



# Standard Methods of Measurement in Construction Contract

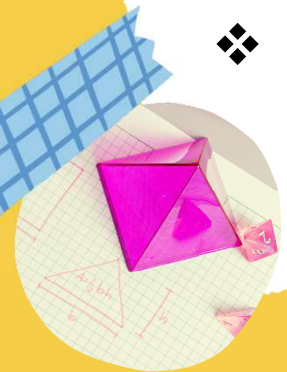
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# Introduction to Quantity Surveying!

- ❖ Quantity surveying is an essential discipline within the construction industry.
- ❖ It involves various tasks such as cost estimation, project management, and financial planning.
- ❖ Quantity surveyors are responsible for ensuring that projects are completed efficiently, within budget, and to high-quality standards.
- ❖ This title will cover measurement significance and the **Standard Method of Measurement (SMM)**.



# Importance of Measurement

- **Accurate measurement** is fundamental to the success of construction projects.
- It directly impacts project costs, timelines, and overall quality.
- *Uniformity in descriptions and units of measurement.*
- Effective measurement aids in **resource allocation, risk management, and dispute resolution.**
- Standardizes measurement practices, ensuring clarity such as **Provisional Sum, Voids, Deemed to be included items.**



# Standard Method of Measurement

- The Standard Method of Measurement (SMM) provides a structured framework for measuring and pricing construction work.
- *Understanding the difference between "net" measurement and "allowances" for waste.*
- Established to ensure uniformity across different projects, the SMM significantly reduces ambiguity in tender documents.
- It serves as a crucial tool for quantity surveyors, facilitating **fair competition among contractors** and **minimizing disputes** related to measurements and pricing.

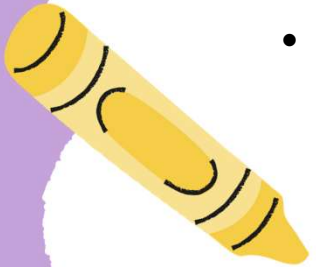




# Introduction to NRM2

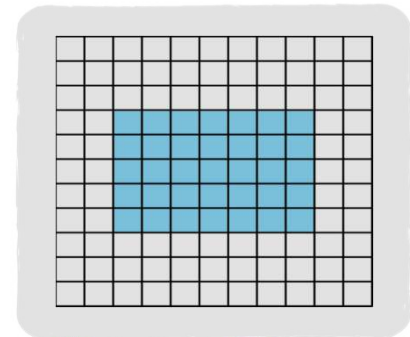
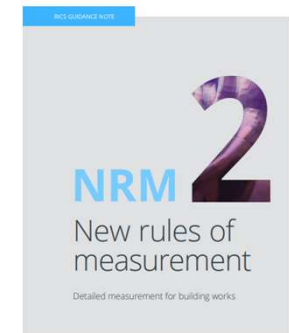


- The **New Rules of Measurement 2 (NRM2)** is an essential standard that complements the SMM, providing comprehensive guidelines for measuring building works.
- NRM2 aims to improve the consistency and clarity of measurement practices across the construction industry.
- It serves as a vital reference for quantity surveyors in preparing **tender documentation** and managing project costs.



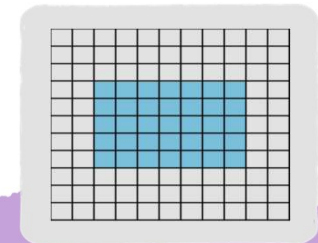
# Historical Context of SMM and NRM2

- SMM2 (Singapore), SMM7 (UK), CESMM4
- The evolution of the SMM reflects the changing landscape of construction practices over the years.
- Initially developed to address inconsistencies in measurement, the method has undergone refinements based on industry feedback.
- NRM2, introduced to enhance measurement standards, incorporates modern techniques, ensuring continued relevance and effectiveness in today's fast-paced construction environment.



# Key Principles of SMM and NRM2

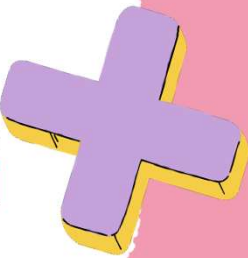
- At the core of the SMM and NRM2 are several fundamental principles: **consistency, transparency, and fairness**.
- **Order of Cost Estimating**
- Consistency ensures that measurement practices are uniformly applied across various projects, while transparency fosters trust among stakeholders.
- Fairness promotes **healthy competition among contractors**, enhancing the integrity of the construction process and benefiting all involved parties.





# Preparing Tender Documents

- Preparing tender documents using the SMM and NRM2 involves creating **detailed measurement guidelines**.
- These guidelines specify how various elements of the project should be accurately measured and priced.
- Clarity in these documents aids contractors in preparing precise bids, significantly reducing the likelihood of **misunderstandings and disputes during the project lifecycle**.







# Measuring Elements



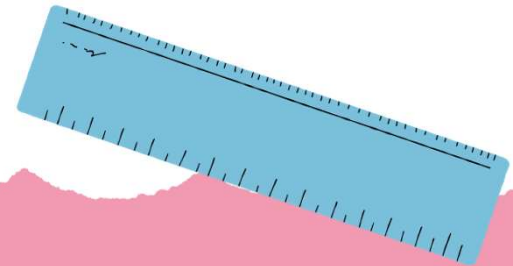
- The SMM and NRM2 provide explicit instructions on measuring construction elements.
- This includes the accurate quantification of items such as concrete, steel, and timber.
- Preliminary, Foundation, Super-Structure, Roofing, Finishes, Landscaping, Provisional Sum, Prime Cost Sum, etc...
- By adhering to these guidelines, quantity surveyors can ensure that all materials are accounted for accurately, leading to more precise cost estimations and efficient resource allocation throughout the duration of the project.

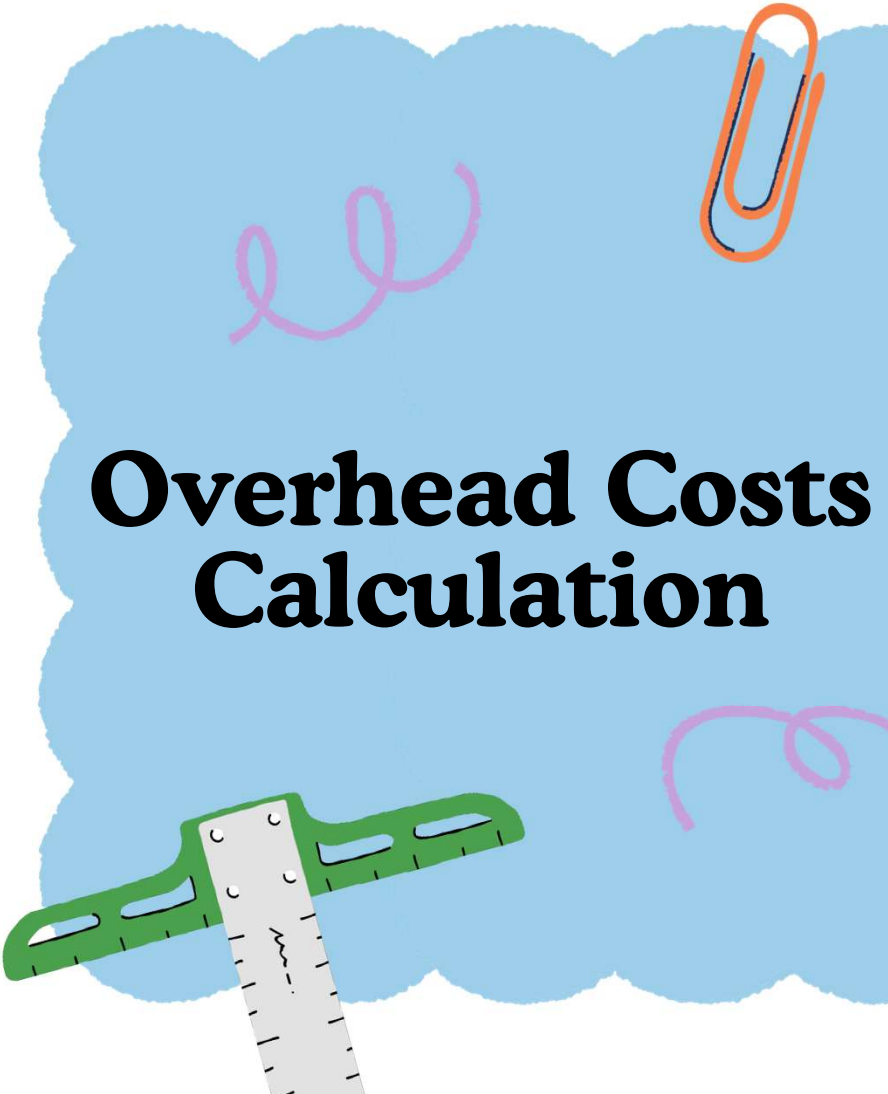


# Labor & Equipment



- Labor & Equipment is another critical component of the SMM and NRM2 framework.
- It involves estimating the number of hours required for each specific task within the project.
- Accurate labor & equipment measurement is essential for effective budgeting and scheduling, ensuring that projects progress on time.
- The guidelines help enhance overall project management efficiency.





# Overhead Costs Calculation


- Calculating overhead costs is essential in any construction project.
- The SMM and NRM2 outline specific methods for determining these costs, which may incorporate site management, utilities, and administrative expenses.
- By accurately estimating overheads, quantity surveyors can provide a clearer picture of total project costs, allowing for more informed financial planning and decision-making.

# **Risk Management in Pricing**

- Effective risk management is crucial when it comes to pricing in construction.
- The SMM and NRM2 assist in identifying potential risks and incorporating them into overall cost estimates.
- By proactively considering risks, quantity surveyors can develop more accurate budgets, helping to mitigate financial surprises and ensuring a smoother project execution process.

# Enhancing Communication

- The SMM and NRM2 significantly enhance communication among all project stakeholders.
- With clear measurement guidelines established, everyone involved—from contractors to clients—can understand and align their expectations.
- This transparency minimizes misunderstandings and facilitates collaboration, ultimately leading to a more successful project outcome and improved relationships among all parties.



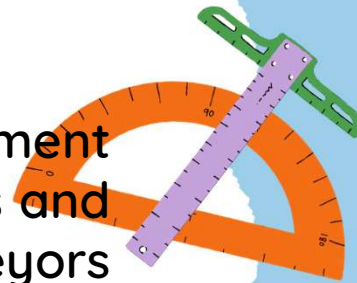
# Reducing Disputes



- Disputes are a common occurrence in construction projects, often stemming from measurement discrepancies.
- The SMM and NRM2 help to mitigate these disputes by providing standardized measurement practices.
- By ensuring that all parties have a clear understanding of measurements and pricing, these standards foster a more harmonious working environment and smoother project execution.

# International Perspectives

- The adoption of SMM and NRM2 principles extends beyond national borders.
- Many countries are developing their own measurement standards influenced by these frameworks.
- Singapore (SMM2, Code of Practices), Malaysia, Thailand, UK, etc...
- Understanding international perspectives on measurement practices can enhance collaboration in global projects and facilitate knowledge exchange among quantity surveyors worldwide.





# FIDIC Clause

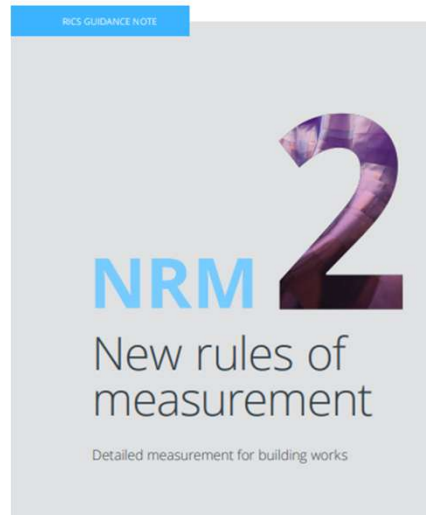
- **Clause 12. Measurement & Evaluation**
  - Measurement Basis: Specifies whether measurements are to be based on actual quantities or agreed-upon standards.
  - Variations: Discusses how variations will be measured and valued, with reference to the SMM.
  - Dispute Resolution: Outlines procedures for resolving disputes related to measurements, ensuring transparency and clarity.



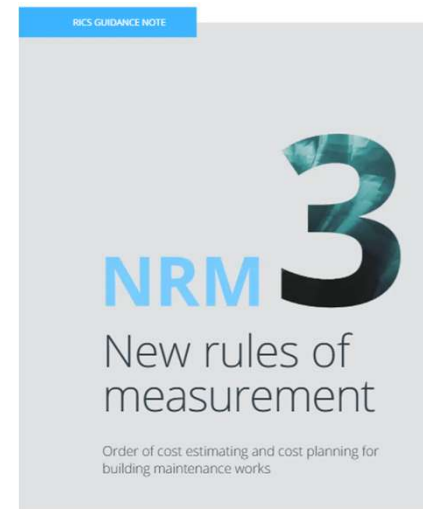
# NRMs OF RICS



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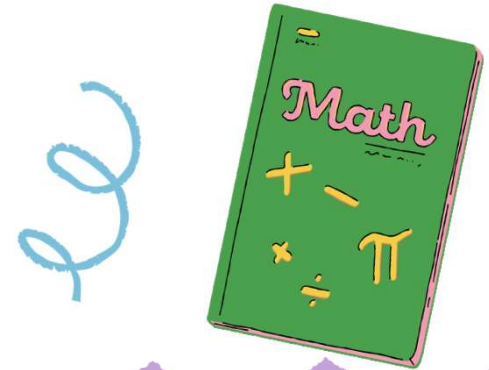
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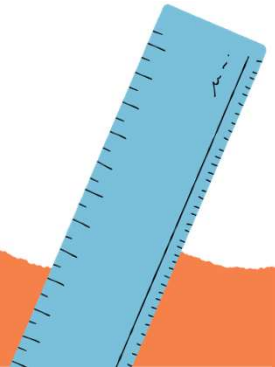




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# KEY POINT

- Promote **consistency, transparency, and fairness**, contributing to improved project outcomes.
- By understanding and effectively implementing these standards, stakeholders can **minimize disputes** and enhance overall efficiency.





**Q&A**



**THANK YOU!**