

**Magnolia HVAC Upgrade Project Report**

USF H&RE Facilities Management and  
Operations

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**Abstract**

The existing HVAC equipment for all student apartment buildings reaching 15 years of service. Without the replacement of the existing equipment is a significant energy burden on each 4-bedroom apartment residence. The replacement is required for the efficient equipment of the required (14) and control systems. SEER values represent higher efficiency.

The major portion of the energy used for heating and maintenance are therefore a significant energy savings and greenhouse gas reductions. The University of California sees this as an opportunity for energy cost savings and to be in alignment with the state's carbon footprint. With the new equipment and the controls the cost of a further reduction is estimated at around 18%.

**Introduction**

In the Summer of 2017, all the buildings renovated with new insulated exterior wall assemblies which have significantly reduced cooling and heating costs even with the inefficient aging HVAC equipment. The results are illustrated in figure 1. The improved building envelope and HVAC equipment work necessary for reducing the

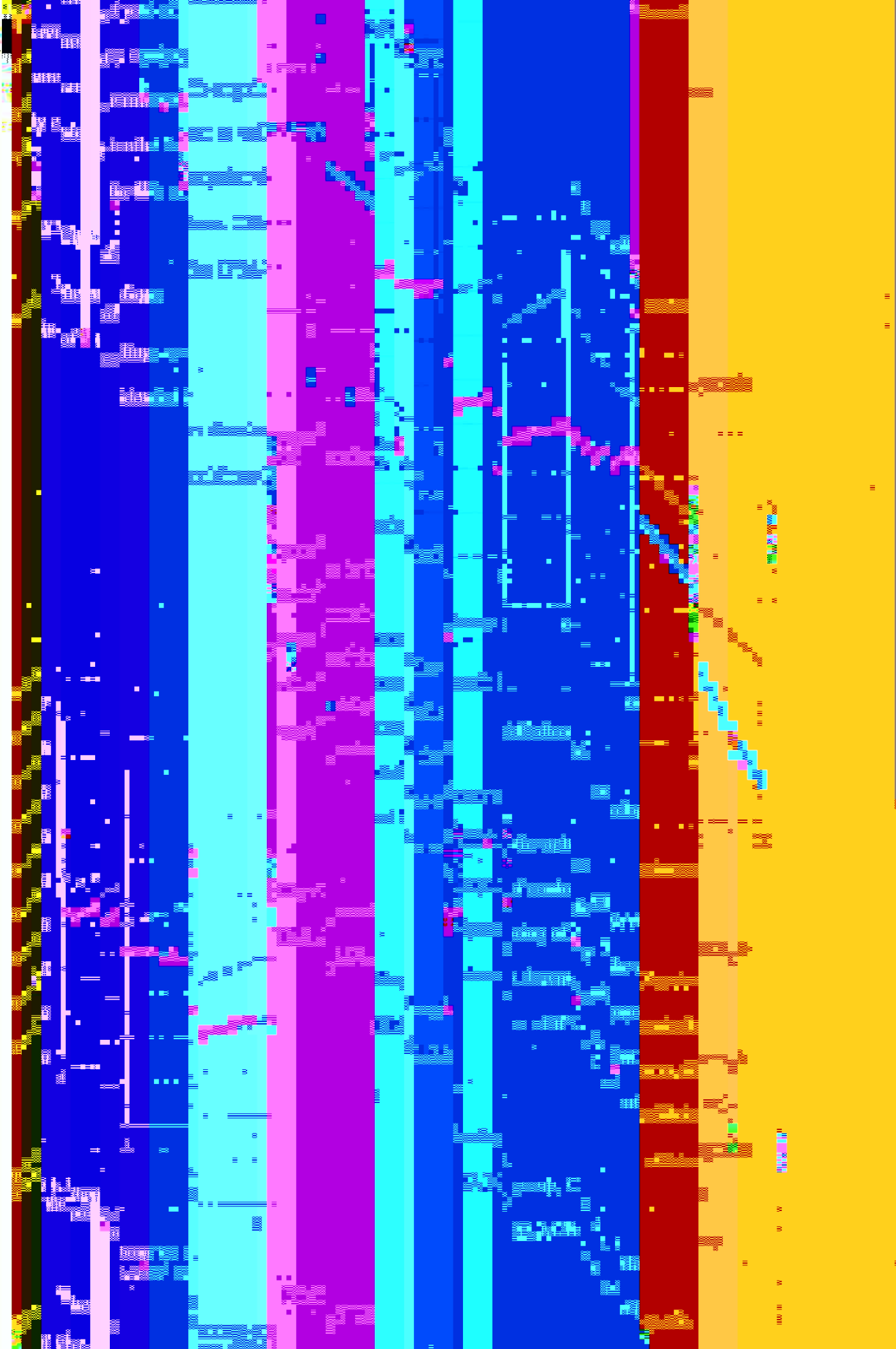






Table II. Project cost

		en	Cost
HV	Equip		\$ 1,
Con	s		\$
Stu	Engag	t	\$
Proj	Grand		\$ 2,
Ma	ng Fu		\$ 1,
SGI	Reque		\$

Table III. SGEF request breakdown

	Item	Cost
	fferenc ve n SEER16 and SEER14	\$ 73,1
	udent E erment	\$ 1,5
	lf of th tro s	\$ 198,2
	<b>GEF T</b>	<b>\$ 272,8</b>

**Conclusion**

The project will result in a savings of 249,400 kWh/yr. In terms of sustain will  
 lead to a reduction of 117 MT/yr of CO<sub>2</sub>. This project will not only have benefi  
 environment and subst student life, but will also continue USF's commit the  
 forefront of sustainability

# Appendix A





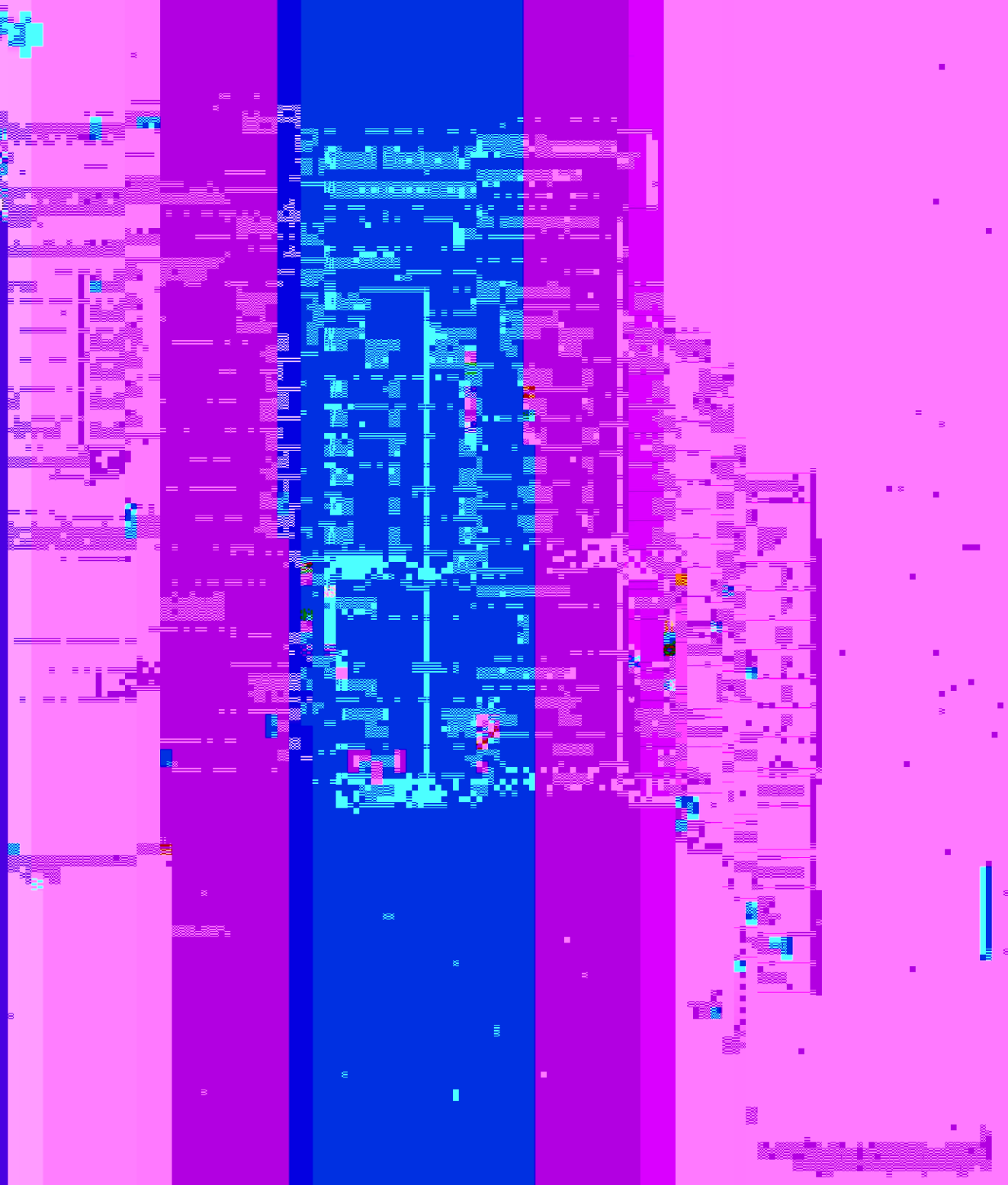
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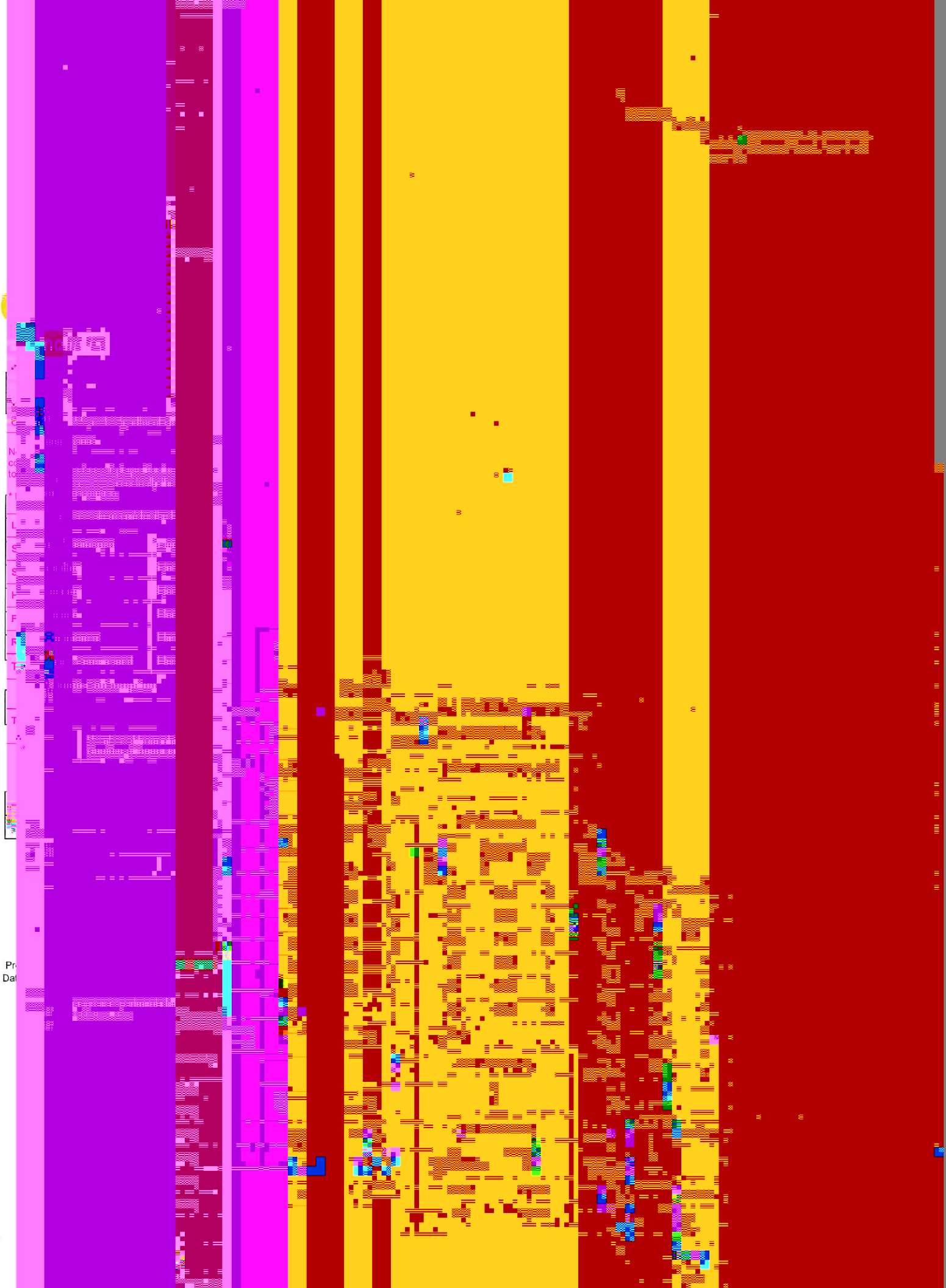
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Project Name  
City

Note: The  
column of  
total energy

\* Denotes

Lighting

Space Heating

Space Cooling

Heat Rejection

Fans - Cooling

Receptacles

Total Building

Total

Electricity

Total

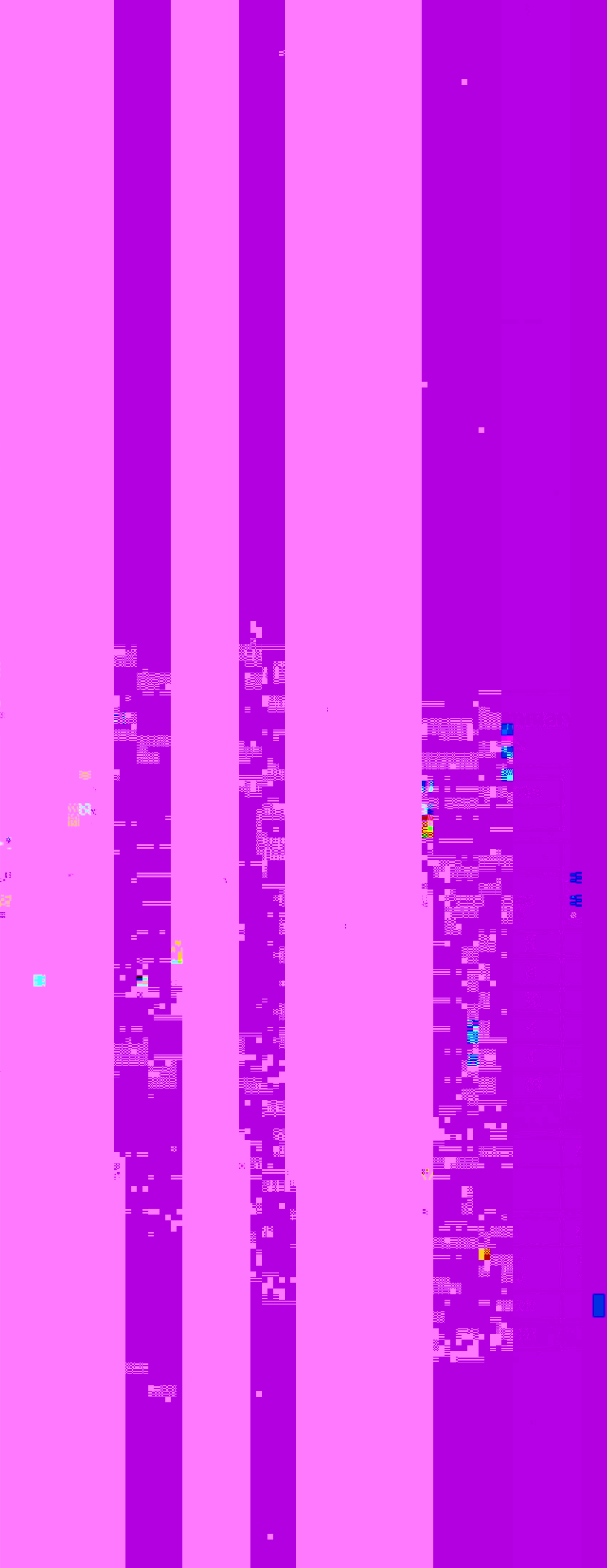
Project Name  
Dataset Name

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10.5



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### Summary

Inc.

13, 2019

Item	Alt-3 Higher	
Peak kW	Energy 10^3 kWh/yr	Proj / Ba %
11	33.3	1
8	2.4	1
32	82.8	1
4	8.7	1
4	30.8	1
12	47.2	1
	205.2	

Item	Alt-3 Higher EF
	0
	0

Item	Alt-3 Higher EF
160	205.2
160	205

TRAC

Project Name  
City, Tampa

Note: The column of total energy

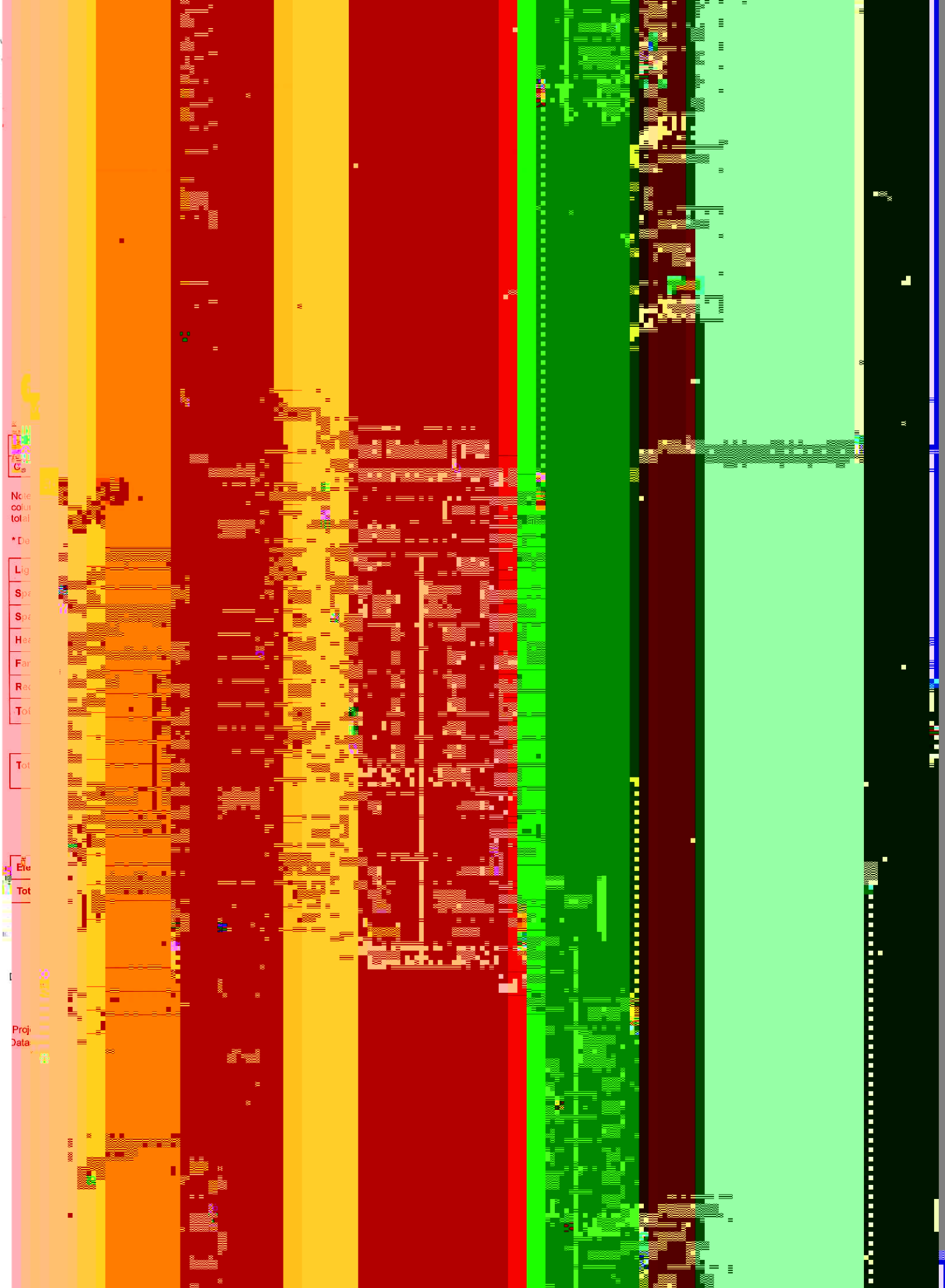
\* Denotes

- Lighting -
- Space He
- Space Co
- Heat Reje
- Fans - Co
- Receptac
- Total Bu

Total

Electricity  
Total

Project Name  
Dataset Name



Project Name

City/Town

Note: The column of total energy

\* Denotes

Lighting

Space Heating

Space Cooling

Heat Rejection

Fans - Cooling

Receptacles

Total Building

Magnolia G

Total

Magnolia Apartments

Florida

Percentage displayed

the base case is a

consumption.

the base alternative

Electricity

Total

Conditioned

Conditioned

Conditioned

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Conditioned

Conditioned

Conditioned

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Conditioned

Conditioned

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Conditioned

Conditioned

### Energy Consumption

By Component

Other Data: Tampa

\* Alt-2 Existing

Energy Proposed

/ Base

/yr %

14.7 13.3

18 2.5

17 49.7

6 4.1

7 12.5

6 17.8

0.1

\* Alt-2 Existing

0

\* Alt-2 Existing

Energy kWh/yr

110

### Summary

Inc.

13, 2019

on

Peak

W

5

5

14

2

2

5