WOMEN, CONSTRUCTION AND HEALTH AND SAFETY (H&S): SOUTH AFRICAN AND TANZANIAN PERSPECTIVES

J. ENGLISH, T.C. HAUPT AND J.J. SMALLWOOD

Corresponding Author: Jane English
University of Cape Town
South Africa
jenglish@ebe.uct.ac.za

ABSTRACT

Construction by its very nature constitutes a challenge in terms of health and safety (H&S) and ergonomics as it exposes workers to a range of health, safety, and ergonomic hazards, manual handling included. Internationally, women constitute a minor percentage of the construction workforce. Furthermore, perceptions exist that women are not suited to construction, that construction work is too physical for women, and that the image of the industry discourages participation by women. Whether or not perceptions are just, they are important as people act on them. A study was initiated to determine perceptions relative to: participation of women in general; their role; their capacity; their impact; their potential contribution; barriers to their participation; and general and gender specific issues. The paper reports on studies conducted in South Africa and Tanzania, the salient findings being: women have a role in construction; increased participation by women will contribute to improving the image of construction; women have requirements related to their gender and roles; some construction materials constitute a manual materials handling problem to women, and current welfare facilities for women (such as medical support or child care) are inadequate. The paper concludes that endeavours are necessary to change attitudes, promote participation by women, accommodate women, and improve conditions, particularly H&S.

KEYWORDS

Women, construction, health and safety

INTRODUCTION

South African construction workplaces appear to exclude women: rarely are women visible on sites or in professional positions. A study of 200 construction workers in the Western Cape that covered a comprehensive economic range of 65 sites did not reveal a single woman (English, 2002). Furthermore, the entire sample selected through random stratified sampling was male. Women have had a lower level of education than men and possibly this has increased unemployment for them, and men have dominated the workplaces (Statistics South Africa, 1999). The South African Construction Industry Status Report describes women as representing a mere 8% of the building and construction management profile in the formal sector (Construction Industry development Board, 2004).

Employment in the construction industry according to the 2001 census was 520 486 altogether, 470 909 of whom were male, 46 577 female. Almost half employment in the industry occurred in the informal construction sector, which in 2001 was 223 000, 206 000 of whom were male, 18 000 female (Kane-Berman, 2001). However, there are some positive indicators of this profile changing. The informal sector reflects female involvement existing through the South African Women in Construction (SAWIC), which reports a membership of about 600 building enterprises owned by women (Department of Public Works, 2004). This is in keeping with the commitment stated by the departments of Public Works and of Housing, and the Construction Industry Training Authority (CETA) to increasing the number of women participating in the industry (CETA, 2000). To achieve these goals, however, it is necessary to review inherited problems of the past, the attitudes to women presently entering construction and, having entered the industry, staying in it (Dainty

and Bagilhole, 2000). Attitudes of women who have not considered construction as a career should also be sought.

In employment of women, there is no general global model though the UN has presented various initiatives (United Nations Conference on Women, Mexico 1970; United Nations Millennium Development Goals 2000). For those countries with stable economies and established education systems, e.g. Australia, Britain and the United State of America (Bullock 1994; Fielden et al. 2001; Graham and Hotchkiss 2003), the argument for employing women is to:

- provide equal opportunities to those wanting to join in a non-traditional occupation;
- appreciate the advantages women may offer to both industry and society by being accommodated in male dominated professions;
- acknowledge many work places and the men working in them may be hostile to women;
- ensure management directives which will equalise recruitment, employment, pay, job placement, promotion, and job retention, and
- address the shortage of skilled and unskilled labour in first world countries.

Strong stereotypes of women's choices for their careers have been found to be held by employers. This stereotyping is reflected in recruitment biases and in the findings that in the UK women leave construction and that only 25% of women in construction believe they can develop careers (Dainty, Neale and Baglihole, 1999). Research conducted in Australia (Department of Employment, Education and Training, 1993) indicates that it is the lack of effective communication between industry and girls / women that is the cause of a low profile of women in the industry. Findings were that women need to be able to access information about the specific aspects and tasks involved in trade work and that they are not able to through general knowledge (Department of Employment, Education and Training, 1993). It would seem from models in Europe that political good will to encourage employment of women is insufficient to elicit change and that only when equal opportunity actions that targeted women were implemented was there a change (Michielsens, 2004). In addition, the recruitment literature of the Construction Industry is gender based, offers no career advice to women, and the industry generally is unaccommodating of women entering (Wall, 1997). Research has also indicated that discreet or overt discrimination against women in the workplace results in women leaving their jobs (Morley, 1994). This is also true of other occupations, which are male dominated: whilst performance in the job of women as equalled that of male colleagues, the environment has been too hostile for them to remain (Bullock, 1994). And as most of these women are working in the formal sector, the options for their position being changed are reduced.

The aspect of health and safety (H&S) is of particular concern as women in South Africa in attempting to enter the construction industry can be presented with the added burden of working in unsafe conditions. The high unemployment, many impoverished people and no shortage of male labourers leaves women with no direct role in construction except as lowly paid helpers, moving earth, bricks and mortar, or making bricks. These jobs are conducted under poor working conditions that can be detrimental to H&S. Thus before promoting women in the SA industry regard must be paid to H&S. This paper is based on a study conducted in 2004 in South Africa and 2005 in Tanzania of attitudes held by senior representatives and stakeholders in the industry.

The objectives of the study reported on in this paper were to determine their perceptions of the following aspects concerning women in construction:

- Participation of women in general;
- Their role;
- Their capacity;
- Their impact;
- Their potential contribution;

- Barriers to their participation;
- General and gender specific issues, and
- Engendering of their participation.

RESEARCH

METHODOLOGY, SAMPLE STRATUM AND RESPONSE

The South African sample stratum was comprised of 37 delegates attending two one-day Construction Regulations Workshops in two metropolitan areas over a two-day period. A survey questionnaire was circulated at the start of the first session for completion by its end. The gender ratio of the respondents was 81.1% male and 18.9% female. All the returned questionnaires were included in the analysis of the data, which equates to a response rate of 100.0%.

The Tanzanian sample stratum consisted of 24 delegates attending a four-day Certificate Programme in Construction H&S in Dar Es Salaam. The gender ratio of the respondents was 82.6% male and 17.4% female. Only 23 were included in the analysis of the data, which equates to a response rate of 95.8%.

It should be noted that such a high level of response to surveys conducted during workshops and programmes is not the norm, suggesting that the subject area was probably topical. The sample could arguably be considered to be a convenience sample. Table 1 indicates the stakeholder constituency of respondents. Architects predominated relative to South Africa, followed by quantity surveyors, and contractors. Architects and engineers predominated relative to Tanzania, followed by contractors.

ANALYSIS

The analysis of the data consisted of the calculation of descriptive statistics to depict the frequency distribution and central tendency of responses to fixed response questions. A five-point scale was used to determine the degree of concurrence relative to a range of statements. Given that a five-point scale was used and that the difference between 1.00 and 5.00 is four, ranges with an extent of 0.8 (4 / 5) are used to discuss the degree of central tendency - the ranges of concurrence are:

- $\geq 1.00 \leq 1.80$: strongly disagree to disagree;
- $> 1.80 \leq 2.60$: disagree to neutral;
- $> 2.60 \leq 3.40$: neutral;
- $> 3.40 \leq 4.20$: neutral to agree, and
- $> 4.20 \leq 5.00$: agree to strongly agree.

FINDINGS

Table 2 indicates the extent to which respondents concur with the various statements in terms of percentage responses to a range 'strongly disagree' to 'strongly agree', and in terms of a mean score ranging between 1.00 and 5.00. Mean scores above the midpoint score of 3.00 indicate that in general the respondents can be deemed to concur with the related statements, and those ≤ 3.00, that in general the respondents cannot be deemed to concur with the related statements. However, the ranges cited in the 'Analysis' section enable a more detailed interpretation of the findings.

Table 1: Stakeholder constituency of respondents

Stakeholder	Respondents (%)	
	South Africa	Tanzania
Architect	36.1	21.7
Contractor	13.9	17.4
Engineer	5.6	21.7
Insurer	0.0	0.0
Project Manager	2.8	4.3
Private sector client	5.6	0.0
Public sector client	2.8	4.3
Quantity Surveyor	16.7	0.0
Other	16.7	30.4

Table 2: Comparison of 'overall' South African and Tanzanian degree of concurrence in terms of mean scores

Statement	Mean score		
	South Africa	Tanzania	Mean
Women have a role to play in construction	4.31	4.27	4.30
Increased participation by women will contribute to improving the image of construction	4.14	4.16	4.15
Women are likely to be sexually harassed on site	3.90	4.09	4.00
Women are not respected to the same extent men are	4.07	3.70	3.89
Current welfare facilities for women are inadequate	3.74	3.90	3.82
Women have 'special' personal hygiene issues / requirements	3.53	3.95	3.74
Some construction materials present a manual materials handling problem to women	3.35	3.71	3.53
Mechanisation of the construction process will promote participation by women	3.55	3.50	3.53
Women are less likely to accept unsafe conditions than men	3.52	3.50	3.51
Older (> 40 years) women are less suited to physical construction process than men of the same age	3.13	3.70	3.42
Women are not as physically capable as men	3.07	3.48	3.28
Some construction materials present a manual materials handling problem to men	3.03	3.38	3.21
Women are less likely to accept inadequate welfare facilities than men	3.13	3.29	3.21
Appropriate work attire is not readily available for women	2.69	3.32	3.01
Women are as physically capable as men	3.07	2.74	2.91
Current provision for vertical movement (access) on site is inappropriate for women	2.32	3.43	2.88
Women are less likely to be willing to work in extreme temperatures than men	2.33	3.20	2.77
Ultra violet radiation poses more of a threat to women than to men	2.71	2.60	2.66
Women are more suited to administrative than production functions on site	1.89	3.17	2.53
Generally personal protective equipment (PPE) is not suited to women	2.43	2.45	2.44
Transport to and from, and between sites is inappropriate for women	2.29	2.57	2.43
Women are more likely to be absent from work than men	1.88	2.90	2.39

Table Preparedness to work on the average construction site as a woman

Response	Response (%)		
	South Africa	Tanzania	Mean
Yes	38.9	38.1	38.5
No	33.3	23.8	28.6
Unsure	27.8	38.1	33.0

Only one statement realised a mean level of concurrence > 4.20 ≤ 5.00, which means that the degree of concurrence is between agree to strongly agree, namely: "Women have a role to play in construction." Given that the greater percentage of respondents is men; this is a notable level of concurrence. Furthermore, it suggests that attitudes have shifted since the findings of the UK study which determined that women leave construction and that only 25% of women in construction believe they can develop careers (Dainty, Neale and Baglihole, 1999). Research by Wells (1990) indicated they play virtually no part in the formal sector, and Dainty and Bagilhole (2000) state that it has been suggested that they do not do so because of both active discrimination against their entering it, and their consequent reaction to the barriers, which reinforces their feelings of alienation. The findings of this paper suggest the climate is more conducive to women. Although Wells (2004) cites a 14.6% increase in women employed in construction in five Asian countries, the statistic for women in production work is in fact 66%. Other research cited women in India who, whilst accounting for over 28% of the workforce in the Construction Industry, work predominantly in unskilled occupations such as head load carriers or cleaners and are offered no opportunity to develop skills (Vaid, 1999).

The next range of mean scores > 3.40 ≤ 4.20, means that the concurrence is between neutral to agree.

The finding of Dainty and Bagilhole (2000) that the construction industry is considered to have one of the most negative public images of all industries is reflected in the concurrence relative to: "Increased participation by women will contribute to improving the image of construction." The concurrence also reflects the potential role of women in improving the image, the poor image being attributed to, inter alia, its reputed working practices. The biological differences between men and women are reflected in the high level of concurrence relative to "Women have 'special' personal hygiene issues / requirements." This concurrence can be linked to the high level of concurrence relative to the statement "Current welfare facilities for women are inadequate." The level of concurrence to the latter is notable, as a previous South African study conducted by Smallwood (2004) determined that performance relative to welfare facilities was rated between very poor to poor. The statement "Women are likely to be sexually harassed on site" attracted a high level of concurrence. Research conducted in countries where women are on site in skilled as well as unskilled positions illustrate unpleasant, and even life threatening instances of harassment on site (Eisenberg, 1998).

The high level of concurrence relative to "Some construction materials present a manual materials handling problem to women" is not unexpected as Schneider and Susi (1994) contend that construction by its very nature constitutes an ergonomics problem. However, it should be noted that the mean score relative to "Some construction materials present a manual materials handling problem to men" is marginally below that relative to women, namely 3.71 vis-à-vis 3.54, the former being 6.7% higher than the latter.

The concurrence relative to the statement "Mechanisation of the construction process will promote participation by women" should not be reviewed solely relative to women, as the potential contribution of mechanisation to an improvement in ergonomics has been identified in previous South African studies (Smallwood, 2002). The level of concurrence relative to "Women are not respected to the same extent men are" is both supported and not supported by the findings of literature. Whilst the inclusion of women is positive, it is only so if they are recognised and their rights regarded. An aspect of discrimination that continues to be perpetuated is the image of women as minor wage earners and of their being less competent in skilled work than men contribute to their being given and

accepting lower wages (Bullock, 1994). An active example of this is women in construction are in services rather than in production – as many as two thirds in Africa (Bullock, 1994).

However, some recent projects indicate that women are being positively received and are possibly experiencing a more supportive environment at work. A female bricklayer in Botswana who, having met with resistance from employers, none the less described her work experience in overall positive terms: *I do not experience any problems as a female bricklayer – both male and female colleagues respect me. It is not difficult to get work as a bricklayer* (Rantshadi, 2004).

The concurrence relative to the statement "Older (> 40 years) women are less suited to the physical construction process than men of the same age" indicates that the perception is perpetuated. However, it should be noted that a previous South African study determined that construction is not complementary to older workers, in general (Smallwood & Haupt, 2004).

The next range of mean scores > 2.60 ≤ 3.40, means the concurrence falls within the neutral range.

The non-concurrence / neutrality relative to "Women are not as physically capable as men" is supported by literature. However, the statement "Women are as physically capable as men" attracted even less concurrence. It is pertinent to note that traditionally African women have been used to undertaking physical hard labour in agriculture and construction. It has only been in recent history, through colonial practice, that they have inherited a system where men have taken over the labourer's role in construction (Wells 1990; Vaid 1999; Dainty and Bagilhole 2000; Budlender, 2002). A further irony is that women were once the architects and builders of homes in Africa. Kalambu (2001) describes research conducted in different parts of Africa, which indicates that women undertake various physical building tasks such as mixing and moulding bricks, building walls, cutting and setting up roofing poles and thatching. With Western influences on African societies, gender roles have become more Eurocentric than African and women have ceased to play a pivotal role in the creation of housing (Kalabamu, 2001).

The non-concurrence / neutrality relative to "Women are less likely to accept unsafe conditions than men" and "Women are less likely to accept inadequate welfare facilities than men" indicate that women are not less receptive to unacceptable circumstances than men. Although studies have indicated that climbing and descending constitutes an ergonomics problem in South Africa, the non-concurrence / neutrality relative to the statement "Current provision for vertical movement (access) on site is inappropriate for women" does not reflect these findings (Smallwood, 1997; Smallwood, 2002). The statement "Appropriate work attire is not readily available for women" is not concurred with; neither is the statement "Generally personal protective equipment (PPE) is not suited to women." The statement "Women are less likely to be willing to work in extreme temperatures than men" attracted non-concurrence / neutrality. The statement "Appropriate work attire is not readily available for women" is not concurred with, and more so,

The non-concurrence / neutrality with the statements "Women are more suited to administrative than production functions on site" and "Women are as physically capable as men" both reinforce the highest level of concurrence received by any statement, namely "Women have a role to play in construction." The non-concurrence is notable in that most respondents are male. However, a realistic concern and one that is entrenched universally, namely that the nature of the work will present many problems needs to be discussed as it has been identified as a barrier. Fielden and Davidson (2000) argue that the negative factors in the construction industry working environment are considered particularly unsuitable for women, and, for

example, the UK industry is devoid of female labourers. However, they maintain that this is more from traditional gender-entrenched attitudes, as many facets of the job are now not dependent on manual strength, as they are supported by machines. In the USA, women for some time have participated in construction trades such as electrical, but are still poorly represented in the industry (Eisenberg, 2001). In one study undertaken in South Africa, women cited the following tasks as being ones they could easily manage in building: clearing site (82%); painting (88%); stock control (91%), and book keeping (92%) (Marshall, 2002). Some women interviewed described activities they had been involved in during the construction of their own homes: preparing the site and shifting the shack to accommodate the house to be built; digging foundations; mixing concrete and cement mortar; packing and carrying bricks; collecting materials by wheelbarrow; fetching sand and concrete, and passing bricks (Marshall, 2002).

The model that this study could develop would see women with needs and abilities being given access to training and employment and working in activities in construction that do not necessarily require physical strength. Therefore, a critical path for women's entry into the industry is for their roles on site to be suited to them; roles which they ultimately fill more effectively than their male counterparts. For example, in Belgium, women are well represented as house painters (Susman, 2003). A study in India described suitable areas of skill for women as tiling, flooring, painting, plastering, finishing and such trades (Chitale, 1999).

The statement "Ultra violet radiation poses more of a threat to women than to men" attracted non-concurrence / neutrality. The next range of mean scores $> 1.80 \leq 2.60$ means that the concurrence is between disagree to neutral.

Although the statement "Transport to and from, and between sites is inappropriate for women" is not concurred with, literature indicates that transport of workers in South Africa is inappropriate and constitutes non-compliance with the transport related provisions of the Construction Regulations (The Civil Engineering Contractor, 2005). Literature does not support the non-concurrence with the statement "Generally personal protective equipment (PPE) is not suited to women." A study conducted on a platinum plant in South Africa determined that small enough boots and overall sizes were not available for women engineering recruits (English, 2004).

The non-concurrence with the statement: "Women are more likely to be absent from work than men", is supported by literature. Female craft workers have been found to be more reliable, produce better quality work and practise sobriety (Boiko, 1994). In a study in Botswana, contractors and foremen who had employed women out of a skills' shortage necessity, stated that most female workers were more committed to their work than male counterparts, being absent less and not requesting daily wages (i.e. can manage their finances and be paid weekly or monthly) (Kalambu, 2004).

Furthermore, the following differences between countries in terms of mean scores relative to statements should be noted: women are likely to be sexually harassed on site; women are not respected to the same extent men are; older (> 40 years) women are less suited to the physical construction process than men of the same age; women are less likely to accept unsafe conditions than men; current provision for vertical movement (access) on site is inappropriate for women; appropriate work attire is not readily available for women; women are less likely to be willing to work in extreme temperatures than men; women are more suited to administrative than production functions on site, and Women are more likely to be absent from work than men.

Respondents were also asked a summary question in the form of: Would you be

prepared to work on the average construction site as a woman? Table 3 indicates that slightly fewer than a quarter would be prepared to work. However, although slightly more than a quarter indicated that they would not be prepared to, as much as 33% were unsure.

CONCLUSIONS

The construction industry is short of skills. Providing able skilled labour through the employment of women on sites will facilitate an improved rate of construction and quality of building. However, the example of Asia must not be followed - women must be trained in skills and recognised for the work they do. As unskilled labour their presence is more easily disguised and as the industry becomes more mechanised, their jobs diminish (Wells, 2004).

Based upon the findings of the surveys reported on it can be concluded that there are positive perceptions with respect to the role of women in the construction industry. However, it must be noted that the respondents were predominantly consultants and from management, and are therefore likely to constitute the more enlightened participants in construction.

The findings of the surveys also lead to the conclusion that the industry projects a poor image, and that the welfare facilities (such as medical support and childcare) are inadequate. The importance of welfare facilities is amplified by the finding that women can be deemed to have 'special' personal hygiene issues / requirements. It can also be concluded that the industry entails a large amount of manual handling, that vertical movement of people requires attention, and that there is a need to mechanise the industry.

Therefore, to realise enhanced participation by women in the industry will require a paradigm shift and re-engineering of the industry. The industry needs to become more of a process industry (incorporating a high level of mechanisation and use of plant and equipment) than a craft industry. Although there are proponents of labour intensive construction which are manageable for women, the realities are that construction in general constitutes physical barriers to women. To change them increased awareness, followed by acknowledgement and commitment is needed.

The study also considered pragmatic concerns such as issues around hygiene, sexual harassment and respect which all impact on women more than on men. There is concurrence relative to the work environment not meeting the personal hygiene issues / requirements of women, that women are likely to be sexually harassed on site, and that women are not respected to the same extent that men are.

An option for enabling women to enter the construction industry is for training to take place on site. Evidence of women's ability to learn on-the-job can be seen in the successful ventures of women building the enhancements and subsequently moving on to manufacture. Another option would be mobile training units which could train women in building skills. This system of training would also alleviate the cost of transport for women to attend training. Training on-site is perceived by some research to be the most viable option for a subcontracted workforce (English, 2002). South African women, who at present participate in building their own houses by making concrete bricks, are taught to do so on-site by people selling the brick / block making equipment (Fletcher, 2004).

Furthermore, leads can be taken from developed countries where there have been initiatives to engender more women in industries. The United States, in recognising the need for gender equity in all forms of employment to ensure parity in job opportunities for women and pay parity with men, has appointed Equal Employment Opportunity Commission (EEOC) and Office of Federal Contract Compliance (OFCCP) in an effort to encourage companies to employ women (Graham and Hotchkiss, 2003). Britain and other European countries

suffering a skills shortage in the craft and manual trades, hope to fill it with women workers from Eastern European and Middle Eastern countries. This move is supported by the Equal Opportunities Commission and the British government's Women's Unit (Whittock, 2002).

REFERENCES

Boiko (1992) cited by Dainty, A., and Bagilhole, B.M. (2000) A Grounded Theory of Women's Career Under-Achievement in Large UK Construction Companies, *Construction Management and Economics*, Vol.18, No.2.

Budlender, D. (2002) *Women and Men in South Africa*, Pretoria: Statistics South Africa.

Bulletin of Statistics/ Statistics South Africa, Vol. 37, No. 4, 2003. Pretoria: Statistics South Africa

Bullock, S. (1994) *Women and work*. Women and World Development Series developed by the UN-NGO Group on Women and Development. Zed Books Ltd., London and New Jersey.

Chitale, M. (1999) Critical Issues in Training Women in Construction, *Women in Construction* edited by Vaid, K., Mumbai: Nicmar, www.nicmar.org

Construction Industry Development Board (CIDB) (2004) *SA Construction Industry Status Report – 2004*. Pretoria: CIDB.

Construction Industry Training Authority (2004) *Sector Skills Plan*, Online, Available

http://www.ceta.org.za/, 25th October.

Dainty, A. and Bagilhole, B.M. (2000) A Grounded Theory of Women's Career Under-Achievement in Large UK Construction Companies, *Construction Management and Economics*, Vol.18, No.2.

Dainty, A.R.J. and Bagilhole, B.M. (2000) A grounded theory of women's career under-achievement in large UK construction companies. *Construction Management and Economics*, March 2000, Vol. 18, No. 2.

Department of Employment, Education and Training (1993) *Different Futures: A Study of the Critical Factors encouraging Women's Access to Non-Traditional Entry-Level Training*, Australia.

Department of Public Works (1998) *White Paper, Public Works Towards the 21st Century*, Department of Public Works, notice 90 of 1998 in Government Gazette, Vol. 391, No.18616, SA Government Printer.

Department of Public Works (2004) *Construction Industry Status Report*, Pretoria.

Department of Public Works (DPW) (1999) White Paper: *Creating an Enabling Environment for Reconstruction*, Growth and Development in the Construction Industry, co-ordinated by the Department of Public Works, SA Government Printer.

Department of Public Works (DPW) (2004) *Construction Industry Status Report*, Pretoria.

Eisenberg, S. (1998) *We'll Call You if We Need You: Experiences of Women Working in Construction*, Ithaca: Cornell University Press, pp 84-85; p 158.

English, J. (2002) *The Construction Labour Force in South Africa: a Study of Informal Labour in the Western Cape,* Sectoral Activities Working Paper, International Labour Office, Geneva.

English, P.J. (2000) *Education in, and Management of, Cultural Differences in a Developing Country in order to Improve Industrial Efficiency*, proceedings for CIB TG29 on Challenges Facing the Construction Industry in Developing Countries, Botswana, November, pp. 51-60.

Fielden, S.L., Davidson, M.J., Gale, A. and Davey, C.L. (2001) Women, equality and construction. *The Journal of Management Development*, Vol. 20, No. 4. Pp.293-305.

Fletcher, J. CEO: National African Women's Alliance (NAWA) interview Cape Town, 12 August, 2004.

Gale, A.W. (1994) Women in Non-Traditional Occupations: the Construction Industry, *Women in Management Review*, Vol. 9, No.2, pp. 3-14.

Graham, M.E. and Hotchkiss, J. (2003) Which industries are best employers for women? An application of a new equal employment opportunity index. *Federal Reserve Bank of Atlanta*
Working Paper 2003-11 July 2003.

Kalabamu, F.T. (2004) Changing Gender Roles in House Construction in East and southern Africa: the case for Botswana, *Women in Construction*, edited by Linda Clarke et al., Construction Labour Research Studies, London: CLR/Reed Business Information, pp. 50-64.

Kane-Berman J. (ed.) 2004 *South African Survey 2003/2004* South African Institute of Race Relations, Johannesburg.

Marshall, S. (2001) *Gender and development: An investigation into housing delivery in Gauteng*. Mphil in Housing Development and Management, Dept. of Construction Economics and Management, University of Cape Town.

Matlay, H. (2001) New Labour, New Deal? Employment relations in the small business sector of the British economy. In: Blyton, P., Heery, E. and Turnbull, P. (eds). *Politics, Pulic policy and the Employment Relationship*. Abstracts from the 2001 Employment Research Unit Annual Conference held at Cardiff Business School, Cardiff University 10-11th September 2001.

Michielsens, E., Frydendal Pedersen, E. and Susman, B. (2004) The European Social Partners for Construction: force for exclusion or inclusion?, *Women in Construction*, edited by Linda

Clarke et al., Construction Labour Research Studies, London: CLR/Reed Business Information, pp. 80-103.

Morley, S. (1994) Women's Participation in Non-Traditional Vocational Training, *Women in Entry Level Training Project*, Department for Employment, Education and Training, South Australia.

Rantshadi, M. (2004) My Career in Building, *Women in Construction*, edited by Linda Clarke et al., Construction Labour Research Studies, London: CLR/Reed Business Information, pp. 64-66.

Schneider, S. and Susi P. (1994) Ergonomics and Construction: A review of potential hazards in new construction. *American Industrial Hygiene Association Journal*. 55(7), 635-649.

Smallwood, J.J. 1997. Ergonomics in construction. *ergonomics SA*. 9(1), 6-23.

Smallwood, J.J. 2002. Construction Ergonomics: General Contractor (GC) Perceptions. *ergonomics SA*. 14 (1), 8-18.

Smallwood, J.J. (2004) Respect for people, *Proceedings for CIB World Building Congress*

2004, Toronto, Canada, 1–7 May, CD-Rom D:\\proceedings\433.pdf

Smallwood, J.J. and Haupt, T.C. (2004) Older workers in South African construction: General contractor (GC) perceptions, *Proceedings for CIB World Building Congress 2004*, Toronto, Canada, 1–7 May, CD-Rom D:\\proceedings\432.pdf

Statistics South Africa (1999*) Provincial Profile*, report no. 00-91-07.

Statistics South Africa (2003*) General household survey July 2002* . Statistical Release P0318.

Susman, B. (2001) Come back when you have some experience. The NVQ 2000 - will it exclude women? A report by Building Work for Women. www.buildingworkforwomen.org.uk

The Civil Engineering Contractor (2005) Could an empty vessel be fronting a conspiracy. *The Civil Engineering Contractor*, April, 1.

United Nations (2000) Millenniun Development Goals. www.developmentgoals.org.

United Nations Conference on Women (1970), Mexico 1970. http://www.un.org/

Vaid, K. (1999) *Women in Construction*, Mumbai: Nicmar, www.nicmar.org

Wall, C. (1997) Notes from the Editor, *CLR News – Women in Construction*, 3, pp.1-2.

Wallace, M. (2000) Workplace training initiatives: implications for women in the Australian workforce. *Journal of European Industrial Training,* Vol. 24, No. 5 2000. Pp. 268-274.

Wells, J. (1990) *Female Participation in the Construction Industry*, Sectoral Activities

Programme Working Papers, International Labour Office, Geneva.

Wells, J. (2000) *The Role of the Informal Sector of the Construction Industries in Developing*

Countries, Best Practices Project, CIB Task Group 29 on Developing Countries, Botswana.

Wells, J. (2004) Women in Construction in the Developing World, *Women in Construction*, edited by Linda Clarke et al., Construction Labour Research Studies, London: CLR/Reed Business Information, pp. 66-79.

Whittock, M. (2002) Women's experience of non-traditional employment: is gender equality in this area possible? *Construction Management and Economics* . 20, 449-456 www.cidb.org.za/resource/report.pdf, 6 June.