but also to learn to perform tasks that, although not now within those capacities, are likely to be in the foreseeable future (Winch & Clarke 2003). Critical to the knowledge of, for instance, a bricklayer is also general knowledge of the building production process and its aims, the different subcontractors involved, agreements and contractual arrangements governing working time and output, social relations on site, and, above all, responsibilities for machinery, equipment, materials and the prevention of accidents and occupational diseases.

Vocational education such as found in northern European countries such as Denmark and Germany in general rises to these challenges. Training systems there revolve around the acquisition of applied theoretical knowledge, whereby the trainee learns to recognise theoretical propositions in practical situations (Clarke and Winch 2004). This involves substantial elements of college based work in which both the theoretical and the simulatory elements of the experience are introduced, followed by controlled practice in operational conditions under the guidance of a senior worker. It is built around college-based block release for abstract and theoretical knowledge combined with simulatory practice in well-equipped training workshops to understand how this is applied, plus work experience in firms. This system is regulated jointly



by the state, the education authorities responsible for college training, employer representatives responsible for training and work experience in the workplace, and trade unions representing those who receive training and the current workforce. In this respect, it is no longer a system resting on the goodwill of the individual employer, which the Modern Apprenticeship in Britain has well illustrated cannot anyway be sustained.

In Germany too the hierarchy of employment, unlike that in Britain, is structured through qualifications, built on formal programmes of training and regulated through the collective agreement, which covers all categories of labour up to senior management level. Progression is therefore far less dependent on the whims or policies of the individual firm. The majority of the workforce is covered by collective agreements and wage rates are broken down into six grades for office employees and eight for site staff, though there are four main categories: *Ungelernte* (untrained); *Angelernte* (semi-skilled); *Facharbeiter* (skilled); and skilled with further training. In terms of wage differentials therefore the German system is much more transparent than the British. Terms and conditions for the construction sector are also critical and specific, given the peculiarities of the sector compared with others. For instance, given that the production unit is mobile, without a fixed workplace, with workers constantly moving from one site to another, agreements need provisions to compensate for travelling time and expenses, as well as accommodation at distant places, etc. Work is usually site-based and therefore of a temporary nature, and may be interrupted by the weather, non-delivery of materials, etc. To compensate for such insecurity, agreements stipulate a guaranteed minimum wage, as in Britain, but also extend further than this, including – in Germany – winter compensation. Increasingly too wages are annualised so evening out otherwise fluctuating earnings.

The suggestion therefore is that to improve skills, employment and wage relations in the industry regulation is required. Rather than being focussed on the relation between the worker and the firm, this needs to be at industry and government levels. The Construction Skills Certification Scheme (CSCS), whereby the skills of all construction workers are registered and recognised, is one indication of a move towards such regulation. This involves on-site assessment (OSA) by accredited NVQ assessors and is intended to ensure that the construction workforce obtains the minimum of a NVQ level 2. The eventual aim though of this scheme is to provide clear qualifications-based hierarchies through which individuals can progress and that this should also facilitate the progress of women and ethnic minorities. In this respect, the widespread requirement for CSCS cards may serve to encourage a more qualification-based than output-based wage structure, particularly if wage grades are linked to NVQ levels, and a more inclusive employment structure.

## **Conclusions**

The need for greater regulation is apparent from many of the aspects of the British construction industry discussed here: ‘bogus’ self-employment, labour-only subcontracting, casualisation, fragmentation, lack of employee involvement and representation, exclusiveness, informal networks of recruitment and selection, acute skill shortages, poaching, traditional skill demarcations, a sharp divide between operative and professional/technical skills, lack of training, poor health and safety, and low productivity. Without, for instance, a comprehensive, thorough and industry-wide training scheme and without a more stable, negotiated and integrated structure of

employment, it is difficult to imagine the British construction industry's contribution to sustainable development being other than rather negative. Sustainable development, according to the Pearce Report, means 'improved quality of life' reflected in 'increases in per capita real incomes, better health and education ... and more social stability' (Pearce 2004: ix). As argued in this paper, such sustainability requires a new structure of skills in the industry, one that incorporates innovative skills at a higher level and is industry-wide rather than built around rigid trade divisions. It requires a clearly regulated wage structure which recognises qualifications and the potential ability of the workforce. And it requires stable and regular employment, open and inclusive to all groups.

There is little evidence, however, of any such restructuring. Indeed, the solution to skill shortages focuses not on training but on importing the necessary skilled labour. This will not address – and may even reinforce - the structural problems that lie at the heart of the problems of the British construction industry. In contrast to many other European countries, skills in Britain are not valued according to the knowledge they incorporate but according to an individual's ability to fulfil the task in hand, that is according to outputs rather than inputs. Training is geared to individual employers' rather than industry needs, qualifications are not a prerequisite for entry and labour is rewarded for its product not its potential value. Ironically, though these very qualities of the British construction labour process which give rise to concern are those which human capital theory espouses. This paper has suggested that the social relations that are implicit in the training and industrial relations systems - and that give rise to ideologies such as human capital theory - need to be confronted if structural problems are to be tackled.

The implication is that any successor to the Pearce Report needs to move outside the narrow constraints of a human capital framework if sustainable development of the construction sector is to be understood and achieved. Such a successor would need to embrace the social and institutional structures that support the current system, including training, the tax and insurance regime, the wage, and employment and industrial relations. These are regulated not by the firm but by the state and the industrial social partners – the employers and trade unions. It is to this level that we need to look to understand the structure of social relations in the industry and not to relations between the worker and the firm nor even to what is known as ‘social capital’ within firms, that is the network of social relationships in which people are embedded within the workplace and on sites (Bresnen et al 2005a). At firm and site levels the effects of the current lack of regulation in Britain may nevertheless well be observed, whether learning-on-the-job, casual employment, output-based pay, labour intensity or low productivity levels. Such observations point to a devalued construction labour process and an apparent lack of regard to the value of labour compared with other leading European countries. It is this devaluation that is at the heart of the problem, just as it is with the human capital approach.

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