

The Role of Standards in COMBATING CLIMATE CHANGE



**TTS/ISO
14064-1:
2009**

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The Importance of a National Building Code

By Mikhail Ramnarine - Standards Officer I, TTBS

Imagine Trinidad and Tobago experiencing a 7.0 or 8.9 magnitude earthquake. Imagine hundreds or even thousands of lives lost in an instant. Imagine Trinidad and Tobago in ruins and billions of dollars in damages. Imagine your life forever changed.

There is a saying among the engineering fraternity: "Earthquakes don't kill people, buildings do." As of February 2010 - for Haiti, this has been the reality.

Chile, New Zealand and more recently Japan recently suffered similar fates - experiencing 8.8, 7.0 and 8.9 magnitude earthquakes respectively. Interestingly, the extent of damage and loss of life were far less extensive than in Haiti as most critical infrastructure remained operational.

This was partially due to national adherence to Building Codes which were developed and enforced, following prior experiences from devastating earthquakes.

These examples bear testimony to the huge difference that Building Codes can make – economically, socially and eventually a life-or-death difference. A country's vulnerability to potential natural hazards is often minimized as historical records may be incomplete and thus may have recorded a limited number of disastrous occurrences. However, a pre-emptive approach to disaster preparedness and management is a key factor if we are to mitigate the loss of life and property.

Today, our built environment is replete with non-engineered buildings with many more currently under construction. Within the informal construction sector there is no control over the quality of construction personnel so that newly minted self proclaimed 'builders' with a few labourers are often responsible for the entire design and construction of buildings. The reality of the situation is that oftentimes no particular code is followed and there is little



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appreciation for the potentially disastrous consequences of errors in judgment. The end result could be buildings in which the structural integrity and the safety of occupants are severely compromised.

The development and enforcement of a National Building Code is indispensable for the orderly and safe development of a country's built environment and therefore its economic and social progress. The main objectives of such a Code is the establishment of minimum requirements for design, construction and occupancy of building structures with the aim of protecting public health, safety and general welfare. However, it should be emphasized that it is only through compliance with its requirements that we can truly reap the benefits of a Building Code. In most cases, particularly in

developed countries, Building Codes provide the basis for construction in both the public as well as the private sector. In certain countries, for example in New Zealand, the National Building Codes have the force of law, as they are referenced in legislation and enforced by state bodies.

In Trinidad and Tobago, while we do not yet have a National Building Code, there is considerable assistance available to practitioners and builders connected with small buildings primarily through the national standard TTS 599:2006, Guide to the design and construction of small buildings. While, as a nation, we may pride ourselves in being 'fortunate' by repeatedly escaping serious natural disasters, it is foolhardy to turn a blind eye to the guidance provided in this document. The Guide, which was prepared in conjunction with the Board of Engineering of Trinidad and Tobago, is applicable to most residential and even small commercial structures and is available from the Trinidad and Tobago Bureau of Standards. The document addresses most aspects of construction including measures to mitigate damage from natural disasters and is generally beneficial to anyone seeking guidance on safe building construction.

Under the theme “Understanding the importance of standards in everyday life” the Trinidad and Tobago Bureau of Standards (TTBS) continues its public education programme to raise the awareness levels of primary school students about the role of standards in improving the quality of life. The public education programme is aimed at fostering an attitude of standards-quality consciousness among the students. Recently, officials from TTBS visited and delivered presentations to Standard Five primary schools students of Arima Girls’ R.C. Primary School, Arima Hindu Primary School and Bon Air Government Primary School. In their presentations, TTBS’ officials explained the role of standards in safeguarding consumer health and safety, improving product quality and protecting the environment. The officials also discussed TTBS’ inspection services for the following goods namely electrical household appliances, pre-packaged goods, garments, footwear and tyres.

Standard Five Teacher of the Bon-Air Government Primary School, Lester Mahabir, said “The presentation of TTBS’ officials was very enlightening and extremely informative. An exercise of this nature highlighted not only the role and functions of TTBS but underscored the importance of consumers becoming better informed and more quality-conscious. It is my hope that TTBS continues to fulfill its mandate in ensuring standards are implemented for the benefit of our society”.

Following the presentations, lively question and answer sessions were conducted to allow the students the opportunity to display their newly acquired knowledge and prizes were awarded to those who did so successfully.

TTBS’ Marketing Officer (Ag.), Mrs. Sherry-Anne Maharaj, Natalie Dennie, Public Relations Assistant and Marsha Padia, Marketing Assistant were responsible for the overall management of the presentations.

Arima Hindu Primary School



▲ **THOROUGH EXPLANATION:** Angeli Mithu thoroughly explains how standards improve the quality of everyday life.

Bon Air Government Primary School



▲ **INTERACTIVE DISCUSSION:** Marsha Padia, Marketing Assistant, TTBS is engaged in a lively discussion on standards and quality with these enthusiastic students.

Arima Girls’ R.C. Primary School



▲ **THOROUGH EXPLANATION:** Ralitsa Renn correctly and proudly provides the answer to the question “How do Standards improve the national economy?”



▲ **CONGRATULATIONS:** Sherry Anne Maharaj – Marketing Officer (Ag.) (centre) is flanked by certificate winners L-R: Mary Jane Mohan - Most Participative Student and Brandon Rambaran - Most Outstanding Student.



▲ **PROUD MOMENT:** Lester Mahabir (Standard Five Teacher- right) congratulates certificates winners (L-R) Brandon Ramdeen - Most Outstanding Student) and Sally Phipps - Most Participative Student. Looking on is Sherry Anne Maharaj –Marketing Officer (Ag.), TTBS (left).



▲ **PRIDE OF OUR NATION:** Carol Reyes and Sarah Ali concentrate on a TTBS flyer entitled “Read Your Labels”

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would aid in absorbing CO₂. According to Dr. Kumarsingh (2010) from the Ministry of Housing and Environment, preliminary research and analysis of local emissions indicates that CO₂, (total emissions arising from direct combustion of fossil fuels, including emissions from power generation and transport), increased from 16806 gigagrams to 63456 gigagrams over the period 1990-2006: an increase of 278%. Methane (CH₄) and nitrous oxide (N₂O) are two other greenhouse gases that are showing increasing levels. Nitrous oxide has increased due to the increased levels of use of nitrogen fertilizers in agriculture. Other greenhouse gases include sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

EFFECTS OF CLIMATE CHANGE

Climate change includes higher temperatures resulting in change in rainfall patterns. Bates et al (2008) states that increased precipitation intensity and variability are projected to increase the risks of flooding and drought in many areas. Change in rainfall patterns will also affect disease occurrences worldwide with areas that were previously unaffected becoming at risk of major diseases. Agriculture is another area that is extremely vulnerable to climate change. Reduced crop yields along with weeds and pest proliferation are due to higher temperatures. The likelihood of short-run crop failures and long-run production declines are caused by changes in precipitation patterns.

NATIONAL AND INTERNATIONAL POLICIES

Countries around the world are grappling with the problems created by climate change. Global agreements through the United Nations aim to set emission reduction targets and encourage low carbon development. The Kyoto Protocol linked to the United Nations Framework Convention on Climate Change sets binding targets for 37 industrialized countries and the European Community for reducing greenhouse gas emissions. This Protocol commits these countries to reducing emissions by 5% (against the year 1990



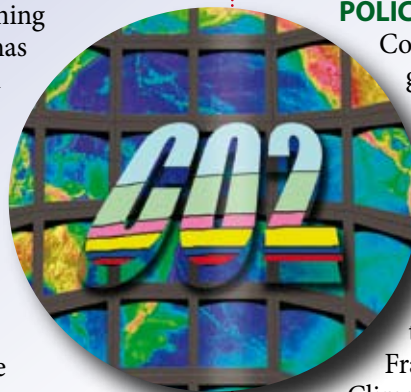
*By Nariscia Phillip
Standards Officer 1 (HSE),
Trinidad and Tobago Bureau of
Standards*

Climate change is one of the greatest challenges facing the global community today. Governments, businesses and even ordinary citizens are concerned about the potentially wide range of negative impacts on the environment, the economy and on society as a whole. Climate change as defined by the United Nations Convention on Climate change (UNCCC) is the “change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is, in addition to natural climate variability, observed over comparable time periods.” Standards on climate change can provide much needed support to

multilateral agreements and national public policies.

GREENHOUSE GASES

The greenhouse effect has been in balance until the emergence of the carbon economy when there was significant increase in the use of fossil fuels. The burning of coal, oil and gas has led to an increase in greenhouse gases in the atmosphere resulting in an enhanced greenhouse effect and increased warming of the planet. Carbon dioxide (CO₂) is the main greenhouse gas responsible for climate change. The levels of this gas have increased not only due to the increase of fossil fuel consumption but also because of the destruction of rainforests that



levels) over the period 2008-2012 (UNFCCC 2010). At the same time many governments are implementing policies that aim to reduce emissions in their own countries. In Trinidad and Tobago, the Ministry of Housing and Environment currently has a Draft National Climate Change Policy for Trinidad and Tobago.



precise records are kept of the trades carried out.

In order for countries and organizations to manage the GHG emissions, they first need to know what the current emission levels are and then adopt strategies to deal with reductions. Consequently, GHGs inventories have become very important in strategies aimed at reduction of GHG, at the organizational, national and international levels. The inventory is

a comprehensive quantified list of an organization's GHG emissions and sources; it is applicable to business in both the public and private sector.

An international GHG Protocol has been established as an international accounting tool for government and business leaders to understand, quantify and manage GHG. It is managed by the World Business Council for Sustainable Development (WBCSD – Geneva) and the World Resources Institute (WRI – Washington, DC).

The Kyoto Protocol offers countries additional means of meeting their targets by way of three market-based mechanisms. These mechanisms are Emissions Trading (also known as 'the carbon market'), Clean Development Mechanism (CDM) and Joint

Implementation (JI). These mechanisms help to stimulate green investment and assist in meeting emission targets in a cost effective way (UNFCCC 2010). The Protocol requires that countries monitor their actual emissions and that



emissions. TTS/ISO 14064-1:2009 Part 1 specifies the requirements for designing and developing organization or entity-level GHG inventories. Other supporting standards are TTS/ISO 14064-2:2009 Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions and removal enhancements and TTS/ISO 14064-3:2009 Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions. Part 2 can be used to design and implement GHG projects, while Part 3 can be used for the validation and verification of these projects.

Quantifying GHG footprints on an annual basis assists in tracking the progress over time and showcases improvements in carbon performances. The ISO GHG standards adopted by TTBS can be used as technical tools to assist in the reduction of emissions from our industries. It is intended to represent best practices in GHG quantification for entities and projects. These standards will enable businesses to measure and report their GHG emissions in a consistent manner that will allow international benchmarking. The use of the GHG standards in conjunction with the projects under the Kyoto Protocol can assist Trinidad and Tobago in fulfilling its obligation as signatories to the Protocol and ultimately aid in combating climate change as we strive for sustainable development.



GREENHOUSE GAS STANDARDS

The GHG protocol supported by standards like TTS/ISO 14064-1:2009 Greenhouse gases- Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals are tools that can be utilized to measure an organization's GHG footprint, i.e. the sum of its direct and indirect GHG

Labelling Standards for PROTECTING PUBLIC WELFARE

Trinidad and Tobago Bureau of Standards enforces the following National Compulsory Standards to safeguard public health and safety and the environment.

These standards require that specific information be stated on the labels of products covered by National Compulsory Standards.

Accordingly, it is an OFFENCE for businesses to sell products that do not conform to the requirements of these Compulsory Standards.

National Compulsory Labelling Standards:

• TTS 76 Part 3:2007
Requirements for Labelling - Part 3- Labelling of Garments

• TTS 76 Part 7:2008
Textiles - Labelling and Advertisement - Requirements

• TTS 76: Part 9:2008
Labelling of Footwear - Requirements

• TTS 76 : Part 13: 2005
Labelling of Domestic Electrical Appliances

• TTS 76 : Part 2 : 1994
Labelling of Pre-packaged Goods

The following information MUST be stated in English on the labels of these products:

ELECTRICAL



CHECK FOR:

- Brand Name or Trademark
- Manufacturer or Distributor
- Model #
- Serial # (as applicable)
- Country of Origin
- Voltage 115 V + 5V
- Frequency 60 Hz
- Current (A) or Power (W)
- Product Certification Marks eg. (UL, CSA, ETL, NOM)

FOOTWEAR



CHECK FOR:

- Brand Name
- Size
- Composition - upper and lower
- Country of Origin

GARMENTS



CHECK FOR:

- Brand Name
- Size
- Fibre Content in percentages (%)
- Care Instructions
- Country of Origin
- Label must be legible and permanently attached to item

PRE-PACKAGED



CHECK FOR:

- Brand Name
- Type of Item
- Name and Address of Manufacturer or Distributor
- Country of Origin
- Net Contents (as applicable)
- Expiry Date (as applicable)
- Composition (as applicable)
- Warnings (as applicable)
- Instruction for Use (as applicable)

TEXTILES



CHECK FOR:

- Country of Origin
- Composition
- Width
- Finishing Treatments (where applicable)

TYRES



CHECK FOR:

- Dimensional and Construction Characteristics
- DOT No. or similar marking
- Brand Name
- Country of Origin
- Treadwear, Traction and Temperature Ratings (as applicable)

Copies of the Compulsory Labelling Standards are available from our Information Center.

TTBS Officer attends International Training Programme in India



Adrienne Stewart, Standards Officer, TTBS attending World Standards Day, 2010 celebrations at the Bureau of Indian Standards (BIS), New Delhi, India.



Participants in training room

In pursuit of its mandate, the Trinidad and Tobago Bureau of Standards (TTBS) continues to provide training opportunities for its staff in critical areas in order to improve the quality of its services to better serve the needs of its stakeholders- consumers, business and government. Accordingly, Standards Officer, Adrienne Stewart attended an international training programme.

The 2-month programme was hosted by the Bureau of Indian Standards (BIS) at the National Institute for Training in Standardization in Noida, near New Delhi, from October 11th to December 3rd 2010. Attending the programme were 32 participants from 25 developing countries including Peru, Cuba, Sri Lanka, Nigeria, Indonesia and Iraq.

The programme covered various aspects of Standardization, Quality Assurance and Management Systems. A combination of instructional methods were used in conducting

the programme such as classroom sessions, workshops, field trips and industrial visits. Participants visited companies in Hyderabad that are certified to ISO 9001, ISO 22000, ISO 14000, ISO 18001 or ISO 17025. These industrial visits were aimed at providing the participants with first hand knowledge of how the companies succeeded in implementing and maintaining these international management system in their operations.

Adrienne said the training was a very worthwhile experience. "The training provided greater insight into certain aspects of standardization. Of significance are the use of mathematical techniques in standards development and the new approach to encourage increased usage of standards. It also provided a forum for sharing of ideas with colleagues of other National Standards Bodies from four different continents and finding solutions to the problems that are common".

STAFF PROFILE

Francis Hamilton
Standards Officer III



Mr. Francis Hamilton is a Standards Officer III in the Metrology Division. He supervises the Standards Laboratory Unit which is responsible for the maintenance and monitoring of the National Measurement Standards to ensure they are internationally recognized and traceable.

He is a past student of Trinity College and a graduate of the University of the West Indies (UWI) with a BSc in Physics and a BSc in Computer Studies.

Mr. Hamilton started working at TTBS in 1994 as a Standards Officer I in the Standardization Division. As a Standards Officer I, he participated in standards writing in areas such as, light truck tyres, noise pollution in the workplace and commercial diving. He was promoted to Standards Officer II in 1998 and in 2001 he moved to the Metrology Section in the Laboratory Services Division where he worked in the Calibration Laboratory. His job included communicating with clients and ensuring the completion of certificates in the areas of mass, density, temperature, volume, length and pressure calibrations. He was promoted to Standards officer III in 2004.

He is currently working on a project to set up internationally recognized temperature standards for Trinidad and Tobago as well as continuing the improvement in the mass calibration area. Mass calibration is the only area of measurement in the Metrology Division that has been internationally accredited.

He has attended many courses and training programs, including courses in Mass and Temperature calibration over the years-2004, 2006, 2009 and 2010 at the National Institute of Standards and Technology (NIST) Washington, and more recently Temperature training at The Instituto Nacional de Tecnologia Industrial (INTI) Argentina, in early 2011. Over the years he has also received training in Quality System Standards ISO 9000 and ISO 17025 (particularly relevant for Laboratories).

When asked how he feels about working at TTBS, he said, "I feel privileged. It's an honour and blessing to serve my country in the capacity that I am in at TTBS. My goal is to make a meaningful contribution to the development of Trinidad and Tobago through my work at TTBS".

He is currently the Secretary of the TTBS Section of the Public Services Association (PSA) and Secretary to the Pension Fund Management committee at TTBS. His hobbies include jogging, cricket, football, table tennis and reading.

Services of the Trinidad and Tobago Bureau of Standards

All standards are intended to improve the quality of life through sustainable development by promoting Economic Growth, Societal Equity and Environmental Integrity.

OUR VISION:

To be a World-Class Standards Institution, dedicated to improving the quality of life of the people in Trinidad and Tobago.

To fulfill this vision TTBS provides the following services: -

• Standards Development

Formulation of National, Voluntary and Compulsory Standards through technical committees for all goods except food, drugs, cosmetics and agricultural products.

Contact: Errol Rampaul,
Head Standardization Division - Ext. 121

• Inspection

Inspection of goods covered by National Compulsory Standards at ports of entry, importers' premises and retail outlets.

Contact: Steve Williams,
Head Implementation Division - Ext. 188

• Laboratory Services

Testing: Electrical, Fibre/Footwear, Material and Chemical Products.

Contact: Renée Abass-Lalla
Head Laboratory Services Division - Ext. 216

• Metrology

Inspection, calibration, testing and certification of measuring devices and pre-packaged goods.

Contact: Theodore Reddock,
Head Metrology Division - Ext. 230

• Certification

Product Certification
A license to use the Trinidad and Tobago Product Certification Mark is issued for certified products.

System Certification-
Quality and Environmental Management Systems (ISO 9001, ISO 14001), Trinidad and Tobago Tourism Certification (TTTIC) and Quality and Environmental Management for SME's (Q&EMS - SME's).

Contact: Ronah Persad,
Head Certification Division (Ag.) - Ext. 177

• Laboratory Accreditation

ISO 17025 for Testing/Calibration Laboratory, ISO 15189 for Medical Laboratories

Contact: Karlene Lewis,
Standard Officer II - Ext. 153

• Standards Information

Supply of local, regional, national and international standards.

Contact: Devitra Maharaj-Dash,
Librarian, Information Centre - Ext. 159

• Quality Training

The Premier Quality Services Limited (PQSL), a subsidiary of the Trinidad and Tobago Bureau of Standards, offers training in:

ISO 9001 and 14001, Laboratory Practices, Calibration, Health and Safety.

Contact: PQSL
Tel.: 645-9026/9268, 662-8827.

Facilities for rental

The Trinidad and Tobago Bureau of Standards also offers facilities for rental through its wholly-owned subsidiary, Premier Quality Services Limited (PQSL)

TS TRINIDAD AND TOBAGO
BUREAU OF STANDARDS

1-2 Century Drive, Trincity Industrial Estate,
Macoya, Tunapuna.

Tel. Nos.: 662-8827, 662-4481/2 or 663-4835/6
Fax: 663-4335 • Email: ttbs@ttbs.org.tt
Website: www.ttbs.org.tt

PREMIER QUALITY SERVICES LIMITED

Facilities for Rent

The Trinidad and Tobago Bureau of Standards offers the following facilities for rental through its wholly-owned subsidiary, Premier Quality Services Limited (PQSL) for business and social functions such as seminars, workshops, conferences, graduations, weddings and award ceremonies.

ROOMS:

Maracas Conference Room

- Seating capacity for 60 persons, class room style
- Seating capacity for 110 persons, theatre style
- Ideal for seminars

Bon Accord Meeting Room

- Seating capacity for 20 persons
- Ideal for strategic meetings
- Equipped with white board and screen

Naparima Training Room

- Seating capacity for 20 persons
- Equipped with white board and screen

An audio/visual equipment also provided to clients upon request.

Auditorium

- Seating capacity for 199 persons
- Podium with built-in microphone
- Stage with head table for 6 persons
- Changing and washrooms (behind stage)
- External entrance to stage

Dining/Reception Area

- Seating capacity for 150 persons
- Tables and chairs provided
- Large Kitchen

Catering services also provided to clients upon request.

Contact: Giselle Taylor
Tel: 645-9026/9268, 662-8827 • Fax: 645-8879
Email: giselle.taylor@ttbs.org.tt



Conference Room



Auditorium



Dining/Reception Area