

National Master Specifications –The Development of Standardisation in the Construction Industry

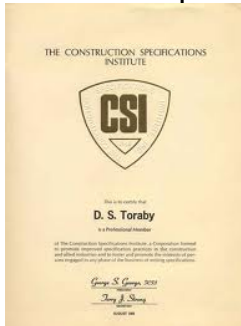
Construction Specifications (“Specs”) are an essential part of the design and construction process, a valuable tool during the design stage, a crucial part of the contract documentation, playing a key role in the efficiency of project fulfilment. It is a well known fact that the majority of the construction industry and particularly construction companies perceive compliance with set standards as an inevitable and often costly requirement. However, it has been proven in practice that linking standards to agreed industry performance measures has an immediate positive impact on the built environment¹.

Specification documents have been developed to provide clear, concise, complete, current and authoritative information conveying the required quality of products (both fabric and services) and their installation and serve as a means of drawing together all the relevant information and standards that apply to any work to be constructed.

In Nigeria, the use of National Master Specification (NMS) documents is not widely accepted or enforced. Only one in fifty constructions is founded upon such technical information. Consultants and contractors generally lack an understanding of the references/codes such as the “British Standard” (BS). Although found in many contract documents, this section is often “copy and paste” from one project to another.

This edition of RE Insight discusses some of the dynamics in developing (or adapting) a master specification document for the construction industry, and importantly, enforcing the use of this document across all construction.

The Role of the Specification Institutes



The Construction Specification Institute (CSI) is an organisation that maintains and advances the standardisation of construction language as pertains to building specifications in the United States, providing structured guidelines for specification writing. The Institute has formulated a single uniform set of construction standards ensuring that the quality of material and construction is kept to a high acceptable minimum standard throughout the construction process.

Fig. 1 – In the United States and other developed countries, certified professionals write specifications for construction projects.

In the United Kingdom, the British Standard Institution (BSI) has developed the constantly evolving British Standard (BS) Codes tied into the National Building Specification (NBS). The UK construction industry has benefitted remarkably from these set of technical codes and the result has been increased standardisation, efficiency and productivity within industry, in addition to specialisation. Recent research indicates that by increasingly linking the performance of the industry players with compliance, the implementation of the BSI specs have led to a significant reduction in construction cost, a growth in skilled labour and an increase in health and safety standards².

With the rapid development taking place in emerging markets, the construction companies and professionals from the developed world are active in these markets. However, most developing countries do not have master specification systems in place. Foreign designers and contractors bring their design and documentation traditions with them. In Nigeria the use of the British Standards can be traced to the “invasion” of building professionals and contractors from the UK half a century ago.

More recent experiences in the Asian and Middle East markets confirm that it is simply not enough to drop foreign national specifications into a developing economy. According to an article which reviewed documentation etiquette in Asia³, it became increasingly difficult for local contractors and suppliers to operate effectively in their environment because UK standards will be cited on one project, American on another, and Australian on another. In extreme cases two or more standards were referenced in the specification on the same project, making enforcement an impossible task.



Fig. 2 – The Construction of Soccer City, one of the venues that hosted the 2010 World Cup – All construction material, equipment and processes should be based on internationally accepted standards and best practices

In South Africa, the “NBS Building” (UK’s master spec) was extensively adapted in the development of the “NBS Building SA”. Although South Africa uses many BSs, it also uses its own standards, its own traditions of construction and procurement, and of course it has its own building regulatory regime. The merging of local and international best practices has led to a tailor-made, fit-for-purpose national master specification for that country.

One of the primary functions of a local Specification Institute is to act as the platform from which local standards, construction and procurement as well as building regulations can be harmonised with whichever foreign master specification document has been adopted.

The Standards Organisation of Nigeria

The Standards Organisation of Nigeria (SON) was established in 1970. The mandate of the Organisation includes preparation of Standards relating to products, measurements, materials, processes and services and their promotion and enforcement at all levels amongst other roles.⁴ In 2004, the Organisation launched relevant standards and codes for building materials and for use by the construction industry. The first part known as the Nigerian Industrial Standards (NIS) has been compiled through the adoption, and adaptation of relevant national and international standards including the British Standards.

The use of the NIS codes is still very limited and many professionals and contractors are not guided by them. The reasons for these are almost obvious; the documentation is not concise or authoritative and it is grossly incomplete. As an example the UK master specification document consists of over 27,000 codes. Another problem is the references to multiple codes which will make enforcement difficult. The master document is also not widely available/accessible, a situation not significantly different from other “public” information relevant to the building industry such as the planning approval process.

The International Construction Information Society Partnership

The International Construction Information Society (ICIS) is an association of organisations that provides national master specification systems for the construction industry in their various countries. There are currently 19 members from 15 countries, including South Africa (the only African member)⁵. The society works towards the fulfilment of several objectives including the international harmonisation of standards and procedures.

ICIS believes that the development of a national master specification system should happen through appropriate local agencies such as the Association of Architects. In Africa, it has worked successfully with the Construction Communication Network (CCN) Pty, a joint venture between the South Africa Institute of Architects and the Association of South Africa Quantity Surveyors.

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In order for Nigeria to take benefit from an organisation such as this, several “local” challenges peculiar to the construction must be addressed:

High Import Dependency. The industry imports over 70% of the construction materials – reinforcement, aluminium, plumbing and electrical items and majority of finishes^{vi}. By comparison, South Africa’s major export include food and construction products while the UK imports less than 25% of construction products/material, the bulk of being aggregates and pre-cast concrete products. There is unfortunately no connection between acceptable construction materials standards (e.g. the BSs) and what finds its way into the market. This link must be established and strengthened to limit the availability of substandard materials.

The Widening Skills Gap: The unavailability of a competent workforce challenges the use of standard specifications. The lack of vocational training and empowering apprenticeship schemes keeps the construction industry workforce poorly educated and equipped. It needs to be understood that obtaining competency within the vocational or technical training centres must be no different from earning a medical or accountancy degree where years of practise and honing of skills is learned.

The ICIS recognises the need for the appropriate competences to manage specifications documents and it channels its efforts into capacity building in the host agency. The expectation is that there is an available skill pool down the construction chain.



Figs. 3 and 4 – A vocational centre for exported joinery works in Ghana, and an Integrated Polytechnic Regional Centre (IPRC) in Rwanda teaching electro-mechanical skills^{vii}.

According to the Minister, the Ministry of Science & Technology has accepted and recognised the need for vocational institutes or technology centres (Nigeria currently has less than 5 such institutions, and compared with counterparts in many African nations, poorly equipped), promising to establish at least one technology incubation centre in every State^{viii}.

Conclusion

We believe that building professional associations, i.e., the Nigerian Institute of Architects and the Nigerian Institute of Quantity Surveyors are the appropriate agencies to lead in the development (by adaptation) and management of Nigeria’s National Master Specification document. These associations have a common interest in construction specification (and costing) systems, in improving the design and construction process and a wider interest in the complete lifecycles of the components which make up the built environment. It is imperative that “ownership” should reside with the “users” of the document.

Organisations such as the SON and similar agencies certainly have a role to play, particularly in enforcement and broader co-ordination issues. However, the professional associations are in a better position to liaise with counterpart associations in other parts of the world and is best placed to work with an organisation such as the ICIS to develop,

manage, run, correct, keep up-to-date and in line with global standards Nigeria’s national construction standards.

ⁱ Gary M Schuman Construction Specification Consultant

ⁱⁱ The Empirical Economics of Standards (DTI, 2005)

ⁱⁱⁱ John Gelder. Focus on Asia: Documentation Etiquette. SPECnews 1996

^{iv} International Organisation for Standardisation (ISO) website 2010.

^v International Construction Information Society (ICIS) website July 2010

^{vi} Research by Alitheia Capital Ltd July 2010

^{vii} The News times 6 Sept. 2009

^{viii} The Guardian Sunday 30 May 2010