"Having Just Broken the Water Pitcher:" Architecture, Fabrication, and the Public Realm

PAUL HOLMQUIST
Louisiana State University

Is there an essentially architectural vocation and capacity implicit within the plethora of contemporary practices by which we can judge them, and account for their significance? If so, what constitutes this essentiality? How can we understand it, and how can we teach it? Through a discussion of the research undertaken in an architectural theory course taught over a number of years at several institutions, I argue that an essentially architectural dimension can be found in the relation between fabrication and the political nature of the public realm as it inheres in public space. Drawing upon Hannah Arendt's notion of the public realm as the sphere of common concern that is actualized through acting and speaking, I propose that what is essential to architecture is the capacity to fabricate the concrete, experiential conditions for the actionability of the public realm. I will discuss the seminar framework and student research projects in order to show how this essentially architectural vocation can, in fact, be most clearly discerned in practices at the extreme edges of the field, and how furthering the plurality of practices is vital to architecture's development and self-definition as a discipline.

Our intuition as architects and educators is that the sheer plurality of current architectural modes and practices must, in some way or another, attest to our strength as a discipline. Yet to those outside of architecture, the plethora of disparate intentions, approaches and products may appear more like Jorge Luis Borges's "certain Chinese encyclopedia" famously cited by Michel Foucault, in which an unthinkable logic defies any reconciling of individual elements through a unifying principle.[1] This is even more the case when buildings are no longer exclusively produced by architects, nor the evident product of architectural practices, and when architects increasingly assert themselves as actors intervening in social, political and cultural processes. Given the Arcimboldean visage of our discipline so aptly invoked by this panel, a correlative plurality of questions arise that have, in fact, long plagued us: How can we account for what architecture is and does as a culturally relevant practice? How do we distinguish ourselves from variously allied practices such as art, engineering, planning, product design, branding and social activism, and articulate what is *singularly*, if not originally, architectural? How do we differentiate what we *should* do from what we *can* do? Is there an essentially architectural vocation and capacity implicit within the diversity of contemporary practices by which we can judge them, and account for their significance? If so, what constitutes this essentiality? How can we understand it, and how can we teach it? In what follows, I will attempt a tentative response to these questions by discussing the work of an architectural theory course I have taught over a number of years at several institutions. I argue that across the plurality of contemporary architectural practices, an *essentially architectural* dimension generally prevails in the relation between fabrication and politics, specifically the political nature of the public realm as it inheres in public space. Drawing upon the political theory of Hannah Arendt, and her view of the public realm as the sphere of common concern that we actualize through acting and speaking with others, I propose that what is essential to architecture specifically concerns its capacity to fabricate the concrete, experiential conditions for the *actionability* of the public realm. Through a discussion of the seminar framework and student research projects, I will show how this essentially architectural vocation can, in fact, be most clearly discerned in practices at the extreme edges of the field, and as such, how furthering the plurality of practices is vital to architecture's development and self-definition as a discipline, and its ability to remain culturally relevant in late modernity.

Fabrication and politics have long been entwined within architectural practice and theory. *Fabrica*, as the meditative knowledge and practice of making, has been considered an essential part of architecture since Vitruvius, along with *ratiocinatio*, or theoretical knowledge and reasoning, as the ability to demonstrate the principles of proportion in architectural making and account for buildings and sites in terms of these principles.[2] Reasoning applied to the whole of architectural ideation and execution, but in particular, to the harmonious and appropriate accommodation of the whole of human life to cosmic order. The social and political dimensions of human life were folded within what David Leatherbarrow has called the technical, ethical and theoretical reasonings comprised by architecture, which acted to mimetically situate society and politics with respect to a generally transcendent order until the end of the eighteenth century.[3] Claude-Nicolas Ledoux inaugurated the shift in architecture's cultural role from imitating this order to productively effecting change in the socio-political world, an ambition that would come to define modern architecture as it identified technological progress with the ends of history. From Ledoux to Le Corbusier to the Office for Metropolitan Architecture, the unifying strand in modern architecture has been the capacity of the technical and fabricative to projectively act within the socio-political realm, embodying and problematizing it as an inhabitable condition. As architectural practice has fragmented and

diversified over the last sixty years, I argue that the essentiality of architecture – if there is any such thing – can only be found in this projective and effective relation between making and the possibilities it opens for action. The plethora of contemporary practices all, to some degree or another, are inherently conceived as projective, constructive and effective with respect to conditioning and shaping the world in its widest sense, and thus our possibilities for acting within it.

Yet we have struggled as a discipline to satisfactorily account for the relation between fabrication and politics – let alone its effectiveness – from within our self-reflective tradition of theory, or for the knowledge and authority that we tacitly presume in taking it up. In raising the question of fabrication and politics within graduate architectural theory seminars, I have looked to the political theory of Hannah Arendt for ways of reframing the question of architectural agency relative to politics and the public realm. Arendt explicitly links fabrication and the political through her notion of the common world – the durable, artificial, constructed world of things that anchors, accommodates and is permeated by the world of human affairs – going so far as to write that "at the center of politics lies concern for the world, not for man."[4] The fabricated common world is the concrete pre-condition for the public realm as the sphere of common concern, actualized through public appearance in speaking and acting with others. By accommodating the radical inclusivity, plurality and equality of actors and their unique identities and perspectives, the common world establishes the conditions for the very objectivity and reality of the public realm, and thus for the possibility of a meaningful political life.[5] The common world furthermore gives durability and orientation to the public realm by preserving public memory in monumental works of architecture and art, and by setting and qualifying its boundaries.[6] Essentially, fabrication of the common world is, for Arendt, the condition of possibility for a public realm in which political life can obtain its fulfillment, reality and meaning in action and speech – the condition of the *actionabilit*y of the public realm. As a privileged constituent of the fabricated common world requiring *prudentia*, the practical wisdom of the statesman, architecture can be understood to play an essential role for Arendt in the possibility of an authentic political life.[7]

Arendt's political theory takes its bearings from her analysis of the origins of the Western political tradition in Ancient Greece. In the modern era, however, the sphere of the political for Arendt has been largely overcome by mass society, in which the nation-state facilitates the endless processes of production and consumption under the hegemony of capital, and public space as the common, durable, actionable domain of a properly political realm has been all but precluded. Arendt sees fabrication itself wholly subsumed within production and consumption, unable to construct things that are meaningful or durable enough to constitute a common world.[8] I have argued elsewhere that, in light of our contemporary condition, architecture must become an "ethical technique" of "making common," and imbue occasions and spaces with sufficient durability to allow for the public realm to obtain a tangible objectivity and effective reality.[9] In so doing, architecture would not so much fabricate objects, buildings or spaces, but in essence the concrete, if provisional, conditions of actionability of a potential public realm. Following in this way from Arendt's theory, I would propose that the essentially architectural relation between fabrication and politics take this specific formulation in response to our contemporary realities: to make the world common, to make it durable, and thus to make the public realm actionable. Furthermore, fabrication so directed should be seen as a task and capacity singular to architecture as a discipline, allowing us to embrace the plurality of contemporary practices and trace a unifying strand within them, in spite of their differences. Recognizing a responsibility to the actionability of the public realm allows us in turn to distinguish what we should do from what, by virtue of our unprecedented technological capabilities, we can do, and above all, to account for our discipline to ourselves and others.

The graduate seminars have provided the ground for formulating the relation between fabrication and the actionability of the public realm, and to examine it within the broader interrelationship between architecture, politics and technology in contemporary practice. The course was developed for graduate students to interrogate and develop their individual thesis topics, spanning the gamut of contemporary issues and approaches, within this relational framework. The course draws upon the work of theorists who, like Arendt, problematize the intersection of technology and politics such as Martin Heidegger, Vilém Flusser, Giorgio Agamben, Henri Lefebvre, Michel Foucault, and Bruno Latour. Students confront the sheer diversity of contemporary architectural practices to find those in which the entanglement of technology and politics can be discerned most clearly, and the public realm is most directly conditioned by fabricative approaches and methods. Very often this is the case with practices at the extreme edges of the disciplinary field of architecture. In fact, the students and I have found that the most vital and instructive ways fabrication enables the actionability of the public realm tend not to involve buildings at all. Rather, they entail the use of architectural tools, methods and competencies in quasi-architectural domains to literally *reconstruct* what we can, following Arendt, comprehend broadly as the common world, making it more common and more durable. To demonstrate this, I will discuss student research projects from the seminar that examined three distinct practices exemplifying these approaches: Forensic Architecture's reconstructive investigation of incidents of war crimes and human rights violations by state actors; archaeological collective Rekrei's crowd-sourced, digital reconstruction of cultural heritage artifacts destroyed in war and conflict; and the design activism of various agencies in response to the crisis of Syrian refugees arriving in Lesbos, Greece in 2015, utilizing sustainable design strategies of upcycling to help refugees

Figure 1. Forensic Architecture, still image of smoke plume image complex from the animation "The Strike on Al Tannur Neighbourhood." In Rafah: Black Friday report, 2015 (https://www.forensic-architecture.org/case/rafah-black-friday/). Image © Forensic Architecture.

transform discarded life vests and rubber rafts into essential everyday items. In presenting the students' analyses of these practices within the framework of the seminar, I will show how each of them is *essentially* architectural, in that they *fabricatively* engage, and make *actionable*, the public realm as a sphere of common concern.[10]

The practice of Eyal Weizman and the research agency Forensic Architecture at Goldsmiths, University of London, is well-known for their investigation and reconstruction of incidents of state sponsored-violence, terror, war crimes and human rights violations to assist international prosecutors, human rights organizations, and political and environmental justice groups. In the context of the seminar, we sought to understand the relationship between the technological and political dimensions of their work. For her course research project, one of the students examined Forensic Architecture's use of architectural tools and methods to reconstruct their subject incidents in both space and time. Drawing upon a wide spectrum of technical and analytical expertise and using an array of digital modeling and multimedia software tools, the agency has developed sophisticated techniques of spatial analysis, geo-synching, and digital modeling to construct complex spatio-temporal information models of incidents. They gather and assemble data from numerous sources such as eye-witnesses, journalists, combatants, and monitoring agencies, making particularly effective use of social media images and video. The resulting models are complete and accurate enough to be used as evidence for the investigation and prosecution of human rights violations and war crimes by international agencies such as the International Criminal Court.

The student analyzed a range of Forensic Architecture's investigative projects including "Left-to-Die Boat," which traced the fatal course of seventy-two Libyan migrants in 2011 as they drifted for fourteen days through the NATO Surveillance Zone in the Mediterranean Sea, willfully ignored by the national and international agencies obligated to aid them; "Ground Truth," an ongoing collective mapping project to document the long historic presence of now-displaced Palestinian Bedouin communities at edge of the Negev/Naqab Desert in Israel, and how the traces of their inhabitation continue to be systematically erased from Israeli maps, and the land itself; "Bil'in," an analysis demonstrating that a Palestinian protestor, fatally shot by Israeli forces with a tear gas canister in 2009, had been intentionally targeted; and the "Rafah: Black Friday" report, in partnership with Amnesty International, which investigated the Israeli attack on the city of Rafah from August 1-4, 2014, in which over 200 civilians were killed, almost half of them children. In each of these cases, fabricative, architectural methods and technologies were employed to retrospectively construct the web of spatio-temporal relations between actors, their actions, and the resulting effects as they took place within complex sites.

Figure 3. Matthew L. Vincent, "The Lion of Mosul." Screenshot of partial digital reconstruction of a lion statue from the Mosul Cultural Museum, 2015 (https://sketchfab.com/models/55ea0aed9bfd462593f006ea8c4aade0). Image © Rekrei.

In her analysis, the student drew upon Arendt's conception of the human, political sense of objective reality, implicitly constituted out of the multiple perspectives we have of the common world, to argue that the spatio-informational models assembled from images and witness perspectives in turn constituted, in an analogous way, the common, objective reality of the incident. She furthermore argued that these models obtained their objectivity and reality – and thus their ultimate evidentiary value – only by virtue of the mathematical model of space inherent in digital architectural tools, which are capable of not only of representing possible realities but serving to constructively produce them. Forensic Architecture's "Black Friday" investigation made especially effective use of digital software tools in modeling the smoke plumes of exploding bombs dropped by the Israeli Air Force. Multiple images of the plumes taken from across the city at different times were photogrammetrically reconciled to construct what the agency calls "Image Complexes," dynamic four-dimensional models that serve as datum-figures for comprehending the unfolding of the incident as a whole in space and time. Just as multiple images were precisely fit together into the model through architectural tools and methods, these means guaranteed that the incident itself fit into the common sense of reality with a level of precision that ensured an undeniable objectivity (figure 1). As the student concluded from her research, not only did Forensic Architecture reconstruct an accurate plan and timeline of incidents, but they also effectively "fabricated" the very reality of incidents themselves as objective, public facts. It was in this relation to reality, then, that the student identified the ultimate political dimension of the agency's practice following from Arendt's theory. They act through fabrication not only to provide irrefutable evidence of potential crimes against humanity, but in so doing, they prepare the conditions of a new, common political reality, or sphere of actionable concern, whose undeniability compels us to take action. It is in this sense, that Forensic Architecture's practice is essentially architectural.

In a similar vein, Rekrei is an international, collective archaeological initiative led by Europe-based researchers Matthew Vincent and Chance Coughenour seeking to digitally "preserve" objects, buildings and sites of cultural heritage that have been destroyed through war and conflict. In the seminar, a student working in heritage preservation examined their practice relative to the role cultural artifacts and artworks play in anchoring and orienting the public realm from within museological contexts. Rekrei originated in an earlier initiative called Project Mosul, which was a concerted response by Vincent and Coughenour to the deliberate destruction of ancient Assyrian and other artifacts held by the Mosul Museum in Iraq by members of ISIS in June

of 2014. Together with the bulldozing of the ancient Assyrian complex at Nineveh, and other acts of vandalism and looting by the insurgent group, this destruction represents an inestimable loss of cultural heritage for not only Iraq and the Middle East, but human civilization as whole. Soon afterward, Vincent and Coughenour began collecting images taken of the Mosul Museum artifacts before their destruction, which were available online or solicited publicly from former visitors including international tourists, Iraqi and US soldiers, and other sources. Using photogrammetry techniques, the images provided the data needed to construct partial digital models of the artifacts from the perspectives of the available photographs (figure 2). The models were then made publicly available and were furthermore situated within an interactive virtual recreation of the Mosul Museum building. Under Rekrei, Project Mosul is ongoing as additional images are contributed by the public, and the methods and technologies that it developed are being applied to destroyed objects and sites across the globe.

As with Forensic Architecture, the student focused on the relationship of the fabricative technology used by Rekrei to the potentially political dimensions of the project, and in particular the public, participatory nature of the process. She argued first of all that digitally reconstructing these artifacts not only recovered them as elements of cultural heritage, but as valuable constituents of the common world, which regained a provisional durability and permanency through being constructively translated into digital models. Secondly, she held that the public, collective process of crowd-sourcing images could be understood as activizing and energizing a common concern for cultural memory within the public realm that transcended the museological and commercial contexts it is typically relegated to. In fact, as she observed, the very tourists and other visitors who had, arguably, and to varying degrees, vacated living cultural memory from the original objects by reducing them to images of commodified cultural experience, paradoxically reversed this commodification by contributing these very images to the project.

Finally, the student concluded that the heritage value of the artifacts had been to some extent diminished through digital translation, but not fatally so. She argued that their value had in fact been revitalized and transformed in the collective process of caring for and constructing the objects, as an active practice of tending to cultural memory rather than passively consuming it. Furthermore, the ongoing practice of advocating for, soliciting, constructing and disseminating images and models of artifacts on behalf of cultural memory and heritage assumed some of the durability these artifacts had themselves formerly held, which for Arendt, was so crucial for the capacity of the common world to sustain a public realm. As an archaeological initiative, Reikei is not an architectural practice in the conventional disciplinary sense, however it does employ "architectural" tools, methods and competencies. In the student's research, Reikei was in fact shown to be an *essentially* architectural practice in that it undertook a fabricative approach to opening up the public realm in a way that the public could both inhabit it – in the experience of cultural memory and heritage as a common concern – and collectively take action within this realm to sustain and preserve it.

William McDonough's and Michael Braungart's "Cradle-to-Cradle" theory of sustainable design has inspired a generation of designers and policy makers to develop innovative, ecologically responsible architectural practices. A seminar student working in sustainability examined McDonough's and Braungart's theory in order to understand how their conception of design could reinvigorate the public realm by enacting a care for human flourishing through the care for nature. Beginning from the standpoint that Cradle-to-Cradle embodied an ethics of fabrication, the student examined it closely in terms of how Arendt positions the common world against nature and its endless processes of growth and decay, and against the analogous process character of modern production technologies. He found that Cradle-to-Cradle's radical identification of design with natural processes, and its reduction of both natural and human worlds to systems of material and energy, cycling through phases of growth and decay, posed serious problems for the durability of the common world as an artificial, human construct, and its capacity to stand apart from, and perdure against, nature. He furthermore found that McDonough's and Braungarts's ambition to harmonize human life and civilization with nature effectively obliterated the sphere of freedom at stake in the origins of the Western political tradition, wherein natural necessity is rejected as the defining condition of a properly and fully human life. Following from Arendt, the totalizing propensity of Cradle-to-Cradle could only be understood as "anti-political," in that it forecloses the opening of a public realm in which human freedom can attain worldly reality, through action and speech.

In light of this conclusion, the student turned to the influence that Cradle-to-Cradle has had in the public realm as a general theory, helping to raise the consciousness of environmental and design ethics and to develop innovative sustainable practices such as upcycling. He found that one of the most powerful examples of these innovative practice was the response of artists, designers and activists to the plight of the tens of thousands of Syrian refugees arriving on the Greek island of Lesbos beginning in 2015, after having made dangerous sea crossings from Turkey in rubber life rafts. Reacting to the humanitarian crisis, as well as the impending ecological crisis of tens of thousands of discarded life vests and remains of rubber rafts accumulating on the seashore, students and volunteer organizations such as Oddysea, Makers Unite, the Embassy for the Displaced design collective, and The Lift Project began designing the transformation of these remnant elements into useful objects that could durably and materially undergird

refugees' efforts to continue their journey, such as mattresses, tote bags, backpacks, laptop and phone cases, and wallets. In many cases refugees were taught how to manufacture these objects themselves according to simple designs, using simple tools and fasteners, so they could fabricate for themselves a provisional infrastructure for their transitory lives – a minimal common world – and imbue it with a degree of durability, reliability, and dignity (Figs. 3,4). Upcycling in this case was a specific response to the concrete circumstances of human situations, and a specific technique for restoring durability to – and effectively recovering – the common world, however provisional. Through the process of fabrication, design "acted" to transform the material conditions that enabled refugees to sustain their struggle for better, more complete and fulfilling lives, rather than mere survival, and in turn made actionable the public realm as the sphere of concern for properly human life. As the student concluded in his research, the true ethical significance of Cradle-to-Cradle as a theory of design and fabrication may ultimately lie in how it helps to persuade designers, citizens and policymakers to take action – to effectively make the public realm actionable.

While these three case studies can hardly encompass the scope of contemporary practice, they exemplify how the essentially architectural relationship between fabrication and the actionability of the public realm inheres in our approaches, our knowledge and methods, rather than the objects we produce. Understanding the singular and original vocation of architecture as fabricating the common, durable conditions of the actionability of the public realm furthermore allows us to differentiate what we *can* do as a discipline from what we *must* do. It enables us to judge our practices, and to account for their effectiveness and cultural relevance to ourselves and others. Teaching this essentially architectural vocation and capacity then rests upon discerning them within the plethora of contemporary practices and comprehending them theoretically in relation to wider cultural discourse. It also depends upon cultivating the broadest possible spectrum of practices in response to contemporary conditions, and collectively opening up, continuously and in ever differing and vital ways, the actionability of the public realm. In this way our discipline will intensify and complexify our essentially Arciboldean visage, which we will ever more be able to recognize as singularly our own.

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Figure 4. *Top,* Refugees assembling a backpack from remnants of life rafts. Design and organization by Floor Nagler and Didi Aslund of Oddysea; *bottom,* Young refugee being fitted with an upcycled backpack.Design and organization by Floor Nagler and Didi Aslund of Oddysea. Still images from video "Upcycling, Refugee-Style," in Daniella Cheslow, "On Lesbos, Dutch Volunteers Teach Migrants To Turn Boats Into Backpacks," on the website of Radio Free Europe/Radio Liberty, March 3, 2016 (https://www.rferl.org/a/lesbos-migrants-turning-boats-into-backpacks-dutch-volunteers/27587663.html.) Image © Radio Free Europe/Radio Liberty.

ENDNOTES

1 Michel Foucault, *The Order of Things* (New York: Vintage Books, 1994), xv.

2 Alberto Pérez-Gómez, *Built Upon Love* (Cambridge, MA: The MIT Press, 2006), 148. See also Vitruvius, *The Ten Books on Architecture*, trans., Morris Hickey Morgan (New York: Dover, 1960), Book I, Chapter I, p. 5. For the original Latin text, see Vitruvius, *On Architecture*, trans., Frank Granger, Loeb Classical Library (Cambridge, MA: Harvard University Press, 1931) Book I, Chapter I, p. 6.

3 David Leatherbarrow, "Architecture is It's Own Discipline," in *The Discipline of Architecture*, eds., Andrezj Piotrowski and Julia Williams Robinson (Minneapolis, MN: University of Minnesota Press, 2001), 85-86.

4 Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1998), Ch. 2, passim; Hannah Arendt, "Introduction into Politics," in *The Promise of Politics*, ed., Jerome Kohn (New York: Schocken, 2005), 106.

5 Arendt, *The Human Condition*, Ch.2, passim.

6 Arendt, *The Human Condition*, Ch.2, passim.

7 Arendt, *The Human Condition*, Ch.2, 91.

8 Arendt, *The Human Condition*, Ch.2, 230.

9 Paul Holmquist, "Towards an Ethical Technique: Reframing Architecture's Critical Call through Hannah Arendt," *The PLAN Journal* 1, no. 1 (July 2016): 17-29.

10 Reem Awad, "From Photographs to Objective Reality," graduate research paper, Carleton University, 2018; Chelsea Jacobs, "Virtual Reconstruction of Lost Heritage," graduate research paper, Carleton University, 2018; Taylor Balodis, "The Theory of Cradle-to-Cradle," graduate research paper, Carleton University, 2016.