

EPIC - Forward HCal

8M Tower Design Update

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Update Summary

- Tower redesigned based on "Option 1B" from prior meeting.
- Tower is now side-loading for Scintillator tiles and electrical connections.
- Tower housing made from 14-gauge sheet metal sides and machined front & back plates.
- Tower is now 140 CM in length.
- Absorber plates to be Electron Beam welded to the sheet metal sides (automated process at manufacturer). Tungsten plates to have steel 'keys' to facilitate welding.
- 8M Tower Weldments can be tolerance checked post-weld to verify size and shape prior to delivery.
- Scintillator / PCB assembly to take place in a custom stand / fixture which allows full rotation of Tower.

Tower Housing Front and Back **Plates** $M12 \times 1.5$ Tapped Hole 8MM Dowel Pins Assembly Low Profile Cover SHCS M3 Front Sheet Metal Sides 14 Gauge (1.897 mm)

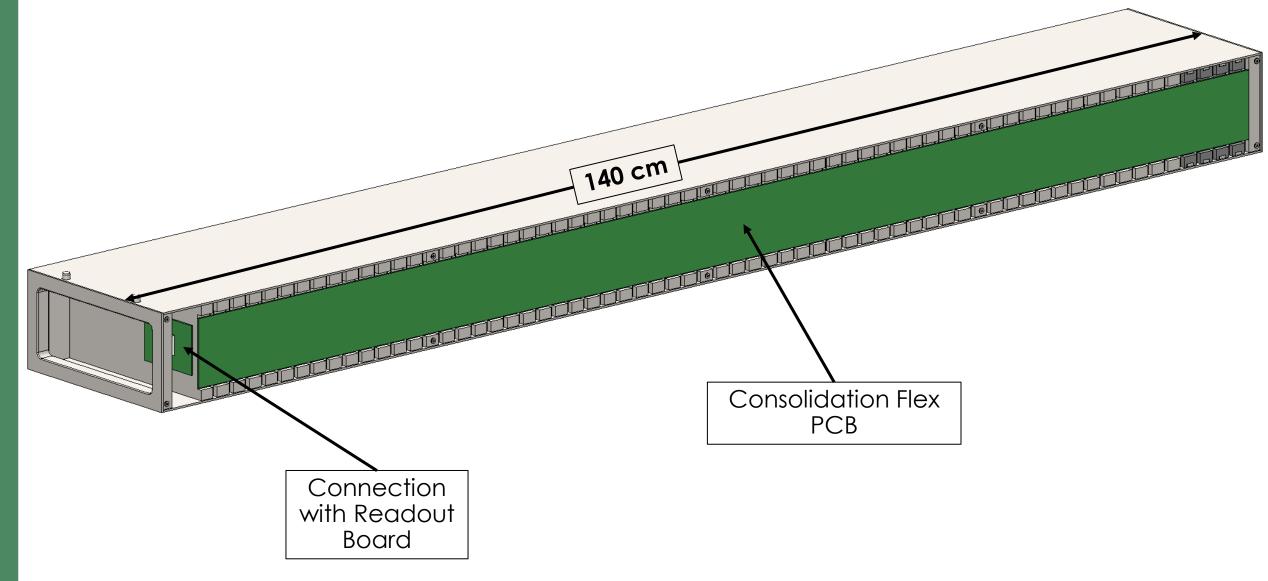
Tower Housing Weldment

fastening for manufacturing and assembly, as well as Electron Beam Weld structural integrity. Locations, (Top, Back, and Bottom sides) Steel Absorber Plates (61x) 3X Tapped Steel **Absorber Plates** Tungsten Absorber Plates (4x)

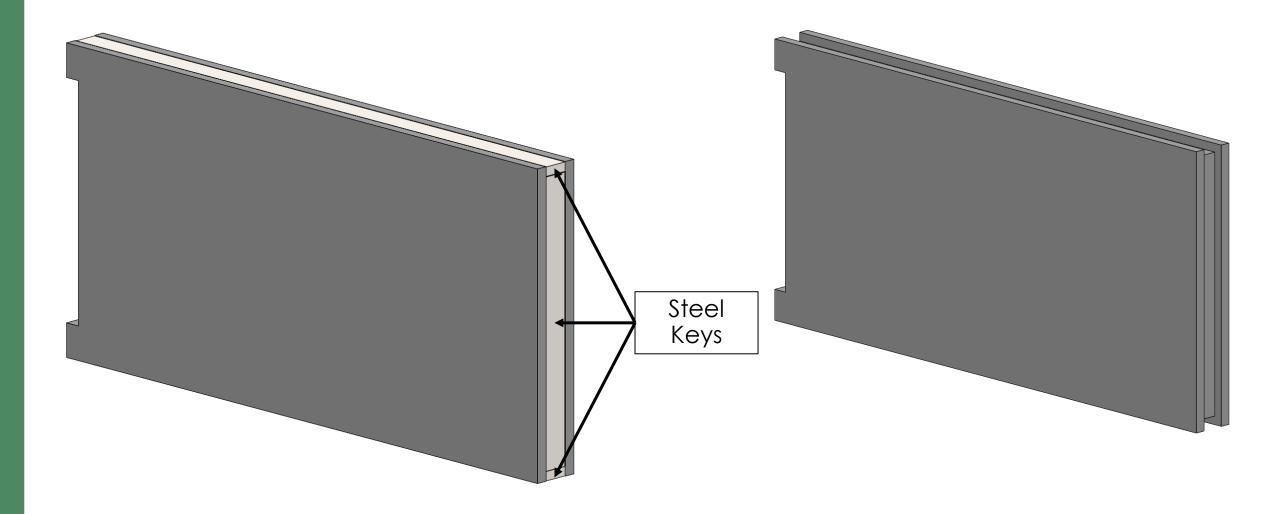
Electron Beam (EBM) Welding will leave no weld

bead and will be superior to

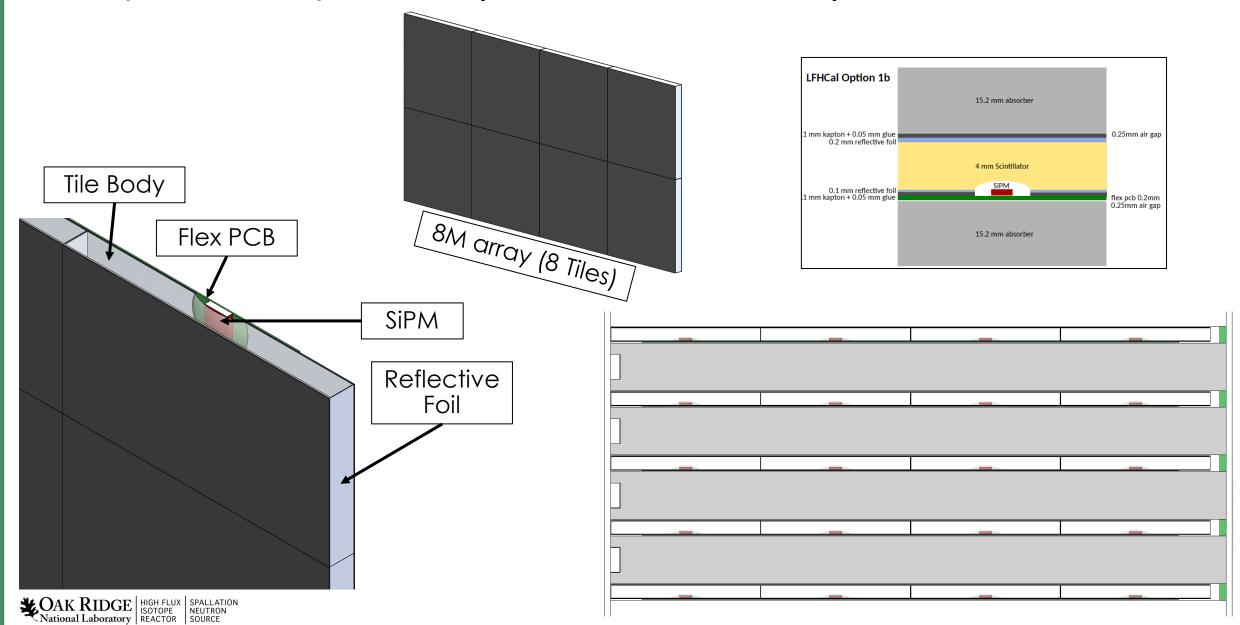
Tower Assembly / PCB Arrangement



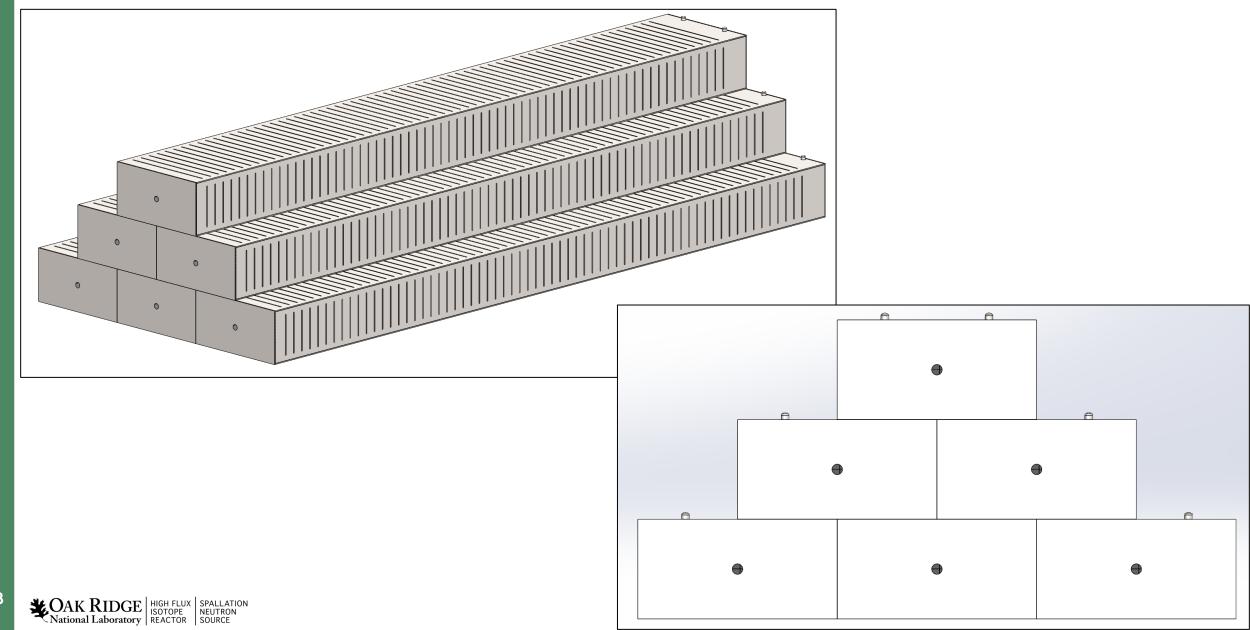
Component Updates (Tungsten Plate)



Component Updates (Scintillator Plates)



Tower Stack



Next Steps

- Structural Analysis / Iteration / Update Tower Design based on comments in meeting.
- Preliminary Assembly Procedure (document)
- Detail PCB arrangement and connections.
- Submit preliminary design drawings for quote.
- Manufacture mockup 8M Tower.
- Manufacture Assembly Stand (80/20 frame, in-house fabrication)
- Other items?



Questions / Comments / Discussion