

GETTING TO **zero** FORUM 2021

NEW YORK, NY
OCTOBER 27-29, 2021

gettingtozeroforum.org

#GTZFORUM



October 28 - 10:45am-12:15pm
BREAKOUT STRATEGIES FOR
DECARBONIZING THE MULTIFAMILY SECTOR

PRESENTED BY:

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SAN FRANCISCO, CA
ESTABLISHED IN 2008

INTEGRATED MEP/LV
ENGINEERING

COMMUNITY IMPACT
INDUSTRIES

MEP
LOW VOLTAGE
FIRE/LIFE SAFETY
TELECOM/SECURITY CONTROLS

AFFORDABLE HOUSING
EDUCATION
PUBLIC & ESSENTIAL SERVICES

10/8/2021

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NET ZERO IN CALIFORNIA



Cities in California with Zero Emissions Building Codes

- 
- | | | | | |
|--------------------|-------------------|----------------------|--------------------|-------------------------|
| 1. Carlsbad | 11. Mountain View | 21. Healdsburg | 31. Burlingame | 41. Albany. |
| 2. Berkeley | 12. Morgan Hill | 22. Los Gatos | 32. San Anselmo | 42. San Carlos |
| 3. Windsor | 13. Palo Alto | 23. Cupertino | 33. Piedmont | 43. Daly City |
| 4. San Luis Obispo | 14. Alameda | 24. San Francisco | 34. Redwood City | 44. Petaluma |
| 5. San Mateo | 15. Milpitas | 25. Los Altos Hills | 35. East Palo Alto | 45. South San Francisco |
| 6. Santa Monica | 16. Santa Rosa | 26. Campbell | 36. Los Altos | 46. Sacramento |
| 7. Menlo Park | 17. Pacifica | 27. San Mateo County | 37. Millbrae | 47. Santa Barbara |
| 8. San Jose | 18. Mill Valley | 28. Richmond | 38. Sunnyvale | 48. Emeryville |
| 9. Davis | 19. Saratoga | 29. Hayward | 39. Ojai | 49. Fairfax |
| 10. Marin County | 20. Brisbane | 30. Santa Cruz | 40. Oakland | 50. Encinitas |

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RESIDENTIAL DOMESTIC HOT WATER (DHW) SYSTEM

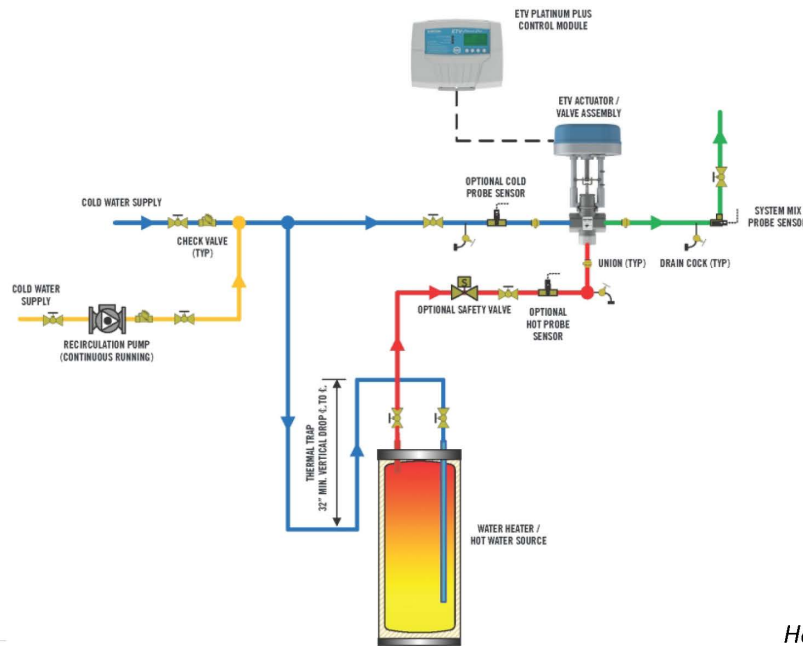


Illustration Source:
Heat-Timer Corporation

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ENERGY USAGE INTENSITY (EUI)

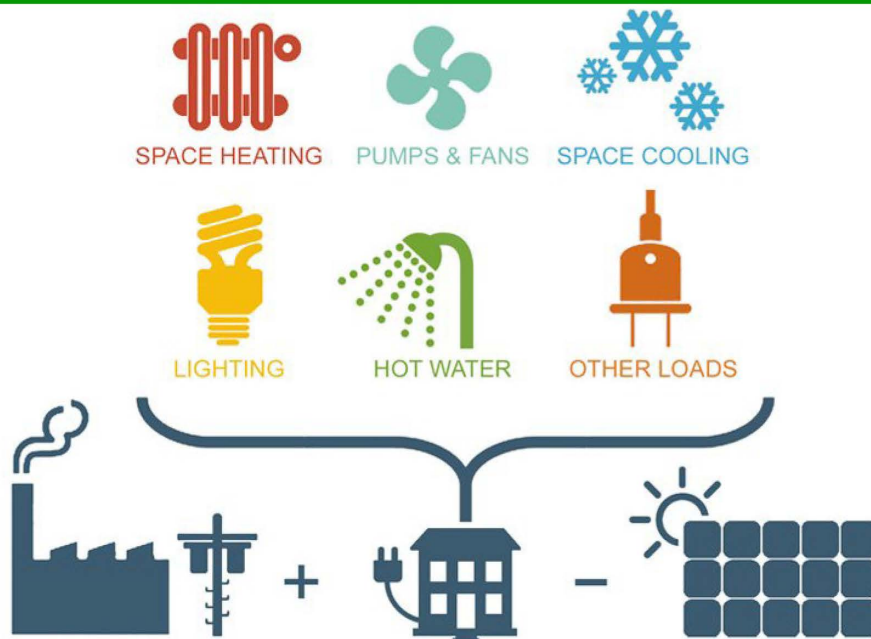


Illustration Source:
Building Enclosure Magazine

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Case Study #1



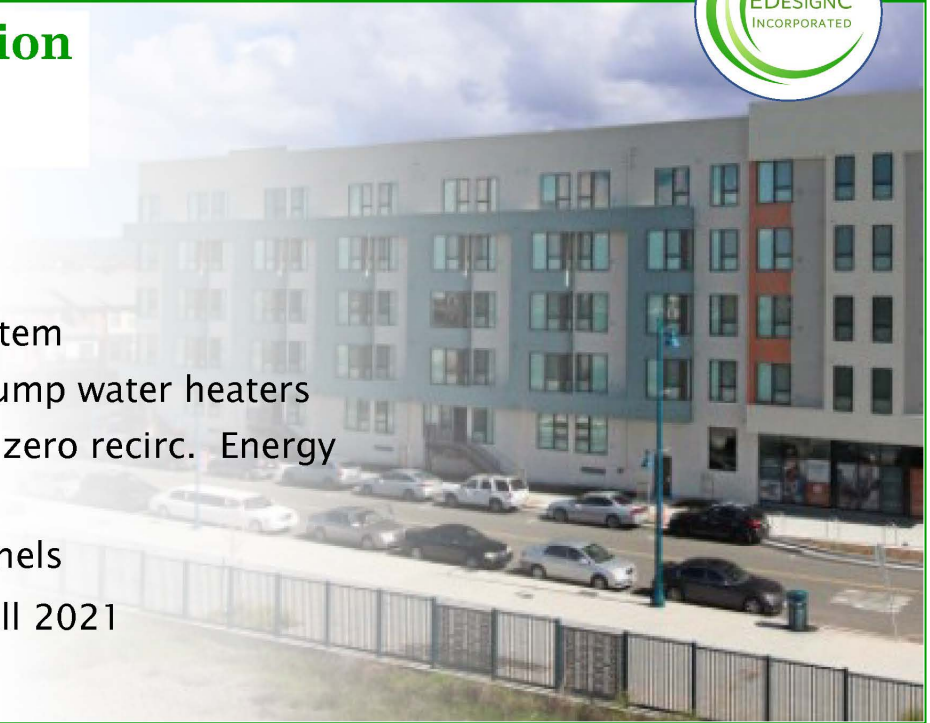
Coliseum Connection

Oakland, CA

- New Construction
- 59 Units, Six Stories
- 10.5 EUI
- Decentralized Water System
- Grouped Electric Heat Pump water heaters
- smaller pex piping with zero recirc. Energy Recovery Ventilators
- Rooftop Photovoltaic Panels
- Estimated Occupancy Fall 2021

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Case Study #1



Coliseum Connection

Oakland, CA

Field Rearch Total Annual Residential Electricity Consumption (kWh) from CUAC (w/o Res DHW)	210,632
Total Annual Residential Electricity Consumption (kWh) from CUAC (w/o Res DHW)	245,027
Total Annual Non-Residential Electricity Consumption (kWh) (Includes Res DHW)	150,934
Annual Whole Project Electricity Consumption (kWh)	395,961
Solar Offset Proposed (kwh per year)	150,000
Annual NET Whole Project Electricity Consumption (kWh)	245,961
Percentage Offset of Whole Project Electricity Consumption	38%
Energy Use Intensity (kBtu/Year/Square Foot)	10.5

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Case Study #2



1710 Moorpark Ave

San Jose, CA

- New Construction
- 106 Studios, Four Stories
- All-Electric
- Centralized DHW
- Two large storage tanks in DHW Plant
- Heat pumps in units
- 101kW Photovoltaic system

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Case Study #3



1717 University Ave

Berkeley, CA

- New construction
- Dorm-style housing
- 17 units, Five stories, Group Housing
- All-electric
- DHW central plant
- Multiple condensing heater pumps
- Buffer storage tank
- Cascading Heat Pumps
- Electric baseboard radiators
- Resiliency process

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Case Study #4



Palmilia By The Bay

San Francisco, CA

- New Construction
- Mixed-Use
- 224 Units, two four-Story buildings
- Smaller building for-sale condos
- One heat pump per unit
- Larger building rentals
- Centralized Water Heating System

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Case Study #5



Boyd Street Apartments

Santa Rosa, CA

- New Construction
- 46 Units , Four Stories
- Individual heat pumps
- All-Electric
- In Construction
- Currently weatherproofing

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Case Study #6

2400 Filbert

Oakland, CA

- New Construction
- 87 Units, Three Stories
- Centralized Heat Pumps
- Main plant on garage level
- Energy Recovery Ventilators
- Innova Heat Pumps
- Roof Photovoltaic Panels
- Permit review

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Q & A

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