THE EXPLORATORIUM
**PROJECT FACTS**

**Sustainable Site**
- 190,000 SF existing historical building on SF waterfront

**Water**
- 50-60% water savings
- 1 million gal/yr fixture savings
- Additional 2 million gal/yr by not using cooling tower

**Energy**
- 57% more efficient than ASHRAE 90.1 Baseline
- ~80% HVAC energy savings
- 47 kBTU/SF - Forecasted

**Indoor Environmental Quality**
- 100% OA air handlers
- Displacement Ventilation
- 30% over ASHRAE ventilation requirements
THE BUILDING
ALL ELECTRIC COMBINED HHW AND CHW CENTRAL PLANT
BAY WATER ROOM EQUIPMENT
4-PIPE SYSTEM W/ ZONAL HW/CHW SWITCHOVER

- Variable Primary Pumping

- Each Zone Modulates to Maintain a Unique Slab Water Avg Temp Setpoint

NOTES:
1. INSTALL MANUAL AIR VENT IN RETURN COIL
   A) IN PIPING HIGH POINT WHEN PIPING IS
   B) CLOSE TO COIL WHEN PIPING IS NOT
2. INSTALL MANUAL AIR VENT IN SUPPLY HEATER
   A) IN PIPING HIGH POINT WHEN PIPING IS
   B) CLOSE TO COIL WHEN PIPING IS NOT
3. MINIMIZE FITTINGS; USE LONG RADIUS 90 DEGREE
2ND FLOOR SLAB PREP
CURRENTLY RENEWING
CURRENTLY RENEWING – FIRST NZE MUSEUM
Projects | J. Craig Venter Institute
NATURAL DAYLIGHTING AND VIEWS
The local micro-climate and views are honored by using filtered direct sunlight in public spaces with strategic glass placement.

RECYCLED CONTENT
Recycled / reclaimed wood is used for the wall framing and possibly in posts. Fly ash is used in the concrete.

FOREST STEWARDSHIP COUNCIL (FSC) CERTIFIED WOOD
All structural timber and wood members are certified by FSC. This ensures the sustainable logging of trees and use of plantation grown wood.

USE OF REGIONAL MATERIALS
The stone used is from local quarries, and the concrete contains local aggregates.

NATURAL VENTILATION
Operable windows improve the occupant comfort, and radiant floors cool and heat office spaces efficiently without unnecessary fan power.
Projects | J. Craig Venter Institute

“Energy Budget”

- Heating
- Cooling
- Pumps
- Fans
- DHW
- Lighting
- Exterior Lighting
- Vehicles
- Office Plug Loads
- Lab Plug Loads
- Freezers
- PV Output
Projects | Heritage Buildings – Major Renov.

Empire State Building Retrofit
New York, NY

Office: New York, NY
Services: Sustainable Design & Modeling

Revitalize & Renew Existing Infrastructure
Talbot Norfolk Triangle EcoDistrict Charette
Thank You!

atraber@integralgroup.com
dramslie@integral-group.ca
bgaluza@integralgroup.com