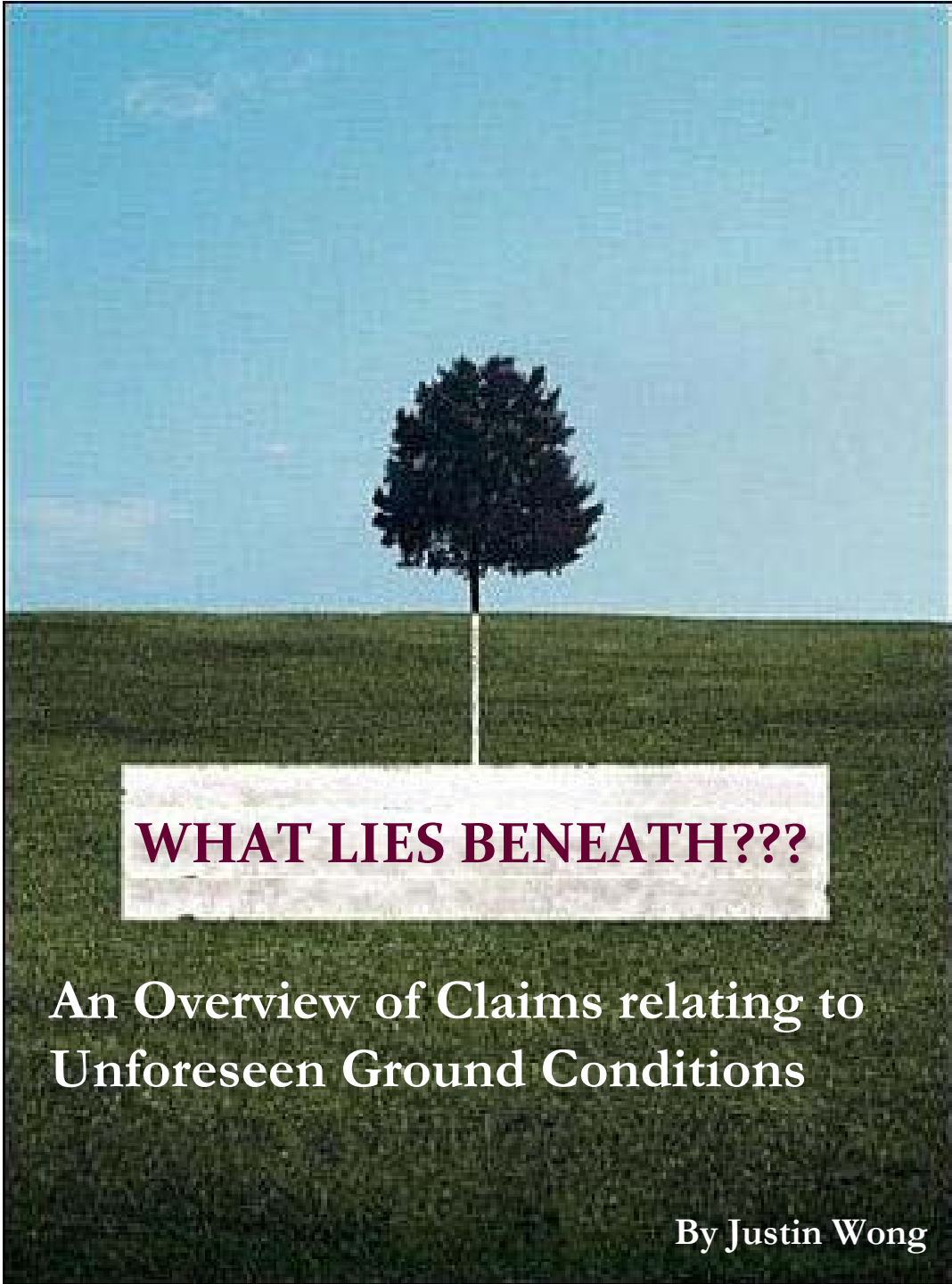


“What lies beneath???”

An Overview of Claims relating to Unforeseen Ground Conditions

Justin Wong | 22 June 2010 | HKIS



WHAT LIES BENEATH???

**An Overview of Claims relating to
Unforeseen Ground Conditions**

EC HARRIS
BUILT ASSET
CONSULTANCY

By Justin Wong

Content of Presentation

- Introduction
- Foreseeable, Unforeseen and Unforeseeable Events
- Ground Investigation (GI) Reports
- Standard Forms of Contract
- Common Law Position
- Issues arising from adverse ground conditions
- Recent Developments
- Conclusion

Introduction

Introduction

“Risk can be managed, minimized, shared, transferred or accepted...it cannot be ignored”

(Latham Report 1994)

“The ground is the place where things are most likely to go wrong during a construction project, and the worse the ground, the greater the risk”

(The Institution of Civil Engineers (ICE) (1991))

Who should be held responsible for such risk? Employer?
Contractor? Shared Risk?

Foreseeable, Unforeseen and Unforeseeable Events

Foreseeable, Unforeseen and Unforeseeable Events

Foreseeable

- capable of being anticipated or predictable.
- 'reasonably foreseeable' means 'whether a reasonable person foresees the results of an act'.



Foreseeable, Unforeseen and Unforeseeable Events (Cont'd)

Unforeseen



- what an experienced contractor can reasonably foresee with the aid of investigative measures (desk studies, site inspections and ground investigations).
- ground conditions are often 'unforeseen' because of incomplete assessment due to limited investigation, insufficient data available and limited resources.



Foreseeable, Unforeseen and Unforeseeable Events (Cont'd)

Unforeseeable

- a more 'risk-taking' process than 'unforeseen'
- relates to something that is technically beyond the contractor's control
- Cannot be completely eliminated (regardless of how experienced the contractor is and/or how much investigations they carried out)



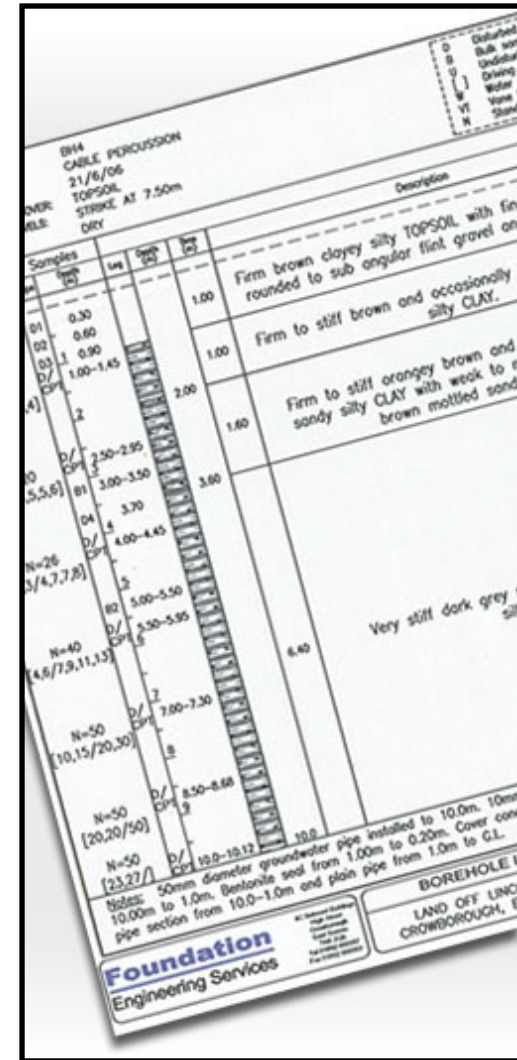
40 THE NEW YORKER, JANUARY 26, 2009

Ground Investigation(GI) Reports

Ground Investigation (GI) Reports

Ground investigations can never fully disclose all the details of the underground conditions. (Risks of unknown ground conditions can never be 100% eliminated)

- Site data contained in GI reports is often of a significant contractual importance in disputes related to unforeseen ground conditions
- Many disputes related to the information provided and/or representation made by the Employer.



Ground Investigation (GI) Reports (Cont'd)

Two common arguments raised by contractors

Whether the GI information forms part of the contract documents?

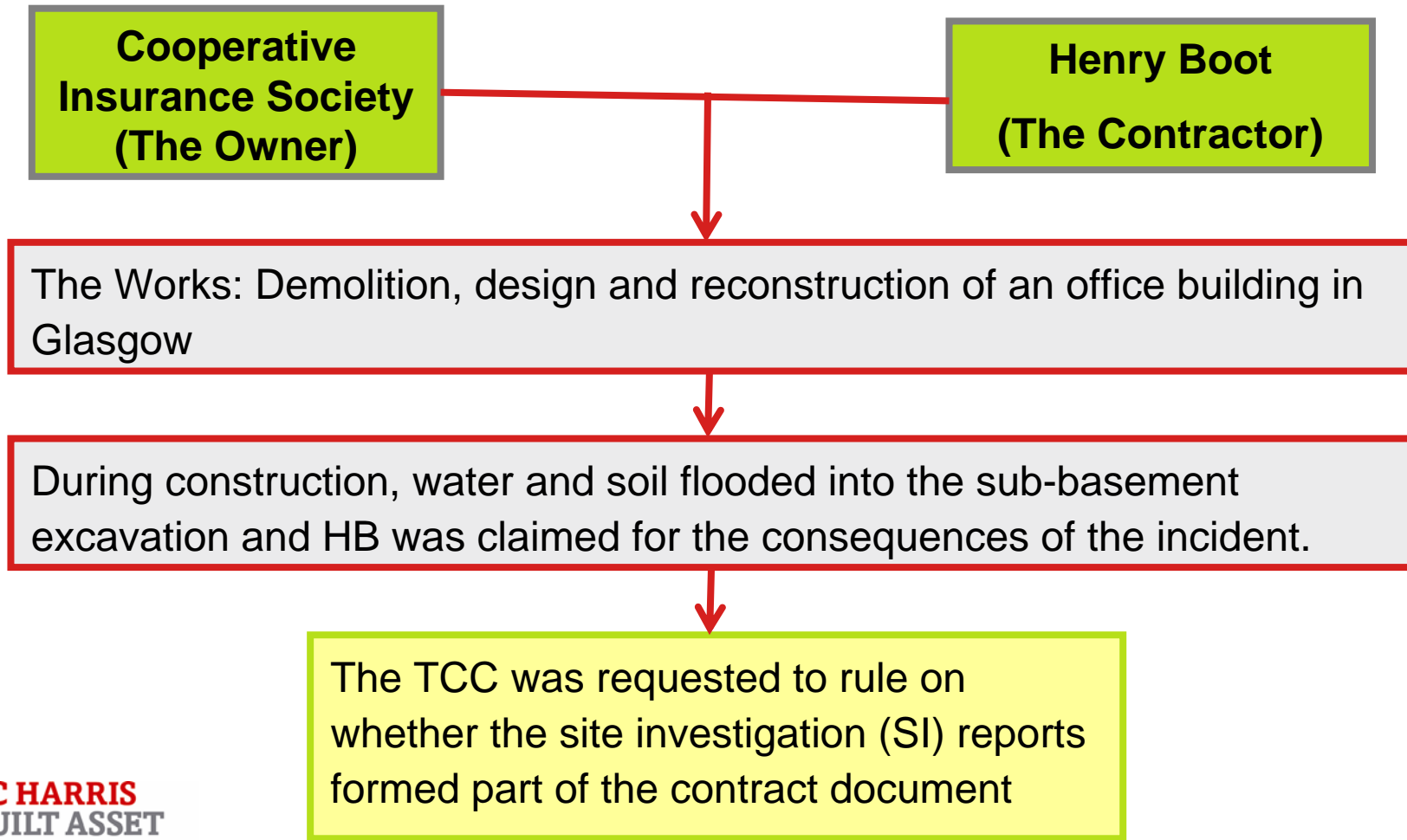
Whether information provided by the employer constitute a representation as to the true ground conditions?



Such matters were brought forward to the Technology and Construction Court (TCC) in England in 2002.

GI Information = Part of the Contract Documents?

Cooperative Insurance Society Limited v Henry Boot Scotland Limited and Others [2002] EWHC 1270 (TCC)



Cooperative Insurance Society Limited v Henry Boot Scotland Limited and Others [2002] EWHC 1270 (TCC) (Cont'd)



- The contract defined 'Contract Document' as:
- *'...the Contract Drawings, the Contract Bills, the Employer's Requirements, the Contractor's Proposals, the CDP Analysis, the Articles of Agreement and the Conditions, the Appendix and the Supplementary Appendix'*
- No reference to SI reports in the Contract.

Judge Richard Seymour Q.C. held: Such reports could not be incorporated into the contract by way of an implied term since it was not expressly incorporated as part of the contract document.

GI Information = Part of the Contract Documents? (Cont'd)

Bacal Construction v Northampton Development Corp. (1975) 8 BLR 88

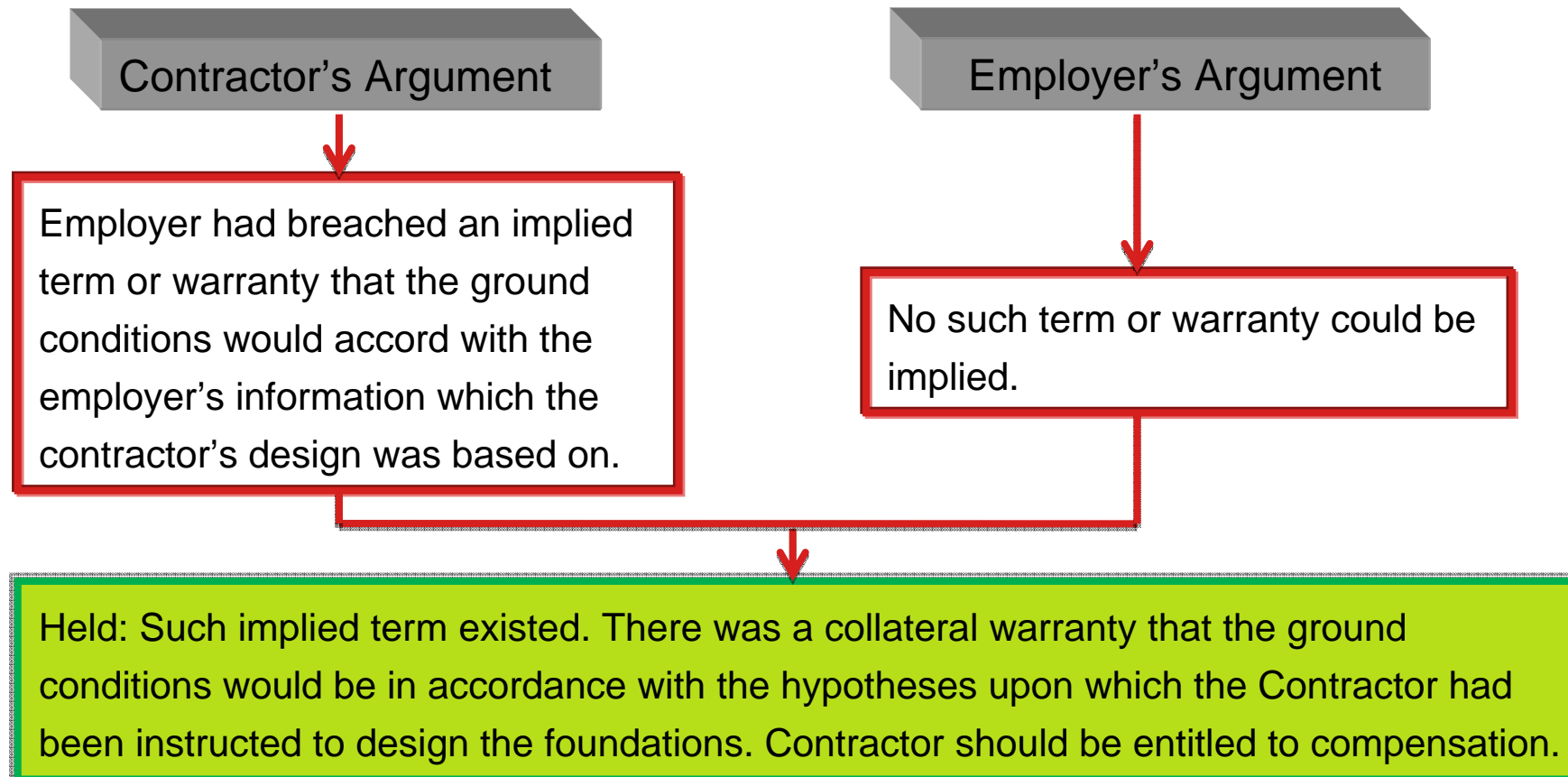


Bacal's foundation design was based on subsurface conditions / assumptions indicated in borehole data provided by the Employer

Bacal submitted the foundation design as part of its tender and formed part of the contract documentation under an express provision in the contract.

Sand & Clay turns out to be rock (different soil type) which caused part of the foundations to be re-designed where additional works were required.

Bacal Construction v Northampton Development Corp. (1975) 8 BLR 88 (Cont'd)



Contractors may recover loss incurred by incorrect subsoil information if such information was a condition or warranty in the contract.

GI Information = Part of the Contract Documents? (Cont'd)

Cooperative Insurance Society Ltd v Henry Boot [2002]

The site investigation report was not expressly incorporated as part of the contract document

No Entitlement ☹️

Bacal Construction v Northampton Development (1975)

The foundation design formed part of the contract document under an express provision.

Entitlement 😊

Any SI documents must be expressly incorporated as part of the contract document in order for the Contractor to exercise his rights under the contract (implied term or warranty).

Employer's Information = Representation as to Ground Conditions?

“The Courts are obviously disinclined to allow a party to make a groundless misrepresentation without accepting liability for the consequences.”

(Abrahamson's 'Engineering Law and the I.C.E. Contracts', 4th Edition)

CIS v Henry Boot Ltd and Others [2002] EWHC 1270 (TCC)

- Whether SI reports constituted 'Employer's Representation' that the actual groundwater levels were those contained in the report, in which the Contractor could reasonably rely on?

Held:

- A disclaimer stated that the SI report only provided an average band of groundwater levels taken from the boreholes. The SI report did not contain any statement sufficiently definite and unqualified to constitute a representation of the actual groundwater level across the site.

Employer's Information = Representation as to Ground Conditions?

(Cont'd)

In practice, it would be difficult to hold the employer liable for misrepresentation for statements contained in SI reports, particularly when the reports contain disclaimers.

However, there are cases where Employer was made liable for making misrepresentations of the work.

- *Howard Marine & Dredging Co. Ltd. v A. Ogden & Sons (Excavations) Ltd. (1978) 2 All ER 1132 C.A.*
- *Pearson and Son Ltd. v Dublin Corporation (1907) AC 351*

Employer's Misrepresentation

Howard Marine & Dredging Co. Ltd. v A. Ogden & Sons (Excavations) Ltd. (1978) 2 All ER 1132 C.A.

- Dumping of excavated clay at sea using barges.
- Plaintiff's manager told Defendant that their barges could carry 1,600 tonnes (based on his memory of the Lloyd's Register), while he was aware that the shipping documents stated the correct figure as 1,055 tonnes.
- Defendant hired the barges based on Plaintiff's figure (1,600 tonnes).



Employer's Misrepresentation

Howard Marine & Dredging Co. Ltd. v A. Ogden & Sons (Excavations) Ltd. (1978) 2 All ER 1132 C.A. (Cont'd)

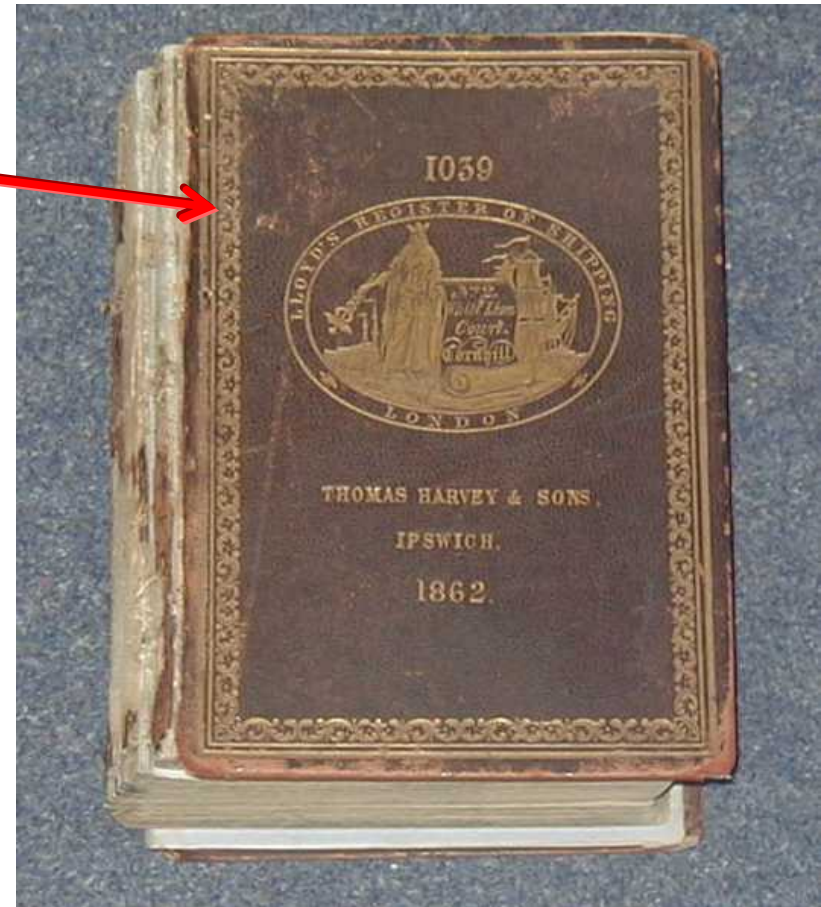
- The Lloyd's Register turned out to be incorrect.
- When the barges proved to be insufficient for the job, Defendant refused to pay the full price.
- Plaintiff terminated the agreement and sued for the outstanding payment.
- Defendant made a counter-claim for breach of collateral warranty and negligent misrepresentation by the Plaintiff's manager.



Employer's Misrepresentation

Howard Marine & Dredging Co. Ltd. v A. Ogden & Sons (Excavations) Ltd. (1978) 2 All ER 1132 C.A. (Cont'd)

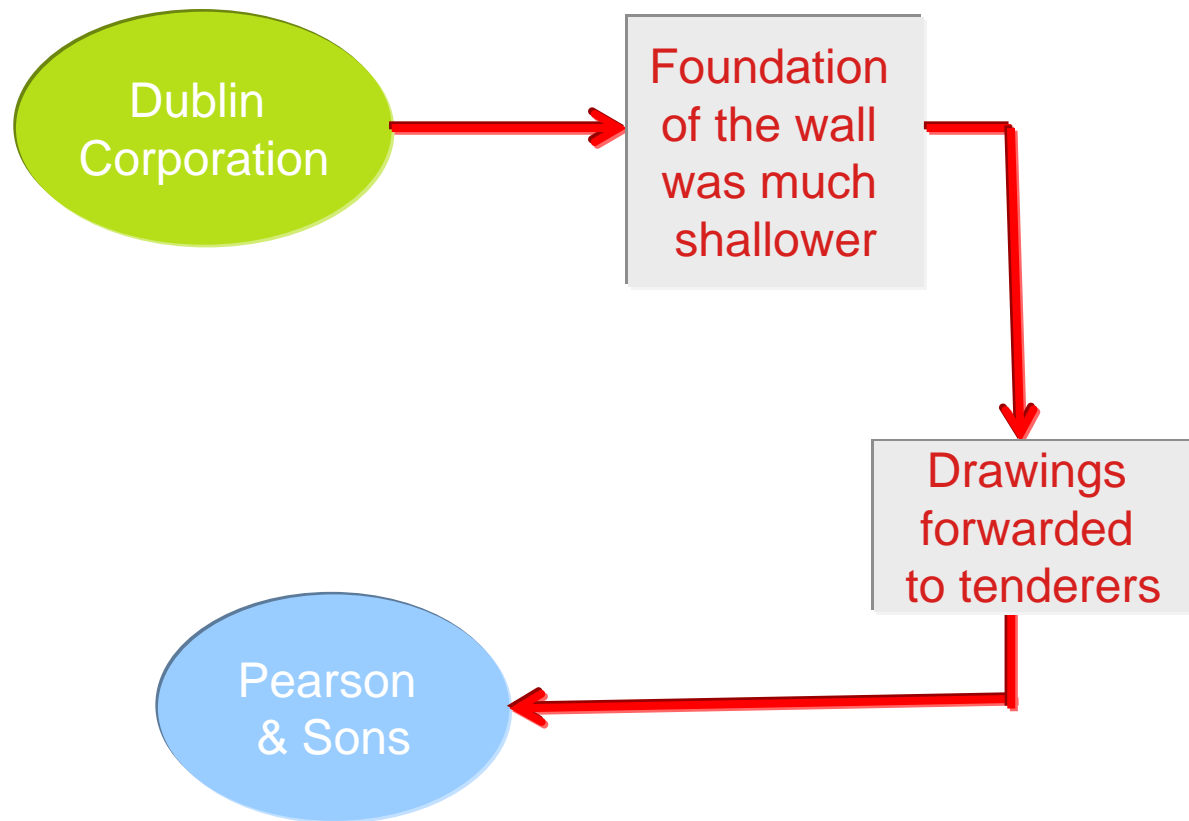
- Plaintiff argued that they had reasonable grounds to believe in their false statement because the Lloyd's Register was the 'Bible'.
- CoA held: Plaintiff liable for breach of duty under Sec. 2(1) Misrepresentation Act 1967. Plaintiff had failed to prove that he had reasonable grounds for belief in the truth of the statement.
- Reliance on the Lloyd's Register was insufficient when the correct figure was in documentation in the Employer's possession.



Employer's Misrepresentation

Pearson and Son Ltd v Dublin Corporation (1907) AC 351

- Engineer showed a wall on the drawings going 9-feet below ground, while aware that it actually did not go down to such depth.
- Engineer knew when preparing the drawings that if the tenderer knows about the true depth of the wall, the tender price would be substantially increased.



Tender was won by P&S at a lower price than they would have offered if they knew the true depth of the wall.

Employer's Misrepresentation

Pearson and Son Ltd v Dublin Corporation (1907) AC 351(Cont'd)

Action for
Fraud

Engineer relied on a clause which stated that the contractor should satisfy himself as to *'the dimensions, levels and nature of all existing works'*, and that Employer should not be responsible for the accuracy of the information given.

- Lord Atkinson: *"...a clause, deliberately introduced into a contract by a party to the contract, designed beforehand to save him from all liability for a false representation made recklessly and without any belief in its truth, is as much 'conceived in fraud' as if the representation had been false to the knowledge of the person who made it..."*
- House of Lords held that such clause was no defence to the liability to the contractor when the details in the drawings provided were in fact misrepresentation.

Standard Forms of Contract

Standard Forms of Contract

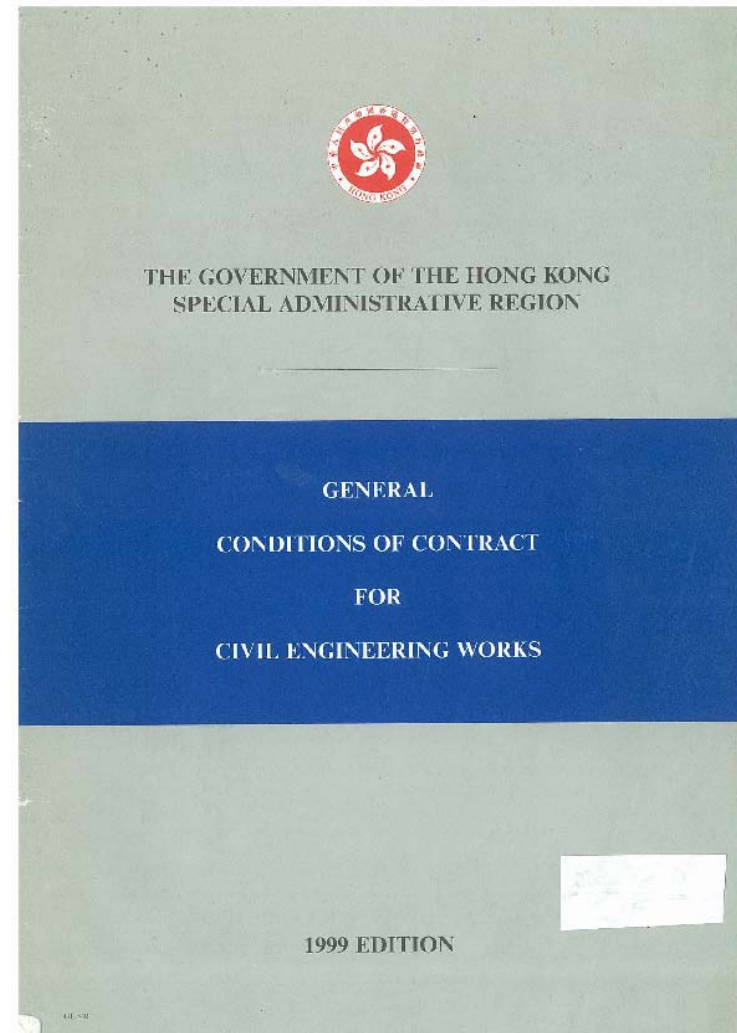
“...only Hong Kong and Malaysia allocate risk of unforeseen ground conditions solely to the contractor.”

(Fenn, International Construction Law Review 439 (2000))

- Typical wordings contained in Standard forms of contract: *“...the Contractor shall be deemed to have visited the site and satisfied himself that he has allowed in his price for everything necessary for the completion of the Works”.*

Government GCC Form

- The Hong Kong Government General Conditions of Contract (GCC) for civil engineering or building works.
- GCC Clause 13 - inspection of site
- GCC Clause 15 - unforeseen underground utilities



Government GCC Form (Cont'd)

GCC Clause 13(1) states:

“(1) The Contractor shall be deemed to have examined and inspected the Site and its surroundings and to have satisfied himself, before submitting his Tender, as regards existing roads or other means of communication with and access to the Site, the nature of the ground and sub-soil, the form and nature of the Site, the risk of injury or damage to property, the nature of materials (whether natural or otherwise) to be executed, the nature of the work and materials necessary for the execution of the Works, the accommodation he may require and generally to have obtained his own information on all matters affecting his Tender and the execution of the Works.”

Government GCC Form (Cont'd)

GCC Clause 13(2) states:

“(2) No claim by the Contractor for additional payment shall be allowed on the ground of any misunderstanding in respect of the matters referred to in sub-clause (1) of this Clause or otherwise or on the ground of any allegation or fact that incorrect or insufficient information was given to him by any person whether in the employ of the Employer or not or of the failure of the Contractor to obtain correct and sufficient information, nor shall the Contractor be relieved from any risk or obligation imposed on or undertaken by him under the Contract or any such ground or on the ground that he did not or could not foresee any matter which may in fact affect or have affected the execution of the Works.”

Government GCC Form (Cont'd)

- No remedy on the grounds of inaccurate information provided or unforeseeability.
- Contractors were expected to satisfy themselves as to the nature of the ground (and underground) conditions before submitting the tender.

Primary reasons in imposing most of the risks on the contractors under GCC:

- Fix costs at the outset
- Final contract sum only subject to variations and other conventional adjustments
- Increase price certainty and better cost savings

...but does it work in practice??

Underground Utilities under the GCC

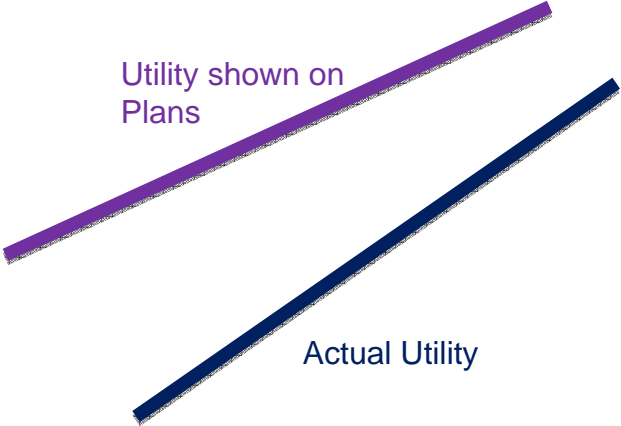
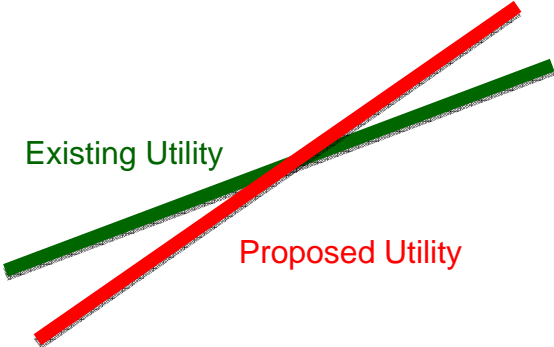
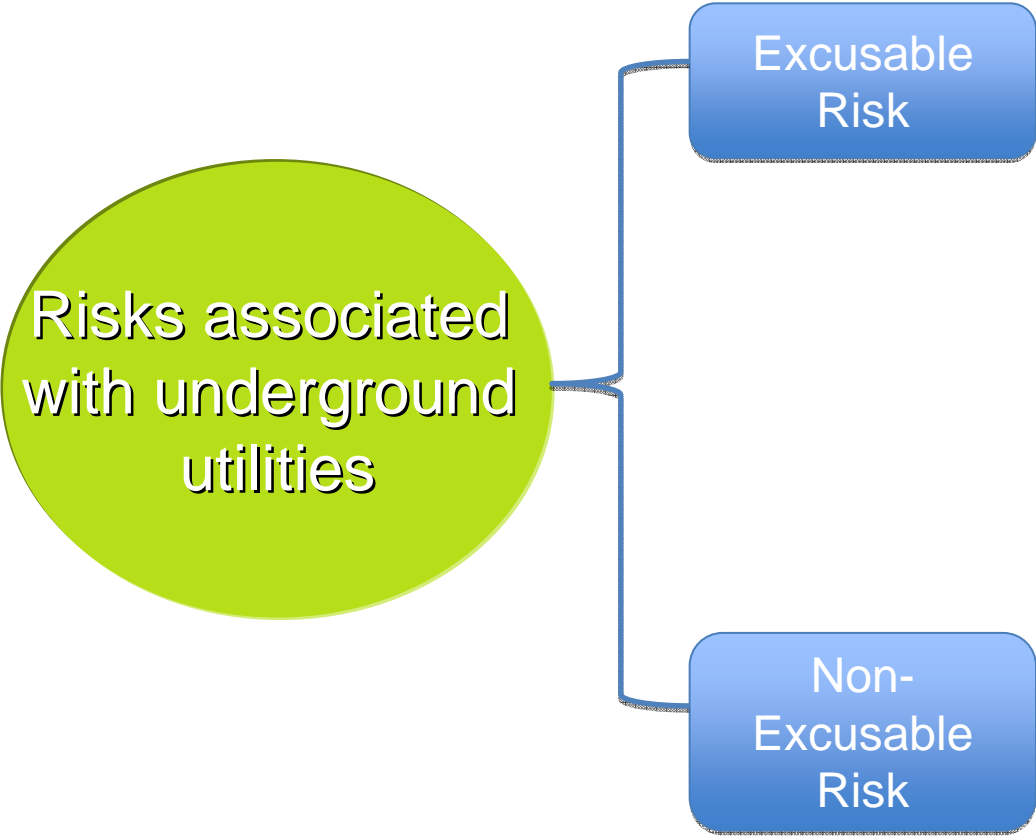
“The lack of accurate as-built records of some existing underground utilities ...has an adverse impact in project delivery”.

(Tang Report - “Construct for Excellence” dated January 2001)

- Possibility and probability of unforeseen ground utilities can never be ruled out during design stage, even with extensive GI works.
- Worse in civil engineering projects than building works.



Underground Utilities under the GCC (Cont'd)



Underground Utilities under the GCC (Cont'd)

GCC Clause 15 states:

“Save in so far as it is legally or physically impossible the Contractor shall execute the Works in strict accordance with the Contract to the satisfaction of the Engineer and shall comply with and adhere strictly to the Engineer’s Instructions on any matter related to the Contract whether mentioned in the Contract or not.”

...so what do ‘Physically Impossible’ and ‘Legally Impossible’ mean?

Underground Utilities under the GCC (Cont'd)

“Physically Impossible”

...not when the works were unexpectedly difficult or unexpectedly expensive

...but when the works cannot be carried out in the manner as originally designed.

“Legally Impossible”

...Contractor has no legal rights to touch any utilities that were not part of the works.

Underground Utilities under the GCC (Cont'd)

GCC Clause 63(d) states:

“If...the Surveyor is of the opinion that the Contractor has been or is likely to be involved in expenditure for which the Contractor would not be reimbursed by a payment...by reason of the progress of the Works... materially affected by:

(d) delay caused by any person or any company, not being a utility undertaking, engaged by the Employer ...

then the Surveyor shall ascertain the Cost incurred and shall certify in accordance with Clause 79”.

Note: Utility undertakings are rarely engaged by the Employer / Government.

Underground Utilities under the GCC (Cont'd)

Relocation / diversion work not performed within a reasonable period by the utility undertaker...

Time

Contractor can claim for EOT under GCC Clause 50(1)(b)(ix)

Cost

Contractor has to bear the financial consequences of such non-performance.

Contractor cannot claim for expenditure arising from disturbances to the works caused by utility undertakers not engaged by government under Clause 63(d)

Underground Utilities under the GCC

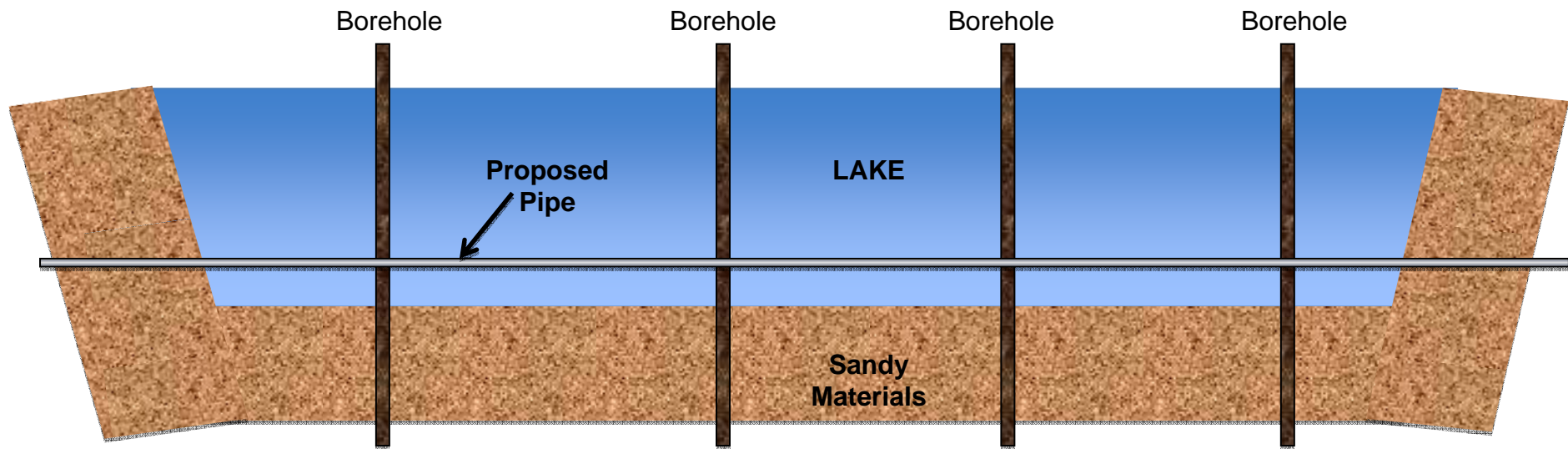
Has the government ever paid for the risk of uncharted utilities?

- In April 2000, the government paid the contractor a substantial amount under the North and South Kowloon Sewerage (Stage I, Phase II) project for the costs incurred due to uncharted utilities.
- Paper prepared for the Public Works Subcommittee stated that
“...the locations of most of the buried utilities were found to deviate substantially from those shown on record drawings. Many were found causing direct obstruction to the planned new sewers...”
- Government’s general approach has been transferring most the risk of uncharted utilities to contractors.

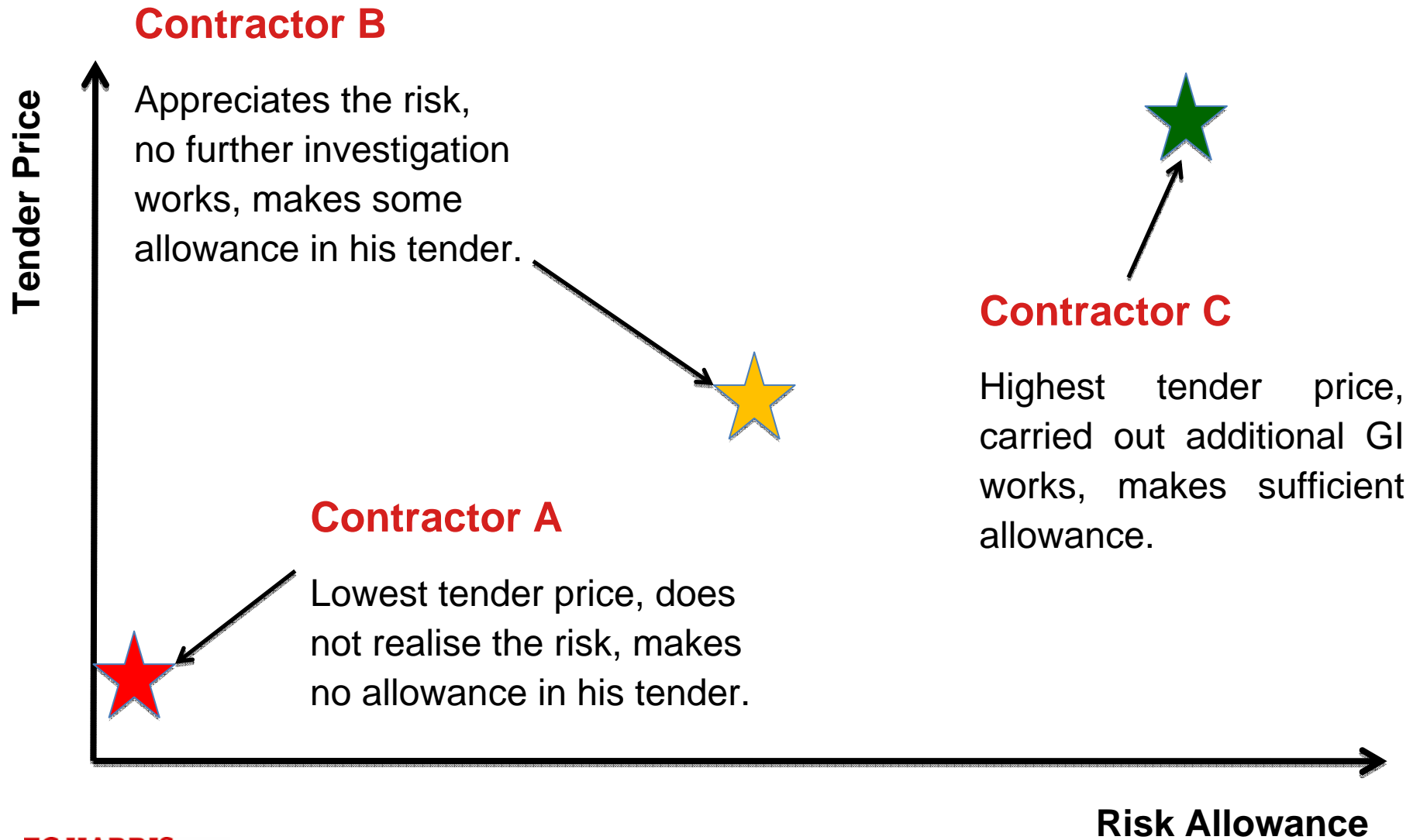
Downside of transferring all risks to Contractor

Example

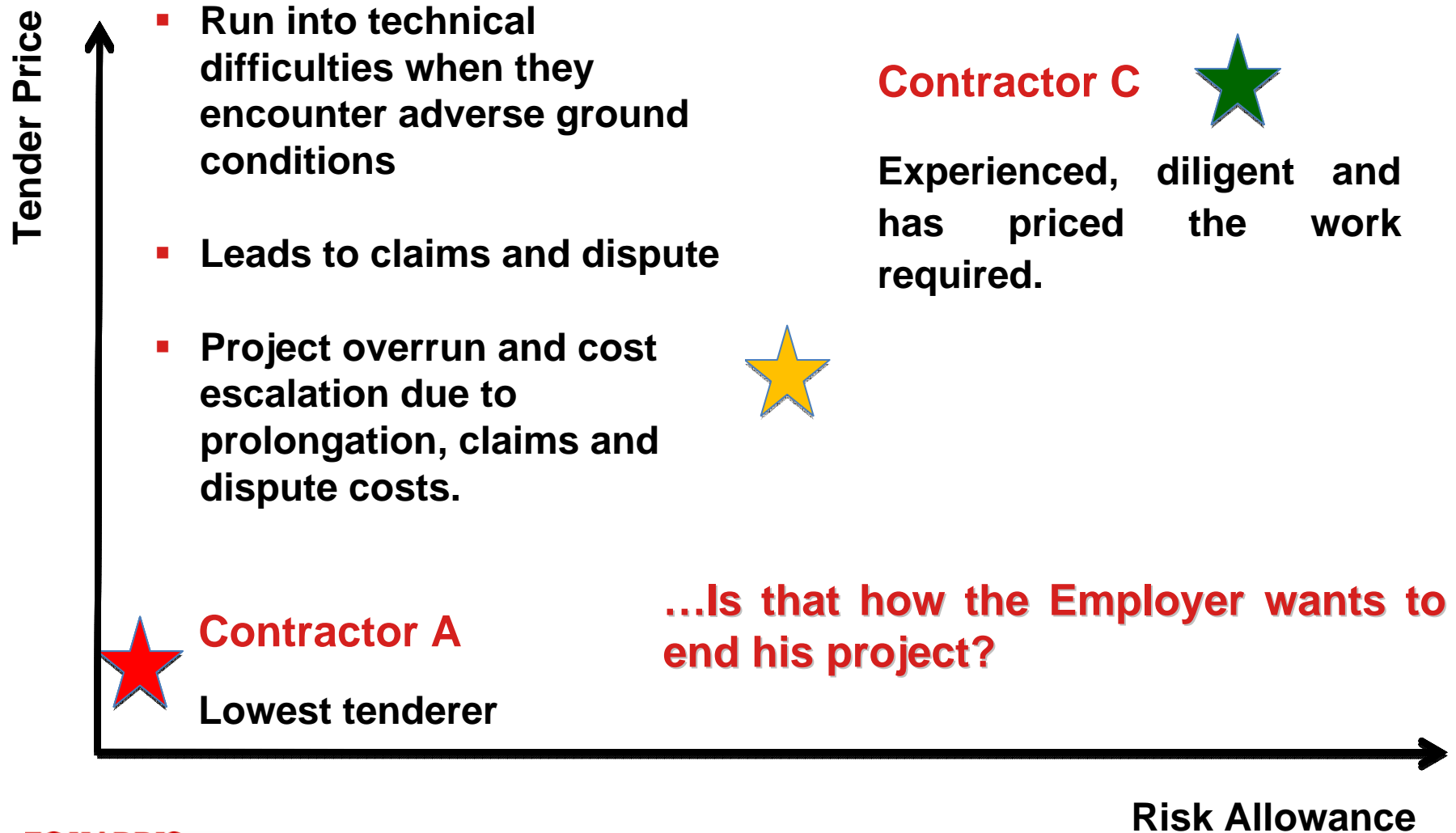
- Project involves the construction of a drainage pipe across the bed of a lake underwater.
- Borehole information shows sandy materials across the site.
- Contract places all the ground risks on the contractor.



Downside of transferring all risk to Contractor (Cont'd)



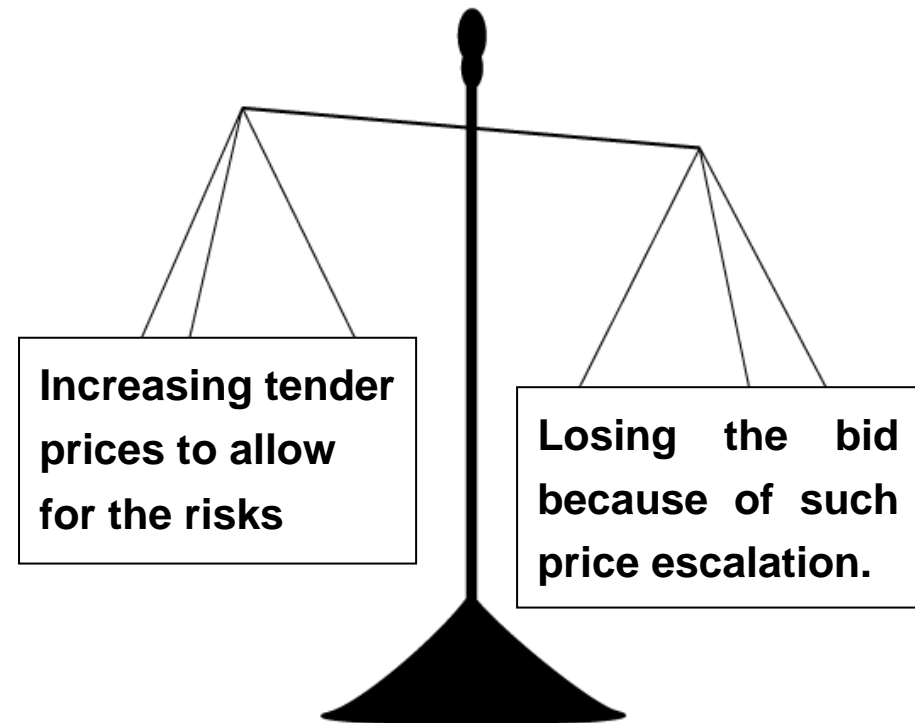
Downside of transferring all risk to Contractor (Cont'd)



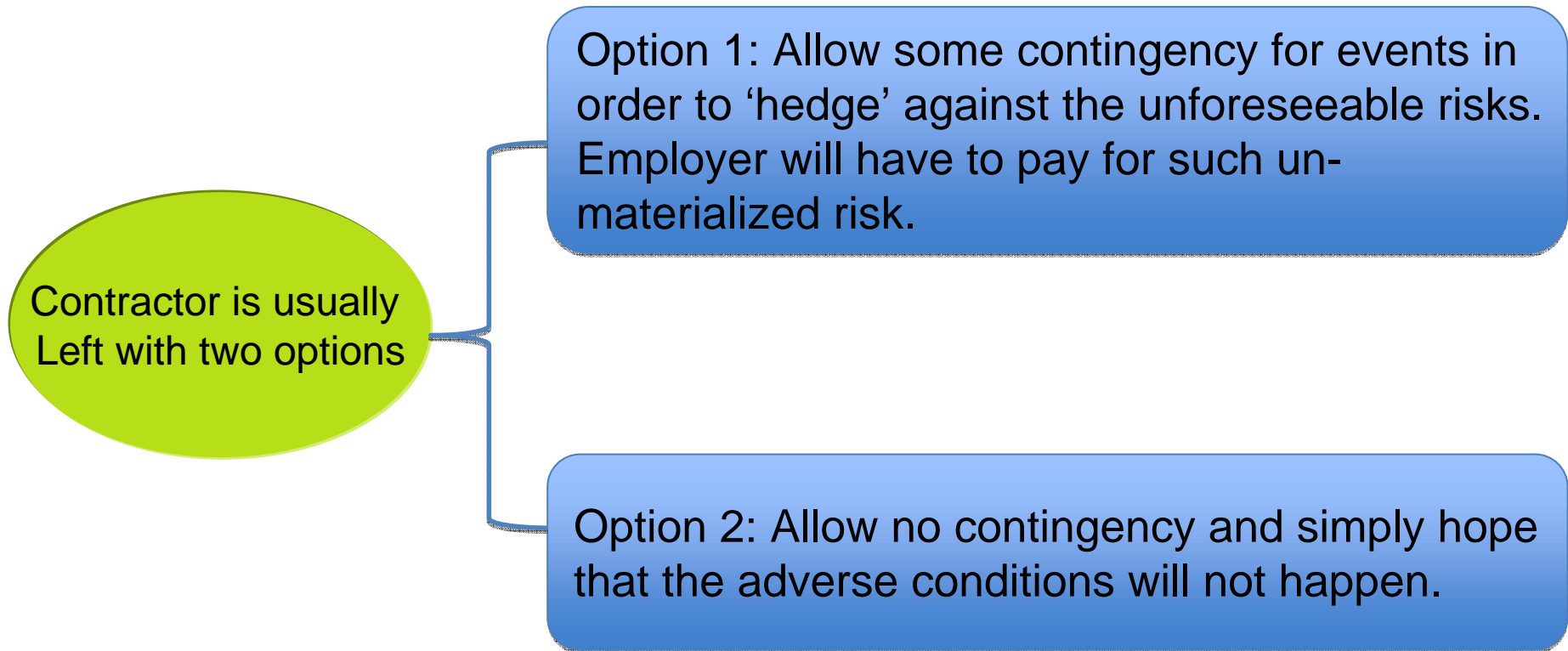
The Grove Report

In March 1998, Jesse B. Grove carried out an independent review of the GCC with respect to risk allocation, public finance and international practice.

“GCC Cl. 13 places the risk of unforeseen and unforeseeable sub-surface conditions (and other risks) on the contractor regardless of whether the contractor was misled by insufficient or inaccurate information given to him by the Government...”

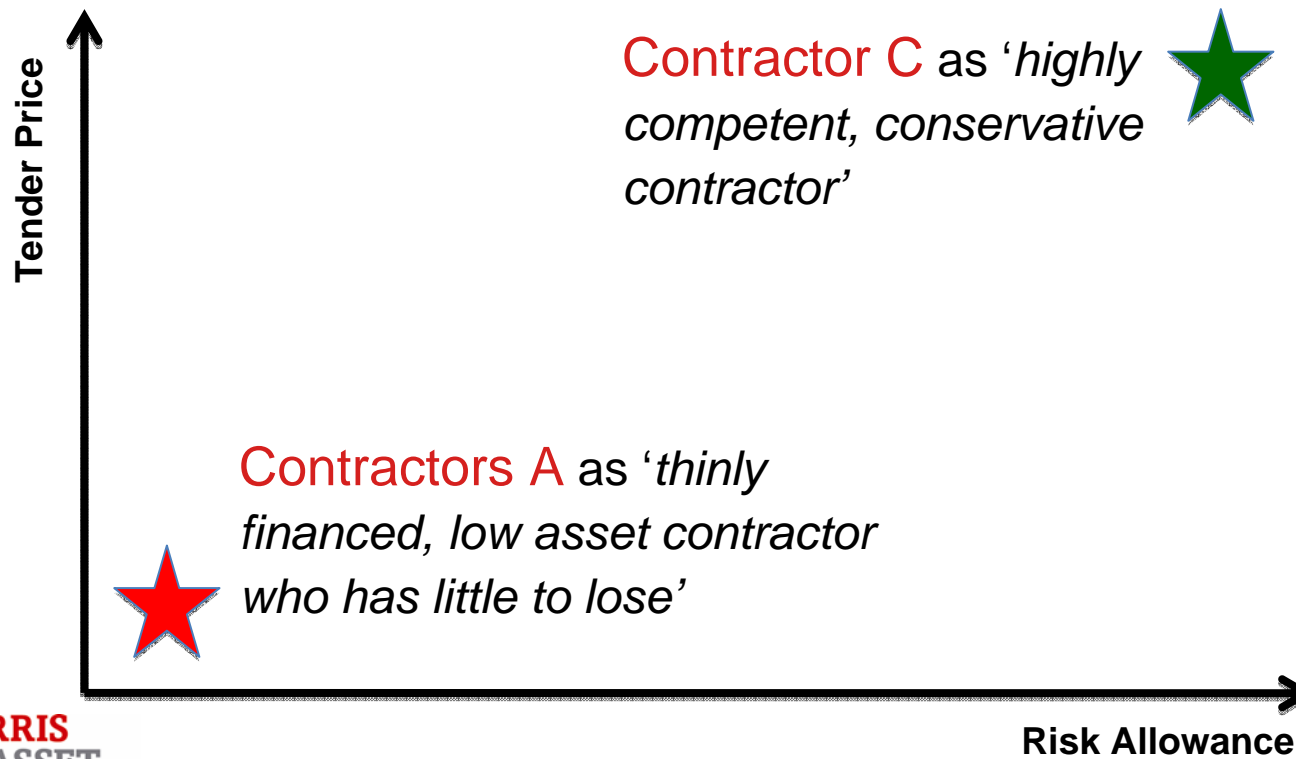


The Grove Report (Cont'd)



The Grove Report (Cont'd)

“The real disadvantage to the employer of forcing the risk of the unforeseeable on the contractor is that contractors who are gamblers and claims artists will predominate among the winners of contract awards”



The Grove Report (Cont'd)

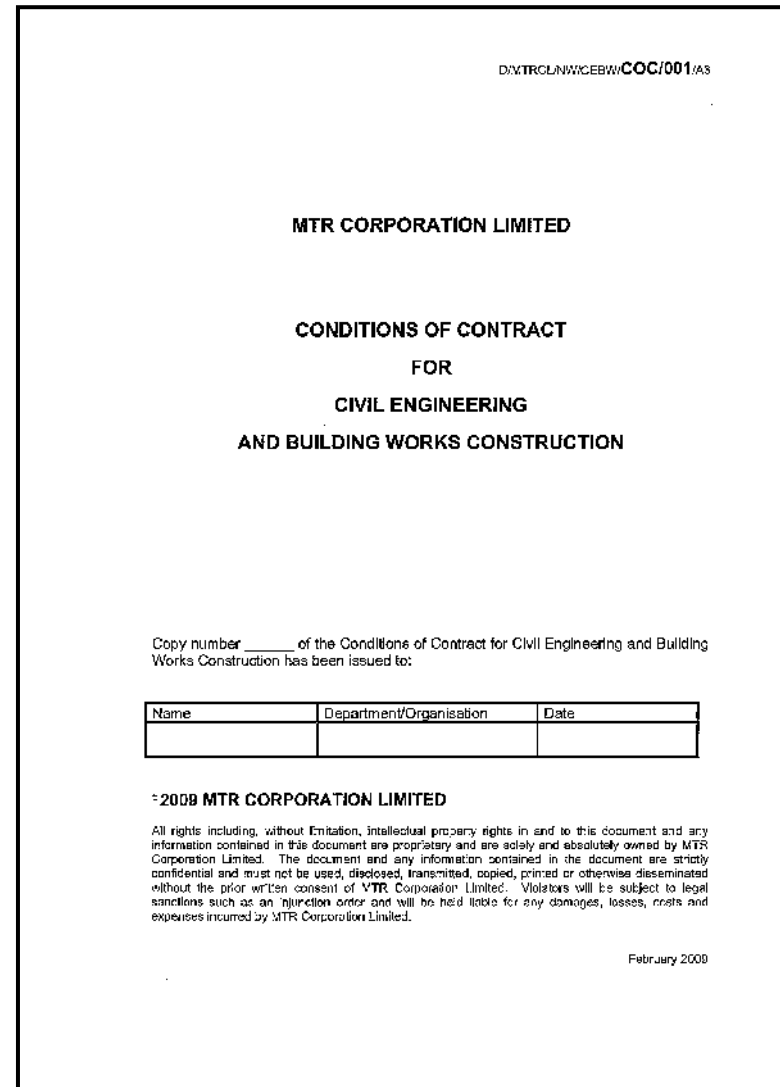
“...Risks should be best borne by the party who gains the long-term benefits of the project, namely the Employer...”

- Such recommendation is in line with the international practice on allocation of risk of unforeseen conditions.
- Recommendations not included in the revised GCC 1999.

MTRC Form

- The most equitable form of contract currently used in Hong Kong, which reflect the international opinion on the risk allocation for ground conditions and obstructions.
- Nature of works usually undertaken under these forms (e.g. tunneling and underground structures).


	MTRC Form
Notice of Physical Conditions / Artificial Obstructions	Cl. 38.1
Engineer’s Response to Contractor’s Notice	Cl. 38.2
Engineer’s Decision to Contractor’s claim on Additional Time and/or Payment	Cl. 38.3 & 38.4



MTRC Form (Cont'd)

Clause 38.1:

“If however during the Execution of the Works the Contractor shall encounter within the Site physical conditions (other than weather conditions or conditions due to weather conditions) or artificial obstructions which conditions or obstructions he considers could not reasonably have been foreseen by an experienced contractor at the date of the Letter of Clarification...he shall...if practicable or as soon as possible thereafter...specify in the notice under Clause 82...

- 
- Physical conditions and/or artificial obstructions encountered
 - Details of the anticipated effects
 - Measures the Contractor is taking or is proposing to take
 - Extent of anticipated delay in or interference with the Execution of the Works

MTRC Form (Cont'd)

Clause 38.2:

“Following receipt of a notice under Clause 38.1...the Engineer may if he think fit:-

- (a) Require the Contractor to provide an **estimate** of the Cost of the measures he is taking or is proposing to take;*
- (b) Approve in writing such **measures** with or without modification;*
- (c) Give written **instructions** as to how the physical conditions or artificial obstructions are to be dealt with; or*
- (d) Order a **suspension** under Clause 72 or a **Variation** under Clause 79.*

MTRC Form (Cont'd)

Clause 38.3:

*“...the Engineer shall decide...physical conditions or artificial obstructions could not reasonably have been foreseen by an experienced contractor at the date of the Letter of Clarification, the Engineer shall...determining any **extension of time** to which the Contractor is entitled under Clause 68.1.*

*...Engineer shall assess such sum as represents the **reasonable Cost** of carrying out any additional work done and additional Contractor's Equipment used...together with a reasonable percentage addition in respect of profit...”*

Clause 38.4:

*“If the Engineer shall decide that the physical conditions or artificial obstructions could have been **reasonably foreseen by an experienced contractor** at the date of the Letter of Clarification, he shall so inform the Contractor in writing as soon as he shall have reached that decision...”*

Hong Kong Airport Authority (HKAA) Form

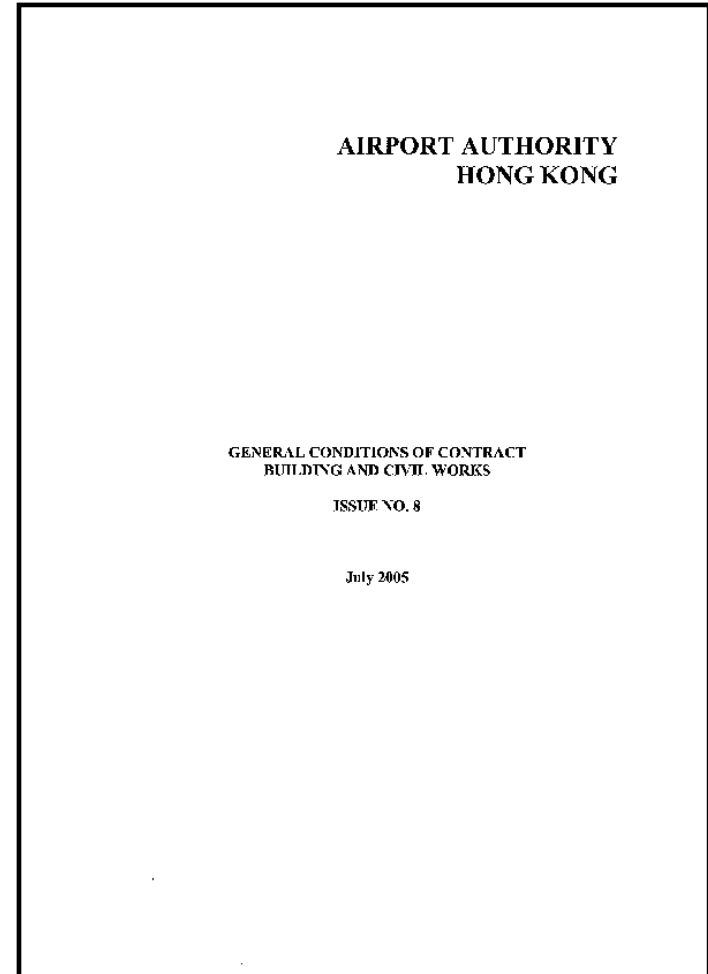
Clause 13.1:

“The Contractor shall be deemed prior to the date of the Letter of Acceptance to have:

- a) inspected the Project Site and its surroundings and examined all information in connection with the Works made available to the Contractor...*
- b) obtained for himself all other necessary information in connection with the Works and his obligations;*
- c) satisfied himself as to the form and nature of the Project Site including its substrata,...”*

Clause 13.2:

“The Contractor shall be deemed prior to the date of the Letter of Acceptance... to have allowed a correct and sufficient Tender Total and rates and prices included in the Pricing Document to cover all his obligations...”



HKAA Form (Cont'd)

Clause 13.3:

“The Employer shall have no obligation to make additional payment and the Project Manager shall have no obligation to grant any extension of time on the ground of:

(a) any misunderstanding or misapprehension in respect of (the Project Site and its surroundings)

(b) ...incorrect or insufficient information given to the Contractor...

(c) the Contractor failing to obtain correct and sufficient information,

nor....on the ground that the he did not or could not foresee any matter which may in fact affect or have affected the obligations...”

Contractor cannot claim any EOT or additional payment on the basis of misunderstanding of the site or incorrect / insufficient information provided.

HKAA Form (Cont'd)

However, the HKAA Form provides some relief for contractors when encountering physical condition or artificial obstructions (Clause 13.4 to 13.7), under a similar approach to the MTRC Form).

Clause 13.4
Notice of Physical Conditions / Artificial Obstructions

Clause 13.5
PM's response to the Cl.13.4 Notice

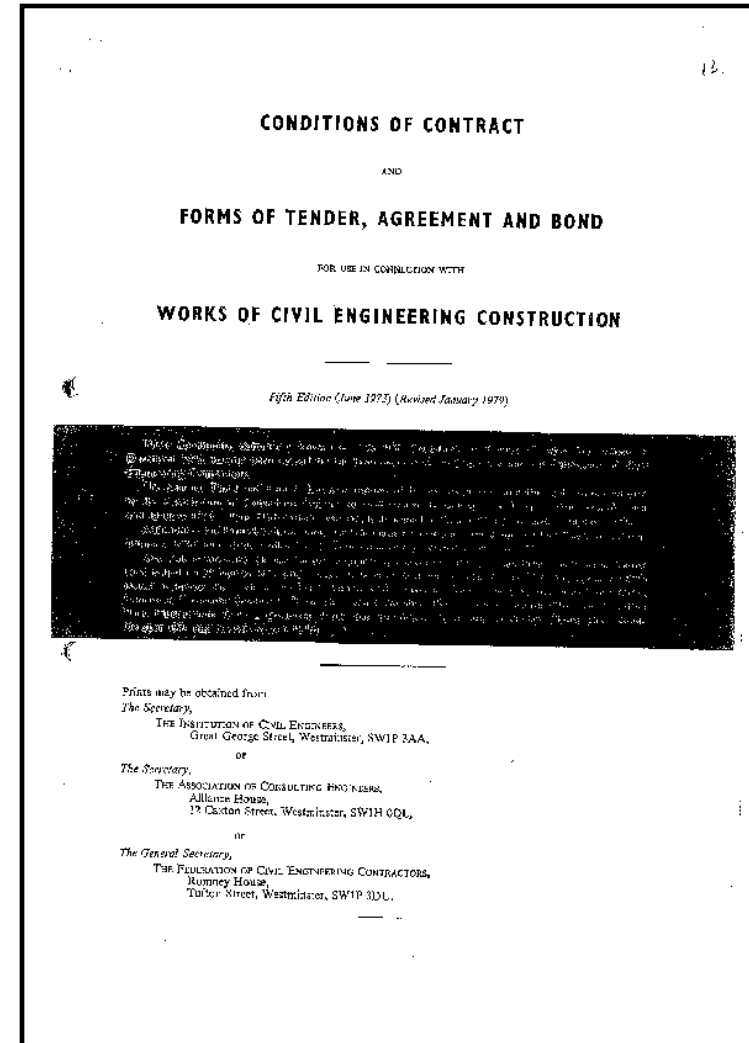
Clause 13.6 & 13.7
PM's decision to Contractor's claims on additional time and/or payment

The Institution of Civil Engineers (ICE) Form

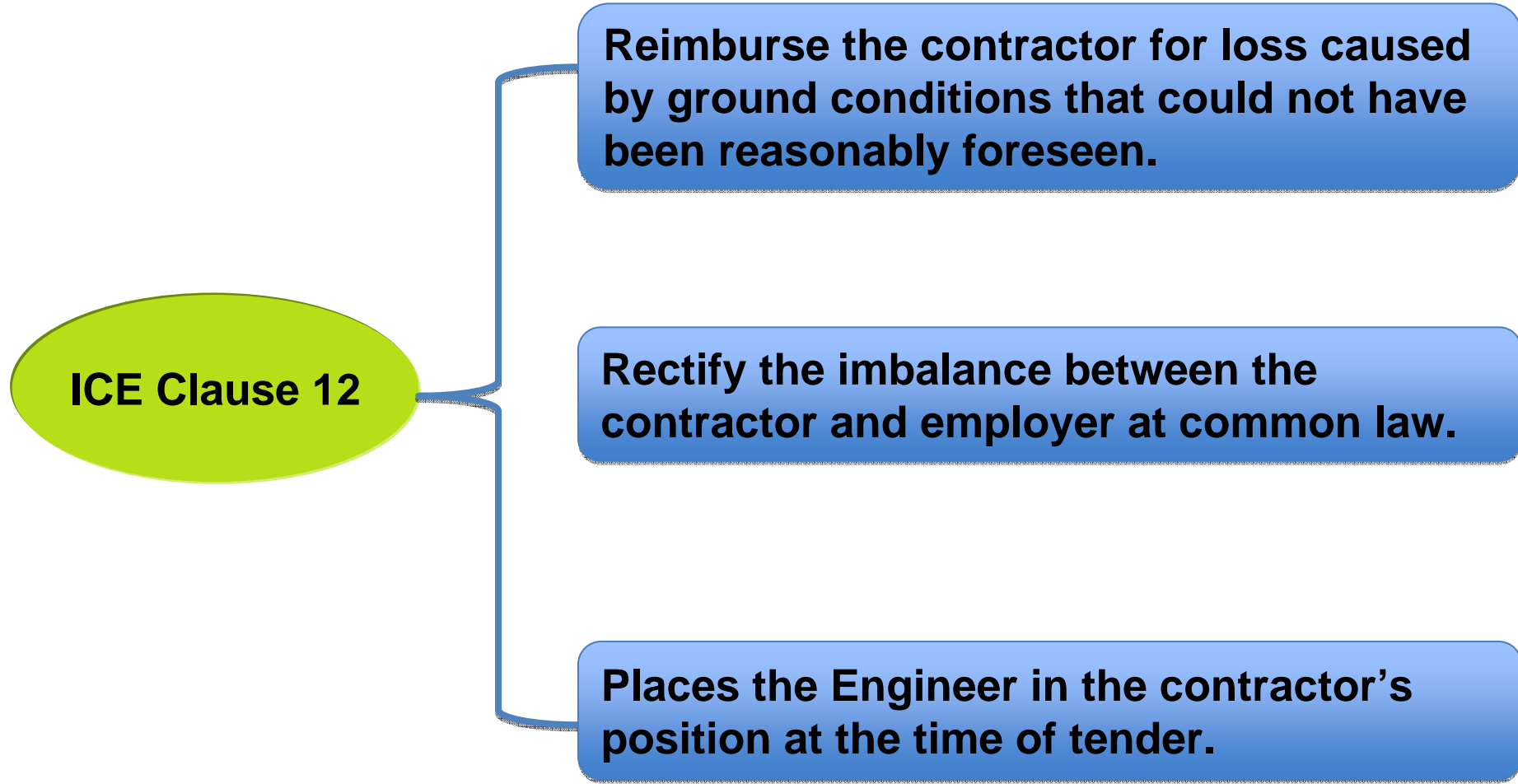
The ICE Form was designed to share the risk on ground conditions between the employer and the contractor.

ICE Clause 12 (6th Edition) states:

“If during execution of the Works the Contractor encounter physical conditions (other than weather conditions or artificial obstructions which conditions or obstructions he consider could not reasonably have been foreseen by an experienced contractor... he shall give notice to the Engineer...”



ICE Form (Cont'd)



ICE Clause 12

Reimburse the contractor for loss caused by ground conditions that could not have been reasonably foreseen.

Rectify the imbalance between the contractor and employer at common law.

Places the Engineer in the contractor's position at the time of tender.

ICE Form (Cont'd) – “Physical Condition”

Associated British Ports v Hydro Soil Services NV and others [2006] EWHC 1187 (TCC)

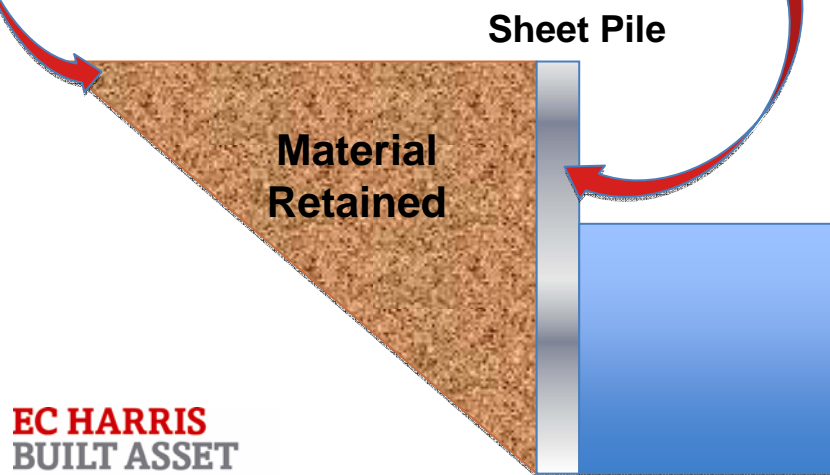
- **WORKS** - Strengthening work at a quay wall (sheet pile)
- **INCIDENT** – Sheet pile cracked and bulged outwards. Remedial works required.
- **Employer’s Argument:** Strengthening works ‘not fit’ for their purpose and Contractor was in breach of contract.
- **Contractor’s Argument:** Sheet pile itself was over-stressed and contained plastic hinges (i.e. unforeseen physical condition) which shall fall under ICE Cl. 12.
- **KEY ISSUE:** Whether the pre-existing physical conditions of the sheet pile wall could have been foreseen by an experienced contractor.

ICE Form (Cont'd) – “Physical Condition”

Associated British Ports v Hydro Soil Services NV and others
[2006] EWHC 1187 (TCC)

Court considered that “Physical Condition” under ICE Clause 12 was wide enough to cover:

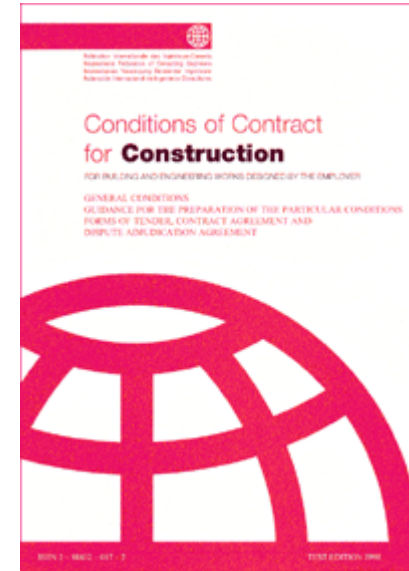
- Something that affects the work (e.g. material retained)
- Actual element of the work itself (e.g. physical state of sheet pile)



- Such “physical conditions” could reasonably have been foreseeable by an experienced contractor .
- Did not fall within ICE Clause 12.
- Contractor’s claim failed.

Fédération Internationale des Ingénieurs-Conseils (FIDIC Form)

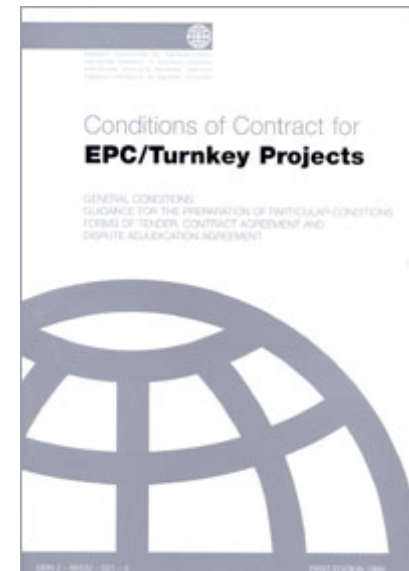
FIDIC 'Red' book
(Employer Design)



FIDIC 'Yellow' book
(Contractor Design)



FIDIC 'Silver' book
(Turnkey Projects)



FIDIC Form – ‘Red’ Book & ‘Yellow’ Book

Clause 4.10

Information on
Sub-surface
conditions

Inspection of Site

Clause 4.11

Interpretation of
data

Accuracy of data

Clause 4.12

Physical Conditions

FIDIC Form – ‘Red’ Book & ‘Yellow’ Book

Clause 4.10:

“The Employer shall have available to the Contractor for his information, prior to the Base Date, all relevant data in the Employer’s possession on sub-surface and hydrological conditions at the Site, including environmental aspects. The Employer shall similarly make available to the Contractor all such data which come into the Employer’s possession after the Base Date. The Contractor shall be responsible for interpreting all such data.”

- Employer is required to make available to the contractor all relevant data in his possession on sub-surface conditions before and after the ‘Base Date’
- Employer’s obligation to provide information does not end after the tender submission.

FIDIC Form - 'Red' Book & 'Yellow' Book

“...To the extent which was practicable (taking into account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender of Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information...

...the form and nature of the Site, including sub-surface conditions,

...the hydrological and climatic conditions,”

- Contractor is deemed to have inspected and examined the site only to the extent as far as practicable, with cost and time considerations.

FIDIC Form - 'Red' Book & 'Yellow' Book

Clause 4.11:

“The Contractor shall be deemed to:

(a) have satisfied himself as to the correctness and sufficiency of the Accepted Contract Amount,

(b) have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in Sub-Clause 4.10”

Contractor is only responsible for interpreting the data provided to him.

FIDIC Form - 'Red' Book & 'Yellow' Book

Clause 4.12:

“Physical conditions’ means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydro-logical conditions but excluding climatic conditions...If the Contractor encounters adverse physical conditions which he considers to have been unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable.”

- Employer carries the risk of physical conditions that could have been unforeseeable by an experienced contractor at the date of tender.
- FIDIC Clause 4.12 follows the well established Clause 12 of the ICE Form

FIDIC Form - 'Silver' Book

Clause 4.10

Verification &
Interpretation of
Data

Clause 4.12

Total Responsibility for
unforeseen difficulties
or costs

FIDIC Form - 'Silver' Book

Clause 4.10:

“The Contractor shall be responsible for verifying and interpreting all such data. The Employer shall have no responsibility for the accuracy, sufficiency or completeness of such data...”

- Contractor is responsible of the interpretation and verification of the data provided.
- Employer offers no warranty as to the sufficiency or completeness of the information provided.
- Risk of adverse ground conditions lies with the contractor.

FIDIC Form - 'Silver' Book

Clause 4.12:

“Except as otherwise stated in the Contract:

By signing the Contract, the Contractor accepts total responsibility for having foreseen all difficulties and costs of successfully completing the Works; and

The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs.”

- A 'catch-all' statement where contractor accepts full responsibility in completing the works and has to include in his price for any unforeseen difficulties or costs.

FIDIC Form – ‘Red’ / ‘Yellow’ vs ‘Silver’ Book

	‘Red’ / ‘Yellow’ Book	‘Silver’ Book
Interpretation of Data	Contractor	Contractor
Warranty of accuracy of information provided	Employer	Contractor
Responsibility on unforeseen physical conditions	Employer	Contractor

HKIA Form / HKIS Form

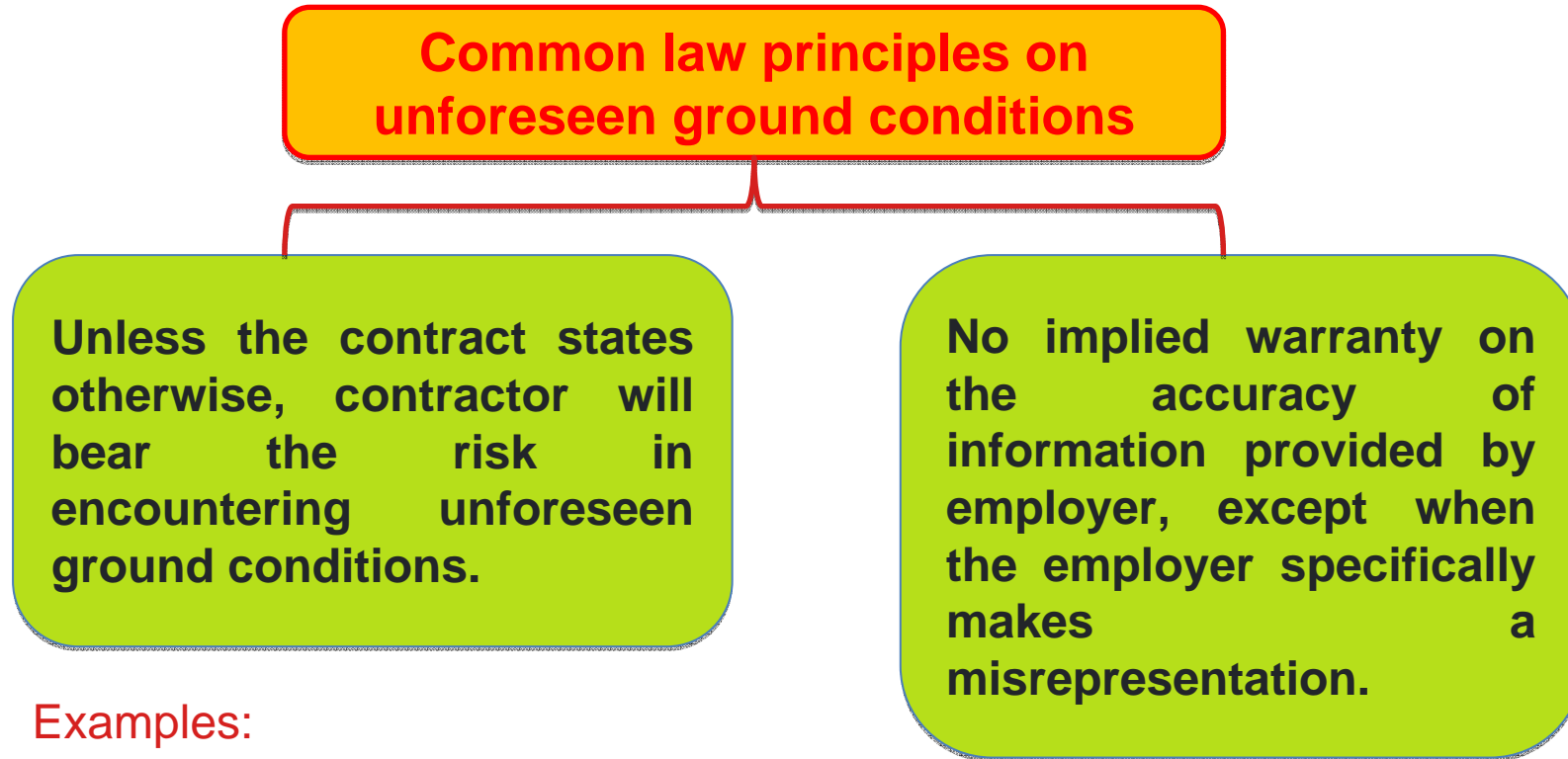
- Hong Kong Institute of Architects (HKIA) and Hong Kong Institute of Surveyors (HKIS) forms for private building works.
- Both forms do not contain any provisions for unforeseen ground conditions.

Comparison of Standard Forms of Contract

Form of Contract	Relief for Unexpected Ground Conditions
Government GCC Form (Civil or Building)	x (except legally or physically impossible conditions)
MTRC Form	✓ (Clause 38.1)
ICE Form	✓ (Clause 12)
FIDIC (Red Book)	✓ (Clause 4.12)
FIDIC (Yellow Book)	✓ (Clause 4.12)
FIDIC (Silver Book)	x
HKAA Form	✓ (Clause 13.4)
HKIA / HKIS Form	x

Common Law Position

Common Law Position



Examples:

- ◆ *Thorn v London Corporation (1876)*
- ◆ *Sharpe v San Paulo Brazilian Railway (1873)*
- ◆ *Bottoms v York Corporation (1892)*

Common Law Position (Cont'd)

Thorn v London Corporation (1876) 1 App Cas 120

- Demolition of existing Blackfriars Bridge and the construction of a new bridge.
- Employer's design involved the use of caissons.
- Contractor spent considerable time and expenses in carrying out the works as per the specified method.
- Employer's design turned out to be not workable.
- Employer issued a variation and Contractor was paid the cost of the varied works.



Common Law Position (Cont'd)

Thorn v London Corporation (1876) 1 App Cas 120

- Contractor sought to recover the cost of abortive work in attempting to follow Engineer's specified method, on the basis that there was an implied warranty that the work was possible by that method.

Held:

- No implied warranty that the bridge could be constructed in the manner specified in the plans and specifications.
- Contractor should take proper precautions to satisfy himself that the works could be carried out pursuant to the specified method.

In the absence of express contract terms, the cost of overcoming adverse physical conditions encountered fell upon the contractor.

Common Law Position (Cont'd)

The position in the *Thorn* case was confirmed by the Halsbury's Laws of England which states:

“It is no excuse for non-performance of a contract to build a house or to construct works on a particular site that the soil thereof has either a latent or patent defect, rendering the building or construction impossible. It is the duty of the contractor before tendering to ascertain that it is practicable to execute the work on the site...”

Common Law Position (Cont'd)

Sharpe v San Paulo Brazilian Railway Co (1873) LR 8 Ch App 597

- Contractor undertook to build a San Paulo railway line in Brazil under a lump sum contract.
- Engineer's drawings proved to be inadequate and the contractor was forced to execute twice the quantities of excavation.
- Contractor claims for extra payment beyond the lump sum price in the tender.



Held: Contractor was not entitled to any extra payment in respect of this work.

Common Law Position (Cont'd)

Sharpe v San Paulo Brazilian Railway Co (1873) LR 8 Ch App 597

Judge: “...*The Plaintiff says that the original specification was not sufficient to make a complete railway...and something more would be required to be done in order to make the line....but what they had contracted to do for a lump sum was to make the line from terminus to terminus complete, and both these items seem to me to be entirely included in the contract. They are not in any sense of the words ‘extra works’*”

Halsbury's Laws of England –

“...It is the duty of a contractor, before making his tender, to inform himself of all particulars concerning the work, and particularly as to the practicality of executing every part of the work contained in the plans, drawings and specifications...Ignorance on his part when making his tender will not excuse him from performing his contract.”

Common Law Position (Cont'd)

Bottoms v York Corporation (1892) HBC 4th ed, ii, 208

- Contract to construct sewers.
- Neither employer nor contractor had investigated ground conditions before contract was tendered and awarded.
- Contractor submitted his tender based on assumed ground conditions.
- Before entering contract, Employer received reports which indicated that contractor will make a loss with the type of ground expected.
- Soil encountered was softer than anticipated and additional temporary works were required to complete the works.



Common Law Position (Cont'd)

Bottoms v York Corporation (1892) HBC 4th ed, ii, 208

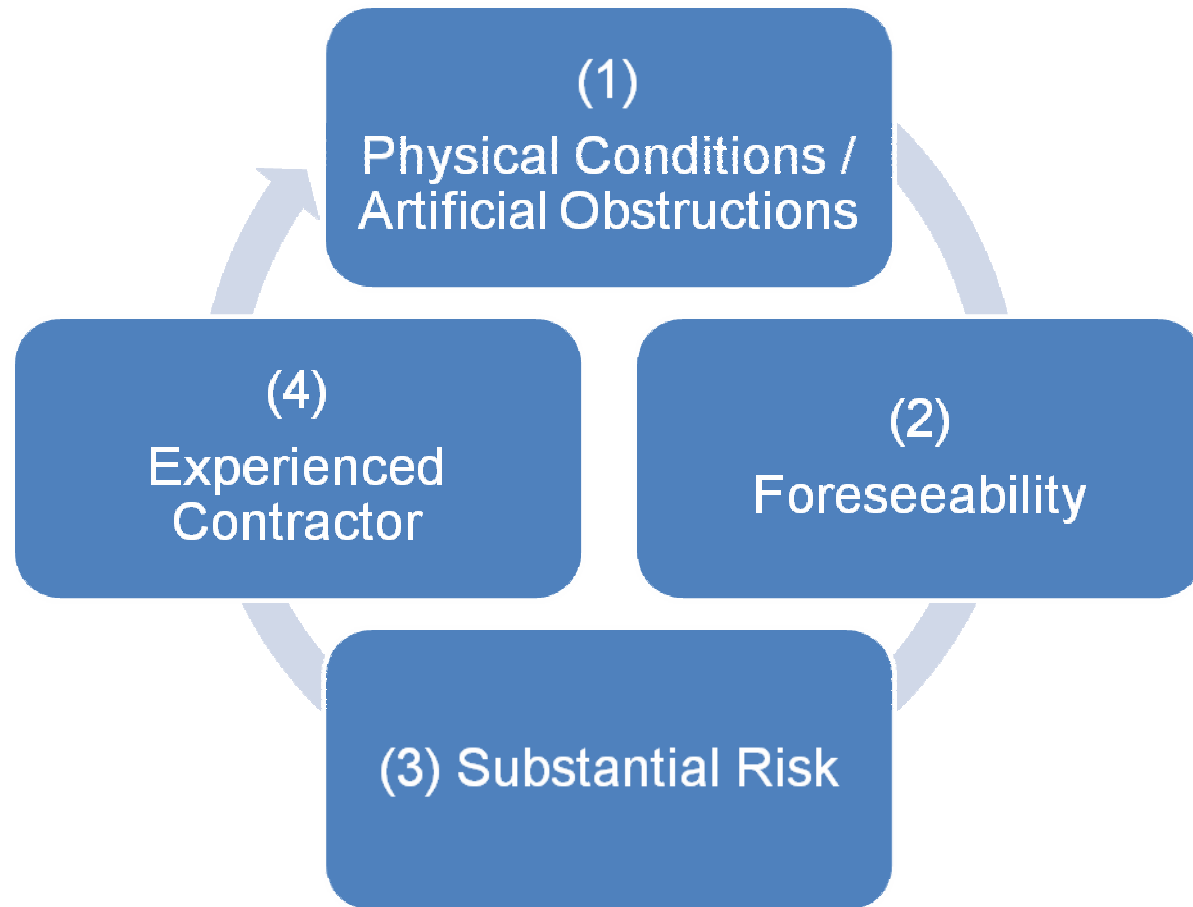
Contractor claimed extra payment as variation.

Held:

- Contractor's claim on extra work failed.
- Employer owed no duty to disclose these reports to contractor and
- Contractor shall carry out their own GI works in order to satisfy himself as to the practicality of executing the works (including overcoming adverse ground conditions), regardless of what information was in the employer's possession.

Common issues arising from adverse ground conditions

Common issues arising from adverse ground conditions



(1) – Physical Condition / Artificial Obstructions

To recap, Clause 38.1 of the MTRC form states:

“If however during the Execution of the Works the Contractor shall encounter within the Site physical conditions (other than weather conditions or conditions due to weather conditions) or artificial obstructions which conditions or obstructions he considers could not reasonably have been foreseen by an experienced contractor”

- The word ‘ground’ does not appear in the provision.
- Not limited to ground conditions but any physical conditions or artificial obstructions.

(1) – Physical Condition / Artificial Obstructions

Physical condition:

- running sand
- hard rock / boulder
- Water / groundwater
- any characteristic of the subsoil



Artificial obstruction:

- uncharted utilities
- abandoned piles or foundations.
- (or a stubborn Resident Engineer!!!)



(1) – Physical Condition / Artificial Obstructions

Humber Oil Terminals v Harbour and General Works (Stevin) Ltd. (1993)

ICE Form of Contract

WORKS

Construction of three mooring dolphins and re-construction of a damaged bathing dolphin.

INCIDENT

The jack-up barge used by the Defendant collapsed when the crane was slewing with a large concrete soffit.



(1) – Physical Condition / Artificial Obstructions

Humber Oil Terminals v Harbour and General Works (Stevin) Ltd. (1993)

CONTRACTOR'S CLAIM

The collapse of the barge could not reasonably have been foreseen by an experienced contractor.



ARBITRATOR

There must have been an unusual combination of soil strength and applied stresses at the base of the barge's legs, which constitute an unforeseeable physical condition.

- Applied stress on the barge caused a different behaviour of the ground and substantial increase in settlement, resulted in the collapse of the barge.
- Although the sub-soil type encountered was foreseen but its performance under the applied stress of the barge was not. Such adverse physical condition could not have been foreseen by an experienced contractor.
- Contractor's claim under ICE Clause 12 succeeded. The Court later upheld the Arbitrator's decision upon Employer's appeal.

(2) – Foreseeability

“...determining whether a condition could reasonably have been foreseen habitually gives rise to the greatest difficulty of interpretation in a civil engineering arbitration...”

‘Keating on Building Contract’, 7th Edition, Page 991

- Entitlement under many contract conditions subject heavily to the qualifying words “...*which could not reasonably have been foreseen by an experienced contractor...*”
- Concept of ‘objective foreseeability’ does cause some difficulty in practice.

(2) – Foreseeability

“...Is a claim excluded only if an experienced contractor could have foreseen that the conditions or obstructions must occur, or is it sufficient that there was a possibility, however remote, that the conditions might occur?...”

It is suggested that a claim is barred only if an experienced contractor could have foreseen a substantial risk.”

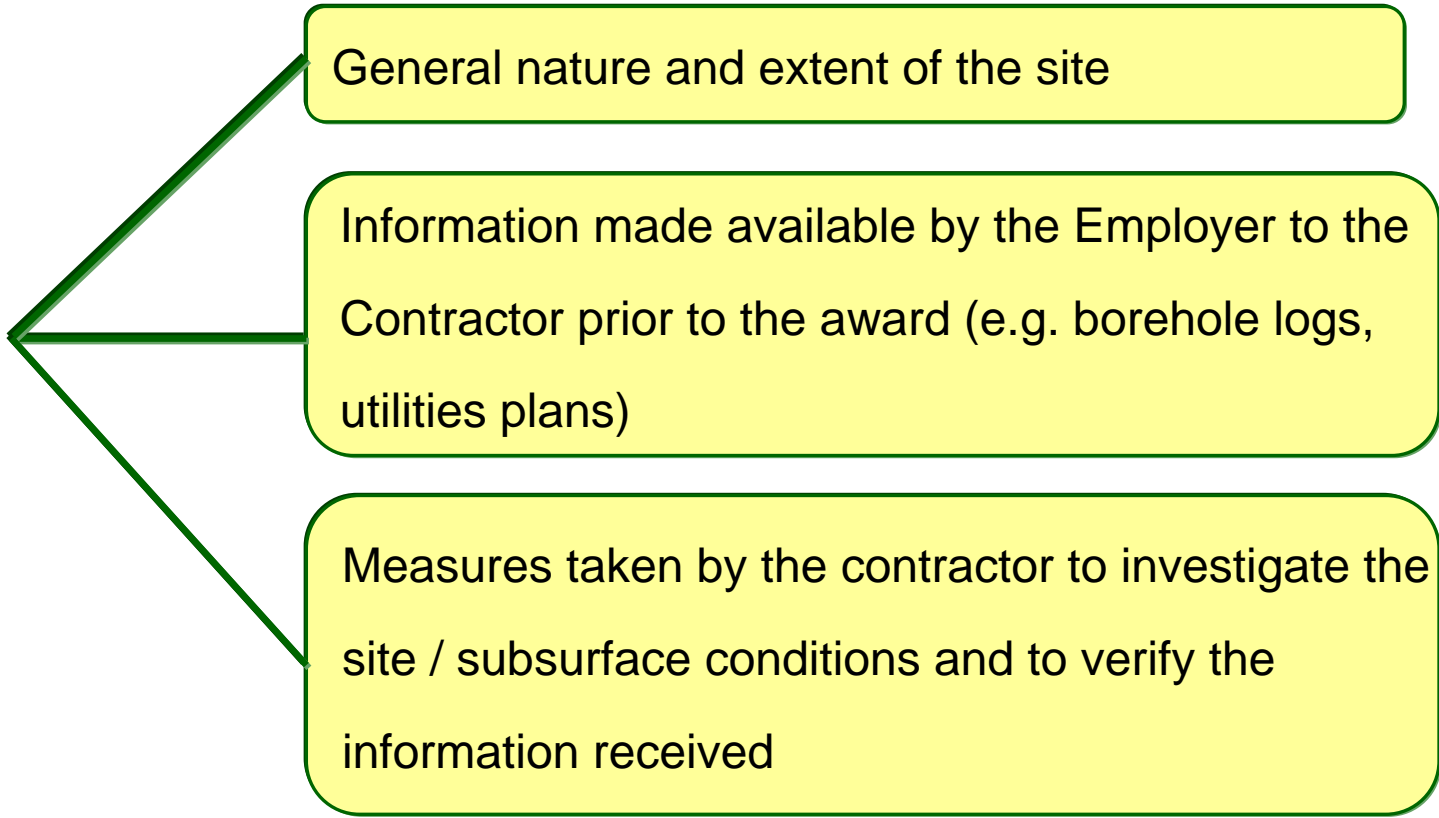
(Abrahamson’s ‘Engineering Law and the I.C.E. Contracts’, 4th Edition)

Physical condition or artificial obstruction can be said to have been foreseen only if an experienced contractor considers a substantial risk of such condition / obstruction arising. (*CJ Pearce and Co Ltd. v Hereford Corporation (1968) 66 LGR 647*)

(3) – Substantial Risk

The risk must have been substantial at the time the contract came into existence (i.e. foreseeable at the outset of the contract), not during the execution of the works.

Factors determining whether a risk was 'substantial'



(4) – Experienced Contractor

“...the mere fact that some risk of meeting the conditions was foreseeable can hardly be enough, since an experienced contractor will know that anything can happen, particularly in work underground.”

(Abrahamson’s ‘Engineering Law and the I.C.E. Contracts’, 4th Edition)

Real contractor vs ‘Experienced Contractor’

(4) – Experienced Contractor (Cont'd)

	Physical Condition / Artificial Obstruction foreseen by		Success of Claim
	'Real' Contractor	Experienced Contractor	
Case 1	No	No	✓
Case 2	No	Yes	✗
Case 3	Yes	No	✗



For Case 3, the actual knowledge of the real contractor will be considered, even if such actual knowledge goes beyond what an experienced contractor would know.

“...the assessment of what could or could not have been foreseen must take into account all available sources of information, including the actual knowledge of the real Contractor, even if this goes beyond what an experienced contractor would know...”

(‘Keating on Building Contract’, 7th Edition, Page 991)

Recent Developments

Recent Developments

MTRC...

- Formal Risk Management Plan
- Pre-award Joint Development of Target Cost Bids
- Geotechnical Baseline Reports

HKSAR Government

- ETWB Technical Circular No. 17/2004
- Utility Management System (UMS)

The MTRC's Experience

Speech given by Russell Black, Projects Director of MTR Corporation Ltd. at the HKCA-CEC Conference” (28 October 2009)

“...MTR is in the best position to own the consequence of unforeseen physical conditions and obstructions....it should be more cost effective for the client to be the banker, or insurer if you like, on unforeseen physical conditions risk....”

“...Even if we provide the tenderers with all the data that MTR has obtained pre-tender, I suggest we probably still have a better understanding of the risks at the time of tender award than the contractor under our normal procurement process, having had much longer to study the challenges...”

This is in line with the international practice where allocation of risk of unforeseen conditions is either shared or borne by the Employer.

MTRC's Formal Risk Management Plan

DO NOT HIDE RISKS

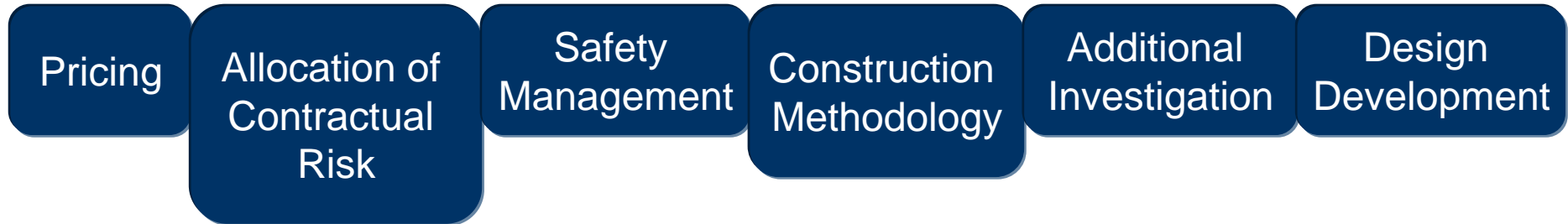
Project delivery stakeholders to debate
and contribute to risk management

- Launched right from the earliest planning stages of the project.
- Plan requires active management, on-going risk identification, risk allocation and review of management / mitigation.
- Consult the industry for views and advice.
- Pre-tender investigation to an appropriate level of details to allow design and programme and planning of the works.

MTRC's Pre-award Joint Development of Target Cost Bids

- Enable tenderers to have a better understanding of the risks in the work at the awarding stage.
- Exercises on risk identification, mitigation planning and costing.
- Understanding of risks inherent in the delivery plan.
- How these risks are to be allocated?
 - To the client?
 - To the contractor?
 - Shared between client & contractor in the form of 'pain share / gain share'?

MTRC's Geotechnical Baseline Reports



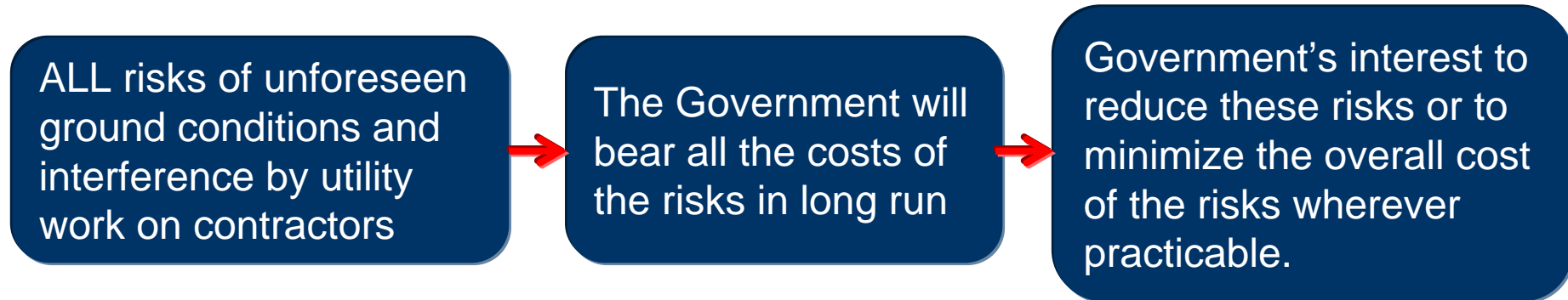
- Prepared as early as in the planning and design stage.
- Shared with tenderers for their review, comment and use.
- An agreed GBR is bound into the contract at award as the benchmark reference for contractual consideration of unforeseen physical conditions.
- GBR also serve as a live technical document for risk management as the work progresses. (joint approach in interpretation of raw data)

**Contract 703 - West Island Line
(Sheung Wan to Sai Ying Pun Tunnels)
First major MTR contract
incorporating GBR**

**Contract 704 - University and Sai Ying
Pun Stations and Kennedy Town
to Sai Ying Pun Tunnels
GBR being agreed with
Stage 1 tenderers**

ETWB Technical Circular No. 17/2004 –

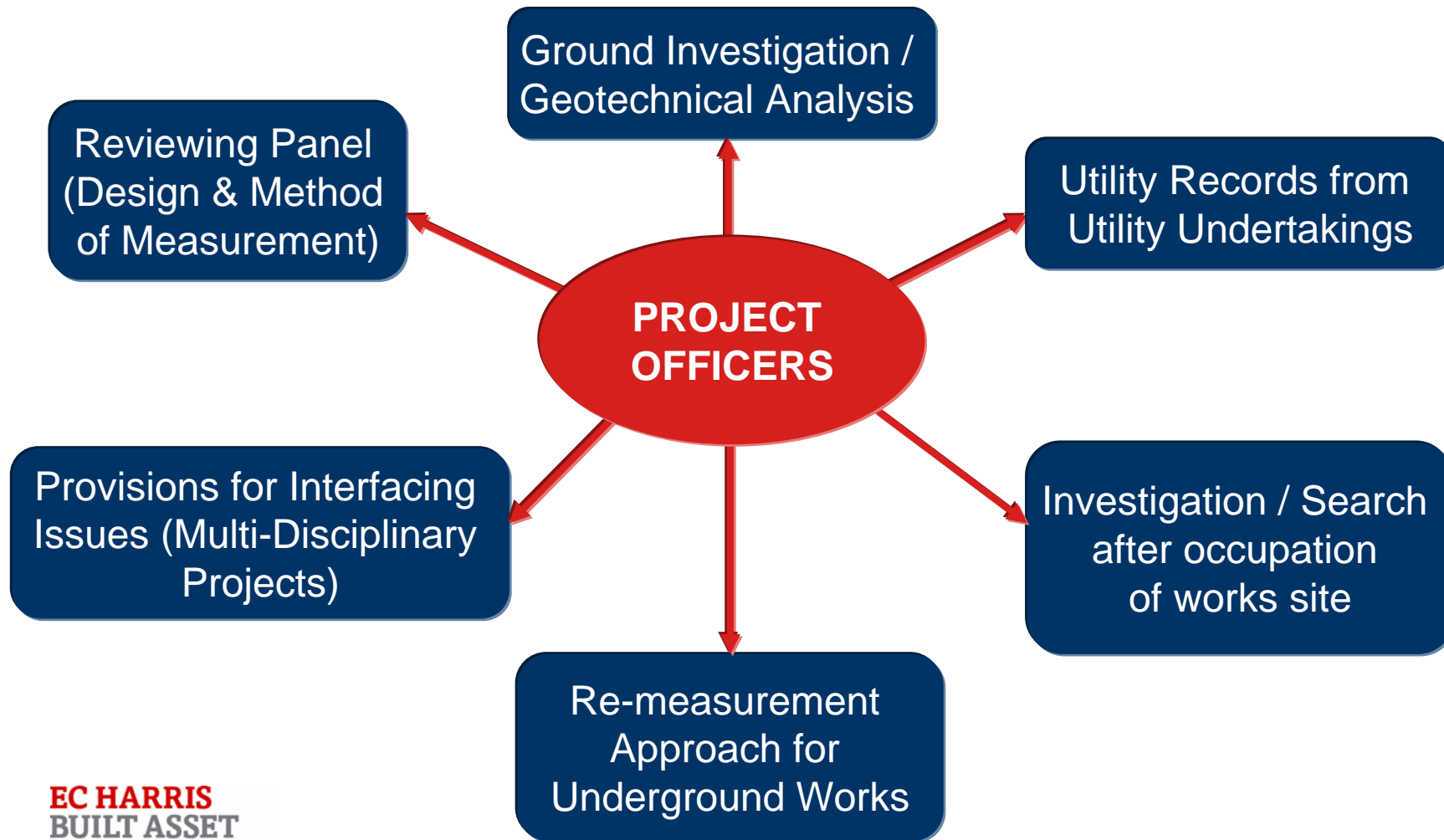
“Impossibility / Unforeseen Ground Conditions / Utility Interference”



- Provides guidelines on risk management with respect to physical and legal impossibilities, unforeseen ground conditions and interference by utility work.
- A mandatory Special Condition of Contract (SCC) which provides EOT to be granted to the Contractor due to unforeseen utility work.
- Applies to all new term contracts and Design & Build contracts (effective from June 2004).

ETWB Technical Circular No. 17/2004 (Cont'd)

Guidelines on risk management with respect to physical and legal impossibilities, unforeseen ground conditions and interference by utility work:



ETWB Technical Circular No. 17/2004 (Cont'd)

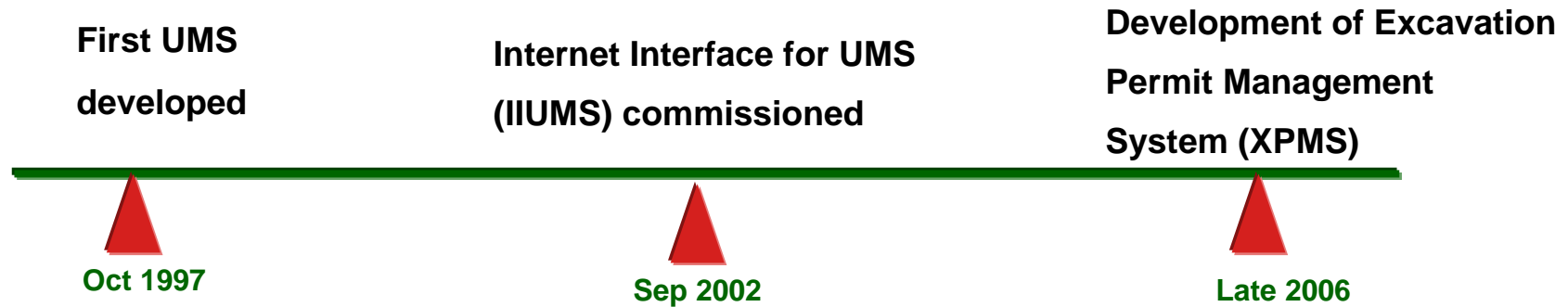
To provide fair compensation to the contractor for delays to the works caused by unforeseen utility work.

Extension of time for unforeseen utility work:

“(ixa) Any utility work directly connected with but not forming part of the Works and which in the opinion of the Engineer/Architect/Supervising Officer could not have been foreseen by an experienced contractor based on the information available as at the tender closing date.”

Contractor will only be compensated for delays but not Cost under GCC Cl.63 or under any other provisions.

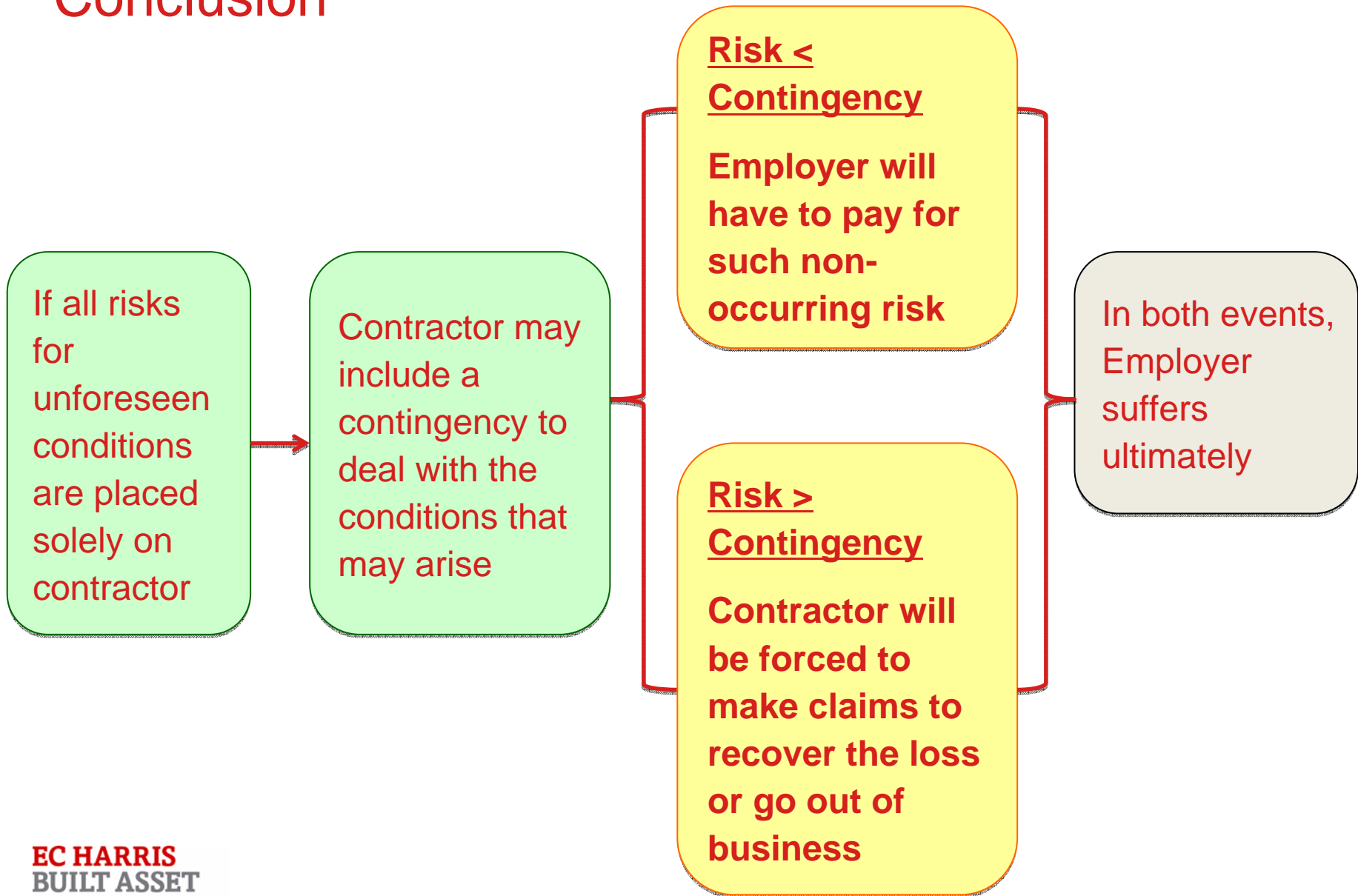
Utility Management System (UMS)



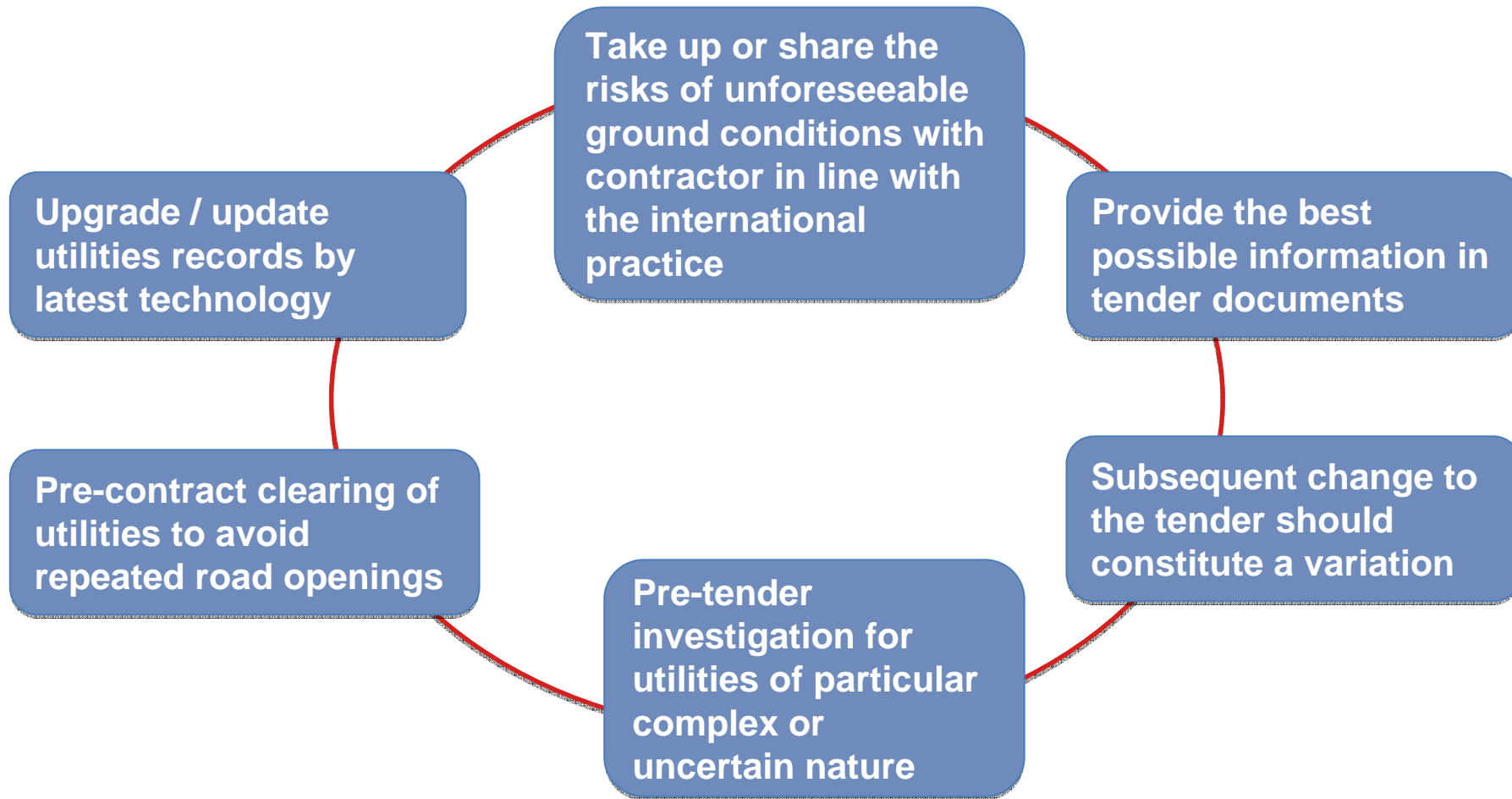
- Improve coordination and control of road openings maintained by HyD.
- Update, access and exchange of information with utility undertakers and government departments.
- External users (e.g. contractors) can plan / coordinate their works, apply excavation permits (EP) and extension, perform search on digital base map.
- Minimize utility damaging during excavation and repeated openings in the same road section.
- Prevent utility undertakings from applying excessively long EP periods.

Conclusion

Conclusion

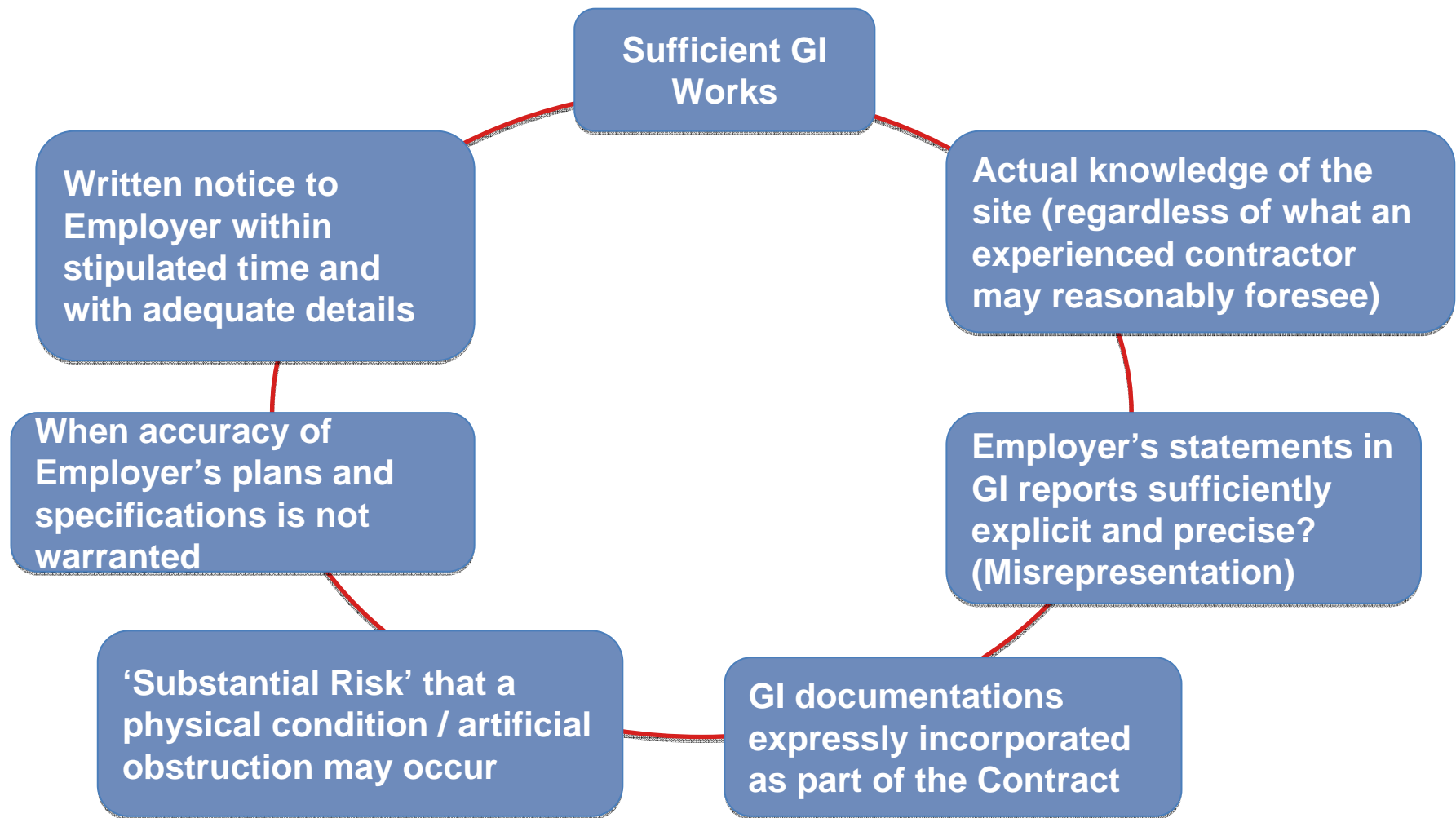


Conclusion – Advice for Employer



It may cost much less in issuing a variation than going to dispute!

Conclusion – Advice for Contractor



It may cost much less in doing verifying works than going to dispute!

