

**INTERNATIONAL COST MANAGEMENT STANDARD (ICMS)
BY: QS RUYA TAMBAYA FADASON, FNIQS**

**BEING A PAPER PRESENTED AT THE 2022 ANNUAL ASSEMBLY
OF REGISTERED QUANTITY SURVEYORS**

**THEME:
SHAPING THE FUTURE OF THE QUANTITY SURVEYING
PROFESSION**

**VENUE:
INTERNATIONAL CONFERENCE CENTRE, PLOT 900 HERBERT
MACAULAY WAY, AREA 11, CENTRAL AREA, GARKI - ABUJA**

DATE: Thursday, 10th March, 2022

Introduction

Construction is a large contributor to world GDP and is recognised to have a significant ‘multiplier’ effect on national economies. It is also an increasingly globally mobile industry, where investments in, and the implementation of, projects is carried out on an international basis. At a macro level, there is no uniform way for governments and markets to calculate construction output. For example, the United Nations produces a list of standard activities which comprise construction output (the ISIC -or International Standard Industrial Classification). The categories, however, are not complete and there is a need to revise them to reflect modern needs and practice. Government statistical agencies and industry commentators require improvements in the official definitions of construction output and the way data is presented. Significant variations in the definitions and measurement of construction output are not only a concern in global and national accounting, but also on the demand (investment) and supply (consultants and contractors) side of the industry. This lack of comparability and consistency affects certainty, and therefore investment in, construction. At a micro

level, surveys carried out by the RICS and CEEC of cost consultants in 40 countries have shown that:

- Approximately 50% of countries did not claim any published standard elemental classification of building parts;
- In the absence of locally agreed standards, professionals frequently adopt 'foreign' standards or ad hoc in-house developed standards;
- There is no common way of expressing cost per m², both in terms of the cost definition and the floor area (IPMS addresses the latter); and
- There are many countries where the quality of cost information, and data classification, falls short of what local professionals might wish. Finally, feedback from professional organisations around the world has identified particular problems relating to different terminologies in use.

This is particularly the case between US and Europe and between buildings and infrastructure.

The Solution

Despite rapid globalization with investment funds flowing across borders and money pouring into constructed assets the construction profession currently lacks a common language and framework for classifying and reporting construction costs.

This can cause huge problems for cost consultants, quantity surveyors, construction economists and cost engineers around the world.

The ICMS introduces a standard structure and format that will lead to greater consistency in classifying and reporting of capital costs for construction projects globally.

ICMS benefits all stakeholders in buildings and civil engineering construction by creating a common language for construction investment while enabling benchmarking.

The International Cost Management Standard Coalition (ICMSC) is a group of 50 professional and not-for-profit organisations from around the world, working together

to develop and implement international standards for benchmarking, measuring and reporting construction project costs.

A new international cost reporting standard for the construction sector will help bring greater confidence to an industry that is critical to creating resilient and successful communities, according to RICS Professional Standards Director Ken Creighton.

The International Construction Measurement Standard Coalition (the Coalition) was formed on 17 June 2015 after meeting at the International Monetary Fund in Washington DC, USA. The Coalition, comprising the organisations listed below aims to bring about consistency in construction cost reporting standards internationally. This is achieved by the creation and adoption of this ICMS, an agreed international standard for the structuring and presentation of cost reports. ICMS sets out a structure for describing construction costs in terms of project scope, attributes and values descriptors. This document setting out the provisions of ICMS is the first prepared by the Coalition's Standard Setting Committee (the SSC). The Coalition members at the date of first publication are:

- i. Africa Association of Quantity Surveyors (AAQS) Association for the Advancement of Cost Engineering International (AACEI)
- ii. Association of Cost Engineers (ACostE)
- iii. Association of South African Quantity Surveyors (ASAQS)
- iv. Australian Institute of Quantity Surveyors (AIQS)
- v. Brazilian Institute of Cost Engineers (IBEC)
- vi. Building Surveyors Institute of Japan (BSIJ)
- vii. Canadian Institute of Quantity Surveyors (CIQS)
- viii. Chartered Institute of Building (CIOB)
- ix. Chartered Institution of Civil Engineering Surveyors (ICES)
- x. China Electricity Council (CEC)
- xi. China Engineering Cost Association (CECA)
- xii. Commonwealth Association of Surveying and Land Economy (CASLE)
- xiii. Conseil Europeen des Economistes de la Construction (CEEC)

- xiv. Consejo General de la Arquitectura Técnica de España (CGATE)
- xv. Dutch Association of Quantity Surveyors (NVBK)
- xvi. European Federation of Engineering Consultancy Associations (EFCA)
- xvii. Federation Internationale des Geometres (FIG)
- xviii. Ghana Institution of Surveyors (GhIS)
- xix. Hong Kong Institute of Surveyors (HKIS)
- xx. Ikatan Quantity Surveyor Indonesia (IQSI)
- xxi. Indian Institute of Quantity Surveyors (IIQS)
- xxii. Institute of Engineering and Technology (IET)
- xxiii. Institute of Quantity Surveyors of Kenya (IQSK)
- xxiv. Institution of Civil Engineers (ICE)
- xxv. Institution of Surveyors Kenya (ISK)
- xxvi. International Cost Engineering Council (ICEC)
- xxvii. Italian Association for Total Cost Management (AICE)
- xxviii. Korean Institution of Quantity Surveyors (KIQS)
- xxix. New Zealand Institute of Quantity Surveyors (NZIQS)
- xxx. Nigerian Institute of Quantity Surveyors (NIQS)
- xxxi. Pacific Association of Quantity Surveyors (PAQS)
- xxxii. Philippine Institute of Certified Quantity Surveyors (PICQS)
- xxxiii. Property Institute of New Zealand (PINZ)
- xxxiv. Real Estate Institute of Botswana (REIB)
- xxxv. Royal Institute of British Architects (RIBA)
- xxxvi. Royal Institution of Chartered Surveyors (RICS)
- xxxvii. Royal Institution of Surveyors Malaysia (RISM)
- xxxviii. Singapore Institute of Building Limited (SIBL)
- xxxix. Singapore Institute of Surveyors and Valuers (SISV)
- xl. Sociedad Mexicana de Ingeniería Económica,
- xli. Financiera y de Costos Society of Chartered Surveyors Ireland (SCSI)
- xlii. Union Nationale des Economistes de la Construction (UNTEC)

Many world bodies, governments and construction clients acknowledge that the financial management of construction requires improvement. Numerous studies have recommended that unifying international standards are required within organisations and markets, and across markets, to provide consistent, comparable reporting and data.

What Is International Standard?

In the context of the work being undertaken by the ICMS Coalition, an international standard is something which has been established and agreed at the international level and which is implemented and delivered locally. The standard itself is owned by the ICMS Coalition and not by any single organisation. ICMS organisations subscribe to the shared international standard and commit to its use and implementation through their membership.

Although there are other recognised international standard setting bodies, notably the International Standards Organisation (ISO), ICMS has been delivered efficiently to the market by professional bodies to address a specific market problem.

What Is ICMS?

ICMS stands for International Cost Management Standard. It is a new, high level international standard which aims to provide greater global consistency in classifying, defining, measuring, analysing and presenting construction costs at a project, regional, state, national or international level.

ICMS is not a detailed method of measuring construction works. Instead, it is a high level benchmarking and reporting framework for international cost classification, reporting and comparison.

What Is the ICMS Coalition?

The ICMS Coalition is a growing group of professional and not-for-profit organisations which are responsible for researching, developing, publicising and implementing the International Cost Management Standard for the construction sector. The Coalition was established on 17 June 2015 after a meeting at the International Monetary Fund in Washington DC, USA.

The ICMS Coalition supports the creation, maintenance and use of high quality, ICMS through a transparent and inclusive standard setting process. Through the Board of Trustees, Coalition organisations have each signed a declaration of support and commitment to promote and implement ICMS and encourage world markets to accept and adopt it.

What Are ICMS AIMS?

ICMS aims to provide global consistency in classifying, defining, analysing and presenting construction costs at a project, regional, state, national or international level.

It will:

- Adopt universal definitions of construction costs and the associated variables;
- Create a single classification system for building and civil engineering projects (works) for use with digital tools such as BIM;
- Recommend a consistent data framework for the collation of national statistics;
- Be as simple as possible, commensurate with allowing robust comparisons to be made;
- Articulate with local standards and the IPMS wherever possible;
- Recommend a standard reporting format;
- Allow global cost comparisons and benchmarking for global investors, corporate bodies and contractors;
- Provide a checklist for international best practice;
- when combined with IPMS, consistent cost comparisons on a per m² basis;

- Provide consistent language and terminologies for the worldwide, and increasingly mobile, profession; and accommodate the need for continuous refinement, updating and change.

The aim of the SSC is not to replace existing local standards, but to provide a consistent framework into which data generated locally can be allocated for the purposes of comparison. In time it is expected that ICMS will become the primary basis for both global and local construction cost reporting.

What Problem Is ICMS Trying to Solve?

Despite rapid globalisation with investment funds flowing across borders and money pouring into constructed assets, the construction profession currently lacks a common language and framework for classifying and reporting construction costs.

When estimating construction project costs, this causes huge problems for cost consultants, quantity surveyors, construction economists and cost engineers around the world. The ICMS Coalition is tackling this problem head on.

For the first time at a global collaborative level, ICMS will introduce a standard structure and format that will lead to greater consistency in classifying and reporting of capital costs for construction projects.

What Are the Benefits of Having ICMS?

Broadly, ICMS will allow:

- Construction costs to be consistently and transparently benchmarked;
- The causes of differences in costs between projects to be identified;
- More informed decision-making about the design and location of construction projects;

- Data to be used with confidence for construction financing and investment, decision-making, and related purposes.

What Is an ICMS Partner?

An ICMS Partner is a government, commercial or academic organisation which supports the collaborative approach to developing international standards and commits, in principle, to the adoption of ICMS. ICMS Partners can include but are not limited to the following types of organisation:

- Construction and infrastructure consultancy firms
- Construction industry service providers (e.g. measurement practices)
- Construction companies (e.g. multinational firms with international construction portfolios)
- Property investment firms
- Developers, banks and lending institutions
- Construction related software vendors
- Construction cost data service providers, etc.

INTERNATION COST MANAGEMENT STANDARD (ICMS) 1

This first edition of ICMS focuses on capital costs. Consistent practice in presenting construction costs globally would bring significant benefits to construction cost management.

This project is the first of its kind, bringing together numerous organisations from around the world to create shared international standards for presenting construction costs. This first edition of ICMS focuses on capital costs. Consistent practice in presenting construction costs globally would bring significant benefits to construction cost management. Globalisation of the construction business has increased the need to make meaningful comparative analysis between countries, not least by international

organisations such as the World Bank Group, the International Monetary Fund, various regional development banks, non-governmental organisations and the United Nations.

The Coalition did not identify any existing standard that was suitable for international adoption. For this reason, the Coalition has come together to create shared standards. At a meeting at the International Monetary Fund in June 2015, Coalition members confirmed they were committed to promoting the implementation of ICMS to encourage world markets to accept and adopt ICMS as the primary standard for presenting construction costs across different nations in a consistent way. An independent Standard Setting Committee (the SSC) was formed. The SSC includes technical experts from 11 countries and a combined expertise covering 47 different markets.

This Standard offers a framework of 13 Project Categories, each identifying a different type of construction Project and a template against which costs can be classified, recorded, analysed and presented. The hierarchical framework has four levels:

- Level 1: Project Category
- Level 2: Cost Category
- Level 3: Cost Group
- Level 4: Cost Subgroup.

The composition of Levels 2 and 3 is the same for all Project Categories. Although discretion is allowed in the contents of Level 4, the recommended contents of Level 4 are given in Appendices A, B and C. This Standard provides definitions, scope, attributes and values, units of measurement and explanatory notes for each Project Category. It provides guidance on:

- How the Standard is to be used
- The level of detail to be included
- The method of dealing with projects combining different Project Categories; and
- The approach to be taken to ensure that like is compared with like, especially taking account different currencies and time frames.

For buildings, the various cost analysis standards worldwide require the measurement of a gross floor area either external gross external floor area (GEFA) or internal gross

internal floor area (GIFA). This permits the representation of overall costs in terms of currency per GEFA or GIFA. Research shows that floor area measurement standards vary considerably between countries. The linking of ICMS with IPMS provides a valuable tool for overcoming these inconsistencies. ICMS requires a cost report to include both GEFA (IPMS 1) and GIFA (IPMS 2) measured in accordance with the rules set out in IPMS. These are summarised in Appendix F.

For civil engineering projects, ICMS also provides units of measurement describing their sizes and functional capacities for the purpose of comparison. The SSC prioritised setting a measurement standard for buildings and selected categories of civil engineering projects. The civil engineering categories chosen for this first edition of ICMS are those that are most commonly required and cover:

- Transport
- Energy
- Oil and Gas and
- The Utility Sectors.

ICMS 2: AN INTERNATIONAL COST MODEL FOR LIFE CYCLE COSTS

Construction is a major world industry, which has a substantial effect on the public, society and prosperity.

The second edition of the International Construction Measurement Standards (ICMS 2) was developed by a 50 strong global coalition of professional bodies, including NIQS.

Its purpose is to improve financial management by standardising cost recording, improving cost prediction and control data, and aiding forensic analysis of construction costs.

"This new standard is a game changer for the global construction industry, representing the first time there will be an internationally standardised way to report the full life cycle cost for portfolios, programmes, and projects around the world."

"In simple terms, this means that projects can be easily and quickly be compared across jurisdictions, giving decision-makers better tools to analyse the impact of their investment in construction, and now across the full life-cycle of the built asset."

ICMS, international construction reporting standards, were initially developed by a coalition of 50 professional bodies and published in July 2017. Following strong global adoption of the standards, the coalition decided to extend ICMS to cover life cycle costs. Hence, ICMS 2, covering the whole project life cycle, presents a globally standardised way of cost reporting for portfolios, programs and projects around the world.

This is a seminal step for those professions involved in cost management of constructed assets. It will improve financial management by standardising and improving cost prediction and control data and aid forensic analysis of construction costs.

These standards will promote a more internationally-recognised, harmonised, profession across the financial management of buildings and infrastructure - raising competence and meeting growing demand - in an industry that is expected to grow output by 85% to \$15.5 trillion by 2030

What Is the Scope of ICMS 2?

Construction Costs: Expenditure on labour, materials, plant, equipment, site and head office overheads and profit, including taxes and levies, incurred as a direct result of the construction intervention. It is the total price payable for work normally included in contracts to construct a building or civil engineering works, including any goods or materials supplied by the Client for the Constructor to fix. It also includes all temporary works required to undertake the construction works.

Renewal Costs: The costs of replacing major components once they reach the end of their life, and which the client decides are to be included in the capital rather than the revenue budget.

Operation Cost: Costs incurred in running and managing the facility or built environment, including administration support services, rent, rates, insurances, energy and other environmental/regulatory inspection costs, local taxes and charges.

Maintenance Cost: The total of necessarily incurred labour, material and other related costs incurred to retain a building or its parts in a state in which it can perform its required functions. (Source: ISO 15686-5) Note 1: Maintenance includes conducting corrective, responsive and preventative maintenance on constructed assets, or their parts, and includes all associated management, cleaning, servicing, repainting, repairing and replacing of parts, where needed, to allow the constructed asset to be used for its intended purposes. It excludes **renewal costs**.

End of Life Cost: The net cost or fee for disposing of an asset at the end of its service life, including costs resulting from decommissioning, deconstruction, demolition, site decontamination/ remediation, asset transfer obligations, recycling, recovery, and disposal of components and materials; and transport and regulatory costs.

ICMS 3: A WORLD FIRST FOR COST AND CARBON MANAGEMENT IN THE BUILT ENVIRONMENT

ICMS provides a high-level structure and format for classifying, defining, measuring, recording, analysing and presenting life cycle costs and carbon emissions associated with construction projects and constructed assets.

ICMS began with the first two versions of the standard covering cost for construction and the whole life cycle of infrastructure assets: With the built environment responsible for around 40% of the global carbon emissions, it is crucial that leaders have clear comparable data to achieve carbon and cost targets. The ICMS Coalition of 49 globally-prominent organisations has developed ICMS 3 - **a world first for cost and carbon management in infrastructure**.

ICMS 3 will contribute positively to efforts to decarbonise the construction sector in the most cost-effective way. Through ICMS 3, professionals will for the first time be empowered to deliver a globally consistent method for carbon life cycle reporting across construction projects, from buildings and bridges to ports and offshore structures.

The ICMS Coalition has developed a third edition (ICMS 3), which is "a world first for cost and carbon management in construction from concept to completion and beyond" (source: [ICMS 3](#)). According to the ICMS website, the third edition of ICMS

"Recognizes the criticality of consistently reporting carbon emissions if a disaster caused by global climate change is to be averted. By providing a common reporting framework for capital costs, life cycle costs and carbon emissions, it allows their interrelationship to be explored, and provides the data to make decisions about the design, construction, operation and maintenance of the build environment that optimizes environmental sustainability."

There are five new project types added to ICMS 3 and they are:

1. Offshore structures
2. New shore work
3. Ports
4. Waterway works
5. Land formation and reclamation

There are not many differences between the second and third edition but based on the changes that have been included, a decision was made to change the title from "International Construction Measurement Standards" to "International Cost Management Standard". The acronym remains the same while it "reflects the broader, high-level scope of its content" (source: [ICMS Draft, 3rd edition](#))

HOW WILL ICMS WORK IN MARKETS WITH EXISTING LOCAL STANDARDS

ICMS is a high-level standard developed with the view that, in time, it can be implemented in all jurisdictions across the globe. Markets that do not have established standards for measuring and classifying construction costs are encouraged to adopt ICMS.

Markets that do have established local standards should adopt ICMS to compare cost data prepared using different standards from different markets on a consistent, like-for-like basis.

The aim of ICMS is not to replace existing local standards, but to provide a consistent framework into which data generated locally can be allocated for comparison. Some adjustment to existing local standards may be necessary to ensure that the local standard meets the requirements of ICMS. Over the long term, it is expected that ICMS will become the primary basis for both global and local construction cost reporting.

However, ICMS will always be secondary to any legally mandated requirements which may differ from ICMS. Where possible, the ICMS Coalition will undertake to work with governments to review and update laws to reflect ICMS.

HOW WILL ICMS BE IMPLEMENTED?

ICMS will be implemented by all organisations which are part of the ICMS Coalition. Many of the Coalition organisations will develop additional training and guidance for their members to use.

ICMS will be implemented around the world through proactive engagement by the ICMS Coalition members with the memberships, key accounts, and relevant national stakeholders (governments, banks, associations etc.) including ICMS Partners.

As with any major global initiative on this scale, it is anticipated that ICMS will initially be used alongside existing standards, but overtime ICMS will become established in construction markets and be used as the primary standard for reporting on construction

CONCLUSION

The lack of a uniform approach can lead to confusion and the inability to compare construction cost on a like-for-like basis. ICMS achieves this by standardising the high level presentation of costs on projects and provides:

- More effective global cost comparisons
- Better investment and funding decisions
- Improved cost prediction and management
- Consistent accounting

The NIQS is a member of the International Cost Management Standards Coalition (ICMSC), a growing group of more than 40 professional and not-for-profit organisations from around the world, working together to develop and implement international standards for benchmarking, measuring and reporting construction project cost.

Global construction is forecast to grow 85% to 17.5 trillion US Dollars by 2030. It will then account for 15% of world output. For quantity surveyors, understanding cost reporting is an essential business skill

ICMS provides global consistency and transparency in construction cost management playing a significant role for critical decisions to be made on asset performance, robustness, and sustainability of capital projects. High profile international organizations such as World Bank Group, International Monetary Fund, United Nations, various regional development banks and non-governmental organizations, public sector project sponsors, global cost consultants and other construction sector stakeholders have leveraged the benefits of ICMS's global consistent practice in benchmarking international construction costs. They have also adopted it for use for comparative analysis between countries. In addition to benchmarking construction costs, ICMS is also

useful for cost reporting, data collection, feasibility studies, investment and risk analysis, procurement evaluation, design optimization, auditing and dispute resolution. Construction Industry stakeholders that are yet to adopt ICMS are encouraged to adopt these measurement standards costing in order to make informed investment decisions and for other benefits that accompany its uses. International is not somewhere else. ICMS can be used nationally across states and provinces and across sub-sectors. It has been mapped to national, more granular design and cost management standards around the world including BESMM, NRM, Omniclass, Uniclass. By creating a standardized bi-directional flow of data from detailed, national level to international level ICMS allows improvements in the reporting, analysis and prediction of construction costs.

CITATIONS

1. Charles Jensen ICE.ORG.UK
2. Charles Mitchell Technological University Dublin, charles.mitchell@tudublin.ie
3. Dale Benton, May 16, 2020
4. ICMS Coalition: 2016, International Construction Measurement Standard - Global Consistency in Presenting Construction Costs. doi:10.21427/yw16-a515
5. International construction management standard. (2019) CMS: Global consistency in presenting construction and other Life cycle costs. 2nd edition. Retrieved from <https://icmscoalition.org>
6. Lian, S. L. (2017). Building information modelling (BIM) & international construction measurement standard (ICMS): Global consistency in presenting construction costs. Retrieved from <https://icms-coalition.org>
7. Muse, A. G. (2019, March). International construction Measurement standards (ICMS).
8. www.icms-coalition.org.