

A Woman Engineer's Experiences of Working on British Construction Sites*

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This paper reports on research that explored the experiences of a woman engineer working in one of the most male dominated British industrial sectors—the construction industry. The paper relates the experiences of its principal subject through reflective journal accounts that she provided over a 12-week period. The diarist experienced serious sexual discrimination and harassment. It is suggested that, if her experiences are typical, then support strategies must be put into place to help women at the outset of their careers. The introduction of sexual harassment policies and procedures, training for staff, mentoring programmes and insight courses are potentially effective ways of helping women engineers prepare for the difficult workplace environment that they could confront.

INTRODUCTION

THE UK construction industry has traditionally been dominated by white men, and there remains a demonstrable under-representation of women and minorities [1–4]. Currently, women comprise less than 4% of the professional membership of the UK's construction-related professional bodies [5]. There are good reasons for encouraging workforce balance within traditionally male-dominated sectors; proponents of diversification argue that it leads to more broadly informed, adaptable organisations, which are closer to customers, more responsive, and more able to attract better quality employees [6, 7]. Accordingly, in recent years the industry has begun to attempt to redress the gender imbalance. An industry-backed task force was set up to explore equality issues [8], and individual organisations, professional bodies and national training organisations have all undertaken steps to improve women's representation and the level of their involvement. These have been successful, with women now comprising some 14% of the undergraduates in civil engineering, and 22% on other construction-related under-graduate degree courses in the UK [9].

Despite the considerable success in increasing the representation of women within the industry, these initiatives have not been based on good empirical evidence that, after graduation, women will have the opportunity to progress their career in parity with their male colleagues. Concerns remain that barriers to women's careers may threaten their increased presence in the future.

Anecdotal accounts and research suggest that women face discrimination and harassment, and have found developing their careers problematic [10–15], and has suggested that only 25% of women believe that they could reach the top of their profession [10]. Research in other sectors has shown that a lack of career opportunities is the principal reason why women managers leave organisations [16, 17]. Thus, it seems likely that as women enter the construction work force in increasing numbers, employers will need to promote equality of opportunity effectively in order to retain them [18, 19]. This need has added significance within the UK construction industry, where skills shortages and higher wage demands are becoming common [20–23]. Consequently, there is now a real need to retain women in the sector, particularly as they may act as role models and mentors for women considering construction careers in the future.

In order to retain women, the construction industry initially requires a more comprehensive understanding of women's careers experiences. This knowledge will allow the industry to make informed judgements when developing human resources management (HRM) policies to develop a fair and equitable work environment and thus improve women's retention in the future. However, whilst the effects of cultural mechanisms on women's careers are well established in many sectors, their influence within the construction industry remains surprisingly under-researched. Previous research on women in construction in the UK has focused on attracting women to the industry rather than exploring their careers or the reasons why they progress at slower rates in comparison to their male peers. To make sense

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of women's experiences in construction, and to identify the aspects of the construction workplace that require change if women are to be successful in developing their careers, it is necessary to identify aspects of the existing culture which define their current position within it. This paper presents a case study that begins to address this need, by identifying career obstacles faced by women in their day-to-day working lives.

RESEARCH DESIGN AND METHODOLOGY

The research described here is one element of a much larger study of women in construction [15]. The method chosen in this part of the study was to use daily diaries to give first-hand accounts of the informants' workplace experiences, which were supported by periodic interviews in which issues raised in the diary entries were explored through direct questioning of the informants. Diaries have been classified into three types: intimate journals (subjective experiences over a long period of time); memoirs (impersonal accounts over a short period); and logs (simple records of visits, meetings and other events) [24]. Intimate journals were chosen, as they give a deeper understanding of the informants' reactions to, opinions of, and feelings about their experiences. Informants were asked to keep a daily account of particular issues that they felt had occurred as a direct or indirect result of their gender. They were asked to define how they spent their working day in their own terms, but to talk principally about interactions with people, and particularly any event which could have had a bearing on the direction or success of their career.

Four completed diaries were returned, which provided detailed insights into the day-to-day experiences of women in their work environment. Only one of these diaries is summarised in this paper. The diarist is a recent graduate and had worked for a large construction company in a site-based managerial role for around 18 months following graduation. The paper deliberately focuses on a single case study in order that a full, vivid account of her experiences over the period can be conveyed. Her journal entries provide a rich, contextual testimony of her working life within the construction industry, and allow the reader to gain an insight into her day-to-day experiences of the industry's workplace culture. Importantly, it is acknowledged that it is not possible to make generalisations about women's experiences from this case study, all of which are unique and affected by a wide range of complex factors, not all of which stem from the workplace environment. Although many of this woman's experiences and coping strategies reflected those of the other diarists participating in the study, these experiences are merely illustrative of the types of issues confronting women working within the construction engineering environment.

However, interestingly, interviews with 40 women construction engineering professionals in another part of this research project also confirmed that many of these experiences were not exceptional and had been experienced in various ways and at various times by many of these women.

EXCERPTS FROM THE DIARY

The excerpts selected are verbatim quotations from the diarist's entries, and have been only amended to ensure anonymity, and reduced where indicated for economy of space. They are presented chronologically over a twelve week period.

Week 1

The diary commences two weeks after the diarist was deployed to her first project

'I went to a meeting with my Commercial manager today. Over lunch he kept hinting at spending the afternoon at a hotel together. I was feeling a little bit nervous but thought it must only be a joke. The car journey home was very tense as I realised he was not joking. Instead of pulling up by my car, he stopped outside the hotel entrance asking if I wished to go in. After he tried to kiss me, I quickly got out of the car, stating I would see him at work tomorrow because I had an appointment in the evening.'

She was concerned about the consequences of her actions

'I felt confused and concerned that my career prospects could rely on the decision I had just made, as he was my supervisor. . . I was feeling very nervous about going to work . . . I decided to . . . get to work when I knew other people would be in the office. Unfortunately . . . as we have to work very closely together for this project, it was difficult to avoid him.'

Her next problem came from a different source

'I have a feeling the secretary does not like me. She accused me of not knowing what I was doing, and I heard her speaking to my supervisor accusing me of being incompetent. I felt extremely angry that she was trying to belittle me in front of the guy whose opinion my job would hinge on. I am now very suspicious of her and will keep my distance only asking her for things that I really need . . . I have noticed that my typing is now her lowest priority.'

Also, other problems continued

'My site manager. . . asked personal questions about my relationship with my supervisor. When I questioned him why he wanted to know, I found out they had a bet on of £5 to see who could get me into bed first! . . . My supervisor asked me to dinner at lunchtime, which I politely refused, so he then asked me out for a drink after work . . . Again I refused. I hope that he will get bored of asking if I keep saying no!'

Week 2

The tension between the diarist and her supervisor appeared to ease at the beginning of the second week;

'My supervisor told me about the bet that he and the site manager had made concerning me and asked if I would like to make a profit on it! However, we then joked about it being a stupid suggestion especially as he was married which took away the tense problem . . . Now we often chat and joke during the day rather than me avoiding going into his office.

Having recognised the sexualised nature of the culture, the diarist decides to exploit it

'In fact because I know what he now likes, I can use it to my advantage. For example when I want to use the computer and he is acting pig-headed by saying 'no', when it is the only computer with my database for the project on, I only have to suggest that I am wearing suspenders and then the answer is reversed!'

However, it was not long before she experienced public displays of inappropriate behaviour in a social situation

'We went out for a leaving party one of the men flirted with me, and my supervisor got very jealous . . . He got up and sat next to me drawing everybody's attention to the problem. I tried to ignore it but with further suggestions and him putting his hand on my knee for the majority of the evening, it was really difficult. I was trapped. I could not cause a scene.'

Week 3

The male power structure within the workplace is evident

'Today was meant to be my first day off since starting work as it was my birthday. Unfortunately, although I had booked the holiday months in advance, I was informed by my supervisor that it was mandatory to attend the commercial awareness workshop in the morning although others who had booked the day off were still allowed to take it as a holiday. I was not very happy and felt that I was being unfairly treated but to whom do I complain?'

The problems continue

'The persistent pressure of being asked to bed and out for drinks is starting to stress me out again and I am very cautious not to allow it to be just the two of us together in the office.'

Rejection of the perpetrator's advances leads to further consequences for the diarist

'The more I say no the more of his work I have to do. I keep questioning if it would be better to agree to it and then if I made it rubbish, the situation would never arise again! But then why should I jeopardise my moral standing just to enable me to be left alone just because I am a woman!'

Again sexual advances were made public:

'Today I received a note giving me directions to a hotel. I was very embarrassed and hoped nobody else saw it although I am quite convinced another QS did. I am glad to be going on a safety course for the rest of the week to get me away from the site.'

However, the diarist also experiences problems off the construction site:

'The course . . . was filled with middle aged site managers. All eyes were on me as I walked into the

room as I was the only woman . . . it was a relief to sit down. I was extremely embarrassed . . . I wish I had never turned up! All breaks I spent on my own, whilst the others chatted away together completely ignoring me.'

The male supervisor continued to demonstrate his power:

'My new company car arrived and my supervisor insisted that I take him for a spin in it. A bit apprehensive, I agreed and we then went for a drink on the way home. Our relationship seems to have returned to normal and no more sexual suggestions were made.'

Week 4

The problems continue:

'I was at the project team party and got stuck between the Regional Director and my old supervisor. Both tried very hard to get me drunk and everybody was enquiring about my relationships . . . I took the earlier train home as the party was ruined for me. Why me? . . . Maybe there was an office bet on.'

Week 5

Continued problems come from new sources

'We have commenced a new project . . . A new site manager has arrived . . . and he has already starting making jokes about me and saying that I fancy him. I have given no evidence of this but I am not prepared to get upset because that is the only reason they are saying it.'

The diarist also feels pressure to perform better than her colleagues

'Tonight I commenced a residential course with a senior site manager from my region . . . Jokes were made about our romantic week together . . . It is easier to laugh with them than to fight their jokes. Yet again I am the only woman on the course which means I have to be better than all the rest just to gain respect.'

Again we hear of an incident

'The site manager from my region teamed off with me on the first exercise and refused to go downstairs for a drink saying we ought to prepare together for the exercise tomorrow. Naively I followed him back to his room for coffee and to discuss the exercise . . . I soon realised his intentions and made the excuse that I had forgotten to phone my manager concerning company business.'

Week 6

The diarist is treated differently to her male colleagues

'My first day on my new site . . . as the secretary has not moved out to site yet . . . I was automatically assumed to be the receptionist cum secretary! . . . The project manager kept asking me to fetch him cups of tea and telling me how he would tell his wife that I am looking after him whilst he is away from home. Most of the time I just wanted to throw the tea over him . . . especially when he hugs me and puts his arm on my shoulder saying what a good girl I was!'

'I am beginning to think that the system on site is to abuse me and see how much I could take, from little comments about the cold weather and my body parts to unfastening my bra. I have learnt to ignore it or laugh it off, as they will tire of it quicker if I ignore it than if I made a fuss about it.'

Week 7

Similar problems continue

'In a meeting with the site team, the project manager kept making remarks about how he has often seen me chatting up the subcontractors and how I fancy other members of the team. I have found myself trying to justify every time I speak to a man on site. With the secretary still not out on site all incoming phones have been diverted to my phone . . . I have had to remain back till 7 pm every night to complete my work because my day was taken up with answering phones.'

Week 8

After a brief holiday the diarist returns to similar problems

'I returned . . . to comments of 'did I pull' and 'who was my victim in bed'. I went to show my tutor my training notes and found a letter in pencil for today saying how I was going to be nice to my ex-supervisor and take him to a hotel, etc. I felt very embarrassed and told my tutor that my work/diary was not up to date and therefore there was no point reviewing it. Luckily he agreed.'

'The secretary felt she could upset me by commenting on my work and the fact that I have to constantly work back because I do not do it during the day and I do not do it properly. What right has she to comment on my work in front of the whole site, trying to belittle me and everything I have worked for? Unfortunately, a slanging match broke out due to how cross I was about the whole situation. The project manager pulled me aside to discuss the situation and my attitude towards the secretary.'

Week 9

There are noticeable differences for a woman on site

'Being the only woman on site certainly gives me an advantage at times because the subcontractors will go out of their way to do things for you and because of my good-hearted nature and the fact that I do not get upset when they make sexual jokes about me! I feel I am able to ask them to complete a task quicker than maybe the other surveyors ask them to do or even asking them to do it in the first place is a bit cheeky. They probably think that they have a good chance of getting me into bed and so agree to do it!'

Week 10

Pressure on the diarist brings out a reaction to other women:

I was informed that a girl would be taking over my job when I leave the project . . . Another woman on site could take the pressure off me a bit as the men could then pick on her and leave me alone!'

Week 11

There is evidence of effects on her outside work life

'Due to my job here, my personal life is a disaster. If you have a boyfriend the site guys in your team do not joke with you so much so it's best to pretend you have one to warn off any unwanted advances. If you have a boyfriend, he thinks you are sleeping with every guy on site or he is jealous about your job and does not want to hear about the problems you encounter.'

Comments on her appearance continue

'I arrived at work in a proper suit, and comments like 'that's more suitable for work' have been passed. Nobody comments on what the men wear! I've even had to buy front-fastening bras because they get undone so much when I'm standing at the photocopier!'

Week 12

The informant reflects on her feelings at the end of the diary:

'My manager seems to be piling on the work at a ridiculous rate. My aim is to prove that I can do it but the pressures of arriving at work at 5:30 am and not leaving until 8-ish most nights is getting too much. There are increasing rumours that I slept with another site manager. It hurts to see people you trusted . . . believing such remarks . . . It is situations like this that have made me realise that there is more to life than construction . . . the men want to keep it a man's world.'

DISCUSSION

The diarist was faced with overt sexual harassment from her senior colleague almost as soon as she had begun working in the site environment. There is a useful typology containing three types of sexual harassment that classifies the behaviour that women are subjected to in male-dominated environments [25]. The first category relates to verbal requests for sexual intimacy. This includes sexual bribery (with an associated threat or promise of a reward or consequence), sexual advances, relational advances (repetitive advances for a social relationship) and subtle pressure (in which the goal of sexual intimacy is ambiguous). The second category accounts for verbal comments, which can include personal remarks and jokes, subjective objectification (such as rumours and remarks about a woman) and sexual categorical remarks. Finally, the third classification relates to non-verbal displays. These can include sexual assault, sexual touching, sexual posturing (such as violations of personal space) and the use of sexual materials. The informant in this case study could be seen to have been subjected to virtually every form of sexual harassment contained within the typology.

Women in non-traditional work will often be more at risk of sexual harassment than their counterparts in traditional forms of female employment. Although women in non-traditional work appear to have been successful in entering a man's world, their precarious position means they are likely to be even more at risk. Analysis from

the insurance industry suggests that they may experience more extensive and aggressive forms of sexual harassment than their counterparts in traditional forms of female employment [26]. Despite performing their jobs extremely well, the women in this study received no support from senior managers and, separated off from one another, they found it extremely difficult to respond in effective ways.

The present case study shows how gender can become entwined within the culture of the construction project environment. This type of environment has been described as a 'locker room' culture, an exclusionary culture where overt sexual references are made to confirm the dominant male heterosexuality [27]. This workplace atmosphere induced a continual testing of the diarist's resilience to intimidating behaviour and harassment had reached an almost ritualistic level. These appeared to have a gradual and cumulative impact on her career and outlook. No support was forthcoming from her employer to counter the pack-like mentality that had developed within the project environment. The woman's visibility in the construction workplace could explain the unwanted attention from dominant male colleagues. Men often see women workers as intruders and use sexual harassment to keep them out of what they see as a male preserve [28].

The informant's coping strategies were an interesting mix of both internally and externally focused actions. They appear to change due to the cumulative effects of the problems she faces. They move along a continuum from avoidance tactics, to adaptation, to accommodation, to pressure to perform better, to blaming herself, to anger, and finally to resignation. However, the movement along this continuum is not linear, and at times throughout the twelve weeks the diarist sometimes tries several tactics in the same week, and also moves backwards and forwards between the strategies to attempt to solve the multiple incidents she experiences.

Despite initially rebutting her supervisor's advances in a polite way, the diarist was still concerned about the consequences of her actions on her career prospects, as the harasser had power over her within the organisation. The stress and emotional strain of her initial experiences led her to try to avoid direct contact with her problematic colleagues. This is difficult given the close physical proximity required within the site-based construction project team environment. Attempts to gain support from other women working within the project team were also unsuccessful. The site secretary's resentment could have been the 'queen bee syndrome'; seeing the young construction professional as a threat to her status and position as the only woman within the site office.

As the diary continues, the informant found out about a sexual conspiracy perpetrated by her male colleagues, and she continues to try and avoid the situations in which she could be subjected to

harassing behaviour. An initial threat from her supervisor in the form of sexual jealousy led to another colleague providing a patronising (and ultimately ineffective) attempt at 'protecting' her. In this case the harassing behaviour has escalated. Thus, merely ignoring advances has failed to avert the problems, and there are now some public displays of inappropriate behaviour within a social situation. Token women feel particularly stressed in 'relaxed' social situations where sexist male humour was most pervasive, particularly where alcohol was freely available, and where formal positions provided less protection [26, 29]. The impact in this case study was to undermine the diarist's professional position publicly. Whilst there is clear evidence of victimisation of the subject, she is powerless to act given her junior position, the operational independence of her project superiors, and the lack of complaint procedures.

Throughout the diary entries, the impact of persistent sexual advances leads to considerable emotional stress for the diarist. Moreover, her rejection of her supervisor's advances leads him to react to her in a 'tit-for-tat' manner, giving her additional work as a consequence of her rebuttal of his sexual advances. At this point the implications of not succumbing to harassing behaviour begin to become evident, as other discriminatory actions come into play. Even seeking to spend time away from the harassing environment of her project team failed to make her survival in this male environment easier, as the exclusionary male culture of the site extended to the office environment.

The diary excerpts suggest a developing coping strategy by the diarist beginning with simple avoidance of the problem, and later developing to playing along with jokes and banter. As the male supervisor continued to demonstrate his power, especially through the overt categorisation of the diarist as a sexualised being, she becomes increasingly isolated and disillusioned with her role, and begins to lack confidence in her interactions with her colleagues. These feelings appeared to evoke a new coping mechanism, as she begins to adapt her reactions again, feeling that any sign of distress on her part would be taken as a sign of weakness and would make her even more vulnerable.

Later on in the diarist's entries she makes reference to the advantages of being a woman in construction. This represents a new approach in terms of appeasing and accommodating the male culture. Having recognised and accepted the sexualised nature of the culture of the organisation, the diarist decides to try to exploit it for what she sees as her benefit. However, in accepting her sexualisation by her male colleagues, she thereby undermines her professional status. This clearly led her to feel that she was losing control of the situation when she experienced further incidents of sexual harassment.

Deliberate discriminatory actions and stereotyping are again in evidence, and the knock-on impacts on the diarist's personal life begin to become apparent. It is noticeable that references towards the impact of her work on her social life form a more dominant feature of the diarist's entries towards the end of the three-month period.

All these changes in tactics are clearly draining on the diarist's mental resources, and as the problems escalate further she puts increased pressure on herself to perform better than her colleagues to try to gain respect.

As the stress increased throughout the second month of the diarist's entries, she begins to blame her own naivety for the actions of her colleagues. Also, she begins to pick possible flaws in her own actions and personality that may explain their behaviour. Blaming herself for the behaviour of the harasser suggests that she has begun to internalise the problems that she is facing rather than link them to the actions of her colleagues and the culture of the workplace. Harassing behaviour is supplemented through direct discrimination which again reinforces her feelings of inappropriateness as a professional woman on a construction site.

The cumulative impact of this seems to begin to create feelings of anger, although she still attempts to ignore the harassment through psychological detachment from the situation or to 'laugh it off'.

Finally, at the end of the diary period the informant reflects on her feelings. Her concerns about the effect of the discriminatory culture on her career are evident, but the emphasis is now on embracing a fuller criticism of the industry in general and the lack of prospects that it offers.

Thus, in the diary excerpts there was evidence of denial, endurance, detachment and a significant amount of self-blame for the actions of her colleagues. However, she also used avoidance and appeasement strategies, actions which were perhaps more proactive in dealing with harassment situations. The only reactions that were not in evidence were to directly confront the harassing behaviour, such as through notifying a senior colleague or making a formal complaint. However, since it was the informant's supervisors that were perpetrating the actions against her, her lack of reaction in this case is unsurprising.

There were a few instances within this case study which suggest that naive or ill-informed actions can exacerbate harassing behaviour in the long-term. For example, a failure to rebut sexual advances effectively had left the diarist in several compromising positions with her colleagues. However, research has found women's responses to sexual harassment self-defeating in the asymmetrical gendered power relations of non-traditional occupations [25, 26, 29, 30–32]. All responses were re-defined and criticised as women's being incompetent or unable to fit in. This vicious circularity is described as a 'no-win situation', where regardless of how women try to cope their responses are then criticised and used to legitimise the persistence of

sexual harassment. If women 'join equally in sexual relations . . . they burn their fingers. When they ignore the sexualised culture they are in turn ignored and marginalised. When they resist it they are labelled' [33]. Therefore, it seems almost certain that the diarist would have faced some inappropriate behaviour from her colleagues regardless of her own actions.

In trying to find an explanation for the severity of her colleagues' behaviour, the fact that so much of her colleagues' actions were directed specifically at her suggests that they were unwilling to allow her to integrate into the project team. When an outsider joins a group, it is common for the dominant group to exaggerate their commonality and the minorities' differences. This has been called 'boundary heightening' where men use sexual stories and humour to isolate women [29]. Tokens (minority employees) can demonstrate loyalty to the dominant group by allowing themselves to become a source of jokes and banter. As boundaries are heightened, the group-culture is dramatised and the tokens stand out more vividly. This generates a self-fulfilling spiral of escalation.

This case study confirms studies where women's presence as tokens tended to reinforce rather than undermine dominant male cultures characterised by sexual jokes and tales of sexual adventures [29, 26]. Men's exaggerated displays of aggression and sexual innuendo were acted out more fervently in the proximity of token women than when the men were alone. Women were constituted as an audience for the men's sexual displays and tested to see how they would respond to the male culture. By defining these women as 'outsiders' men could unite and reinforce their dominant group solidarity. As in the case study reported here, reducing women entrants to sexual objects of ridicule, the dominant male culture reproduced and even reinforced itself.

CONCLUSIONS AND RECOMMENDATIONS

This paper has provided an insight into the experiences of one female construction professional during her early career working on construction projects. The journal entries provide an appalling picture of the construction workplace and its impact on a woman professional working within the industry. They suggest that men's compliance with the dominant culture can lead to behaviour that undermines the confidence of women construction professionals, and isolates them within the workplace. The lack of support and solidarity from female colleagues merely reinforces the cultural exclusion.

These diary entries are characterised by serious sexual harassment and discrimination, and deliberate attempts to undermine the diarist's position and credibility. Her experiences demonstrate the difficulties faced by women caused by male

colleagues resentful of women's intrusion into their environment. The woman's visibility (as the only professional woman in the workplace) increased her feelings of isolation and resentment. This extended to social interactions with colleagues, where the continual threat of sexual advances, rumour and innuendo rendered normal work relationships impossible. The continual shifts between sexual objectification, overt subordination and discrimination suggests a workplace culture which is uneasy with working with women, with little evidence of female solidarity in the predominantly male work environment to help cope with the environment. The inevitable result is considerable and continual stress and emotional strain being placed upon the informant. This transcends into fear, depression and ultimately impacts on her professional performance and personal life.

If the diarist's experiences are reflective of the general nature of the workplace environment, this raises important questions as to whether the industry is equipped, both structurally and culturally, for diversifying its workforce. Moreover, it questions whether women who do work in the industry are likely to report cases of sexual discrimination

or harassment to their employers and/or authorities. It is likely that until women form a more significant proportion of the construction industry's workforce, change is unlikely to be forthcoming. This presents a circular argument, because sustaining women's growing presence within the sector will firstly require a fundamental change in its culture of harassment and discrimination towards women.

Whilst equal opportunities training for men working within the industry and robust sexual harassment policies could go some way to improving the equality of work environment, preparing women for the workplace culture that is likely to confront them remains fundamental to ensuring their long term retention within the industry. Mentoring programmes could have an important role to play in helping young women engineers in adapting and coping with their early career experiences. Furthermore, supplementing undergraduate studies with insight courses and honest accounts and reflections from practising women engineers and construction professionals could help to ensure awareness, as well as providing new entrants with a set of proven strategies for surviving their first few years in the industry.

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