

## INTRODUCTION

The following guide is a result of findings from my Construction Management PhD entitled: The Effect of the Integration of Design, Procurement, and Construction Relative to Health and Safety (H&S), submitted in 2016 to the Nelson Mandela Metropolitan University (NMMU).

The guidelines are a broad guideline for Built Environment Professionals (BEPs), and cross reference the roles as currently published in each Councils Identity of Work (IDoW), and the roles as identified in the Construction Regulations (CRs), 2014. The table outlines the roles of the client, designers and contractors, and the role of the Pr. CHSA, as the construction H&S Agent as defined by the South African Council for the Construction and Project Management Professionals (SACPCMP).

It is a common misconception that a Pr.CHSA is only needed during stages 5 and 6, and also only if a Construction Work Permit is needed. These are not the correct interpretations of the CRs. It can be noted that the BEPs, as designers have significant H&S responsibilities through the life cycle, and across the stages of work.

I hope the information is of interest and will serve to guide the practice of H&S on projects.

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<b>GUIDE TO ROLES AND RESPONSIBILITIES OF BUILT ENVIRONMENT PROFESSIONALS (BEPS) RELATIVE TO THE CONSTRUCTION REGULATIONS, ACROSS THE STAGES OF WORK: Dr Claire Deacon Pr. CHSA 010/2013 (PhD Constr Mgt)</b>						
<b>CONSOLIDATED ROLES: CONSTRUCTION REGULATIONS (2014) KEY STAKEHOLDERS</b>			<b>H&amp;S COMPLIANCE REQUIREMENTS ACROSS THE STAGES OF WORK, WITHIN THE BUILT ENVIRONMENT COUNCILS</b>			
			<b>SACPCMP</b>		<b>SACAP SACLAP SACQSP SACPVP</b>	
<b>Client</b>	<b>Designer</b>	<b>Principal Contractor</b>	<b>CM</b>	<b>CPM</b>	<b>Architects; Landscape Architects; Qs, and Property Valuers</b>	<b>Engineers</b>
<b>STAGE 1 DESCRIPTORS: Project Initiation and Briefing / Inception / Inception Services</b>						
Appoint a registered person as agent to act as their representative to manage H&S.		Not Applicable.		Development of a design H&S Brief for Stages 2 and 3, that is the initiation of the Baseline Risk Assessment (BRA), and the Site Specific H&S Specification (SSHSS). The BRA and SSHSS are to be used for hazard identification, legal risk register to prepare for Stage 2.		
<b>STAGE 2 DESCRIPTORS: Concept and Feasibility / Concept and Viability/ Concept and Viability Services</b>						
Prepare a baseline risk assessment (BRA) and project specific H&S Specification (PSHSS).		Not Applicable.		Pr. CHSA to further develop the BRA and SSHSS with the client for inclusion in the designers' tenders. The BRA and SSHSS are to guide the designers in limiting risk during all the stages		

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<b>STAGE 3 DESCRIPTORS: Design and Development / Design Development / Design Development Services</b>						
Provide the designer with the SSHSS.	Not Applicable.		BEPs tendering or quoting to manage a project, ensure there is a Pr. CHSA appointed to act on in order to liaise and work with during the life cycle of the project. BEPS need to ensure they have a SSHSS and BRA for their project.			
	Take into consideration the PSHSS submitted by the client.	Not Applicable.		Note the H&S risks identified in the BRA known or potential conditions that could impact on the project, focus on areas for investigation, and particular competencies to be noted. Prepare a H&S plan for submission for any construction work to be done during design against the provided in the PSHSS and BRA. Submit the Design Stage SSHS Plan (SSHSP) to the Pr. CHSA for the preparation of the construction work to be done during design.		
	Complete pre-tender client report with all— (i) relevant H&S information about the design that may affect the pricing (ii) the geotechnical-science aspects, and (iii) the loading that the structure is designed to withstand.	Not Applicable.		Note the H&S risks identified in the BRA, known or potential conditions that could impact on the project, focus on areas for investigation, and particular competencies to be noted. Geotechnical and structural information from competent persons is to be provided. Pr. CHSA to assist with preparing a design report that includes critical H&S information, inherent risks such as the geotechnical information and aspects that could affect the way contractors would need to work.		

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Where a client requires additional work to be performed as a result of a design change or an error in construction due to the actions of the client, the client must ensure that sufficient safety information and appropriate additional resources are available to execute the required work safely.		Not Applicable.	Design changes and relevant information needs to be applied during Stages 4, 5 and 6.		Take cognisance of the H&S risks identified in the BRA, relative to known or potential conditions that could impact on the project, focus on areas for investigation, and particular competencies to be noted. Geotechnical and structural information from competent persons is to be provided. Prepare with the Pr. CHSA a design report that includes critical information about the design, inherent risks such as the geotechnical information and any aspects that could affect the way contractors would need to work.	
	Provide a client report that includes known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered.	Applies during stages 4, 5 and 6.	Applies during stages 4, 5 and 6.		Provide the client with a preliminary and / or final design report, that includes the design risks identified in the BRA and outlines the issues that are critical to the project and tender.  Applicable where design changes occur during the Stages 4, 5 and 6.	
	Design out, modify or substitute hazardous materials or procedures.	Applies during stages 4, 5 and 6	Applies during Stages 4, 5 and 6.		Include evidence in BRAs, design reports with the Pr. CHSA to indicate how designs and changes have reduced risk.	

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Ensure that the designer carries out all responsibilities.		Applies to temporary designs during any stage.	Monitor as design occurs during Stages 4, 5 and 6.			The Pr. CHSA will audit the designers and ensure they adhere to the set requirements or own requirements as set out in the PSHSP. Continues through to Stage 6. Ensure that the designer carries out all responsibilities.
Ensure that the designer takes the prepared PSHSS into consideration during the design stage.		Applies to temporary designs during any stage.	Monitor as design occurs during Stages 4, 5 and 6.			Attention to the development of the BRA and PSHSS that develops through Stage 3. Use opportunities to guide the process to limit opportunistic risk and mitigate.
	Take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimize the risk.					Indicate life cycle issues relevant during maintenance of the structure. Should be contained in a report that becomes a part of the O&M documentation. Temporary works that have the potential to increase risk are to be reviewed and mitigation applied.
	During the design stage, take cognisance of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.					BRAs to consider all aspects of ergonomics during design as a life cycle approach and to be included in the PSHSS, design reports and O&M documents. Ergonomic aspects to be considered relative to the likely construction methods to be applied.

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<b>STAGE 4 DESCRIPTORS: Tender Documentation and Procurement / Document and Procurement / Documentation and Procurement Services</b>						
Where more than one principal contractor (PC) is appointed, take reasonable steps to ensure co-operation between all PCs and contractors in order to ensure legal compliance.			Make arrangements in the PSHSS for PCs and their contractors to communicate H&S issues from the client, designers and other contractors. Audits for all parties to be monitored and submitted to the client.			
Ensure that potential PCs submitting tenders have made adequate provision for the cost of H&S measures, competencies and resources.			Include returnables in the BoQ that relate to the provision for H&S made, that are appropriate to the project, and address the limitation of risk.			
	Ensure the designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor.	Applies during Stages 4 and 5.	Ensuring temporary works designs are in accordance with structural designs, design method statements during design Stage 3 or other stages as they apply.			

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	All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector.		Ensure availability of temporary designs.			
Where a construction work permit is required as contemplated in regulation 3(1), the client must, without derogating from their H&S responsibilities or liabilities, appoint a competent person in writing as an agent to act as his or her representative, and where such an appointment is made the duties that are imposed by these Regulations upon a client, apply as far as reasonably practicable to the agent so appointed.			Ensure the co-operation with the appointed Pr. CHSA relative to the development of all the documentation as regulated to prepare for the permit application.			

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<b>STAGE 5 DESCRIPTORS: Construction Documentation and Management / Construction Contract Administration / Construction / Contract Administration Services</b>						
Take reasonable steps to ensure co-operation between all contractors appointed by the client to enable each of those contractors to comply with the Regulations.					Ensure arrangements for co-operation are included in tender documentation, quotes and provide information to the Pr.CHSA and contractors as needed.	
	When mandated by the client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design: Provided that if the designer is not so mandated, the client's appointed agent in this regard is responsible to carry out such inspections.				Inspection of structures before, during and post construction to ensure conformance with designs and with the Pr. CHSA, compliance.	

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Discuss and negotiate with the PC the contents of the principal contractor's H&S plan and must thereafter finally approve that plan for implementation. Appoint every PC in writing for the project or part thereof on the construction site.		Provide and demonstrate to the client a suitable, sufficiently documented and coherent site specific H&S plan, based on the client's documented H&S specifications, which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the PC as work progresses.	Ensure the timeous, appropriate, project specific H&S plan is presented in accordance with the parameters set by the clients agent, that approval is available from the date of commencement, and throughout the project, with any changes as designs and processes are updated or amended. Not allow any work to proceed unless the documentation is available and recorded.			
Copy of the PCs H&S plan is available, ensure it is implemented and maintained.		Take reasonable steps to ensure that each contractor's H&S plan is implemented and maintained on the construction site.	Ensure the appropriate H&S plans and the implementation and maintenance thereof is available, implemented and maintained. Verification will be via the Pr. CHSA.			

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Ensure that the H&S file is kept and maintained by the PC.		Open and keep on site a H&S file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the client, the client's agent or a contractor.	Ensure availability of the H&S file, that includes all statutory documentation relating to compliance through the project. Act on non-conformances reported.			
Stop any contractor from executing a construction activity which poses a threat to the H&S of persons which is not in accordance with the client's H&S specifications and the principal contractor's H&S plan for the site.	When mandated stop any contractor from executing any construction work which is not in accordance with the relevant design's H&S aspects: Provided that if the designer is not so mandated, the client's appointed agent in that regard must stop that contractor from executing that construction work.	Stop any contractor from executing construction work which is not in accordance with the client's H&S specifications and the PC's H&S plan for the site or which poses a threat to the H&S of persons.	Where work is not in compliance with the required statutory or appropriate designs, stop the work until the non conformance has been rectified. A client, designer and contractor responsibility. Contractual documentation to indicate compliance where work is stopped.			

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Ensure before any work commences on a site that every PC is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993).		Make available a comprehensive and updated list of all the contractors on site accountable to the PC, the agreements between the parties and the type of work being done, and ensure contractor's H&S plan is available to parties as required.	Ensure an updated list of Contractors, scope of work, approvals by the Pr. CHSA and all statutory requirements are met as the work commences and progresses.			
Ensure that periodic H&S audits and document verification are conducted at intervals mutually agreed upon between the PC and any contractor, but at least once every 30 days, Ensure a copy of the audit is provided to the PC within 7 days after the audit.		Ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the PC and any contractor, but at least once every 30 days.	Ensure the frequency of audits and documentation verification has been made, notwithstanding the risks of work and changes to the designs, programme and site activities.			

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		Ensure that all employees have a valid medical certificate of fitness (CoFs) specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.	Ensure the availability of CoFs are verified by auditing results and reports by the Pr. CHSA, in accordance with Annexure 3.			
Where changes are brought about to the design or construction work, make sufficient H&S information and appropriate resources available to the PC to execute the work safely.		Where design and construction changes, make available sufficient H&S information and appropriate resources to the contractor to execute work safely.	Design changes and relevant information that are to be implemented need to be applied and cascaded through the project. Review of BRAs, SSHSS, BoQs and permits, the submission of revised PSHS Plans for approval prior to changes being implemented is required.			

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<b>STAGE 6 DESCRIPTORS: Project Close Out / Close Out Services</b>						
	When mandated, in the final inspection of the completed structure in accordance with the National Building Regulations (NBRs), include the H&S aspects of the structure as far as reasonably practicable, declare the structure safe for use, and issue a completion certificate to the client and a copy thereof to the contractor.	Hand over a consolidated H&S file to the client upon completion of the construction work and must, in addition to the documentation, include a record of all drawings, designs, materials used and other similar information concerning the completed structure.	Consolidation of structural issues for life cycle management, including the requirements of NBRs. Certificate of occupation and completion certificate to parties. Ensure the consolidated H&S documentation for the PC and the contractors is included. Ensure the as built drawings, materials and any other relevant H&S matters that need to be considered by the client for maintenance and future construction work.			