

**6TH PROJECT AND CONSTRUCTION MANAGEMENT PROFESSIONS
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HEALTH, SAFETY AND WELL-BEING (HSW) IN CONSTRUCTION

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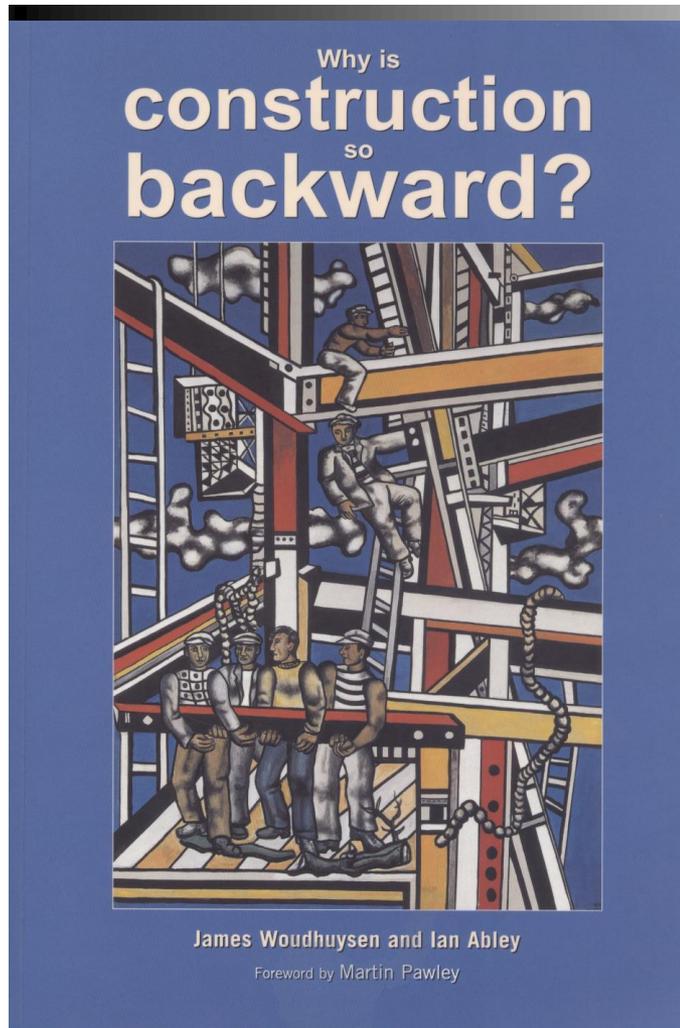
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Outline

- Introduction
- Concepts
- Definitions
- Visual overview
- Personal and co-research
- Other research
- The core values that support health, safety, and well-being (HSW) at work:
 - Review of the literature
 - Personal research

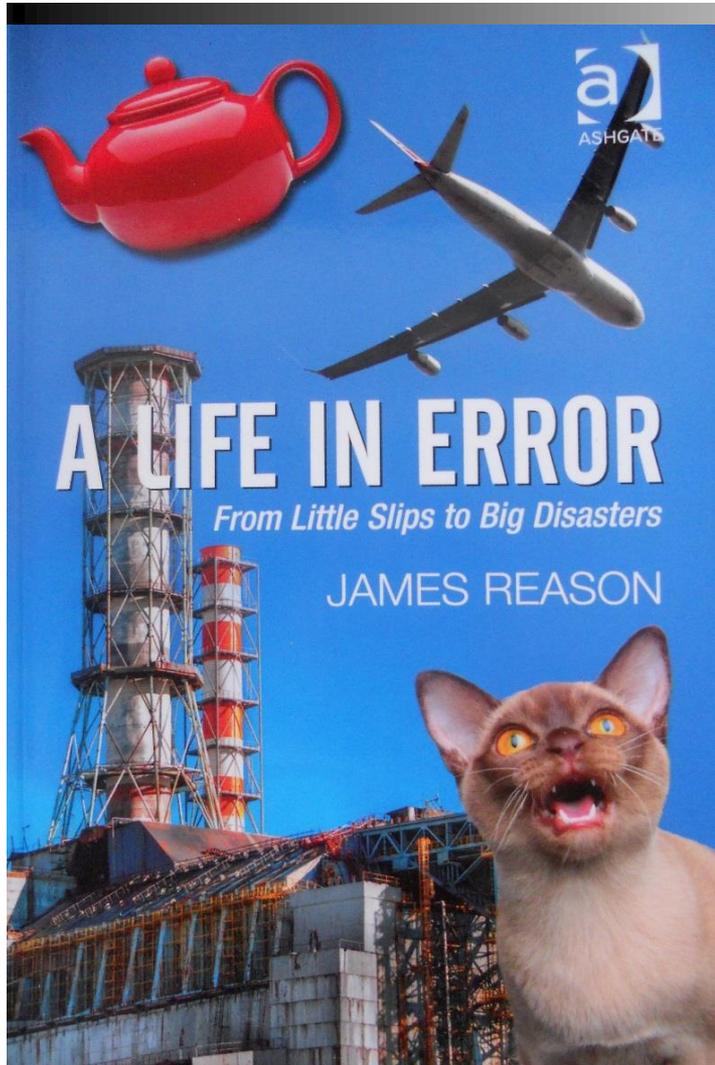
Why is construction so backward?



“So long as construction remains a backward industry, safety within it will be backward. So long as off-site manufacturing remains a footnote to general building, a lot of accidents are bound to happen in the hurly-burly rush to get on-site work completed on time .” (p. 43)

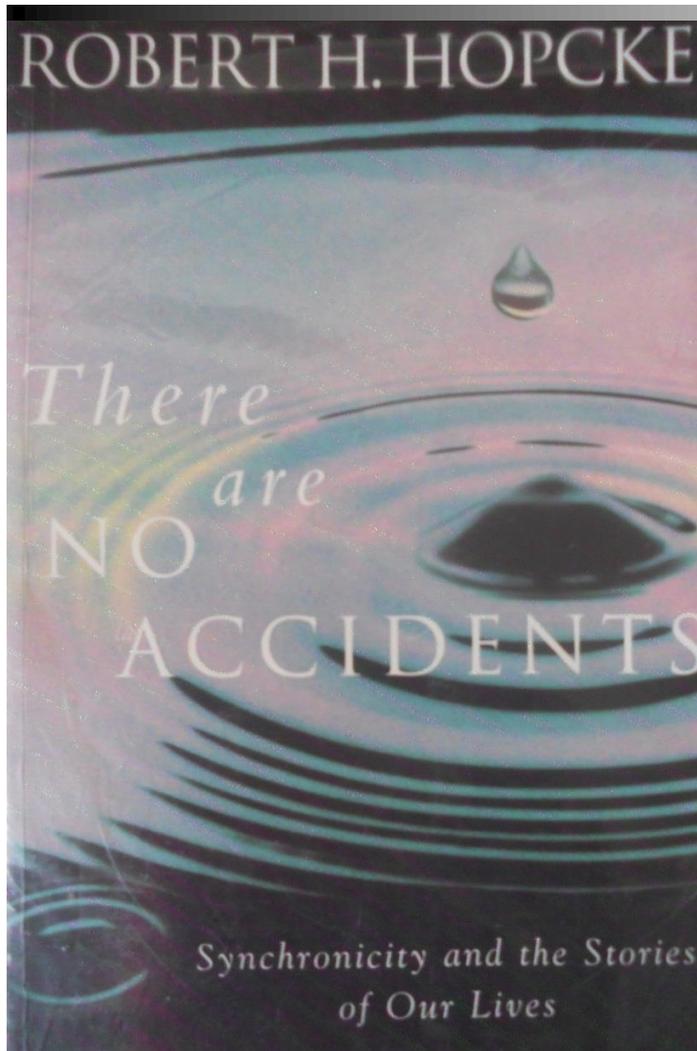
(Woudhuysen and Abley, 2004)

'Failure of management' versus 'Accident'(1)



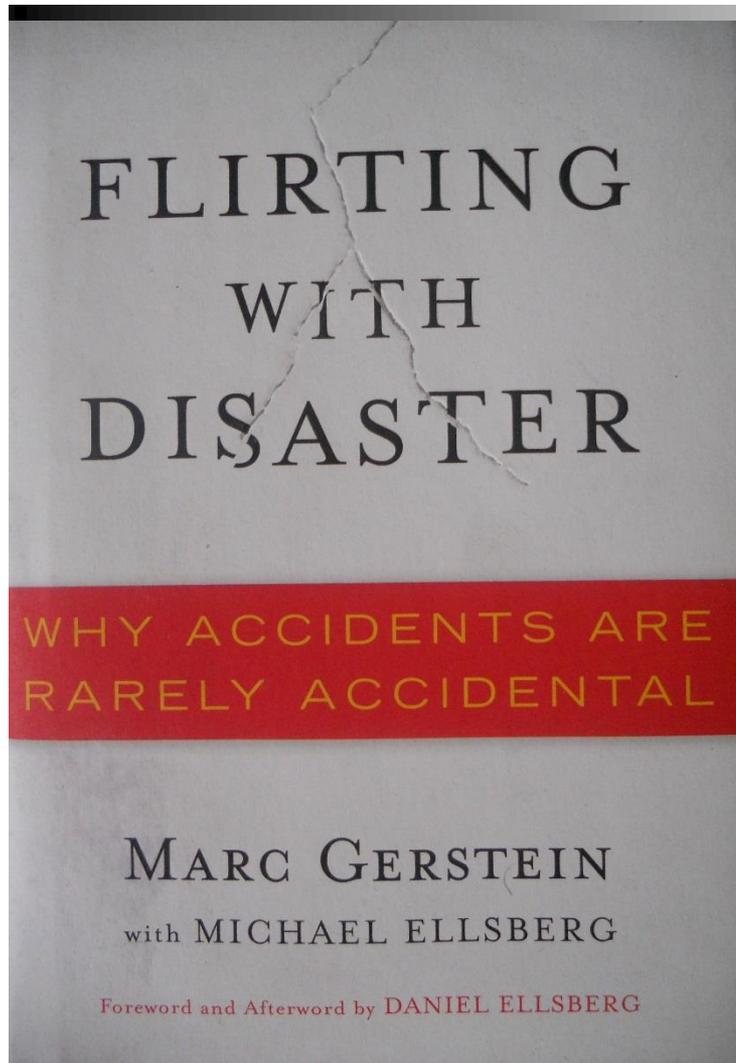
Chapter 8: Planning Failures

'Failure of management' versus 'Accident'(2)



A different kind of coincidence, a confluence of events that shakes us up. Can see and feel a significance in the randomness. Like pure chance, or just a coincidence. However, Jung refers to it as synchronicity. (p. 3)

'Failure of management' versus 'Accident'(3)



‘Failure of management’ versus ‘Accident’(4)



Stellenbosch Collapse (Anonymous, June 2008)

‘Failure of management’ versus ‘Accident’(5)



Stellenbosch Collapse (Anonymous, June 2008)

‘Failure of management’ versus ‘Accident’ (4)



Stellenbosch Collapse (Anonymous, June 2008)

Consciousness and mindfulness (1)

- **Consciousness (Payutto, 1999):**
 - “The perception and awareness of sensations, which will be related to particular intentions.”
 - “The awareness of sensations, namely seeing, hearing, smelling, tasting, touching and cognising; the basic climate of the mind from moment to moment.”
 - Fashioned into specific qualities by intention
- **Through self-observation a person can see, be aware, and in control of his / her own body or mind-mindfulness:**
 - This includes awareness of mind movement – thoughts
 - Awareness of the constant changes of all mental phenomena resulting in intuitive wisdom, which in turn averts clinging to conditioned phenomena that would lead to suffering (Tanphaichitr, 2001).

Consciousness and mindfulness (2)

- **Support work can be used to explain the role of optimum consciousness and mindfulness. The intention to realise optimum H&S will engender optimum observation and cognising relative to inadequate support work - consciousness. Mindfulness will result in, among other, intuitive wisdom, which will prevent clinging to the conditioned phenomenon of cost i.e. reducing the centres of standards or omitting bracing to reduce cost, which could result in a collapse and suffering of workers**

This is not the result of consciousness and mindfulness



Stellenbosch Collapse (Anonymous, June 2008)

Construction is a Science, Art, and a Profession / Sound Construction Management (1)



Scaffolding, Bradford on Avon (Smallwood, August 2014)

Construction is a Science, Art, and a Profession / Sound Construction Management (2)



Scaffolding, Bradford on Avon (Smallwood, August 2014)

The Golden Rule (1)

Eckhardt (2001) says the ‘golden rule’, which establishes a moral level of care for others that we are responsible to provide, is a common theme in most, if not all, of the world’s major religions:

- **Buddhist: hurt not others in ways that you would find hurtful**
- **Christian: all things whatsoever he would that men should do to you, do ye even so to them**
- **Confucian: do not unto others what you would not have them do unto you**
- **Hindu: this is the sum of the duty; do naught unto others which if done to thee would cause thee pain**
- **Islamic: no one of you is a believer until he desires for his brother that which he desires for himself**

The Golden Rule (2)

- **Jain: in happiness and suffering, in joy and grief, we should regard all creatures as we regard our own self**
- **Sikh: as thou deemest thyself, so deem others**
- **Taoist: regard your neighbours gain as your own gain, and your neighbour's loss as your own loss**
- **Zoroastrian: that nature alone is good which refrains from doing unto another whatsoever is not good for itself**

Definitions (1)

- **Health: “A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organisation, 2013)**
- **Well-being: ”Includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfilment, and positive functioning” (Centers for Disease Control & Prevention, 2018). Includes:**
 - **Physical well-being**
 - **Economic well-being**
 - **Social well-being**
 - **Development and activity**
 - **Emotional well-being**
 - **Psychological well-being**

Definitions (2)

- Life satisfaction
- Domain specific satisfaction
- Engaging activities and work

What people are required to construct (1)



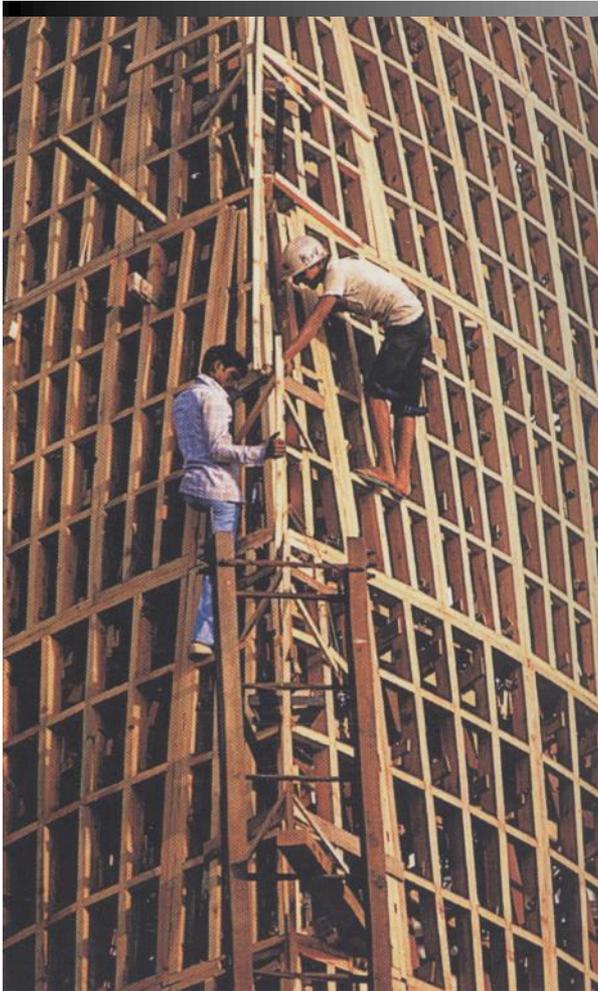
Bahia Temple, Delhi, India (Smallwood, 2005)

What people are required to construct (2)



Bahya Temple, Delhi, India (The National Spiritual Assembly of the Bahya'is of India, 2002)

What people are required to construct (3)



Bahia Temple, Delhi, India (The National Spiritual Assembly of the Bahai's of India, 2002)

Respect for people (1)



Lockers, SEP (Smallwood, 2007)

Respect for people (2)



'Outdoor dining', Sishen Expansion Project (SEP) (Smallwood, 2007)

Respect for people (3)



Mess facility, Sancti Spiritus, Cuba (Smallwood, 2007)

Respect for people (4)



**Workers change room, shower, and lockers, Max 4 project, Lund, Sweden
(Smallwood, August 2012)**

Respect for people (5)



Workers' mess area, Max 4 project, Lund, Sweden (Smallwood, August 2012)

Respect for people (6)



Contents of portable toilet, Humansdorp (Pierce-Jones, 2006)

Respect for people (7)



Contents of portable toilet, SEP (Smallwood, 2007)

Respect for people (8)



Naturally ventilated portable toilet, Port Elizabeth (Anonymous, 2007)

Respect for people (9)



Urinal, Port Elizabeth (Anonymous, 2007)

Abuse of migrant workers in Qatar (1)

Takes place against a backdrop of discriminatory attitudes against many categories of migrant workers - includes (Amnesty International, 2013):

- **Workers arriving in Qatar to find that the terms and conditions of their work are different to those they had been promised during the recruitment process – including salaries being lower than promised**
- **Workers having their pay withheld for months, or not being paid at all**
- **Employers leaving workers ‘undocumented’, and therefore at risk of being detained by the authorities**

Abuse of migrant workers in Qatar (2)

- **Migrant workers having their passports confiscated and being prevented from leaving the country by their employers**
- **Workers being made to work excessive (sometimes extreme) hours and employers failing to protect workers' H&S adequately**
- **Workers being housed in squalid accommodation**

A South African GC initiative

8/14/2016

Murray & Roberts - Robust - March 2009 - People



PDF format [1.8MB]

MARCH 2009



WE CARE
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LAUNCHES STAFF
WELLNESS INITIATIVE

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People

MURRAY & ROBERTS CARES

Murray & Roberts will introduce an employee wellness program across the Group from 1 March 2008. The launch will be accompanied by a comprehensive communication process to ensure that all employees are aware of it and know more about their current health.

Murray & Roberts has made a commitment to promote and maintain healthy lifestyles and the wellbeing of its employees. The Group recognises the risk associated with employees' personal and work-related problems both for the individual employee and the organisation. Organisational consequences of such problems include heightened absenteeism, lower productivity and morale, high staff turnover and the risk of incapacity.

By establishing the Murray & Roberts Employee Wellness Program (EWP), the Group has made a commitment to the creation of a caring and supportive working environment that is people-oriented and people-driven. The Murray & Roberts EWP is designed to assist employees who experience personal or work-related difficulties and ensure optimal performance of employees.

To provide employees with a high-quality wellness program, Murray & Roberts has partnered with ICA 8 Southern Africa, an independent external company specialising in employee support service provision. ICA 8 is part of ICA 8 International (a division of AXA PPP), the world's leading provider of behavioural risk management services to the business community.

Murray & Roberts is committed to promoting and maintaining the wellbeing of its employees and creating caring and supportive working environments.

Since its local launch in 1998, ICA 8 has established itself as the country's foremost specialist in the provision of behavioural risk management and employee wellbeing programs, contributing to the health and performance of employees and organisations in all sectors of the economy. In terms of the Department of Trade and Industry's BBBEE scorecard, ICA 8 is a 'Level 2' contributor. The work context within which we live is challenging and is characterised by:

- * Competitive pressure, earnings, value, reputation and market share are
- Continuous transformation and change at a societal and personal level
- A demanding work environment
- Vulnerability to violent crime, HIV, trauma and substance abuse
- Significant prevalence of lifestyle risk factors: sedentary lifestyle, obesity, poor nutrition, smoking, chronic disease
- Evidence of mental health and related problems: anxiety and depression, sleep disorders, tension headache and chronic fatigue
- A myriad of social problems, the most prominent of which is debt
- Pressure of work affecting family life

Respect for People (1) (CIB WB Congress, 2004)

Aspect	Response (%)						II	Rank
	Unsure	Very poor	Poor	Average	Good	Excellent		
Provision of appropriate materials	0.0	0.0	9.1	27.3	63.6	0.0	2.55	1
Employment contracts	0.0	0.0	18.2	27.3	45.5	9.1	2.45	2
Provision of plant and equipment	0.0	0.0	18.2	36.4	45.5	0.0	2.27	3
Occupational safety	0.0	0.0	27.3	27.3	45.5	0.0	2.18	4
Mechanisation	0.0	0.0	9.1	72.7	18.2	0.0	2.09	5
Promotion	0.0	0.0	9.1	81.8	9.1	0.0	2.00	6
Workplaces	0.0	9.1	9.1	63.6	18.2	0.0	1.91	7=
Constructability of design / details	0.0	9.1	18.2	45.5	27.3	0.0	1.91	7=
Limited manual handling	0.0	9.1	27.3	27.3	36.4	0.0	1.91	7=
Occupational health	0.0	0.0	45.5	27.3	18.2	9.1	1.91	7=
Housekeeping	0.0	9.1	27.3	36.4	27.3	0.0	1.82	11=
Environment	0.0	9.1	27.3	36.4	27.3	0.0	1.82	11=
Employment practices generally	0.0	0.0	36.4	54.5	9.1	0.0	1.73	13=
Supervision (inter-personal skills)	0.0	9.1	27.3	45.5	18.2	0.0	1.73	13=
Optimum time for activities	0.0	0.0	36.4	54.5	9.1	0.0	1.73	13=
Provision of information	0.0	9.1	18.2	63.6	9.1	0.0	1.73	13=
Primary health promotion	0.0	18.2	18.2	45.5	9.1	9.1	1.73	13=

Table 1A: Rating of the South African construction industry relative to production workers in terms of various aspects (II = 0.00 – 4.00) (Smallwood, 2004)

Respect for People (2) (CIB WB Congress, 2004)

Aspect	Response (%)						II	Rank
	Unsure	Very poor	Poor	Average	Good	Excellent		
General development	0.0	0.0	54.5	27.3	18.2	0.0	1.64	18
Skills training	0.0	0.0	63.6	18.2	18.2	0.0	1.55	19=
Provision of PPE	0.0	9.1	54.5	9.1	27.3	0.0	1.55	19=
Traffic safety during work	0.0	18.2	27.3	36.4	18.2	0.0	1.55	19=
WHBs (ablutions)	0.0	20.0	30.0	30.0	20.0	0.0	1.50	22
Induction (general)	0.0	0.0	63.6	27.3	9.1	0.0	1.45	23=
Sustainable employment	0.0	27.3	18.2	36.4	18.2	0.0	1.45	23=
Appropriate remuneration	0.0	9.1	45.5	45.5	0.0	0.0	1.36	25=
Recognition	0.0	9.1	45.5	45.5	0.0	0.0	1.36	25=
Ergonomics	0.0	9.1	63.6	9.1	18.2	0.0	1.36	25=
Toilets (ablutions)	0.0	18.2	36.4	36.4	9.1	0.0	1.36	25=
Changerooms	0.0	18.2	54.5	18.2	9.1	0.0	1.18	29=
'Off-the-job' H&S	0.0	18.2	63.6	0.0	18.2	0.0	1.18	29=
Soap (ablutions)	0.0	45.5	9.1	36.4	9.1	0.0	1.09	31=
Canteens / Mess rooms	0.0	27.3	45.5	18.2	9.1	0.0	1.09	31=
Showers (ablutions)	0.0	45.5	18.2	27.3	9.1	0.0	1.00	33
Towels (ablutions)	0.0	54.5	9.1	27.3	9.1	0.0	0.91	34

Table 1B: Rating of the South African construction industry relative to production workers in terms of various aspects (II = 0.00 – 4.00) (Smallwood, 2004)

Respect for People (3) (CIB WB Congress, 2004 & 2010)

Aspect	Response (%)						II	Rank
	Unsure	Very poor	Poor	Average	Good	Excellent		
Respect for people	0.0	0.0	18.2	54.5	27.3	0.0	2.09	1
Empowerment	0.0	0.0	40.0	30.0	30.0	0.0	1.90	2

Table 2: Rating of the South African construction industry relative to production workers in terms of respect for people and empowerment (II = 0.00 – 4.00) (Smallwood, 2004)

Aspect	Response (%)						II	Rank
	Unsure	Very poor	Poor	Average	Good	Excellent		
Respect for people	0.0	0.0	0.0	71.4	28.6	0.0	3.29	1
Empowerment	0.0	0.0	14.3	57.1	28.6	0.0	3.14	2

Table 3: Rating of the South African construction industry relative to production workers in terms of respect for people and empowerment (II = 0.00 – 4.00) (Smallwood, 2010)

Role of religion in H&S (CIB W99, Hong Kong, 2002)

Statement	II
A price cannot be put on a person's life	3.94
People are an organisation's most important resource	3.88
People have a body, mind and a soul	3.82
Values are important for H&S	3.82
Optimum H&S reduces waste	3.59
Accidents result in hardship to the injured	3.59
Values influence a person's concern for another person's well being	3.53
H&S should be a value and not a priority	3.50
People and the environment (nature) are inter-connected	3.41
Non-compliance with legislation is unethical	3.35
Optimum H&S engenders sustainability of the organisation	3.24
Workers should be assigned work which suits their abilities	3.13
We as people are 'our brother's keeper'	3.12
Optimum H&S engenders sustainability of the earth	3.06
Exclusive / Primary focus on cost compromises H&S	3.00
Belief in and practice of a religion influences a person's values	2.94
A healthy and safe work place results in justice and equity (fairness)	2.94
Management is responsible for workers' well being	2.88
A healthy and safe work place results in dignity of labour	2.82
A healthy and safe work place results in avoidance / removal of hardship	2.76
Work is a deed of spiritual value	2.65

Table 4: Concurrence wrt statements (II = 0.00 – 4.00) (Smallwood, 2002)

The role of Feng Shui principles in wellness & performance on construction sites (IEA, Seoul, 2003)

- ***Feng shui* as “the ancient Chinese art of living in harmony with the environment” (Webster, 1998)**
- **There is potential for the application of *feng shui* principles on construction sites due to the effect that.... (Smallwood, 2003):**
 - **The positioning of various functional points and areas have on the wellness of people on site, in particular, change rooms, and ablutions**
 - **Various aspects have on the wellness of people on site, in particular: housekeeping; noise; temperature; lighting levels; organisation of work area**
 - **The positioning of various functional points and areas have on overall project performance, in particular: materials store; change rooms, and ablutions**
 - **Various aspects have on overall project performance: organisation of work area; housekeeping; lighting levels; major plant; site establishment ‘clutter’; process layout, and temperature**

Role of EQ in managing H&S (JCPMI, 2014)

Attribute / State	Importance		Contribute		Difference
	MS	Rank	MS	Rank	
Problem solving	4.74	1	4.50	1	0.24
Assertiveness	4.55	2	4.29	2	0.26
Stress tolerance	4.50	3	4.29	3	0.26
Reality testing	4.42	4	4.11	11	0.31
Impulse control	4.39	5	4.24	4	0.15
Interpersonal relationship	4.39	6	4.18	6	0.21
Empathy	4.29	7	4.00	13	0.29
Emotional self-awareness	4.29	8	4.11	12	0.18
Optimism	4.29	9	4.18	7	0.11
Self-regard	4.13	10	4.16	8	- 0.03
Social responsibility	4.11	11	4.13	10	- 0.02
Flexibility	4.11	12	4.16	9	- 0.05
Self-actualisation	4.08	13	4.21	5	- 0.13
Happiness	3.92	14	3.95	14	- 0.03
Independence	3.84	15	3.79	15	0.05

Table 5: Comparison of the importance of attributes / states in terms of managing construction H&S and the extent to which attributes / states contribute to optimising (best possible) H&S performance on construction projects (MS = 1.00 – 5.00) (Smallwood, Emuze, & Bloomberg, 2014)

Stress (1) (CIB W99 Conference, 1999)

Level of employment	II			Rank		
	GC	SAIB	Mean	GC	SAIB	Mean
Contracts Management	2.21	2.33	2.27	1	1	1
Operational Management:						
Site Manager / Agent	2.17	2.26	2.22	2	2	2
Foreman	2.06	2.07	2.07	3	3	3
Junior / Section Foreman	1.65	1.56	1.61	4	4	4
Leading Hand	1.40	1.48	1.44	5	5	5
Production Workers:						
Skilled	1.35	1.33	1.34	6	6	6
Semi-skilled	1.10	1.00	1.05	7	7	7
General	0.98	0.81	0.90	8	8	8

Table 6: Experience of stress among construction management, supervision, and workers according to construction management (II = 0.00 – 3.00) (Smallwood and Ehrlich, 1999).

Stress (2) (CIB W99 Conference, 1999)

Cause	GCs		SAIB		Mean	
	II	Rank	II	Rank	II	Rank
Physical environment:						
Dirty' conditions	1.08	19	1.63	12	1.36	17
Excessive noise	1.15	18	1.52	18	1.34	18
Inadequate ventilation	0.92	23	1.41	21	1.17	21
Lack of privacy	0.79	26	1.26	25	1.03	26
Poor illumination	0.88	24	1.44	20	1.16	22
Temperature	1.35	10	1.67	9	1.51	8=
Temporary accommodation	1.00	21	1.22	26	1.11	24
Unsafe & unhealthy site	0.85	25	1.33	23	1.09	25
Organisational:						
Change	1.38	9	1.56	15	1.47	10=
Crisis Management	1.46	6	1.85	3	1.66	5=
Inadequate staff	1.54	2	1.77	6	1.66	5=
Inappropriate communication channels	1.35	9	1.74	7	1.55	7
Incompetent staff	1.54	4	1.81	5	1.68	3

Table 7A: Causes of stress according to construction management (II = 0.00 – 3.00) (Smallwood and Ehrlich, 1999).

Stress (3) (CIB W99 Conference, 1999)

Cause	GCs		SAIB		Mean	
	II	Rank	II	Rank	II	Rank
Individual:						
Delegating	1.31	12	1.63	11	1.47	10=
Inadequate managerial support	1.19	16	1.67	8	1.43	14
Job complexity	1.54	3	1.92	2	1.73	2
Job insecurity	1.25	15	1.50	19	1.38	15
Lack of training	1.38	7	1.63	14	1.51	8=
Overburdening	1.49	5	1.85	4	1.67	4
Relationships with superior	1.17	17	1.56	16	1.37	16
Relationships with subordinates	1.33	11	1.33	22	1.33	19
Role ambiguity	1.02	20	1.28	24	1.15	23
Time variables:						
Overtime	1.29	13	1.63	13	1.46	13
Project schedule	1.88	1	2.04	1	1.96	1
Shiftwork	0.79	27	0.99	27	0.89	27
Off-the-job:						
Family	1.27	14	1.67	10	1.47	10=
Life events	1.00	22	1.56	17	1.28	20

Table 7B: Causes of stress according to construction management (II = 0.00 – 3.00) (Smallwood and Ehrlich, 1999).

Primary health promotion (1) (JoCR, 2003)

Aspect	Response (%)				MS	Rank
	Never	Annually	Monthly	Weekly		
HIV & AIDS	52.3	18.2	25.0	4.5	1.82	1
Sexually Transmitted Infections (STIs)	62.5	17.5	20.0	0.0	1.58	2
Alcohol abuse	66.7	14.3	14.3	4.7	1.57	3
Tuberculosis (TB)	69.0	16.7	14.3	0.0	1.45	4
Drug abuse	79.0	11.6	4.7	4.7	1.35	5
Smoking	86.4	2.3	4.5	6.8	1.32	6
High blood pressure (hypertension)	81.8	13.6	4.6	0.0	1.23	7
Epilepsy	84.1	11.4	4.5	0.0	1.20	8
Healthy eating (nutrition)	88.4	4.7	6.9	0.0	1.19	9
Sugar diabetes (diabetes)	84.1	15.9	0.0	0.0	1.16	10=
Controlling weight (obesity)	90.7	2.3	7.0	0.0	1.16	10=
Stress	93.0	2.3	4.7	0.0	1.12	12
Cancer	90.9	6.8	2.3	0.0	1.11	13=
Family planning	90.9	6.8	2.3	0.0	1.11	13=
Family violence	90.9	6.8	2.3	0.0	1.11	13=
Worms, family illnesses e.g. measles	93.2	4.5	2.3	0.0	1.09	16

Table 8: Frequency at which health related aspects are addressed at work (MS = 1.00 – 4.00) 43
(Deacon and Smallwood, 2003).

Primary health promotion (2) (JoCR, 2003)

Aspect	Response (%)			Rank
	Yes	No	Don't know	
HIV & AIDS	88.9	12.2	6.7	1
Sexually Transmitted Infections (STIs)	86.7	4.4	8.9	2
Tuberculosis (TB)	84.4	6.7	8.9	3=
Alcohol abuse	84.4	6.7	8.9	3=
Drug abuse	78.6	9.5	11.9	5
Smoking	75.0	9.1	15.9	6
Family planning	69.0	17.5	16.7	7
Epilepsy	63.4	14.6	22.0	8
Healthy eating (Nutrition)	61.0	14.3	26.8	9=
High blood pressure (Hypertension)	61.0	19.5	19.5	9=
Family violence	58.6	14.6	26.8	11=
Stress	58.6	14.6	26.8	11=
Sugar diabetes (Diabetes)	56.1	14.6	29.3	13
Cancer	51.3	14.6	34.1	14
Controlling weight (Obesity)	47.5	22.5	30.0	15
Worms, family illnesses e.g. Measles)	45.0	14.6	37.5	16

Table 9: Perceived extent to which employees would benefit from employers addressing various health related aspects (Deacon and Smallwood, 2003).

Primary health promotion (3) (JoCR, 2003)

Aspect	Response (%)			Rank
	Yes	No	Don't know	
Better general health	88.9	6.7	4.4	1
Prevention of disease	88.6	9.1	2.3	2
Lower absenteeism	75.6	12.2	12.2	3
Improved productivity	69.7	16.3	14.0	4
Enhanced quality	65.8	22.0	12.2	5
Prevention of injuries	61.6	33.3	5.1	6
Lower stress levels at work	57.5	30.0	12.5	7
Enhanced schedule (programme)	47.3	31.6	21.1	8

Table 10: Perceived benefits arising from employers addressing various health related aspects with their employees (Deacon and Smallwood, 2003).

Primary health promotion (4) (SEEDS Conference, 2016)

Issue	Response (%)						MS	Rank
	U	Minor.....Major						
		1	2	3	4	5		
Alcohol abuse	0.0	6.3	0.0	12.5	18.8	62.5	4.31	1
HIV & AIDS	0.0	6.3	0.0	25.0	12.5	56.3	4.13	2
Drug abuse	0.0	0.0	6.3	31.3	18.8	43.8	4.00	3
High blood pressure (hypertension)	0.0	0.0	12.5	18.8	25.0	43.8	4.00	4
Tuberculosis (TB)	0.0	0.0	12.5	18.8	25.0	43.8	4.00	5
Sexually Transmitted Infections (STIs)	0.0	6.3	6.3	25.0	12.5	50.0	3.94	6
Healthy eating (nutrition)	0.0	6.3	6.3	25.0	25.0	37.5	3.81	7
Stress	0.0	6.3	6.3	37.5	6.3	43.8	3.75	8
Smoking	0.0	0.0	18.8	31.3	12.5	37.5	3.69	9
Cancer	0.0	6.3	6.3	43.8	6.3	37.5	3.63	10
Family violence	0.0	6.3	6.3	43.8	6.3	37.5	3.63	11
Worms, family illnesses e.g. Measles)	0.0	0.0	12.5	43.8	18.8	25.0	3.56	12
Family planning	0.0	6.3	6.3	50.0	6.3	31.3	3.50	13
Sugar diabetes (diabetes)	0.0	6.3	6.3	50.0	6.3	31.3	3.50	14
Controlling weight (obesity)	0.0	6.3	12.5	50.0	6.3	25.0	3.31	15
Epilepsy	0.0	6.3	25.0	37.5	0.0	31.3	3.25	16

Table 11: Extent to which workers benefit or would benefit from primary health issues being addressed in the work place (MS = 1.00 – 5.00) (Smallwood & Deacon, 2016).

Primary health promotion (5) (SEEDS Conference, 2016)

Issue	Response (%)						MS	Rank
	Unsure	Annually	Quarterly	Monthly	Fortnightly	Weekly		
Alcohol abuse	0.0	12.5	18.8	31.3	6.3	31.3	3.25	1
Drug abuse	0.0	25.0	18.8	31.3	0.0	25.0	2.81	2
Smoking	12.5	37.5	12.5	12.5	6.3	18.8	2.50	3
HIV & AIDS	0.0	37.5	25.0	31.3	6.3	0.0	2.06	4
High blood pressure (hypertension)	12.5	31.3	31.3	18.8	6.3	0.0	2.00	5
Sexually Transmitted Infections (STIs)	6.3	37.5	25.0	31.3	0.0	0.0	1.93	6
Tuberculosis (TB)	18.8	37.5	12.5	31.3	0.0	0.0	1.92	7
Healthy eating (nutrition)	20.0	40.0	13.3	26.7	0.0	0.0	1.83	8
Family planning	25.0	43.8	12.5	12.5	0.0	6.3	1.83	9
Family violence	25.0	37.5	25.0	12.5	0.0	0.0	1.67	10
Stress	25.0	43.8	12.5	18.8	0.0	0.0	1.67	11
Sugar diabetes (diabetes)	25.0	37.5	31.3	6.3	0.0	0.0	1.58	12
Controlling weight (obesity)	25.0	43.8	25.0	6.3	0.0	0.0	1.50	13
Cancer	18.8	50.0	25.0	6.3	0.0	0.0	1.46	14
Worms, family illnesses e.g. Measles	31.3	50.0	6.3	12.5	0.0	0.0	1.45	15
Epilepsy	37.5	50.0	12.5	0.0	0.0	0.0	1.20	16

Table 12: Frequency at which respondents' organisations address primary health issues with workers (MS = 1.00 – 5.00) (Smallwood & Deacon, 2016).

Primary health promotion (6) (SEEDS Conference, 2016)

Aspect	Response (%)						MS	Rank
	U	Minor.....Major						
		1	2	3	4	5		
Improved productivity	0.0	0.0	0.0	6.3	25.0	68.8	4.63	1
Enhanced schedule / time performance	0.0	0.0	0.0	6.3	31.3	62.5	4.56	2
Enhanced quality	0.0	0.0	0.0	6.3	37.5	56.3	4.50	3
Reduced absenteeism	0.0	6.3	0.0	6.3	18.8	68.8	4.44	4
Enhanced general health	0.0	6.3	0.0	6.3	25.0	62.5	4.38	5
Reduced stress levels at work	0.0	6.3	0.0	12.5	25.0	56.3	4.25	6
Prevention of disease	0.0	6.3	0.0	12.5	31.3	50.0	4.19	7
Prevention of injuries	0.0	6.3	6.3	6.3	25.0	56.3	4.19	8

Table 13: Extent to which respondents' organisations would benefit relative to aspects as a result of primary health aspects being addressed in the work place (MS = 1.00 – 5.00) (Smallwood & Deacon, 2016).

Annual medicals (1) (CIB W99 Conference, 2014)

Stakeholder	Response %						MS	Rank
	Un- sure	Not..... Very						
		1	2	3	4	5		
You	1.8	1.8	1.8	3.5	5.3	86.0	4.75	1
GC management	1.8	1.8	1.8	5.4	7.1	82.1	4.69	2
GC H&S management	1.8	1.8	0.0	5.3	17.5	73.7	4.64	3
Medicals service provider	5.4	1.8	0.0	7.1	12.5	73.2	4.64	4
GC HR management	1.8	0.0	0.0	9.1	18.2	70.9	4.63	5
Your family	1.8	1.8	0.0	7.0	26.3	63.2	4.52	6

Table 14: Degree of importance of medicals to the stakeholders related to the medicals (MS = 1.00 – 5.00) (Smallwood & Deacon, 2014).

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Annual medicals (2) (CIB W99 Conference, 2014)

Parameter	Response (%)							MS	Rank
	Un- sure	Did not	Minor.....Major						
			1	2	3	4	5		
Your awareness of specific health issues	0.0	1.7	3.4	0.0	3.4	24.1	67.2	4.47	1
Your awareness of general health issues	0.0	1.8	1.8	0.0	7.0	26.3	63.2	4.44	2
Perception of GC as an employer	0.0	1.8	1.8	3.5	14.0	15.8	63.2	4.30	3
Personal health and well being	0.0	3.5	0.0	1.8	12.3	26.3	56.1	4.26	4
Self esteem	0.0	7.0	0.0	5.3	12.3	17.5	57.9	4.07	5
Productivity of work	1.8	10.9	1.8	1.8	12.7	16.4	54.5	3.89	6
Work attendance	1.8	17.5	1.8	3.5	8.8	10.5	56.1	3.64	7
Frequency of ill health	1.8	14.0	14.0	3.5	15.8	10.5	40.4	3.18	8

Table 15: Extent to which the medicals have impacted on various aspects (MS = 0.00 – 5.00) (Smallwood & Deacon, 2014).

Annual medicals (3) (CIB W99 Conference, 2014)

Purpose	Response (%)
Regulations compliance	7.0
Employer's wellness programme	10.0
Productivity management	15.0
H&S management	69.0
Creation of awareness	13.0

Table 16: Purpose of medicals according to respondents (Smallwood & Deacon, 2014).

Reason	Response (%)
Regulations compliance	10.0
Employer's wellness programme / caring for employees	25.0
Knowledge of employees' H&S status	49.0
Improvement of working conditions	11.0

Table 17: Reason for medicals according to respondents (Smallwood & Deacon, 2014).

Complexity (1st. Intl. Conference on Complexity and the Built Environment, 2005)

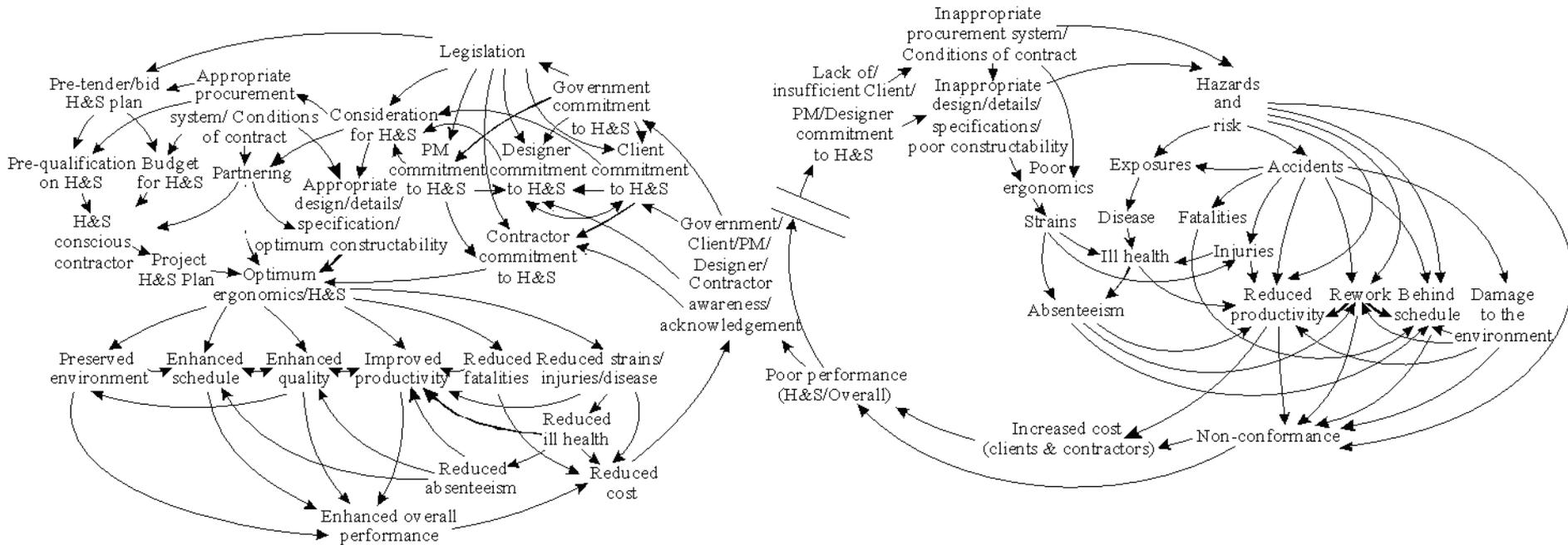


Figure 1: The holistic role of H&S in overall project performance (Smallwood, 2000; 2005)

Iconic projects – London 2012 (1)

Shiplee, Waterman, Furniss, Seal and Jones (2011):

- **Workforce on the Olympic Park site in east London peaked at 12 000 and a total of 30 000 people through its lifetime**
- **Careful planning, implementation of strategies with a proven track record and clear leadership by the Olympic Delivery Authority (ODA)**
- **Accident frequency rate comparable to the average for all British employment, significantly better than the construction sector**
- **“The protection of the H&S of everyone involved in our work or affected by it ... is important to us ... Our vision is to go beyond eliminating preventable illnesses, injuries, business losses and environmental harm ... it extends to enhancing the well-being of all involved in our project work.”**

Iconic projects – London 2012 (2)

- **Key to H&S performance is leadership**
- **The base case for each project, the design brief and specifications, the methods of procurement and the wording of contracts and works instructions, all reflected ODA's requirements**
- **Design management included the unique appointment of a Construction (Design and Management) (CDM) Regulations integrator, to assist in managing the many CDM coordinators appointed across the projects:**
 - **CDM coordinator initially appointed through the design team and as soon as possible through the integrated team operating under the Tier 1, which helped to embed the 'safe and healthy by design' approach**

Iconic projects – London 2012 (3)



Alternative cable-net roof for the Velodrome (Shiplee, Waterman, Furniss, Seal and Jones, 2011)

Iconic projects – London 2012 (4)



‘Safety First’ campaign supported by ODA CEO, and Locog Chair pictured with Enabling Works contractors after 1 000 000 hours without a reportable accident (Shiplee, Waterman, Furniss, Seal and Jones, 2011)

Iconic projects – London 2012 (5)

- **Five key elements to the H&S programme on site:**
 - **Safety – clear policies, risk assessments, method statements, common standards, visual standards, daily activity briefings**
 - **Health – pre-employment medical checks, prevention programme, assessment and control, health surveillance, training, emergency response**
 - **Well-being – advice, well man / woman clinics, good food strategy, campaigns, sexual health clinics, partnerships**
 - **Competence – induction, training, supervisor academy, briefings, apprenticeships, checks, and records**
 - **Culture – leadership, action plans, near-miss reporting, communications, reward and recognition, and climate tool**

Core values that support HSW at work (1):

Zwetsloot, van Scheppingen, Bos, Dijkman, & Starren (2013):

- **Argued that individual values are recognised as HSW influencing factors:**
 - However, a good overview of HSW-related values is missing
 - Their study aimed to fill this gap by identifying relevant values and clustering them into a limited set of core values supportive of HSW
- **Central research question: What organisational values are supportive of HSW at work? Operationalised into the following sub-research questions:**
 - What organisational values or value-laden concepts are mentioned in the literature as relevant for HSW?
 - Can these values and value-laden concepts be logically clustered around a limited set of core values relevant for HSW?

Core values that support HSW at work (2):

- **29 Values or value-laden concepts were identified courtesy of the survey of the literature**
- **Resulted in the need to evolve clusters of closely related value factors**
- **Content analysis:**
 - **Value factor was attributed only to the cluster it was judged most relevant for**
 - **What values are more central than other values or value-laden factors?**
 - **Some value factors are ‘essential values’ - potentially relevant for the identity of organisations, and selected as core values**
 - **Other factors appeared to be ‘expressions of’ such deeper values**
 - **For example, interconnectedness (core value), and ‘social support’ (an expression thereof)**

Core values that support HSW at work (3):

- **1st Workshop – 14 stakeholders:**
 - Clarify the meaning of core values
 - Provide feedback and associations wrt the cultural factors identified
 - Cluster the cultural factors and select a ‘core value’ for each cluster
 - Evolved 7 clusters versus the researchers’ 6 clusters
- **2nd Workshop – 8 stakeholders:**
 - Clarify the meaning of core values
 - Provide feedback and associations wrt the cultural factors identified
 - Cluster the cultural factors and select a ‘core value’ for each cluster
 - Evolved 7 clusters versus the researchers’ 6 clusters
- **Finally (last step) researchers categorised the 7 core values identified:**
 - Resulted in 3 main categories of core values that are supportive of HSW

Core values that support HSW at work (4)

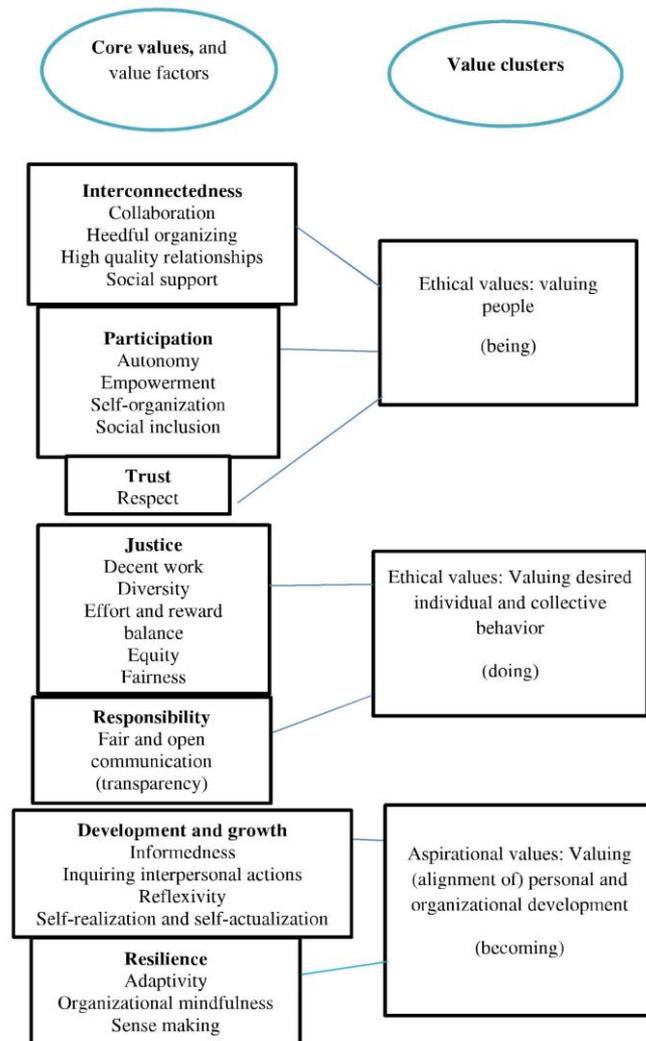


Figure 2: A framework of core values, value factors, and value clusters that support HSW (Zwetsloot, van Scheppingen, Bos, Dijkman, & Starren (2013))

Core values that support HSW at work (5)

Definitions:

- **Values:** “operating philosophies or principles that guide an organization’s internal conduct as well as its relationship with the external world.”
- **Reflexivity:** “the fact of someone being able to examine his or her own feelings, reactions, and motives (= reasons for acting) and how these influence what he or she does or thinks in a situation”
- **Self-realisation:** “fulfilment by oneself of the possibilities of one's character or personality”
- **Self-actualisation:** “the realisation or fulfilment of one's talents and potentialities, especially considered as a drive or need present in everyone”

Core values that support HSW at work (6)

Research:

- **Sample strata:**
 - GCs
 - Pr Construction H&S Agents (CHSAs)
 - Candidate Construction H&S Agents (Can CHSAs)
 - Construction H&S Managers (CHSMs)
 - Candidate Construction H&S Managers (Can CHSMs)
- **Response (up to 25 July end of day; commenced 18 July):**
 - 1 GC
 - 14 Pr CHSAs
 - 14 Can CHSAs
 - 26 CHSMs
 - 55 Total

Core values that support HSW at work (7)

Core Value: Value Factor	MS		Exp. as a % of Imp.
	Imp	Exp	
Interconnectedness:			
• Collaboration	4.35	2.98	59.1
• Heedful organising	4.11	2.88	60.5
• Quality relationships	4.30	2.90	57.6
• Social support	3.81	2.67	59.4
Participation:			
• Autonomy	3.69	2.49	55.4
• Empowerment	4.19	2.65	51.7
• Self-organisation	4.19	2.55	48.6
• Social inclusion	3.78	2.55	55.8
Trust:			
• Respect	4.70	2.96	53.0

Table 18A: Comparison of the importance and experience by workers of core values / value factors (MS = 1.00 – 5.00).

Core values that support HSW at work (8)

Core Value: Value Factor	MS		Exp. as a % of Imp.
	Imp	Exp	
Justice:			
• Decent work	4.43	3.04	59.5
• Diversity	4.09	3.00	64.7
• Effort and reward balance	4.43	2.88	54.8
• Equity	3.94	2.96	66.7
• Fairness	4.48	2.96	56.3
Responsibility:			
• Fair and open communication (transparency)	4.76	2.87	49.7
Development and growth:			
• Informedness	4.35	2.86	55.5
• Inquiring interpersonal actions	3.74	2.71	62.4
• Reflexivity	3.69	2.64	61.0
• Self-realisation and self-actualisation	3.89	2.67	57.8
Resilience:			
• Adaptivity	4.26	2.81	55.5
• Organisational mindfulness	4.38	2.88	55.6
• Sense making	4.26	2.73	53.1

Table 18B: Comparison of the importance and experience by workers of core values / value factors (MS = 1.00 – 5.00).

Core values that support HSW at work (9)

Comments in general:

- **CHSAs:**
 - **Workers are seen as a resource to complete a project, and when the project is running down they are de-mobbed as soon as possible, irrespective of the value they can add to the company they have been working for.**
 - **Workers are bullied into a situation where it is clear that they must do as senior staff insist or face penalties, sometimes even loss of employment, this has the effect that workers do as they are told. I, for one had many discussions with the workers at grassroots level and I know that they DO have positive contributions to make, yet that are not given the chance.**
 - **Further research is required re decent work environments. The South African government and private procurement systems should modernise their systems to allow for greater transparency throughout their supply chains. The UK's recent launch of their Modern Slavery Act could be used as a starting point.**

Key points

- **‘Same same nothing different’:**
 - So you have an H&S management system! So what?
 - Role of religion?
 - EQ?
 - Other esoteric issues?
- **Respect for people**
- **Consciousness and mindfulness**
- **HSW is a strategic business, not just an operational issue**
- **HSW culture – core values and value factors**
- **Multi-stakeholder contributions**
- **Management commitment, involvement, and accountability**
- **Worker empowerment**
- **Primary health promotion**
- **Health and well-being - safety is the entry level**

References (1)

- **Amnesty International. 2013. *The Dark Side of Migration Spotlight on Qatar's Construction Sector of the World Cup.* London: Amnesty International.**
- **Centers for Disease Control & Prevention. 2018. *Well-Being Concepts.* <https://www.cdc.gov/hrqol/wellbeing.htm>**
- **Eckhardt, R.E., 2001. The Moral Duty to Provide for Workplace Safety, *Professional Safety*, August, 36 – 38.**
- **Gerstein, M. and Ellsberg, M. 2008. *Flirting with Disaster Why Accidents are Rarely Accidental.* New York: Sterling Publishing Co., Inc.**
- **Hopcke, R.H. 1997. *There are No Accidents Synchronicity and the Stories of our Lives.* London: Macmillan.**
- **Murray & Roberts. 2009. *People Murray & Roberts Cares.* http://www.murrob.com/publications/robust_mar2009/people.asp**

References (2)

- Payutto, P.A. 1999. *Dependent Origination*. Bangkok: Buddhadhamma Foundation.
- Reason, J. 2013. *A Life in Error From Little Slips to Big Disasters*. Farnham, Surrey: Ashgate Publishing Limited.
- Shiplee, H., Waterman, L., Furniss, K., Seal, R. and Jones, J. 2011. Delivering London 2012: health and safety. In: *Proceedings of the Institution of Civil Engineers – Civil Engineering*, 2011, 164 May 2011, 46 - 54.
- Smallwood, J.J. 2000. *A study of the relationship between occupational health and safety, labour productivity and quality in the South African construction industry*. Unpublished PhD Thesis. University of Port Elizabeth, Port Elizabeth.
- Smallwood, J.J. 2002. Health and safety (H&S) and religion: Is there a link? In: *Proceedings of the Triennial Conference – CIB W 99 (Implementation of Safety and Health on Construction Sites) ‘One Country and Two Systems’*, Hong Kong, 7-10 May 2002, 201 – 206. © 2014: Prof JJ Smallwood

References (3)

- Smallwood, J.J. 2003. The role of feng shui principles in wellness and performance on construction sites. In: *Proceedings of the 15th Triennial Congress of the International Ergonomics Association*, Seoul, Korea, 24–29 August 2003 CD-Rom \ 01151.pdf.
- Smallwood, J.J. 2004. Respect for people. In: *Proceedings of CIB World Building Congress 2004*, Toronto, Canada, 1-7 May 2004, CD-Rom D:\\proceedings\433.pdf
- Smallwood, J.J. 2005. Complexity Theory, Project Management, and Construction Health and Safety (H&S). In: *Proceedings 1st. International Conference on Complexity and the Built Environment*, Liverpool, United Kingdom, 11-14 September 2005, 157 – 165.

References (4)

- Smallwood, J.J. 2010. Respect for people. In: P. Barrett, D. Amaratunga, R. Haigh, K. Keraminiyage & C. Pathirage (eds) *Proceedings of the CIB World Building Congress 2010*, Salford Quays, 14-17 May, 2010, <http://www.disaster-resilience.net/cib2010/files/papers/959.pdf>
- Smallwood, JJ. and Deacon, C.H. 2003. Health promotion in South African construction. *Journal of Construction Research Special Issue on Construction Health and Safety (Part II)*, 4(2) (September 2003), 129 – 140.
- Smallwood, JJ. and Deacon, C.H. 2014. The Impact of Annual Employee Medicals on a General Contractor (GC) and its Employees' Sustainability. In: *Proceedings of the CIB W099 International Health and Safety Conference*, Lund, Sweden, 2-3 June, 437 – 446.
- Smallwood, J.J. and Deacon, C.H. 2016. Primary Health Promotion (PHP) in the South African Construction Sector. In: *Proceedings SEEDS 2016 Conference*, Leeds, United

References (5)

- Kingdom, 14-15 September 2016, 329 – 340.
- Smallwood, J.J. and Ehrlich, R. 1999. Occupational health in construction. In: A. Singh, J.W. Hinze, & R.J. Coble(eds.) *Proceedings of the Second International Conference of CIB Working Commission W99 Implementation of Safety and Health on Construction Sites*. Honolulu, Hawaii, 24-27 March 1999, 733 - 740.
 - Smallwood, J.J., Emuze, F. & Bloomberg, C. 2014. Exploring the Importance of Emotional Quotient in Construction: Perspectives from Health and Safety Professionals in South Africa. *Journal of Construction Project Management and Innovation*, 4(1), 721 - 733.
 - The National Spiritual Assembly of the Bahia'is of India. 2002. *The Dawning Place of the Remembrance of God*. New Delhi: Thomson Press.

References (6)

- Tanphaichitr, K. 2001. *Buddhism answers life*. Bangkok: Kled Thai Co. Ltd.
- TimesLIVE Mobile. 2014. *No signs of life after deadly collapse*. <http://m.timeslive.co.za/thetimes/?articleId=12466043>
- Webster, R. 1998. *Feng Shui for the Workplace*. St. Paul, Minnesota: Llewellyn Publications.
- World Health Organisation (WHO). 2013. *Measurement of and target-setting for well-being: an initiative by the WHO Regional Office for Europe*. Copenhagen, Denmark: WHO.
- Woudhuysen, J. and Abley, I. 2004. *Why is construction so backward?* Chichester, Sussex: Wiley-Academy.
- Zwetsloot, G.I.J.M., van Scheppingen, A.R., Bos, E.H., Dijkman, A. & Starren, A. 2013. The Core Values that Support Health, Safety, and Well-being at Work. *Safety and Health at Work*, 4, 187-196.