

**DEVELOPING A ROBUST SAFETY CULTURE
IN THE CONSTRUCTION INDUSTRY –
Making “Safety First” More Than a Slogan**

The construction industry accounts for about 10% of the world’s gross domestic product (GDP), employs 7% of the world’s working population, half of all resource usage and nearly 40% of energy consumption. The industry has a profound effect on our daily lives – from the buildings we live and work in, the roads and bridges we drive on, services distribution systems we use, spaces and facilities through which we travel and trade. These are all products of the construction industry¹.

The industry is also a key indicator and driver of economic activity and wealth creation. However, the future of the industry, as the world’s economies emerge from the doldrums will depend on its capacity to evolve on several fronts. Business and project risk management and skills training appear to be top on the agenda of most players in the industry driving to be better at choosing clients and projects and addressing the underinvestment of the past decade (and more) in skills developmentⁱⁱ.



Fig 1 – In Nigeria, contractors are not compelled by law to install standard safety signs such as this.

In addition, safety also ranks high on the agenda. The construction industry is a strongly unionised sector and industrial relations issues such as health and safety in the workplace will become more important with several countries introducing new (and tightening existing) laws on corporate manslaughter. These laws prescribe jail terms for executives of construction companies if found vicariously culpable (up to 14 years in the United Kingdom) of safety violations.

This edition of RE Insight addresses safety in the construction industry, in the light of recent safety issues in Nigeria’s construction sector, particularly the collapse of buildings under construction.

The Peculiarities of the Construction Industry

Construction is hazardous and sometimes happens on the most uninhabitable work place one can ever be exposed to. It is an industry that contributes persistently to high accident rates: especially fatalities. As a matter fact, everything a safety practitioner may consider taboo can be found in the construction site – exposure to hazardous substances such as paint, glues and asbestos, drilling which can cause explosions and fires, the risk of falling debris (and workers falling from heights), heavy duty land movers, cranes and forklifts and collapsing structures. This is compounded by the uniqueness of the typical construction site – no two days are ever the same, therefore creating new hazards by the hour.

In 2006, the International Labour Organisation (ILO) published a report on safety in the construction industryⁱⁱⁱ. Key findings are a pointer to how important it is for the industry to make safety a priority:-

- The accident rate in construction (global) is five times higher than that of the manufacturing sector (four times in industrialised countries such as the UK, US^{iv} and Japan).
- After initial employment, there is a dramatic increase in accident frequency in the first year (a pointer to poor training).
- The average number of such occurrences per 100,000 workers is 12 per annum, with less industrialised countries reporting up to 35.

More current statistics indicate that this appalling safety record is being maintained in absolute terms and by percentage. Closer to home, poor

reporting and record keeping makes the information available quite unreliable. A recent report in a local newspaper states that last year (2009) alone at least 20 people died in collapsed buildings in Lagos.^v Majority of these deaths occurred on construction sites.



Fig.2 – A collapsed building (under construction) in Oshodi Lagos Nigeria. Photo by Patience Ogbo. Next April 26 2010

Why Managing Safety and Health (S&H) Issues Is So Important

Managing safety and health is not only good for safety reasons; it also makes good business sense. Increasing efficiency, and therefore the bottom line should be enough reason to manage S&H issues and to strive to attain consistent high standards of performance throughout the industry. As an example, the oil industry, particularly the upstream sector, generally follows through on quite stringent safety guidelines. It is interesting to note that this industry (more than any other) has brought the attention of Nigeria’s construction industry to the issues and importance of safety management.

In the United States, the Real Estate Safety Council, a non profit organisation of real estate industry leaders encourages the industry to practice its mantra “Be on the Safe Side” and is dedicated to the development, promotion and improvement of safety in the industry.

The peculiarity of the construction industry does not end with the daily dynamics of on-going activities on a typical site. The procurement structure of construction projects itself creates a challenge – a client/developer engages a contractor who in turn employs various subcontractors and suppliers who provide the personnel that perform the actual works. The best equipment or work environment does not guarantee the success of a safety management system and unfortunately, the procurement structures are such that the responsibility of safety, which is typically tied to employer/employee relationships, is lost.

Creating a Safety and Health Management System

Experts define a structure manned and managed by people, backed by activities, documents and procedures as the frame around which a management system is created. The body of people assigned to manage the system are the most important component of the system.

Identifying and Involving Key Parties – assigning roles and responsibilities, coordinating activities and holding parties accountable is the first step in the process. “The Construction (Design and Management) Regulation” or “CDM Reg” was developed in the UK and provides a framework for the European construction industry. It rightfully identifies and places special duties on a few key personnel including those appointed by the client/developer, planning office/supervisor, the building consultants and the main contractor.

Effective Communication – initiating and maintaining dialogue, keeping abreast of all developments relevant to safety and technical

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improvements is imperative. Procedures which guide such issues as accident reporting, etc should be kept "alive" through regular communication and training.

Managing Contractors – acquiring the service of a competent contractor with a good safety record is fundamental to the success of the construction industry. A prequalification exercise which includes safety criteria is important. While the typical contract contains basic safety requirements, it is important that the full complement of safety and health requirements are included at tender stage, allowing the contractor to appropriately address its impact on price and duration. These include the identification of specific project prerequisites, quantifying and costing occupational safety and health issues. This process sets the minimum standards for contractors.

Identifying Risks – every activity should be measured, evaluated and documented in as acceptable procedures. Such detailed steps pay dividends as it forces all parties involved to think about how they will carry out particular tasks, subsequently paying attention to the underlying hazards. Risk assessment is a proactive measuring tool based on the principal of "fact finding" and not "fault finding"^{vi}.

Developing and Implementing Industry-Wide Policies and Procedures

Nigeria's National Building Code (NBC) was signed into law in 2007. The NBC is a catalogue of requirements, including those related to



Fig. 3 – A construction site is hazardous

construction safety and health. In spite of this law however, unofficial statistics show that more safety related incidents and more buildings have collapsed year on year (in Lagos) since 2007. Sector practitioners report that published figures are inaccurate because many more are not reportedⁱ. Following the establishment of the NBC, the Lagos State Government has established a Building Control Agency. This body will monitor material and construction

standards on site and is empowered to prosecute^{vii}. The administrative structure of the Agency and the impact of its activities remain unclear.

About 1970, the US Government passed the Occupational Safety and Health Act. The Act led to the establishment of the Occupational Safety and Health Administration (OSHA) whose role has been to develop and enforce standard industry-wide policies. OSHA employs more than 1,000 compliance officers who randomly inspect more than 10,000 project sites a year, handing citations out to violating contractors^{viii}.

OSHA's success can be traced back to; the involvement of industry leaders in the formulation of its policies, a strong education/enlightenment outreach, compulsory training programmes/certification for trades, an effective whistle blowing programme, amongst others.

OSHA's Federal Inspections by Type of Violation (Fiscal Year 2002)			
No. of Violations	Percent	Type	Current Penalties (\$)
54,842	70%	Serious	48,312,043
20,749	26%	Other-than-Serious	2,145,151
1,969	2.5%	Repeat	7,710,736
416	0.5%	Willful	11,799,539
231	0.3%	Failure to Abate	597,301
226	0.3%	State Inspections	2,268,508
78,433	100%	Total	72,827,278

Table 1^x – In 2002, OSHA identified (and made violators correct) over 78,000 S&H offences.

Its' most significant credit are the men and women whose roles as compliance officers ensure that all safety and health violations are appropriately addressed, corrected and punished. Offences which are categorised as "wilful" or "repeat" as well as those which result in fatalities are often promptly prosecuted.

Conclusion

Construction safety does not start and end on construction sites. The parties involved in the entire property development chain can all contribute to creating a culture of safety within the industry. The concept of "designing for construction safety" is a viable intervention through which the design professional (and often the developer/owner) is involved in facilitating construction site safety at the earliest phase of a project's life cycle through decisions on design, detailing, installation methodology and selection of materials.

Nigeria's construction industry must inculcate a culture of safety in order to be competitive. This starts with the commitment of real estate industry leaders in the public and private sectors - commitment to long-term involvement and to champion initiatives including minimum standards, recognize and promote, educate, train and reward (or punish) in accordance with well documented industry-wide policies and procedures.

ⁱ PWC report on the Construction Industry 2009
ⁱⁱ PWC report on the Construction Industry 2009
ⁱⁱⁱ Safety in Construction Sites. Ravi Damodaran. June 2006
^{iv} Construction workers represent 8% of the US workforce but suffer 22% of all on-the-job fatalities. Mark Ayers, President of B&C Trades Dept. 2008
^v Saving Lagos from Ruins. Next Newspaper, June 12, 2010
^{vi} Culled from Construction Safety. Marshal Rozario
^{vii} LASG Planning Authority rep at Housing Fair 2010
^{viii} OSHA's Top 25 Construction Violations. A.F. Fischbach. 2003
^{ix} OSHA's Top 25 Construction Violations. A.F. Fischbach. 2003