

# Practical Commercial Aspects of Implementing GBRs in Asia

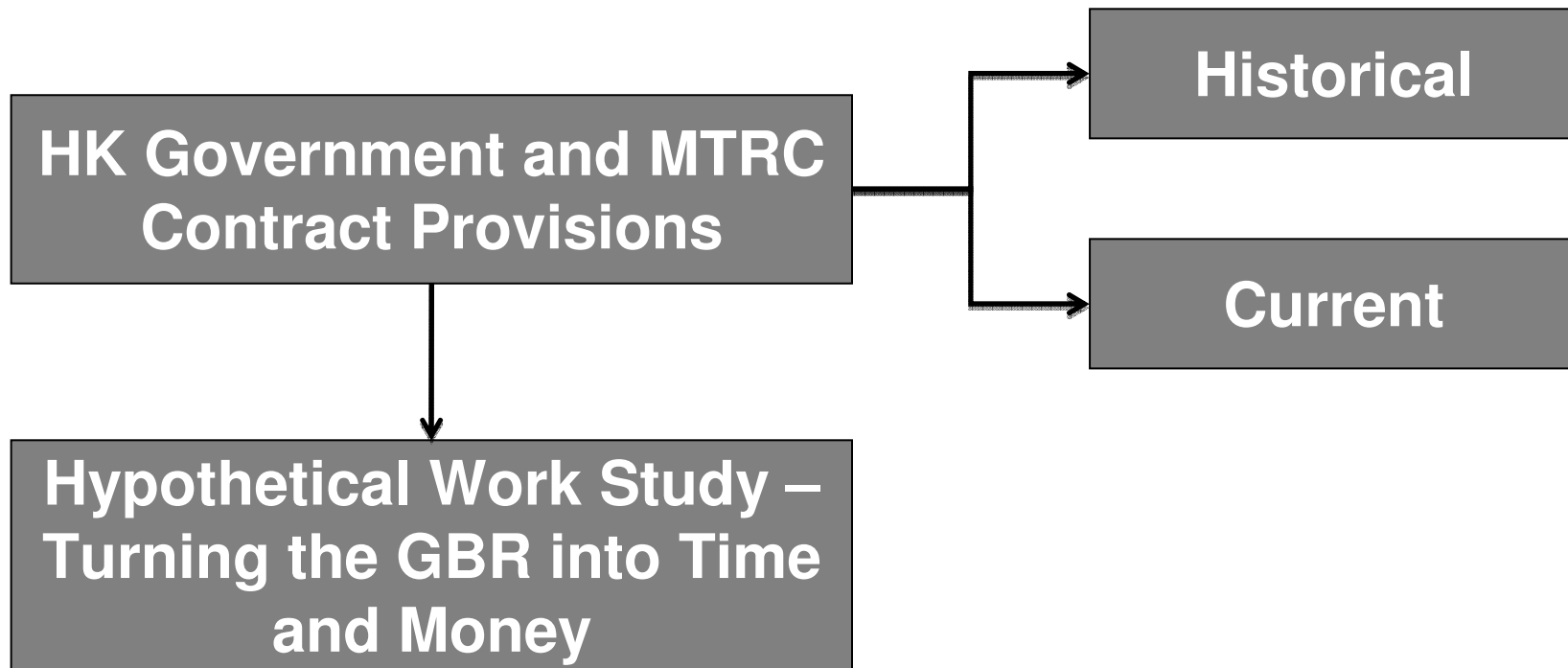
## AGS(HK) 1-day Seminar on Geotechnical Baseline Reports

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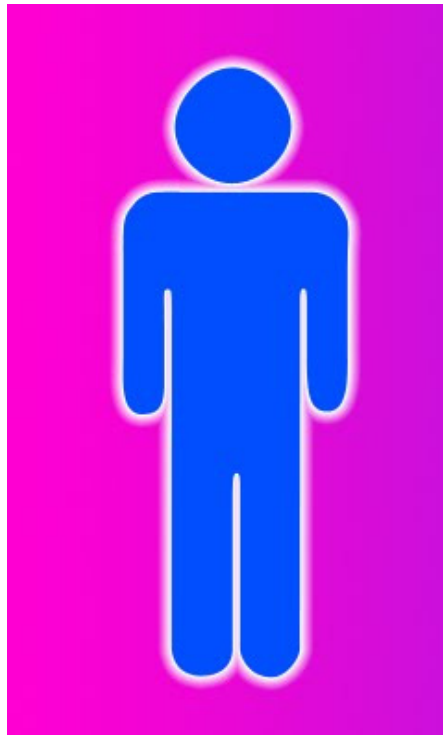
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# Road Map



# Historically... Adverse Ground Conditions



**MTRC**

**Diametrically Opposed**



**HKSAR**

## Historically...

### Hong Kong Government – GCC Clause 13

- ❏ Risk of unforeseen ground conditions is entirely with Contractor
- ❏ Even where the Contractor is misled by insufficient or inaccurate information
- ❏ Grove Report (1998) – *“Contractors regard this provision of GCC as the most repugnant of all”*

# Historically...

## MTRC – GCC Clause 38

- ❏ In line with international practice
- ❏ Risk of ground conditions accepted by the Employer if *“could not reasonably have been foreseen by an experienced contractor”*
- ❏ Objective degree of foresight on the Contractor which takes into account all the available sources of information
- ❏ Advantage of precise and competitive bid without high contingency

# A new dawn (or dead duck?)... The Geotechnical Baseline Report



# A new dawn...

## Background

### The Hong Kong Government

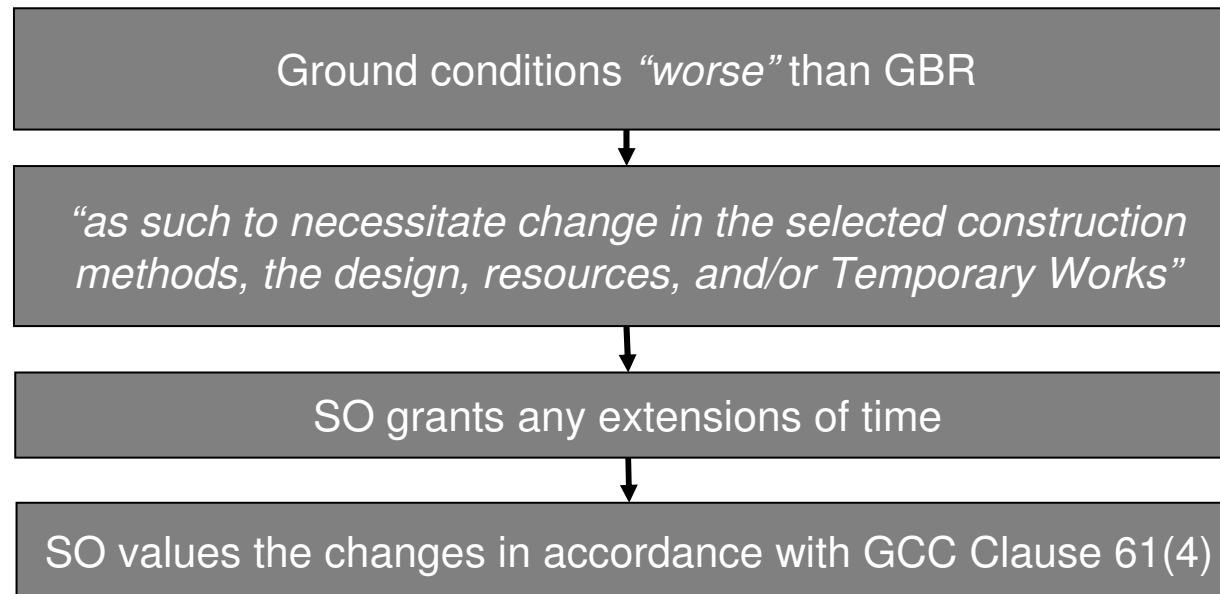
- ❏ Pilot scheme on Government piling project in late '90s – ended in arbitration!
- ❏ Used by DSD in 2007 on two major design and construction drainage projects

### The MTRC

- ❏ Used on all major infrastructure projects – WIL, XRL, SIL and SCL

# A new dawn... HK Government – How?

- Incorporated by Special Conditions of Contract which amend GCC Clause 13 to include a Differing Site Condition (DSC) Clause





## A new dawn...

# HK Government – Valuation: Clause 61

- ❏ Changes valued like a variation – so includes profit
- ❏ GCC Clause 61(4)(c) – use “*the Contract rates or prices as a basis for determination*” – so includes same pricing level as in the BQ (are the rates loaded?) and CPF
- ❏ GCC Clause 61(2) – valuation includes “*the Cost (if any) of any disturbance to, or prolongation of both varied and unvaried work*”

## A new dawn...

# HK Government – Pitfalls

- ❏ Gaps in GBR mean GCC Clause 13(1) applies and no claim
- ❏ What is the threshold for a ground condition being “*worse*” than the GBR?
- ❏ Suggested that if they “*necessitate a change in the selected construction methods, the design, resources and/or Temporary Works*” then the ground conditions are “*worse*”

## A new dawn...

# HK Government – Pitfalls

- Notice of claim is required within 7 days of it becoming “*apparent*” of the adverse ground conditions
- Some Supervising Officers have suggested that a “*necessitated change in resources*” does not include prolonged staff, site overheads or head office overheads

# A new dawn...

## MTRC – How?

- ❏ Clause 38 is retained and the GBR provides a baseline as to what *“could reasonably have been foreseen by an experienced contractor”*
- ❏ This is done by a *“bolt on”* provision in the Particular Specification – the wording varies between WIL, SIL and XRL
- ❏ The Engineer is required to take account of the GBR in making a decision as to whether the adverse conditions could reasonably have been foreseen

# A new dawn...

## MTRC – How?

- ❑ If the ground conditions are not addressed in the GBR then GCC Clause 38 operates independently of the GBR
- ❑ The test reverts back to whether the adverse ground conditions could reasonably have been foreseen by an experienced contractor

# A new dawn...

## MTRC – How?

Contractual Route	Conditions	Claim Type
Route 1	GBR does address the ground conditions	Foreseeability is based on GBR
Route 2	GBR does not address the ground conditions	Foreseeability is based on other information

# A new dawn...

## MTRC – Valuation: Clause 38

(1) *“...reasonable Cost of carrying out additional work done and additional Contractor’s Equipment... with a reasonable percentage addition ... of profit”*



(2) *“and the reasonable Cost incurred by the Contractor by reason of any delay and disruption of working suffered as a consequence of encountering the said conditions or obstructions”*

# A new dawn...

## MTRC – Pitfalls

- ❏ GBRs are not always a meaningful, reasonable or realistic interpretation of the available site investigation; examples are:
  - ❏ SPT 'N' values covering all possible values;
  - ❏ RQDs from 0 – 100%
  - ❏ Rockhead fixed with baseline higher than actually anticipated
- ❏ Contractor's assume more risk than would otherwise have been the case if there was no GBR



# Hypothetical Case Study: Step 1

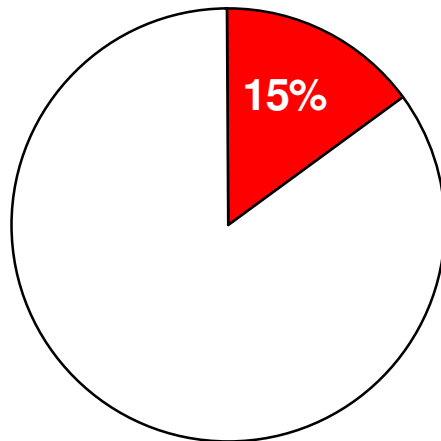
## Quantify Relevant GBR Parameters

- Percentage values;
- Maximum values;
- Minimum values;
- Average values; or
- Histograms of distribution values

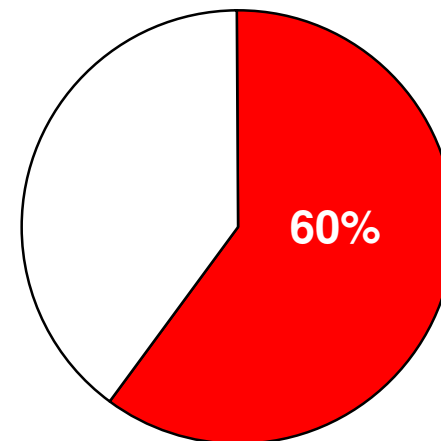
# Hypothetical Case Study: Step 2

## Compare GBR with Actual


GBR



Actual

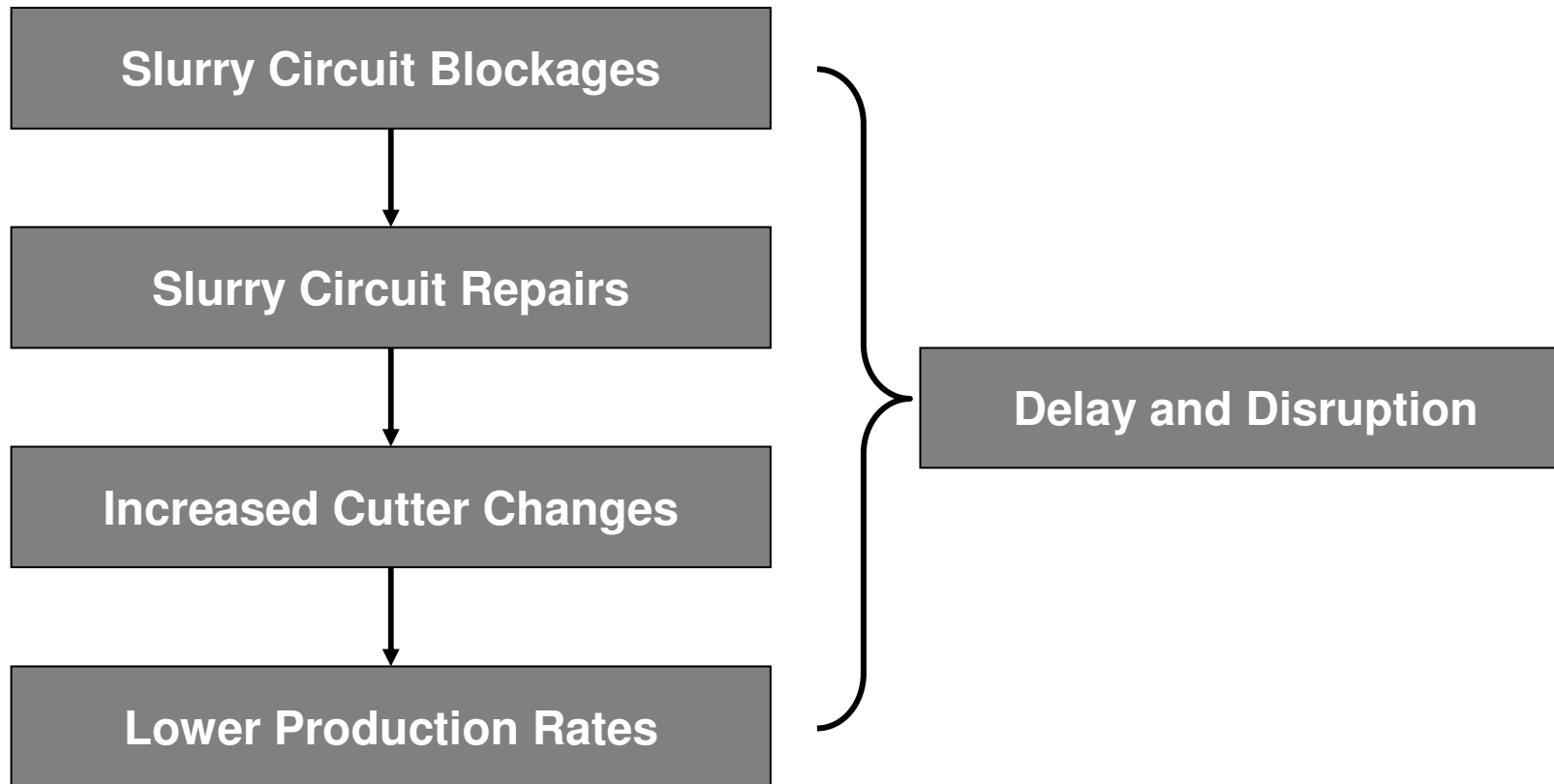


 **Adverse Ground Conditions**

-  300% increase in the extent of adverse ground conditions

# Hypothetical Case Study: Step 3

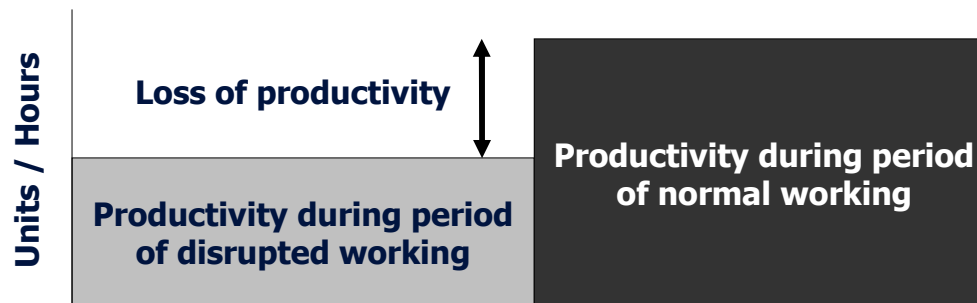
## Record Time Effects



# Hypothetical Case Study: Step 4

## Quantification: Measured Mile Approach

- Delay and disruption is normally calculated using a technique known as the measured mile



- The measured mile compares productivity during a period of normal working (the measured mile or yardstick) with a period of disrupted working

# Hypothetical Case Study: Step 4

## Quantification: Measured Mile Approach

- Independent of Works Programme
- Based on downtime and output actually achieved
- Based on agreed contemporaneous records
- Judicial support – *Whittal Builders v Chester – Le-Street DC* (1988)

# Hypothetical Case Study: Step 4

## Quantification: Measured Mile

<u>Item</u>	<u>Days</u>
➤ Actual time from records	A
➤ <u>Less</u> achievable time required for ground conditions in the GBR	(B)
➤ Delay	<hr/> C=A-B <hr/>

# Commercial Aspects of GBRs

## Conclusions

- ❏ GBRs provide innovative approach for allocation of risk
- ❏ However, GBRs in HK do not always provide a meaningful, reasonable and realistic interpretation of the site investigation data
- ❏ For Government – move away from the repugnant Clause 13
- ❏ For MTRC – Contractor's probably assume more risk

**Thank You**

# **Questions and Answers**