STUDIO 2029
Speculating Speed and the High Speed Rail

It's a done deal.

With the support of California voters and the federal Recovery Act, construction on the high-speed rail began in 2012, and groundbreaking is expected this year.

Recent advancements in the budget and business plan have secured ongoing state funding and move the project forward with certainty.

Given this civic act of visionary will and its planned completion date of 2029, how might architecture engage with this impending linear infrastructure?

Can Architecture be treated as leading or alongside infrastructure rather than an after thought?

How can Architecture galvanize projects around big ideas and capture new value for public space and infrastructure?

The term BIG here may be interpreted in many ways and scales; is it an accumulation of small installations—or something of a tremendous infrastructural dimension and scope?

Could issues of Energy, Ecology, Economics and Urbanization together with Movement and Mobility be our framework for thinking about Architecture and infrastructure at this site?

What would you propose for Architecture to partner with here?

STUDIO AGENDA

In this studio we will identify issues, imagine strategies, think up new programs, and create designs to be enacted on this 800-mile long zone proposed to connect California's major regions along a single line of rail.

The agenda of this studio is to produce possible real proposals, both formal and programmatic, for the inevitable arrival of the High Speed Rail (HSR). The HSR and a selection of stations along the densely desolate space of the rail line will be our site. The class will analyze this complex and extra-large-scale physical environment through many trajectories: political, cultural, economic, historical, technological, geological and topographical. Given the challenge of large-scale infrastructural construction with regard to political, social, economic and ecological issues; we will look to develop proposals beyond the mere accommodation of vehicular traffic.

CONTEXT / HISTORY

Transportation has always shaped cities—historically water-based, and in the 20th century automobile and airport based. What will shape and extend our urban and extra-urban areas in the 21st Century?

With globalism's acceleration and the corresponding dwindling supply of resources, namely peak oil, what will the dominant mode of transportation be to sustain this process? Today's "instant age" is heavily dependent on the rapid movement of people (travel), goods (shipping), and information. In the U.S., trade and manufacturing abroad along with consumer demand brought about by globalism have significantly contributed to negative development in the form of urban sprawl, and the ad-hoc re-centering of urban areas as more open space is absorbed by the shipping industrial complex, transportation systems, and housing.

Trains

High Speed Train travel has been actively pursued and implemented in Europe and Asia, and continues to be the major mode of travel. Originally initiated by California Senate Continuing Resolution 6 and Proposition 1A, California is engaged in the planning and public approval stages to install an inland high-speed rail (220 mph) from San Francisco to LA (500 miles in 2 hours and 40 minutes) and eventually beyond to Sacramento and San Diego. Construction is planned to be complete in 2029, and will occur incrementally to ensure that each section provides independent utility prior to finishing the statewide system.

High-speed rail travel is limited by the constraints inherent to its implementation: the land. Issues such as rights-of-way—acquisition by imminent domain of privately owned land and great distances to be connected (800 miles and 24 stations)—challenge the installation of this infrastructure.

With a project of this scale, what are the unique opportunities for alternative power generation, cultural production and urbanization that may catalyze? Can these systems synthesize sustainable development and revitalize our existing urban centers? California's population continues to grow at accelerating rates each year. Most of this new growth must go into existing urban areas, but consider how these areas might change if growth were also to occur adjacent to high-speed rail.

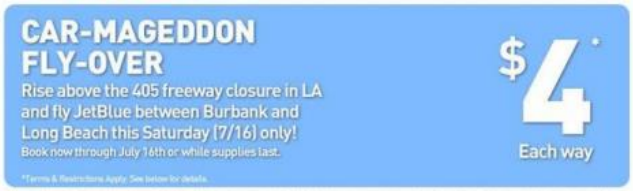
Planes and Automobiles

In order to sustain California's increasing population, transportation networks—whether in the form of rail, roads, or airports—must grow. Without high-speed rail, to build similar capacity with the existing system would require 2,326 new lane miles of highways, 115 new airport gates, and four new airport runways.

Challenging the publically subsidized mega-project approach are other programs that envision new methods for short distance travel utilizing the country's current airport and highway infrastructure. Super light, safe, fuel-efficient jet taxis with a 1200 mile range may threaten the current organizational "hub and spoke" arrangement of the airline industry, utilizing the some 19,700 small airports in the US instead of the 503 currently offering commercial service. Autonomous Vehicles similar to "Stanley," as developed by Google and Stanford University or those being implemented in Foster's Masdar City, may soon offer driverless service to and from destinations utilizing existing roadways. Programmable vehicles could offer network-like transportation systems allowing flexibility and individualized on-demand public transit.

Both automobile and airplane based transit suggest a flexible, individualistic approach to the same need. Both are also dependent on fossil fuels and are significantly less efficient per passenger than rail travel, especially in the long-term. Could government incentives to inspire innovation in these fields overtake and render obsolete the behemoth rail-based infrastructural project?

Are these systems more reflective of the US's dominant ideology and easier to implement on a cultural, economic level than the systems modeled on European or Asian prototypes? In utilizing existing infrastructure, rather than conceiving anew, are we selling out our future to reuse what is fundamentally problematic? Are there clever methods of reuse that anticipate architecture and figure into the evolution of those systems? Is freight more than pedestrian travel likely to shape the urbanisms of the future in the globalized "instant age"? At the core, what unique new hybrids and social arrangements are suggested by these potential future systems?



"Car-mageddon" – July, 2011, Jet Blue's promotion to ease traffic within Los Angeles during freeway construction.

STUDIO FORMAT

Through comprehensive research, case studies, and design investigations, we will work to explore how the various systems of vehicular infrastructure, ecology, and architecture can be integrated in innovative ways.

Some key questions and issues are:

Infrastructural: What modes of transportation can the HSR carry and serve? How can this linear infrastructure physically carry, connect, and combine various types of industry (tourism, cargo, commerce, entertainment, culture) in innovative ways?

Site: How do the various regions along the 800-mile stretch differ, and what do these differences offer and require of your designs. Consider demographics, land use, terrain, industry, etc. To realize the full benefits of the high-speed rail, good planning at stations must drive other types of development nearby.

Energy + Sustainability: Energy and sustainability issues are essential components and leading concerns for the Studio and the studio projects. In order to take seriously this imperative, we will work closely with the environmental engineers and structural engineers at critical points in the semester to test your ideas.

2029: The first phase of construction is planned for completion by 2029. Designs should project what life will be like in this near future scenario. Speculate changes in lifestyles and social behaviors, and envision how your designs may impact California's growing population.

STUDIO STRUCTURE

Design work will progress concurrently with the research. Students will work individually or in teams to develop programs and site strategies at specific station locations in order to formulate their proposed architectural project. Each project will be developed as a thesis, and thus is defended and argued for at critical points during the semester.

Students will begin by critically mapping the length of the HSR through demographic, infrastructural, and commuting data, and will make assumptions projecting how things may change by 2029 and beyond. **The studio is required to enroll in Juan Saldarriaga's GIS Visual Studies course in order to effectively benefit from this cartographic investigation.**

The studio will make a physical site model and installation format within which projects will be conceptualized, developed, and presented throughout the semester.

By midterm, each student or team will select a specific station location to test their proposed strategy. This selected area of study will be developed as a detailed architectural proposal, adapting the standards of a proto-typical European HSR station.

For the Final Review, students will present their site strategy, the production of a scenario, and the detailed development of their test site at an architectural scale using drawings, models, mock-ups, and large-scale sections.

Travel: The studio will travel to Sacramento and San Francisco California October 2-6.

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