

Ten factors to improve occupational safety and health in construction projects

Richard Neale
UK

The International Labour Office (ILO) estimates that some 2.3 million women and men around the world succumb to work-related accidents or diseases every year; this corresponds to over 6000 deaths every single day. Worldwide, there are around 340 million occupational accidents and 160 million victims of work-related illnesses annually. The ILO updates these estimates at intervals, and the updates indicate an increase of accidents and ill health.

The construction industry has a disproportionately high rate of recorded accidents.

[<http://www.ilo.org/public/english/region/eurpro/moscow/areas/safety/statistic.htm>]

Improving occupational safety and health (OSH) in the construction industry is a slow but achievable process. Let me start by setting the context of my own country, the United Kingdom (UK). Photo 1 shows myself when I was working as a civil engineer on a construction site in 1970. The site worked 12 hours a day, seven days a week. I had just met the person who would become my wife, so in order to spend more time with her, she sometimes accompanied me to work; in the photo, she is helping with some data logging. It is obvious that OSH was not considered important at that time. We had no safety clothing, there was no guardrail (there was a drop of 10 metres the other side of the wall), there is no fencing round the site to protect the public from entering it, and the whole site is untidy and rather chaotic. This state of affairs was commonplace on sites in the UK at that time.

Photo 2 is of a site in the city of Cardiff, UK, in 2010; that is, 40 years later. The construction company obviously had taken OSH very seriously, providing good barriers between the site and the public, safety fencing on all floors, and fans to catch falling debris. The construction company had adopted the principle of 'zero incidents' and generally this is what they achieved.

This transition was achieved in the UK over a period of 40 years, so how can African countries make a similar transition? As a result of extensive searches in the literature and my own experience of the construction industry in 14 countries over more than 40 years, I came to the conclusion that there are ten main factors that need to be considered, which I shall describe briefly.

With Africa being such a big country, it is likely that current OSH practice varies greatly. Photo 3 shows poor OSH provision, which may be commonplace. I took the photo 4 in Dar es Salaam in 2010, which shows that some effort is being made. The operatives are obviously in a dangerous position but they are wearing safety helmets and one has a safety harness; if the harness had been attached to something firm, instead of being looped back into his belt, he may have been relatively safe. This illustrates one crucial aspect of good OSH systems – the need to implement them thoroughly and comprehensively. This is further emphasized by the photo 5, taken in

the same city on the same day, which shows an operative working at height in a most precarious position.

So, here are my ten factors that influence improving OSH.

1. Developing a national culture of safety

Construction projects do not operate independently of the society in which they are located. However determined the project managers may be to run a safe and healthy site, it is almost impossible for them to do this if the prevailing national culture is that 'life is cheap' and 'we cannot afford safety measures'. Developing an effective OSH culture has to start at senior government level and be implemented throughout the government, employers and employee organizations.

2. International agreements influence national policies and national laws

The obvious agencies to influence governments' attitudes to OSH, and cause them to take action, are the sponsors of this Newsletter, the ILO and WHO, both of whom work quite tirelessly towards this end, but there are other organizations, such as the G20 group of nations, all of whom could do far more than they do currently.

3. Funding agencies must insist on good OSH through their contracts

In many countries in Africa, a significant proportion of construction projects are funded, at least partially, by external funding agencies. These agencies have a responsibility to enforce good OSH practice through the contracts that they fund. The purpose of most externally funded projects is to enhance the well-being of the citizens of the country, and this includes the well-being of all those engaged in the construction process. Therefore, external funding agencies must see themselves as prime agents of beneficial change.

4. Comparative studies of the OSH environment and practices in a range of African countries would be useful in identifying the importance and relevance of such possible key factors as culture, climate and differences between urban and rural environments

Much of the information and technology for OSH has evolved in industrialized countries, such as the USA, Europe and Australia. African countries are obviously very different and very diverse within the continent. However well intentioned, attempts to simply apply industrialized country practices and procedures are unlikely to succeed. A comprehensive study of these issues, leading to recommendations of how to improve OSH locally, may well be one of the most important of these ten factors.

5. A comprehensive, generalized model on the business case for OSH should be developed.

In my discussions about effective OSH with quite a variety of construction companies throughout the developing world, cost has always been put forward as a major obstacle. Nevertheless, it is quite reasonable to argue that a good business case can usually be made for investing in OSH. Photo 3 shows an obvious example; the operatives in the photo cannot be working at maximum efficiency; if their workplace had been properly designed, they would be very much more productive.

It is also obvious that when temporary structures or excavations collapse and kill or injure people, the construction project suffers from additional costs and delays. There are also other factors such as reputation, which helps a construction company to obtain work, and insurance costs. A succinct Australian publication gives helpful guidance on preparing an OSH business case (1), but what is needed is a comprehensive African study leading to clear and detailed guidance.

6. OSH has to be managed actively.

Most construction work is planned in some way, but it is commonly the technical construction process that is the focus of the planning and OSH is then considered only when the technical construction process has been agreed; that is, OSH is an ‘add on’ in the minds of managers. In many cases, this practice is just not effective. OSH must be actively managed and planned as an integral part of the planning process, and if no safe construction method can be found, the construction team should go back to the designers and help them to amend the design.

Realistically, this process will be much more effective if the designers embrace OSH principles at the outset of their design process. “Safe by design” is a subject of increasing interest throughout the world, with the objective of eliminating or significantly reducing hazards and risks by careful design, while at the same time meeting the functional requirements of the project.

7. Workers should be more directly involved in planning and implementing safe and decent work.

Safety practitioners and observers have widely agreed that the traditional belief that employers are solely responsible for workers’ safety at work should change.

To create safe working conditions, workers should be allowed to participate actively in OSH and cooperate with employers. Since they are closer to their work, it is felt that the workers themselves are the most qualified to make decisions about safety and job improvements.

Evidence shows that various benefits could be yielded if workers worked together with employers, including the reduction of death and injury rates at work. However, to make workers’ participation in this field effective, several criteria are crucial: legal support, management support, trade union support, training, and the positive quality of the workers involved. (2)

8. OSH personal protective clothing and equipment (PPCE) must be developed to suit the diversity of cultures and physiques of both men and women workers.

Currently, most of the PPCE that is currently available is designed for quite robust males, and is western/European in design and appearance. In many countries men are physiologically smaller and less strong (their diet may influence this) and so the PPCE available is unsuitable. There is also a serious issue with attempts to use items designed for temperate climates in hot or humid conditions.

Large numbers of women work on construction projects in Africa, and the PPCE may not fit them (and in some cases may be harmful to a woman's physique) and is often culturally unacceptable in appearance. This presents a major obstacle to improving OSH. So the development of suitable work-wear and safety equipment for women is crucial. I am currently working with my friend Dr Tabarak Ballal of the University of Reading, UK, on a research and development proposal to develop women's work-wear and protective equipment, and we shall be very pleased to receive comments and information from readers of this Newsletter.

9. The technology to improve OSH, including better control and warning systems, communication devices and better (safer) machines, should be further developed.

Modern construction machinery is used increasingly in Africa. Thrust upon an unskilled and untrained workforce, this machinery can be lethal. Therefore, manufacturers and suppliers have an important obligation to ensure that the machines are designed and made to be as safe as possible, and incorporate realistic safety devices.

10. Effective education and training in OSH is required globally; it should be designed in such a way as to measurably enhance attitudes, skills and knowledge.

This is obvious but the point I wish to make is that it must be realistic and practical. Lectures on regulations may be relevant, but there is also a need for educators and trainers to get involved in the reality of construction work; they should be "guides by your side" rather than "sages on the stage".

A good source of practical training material, freely available for download from the Internet, is *ILO Construction OSH (3)*.

Concluding remarks

In this short article I have given a brief review of the context of OSH in construction projects, followed by outline explanations of ten factors that, if addressed with determination and expertise, could facilitate a general improvement. These factors are really quite wide-ranging, which illustrates the difficulty, but because the problem itself is wide-ranging, they are all important.

Since most construction projects are intended to enhance the general well being of the citizens of a country, it is quite unacceptable for large numbers of these same citizens to be killed, injured or otherwise damaged in the process.

Acknowledgement

The structure of this article is derived from a chapter in a book edited by Professor George Ofori (4).

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Dr Richard Neale
Visiting Professor of
International Development,
University of Winchester, UK
Richard.Neale@winchester.ac.uk