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Women in the UK construction industry

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This paper considers the opportunities for, and barriers against, women within the UK construction industry. Women form the greater proportion of the economically active UK population and yet within construction, and other industries, they are under represented. Data available clearly indicates that women are more than capable of performing the tasks undertaken by many professional male counter-parts. Many of the professional bodies within the industry have a women's cohort, which may be perceived as a useful starting point, but does not fully reflect the potential available. It is suggested that women should be better represented and consideration is given to methods suitable for increasing the representation and reducing or eliminating some of the barriers to entry and eventual retention.

Keywords: Opportunities for women, UK construction, careers.

Introduction

If an industry aims to become more productive or more competitive it must maximize the quality of management and technical skills utilized. To do this it must attract, retain and make effective the highest quality human resources available. During periods of stability in the target population this task is difficult due to the attraction of alternative careers, but during a period when the target population is declining, then the problem of attracting high quality recruits is exacerbated.

Several of the barriers to women's entry to the construction industry are illustrated in Fig. 1, which shows that some of the barriers are of a long standing nature, whilst others are more recent in their making. From Fig. 1 it may be seen that the barriers whilst being numerous, are not insurmountable, and many initiatives are currently being pursued which seek to moderate the influence of the barriers and so increase women's participation within the industry (RICS, 1991; CIOB, 1990).

Perceived image

The recruits to an industry may be perceived as being a reflection of the public image of that industry, indeed

the CITB (1988) study clearly reinforces this perception. The UK construction industry has, historically, suffered from a poor, strongly stereotyped, image (Centre for Strategic Studies of Construction, 1989). Gale (1991) has shown that the perceived image is predominantly of the masculine gender and consequently it is not unexpected that the entrants to the industry are overwhelmingly male; consider the safety angle, i.e. macho males. To widen the catchment area by encouraging more active participation of women, at all levels within the industry, would increase the competition for places and consequently raise the quality, in terms of educational achievement, of entrants to the industry.

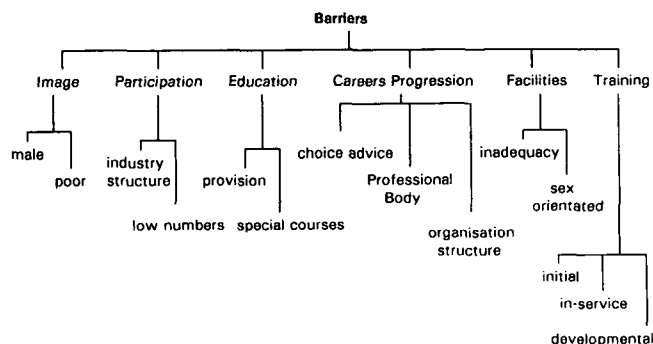


Figure 1 Barriers to women's entrance to the industry

Industrial participants

The number of women within the construction industry, is in comparison with other industries, relatively low. Table 1 and Fig. 2 show all standard industrial classification divisions and their respective female populations, expressed as a percentage of the total. The construction industry has a significantly lower proportion of women members than other classified industrial sectors. The figure would be much worse, if not for the inclusion of secretarial and head office administrative staff, which is predominantly female. From this it may be drawn that the number of women active in technical, professional and managerial roles is low.

The statistical data available clearly indicates that by the year 2001 (CSO, 1992) the total economically active population will have changed appreciably, i.e. the percentage of all males over the age of 16 who are active will fall by around 3%, whilst economically active women aged 16+ look set to increase by around 4%. Therefore the pool from which employers may draw

Table 1 Percentage of women employees per SIC division

SIC Div	Description	% Males		% Females	
		FT	PT	FT	PT
0	Agricul, Forest, Fish	63.7	10.7	16.5	9.1
1	Energy & Water Supply	80.1	0.3	15.7	3.9
2	Metal, Minerals & Chems	75.1	0.6	20.6	3.7
3	Metal gds, Engl. & Vehicle	77.7	1.1	17.6	3.6
4	Other manufacturing	57.3	1.8	31.2	9.7
5	Construction	81.9	1.6	9.9	6.6
6	Distri, Hotels & Catrng	37.0	8.6	21.5	32.9
7	Transpt & Commun.	72.1	4.6	17.3	6.0
8	Bnkng, Financ, Ins, Leas	44.7	4.4	37.8	13.1
9	Public Admin & others	27.0	6.5	32.1	34.4

Source: Dept of Employment; all figures at March 1992, unadjusted. PT=part time; FT=full time.

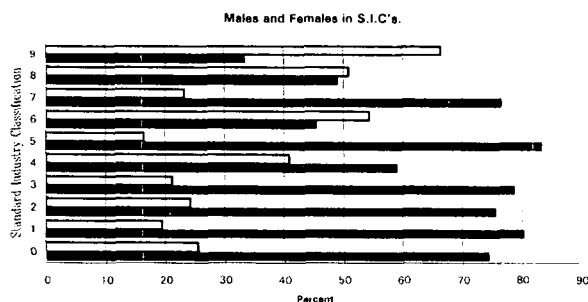


Figure 2 Males and females in SIC's. (■) Males, part and full time; (□) Females, part and full time

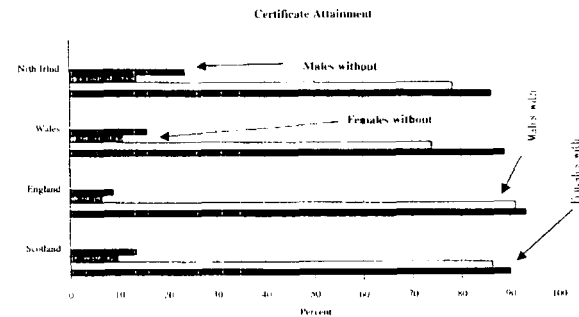


Figure 3 Certificate attainment

recruits will change in its structural format; the 'demographic time-bomb' has not gone away, it has simply been masked by current fluctuations.

As the available pool of male applicants contracts, so then the likelihood of securing academically suitable applicants becomes more difficult, and females will come to the fore as the more predominant potential employees. In order to maximize this potential, adequate educational provision must be made. Historically, little provision has been specifically geared towards women and therefore was a barrier to their entry to the industry (CIOB, 1989). Education providers have long held the view that changes should be brought about, in order to encourage the provision of, and the take-up of, opportunities (UGC, 1984).

Women in construction education

Much change has already taken place in the provision of educational facilities for women. As the full effects of the National Council for Vocational Qualifications and Scottish Vocational Education Council's efforts are brought into focus so the present impetus will gain greater weight.

The statistic clearly demonstrate that female school leavers generally tend to give a good account for themselves. Table 2 and Fig. 3 show the percentages of school leavers who have displayed some form of certificate attainment, for each geographic region.

From this table it can readily be seen that the female students perform better academically than their male

Table 2 Educational attainment

	Females with certs.	Males with certs.	Females no certs.	Males no certs.
Scotland	90.1	86.3	9.9	13.7
England	93.3	91.0	6.7	9.0
Wales	89.0	74.0	11.0	16.0
Nrthn Irlnd	86.3	78.3	13.7	23.7

Source: Annual Abstract of Statistics/Social Trends 22, 1992, Central Statistical Office.

counterparts, in all geographical areas. Therefore educational attainment, or rather the lack of it, may not be held as a valid reason for not considering women for a variety of posts.

The record in Scotland exemplifies the inroads made into encouraging women into the various facets of our industry. Table 3 and Fig. 4 show the numbers of students engaged on a variety of courses in Scotland, in academic years 1988–89, 1989–90 and 1990–91. Each of the courses fall within, and may be incorporated into the general heading ‘the built environment’, and includes: Degree in Building, Degree in Architecture, Degree in Quantity Surveying, Degree in Building Surveying, and also the Higher National (+other Advanced) provision of each of the degree subject areas.

As can be seen from Table 3, the overall figures for the population of all students, and more specifically the subset of females, has increased significantly.

Extrapolation from the data available to construct Table 3 indicates that the population of all full-time students rose during the period 1988–91 by some 26.4%. The female sub-group of full-time students showing a 43.3% gain over the time period. A substantial rise occurred in the number of part-time female students whose population increased by 139%, whilst

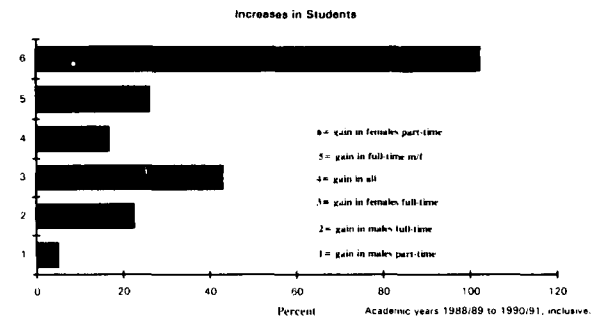


Figure 4 Increases in students

the total population of all female students rose by 61.6%. Clear indication of the growth, in Scotland, in the trend towards encouraging females to participate in construction related courses.

Within the UK as a whole, the numbers of women engaged in courses relevant to the construction industry has shown steady growth over the period 1985–90, and yet the increasing numbers of suitably qualified employees does not reflect in the membership totals analyses available from relevant professional bodies. In the academic year 1985–86, 24.5% of all full-time degree students were female, this figure increased to 26.4% in year 1986–87, growing to 27.3% in 1987–88, reaching 28.6% in 1988–89, and increasing to 30.5% in 1989–90. Figures 5 and 6 illustrate this growth. Logic would suggest that these qualified women would migrate through into the appropriate professional body and show in the relevant statistical analysis. This however does not appear to be the case in practice, where many of the professional bodies have women populations which fall way below that which might be expected given the number of women within the general populace, and more specifically the numbers within the industry itself.

Professional bodies

Analysis of eight of the leading professional bodies within the industry further highlights the dichotomy

Table 3 Females on relevant courses

		Academic year		
Course		1988–89	1989–90	1990–91
1	Male	124 (0)	141 (0)	193 (0)
	Female	13 (0)	22 (0)	25 (0)
2	Male	517 (51)	548 (55)	570 (56)
	Female	196 (12)	237 (11)	237 (20)
3	Male	538 (108)	500 (39)	586 (290)
	Female	85 (8)	112 (1)	124 (44)
4	Male	0 (0)	8 (0)	86 (0)
	Female	0 (0)	2 (0)	19 (0)
5	Male	270 (1430)	263 (1427)	297 (1383)
	Female	23 (29)	23 (27)	38 (32)
6	Male	0 (138)	4 (182)	29 (279)
	Female	0 (10)	0 (19)	2 (74)
7	Male	0 (354)	19 (365)	21 (177)
	Female	0 (20)	3 (33)	2 (19)
8	Male	102 (0)	102 (3)	122 (4)
	Female	18 (0)	23 (2)	23 (0)

Source: Scottish Office Education Department.

1—Degree in Building, 2—Degree in Architecture, 3—Degree in Quantity Surveying, 4—Degree in Building Surveying, 5—HN (other Advanced) Building, 6—HN (other Advanced) Architecture, 7—HN (other Advanced) Quantity Surveying, 8—HN (other Advanced) Building Surveying. HN=Higher National. Figures in brackets indicate part time students on each course.

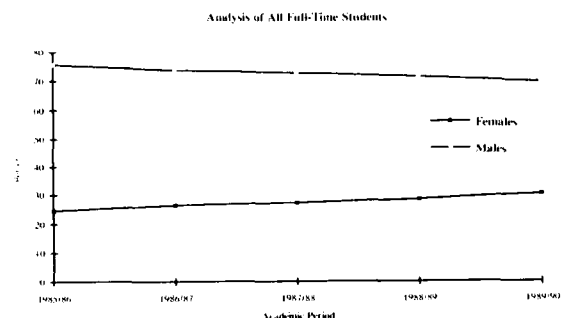


Figure 5 Analysis of full-time students

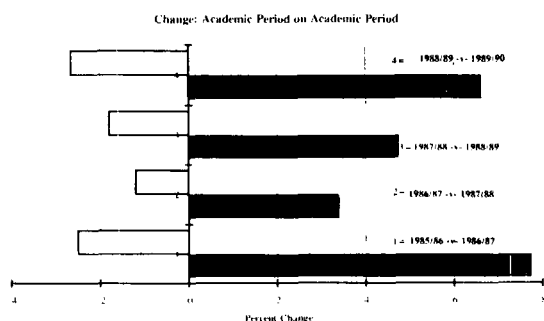


Figure 6 Change: academic period on academic period. (□) Males; (■) females

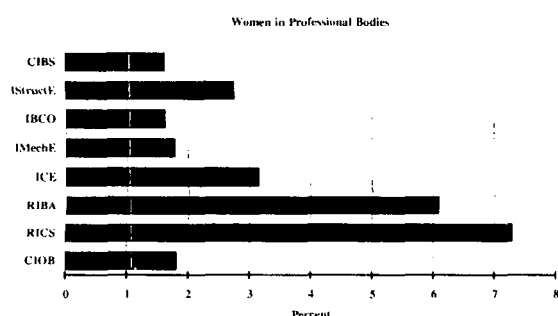


Figure 7 Women in professional bodies

which exists when considering the numbers of males and females. In Table 4 and Fig. 7 illustrate the nature of the clear divide in numbers. These bodies are well aware of the scale of the problem and actively encourage and support the various government led initiatives. However when it comes to ploughing in resources then the whole area changes complexion. To quote one of the leading lights, 'we are spending little on the issue'.

The professional bodies analysed were: The Chartered Institute of Building, The Royal Institution of Chartered Surveyors, The Royal Institute of British Architects, The Institution of Civil Engineers, The Institution of Mechanical Engineers, the Institute of Building Control Officers, The Institution of Structural Engineers, and The Chartered Institution of Building Services Engineers, and of these, several were unable to provide a detailed breakdown on the Corporate status of each member. However, from those few that did provide data, the figures shown in Table 5 add illumination to the situation facing the industry as a whole.

Table 5 indicates that: 0.39% of full Corporate status members of the CIOB were female; 4.78% of RICS Corporate members were female; and 0.85% of ICE members were of Corporate status. If the SIC Division percentage is seen to be a true reflection of the structure of the industry then we might expect that each of the professional bodies would reflect this value, i.e. by

Table 4 Leading professional bodies

Professional body	Males	Females	Total	Females as % of body
CIOB ^b	31 968	594	32 562	1.82
RICS ^b	83 555	6575	90 130	7.30
RIBA ^b	27 062	1758	28 819	6.10
ICE ^b	76 423	2497	78 920	3.16
IMechE ^a	77 402	1408	78 810	1.79
IBCO ^a	3443	57	3500	1.63
IStructE ^a	20 120	572	20 692	2.76
CIBS ^a	15 000	249	15 249	1.63

Source: Information Section of each Body; ^a as at December 1991; ^b as at March 1992.

Table 5 Corporate membership analysis

Professional body		Membership grade						
		F	M	A	L/P	Gr	Stu	Aff/Ot
CIOB	Males	2280	8412	10 252	1540	786	8598	0
	Females	2	40	64	13	43	432	0
RICS	Males	26 088	53	37 638	8243	0	10 078	1455
	Females	159	0	3043	1396	0	1969	8
ICE	Males	6174	43 027	3767	0	15 343	7774	429
	Females	5	416	136	0	1000	926	14

Source: Information section of each body.

F = Fellow; M = Member; A = Associate; L = Licentiate/Probationer; Gr = Graduate; St = Student; Aff/Ot = Affiliate/Other. N.B. where several subdivisions of grades are available then these have been grouped for the sake of clarity; grades are not strictly interchangeable between bodies, simply titles.

having a pro-rata female proportion. The analysis shown in Tables 4 and 5 demonstrate that the pro-rata basis is not holding fast, with only the RIBA and RICS achieving female cohorts which exceed 5% of the total membership. Questions arise as to why the numbers are so low and how this situation may be addressed.

Underlying reasons

In order to understand why women are so under represented in the construction industry it is necessary to understand the processes of socialization and sex typing which have led to the under representation of women in all areas of society.

While the gains which have been made in equal opportunities legislation are significant, they must be seen in an historical context (Souhami, 1985). For example, it was 1928 (HMSO, 1928) before women won the right to vote on the same basis as men, 1948 before they could take degrees at Cambridge University, 1956 before equal pay was introduced for women teachers and civil servants, 1975 before sex equality legislation made it illegal to discriminate against women in work or education, and 1985 before an amendment to the Equal Pay Act stated that equal pay should be given for work of equal value.

Women represent a valuable resource to the industry and to the economy generally. During the First and Second World Wars, when the men were at the front, women took over what was traditionally seen as 'men's work'. Economic necessity changed the role of women in the workplace for ever. The Government introduced training schemes for women in sheet metalwork, panel beating, oxy-acetylene welding, instrument making, electrical installation and motor mechanics. Women worked as welders, fitters, plumbers, drillers, machine operators, bricklayers and labourers. They also worked in the heavy chemical industry, shovelled coal, operated cement mixers and worked in foundries (Longmate, 1971; Mauger and Smith, 1972; Walker and Munn, 1981).

Childcare provision played a critical part in this arrangement. Government funded nurseries and canteens ensured that women could work a 60 h week and not to have to worry about their families. If the construction industry hopes to attract more women it must follow the lead of companies like Marks & Spencer in terms of maternity leave, childcare provision and flexible working hours for both parents.

The first section of this paper highlighted the percentages of women who chose to study construction related subjects at further or higher education level. Such low percentages are a direct result of the subjects

which girls choose to study at school. Girls study literature, languages, history, biology and domestic subjects and boys study maths, physics, chemistry and economics. Less girls than boys take 'O' Grade mathematics, although it is often cited as a minimum requirement for careers in computer programming, technology, architecture, surveying and town planning (SOED, 1992). Despite ostensibly equal opportunities, some subjects are perceived as boys' subjects and others as girls'. Boys are educated with the clear understanding that their education correlates with employment, or the hope of it, and so choose to study subjects which have a high value in the employment marketplace.

Studies have shown that girls, for the most part, are better at verbal tasks and boys at spatial tasks while at primary school. Girls learn to read sooner than boys and twice as many boys as girls are retarded readers (Maccoby and Jacklin, 1974). It is the spatial manipulation element of mathematics at which girls fall down, rather than the computation. Maths, especially geometry, has a high spatial component and boys at the age of 11+ do better at this than girls of a similar age (Collis, 1976). In the construction fields, where spatial manipulation skills are called upon constantly, it is suggested that this ability, to be spatially manipulative, may be seen to be of paramount importance (Dodwell, 1970; Canter, 1974).

The key point is that spatial skills can be taught. A clear practice effect has been found on tasks like these and greater exposure to them in the primary school year would help children of both sexes cope with secondary school mathematics as well as narrowing the gap between the sexes (Pellegrino and Glaser, 1979). Therefore this lack of spatial manipulation skill can be taught to females, and so increase the potential pool of applicants for the industry. The CIOB are actively pursuing young school children with the innovative programmes such as that undertaken at Stanbury First School (CIOB, 1992).

Many more such initiatives and changes in society will be necessary until women have the same opportunities as men. As the numbers of women in professional life and the marketplace increases, so the construction industry must take advantage of this by actively improving itself and maximizing any change or opportunity available.

Changes and opportunities

The picture is not static, indeed the recent government initiative (Opportunity 2000) has shown that the problem is being tackled at the very highest levels. Those on the ground are able to contribute towards the bringing about of changes. Legislation and guidance already exists (Equal Pay, 1970; Equal Opportunities Commission, 1978) to ensure that the industry adopts some form

of practical policy, but there are many measures which can be taken to go further than the legislation requires and so maximize opportunities presented.

These measures may be considered under two broad banners of Specific Steps and General Issues:

Specific steps

1. Accept that a broader range of prior learning and work experiences may well enhance the female candidate's suitability for vacant posts. The 'alternative' training and experiences may bring fresh ideas and approaches to problem solving.
2. Offer practical support and encouragement, especially with the creation of 'Mentors'. The initial entry period of any new recruit is often the most traumatic time and reduction of this trauma may secure longer, more worthwhile service from the employee.
3. Provide facilities for child care and family grouping areas. Time spent with children at the workplace may reduce the need to spend unscheduled time away from the task at hand.
4. Offer career break systems or schemes and maternity/paternity leave for both parents, over and above the statutory minimum. Showing commitment is bi-polar.
5. Establish and maintain a gender balance on committee and decision making bodies. Thus presenting an even face to other potential female employees and the external environment.
6. Set up and maintain a user-friendly atmosphere, especially in non-traditional work areas. Encouraging employees to expand themselves in terms of work undertaken, and to accept wider roles and responsibilities.

General issues

1. Examine appointment procedures to ensure that no discriminatory policy, either overt or covert, exists. Thus ensuring fairness in the allocation of vacancies to male or female applicants.
2. Appoint women to posts which may be seen as 'Role Models', and secure as much media attention as possible to the appointment and the role.
3. Implement job-sharing/networking to fully utilize the potential which exists. Many jobs are suitable for sharing or networking arrangements, e.g. invoice settlement, drafting, contract preparation.
4. Emphasise that the organization is committed towards the attainment of equal opportunities for all.
5. Allocate adequate resources to enable effective implementation of equal opportunity policies and

ensure that Senior management are committed towards the effective implementation.

6. Continually monitor the various measures taken and adjust as necessary, emphasising the positive aspects derived from the processes and modifying the poorer outcomes.

The measures proposed should not be perceived as simply further costs to be borne by the organization. Execution of Cost-Benefit Analysis suggests that increased commitment from the employee; the enhanced social image of the industry; reduced absence; lower employee turnover; stable cohorts; reduced recruitment costs, and the increase in the skill base, are positive benefits which may emanate from implementation of the proposals, and thus offset costs.

All levels within the industry are capable of implementing some, or all, of the proposed measures and when driven by the employees themselves, then it may be found that they are as simple to operate as the ubiquitous 'suggestion scheme'. At site level, portrayal of a more professional industry is a simple but effective step involving: good working practices; well laid out, safe and tidy work areas; appropriate signboards, and courteous employees. Management can implement the policies and procedures outlined earlier, and the industry itself may promote the wide range of challenging roles, worthwhile careers, and skills and expertise to be found in the industry.

Solutions

The demographic shift in the UK is not an isolated occurrence, consideration of the wider European construction industry shows that the problem is equally distributed throughout the whole industry and is an issue to be resolved by all participants (European Employment Observatory, 1992). Solutions may be grouped under three broad banners: Image, Training, and Alternatives.

Image. The introduction of Women's Networks (which encourage mutual communication, collaboration and consultation between the women), operating Access Courses and Insight Events' (which provide previews of the role and careers available), can be coupled with greater publicity and image enhancement for those women already operating within the industry, to encourage others to join.

The perceived image of the industry may also be enhanced by reducing the accident rate. The construction industry accounts for some 15% of all industrial accidents and 30% of all fatal industrial accidents, within the European Community (European Foundation, 1991). These incidents are estimated to cost 3% of

the industry's turnover with the cost of statutory protection estimated at 1.5% of the turnover. Therefore implementation of the protection policies would more than pay for themselves, and incur additional added value from the improved image.

Training. Training in other industries is seen as a vital component in the ongoing development of the industry. Construction is perhaps the most dynamic industry of all and therefore demands that: Initial, In-service and Complementary training be seen as a priority. The costs of this training being recouped via increased efficiency, improved quality, enhanced employee skills, and improved transferability and flexibility of the employees.

Alternatives. The alternatives include employing women who are returning to employment. This group are often hungry for training, or retraining, and seek employment because some of the earlier barriers have been removed, e.g. the family has been raised. The maximum use should also be made of part-time or seasonal employees, especially in light of the construction industry's domination by climatic conditions.

Conclusions

Recently the construction industry gave considerable attention to the ramifications of 'the demographic time-bomb'. The present recession in certain sectors of the construction industry has temporarily masked the underlying demographic problem. As demand re-emerges, so the 'demographic time-bomb' will once again come to the fore and unless action is taken now then the opportunity to maximize the resource, which women represent, will be lost. The statistical data available shows that there is much room for improvement in the attraction, retention and development of women within the industry.

The overall progression of women's careers has received little attention resulting in a lack of information on vertical segregation within the industry and individual organizations. This lack of information acts as a barrier to analysis of trends and development of future strategies, and as a result of this inadequacy, career structures, education provision, and training, may all be slanted heavily against women or women's perspectives.

Several professional bodies within the industry are aware of the problem and are actively pursuing initiatives which will attempt to redress the balance, other bodies would wish to instigate some form of action given sufficient resources and impetus.

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