OpsPilot

Constructability Review — User Manual

Design-for-Construction Discipline · CII IR3-2 · AI Engineering Co-Pilot

What this guide covers — what a constructability review is, how the OpsPilot module runs it, what to have ready, and the output you receive.

1. What is a constructability review?

A constructability review brings construction knowledge into the design while the design can still change — asking, before the drawings are frozen, "can this actually be built efficiently and safely, and have we made it as easy to construct, operate and maintain as it could be?" It is one of the highest-leverage interventions in capital projects: Construction Industry Institute research shows reviews at the front-end stages reduce capital cost by 4–10% and schedule by 8–15%, because changing a drawing is cheap and changing a half-built structure is not.

OpsPilot runs it to *CII IR3-2 Best Practices and IR34-1*, assessing construction-driven design, standardisation, modularisation, site logistics, sequencing, resource availability and operability/maintainability access.

2. What the OpsPilot module does

Role	Responsibility
🎯 **AI Coach — Senior Construction Manager (OpsPilot)**	Assesses the design for construction-driven design, standardisation, modularisation, site logistics, sequencing, resource availability and O&M access — and prioritises the findings by cost and schedule impact.
👷 **Project / Engineering / Construction Lead (you)**	Provide the project context, design maturity, construction strategy and regional context — and validate the findings against constructor reality and confirm the recommendations are implementable.

3. What you will be asked — have this ready

- The project context and the design maturity (how much can still change).
- The construction strategy and the regional context (labour, access, climate).
- The design documents to review.
- Any known construction constraints or lessons from similar builds.

4. What you receive — the output

A complete Constructability Review (Word): the findings and recommendations across construction-driven design, standardisation, modularisation, logistics, sequencing and O&M access — prioritised by cost and schedule impact, ready for the design team to action.

5. Worked example (illustrative)

A plant design has a large vessel specified to be assembled in place, high in a congested structure. The constructability review — done while the design can still move — flags it: assembling at height in a congested area is slow, costly and higher-risk. The recommendation is modularisation — build the vessel and its associated pipework as a module at ground level (or off-site) and lift it in as one piece. That single change can take weeks off the schedule and remove a swathe of work-at-height risk. Caught at the design stage it's a drawing revision; caught during construction it's an expensive, disruptive rework — which is exactly why the review pays back 4–10% on capital when done early.

6. Getting the best result

- **Review while design can still change.** The whole value is intervening before the drawings freeze.
- **Think modularisation.** Building at ground level or off-site and lifting in is often faster, cheaper and safer.
- **Design in O&M access.** A vessel that can't be reached for maintenance is a lifetime of cost.
- **Validate against constructor reality.** The people who'll build it know what the drawing doesn't show.