

Country / City	United States, Cambridge, MA
University / School	Harvard Graduate School of Design
Academic year	Spring 2018
Title of the project	Turnpike Metabolism: Reconstituting National Infrastructure Through Landscape
Authors	Ernest Haines





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TECHNICAL DOSSIER

Title of the project	Turnpike Metabolism: Reconstituting National Infrastructure Through Landscape
Authors	Ernest Haines
Title of the course	ADV9342 - Independent Thesis in Satisfaction of MLA I
Academic year	Spring 2018
Teaching Staff	Robert G. Pietrusko, Thesis Advisor - Charles Waldheim, Thesis Coordinator
Department/Section/Prog	gram of belonging
·	Master of Landscape Architecture I
University/School	Harvard Graduate School of Design

Written statement, short description of the project in English, no more than 250 words

When one thinks of national infrastructure, the interstate highway system immediately comes to mind. Nearly fifty thousand miles in length, planned and constructed for over half a century, it is the largest contiguous landscape in the United States of America. However, in its current state, the highway disproportionately produces the landscape rather than vice versa. This thesis proposes a set of systems and methods that allow the landscape to actively push back upon and define the way infrastructures are developed in the United States by making landscape formation, composition, and metabolism primary drivers.

As the issue of "crumbling infrastructure" continues to become more relevant in the face of global instability, there is a priority to rehabilitate our nation's infrastructure. A proposed consortium leverages the responsibilities and interests of existing government agencies by locating their operations in research stations across the country. These stations collect data, experiment on the ground, and develop standards and guidelines to be used nationally. Research Station #25, in New Jersey's Meadowlands, is the primary locus of this thesis. In this site, Turnpike Metabolism explores the ways an active feedback loop between sensing, design, construction, use, degradation and replacement redefine infrastructural metabolism in the United States.

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National

More specifically, the Dwight D. Sterhover National System of Interstate and Defense Tilghways, is a system of Interstate highways that render a nation. Mostly constructed during Esenhower's term in office, it could possibly be the most common experience shared amongst American Citizens. Standardized sections create a uniform experience of con-











New Jersey State Roads State/Local

> portation issues and policies in the State of New Jersey. They marituin and operate the State Highways and public road system, plan and develop transportation policy and assist with rail, freight and intermodal transportation issues.

Infrastructural production in the United States is overseen by a number of federal and state agencies These agencies operate as consortium where state and national departments, turnpike authorities, and others, render the United States, Geographic Regions and Local conditions through infrastructure.

In each instance, concerns of landscape architecture find relevance. Within the highway, aesthetics and materials are standardized, cut and fill operations are determined, and hydrological systems are accounted for.

Historically, landscape architects have been involved in the production of the highway. As the united states pivots towards reconstructing and renovating national infrastructure, this project proposes a world where landscape actively pushes upon and defines the way infrastructures are developed in the United States.





#120 Yakima River Highway





0001 Mid West Forested, Agricultura 05/24/2023













To achieve this, the responsibilities of state and federal agencies are tweaked to direct their interests towards the infrastructural landscape. Sites along the highway become sites for experimentation.

The consortium of agencies maintain research stations across the country, with the primary goal of collecting and analyzing environmental data, experimenting on types of landform and producing design guidelines and standard sections for use in the production of national infrastructure

Data created in this way is metabolized by the Consortium. Each research station has a set of spatial and ecological characteristics which can be utilized in infrastructural projects with similar spatial and ecological conditions.

For example, on the north west coast, the Yakima River Highway Monitoring Center performs experiments relating to the connection between the mountainous region, its ecology and the grade of the highway. Information is shared nationally, where topographic change is extreme.

Or, in the mid-atlantic, the Meadowlands Infrastructural Research Station develops new standards for infrastructural maintenance and development in an estuarian condition Information is shared across the country, where wetlands are a major concern in ecological functions.







ABOVE/BELOW_BROADWAY

Country / City	United
University / School	Harvard Gradua
Academic year	
Title of the project	Abov
Authors	

d States / Cambridge uate School of Design Fall 2018 ve / Below **Broadway** Daniel Berdichevsky





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TECHNICAL DOSSIER

Title of the project	Above / Below Broadway
Authors	Daniel Berdichevsky
Title of the course	Broadway Shuffle II: Performance / Space
Academic year	Fall 2018
Teaching Staff	Gary Hilderbrand
Department/Section	n/Program of belonging Landscape Architecture
-	
University/School	Harvard Graduate School of Design

Written statement, short description of the project in English, no more than 250 words

Broadway (and on it's extents most of Manhattan) exists on a constructed, thick ground. Its urbanity depends on underground infrastructure which have been built as a continuous process during the late 19th and 20th century. By acknowledging and understanding Broadway's street level as a second floor, one can re-imagine the space of the city.

This project aims to extensively connect Broadway's ground level to its underground as an interconnected urban and vegetal surface on which both enter into a true performative dialogue.

At the same time it acknowledges the current state of its infrastructure, opposes its continuous physical and cultural neglect, and proposes treating this space as a "public treasure" in the same way in which many other important elements of New York are today. The project converts Broadway from the 62nd to the 67th streets into a pedestrian boulevard with an urban "Forest" above and an extended subway station with continuous ramps below. The subway then becomes opened or "daylighted", and a new type of urban space for NY is created.

A field condition inspired by Broadway's Diagonal within the Manhattan grid is developed to generate the paver system which displays this urban condition, plus allows for the linear set of trees, sidewalks, streets, urban furniture and connection to Lincoln Center

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ABOVE



Above view_Vignette As seen from Lincoln Center's central stairs. Both London Plane Trees and Pin Oaks were chosen given it's familiarity, beauty and resilience within the New York's park department list of allowed street trees.



1:500_**Above Plan** Looking at the overall project along Broadway

1:500_**Below Plan** Looking at the overall project below Broadway Underground systems_**Axonometric** Having coloured red what is new and white/gray what is existing on the subway+Lincoln center



Underground_Physical Model Showing the spaces below Broadway

Ramp to subway_Vingette Showing the moment where the train can be seen on movement from the ramp

BELOW



Country / City	USA / Cambridge
University / School	Harvard University Graduate School of Design
Academic year	2017 - 2018
Title of the project	The Woven Edge: An Activation & Excavation of Hidden Infrastructure in Ochanomizu, Tokyo
Authors	Elizabeth Savrann







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TECHNICAL DOSSIER

Title of the project	The Woven Edge: An Activation & Excavation of Hidden Infrastructure in Ochanomizu, Tokyo
Authors	Elizabeth Savrann
Title of the course	1403 Excavating Space & Nature in Tokyo
Academic year	2017 - 2018
Teaching Staff	Toru Mitani & Manabu Chiba
Department/Section	n/Program of belonging MLA I

University/School Harvard University Graduate School of Design

Written statement, short description of the project in English, no more than 250 words

The premise of the studio was to engage with unifying transportation and waterfront in Ochanomizu, Tokyo through the excavation of nature on the urbanized Kanda River. As it exists, there is so much overlapping infrastructure that the river is rendered invisible in a way – it is covered and obscured by the presence of heavy flood walls, highways and fast-moving trains. The goal was to identify and find space and nature in this complex urban setting by embracing and embodying flows to encourage stay.

The project widens the Kanda River by exposing an underground flood management channel. This excavation between the existing subterranean infrastructure and the Kanda creates room for the design of an active waterfront, dual rivers, and a functional edge condition. The river walls slow water speed and enable vegetation growth,

program and architectural form. The structure is connected to the Marunouchi Station and is an extension that allows visitors and commuters to experience the public river side. It acts as a respite, especially in comparison to

- shopping centers which normally adjoin metro-stations. Through the integration and exposure of the infrastructures on site, the character of the Kanda River in Ochanomizu is revealed and celebrated. In summary, the project 1) Excavated the hidden water management canal, 2) Re-purposed this space to house a new interior
- shallow river, and 3) Used the infrastructure as design tool and redesigned the Kanda River canal walls, breaking

them into braided filaments, distributing them interiorly, and effectively widening the river into a flood plain.

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Country / City	United States / Cambridge, MA
University / School	Harvard University / Graduate School of Design
Academic year	2016-2017
Title of the project	Rise: A Guide to Boundary Resistance
Authors Alexan	idra Mei





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TECHNICAL DOSSIER

Title of the project	Rise: A Guide to Boundary Resistance
Authors	Alexandra Mei
Title of the course	MLA Thesis
Academic year	2016-2017
Teaching Staff	Robert Pietrusko, Charles Waldheim, Bradley Cantrell
Department/Section/	Program of belonging
	Department of Landscape Architecture
University/School	Harvard University, Graduate School of Design

Written statement, short description of the project in English, no more than 250 words

The assumed objectivity of the land/water boundary forgets the memory and identity embedded in coastal landscapes. In response, continued local acts of boundary resistance and subversion can sustain such communal identity. For a steadily increasing amount of coastal communities, this boundary line on the map is not only moving constantly, it is formed by physical characteristics on the ground that the Army Corps of Engineers has determined to be a boundary between private land and state-owned water. In the case of the Biloxi Chitimacha Choctaw tribe on the Isle de Jean Charles, Louisiana, this Ordinary High Water Mark divides native and state properties. This Native American community, forced to leave for a land-locked parcel farther north, will eventually lose their island to the state as this mark rises with the sea in the next fifty years. However, if the water mark can be altered and blurred, the tribe will maintain ownership of their land and have a reason to return after they leave. Using the format of a guidebook, the project suggests acts of community resistance against this mark, and strategizes how island communities can maintain access to their waters and their culture. Through the persistent action of the community, the island is still their own. Their identity as Native Americans strengthens and continuously re-establishes as they shape their own land. Here, culture and landscape have a co-dependency that renders the land evermore present in our current conversation of political boundaries. Social formation is derived

through landscape practices and conversely, the land is formed by the memory and identities embedded in it.

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presence of litter and debris



leaf litter disturbed or washed away



destruction of terrestrial vegetation



wracking







Country / City	United States, Cambridge
University / School	Harvard University
Academic year	2017/2018
Title of the project	Thirteen Ways of Looking at an Island
Authors	Stacy Passmore

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TECHNICAL DOSSIER

Title of the project	Thirteen Ways of Looking at an Island
Authors	Stacy Passmore
Title of the course	The Anatomy of an Island
Academic year	2017/2018
Teaching Staff	Eelco Hooftman and Bridget Baines
Department/Section/Pr	rogram of belonging Department of Landscape Architecture

University/School Harvard University

Written statement, short description of the project in English, no more than 250 words

Ecologies and climates have always changed over time. Globalization, urbanization and human-driven climate change have accelerated these changes, continually restructuring global ecologies. We cannot return to the past, and altering the current trajectory of global warming and CO2 emissions is unlikely. In this context, this project looks at the changing vegetation of Mount Desert Island, to reflect on past, present and future vegetation as a way of understanding evolving climate conditions and the migration of plants and animals. Today, the migration of species (human, animal, vegetative) is accelerated by natural disasters and climate changes that challenge the fixed spatiality of national boundaries and demographics. This project proposes thirteen new islands within and adjacent to the island, that can serve as sites of research and comparison with present conditions, helping humans to be more open to change. These new 'wild gardens' will function as petridishes, moments of experimentation and proposition, accelerating future botanical conditions, some of which may include plants that are today considered undesirable but realistically are expected to expand their ranges north. The project aims to help people recognize that 1) all species move in response to climate changes, 2) that we are all part of a planetary climate 3) that we as humans choose how we respond to the changes.

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