

NEC USERS' GROUP Asia Pacific Workshop



18 May 2023

At the end of the course participants should be able to:

- Appreciate the risk for physical conditions, and who bears that risk
- Allocate and share that risk by adopting and amending the various forms of contract
- Understand the NEC provisions on physical conditions
- Gain some insight on bringing a claim for physical conditions under NEC

- 1. Introduction**
- 2. Who bears the risk?**
- 3. Allocation of Risks**
 - HK forms, FIDIC Silver Book
 - FIDIC Yellow/Red Books: “reasonably foreseeable” test
 - NEC: Probability test
 - Geotechnical Baseline Report/GBR: Baseline geological conditions
- 4. An examination of the NEC provisions**
- 5. Bringing a claim under NEC**

1. Introduction

- Claims for physical conditions are difficult & depend on:
 - Form of contract used & (often complex) bespoke amendments to standard forms
 - Express and implied terms
 - Site data made available, representations and deeming provisions
 - Extent of site investigation
 - Impact of particular circumstances that arose after work commenced
 - Engineer's action after the unforeseen conditions are encountered
 - Lack of public decisions to consider as precedents
- Consequences of unforeseen physical conditions (cost and time impact) depend on the risk allocation in the contract

2. Who bears the risk?

Common law

- Exclusively the contractor (except pure cost-plus and re-measurement contracts with no fixed completion time)
- Consequence: Tenderers either gamble for favourable ground conditions or price a contract accordingly (by assuming the worst case scenario?)

“...tenderers gambling on favourable ground conditions would risk a large loss, while conversely, if all tenderers anticipated the worst case, but in the event reasonable conditions were encountered, the Government would be the losers. It follows that, if the Government are right, there is a large element of wagering inherent in this contract. It seems to their Lordships somewhat improbable that a responsible public authority on the one hand and responsible engineering contractors on the other, contracting for the execution of public works worth many millions of dollars, should deliberately embark on a substantial gamble.” (emphasis added)

(Mitsui Construction Co Ltd v The Attorney General of Hong Kong (1986) 33 BLR 1)

- Harsh position. As a result, other bases of claims have evolved

2. Who bears the risk?

Other bases of claim

- Misrepresentation: Employer disclosed inaccurate site investigation materials
- Implied warranty: Employer gave an implied warranty of the site conditions by the presentation of site investigation materials before tender
- Frustration, mistake: Contract has been frustrated by adverse physical conditions

2. Who bears the risk?

- Physical impossibility: Impossible to complete the works in strict accordance with the contract
 - S.16 of LARCO: physical impossibility = frustration = entitled to a reasonable sum for the work done
- Commercial impossibility: The cost or time required for completing the works is out of all proportion to what is contemplated by the contract; the obligation is outside the range of the practicable and reasonable
- Adverse physical conditions = impossibility = require a variation: Physical conditions encountered makes it impossible to carry on works so the Employer is obliged to order variations to eliminate the impossibility, and if refused, the contractor is entitled to abandon the work and be paid for the value of the work done
- “The more risk that is left with the contractor, the more prospect there is that the impossibility provision will be called upon”

3. Allocation of risk

HK Govt General Conditions of Contract (1999)

- Follows common law position
- No provision for unforeseen physical conditions
- All risks placed on contractor? – Clause 13(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 on 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.” (emphasis added)

3. Allocation of risk

FIDIC Silver Book 1999

- Follows the common law position – Clause 4.12(b)(c):

4.12(b) By signing the Contract, the Contractor accepts total responsibility for having foreseen all difficulties and the costs of successfully completing the works

4.12(c) The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs

3. Allocation of risk

ICE, FIDIC Yellow/Red Books

- Reasonably Foreseeable test – FIDIC Yellow Book Clause 4.12
If the Contractor encounters physical conditions which the Contractor considers to have been Unforeseeable and that will have an adverse effect on the progress and/or increase the Cost of execution of the Works, subject to complying with notice etc. provisions, the Contractor shall be entitled to EOT and/or costs
- “Unforeseeable” is defined as not reasonably foreseeable by an experienced contractor by the Base Date (i.e. 28 days before the latest date for submission of the tender).

HK Airport Authority

- HK AA form adopting the same test – Clauses 13.4 -13.6
If, 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 could not, in his opinion, reasonably have been foreseen by an experienced contractor at the date of the Letter of Acceptance, the Contractor may, subject to complying with notice etc. provisions, claim for time and/or payment

3. Allocation of risk

MTRC

- MTRC form adopting the same test – 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, the Contractor may, subject to complying with notice etc. provisions, claim for additional payment

- Clause 38.3 – If the Engineer decides that... the said physical conditions or artificial obstructions could not reasonably have been foreseen by an experienced contractor...the Engineer shall take any delay or disruption of working suffered...into account in determining any EOT
 - I.e. contractor does not automatically have a valid claim to EOT

3. Allocation of risk



ECC4 60.1(12): Compensation Event

- Encountering physical conditions which satisfy these requirements are compensation event entitling contractor additional time & money:
 - within the Site,
 - not weather conditions, and
 - an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable for him to have allowed for them.

ECC4 60.2

- In judging the physical conditions for the purpose of assessing a compensation event, the Contractor is assumed to have taken into account
 - the Site Information,
 - publicly available information referred to in the Site Information,
 - information obtainable from a visual inspection of the Site and
 - other information which an experienced contractor could reasonably be expected to have or to obtain.

3. Allocation of risk

- **Geotechnical Baseline Report (“GBR”)**
 - Prepared by, or on behalf of, the Employer, using data and facts to provide the geotechnical conditions expected at the site
 - “Baseline conditions are intended to be contractually binding”; purpose is to bring clarity to risk allocations:
 - Ground conditions more adverse than baseline are accepted by the Employer
 - Ground conditions consistent with or less adverse than the baseline are accepted by the Contractor
 - Baselines are “*an*” interpretation of geological conditions, not necessarily *the only* interpretation
 - Where the GBR is silent on a matter (e.g. no baseline parameters provided) – falls back to other contractual allocation of risk
 - E.g. for NEC - Contractor have to satisfy himself as to the nature of those matters, using all information that he is reasonably expected to obtain

3. Allocation of risk

- **NEC Clause 60.1(12) + GBR**
 - Suitable if underground / ground works is significant
 - **Contractor** can make the more adverse conditions expressly as a compensation event:
 - “The Contractor encounters conditions that are more adverse than a baseline stated in the Geotechnical Baseline Report. Only the difference between the conditions encountered and the baseline statement is taken into account in assessing a compensation event.”
 - **Employer** can expressly exclude the conditions already identified in the GBR from being a compensation event:
 - “The Contractor encounters physical conditions other than those which are the subject of a baseline statement in the GBR”

3. Allocation of risk

- **Payment Options in NEC**

- Lump sum: Contractor takes risk if there is adverse conditions which is not a compensation event, but will benefit if the conditions are more favourable
- Target contract: Employer pays the Contractor's costs in dealing with the adverse conditions, but the benefit for more favourable conditions is shared

4. Key provision: 60.1(12)

NEC4 Engineering and construction contract Clause 60.1(12)

The Contractor encounters physical conditions which

- are within the Site,
- are not weather conditions, *and*
- an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable for him to have allowed for them (let's call this, the "Objective Probability criteria"). Unique to NEC.

Only the difference between the physical conditions encountered and those for which it would have been reasonable to have allowed is taken into account in assessing a compensation event.

Note: also applies to **NEC3**.

The Contractor encounters “**physical conditions**”

- Wide interpretation
- Underground only?
- Natural or man-made (e.g. pollution)?
 - Compare FIDIC Yellow/Red Clause 4.12 – “**natural** physical conditions and physical obstructions (natural or **man-made**) and pollutants...including sub-surface and hydrological conditions...”
- NEC: *“The term ‘physical conditions’ is not defined in NEC contracts ...It is commonly linked with related familiar terms including ‘physical obstructions’, ‘artificial obstructions’, ‘ground conditions’, ‘pollutants’ and ‘contaminants’. These all point to something more specific whereas the NEC term embraces a broader spectrum, applying both above and below ground.”*

4. Physical conditions: 60.1(12)



The Contractor encounters “**physical conditions**”

- Unsuitable material on site for infill of embankment = “physical condition” – *Atlantic Civil Pty td v Water Administration Ministerial Corp (NSW)* [1997] 83 B.L.R. 113. What if external quarry?
- Includes ground conditions which behaved unexpectedly (jack-up barge listed due to unstable ground below) – *Humber Oil Terminals Trustee v Harbour and General Works* (1991) 59 B.L.R. 1
- May relate to a part of the retained permanent work – *Associated British Ports v Hydro Soil Services NV* [2006] EWHC 1187 (TCC)

Vital to demonstrate physical conditions 1st.

Atkins Ltd v Secretary of State for Transport [2013]

Modified clause:

“[Contractor] encounters a defect in the physical condition which an experienced contractor would have judged at the Contract Date to have such a small chance of being present ...unreasonable for him to have allowed for it”

- Contractor - encountered more potholes (defect) than what an experienced contractor might reasonably have allowed for in pricing.
- **Held:** *number* of defects not a compensation event under modified clause.
- Lump sum contract. To hold otherwise would result in win-win for Contractor.
- Failure to show - what would have been allowed by a reasonable contractor

4. Within the Site: 60.1(12)



physical conditions which are “**within the Site**”

- “The Site” - as defined by the Contract.
- Recap: *Atlantic Civil’s case* earlier. Borrow pit was within site.
- Care with laydown, storage, and staging areas.
- Q: *external event* causes physical change to site conditions?

4. Not weather conditions: 60.1(13)



physical conditions not “**weather conditions**”

Instead, 60.1(13) may apply.

- “A *weather measurement* is recorded
 - within a calendar month,
 - before the Completion Date for the whole of the *works* and
 - at the place stated in the Contract Datathe value of which, by comparison with the *weather data*, is shown to occur on average less frequently than once in ten years”.
- Q: Can *effects* of weather conditions constitute “physical conditions”

4. Objective Probability criteria



an experienced contractor would have judged (the physical condition) at the Contract Date to have a small chance of occurring that it would have been unreasonable to have allowed for them. In 60.1(12), also in 60.1(19)

- **Objective test**
- Does not have to be unforeseeable
- NEC: “*an experienced contractor*” refers to one who has “*previously constructed and delivered works of a similar nature*”.

4. Objective Probability criteria



an experienced contractor would have judged (the physical condition) at the Contract Date to have a **small chance** of occurring that it would have been **unreasonable** to have allowed for them.

- Small chance of occurring – test of reasonableness
- What is risk?
- Cost – benefit analysis
- Comparing : *frequency* of event vs contract *period*
- Ascertaining “a small chance of occurring” & whether “unreasonable to have allowed for them”?

4. Objective Probability criteria



an experienced contractor would have judged (the physical condition) at the **Contract Date** to have a small chance of occurring that it would have been unreasonable to have **allowed** for them.

- **“Contract Date”** = date contract came into existence. But allowance made earlier?
 - Cf. FIDIC’s Base Date – judged at 28 days before latest date for tender submission (prices fixed at that time)
 - HKAA’s date of Letter of Acceptance – letter issued by HKAA confirming that it accepts the Tenderer’s offer
 - MTRC’s date of Letter of Clarification – letter issued by MTRC clarifying or confirming the matters agreed after the submission of the Tender
- **“Allowed”** for it – prices and programme, maybe insurance?

4. Other heads of claim?

60.1 The following events are compensation events:

- (12) [Physical conditions compensation event]
- (18) A breach of contract by the Client which is **not one of the other compensation events** in the contract:
- (19) An event which
 - stops the Contractor completing the whole of the works or
 - stops the Contractor completing the whole of the works by the date for planned Completion shown on the Accepted Programme, and which
 - neither Party could prevent,
 - an experienced contractor would have judged at the Contract Date to have such a small chance of occurring that it would have been unreasonable to have allowed for it and
 - is **not one of the other compensation events stated** in the contract.

4. Taken into account: 60.2

60.2 In judging the physical conditions for the purpose of assessing a compensation event, the Contractor is assumed to have **taken into account**

- the Site Information,
 - publicly available information referred to in the Site Information,
 - information obtainable from a visual inspection of the Site, and
 - other information which an experienced contractor could reasonably be expected to have or to obtain.
-
- What does “**taken into account**” mean?
 - Does the contractor need to *verify*?
 - Any tension in the following?
 - requirement to have “*taken into account*” [in 60.2], and
 - assessment whether it is reasonable to have “*allowed*” for it [in 60.1(12)]
 - Does **actual knowledge** preclude claim under 60.1?

4. Inconsistencies: 60.3

60.3 If there is an ambiguity or inconsistency within the Site Information (including the information referred to in it), the Contractor is assumed to have taken into account the physical conditions more *favorable* to doing the work.

- Note: more *favorable* to the Contractor (Employers note!)
- But clause 17 (ambiguities). PM give instructions to resolve ambiguity.
- Other sources of information?
- Option Z ‘no reliance’ clause common. But non-reliance language may be inappropriate
- Care: interplay between (non-)Reliance, Inconsistencies, Take into account and Site Data related clauses

4. Entitlement: 60.1(12)

- Another unique feature
- Only the **difference** between (a) physical conditions encountered and (b) those for which it would have been reasonable to have allowed is taken into account, in assessing compensation event
- Establishing the delta is vital
- Emphasizes good practice of keep contemporaneous records
- Cf. FIDIC Yellow/Red 4.12 - Contractor entitled to payment of all expenditure reasonably incurred. No reference to the delta exceeding what was foreseeable.

5. Bringing a claim: Clause 6



- **NEC Structure**
 - 60 Defines compensation events
 - 61 Notification
 - 62 Quotations
 - 63, 64 Assessing compensation events
- **PM's obligation to notify (ECC4 61.1)**
 - PM obliged to **notify Contractor** of compensation event, when (i.e. at the same time) he gives an instruction or notification, issues a certificate or changes an earlier decision + request a quotation.
 - 61.1 applies to compensation events in 60.1 (1), (4), (7), (8), (10), (17).
 - Important: time bar for Contractor's late notification in 61.3, applies to compensation events *not covered by 61.1*

5. Contractor's Notice: 61.3

Contractor's obligation to notify (ECC4 61.3)

- Contractor notifies PM of an event:
 - which has **happened**; **or**
 - which is **expected to happened**as a compensation event (C.E.), **if**
 - he **believes** the event is a compensation event (*subjective*), **and**
 - PM has not notified the event.

Consequences of non notification (ECC4 61.3)

- If the Contractor does not notify a C.E. within 8 weeks of becoming **aware** that the **event has happened**,
- Prices, Completion Date or Key Date are **not changed**,
- unless event arises from the PM or Supervisor giving an instruction or notification (i.e. where 61.1 applies, and PM is to give notice instead)

5. Contractor's Obligation to give notice



Obligation to notify

- Contractor (subjective) notifies PM of an event:
 - which has **happened** ← **past** event; **or**
 - which is **expected** to **happen** ← **future** event.
- Contractor must notify **if** “he **believes** event is a compensation event”
 - Belief - highly subjective. Unique. Including recklessness?
 - Whose belief within organisation
 - Beware 10.1’s “mutual trust and co-operation”, and
 - Breach of 15’s “early warning”
 - How to establish “belief”?
 - Reckoning of weeks
 - Belief tied to awareness of the event or of consequences?

5. Consequences of non notification

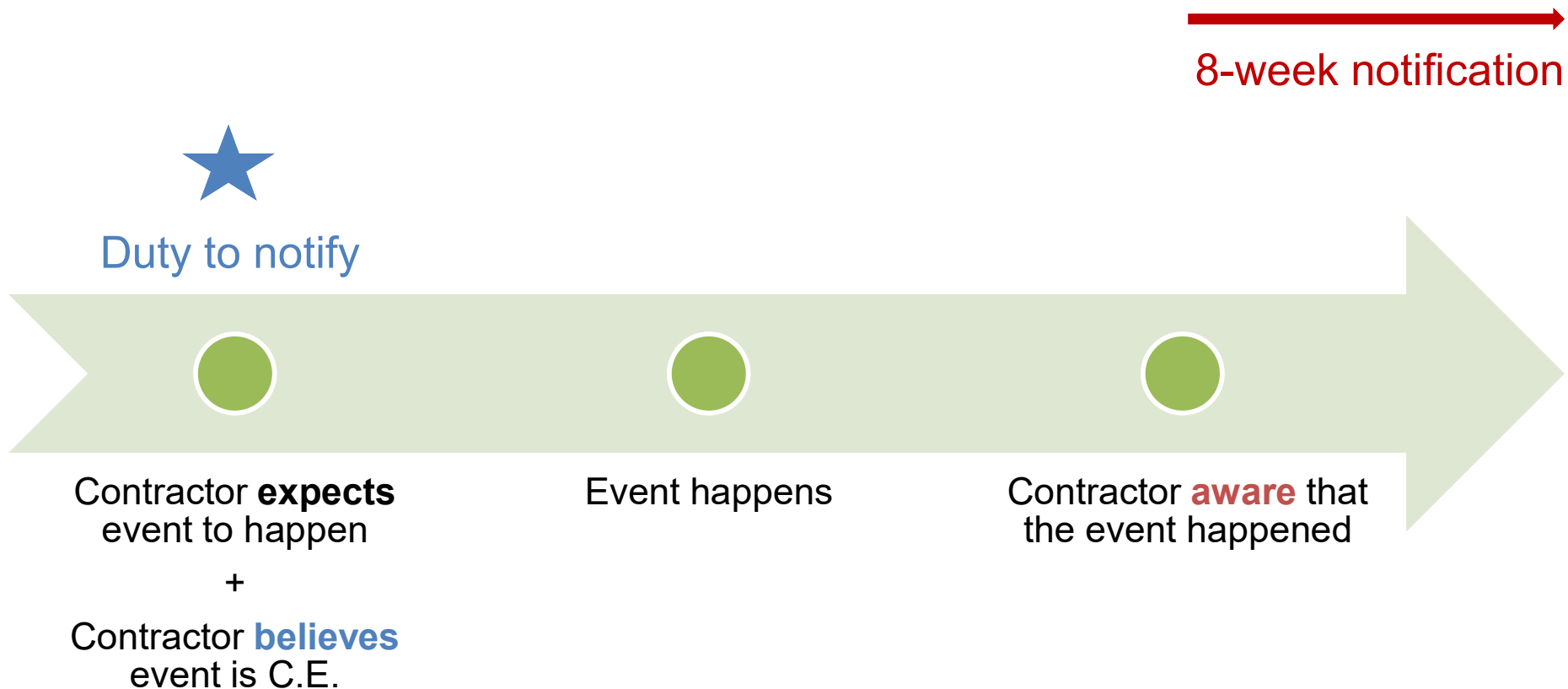
- Obligation: Notifies event which has happened or expected to happen, if **believes** event is a **compensation event**
- Time Bar: 8 weeks of becoming **aware** event has happened



5. Consequences of non notification

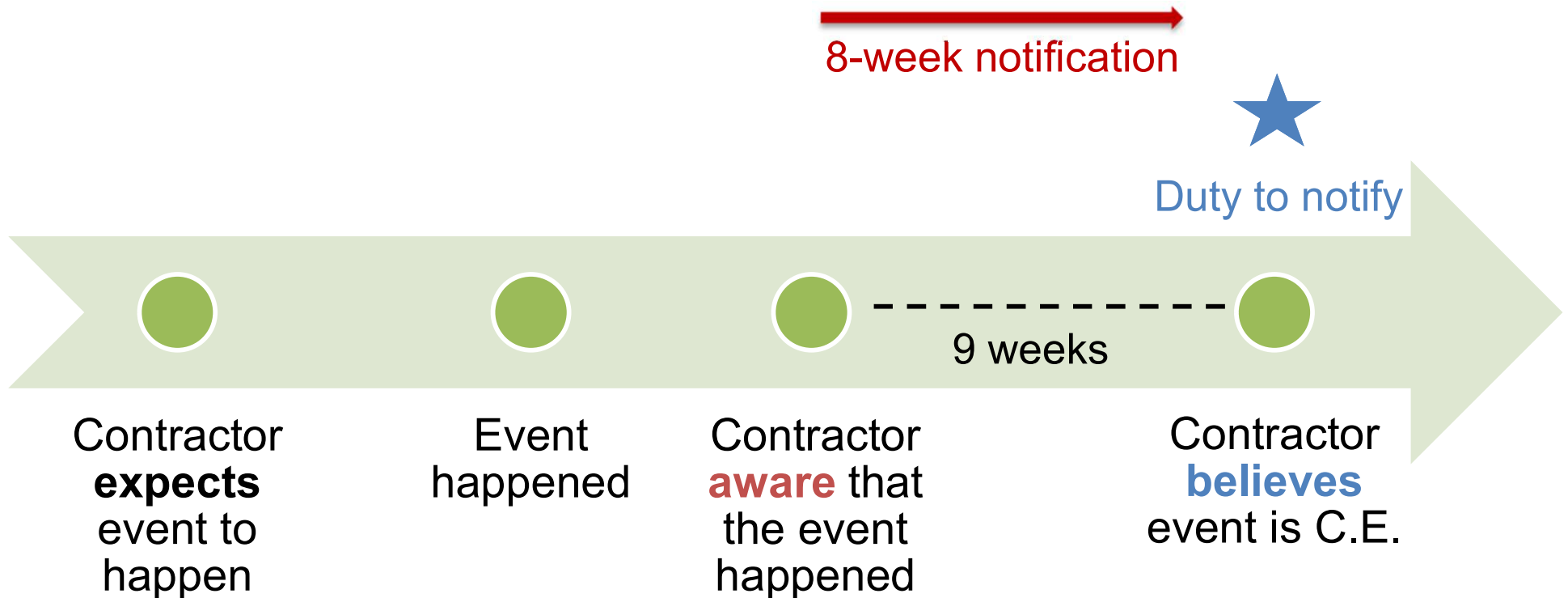


Obligation (to notify) -v- consequences of late notification



5. Consequences of non notification

Obligation (to notify) -v- consequences of late notification



5. Consequences of non notification



Consequences of non notification

- The Prices, Completion Date or Key Date are **not changed**.
- Waiver?
- Damages?
- Exception: unless the event arises from PM instruction/notification (i.e. 61.1 events)
- Beware: conduct of PM in reviewing claim, knowing it is time barred

5. Project Manager's reply

Project Manager's reply regarding the compensation event: ECC4 61.4

- Project Manager reply to Contractor's notification within 1 week after Contractor's notification, unless otherwise agreed
- If he fails to reply, the Contractor may notify him, and if PM still fails for a further 2 weeks, **deemed** to have accepted event as a compensation event
- Too fast paced?
- Deemed compensation event – perhaps unique to NEC. (Cf. FIDIC2 – if Engineer delays, deemed to be valid Notice).
- 4 grounds PM to reject claims:
 - Contractor's fault
 - Not happened (yet)
 - No effect
 - Not a compensation event in 60.1

5. Early Warning

PM's reply includes early warning considerations: 61.5 (*objective*)

If PM decides that Contractor did not give an early warning of the event which an experienced contractor could have given, PM states this in his instruction to submit a quotation.

Obligation to give early warning – 15.1 (*subjective*)

Contractor (and PM) gives early warning as soon as either becomes aware of any matter which could increase the total of the Prices, delay Completion etc. (*“which could” - consequences not manifested yet*)

Tip: Harmonise (i) Obligation to notify (incl giving early warning) and (ii) consequences of late notification (and delayed early warning).

5. Early Warning

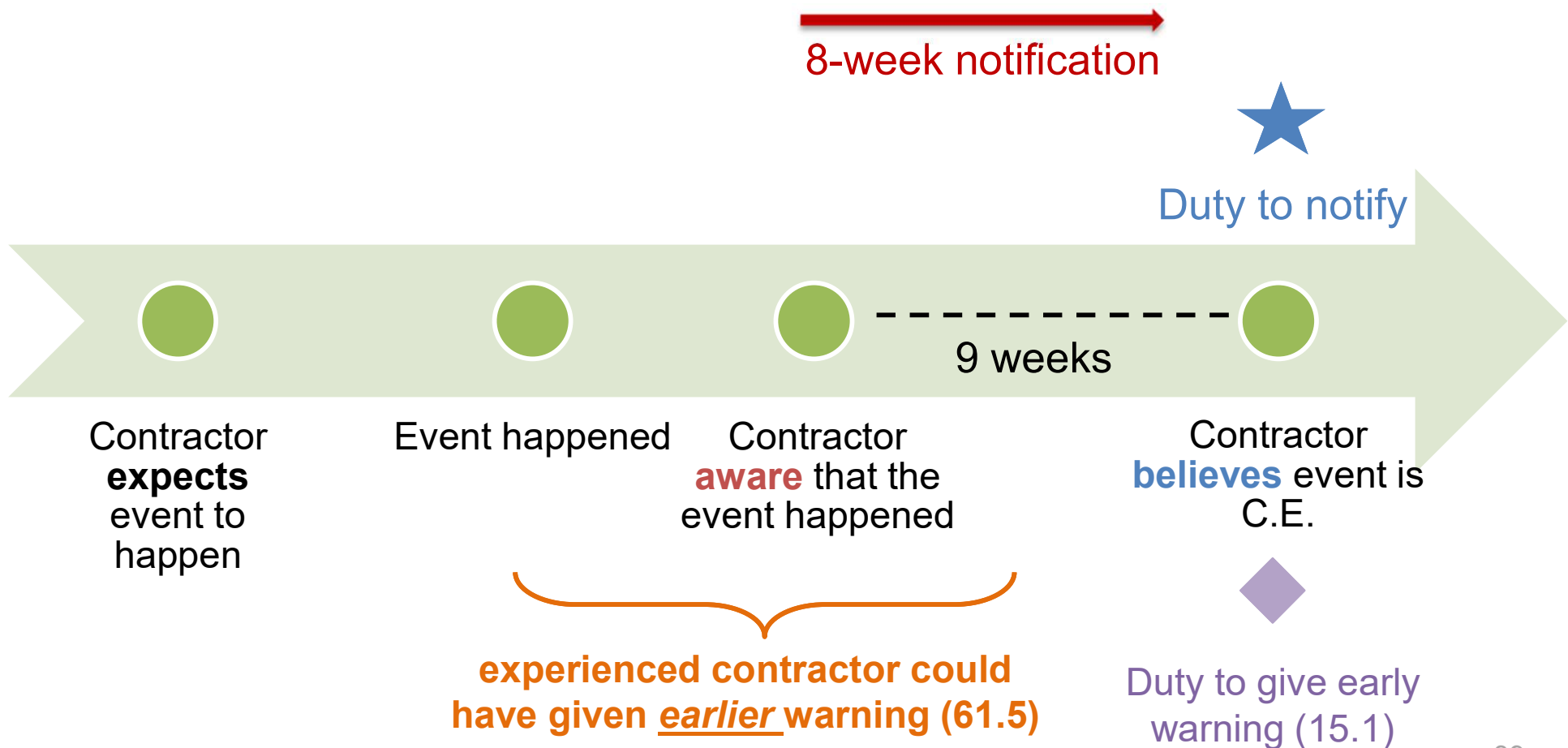
Consequences of not giving Early Warning: 63.7

- Compensation assessed as if Contractor had given early warning (if parties lost chance to mitigate effects of compensation event, then Contractor will **not** be compensated for those effects).
- Worse, if entire compensation event could have been avoided, then it could be argued compensation event arose from the fault of the Contractor.

Recap: 15.1 → 61.5 → 63.7

5. Early Warning

Obligation (to give early warning) -v- when an experienced contractor could have given early warning



5. ECC4 61.6, 61.7

Assumptions : ECC4 61.6

If PM decides that effects of a compensation event is too uncertain to forecast reasonably, he states assumptions in his instruction. If any assumptions are later found to be wrong, PM notifies a correction.

- Only “effects”. Does not apply if compensation event itself is uncertain.
- Open to Contractor to make assumptions?
- Correction of assumption is also a compensation event (60.1(17))

Cut off time for notifying compensation events : ECC4 61.7

- No claims after issue of Defects Certificate.
- Applies to *both* PM and Contractor. (NEC3 only to Contractor)

5. Contractor's Quotation

Contractor's quotation: ECC4 62.2, 62.3, 62.5, 62.6

- Quotations are in effect the Contractor's initial assessment
- If PM accepts that event is a compensation event, Contractor must submit a quotation within 3 weeks of that acceptance, unless otherwise agreed (62.3)
- Quotation must include (62.2):
 - proposed changes to the Prices;
 - any delay (Completion and Key Dates) assessed by Contractor;
 - details of the Contractor's assessment; and
 - alterations to the Accepted Programme (if any)
- PM replies to quotation within 2 weeks, unless otherwise agreed (62.3)
- If he fails, Contractor may notify him, and if PM still fails for a further 2 weeks, quotation is **deemed** accepted (62.6)

5. Assessment of Claims



- **Assessment of Prices: ECC4 63.1, 63.2**
 - Prices are altered by the same amount as the Defined Cost + Fee is altered by the effect of the compensation event
 - Parties may agree rates or lump sums to assess the change to the Prices
- **Assessment of Time: ECC4 63.5**
 - Assessed as the length of time that, due to the compensation event, planned Completion is later than planned Completion as shown on the Accepted Programme, or planned date when the Condition stated for a Key Date will be met is later than the date shown on the Accepted Programme
- **Implementation: ECC4 66.1, 66.2**
 - Once the Contractor's quotation is accepted or the Project Manager notifies the Contractor of its assessment, the Prices, the Completion Date and the Key Dates are changed accordingly

Concluding thoughts

1. Any allocation of ground risks invariably better than common law.
2. NEC's allocation of risks of physical conditions truly **unique**.
3. Records (Contract Date) - crucial for assessment.
4. 60.1(12) needs care in implementation, consider related clauses that impact on physical conditions.
5. Claim procedure - need to consider related provisions and "duplicate" grounds of claim. Harmonise early warning into notification process.
6. Beware *mutual* obligations and consequence for late notifications.
7. Is GBR the way forward?



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