



REQUEST FOR IDEAS:

CO-CREATING BOSTON'S FUTURE-DECKER

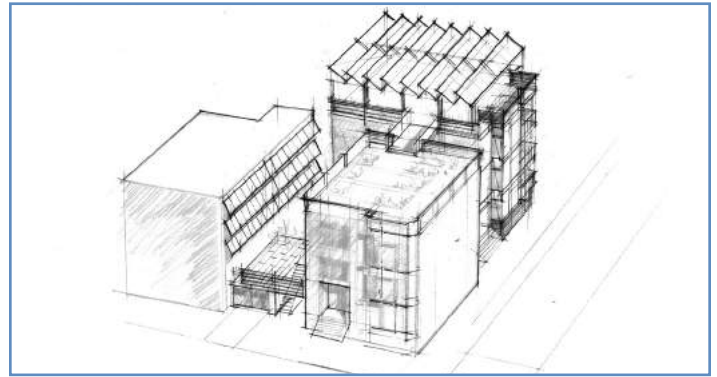
PAUL LUKEZ ARCHITECTURE

RICHARD BURCK ASSOCIATES

INTRODUCTION

Our team (Paul Lukez Architecture (PLA) and Richard Burck Landscape Architects (RBLA) are submitting a joint entry to this RFI for a prototypical “Future Decker” for several reasons.

- We believe a re-conceptualized triple decker can offer a valuable housing option to Boston residents.
- This new model can build on the strengths of the original triple-decker model commonly found in Boston neighborhoods. This new “future decker” can also address the original design’s shortcomings including vulnerability to fire events, and inefficient energy consumption.
- We believe that we have ideas that can integrate the best practices from the fields of architecture, landscape architecture, and sustainable design in a way that offers residents a safer, more flexible and ecologically self-sustaining development model.
- We believe that a collaboration of architects and landscape architects and other related experts can generate ideas that advance the conversation on how to provide attractive, affordable and equitable housing alternatives.



For this reason, we believe that our collaboration (architect and landscape architects) can offer a unique design proposal responding to this RFI’s call to action. As you will see our proposal is very much built on a hybrid proposition, part architecture and part landscape, and entirely inter-dependent on both fields. This proposal can only be further enriched by the participation of other parties, stakeholders, community members and experts that we hope will be able to come together soon.

We look forward to your response and feedback to our proposal.

PAUL LUKEZ ARCHITECTURE PLASES

PLA / PLASES is a Somerville based design studio that is actively engaged in architectural and urban design with a special focus on sustainable design. The 10-person firm has received over 60 design awards since its inception in 1992. As part of its charter, PLA is also involved in research related projects, rooting its design solutions and proposals in a research-intensive design process. Typically, the firm takes on one project a year that falls outside the typical client-architecture model and develops proposals that can help different community-based user groups. We view this RFI as one such opportunity to contribute to local Boston based communities.

Richard Burck Associates, Inc Landscape Architecture

Since founding Richard Burck Associates in 1985, Richard (Skip) Burck has led an office that focuses primarily on the planning, design and making of landscapes.

A key aspect of his practice focuses on native and adapted plant communities that create habitats not only for human occupation but also for all living biota present in a place. His expertise in the design of these plant communities is augmented by research and collaboration with experts in the areas of, urban hydrology and soils, plant community dynamics, and native habitat studies.

Skip has a B.S. with Honors in Landscape Architecture and a Master in Landscape Architecture from the GSD, Harvard University; he was a Merit Scholar at Cranbrook Academy of Art and a Rome Prize Fellow in Landscape Architecture. He is a Fellow of the American Society of Landscape Architects.

SITE SELECTION

WASHINGTON ST. 2751, 2775, 2777

While we believe that our prototype is applicable to most of the sites offered in this RFI. However, the following site characteristics drew us to the Washington Street site (2751, 2775, 2777).

- The three sites along Washington street provide a good mix of site conditions for testing our model. One site is a single infill site, while the other two sites are paired, demonstrating our model's ability to be fitted and scaled across the neighborhood as desired.
- While not optimal, the south-easterly site orientation offers a reasonable site orientation for fixed PV.
- This site allows for the harmonious integration of existing housing stock and our proposed Future-Decker.
- This site offers strong connections to community amenities including a Community Center (1) and Recreational Center (2) located at Malcolm X Park (3).
- Access to the Thorton Street Urban Farm offers residents access to local produce.



OUR STORY - OUR CONCEPT

On December 5th, 2016, a ten-alarm fire ravaged a vibrant neighborhood, densely packed with triple-deckers. This fire storm in East Cambridge destroyed more than ten buildings and left over sixty people homeless that cold night. We happened to know some



of the victims, so we drove to East Cambridge to see if we could help. Fortunately, our friends were well provided for by family and agencies. But I remember being impressed by how densely packed the triple-deckers were and the fire hazard they presented.

What you see in this proposal came out of this experience. As architects we realized we could do something that might enhance the safety of dense neighborhoods like those found in Cambridge and Boston. We also recognized that we could begin to develop multi-valent design strategies, i.e. develop systems that not only promote fire safety but make neighborhoods more heavily vegetated and healthier. They could also help store water and energy. Cumulatively these strategies can shape resilient communities, where quality open spaces can be engaged by all. We hope you enjoy our proposal we welcome your feedback and ideas.

MISSION: DEVELOP A GREEN WALL SYSTEM THAT ADDS FIRE PROTECTION, CREATES HEALTHY GREEN SPACES, STORES ENERGY AND STRENGTHENS COMMUNITY.

Our core concept is to create a green wall system that can inhabit the underutilized space between adjacent triple deckers.

These green walls will accomplish multiple goals including:

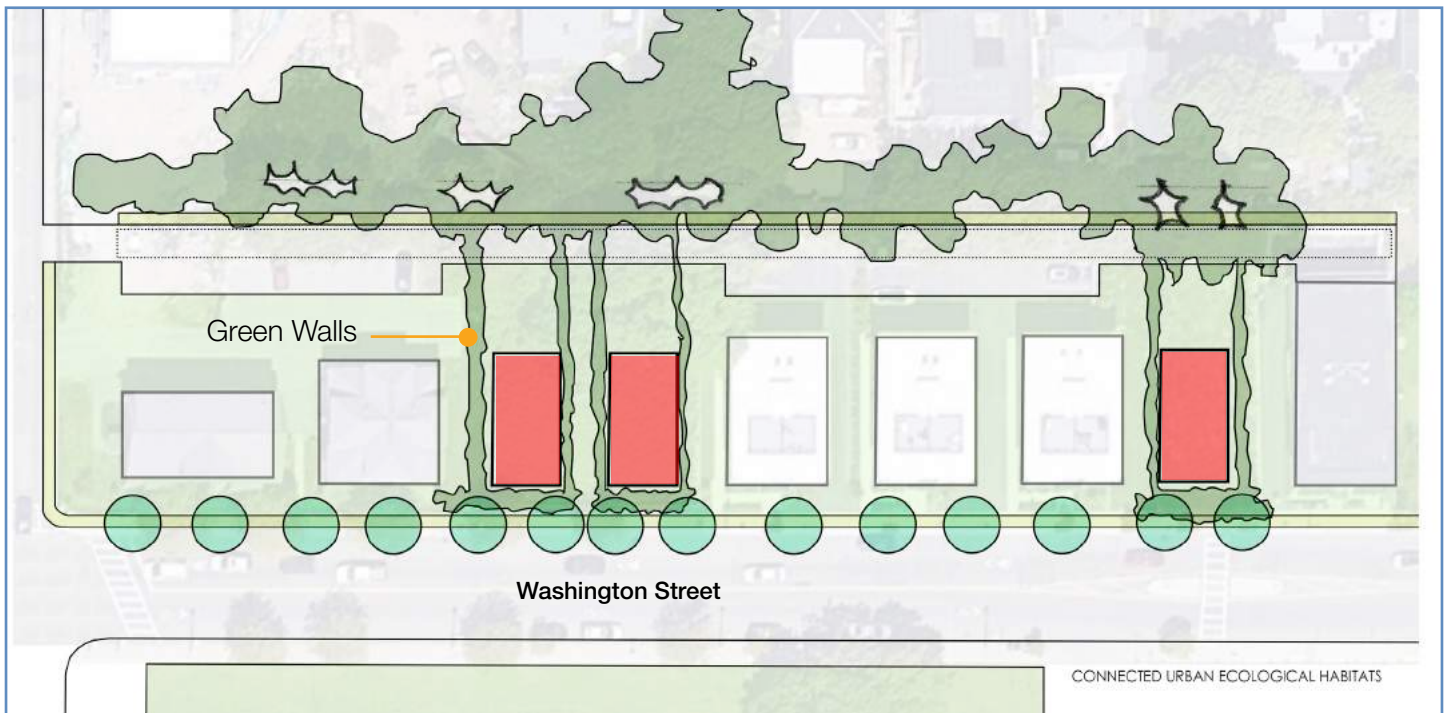
- Provide added fire protection between neighboring buildings
- Create more green space, and oxygen – thereby improving air quality and resident's
- The green walls can filter and manage water run-off from the roof.
- The green wall system can also use water as a way of storing electric energy.
- Combined with a solar system, this NZE proposal, addresses energy intermittency by storing energy in off-hours using water filtration cylinders.
- As an expanded network of green walls, private and public open spaces can be created.

- This proposal can strengthen the community's ecology and urban design while supporting the community and its needs.
- This proposal turns what is largely viewed as left over space into a positive, environment enhancing space.
- The presence of vegetation becomes almost ubiquitous – especially as seen from the inside rooms looking out.

4 CORE SYSTEMS FOR THE LANDSCAPE

- Stormwater collection and infiltration
- Solar orientation for PV and vegetative cooling
- Connected Urban Ecology
- Fire suppression strategies

URBAN ECOLOGY



Urban Ecology Diagram

CONNECTED URBAN ECOLOGY

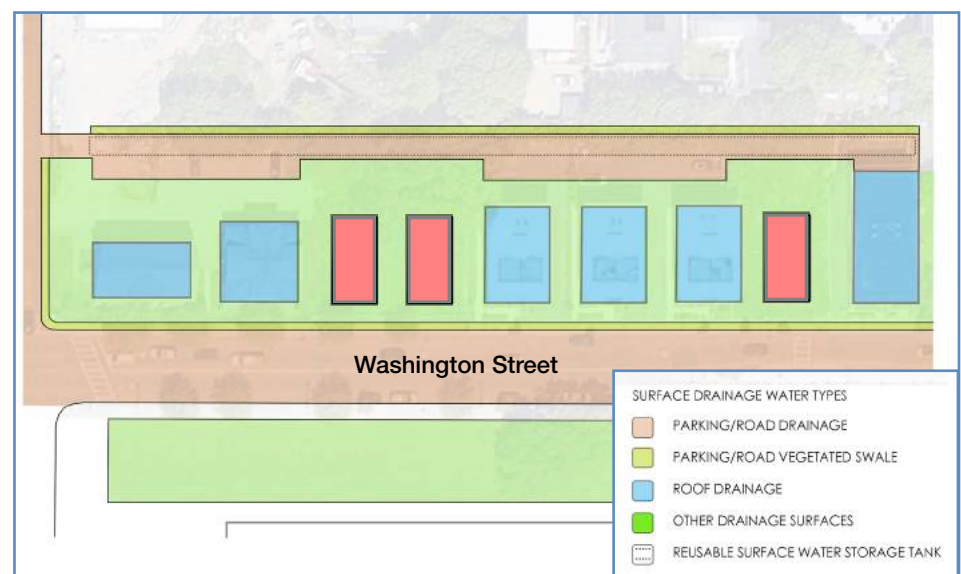
The planting strategy of the neighborhood creates a connected urban ecological habitat. Street trees, vegetated swales, green walls, and urban tree groves form a landscape of corridors and patches that support a robust local ecosystem.

STORMWATER

The strategy is to retain-reuse and infiltrate storm water. However, storm water comes in different qualities. The parking road drainage polluted with phosphorous, hydrocarbons and particulates and is directed to adjacent vegetated swales. The roof drainage and air conditioning condensate are directed to an underground

neighborhood storage tank. The areas adjacent to the buildings but not subject to vehicular traffic are also directed to the storage tank. The rainwater in these areas is

channeled to the storage tank along infiltration swales, allowing a portion of the water to infiltrate into the soil and nourish the plant communities.

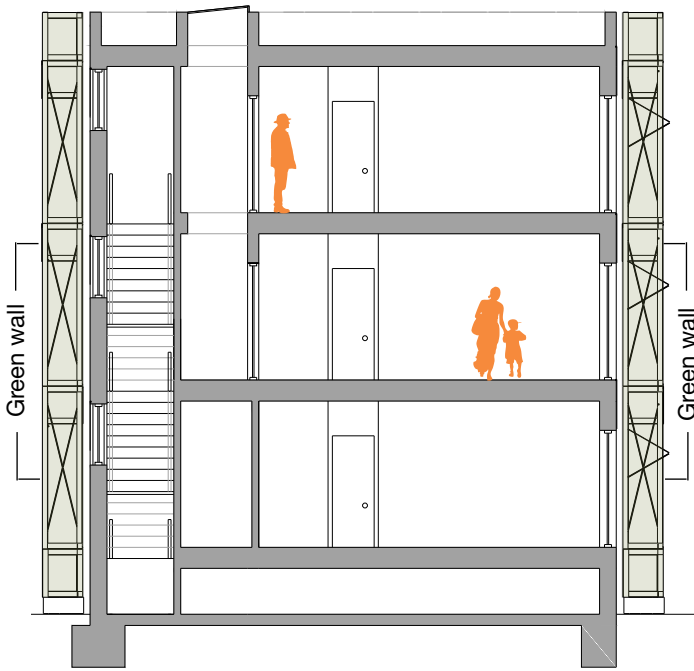


Stormwater Diagram

GREENWALL CONCEPT & VARIATIONS

FIRE SUPPRESSION

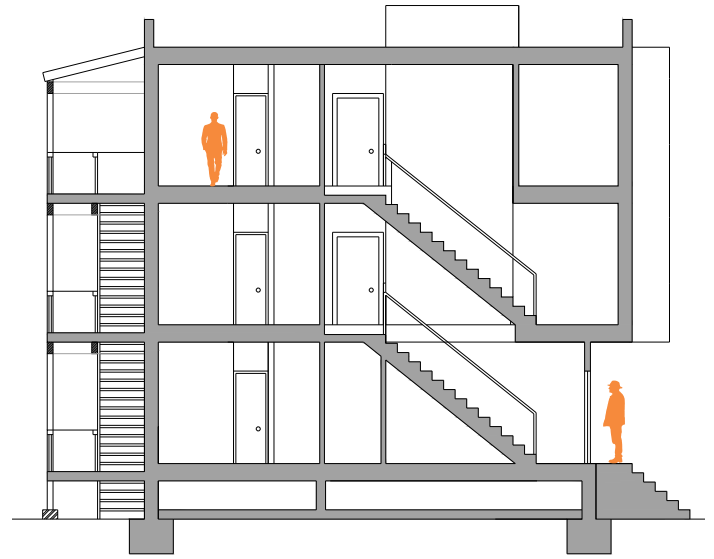
In the event of a fire the building green walls are deluged with a curtain of water stored in a tank on the roof. This wet wall contributes to slowing the spread of flame on the wall surface.



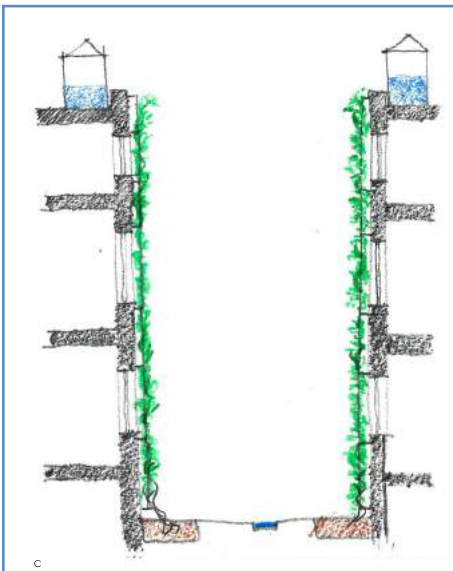
LATERAL SECTION

SOLAR ORIENTATION

The species of the green walls and tree plantings are deciduous, and the specific species are selected to provide canopy shade in summer, thus reducing solar gain in the interior of the buildings. The leafless trees maximize solar access to the rooftop PV panels and afford radiant heating to the interior living spaces in winter. The species used also contribute to the urban ecological framework of the neighborhood.

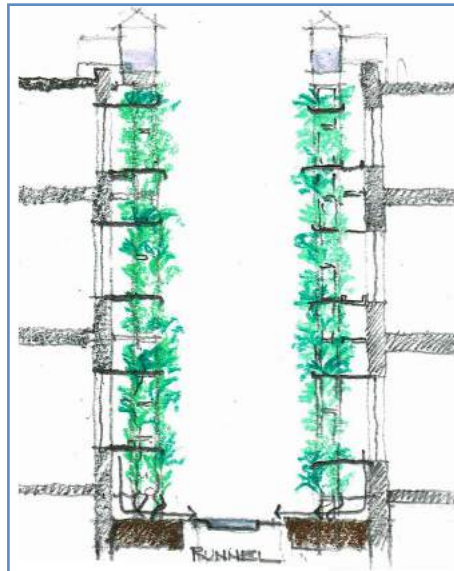


LONGITUDINAL SECTION



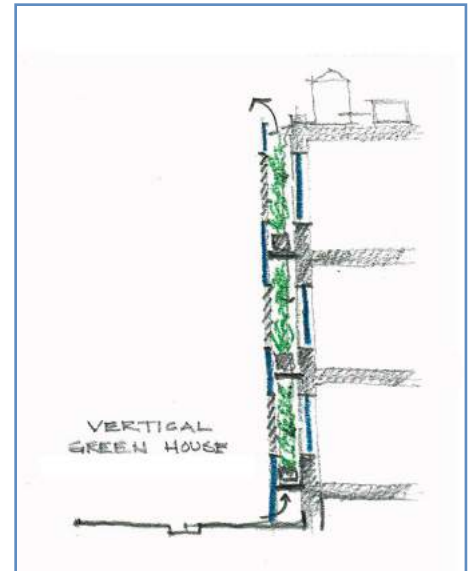
Type 1

This is the most basic option. Vegetation grows on lattice attached to the walls.



Type 2

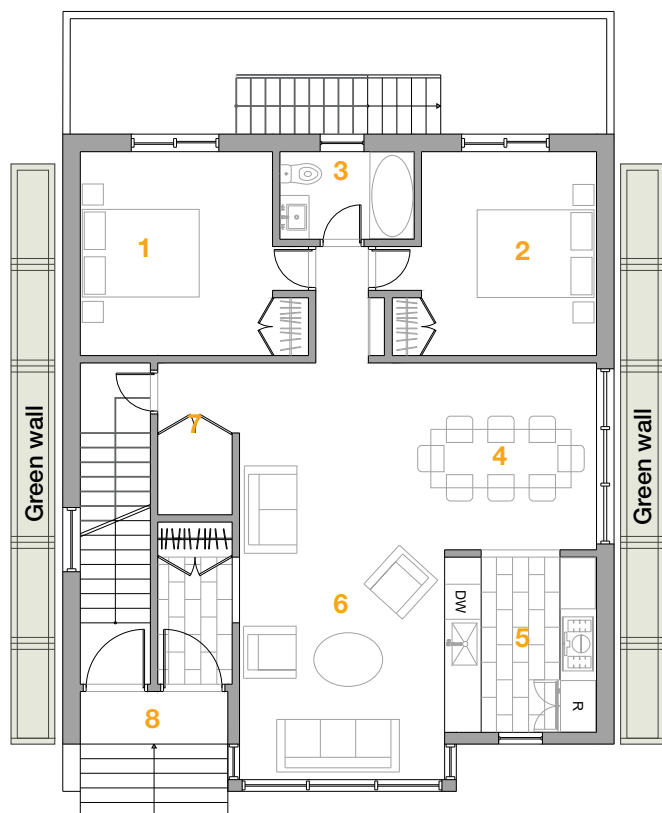
This option creates a deeper framework that houses and supports different systems.



Type 3

This option includes a glass greenhouse wall.

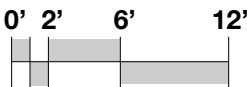
PLANS AND SECTIONS



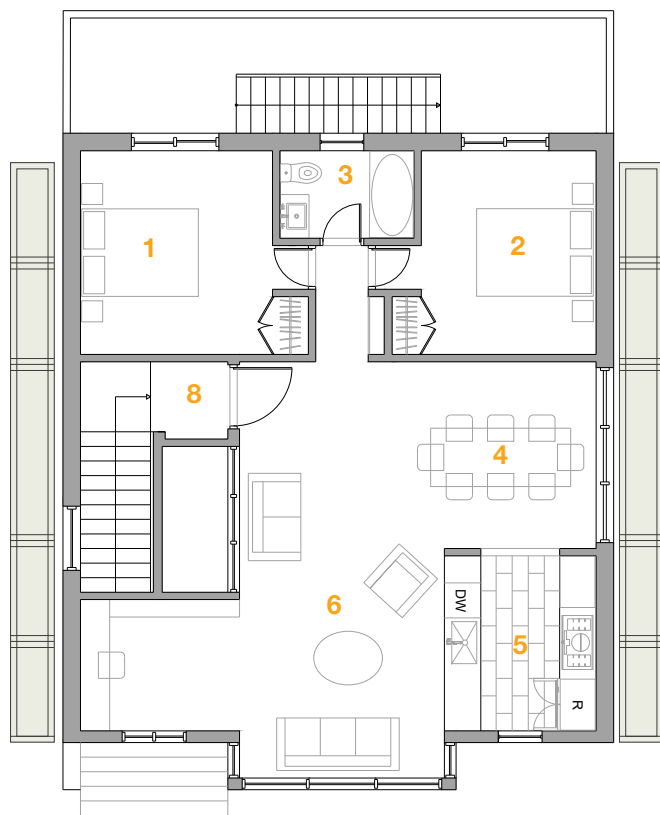
FIRST FLOOR PLAN

PLAN LEGEND

RM#	NAME
1	BEDROOM 1
2	BEDROOM 2
3	BATH
4	DINING
5	KITCHEN
6	LIVING
7	MECHANICAL
8	ENTRY



Scale: 3/32" = 1'



THIRD FLOOR PLAN

ENVIRONMENTAL SYSTEMS

More about the proposed Green Wall System

- **Fire Protection**

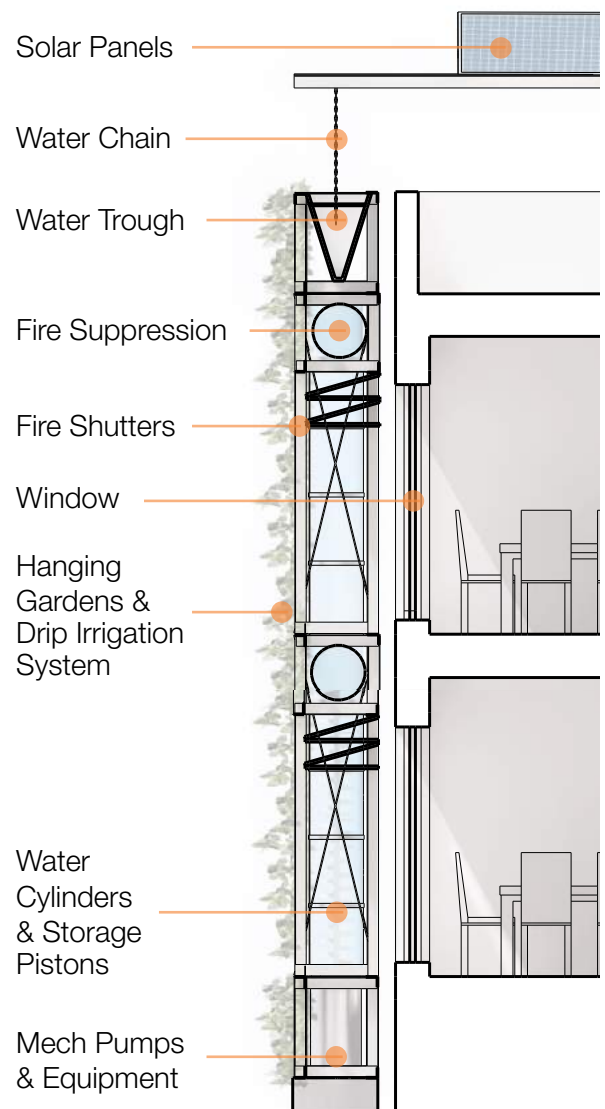
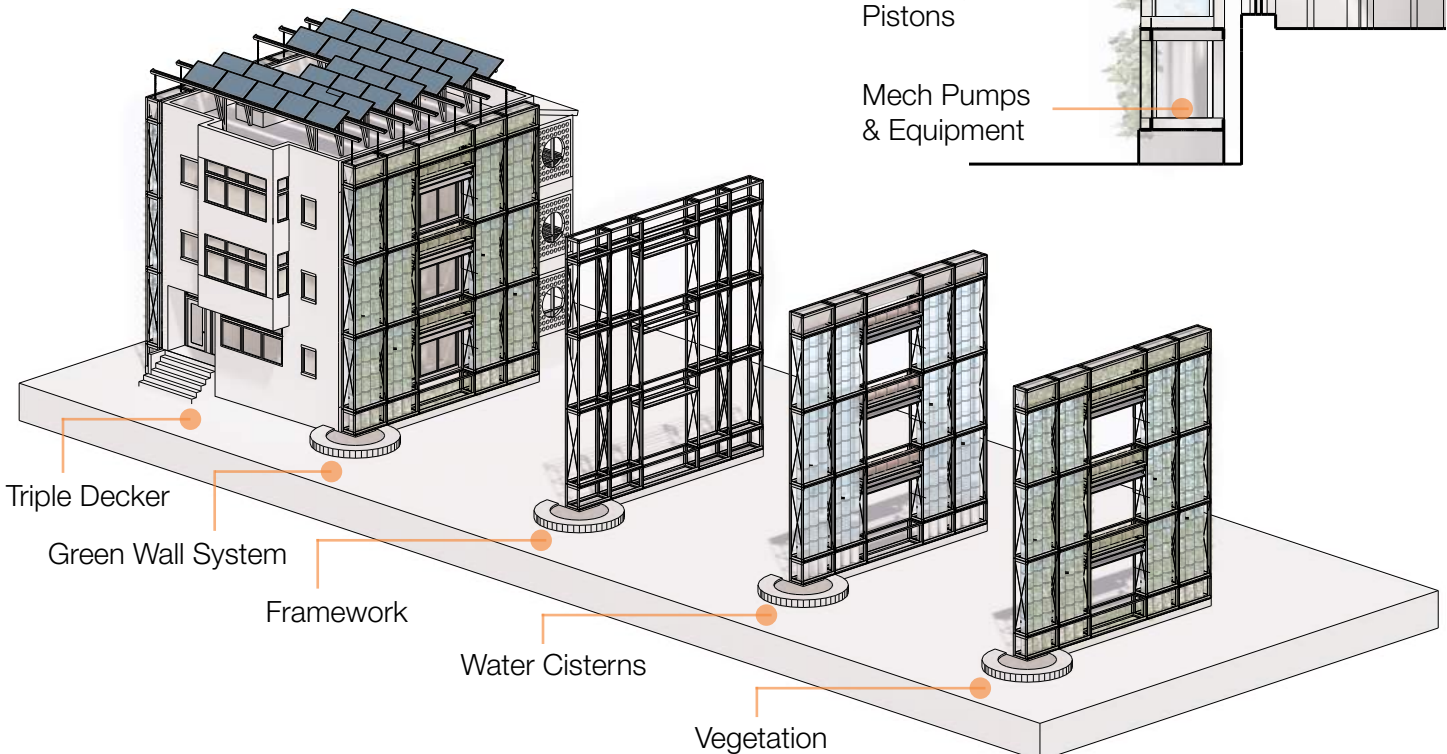
Fire protection is provided in three ways including 1) fire resistant vegetation 2) fire deluge systems located above window openings 3) shutter walls over the windows are closed during a fire – See section diagram

- **Biophilic Health Effects/Increased Air Quality**

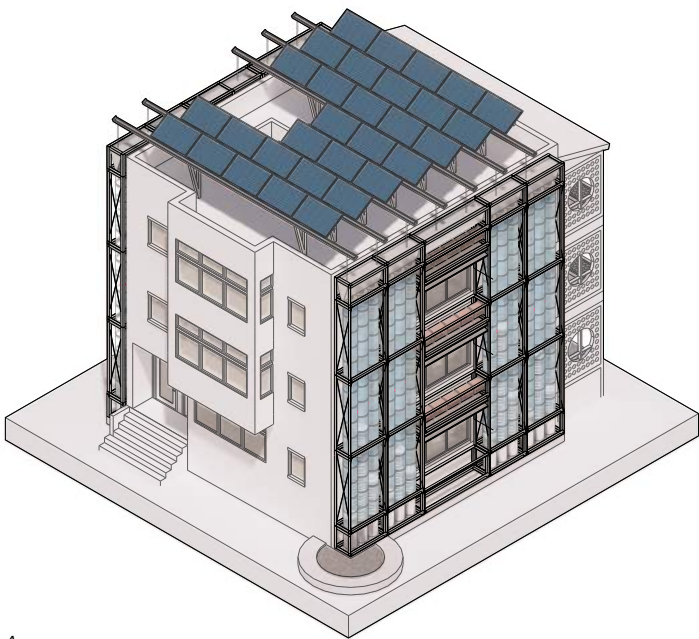
The green vegetation will be nurtured through a water irrigation system that is integrated into the green wall system. A large trough is located at the top of the green wall which collects water run-off from the solar panels and roof. The water is filtered down the hanging wall of plants and vegetation.

- **Energy Storage system – Energy Intermittency**

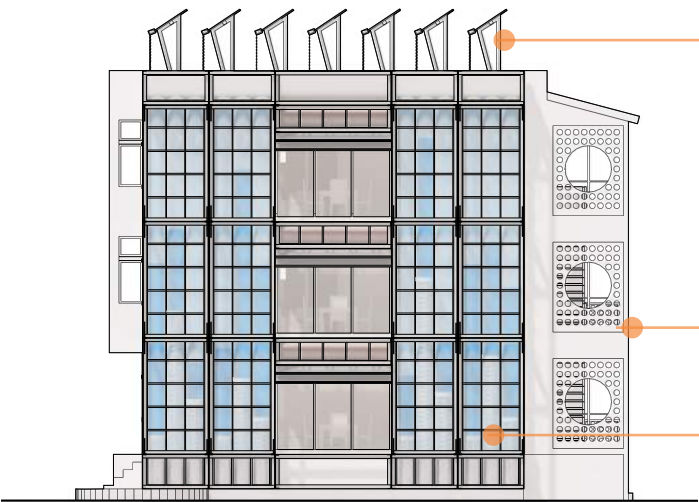
Excess water is stored in large vertical cylinders. These cylinders rise up and down a geared piston that is powered by the excess energy generated by the solar system. If there is excess energy generated by the solar panels, the pistons will be lifted to a higher level. If energy is required on cloudy days or the evenings, the water in the pistons is released to generate power.



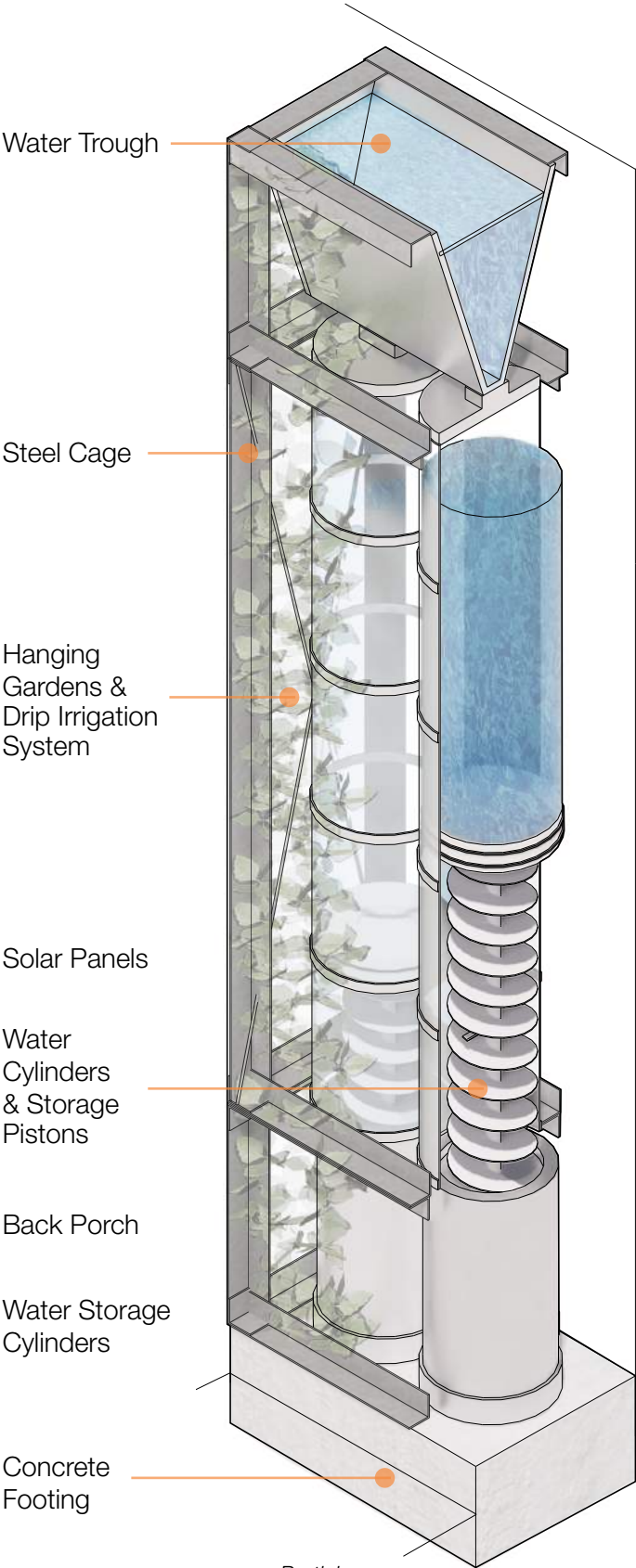
GREEN WALL ELEVATIONS & PARTIALS



Axon



Green Wall Elevation



Partial

GREENWALLS DEPLOYED



Example of how typology works in an existing neighborhood. (This example is for a site in East Cambridge)

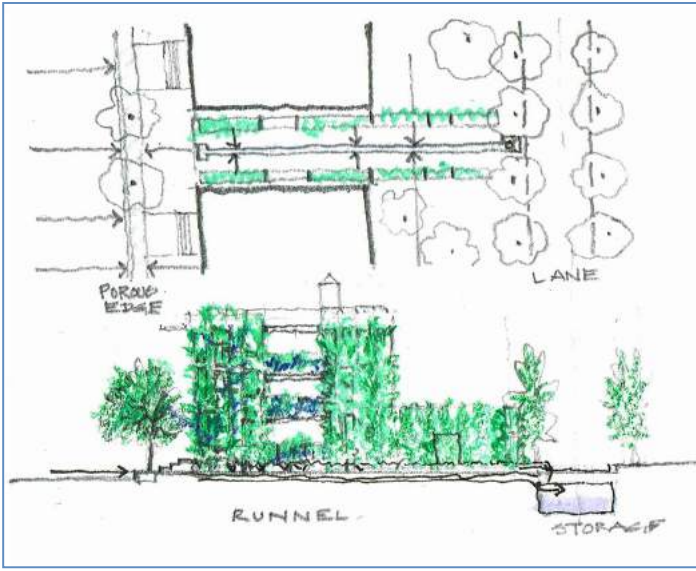


Dining wall overlooking a neighbor's Green Wall



Street view

URBAN DESIGN & PROJECTED BARRIERS



Sketch of Green Walls shaping the community

PROJECT BARRIERS

There several project barriers that need to be addressed in order to realize this project. They include:

- Zoning issues associated with side yard set-backs
- Assuring that fire ratings as required by code are met
- Developing the integrated technologies required to make the green wall system work including the water (energy) storage system
- Affordability issues – including determining the pay-back period on the extra investment in the Green Wall.

PERMISSION TO USE IDEAS

We agree to let this proposal and its ideas to be shared with your audience and the community.



Prototype typology deployed