

# THE HYDROELECTRIC CANAL

GENERATING RESILIENT URBAN ECOLOGIES

TEAM DESIGN PROCESS

## Abstract

We propose to harness clean energy through hydropower generation from tidal changes and storm surges in low-lying urban areas, as a means of shaping economically and environmentally resilient, self-sustaining communities. Our proposal offers an array of integrated landscaping, ecological restoration, urban development and financing strategies for achieving this goal. The latter include public-private partnerships for creating a new energy-producing, amenity-laden infrastructure that reduces risk to communities and investors.

## Introduction

### Design Process:

We assembled a team of landscape architects, ecologists, engineers, venture capitalists, economists, cost estimators, and leading entrepreneurs and scientists advancing turbine technologies for river and ocean applications. Our three months of iterative design exploration included identification of market-ready turbines amenable to Columbia Point's ecology and landscape.

### Submitting Team:

Paul Lukez Architecture & TEAM  
Somerville, Massachusetts (Architecture & Urban Design)

### Principal Team Members:

- Arup, New York, N.Y. (Engineering)
- Barnraisers Group LLC, Ayer, Massachusetts (Business Strategists - Financial Analysts - Consultants)
- C2 Studio Landscape Architecture, Fort Collins, Colorado
- Prof. Anamarija Frankic, University of Massachusetts Boston (Ecologist)
- Simpson Gumpertz & Heger Inc. (SGH), Waltham, Massachusetts (Structural Engineering)

### Turbine Company Partners/Consultants: (put in order of importance/contribution)

- Blue Energy, Richmond, British Columbia, Canada
- MJ2 Technologies, La Cavalerie, France
- Natel Energy, Alameda, California
- OpenHydro, Dublin, Ireland
- Tidal Energy PTY Ltd., Brisbane, Australia
- Verdant Power, Inc., New York, N.Y.
- Whitestone Power Communications, Delta Junction, Alaska

**See appendix for detailed description of the process and resulting research / content.**