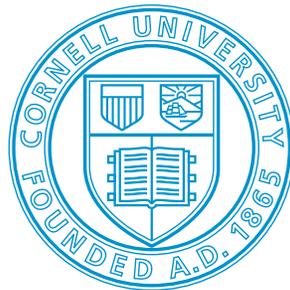


COLLEGE *of* ARCHITECTURE, ART & PLANNING  
DEPARTMENT OF ARCHITECTURE  
FALL 2011  
OPTION STUDIOS



*Cornell University*

# THE THIRD WAY

OF RUSSIA MIND CANNOT CONCEIVE  
HERS IS NO COMMON YARDSTICK.  
YOU MEASURE HER UNIQUELY:  
IN RUSSIA YOU BELIEVE

FEDOR TYUTCHEV, 1866

THIS STUDIO WILL TRAVEL TO  
MOSCOW TO RECONSIDER  
TYUTCHEV'S 1866 POEM TODAY FROM  
AN OUTSIDER'S PERSPECTIVE; AND TO  
ASPIRE FOR AN ARCHITECTURE THAT  
IS MINDFUL OF ITS PAST AND  
EXPRESSIVE OF ITS PRESENT TIME  
AND PLACE

ALEKSANDR MERGOLD, 2011

WITH  
JEAN-LOUIS COHEN, SVETLANA BOYM, MICHAEL IDOV ET AL  
TA  
KSENIA CHUMAKOVA

BRODSKY - MERGOLD / FALL 2011



CORNELL ARCHITECTURE - MARKHI - STREILKA

# I THACA - MOSCOW



*Shapeshift: Application of Electro-Active Polymer at an Architectural Scale | ETHZ and EMPA*

Arch 4101/4102 /5101 & 7912 **Smart Materials in Interactive and Reactive Architectures**

Fall 2011 | Monday, Wednesday, Friday | 12:20pm – 4:25pm

Class Location: TBA

Instructor: Martina Decker

Office Hours: by Appointment

Credits: 6

This studio will pursue innovation through recent developments in materials science, in particular, a genus of substance known as smart materials. Materials are considered smart materials if they can respond to an external stimulus due to changes in their environment. For example, Shape Memory Alloys are a polymorphic smart material that can change shape due to changes in temperature. This repeatable transformation makes them their own sensor, processor, and actuator. We can no longer think of materials as just being static, and as resources that must be cut, shaped, cast, or formed into devices; now materials themselves can be devices that react to their environment.

Throughout the semester, we will be focusing on smart materials and the performative systems that they can enable. We will look at scientific research papers, as well as a range of innovative projects. In a one week workshop we will also familiarize ourselves with a hands-on approach to research, wherein we will be working directly with a selection of smart materials to discover their capabilities and limitations. Informed by this detailed materials inquiry, students will create design propositions that exploit the reactive capabilities of a range of smart materials.

Two projects will be assigned during the semester that consider smart materials as a means to create responsive environments. We will consider an architecture of effects that the studied materials will enable. Both project assignments will be sited in New York City and each student will be required to develop a comprehensive program that is supported by the interactive nature of at least one smart material.

During two trips to New York City, we will not only familiarize ourselves with the site conditions of our design ventures, but we will also be exposed to different approaches of working with emergent smart materials. We will visit innovative practices interested in emergent technologies, such as Terreform ONE, and we will look at relevant precedents in the city.

At Materials ConneXion, a global materials consultancy, we will learn from those at the forefront of emergent materials. We will learn how they are being implemented in design, aided by an international team of multidisciplinary material scientists and specialists.

# ARTIFICIAL MATTERS

*"Often sculptures are built to look like something they are not, and paintings are crafted so they portray a materiality they are not made of". Jeff Koons*

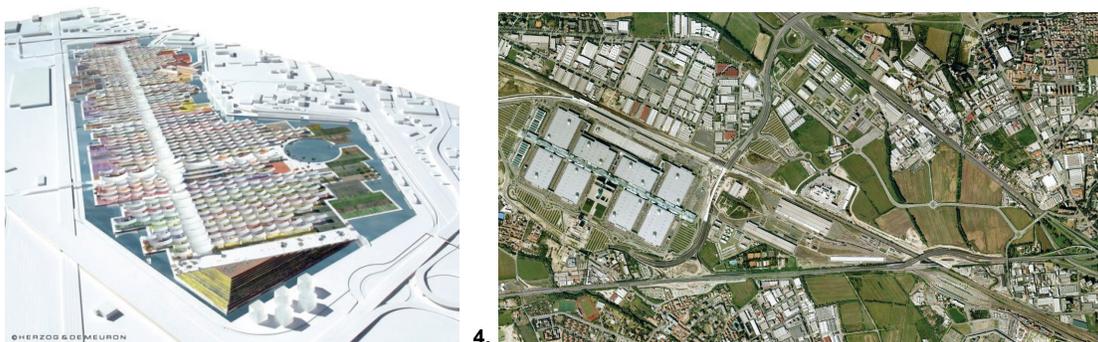
Traditionally architects have been taught that materials have a "true nature" and that their use should align with the honest application of that nature. However, lately the architecture world has witnessed a renaissance in material consciousness. This new awareness recognizes the value of a material's intrinsic characteristics but further explores the possibility that altering, exaggerating, or reconfiguring inherent properties provokes an entirely novel vocabulary of material sensations. The resulting artificial materials can be described as "synthetic" because they are the result of layering various qualities that are not necessarily innate to the physical properties of a specific matter but instead are the compounded product of combining multiple stratifications of texture, geometry, coloration and tooling.



1. Patricia Piccinini "Still Life with Stem Cells" (2002) 2. Example of ZBrush canvas

This boundary between real and artificial has blurred as digital processes became sophisticated in hiding their procedures. This studio will aim to extend the potential of architectural envelope and massing to produce hyper-realistic experiences through the invention of new breeds of artificial matter. Students will investigate how synthetic materials can induce novel sensuality, intellectual associations, and visual effects. The studio will utilize digital techniques such as 3d laser scanned forms and advanced software such as Maya and Zbrush to develop digital procedures which will not be clearly visible in the final project, but will leave the viewer wondering how such things could be designed. Each project will collapse reality and artifice, and propose that contemporary architectural materials are often a mutation from the "original" producing a world in which fact, fiction and fantasy co-exist.

This studio will borrow specific techniques from the art field and apply them to an architectural project. Students will select a portion of the master-plan by Herzog&DeMeuron for the **Milan 2015 EXPO** ("Feeding the Planet, Energy for Life") and design a **Pavilion** and its **landscape**. As part of the research for the project, the class will take a field trip to Los Angeles to visit natural and artificial landscapes.



3. Aerial view of Milan Expo 2015 Master Plan by Herzog&DeMeuron 4. Location of Milan Expo 2015 area adjacent to the new Fiera Milano



The Slussen Studio looks at the convergence of infrastructure and architecture as architecture/urban design seeks other disciplinary alignments beyond master planning and/or heroic form-making. Increasingly, there is a demand for integrated solutions responding to new, complex and dispersed urban landscapes. This calls for coalitions drawn **territorially** from not just architecture, engineering, planning or landscape, but hybridized practices able to fully respond to emerging conditions. By addressing the form and performance of infrastructure, **Slussen Slowdown** aims to do just this.

The focus of this investigation will be Slussen (trans. 'locks') in the heart of Stockholm, Sweden. Built in the 1930's, Slussen remains a prime-candidate for a re-examination of larger-scale Modernist planning. Weaving a mind-numbing range of transportation systems into a single network, the existing Slussen organization remains a nexus of urban activities in central Stockholm being the civic, not to mention infrastructural 'knot' linking the different islands of this metropolis. (Slussen has historically been the narrow point at which land is connected north-south and water linked east-west. The hourglass shape and geographical constraints of a growing Stockholm are primarily focused on this spot) Automobile, train, subway, bicycle, pedestrian and maritime traffic all coexist at present in a multi-layered stratification of systems. Yet due to its dated program as well as deteriorating structure, the Slussen site now solicits redefinition.

In 2007, Slussen became the site of an international design competition to rethink the role of the city and its various transportation networks (the last of several competitions dated back to 1991). Five finalists including Jean Nouvel and Norman Foster proposed a radical reconfiguring of Slussen with Foster ultimately obtaining the role of chief organizer. Yet continuing criticism and revisionary amendments have left this most recent phase of design speculation in doubt- an unfortunate yet opportunistic fact for a design reexamination.

**Slussen Slowdown** as a studio proposes an architectural reengagement with the complexities of the city of Stockholm as the technologies, politics, social life and economies of the city continue to change around a set of geographic conditions. While not ignoring previous efforts to reconfigure Slussen, the studio recognizes a growing awareness of the many fields including architecture, urban design, landscape, infrastructure, ecology and program in the design of a new hybridized field of speculation. The dynamic nature of the Territorial Planning process allows a 'new' Slussen to fuse elements of time, occupant trajectories and program into an efficient and integral system embracing such possible programs as office space, shops, housing units, a new station hall, railway platform and underpass, car tunnels, bicycle storage and large parking structure etc. Architecturally precise, programmatically open-ended, temporally as well as spatially focused, the **Slussen Slowdown** Studio invites students to operate strategically valuing organization as much as composition, the authored, finite, crafted and subjectively positional.

The **Slussen Slowdown** studio is organized in three stages: an introductory speculation in abstract 'analogue/tectonic' form of the notion of threshold; a one week site survey by the studio to Stockholm/Slussen (early October) and a final territorial development phase consolidating prior findings in either individual or group design proposals.

Swedish architect and professor, **Erik Stenberg** (Head, Department of Architecture; KTH- Royal Institute of Technology; Stockholm) will be a guest-critic over the course of the semester and host the studio during its stay in Stockholm.

## **PARALLEL UTOPIAS: STRATEGIES OF NORMALCY AND EXCEPTION**



Propaganda Village of North Korea, Gijong-dong and propaganda village of South Korea Daesung-dong

The Studio will investigate and analyze the dystopic/utopic status of the divided Korea to propose divergent urban and architectural scenarios based upon the inevitable parallelism. The objective is to analyze the language of utopian dreams purported through the propaganda machine deployed by the two Koreas to critically assess its trajectory of coexistence. The parallel existence of the two halves provides an intriguing juxtaposition of escalated reification of dreams that are uncannily similar and interdependent in which architecture becomes its key organizer. Understanding the myth of architecture's political immediacy and its critical career in sustaining the mirrored relationship is essential in analyzing the current status of the two parallel worlds and its implications in its parallel trajectories.

The Studio will focus on the question of Lines. Despite wishful desires for reunification, a parallel dystopic and utopic continuation exists where one cannot assume a one-sided victory. Both Koreas have developed as an essential foundation of each other for ideological, economic, and political purposes and like conjoined twins, one can no longer exist without the other. Under this assumption, the project intends to question the typology of the Line as a boundary condition that transforms and mutates as a precondition of separation, division and parallelism. Although the border is a 0.5mm thick line in a 1:50,000 map that roughly follows the 38 longitude, at 1:1 scale, its physical ramifications transform drastically. The Line varies in its spatial typology from being non-existent in the maritime territories to being 1cm thick across the negotiation table to 18cm thick inside the Joint Security Area to being 2km thick where residents live within extraterritorial land. The Line is the boundary of negotiation and exception where the mirrored yet interdependent trajectories of the two Koreas perpetuate towards a continuation of the inevitable present. The presumed transparency of architecture is questioned to explore its potential as an active agency of political, social, economic ideologies.

The Studio will propose strategies for a Peace Park within the DMZ. We will travel to South Korea to visit the DMZ and other sites in South Korea for further understanding of the geopolitical conflict. Kyong Park and Saleem Ali are Advisory Critics to the Studio. The Studio is partially funded by the Rotch Foundation.