24 May 2013

Council for International Teaching and Research
Letter of intent for Princeton USP proposal

To the Council:

On behalf of Ruben Gallo of PLAS and myself I am pleased to submit this proposal for a grant through the University of São Paulo / Princeton University Strategic Partnership for Teaching and Research Collaboration. This proposal requests support for a joint working group between Princeton University and the University of Sao Paulo as institutional anchors for a research project focusing on one of our shared interests: Megacities and Urban Infrastructure.

Traditional ways of thinking about the environment are very limited in relation to the scale of contemporary global crises, which include rapid urbanization and depletion of natural resources. As a discipline and practice, city planning has become increasingly contingent in its aims and aspirations since the heyday of modern urbanism. In São Paulo, a recent project proposes a far-reaching intervention in South America’s largest metropolis: a 170km Waterway Ring that seeks to radically re-organize the city’s growth. This research network includes scholars from various disciplines at Princeton and USP to reflect about this project’s precedents, contexts, and potentials.

This initiative seeks to invite faculty from various disciplines at Princeton and the University of São Paulo (USP) to reflect about a future research network focused on the precedents, context, and potentials of a recent project that proposes a far-reaching intervention in São Paulo: a 170km waterway ring that seeks to radically re-organize the growth of South America’s largest metropolis.

This seed grant would be allocated to enable a three day trip of three FAUUSP faculty members to Princeton. By using this seed grant to allow Princeton-USP faculty members to convene and explore prospects for collaborations, we can begin moving toward one of the broader goals of a future research network: to identify sustainable solutions that are sensitive to issues like water resource management, energy efficiency, technology innovation, human and environmental health, as well as equity and fairness, poverty and job creation, and more intangible notions of belonging – of cities as homes.

Thank you for your consideration of this proposal.

Mario Gandelsonas
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São Paulo, the Fluvial Metropolis: Infrastructure, Urban Futures, and the City as Home

croquis by Alexandre Delijaicov, 2013

Introduction

This initiative seeks to invite faculty from various disciplines at Princeton and the University of São Paulo (USP) to reflect about a future research network focused on the precedents, context, and potentials of a recent project that proposes a far-reaching intervention in São Paulo: a 170km waterway ring that seeks to radically re-organize the growth of South America's largest metropolis.

The São Paulo Metropolitan Waterway Ring Project is a network of rivers, reservoirs and an artificial canal. This initiative started more than 20 years ago as a master's research project, followed by a PhD thesis by Alexandre Delijaicov.

Recently, the São Paulo Metropolitan Waterway Ring Project has caught the attention of São Paulo State and Municipal spheres (2009 and 2012 respectively). It has been widely reported on most major newspapers and television, selected for architectural exhibitions, lectures and has received several awards. The project has clearly overcome the boundaries of the academic environment, showing at the same time its potential, relevance, and importance in expanding the role of the university in the Brazilian context, specifically the role of research at the architecture school, by bringing new demands and possible configurations to the scenario.
From Princeton’s perspective,
Taking this as the case study of a long-term research network acknowledges the increasing impact of so-called BRIC (Brazil, Russia, India and China) countries and megalopolises of the Global South in our environmental challenges, as well as in the devising of new urban solutions.

From USP’s perspective,
This is an opportunity to discuss the São Paulo Waterway Ring Project across both disciplinary and national boundaries.

Work Plan and Rationale

This cluster serves as an important component of different initiatives at both institutions, currently at different stages:

1. It builds off of current collaborations between School of Architecture of the University of São Paulo (FAU-USP) and Princeton’s School of Architecture, connected to a Brazil Studio led by Mario Gandelsonas at Princeton, in parallel with a Studio led by Alexandre Delijaicov, Cristina Leme and Angelo Bucci at FAU-USP that explores some remarkable precedents in the United States like the Erie, Delaware and Raritan Canals. Both are design-based research studios focusing on the São Paulo Waterway Ring Project and will begin to generate data for a future interdisciplinary research network. The Princeton studio, professor and students, will travel to São Paulo annually starting in this 2013 Fall semester. The USP Studio will travel annually to Princeton starting in 2014.

This three-year project is funded, from Princeton side, by the CITR (Council for International Teaching and Research). The USP Studio is managing to raise funds to sponsor the students’ trip to Princeton in 2014.

2. It will provide expertise and contacts for a joint-course on the environmental humanities currently being designed by Mario Gandelsonas and Bruno Carvalho. Proposed to PEI (Princeton Environmental Institute), this course would not be taught until 2014-15 (at the earliest), and would incorporate lectures by USP faculty involved with the Fluvial Metropolis initiatives. It will also provide expertise and training for the design based research at FAU-USP to develop the Water Ring studio and related research activities.

3. It will help to enhance the intellectual life of PLAS, by strengthening the program’s ties to architecture, urbanism and the environmental sciences. At same time, it enhances the international relationship of FAU-USP by having a ‘design proposal’ guiding it.

4. It will contribute to the internationalization of Princeton’s environmental studies and urban studies programs, by setting up a blueprint for sustained flows between the two institutions, where USP scholars are invited to share their expertise in the United States.
5. The different fields of inquiry of the Princeton faculty can help to add historical, theoretical, phenomenological and cultural dimensions to the scientific, technological, and policy aspects of São Paulo’s Waterway Ring project.

6. Precedents: a future research network would study comparable interventions involving the transformation of urban infrastructure and its effects on urban space and form. One likely line of research, for example, would be based on the comparative analysis of the São Paulo project with the 19th and early 20th century projects for canals in New York (Erie) and New Jersey (Raritan). These precedents and some others in the US such as the TVA (Tennessee Valley Authority) provide necessary background to support the current proposal for São Paulo.

7. The exchange with Princeton enhances FAUUSP’s possibilities of succeeding on an ambitious and long term project: a 3D database of the metropolitan area of the São Paulo Metropolitan Waterway Ring as a meaningful starting point. This project requires GIS technology, training, and Brazilian consultants to take part in the process.

Allocation of Funds and Objectives

This seed grant would be allocated to enable a three day trip of three FAUUSP faculty members to Princeton.

By using this seed grant to allow Princeton-USP faculty members to convene and explore prospects for collaborations, we can begin moving toward one of the broader goals of a future research network: to identify sustainable solutions that are sensitive to issues like water resource management, energy efficiency, technology innovation, human and environmental health, as well as equity and fairness, poverty and job creation, and more intangible notions of belonging – of cities as homes.

The cluster, therefore, seeks to find ways of bridging the environmental sciences, the social sciences, architecture, engineering, the arts and the humanities in innovative ways.

FAUUSP Faculty Bios

1. Alexandre Delijaicov

Architect by the São Paulo Fine Arts School in 1985
Architect of the São Paulo Municipal government since 1992

Design Studio professor since 1992
PhD Professor at FAUUSP since 2000
PhD by FAUUSP in 2005
Master Degree by FAUUSP in 1998
2. Maria Cristina da Silva Leme

Architect by University of São Paulo, 1973;
Master Degree, 1983 and PhD, 1990, by University of São Paulo
Full Professor of Urban Planning School of Architecture and Urbanism University of São Paulo.
Vice Dean School of Architecture Urbanism University of São Paulo 2010-2014
Visiting research associate Japan Center for Area Studies Metropolitan Museum of Ethnology, Osaka, Japan.
Visiting research associate Center for Brazilian Studies, University of Oxford.
Visiting scholar Department of History NYU New York University

3. Angelo Bucci

Architect by University of São Paulo, 1987
Master Degree, 1998 and PhD, 2005, by University of São Paulo
Honorary Fellow of the American Institute of Architects (HF AIA), 2011

SPBR arquitetos
www.spbr.arq.br
Founder and principal in charge since 2003

PhD Professor at the University of São Paulo FAU USP, since 2001
Eero Saarinen Visiting Professor at Yale – New Haven, CT, US, 2013
Jury - Holcim International Sustainable Construction Award, 2011
Visiting Professor at Di Tella University – Buenos Aires, Argentina, 2010
Visiting Professor at UT Austin – Austin, TX, US, 2010
Visiting Professor at IUAV summer workshop – Venice, Italy, 2008 and 2009
Visiting Professor at MIT – Cambridge MA, US, 2008
Visiting Professor at UC Berkeley – Berkeley CA, US, 2006
Visiting Professor at Tooruato Di Tella University – Buenos Aires, Argentina, 2006
Visiting Professor at University of Cuenca - Cuenca, Ecuador 2005 and 2007
Visiting Professor at Andres Bello University - Santiago, Chile, 2006

Princeton Faculty Bios

1. Mario Gandelsonas joined the Princeton faculty in 1991, and is an architect and theorist whose specializations include urbanism and semiotics. He is the director of CAUI (Center for Architecture, Urbanism and Infrastructure) and the Principal researcher of the project "Twenty First Century Infrastructure" funded by Princeton University's Global Collaborative Research Networks initiative. He is associated faculty at PLAS and PEI. His professional work, which includes residential, institutional, and urban design projects,
received numerous design awards. In 2003 his firm won an international competition for the Urban Design of the Xu Jia Hui district in Shanghai, which was completed in 2004. In 2005 his firm developed a Master Plan for the South Amboy Greenbelt. In 2006, Mr. Gandelsonas was elevated by the AIA to The College of Fellows, an honor awarded to members who have made significant contributions to the profession. He was honored for advancing the science and art of planning and building by advancing the standards of architectural education, training and practice. In 2007 his firm developed a Transit-Oriented Development study for Main Street in Woodbridge, NJ, and a new Vision Plan for the city of Des Moines, IA. In 2010, his firm, Agrest & Gandelsonas Architects, completed construction of the Pappajohn Sculpture Park located in downtown Des Moines IA as a showcase for the "art of our time" that is free and accessible to the entire community. Most recently Gandelsonas has organized for CAUI workshops on mobility infrastructure, at Princeton, on energy infrastructure in Shanghai, on water infrastructure in Paris and Los Angeles and on digital infrastructure at Princeton. Gandelsonas has been published extensively and is a frequent contributor to architectural journals. His most recent book, In Search of the Public was published in 2013 by Island Press. Shanghai Reflections: Architecture, Urbanism, and the Search for an Alternative Modernity, 2002 and X-Urbanism, Architecture and the American City, 1999 were published by Princeton Architectural Press. Other publications include The Urban Text (Cambridge: The MIT Press, 1991) and Agrest and Gandelsonas, Architects (New York: Princeton Architectural Press, 1994).

2. Bruno Carvalho, an Assistant Professor in the Department of Spanish and Portuguese Languages and Cultures at Princeton, holds the George H. and Mildred F. Whitfield University Preceptorship in the Humanities (2012-2015). His research focuses on intersections between urban development and culture in modern Brazil. He has published on topics related to literature, cinema, architecture, city planning and cartography. In 2012, he coordinated the research project for a new Museum of Rio de Janeiro’s history and culture. His book, Porous City: A Cultural History of Rio de Janeiro (from the 1810s onward), will be released in 2013 (Liverpool University Press, US Dist. The University Press of Chicago). A version in Brazilian Portuguese is currently under preparation. He also co-organized a critical edition in Portuguese of the earliest versions of the United States constitutions, which circulated in 18th century Brazil and played a role in independence movements (O Livro do Tiradentes, Companhia das Letras, forthcoming). At Princeton, he teaches courses on urban studies as well as Latin American film, literature and culture. He is currently working on a book tentatively titled Partial Enlightenments: New Cartographies of Knowledge (1755-1791), and looks forward to a research project called “The Future Revisited,” which seeks to explore how different unrealized plans have helped to shape the imaginary of cities. He received his Ph.D. from Harvard University.

3. Gyan Prakash is the Dayton-Stockton Professor of History at Princeton, and specializes in the history of modern India. His general field of research and teaching interests concerns urban modernity, the colonial genealogies of modernity, and problems of postcolonial thought and politics. Until the dissolution of the Subaltern Studies in 2008, he was a member of its editorial collective, actively involved in the publication and other intellectual activities of this group of scholars. From 2003 to 2008, he served as the director of Shelby Cullom Davis Center for Historical Studies. Under him, the Davis Center conducted a two-year program on "Cities: Space, Society, and History" during 2003-05, and another two-year cycle on "Utopia/Dystopia: Historical Conditions of Possibility." He completed his directorship of the Davis Center Davis Center with a one-year program on

**ATTACHMENT 1**

**A studio on the Metropolitan Waterway Ring in São Paulo**

A shared studio with Princeton, Mario Gandelsonas, Bruno Carvalho and Gyan Prakash and FAUUSP Alexandre Delijaicov, Maria Cristina Leme and Angelo Bucci

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**An introduction from FAUUSP approach**

What are we going to looking at, or focusing, in Sao Paulo?

To those subjects which our eyes were not trained to see, those issues which were historically neglected; those which were disregard and refused by the hegemony; those which were made invisible by the [social] prejudice. It will be a gaze on issues such as dredging sediment, sludge, garbage, rubbish and, because it joins all this, it will be a gaze on the rivers of Sao Paulo aiming to overcome a historical blindness and chronic disasters.
The metropolitan waterway ring in Sao Paulo, as proposed by Alexandre Delijaicov over than twenty years ago, condenses several of those neglected approaches. It joins our most primordial inheritance, the rivers, and our lasting infrastructural legacy, the avenues; at once, nature and construction. The scale of both metropolis and geography suggests us to hold the topic as environment, which moves away the idea of a design object. Instead, it brings the notion of image. As environment it has no contour lines but dynamics. It has densities which are stressed in the metropolitan area and softened toward outskirt to be merged with the densities of other cities and regions. In a way that, as environment, the border tend to fade and blur and the whole seems clearly connected.

It is a topic to be taken in order to overcome historical limits and chronic refusals, to enlarge our field of possibilities or the infrastructure for our imagination process.

ATTACHMENT 2

Princeton / USP Pilot Project Proposal

THE BRAZIL STUDIO_ PRINCETON UNIVERSITY SCHOOL OF ARCHITECTURE_ CENTER FOR ARCHITECTURE, URBANISM, AND INFRASTRUCTURE (CAUI)

June 20, 2012

Introduction: CAUI Research and Programs

The Center for Architecture, Urbanism, and Infrastructure (CAUI) at the Princeton University School of Architecture was founded in 2007 to study the monumental transformation of urban space currently taking place throughout the world. It carries out its mission by sponsoring independent directed research and collective projects, hosting colloquia and design workshops, mounting public exhibitions. Although housed within the School of Architecture, CAUI's framework is interdisciplinary: urban research that is conducted in numerous departments—anthropology, archaeology, architecture, art, civil engineering, economics, history, literature, politics, religion, sociology, and the environment—is now collected and shared under the auspices of the center. As a result, a critical, cohesive platform has emerged for thinking about cities and metropolitan regions, urban and suburban landscapes, in all of their complexity—as physical spaces; as social, political, and economic nexuses; and as historical artifacts.

CAUI supports research and academic programs in Princeton’s School of Architecture, reflecting a commitment to issues facing contemporary cities. The China Studio, an international exchange program with Tongji University for masters in architecture students that started in 1995 has offered a means to study and explore cities and urbanism with a comparative, international perspective.

Brazil Studio
We propose to build on the success of the China Studio and expand our International programs by piloting a research and teaching partnership with the faculty of Architecture at the University of São Paulo (USP) in Brazil. Through close collaboration with PLAS (Program in Latin American Studies) and the Spanish and Portuguese Department as well as USP, the Brazil studio has already established a diverse network of connections with individuals and institutions in Brazil.

While in Brazil the students will not only experience the city directly (gathering maps and photographs necessary for their design work), they will also meet with local architects, planning officials and community groups, as well as working closely with their counterparts in USP. Travel to Brazil will offer Princeton students exposure to the urgent issues associated with modernization, urbanization and globalization facing Brazil. Students will experience first-hand the role of Brazil in the development of 20th century art and architecture.

Megacities, urban infrastructure, and São Paulo

The 20th century was a century of rapid urbanization across the globe. At the beginning of the century, approximately 10% of the world’s population lived in cities; today, at the beginning of the 21st century, more than half of the world’s citizens live in urbanized areas. In 1950, only New York and London had more than 8 million inhabitants; today there are 22 “megacities,” many of them located in the developing BRIC countries an acronym that designates – Brazil, Russia, India and China – as representing a newly advanced stage of economic development. Over 40% of the world’s population lives in BRIC countries, and BRIC countries occupy more than one quarter of the world’s land area. Since the launch of the China Studio in 1995, Princeton’s School of Architecture has focused on the growing importance of megacities in reshaping the architecture and urbanism of the 21st century. The emergence of megacities and the development of a new global, urban culture complicates the architectural, aesthetic, economic, political, and social responsibilities of practitioners and students alike.

Of the 22 “megacities,” five of which are in BRIC countries, São Paulo is one of the most dynamic in terms of its culture of architecture, infrastructure, and landscape. Throughout the 20th century, São Paulo served as a laboratory for new urban and architectural typologies. Local building practices combined with rapid urbanization and a tropical climate made for an ideal setting to test, develop, and refine new forms of public and private space. Increases in urban density forced architects and planners to reconsider how buildings integrate public space, transportation infrastructure, and dwelling units.

Studio Project: The Metropolitan Waterway Ring Project [Hidroanel Metropolitano], a twenty first century water infrastructure project for the São Paulo megacity, www.metropolefluvial.fau.usp.br

The theme of the Brazil studio will be the Metropolitan Waterway Ring Project, a 170 km (105 miles) network of rivers, reservoirs and an artificial canal. The State Government of São Paulo initiated in 2009 the Study for Technical, Economical and Environmental Pre-viability for the Metropolitan Waterway of São Paulo through the State Department of Logistics and Transportation. Since 2011 the project has been discussed at the Faculty of Architecture and Urbanism of the University of São Paulo, with the creation of a Fluvial
Metropolis Research Group (GMF), involving students, professors and technicians under the coordination of Professors Alexandre Delijaicov and Milton Braga, and by the municipal architect André Takiya (São Paulo City). The proposed Princeton studio will work in direct collaboration with the GMF.

The Waterway Ring is a 30-year project representing a new concept of integrating water infrastructure, mobility, and energy to produce a new urban infrastructure. The proposed studio project will operate at the scale of the city and the neighborhood. At the scale of the city, we will investigate how the Waterway Ring system can provide transportation of people and goods, water treatment, energy generation, and irrigation for urban farming. At the same time the project will link 19 cities through the creation of a greenway, connecting parks, urban farms, markets, and community gardens all the way down to the scale of neighborhoods. Water, both for industrial and domestic use, is a major concern in megacities across the globe. Building on CAUI’s body of research on water and urban form, the studio project focuses on how water and transportation infrastructures may be used to direct the growth of the city.

The studio will be organized in two stages, preceding and following the trip. During the first two weeks, the students will study building practices in Brazil throughout the 20th century, from modern architecture to the development of favelas. In the last three weeks of this first stage the students will produce a Master Plan with a special focus on a given section of the Waterway Ring. The studio will travel to Brazil during the fall break and will visit the area of study. The Princeton and USP students will then present their Master Plans for a mid-term review, after which they will work together in a one-day charrette to produce joint projects based on their direct experience of the site. In the last six weeks, following their return to Princeton, the students will develop the final architectural water-infrastructural project.

Implementation Timeline

**Year 2013**

---Spring 2013

Princeton doctoral student (established in Princeton and traveling frequently to Brazil) lays groundwork for the studio.

Exploratory trip by Professor M. Gandelsonas to prepare in collaboration with the USP professors the materials required for the development of the studio and coordinate with Princeton. Site visit with Professors Angelo Bucci, Maria Cristina Leme and Alexandre Delijaicov.

---Fall 2013

Launch joint studio and visit São Paulo. Visit project site.

Princeton and USP students present their projects for a review by USP professors and local architects.

One-day “charrette” and projects presentation. Seminar on “mobility infrastructure”

**Year 2014**

---Fall 2014
Princeton and USP students present their projects for a review by USP professors and local architects.

One-day “charrette” and projects presentation. Seminar on “energy infrastructure”

Visit São Paulo and project site.

Year 2015

Princeton and USP students present their projects for a review by USP professors and local architects.

One-day “charrette” and projects presentation. Seminar on “Urban Infrastructure and the city as home”.

Visit São Paulo and project site.

Opening exhibition of student work for the Brazil studio.

ATTACHMENT 3

PEI: Climate and Energy Challenge Mario Gandelsonas / Bruno Carvalho

Course Development Proposal: “Environmental Challenges, Urban Solutions”

Summary:

At the beginning of the 20th century, approximately 10% of the world’s population lived in cities; today, more than half of the world’s dwellers live in urbanized areas. Recent studies indicate that compact cities are significantly more energy-efficient than sprawling suburbs. As societies of the so-called Global South continue to urbanize at a rapid pace, it is more than ever urgent to examine ways in which cities can present viable models for sustainable development. The proposed interdisciplinary course aims to add historical, theoretical and cultural dimensions to scientific, technological, and policy aspects of current environmental challenges. In an effort to bridge the environmental sciences, architecture and the humanities, this interdisciplinary course would explore how scientists, writers, planners and designers have attempted to rethink traditional city/nature dichotomies. The term environment only acquired its current specialized ecological sense in the late 1950s. Today, as part of our search for solutions to climate and energy challenges in a rapidly urbanizing world, it is crucial to reassess and better understand the role of cities in the environment.

Detailed description:

The course will take shape as a multi-year initiative seeking to prepare undergraduate students to more effectively address the intersections between climate, energy, and urban environments. Readings will approach issues of sustainability from a variety of perspectives, engaging multiple interrelated dimensions of urbanization processes. Over the course of a given semester, students should be exposed to the expertise of an array of visiting specialists working in various disciplines and areas of the world, including architects, city planners, engineers, scientists, activists, entrepreneurs, politicians, cultural critics and artists. Our goal will be to identify sustainable solutions that are sensitive to
issues like water resource management, energy efficiency, technology innovation, human and environmental health, as well as equity and fairness, poverty and job creation, and more intangible notions of belonging – of cities as homes.

Recent disasters – earthquakes, floods, hurricanes, etc. – have served as painful reminders that human-made environments and natural forces are in constant interaction. These relationships often occur in less visible or self-evident ways: the encroachment of agriculture into rain forests in South America is tied to demands from urban markets; the water and waste management of metropolitan areas depends on intricate infrastructures that often remain opaque to urban dwellers, while they impact regional ecosystems; car dependent suburbanites living in tree-lined streets of single family houses often produce a heavier carbon footprint than residents of dense and polluted inner cities, relying on mass transportation systems.

Since the North American urban model of high rise downtowns and sprawling low density suburbs, centralized energy grids, and depletion of water resources has become universally adopted, the problems inherent in it have spread all over the world. Therefore, the course will seek to stimulate academic research and civic engagement that focuses on local, regional, and global scales. A site visit to São Paulo (Brazil) during the semester recess would provide experiential immersion experiences for undergraduate students. This would be an opportunity to experience first-hand some of the issues discussed in class.

Besides focusing on in-depth case studies, assignments and precept discussions would aim to provide a forum where undergraduates can develop research interests that might culminate in junior or senior independent work and publishable materials. To that end, invited guests, Princeton faculty and graduate students will be asked to participate in workshops where students can begin to test out their ideas. Since this is conceived as a multi-year sequence, undergraduates who have taken the course can be asked to share new developments in their independent projects.

Given the interdisciplinary nature of the questions involved, the objective is to find mutual interests and possibilities for productive exchanges between students and scholars working in a variety of fields within the University’s various divisions. While allowing faculty and students to move into new areas of research and/or to produce new collaborations across disciplines, we also intend to collaborate with PEI, the Program in Urban Studies, PLAS, SEAS, CAAS, and the Center for Human Values. The course will also seek to build on and add to the body of research produced by CAUI and the Innovations for Successful Societies program (WWS). Our approach to the interconnections between climate, energy and urban environments will be enriched by dialogue with existing University programs, while it introduces undergraduates to the multiple opportunities available at Princeton.

Potential case studies and/or site visits, from local to regional to global.

**New Jersey, The Garden State:**
The city presents environmental challenges that can be more effectively understood through an approach that combines tools from the sciences with architecture and the humanities. New Jersey offers the possibility of exploring the issues of sustainability raised by different conditions, the suburban and exurban developments where the majority of people live. The state has developed rapidly over the last half century with little compre-
hensive planning. With nearly nine million residents it is denser than any other state in the nation, yet it boasts only one city (Newark) with more than a quarter million residents. In the next 50 years, the state is projected to reach “total build out”— the point at which no more open land is available for development. At once dense and decentralized, the benign image of a verdant landscape that the “Garden State” projects does exist, but only in immediate adjacency to the freeways, turnpikes and heavy infrastructure that tie the state together.

How has this model been shaped by historical, cultural, social and economic forces? How did the literary convention of pastorals (from Virgil to neoclassical poets) influence a political philosophy (Jeffersonian “agrarian republic”) that in turn connects to our predicament? By better understanding the past, we can begin to imagine alternative futures. Reliance on personal automobiles is growing ever more tenuous. Increasing energy costs and a burgeoning desire for constant digital connectivity demand that we articulate a future for the state that is no longer directed by the demands of driving. Further development of rail transit will be essential to New Jersey’s future, but high-speed corridors must also be integrated into existing patterns of urban development.

Plans for the state built around mobility and transportation should not abandon existing models, but instead reclaim and reinvent them for new uses and activities. In the nineteenth century, the construction of the railroad produced one of the most important changes in the spatial and economic organization of the state: the generation of new urbanity. Every stop of the New Jersey Transit rail encouraged development. Yet, the demise of numerous routes and services in the mid-twentieth century has produced a no-man’s land that divides many towns and cities, fragmenting them and separating neighborhoods. Abandoned systems of infrastructure have produced a reserve of undeveloped land and an opportunity for future action.

The Hidroanel project in São Paulo, Brazil:
Case studies will acknowledge the increasing impact of so-called BRIC countries (Brazil, Russia, India, China) and megalopolises of the Global South in our environmental challenges, as well as in the devising of new urban solutions. The Metropolitan Waterway Ring Project is a 170 km (105 miles) network of rivers, reservoirs and an artificial canal. The State Government of São Paulo initiated in 2009 the Study for Technical, Economical and Environmental Pre-viability. The Waterway Ring is a 30-year project representing a new concept of integrating water infrastructure, mobility, and energy to produce a new type of urban infrastructure. The proposed project aims to operate at two different scales. At the scale of the city, it seeks to provide transportation of people and goods, water treatment, energy generation, and irrigation for urban farming. At the same time the project will link 19 cities through the creation of a greenway, connecting parks, urban farms, markets, and community gardens all the way down to the scale of neighborhoods.

As the State experiments with new infrastructural models, artists and city dwellers are already rethinking traditional relationships between cities and nature. In 2006, a theater troupe staged a play in an adapted barge that floated down São Paulo’s Tietê, an urban river flanked by highways. The production was a success. Attendants reported that experiencing the water – with foul smells, occasional trash and urban fauna (including birds, but also
rats), gave them an entirely new perspective of our place in nature, and the place of nature in urban environments. Water, be it for industrial, domestic, transportation or recreational use, is a major concern in megacities across the globe. A case study like São Paulo’s proposed Hidroanel, focused on how water and transportation infrastructures may be used to reorganize the growth of the city and integrate neighborhoods, can also lead to questions of belonging. A site visit to some of the places affected would provide an invaluable opportunity of experiential immersion for students approaching questions about climate, energy and urbanity from various angles.