

Webinar:

Why the Emerald Book - A New International Form of Contract for Underground Works

with Martin Smith – Matrics Consult Ltd (UK)

and

with Giorgiana Tecuci - Tecuci & Păltineanu Avocați
(Romania)

21 September 2023 | 11:00am UK (BST)



WEBINAR

BARTON
LEGAL



Martin Smith



Giorgiana Tecuci



Why the Emerald Book - A New International Form of Contract for Underground Works

Why The Emerald Book ?

A New International Form of Contract for Underground Works',

A Construction Manager's
Viewpoint



**The
Presentations**

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In 2 Parts:

Part 1/2

**The Main Purpose and
Differences in the Sub-Clauses
to other FIDIC Sub-Clauses**

Part 2/2

**Calculating the
Time for Completion**



A Procurement Lawyer's
Viewpoint



**Giorgiana Tecuci
SCPA Tecuci Păltineanu**

**Questions
&
Answers**

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Why The Emerald Book ?

Introduction

Let's Get Back to Basics > Avoiding Collapses



The
Employer



The
Contractor

Who is taking the risk for consequential damages ?

Why The Emerald Book ?

WHICH APPROACH ?

The problem then becomes apparent when trying to correlate the individual details to clarify the **distribution of risk**:

Documents:

Governing Law & Regulations
Invitation to Tender
General & Specific
Conditions of Contract
Employer's Requirements
Drawings
Technical Specifications
Appropriate Standards
Schedules: Activity Descriptions
Reference Documents
Correspondence
Contractor's Tender

Etc.etc

Table of Contents:

Packages 1,2,3,4
FIDIC Design -Build
Specific Conditions
§ 1 to § xxx,yyy,zzz
100/25/350 Rev.C etc
Clauses 100 to 900
ISO / BS / DIN / ASTM
Milestones
As described
Letters EM date CN date

Submission Package



Finding the Relevant Information

A Typical Contract 70 kg +



Why The Emerald Book ?

Hallo Everybody

This presentation has been prepared in **2 distinct parts** as the subject matter assumes that the reader has a ***basic understanding*** of the existing Rainbow Suite of Books 2017 Editions and wishes to further understand what are the ***reasons*** and ***key differences*** between the ***existing*** Rainbow Suite and the **New** and **Amended** Sub-Clauses in the ***Emerald Book 1st Edition 2019***.

The ***Emerald Book*** is a Joint Publication by FIDIC and ITA and considerable effort has been undertaken to introduce many ***key additions*** which need an understanding both of the conditions of working in an ***underground environment*** as well as the generally accepted global FIDIC conditions of contract.

Why The Emerald Book ?

Consequently the reader needs to understand:

- 1 The **vocabulary** adopted which differs in places to the other FIDIC Books;
- 2 **What needs to be prepared before** signing a contract;
- 3 The **process of agreeing what the baseline assumptions** are at tender stage and
How these are
adjusted in the case of changed physical conditions of the ground
during
the execution of the Works; and
- 4 The reasoning for determining any **adjustments in time and cost or not** due to the above.

Why The Emerald Book ?

In light of this complexity:

Part 1 will deal with the background and a summary of **NEW** or **AMENDED** Sub-Clauses compared to the Yellow and Red Books;

Part 2 will graphically illustrate how the changes in **time** and **cost** are determined.

The time allowance for each part is approximately 20-30 minutes including commentary and discussion where required.



A general questions and answers session will be provided at the end of Part 2 of the presentation.

Why The Emerald Book ?

Part 1/2

The Main Purpose and
Differences in the Sub-Clauses
to other FIDIC Sub-Clauses

Other
FIDIC
Sub-
Clauses



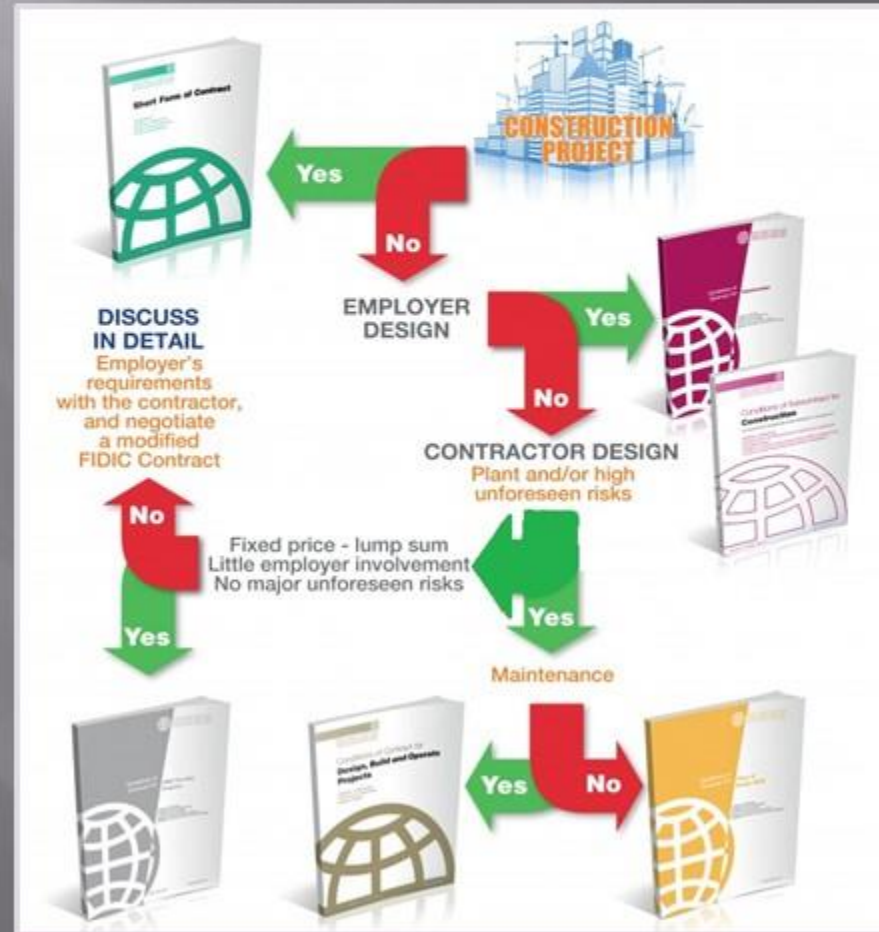
The
Emerald
Book

Why The Emerald Book ?

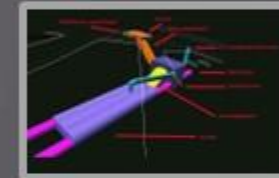
General Conditions: All Types of Construction for Underground Works

Particular Conditions: Specific Types of Applicable Alternative Situations

Typical
Standard
Forms of
FIDIC
Contracts



The missing link

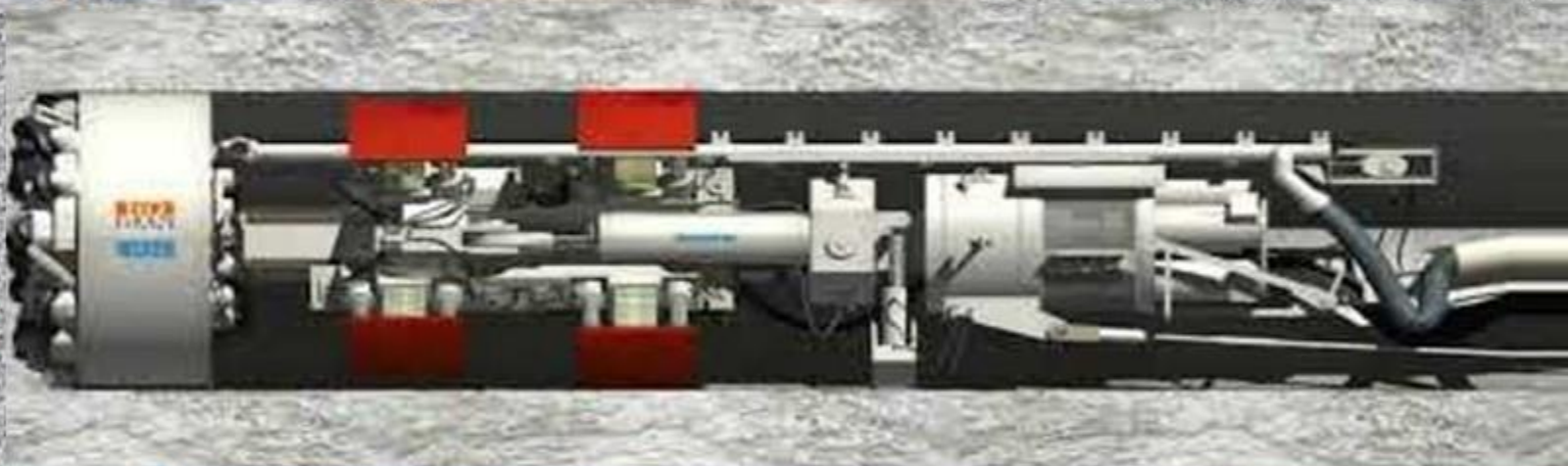


Why The Emerald Book ?

A NEW INTERNATIONAL FORM OF CONTRACT FOR UNDERGROUND WORKS



**What
lies
ahead ?**



Why The Emerald Book ?

List of Sub-Clauses of these Conditions of Contract for **Underground Works**, First Edition 2019, that are **new or different (amended)** from the Sub-Clauses in the Conditions of Contract for Plant and Design Build, 2017 Edition:

(*Errata* corrections are underlined as appropriate).



Not recommended



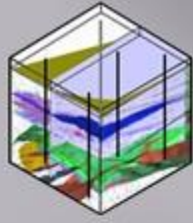
Base for The Emerald Book



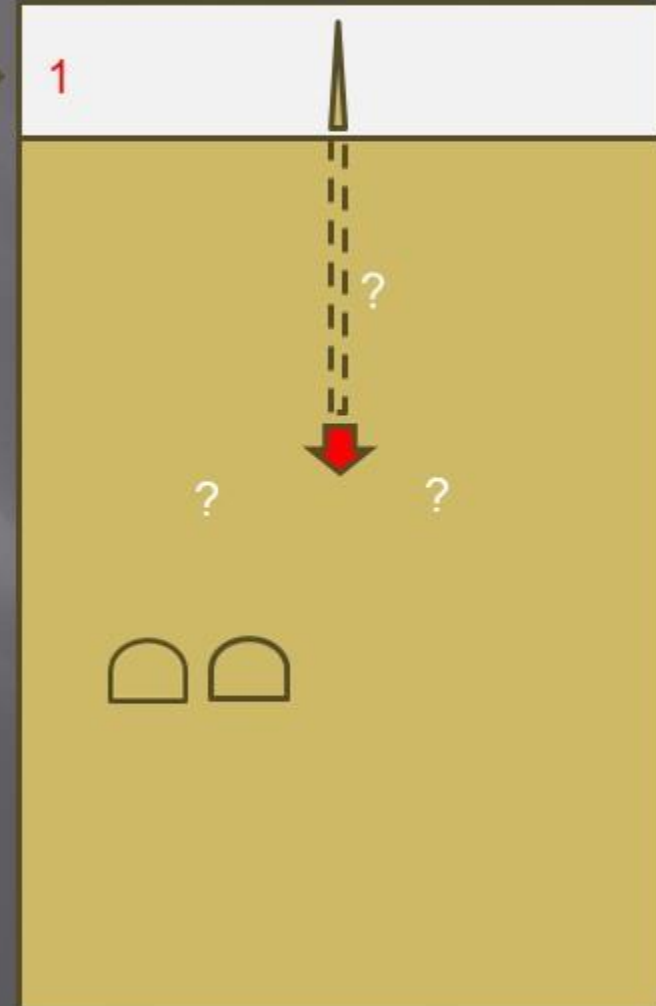
Partial Inclusion The Emerald Book



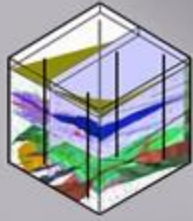
The Emerald Book



Why The Emerald Book ?



Initial Assumption for Proposed Alignment



Why The Emerald Book ?

4.12 Unforeseeable Physical Conditions In this Sub-Clause, “**physical conditions**” means natural physical conditions, physical obstructions (natural or man-made), pollutants and reactions of the ground to Excavation and Lining Works * ✨ which the Contractor encounters at the Site during execution of the Works, including subsurface and hydrological conditions but *excluding* climatic conditions at the Site and the effects of those climatic conditions

* Amendment (underlined) vs. the text issued in Emerald Book version 2019

Why The Emerald Book ?

	Red Book (RB) 2017	Yellow Book (YB) 2017	Emerald Book (EB) 2019
1.03 Main Sub-Clauses (SC) Different from the Yellow Book (YB)	ISSUES	CONSEQUENCE	ACTION
Table of Contents: (Marked in green where different to Rainbow Suite)			
Acknowledgements, Notes (16 pages + i-vi)	1.5 PAGES & 3 PAGES SEQUENCE OF EVENTS	1.5 PAGES & 3 PAGES SEQUENCE OF EVENTS	4.5 PAGES & 3 PAGES SEQUENCE OF EVENTS
General Conditions: Clauses 1-21, Appendix DAAB (pages 1-138)	128 PAGES	132 PAGES	138 PAGES
Guidance for the Preparation of Particular Conditions (pages 1-95)	65 PAGES	68 PAGES	95 PAGES
Annexes: Example Forms of Securities			
Guidance for the Preparation of Tender Documents & Annexes (20 pages 73-93)			
1 General Aspects;	NONE	NONE	7 PAGES
2 Central Principles, Underground Works ;			
3 Pre-Contract Actions by the Employer;	2.5 PAGES	3 PAGES	EXTENSIVE 22 PAGES
4 Employer's Tender Documents			
Appendix A:			
The Geotechnical Baseline Report (pages 85-90)			
Annexes: Example Schedule of Baselines, (Excavation & Lining), (pages 92&93)	NONE	NONE	2 PAGES
Completion Schedule, (p 94)	NONE	NONE	2 PAGES
Schedule of Contractor's Key Equipment, (p 95)			
Forms of Letter of Tender,			
Letter of Acceptance,			
Contract Agreement			
& DAAB Agreement (pages i-vi)			

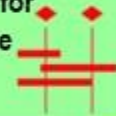



Why The Emerald Book ?

General Overview

<p>RB has the possibility to provide a design based on Drawings and a Specification prepared by (or on behalf of) the Employer, however the design may not be appropriate.</p>	<p>Limits the ability of a potential contractor to propose, (or receive acceptance) of an alternative design.</p>	<p>YB does not detail the ground physical conditions which are difficult to predict in the time available from the Tender Base Date for potential contractors.</p>	<p>No common baseline for comparing assumed physical conditions of the ground.</p>	<p>EB Introduction of Baseline Schedules and Geotechnical Baseline Report (GBR) and Completion Schedule.</p>	<p>?</p>
<p>Principal approach of RB for the Employer to provide a Bill of Quantities, however the quantities may not be certain.</p>	<p>Later disputes on time and cost overruns.</p>	<p>Principal approach of YB a series of lumps sums against an Employer's Requirement and a commitment to a Time for Completion.</p>	<p>Later disputes on the certainty of the Site Data provided by the Employer</p>	<p>Separation of items of work depending on whether it is related to the physical conditions of the ground or not.</p>	<p>?</p>
<p>Who takes which risk ?</p>	<p>Disputes</p>	<p>Who takes which risk ?</p>	<p>Disputes</p>	<p>Introduction of a Contract Risk Management Plan and Contract Risk Register.</p>	<p>?</p>

Why The Emerald Book ?




Definitions 1/3

	88 DEFINITIONS Defined	90 DEFINITIONS Not defined	104 DEFINITIONS YES
1 General Provisions			
1.1 Definitions			
New SC 1.1.5			
★ "Bill of Quantities" or BoQ from RB > part of EB SC 1.1.88			particular allocation Excavation & Lining Works
New SC 1.1.8	Programme	Programme	YES basis for Programme 
★ "Completion Schedule"			
Amended SC 1.1.11			
"Contract" (YB SC 1.1.9)			
★ New SC 1.1.15	NO	NO	YES
"Contract Risk Management Plan"			
★ New SC 1.1.16	NO	NO	YES
"Contract Risk Register"			
★ New SC 1.1.20	NO	NO	YES 
"Contractor's Key Equipment"			
Amended SC 1.1.21			
"Contractor's Key Personnel" (YB SC 1.1.48)			
Errata SC 1.1.23			
"Contractor's Proposal" (YB SC 1.1.17) EB=YB			
Amended SC 1.1.30	UNCLEAR	UNCLEAR	CONSISTENCY 
"Date of Completion" (YB SC 1.1.24)			MEASUREABLE & ADJUSTABLE

NB: Numerous definitions are embedded in the subsequent Sub-Clauses 2 -21

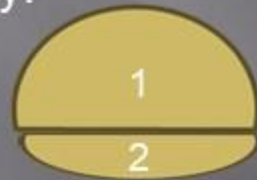
Why The Emerald Book ?

Definitions 2/3

<p>Amended SC 1.1.39 "Employer's Requirements" (YB 1.1.33)</p>	DRAWINGS & SPECIFICATIONS	YES	YES	
<p>New SC 1.1.43 "Excavation"</p>	NO DEFINITION	NO DEFINITION	DEFINED INCLUDES SUPPORT MEASURES	LINK TO METHOD OF CONSTRUCTION
<p>Amended SC 1.1.50 "General Conditions" (YB SC 1.1.43)</p>				
<p>New SC 1.1.51 "Geotechnical Baseline Report" or GBR</p>	NO	NO	YES GBR	
<p>New SC 1.1.52 "Geotechnical Data Report" or GDR <i>(Errata EB Typo)</i> <i>Errata SC 1.1.58 "Letter of Acceptance"</i> <i>(YB SC 1.1.50) EB = YB</i></p>	SITE DATA	SITE DATA	SITE DATA GDR	
<p>New SC 1.1.60 "Lining"</p>	NO DEFINITION	NO DEFINITION	DEFINED INCLUDES. SUPPORT MEASURES	LINK TO METHOD OF CONSTRUCTION
<p>New SC 1.1.63 "Milestone"</p>	NONE	NO DEFINITION	COMPLETION SCHEDULE	
<p>New SC 1.1.64 "Milestone Certificate"</p>	NONE	NONE	YES LINK OF MILESTONE	
<p>Amended SC 1.1.83 "Schedules" (YB SC 1.1.72)</p>				
<p>New SC 1.1.84 "Schedule of Baselines"</p>	NONE	NONE	YES	

NB Terminology:

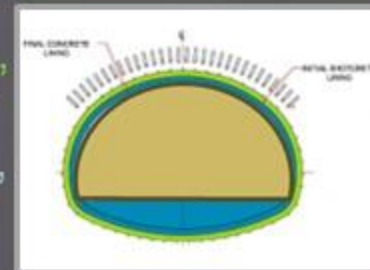
excavation



1 heading
2 bench

"Excavation"

"Lining"



excavation & support measures

Why The Emerald Book ?

Definitions 3/3

	NOT SPECIFIED	NOT SPECIFIED	SPECIFIED	
<p>New SC 1.1.85 "Schedule of Contractor's Key Equipment" <i>Typo 1.1.86...</i> <i>"Schedule of Payments"</i> (YB SC 1.1.73) EB = YB</p> <p>Note SC 1.1.5 SC 1.1.88 "Schedule of Rates and Prices" (YB SC 1.1.75) <i>Amended</i> SC 1.1.92 "Statement" (YB SC 1.1.79)</p> <p><i>Amended</i> SC 1.1.94 "Tests after Completion" (YB SC 1.1.84)</p> <p>★ <i>Amended</i> SC 1.1.99 "Time for Completion" (YB SC 1.1.86)</p> <p>★ New SC 1.1.10 "Underground Works"</p> <p>★ <i>Amended</i> SC 1.1.101 "Unforeseeable" (YB SC 1.1.87)</p> <p><i>Amended</i> SC 1.1.102 "Variation" (YB SC 1.1.88)</p> <p>SC 1.2 Interpretation</p> <p>New (k) "ancillary surface Works' and (l) "subsurface"</p>	<p>NOT SPECIFIED</p> <p>NONE</p> <p>sub-surface</p>	<p>NOT SPECIFIED</p> <p>YES</p> <p>sub-surface</p>	<p>SPECIFIED</p> <p>INCL. PRICED BILL OF QUANTITIES BoQ</p> <p>subsurface</p>	 <p>CONFUSION BETWEEN THE TYPES OF STATEMENT: FIDIC DBO means a <i>financial Statement</i> under CI 14 Terminology Note 1: In many construction projects the terms <i>design and construction method statements</i> are required. Note 2: <i>Appendix A</i> The Geotechnical Baseline Report GBR calls for <i>referenced baseline statements</i>. Note 3: SC 1.2 (k) to differentiate the individual Temporary Works e.g. <i>open cut foundations for Employer's & Contractor's Site Facilities</i> from the main Permanent Works where a GBR is not considered a pre-requisite.</p>

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Priority of Documents 1/2



SC 1.5 Priority of Documents

(see 1.02 above)

(a) the Contract Agreement;
 (b) the Letter of Acceptance;
 (c) the Letter of Tender,
 (with the Addenda Nos.); # 1

(d) the Particular Conditions Part A –
 Contract Data, the **Completion
 Schedule and the Schedule of
 Baselines;**

Forms: iii Contract Agreement	Contractor's Proposal MISSING	Forms: iii Contract Agreement	Contractor's Proposal INCLUDED	# Note 1 The Addenda Nos. 1, 2, 3, etc. are part of the Contract Agreement	Contractor's Proposal INCLUDED
				1.1: Gantt Chart with Milestones and Time for Completion from Commencement Date; 1.2: Tabular Schedule outlining all the sequential activities per Works Sections or Milestones with the planned production rates and linear metres per zone (Excavation and Lining Works) to establish the planned time for construction of each zone. This Schedule is then used to compare with the actual production rates to establish any adjustments in Time for Completion of the Works Sections or Milestone.	These 2 documents need to be correlated with each other and the agreed Programme SC 8.3 submitted by the Contractor.

See additional documents and # Notes 2, 3 & 4 on the next slide

Why The Emerald Book ?

Priority of Documents

Priority of Documents 2/2

(e) the Particular Conditions Part B – Special Provisions; #2				# Note 2 Some additional recommendations are noted		
(f) the Geotechnical Baseline Report; 	NONE		NONE	GBR		
(g) these General Conditions;						
(h) the Employer's Requirements; # 3	DRAWINGS & SPECIFICATIONS	(drawings of the Works) AND (any additional AND modified drawings) AND specification	EMPLOYER'S REQUIREMENTS Extent NOT defined	(describes the purpose for which the Works are intended) AND evaluation criteria	EMPLOYER'S REQUIREMENTS # Note 3 includes the Employer's reference design	(describes the purpose for which the Works are intended) AND Employer's reference design (scope and any preliminary design) AND evaluation criteria
(i) the other Schedules; # 4	Extent NOT defined		Extent NOT defined		# Note 4 The Emerald Book foresees additional Schedules	
(j) the Contractor's Proposal;	PERMITTED, however NOT defined		PERMITTED, defined		PERMITTED, defined	
(k) the JV Undertaking (if the Contractor is a JV); and						
(l) any other documents forming part of the Contract, including the Geotechnical Data Report, the Contract Risk Register and the Contract Risk Management Plan	any other documents forming part of the Contract		any other documents forming part of the Contract		GDR & the Contract Risk Register and the Contract Risk Management Plan	



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Amended SC 1.9

Errors in the Employer's Requirements and/or in the Geotechnical Baseline Report

New SC 1.16

Contract Risk Register and Contract Risk Management Plan

SITE DATA

SITE DATA

NOTA BENE

The Geotechnical Data Report (GDR)

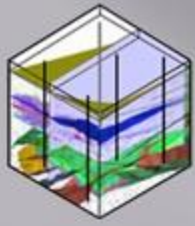
Unforeseeable Physical Conditions?

The deep drilling borehole that changed the whole alignment!

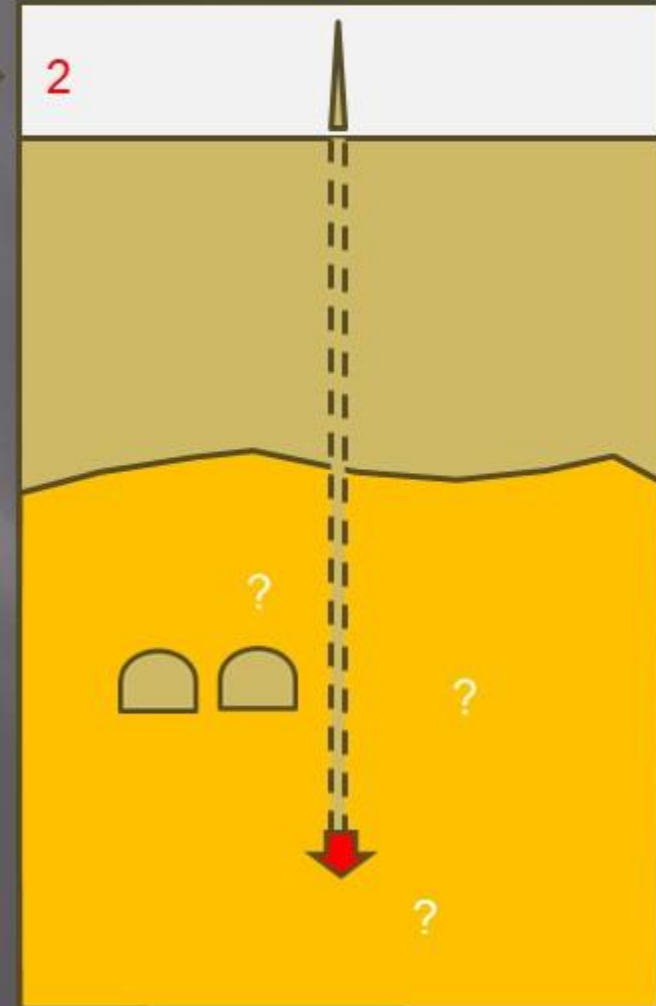
EXTENT OF SITE INVESTIGATION: Employer's Drawings to show details.

EXTENT OF SITE INVESTIGATION: Difficult for potential contractors

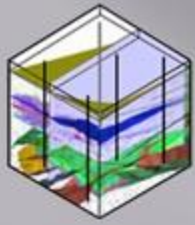
EXTENT OF SITE INVESTIGATION & Geotechnical Baseline Report (GBR) REFERENCED BASELINE STATEMENTS



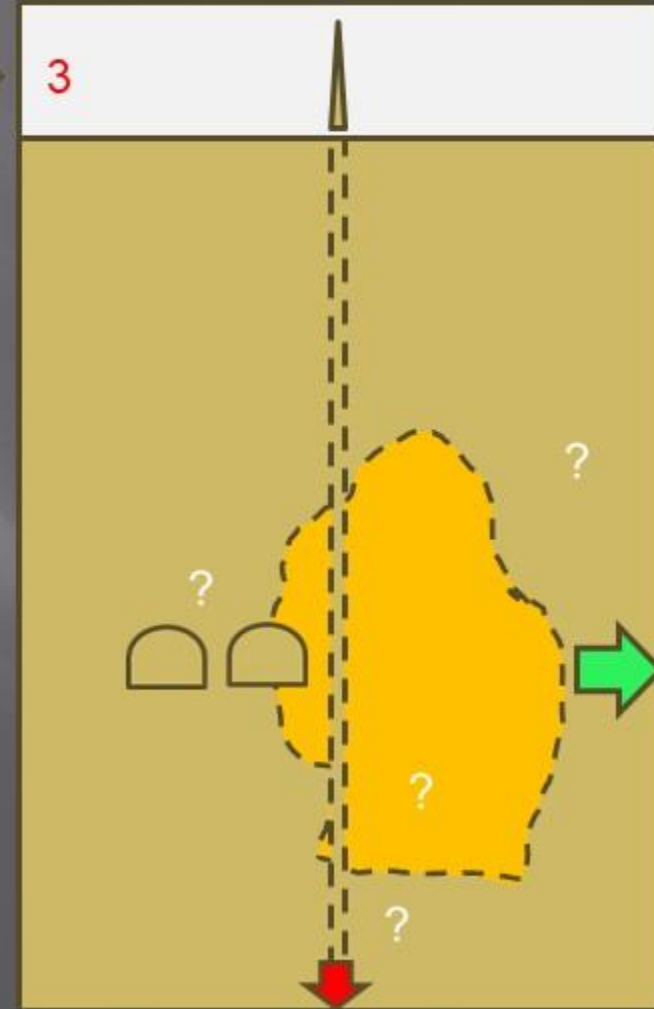
Why The Emerald Book ?



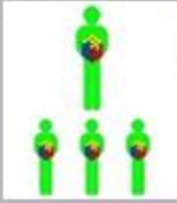
Initial Assumption for Proposed Alignment



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Decision to Drill Further resulting in **Change in Alignment**



Why The Emerald Book ?



2 The Employer

Amended SC 2.5

Site Data and Items of Reference



3 The Engineer

Amended SC 3.2.1

Engineer' General Duties and Authority

New SC 3.2.2

Engineer's Specific Duties and Authority for Excavation and Lining Works

GDR & GBR added

Time for comment reduced in line with urgency



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4 The Contractor

New SC 4.10



Use of Site Data, of the Geotechnical Baseline Report and of the Geotechnical Data Report

New SC 4.10.1

Use of Site Data

(a) including sub-surface conditions

(a) including sub-surface conditions

Use of GBR & GDR subsurface

New SC 4.10.2

Use of the Geotechnical Baseline Report

New SC 4.10.3

Use of the Geotechnical Data Report

Amended SC 4.11

Sufficiency of the Accepted Contract Amount

Amended SC 4.12

Unforeseeable Physical Conditions

Amended SC 4.12.1

Contractor's Notice

Amended SC 4.12.2

Engineer's inspection and investigation

Amended SC 4.12.5

Agreement or Determination of Delay and/or Cost

Amended SC 4.16

Transport of Goods

Amended SC 4.17

Contractor's Equipment

Amended SC 4.20

Progress Reports

New SC 4.24



Excavation and Lining Works

New SC 4.25

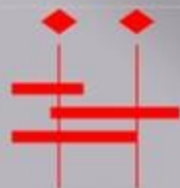


Milestones



Why The Emerald Book ?

<p>5 Design <i>Amended</i> SC 5.1 General Design Obligations</p> <p><i>Amended</i> SC 5.2 Contractor's Documents</p> <p>6 Staff and Labour <i>Amended</i> SC 6.1 Engagement of Staff and Labour</p> <p>7 Plant, Materials and Workmanship</p>	<p>DETAIL DESIGN by Employer</p>		<p>DETAIL DESIGN by Contractor</p>	<p>DETAIL DESIGN subject to Contract Agreement: Excavation & Lining <i>defined and described</i> in the GBR and Baseline Schedules</p>	
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Why The Emerald Book ?

<p>8 Commencement, Delays and Suspension</p>						
<p><i>Amended</i> SC 8.2</p>						
<p>Time for Completion</p>						
<p>★ New SC 8.2.1</p>	<p>NONE</p>		<p>NONE</p>		<p>Precursor to Programme dependent on Date of Commencement</p>	
<p>The Completion Schedule</p>						
<p>★ New SC 8.2.2</p>	<p>NONE</p>		<p>NONE</p>			
<p>The Schedule of Baselines</p>						
<p><i>Amended</i> SC 8.3</p>					<p>Needs to be linked to Completion Schedule</p>	
<p>Programme</p>						
<p><u><i>Errata 8.4 Advance Warning (EB=YB)</i></u></p>					<p>See Adjustment SC 13.8</p>	
<p><i>Amended</i> SC 8.5</p>						
<p>Extension of Time for Completion</p>						
<p><i>Amended</i> SC 8.7</p>					<p>See Schedule of Baselines</p>	
<p>Rate of Progress</p>						
<p><i>Amended</i> SC 8.9</p>						
<p>Employer's Suspension</p>						



Why The Emerald Book ?

13 Variations and Adjustments

New SC 13.8

Measurement of Excavation and Lining Works and Adjustment of Time for Completion and of the Contract Price

New SC 13.8.1

Responsibility for Measurement

New SC 13.8.2

Bill of Quantities for Excavation and Lining Works

New SC 13.8.3

Adjustment of Time for Completion

New SC 13.8.4

Adjustment of the Contract Price

ISSUED by Employer, COMPLETED by Contractor

NONE > SCHEDULE OF RATES & PRICES

INCL. PRICED BILL OF QUANTITIES

INCL. IN Schedule of Rates and Prices

CLAIMS

CLAIMS

NO need for a Claim under SC 20.1

EOT PERMITTED

CLAIMS

CLAIMS

NO need for a Claim under SC 20.1

PROVISIONAL SUMS



Why The Emerald Book ?



14 Contract Price and Payment

Amended SC 14.1
The Contract Price

Amended SC 14.3

Application for Interim Payment

Amended SC 14.4

Schedule of Payments

15 Termination by Employer

16 Suspension and Termination by Contractor

17 Care of the Works and Indemnities

18 Exceptional Events

19 Insurance

20 Employer's and Contractor's Claims

SC 20.2.4

"fully detailed Claim"

(EB=YB) # 1 Note: see SC 13.8

21 Disputes and Arbitration

ADJUSTMENT
MECHANISM
DEFINED

NO NEED FOR
CLAIM AS
MEASURED
UNDER SC 13.8

Why The Emerald Book ?

▣ End of Part 1/2



Working at the Tunnel Face

Q: *What lies ahead ?*



Why The Emerald Book ?

Part 2 / 2

Calculating the Time for Completion



1.1.99 “Time for Completion” means the time for completing the **Works, a Section or a Milestone** (as the case may be) under Sub-Clause 8.2 [Time for Completion] as **stated in the Completion Schedule**, and as may be **extended** under Sub-Clause 8.5 [Extension of Time for Completion] or **adjusted** under Sub-Clause 13.8.3 [Adjustment of Time for Completion], **calculated from the Commencement Date**.



Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example

Phase 0 Feasibility Study Questions ?



Initial Risk
Assessment
Approach



Location >>

Time ?



Issues:

Hydro-geology ?
Physical
conditions

Breakthrough
Time ?

Cost ?

?

Breakthrough
Location ?

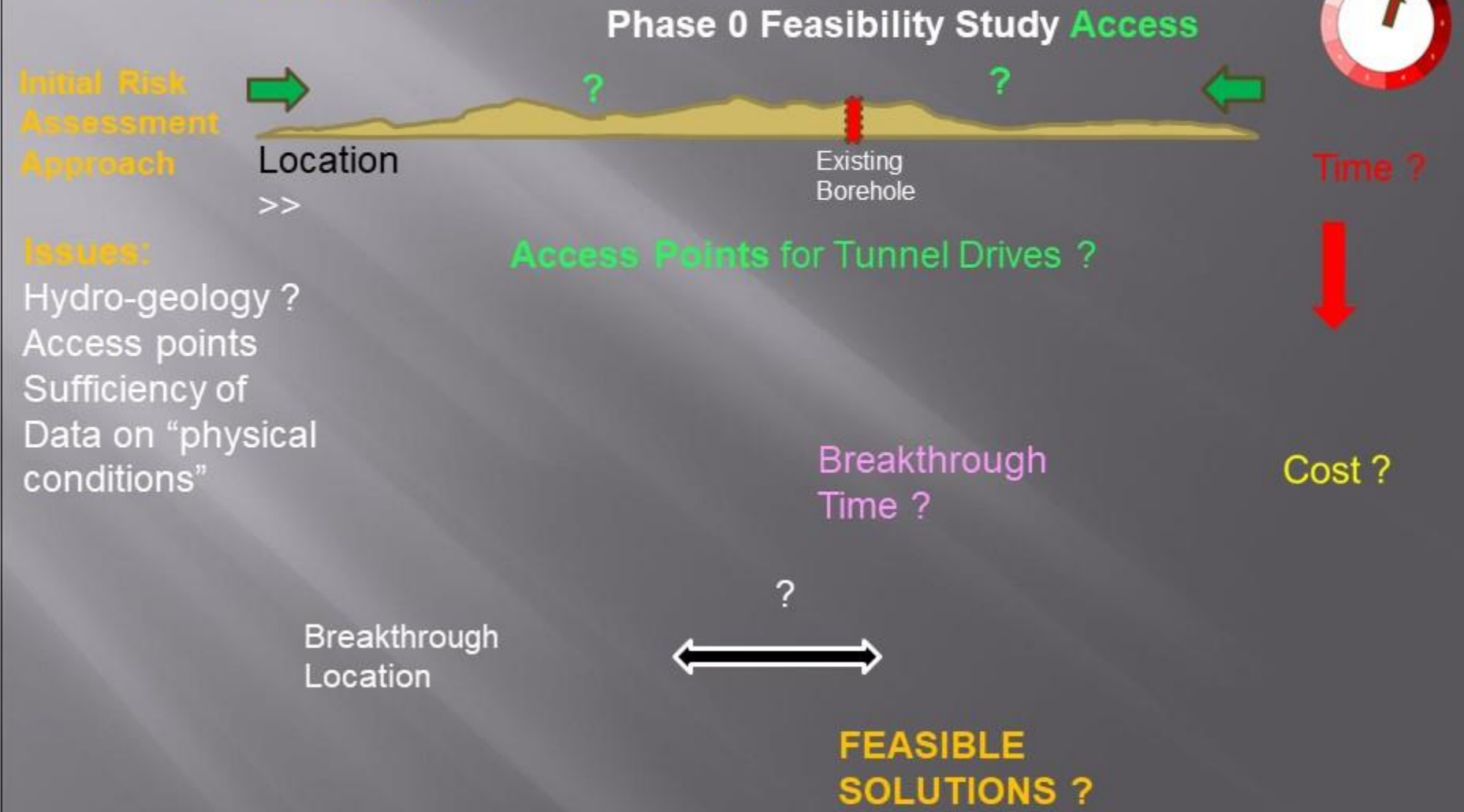


**FEASIBLE
SOLUTIONS ?**

Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example



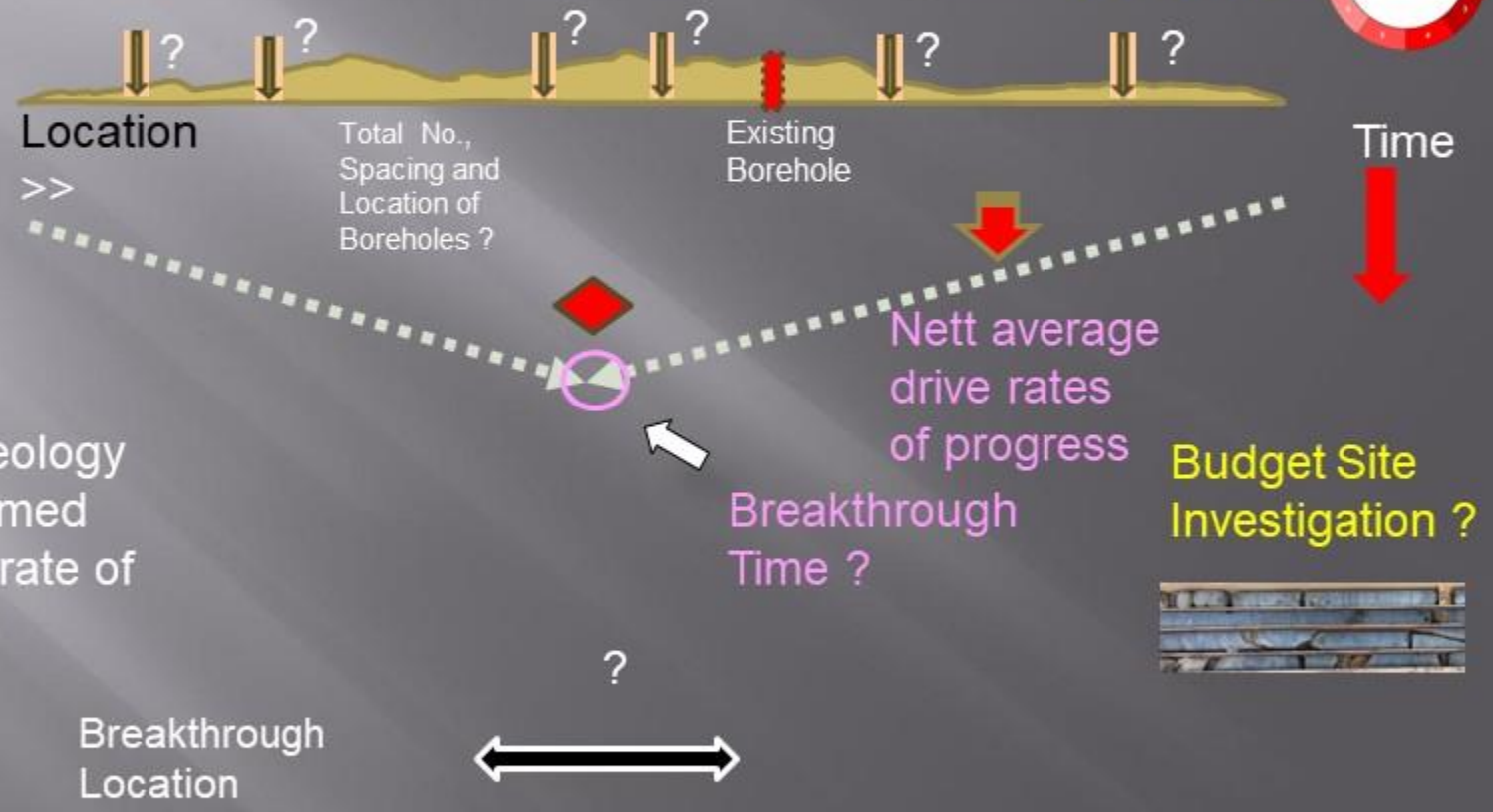
Why The Emerald Book ?

New Form of International Contract for **Underground Works**

Worked Example

Initial Risk Assessment Approach

Phase 1 Site Investigation Boreholes



Issues:
Hydro-geology
the assumed
average rate of
progress

Budget Site Investigation ?



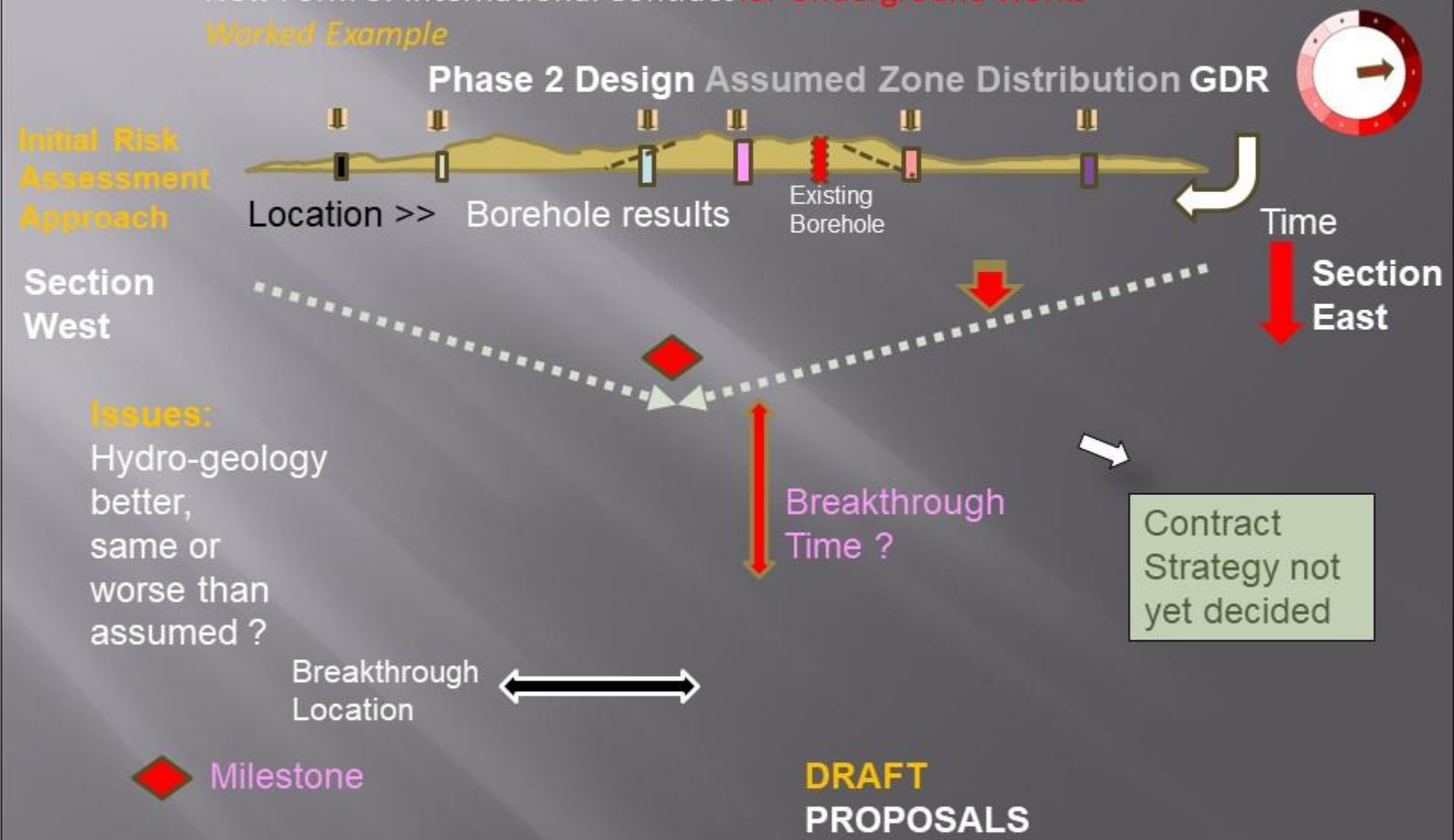
Milestone

DRAFT PROPOSALS

Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example



Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example

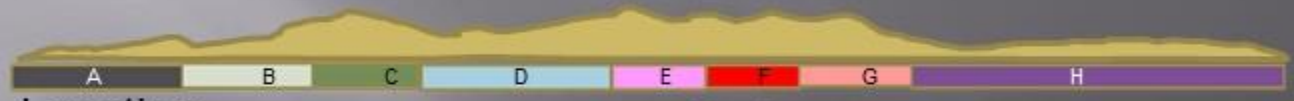
Phase 2 Reference Design Zone Distribution GBR

Initial Risk Assessment Approach

Section West

Issues:

Hydro-geology
Limits set for contractually referenced baseline statements for each zone.



Location



Time

Section East

Scenarios:



Nett average drive rates of progress

Breakthrough Time

Breakthrough Location

Contract Strategy Formulation

DRAFT PROPOSALS

◆ Milestone

Why The Emerald Book ?

New Form of International Contract for Underground Works

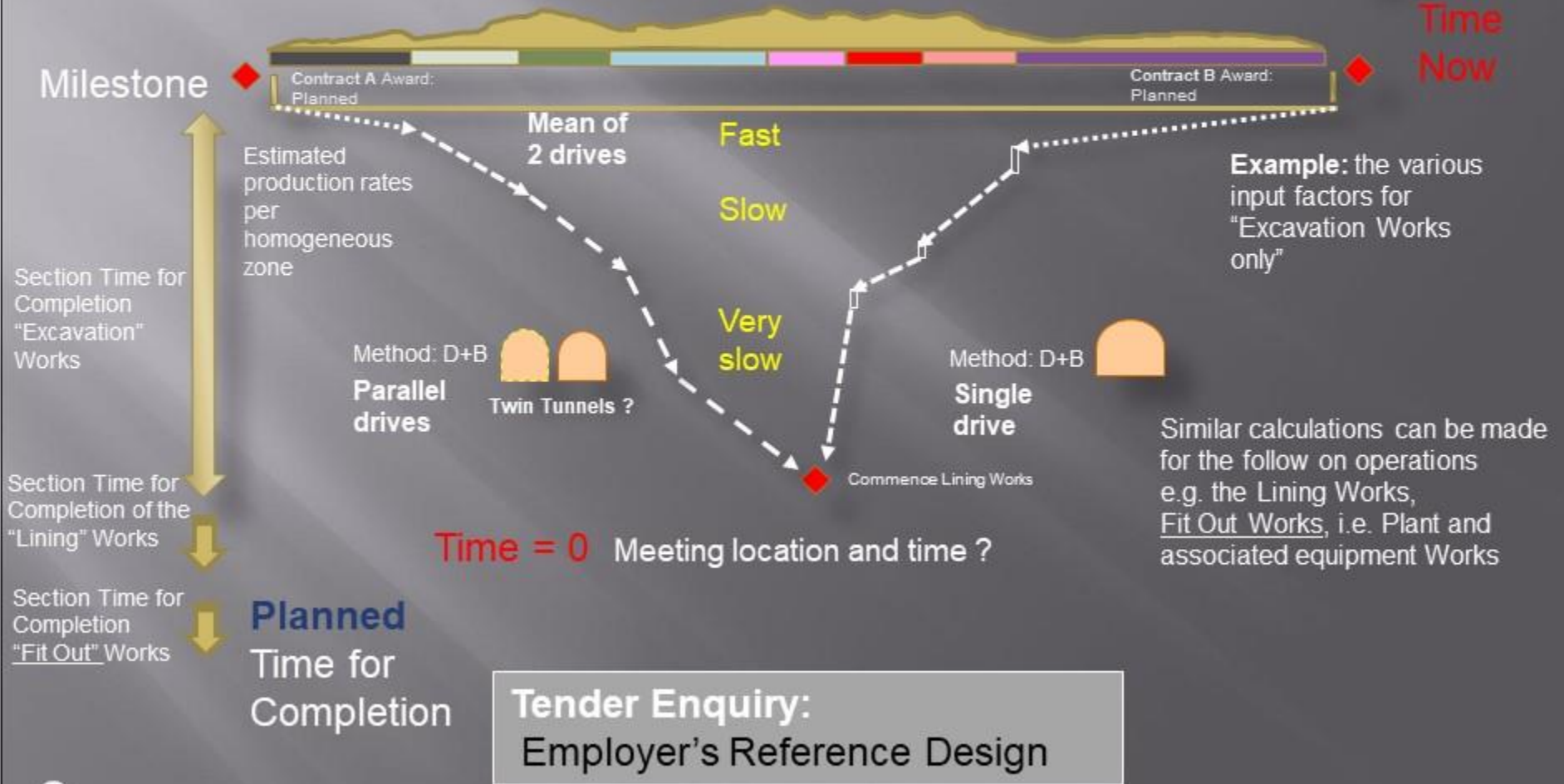
Worked Example

Phase 3.1 Procurement Invitation to Tender

Estimating Time for Completion:



Time Now



Example: the various input factors for "Excavation Works only"

Similar calculations can be made for the follow on operations e.g. the Lining Works, Fit Out Works, i.e. Plant and associated equipment Works

Time = 0 Meeting location and time ?

Planned Time for Completion

Tender Enquiry: Employer's Reference Design

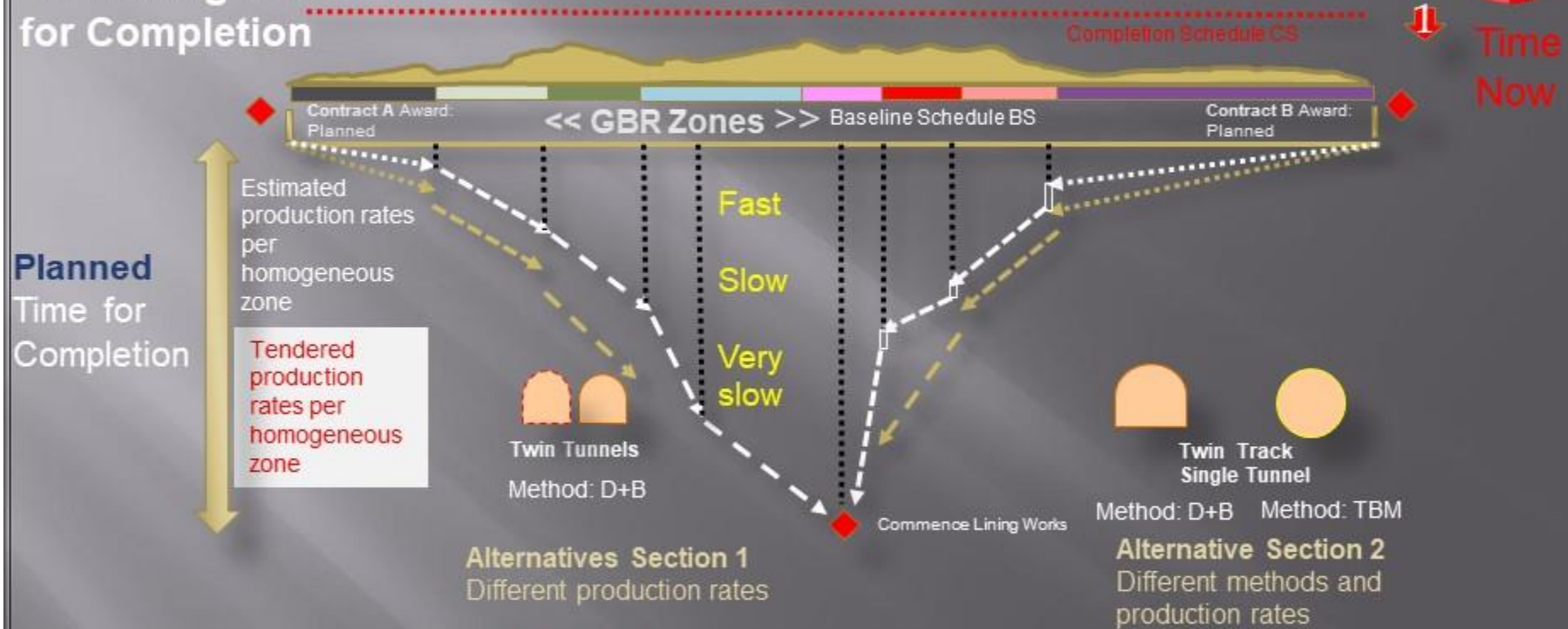
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Worked Example

Estimating Time for Completion

Phase 3.2 Procurement Alternative Proposals



Time = 1 Meeting location and time ?

Tender Submission:
Comparison of Proposals

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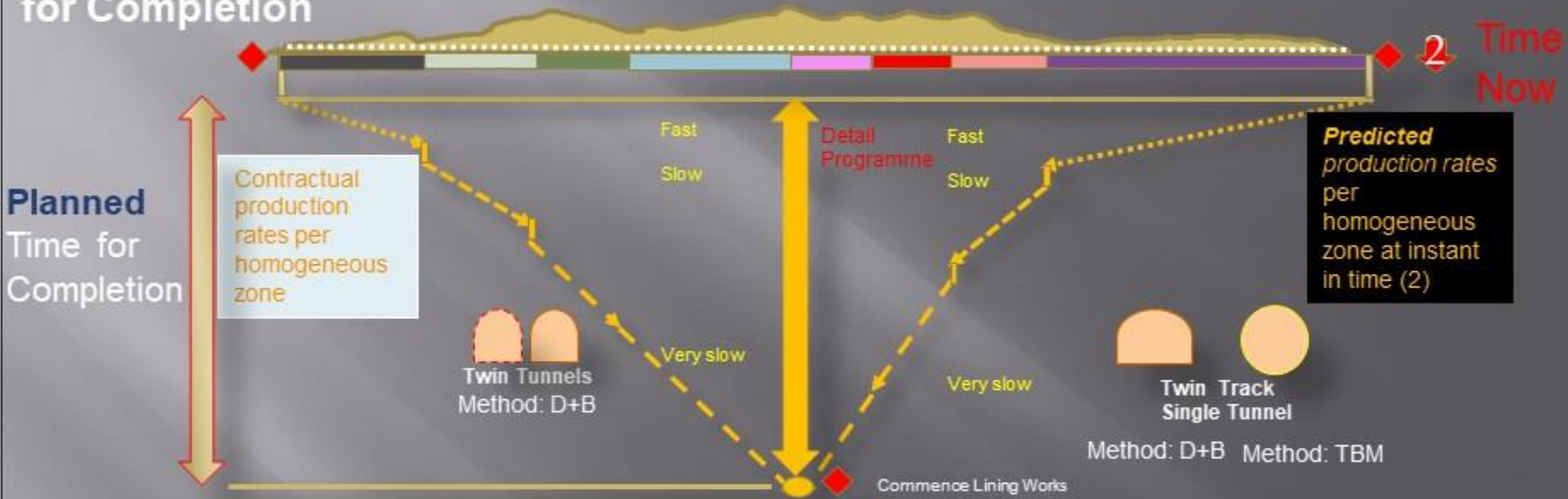
New Form of International Contract for Underground Works

Worked Example



Estimating Time for Completion

Phase 3.3 Procurement



Contract A
Section 1

Time = 2 Meeting location and time ?

Contract B
Section 2

Contract Award: Contractor's Proposal
Contracts A&B Sections 1&2

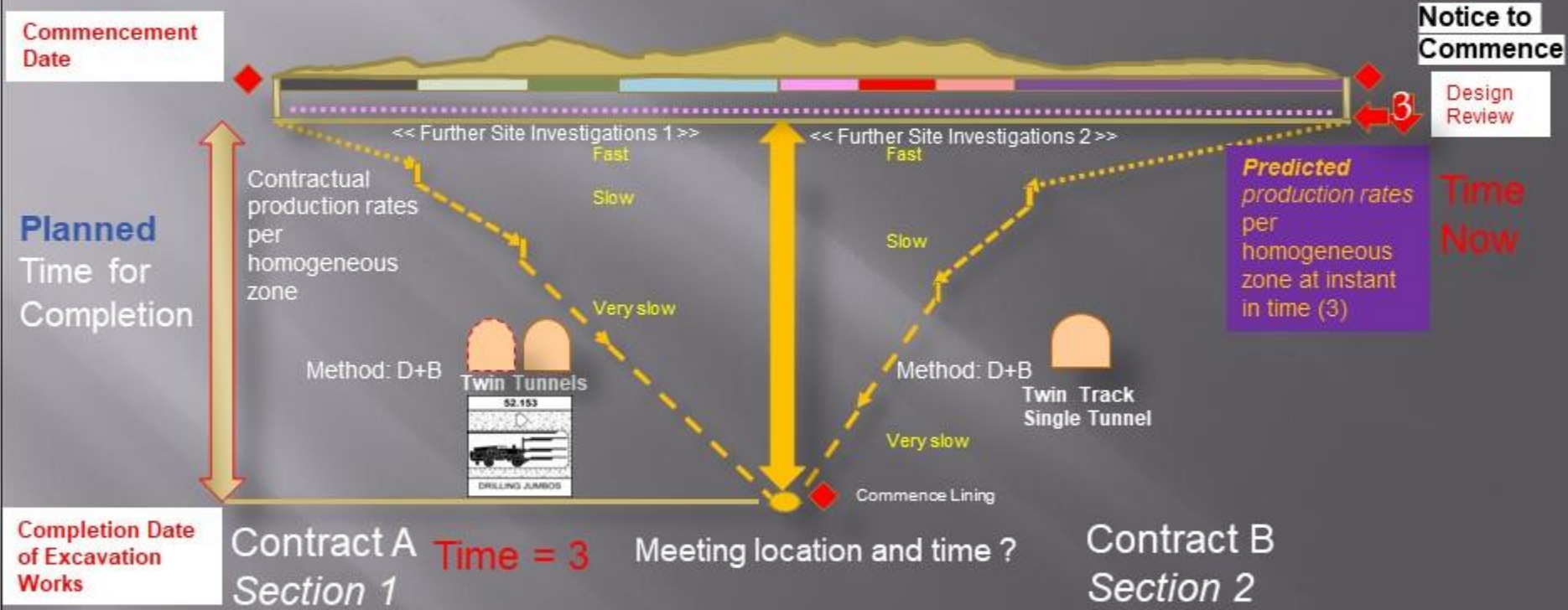
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Worked Example



Phase 4.1 Construction Option a D&B



Commencement Date

Notice to Commence

Design Review

Planned Time for Completion

Time Now

Completion Date of Excavation Works

Contract A Section 1 Time = 3 Meeting location and time? Contract B Section 2

Contract: Contractor's Proposals Contracts A&B Sections 1 & 2 Employer's reference design Stage: Design Review

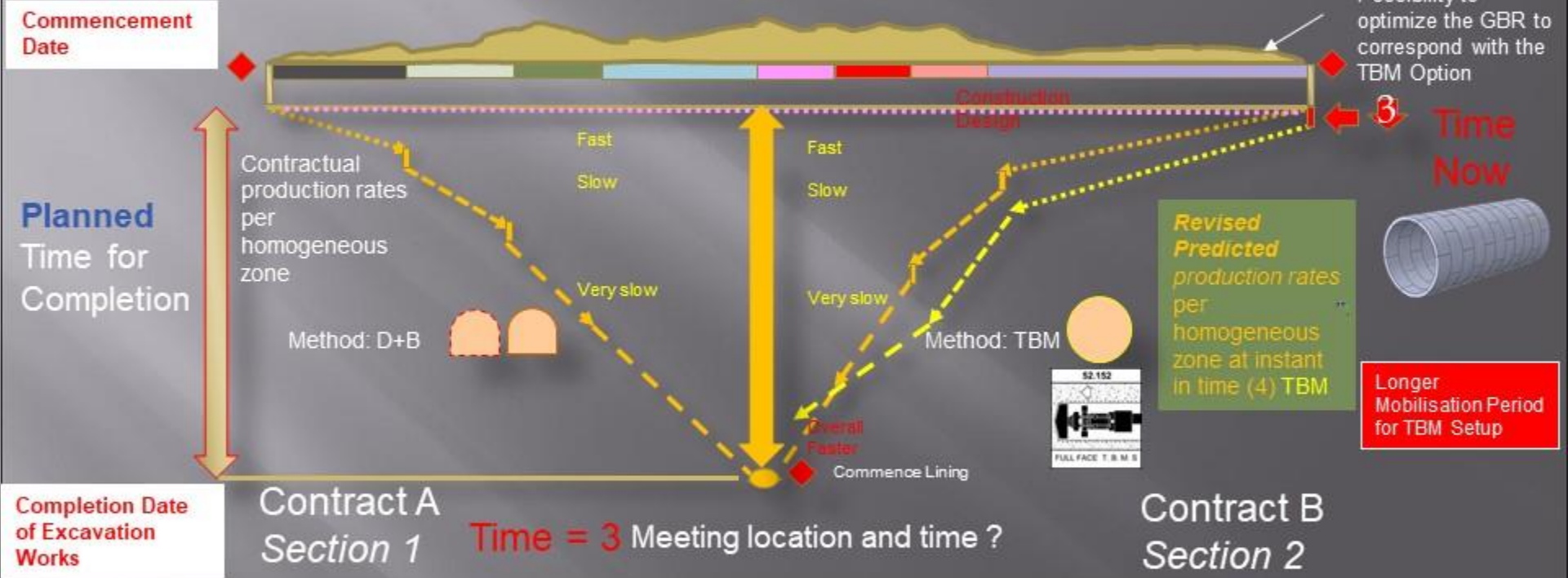
3a

Why The Emerald Book ?

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Worked Example

Phase 4.2 Construction Option b TBM



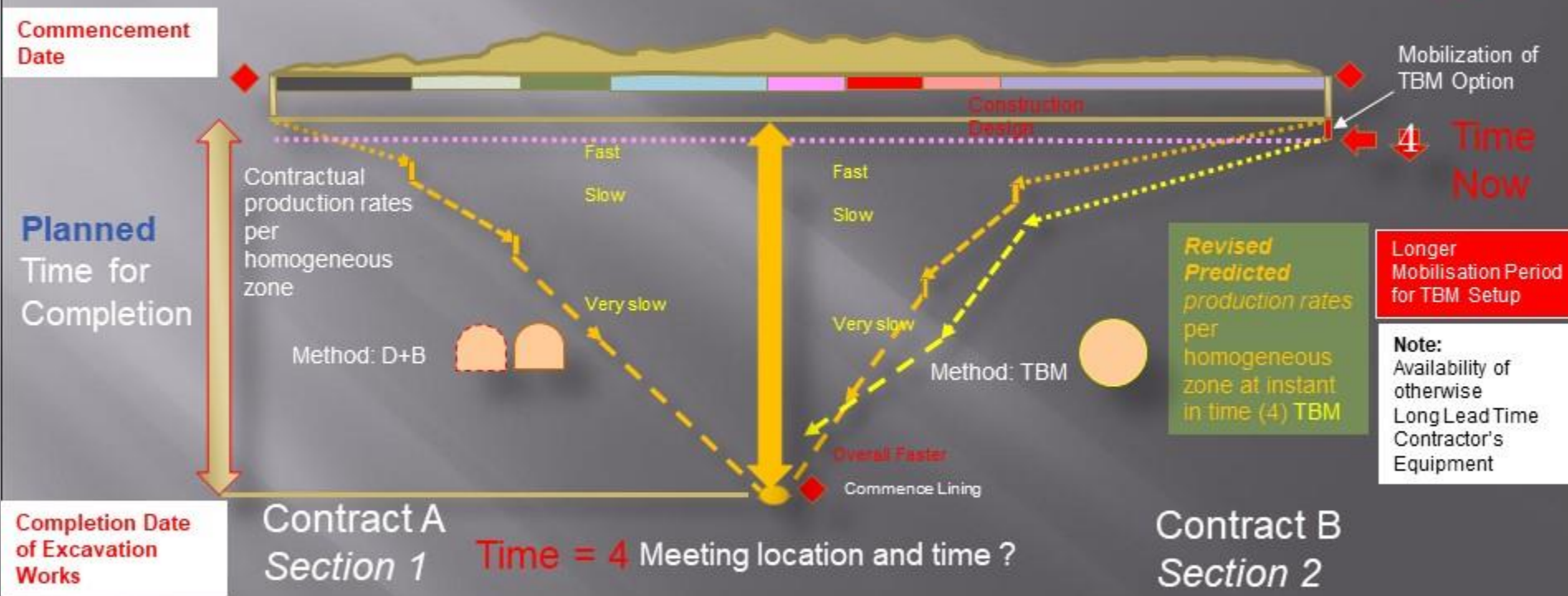
Contract: Contractor's Proposal
 Contract B Section 2 *Alternative Design*
 Stage: *Construction Design*

Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example

Phase 4.2 Construction Option b TBM



Contract: Contractor's Proposal
 Contract B Sections
 Stage: Extended Mobilization due
 Alternative Construction Design &
 Review + Longer Mobilization Time

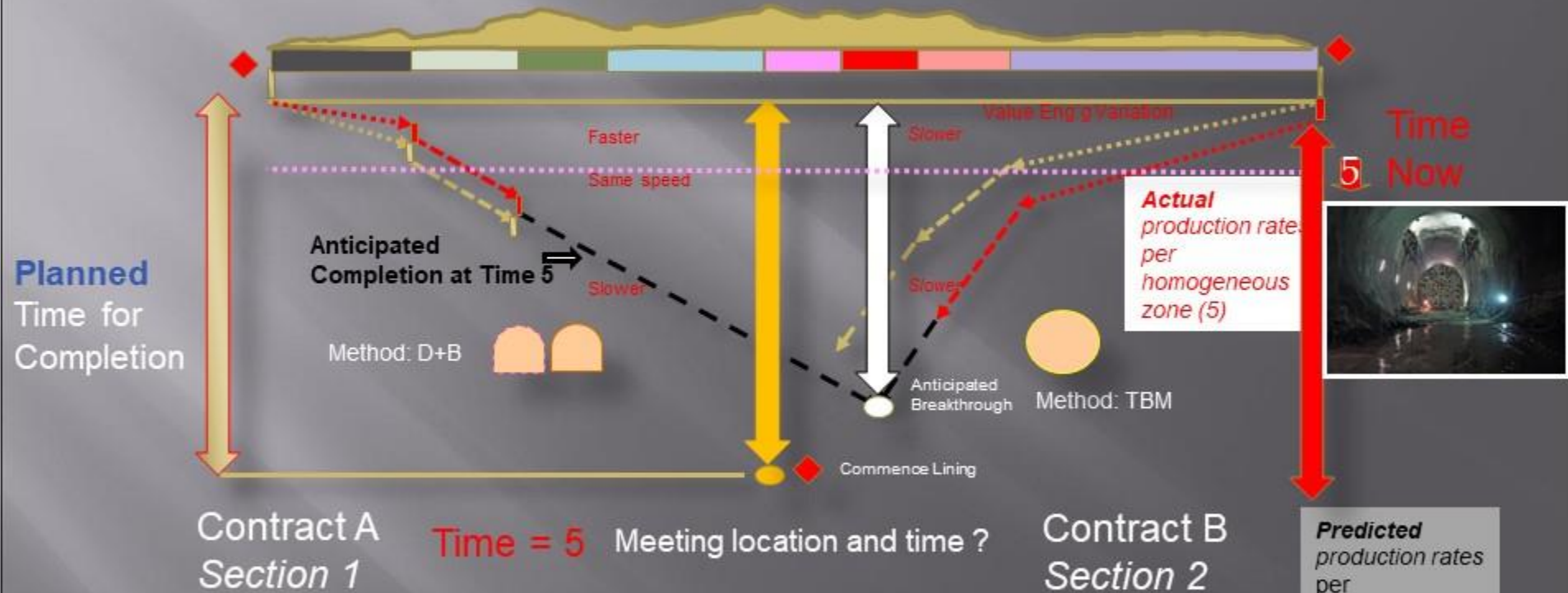
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Worked Example



Phase 4.3 Construction



5

Contract: Contractor's Proposals
Contract A&B Sections 1&2
Stage: Construction Programme
Mobilization Plan

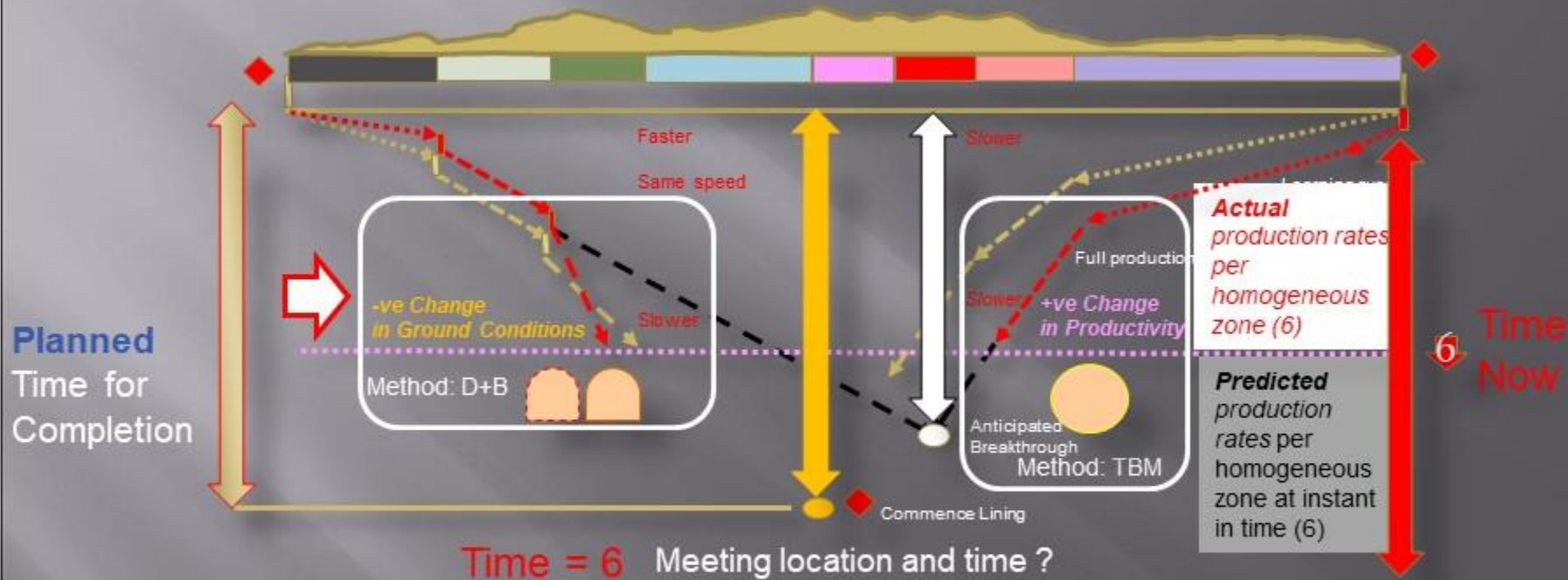
Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example



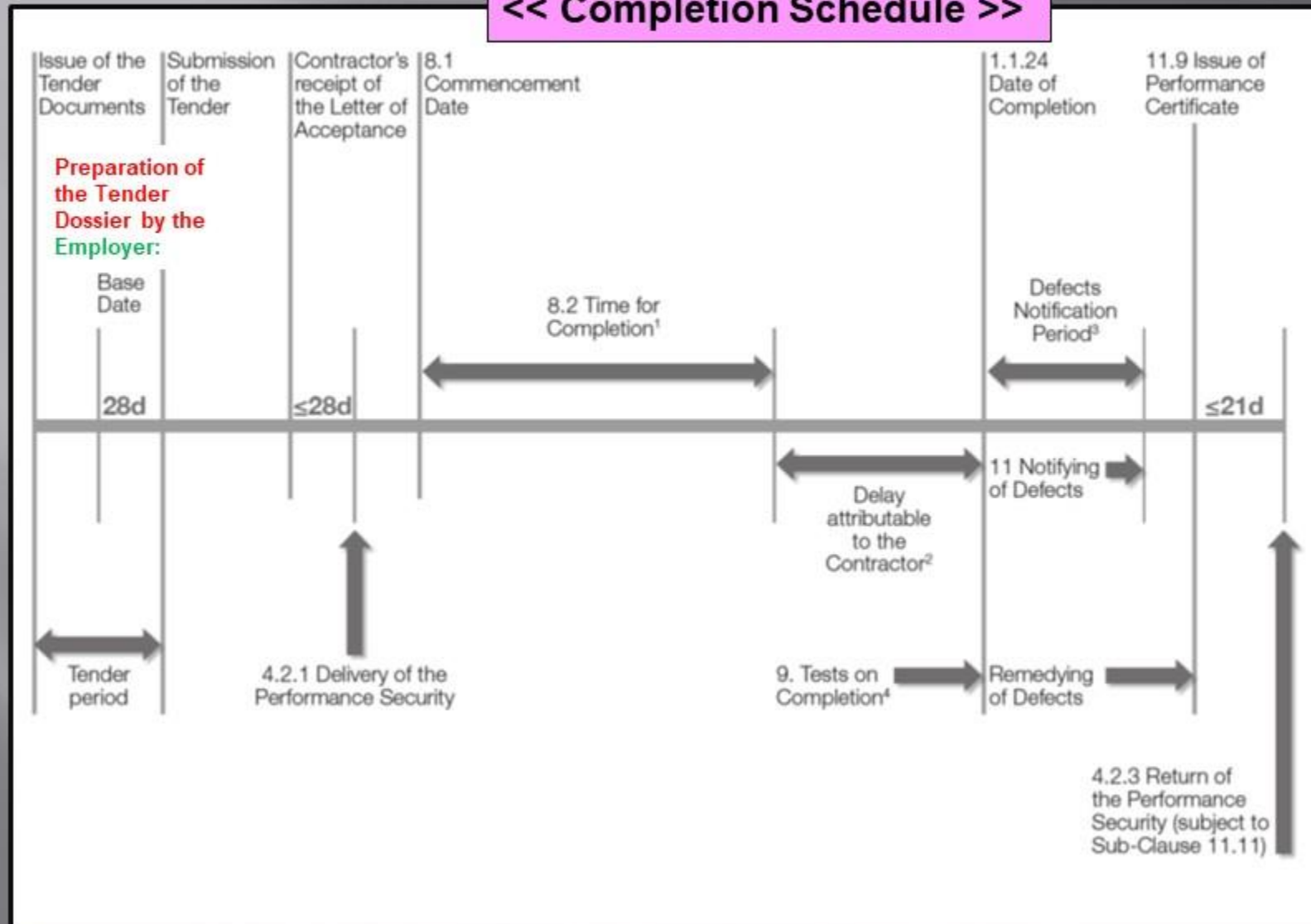
Phase 4.4 Construction Delays



Contract: Contractor's Proposals
Contracts A&B Sections 1&2
Stage: Construction *obvious delays*

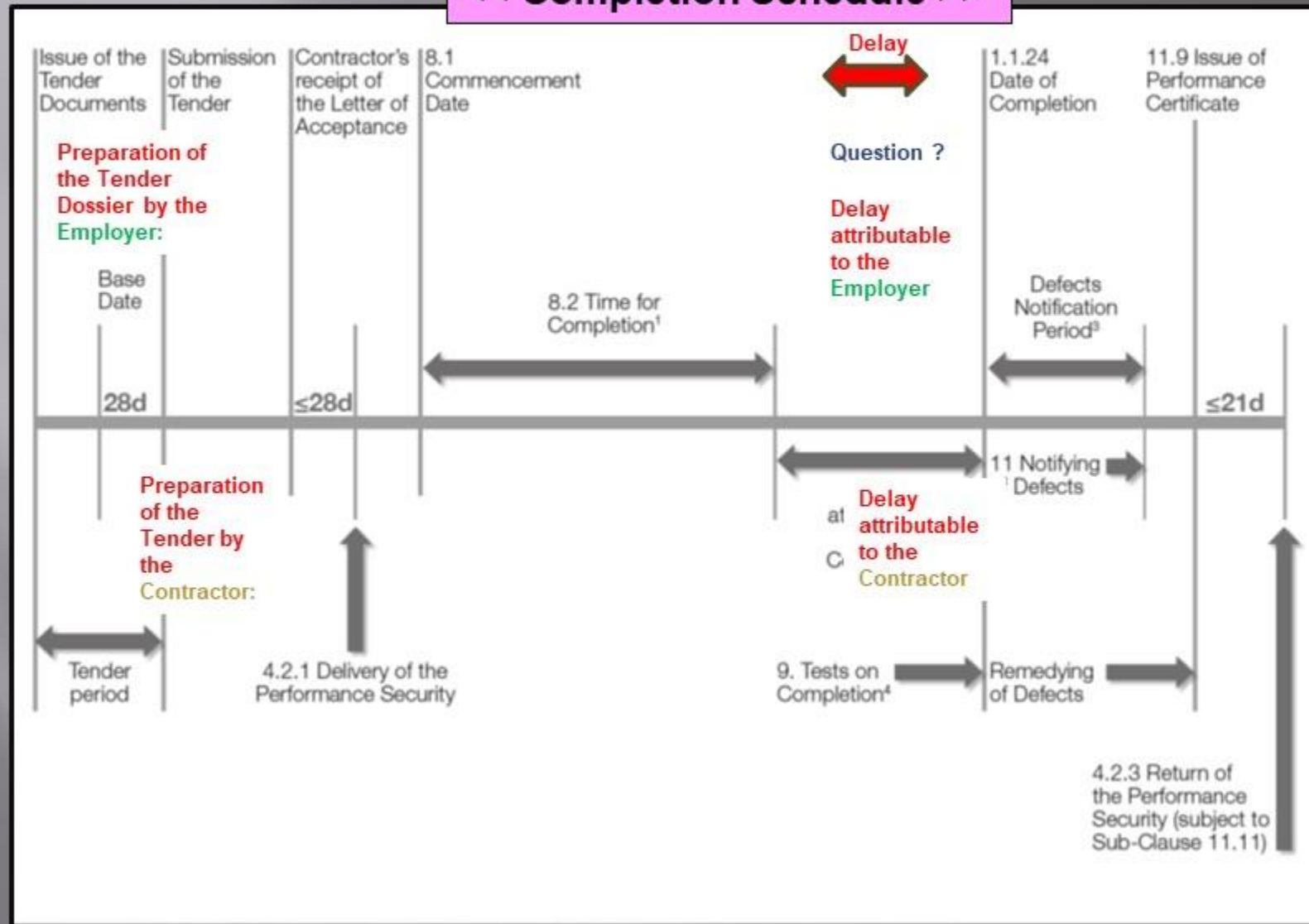
Why The Emerald Book ?

<< Completion Schedule >>

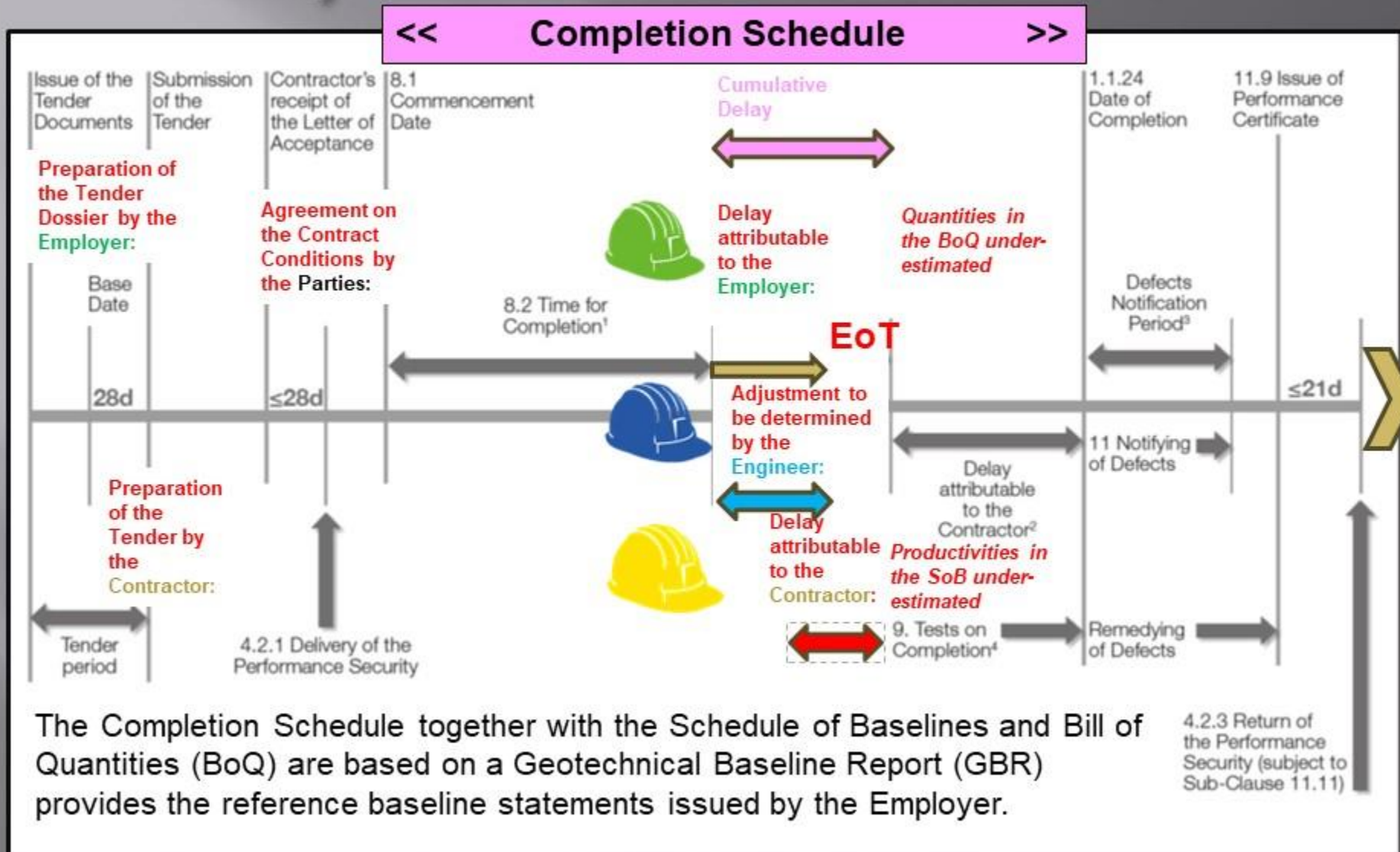


Why The Emerald Book ?

<< Completion Schedule >>



Why The Emerald Book ?



The Completion Schedule together with the Schedule of Baselines and Bill of Quantities (BoQ) are based on a Geotechnical Baseline Report (GBR) provides the reference baseline statements issued by the Employer.

The completed Schedules of Baselines (Excavation & Lining Works) and the Contractor's Proposal with the Letter of Tender provide the Contractor's conditions to complete the Works⁹

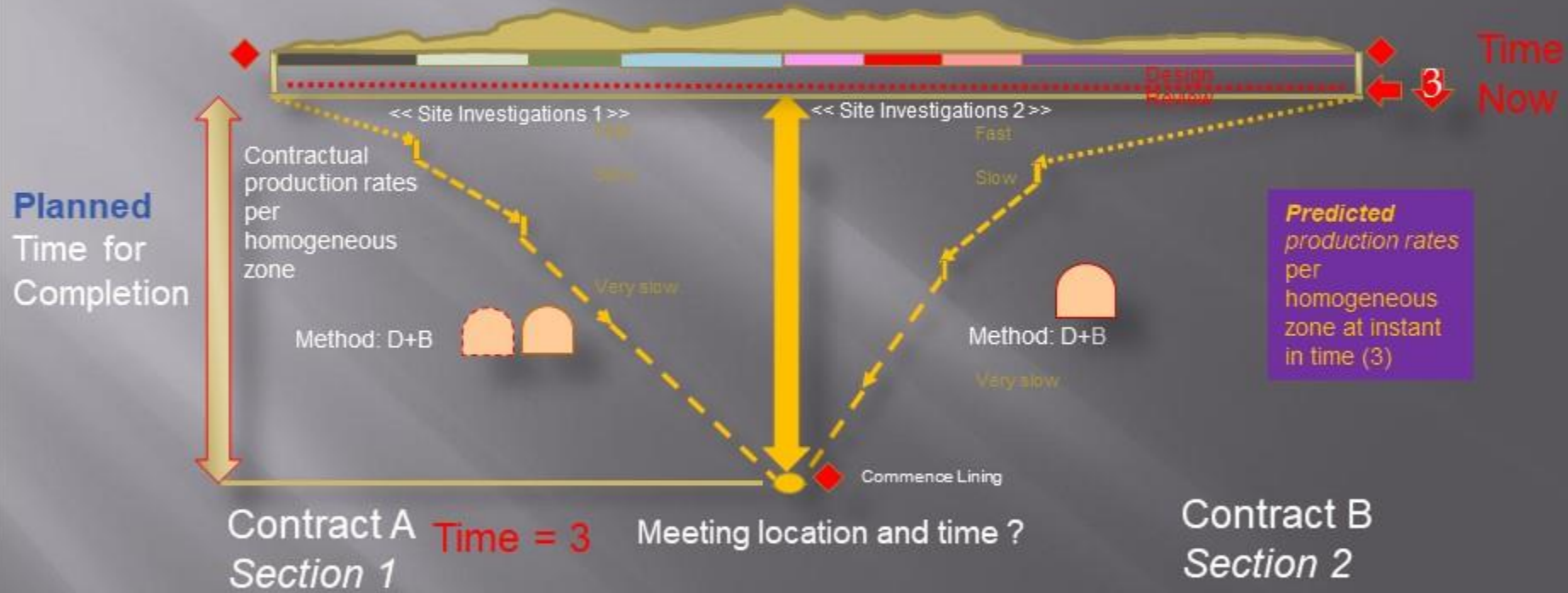
Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example



Phase 4 Construction Commencement (Options)



Recapping

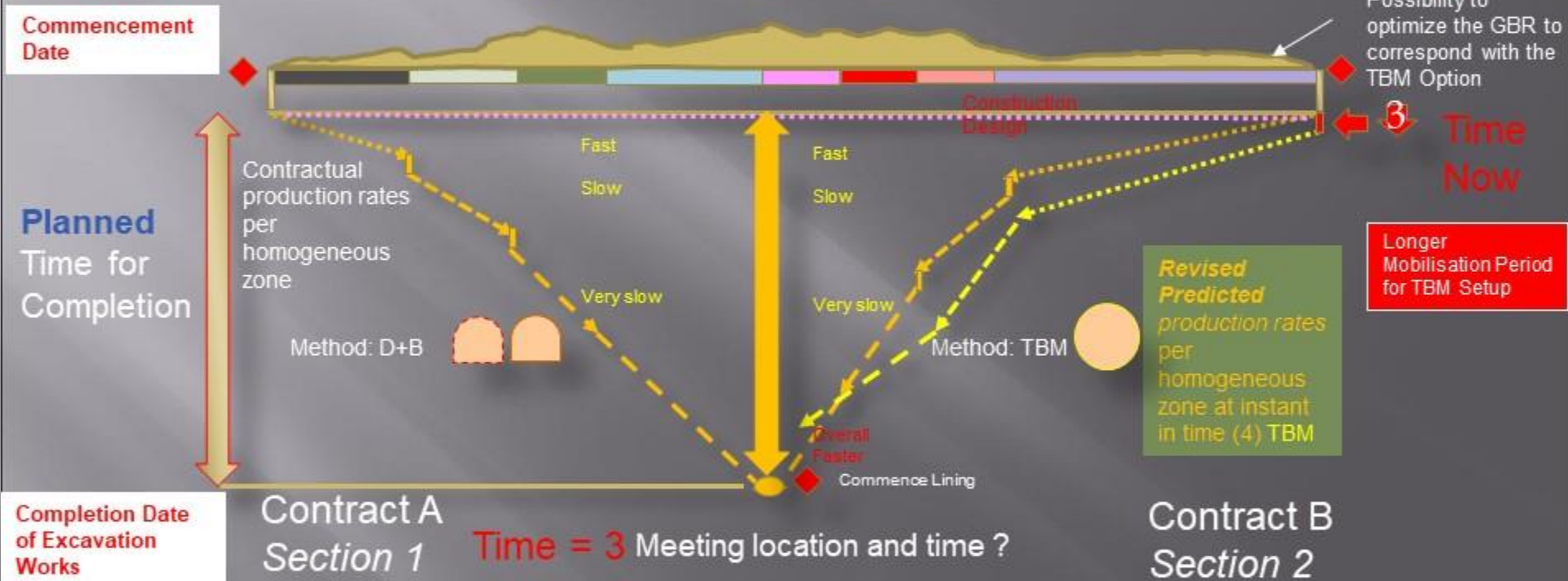
3a

Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example

Phase 4.2 Construction Option b TBM



Recapping
3b

Contract: Contractor's Proposal
Contract B Section 2 Alternative Design
Stage: Construction Design

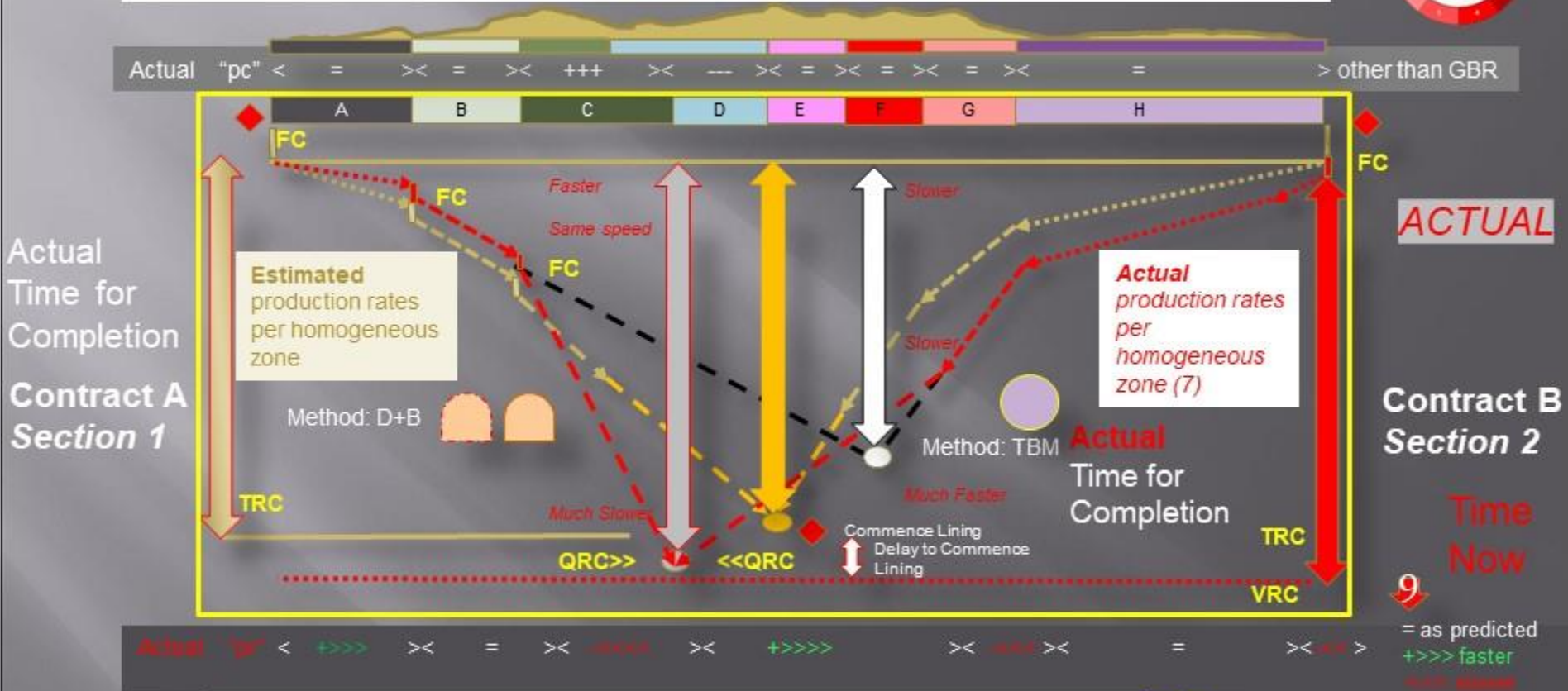
Why The Emerald Book ?

New Form of International Contract for Underground Works

Worked Example

Phase 4 Construction Completion: Excavation Works

Calculation of encountered physical conditions "pc": >; =; or < GBR; "pr" production rates + charges

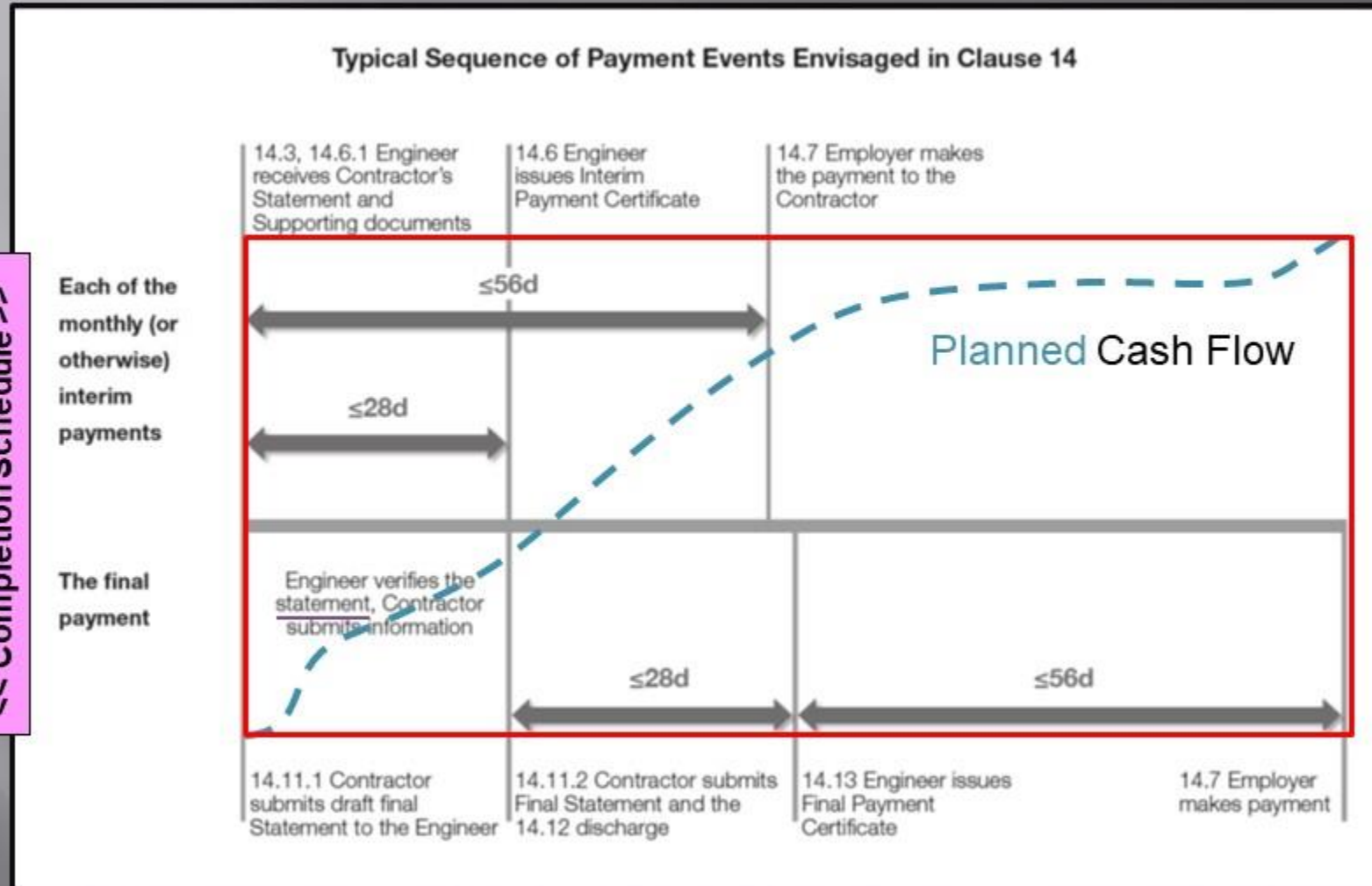


Contract: Contractor's Proposal Contracts A&B Sections 1&2
 Stage: Excavation Works Completion;
 Event: Breakthrough & Time / Cost

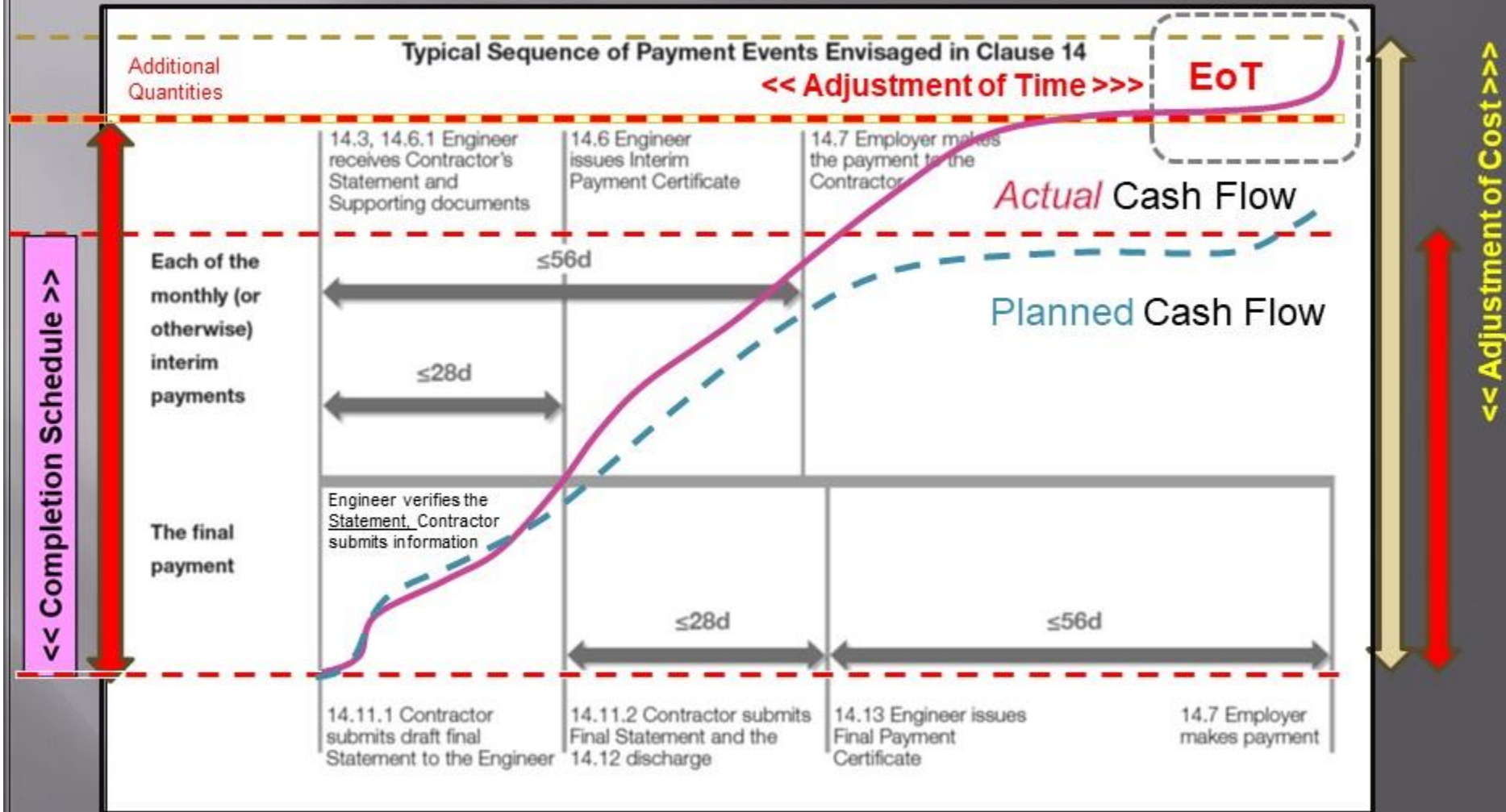
- Method-related charges:
- FC Fixed charges
- TRC Time-related charges
- QRC Quantity-related charges
- VRC Value-related charges

Why The Emerald Book ?

<< Completion Schedule >>



Why The Emerald Book ?



Why The Emerald Book ?



The **Emerald Book** provides the mechanism to distinguish between the risks to be allocated to the Employer and the Contractor in respect of both

Time to Completion

and

Cost to Completion

dependent on the degree of certainty defined during the Tender stage, as well as the calculation of

any **Extension of Time EOT**

relative to the Schedule of Baselines agreed at the time of Contract award.



*Light at the
End of the Tunnel*

Why The Emerald Book ?

Ask the
Right
Questions

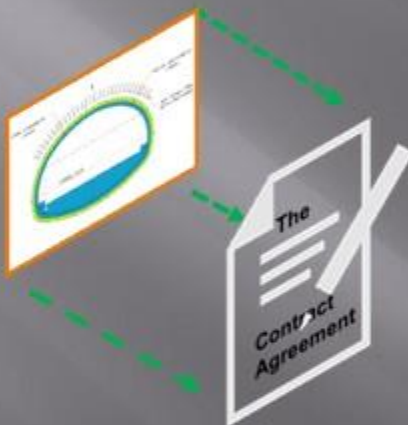


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Question:
*Correlating 2-D
Contractual
Documents with
Multiple-D Reality:*

Is this realistic ?



The Matrics Approach to
a Visual
Integrated Coding Solution



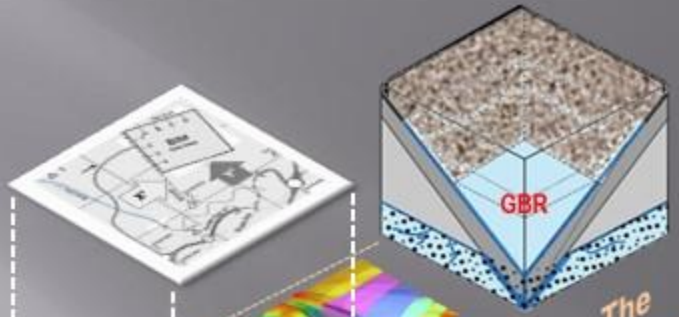
Find the
Right
Answers



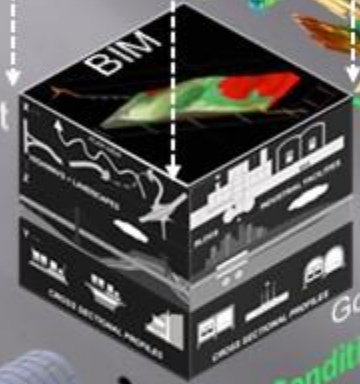
Ask the
Right
Questions



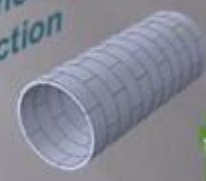
The Project
Alignment
X, Y, Z



The Hydro-
geology



The Methods of
Construction



The Parties
to the Project
Organisation



The Conditions
of Contract:
Particular
General
Conditions

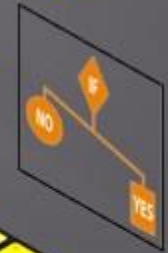


Governing Law

The Cash
Flow and
Costs



The Contract
Risk
Management
Plan



The Contractor's
Key Equipment



The Time for
Completion



Why The Emerald Book ?

Find the
Right
Answers



Why The Emerald Book ?

Ask the
Right
Questions



The Priority of Documents:

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- (a) **the Contract Agreement;**
- (b) the Letter of Acceptance;
- (c) the Letter of Tender, **(with the Addenda Nos.); # 1**
- (d) the Particular Conditions Part A – Contract Data, **the Completion Schedule and the Schedule of Baselines;**
- (e) the Particular Conditions Part B – Special Provisions;
- (f) **the Geotechnical Baseline Report;**
- (g) **these General Conditions;**
- (h) **the Employer's Requirements; # 2**
- (i) the other **Schedules; # 3**
- (j) the Contractor's Proposal;
- (k) the JV Undertaking (if the Contractor is a JV); and
- (l) any other documents forming part of the Contract, including **the Geotechnical Data Report, the Contract Risk Register and the Contract Risk Management Plan**



Find the
Right
Answers

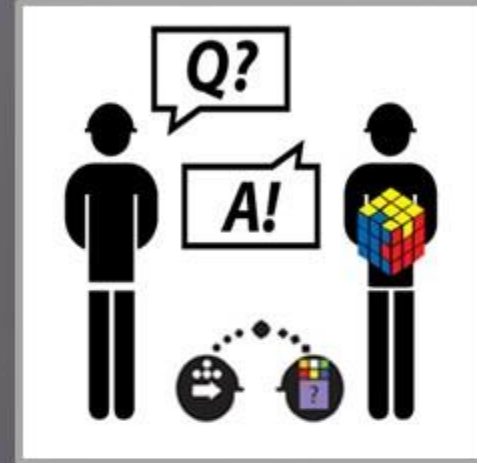


Why The Emerald Book ?



Thank You

Any Questions?



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DISPUTE BOARDS IN THE TUNNELLING INDUSTRY



DRB v DAAB



Giorgiana Tecuci

Tecuci Păltineanu SCPA





Overview

- History of Avoiding and Resolving Dispute in the Tunnelling Industry
- Forms of Contract used by the Tunnelling Industry
- Dispute Review Boards (DRBs)
- Dispute Avoidance and Adjudication Boards (DAABs)
- DRB v DAAB
- Why Dispute Boards?



History of Avoiding and Resolving Disputes in the Tunnelling Industry

- Dispute Board concept
- Used for the first time by the Tunnelling Industry
 - 1974 **Better Contracting for Underground Construction**
 - 1978 **Better Management of Underground Construction Projects**
 - 1989 **Avoiding and Resolving Disputes in Underground Construction**
 - 1989 **Contracting Practice for the Superconducting Super Collider: “*the use of a professional review board to settle claims and disputes that cannot be settled easily by normal contract administration procedures before the completion of the works”*”**



Forms of Contract used by the Tunnelling Industry (1)

- National standards:
 - N. America (DB, DBF, DBF O&M)
 - Europe – Austria, France, Germany, Italy, Portugal
 - Switzerland
 - Africa – South Africa
 - Asia - India
- International standards:
 - NEC
 - FIDIC
 - [...]



Forms of Contract used by the Tunnelling Industry (2) – Dispute Resolution

Preferred resolution method:

- litigation and/or arbitration:

- US – Michigan;
- India – Railway

- Dispute Boards:

- DRB – USA* (25 states in 2010**), Switzerland, New Zealand
- DAB/DAAB – FIDIC
- Adjudicator – NEC₃, NEC 4*

*Sr. Representatives before DB

**'Dispute Resolution Boards (DRBs): Effective Resolution in the Construction Industry', Dick Fullerton



Dispute Review Boards (DRBs) in Tunnelling

- The DRB is a unique, non-adversarial project management technique that is a proactive, dispute prevention and resolution method utilized during the course of construction seeking to resolve a dispute contemporaneously:
 - Encourages dispute avoidance (since 1975!) - *standing*
 - Assists in the resolution of claims and disputes – *standing and on-demand*



- Panel of 3 or more impartial neutrals with particular expertise and reputation:
 - Each party nominates one member
 - The two approved member select a third one for approval
 - The 3rd may become chair
 - Three-party agreement (Owner, Contractor, Board member)
- Upon request:
 - An informal hearing (disagreements) – advisory opinion (oral) – negotiations;
 - A formal hearing (disputes) – non-binding recommendation



Dispute Avoidance and Adjudication Boards (DAABs) – Emerald Book

- The DAAB is a project management tool, used to prevent and resolve disputes , comprising 1 or 3 independent and impartial persons selected by the parties, appointed at the commencement of a project
- introduced in 2017 edition of FIDIC Rainbow
- Adopted by Emerald Book



DAAB v. DRB

DAAB Emerald Book

Yet to be tested (to our info)

- aims to resolve disputes as they arise;
- process potentially costly (EIC)

**'Dispute Resolution Boards (DRBs): Effective Resolution in the Construction Industry', Dick Fullerton

Dispute Review Board

Tried & tested

- Colorado DOT** – standing DRBs program 2008 for projects over \$15mill.
- Between 2008 – 2013:
 - only 13 claims – DRB hearings;
 - 12 claims resolved;
 - 1 claim not resolved;
 - ALL other claims were prevented



Why use a Dispute Board? DRBF Manual

- DB remains familiar with the project
- Dispute avoidance attitude
- Parties choose Members
- Cost efficient
- Parties maintain control over the outcome
- Encourages good relationships
- Confidential
- The DB is PROACTIVE



Conclusion***

Records show convincingly that a **standing DB appointed at the commencement of the contract** greatly assists in the **avoidance of disputes** and the unnecessary referral of costly disputes (the outcome of which is never guaranteed)

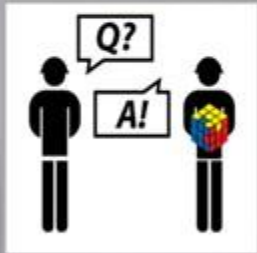
International Funding Agencies are convinced – many specify it in their contracts

****Excerpt of DRBF A&P Training Workshop*

Why The Emerald Book ?



Questions Time



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QUESTIONS



NEXT WEBINAR

19 October 2023 | 11:00 AM UK (BST)

Chevron's approach to Force Majeure

with Steve Gibson of Chevron

and

Risk identification and elimination as in-house counsel

With Rachel Gwilliam of Bouygues Energies & Services

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Thank You



zoom





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