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“We Didn’t See That Coming”: Managing Unforeseen Ground Conditions under NEC4 ECC (Option C)

D&D Contract Focus

“We Didn’t See That Coming”: Managing Unforeseen Ground Conditions under NEC4 ECC (Option C)

— A Scenario-Based Analysis of Compensation Events and Dispute Mechanisms under English Law

Introduction

Construction projects rarely go entirely to plan. Ground conditions remain a notorious source of delay and cost, especially in urban and brownfield sites. NEC4’s Engineering and Construction Contract (ECC) is designed not to eliminate uncertainty, but to manage it collaboratively — with clear duties to notify, assess and resolve risks.

This scenario article explores a scenario involving a contractor encountering unexpected sulphate-rich ground during excavation — and traces how the NEC4 ECC Option C contract addresses it through **early warnings, compensation events** and **dispute resolution**, applying English law and **Option W2**.

The Scenario: Unexpected Sulphates Below

1. Project Context

The Client — a metropolitan borough council — is delivering a civic library under **NEC4 ECC Option C.** The **Contractor** has design responsibility for the foundations. The **Project Manager (PM)** is a consultant acting on the Client’s behalf.

The **Site Information** included a basic intrusive investigation that did not identify any unusual chemical conditions. The Contractor priced for pad foundations on standard fill and included a modest risk allowance within their £7.4 million Target Cost.

2. Early Execution

Works begin in accordance with the Accepted Programme. Foundations are scheduled early in the sequence. No early warnings have yet been raised.

3. Discovery and Early Warning

Two weeks into excavation, the Contractor uncovers widespread **sulphate-rich made ground**, not visible in the Site Information or foreseeable through visual inspection. The new conditions require either partial piling or deeper excavation and the use of sulphate-resisting concrete (**SRC**).

In accordance with **Clause 15.1**, the Contractor raises an **early warning**, alerting the PM to a potential increase in cost and delay to Completion. An **early warning meeting** is convened under **Clause 15.3**, during which those attending cooperate in identifying possible actions to avoid or reduce the effects of the issue.

The attendees — including the Contractor, PM, the Client's technical advisor, and the foundation designer — explore several options. They agree to proceed with **partial piling** and revised detailing.

The PM then issues an **instruction to stop** excavation in affected areas (**Clause 34.1**) pending redesign.

4. Compensation Event Notification

The Contractor notifies the PM that a **compensation event** has occurred under **Clause 61.3**, relying on **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 to have allowed for them."

This triggers the test of **foreseeability**, not whether the condition is difficult or expensive to manage.

After reviewing the Site Information and discussing the conditions, the PM agrees the test is met and issues an instruction to quote under **Clause 61.4**, confirming the event **will affect Defined Cost and delay Completion**.

5. Submission of Quotation

Within the three-week period allowed under **Clause 62.3,** the Contractor submits a detailed **quotation** comprising:

- An increase in **Defined Cost** of **£343,000**
- A **three-week delay** to the Completion Date
- A **revised programme** showing the impact on the critical path

The submission is supported by:

- Piling contractor quotes and redesign costs
- Plant and preliminaries data
- Site diaries, weather logs, and sequencing logic

While not explicitly required under Clause 62, the **revised programme** supported the Contractor's entitlement to time, in accordance with **Clause 63.5**, which bases delay assessment on differences in the Accepted Programme.

6. PM's Rejection and Own Assessment

The PM replies within two weeks, as required by **Clause 62.3**, but **rejects the quotation**, stating that:

- The full delay was **not inevitable** and could have been mitigated
- The Contractor **did not update the Accepted Programme promptly** as required under **Clause 32.2**
- Some costs (e.g. temporary works and extended prelims) are excessive or unsubstantiated

The PM proceeds under **Clause 64.1**, making their **own assessment**:

- Cost increase allowed: **£248,000**
- Extension of time allowed: **one week**

This assessment is notified to the Contractor with a brief rationale. The Contractor contests the assessment.

7. Dispute Escalation under W2

Since the contract is governed by English law, adjudication proceeds under **Option W2**, in line with the **Housing Grants, Construction and Regeneration Act 1996 (as amended)**.

The Contractor initiates adjudication, appointing an adjudicator through the nominating body listed in the Contract Data. The adjudication follows the 28-day timetable set out in **W2.3**.

8. Adjudicator's Decision

The adjudicator finds:

- The **sulphate-rich material was not foreseeable**, meeting the test in **Clause 60.1(12)**
- The early warning was **timely and adequate** under **Clause 15.1**
- The Contractor had submitted **a timely, substantiated quotation**, supported by appropriate evidence
- The delay of **three weeks** was clearly shown on the programme and fell on the critical path

The adjudicator also noted the PM's partial reasoning failed to meet the standard of impartial decision-making required by **Clause 10.1** and **Clause 10.2**, which bind the PM to act "as stated in this contract" and "in a spirit of mutual trust and co-operation".

Accordingly, the adjudicator orders that:

- The PM's assessment is set aside
- The Contractor's quotation is **accepted in full**
- The compensation event is **implemented** per **Clause 66.1**

9. Commercial Consequences

Following adjudication:

- The **Target Cost** is increased by **£343,000**
- The **Completion Date** is moved back **three weeks**
- The **pain/gain share** remains in place: the Client absorbs part of the Defined Cost and the

Contractor’s gain-share is slightly reduced[1]

The Client quietly reviews internal processes and reinforces NEC4 training for project managers, focusing on the importance of acting **impartially** even when under commercial pressure.

10. Reflections: Learning Points by Clause

Clause 15.1–15.4

The early warning and early warning meeting enabled proactive, collaborative mitigation — just as NEC4 intends.

Clause 60.1(12)

This is the key provision for unforeseeable physical conditions. The bar is high — and rightly so — but here it was met.

Clause 61.3–61.4

Timely notification by the Contractor and a prompt reply from the PM kept the process clean and contractually sound.

Clause 62.3

The quotation was timely and well supported. Including a revised programme is not required by the clause but supports entitlement to time.

Clause 63.5

Delay to Completion must be assessed by comparing planned Completion before and after the event, based on the **Accepted Programme** current at the dividing date.

Clause 64.1

The PM may assess the event themselves — but only if justified. Here, their decision lacked support and was overturned.

Clause 66.1

Once implemented (via acceptance, PM assessment, or adjudication), the Prices and Completion Date are changed. This marks the contractual implementation of the compensation event.

11. Conclusion

This scenario demonstrates NEC4 ECC's power when properly applied:

- Early warnings are a vital tool, not a mere formality
- Compensation events depend on good records and timely notices
- The Project Manager’s impartiality is not optional — it’s foundational
- Disputes can and should be resolved rapidly via adjudication under **Option W2**

When the contract is followed — and when all parties act “in a spirit of mutual trust and co-operation” — NEC4 allows even unexpected problems to be managed fairly, transparently, and efficiently.

Postscript: What If the Project Manager Stays Silent?

The NEC4 ECC is built around timely, accountable communication. If the **Project Manager fails to respond to a Contractor's quotation for a compensation event** within the contractual time frame, the contract provides a remedy.

Under **Clause 62.3**, the PM must reply to the quotation within two weeks, either by accepting it, instructing a revised version, or stating they will make their own assessment.

If they fail to reply, **Clause 62.6** allows the Contractor to notify the failure. If silence continues for a further two weeks, the quotation is **deemed accepted**.

This provision prevents the PM from **delaying or avoiding** decisions and ensures that quotations cannot be left in limbo. It upholds the NEC4 emphasis on **clarity, responsiveness, and procedural certainty** — critical principles in avoiding unnecessary disputes and maintaining trust between the parties.

In our scenario, had the PM failed to respond at all, the Contractor's quotation — including the £343,000 cost and three-week delay — could have been implemented **without adjudication**, by operation of the contract itself.

Parting Thoughts

So, what have we learned? First, that ground is never just ground — sometimes it harbours sulphates and sometimes it harbours claims. Second, that NEC4, for all its collaborative utopianism, is not so much a contract as it is a behavioural framework wrapped in politely numbered clauses. And third, that silence from a Project Manager isn't golden — it's deemed acceptance under Clause 62.6.

What's striking is how well the contract works when people actually use it as written. Notify early, warn loudly, quote accurately, and — when things go sideways — adjudicate swiftly. There's no need for contractual histrionics. The tools are there. The timelines are short. The logic is tight. And the consequences are... expensive.

In the end, NEC4 doesn't punish unpredictability; it punishes dithering. And if you're going to encounter sulphate-rich fill and a programme delay, you'd better have a contemporaneous diary, a compliant early warning and the kind of quotation even a grumpy adjudicator might describe as "well-substantiated".

Because under NEC4, as in life, fortune favours the prompt, the precise, and — crucially — the well-documented.

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[1]**Explainer: Why the Contractor's Gain-Share Is Slightly Reduced**

The reason the Contractor's gain-share is slightly reduced in relative terms is because the Target Cost increased more than the actual cost increase, which narrows the saving. The gain-share mechanism continues to function but the Contractor's share becomes a smaller percentage of a smaller margin, especially where Defined Costs rise less than the CE uplift.

Under NEC4 ECC Option C, the Contractor's gain-share is calculated by comparing the final Defined Cost (plus Fee) to the Target Cost, with any saving shared per the agreed percentages. When a compensation event is implemented, Clause 66.1 increases the Target Cost — in this case, by £343,000. If the Contractor's actual Defined Cost doesn't increase by the same amount, the margin

between the adjusted Target and the actual cost narrows. The gain-share mechanism itself remains unchanged, but the Contractor's share of the saving is reduced — not because costs rose dramatically but because the benchmark moved. Hence: a slightly smaller slice of a slightly smaller pie.

Worked Example: How the Implemented Compensation Event Affects Gain-Share

Initial Contract Position (Before CE)

- ***Original Target Cost****: £7,400,000*
- ***Final Defined Cost****: £7,100,000*
- ***Contractor's Fee (5%)****: £355,000 (5% of £7.1m)*
- ***Total to compare for gain-share****: £7,455,000*
- ***Saving vs Target****: £7,400,000 – £7,455,000 =* ***–£55,000*** *→* ***Contractor is over Target***
  → In this case, Contractor ***shares pain****.*

But let's assume instead:

- ***Final Defined Cost****: £7,000,000*
- ***Fee (5%)****: £350,000*
- ***Total cost including Fee****: £7,350,000*
- ***Saving vs Target****: £7,400,000 – £7,350,000 =* ***£50,000***
- ***Gain-share split (say 50:50)****:*
  - ***Contractor gets*** *£25,000*
  - ***Client gets*** *£25,000*

After the Compensation Event (CE) is Implemented

A CE is implemented under Clause 66.1, increasing the Target Cost by ***£343,000****.*
The ***adjusted Target Cost*** *is now:*

- ***New Target****: £7,400,000 + £343,000 =* ***£7,743,000***
- ***Final Defined Cost*** *remains at: £7,000,000*
- ***Fee (5%)****: £350,000*
- ***Total cost including Fee****: £7,350,000*
- ***New saving****: £7,743,000 – £7,350,000 =* ***£393,000***
- ***Gain-share split (50:50)****:*
  - ***Contractor gets*** *£196,500*
  - ***Client gets*** *£196,500*

So far, this looks better for the Contractor. But the Explainer assumes the ***Defined Cost increases but by less than £343,000****, not that it stays flat. Let's model that.*

Adjusted Example: Defined Cost Increases by Less Than CE Amount

Suppose the ***actual Defined Cost*** *increases by only* ***£200,000****, not £343,000.*

- ***New Defined Cost****: £7,000,000 + £200,000 =* ***£7,200,000***
- ***Fee (5%)****: £360,000*

- ***Total**: £7,560,000*
- ***Adjusted Target**: £7,743,000*
- ***Saving**: £7,743,000 – £7,560,000 = **£183,000***
- ***Contractor's share (50%)**: £91,500*

Compare that to the pre-CE saving:

- *Previously: £50,000 saving → £25,000 gain-share*
- *Now: £183,000 saving → £91,500 gain-share*

*Yes — the gain-share is still larger than before, but **smaller than it would be** if the Target hadn't increased **by more than the actual Defined Cost** increased. The Contractor's gain-share is slightly reduced relative to the situation where the Target Cost had not changed — that's the nuance.*

*Confused? Let's work this through **with side-by-side numbers** to show the **before vs after** situation clearly, including:*

- ***No CE***
- ***With CE (Target +£343k, Defined Cost +£200k)***
- ***With CE but Defined Cost = CE increase (£343k)** ← for comparison*

We'll assume:

- ***Fee = 5%***
- ***Gain-share split = 50:50***

1. Scenario A: No Compensation Event

Item	Value (£)
Target Cost	*7,400,000*
Defined Cost	*7,000,000*
Fee (5%)	*350,000*
Total Cost incl. Fee	*7,350,000*
Saving vs Target	*7,400,000 − 7,350,000 = **50,000***
Contractor's Gain-Share (50%)	***25,000***

2. Scenario B: CE Implemented

- *CE increases **Target Cost by £343,000***
- *Actual Defined Cost only increases **by £200,000***

Item	Value (£)
New Target Cost	*7,400,000 + 343,000 = **7,743,000***
New Defined Cost	*7,000,000 + 200,000 = **7,200,000***
Fee (5%)	*360,000*
Total incl. Fee	*7,560,000*
Saving vs Target	*7,743,000 − 7,560,000 = **183,000***

Item	Value (£)
Contractor's Gain-Share (50%)	**91,500**

So yes, gain-share is bigger than before (£91.5k vs £25k).

3. Scenario C: CE Implemented but Defined Cost also increases by full £343k

*This is a **neutral impact** scenario — the benchmark (Target) and actual cost both go up equally.*

Item	Value (£)
New Target Cost	7,743,000
New Defined Cost	7,343,000
Fee (5%)	367,150
Total incl. Fee	7,710,150
Saving vs Target	7,743,000 − 7,710,150 = **32,850**
Contractor's Gain-Share (50%)	**16,425**

*So here, the gain-share is **less than before the CE**.*

Comparison Summary

Scenario	Saving vs Target (£)	Contractor's Gain-Share (£)
A – No CE	50,000	25,000
B – CE (+343k TC / +200k DC)	183,000	91,500
C – CE (+343k TC / +343k DC)	32,850	16,425

Conclusion

*The **gain-share increases** in absolute terms **when Defined Cost increases by less than the CE uplift** (Scenario B).*

*But it is still **less than it would have been if the Target hadn't moved** and the Defined Cost increase had been lower still.*

So the statement holds:

"The gain-share is still larger than before, but smaller than it would be if the Target hadn't increased by more than the actual Defined Cost increased."

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Adjudicator Exam Question Setter for the ICE
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CIArb Arbitration Panel Member since 2006
CIC Adjudication Panel Member since 2010
Law Society Panel Arbitrator
RIBA Adjudication Panel Member since 2018
RICS Adjudication Panel Member since 2006
TECSA Adjudication Panel Member since 2012
FIDIC Adjudication Panel Member since 2021
ICE Adjudication Panel Member since 2021
RICS Dispute Board Registered since 2013

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