Smart Meter Driven Energy Analytics

Leveraging Data to Increase Efficiency

Joint Commission on Technology and Science
(JCOTS)

Energy Advisory Committee

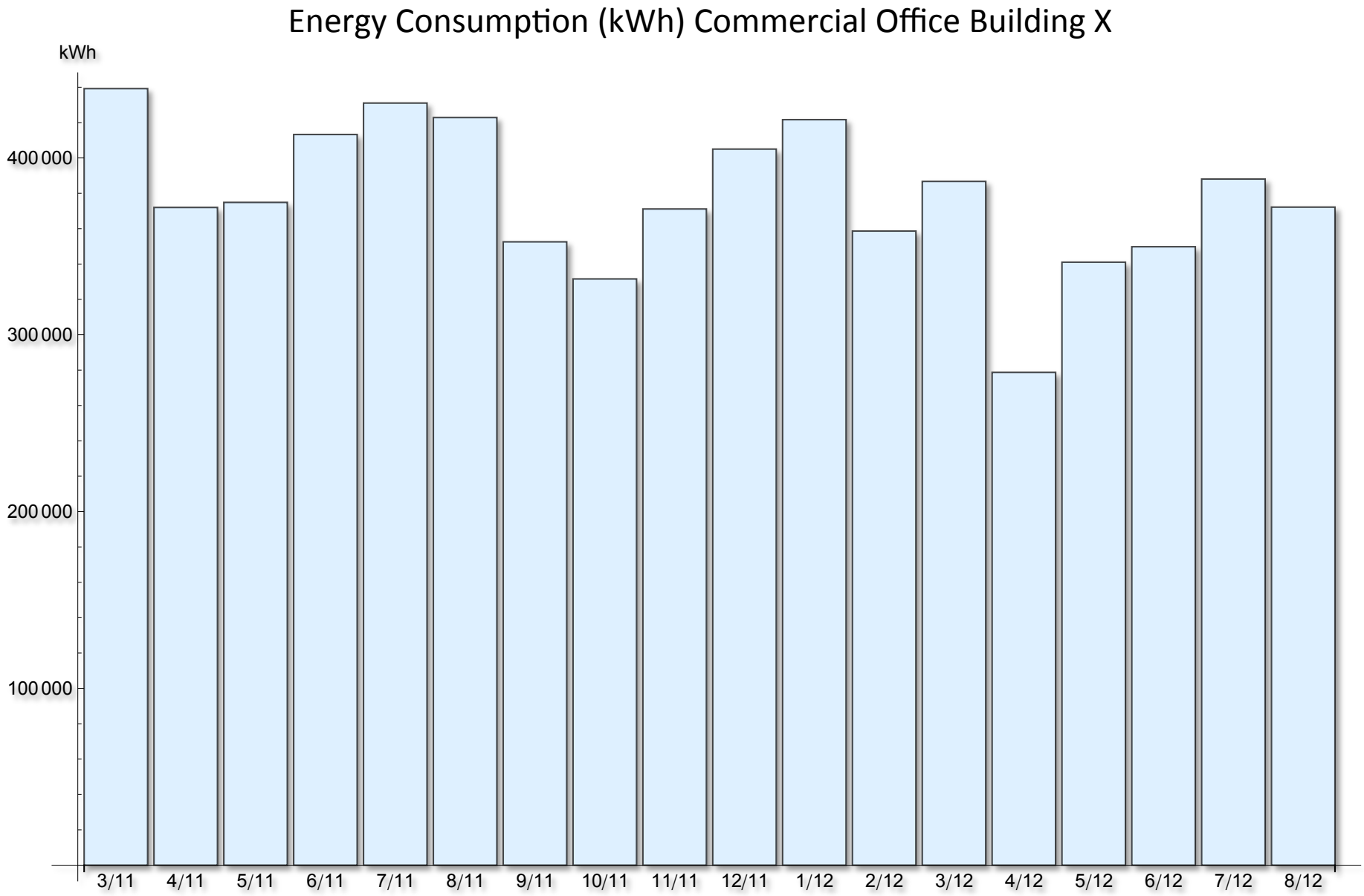
Richmond

October 2, 2012

AGILIS / ENERGY

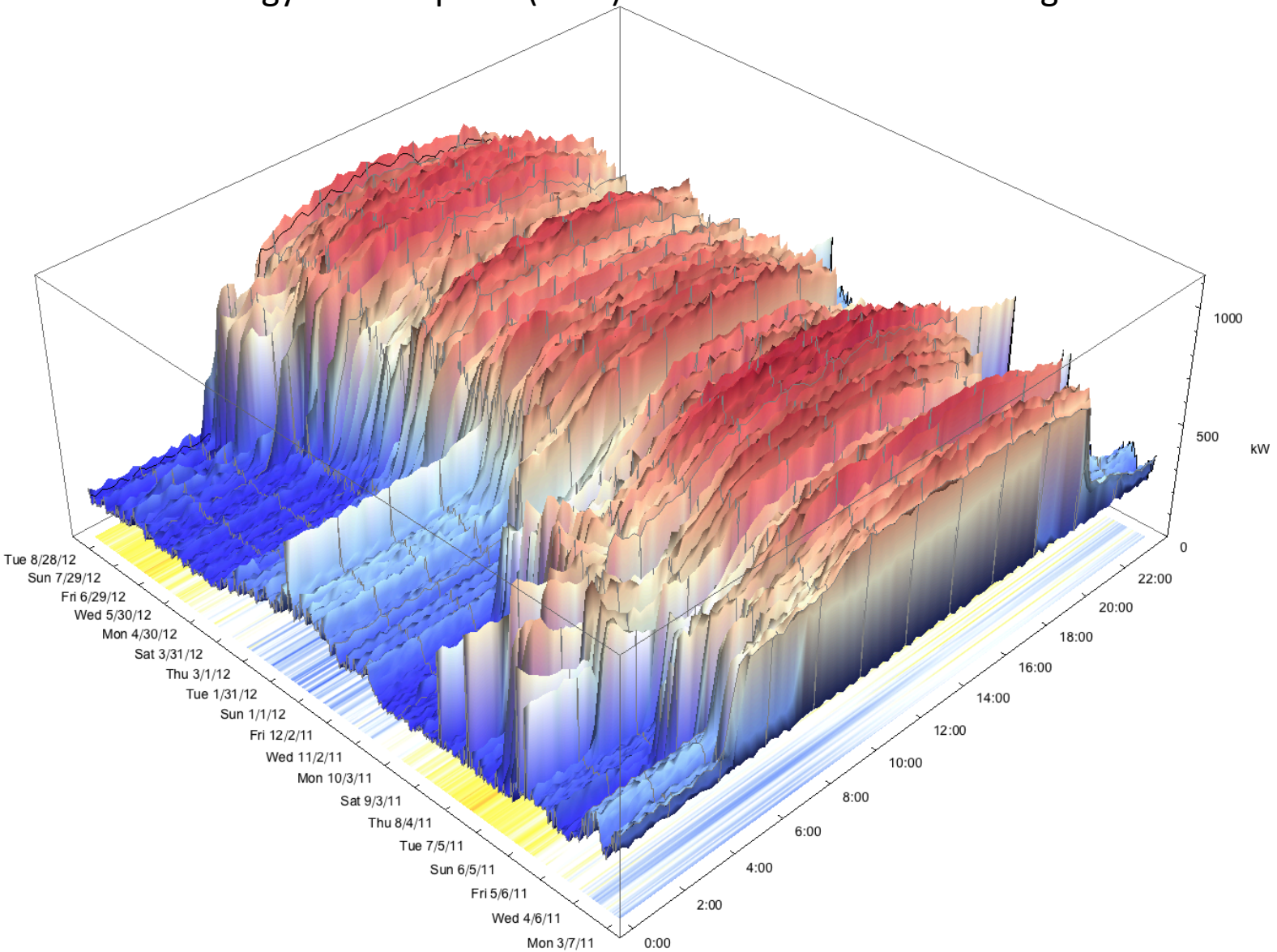
Big Data & Energy

Energy Consumption by Month – Typical Energy Analysis



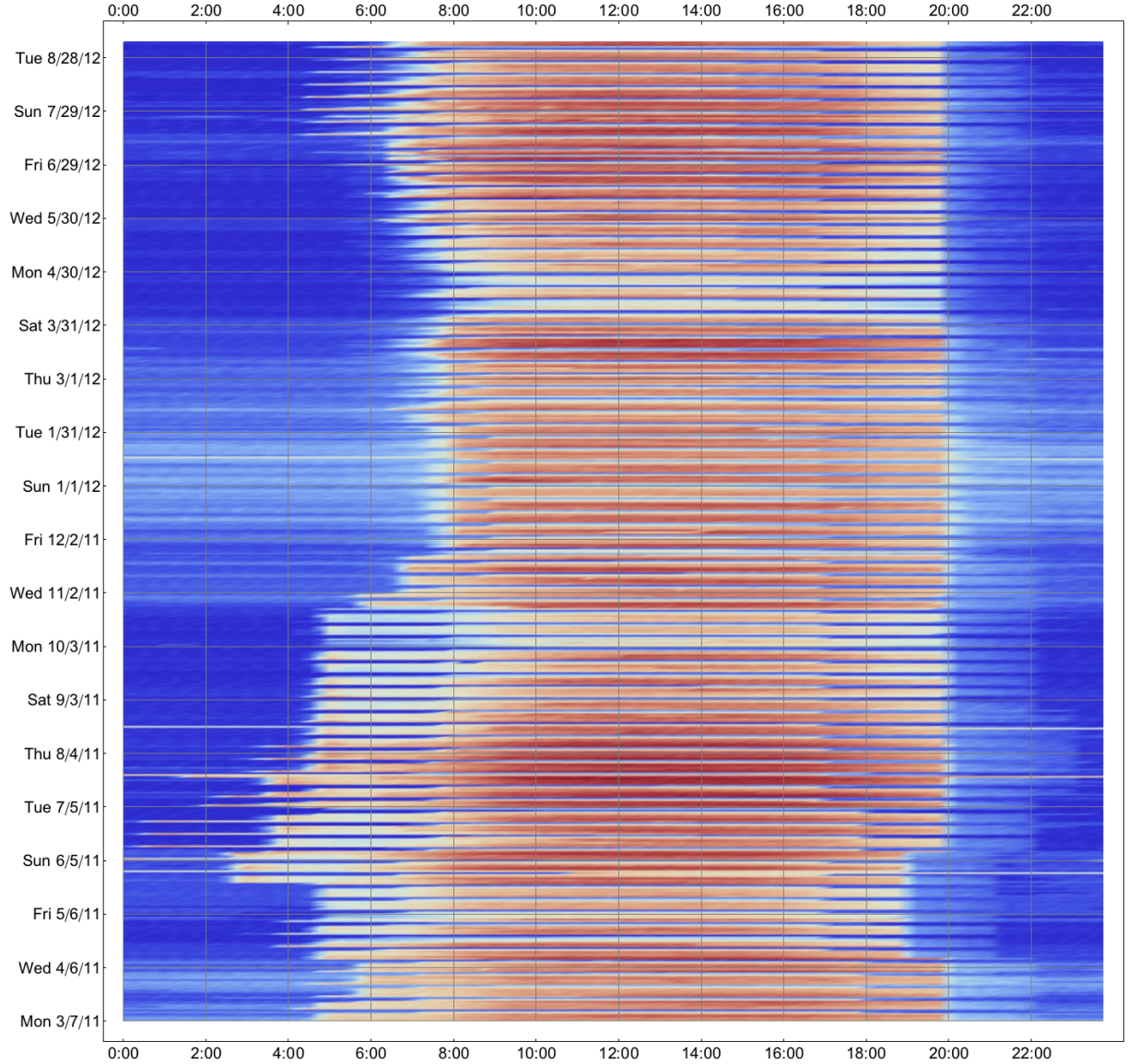
Energy Consumption by 15 Minute Interval – Leveraging >3000x More Data

Energy Consumption (kWh) Commercial Office Building X



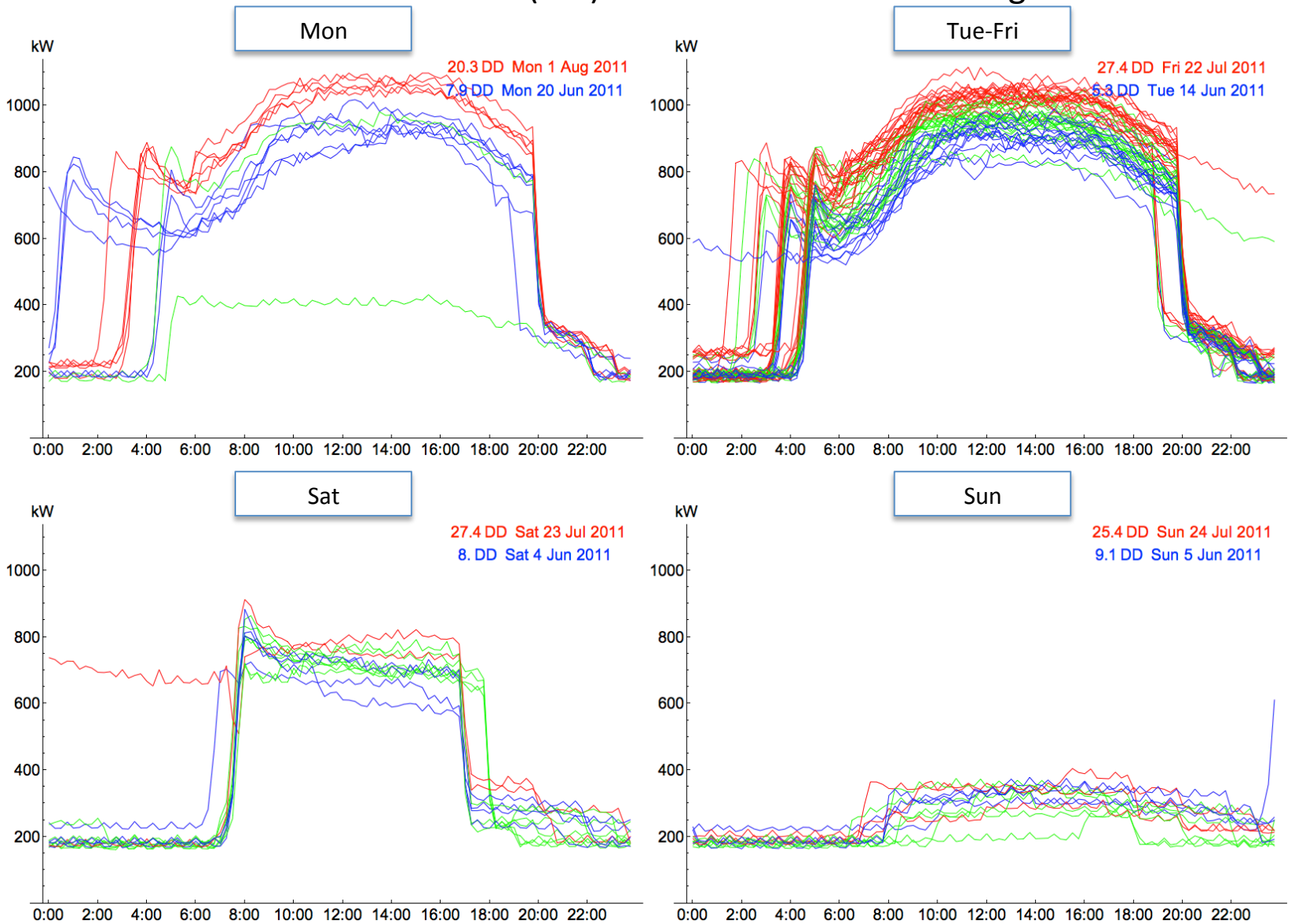
Demand (kW) by 15 Minute Interval

Demand (kW) Commercial Office Building X



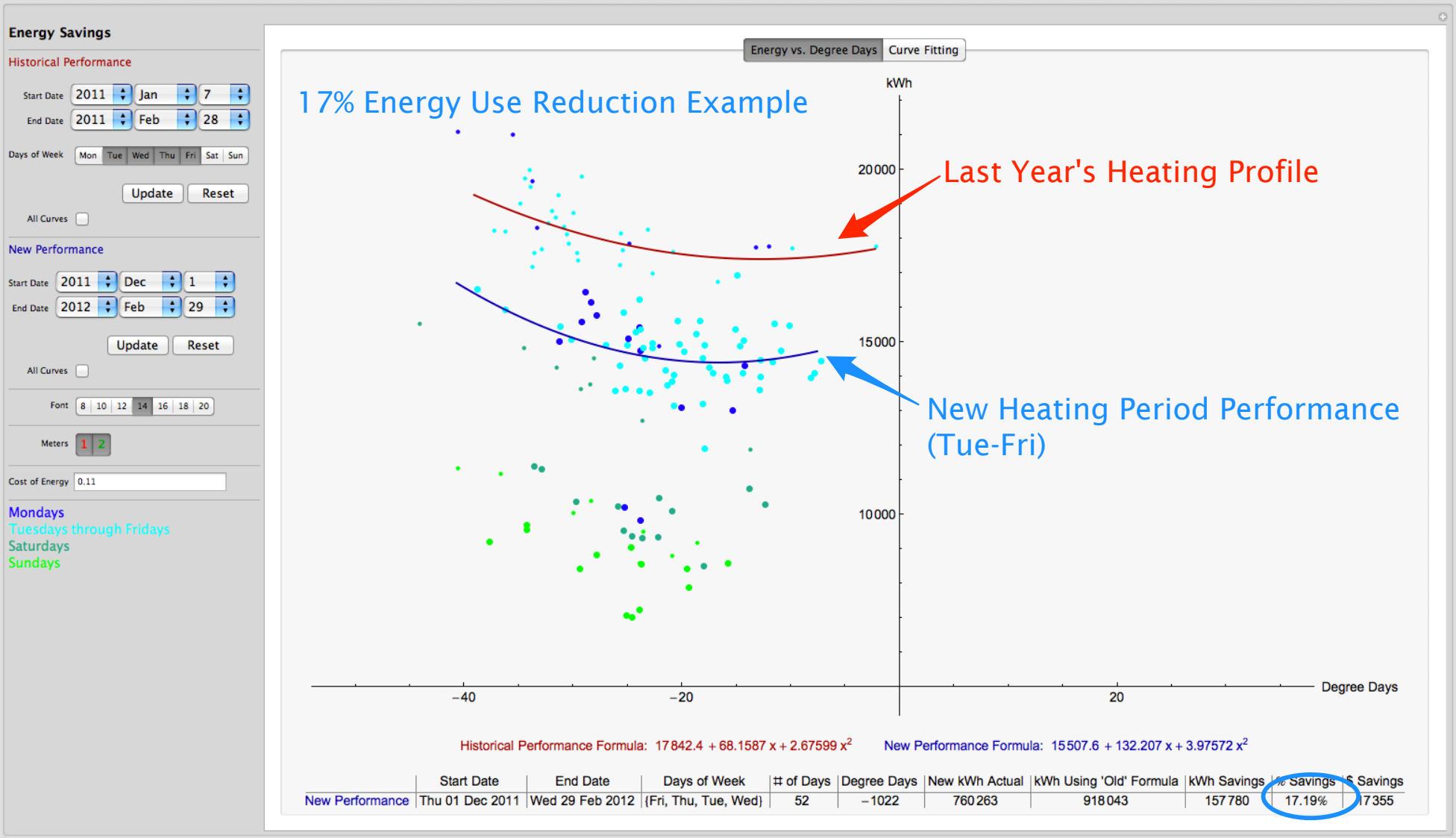
Daily Load Profiles by 15 Minute Interval , Type of Day and Temperature

Summer Demand (kW) Commercial Office Building X



Results from Improved Performance – With NO Capital Investment

Measurement & Verification of Improved Performance



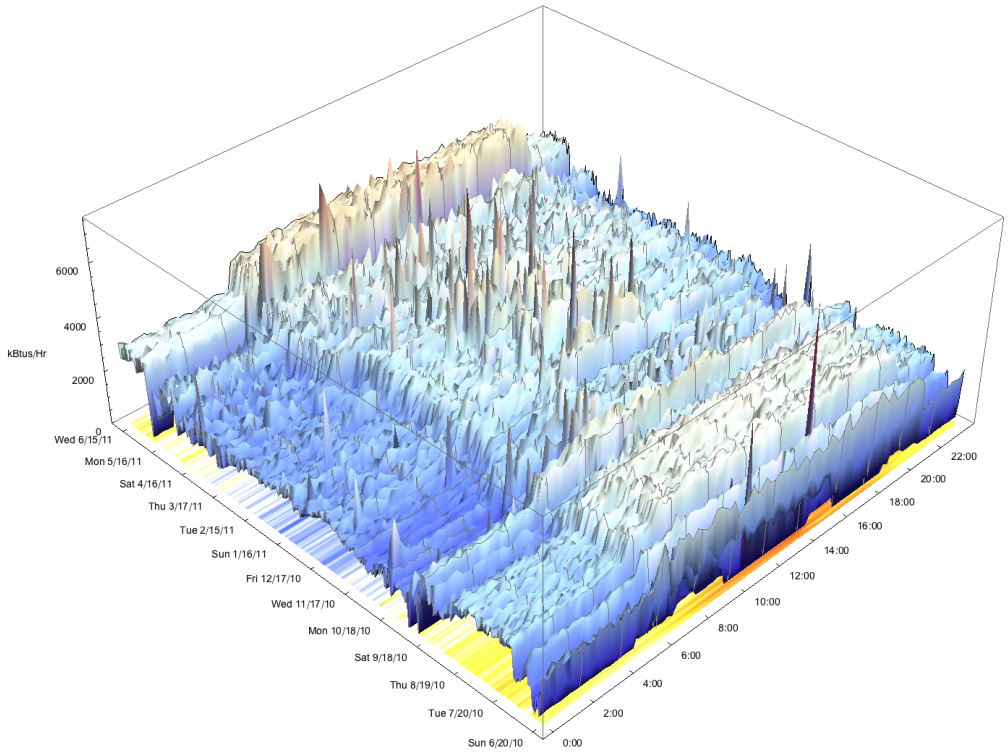
Commonwealth of Virginia's

Opportunity

Annual Savings Potential

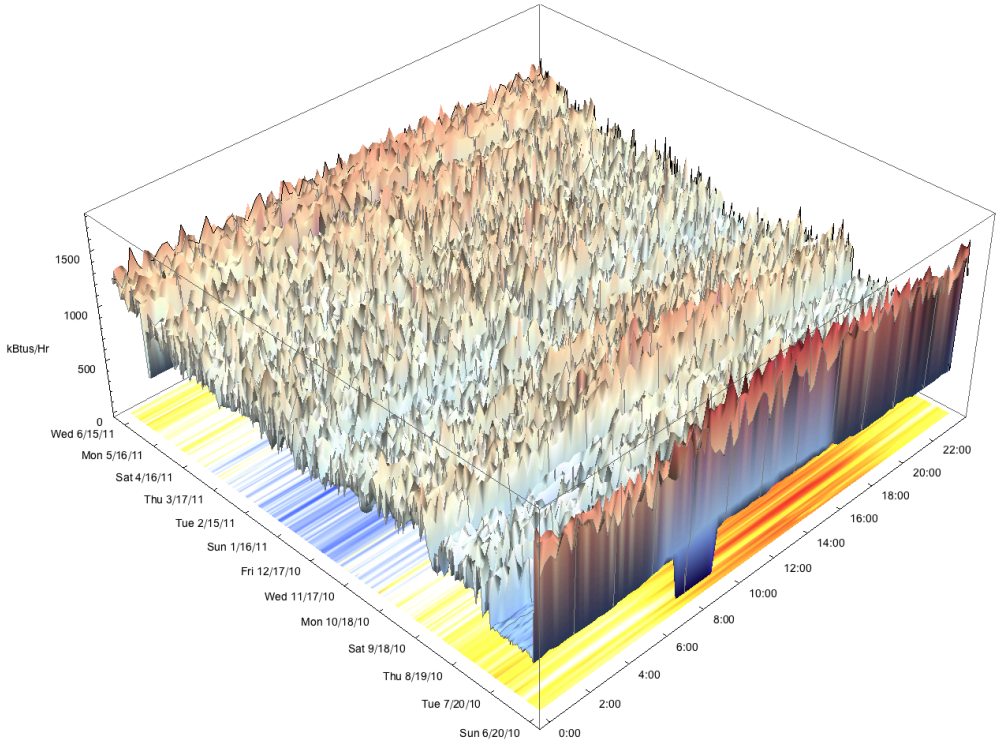
- 2010 Virginia Statistics (DOE EIA)
  - Commercial Retail Electricity Sales: 48 billion kWh
    $3.7 billion
  - Extensive deployment of advanced meters with interval recording capabilities for larger facilities
  - Universities have installed 3rd party electricity, steam and chilled water meters
  - Dominion Virginia part of Department of Energy's Green Button Program – Make data more accessible
- Savings Potential – VA Large Office Buildings
  - VA office buildings >100,000 SF: 889
  - Estimated electricity usage: 2.8 billion kWh
    $213.0 million
  - Annual savings potential for VA large office buildings: $30-40 million
- Comparable savings to be achieved for educational facilities, healthcare, state buildings, retail and manufacturing

Virginia Buildings

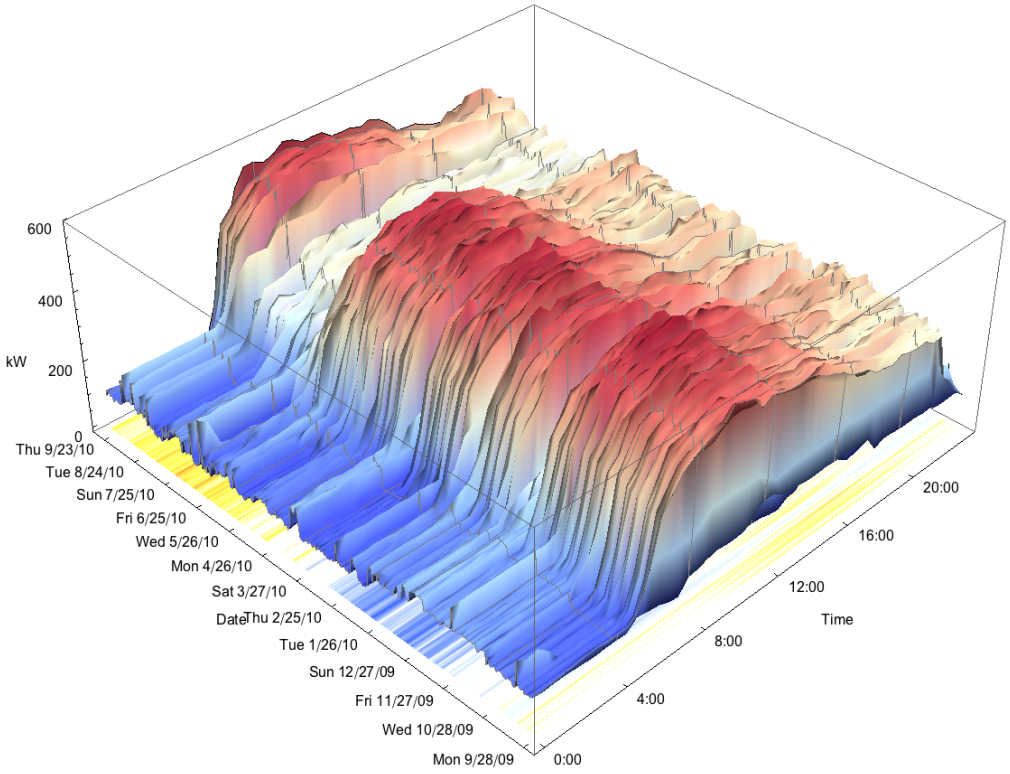


University Classroom Building

University Classroom Building

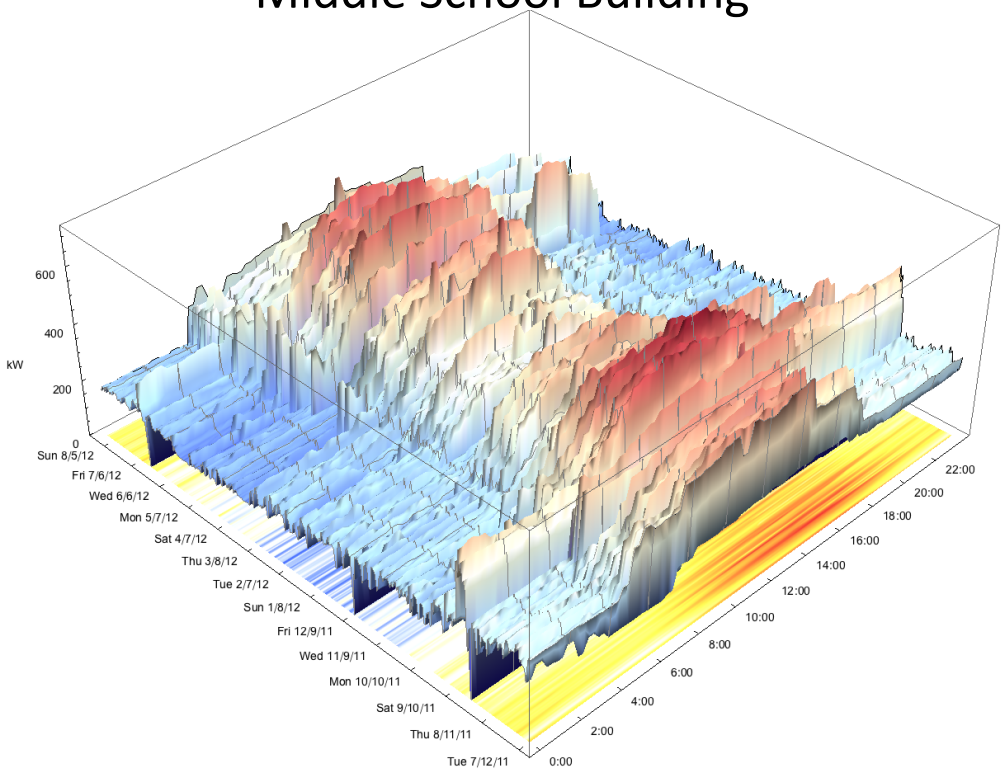


Virginia Buildings

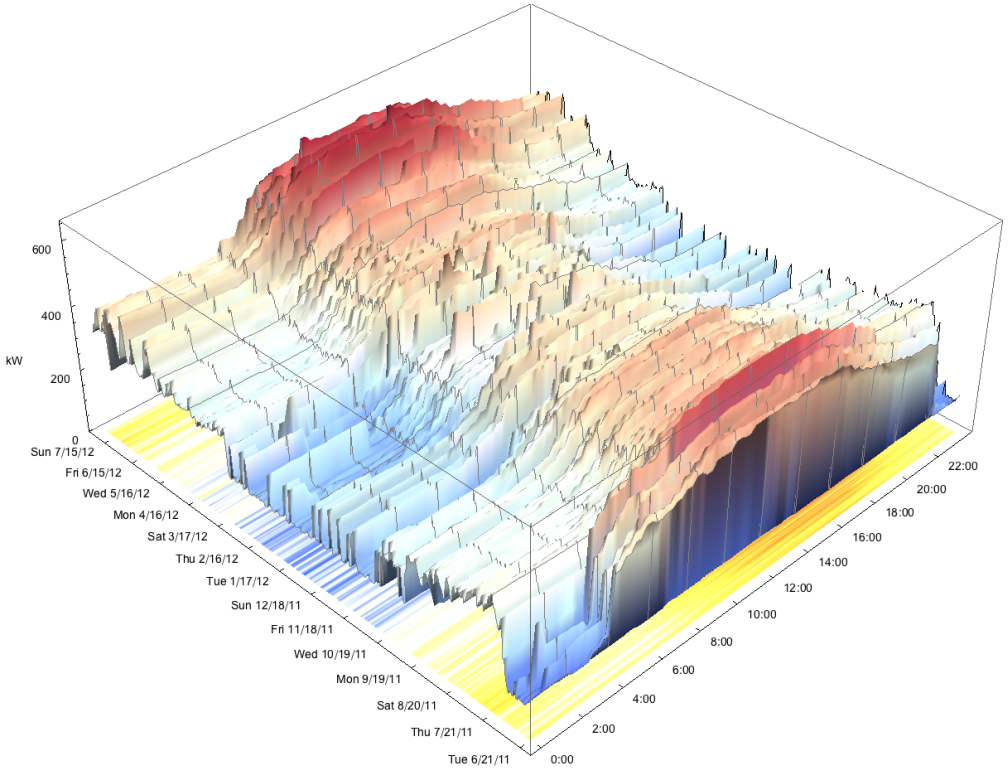


Secondary School Building

Middle School Building

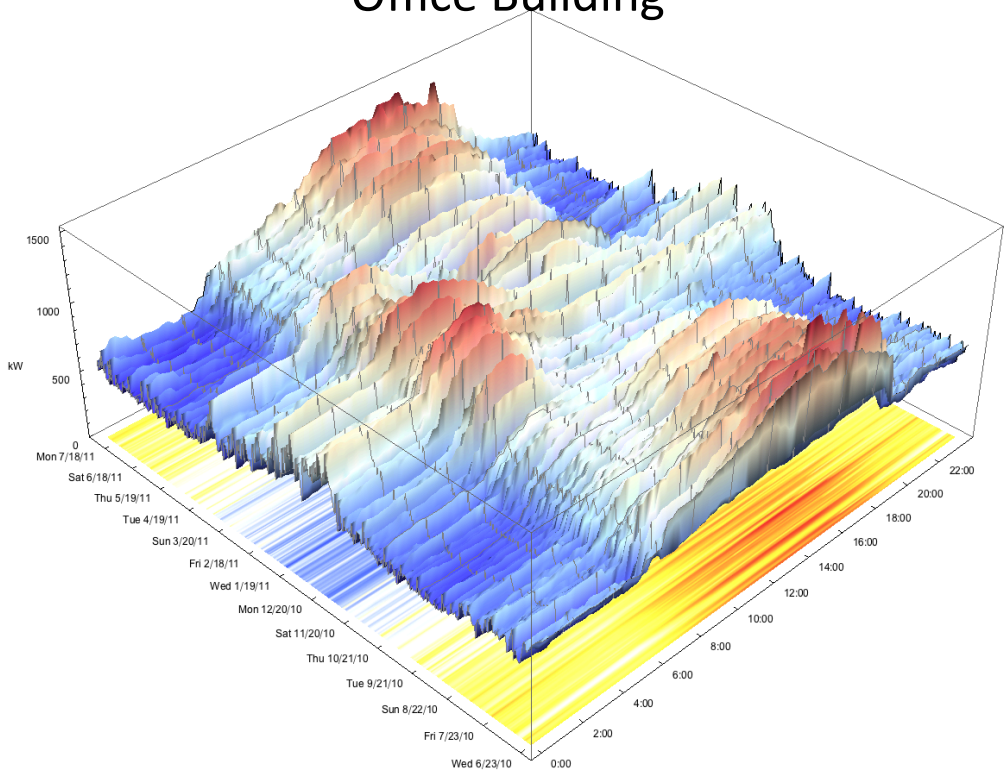


Virginia Buildings



Courthouse Building

Office Building



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