- The image opposite shows an existing bracket in grey that is rigidly fixed at the two corners at the top of the image and loaded by hanging a weight from the bottom of the bracket.

- The challenge is to select **10** of the **32** possible reinforcing beam locations to achieve a maximum stiffness

- To enter, scan the QR code in our delegate pack and complete the form

- **Entries will close at the end of the lunch break**

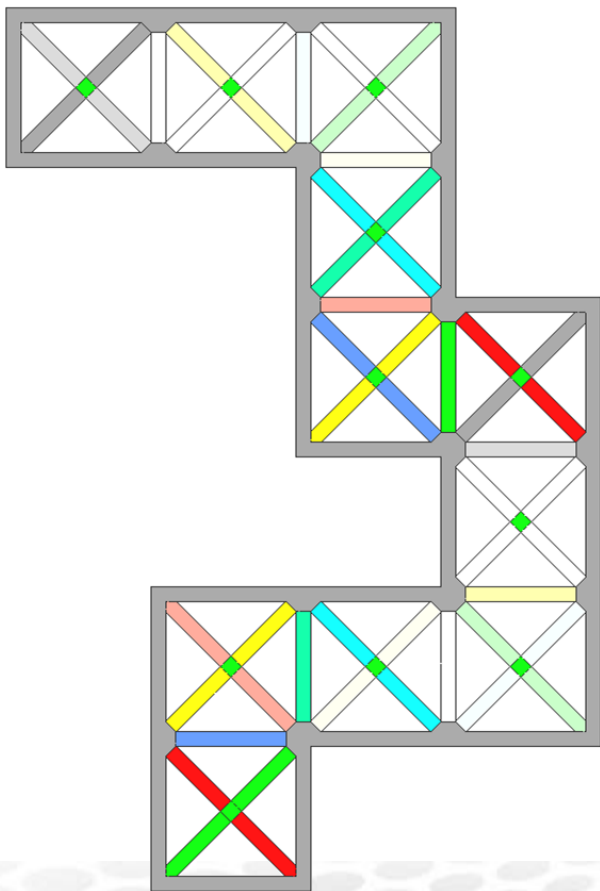- Prize: **SONOS Roam SL Portable Speaker**

Design space
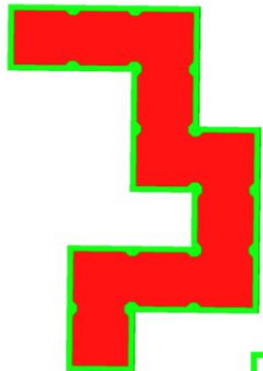
Topology results
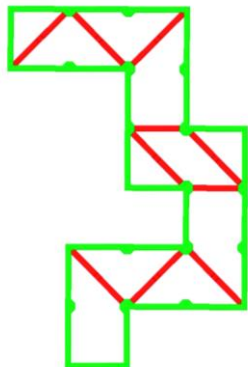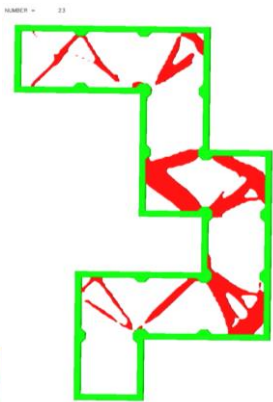
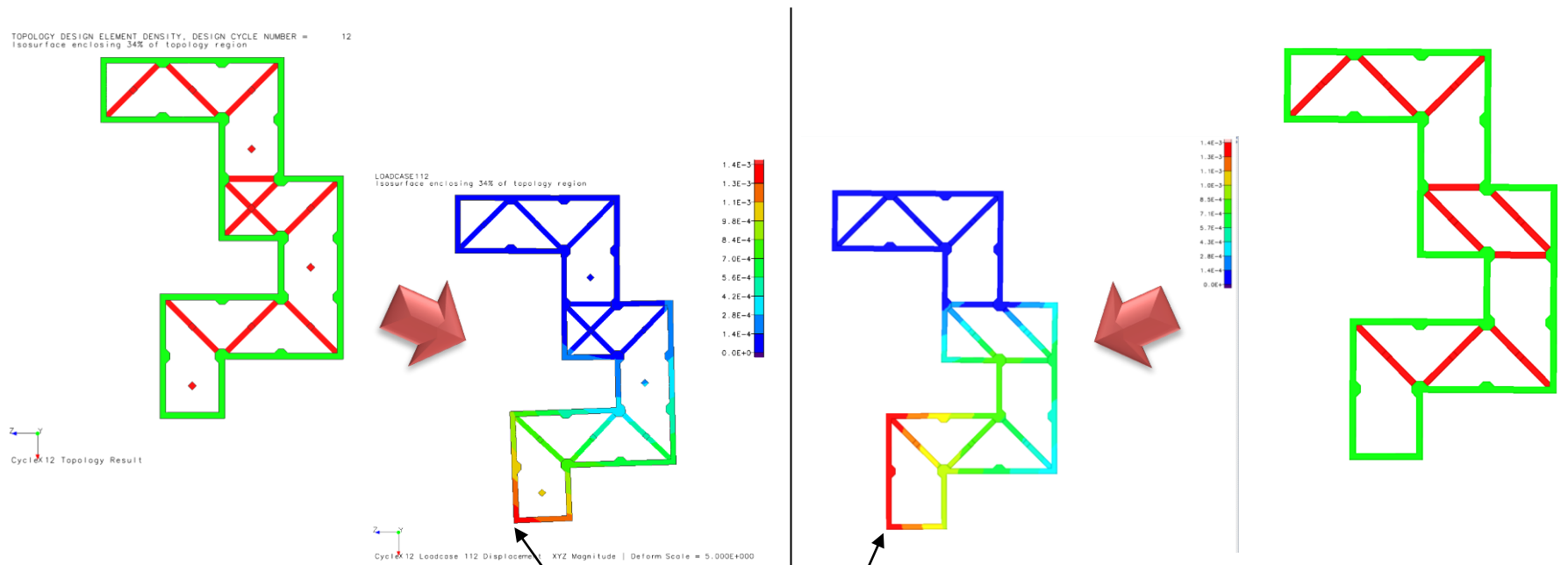Interpretation

- Define major loadpaths and inform the design
  - Variables
    - Red = Designable region
  - Objective
    - Minimise Displacement
  - Constraint
    - 30% of the material

- Informing an optimiser with more known information allows it to identify a more direct answer.

- To refine the study we have:
  - Modelled each candidate beam as an individual property
  - Performed Topology on each individual beam, enforcing the beam to be considered as a single Topology variable (Uniformity manufacturing constraint)
  - Utilised Genesis' TSELECT function to ensure members are full 'on' or 'off'. (intermediate Topology densities will create a constraint violation).
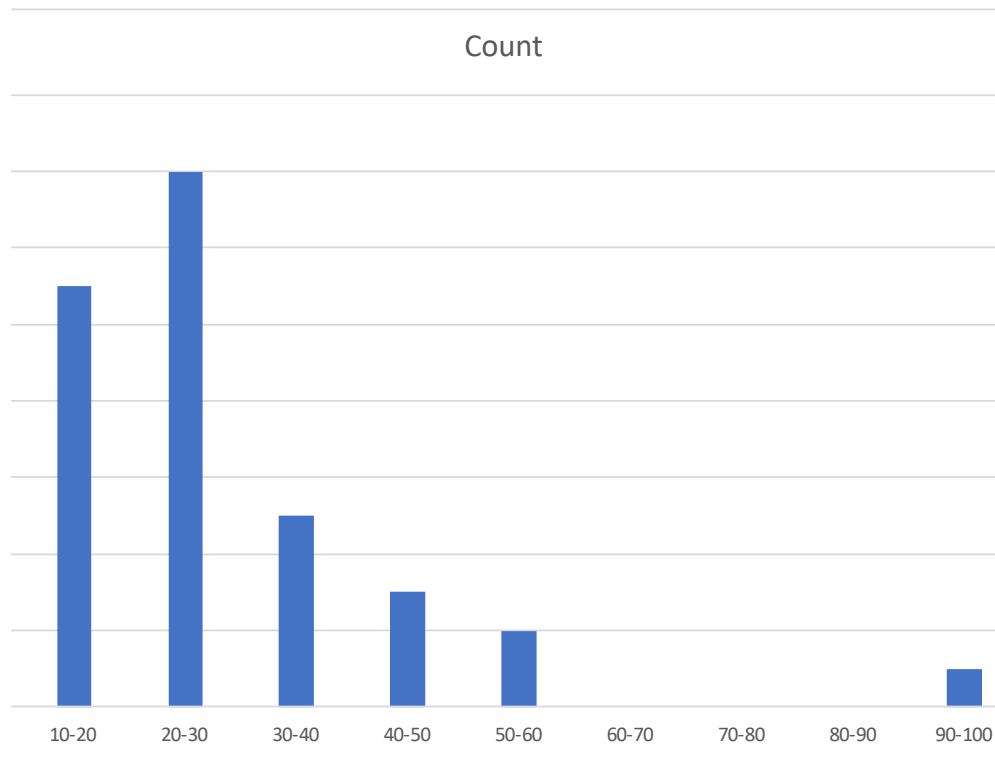
- 10 Beam Optimisation

- Topology Informed

Displacement = 1.4mm

- Delegate results

Count

10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100

- Mean = 27.12mm

- Standard Deviation = 19.26mm

- Worst = 100.00mm

- Best = 1.57mm

- Genesis = 1.36mm

Name	Result
Simon Gardner	1.57
Fraser Ayton	6.43
Luca Regnini	6.56
Andrea Orezzi	9.07
Giuseppe	9.33
Connie Qian	9.74
Niclas Kalter	10.88
Andrea Comin	12.67
Luke Howard	13.19
Paolo Ponzo	15.68

- Winner = Simon Gardner (1.57mm)
- GENESIS = 1.36mm