

# Why do Women Like Working in Building Conservation?

Ali BUXTON, Pat TURRELL and Sara WILKINSON, United Kingdom

**Key words:** women, building conservation, careers

## SUMMARY

There is a perception that Building Conservation as a career is different from the mainstream, and it appears to be more attractive to women - at whatever level - than many other careers in the construction industry. Whilst recruitment and publicity can be targeted, the culture within the construction industry can be a barrier to entry for anyone that is "different." As Clara Greed (1999) discovered in her research "the traits, beliefs and lifestyle peculiar to the construction tribe" can inhibit the entry to the industry of a number of groups outside the traditional pool. The growth of women in the workforce generally (some 50% according to Turrell et al, 2000) is nowhere near being matched within the construction industry as a whole - the Construction Industry Board placed it at around 8.6% in 2000 across all positions. The various UK industry and professional bodies are actively supporting the need to attract women, with the CITB saying they want a 10% year on year increase in participation, the RICS have their own Raising the Ratio working group and the RIBA have carried out research to find out "why women leave architecture."

Of course the whole of the industry is not unfriendly to women - there are a number of us who have been in the industry for many years and recognise it as a fulfilling and exciting career - a number of women work as surveyors working on historic buildings. The initiatives that are working towards change might have something to learn from Building Conservation - while the shortage of skills is just as severe in work with historic buildings - this area of work holds an attraction to women, not found elsewhere. This paper draws on research carried out to explore some of the reasons for this.

The study involved sending a questionnaire to twenty women already working in Building Conservation (the response rate was over 100%) and arranging for questionnaires to be completed by school students (male and female) choosing university courses in one school (60 questionnaires sent out, with 35 returned at a response rate of 58%)

The research showed that the majority women working in Building Conservation did not agree that men heavily dominated their sector of the industry, whereas within other areas of the construction industry men make up approximately 90% of the workforce. The research found that women often perceived the Construction Industry to be 'cut-throat', 'egotistical' and 'financially beneficial', whereas they thought Building Conservation required 'patience', 'care' and 'attention to detail'.

Of the women who took part in the research, 87% were working in Building Conservation because of a personal interest , and the main aspect of that attraction was history and architecture. The study examined attitudes of school students choosing careers and the research shows that when male and female sixth form students were told what Building Conservation was about and what it involved, 43% would consider a career in it and 49% would be interested in talking part in a work experience placement working with historic buildings. The shortage of people working in Building Conservation could be reduced if more people were educated about the profession in a way relevant to their skills and interests. In order to assist this action, the study examined ways to introduce Building Conservation careers to school girls and drew on the initiatives that the university is doing to promote careers in the built environment to schoolgirls.

# Why do Women Like Working in Building Conservation?

Ali BUXTON, Pat TURRELL and Sara WILKINSON, United Kingdom

## 1. INTRODUCTION

Women now make up 50% of the working population of the UK (Williams et al, 2000). However the pattern of employment is still strongly segregated. Women represented just 7% of those within engineering and technology occupations in 1994 in the UK, which is a mere 1% rise since 1979 (ONS, 1995). In an ESRC pilot study of figures from 1996 (Greed, 1999) it was found that female membership in of the professional institutions associated with the construction industry varied from

- 23% in the Royal Town Planning Institute
- 2.7% in the Chartered Institute of Building
- 4.3% in the Institution of Civil Engineers
- 8.7% of the Royal Institution of Chartered Surveyors, and
- 11% of the Royal Institute of British Architects.

The Construction Industry Board placed it at around 8.6% in 2000 across all positions, with about 1% in trade occupations and 10% in professional roles.

Yet there are parts of the construction industry that are perceived to be more attractive to women. Building conservation is one of the areas that are referred to as 'different from mainstream construction', and more attractive to women. One example discovered during the research included Emma Simpson, a Cambridge graduate who had chosen to become a 'conservation bricklayer' rather than the traditional graduate career (Hoare, 2003). The various professional bodies and even the UK government are actively supporting the need to attract and retain women in non traditional areas of work such as science, engineering, construction and technology. There are many initiatives with the CITB working towards a 10% year on year increase in participation, the RICS are Raising the Ratio and the RIBA have carried out research to find out 'why women leave architecture' (Turrell et al, 2003).

### The Study

This study was developed by a female building surveying final year undergraduate who 'has a passion' for Building Conservation and wanted a career working with historic buildings. She wanted to try and find out if building conservation is perceived by those women within it to be dominated by men (as the construction industry generally is). There were two aims:

- To find out if it is possible that those working in building conservation have attained a way of working that is more attractive to women.
- To find out how young people could be attracted to careers in this area.

In order to carry out the research working with two target groups - twenty women already working in Building Conservation and 60 school students (male and female) making their university and course choices at a local school.

## **2. METHODOLOGY**

The research is of a qualitative nature, and the primary data collection method chosen was in the form of questionnaires to both groups. Questionnaires were sent to women working in building conservation and to sixth form students at The Dronfield School.

### **2.1 Study of Women in Building Conservation**

This data collection, in the form of questionnaires, was targeted at women of all ages working in any aspect of building conservation, including Architects, Building Surveyors and Trades and Crafts women. The questionnaire was used to discover how long the women had been in conservation and whether they had worked in the construction industry prior to working in conservation. It also looked at what attracted the women to the profession, and asked whether these women believed that conservation was as heavily dominated by men as the construction industry, and if this was not the case why was conservation different? The questionnaire contained a mixture of structured and open-ended questions. Structured questions gave factual answers that can easily be compared and analysed, whereas the open-ended questions gave the 'why' and 'how' and allowed the participants to elaborate on an answer and tell of personal experiences.

Finding a sample of women working in building conservation proved to be quite difficult. First intentions were to contact The Society for the Protection of Ancient Buildings (SPAB) and the Royal Institution for Chartered Surveyors (RICS) Conservation Forum for a list of members, from which female members names could be highlighted. However the Data Protection Act prevented these organisations disclosing membership lists. After searching the internet for conservation companies, a database was discovered listing the contact details of Architects working in conservation. From this list 10 women were found and the questionnaires were e-mailed to them. Internet and newspaper articles also provided the names of 5 other women working in conservation. These women were posted the questionnaire as their e-mail addresses were not given with their contact details. A further 5 questionnaires were hand delivered to women attending the part time post graduate course in Heritage Management at Sheffield Hallam University. It is recognised that the overall sample for the study was limited, however the response rate was very good and the data obtained from the questionnaire gave much valuable information.

### **2.2 Students at Dronfield School**

This part of the study focused on 17 and 18 year olds at a local school, and their knowledge of building conservation. It also looked at how best young people, both male and female, might be informed about a career in conservation. This age group was chosen for the study as the students were in the process of considering their future career choices. It was hoped that

the findings from the questionnaires would help increase the number of people entering the building conservation sector by looking more closely at the way young people are recruited. The Dronfield School in Derbyshire was chosen for the study as the author had strong links with the school.

A short questionnaire was chosen to encourage more people to participate in filling it in, creating a larger sample.

The questionnaire addressed the following areas:

- - Subjects studied and preferred career choice
- - Whether Building Conservation would be considered as a career
- - The best way of educating people about a career in Building Conservation

60 questionnaires were distributed between four classes. Art, Design Technology, History and Geography were the chosen subjects as these are subjects most related to building conservation. Questionnaires were given out to 15 students of each of these subjects.

### **3. ANALYSIS OF DATA**

The data received from the women was clear and good quality. However from the returned school questionnaires it was clear that the students had not been briefed on the purpose of the research. The questionnaire was titled 'Sixth Form Questionnaire' and there were comments from some of the students that it was more of a building conservation questionnaire, not a sixth form questionnaire. As the students were not briefed on the reasoning behind the research it may have been harder for them to understand the point of the questionnaire. The pilot study had not picked up on this as the two young people used were briefed on the reasoning behind the research. Ideally the questionnaire should have had an introductory statement to inform the students the purpose of the research. This was the only alteration that would be made to improve the method of data collection, everything else worked very well and strong data was collected from both the sixth form students and the women in building conservation.

The results of both questionnaires were analysed using two techniques. The structured closed ended questions were coded and input to computer software, Statistical Package for Social Sciences (SPSS), and the open-ended questions were compiled, compared and trends identified.

The question 'does the research sample represent the whole population of women working in building conservation?' needs to be asked. The sample was quite limited and contained more female Architects and Building Surveyors than women working in the craft sector of conservation. At first glimpse this may be seen as a biased sample, however if it was possible to calculate the actual number of women working in each area of building conservation, it would most likely show a greater amount of women working in Architecture and Building Surveying and relatively few women working in the craft or trade sector. This information was not available, however these are the trends within other parts of the construction

industry. Internal validity was achieved through analysing the results and then triangulating them with the literature available.

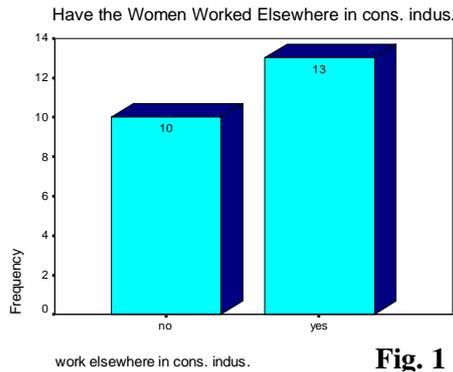
### **3.1 Women in Building Conservation**

The 20 questionnaires e-mailed, posted and hand delivered to the small sample of women working in building conservation had over a 100% return rate. This occurred when two of the participants passed on the questionnaires to other women in building conservation when they became aware how difficult it had been to find the names and contact details of women working in conservation. 20 questionnaires were distributed and 23 were returned. It is believed that this extremely high response rate was due to the nature of the profession, being one that the participants have a passion for and like to share their experiences with other people who are interested, and because the questionnaire was short, taking very little time to fill in. These questionnaires represent a 115% return rate, which is well above the 40-60% return rate advocated by Naoum (2002).

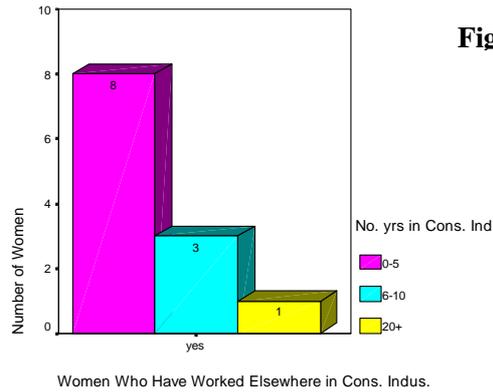
The data from the questionnaire was coded and analysed using the computer application Statistical Package for Social Sciences Version 11 for Windows (SPSS). This enabled a thorough statistical analysis of the results to be carried out. It also enabled appropriate charts and tables to be produced, which illustrate the analysis.

Results show that 39% of the women taking part in the study were Architects, 22% were Building Surveyors, 13% worked in Planning and 4% worked in practical crafts. This result is largely affected by the limited sampling used for the study, due to the challenge of finding contact details of women working in building conservation. However the proportions of each profession are thought to be well represented as the literature stated earlier in the study that around 10% of professionals in construction are women and that only 1% of the trade and craft sectors of the industry are female.

The majority of women working in building conservation are aged between 26 and 35 and the majority have worked in the profession for up 3 years. There are very few under graduate courses in building conservation and therefore many of the women who do go into conservation do so through a post graduate course or gain experience within other areas of the construction industry before specialising. The questionnaire asked whether the women participants had worked in the construction industry before going into building conservation. This was also to establish whether the women had come through a construction route, or by some other means, to conservation.



**Fig. 1**



**Fig.2**

The results in fig.1 above show that out of the 23 participants, 13 of them had previously worked in construction whereas 10 had not.

The cross tabulation in fig.2 shows that out of the 13 who had worked within the construction industry, 8 had worked elsewhere in the industry for up to 5 years. This indicates that many of the women who had a career in the construction industry may have not been content in their career before specialising into building conservation. Alternatively this result could be due to the women using the construction industry as a stepping-stone into conservation. This confirms the literature by the EOC (2001), stating that a higher proportion of men than women with engineering and technology degrees go into teaching or careers not directly related to their degree. These women may have been more comfortable training than working in construction.

### 3.2 Career Choice of Students

60 questionnaires were divided between the history, geography, art and design & technology sixth form classes of the Dronfield School, however only 35 questionnaires were returned. This was a 58% return rate, which is in agreement with Naoum (2002) who believes a 40-60% return rate can be expected.

The results indicated that 71% of the respondents were male and 29% were female.

The sixth form questionnaire was to be circulated evenly around the art, design technology, history and geography classes. However on return of the questionnaires it is clear that the questionnaires from the history classes had not been returned. This made the data more difficult to analyse, as it was a key aspect of the data. The following pie chart fig 3 shows the percentage of different subjects studied by the sixth form students. These subjects are most related to building conservation. Some of the students studied more than one of these subjects. Excluding history, geography and art had the largest response rate followed by design technology.

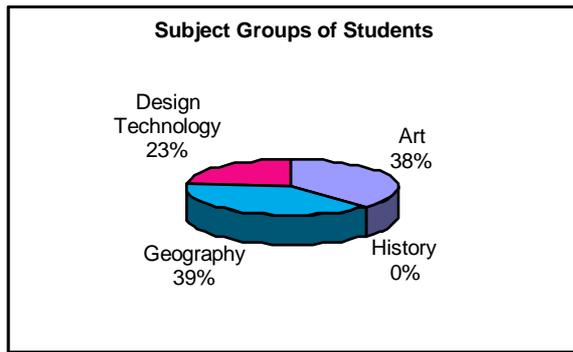


Fig 3

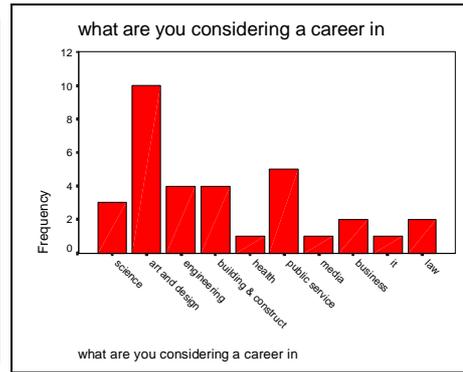
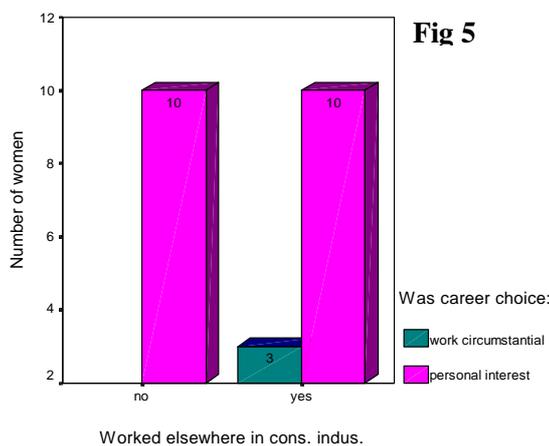


Fig. 4

The students were asked whether they were planning to go to university. This question helped to look at what level young people will be starting their careers. It was determined that 77% of the students questioned were planning to go to university. The bar graph above (fig. 4) shows the responses of the sixth form students regarding what area they were considering a career in. The graph indicates that the majority of students are considering a career in art and design, followed by an average of students wanting careers in engineering, building and construction and within public services. Fewer students who were studying art, technology or geography were interested in careers in science, health, media, business, IT or law. These results show that many of the students could potentially have an interest in building conservation as it has links to Art & Design, Engineering and Building & Construction.

### 3.3 Why do Women Choose Building Conservation?

87% of women chose a career in building conservation due to a personal interest and only 13% was due to work circumstantial. These results back the author's initial thoughts that women working in conservation have a passion for their work and it is 'not just a job'.

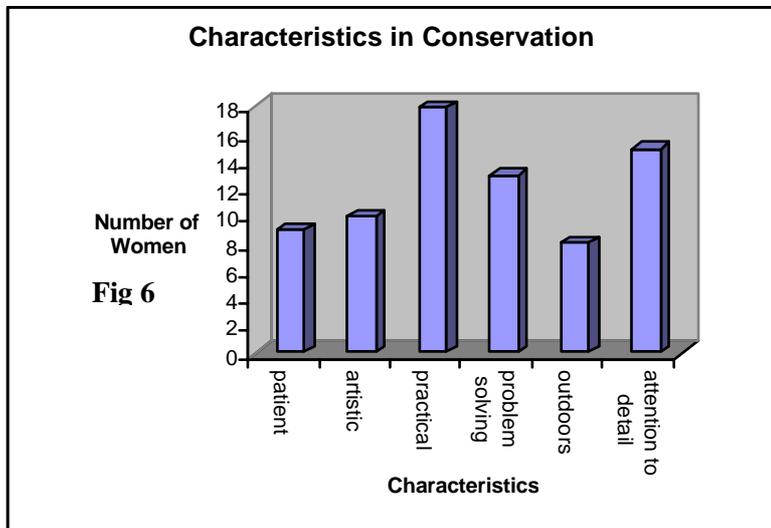


The results were then cross tabulated with data regarding whether the women had worked in the construction industry before working in conservation. The graph to the left indicates that equal numbers of women have and have not worked elsewhere in the construction industry and are working in conservation due to their personal interest. All the women who are in conservation due to work circumstances have before worked in the construction industry.

The study looked at the actual aspects of building conservation that attract women to the profession. Architecture is the main attraction to building conservation with history closely behind. The results also show that art,

surveying, craft and archaeology attract slightly less women, and that none of the women were attracted by financial gains.

Now the subjects attracting women to conservation have been found the individual characteristics of the profession can be identified.



The graph in Fig.6 shows the responses of the women when asked if any of the shown characteristics in the graph relate to them and their work in conservation. As can be seen 18 out of the 23 women believed that practical skills relate to their work, followed by attention to detail and problem solving. Being patient, artistic and working outdoors were also characteristics identified by the women. These characteristics are not necessarily associated with just women, but are also found among men. The ‘patience’ and ‘attention to detail’ characteristics are however more associated with women than men.

### 3.4 Is Building Conservation Male Dominated?

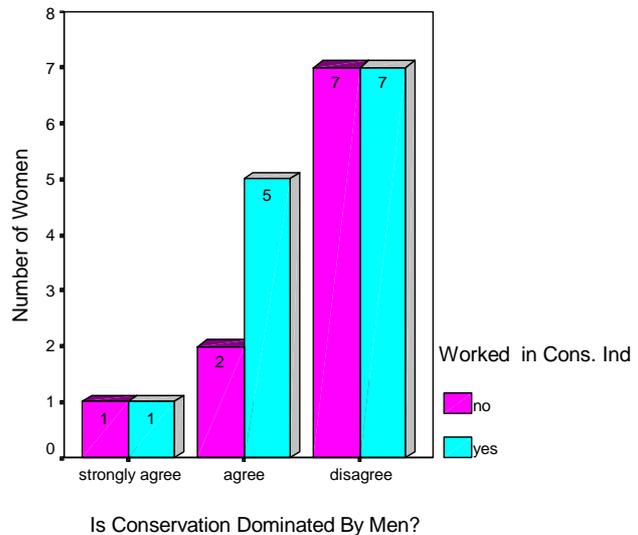
In attempting to answer this question, it was important to discover what the women working in building conservation thought about the ratio of women to men in conservation, and also to find out from the sixth form students whether they would be deterred from entering a profession that was dominated by the opposite sex.

The women in conservation questionnaires, asked whether if it was believed that men, as in the rest of the construction industry, heavily dominate building conservation.

14 out of the 23 women disagreed that their profession is heavily dominated by men and only 9 of the women agreed or strongly agreed that conservation is heavily dominated by men. This data contradicted the literature review, which suggested that construction is heavily dominated by men, showing how different the view of men is within the two sectors. .

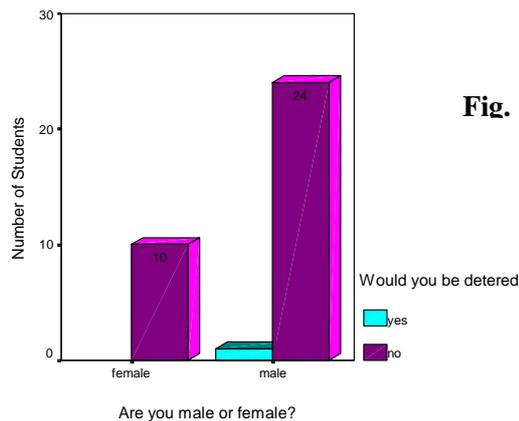
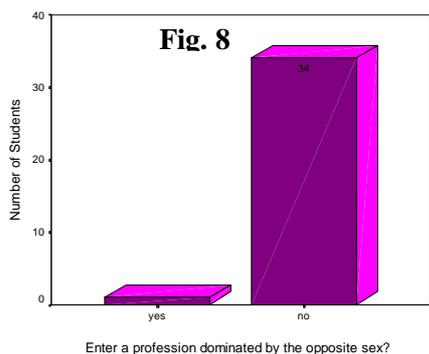
The graph in Fig.7 indicates that an equal amount of women disagreed that men dominate conservation, whether they had previously worked in the construction industry or not. The interesting result is that 5 women, who had previously worked in a male dominated construction industry, agreed that conservation was heavily dominated by men, whereas only 2 women, who had not worked in the construction industry, agreed that men dominated conservation. This indicates that the women who have before had a career in construction may be more aware of a male dominated environment.

**Fig 7**



The women, who believed that men do not heavily dominate building conservation, were asked why they thought conservation was different from construction with regard to the amount of women in the field. Many of the views suggested that conservation requires ‘sensitivity’, ‘patience’, ‘care’, ‘consideration’ and ‘attention to detail’ which are all feminine characteristics. They also believed that building conservation was ‘less cut-throat’, ‘less egotistical’ and is ‘less about business’ than construction is, which are often characteristics associated with men. One view suggested that men like to do ‘work which can be seen’ which relates to new build construction, but not to conservation which is more about being ‘discrete’.

The students were asked in their questionnaire whether they would be deterred from entering a profession that was dominated by the opposite sex.



The graph in Fig.8 shows, that when asked if the students would be deterred from entering a profession dominated by the opposite sex, 34 of them had said that they would not and only

one student said that they would. This was then compared with whether the student respondents were male or female. The graph in Fig.9 indicates that none of the females would be deterred from working in a profession dominated by the opposite sex and only one of the male students would be deterred. This was somewhat surprising as the literature reviewed in this dissertation suggested that it is more common for women to feel threatened and uncomfortable about entering a profession that is dominated by the opposite sex. The women's questionnaire asked if the participants had ever experienced sexual discrimination in their role at work.

Have You Experienced Discrimination At Work?		
	Frequency	Percent
no	20	87.0
yes	3	13.0
<b>Total</b>	<b>23</b>	<b>100.0</b>

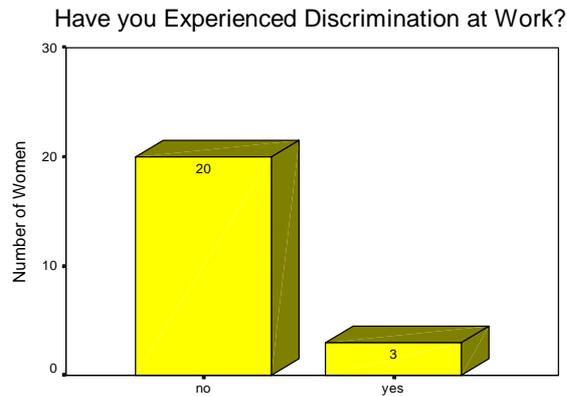


Fig.10 Have you Experienced Discrimination at Work?

The above table and graph in Fig.10 indicate that 20 out of the 23 participants have not experienced sexual discrimination, but that 3 people had. This is 13% of the women who at sometime in their role at work, experienced sexual discrimination. This is a relatively small proportion and one explanation given in an open ended answer from the questionnaire suggesting that “as conservation is a relatively young sector of the industry, perhaps it doesn't have some of the ingrained attitudes as a hangover from the days when women's roles were limited”.

This section has analysed the data to try to discover whether men, as in the construction industry, dominate conservation. The analysis has shown that the majority of the women working in conservation disagree that men dominate their profession. Of the women who agreed that men did dominate conservation, the majority had before worked elsewhere in the construction industry and may have a slightly different view of male domination within the different sectors. Only one out of the 35 sixth form students said they would not enter a profession that was dominated by the opposite sex. It was a surprise to discover that this one student was male and that, contradicting current literature, none of the female students would be deterred from entering a profession that was dominated by the opposite sex. The analysis of the data also discovered that out of the 23 women working in conservation, only 3 of them had experienced sexual discrimination of some sort at work. A reason given for this small number was that because conservation is still a relatively young sector of construction, there are not the ingrained sexist attitudes that are present in some of the older disciplines.

### 3.5 How Can Young People be Encouraged to Take Up a Career in Building Conservation?

It has been established that building conservation is quite different from many other areas in the construction industry and many of the women working in conservation hold interests and characteristics that may not be associated with construction. There is also a shortage of people working in conservation. It is suggested that building conservation should become more of a single profession rather than coming under the shadow of construction, as they are quite different subjects. This should also mean that more people could be educated in the profession, creating a greater opportunity for the students who have an interest in art, history, geography and technology to go into building conservation.

The results show that the majority of the students would consider working outdoors, in design and as part of a team. These can all be key elements to working in building conservation.

The students were given a statement about building conservation and what it involves, and were asked if they would consider a career in it. 57% of the students said that they wouldn't consider a career in it, but 43% said they would. This is a high percentage of students that would consider a career in building conservation had it been an option presented to them.

The students were then asked if they would consider work experience in building conservation. 51% of the students were not interested in doing work experience in building conservation, but 49% of the students were. This is very encouraging as it shows that once students from conservation related subjects are informed about the profession they become interested, therefore if more students are informed about building conservation as a career, more may be recruited reducing the shortage of people working in building conservation.

Would you consider a career in conservation?

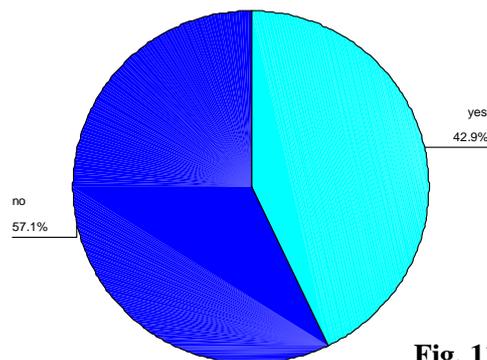


Fig. 11

Would you consider work experience in conservation?

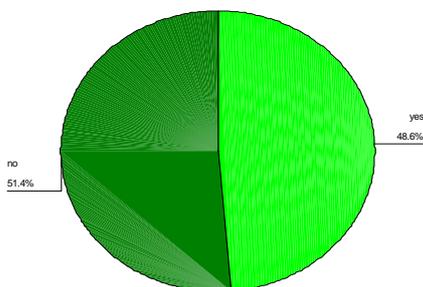


Fig. 12

To find out the best way of educating the students about building conservation, the questionnaire asked what the main influence in their career choice had been. The majority of the students indicated that their career choice had been influenced by their personal interest in the subject, next by knowing someone in the profession and thirdly by the influence of a parent. The least influencing factor was through work experience. The students were then asked what would be the best way to teach them about building conservation. Most of the students would like to be taught through a visit to the school by someone working in building conservation. The author is of the view that a personal connection with someone in a profession can cause an inspirational trigger. Students also expressed an interest in having a promotional video in class. The less popular options were information from the careers advisor, a stand at a career's event and a career's information database. These results give clear advice to the building conservation sector regarding the recruiting of new building conservationists.

#### **4. SUMMARY OF FINDINGS**

The general analysis of women in building conservation concluded that the majority of the responses came from architects and building surveyors, both of which are professional careers within the construction industry. There was a mixed age group of participants but most fell within 26-35. The participant's age correlated with the amount of time they had worked in the profession. The analysis also illustrated that where women had worked previously in the construction industry, most had been in construction for a relatively short time. The general analysis of sixth form students at the Dronfield School revealed that over 70% of them were male and less than 30% female. The questionnaires were not returned from the history class and therefore analysis had to be made using the data from only the art, technology and the geography classes. 77% of the students intend going to university and the analysis shows that the majority of the sample want to pursue a career in art and design, followed by engineering, construction and building and public services. The data was analysed to answer why women chose careers in building conservation? It can be concluded that 87% of women chose a profession in conservation because of a personal interest in the subject and only 13% are working in the field because of work circumstances. The main aspects that attract women to building conservation are architecture and history, followed by art, surveying and crafts. There is no incentive to work in the field for financial gains. It was found that practical skills and attention to detail were the key characteristics of the women, followed by problem solving, patience, artistic and working outdoors. The next section analysed the data to try to discover whether men, as in the construction industry, dominate conservation. The analysis has shown that the majority of the women working in conservation disagree that men dominate their profession. Of the women who agreed that men did dominate conservation, the majority had before worked elsewhere in the construction industry and may have a different view of male domination within the different sectors. Only one out of the 35 sixth form students said they would not enter a profession that was dominated by the opposite sex. It was a surprise to discover that this one student was male and that, contradicting current literature, none of the female students would be deterred from entering a profession that was dominated by the opposite sex. The analysis of the data also discovered that out of the 23 women working in conservation, only 3 of them had

experienced sexual discrimination of some sort at work. A reason given for this small number was that because conservation is still a relatively young sector of construction, there are not the ingrained sexist attitudes that are present in some of the older disciplines. The final section of the data analysis looked at how young people can be encouraged to pursue a career in building conservation. The data analysed has shown that many of the students from art, design technology and geography classes are interesting in working outdoors, in design and as part of a team, which are all key areas when working in building conservation. It has been established that once the students had been told about conservation, 43% of the students would consider a career in building conservation and 49% would consider work experience in the profession. The best way to encourage the students to take up a career in building conservation is through introducing them to someone working in building conservation through a visit to the school accompanied by a talk on what building conservation involves.

## **5. FINAL CONCLUSIONS**

The study although small, established some interesting findings that could be drawn on for a wider study. The aspects of Building Conservation that have attracted women are not necessarily the traditional aspects of the construction industry. The key aspects identified are art, history, architecture, surveying and crafts. Money is not seen as an incentive, but the passion for the work is an incentive. Attention to detail is identified as a key characteristic required. Both of these traits are traditionally viewed as feminine characteristics, and contribute to the perception of Building Conservation as being less masculine than construction. The perception by some of the women that men do not dominate building conservation could not be verified without a clear collation of statistics. The size and gender of the workforce within Building Conservation could not be established within this research, but it would be an interesting statistic to collect.

The study of course and career choice produced some interesting findings, including a view that the group would not be discouraged from entering a career dominated by the opposite sex. Careers information about conservation could be situated within a number of themes, and the theme could exclude females if the theme is construction related, just by their being fewer females studying in those areas. Having Building Conservation within art or history themes could open the possibility of a career to more women as would the possibility of work experience in the area.

The reality of how career choices are made is complex with so many variables that can impact on how those choices are made (Hodkinson, 1996). What is clear, however is that horizontal occupational segregation continues to have a significant effect on the choices girls and women make (EOC,2001). With the skill shortages within Building Conservation being evident (RICS, 2004) the findings of this study indicate that girls and women could be a marketing opportunity.

## REFERENCES

- Construction Industry Board (2000) The State of the Construction Industry Report, URL [www.dti.gov.uk/construction/stats/soi/soi12.htm](http://www.dti.gov.uk/construction/stats/soi/soi12.htm)
- Equal Opportunities Commission (2001) Women and Men in Britain; Sex stereotyping: from school to work.
- Greed, Clara (1999) The Changing Composition of the Construction Professions, University of the West of England.
- Hoare, S. (2003) How it was Dung, The Guardian Newspaper, February 18 2003.
- Construction Industry Board (2000)
- Hodkinson, Phil (1996) Careership: The individual, Choices and Markets in the Transition into Work, Chapter 6 in Knowledge and Nationhood: education, politics and work, James Avis et al, Cassell Education.
- Naoum, S. G. (2002) Dissertation Research and Writing for Construction Students. Oxford: Butterworth-Heinmann.
- Office for National Statistics (1995) Survey database URL [www.statistics.gov.uk](http://www.statistics.gov.uk)
- RICS (2004) "Bob the Gilder" article in Building Surveying Newsletter,
- Turrell, P, Wall, R & Wilkinson, S (2003) Women's Work, Paper for the BEAR Conference, Salford University, England, April 2003
- Williams, A, Turrell, P, Moss, C, Wall, R (2000) Access to Engineering Education, Conference proceedings of 3<sup>rd</sup> Working Conference on Engineering education for 21<sup>st</sup> century, April 2000, Sheffield, England.

## BIOGRAPHICAL NOTES

**Ali Buxton** completed her BSc Hons Building Surveying at Sheffield Hallam University in 2003 and is now working for an Architectural Practice that specialises in working with Historic Buildings in York. She has been actively involved in promoting careers in the built environment to school students and has spoken at a number of promotional events.

**Pat Turrell** is a Chartered Building Surveyor and a Fellow of the RICS with over twenty years of experience in the construction industry. She has spent the last twelve years as an academic at Sheffield Hallam University and has completed a MPhil in maintenance of school buildings. She is involved with the Let's TWIST partnership in mainstreaming of gender in surveying, construction and engineering. She has published refereed conference papers in all three areas of research, and in working towards an EdDoc with gender and culture as her dissertation topic.

**Sara J Wilkinson** is a Chartered Building Surveyor and a Fellow of the RICS, and is a Principal Lecturer at Sheffield Hallam University. She completed her MPhil in 'green buildings' and has furthered her research towards her Ph.D. into energy efficiency requirements of buildings both commercial and residential, along with energy aspects of refurbishment writing a number of papers, articles and presenting at conferences. She has recently won a teaching fellowship at Sheffield Hallam to develop interactive learning materials for dissertation students.

## CONTACTS

P M Turrell and S J Wilkinson  
School of Environment and Development,  
Sheffield Hallam University.  
Howard Street  
Sheffield  
South Yorkshire  
S1 1WB  
UNITED KINGDOM  
Tel. + 44 114 225 3216  
Fax + 44 114 225 3179  
Email: p.m.turrell@shu.ac.uk, s.j.wilkinson@shu.ac.uk  
Web site: <http://www.shu.ac.uk/sed>