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BROOKLYN-TOKYO / DENSITY-INTENSITY



Version January 19th, 2015 - to be revised periodically.

Synopsis: Using the city of Tokyo and some of its buildings as an analogous context, students will develop alternatives to current notions of density in the design of a new building in downtown Brooklyn. Through this architectural scale, the studio will address the urban issue of increasing need for density with an apparently contradictory desire for more shared open space. How can we fit more and more in our buildings and cities without increasing floor area or succumbing to Bigness, and while allowing for more and more public space? The studio will frame this conundrum as an architectural problem, focusing on the capacity of architectural elements and systems to propose radical or lyrical forms of density. Employing optimization strategies of miniaturization, time-sharing, overlaps, and other methods derived from students' analyses of Tokyo, students will design visionary buildings in Brooklyn that are inscribed within new social, economic and cultural intensities. This studio is the first in a series of three studios about density.*

“...only ‘Bigness’ instigates the regime of complexity that mobilizes the full intelligence of architecture and its related fields.”, Rem Koolhaas, ‘Bigness’, *SMLXL*, 1994. This studio asks: is this true?

Preamble: Organic Metabolism

In the 1960s Kenzo Tange, Kinoru Kikutake, Kisho Kurokawa and their fellow Metabolists envisioned an ever changing Tokyo comprised of vertical cores and reconfigurable capsules that would liberate the ground. The paradoxical rigidity we perceive in these architectural elements today result from the challenges of continuous renewal at such a large scale, and from the impossibility of maintaining an over-arching top-down agenda for long, however inherently changeable: another paradox of a movement dedicated to constant flux. What could not however be achieved by a standardized construction industry was in some ways achieved organically by a city where the average lifespan of a house is 26 years. Every year, almost one third of Tokyo's buildings is transformed, demolished or rebuilt. Despite the predictions and provocations of the

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Metabolists, Tokyo is now a dispersed city of houses, described by Atelier Bow-Wow's Yoshiharu Tsukamoto as a "landscape of democracy", centered around voids rather than cores: a "Void-Metabolism".

Brooklyn: Almost as Dense as Tokyo

With an urban density of 4,400/km² for the Tokyo-Yokohama urban agglomeration (the most populous in the world at over 37M inhabitants), as compared with the very low 1,800/km² for New York City's metropolitan area, Tokyo is ostensibly more than twice as dense. However, if one compares the population density of the original Tokyo City - the 23 Special Wards that together make up the core and the most populous part of Tokyo - at 14,390/km² it is almost the same as that of Brooklyn at 14,182/km². Neither Tokyo nor New York City however figure in the list of the world's top 50 most dense cities, the first place currently held by Dhaka at over 45,000/km². *But how much do these figures really tell us about cities, let alone about architecture?*

Alternate Models of Density

The concept of density in the context of cities emerged in the second half of the 19th Century to measure the relation between entities such as people or dwellings, and area. Its initial descriptive uses in the 19th century referred to overcrowding in cities that were too dense, and then again in the second half of the 20th century to sprawl in cities that were too dispersed. Urban planners use it in both descriptive and prescriptive ways, seeking to first diagnose problems and then enact physical and social changes through legislation that selectively modifies density. But as an ultimately abstract and too elastic a concept, the notion of density poorly reflects spatial properties. In a basic and often quoted example, the same population density or FAR (floor area ratio) can be achieved with different building types, whether point tower, slab, or tightly packed houses.

The limitation of density as a metric goes beyond the mathematical. Tokyo's impression of density - characterized by a porous warren of streets with urban and domestic spaces in close proximity- is for example more experiential than statistical. While due in part to a variety of measurable causes such as smaller average dwelling sizes (55m² in Tokyo vs. 90m² in New York), less public or green spaces per inhabitant (2m²/person in Tokyo vs. 19.2m²/person in New York), and smaller/narrower roads (13% of Tokyo vs. 23% of New York), the perceived density of Tokyo also emerges from a variety of less tangible criteria that we will investigate firsthand.

Maintaining the Vitality of Cities in the Face of Global Urbanization

As the planet becomes increasingly urbanized, dense and compact cities are generally considered the most environmentally and socially sustainable form of habitation, at least as opposed to low density or suburban sprawl. And in support of a connection between (a relative level of) density and vitality, the London based Monocle magazine has this year ranked Tokyo as the 2nd most livable city in the world, based on a variety of social, economic and cultural indicators. In the face of a variety of social and economic pressures resulting from overpopulation and climate change, the concentration of humans in cities results in a more efficient use of resources, fosters innovation, and results in a downward pressure on overpopulation. Bypassing the constraints of unwieldy national frameworks, cities are increasingly solving national scale problems at municipal levels, and working with each other to trade and exchange ideas. Mayors, increasingly more than

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Presidents, are our new political avant-garde, addressing broad issues ranging from health and education to social justice and inequality.

But for cities to remain viable and retain their vitality, in addition to concentration they require heterogeneity, mobility, affordability, security, and social and environmental resilience. With the world population projected to increase from its current 7 billion to up to 9 or even 11 billion by 2050, and with continuing global urbanization, the increasing densification of cities will likely begin to challenge these basic preconditions. For cities to remain vital and enjoyable places to live and work, city dwellers will require new forms of infrastructure, increased mobility, etc. but also innovative new uses of space - not simply more of it. *And this is where our urban preoccupation becomes an architectural problem.*

Design Problem at the Epicenter of Brooklyn

The Brooklyn-Tokyo / Density-Intensity studio begins with the premise that urban or even global challenges can be confronted at a smaller scale than merely with tools of policy, urban planning, and urban design. Using the city of Tokyo and some of its buildings as an analogous context, students will develop alternatives to current notions of density in the design of a new building in downtown Brooklyn. By analogous context, we mean that students will develop architectural strategies for the Brooklyn site through analyses of certain urban conditions and/or provocative buildings in Tokyo. Although the studio's design focus will not be on housing, we will look at this type as a source of possible reformulation, given its strong connection to notions of density, and the high level of innovation found in contemporary Japanese housing projects.

Our triangular site at 1 Boerum Place is currently occupied by the Brooklyn Law school in a former Fulton Savings Bank built in 1955, designed by the international style architecture firm of DeYoung, Moscovitz & Rosenberga. Despite its relative merit, students may either assume the building's replacement or expansion: the site can support a much greater density at FAR 12.0 (about 150,000sf), and a more significant building and uses given its prominent position as a sort of Gateway to downtown Brooklyn when arriving from the Brooklyn Bridge. Located at the junction between municipal buildings such as the Brooklyn Borough Hall and Supreme Court to the West, the commercial Fulton Street to the East, a variety of educational and cultural uses nearby, the transportation hub of Jay Metrotech one block away, and its inclusion at the heart of the Brooklyn Tech Triangle, the site could in fact be considered a potential epicenter of Brooklyn.

With the aim of a studio-wide encyclopedic approach, each student or group will select from this adjacent heterogeneous context a unique primary program, typology or use to intensify, and reposition in relation to public space. We therefore expect that while a focus on density will unite the studio's efforts, projects will vary in program, whether government building, courthouse, school, office, market, theater or museum, etc., combined with a redefined notion of open space(s) or Public park. Students may also elect to connect to the subway platform beneath the site along Fulton Street.

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Employing optimization strategies of miniaturization, transformation, time-sharing, overlaps, and other methods derived from students' analyses of Tokyo, students will design a vibrant building inscribed within new social, economic and cultural intensities. *Our overarching goal will be to contribute - at an architectural scale - to the vitality of the contemporary city in the face of overpopulation, global urbanization, and the alienation and potential abdication of responsibility embodied in Rem Koolhaas' manifesto on Bigness.*

***Epilogue: Bigness or Smallness? A Small Manifesto against the Tyranny of Space**

As Adrian Forty and others remind us, the term *space* was introduced into architectural discourse relatively recently at the end of the 19th century, assuming its current associations in the early 20th century through inspiration by architects of De Stijl and others from theories of relativity and actual, endless, outer space. Nowadays one could argue that the term *space* is predominantly used as a currency that first and foremost measures real estate value, and the main instrument by regulatory agencies of control over the urban environment. Pencil towers are the new *space* vaults or banks, storing *space* for future trade, and often uninhabited. Along with the progressive dis-association between interior and exterior, the notion of *space* as a container has largely relegated architectural invention to the *envelope* - another term that cements the notion of *space* as a sealed commodity.

Twenty years after Rem Koolhaas' provocation that "...only 'Bigness' instigates the regime of complexity that mobilizes the full intelligence of architecture and its related fields", this studio proposes another (smaller) provocation: can we paradoxically compress the intensities and complexities of Bigness again? And through this compression, can we regain the connection to the city that Koolhaas' Bigness severs through its absolute autonomy - and at the same time offer its "blueprint for perpetual intensity"? Koolhaas' theory of Bigness relies on the need for vast areas; however much they depend on "regimes of freedoms" and "the assembly of maximum difference", the individual uses and programs are unquestioned in their ravenous consumption of *space* - a central tenet that this studio will contest.

Studio Organization

Students will initially work in pairs for the first couple of weeks and can choose to remain in pairs or work individually, although work in pairs will be encouraged. Students will be expected to research, prepare presentations on selected readings, develop clear concepts and strong diagrams, build detailed physical models, and develop technically resolved designs for radical buildings. Eric Bunge will be in studio approximately on Mondays and many Thursdays; Rodrigo Valenzuela on flexible days, once to twice a week.

Kinne Trip

During our 1 week trip we will visit Tokyo and some day trips to be determined; we will also intersect with other studios traveling to Tokyo. Our focus will be to visit many outstanding works of architecture, urban areas, and some architectural offices to be determined.

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SCHEDULE (till midterm)

v. January 16, 2015, to be periodically revised.

Week 0:	Fri. Jan 23 rd	Meet at 2pm – Project 1.0 assigned (Room TBD) (EB/RV). Bring scans of your passports and your portfolios to class; also please bring images of one example of density (see Project 1.0).
Week 1:	Monday Jan 26 th Thursday Jan 29 th	Meeting at nA office at 2:00, then walk to site. Bring camera & sketchbook and portfolios. (EB/RV) Pinup Project 1.0 ; Project 2.0 assigned (Room TBD) (EB/RV)
Week 2:	Monday Feb 2 nd Thursday Feb 5 th	Desk crits (EB) Mini pin-up Project 2.0 (2 groups at a time, Room TBD) (EB/RV)
Week 3:	Monday Feb 9 th Thursday Feb 12 th	Desk crits (RV) Pinup Project 2.0 ; Project 3.0 assigned (Room TBD) (EB/RV)
Week 4:	Monday Feb 16 th Thursday Feb 19 th	Desk Crits (RV) Desk Crits (EB)
Week 5:	Monday Feb 23 rd Thursday Feb 26 th	Pinup Project 3.0 (Room TBD) (EB/RV) Desk Crits (EB/RV)
Week 6:	Mar. Wed 4 (TBD)	MIDTERM. Time tbd.
Week 7:	Mar. 9-13	TOKYO (students to arrive March 8).

Friday Jan 23rd:

- Studio Intro: objectives, schedule, Kinne trip logistics.
- Each student presents one example of density in architecture or from another context (eg the natural world, industry, etc), for general discussion about notions of density.