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**THE PERFORMANCE OF CONSTRUCTION
HEALTH AND SAFETY AGENTS (CHSAs)**

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Introduction (1)

- **Construction Industry Development Board (cidb) (2009) 'Construction Health & Safety Status & Recommendations' report attributed the significant number of accidents, fatalities, and other injuries that are prevalent in the South African construction industry to a lack of compliance with H&S legislative requirements, and stated that there is a lack of sufficiently skilled, experienced, and knowledgeable persons to manage H&S on construction sites**
- **The Construction Regulations make provision for the appointment of CHSAs (Republic of South Africa, 2014)**
- **The cidb industry report highlighted the need for professional registration of construction H&S practitioners due to, among other, the finding that there was a lack of competencies, and no formal registration process**

Introduction (2)

- Led to the identification of **three categories of registration with the SACPCMP, including CHSA**
- Given the findings in the cidb report 'Construction Health & Safety Status & Recommendations', other ad-hoc research findings, anecdotal evidence, exploratory research findings, a further study was conducted to determine, inter alia, the:
 - Performance and contribution of CHSAs
 - Barriers to CHSAs' contributions to construction and construction H&S
 - Potential of interventions to contribute to an improvement in CHSAs' contributions to and impact on construction and construction H&S

Legislation and Regulations

- **The amended Construction Regulations (Republic of South Africa, 2014) - requirements wrt clients and designers**
- **Where a construction work permit is required a client must appoint a competent person in writing as an agent, and where notification of construction work is required the client may appoint a competent person in writing as an agent**
- **The agent must manage the H&S on a construction project, and be registered with a statutory body**
- **Clearly the requirements of clients are onerous given that they are invariably not built environment professionals or H&S professionals**
- **Given the requirements of clients and designers and the indirect requirements of clients as a result of the designer requirements, CHSAs require a range of knowledge and skills.**

Knowledge and Skills Areas (1)

- **The SACPCMP requires a report upon application to register as a CHSO that addresses the following nine knowledge areas (SACPCMP, 2013a):**
 - **Procurement Management**
 - **Cost Management**
 - **Hazard Identification Management**
 - **Risk Management**
 - **Accident or Incident Investigation Management**
 - **Legislation and Regulations**
 - **Health, Hygiene and Environmental Management**
 - **Communication Management**
 - **Emergency Preparedness Management**

Knowledge and Skills Areas (2)

- **The CHSO Scope of Services in turn states that CHSAs are expected to be experienced and knowledgeable relative to the following areas (SACPCMP, 2013b):**
 - **Construction project H&S management systems**
 - **Construction H&S management**
 - **Construction H&S performance measurement and monitoring management**
 - **Construction H&S continual improvement**

Knowledge and Skills Areas (3)

Composite knowledge area	MS	Rank
OH&S	4.72	1
Project administration	4.60	2
Design	4.25	3
Law	4.10	4
Management / Management of parameters	3.79	5
Construction technology / Technology	3.68	6
Planning	3.63	7
Financial management	3.00	8
Mean	3.97	

Table 1: Importance of composite knowledge areas relative to the management of H&S by CHSAs (Smallwood & Haupt, 2008) (MS = 1.00 – 5.00).

Knowledge and Skills Areas (4)

Composite skill area	MS	Rank
Interpersonal / Developmental	3.96	1
General management	3.95	2
Leadership	3.94	3
Technical	3.84	4
Planning	3.81	5
Financial	3.28	6
Negotiating	3.02	7
Mean	3.69	

Table 2: Importance of composite skills areas relative to the management of H&S by CHSAs (Smallwood & Haupt, 2008) (MS = 1.00 – 5.00).

Research – Method and sample stratum

- A self-administered questionnaire was circulated to 40 CHSAs registered with the SACPCMP
- Consisted of 22 questions, 21 of which were close ended, one being open ended
- 10 Five or six point Likert scale type questions
- Certain questions required a sixth point due to either a ‘have not’, ‘does not’, or ‘will not’ response
- 14 Questionnaires were included in the analysis of the data = response rate of 35%
- A measure of central tendency in the form of a mean score (MS) was computed to enable ranking and comparisons:
 - Between 1.00 and 5.00 (five-point scale), or
 - Between 0.00 and 5.00 (six-point scale)

Research – Findings (1)

Stage	Yes (%)
1. Project initiation and briefing	27.3
2. Concept and feasibility	0.0
3. Design development	18.1
4. Tender documentation and procurement	27.3
5. Construction documentation and management	27.3
6. Project close out	0.0

Table 3: Stage at which CHSAs are generally appointed.

Research – Findings (2)

Aspect	Response (%)							MS
	Un- sure	Have not	Minor..... Major					
			1	2	3	4	5	
Contributed	0.0	21.4	0.0	14.3	28.6	28.6	7.1	3.36
Impacted	7.1	21.4	0.0	7.1	35.7	21.4	14.3	3.55

**Table 4: Extent to which CHSAs have contributed to and impacted on H&S
(MS = 0.00 – 5.00).**

Research – Findings (3)

Factor	Response (%)							MS	Rank
	Un-sure	Does not	Minor..... Major						
			1	2	3	4	5		
Inadequate construction H&S knowledge	0.0	7.1	0.0	7.1	14.3	28.6	42.9	3.86	1
Late participation in the project	0.0	0.0	0.0	14.3	21.4	28.6	35.7	3.86	2
Non-consultation by project management / principal agent	7.1	7.1	0.0	7.1	14.3	21.4	42.9	3.85	3
Inadequate construction H&S experience	0.0	7.1	0.0	7.1	14.3	35.7	35.7	3.79	4
Exclusion from decision making	7.1	0.0	0.0	14.3	28.6	14.3	35.7	3.77	5
Inadequate knowledge of the construction process	0.0	0.0	7.1	7.1	21.4	35.7	28.6	3.71	6
Inadequate resources	0.0	0.0	0.0	21.4	28.6	28.6	21.4	3.50	7
Exclusion from management of project	0.0	7.1	0.0	14.3	21.4	28.6	28.6	3.50	8
Status level	15.4	7.7	0.0	0.0	38.5	15.4	23.1	3.45	9
Inadequate construction management knowledge	0.0	0.0	7.1	7.1	35.7	35.7	14.3	3.43	10
Inadequate construction process experience	0.0	0.0	14.3	7.1	14.3	50.0	14.3	3.43	11
Lack of authority	0.0	7.1	7.1	21.4	7.1	14.3	42.9	3.43	12
Inadequate construction management experience	0.0	7.7	0.0	7.7	38.5	23.1	23.1	3.38	13
Inadequate construction activities experience	0.0	0.0	14.3	14.3	28.6	21.4	21.4	3.21	14
Inadequate knowledge of construction activities	0.0	0.0	7.1	35.7	7.1	42.9	7.1	3.07	15

Table 5: Extent to which factors constitute a barrier to CHSAs contributing to H&S
(MS = 0.00 – 5.00).

Research – Findings (4)

Composite knowledge area	Response (%)						MS	Rank
	Un- sure	Very poor.....Excellent						
		1	2	3	4	5		
Health & Safety	0.0	0.0	0.0	0.0	21.4	78.6	4.79	1
Planning	0.0	0.0	0.0	14.3	35.7	50.0	4.36	2
Law	0.0	0.0	0.0	7.7	53.8	38.5	4.31	3
Project administration	0.0	7.1	0.0	7.1	50.0	35.7	4.07	4
Management/ Management of parameters e.g. quality	0.0	0.0	0.0	21.4	50.0	28.6	4.07	5
Financial management	0.0	0.0	7.1	14.3	50.0	28.6	4.00	6
Construction technology / Technology	0.0	0.0	7.1	21.4	64.3	7.1	3.71	7
Design	0.0	0.0	14.3	35.7	50.0	0.0	3.36	8

Table 6: Self-rating of CHSAs in terms of composite knowledge areas (MS = 1.00 – 5.00).

Research – Findings (5)

Composite skill area	Response (%)					MS	Rank	
	Un- sure	Very poor.....Excellent						
		1	2	3	4			5
General management	7.1	0.0	0.0	14.3	0.0	78.6	4.69	1
Leadership	7.1	0.0	0.0	0.0	28.6	64.3	4.69	2
Planning	0.0	0.0	0.0	0.0	42.9	57.1	4.57	3
Negotiating	7.7	0.0	0.0	15.4	38.5	38.5	4.25	4
Financial	7.1	0.0	0.0	14.3	50.0	28.6	4.15	5
Interpersonal / Developmental	7.1	0.0	7.1	7.1	42.9	35.7	4.15	6
Technical	0.0	0.0	0.0	7.1	71.4	21.4	4.14	7

Table 7: Rating of CHSAs in terms of composite skills areas (MS = 1.00 – 5.00).

Research – Findings (6)

Intervention	Response (%)							MS	Rank
	Un-sure	Will not	Minor..... Major						
			1	2	3	4	5		
Increased consultation by project management / principal agent	0.0	0.0	0.0	0.0	7.1	28.6	64.3	4.57	1
Inclusion in planning activities	0.0	0.0	0.0	0.0	14.3	14.3	71.4	4.57	2
Participation in the early stages of projects	0.0	0.0	0.0	0.0	21.4	0.0	78.6	4.57	3
Inclusion in decision making	0.0	0.0	0.0	0.0	0.0	50.0	50.0	4.50	4
Formal CHSA qualification	0.0	0.0	0.0	0.0	0.0	53.8	46.2	4.46	5
Inclusion in the management of projects	0.0	0.0	0.0	0.0	21.4	21.4	57.1	4.36	6
Education / Training relative to construction H&S	0.0	0.0	7.1	0.0	0.0	35.7	57.1	4.36	7
Optimum position in projects' hierarchies	0.0	0.0	0.0	7.1	14.3	21.4	57.1	4.29	8
Education / Training relative to construction activities	0.0	0.0	0.0	0.0	14.3	50.0	35.7	4.21	9
Education / Training relative to project management	0.0	0.0	0.0	0.0	21.4	35.7	42.9	4.21	10
Education / Training relative to construction management	0.0	0.0	0.0	0.0	21.4	35.7	42.9	4.21	11
Education / Training relative to the design process	0.0	0.0	0.0	0.0	21.4	42.9	35.7	4.14	12
Education / Training relative to the construction process	0.0	0.0	0.0	7.1	14.3	42.9	35.7	4.07	13
Increased authority	0.0	0.0	0.0	7.1	14.3	42.9	35.7	4.07	14
Optimum resources	0.0	0.0	0.0	0.0	28.6	42.9	28.6	4.00	15

Table 8: Extent to which interventions could contribute to an improvement in the contribution of CHSAs to H&S (MS = 0.00 – 5.00).

Conclusions (1)

- **CHSAs are mostly appointed during Stages 4 and 5, which does not enable them to influence construction H&S through design:**
 - **May not be viewed as being able to contribute during these stages, which the other findings underscore**
 - **Clients and / or principal agents may not view consideration of H&S during the earlier stages as necessary or of value**
- **CHSAs have contributed to and impacted on H&S:**
 - **They have a role to play relative to construction H&S**
 - **Their creation courtesy of the Construction Regulations is vindicated**
- **A range of factors constitute a barrier to CHSAs contributing to H&S, particularly inadequate knowledge and experience, which in turn leads to their limited status, exclusion from decision making and management of the**

Conclusions (2)

project, and not being consulted, all of which are also barriers

- **Although CHSAs rate themselves quite high relative to eight composite knowledge areas, and seven composite skills areas, the finding that the contribution of CHSAs to H&S could be improved, and that a range of interventions could contribute to an improvement in the contribution of CHSAs to H&S, particularly education and training relative to various aspects, indicates a need for developmental interventions**

Recommendations

- **Given the potential of a formal CHSA qualification, and a range of education / training related interventions in terms of contributing to an improvement in the contribution of CHSAs to H&S, CHSAs should register for and complete formal tertiary education programmes that empower them in terms of construction economics, management, H&S, and science and technology as well as design management, procurement management, and project management**
- **Continuing professional development (CPD) courses should be evolved relative to the these subject areas**
- **CHSAs should be appointed at Stage 1 ‘Project initiation and briefing’ and obviously during Stage 2 ‘Concept and feasibility’, and Stage 3 ‘Design development’:**
 - **The completion of appropriate tertiary education programmes, and CPD will enable CHSAs to contribute during these stages**

References (1)

- **Construction Industry Development Board (cidb), 2009. Construction Health & Safety in South Africa Status & Recommendations. Pretoria: cidb.**
- **Republic of South Africa, 2014. No. R. 84 Occupational Health and Safety Act, 1993 Construction Regulations 2014. Government Gazette No. 37305. Pretoria.**
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- **SACPCMP, 2013b. Registration Rules for Construction Health and Safety Agents in terms of Section 18 (1) (c) of the Project and Construction Management Professions Act, 2000 (Act No. 48 of 2000). Midrand: SACPCMP.**

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- **Smallwood, J.J. and Haupt, T.C. 2008. Competencies Required to Manage Construction Health and Safety, In: Proceedings Rinker International Conference 'Evolution of and Directions in Construction Safety and Health', University of Florida, Gainesville, Florida, USA, 9-11 March, pp. 227-240.**