Case Study 1: Acadia National Park, Mt Desert Island, Maine

The Project

In late 2015 the CTDL was contacted by our frequent collaborator Michael Kelly, who had been hired to design and install an exhibit at Acadia National Park's seasonal visitor's center, the Sieur du Monts nature center. The theme of the new exhibition space was climate change and the effects of rising and warming ocean on the Maine coastline. He asked us if we could build out a few robust interactives that would be able to withstand being turned off during the winter months and easily reactivated when the center opened May-October. We saw right away that this would be a good use case for the Museduino, since his design called for a long run from the sensors to the actuators, and response time with no data delay was a big reason we developed the Museduino.

The Space

The Sieur du Monts nature center is a small, old building inside Acadia National Park. It is open seasonally, from May through October, so anything we built had to be easy to shut down and then restart again in the late spring. Easier said than done, as the park rangers, who are brilliant at doing their park-related work, had a fear of the electronics and did not want to be responsible even for plugging things in and switching on a power strip. To reactivate after the first winter, Rianne flew from New Mexico to Mt. Desert Island on a tiny plane to flip a switch. Since then, a new park ranger has been assigned this onerous task each fall and spring.

Other issues with the space were that it is an historic building, so installation had to easy to remove, and also the electrical wiring was a little wonky when it came to grounding.
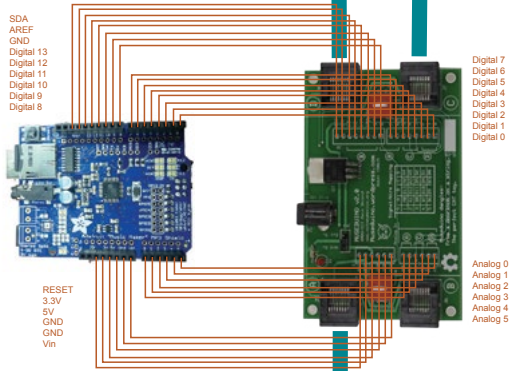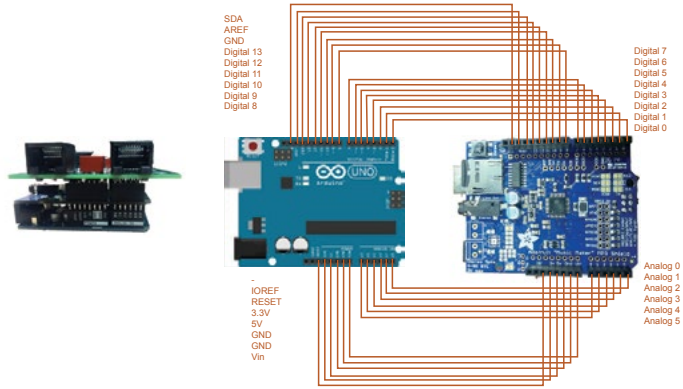
Installation
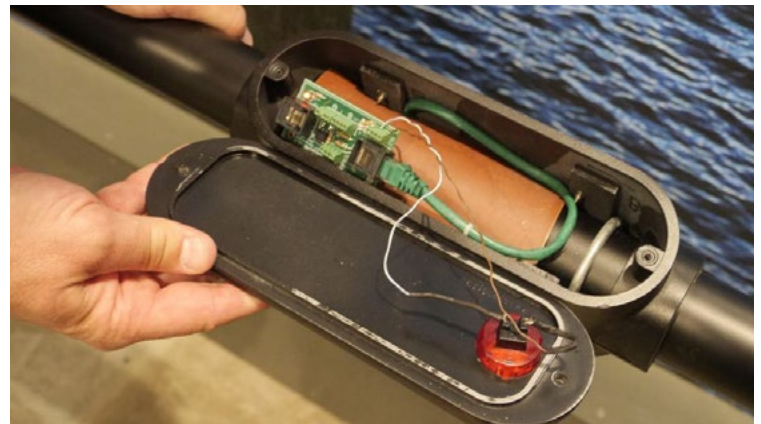
Circuit Diagram

Acadia National Park
Marsh Sea Interactive
Shematic

Ethernet Cable to connect Pins/Power from Museduino to Satellite boards

Arduino Stack

Museduino
Adafruit Music Shield
Arduino

SDA
AREF
GND
Digital 13
Digital 12
Digital 11
Digital 10
Digital 9
Digital 8

Digital 7
Digital 6
Digital 5
Digital 4
Digital 3
Digital 2
Digital 1
Digital 0

IOREF
RESET
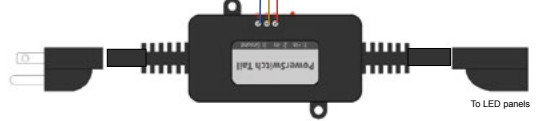3.3V
5V
GND
GND
Vin

Analog 0
Analog 1
Analog 2
Analog 3
Analog 4
Analog 5

Satellite board used in install
will have screw terminals

Power (s2 pin 1)
Signal A5 (s2 pin 2 or 3)
GND (s2 pin4)

To LED panels

PowerSwitch Tail

Power
Signal A2
GND

GND
Signal A3
Power

To LED panels

SDA
AREF
GND
Digital 13
Digital 12
Digital 11
Digital 10
Digital 9
Digital 8

Digital 7
Digital 6
Digital 5
Digital 4
Digital 3
Digital 2
Digital 1
Digital 0

RESET
3.3V
5V
GND
GND
Vin

Analog 0
Analog 1
Analog 2
Analog 3
Analog 4
Analog 5

Power (s2 pin 1)
Signal A5 (s2 pin 2 or 3)
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