

Indio Building

05.12.2016

John Andary, PE, LEED AP

jandary@integralgroup.com



435 INDIO

BUSINESS CASE FOR NET ZERO ENERGY



EXISTING CONDITIONS



- 30,000 SF square one-story office warehouse circa 1970
- Uninsulated concrete walls, wood roof and single pane windows
- DARK, DINGY, DERELICT and UNRENTABLE!

THE INDIO BUILDING



HIGH PERFORMANCE ENVELOPE



DAYLIGHTING DESIGN



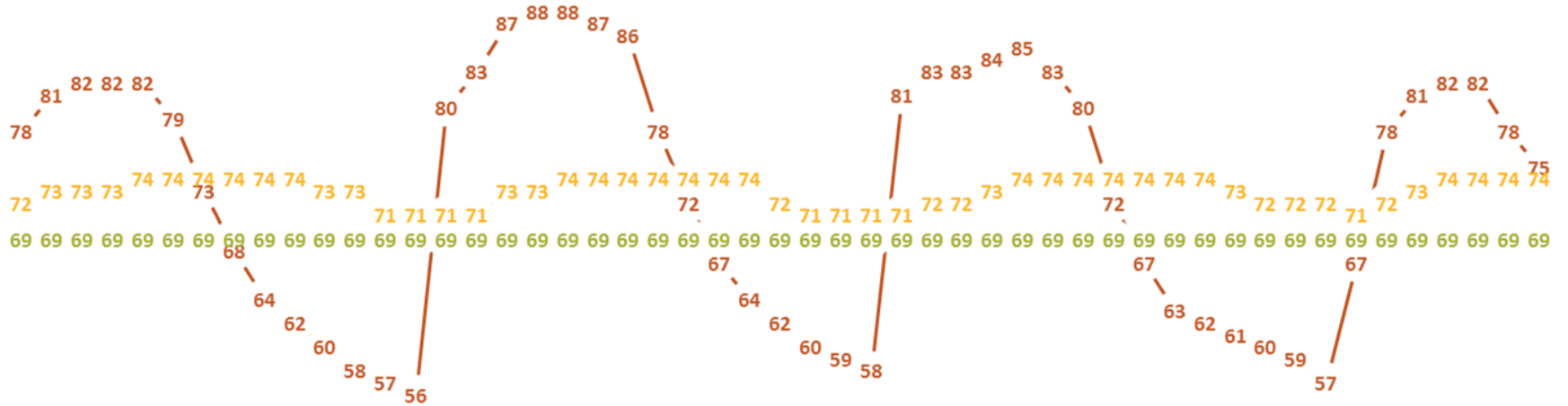
INTEGRATED ROOF PLANNING



PASSIVE COOLING



MEASURED PASSIVE PERFORMANCE



10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM

4

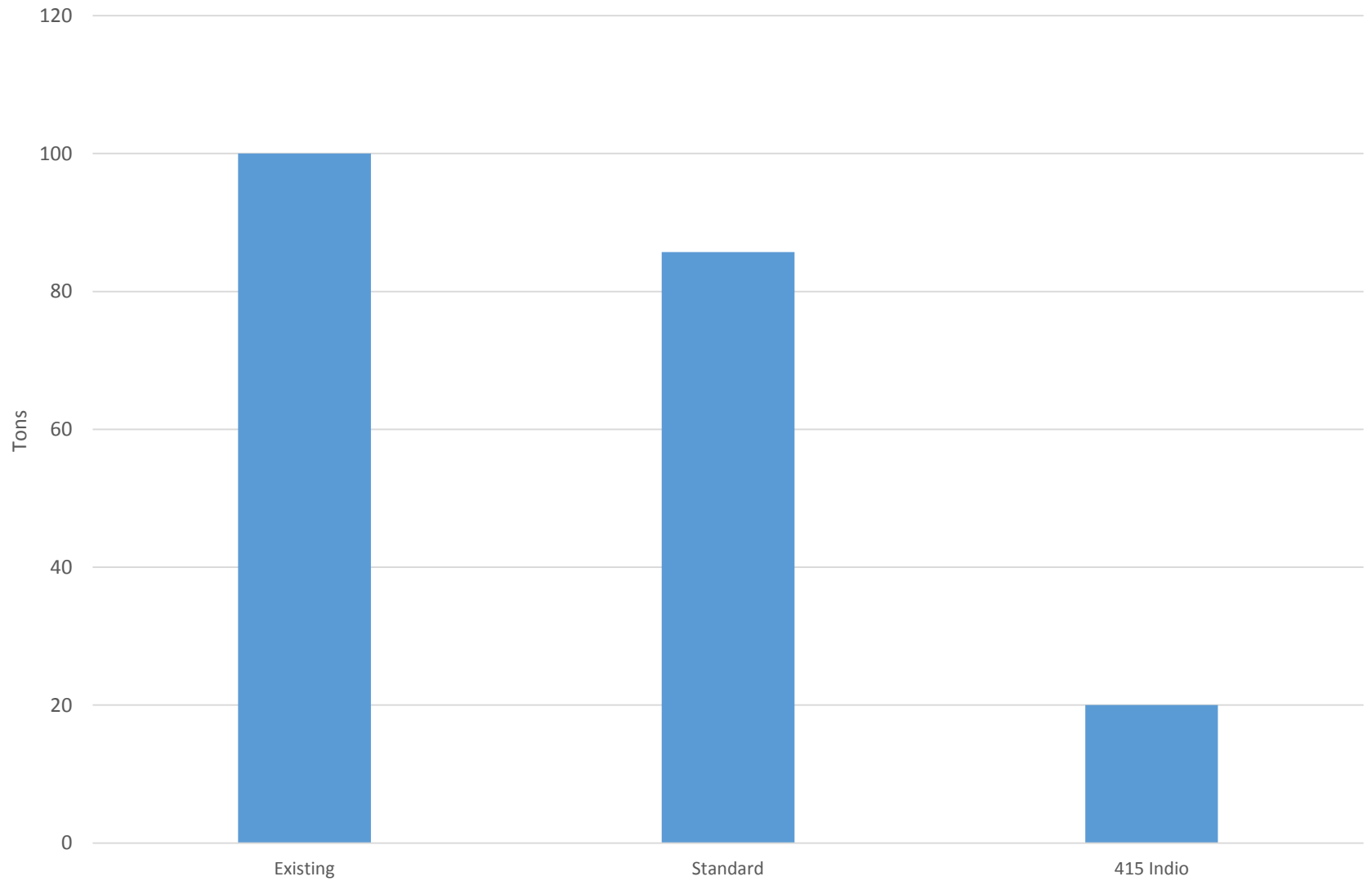
5

6

7

- Max of OAT
- Max of Work Space Temp
- Max of Thermal Mass Temp

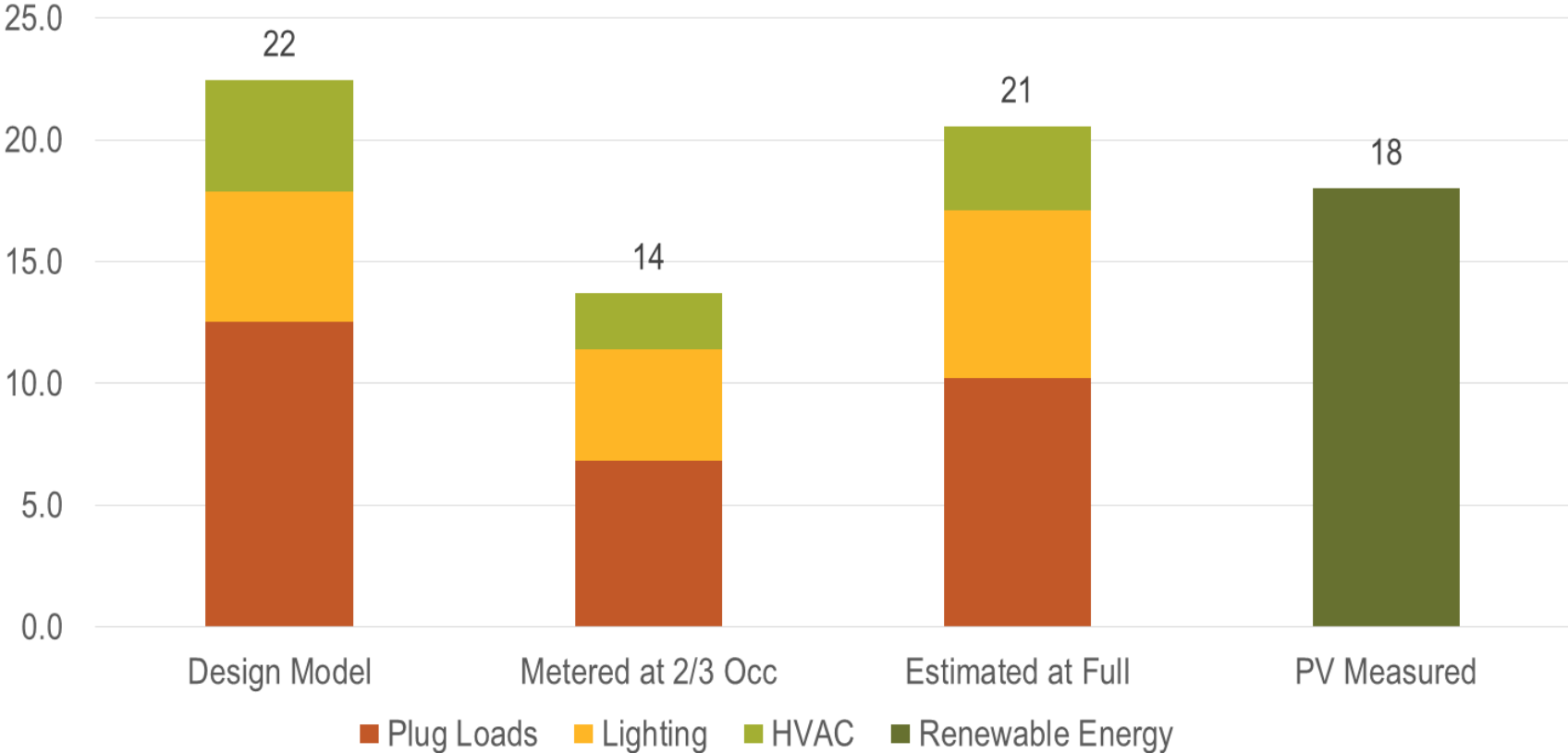
REDUCED HVAC SIZE



TENANT IMPROVEMENT



MEASURED NET ZERO PERFORMANCE

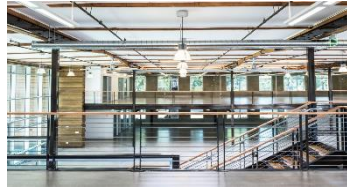


INDIO



2014

MATHILDA



2015

AP + I



2016

PASTORIA



2017