Modular Modeling Approach

Commerical Schedule
WWr: 80%
131.39 kWh/m²

Residential Schedule
WWr: 35%
171.87 kWh/m²

Office Schedule
WWr: 45%
131.39 kWh/m²

Avg kWh = \( \frac{\sum \text{kWh/m}^2}{17} \)
**SCENARIO 1**

**KEY ASSUMPTIONS:**
- ASHRAE 90.1 standard for comparisons
- wwr held constant at 35% and 65% (retail)
- gross floor area held constant
- residential schedule + weekends
- office schedule (8am - 6pm)

**CONSTRUCTION COST:** $58,040,824
*Per Lego: $59,165*

**KEY FINDINGS:** 55% discrepancy

- 133.23 kWh (LEGO)
- 77.9 kWh (UMI)
- 57% Daylit at 300 lux
“This is about gentrification”

“public distortion”

“we have a responsibility to cluster growth in Kendall Square”

“MIT doubles down on Kendall Square redevelopment”

“It’s people versus money”

“Yes, in my backyard!”

“high-tech industry wants to come to Cambridge because of graduate students, not because of commercial buildings”

“someone who isn’t a scientist has no reason to go to Kendall Square”

“Land for MIT campus development in Cambridge is unique and irreplaceable”
Variant A: A Commercial Office Focused Plan to Optimize Economic Value
[K2C2 Plan]
Variant A LEGO Model

Gross Floor Area by Program

\(= 10,000 \text{ m}^2\)

- Office
- Residential
- Retail

Problematic Deep Floorplates

Troublesome Shady Zones

Daylighting Analysis
Overall Performance

- FAR: 6.0
- ROI: 15%
- Walk Score: 100%
- EU/ppl*hr: 2.0
- Daylight (CDA): 100%
- Community: Excellent
Variant B: A Residential Focused Plan to Provide More Housing Options
[CBT Plan]
Gross Floor Area by Program

- Office
- Residential
- Retail

Daylighting Analysis

Narrower Floorplates Characteristic of Residential Development

Self- and Contextually Shaded Buildings

Variant B LEGO Model
Variant C: A New Alternative for a More Sustainable Community
Daylighting Analysis

Gross Floor Area by Program

- Office
- Residential
- Retail

= 10,000 m²
Financial Sensitivity Analysis

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