From Representation to Infrastructure
The Case for Design Advocacy through Drawing

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INTRODUCTION

When teaching design and architecture in oscillation between practice and academia, we are inescapably bound by questions of context; our environment reflects greatly on us and our perception and forms the basis of our design approach and rhetoric. In teaching, we attempt to engage students in reflecting on, observing and rethinking their contexts. We push them to reflect on new potentials, to re-imagine what is usually widely established. We allow them to create opportunities for new perspectives, and to ponder upon the potential of "other" possibilities that may exist. In Lebanon, a country with endless problems and infrastructural deterioration, such questioning is unavoidable and becomes crucial to pursue at an academic level, where reality and practice fail to proceed. The academic endeavor takes on the role of the provocateur, the advocator for change, projecting forward with a new imaginary.

On the other hand, drawing, architecture's most powerful medium, has resurged today as an essential thinking tool, able to convey ideas and suggest aspirations. Its role has progressed beyond the limits of representation, becoming fundamental for reflection, conceptualization and advocacy. Its power lies in its recurrent ability to convey meaning visually, which is universally understood.

My teaching trajectories try to bring these two together: Drawing and reimagining context. This is especially distilled in a seminar course I teach at the American University of Beirut, titled "Micro/ Macro Infrastructures" that builds upon the potential of architecture representation with speculative proposals for local infrastructural systems, presented through the medium of a pamphlet and articulated to advocate for change through design.

DRAWING RESURGENCE

In the design discipline today, a resurgence of drawing through experimental representation and complex projections is taking shape, bringing drawing back as a necessary reflective and conceptual device. Drawing, an essential architecture medium, is being reconsidered today as architecture's fundamental output, recognized not only as a representation tool with a descriptive aim but more essentially as an experimental design tool that conveys thought, process, desires, and sensibility. In his essay Diagrams of Diagrams[1], Anthony Vidler, in reference to Robin Evans, describes the architecture drawing as the only output during the design process that is directly touched by the architect's hand. The latter according to Vidler defines it as the architect's "peculiar disadvantage" where in they are only able to work directly with an intervening medium, or the drawing, to produce their ideas. However, this disadvantage has elevated the role of drawing where it has gained the capacity and power to move beyond architecture's practical bounds and to reflect in a cumulative manner the complexity of the thought process. Recent trajectories in architecture discourse and research bear a witness to that with work of architects like Neil Spiller, Work AC, among others.

Sam Jacob on the other hand considers that architecture representation has today moved towards a post-digital era[2]. He reflects upon

Figure 1. OFFICE KGDVS, Solo House

the revival of drawing in architecture through creative use of digital media. In his discourse, Jacob understands this as a reactionary move away from the trend of mundane and hyper-realistic representations, bringing back drawing to its expressive and thought-provoking capabilities. Works like those by Bureau Spectacular, Office KGDVS (Figure1), and others, re-examine drawing as a form of digital craft, from the use of expressive collages evoking cultural and art references to composite line drawings reflecting on historical references and etch-ing techniques. The techniques used suggest a complexity and layer-ing through digital media that seem more linked to artistic exploration than technical representation. The use of color, digital collages, sym-bolism and borrowed references, indicate a more playful attribution to the architect's output. The architect/designer is thus expanding the boundaries of their representations to encompass more vivid dig-ital expressions of ideas, sensibilities, and cultural resonance.

DRAWING AS ADVOCACY / THE PAMPHLET (A REVIVAL)

In addition to its ability to encompass meaning and thought, drawing has long gained a role for design advocacy, for taking positions, and proclaiming visionary manifestos. It has been used as a tool for imagining new possibilities and for expressing them in a manner that provides larger outreach. In this current connected digital world, visualization and the "image", their abundance and power of transmittance, have re-enabled the visual to convey meaning and to provoke. Within the architecture milieu specifically, the conceptual drawing has regained a central role as an active instigator for change, provoking through complex projections and collages new imaginary possibilities. Work of architects like Design Earth (Figure 2) and Lateral Office build on that and utilize drawing as a geo-political tool for speculation. One seminal work that has strongly exhibited map-ping and drawing as a form of socio-political narrative is MVRDV's Metacity Datatown[3]. Through comparative drawings and mappings, reflecting on infrastructure, consumption, and waste scenarios, and scaled to various human densities and possible urban agglomerations, MVRDV's work expand on the realities and implications of human

consumption, provoking awareness and a measured understanding of the future ahead.

At another level, and further in advocacy through drawing, a well-known print medium, the pamphlet, has long been used and recognized as an effective tool for the dissemination of ideas. Described generally as a concise and relatively small zine, the pamphlet has been effectively used as a literary tool for printed propaganda since the beginning of print. In architecture specifically, it has been used to communicate and proclaim ideas, in many cases inventive and radical, in an informative and visual manner. One of such examples is in the celebrated work of the British collective, Archigram. The group's founding method for disseminating their ideas was in producing a visual pamphlet, using the term Archi-gram as a combination between architecture and telegram[4], to serve as the platform for presenting their visionary projects and radical ideas. Similarly, in the late 70s, Steven Holl and William Stout established the renowned Pamphlet Architecture to serve as an explorative publication for design research and speculation[5]. More recent productions of architecture pamphlets include the work of David Garcia and his MAP publication (Manual for Architecture Possibilities), initiated at the Architecture Association in London as a theme-based folded pamphlet, focusing on different critical themes per issue and displaying a combination of research work and speculative design.
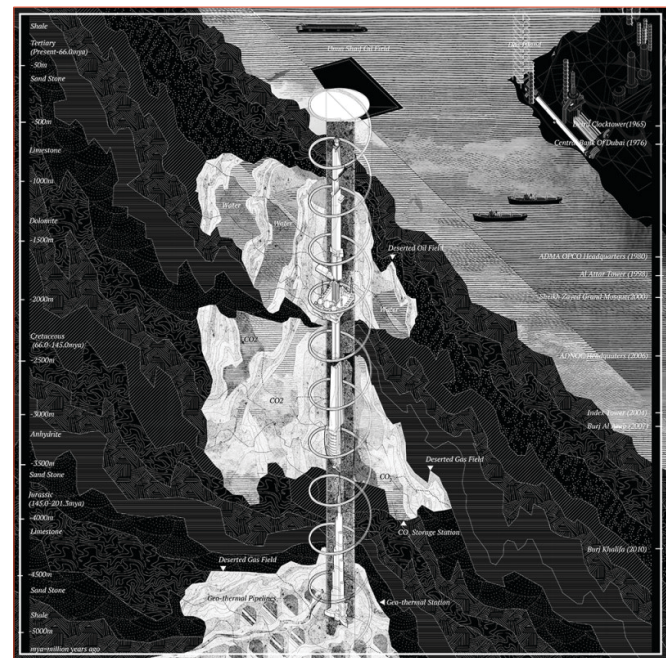

Figure 2. Design Earth, After Oil

TOWRDS A NEW INFRASTRUCTURAL IMAGINARY

For more than a decade now, Lebanon's infrastructure has been in rapid decline, as political stagnation and corruption are hindering

any substantial development. Different infrastructural systems, such as transportation and road networks, and water and waste systems, have all been deteriorating to unprecedented levels, leading to severe repercussions, from paralyzing traffic congestions to extensive air and water pollution affecting general public health.

For that, a need to rethink Lebanon's infrastructure has become crucial particularly in academic environments, which facilitate the emergence of "other" ideas and allow for unconventional possibilities. Provocation through design and speculation on alternatives emerge thus as fundamental and necessary pedagogical endeavors. With that in mind, the seminar course I teach was conceived to rethink local infrastructural systems through explorative drawings, advocating for change by design, and building on the work of MVRDV, MAP, Design Earth, and Lateral office, where infrastructural concerns and representation are coalesced in an attempt to affect change through speculative visions. The course's output conveys research, mappings, and new imagined proposals, developed by the students within a folded distributable pamphlet, in both digital and printed versions.

Each year a specific infrastructural concern is tackled, focusing on its local ramifications, problematics, and possible alternative scenarios. Proposals in the course reflect on the imagination and attempt to link between the infrastructure at hand and drawing. Through composite drawings and diagrammatic overlays, students explore the system under study, using analysis and comparative understanding, and articulated in a singular visual language. Each student group concentrates on a specific sub-theme or lens of inquiry, and thus each pamphlet becomes a focused catalog of that single infrastructural issue, presented from research to proposal. Inspired by MVRDV's mode of a sequenced story presented through diagramming, the proposed pamphlets compile concise narratives of local problematics, using design and speculation as a way to instigate and provoke.

The aim is both to collect data and analyze them, but also to create a visual narrative and design vision that expand the boundaries of the issue at hand. Through the collection of pamphlets produced, the course seeks to generate a compilation of various small infrastructural possibilities. The folding and unfolding of each pamphlet, using mostly a square 60x60 cm format, present a story of local infrastructural deterioration and potential, albeit sometimes satirical, proposals.

THE PROPOSALS

Over the course of two years, the class dealt with different local problematics, focusing mainly on the issues of transportation and pollution. Sometimes imaginary, other times more tangible, the work produced explores the possibilities of the drawing as an informative medium and reveals new infrastructural visions, from driving aggression shading devices, conveyor belt road commerce, to floating water-filtering parks.

The first theme tackled as part of this course is transportation.

With highly congested arteries from the suburbs leading to the capital Beirut, daily car entrances into the city exceed 500000 cars in a country with an overall population of 5.5 million inhabitants. Lack of any form of public transportation, proper lane organization or any police enforcement of traffic laws, all exacerbate the severity of the daily traffic in the area. Deeply frustrated by the lack of any appropriate governmental planning to reduce the congestion, the students propose extreme reactions to the mundane problems of traffic, focusing mainly on the northern section of the artery. Using research on the different highway zones by means of observation, videos, still images, and google traffic analysis, the students analyze and present their mappings in the format of the printed pamphlet, on the one hand raising awareness through visualizing information, and on the other hand presenting potential speculative responses. In each of their proposals, drawing is articulated in a playful manner, critiquing and revealing data, while satirically highlighting the potentials of new interventions.

One of the students' project (Figure3) explores the various modes of consumerism that affect the continuity of car flow on the highway, from the random street vendors between the lanes, to the roadside stores and eateries. Their proposal considers the informality of the various commercial locations and vendors, and transforms the high-way into a consumerist artery, connecting cars on automatic vending conveyor belts with an endless shopping experience while ensuring the traffic flow. In their project and pamphlet, the drawing of the con-veyor system is centralized as a composite construct, overlaying site data mappings with their proposal, and accordingly organizing their proposed system as a narrative. Their structures are given a hierarchi-cal focus in the pamphlet, while integrating their extensive research
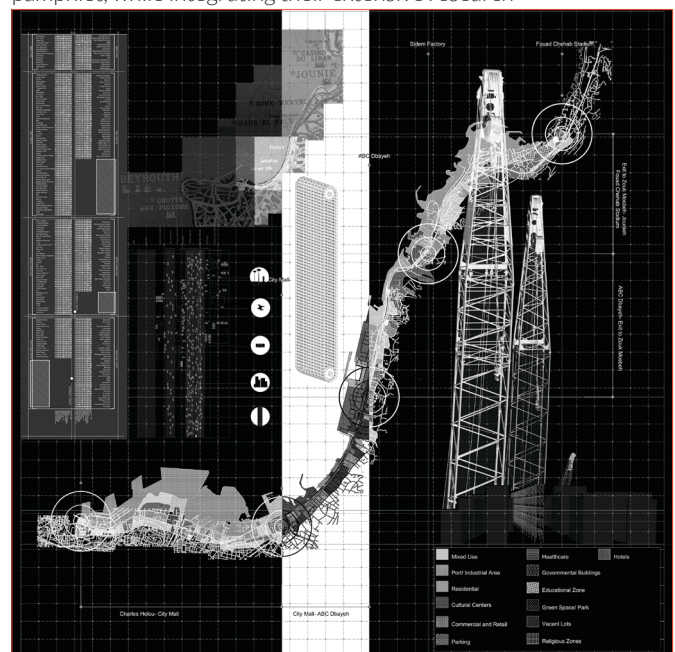

Figure 3. Consumed(ism): Reem Nassour, Mario Khoury, Mia Dibe

with analytical visualizations in an intentionally dark black and white pamphlet. The contrast reveals both a seriousness in the investigation but also reflects on the dystopic nature of their proposal.

A second proposal (Figure 4) looks critically on driving aggression as one of the main factors of the elevated traffic problem in the country. From their analysis and research, they understand the highway as a congested boulevard rather than a high-speed artery, reflecting on its typology and proximity to residential and commercial zones, and thus look at its potential to become a laterally linking artery rather than a linear separator. Building on research on the relationship between aggression and sun and heat exposure while driving, the students propose multifunctional pedestrian crossings that shade critical parts of the highway, while creating an accessible and connective struc-ture that connects the peripheral areas around. Their sun-shading proposal resolves the lack of connection between the two opposite sides of the highway, as their emerging structures incorporate various public leisure activities and community programs, allowing pedestri-ans to stroll and connect to the various commercial areas lining the highway. In their pamphlet, the analytical mappings of sun exposure, and visual connections/disconnections on the highway are present-ed on the first side, while their structures are expressed through sin-gle white line drawings on the other side. Their use of warm hues and light white lines, express both the sun heat factors and the lightness of their hovering crossings, contrasting between aggressive driving behavior and the potential loftiness of their idea.

Figure 4. Filtering Aggression: Hilal Bou Ali, Helena Homsi, Mohamad Nahle

The third project (Figure 5) in this series critiques the lack of public

transportation more directly and examines the potential of the sep-arating residual space between the two opposite highway lanes. The students understand and analyze the various edges of the highway, their permeability, current flexibility, and occasional obstructions. Their proposal suggests reusing the internal separator of the highway as an intensive public transportation artery, with pedestrian and bik-ing lanes, connected intermittently through pedestrian crossings to the highway's sides. This transportation link also integrates greenery as a filtering device, reducing car generated toxins from the air. The edges of the highway are further designed with modular and mobile separators that allow transformation and expansion upon need. Their pamphlet presents their ideas in manner that highlights flexibility and connectivity through drawing, while focusing the linearity of their intensive infrastructure as a central element in the sheet.
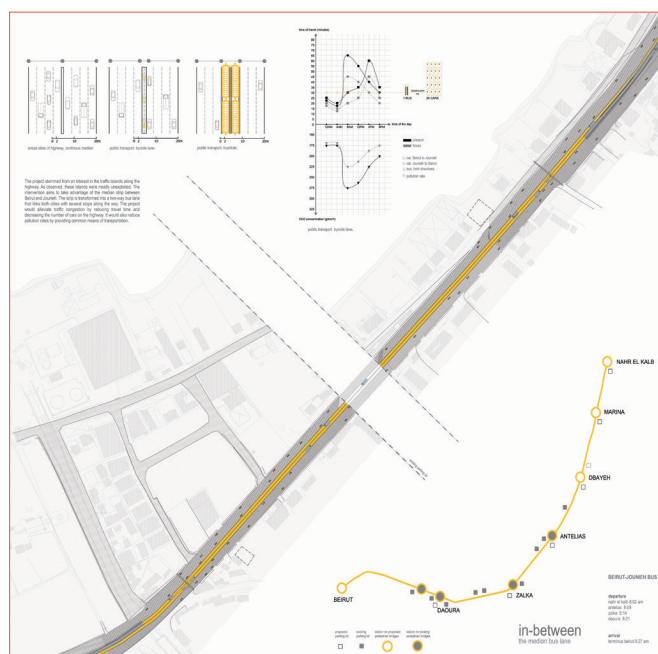

Figure 5. In-Between: Mira Al Jawahiry, Ibrahim Kombarji, Nayla Saniour

The course in its second year tackled the issue of pollution, looking at its various aspects and dangerously rising levels in Lebanon, from air pollution, water pollution to waste habits. Air pollution in the coun-try has been increasing rapidly and in an alarming manner, aggravated by neighborhood-wide private generators and severe car conges-tions. Additionally, the recent waste collection crisis resulted in trash piling up on the streets with very little government led initiatives to encourage reduction of waste and recycling. Furthermore, sewage and industrial waste are generally disposed of in dubious ways, and in many cases ending up in water streams and the sea. Again, the lack of government control or enforcement, results in main pipes being directed towards the sea bed, and industrial waste poured into near-by valleys and rivers, leading to massive contamination of water bod-ies in the country.

With all these environmental and hazardous conditions, the students approach the subject of pollution through different lenses of investigation, with each group zooming in on one aspect of pollution and attempting to uncover the severity of the situation.

One student proposal (Figure 6) tackles the subject of river pollu-tion, particularly focusing on the Nahr El Kalb and Nahr Beirut riv-ers. Stemming from data collected from research, they delve into mapping out their findings of local river pollutants, particularly micro pollutants, showing locations of industrial waste disposal and sewage pipe leakages that infiltrate the underground water channels. They attempt through their pamphlet to raise awareness on the severity of the polluted rivers and the health hazards associated with micro-pollutants. They also propose a vision for floating purification land-scapes that clean the river edges and delta area, minimizing bacteria and waste accumulation. Their pamphlet's representation technique uses the figure ground approach to emphasize the water streams versus the geography, while maintaining the same visual language to articulate their designed platforms on the reverse side of the sheet.
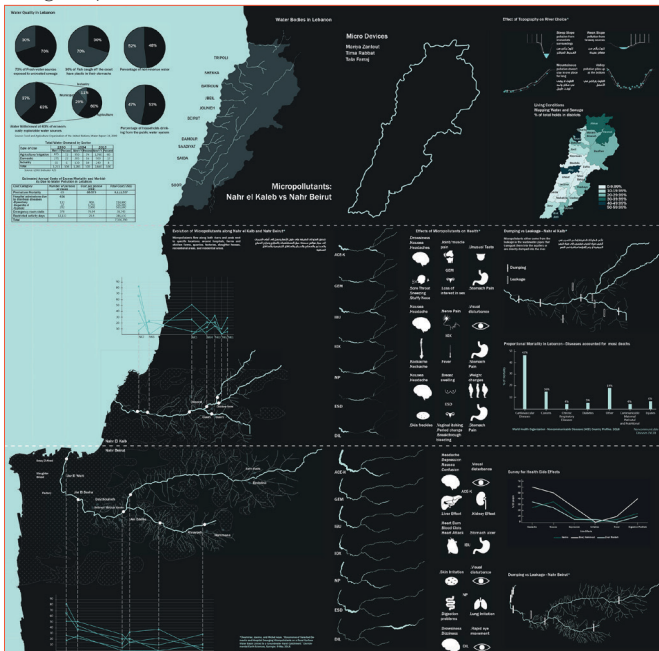
area of Dbayeh, where different pedestrian activities from jogging to strolling are practiced. There, they propose waste collection devic-es that engage the public, aiming to be both playful and education-al, and that can be installed in areas near the corniche. The devices allow people to dispose their trash in a game like manner, receiving perks for recycling and attaining the bin target. The students present their research and proposal with visual simplicity, focusing instead on a mapped graphical scale as an indicator of the gravity of the situa-tion. Strong colors reflect the playfulness of the devices, seen more as small installations rather than large-scale intervention schemes.
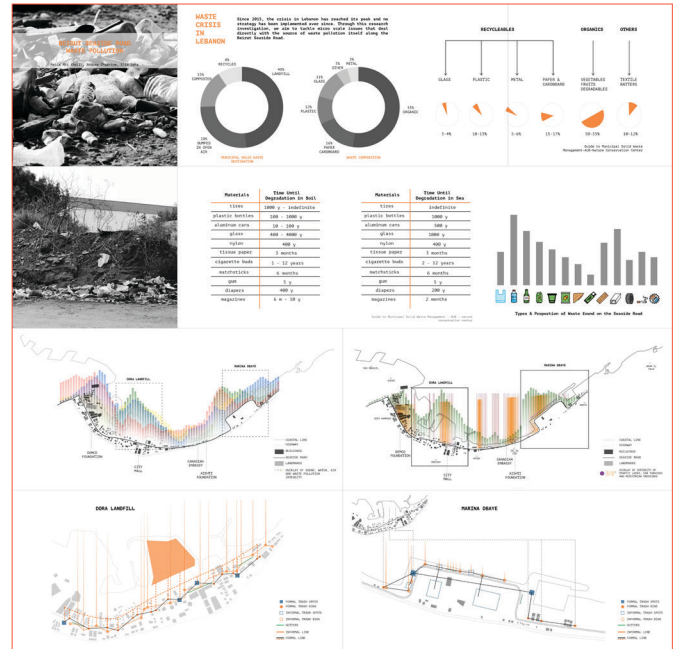

Figure 7. Trash Devices: Elie Geha, Nella Abi Khalil, Andrea Chaanine

CONCLUSION

The course thus attempts to compile various narratives of infra-structural problematics in Lebanon, and to generate a collection of distributable pamphlets that reimagine the possibilities of our daily realities. Through combining explorative drawings and analyt-ical mappings, the course aims to allow students to reflect on their local conditions and context, and to understand the issues affecting their daily lives. Through the different explorations, the pedagogical approach gives them the chance to use the medium of the pamphlet to provoke awareness through drawing. With key references in archi-tectural drawing and representation, from diagramming methods and mappings of MVRDV to current composite drawings of Design Earth and others, the students develop their own visual language, position-ing themselves and their proposals within other similar initiatives and approaches to advocacy on infrastructural concerns through design.

In a sense, the course enables them to act as local activists, using design and the academic setting as the frame within which they can

push for new potentials. The focus on understanding their surroundings and context becomes essential to their learning as they move from a research mode into a speculative one, aspiring to incite change through design. Their graphical explorations and resulting pamphlets become the interface that brings their ideas to a broader public, hoping to raise awareness and concern, and ultimately to shake the stagnation of the situation into action.

Notes

1. Vidler, A., "Diagrams of Diagrams: Architectural Abstraction and Modern Representation", Representations No. 72, Autumn 2000, pp. 1-20

2. Jacob, S., "Architecture Enters the Age of Post-Digital Drawing", Metropolis Magazine, 2017,

3. MVRDV, "Metacity / Datatown" MVRDV/010 Publishers, 1999

4. Cook, P. "Archigram", Princeton Architecture Press 1999

5. Taylor-Hochberg A., "Inside Pamphlet", Archinect 2016 https://archinect.com/features/article/147814975/inside-pamphlet-how-one-of-the-most-enduring-experimental-architecture-publications-got-its-start