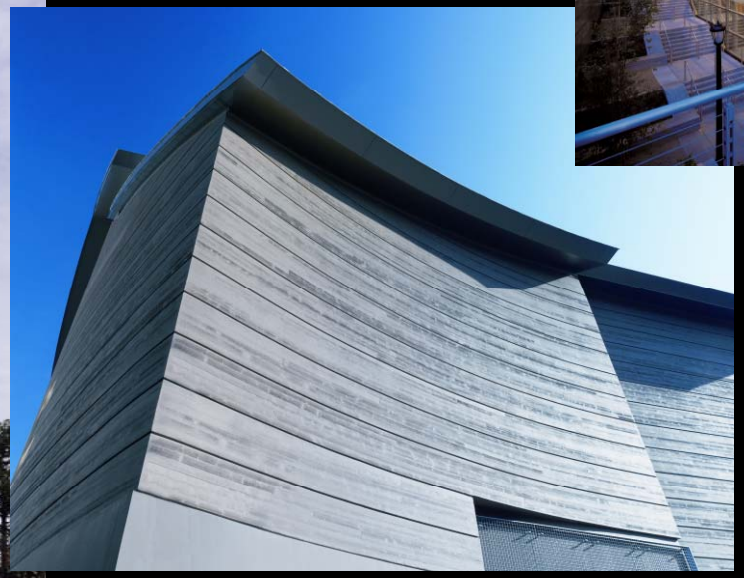
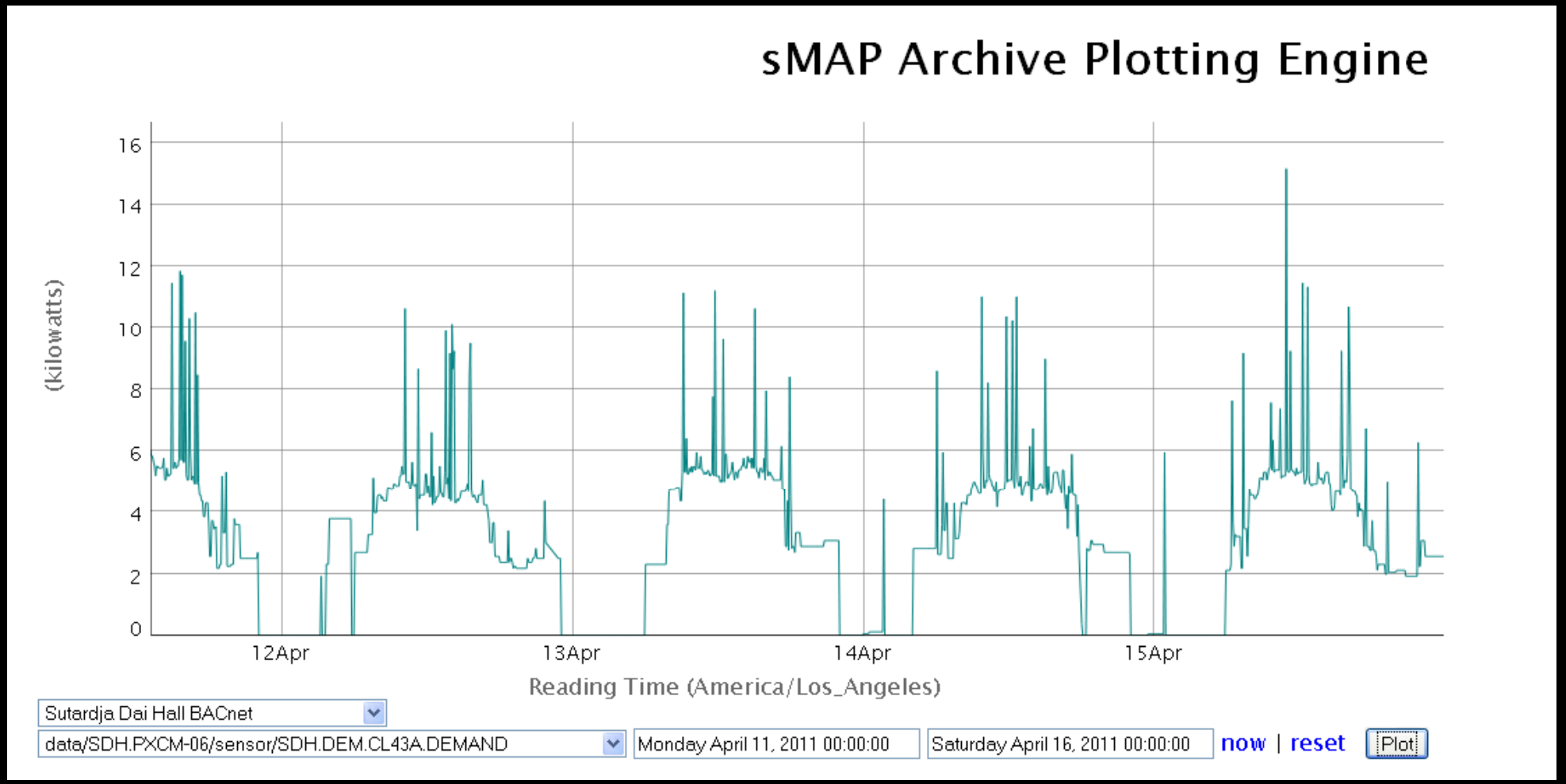
Sutardja Dai Hall
"A Living Laboratory"

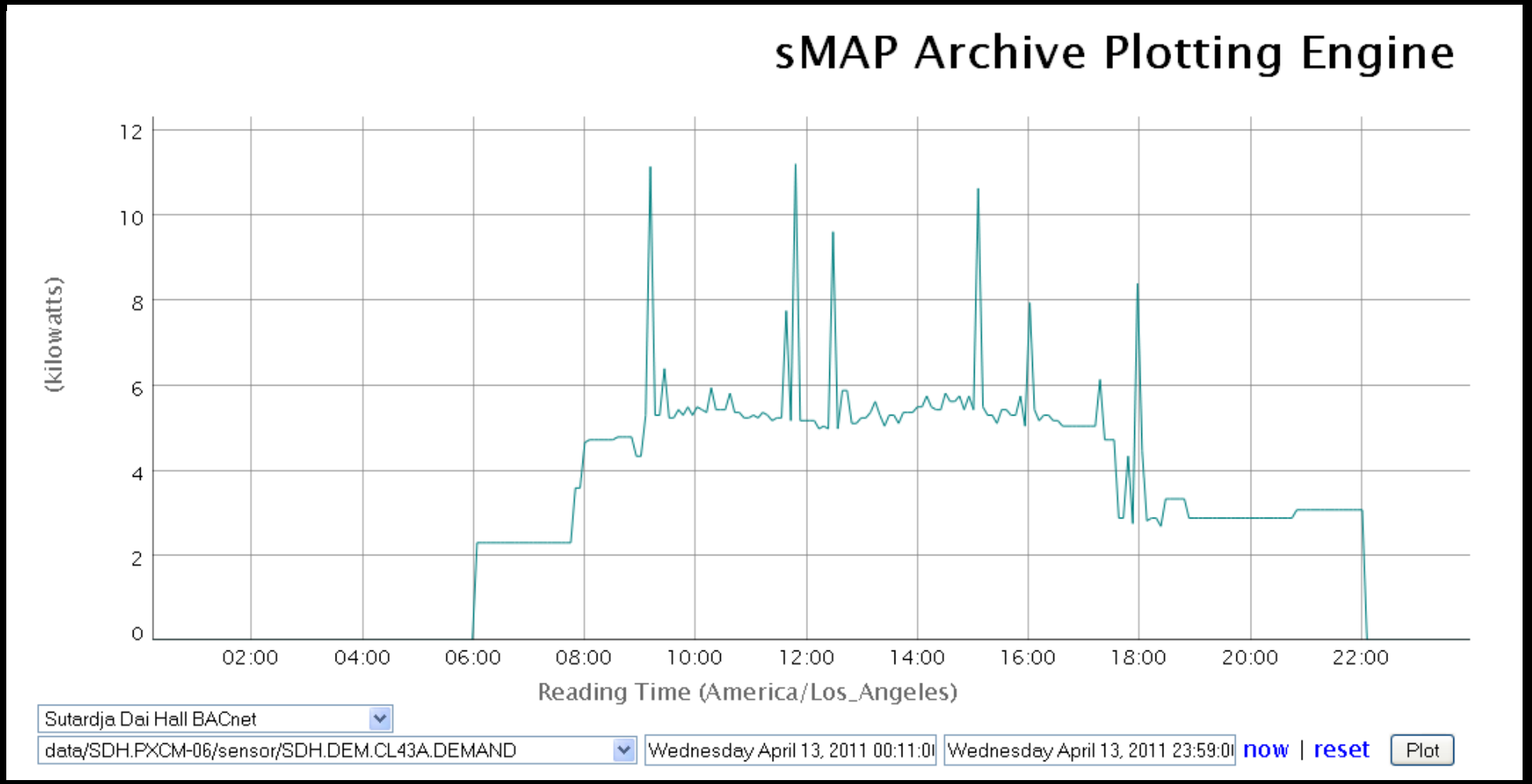


Domenico Caramagno
Facilities Manager
Center for Information Technology in the Interest of Society
(CITRIS)
April 21st 2011

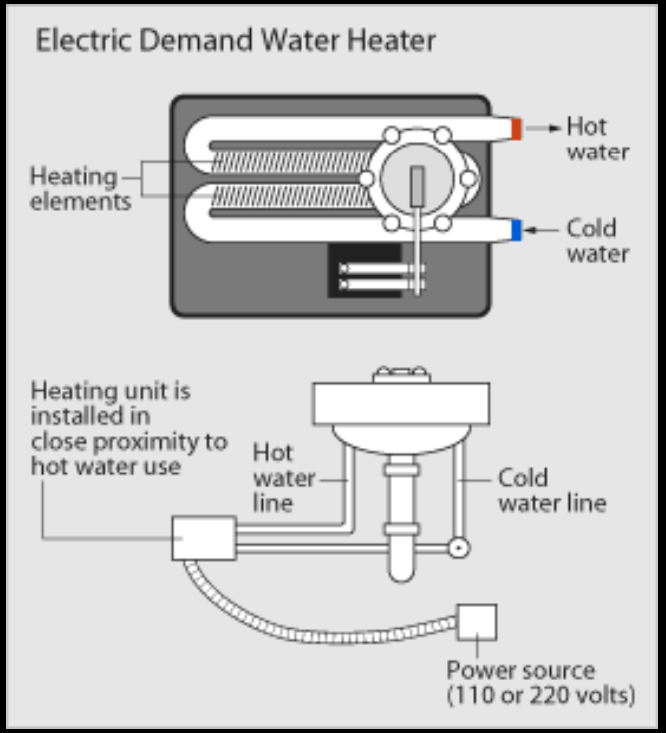
3rd Floor Lighting Data
Monday April 11th thru Friday April 15th 2011



3rd Floor Lighting Data
Wednesday April 13th 2011



Eemax EX60T "Thermostatic" Electric Tankless Water Heater



Specifications:

- Volts 277V
- KW 6.0kW
- Amps 22A
- Rise at 0.5 GPM 81°F
- Rise at 0.75 GPM 55°F
- Rise at 1.0 GPM 41°F
- Rise at 1.5 GPM 27°F
- Wire Size AWG 10
- Dimensions 10.75" x 5.25" x 2.125"
- Weight 3 lbs
- Element - Replaceable cartridge insert
- Connections: 1/2" compression

iTRIS
Center for Information Technology Research in the Interest of Society

Sutardja Dai Hall

- 141,000 Gross Square Feet
- 80,000 Assignable Square Feet of office space
- 15,000 Assignable Square Foot NanoLab
  - (Class 1000 and 100 clean rooms)
- Over 50 Faculty and 300 Grad Students
- Qualcomm Café
- Main Distribution Center (MDC) for NE Corner of Campus
- CITRIS Server room
- Auditorium and Classrooms
- Reheat System
- Two 600 ton Chillers
  - (Centrifugal and Absorber)
- Currently building is running at a 850KW base load
- Siemens Apogee Building Automation System (BAS)
  - Siemens Energy Management and Control System (EMC)

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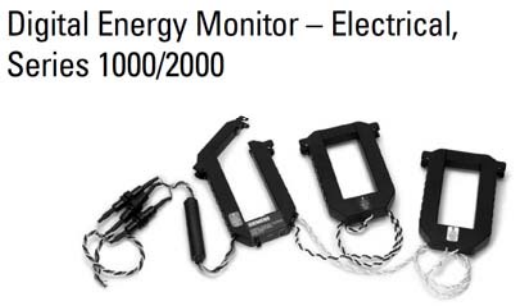
Sutardja Dai Hall Submetering



- CITRIS has invested over 200K in submeters and infrastructure
- Over 28 Submeters Monitoring
  - Light and Plug Loads Per Floor
  - HVAC Systems

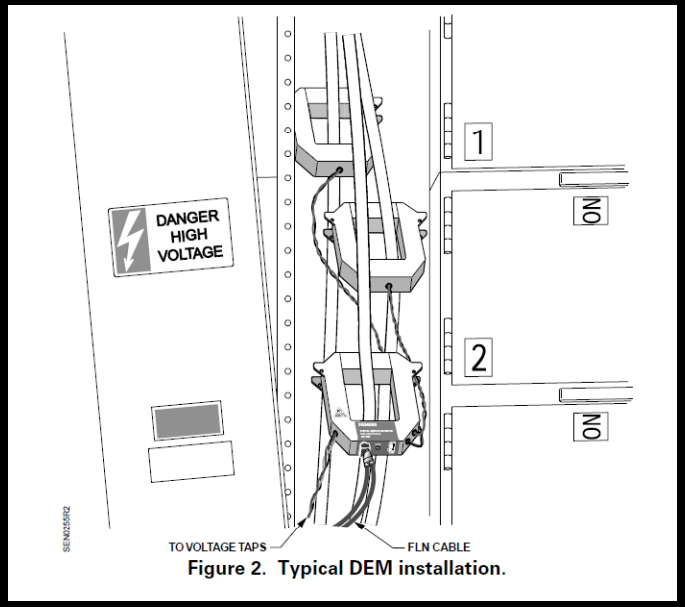
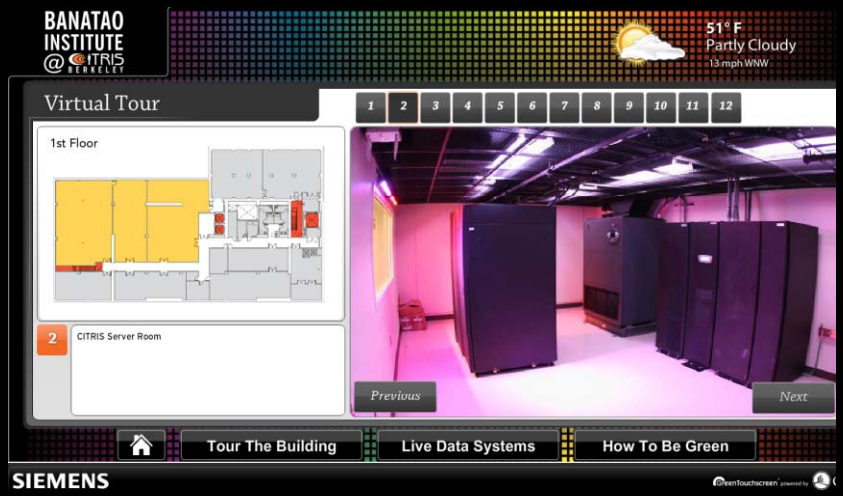


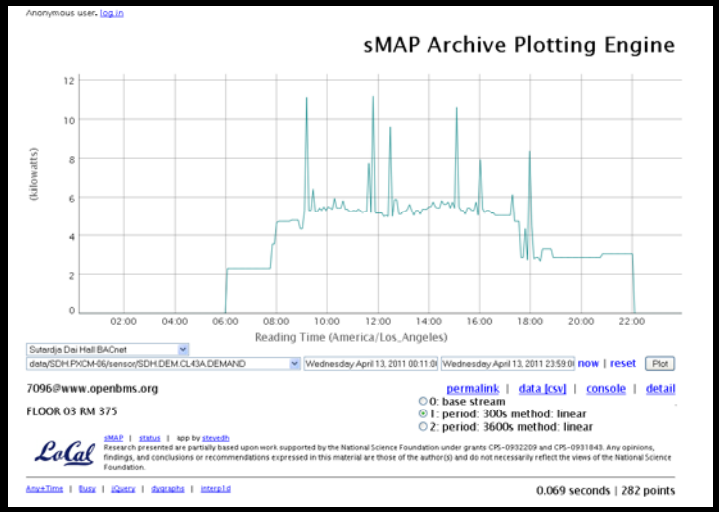
Figure 2. Typical DEM installation.

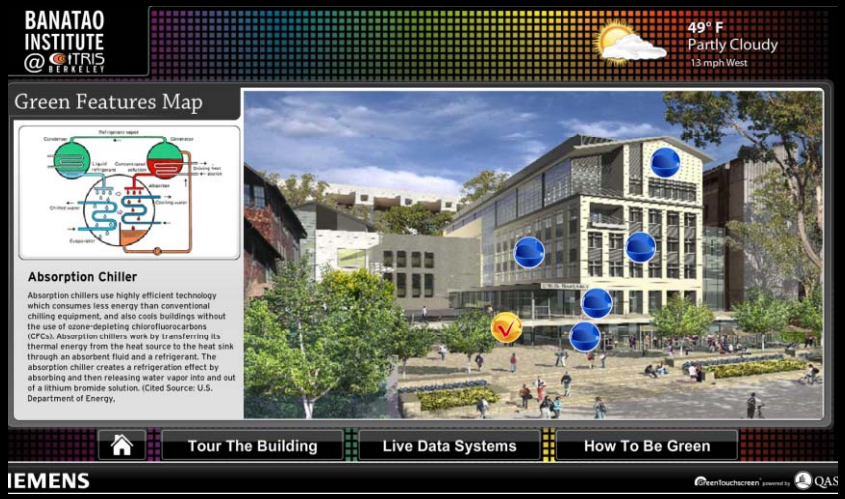
CITRIS
Center for Information Technology Research in the Interest of Society

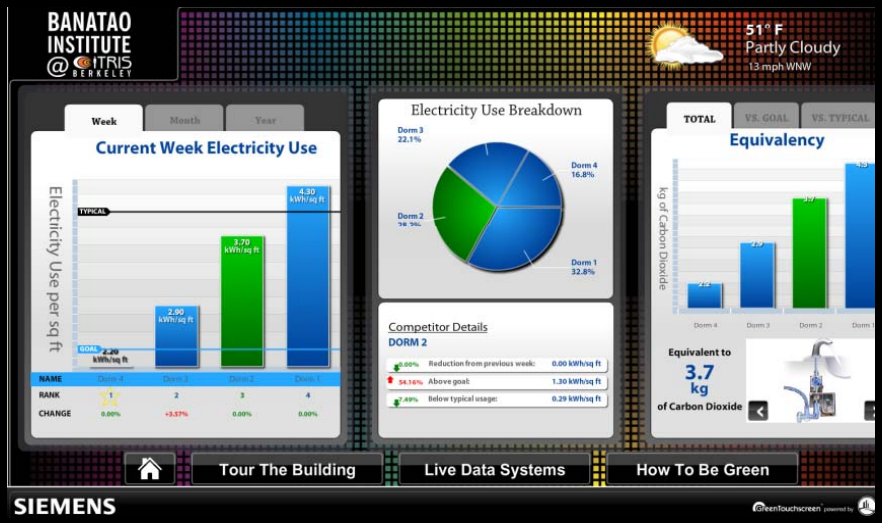
Sutardja Dai Hall's

Energy Dash Board, Green Touch Screen & sMAP

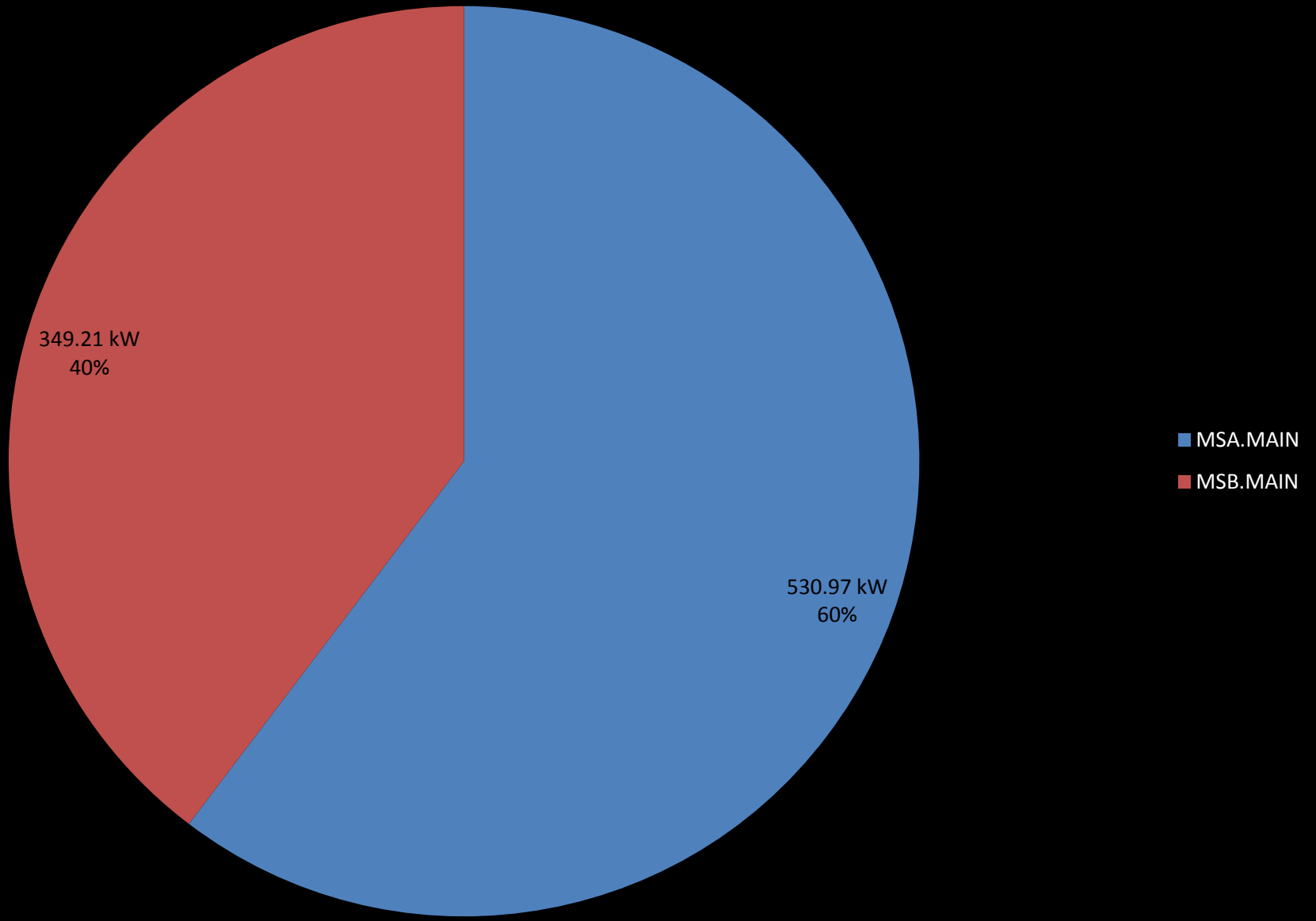




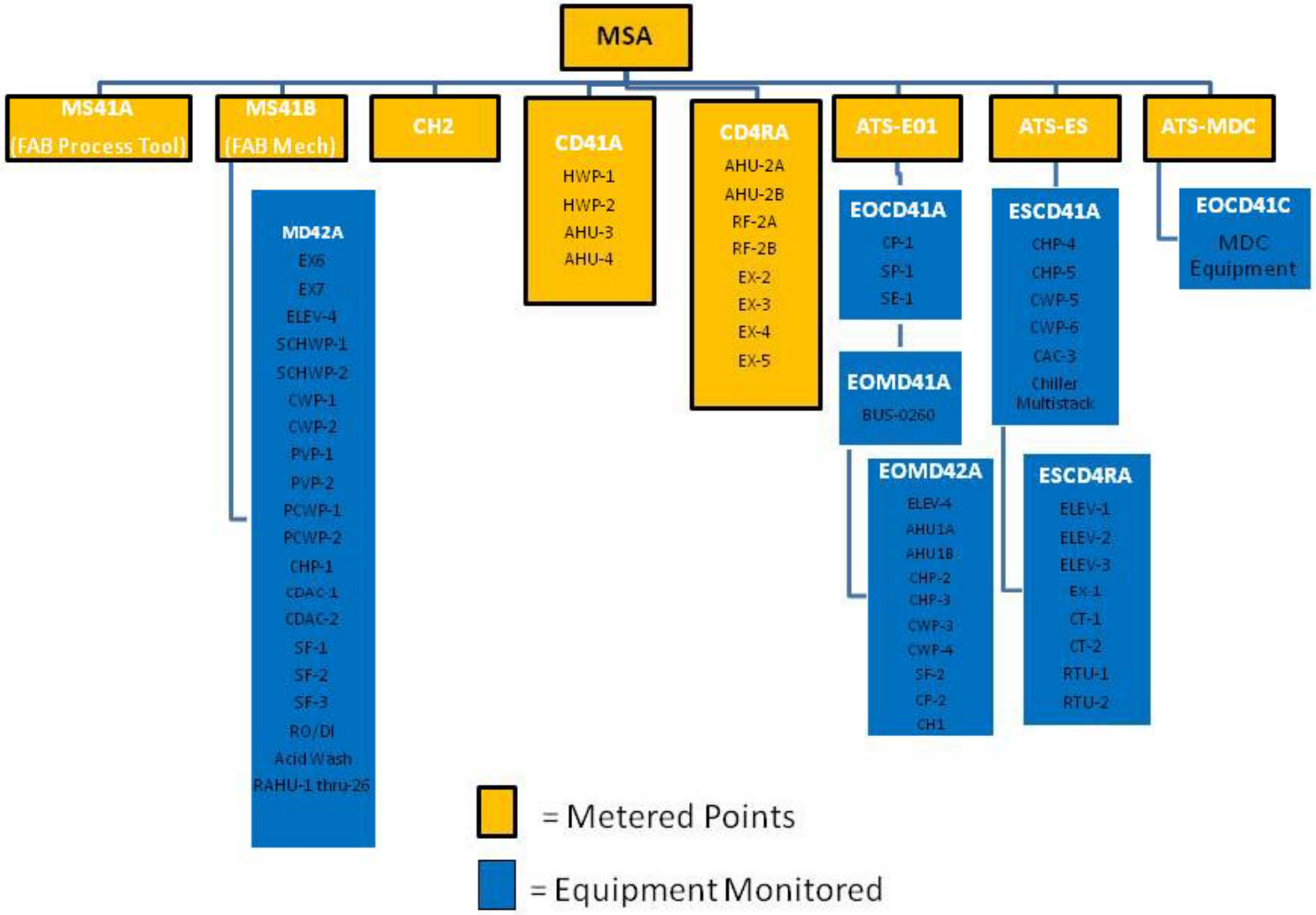




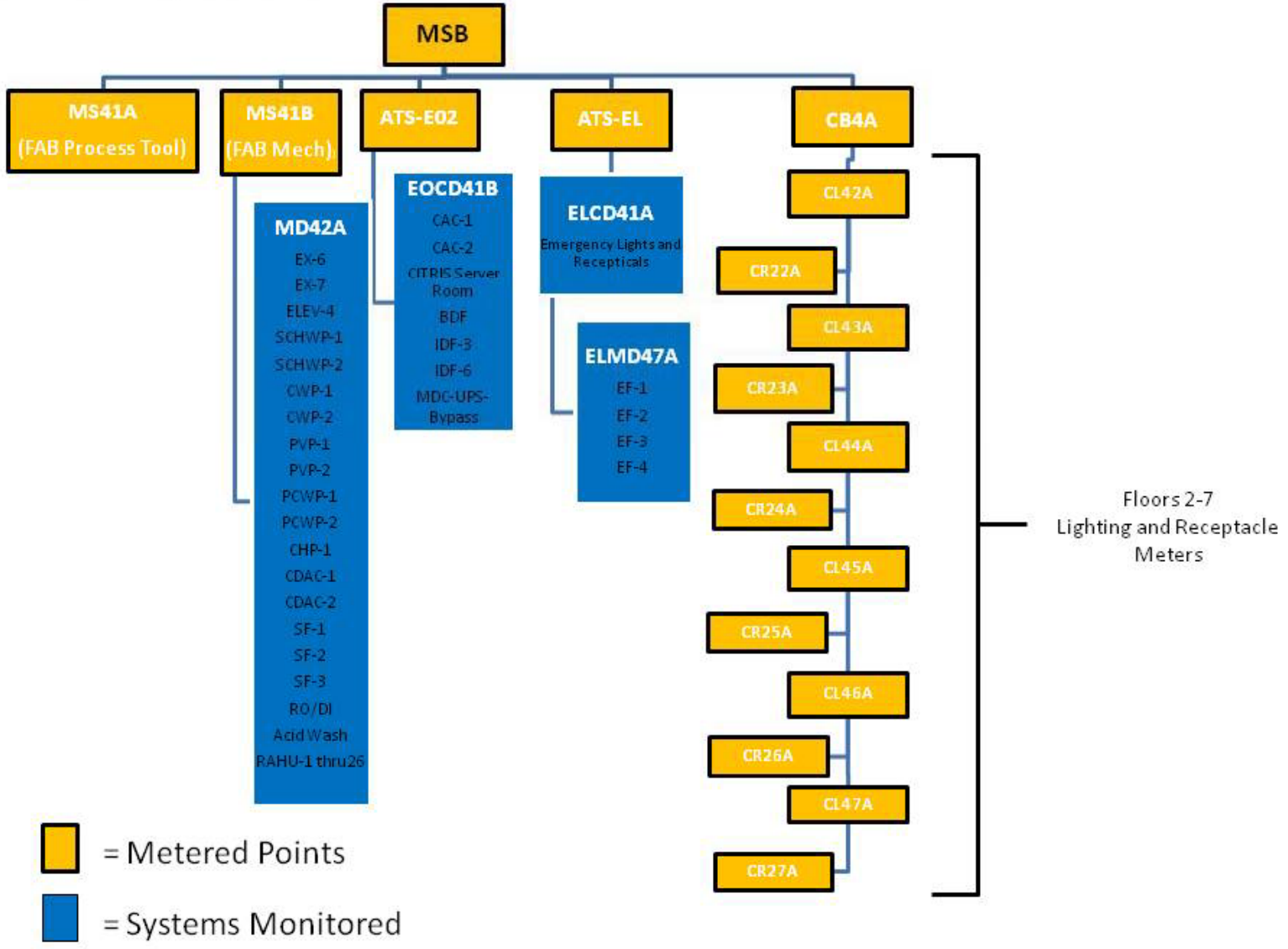
MSA vs. MSB (1/7/11-1/18/11)



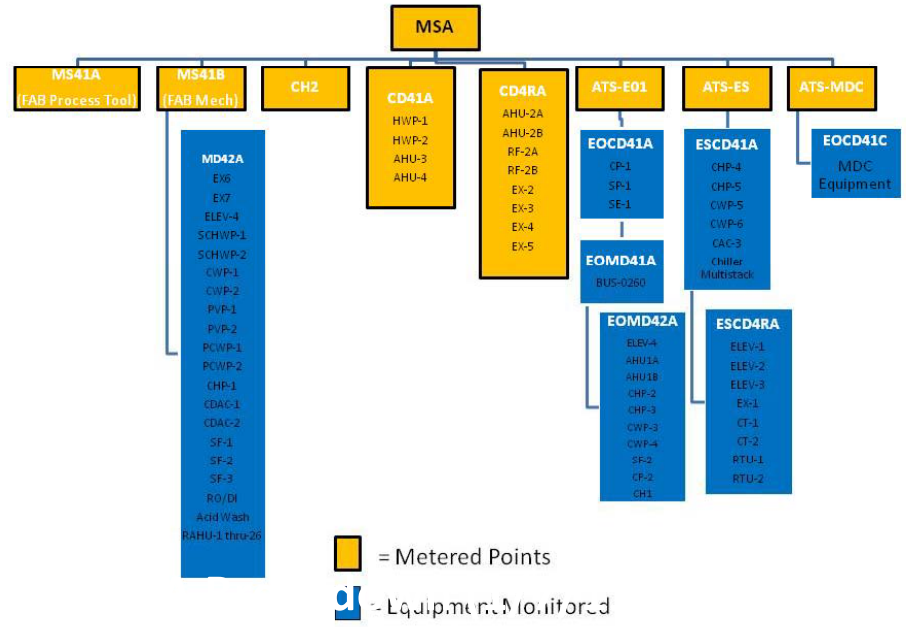
Main Substation A



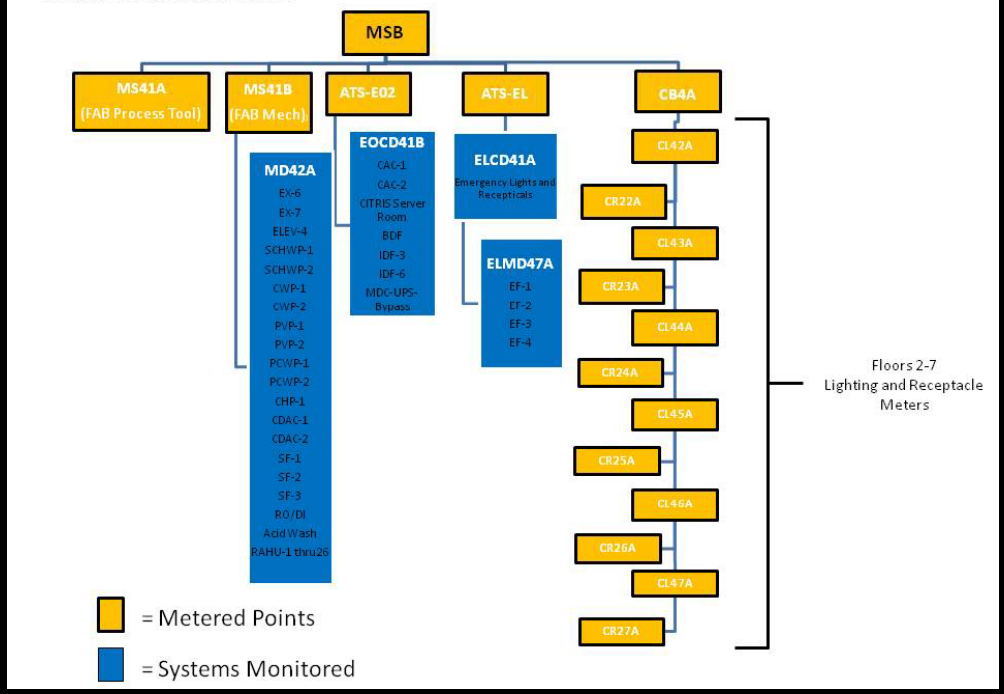
Main Substation B

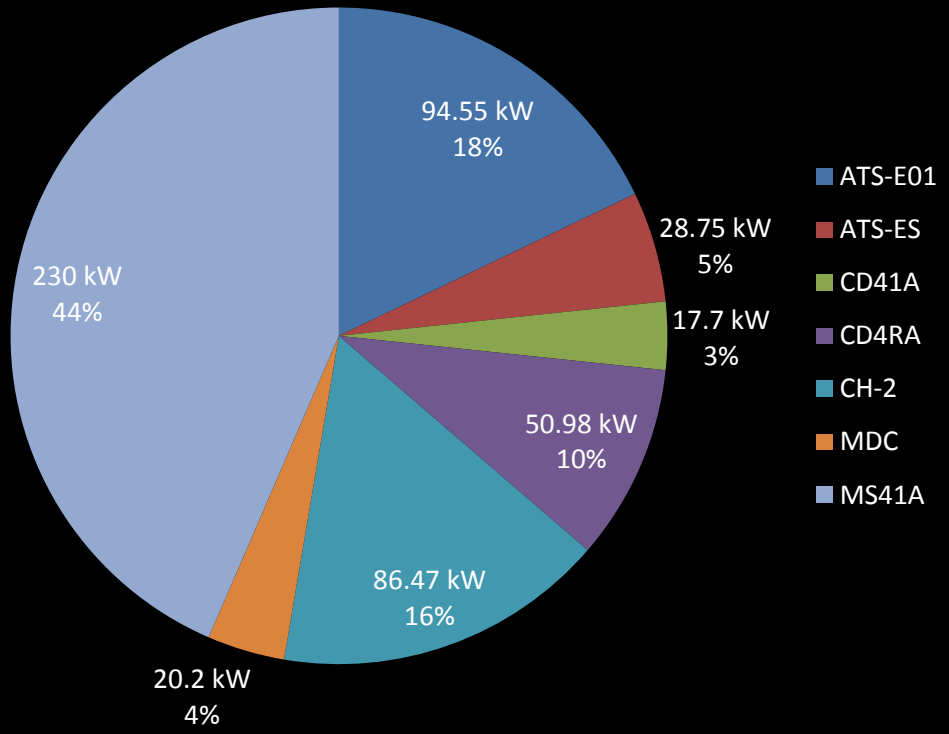


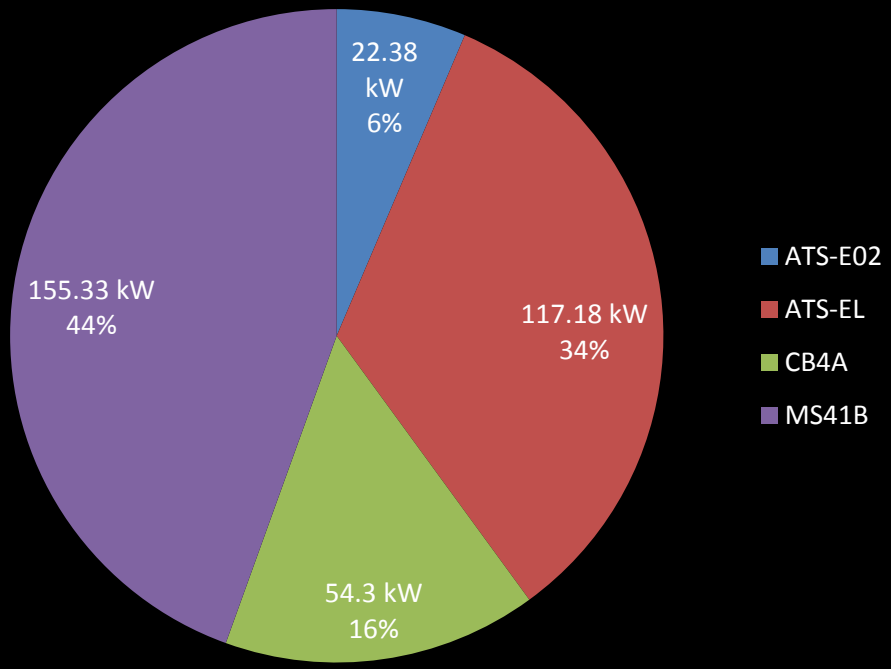
Main Substation A



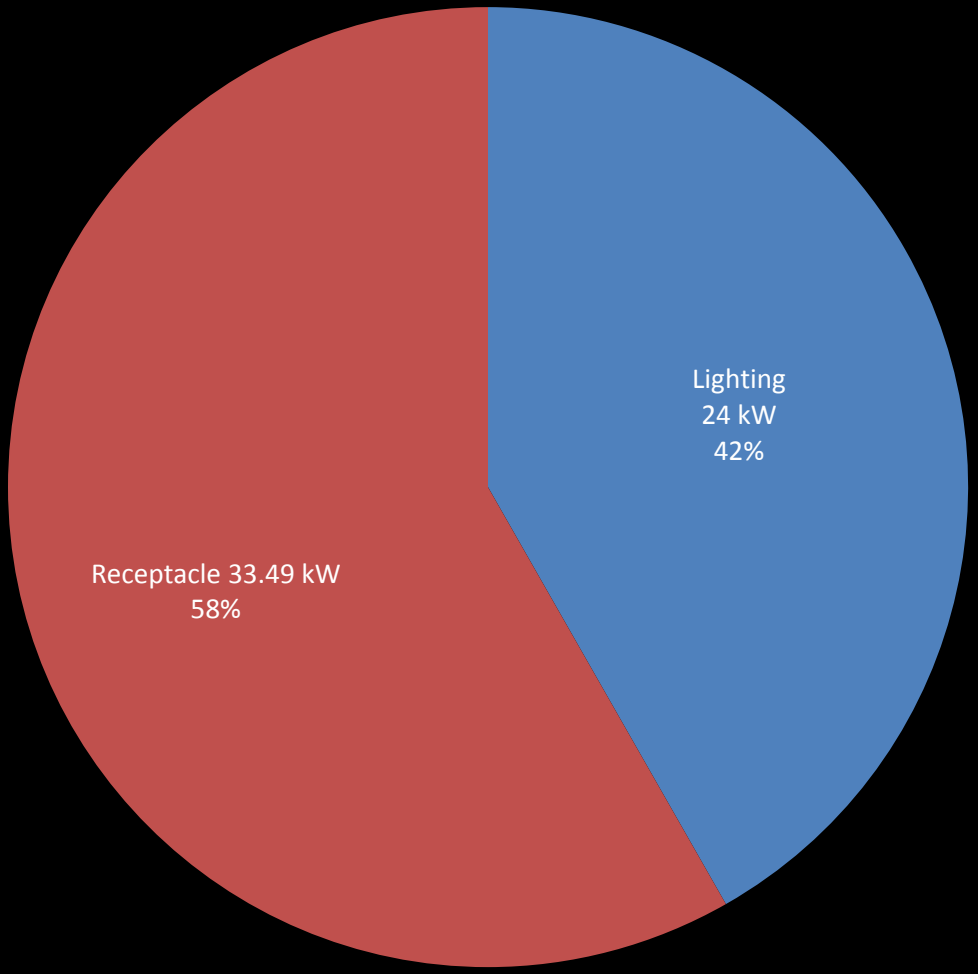
Main Substation B



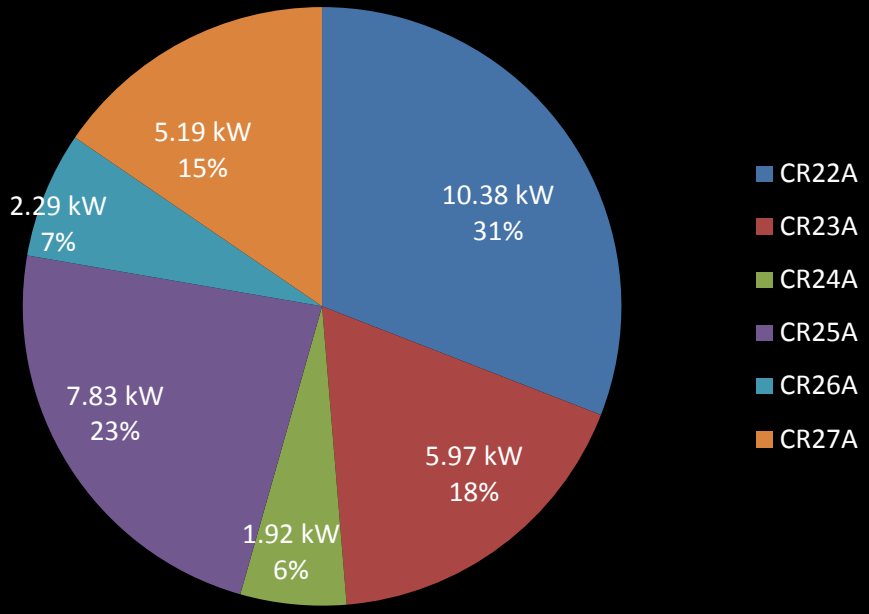




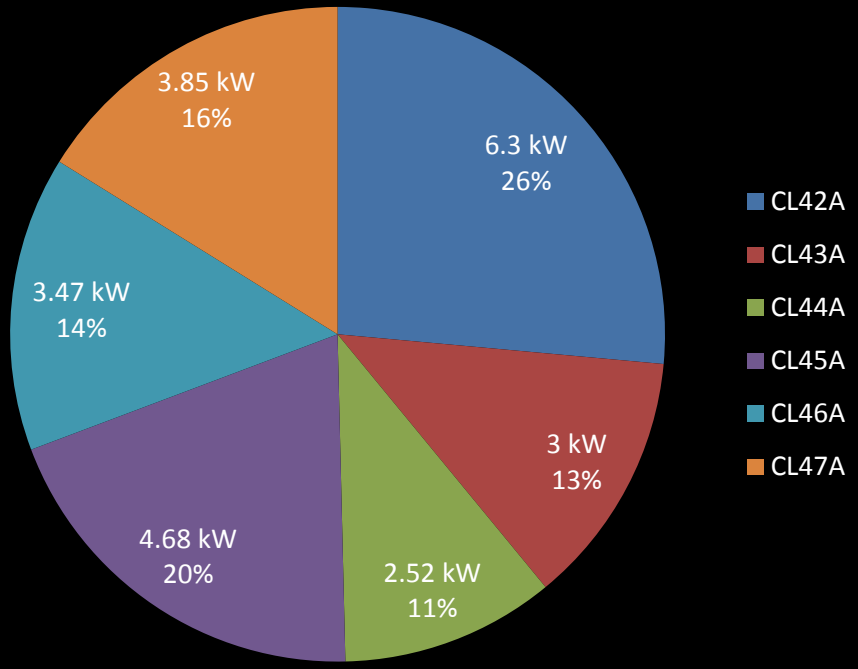
CB4A Breakdown (1/7/11-2/7/11)



Average Receptacle Demand (1/7/11-2/7/11)

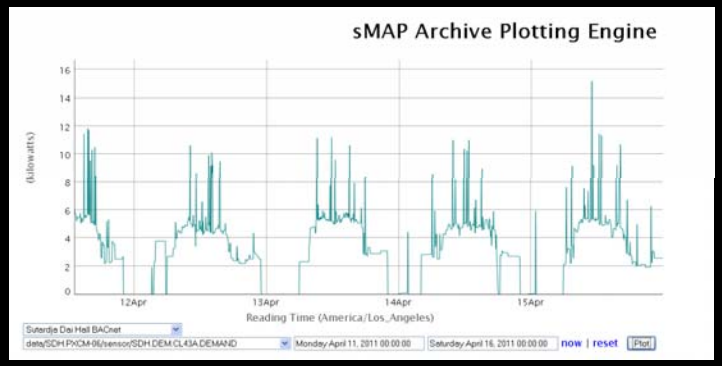


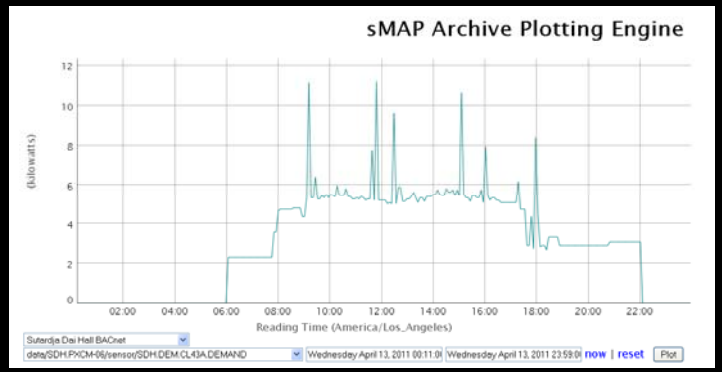
Average Lighting Demand (1/7/11-2/7/11)



Finer Grained Submetering is Needed

- Problems with the existing meters and infrastructure
  - Reference power source
  - Communication infrastructure to field panels
  - Not enough space in distribution panels for multiple CT's





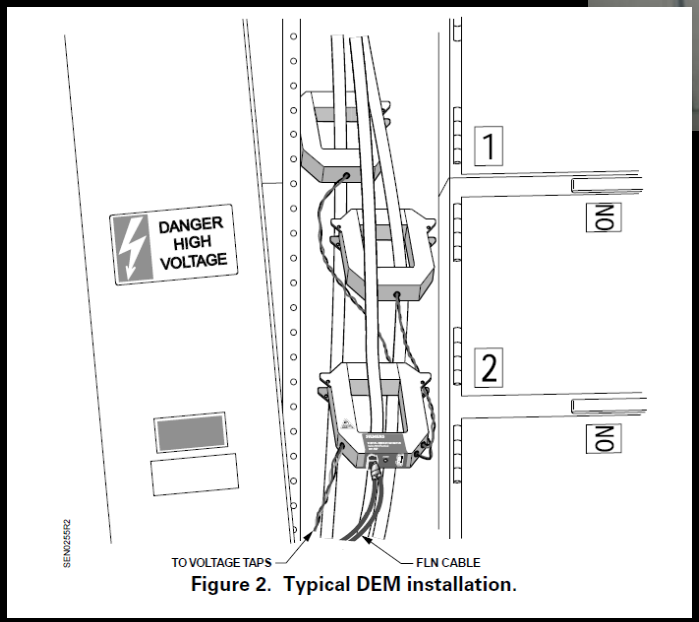


Figure 2. Typical DEM installation.