# Parallel Indexing
Infrastructure and Space

As governments around the world open the public coffers in an attempt to pull their economies back from collapse, **Holger Kehne and Jeff Turko** describe how they have extended the work of the Architectural Association Diploma Unit 12 to incorporate the pertinent subject of infrastructure and architecture, employing 'indexical systems'.

Nadia Kloster, HKAI T3, Diploma Unit 12, Architectural Association, London, 2008
Nadia Kloster's indexical drawing of the existing Hong Kong International Airport projects actual sound profiles in response to topography, wind and plane movements in order to develop a suitable strategy for expansion. The index informed the design of a new typology in the form of a floating terminal.
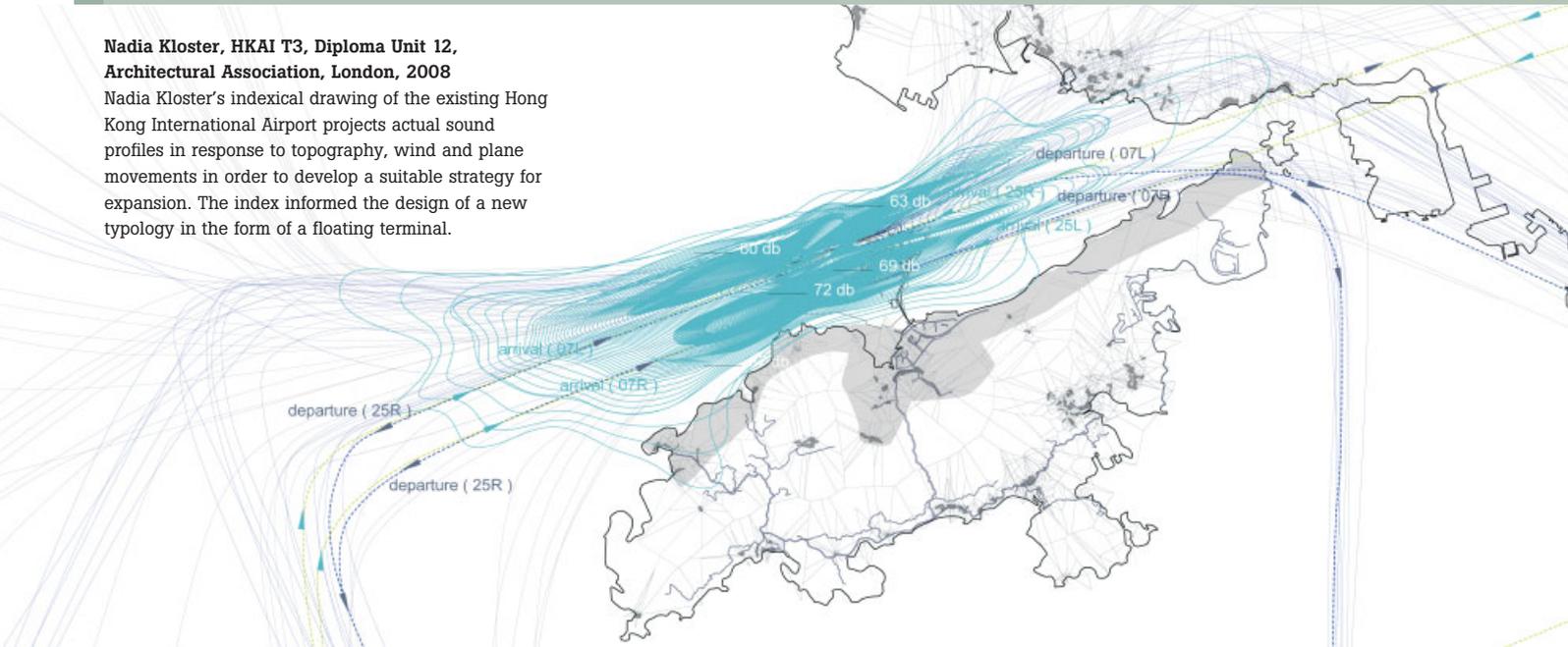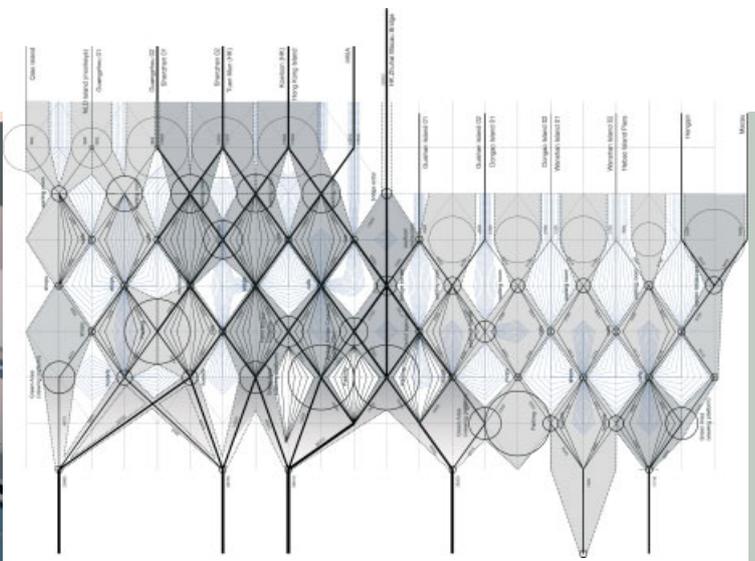

Julia Li, Xhuhai Ferry Terminal and Coastal Park, Diploma Unit 12, Architectural Association, London, 2008
Julia Li's indexical drawing of Xhuhai's waterfront in China renders the core relationships between the existing urban layout, with regard to walking distance and the bay's topography and tidal movement with a view towards projecting a new ferry terminal that adapts to both. The index and proposal led to integrated transport hubs and public spaces positioned strategically to provide vitality for the waterfront.
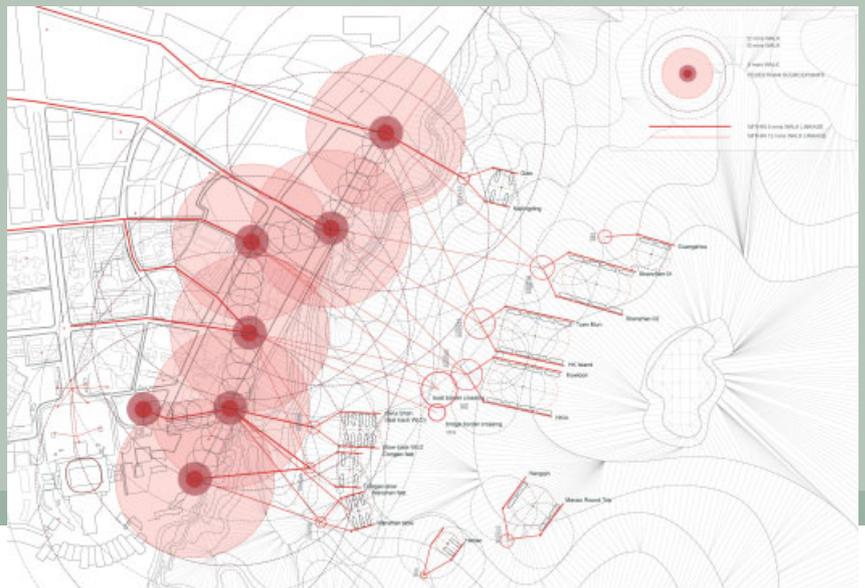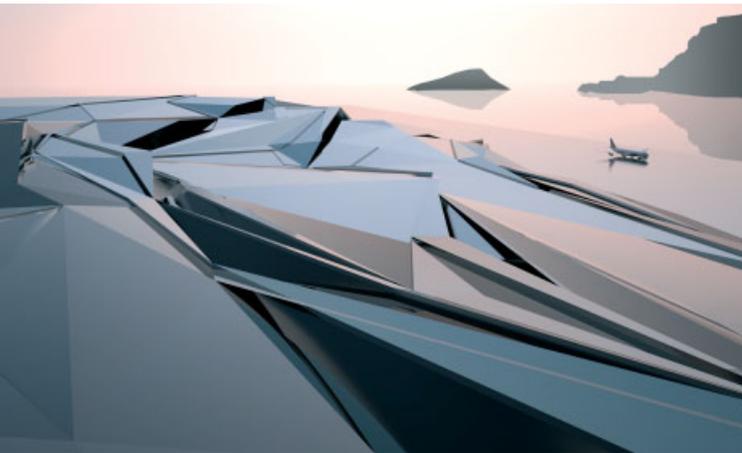
**Nadia Kloster, HKAI T3, Diploma Unit 12,
Architectural Association, London, 2008**
The rendering of Nadia Kloster's final new
terminal design highlights the accessible
roofspace from where the physical
surrounding waterscape can be appreciated.

**Julia Li, Xhuhai Ferry Terminal and Coastal Park,
Diploma Unit 12, Architectural Association, London, 2008**
Julia Li developed a diagram in the form of an abstract matrix able to negotiate
the intertwining of land and water in relation to a network of pedestrian paths.
Developed from the initial index, this enabled her design to synthesise
infrastructure, topography and experience in a single holistic system.

The last two decades of market-led, neoliberal structural
development with its resistance to public spending has
seriously endangered the future performance of
infrastructure, while also diminishing the quantity, quality
and role of public space. Architecture has been stripped
of its ambitions as a social entity. Even public buildings
are now procured, organised and run as private entities,
while having to absorb some of the needs of public
identity through an often exaggerated iconography.

Credit crunch-induced, socioeconomic policy revisions
offer the opportunity to question these developments and
reinvigorate the public role within the production of
space. Many billions of public spending is going to be
allocated to infrastructural projects. Ideally, this money
would go not just on the repair of existing bridges or be
allocated to building new transportation links, but also on
architecture and public space as part of the equation.

The Architectural Association (AA) Diploma Unit 12
proposes exploiting potential synergies through a
concurrent engagement of infrastructure and architecture,
and has set out to develop a series of concepts and tool-
sets to address these issues. It is now expanding on such
design methodologies through the engagement of
qualitative means in order to evaluate, reach out to and
communicate the vision and experience of such an
integrated urbanism.

Indexical and Sensitive Systems
Holger Kehne and Eva Castro kicked off Diploma Unit 12
in 2003–04 with a programme that focused on the slopes
of Venezuela's coastline, which had been devastated by

landslides the previous year. This was the start of a
continuous preoccupation with man-made landscape and
infrastructure as space, and subsequent years dealt with
extreme environmental and infrastructural conditions in
Mexico City (2004–05) and Dubai (2006–07), as well as
the impact of rapid development on transportation nodes
in the Pearl River Delta (2007–08).

In dealing with such issues, the unit continues to be
concerned with the development of an 'architectural
indexicality'. Examples for an index are a thermometer
indexing temperature or a weathervane that indexes the
direction of the wind.[1]

In Diploma Unit 12, students produce indexical
drawings and models through translating environmental,
structural, organisational and morphological conditions
into gradient fields of varying intensity. Their immediate
spatial value may literally form the basis for a subsequent
design proposal. In other cases they become
instrumental in fostering, strategising and evaluating the
design process.

At a second stage these fields become interpreted and
parametrically organised to form 'sensitive systems':
working methodologies that enable students to grow new
organisations from within existing systems. Their scale,
distribution, organisation and potential become integrated
through the formation of a proto-morphological matrix
that helps to guide the subsequent design process
towards cohesion and reverberance between existing and
new. At the same time the scope for interpretation,
evaluation and choice is unlimited, as is the potential for
radically new interpretations and consequences.

Tom Lea, Interstitial Weave, Diploma Unit 12, Architectural Association, London, 2009
Tom Lea's final proposal for the 2009 relational skin competition – a structure inserted into Paddington station – indexes the pedestrian movements in relation to the physical systems, and translates these into a radically new three-dimensionally weaving structure. Scale, occupation, light and spatial quality are all examined through a range of detailed renderings.
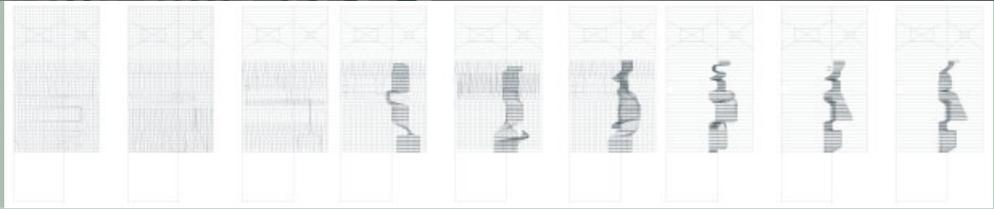
Post-Indexical and Assertive Figures

There is a new generic subject who, inundated by media, information, and images, has less motivation for other, more interpretive kinds of information. It is not that the subject cannot understand or closely read an architectural object; rather it is that the subject does not have the means to bridge the gap between the discipline of architecture as it was known in the past and in its present incarnations.

Peter Eisenman, 'The Post-Indexical: A Critical Option', 2008[2]

Diploma Unit 12's scope developed in the last two years aligned with Eisenman's observations to produce post-indexical conditions: projects that are based on the indexicality of environmental, social and spatial registers yet communicate their specificity without the need to refer them back to this. Existing tools were mended and additional ones sought in order to foster a shift from the adaptive and integrated towards open-ended assertive design strategies.

The first of these is the diagram, which though regularly employed previously now becomes central to the design process. The diagram as used by the unit should not be confused with an abstract version of the design proposal or some specific way of representing aspects of it; it is used for its projective potential as described by Deleuze: 'The diagrammatic or abstract machine does not function to represent, even something real, but rather constructs a real that is yet to come, a new type of reality.'[3]

The diagram thus has the potential to engage local forces and conditions directly and before the implementation of material and technology. [4]

The second new mode of engagement is with iconography itself. While the intention remains to expand and diffuse architecture's boundaries, including visual ones, it cannot be ignored that, in power and instrumentality, the image in many aspects exceeds the scope of the physical. It also provides an opportunity to focus on the actual experience of space itself, its quality and character. In this manner the unit is incorporating visualisation into the index with the aim of avoiding the visual sound-bite, and transforming it into a means of analysing and evaluating as well as presenting the author's architectural vision.

This year the unit is exploring rail infrastructure. Starting with a small-scale design competition, students were asked to insert public space into infrastructure. This took the form of a tangible modulated skin/envelope for Paddington station, one of London's main multinodal infrastructural hubs. Creating space that takes advantage of the obvious and latent potentials within the ubiquitous arrangement of pedestrian and vehicular flows and added commerce, the new skin formation interacts with, alters or complements the existing functional template. The aim here is to elevate the space from its mundane, problem-solving status to a contemporary civic place where a multitude of activities, encounters and experiences can take place.

The unit is currently working on developing a high-speed train link along the length of Chile from the tropics to the sub-Antarctic glaciers. All along the line, a string of railway stations will engage with radically different local conditions.

In cross section, the project's territory slopes from the 6,000-metre (19,685-foot) peaks of the Andes down to the Pacific. Digital tools are used as means of addressing this topographic variety and articulating the multiple ground planes and complex 3-D relationships involved.
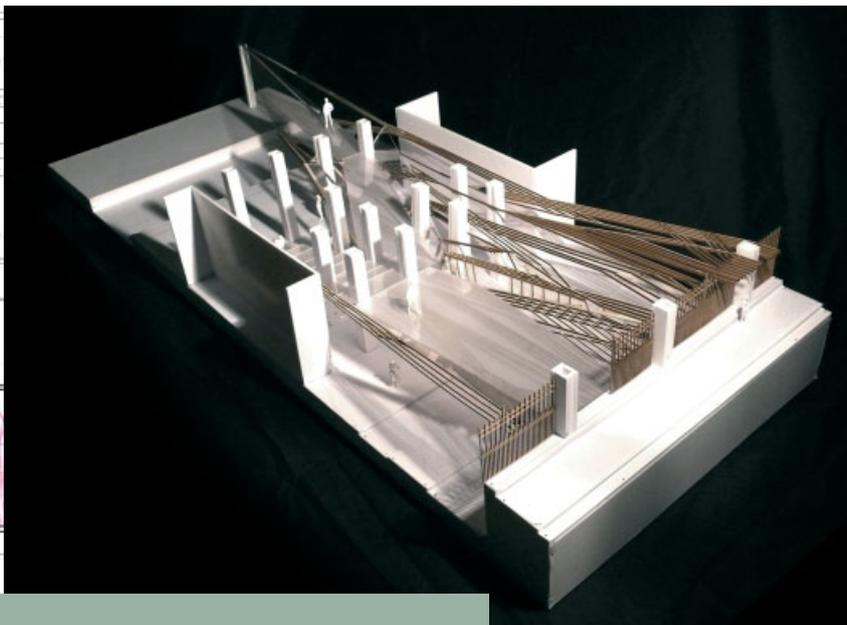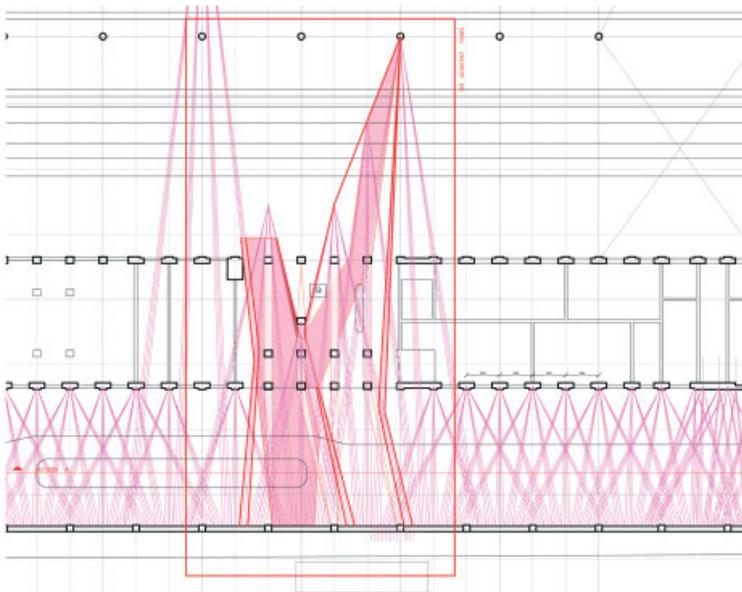
Mark Chan, Oscillating Vectors, Diploma Unit 12, Architectural Association, London, 2009
Mark Chan proposes the replacement of the existing canopy over the departures road at the side of Paddington station with a pair of smaller canopies that index the modular differences between the exterior face of Macmillan House and the iron bars above the retaining wall. Simultaneously sheltering the taxi drop-off area and performing as a bridge that forms a new direct connection between train tracks and bus stops on the main street level, the structure is a direct derivative of the initial index.

Many of the stations will be located in urban environments, traversing the different conditions: tracks and rail buildings will be interwoven with the surrounding city while articulating new spatial configurations. Each student will study one of the projected stations and its corresponding climatic zone, geography, geology, landscape or urban environment. Responding to this climatic diversity, the unit will develop building envelopes and skins that will serve as mechanisms of environmental modulation as well as socially and experientially operative formations.

The Diploma Unit 12 programme highlights the need to develop new, meaningful relationships between local and global scales and conditions. The ambition of such multiscale systems should not be restricted to solving existing problems, and extends to the generation of new possibilities and relationships between the city, its occupants, the landscape and its sociopolitical environment: a structured field condition that deploys architecture as its main nodal articulation. 𝐷+

Notes
1. 'For Charles Peirce, "indexicality" is one of three sign modalities and is a phenomenon far broader than language. Anything we can construe as a sign that points to something – including a weathervane (an index of wind direction), or smoke (an index of fire) – is operating indexically. In the human realm, social indexicality includes any sign (clothing, speech variety, table manners) that points to, and helps create, social identity.'

See Wikipedia: http://en.wikipedia.org/wiki/Indexical.
2. From Peter Eisenman, 'The Post-Indexical: A Critical Option', in Penelope Dean (ed), *Hunch 11: Rethinking Representation*, Episode Publishers (Rotterdam), 2007, pp 18–25.
3. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus*, Athlone Press (London), 2001, p 142.
4. 'Diagrams should not be understood as instrumentalized ideas, as this could be construed as deterministic. Instead, diagrams should be understood as conceptual techniques that come before any particular technology.' Greg Lynn, 'Forms of Expression: The Proto-Functional Potential of Diagrams', in *Folds, Bodies & Blobs: Collected Essays*, La Lettre Volée (Brussels), 1998, pp 223–32.

Holger Kehne is an architect and has been a Diploma Unit 12 Unit Master since 2003. He is a founding partner of Plasma Studio (www.plasmastudio.com) and GroundLab (www.groundlab.org). He has received the Next Generation Architects Award, Young Architect of the Year Award, HotDip Galvanizing Award and the ContractWorld Award. His work has been published widely in international books and journals.

Jeff Turko is the founder of the design practice NEKTON (www.nekton.org), and is also a member of OCEAN (www.ocean-designresearch.net). He studied at the AA School of Architecture where he received the AA Diploma in 1999, and has been a Diploma Unit 12 Unit Master since 2008. He also teaches architecture at the University of East London School of Architecture and Visual Arts.

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