# FROM COMPETITION TO CONFLICT

## Designing EO infrastructure for proportional risk

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CORE ARGUMENT

# The proposition

## The standard does not reduce. The safety picture becomes more complete.

**This is not safety versus speed. It is balancing EO risk against conflict risk as tempo changes.**

### PROPORTIONAL SAFETY

Align safety controls with credible risk across both

#### SPACE

**Where the energy can reach**

- Hazard division, NEQ and MCE define the credible event
- Separation distance and structural resistance limit effects on exposed sites

#### TIME

**How long, on what evidence**

- Configuration and maturity: what protection exists now
- Duration and concurrent activity: who is exposed
- Transition evidence: what unlocks the next level

Completed-state compliance remains the enduring reference condition.

### WHAT THIS LOOKS LIKE IN PRACTICE

#### The end state does not move

Same outcomes: protect life, prevent propagation, preserve critical capability. Completed-state compliance is unchanged.

#### Interim states are assessed

Each material configuration is identified, with its EO limits, occupancy and how long it will exist.

#### Controls match credible risk

Release follows evidence, not the calendar. No unmanaged exposure and no blanket over-design.

# The strategic environment changes two variables

## Operational demand

*What Defence needs the infrastructure to enable.*

- **Sovereign production uplift** – more energetics and munitions made onshore
- **Distributed storage** – EO held across more sites, not a few large ones
- **Multi-site redundancy** – capability survives the loss or disruption of any one site
- **Increased throughput** – higher volumes through handling, storage and movement
- **Flow and stockpile depth** – munitions must keep flowing through to the user and be held in enough stock
- **Greater consequence of delay** – capacity that is late is capability that is missing

## Delivery tempo

*Several pressures hit delivery at the same time.*

**INFRASTRUCTURE INDUSTRY IS BUSY**

- **Competing demand** – many major programmes drawing on the same market
- **Constrained specialist resources** – blast, EO and security-cleared skills are scarce
- **Material supply variability** – long lead items and substitution pressure

**REMOTE LOCATIONS MUST BE ESTABLISHED**

- **Sites before structures** – access, power, water, camps and laydown come first
- **Long logistics chains** – remote mobilisation and a thin local workforce

**PROGRAMME PRESSURE**

- **Compressed programmes**, more concurrent work fronts and pressure for staged operational use

**Risk increases while the time available to create protective capacity decreases.**

# Warning time is getting shorter

## The warning

UK Defence Secretary Wes Streeting, writing in The Telegraph on 24 October, says adversaries could be able to attack by 2030. That leaves “a little over 1,000 days” to be ready.

## What it means for us

If the date is fixed, time is what we run out of. Programmes get squeezed while demand for munitions, storage and flow-through goes up.

### OTHER SIGNALS FROM THE UK

## Political

**WHAT WAS SAID**

Readiness is “the only metric that counts.”

**WHAT IT MEANS FOR US**

We get measured against a date, not a comfortable schedule.

## Army

**WHAT WAS SAID**

General Sir Roly Walker, to 700 soldiers at Catterick on 15 October: “extreme jeopardy in the world at the moment.”

**WHAT IT MEANS FOR US**

Demand for munitions, storage and flow-through goes up before we can build the infrastructure.

## Civil preparedness

**WHAT WAS SAID**

Cabinet Office “Be Ready” campaign, launched 22 October: households asked to prepare for three days of disruption.

**WHAT IT MEANS FOR US**

Government calls it general resilience, not a response to a specific threat, but it shows the mood.

**Less warning means compressed delivery. That’s where interim-state risk grows.**

Sources: Streeting, The Telegraph, 24 Oct 2026 (via The Independent; Anadolu); UK Cabinet Office, Be Ready, beready.campaign.gov.uk, 22 Oct 2026; Gen Sir Roly Walker, Catterick Garrison, 15 Oct 2026 (BFBS / Forces News). Cross-checked against World Socialist Web Site, 26 Oct 2026.

# Proportionality balances EO risk against conflict risk

## Risk presented by the EO

Hazard division, NEQ and MCE. Separation and structural protection. Who and what is exposed, now and in interim states.

## Risk presented by the conflict

Munitions short, late or lost. Throughput that stalls. Stocks too thin or too concentrated to survive disruption to a site.

### THE BALANCE APPLIES TO MORE THAN THE MUNITIONS

## Munitions held

**EO RISK**

Quantity, hazard division and MCE set separation and structural protection.

**CONFLICT RISK**

Too few, too late, or too concentrated to survive the loss of a site.

## Supply and flow-through

**EO RISK**

Receipt, handling, movement and dispersal raise activity, occupancy and exposure.

**CONFLICT RISK**

Constrained flow means munitions do not reach the user when needed.

## Stockpile

**EO RISK**

Deeper stocks and longer dwell raise NEQ and consequence at each site.

**CONFLICT RISK**

Thin stocks and few sites cut endurance and redundancy.

**Neither risk can be ignored. Proportionality weighs both, in space and in time.**

VISUAL PROPOSITION

# EO infrastructure changes with context and configuration



## COMPLETED CONDITION

Earth-covered magazines: stable configuration, defined separation and operating envelope.



## DELIVERY CONFIGURATION

Reinforcement, formwork and temporary works precede the verified protective state.



## ALTERNATIVE ARCHITECTURE

Singapore UAF: underground storage responds to land, buffers and operational access.

**The physical solution already adapts to consequence, geography and need. The delivery pathway should be treated just as deliberately.**

Sources: DVIDS / US Government imagery supplied by author; DSTA / The Straits Times, 8 March 2008.

# Doctrine is strong at defining the completed condition

## AASTP-5

Consequence-based and spatial:

- Hazard division
- Net explosive quantity
- Maximum credible event
- Quantity-distance
- Protection of exposed sites

## eDEOP 101

Australian EO safety governance:

- Formal approval
- Engineering assurance
- Traceability
- Operating conditions
- Defence application

## Building Works Manual

Building compliance pathway:

- Building approval
- Required inspections
- Completion certification
- Occupancy/use controls
- State and Territory interface

**Necessary foundation** → **Potential gap between gates**

## Building certification

Approval, inspection and completion confirm the building condition and its suitability for occupation or use.

## EO operating approval

Confirms whether the proposed storage, handling or related activity is acceptable under the operating conditions.

## Between the gates

Temporary works, material maturity and staged configurations, unless the safety argument describes them. Stockpile and throughput trade-offs sit here too.

OPERATIONAL LENS

**Should today's operational picture define the facility?**

Facilities should not be designed and approved only for today's posture. Understand now how each will need to operate in crisis and conflict, and have those operating states assessed and approved in advance, so a shift in posture is a step within an existing approval, not a new one.

# Proportionality must operate across space and time

## SPACE

**Where the energy can reach**

**Hazard division**
Classifies the dominant hazard

**NEQ and MCE**
Size of the credible event

**Separation distance**
Limits effects at range

**Exposed sites**
Who and what is in reach

**Structural resistance**
Contains or resists effects

## TIME

**How long, on what evidence**

**Configuration**
Protection in place now

**Material maturity**
Performance achieved so far

**Exposure duration**
How long the state lasts

**Concurrent activity**
Overlapping EO activity

**Transition evidence**
Gate to the next level

## Temporal proportionality

**does not create a "temporal QD".**

It defines how long a configuration may exist, what activity is permitted and what evidence enables transition.

**Configuration**
What protective systems physically exist?

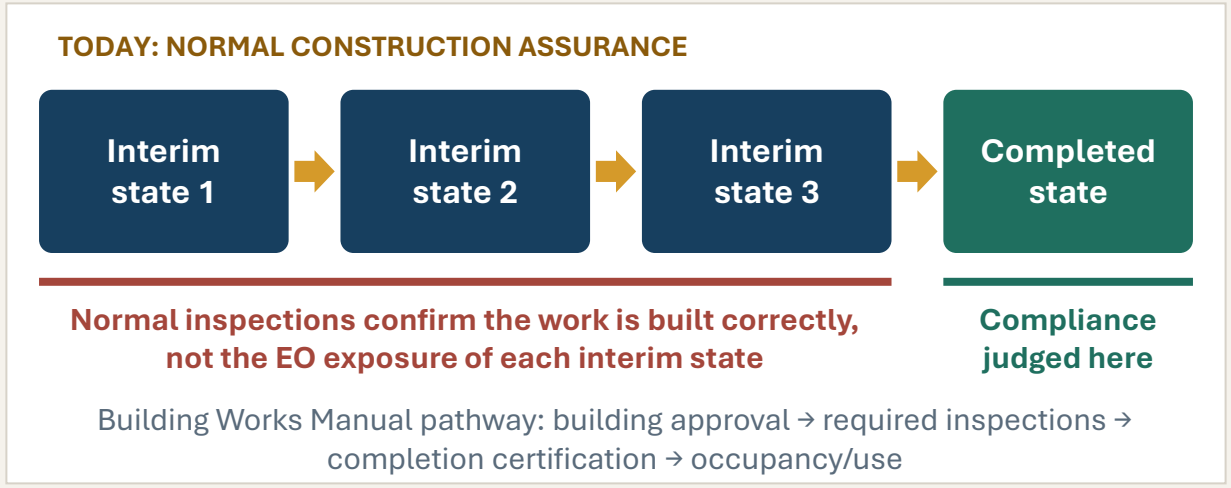
**Maturity**
What performance have they actually achieved?

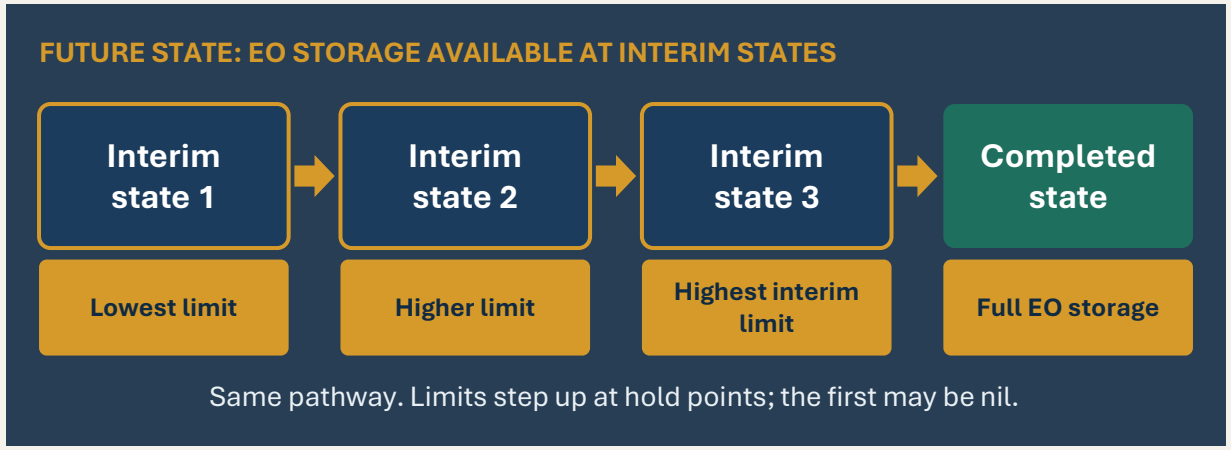
**Exposure**
Who and what is present, including concurrent activity?

**Duration**
How long will that state continue?

**Transition**
What evidence is needed before the next level of use?

# From assurance of the end state to assurance of the path




## Today: two failure modes

**Underestimation:** interim states are treated as ordinary construction. Result: unrecognised EO exposure.

**Overcompensation:** uncertainty is absorbed into permanent thickness, reinforcement or stand-off. Result: cost, delay and constrained scalability.

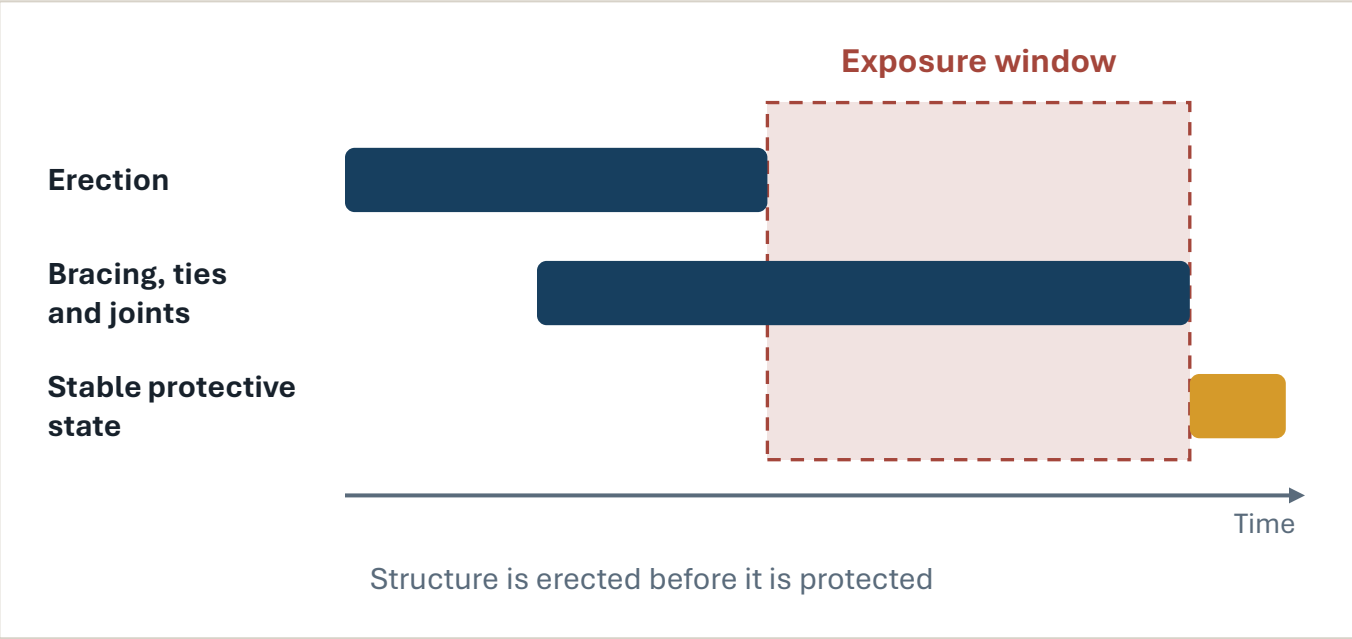
## Future state: what it adds

**Identify:** material interim configurations and the EO storage each can safely hold.

**Release:** EO storage in steps, on evidence at defined hold points, not the calendar.

**Integrate:** through the Building Works Manual and EO approval, as one safety argument.

# The exposure window sets when EO can be stored, and how much




- Load-path continuity
- Temporary bracing
- Joints and penetrations
- Form ties and connectors
- Sequence to stable protection

**Fastest erection ≠ fastest protective state**

## THE CONFLICT CONTINUUM SETS HOW LONG THE WINDOW LASTS AND HOW MUCH EO CAN BE HELD DURING IT

### Competition

**Exposure window:** Short; stages sequential and separated from EO.

**EO storage:** None during interim states. EO enters at the completed state.

### Crisis

**Exposure window:** Longer; stages begin to overlap.

**EO storage:** Restricted, released in steps at hold points as protection is verified.

### Conflict

**Exposure window:** Longest; concurrent work fronts.

**EO storage:** Earliest controlled storage within limits, adjustable as demand shifts.

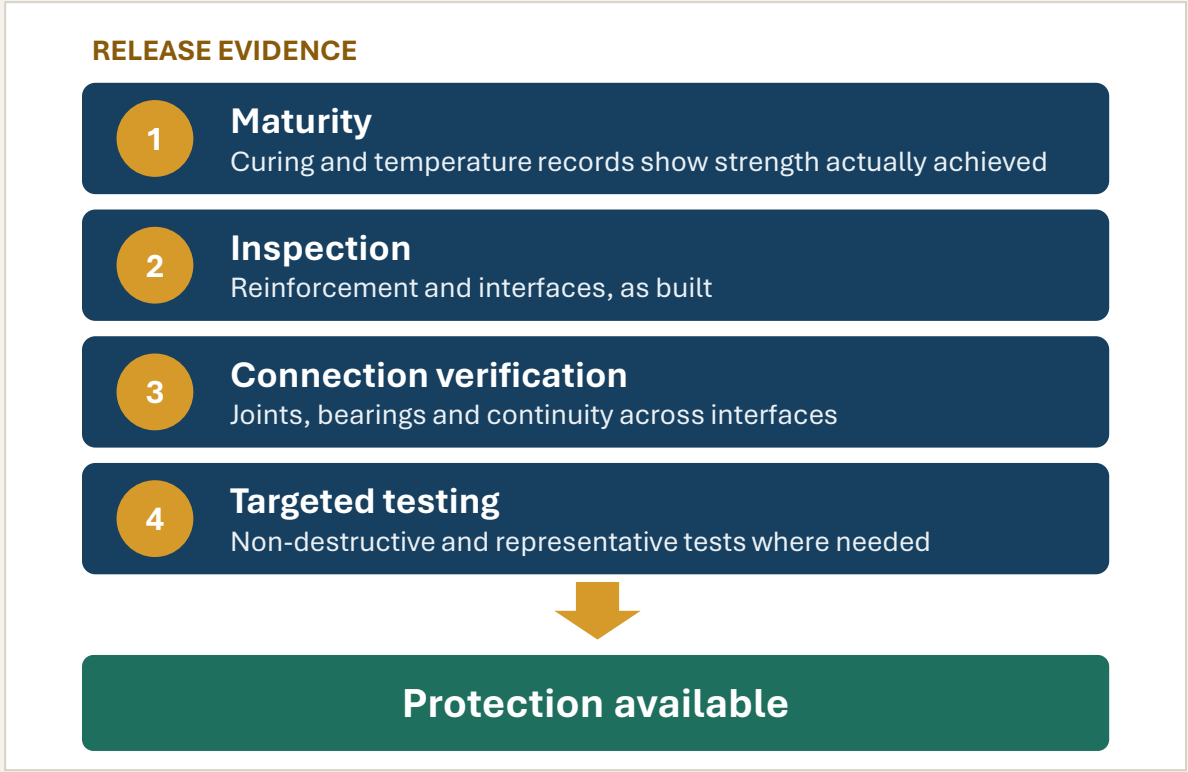
### Storage follows protection

Capacity to hold EO steps up with protection achieved, not the calendar.

# Material maturity determines when protection is available

## Compressive strength is necessary, not sufficient.

- **Tensile capacity**
  Carries load once the concrete has cracked
- **Fracture behaviour**
  Brittle or ductile response under blast load
- **Bond and ductility**
  Steel and concrete working together
- **Cracking and thermal effects**
  Shrinkage and gradients from rapid curing
- **Spalling and residual capacity**
  Fragments, and resistance left after damage




THE NUANCE

**Faster is not free**
Rapid curing and high early-strength mixes verify sooner but alter shrinkage, cracking and durability.

**Substitution**
A changed binder, fibre, steel or connection is re-checked against the function relied on.

**Targeted, not blanket**
Test where performance drives release, and weigh the cost of delay against conflict risk.

# Worked example: staged operational release

**A**

## Structural shell incomplete

**EO prohibited**

Open load paths; temporary bracing; penetrations incomplete

→

**B**

## Primary confinement established

**No routine EO use**

Envelope complete; connections and material criteria verified

→

**C**

## Restricted operational release

**Controlled inventory and occupancy**

Inventory and throughput balanced against conflict risk; residual works controlled

→

**D**

## Final operating condition

**Approved operating envelope**

Completed configuration; enduring safety basis

### THE CONFLICT CONTINUUM CHANGES THE TEMPO THROUGH THESE STAGES

**Competition**

Stages largely sequential; interim states short and separated from EO activity.

**Crisis**

Programmes compress; stages begin to overlap; pressure for early use.

**Conflict**

Concurrent work fronts and staged release; interim states last longer.

**If the posture shifts**

Re-confirm the configuration, limits and release evidence. The stages stay; the permitted envelope is reviewed.

# A proportional safety release framework

**1 CONFIGURATION**

What actually exists?

**2 EO CONDITION**

What activity and inventory?

**3 PERFORMANCE**

What protection is available?

**4 EVIDENCE**

What demonstrates it?

**5 LIMITS**

What restrictions remain?

**6 RELEASE**

Who authorises transition, under existing approvals?

## THE CONTINUUM SHAPES HOW THE FACILITY IS DESIGNED AND STAGED

**Competition**

Design to the completed state. Staged release is the exception, not the plan.

**Crisis**

Design in the stages. Plan stable intermediate configurations and early protective states.

**Conflict**

Design for concurrency. Reach protection early and keep limits adjustable as demand shifts.

### Plan how it eventuates

Decide early how a posture shift is recognised, who reviews the limits and how the facility steps up or back. Have each posture's operating state approved in advance. Interim EO storage is released through eDEOP operating approval and staged building certification.

**Apply only at configurations where protection, exposure or operating permission materially changes.**

# Integrate through existing governance

### DESIGN BASIS

Credible demand
Required protection

→

### CONSTRUCTION ASSURANCE

Temporary works
Material maturity

→

### BUILDING CERTIFICATION

Approval
Inspection
Completion

→

### EO OPERATING APPROVAL

Inventory
Activity
Conditions

## WHAT INTEGRATION MEANS IN PRACTICE

### One safety argument

Records the assumptions relied on at each stage, from design through to EO approval.

### Defined hold points

Set where protective configuration or operating permission materially changes.

### Configuration control

Records temporary concessions, inventory restrictions, occupancy limits and closure conditions.

### Named release authority

One owner coordinates release, restriction or increase of use, within existing approval authorities.

**Building certification and EO approval answer different questions. Interim EO storage needs both: EO operating approval and staged building certification.**

THE REQUIRED EVOLUTION

# Protect life.
# Prevent propagation.
# Preserve capability.
# Protect tempo.

## Recommended first action

**Require the EO safety case for accelerated projects to identify material interim configurations, their operating limits, the evidence for transition, and the crisis and conflict operating states approved in advance.**

This is not a lower standard. It is a more complete account of risk: EO risk balanced against conflict risk, across munitions, flow and stockpile.

## Questions

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