



# NoMa M STREET UNDERPASS COMMUNITY MEETING

[WWW.NOMAPARKS.ORG](http://WWW.NOMAPARKS.ORG)

[@NoMaParksDC](https://twitter.com/NoMaParksDC)

[#MStUnderpass](https://twitter.com/NoMaParksDC)



## “RAIN”

- **Highly ranked in community surveys**
- **Responsive to pedestrian + bicycle needs**
- **Improves light + safety**



# Rain

Thurlow Small Architecture, NIO architects, MC Dean  
NoMa BID - M Street Underpass  
April 2015

# Team introduction

## Thurlow Small Architecture & NIO architects

We are pleased to submit our final proposal for the tunnels in K-street and L-street in the NoMa underpass competition. Our team, NIO architects from Rotterdam (the Netherlands) and Thurlow Small Architecture from Rhode Island, offer a combination of artistic innovation and professional expertise shown through our recent infrastructure and public realm projects.

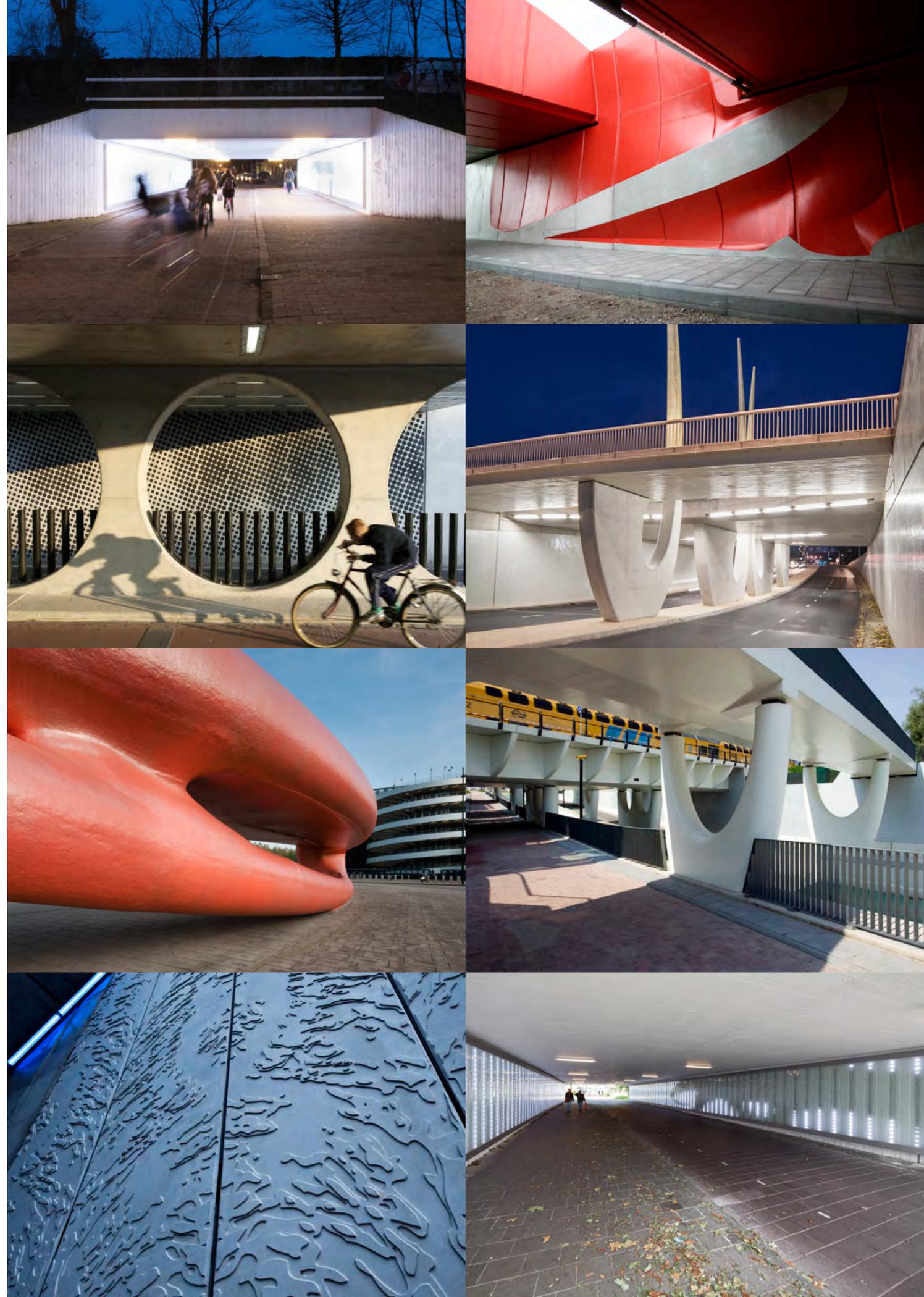
NIO architects have completed more than 10 underpasses in the last 14 years and are well versed in both the their unique technical constraints and architectural possibilities. The project most similar to the NoMa underpass is our Amsterdam tunnel, a light artwork that we created under an existing train track. NIO architects was not only the designer, but the general contractor and thus managed the design, the existing requirements of the train structures, as well as announcing and controlling the opening and closing phases of the construction progress. NIO has been recognized for our high-level design and technically proficient execution.

Thurlow Small Architecture is an architecture and urban design services firm that has worked both locally in communities across New England and globally in China on projects in the planning and development of parks, downtowns, and public infrastructure. We have worked for municipalities and institutions for nearly 10 years on projects that have included extensive community and state agency participation. We have been recognized for our good ideas and common-sense approach to getting projects done in complex environments.

Having known each other for fifteen years, we believe that our two firms together offer an ideal fulfilment of both innovation and professionalism. The team would offer a productive design and stakeholder process that would result in a specific and beautiful result.

Office: Thurlow Small Architecture, Inc.  
Contact person: Andrew Thurlow, principal  
Address: 10 Exchange Court  
Studio 406  
Pawtucket Rhode Island 02860  
USA  
Telephone: 401 316.5708  
Email: [info@thurlowsmall.com](mailto:info@thurlowsmall.com)  
Website: [www.thurlowsmall.com](http://www.thurlowsmall.com)

NIO architecten v.o.f.  
Joan Almekinders, architect & principal  
Schiedamse Vest 95a  
3012 BG Rotterdam  
The Netherlands  
+31 (0)10 4122318  
[nio@nio.nl](mailto:nio@nio.nl)  
[www.nio.nl](http://www.nio.nl)



# Rain

## Contractor and sub-contractor

The project consists of a structural component - the primary construction that is attached to the tunnel - and an electronic component - the 'rain vaults,' or 'rods' with LED lights. We have made the division between these parts as clear and functional as possible and selected the contractor and subcontractor according to their expertise. For the execution of this project we propose a primary contractor and a subcontractor:

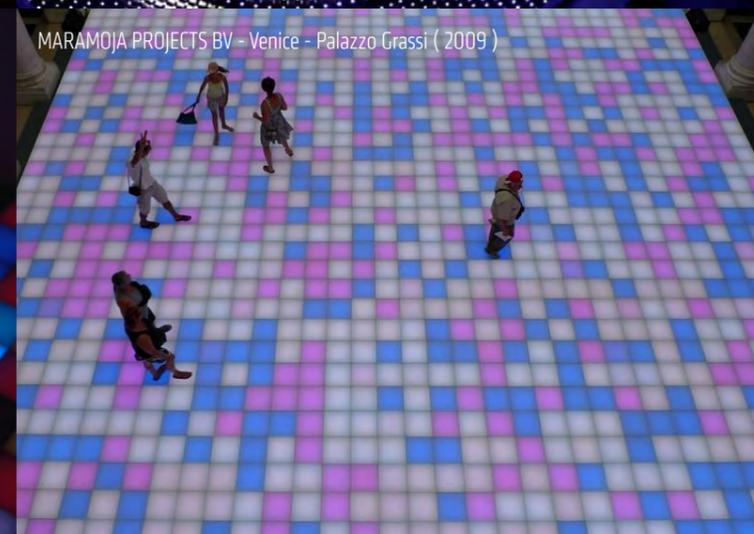
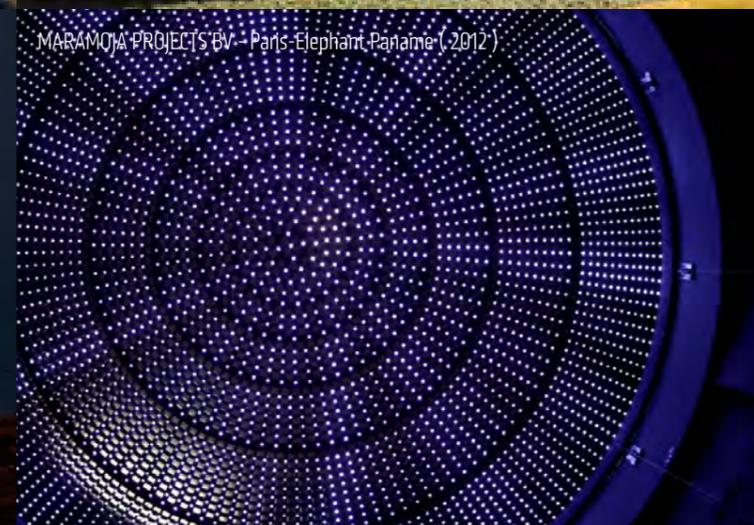
	<b>MC DEAN, INC</b>	<b>MARAMOJA PROJECTS BV</b>
address	22980 Indian Creek Drive Dulles VA 20166 USA	Het Hoogt 142 1025HD AMSTERDAM the Netherlands
phone	202-529-1080 Ext. 3538	+31 (0) 20 4822294
email	matthew.hill@mcdean.com	info@maramoja.com
internet	www.mcdean.com	www.maramoja.com
contact	Mr. Matthew Hill	Mr. Herman ter Hennepe

**MC DEAN, INC** is a contractor local to the Washington D.C. metro area and will be coordinating the installation of the structure and all additional on-site construction, including site permits and insurances. They will prepare the prearrangements for the installation of all lighting elements.

**MARAMOJA PROJECTS BV** will develop a plug-and-play light installation that can be easily transported, shipped, installed as well as demounted and stored. The light installation will be fixed to the primary construction that is placed in the tunnel.

**MC DEAN, INC.** is a fully licensed, award-winning construction company that serves the Washington, D.C. metro area. It is an industrious modern design/build firm that has, for many decades, delivered creative, eco-friendly solutions to several projects. They thrive on the unique challenges that each project presents and set themselves apart by the singular solutions they provide, each one tailored to their client's sensitivities and their project's specific requirements.

**MARAMOJA PROJECTS BV** is an international company specialising in architectural & design LED-lighting integration projects with a sensitivity for aesthetics and awareness of state-of-the-art LED lighting techniques. Maramoja Projects BV translates light concepts created by architects, light-architects, designers, interior designers, and artists into achievable engineered plans, budgets and production-installation schedules. The company provides technical solutions, manufacturing and on-site installation and works on-site for light projects as a contract partner.



MC DEAN, INC.

MC DEAN, INC.

MC DEAN, INC.

MC DEAN, INC.

MARAMOJA PROJECTS BV - Helsinki-Silo 468 ( 2012 )

MARAMOJA PROJECTS BV - Paris-Elephant-Paname (2012)

MARAMOJA PROJECTS BV - New York - Guggenheim Museum ( 2007 )

MARAMOJA PROJECTS BV - Venice - Palazzo Grassi ( 2009 )

# M Street Tunnel

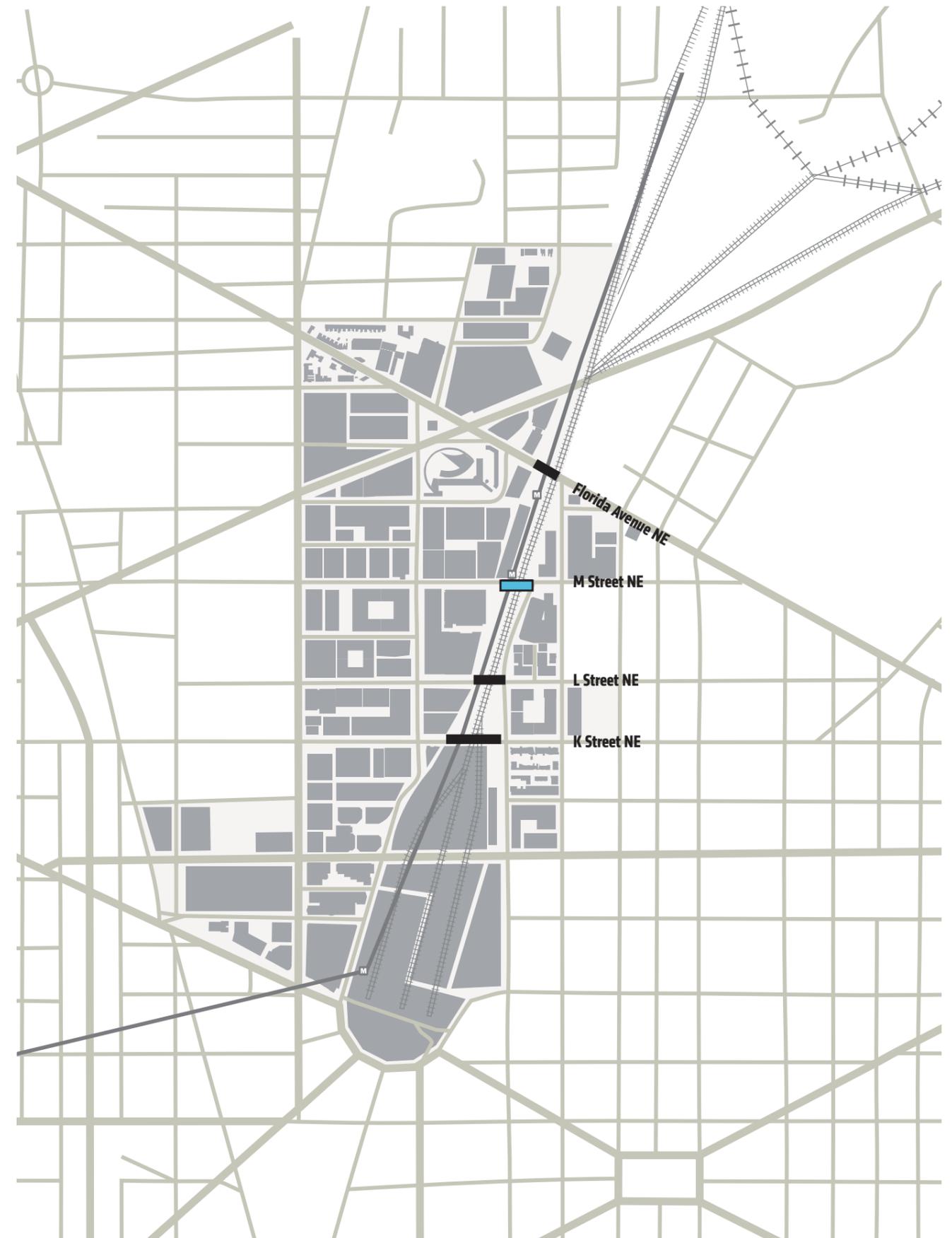
## Original concept

While a dark tunnel dominated by polluting cars is not the first thing that comes to mind when thinking about a park, our tunnel proposal for NoMa does what all good urban parks do: it offers a moment of openness, a space to breathe, and a place where thoughts can drift away...

Our tunnel proposal takes an unpleasant and desolate space and instead offers an intimate, almost theatrical environment, with its own sensory experience. M-street is to offer the physical experience of a rainy day with dynamic skies and wind, making circulation through the tunnel, wether on foot or by bicycle, a memorable, dynamic, and compelling experience.



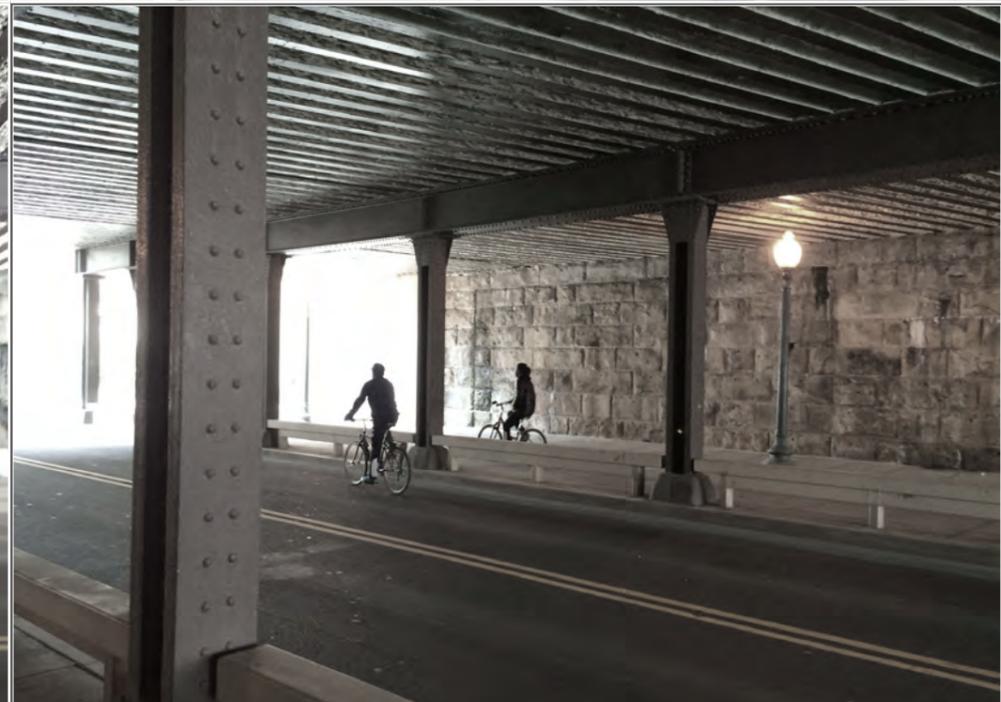
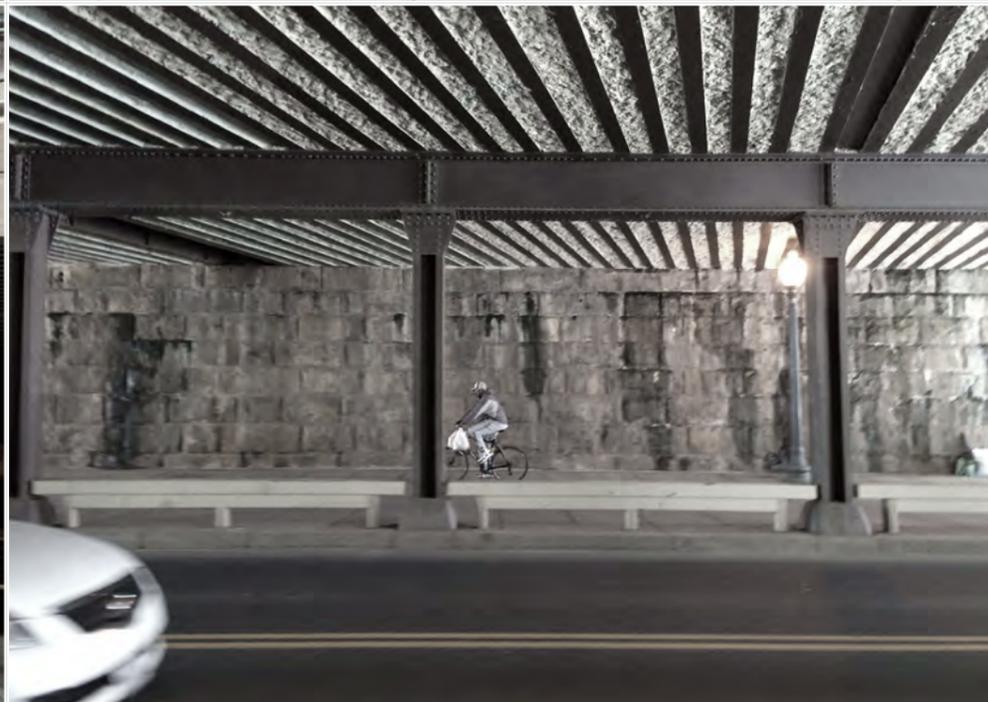
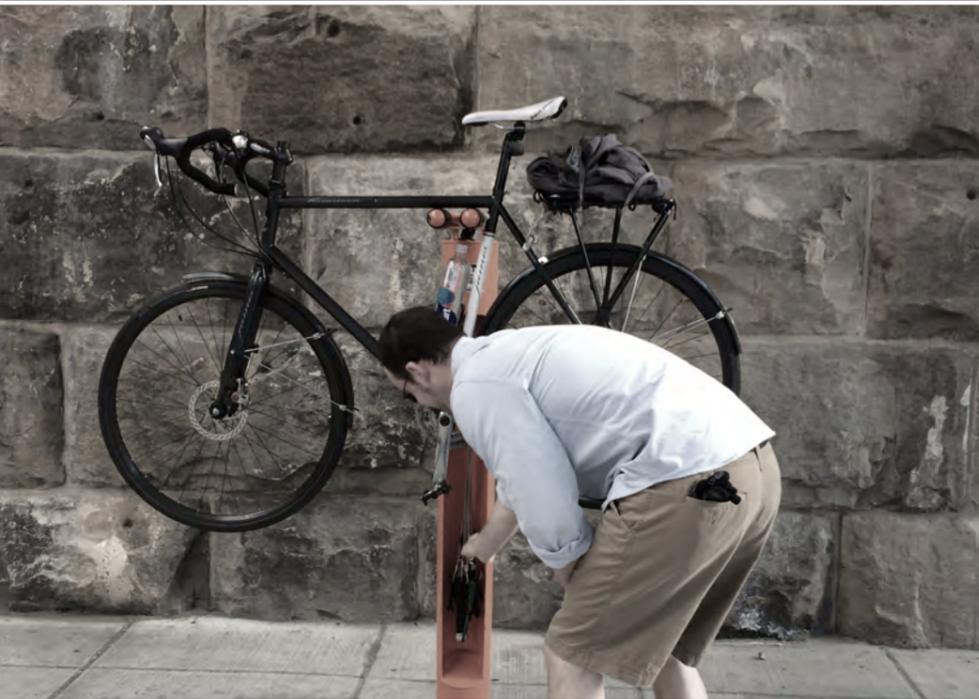
01. Inspiration



02. Site

# Rain

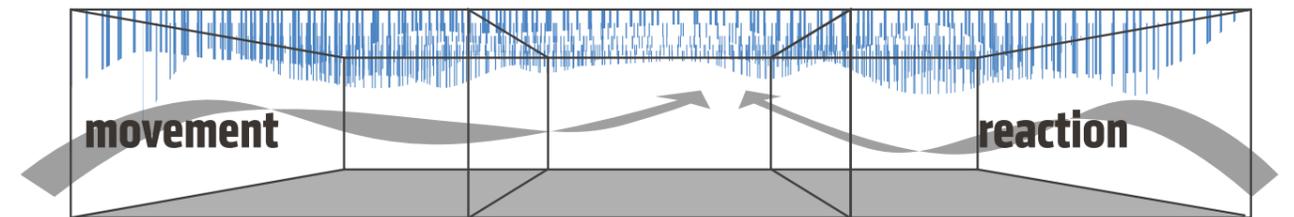
Existing site - Photographic safari



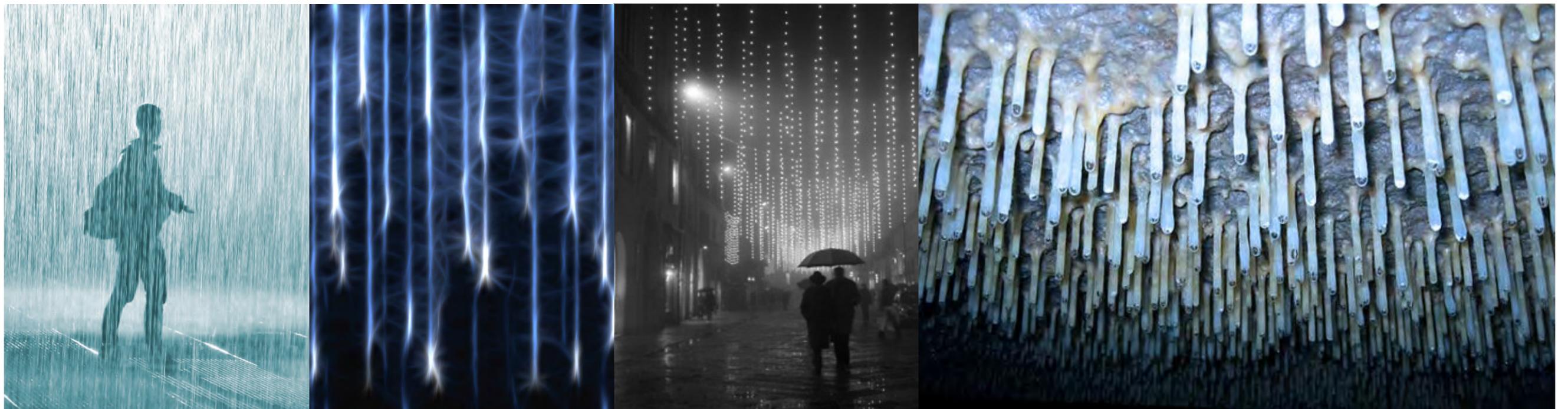
# Rain

## Vault

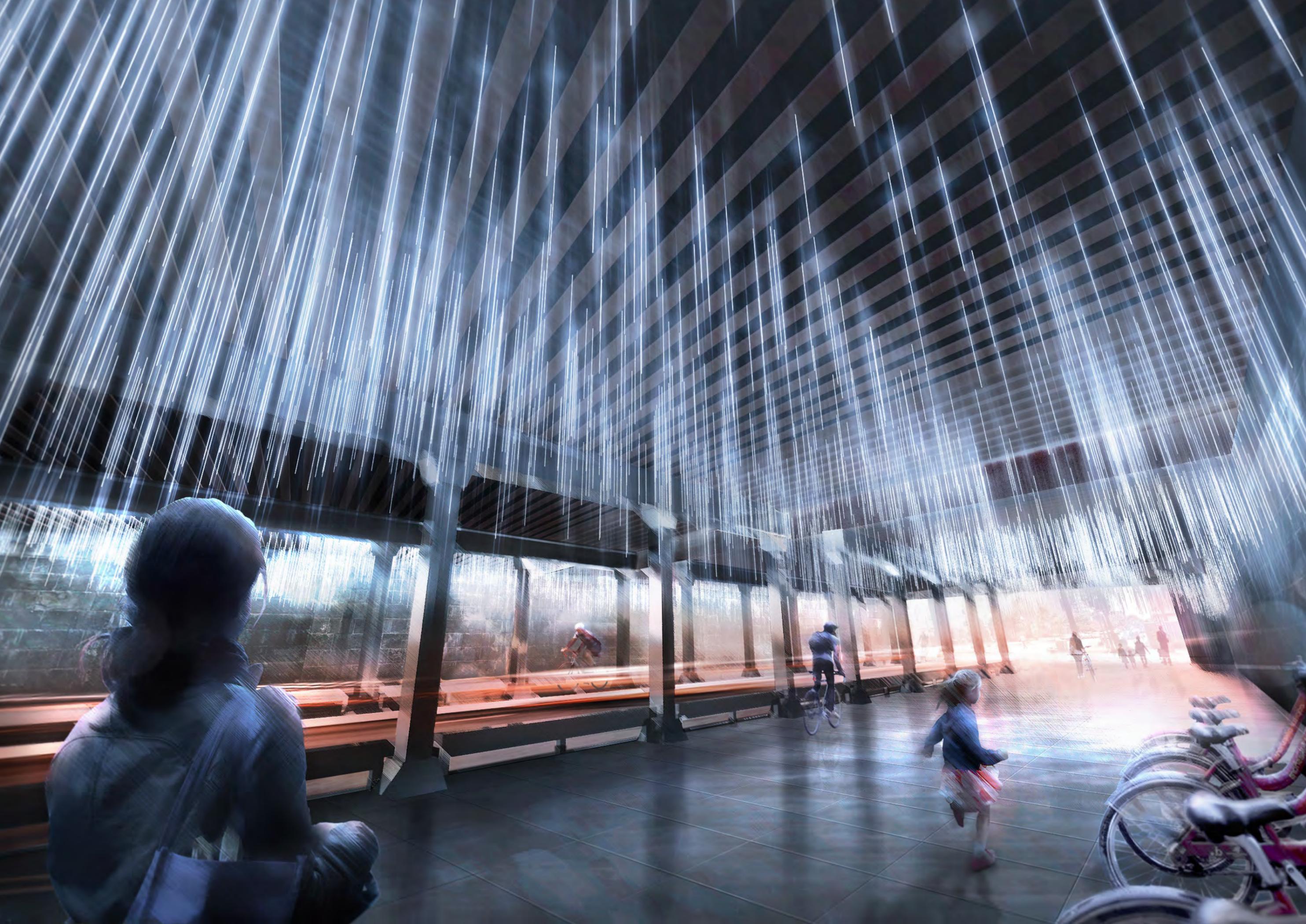
During a cool breezy fall when the sky opens up with a downpour, usually the easiest place for respite is the tunnel. In our M Street tunnel, however, the inside rains with light – a fixed bright pointillist plane that turns a dark roof into a glowing field. The interior of this tunnel radiates with tiny curtains that shift as you move through them like a set of waterfalls that stop above you. Looking up into this environment shifts the expectation of a dark and damp tunnel ceiling into a place you want to be. The light varies over this field so that you see a still effect of waves.



01. Vault Concept

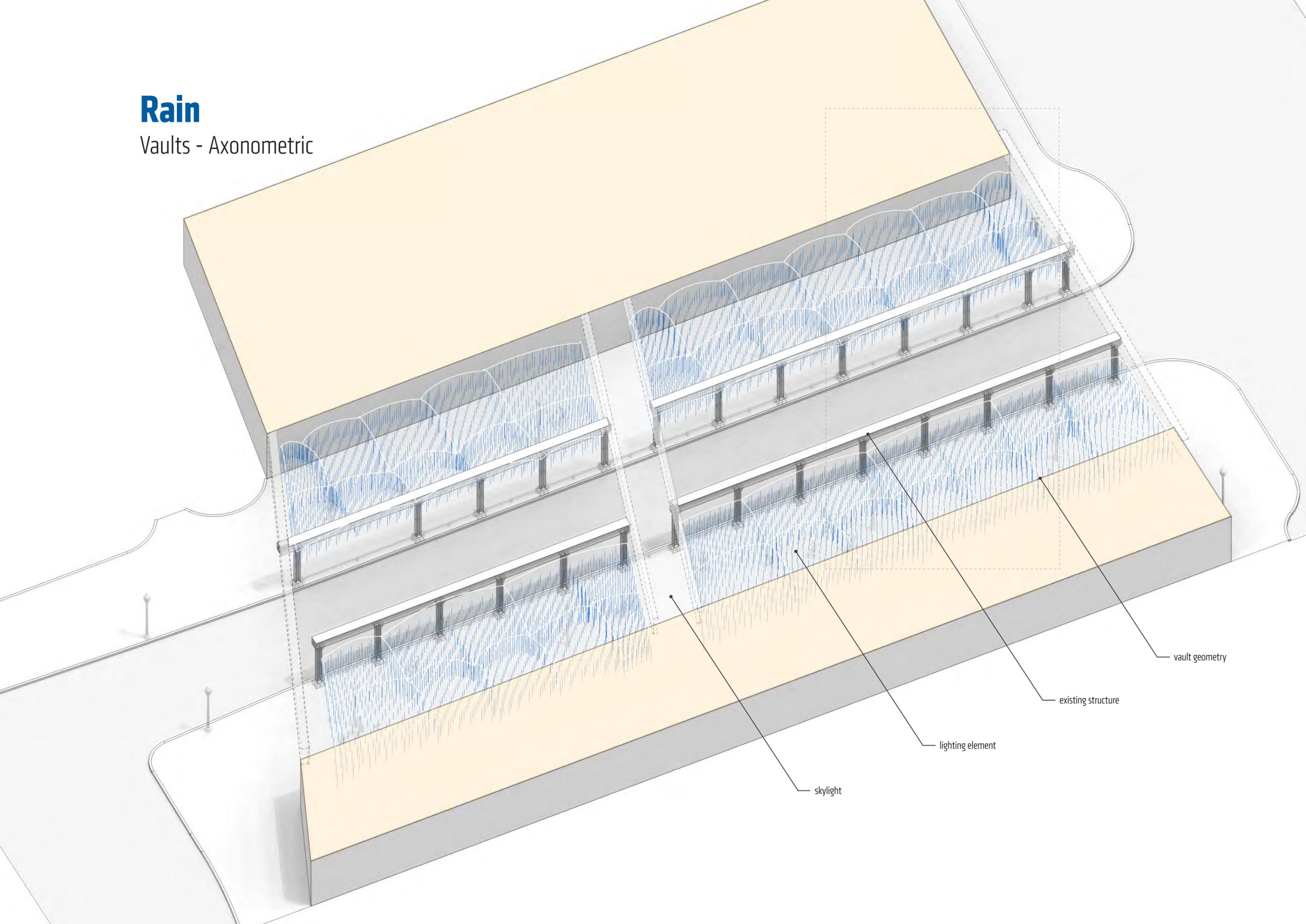


02. Rain Vault Inspiration



# Rain

## Vaults - Axonometric

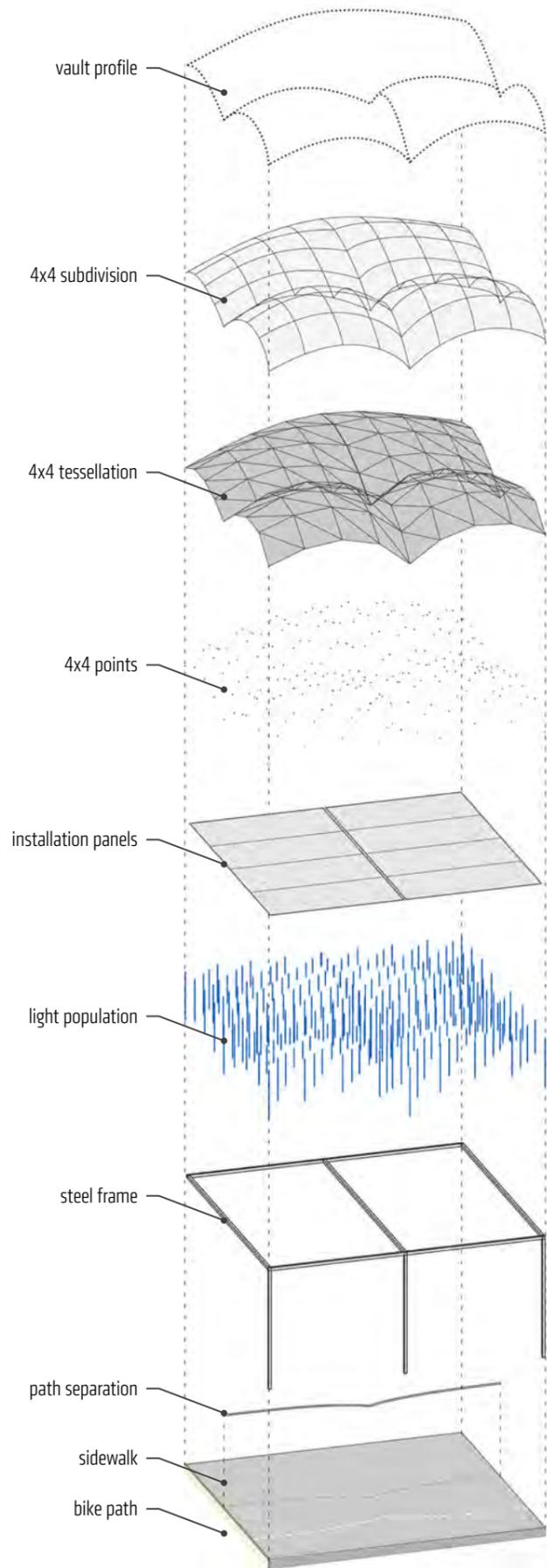


vault geometry

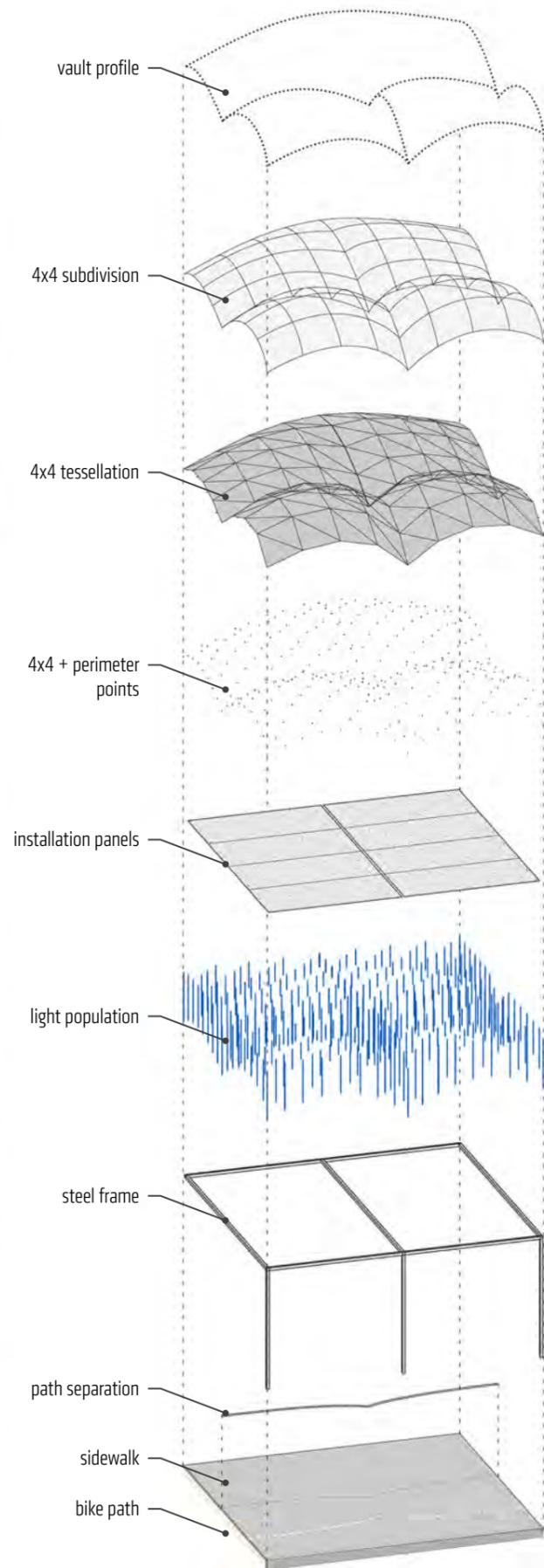
existing structure

lighting element

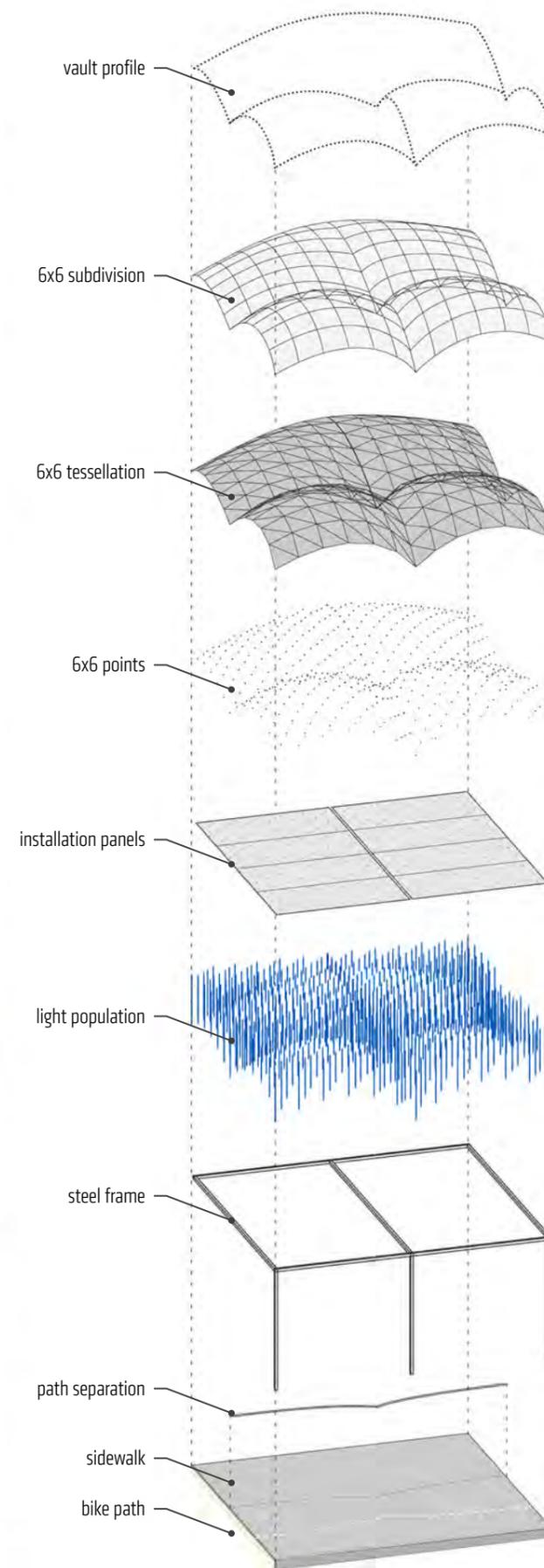
skylight



**01.** Ideal Vault Option - 4x4 Density



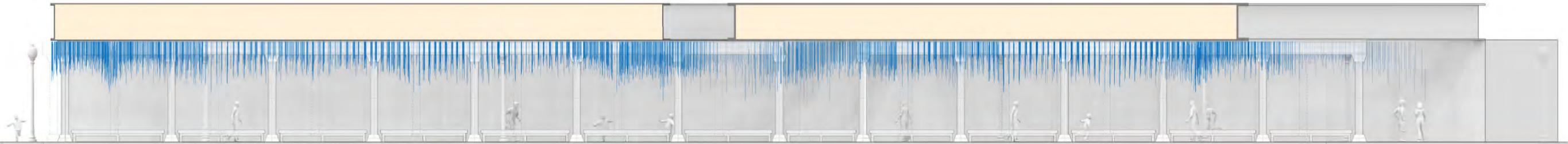
**02.** Ideal Vault Option - 4x4 + Perimeter Density



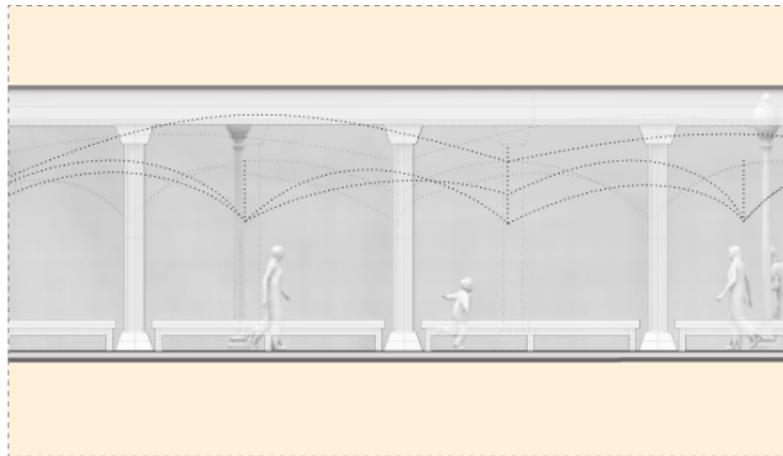
**03.** Ideal Vault Option - 6x6 Density

# Rain

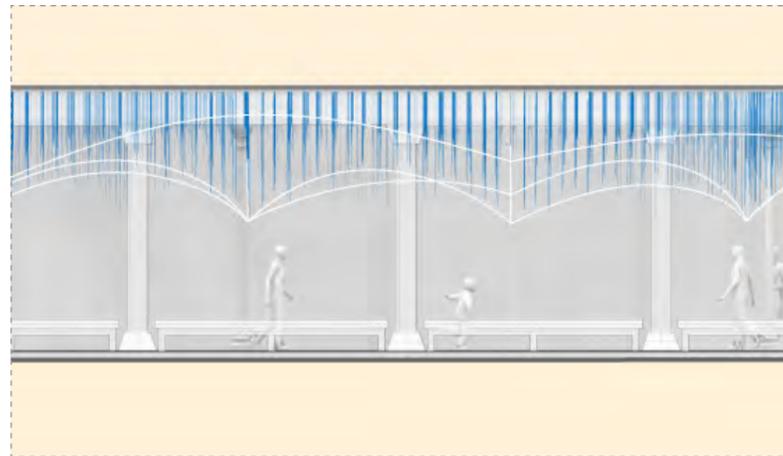
## Longitudinal Section



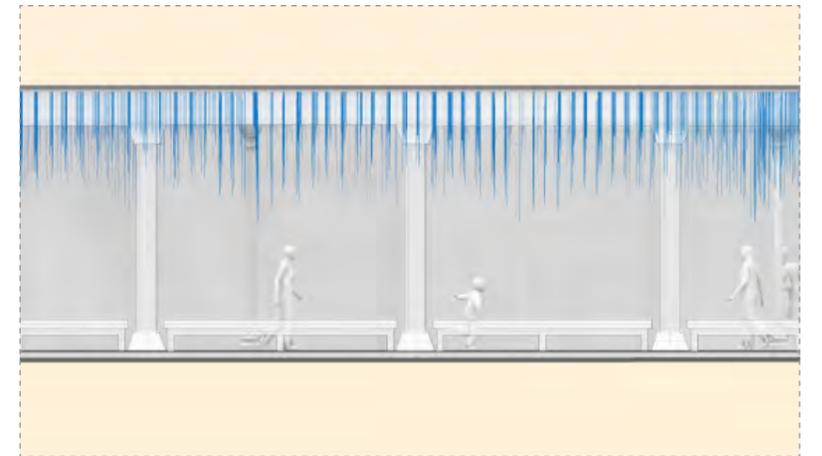
01. Sectional Density



02. Vault Profiles



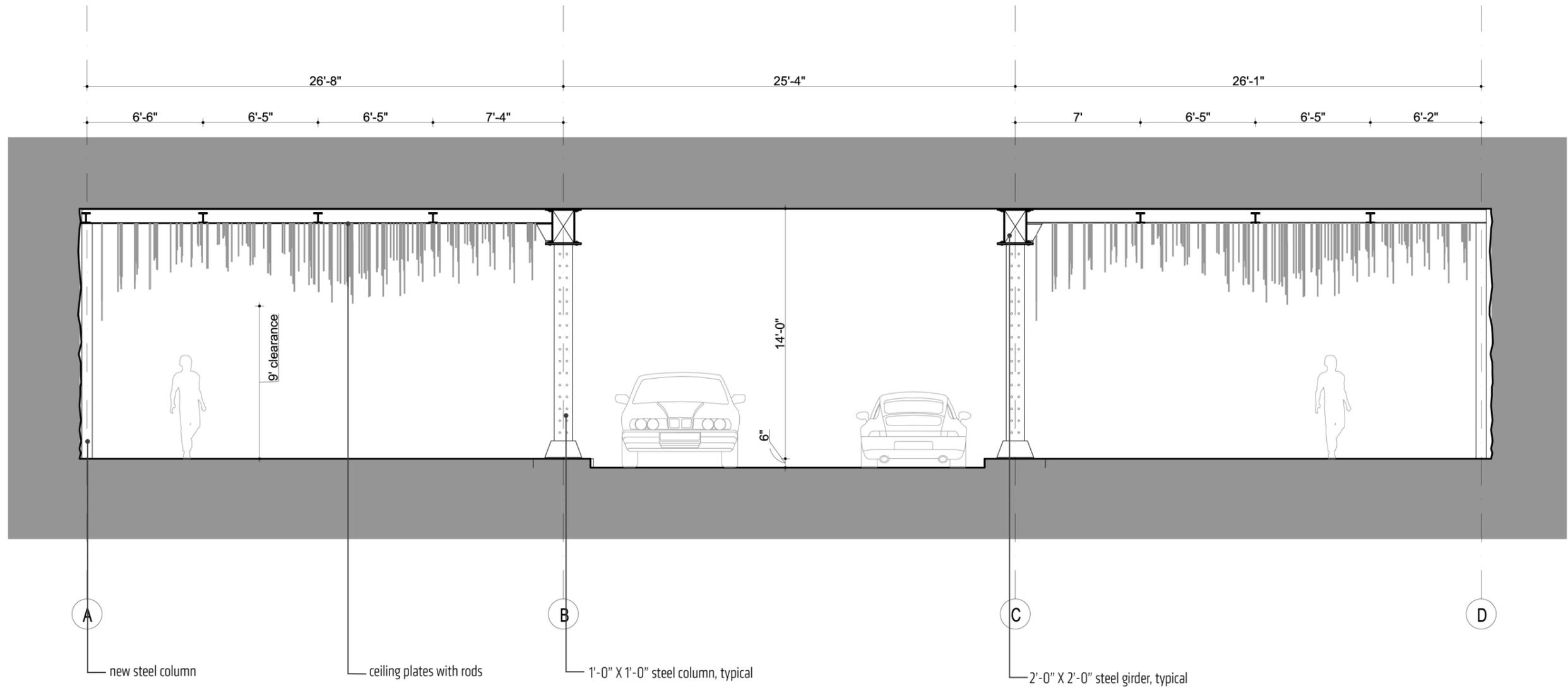
03. Vault Profiles + Light Population

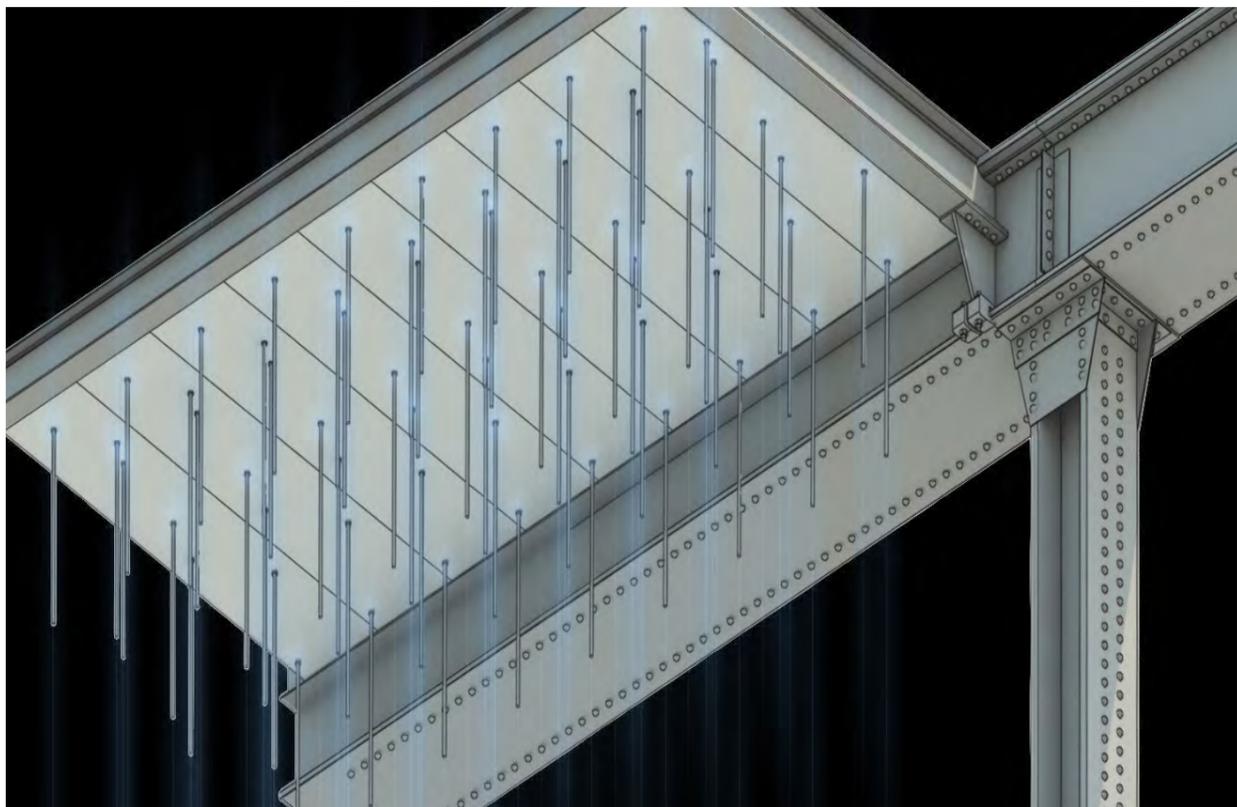
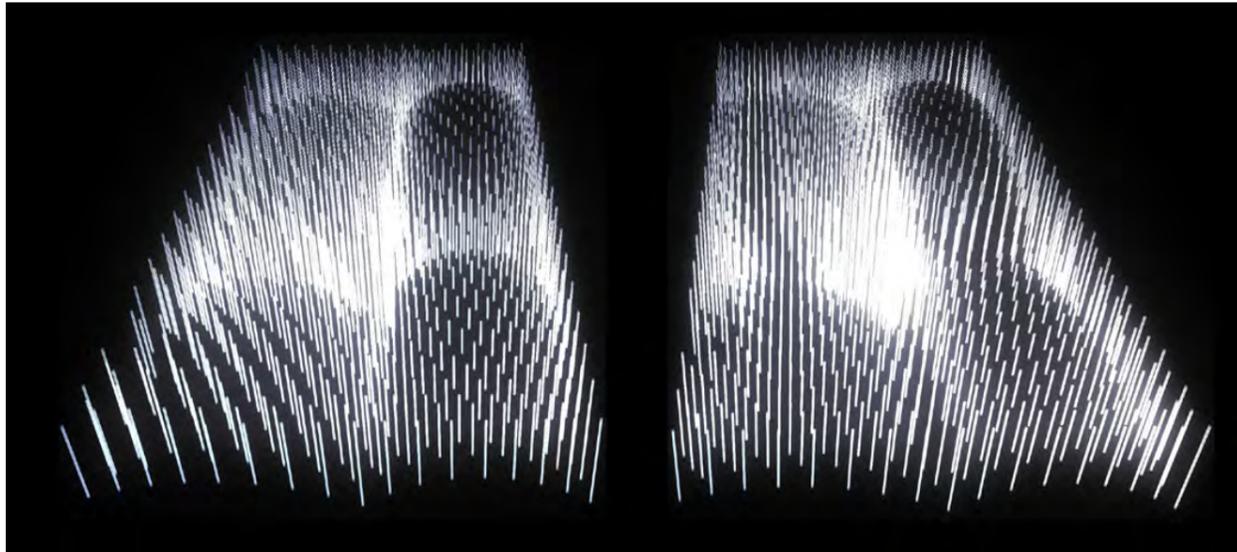
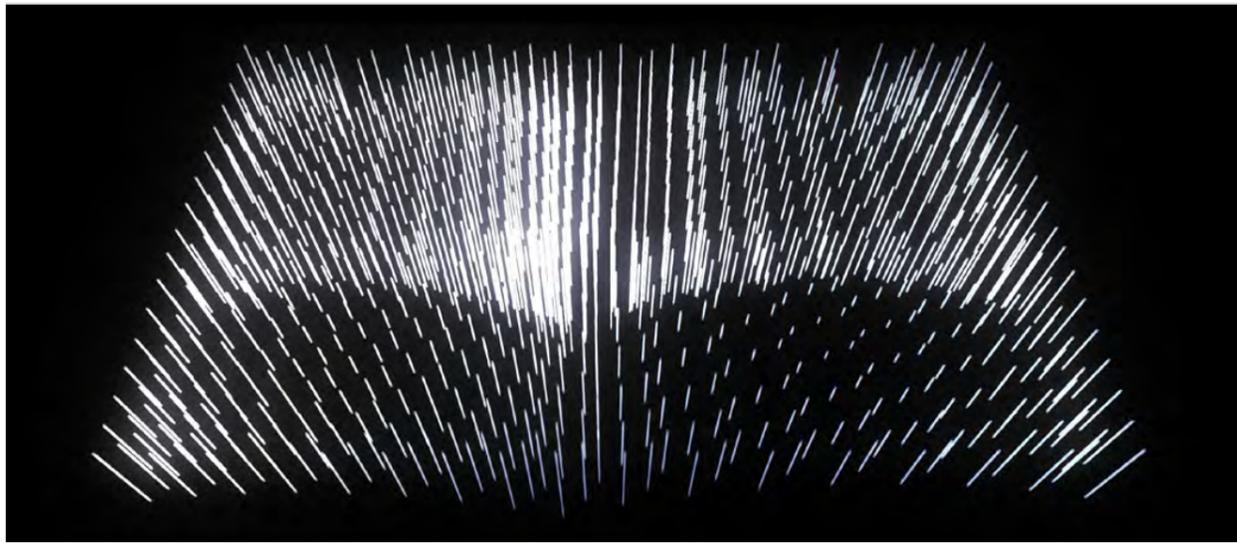


04. Rain Vaults

# Rain

## Transverse section





# Rain

## Vault dynamics

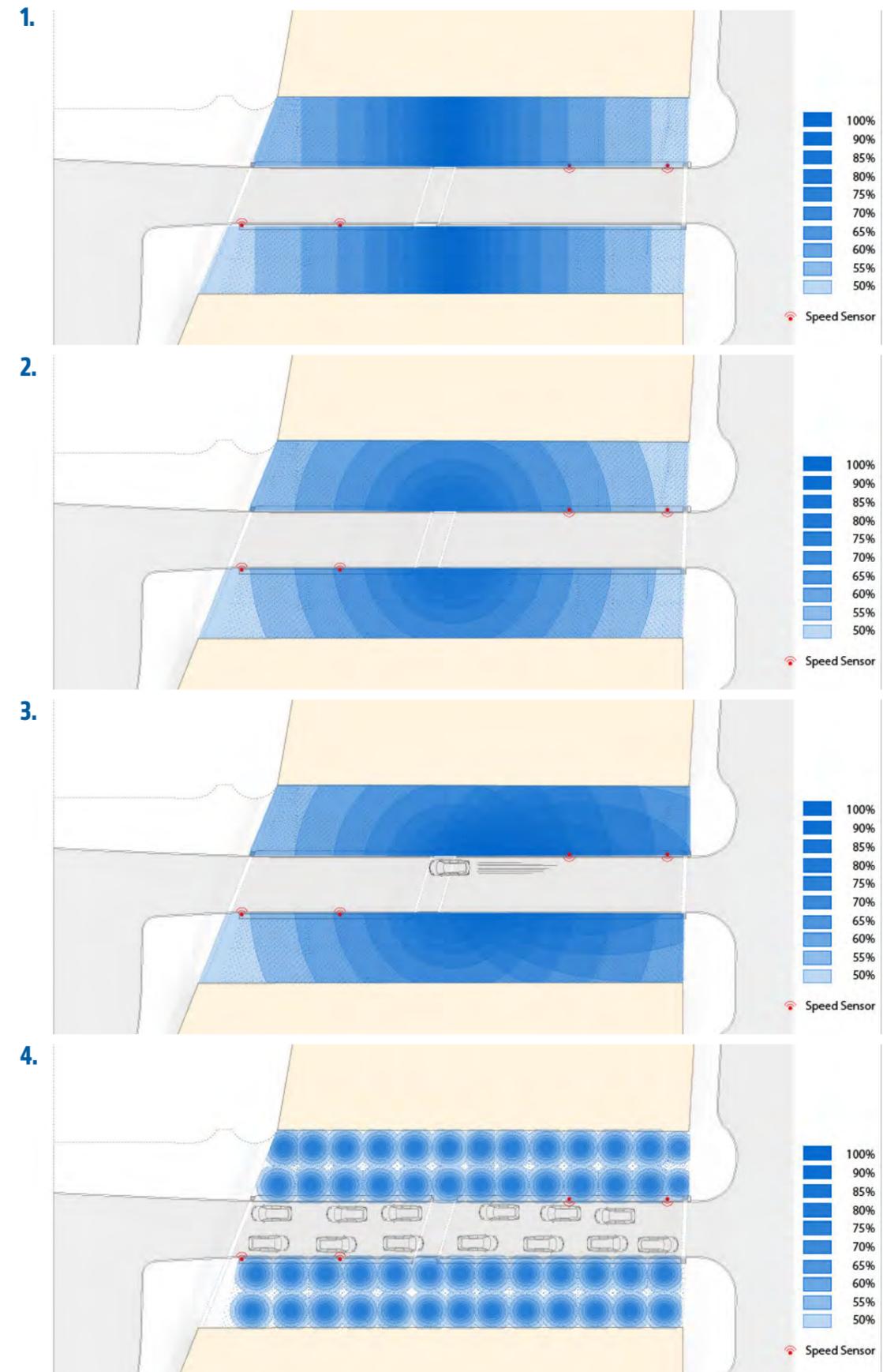
Programmable LED's first turn a dark tunnel into a glowing field, and secondarily create the effect of 'rain'. The interior of the tunnel radiates with tiny curtains that shift as you move through them like a set of waterfalls that stop above you. The light varies over this field so that you see a still effect of waves.

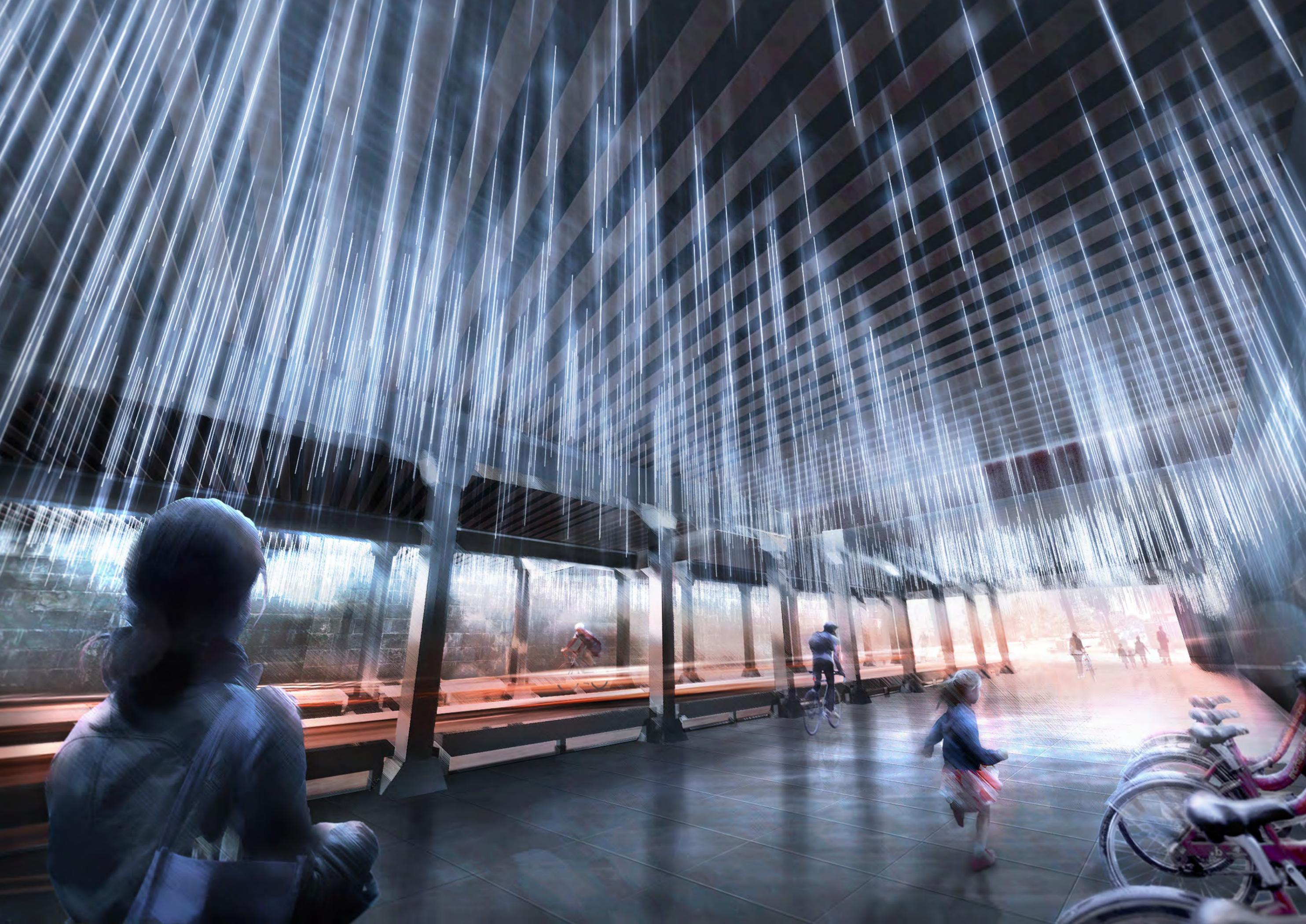
The 'rain' consists out of 4000 matte polycarbonate rods hanging from the tunnel ceiling. At the top of each rod, a LED-armature is fixed, shining blue light and is always turned on to 50% of its power. Light cascades, or is seen to move within the tunnel by varying the strength of individual rods in pre-determined, programmed patterns, up to 100%.

Automobiles, bicyclists and pedestrians that pass through the tunnel seemingly create slipstreams of light as an ever evolving atmospheric series of phenomenological effects. Where most cars in tunnels only distress pedestrians through light and sound, here they contribute beauty through variable patterning.

The dynamics in the light intensity in tunnel L is caused by 2 parameters -- its own rhythm and through the movement of automobiles. We have defined 4 patterns that run through the light, depending on the time in the day or on the car traffic.

1. At night, when most of us sleep, the tunnel has a very slow pulse. When there is no one in the tunnel, every 20 seconds a linear wave rolls from the middle of the tunnel towards both ends.
2. At daybreak, this movement turns into a slightly faster – every 10 seconds - radial pulse. The tunnel gets awake and becomes a bit more self-centered.
3. Then, when a car rides through the tunnel, it produces a wave, like the slip stream of a boat. This wave interferes with the rhythm of the pulse. When more cars enter the tunnel, the multiple waves create a twinkling effect. The speed of the cars is measured at both starts of the tunnel by 2 presence sensors.
4. At some point, probably during rush hours the roads in the tunnel will be filled with cars, most of the time standing still. At this point the light will withdraw itself to the vaults of rods. Every vault produces its own pulse, simultaneously. This pattern emphasizes the cramped space of the tunnel.





# TIMELINE + NEXT STEPS



## SPRING 2015

- Advance concept design per feedback
- Follow-up community meeting (late Spring)

## SUMMER 2015

- Construct “Rain” prototype
- Finalize drawings based on feedback and prototype testing

## FALL 2015

- Construct “Rain,” transforming the M Street underpass

## ONGOING

- Continue to meet with District partners, transportation partners, and community stakeholders
- Updates provided at [www.nomaparks.org](http://www.nomaparks.org)