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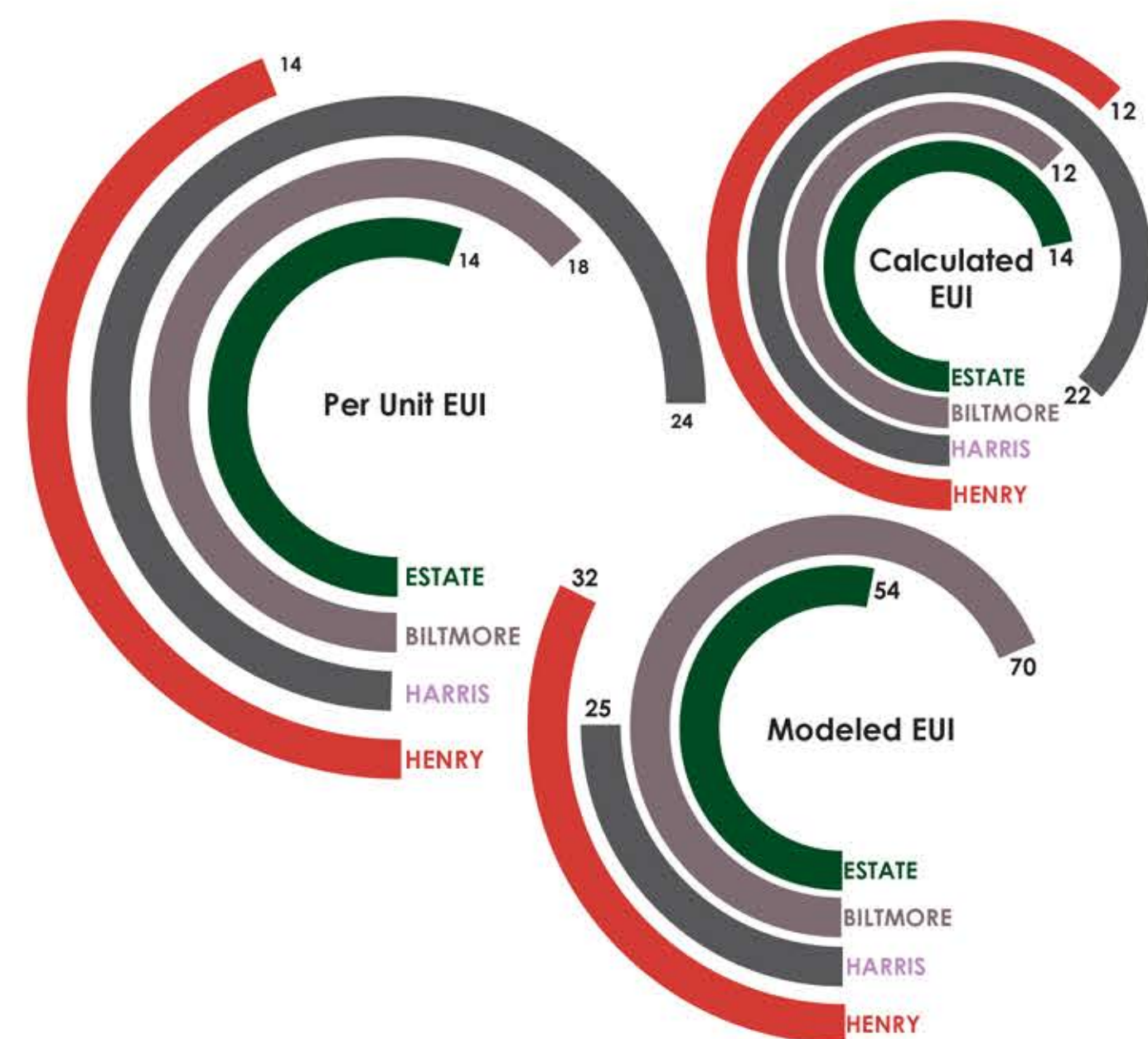
## Project Overview:

Energy assessments for four CCC buildings which represent the array of properties in their portfolio.

## Method:

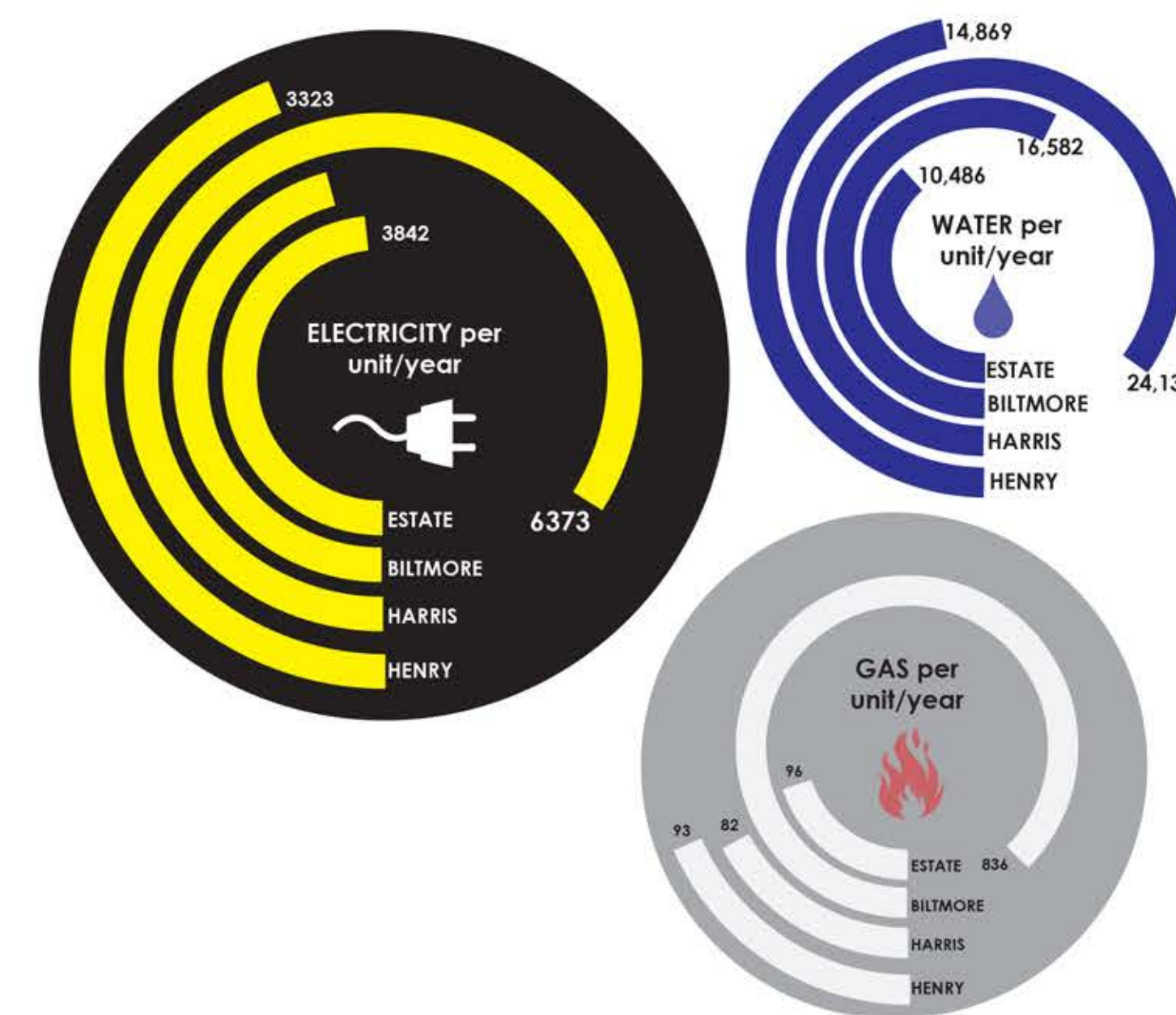
Use thermal imaging, 3D modeling with Sefaira and data sets from WegoWise to create comparative analyses for CCC to utilize in future projects.

Energy Use Intensity

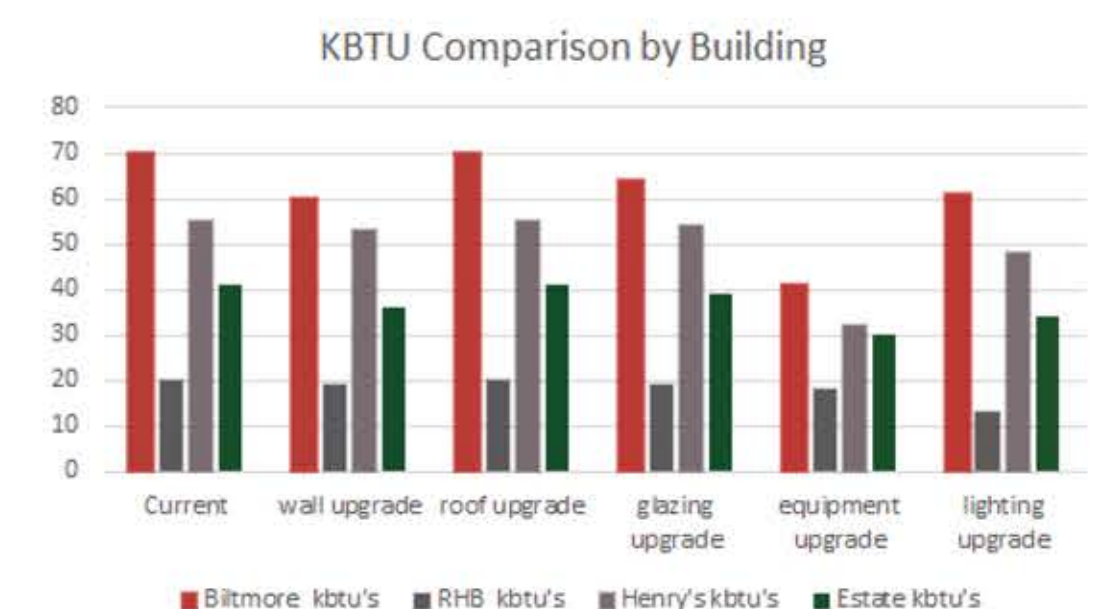


Modeled EUI's are generated by 3D software which is analyzed by Sefaira to calculate the efficiency based on assumptions while the calculated EUI uses past data to get real numbers.

Utilities per unit/year



The Harris building is inefficient in both water and electricity use considering how new it is while the Biltmore uses the most gas because the boiler is always on.



**Henry Building** 309 SW 4th Ave

- Built in 1905
- 76 units SRO
- 98% occupancy
- 3 stories
- 50,802 sq. ft.

**Henry Building**

The thermal anomaly at the corner appears to be the heat from Starbucks traveling upwards. Many windows are open.

32 kBTU/ft<sup>2</sup>yr

APPLIANCE DOMINATED

MOSTLY WELL LIT

Henry KBTU per square foot per year

Scenario	Difference
Current	32
wall upgrade	8.25
roof upgrade	19
glazing	.45
equipment	.55
lighting	.39

**Biltmore Hotel**

The majority of the heat loss is through the storefront windows on the ground floor, and thermal losses also occur at the floor plate.

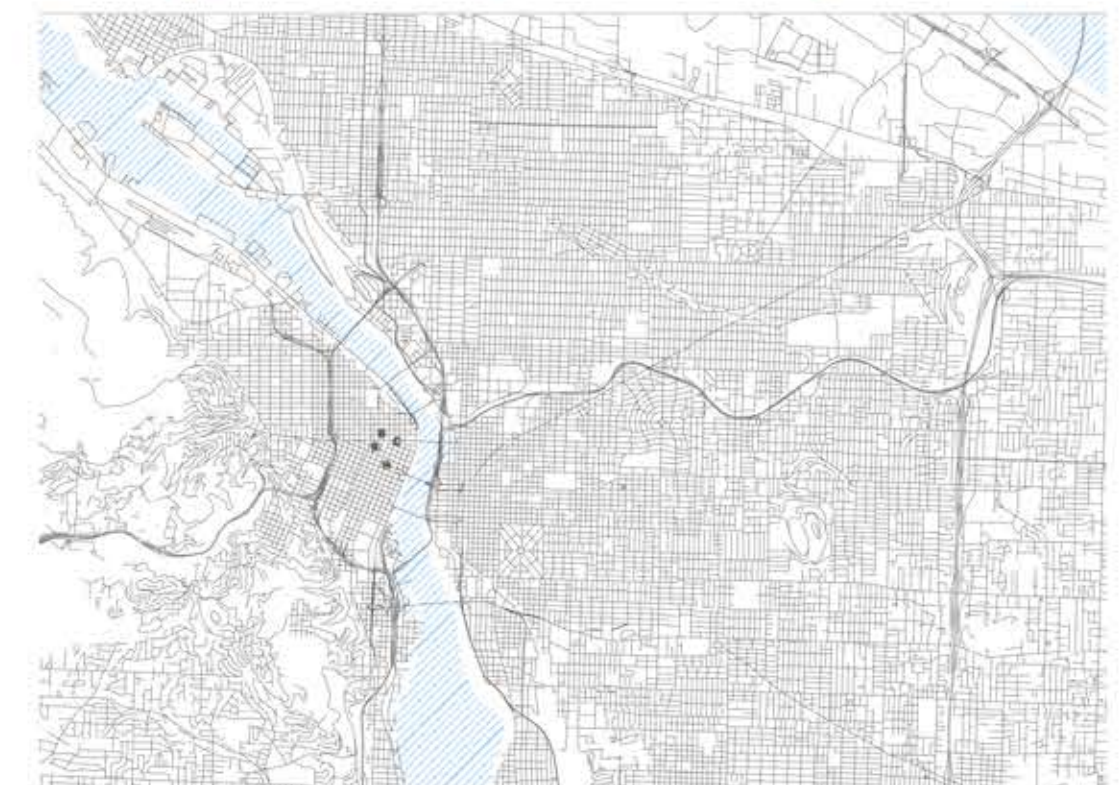
70 kBTU/ft<sup>2</sup>yr

EQUIPMENT DOMINATED

MOSTLY UNDERLIT

Biltmore KBTU per square foot per year

Scenario	Difference
Current	70
wall upgrade	8.25
roof upgrade	12
glazing	.21
equipment	.55
lighting	.39



**Biltmore Hotel** 310 NW 6th Ave

- Built in 1909
- 153 units SRO
- 99% occupancy
- 6 stories
- 29,665 sq. ft.

**Richard Harris**

Thermal losses at the floor plates show thermal bridging and lack of insulation.

26 kBTU/ft<sup>2</sup>yr

LIGHTING DOMINATED

MOSTLY UNDERLIT

RHB KBTU per square foot per year

Scenario	Difference
Current	26
wall upgrade	12
roof upgrade	9
glazing	.46
equipment	.55
lighting	.39

**Estate Building**

Most of the heat loss is at the ground floor due to the large single pane windows versus double pane in the SRO's.

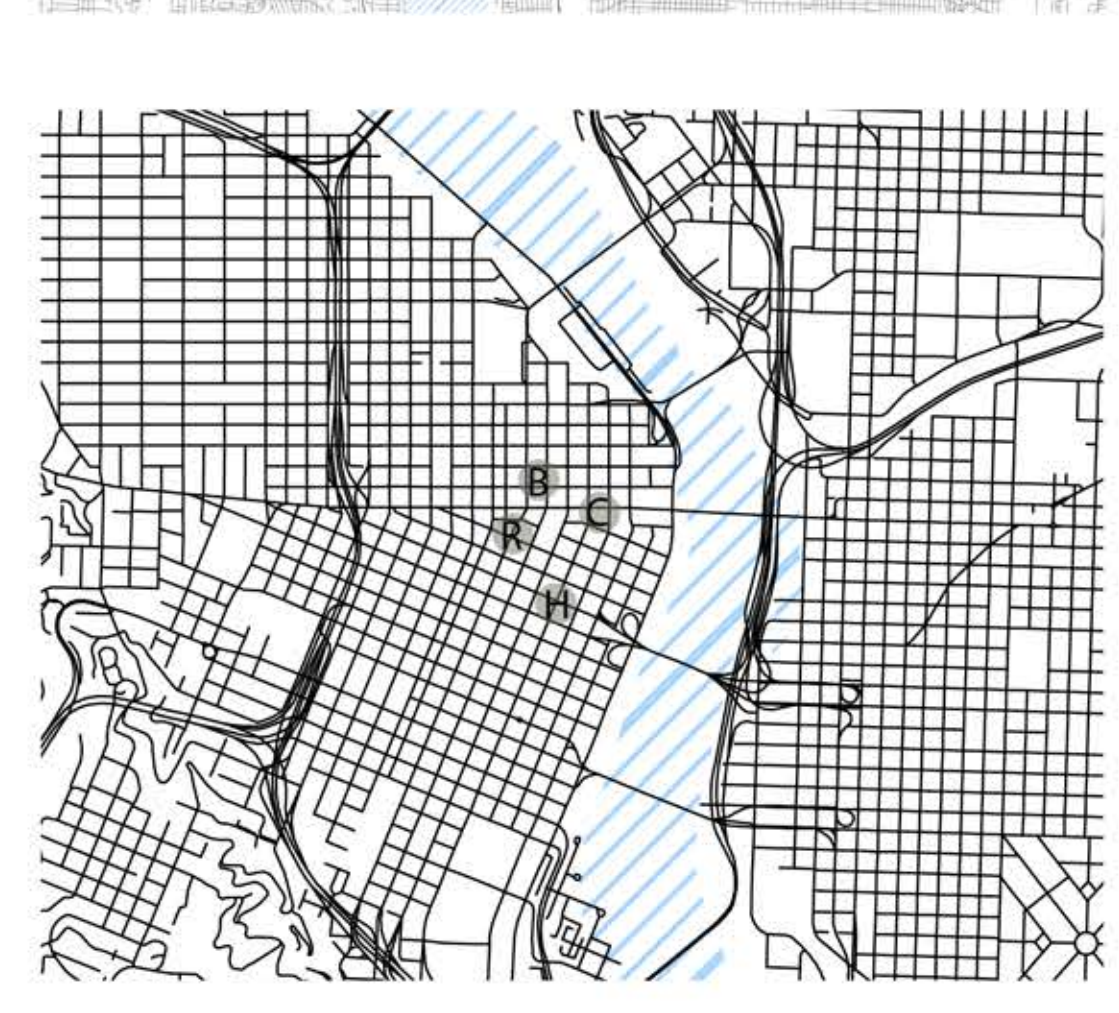
54 kBTU/ft<sup>2</sup>yr

APPLIANCE DOMINATED

MOSTLY WELL LIT

Estate KBTU per square foot per year

Scenario	Difference
Current	54
wall upgrade	8.25
roof upgrade	12
glazing	.45
equipment	.55
lighting	.39



**Richard Harris** 8 NW 8th Ave

- Built in 2006
- 181 units SRO
- 99% occupancy
- 12 stories
- 77,738 sq. ft.

**Estate Building** 225 NW Couch St

- Built in 1914
- 191 units SRO
- 95% occupancy
- 6 stories
- 59,416 sq. ft.

Biltmore Hotel

Estate Building