

**The tools of mediation:  
Extending the Diagrammatic Project.**  
Maria Fedorchenko



## Introducing diagrammania and the disciplinary project

So how do we re-open, once again, a discussion of the diagram within the contemporary architectural culture? As was suggested in introductions to the seminar, the diagram is somewhat missing from our formal curricula, teaching programmes, and recent publications. <sup>1</sup> It is no longer seen as a key part of the mainstream academic discourse – especially when it comes to explicit theoretical engagement and practical exploration – due to our strained relationship with its past.

<sup>1</sup>With a few notable exceptions, such as Mark Garcia (2010).

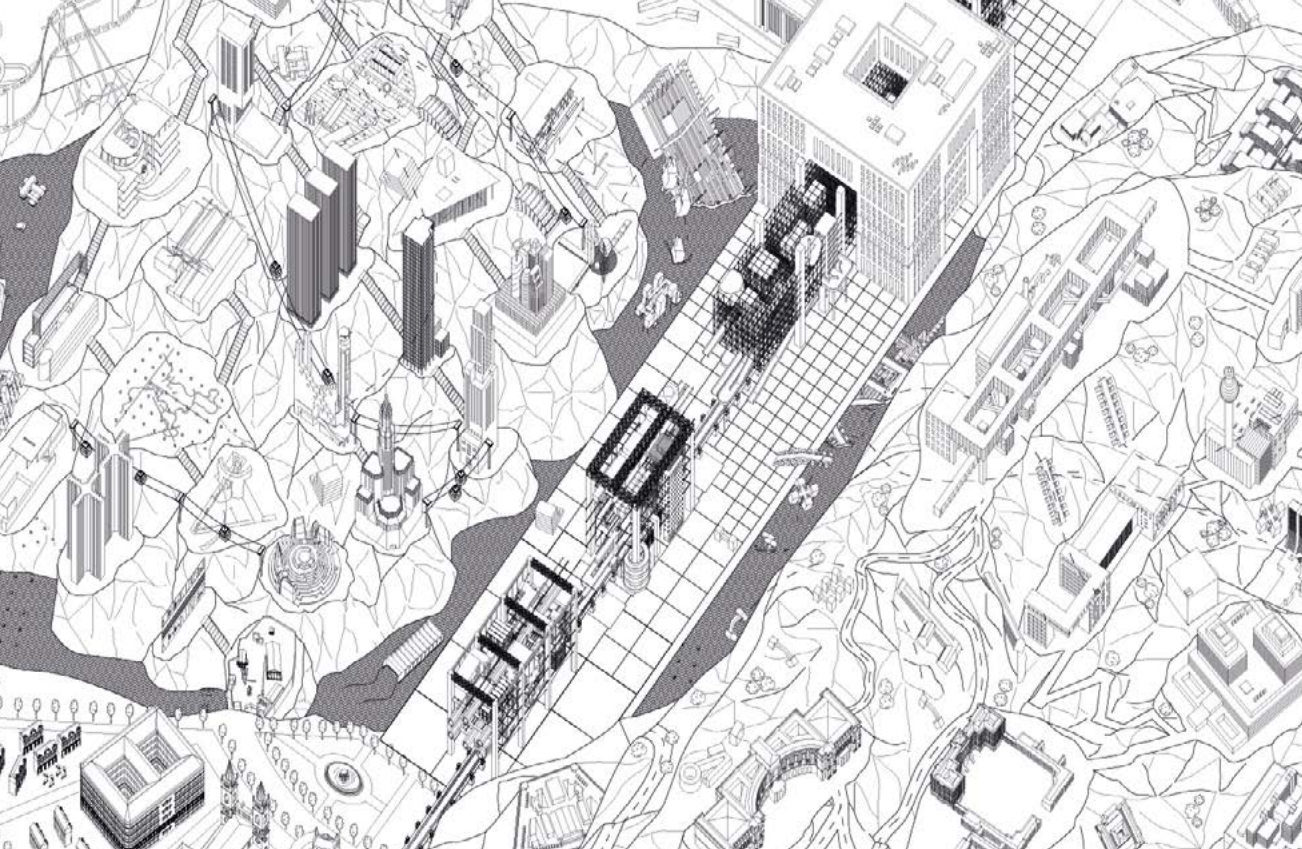
It can be attributed to what happened during the last period of “Diagrammania” of late 1990s–2000s – with its lofty theoretical aspirations and purported methodological overhauls – that was followed by certain disenchantment and pessimism. And subsequent attacks and exposures of the leading diagrammatic practices lead us to distance from what was amounting to a collective disciplinary project. And so today, after this hiatus and suspension, a proper engagement with the diagram as a theoretical concept and a practical tool seems long overdue. Especially given the fact that diagrams remain in active use in a number of prominent design practices, and are still ubiquitous in the academic work. <sup>2</sup>

<sup>2</sup>The pervasive nature of the diagram-like representations can be seen in the continuing production of the more established diagrammatic practices (Bernard Tschumi, OMA) as well as the younger ones (from BIG and WorkAC to R&Sie and Serie).

Globally, experimental design studios rely on diagrams to bridge research and design, concepts and spaces, performance and appearance. As when it comes to negotiating disparate domains of inquiry, few tool-kits can boast the kind of versatility and efficiency to compare with the historical archive of architectural diagrams. And I would suggest that with well-informed solicitation and careful application, diagrams could continue to help us mediate between dissimilar contexts of the projects, diverse contents and tests, as well as intellectual and graphic outputs. But first, it is imperative that we openly confront the diagram’s continuous presence and its difficult past, in order to best speculate about its alternative futures. To do that, I would suggest a particular approach.

To start, we could at least try to re-balance the unreasonable expectations and the sweeping critiques of the diagrammatic “super-tools”, and soberly review the historical legacies of the earlier hyper-active periods. This way, we could begin to liberate fixed associations with the diagrams, and start making new ones. It is also possible to contextualise any further analyses and proposals against long-term disciplinary pursuits. We can discern most frequently recurring problems, and make these persistent tensions a deliberate focus of our debate. Further, we can review and better learn from the recent experiments in advanced design and academic studios, making a separate effort to retroactively formulate their latent offerings and possibilities. As being conscious of how diagrams factor into the daily production of architecture would stimulate further experiments, findings, and newer manifestoes – confirming its key role not only in the profession, but also the academic discipline.

As with some research course correction and design leeway, we might also be able to herald a new chapter of the “diagrammatic project”. And here it would be important to place this discussion in the unique context of the Schema programme of seminars and debates, that allows for the diagram’s definitions, taxonomies and uses to be examined in relationships to other tools that operate



### TOWARDS THE EUROPEAN HYPER-DISTRICT

Lloyd Lee

The project that questions the applicability of hyper-building and other mega-objects for European Cities, using the test-case of Vienna. It combines a number of diagrammatic models and “variations” on the key precedents drawn both from global practices and the examples of Viennese modernism. The conceptual landscapes that accommodates these inputs, is also a base for the experimental concept for the large-scale hyper-district that combines the old and the new urban elements.

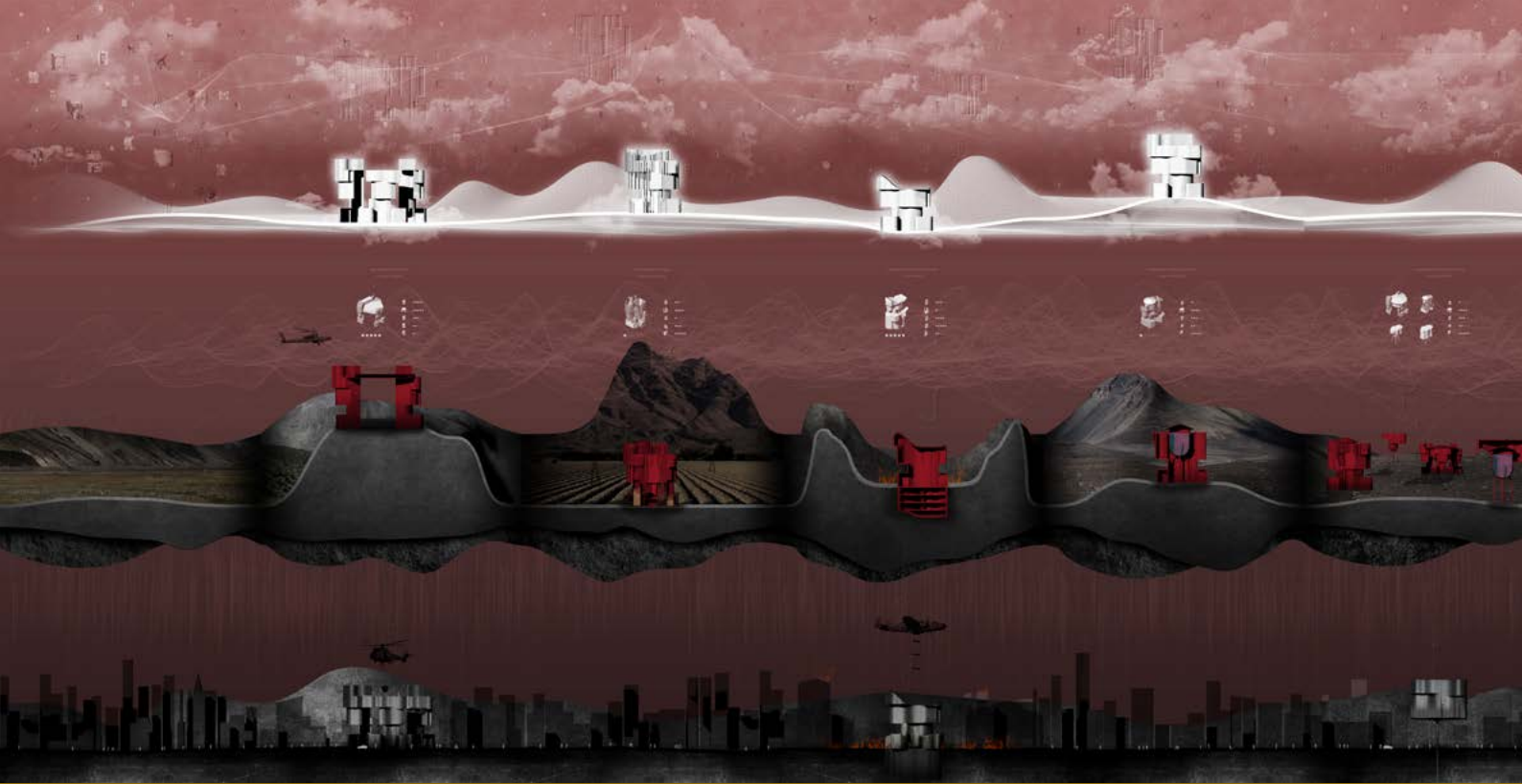
across multiple fields. We all recall, that the latest revival of the diagram heavily relied on active links between architecture and philosophy, as well as geography, statistics and computers science. However, today we also need to better articulate the limits of specifically architectural diagrams and their visual correlatives. That means not only acknowledging the catalytic influences of the inter-disciplinary phase of exchange, but also emphasising the future of the “trans-disciplinary” project – that acknowledges the need for the discipline to redefine and reposition itself, while respecting its strong boundaries and continuities with the past. <sup>3</sup>

#### Re-direction: historical legacies and design tensions

<sup>3</sup> For the argument for the trans-disciplinary as opposed to the inter-disciplinary and the inner-disciplinary projects, see Mark Linder (2012).

So let us take a quick look back, at the cumulative legacies of the last chapter of the diagrammatic project, paying attention to the design tensions and methodological challenges. As I would suggest that many of these apparent problems can help us mitigate the subsequent attacks on the diagrams, and paradoxically, also suggest the ways out of our current impasse. So what happened, then, when the diagram seemed at its all-time-high?

Obviously oversimplifying the conditions of the time, one could say that the last stage of intense “infatuation” with the diagram also coincided with the recovered fascination with modernity. It marked yet another ideological pendulum swing, as characteristic of the 20th century, marking a series of general “turns” and “re-turns” – of markedly urban, externally contingent briefs;



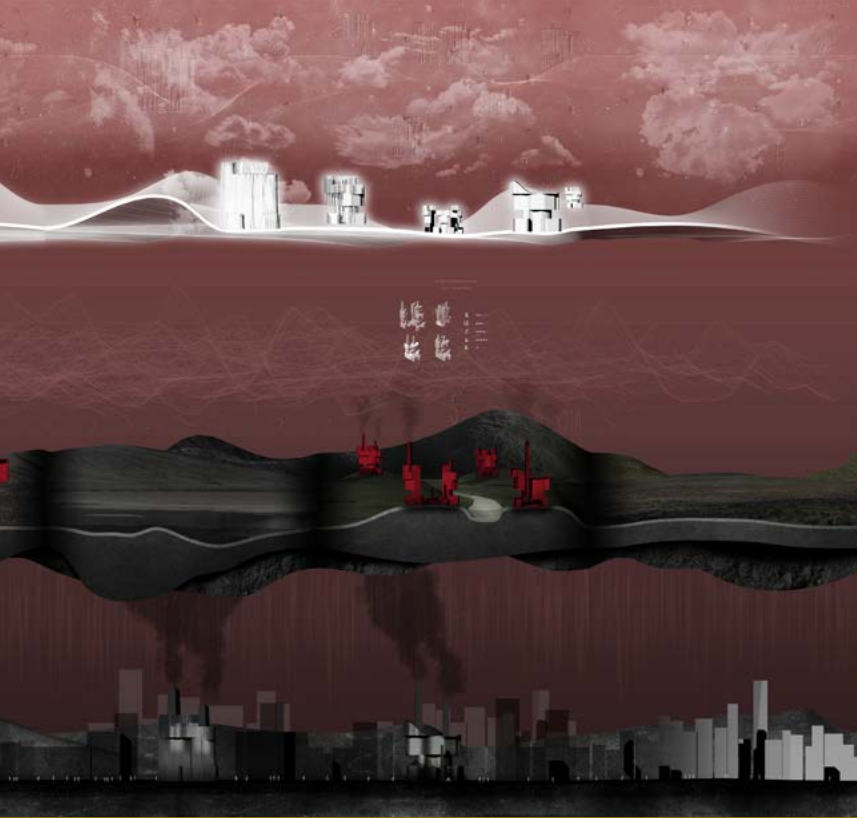
emphasis on social and spatial performance and effect; as well as renewed faith in technological and scientific advances. Yet in hindsight, we can also begin to isolate a few specific “triggers” that directly contributed to the intense focus on the theory of the diagram and the wide-spread use of diagrammatic representations. One of them was the proliferation of the theoretical texts on the complex, dynamic, immaterial and mutant contemporary city, that strained traditional approaches to urban context (see Soja 2000; Boeri 2000). <sup>4</sup> The other was the keen interest in the extended processes of social production of space, that challenged our idea of the city as primarily space and structure (see Lefebvre 1991). And then there was the unprecedented intensity of inter-disciplinary flooding and cross-pollination, especially in terms of concepts and visual tools borrowed from other fields, such as philosophy. And with all this, we had the perfect setting for the rise of social and spatial “abstract machines”. <sup>5</sup>

Suddenly, we appeared to be in possession of a universal solution to our crisis of relevance, legibility, and agency. Theoretically, we heard that diagrams could deliver a more in-depth, incisive analysis of the hitherto inaccessible urban forces and site dynamics; convert the ungainly tectonic project into a much more pragmatic, light and variable version; and on top of that, liberate us from most common design struggles – either a sharp choice between external and internal agendas, or the search for the evasive “good fit” between program and space. <sup>6</sup> Of course, as we came to see, the reality of working with the diagrams was much less straightforward than we hoped. And we can now concede there were fewer radical ruptures with the historical methods of urban and site analysis; conceptual approaches to architecture as systems and elements; or more broadly, modern design methods and techniques. However, if

<sup>4</sup> For the challenge of immaterial exchanges and technological aspects see Manuel Castells (2004).

<sup>5</sup> Here I am of course referring to a series of texts by Deleuze and Guattari, that provided the essential philosophical base for the architectural discourse on the diagram as social and spatial “abstract machine”. (see Deleuze & Guattari 1987).

<sup>6</sup> Here, I am referring to the key functionalist motto of form-follows-function, and borrowing the concept of “good fit” from Christopher Alexander.



## LIBER-LAND

*Ema Kacar*

The project utilises the contested border area of the “Liber-land”, to explore contextual displacements, autonomous transformation, and speculative programming of the urban ‘monuments’. Executed primarily through rapid diagrammatic analysis and synthesis, the project is then developed through an on-going cycle of re-positioning and versioning of multiple design “prototypes” that move between the three key tiers within this conceptual “cosmology” – Celesta, Terra, Inferna – that loosely correspond to the autonomous discipline, design lab, and the built city.

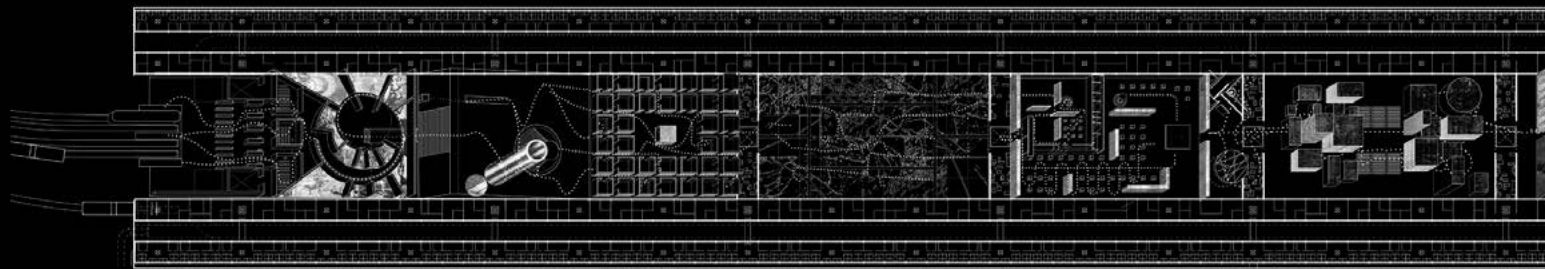
we are willing to take another, more sympathetic and opportunistic look at this important phase of diagrammatic work, we could use it to build much stronger foundation for our own hypotheses and experiments.

So below, I attempt to partially reconstruct what were the key conflicts and contradictions encountered. And once we have a clearer view of the apparent oppositions and dialectics, we could then move towards more relevant questions of inclusion and mediation between settings, expertises and outputs. My main goal is to consider how we could first re-direct, and the deliberately extend the future diagrammatic project. And so my own preliminary provocations and lines of extension to follow, would also try to account for lasting motivations as well as important caveats.

In deciding what we need to cover in terms of key uses and abuses of the tool, let us now consider how the architects attempted to co-opt the diagrams as a way of pursuing three primary goals. The first was to bring the project in the closer alignment with the urban context, especially using the lense of dynamic systems and processes. Second, to reopen the problem of design authorship and control, and conceptually expand how we approach a longer and broader project on the city. And third, was to re-equip the architect with advanced design methods, in view of provisional and emergent relationships between project and site, program and space, information and matter. In quickly outlining these key three areas of practical application below, let us also note how the theoretical terminology and historical genealogies might have also contributed to the perceived inadequacies of the diagrammatic approaches.

### **Context and System: Site Infrastructures**

The first set of problems arose when architects attempted to generate the project directly from the urban analysis, using diagrammatic surveys and local diagnostics. With the premature collapse of analytical and generative diagrams, the design process was essentially short-circuited, bypassing important conceptual bridges and visual links that would be traditionally used to relate



the project to its wider context. As in the late 1990s, after a post-modern period of mainly autonomous, inward-looking speculation that opposed political and economic constraints, we once again turned our gaze outward – towards the city, as the context and the driver of the contingent project. But, if we recall, the city was then predominantly discussed in terms of various infrastructures and flows of people, matter and information they direct (see Graham & Marvin 2001). <sup>7</sup> To engage with this “infrastructural city”, the focus shifted to analyses of site movements, occupancies and intensities, followed by the attempt to correlate such layers of site information to an inclusive diagram that anticipates the design scheme (consider, for example such approaches as “datascape” of MVRDV and “deep planning” of UN Studio).

<sup>7</sup> For the dynamic concept of infrastructure, see Manuel de Landa (2000).

However, architects may have over-estimated the ability to transfer the theoretical ideas directly into the design briefs, and to somehow derive the project from an extremely localised and primarily quantitative analyses of site and programme. <sup>8</sup> Neither it was easy to equate the design intervention with the infrastructural system of the city. Not to mention the difficulties with defining forms and objects as directly based on the diagrams of fields and flows. And so the growing distance between aspirations and outcomes - the calls for “infrastructural urbanism” (as advocated by Stan Allen) vs. the offerings of more formal “infrastructuralism” (as evoked by Jesse Reiser)

<sup>8</sup> Consider the ongoing discourse on infrastructure and the difficulty to transpose it onto the project briefs, looking at the collection of voices in Katrina Stoll & Scott Lloyd (2010).



## THE CREAM ART-FACTORY

*Jesper Henriksson*

The project condenses the diffused mechanisms of art production and marketing in a post-industrial site, proposing a dystopian and critical project of an art-factory. The key diagram is a condenser of various contexts across the city and the cultural platforms where art could be found, in one core production spine.

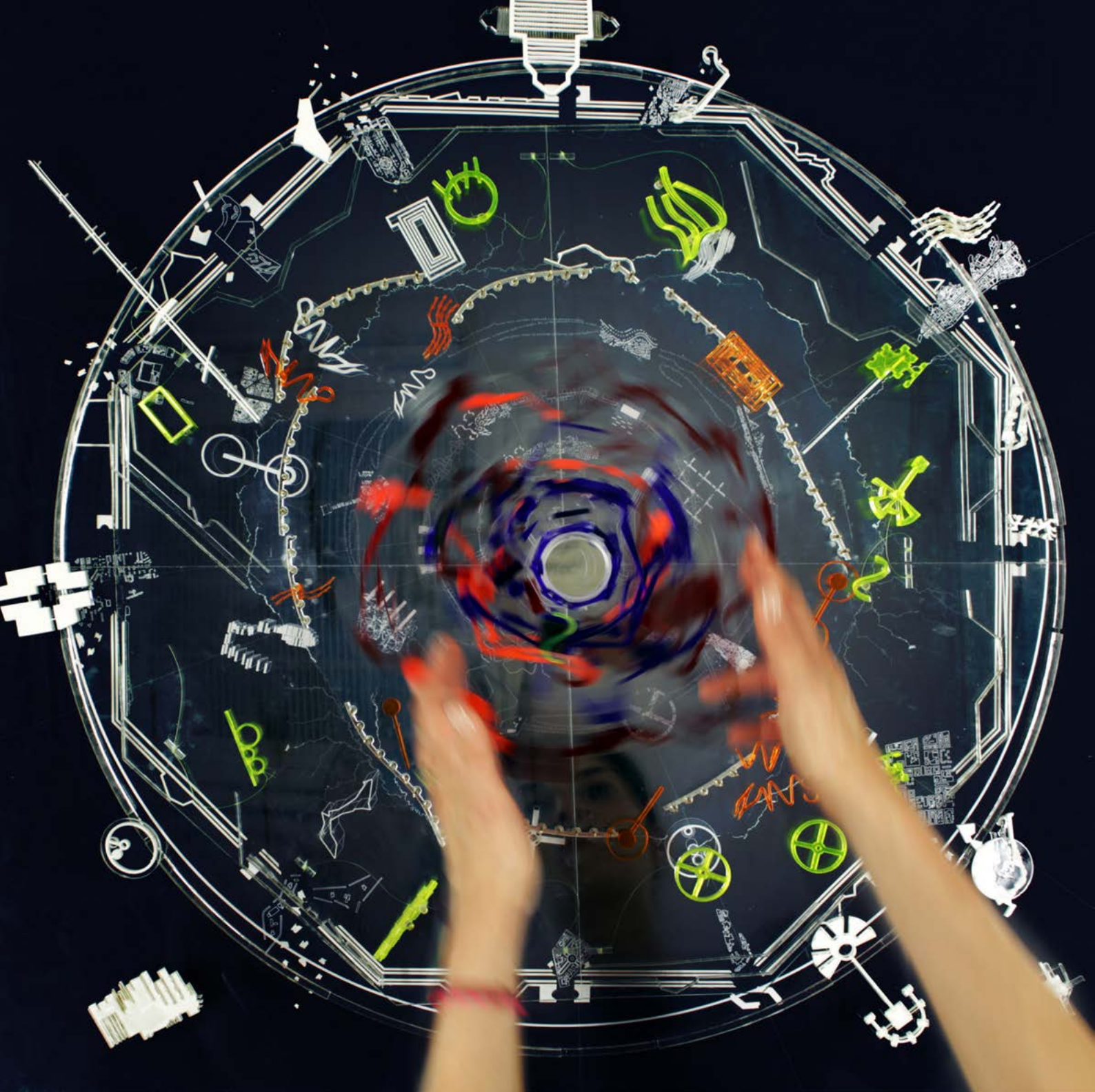
- became difficult to ignore. <sup>9</sup> And we could also add, that we didn't fully include in our search the disciplinary history of earlier network and system "fevers" (to include work by Constantinos Doxiadis or Cedric Price), or previous techniques with regards to ensuring complexity and flexibility within the architectural object itself (from matt-buildings to megas-structures). <sup>10</sup> And so as a result, we never quite dealt with the schism between dynamic context and static content, between fluid diagrams and frozen forms.

<sup>9</sup> See the manifesto for "Infrastructural Urbanism" that was formulated by Stan Allen; as well as the design approach of what comes closer to "infrastructural" formalism, generalised based on such projects as the IFCCA competition entry by Reiser & Umemoto (see Allen 1999).

<sup>10</sup> See for example the post-war "network fever" and the similar problems it posed (see Wigley 2001; Banham 1976).

### Control and Emergence: Diagrammatic Framework

These issues were further compounded when the designers didn't just down-play the disciplinary basis of the project, but also went on to dismiss the idea of the architect-theorist or artist-creator, opting instead for the role of information manager and spatial director. As part of that reorientation, the design development was in part supplanted with orchestrating processes and juggling elements within thicker and looser "diagrammatic frameworks". And despite its liberating aspect, this approach also required that we hold back on our architectural expertise, and resist conventional modes of visual representation. Instead, new hybrid diagrammatic-drawings and diagrammatic-maps conveyed a number of exciting experiments with graphic architecture, taxonomy and notation (from



### **A CITY OF A 1001 UTOPIAS**

*Carolina Gismondi*

Rethinking Milan as an inherently 'dis-continuous' city-archipelago, while condensing the idiosyncratic urban diagrams behind its multiple islands. However, the project also develops when a series of 'conceptual, concentric "rings" of diagrams – radiating from local to historical, from concrete to abstract – begin to interact and spur the production of new splinters and micro-islands – using diagrammatic maps as both catalogues and "gameboards".

Field Operations and Chora to Tschumi and Koolhaas). These innovations also implied the project as unfolding through the semi-automatic process – self-organisation, social alchemy and formal emergence. The few remaining means for the architect to exert any influence over such a process was through diagramming the systems and offering previews of select elements (see Guiheux 2003). We can easily detect these symptoms as manifest in projects that became



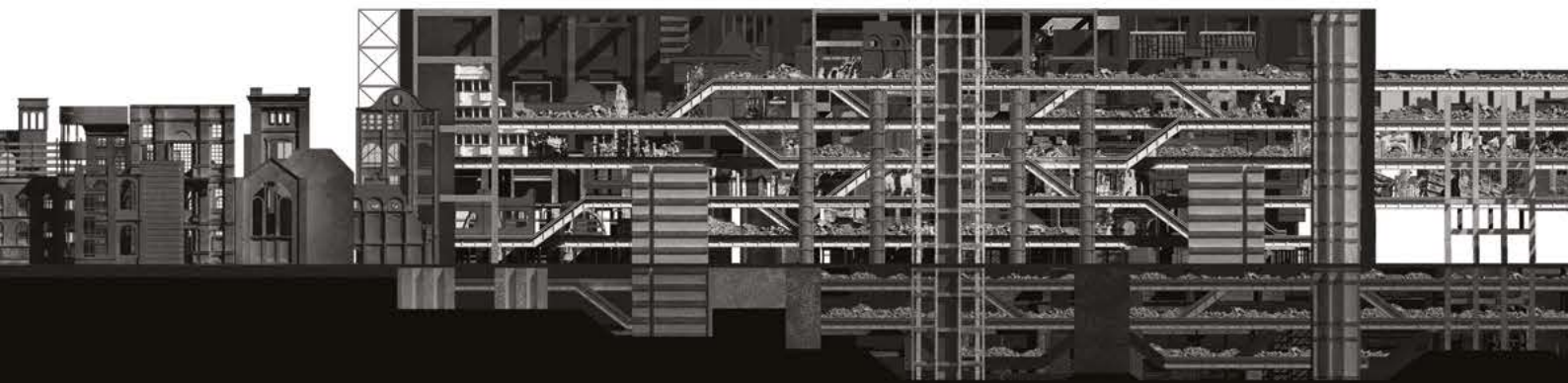


### **THE EXTRA-NATIONAL DOMAIN**

*Frederique Paraskevas*

As an architectural expression of the cultural “limbo” reserved for contested cultural artefacts, the project develops a vast operational network across European borders. This system requires the development of new typologies of customs and vaults, archives and galleries; at the same time, it is also trigger the formation of more centralised nuclei – seen as vast infrastructural “under-bellies” and mega-structures that “shadow” key national institutions in the cultural capitals such as Berlin.

associated with the rise of such inter-disciplinary fields as “landscape urbanism”, and especially in the diagrams that carried the proposals for several large parks that included variations on the social and cultural condensers (see Waldheim 2006). In several historical arcs (such as the one from Parc de La Villette in Paris to Downsview Park in Toronto), the earlier programmatic systems appeared to have been upgraded to “ecological” ones, with all the points/clusters/patches,



lines/circuits/corridors, and surfaces/game-boards/arenas all set to co-exist within larger artificial “matrices”. <sup>11</sup>

And while the use of analogies from other fields – such as landscape ecologies or the sciences of complexity – did significantly improve our intellectual grasp of all these dynamic systems and their bottom-up processes of evolution, the way to best construct and utilise these new kinds of diagrammatic representations as specifically architectural content was much harder to agree upon. Especially if in the course of developing of various programmatic scenarios, we were also made aware of persistent influence of master-plans or megastructures, graphic patterns and space-frames – which are part of the conventional vocabulary of the top-down design. We could also admit, that at the time we were not ready to take a more inclusive view of design control that could actually oscillate from “total” to minimal and back again. Neither did we consider a much longer history of architectural representations that addresses both processes and products they engender, and the previous overlaps between diagrams and drawings, maps and images. <sup>12</sup> These were some of the reasons why the diagrammatic frameworks were largely discredited, seen as either too inconclusive and illegible, or (ironically) as too imposing and controlling. And the systematic way of thinking was sought primarily through the technologically driven advances in parametric design modelling and simulation (see Weinstock 2013).

<sup>11</sup> For a useful discussion of how the diagrammatic frameworks also introduced a number of hidden tensions into the large-scale landscape-urbanism projects, see Julia Czerniak (2001).

<sup>12</sup> As we were forewarned of the dangers of cartographic power and the limitations of the “projective cast”, beforehand (see Evans 1994).

### **FORM AND PROGRAM: Loose Fit and Loose Process**

And here, we should also consider yet another important scale of architectural design – that of the singular building and structure. As there, the relationship between “what it does” and “what it looks like” was also often rendered



## MEMORY PALACE

*Sebastian Tiew*

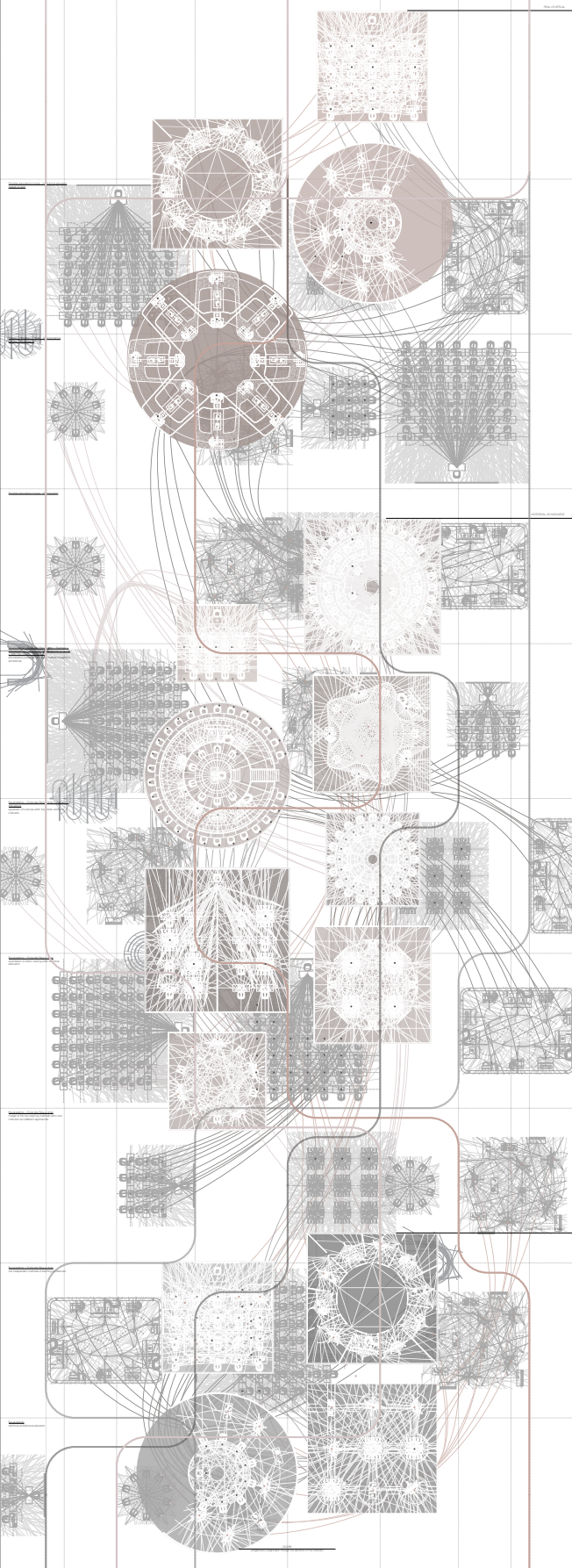
With the aim to preserve the turbulent history of Berlin's destruction and radical reconstruction, the project programmes and technically enables a seemingly realistic proposition – a cross-over between a cultural institution and an industrial factory to hijack the on-going “remake” of the Berlin Schloss. However, the real focus is on the “diagrammatic machines” that intellectually and physically engage with continuous flow of Berlin architectural fragments – ensuring their deconstruction and reconstruction, and offering evocative architectural “chimeras” for the ultimate provisional city.

problematic. As to an extent, architects temporarily suppressed what they previously knew about design method (domains, causality, and sequence), falling for the well-advertised efficiency of the diagrammatic method – especially with regards to quicker, lighter and looser reasoning about the relations between program and form. As despite the purported ability of the diagram to juggle a multiplicity of design traits, there were several important hurdles to be overcome with regards to coherent development and synthesis.

And here, it was precisely the theoretical vagueness that necessitated further practical ingenuities. We could highlight two expedient solutions to the problem of integration – loose fit vs. loose process. The first suggested that we could collide two sets of final diagrams into a single structure. As a way to deal with divergent design principles based on interior demands of program and circulation vs. external demands of image and shape, different diagrams could be collapsed into a final, contradictory whole (as seen in the work by OMA, MVRDV and Neutelings & Riedjik). <sup>13</sup> Whereas, the second approach permitted abrupt leaps and switches between dissimilar process diagrams, opting for meandering and multi-track process (as seen in work by UN Studio and FOA). In both cases, the distance between design domains was not a matter of concern – and whereas the former yielded a new, robust generation of “decorated diagrams” that made the most of late-functionalistic inconsistencies; and the latter the widespread proliferation of animated, smooth geometries that referred to the original program and movement diagrams only indirectly. <sup>14</sup> And as few practices would deliberately investigate their own emerging methods, we were left with a number of “blind spots” with regards to how different diagrams are to be created, sustained, and related throughout the design process. And let us not forget the detrimental effect of the disciplinary divides. These included not only the opposed ideological “camps” of form vs.

<sup>13</sup> Consider the indiscriminately filled “cake-tin” architecture by OMA, density-driven compactors by MVRDV, and zoomorphic containers by Neutelings&Riedjik.

<sup>14</sup> I developed this argument in an earlier publication, where I suggest that the perceived weaknesses of the “decorated diagrams” were converted into strengths in the shape-driven projects by the diagrammatic practices (see Fedorchenko 2011). For the original discussion of the “decorated diagram”, see Klaus Herdeg (1983).



## BAUAKADEMIE

Zsuzsa Peter

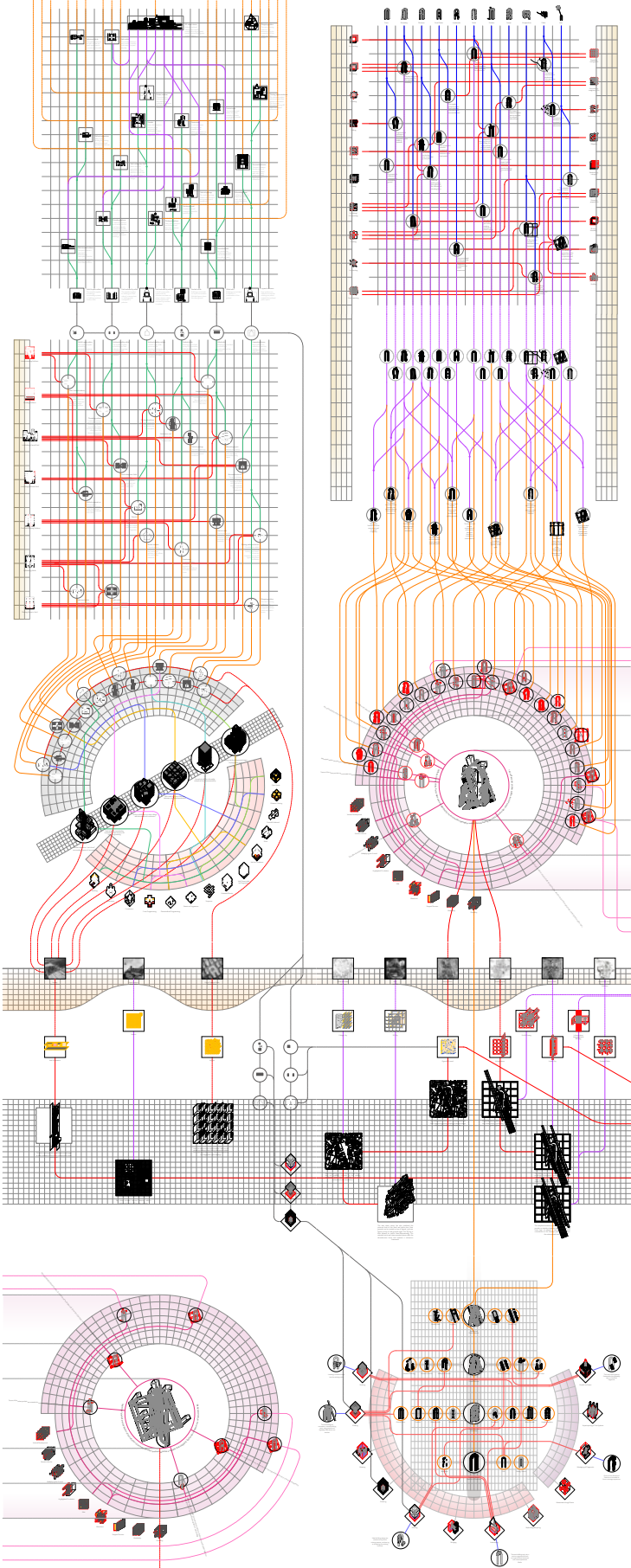
The project develops a model for the school of architecture of the future, as a tower of knowledge woven from several key programmatic strands – of history and technology, art and science. The spatial elements that draw on history of education spaces and typologies, and the programmatic elements that are derived directly from novel teaching approaches, are forced to negotiate within diagrammatic “transcripts”.

program (as anchored by the key figures of Eisenman and Koolhaas, and their descendants and followers). But also were technically tapping into very different origins and genealogical trees of formal/indexical vs. functionalist/operational diagrams. So as a result, while the everyday inventions abounded, there were few significant advances in the more comprehensive design methodologies.

### EXTENSIONS: Academic Experiments and Future Projects

These apparent conflicts and inconsistencies might help explain why diagrams suffered rather harsh criticism and drastic devaluation in the period that followed (See Aureli & Mastrigli 2006). However, despite theoretical deflation, the diagram remains a genuinely useful and a wide-spread design tool. And besides advanced practices, it is often found in experimental design studios in the leading schools of architecture. And while deliberately structuring the studio agenda around exploration of the diagrammatic machines is not likely to result in political gains or the additional “likes” from the student body, there are still several crucial areas of work – from the historically-framed urban research and conceptual speculation to radical programming and engagement with urban morphology – where it is almost impossible to avoid the use of the diagrams of one kind or another.

So, I would propose that we rethink the legacy of the “diagrammania” period, and try to reinterpret its lessons and symptoms more carefully. And these



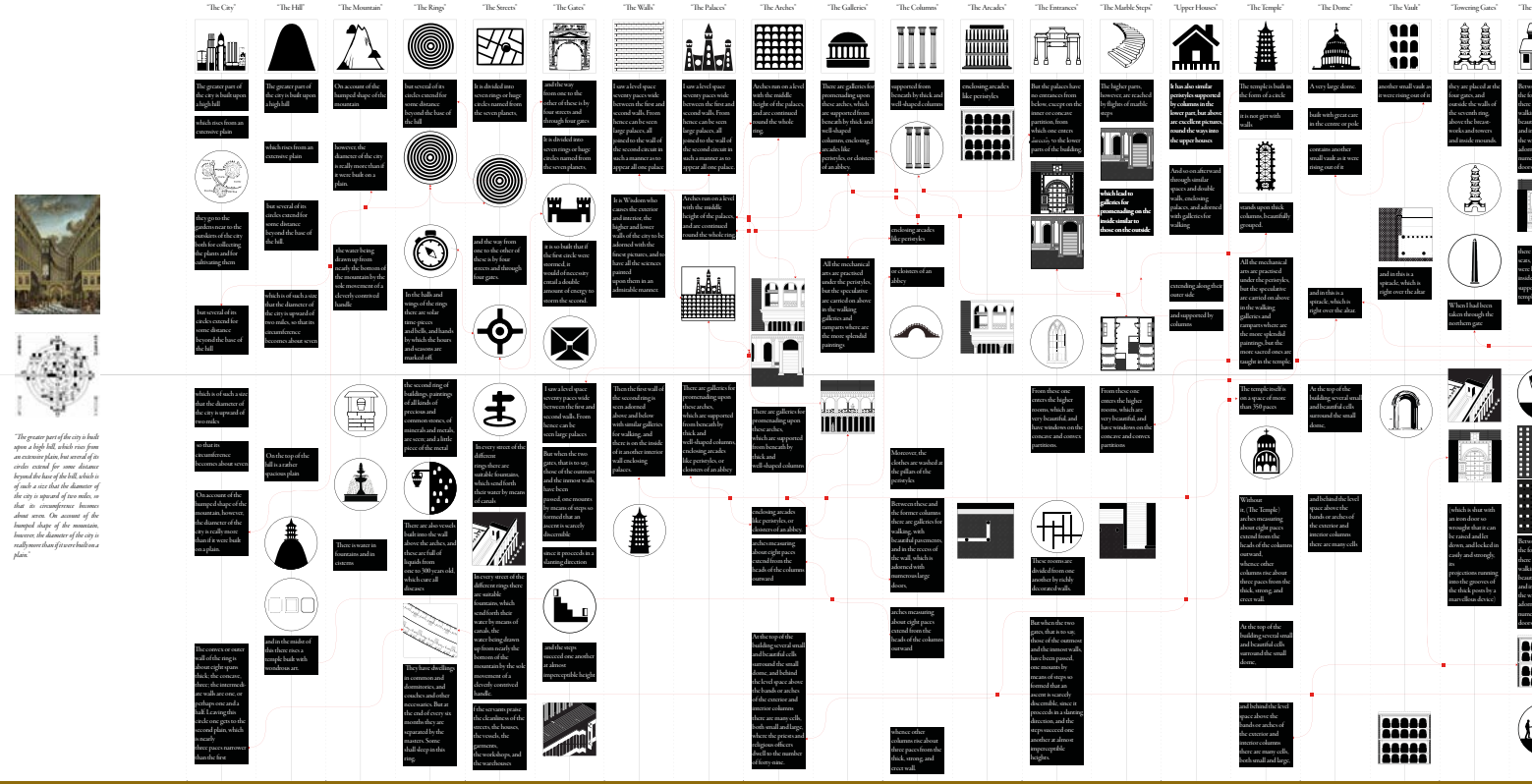
## AUTOMATA

### *Ruoming Song*

The project focuses on the development and the exposition of methodological laboratory, focusing on historical collisions. Using the test-site of Piazza Navona in Rome, various “samples” from the city get processed by dissimilar disciplinary approaches, from semiotic to parametric. Meta-diagrams reveal the alternative circuits or design “tracks” followed, between different architectural “machines”.

exposed gaps might suggest new areas of opportunity. Could we reconsider those schisms and inconsistencies, and see them now as timeless, core design “tensions”, inherent to most projects? And how do we then view them within longer disciplinary histories, and set them within the contemporary debates? And trying to avoid those unhealthy swings between obsession and abandonment, could we take a sober view of how particular diagrams best match certain design problems? And if we pay closer attention to both high and low, elevated and down-to-earth versions of the tool, could we then detect more of the yet un-theorised tendencies, discoveries and short-cuts? Perhaps, abandoning hopes for social panacea or creative magic, we could still benefit from the diagram’s unique ability to mediate between contingency and autonomy; system and object; form and program. And we could begin to accommodate multiple allegiances within the same, more capacious projects.

In what follows, I would like to follow these steps, and offer my own initial hypotheses set against the quick review of the key results from my own academic work. The student projects generated by the Diploma Unit 8 at the AA School of Architecture become a basis for speculating about the future diagrams. As for us, the diagram has been a central tool, operating on several key fronts. And while we no longer explicitly emphasise the study of the diagram, they are crucial to our ability to relate our research on the European city to new architectural briefs; develop concepts and apply them to design;

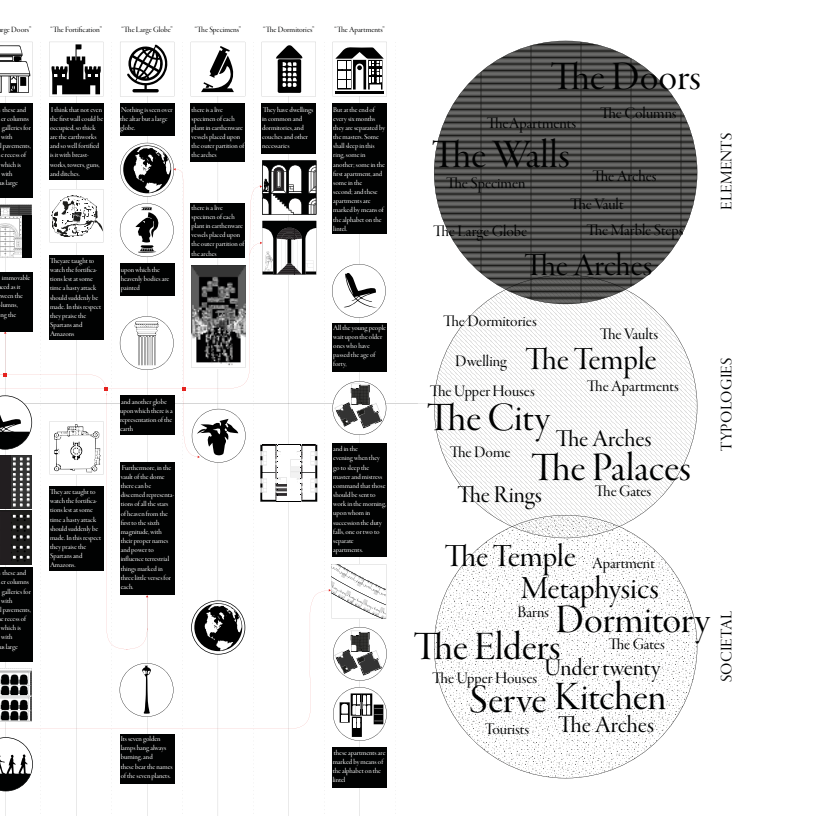


and then invest in both programmatic or formal resolution. And while they tend to operate in the background, they are essential for the analysis and projection throughout the project. They often serve as key means of capturing interim findings and raw ideas. And we use them to assess alternative design options and move towards the final synthesis. Overall, diagrams help us move between dissimilar settings and phases of work. Below, I build from the three key clusters of student projects, to highlight the emerging conceptual and visual tools. I generalise them into three main types – “Contextualisers”, “Processors” and “Multipliers”. Building upon these shared tendencies, I then offer some preliminary lines of extension – towards what could become the larger disciplinary project with research, diagram, and infrastructure at its core. These are of course working propositions, aiming to incite further discussion and debate.

### Contextualisers

To create a solid foundation for topical and well-grounded projects, we need to actively construct and consciously relate to contexts, both urban and disciplinary. The key proposition here is to broaden the basis of the project - how it reacts to contemporary demands, and how it responds in view of architectural knowledge. In view of earlier tensions, we can aim for a theoretical dual-orientation in our thinking and research – both towards “outside”, the contemporary changes and challenges of the city and society, and towards “inside”, the set of long-term disciplinary pursuits and continuous projects. This would help us avoid the opposition of contingency vs. autonomy, and prevent us from zealously collecting external needs and cues (via diagrams-agents and -managers), as well as getting lost in the highly abstract and self-referential creative acts (via diagrams-readers and -recorders). This could allow us to construct more expanded projects that encompass the ideas for both built and “disciplinary cities”.

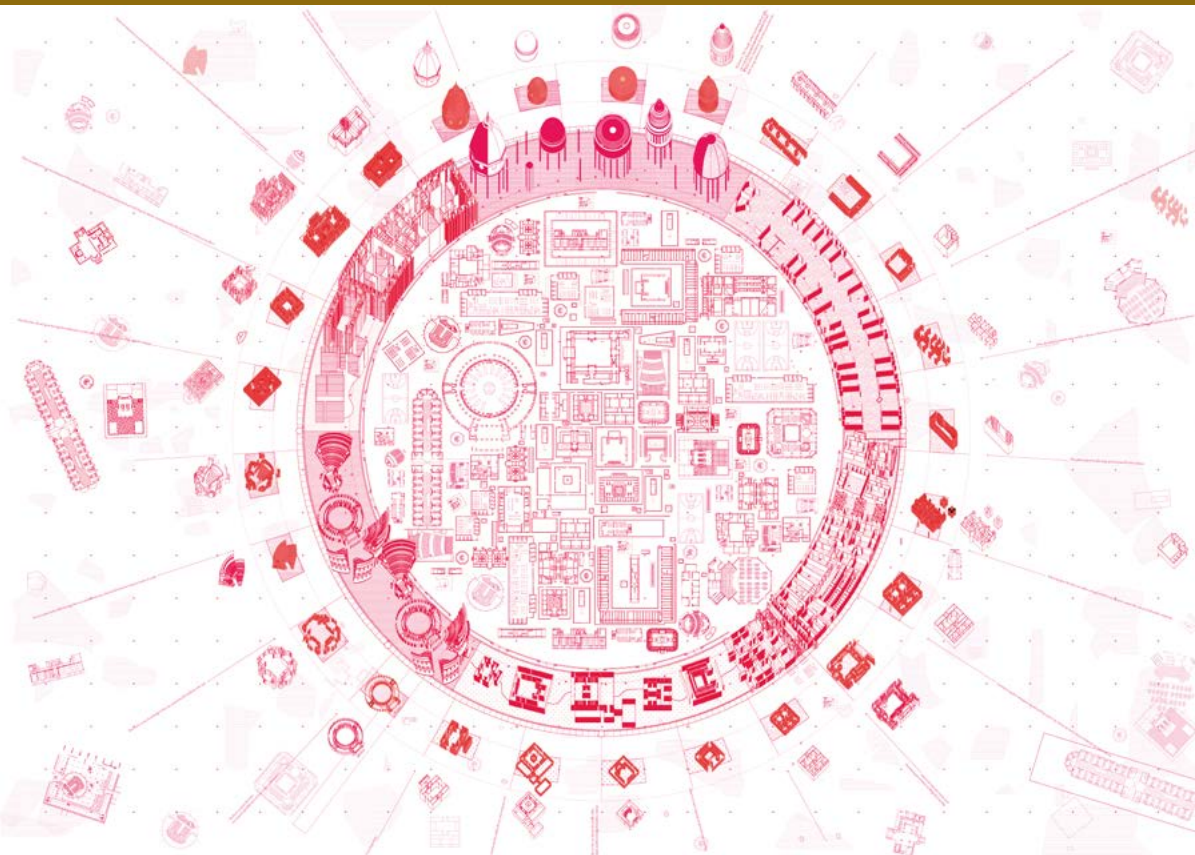
But for this to happen, we would also need to re-calibrate the diagrammatic tools used in both external and internal analysis. As diagrams remain our



## MULTIPLIER OF UTOPIAS

Nabila Mahdi

The project is concerned with the slippery process of translation and transliteration of the utopian briefs and urban programs into graphic and spatial language. Using contemporary variation on the Tommaso Campanella's "City of the Sun" as test-case, the "Multiplier" tools contain diagrams linked to visual samples and formal patterns, as the function and the meaning of key urban 'elements' is repeatedly re-interpreted and modified using dissimilar cultural contexts, precedents, and associations.



crucial aids for extraction, transfer, and deployment of architectural concepts and forms across contexts. And given that our unit work is continuously "saturated" with multiple references, analogies and inspirations from diverse sources, we need to make further adjustments to stimulate the development of new conceptual and graphic techniques. On the city side, we could offset the bias towards the "raw" diagnostics – when it comes to urban anomalies and paradoxes or capturing site-imprints, with no disciplinary bias. We can access analytical lenses that better use the history of urban structure and morphology, system

and organisation. Whereas on the discipline side, we could move beyond the analytical dissection and reduction of the precedents into essential geometric or programmatic skeletons, and also use diagrams to capture and construct the associations across multiple histories, canons and precedents.

The diagrammatic samples drawn both from the contemporary city and the historical archive could then be allowed populate the graphic space of the project, no longer supporting the divisions between history and modernity. However, in cases where the source contexts are visualised independently, the question becomes how these “landscapes” are to be managed, beyond their co-existence or layering. Sometimes it is useful to see the design project as an additional active “3rd Context”. It can then be used as a separate conceptual domain and a design laboratory, while remaining tightly wired to the city and the discipline through diagrammatic links. In many cases, the project becomes about these intermediate sites of ‘transfer’ – thresholds, frontiers, and gateways – where the cultural exchange and the spatial “traffic” of architecture could be explored, suggesting generative clashes and combination.

However, in order to develop the project further, we also need to consider what actually happens within these conceptual planes that contain all the incoming diagrams. And here, we could also refer back to the earlier dilemmas of open-ended frameworks vs. fixed structures, as well as the issue of part vs. whole. Perhaps, we could learn to take better advantage of these de-laminated, open and non-deterministic constructs – as we in part accept and in part affect the layers and the systems of the project. But that doesn’t mean that the conceptual tool supplants the need for urban proposals or architectural structures. And that does not exclude the challenge that we all face to better refine and represent select design elements in projection drawings, or the need to construct provisional configuration of the city in larger maps. Respecting the need for legible demonstrations of key elements, we can still permit the larger conceptual models to remain deliberately fluid and evolving. We can even exploit the characteristic limitations of the diagrams, as in their resistance to readily land or concretise, they would allow us to keep polluting, and reshuffling their abstract versions. And future collisions between various samples and elements can be captured in further dynamic diagrammatic matrices, drawings and maps.

More generally, these diagrammatic tools – the so-called “Contextualisers” – help mediate between previously dissociated areas of research. Diagrammatic representation becomes an interface that sits in-between urban and disciplinary contexts, and allows us for the flow of the diagrams between the two. We can keep the lines of communication open, that would have otherwise been burdened with excessive responsibility or detail. And we can continuously animate the design space, without demanding immediate translation into maps or drawings. Furthermore, the working “Contextualiser” helps us to explore further variations and combinations of the initial diagrammatic set, throughout its multiple research-design cycles.

Obviously, these conceptual urban projects and their abstract diagrams are not universal solutions. And working on the city will remain a tough balancing act between realising and idealising, excavating and super-imposing, separating and integrating. But they remind us that longer, messier processes are still important to account for in devising the future visions for the city – its overall identity, structure or image. And they also call our attention to the fact that the tension between dynamic process and static product, systems and objects,



control and emergence, would still need to be dealt with – but this time, perhaps on a much smaller scale of a single site or building.

## Processors

Here, I would propose that we incorporate some aspects of the diagrammatic frameworks while moving towards a much robust concept of “design infrastructure” - that interrelates multiple levels and scales of design, and affects form and space only indirectly. Diagrams and forms co-evolve within the same project – specifically, systemic and procedural diagrams could affect the process of “production” of typologies and forms, and vice versa.

Learning from our swaying allegiances – including scientific or artistic association with design; primacy of social or formal pursuits; or, more recently, faith in environmental systems and advanced technologies or a return to material form and “Building” - we should safely assume that the way forward should include a combination of contrasting sensibilities. **15**

But first we would need to overcome several common forms of avoidance that we learned in part to mitigate the perceived shortcomings of the earlier diagrammatic phase. For the diagrammatic project would be further condemned no matter what kinds of substitution it resorts to – whether it posits that the infrastructural systems and processes are the real architecture, or offers us some augmented versions of buildings as receptacles of urban diagrams. Our generation needs to go beyond these stratagems, and explore both diffusion and concentration. We can no longer hide behind visually seductive but evasive representations of fields, flows and “flotsam”, without dealing with impact on concrete forms (see Bunschoten 2000). And we could let go of the safety of the built enclosure, trying to somehow enlarge, over-program or otherwise re-furbish the inherited mega-structures and Big-Objects from the past, without researching new diagrams for the urban elements. We can work across the projects on field conditions and artificial ecologies or built hybrids and hyper-buildings. **16** We can seek a new kind of urban architecture, in a conscious relationship to systems and forms. But neither a simple combination would suffice; rather, we should seek opportunities for their mutual influence and cross-fertilisation. This provocation could be extended to the sub-problem of design control vs. extended process of emergence. We have long accepted that our designs exist within much bigger worlds and longer time-cycles – of life and death, order and entropy, creation and evolution. We can continue making explicit formal proposals, but also keep thinking in relationship to the systems of organisation, processes of production, and cycles of transformation.

With regards to our on-going academic experiments, it would definitely allow us to avoid the common “traps” that we also fell into in our earlier work. We tried to embrace the urban transitions within diagrammatic infrastructures, and, simultaneously, to propose new hybrid typologies and formal models. This double-expectation of operation and appearance definitely expanded the scope of the projects, but scripted familiar extremes. This becomes noticeable as we consider our investment in diagrammatic modelling, layering and sequencing of

**15** Note for example the significant return of interest in the built form and object in José Aragüez (2016).

**16** Consider a juxtaposition of the diagrams for these projects: Chora, Xiamen University Smart Campus or R&Sie, Swarm-Town vs. Steven Holl, Linked Hybrid, OMA, Hyper-Building.

the urban systems, while letting them remain abstract. Conversely, we put a lot of effort in constructing crossovers between cultural and commercial programs, and built up a significant catalogue of our own versions of hybrid buildings and social condensers. We still face a number of challenges with regards to the diffusion and condensation, across the city and the territory. As we should try to avoid for the project to remain site-less or scattered across the city, or to be forced to anchor down upon an arbitrary test-site. One way to deal with this is to temporarily separate and then conceptually bridge the parts of the project that deal with process and product, system and the object.

And here, we could build from the projects on the so-called “cultural processors” that we developed over the years. They question how architecture is affected by the processes of urban “production”, and how architecture could be “produced” differently in light of that knowledge, often directly engaging with creative platforms and cultural institutions. They also suggest that we could begin to re-orient the direction of influence between urban systems and architectural forms. Two main alternatives that emerge are either expansive and spatial or intensive and procedural.

The first set of projects keeps the focus on infrastructural systems and devices, as part of understanding the cultural agency that cuts across the cities and the nations. And while they invest in mapping out all the systems of flow and exchange (of ideas, agents and artefacts), they also, separately, commit to investigating their consequences at the level of the architectural structure. These key sites and stations are defined more autonomously, yet still in view of wider operational challenges and idiosyncratic transactions (transit and storage, public interface and security). As a result, besides the networks and the flows, there is a set of tangible results as condensed design “elements”. And together, they can challenge both the operational principles and the spatial typologies of the current institutions.

By comparison, the second set of projects not only approaches architecture as an important channeler for cultural activities or artefacts, but also flips the power of the process diagrams directly onto the production of the architecture itself. In these cases, both the architectural traditions and the cultural logistics are equally crucial, and urban form becomes linked to both immaterial/cultural and material/industrial devices. These are often diagrammed as inter-linked programmatic platforms - production and re-production, display and consumption. As more literal or direct versions of the diagrammatic “machines”, they permit exploration of the subtler questions of utopia and realisation, original and copy, fragment and assemblage. And feeding a few first samples through the prototypical “production lines”, we can not only tune the process, but also welcome the accidental and unexpected precursors of future transitional forms.

While acknowledging their inherent limitations, we can see the additional opportunities offered by these “processors” in architecture. If we are able to separate and “nest” diagrams of systems and objects, we can explore their influences in both directions. We can expand the scope and the area of the design project, engaging with networks, nodes, and control devices, but from an appropriate theoretical distance. And we can also focus on the cultural tendencies and platforms that are directly involved in the production of architecture, with unique disciplinary expertise. Hopefully, we could learn to integrate the divergent options, giving new life to the projects on urban systems and architectural

condensers. With this, we can then significantly broaden our conception of diagrammatic infrastructures, and exonerate them in part.

However, while the diagrams of processes and products might stay somewhat separate in these more intellectual and cultural projects, when moving on to the formal proposal, we still have to address the issues of their precedence, causality and translation. Or in other words – what produces what, and how? And so here is one more, crucial tension from the past that we must consider. We need to know: how does the production process affect programming? Would the design be based directly on the programmatic platforms that sustain the process, or on other visual or spatial considerations? And if the diagrams of program and diagrams of form are fundamentally incompatible, do we still need to worry about their unhealthy co-dependency or the opposite, their counter-dependency from the past?

### Multipliers

Which brings us to the third, and final proposition. We can embrace the perceived mis-fits and mis-translations between different diagrams, welcoming further ideas for design ‘plasticity’. We can work in the exposed gaps between text and image, program and form, suspending the need for the final fitting or spatial integration. We can also make more conscious and methodical switches between the diagrams, now deeply related to the relevant disciplinary histories. This could lead the search for newer “loose methods”.

Given all the previous disagreements with regards to the diagrammatic tools and techniques of choice, we are not likely to find a more rational process or the universally-approved method. But we can tap into the incredibly rich history of the diagram in architecture, and render these previous struggles and conflicts much more generative. We can now access a broad “gradient” of diagrams, ranging from scenarios and datascares and functionalist flow-charts to geometric skeletons and formal primitives. But we should be more savvy which ones we pull in, when, and most importantly, why. And rather than rushing towards perfect correlation and composition of final formal patterns, we could allow ourselves to slow down, and engage with the wonderfully messy, non-linear and convoluted process – continuing to extend the strict modern “diagrammatics”. <sup>17</sup>

Furthermore, this larger arsenal of design tools does not imply that we would all slowly become generalists with regards to the diagrams – in fact we can deliberately embrace their idiosyncrasies, and inspire emerging generation of hyper-specialists. While of course, the initial urge to simply mediate between sharp divisions is understandable; especially if we recall the entire generation of the “projective” practices that has showed us how we can mitigate the form and function principles, and suggested much more inclusive, polyvalent diagrammatics (from the overlapping “regulating brackets” of WW and semi-formalised “design models” of UN Studio to the concretised “program-blocks” of BIG and WorkAC, for example). However, it would be equally important to recall why the diagrams of the two camps differed so much in the first place, and consider how our generation could also consider the benefit of divergences and expertise. Perhaps, we could recover our belief in the deep work, or what we call the “slow project” within the discipline (that kind of intensity and

<sup>17</sup> As even the proponents of the explicit method and good fit would ultimately embrace the non-linear process and the ambiguity in their late careers (see Alexander 1993).

commitment that gave us Rowe’s analytical geometries and Eisenman’s indexical forms or Price’s atomised program and Koolhaas’ urban scripts). And while we would respect dissimilar expert-diagrams, we would be still free to experiment with their sequences and overlaps.

In the unit work, we definitely tried to test these hypotheses – progressing slowly from the initial expansion of the diagrammatic tool-kit, to exploring further possibilities of the “loose” approaches. We tried to learn from and include different kinds of interim diagrams. And while the individual representations would often bear visual resemblance to the precedents, we try not to subscribe to one ready-made method or one fixed type of diagram. **18** Expressing the design ideas in several diagrammatic languages – as sequences of programmatic platforms and as series of formal prototypes – we have been searching for the more “plastic fit” between the different domains of design.

**18** Avoiding subscription to the functionalist tuning derived from scientific management (from Corbusier and Gropius to MVRDV) or parametrically-driven digital morphogenesis (from Gleg Lynn Form to Xefirotarch).

However, over time, we became aware of the lack of precision and control over these combinations, and also invested in tracking how the methodology actually shifts as the project grows. Diagrams would point to specific means of converting urban briefs into architectural proposals, concepts into forms, revealing all the invisible transactions that occur along the way. And so the recent methodological experiments tend to work through the so-called diagrammatic “Multipliers” – the tracking conceptual and visual devices, often rendered visible as transcripts or matrices. These get continuously updated as the project’s “meta-representation” that condenses various design tracks, bifurcation points and key outputs. But here I would like to also highlight the difference between the two main types – more process vs. more form oriented.

The first type is used to increase the number of design methods applied within the project. It articulate the co-existence of several sub-domains where discrete architectural elements are being modified, and then allows us to overview them as parts of the larger conceptual whole. These domains are often linked to the expert disciplinary “platforms” – geared towards Form (through excavation, tracing, structuring, animating, calibrating, etc.) or Program (through division, analysis, scenario-planning, modelling, hybridisation, linking). And in the later stages of work, we often conceive of the more complex arrangements of these different design “machines”, aiming to arrive not only at a strong formal output but also to make a methodological conclusion.

And the second type of the “multiplier” allows us to engage more deeply with intricacies of conversion and translation, that define the space between separate domains and platforms. However, rather than aiming for the closer correspondence between urban briefs and architectural forms, abstract and concrete structures, events and spaces, we can fully exploit the unavoidable accidents that occur with attempted translations. And if we accept the multiple outputs, it could mark the ultimate proliferating aspect of the diagrammatic tools. And while we accept that our urban visions and utopias would never be precisely rendered via form or image, it nevertheless allows us to delve into the multitude of imprecise, indirect and subjective associations between them. **19** And just as the conflicted and redundant versions of the same elements threaten to over-run and splinter the project, akin to the heterogeneous Post-Modern

**19** As one of the noted tensions was how the diagrams of utopia resist direct translation, and

assemblage, we also need to consider how we could ensure the project’s overall consistency. As it could be done better through intellectual means, by attempting to work with and also resist the homogenising Modern diagram.

problematise the functional vs. formal diagram (see Vidler 2000).

We can continue developing such working “Multipliers” and further over-arching diagrammatic managers that best aid the heuristic design processes. We could include multiple stages of formalising diagrammatic abstractions, and also tap directly into a variety of disciplinary expertises. The added benefits could be found not in purported clarity and rationality but precisely in ambiguity and subjectivity. And with at least partial awareness and accountability for all the jumps and leaps in our design method and process, we have the ability to co-opt multiple diagrammatic tools and short-cuts devised by others before, while keeping with our own larger visions and priorities. And finally, a separate note should be made with regards to the diagram and design control. When attempting to engineer and equip these multiple design tracks, we should not fall back into the traps of the “Black-Box” thinking about impenetrable mysteries of the creative process, or cede our authority to yet another version of a design automata. <sup>20</sup> As these dense meta-diagrams suggest, we are still tasked with untangling the overwhelming amount of all the “pre-formal” and “pre-functional” traits of the emerging design, and responsible for assembling our own architectural “abstract machines”. <sup>21</sup> This could suggest a way towards much more realistic and resilient design methods.

<sup>20</sup> Here I am referring to the Reyner Banham discussion of the “Black Box” as concealing the subjective creative process between inputs and outputs, as opposed to the attempts by the modernists working from UC Berkeley and MIT in the 1960s and 1970s to try and de-personalise and automate the design process, laying the ground-work for our current bias towards design-computation.

### Future tools of mediation

So what is to be gained from the discussion of these works-in-progress, and theoretical provocations and practical discoveries? Do we see the questions reverberate with the works generated by our academic colleagues, and those interested in animating the historical legacies as a way to speculate about the futures? And how could the lessons of our work apply far beyond our unit, the school, and the specific academic environment, and start contributing to the larger architectural culture?

<sup>21</sup> Here I am again referring to the way Deleuze and Guattari would advertise the ability of the diagrammatic abstract to capture multiple pre-formal and pre-functional traits, ultimately driving the production of new virtual worlds.

We can extrapolate from our small set of experiments towards much broader issues – thinking back to the lingering tensions, and considering additional extensions. But before that, let us account for the bigger role the diagram plays in our unit agenda. Obviously, for us the term covers a very broad range of conceptual tools and graphic techniques. These ensure we can perform efficiently as an innovative research-design studio. As gleaned from the examples above, we rely heavily on various diagrams in order to: properly contextualise the work against historical precedents and contemporary triggers; put forward abstract concepts and briefs, and then see these through multiple stages of design development; as well as continue to experiment with design methods and processes. All these activities demand further derivatives and updates to the historically “found” diagrams. And so the three main diagrammatic tools outlined above – “Contextualisers”, “Processors” and “Multipliers” – are evidence of our attempts to engage with further uses and applications of the diagram.

Notably, the analyses should reveal not only their unique strengths but also significant weaknesses. And so perhaps it would be fair to reiterate what they offer us as potential mediating tools – now better able to negotiate those artificial divides, schisms and conflicts that undermined the wider adoption of the diagrammatic practices before. And at the same time, we should add important disclaimers and even potential warnings, acknowledging remaining challenges for further research and exploration.

With diagrammatic diagnostics and projection, we can conceive internally-coherent projects that also maintain meaningful connections to outside contexts. The efficient transfer of samples from different settings is also dependant on our ability to pull together multiple tools and techniques as needed – quantitative and qualitative, operational and geometric, scientific and artistic. And the more personal discoveries could be formulated into much more general methodological approaches.<sup>22</sup> And we should not view the emerging “Contextualisers” passively – accepting whatever these diagrammatic “nets” catch, as ideas and information move through them. Diagrams won’t project the future virtual worlds for us. We must do it, with subjective judgement, creative action, and critical self-awareness. And the issue of authorship and control would remain at the core of what we do – no matter what social, urban or cultural concepts inspire us from outside of the discipline. And that also brings us to the ultimate issues of agency and meaning – the orientation back out towards disciplinary and urban contexts, once the project takes shape. And perhaps the more conscious “diagrammatic basis” of the work could open up the possibilities for a more engaged and expanded disciplinary project on the city – now firmly grounded in urban reality and architectural history (see Somol 1999).

<sup>22</sup> Such as for example the kind of diagrammatic “loops” that we tend to use very often – dissection, reduction; packaging, condensation; transfer, association; deployment, application; and then back to isolation, analysis, and transfer yet again.

Further, the continued use of the diagram could help us manage temporal and spatial, organisational and formal aspects of design. We can accept their differences, and play with their hierarchies and influences. Tools such as “Processors” suggest the possibility to draw upon system and object sensibility, while maintaining their independence. We could relate broader cultural and urban dynamics to the specific forms-in-the-making, but without forcing the diagrams of systems to become forms. And while it will remain a challenge to deal with the particular disciplinary “baggage” that each layer might carry, it is possible to embrace a broader concept of design infrastructure than before. Surely, we need to be ready to gain and losing control, and let go of some earlier hopes – such as that we could outsource the struggles with optimisation and integration to a philosophical “apparatus” or some artificial intelligence, or that the act of condensing and compacting all the abstractions into a material structure will bring the desired resolution.

With acceptance of the inevitable contradictions and core tensions that permeated architectural thinking for multiple generations, we could also broach the possibility of a new kind of design consistency. We can definitely juggle the messy imbroglio of design hypotheses and experiments, theoretical and practical bits, programmatic and formal facets, along with the delightful clashes between them. And with such tools as “multipliers”, we could at least delve into minor voids and cracks between the still-malleable design ideas and focus our attention on the previously dismissed negotiations, frictions and overlaps.

But even more importantly, we could call for much clearer intellectual oversight over the difficult, proliferating whole as a deliberate “Project”. As without the much-needed transparency and accountability for all the leaps, jumps and collisions, no genuine evolution of the widely taught design methods would be possible. And for some of us, teachers and students alike, the project’s purpose could be just that – using the diagrammatic refractions to access and tinker with the culture of design itself. This could provoke more open-minded encounters with the by-now notorious “design theories and methods”, and also somewhat suspect “diagrammatic practices” - no longer indiscriminately lumped together, along with some earlier outcasts (functionalist and semiotic, compositional and automated) but charting the new future.

And if all of this changes, ever so little, the way the emerging generation of designers would navigate the bewildering complexity of urban and cultural contexts of tomorrow, while also taking a principled stance; raise the bar on their expanded, intellectual and creative projects, while developing unique design expertise; as well as take full responsibility for developing new theoretical positions and practical methodologies, while drawing on the wisdom of the past – then, it would be worth all the time and effort.

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