CULTURAL CHANGE IN CONSTRUCTION

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This paper presents and discusses initial findings from a pilot research project investigating the changing composition and culture of the construction industry, with particular reference to the inclusion of women, ethnic minorities, the disabled and other under-represented groups at the professional level. Internal subcultural factors which may prove problematic for these groups are identified, and external cultural, regulatory, and organisational forces for change are identified.

Keywords: Access, bullying, change, community, conflict, disability, ethnic groups, ethnography, management, professions, subcontracting, subcultures, women.

RESEARCH CONCERT AND CONTEXT

This research builds on previous studies of women in surveying and town planning (Greed, 1991, 1994). This project seeks to fill in another piece of the property development jigsaw by looking at the 'harder' and more 'site-related' end of the built environment professional spectrum, including construction management, civil engineering, building surveying; and architecture for comparison. The study is funded by ESRC for a one year (from 1.1.97) and is structured as a pilot study, which seeks to stock-take, to assess the current situation, to identify key themes, concepts, questions and change-agents, with a view to undertaking a more detailed and focused Stage Two. This research utilises qualitative, ethnographic methods (Hammersley and Atkinson,1983) with some quantitative contextualisation (Table 1). In seeking to understand the changing situation it is important firstly to examine the nature of the present situation and secondly to identify factors, within and without, the industry which are contributing to change, and the paper follows this sequence. The paper includes some recommendations in the light of the findings which may contribute to attracting and retaining more members of under-represented groups to the construction industry. But, the primary purpose is not to investigate 'how to get more women and ethnic minorities into construction'. Rather, the research has a more critical agenda, and reflects my ongoing interest in the eternal 'urban question' namely, 'who gets what why how and where' and in the processes, decisions, and human input, which shape the built environment, and determine 'what is built'. Although, construction professionals emphasise the importance of public service, still, there is considerable dissatisfaction within the community at the end product in terms of individual building design, inconvenience of location, layout and overall city form, and wider social and access issues. There is concern at the continuing under-representation of minority groups and interests in the development process - a factor which undoubtedly shapes the nature of professional decision-making, and creates an unsatisfactory end product.

One may say, 'so what?' (as some construction professionals have told me), 'this is nothing to do with construction, you should go and talk to the town planners, the politicians, the property developers and architects... The decisions have already been

made by them, we just build what we are told. We have too many technical and financial requirements to fulfill for the client to worry about all this social stuff. In response to this I would argue that 'the construction industry' is not a separate planet (although sometimes it seems so) it does not exist in a technological realm separate from the wider society. Indeed its economic future depends upon being in tune with society's needs and demands. Inevitably, professional decision-making is not entirely socially-neutral but is influenced by an individual's perception of 'reality' as to how he (and its usually 'he' in the world of construction) sees the world, and imagines society to be. I have developed this concept in detail in earlier work on the surveying profession (Greed, 1991 :5-6). 'Subculture' is taken to mean the cultural traits, beliefs, and lifestyle peculiar to the construction tribe. One of the most important factors seems to be the need for a person to fit in to the subculture. It is argued that the values and attitudes held by its members have a major influence on their professional decision-making, and therefore ultimately influence the nature of 'what is built'. Gender is of course a major consideration in the world of construction, as is ethnicity. The need for the identification with the values of the subculture would seem to block out the entrance of both people and alternative ideas that are seen as 'different' or 'unsettling', but which may, in fact, be more reflective of the needs an composition of wider society. The concept of 'closure' in the relation to the power of various subculture groups to control who is included in, or out, is a key factor in understanding the composition of the professions. This is worked out on a day to day basis at an interpersonal level, with some people being made to feel awkward, unwelcome and 'wrong' and others being welcomed into the subculture, and made to feel comfortable and pan of the team, and thus encouraged to progress to senior posts and thus decision-making levels within it, and are therefore in a position to shape the built environment.

The influence of construction professionals goes way beyond individual building projects, they are among the 'great and the good' being called up to shape the built environment, at macro and micro levels, in a variety of capacities, posts and committees. For example civil engineers may be heads of town planning departments, transportation planners, and planning inspectors. Construction managers and building surveyors are to be found in the highest levels of academia, and sitting on a range of policy making governmental committees on strategic urban policy issues. Since women and other minorities are under-represented in the construction professions when members are sought for decision-making committees and boards, candidates are chosen from a predominantly male pool. So 'women's issues' are often, by default, dealt with by all male committees. For example, many BSI committees still predominantly consist of male engineers and other elderly gentleman. The BS 6465 Code of Practice for Sanitary Appliances committee, has only recently welcomed its first woman member. It is no co-incidence that for many years this Code has specified almost twice the provision of public conveniences for men as against women.

METHODOLOGICAL APPROACH

The emphasis in this research is upon 'understanding' and 'making sense' of the situation, the focus is upon 'why' and 'how' rather than 'what' or 'how many', as is common in modern qualitative research of professions and large organisations. This puzzles some in the construction industry who are used to a more linear, objective and scientific approach, in which it is assumed there is a 'research question' which will be methodically pursued in a traditional empirical manner using questionnaires, surveys

and statistical data, to be written up in an impersonal style. But we all should know by now from Latham (Cm,1996), there are relatively few women and ethnic minorities in construction, and that there is a 'problem'. Some might say the subject has been done to death, particularly in relation to women's issues. In the early stages of my research my innocent enquiries about the topic were often met with the response, 'You ought to look at the Latham Report Working Group 8' or 'Have you spoken to Sandy Rees Jones? '. It was as if everyone had had their jabs, they had all been innoculated against the e.o. virus, and the need to further consider the matter, because they had read or been contacted by key researchers in this field (Rhys Jones f et aI, 1996). A Latham 'script' now exists which male construction professionals can } confidently recite: the topic has been 'done'. One gets the same sound bites again and i again (Barnes, 1997). Likewise some young women construction professionals come across as full of excitement about their future career, unaware that senior women are few and far between. A reading of Latham's 'proposals' as 'actions' imminently to be implemented can bolster this optimism (cfSharpe,1995: 14-16), 'great expectations: young women today think the battles have been won'.) The Latham-phenomenon has led to what ethnographers call 'reactivity' a feed-back loop has been created. We must move beyond this.

Ethnography is a means of getting below the surface of 'words' and 'fronts'. The method is based on observing the various construction 'tribes', and seeking to understand their perception of 'reality', not least how they see 'others' who are unlike themselves. In this pilot stage I am not 'doing' a full ethnography but rather am identifying a series of 'key themes' that frequently manifest themselves in the course of my contacts with organisations and conversations with individuals in the world of construction (cf Evetts, 1996:44: and Miles and Huberman, 1994:7 on thematic approaches). Because the construction industry is not geographically 'fixed' (as in the case of the study of a school or a prison) but many of its personnel are site-based and always on the move, a dispersed ethnographic approach is appropriate, contacting people wheresoever they were found. I am also using an element of retrospective ethnography that is drawing on material with which I am already familiar from the recent past, and making comparisons with the present to gauge the level of change. I am hardly 'new' to this area of research and am 'known'. People think I have lost my memory or gone mad if I seek, afresh, to interview them formally. They are likely to say, 'why are you asking me this? I thought you knew all this already?'. So a 'softly, softly' approach based on mingling, observation, attending my usual professional committees, and doing nothing out of the ordinary often yields far more interesting material than approaching people direct. Being part of what I am studying provides a headstart, but prior knowledge must be treated with caution. An essential attribute among ethnographers studying their own world is the ability 'to make the familiar strange' (Delamont, 1985). Making comparisons with other parallel professions, such as architecture, and other countries where progress is greater, such as Sweden (Mellstrom, 1995), enables one to identify the peculiarities of the British construction professions, and to 'fight familiarity'.

AS OTHERS SEE US: THE CONSTRUCTION INDUSTRY CULTURE

In this section I will highlight the peculiar traits of the construction industry and the professions therein, writing in a style which incorporates comments and reflects opinions which 'others' not of the tribe have made. The Construction industry employs

around 1.2 million people at present, a drop of half a million from the end of the 1980s. In spite of this state of decline, it still responsible for around 10% of the Gross National Product (Rhys Jones et al, 1996) employing 7% of the total male workforce (Druker and White, 1996). Women constitute less than 5% of the 20% who are in all the professional and managerial levels in the industry, and around 2 % are in the manual trades. (Source: CITB The Construction Industry: Key Labour Market Statistics, 1996). I use the word 'around' intentionally because one of the features of the industry is some 'fluidity' as to labour force numbers, exacerbated by a 'boom and bust' environment, and the fact that it is not 'fixed' geographically or economically but the workforce fluctuates as new sites are developed' as the circus moves on'. Also many 'outsiders' have commented upon what they see as the 'secretiveness', of the construction culture, making it difficult to get a straight answer when seeking 'facts'. Also there is often a lack of clear written criteria in evidence on matters such as recruitment, promotion, career development, and qualification, and much of the system still seems to run on the 'he's a good chap, I knew his father' principle, with informal associations, 'pub culture' fraternities, masonic and sporting enclaves playing a key role in the management of the industry, and the chance of work, at all levels. Relatively few women are to be found in senior posts (New Builder 24.3.95 'top posts still elude women'), Although there are now meant to be more young professional women in construction, and some large firms have positive recruitment programmes, my attempts to track them down often resulted in my being informed, 'oh there was one, but she left': the 'was one' phenomenon proved commonplace. In other words nothing is ever quite what it seems.

For young women, and men, the changeable and uncertain nature of the industry may discourage them from investigating it as a career choice. 'It's a rubbish industry, there's no future in it'. There are more students studying leisure, sport and recreation degrees than the total on all built environment courses, and four times the number of students on hairdressing courses than on construction courses at the technical college level. There are now small cohorts of women on most courses (7% on average, with considerable variation between courses), but this is hardly a growth area. The 1990s has been characterised by easier initial access, and the encouragement of ethnic minority groups, particularly by some of the new London universities. In comparison architecture continues to attract by far the greater number of women, and men, with 30% women being common on courses. The emphasis in architecture upon 'design' and 'changing things' and 'working for the community' are key incentives for women. In contrast many construction courses, approved by the CIOB, RICS and ICE are struggling for students, when the reality is that much of their course material and subsequent career activities are not that different from architecture. It would seem the very factors that young males might be attracted by are a put-off for women, such as the emphasis upon quantitative, scientific study material, formal methods of study (as against creative studio work), 'too much' management studies, and a generally technological, impersonal ethos. The emphasis upon team working and large organisation management is inappropriate when a third of all women architects work alone (WAC, 1993), and professional women in construction are increasingly working in small firms and organisations, as self-employed, and on a part-time or consultancy basis. The 'big boys' in the 'big firms' are only the tip of the iceberg, as the majority of all firms in construction are small, even though greater attention is always given to the 50 or so large 'big name' contractors (Druker and White, 1996:10).

Many students, both male and female, become disillusioned or chose alternative career paths having entered architecture, as only 25% of those who enrol ever become architects (Kirk Walker, 1997). A similar figure applies to civil engineering. Those who are very determined strong women will keep going regardless, but the 'average woman' who is perhaps not prepared for what might face her may find it more difficult. One problem is the question of 'fitting in' to the respective subcultural image of each profession, none of which were designed with women or non-white groups in mind. Women may be confused by the extremely fragmented and diverse nature of the different professional bodies (Leveson, 1996), However initiatives such as the Construction Careers Forum are seeking to create a better, less fragmented' image' , so potential recruits are clearer as to which specialist chartered body might suit them best. Civil engineers, for example, prefer to align themselves with' science and engineering' rather than mere 'building' and, like the architects may be seen as the aristocrats of the industry. Building surveyors, and most RICS surveyors, have a more commercial culture, and may be seen, relatively speaking as the 'yuppies' of the sector. The architect has an ostensibly 'arty' 'soft' image which makes it 'the odd one out' and therefore initially attractive to women. CIOB construction manager types may eschew the word 'building' and prefer to use the word 'construction', or just stress the word 'management'. Whilst the men, are seeking to drop associations with 'building' women are frequently still told that they cannot be construction professionals because of the difficulties they might have with building site and with understanding building technology. But many of the large firms such as Bovis which offer employment to construction professionals are essentially nowadays project managers and brokers of others' skills rather than technical specialists. With the advent of new technology, such the relaying of real-time video of site details from safety helmet cameras via computer communication, I was told by one project manager that there would be no need to go on site in the future, 'no more terrapins!'.

The building site is still used as the great excuse as to why women cannot go into construction. In conversations the emphasis on the 'hardness' and 'dirtiness' of the work increases proportionately to my respondents embarrassment about women's' exclusion. It seems it is not the physical site that is the real problem but rather the nature of social relations on site, in particular the ethos of pressure, and bullying, which many have commented upon (Brown,1997). The construction industry is not only highly gendered it is also strongly classed (cf Evetts, 1996:27), quite feudal, and military in structure. The subtle vertical divisions between different skills, and levels of responsibility in which every man knows his place, is reflected, in the 'map' of the construction industry produced for NVQ purposes by CISC (1994). Relatively upper class white females, who might have traditionally been officers' wives staying at home (cf Building, 14.10.94:210-3), may find there is no place for them in a male world divided into officers and men. 'Others' such as black women built environment professionals, I have been told frequently, are the most difficult 'to place', although other ethnic groups do better, especially the Japanese who appear to be valued 'better than whites' with male Asians also ranking high as 'businesslike'.

Many women have commented upon the strange contrast between the 'clean' image of 'management' found in the literature of the construction tribe (for example, Langford et al, 1994), with its polite discussions of conflict management (Gale, 1992), and what are seen as the harsh realities of labour relations, characterised by bullying, conflict, exploitation, poor conditions, and pressure. Much of the literature seems amazingly peopleless and impersonal (cf Druker et al,1996). The whole industry seems to work

by each level putting pressure on the next one down. Little indication is given of the fact that below the 'clean finger nails' level of higher management there is a ladder of command stretching down to the 'overseer' (sergeant, clerk of works) type levels where ability to shout and command instant obedience are essential attributes. Some women have talked of seeing this' slave culture' as the 'guilty secret' which professional men are hiding from women seeking to work in construction. r Several women professionals commented that the hidden agenda behind CDM in ! Britain (1995 Construction (Design and Management) Regulations) (above the effects of the 1992 EU Safety Directive), was to reduce the pressure and bullying, under the guise of health and safety.

A culture of intimidation has developed in the wake of increased emphasis upon sub-contracting in the private sector, and a decline in Direct Labour Organisations. There has been a very high level of self-employment, around 65 %, among the trades and manual levels. In spite of tales of 'yuppie bricklayers' (Casey,1994:72) with mobile phones hopping from site to site for ever-higher returns, the reality is that many see such self-employment as a form of reserve labour which provides none of the benefits of being an employee, and which UCATT see as exploitation. It is significant that unlike in general practice surveying or town planning, construction professionals have their own labour force. In terms of class analysis this is one of the few remaining truly 'manual working class' groups left nowadays, but unlike factory workers or miners, (the darlings of traditional marxist analysis) this group is mobile, self- employed and it seems relatively invisible to mainstream sociologists. When looking at 'women in management' it is important to consider 'who' or 'what' is being managed, and at what human cost. The context and culture is very different from what a senior woman manager might encounter in a bank or retail organisation.

Many have argued that attracting more women would lead to more humane forms of management which would result in greater productivity and less of a confrontational, conflict-ridden 'macho pack culture' (cf Construction Manager October 1996:5), and thus more efficiency and cost-effectiveness. One of the obstacles, it seems, is the unwillingness of managers and professionals to admit the need for drastic change. Manual workers may fear being seen as 'chicken' or less than real men if they complain. But some of the manual and trades workforce nowadays are women (albeit only around 2 %) and they may yet prove the catalysts as they have nothing to lose in complaining and seeking change (Wall and Clarke, 1996). But they are unlikely to be employed on major projects. It is significant that the majority of women in the manual trades are likely to work in DLO organisations, for housing associations, and as self-employed people undertaking general domestic work. Also the cultural setting may be better for minorities on smaller, refurbishment and urban conservation schemes, rather than on large new-build sites. where The need to work for an organisation with its own local depot with toilets was seen as a key factor, because of the 'sanitation situation' on large building sites. Some women and other minorities feel more at ease in smaller organisations, especially those that are run to meet social and community needs. Some are wary of the superficial nature of Equal Opportunities policy in construction for women and other minorities, when the whole system, it seems to them, runs on the basis of an ancient and exploitative class structure, a time bomb waiting to explode, commenting 'the construction industry is rotten to the core, drastic change is needed'.

ALTERNATIVE PERSPECTIVES AND FORCES FOR CHANGE

In this section I will look at the situation from the 'other' side, in relation to those who are outside or on the periphery of construction but who might act as change agents exerting influence on the industry. Many women, ethnic minorities & and disabled people (not mutually exclusive categories) are interested in the built environment, because of concerns about community issues, especially the inadequate design of buildings, lack of access for the disabled and those with pushchairs and small children. Many citizens experience a sense of remoteness and lack of communication from developers and planners when major development was taking place in their neighbourhood. This concern may translate into a desire to enter the construction industry at some level in order to change the situation, particularly among mature women students who already have some idea about how the system works. Unfortunately the 'windows of opportunity' for training and advancement are still geared to the younger, rather than mature candidate (Cargill, 1996) and the construction press seems obsessed with the lack of younger 16-17 year old manual, workers (Construction News, 6.2.97:2) especially the shortage of steel erectors, crane drivers and welders (cf Cantrell,1996, growth areas for women in the USA). Generally one finds that women, true to stereotype, seem to be more concerned about the caring, environmental and design aspects of the built environment. One does not see these interests fully reflected in the publicity material for careers in construction. There are some ghastly attempts that miss the mark, such as a certain professional body which produced a leaflet advising girls that they could design hospital buildings and thus contribute to caring for the sick as much as a nurse. This leaflet seemed misplaced for those for 'bright' schoolgirls, who would never consider nursing in the first place, whilst mature women would be likely to see such material as ignorant of the important role they might already be playing in caring for the city and community.

More women have been entering professionally-exempting built environment courses since the mid 1980s (Greed, 1991,1994), but there has been a gradual decline in recent years, especially in surveying, as if women have 'tried' the construction professions, not thought much of them, and moved on to other areas, especially law, accountancy, media studies, and environmental courses. Even on courses where there has been a substantial number of women and commendable completion rates, some of those who qualify may subsequently 'vanish' (q. v. the 'was one' factor discussed earlier). Some are taking a temporary career break to rear children but others are not' dropping out' but positively going into other more interesting fields. Among these are women who are still very interested in built environment and building design issues, but who channel their energies into the voluntary sector. Also a range of ethnic minority and disabled built environment professionals, who have given up on the mainstream, are to be found in community, charity and campaigning groups. Far from altering the culture of construction, a series of new satellites are now circling 'Planet Construction' with their own subcultures and organisational structures. Significant groups include the Centre for Accessible Environments; Planning Aid for London; London Women and the Manual Trades; the Society of Black Architects, and Women's Design Service.

Those actively involved are admittedly quite small in number but they may be seen as a force for change in that they form part of a powerful network of alternative groups, they are often highly productive in publication, research and campaigning.

Also the organisations they run offer a model of alternative management structures, which are often based on a more co-operative, inclusive attitude towards employees at

all levels, and a greater level of the communication with' society' particularly when their 'client' is the community, or a disadvantaged or under-represented minority group. Whilst it may be argued these organisations are not commercial enterprises and therefore irrelevant as models for the construction industry, yet their ability to achieve a great deal with limited resources shows they have a respect for the 'cost factor' and for efficiency, economy, and flat management structures, which might be emulated. One often finds among women's groups a complete lack of the social division between manual trades and professional levels found in the mainstream industry.

Indeed many women appear impatient with all these demarcations and divisions and seek a more holistic, community based, cross-class, and cross-ethnicity approach to 'getting things done'. It is observable that women from the professional, trades and manual levels, plus ordinary women from the community, often mix quite freely at 'women and construction' conferences. Town planners stress the importance of public participation and admire such cross-class liaison. But, 'it only works for women', in contrast, working class men from the community are already 'in' the construction industry and may also have suggestions to make about the development of their area. They are not there to be consulted and involved in urban decision-making for their area, rather they are there to work, to be seen and not heard. This divisive class-based construction culture contrasts strongly with both Community Self Build Projects in Britain, and with the situation found in Third World, development building projects, run by groups such as Alternative Technology, which use UK construction professionals as advisors, particularly in countries where women have traditionally , been the main builders. (The ICE's RedR, Registered Engineers for Disaster Relief, also uses women volunteers nowadays.) In one Community Self Build project (Community Self-Build Agency 1997) the homeless and unemployed built their own flats, thus empowering them with skills, qualifications, employment and habitation. The female project manager ensured that the predominantly male homeless participants received hot breakfasts when it was found they were too hungry to work! Likewise other projects for women have provided childcare facilities and after school care. This reflects a more holistic, comprehensive approach, in which the activity of building is not separated from life itself, or from the surrounding community context.

Another key change agent which is also separate from the construction industry itself, but in this case 'over and above' it, is the role of governmental agencies, especially funding bodies. These can insist upon higher levels of what the Americans call 'contract compliance' above current Building Regulation and employment legislation requirements as to, respectively, the design of 'what' is built, and 'who' is building it. The Lottery, Millennium, Sports Council, and Arts Council all have higher e.o. requirements and accessibility design standards than are found under' normal' legislation (Arts Council, 1996). Voluntary bodies, representing minority groups are likely to be among the beneficiaries of grants, thus enabling them to produce exemplar schemes in terms of both design and employment practice. But, black groups may still feel excluded even when other community groups are getting recognition, particularly when it comes to 'competitions' for new schemes (such as the controversy over the Stonebridge site in Brent), and many are critical of the perceived racism of some housing associations who put black women professionals on their management committee, 'because it looks good', but never actually use black professionals in construction projects. Black built environment professionals have set up a range of network groups, to raise the 'visibility' of all black practices and individual practitioners, to counter further 'assimilation' or 'exclusion'.

Local authorities are also able to play a role in improving standards in the construction industry, for example by co-ordinating Local Labour in Construction Schemes, such as GLLiC in Greenwich (LWMT,1996), in association with major developments in the area, and in liaison with training schemes and local small business initiatives. Also, many London borough town planning departments make it a requirement of any major planning permission that under a 'Section 106 Agreement' certain equal opportunities measures and design features should be integrated in the development, including, the use of local labour, and even directions on female and ethnic minority' quotas' although, such measures have been subject to legal challenge, as *ultra vires.* A range of controversial Single Regeneration Budget and Urban Renewal schemes in inner London have created tremendous levels of community involvement, such as at the King's Cross development site, and at the 'Guiness Site' Gargoyle Wharf site in Wandsworth, with demands for the use of local labour, designers and planning ideas. All this may be a major headache for those managing the development and construction process but it is a sign of the desire of ordinary people to be more involved in built environment and construction matters, and who knows, as a result, some of them, or their children, may want to enter construction as a career. In contrast some young people nowadays seem totally anti-construction, particularly of roads, in the name of 'environmentalism', Swampy epitomising this trend. Clearly there is a need for a more positive, community-based message to be projected.

CONCLUSION SO FAR

The combination of pressures to change the culture from within, the activities of ~ satellite pressure groups, and the power of governmental regulation may with time f ameliorate the nature of the construction culture -and then women and other under- t represented groups will enter freely, enthusiastically and in greater numbers.

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TABLE 1: MEMBERSHIP OF THE PROPERTY PROFESSIONS 1995					
BODY	Full members		Student Members		Total Members	
RTPI	14534	(20.0 %)	3192	(42.0 %)	17726	(23.0 %)
RICS	70918	(6.1 %)	21267	(15.8 %)	92185	(8.3 %)
ICE	52000	(1.2 %)	9285	(11.0 %)	80250	(3.5 %)
ISE	17131	(1.7 %)	6489	(11.9 %)	23620	(4.5 %)
CIOB	25118	(0.7%)	9439	(4.3 %)	33557	(1.7 %)
CIOH	8000	(43.0 %)	4116	(56.0 %)	1230	(44.0 %)
ASI	4820	(1.2 %)	485	(10.2 %)	5305	(1.9 %)
ISVA	5774	(6.7 %)	1381	(16.5 %)	7155	(8.6 %)
RIBA	27708	(7.2 %)	4102	(28.2 %)	31810	(10.0 %)
CIBSE	12939	(1.2 %)	2225	(4.9 %)	15164	(1.8 %)
LI	2284	(40.5 %)	3653	(42.4 %)	3777	(40.0 %)
NAE	(non examining body)				9657	(21.1 %)
IRRV	2361	(N/A)	1570	(N/A)	5751	(24.0%)

Source: professional bodies. Note: In some cases there are other intermediate or honorary categories which make up the remainder of the total, who are not strictly speaking either fully qualified members or students, such as probationers, technicians, international members, graduate associates. Also categories of data may be redefined by professional bodies.

RTPI = Royal Town Planning Institute (Female percentages in brackets.)

RICS = Royal Institution of Chartered Surveyors ICE = Institution of Civil Engineers ISE = Institution of Structural Engineers

CIOB Chartered Institute of Building

IOH   Chartered Institute of Housing

ASI   Architects and Surveyors Institute

ISVA Incorporated Society of Valuers and Auctioneers

RIBA Royal Institute of British Architects

CIBSE = Chartered Institution of Building Services Engineers

NAEA = National Association of Estate Agents

LI = Landscape Institute