residual

thresholds 36

Massachusetts Institute of Technology Department of Architecture

thresholds 36 Editors

Editor, Chienchuan Chen
Associate Editor, Simon Kim
Managing Editor, Christopher Guignon

Advisory Board

- Mark Jarzombek, Chair
- Stanford Anderson
- Dennis Adams
- Martin Bressani
- Jean-Louis Cohen
- Charles Correa
- Arindam Dutta
- Diane Ghirardo
- Ellen Dunham-Jones
- Robert Haywood
- Hassan-Uddin Khan
- Rodolphe el-Khoury
- Leo Marx
- Mary McLeod
- Ikem Okoye
- Vikram Prakash
- Kazys Varnelis
- Cherie Wendelken
- Gwendolyn Wright
- J. Meejin Yoon

Patrons

- James Ackerman
- Imran Ahmed
- Mark and Elaine Beck
- Tom Beischer
- Yung-Ho Chang
- Robert F. Drum
- Gail Fenske
- Liminal Projects, Inc.
- R.T. Freebaim-Smith
- Nancy Stieber
- Robert Alexander Gonzales
- Jorge Otero-Pailos
- Annie Pedret
- Vikram Prakash
- Joseph M. Siry
- Richard Skendzel

contents

Introduction

Chienchuan Chen

By definition, the residual is something borne out of sufficiency, not necessity. When "residual" was first used more than five centuries ago, according to the *Oxford English Dictionary*, the word meant "a quantity that remains after the main part is subtracted or accounted for." The "primary" figure was distinguished from the messy and inconvenient "leftover," which did not correspond to the multiplied value of the denominator; whereas the former could be analyzed and described with mathematical certainty, the latter was simply an anomaly not worthy of further interpretation. Later on, "residual" also denoted error, referring to the difference between the "observed value of a quantity and its true or notional value." What the naked eye was capable of seeing, as scientists in the late 19th century discovered, departed notably, though not measurably, from the actuality according to logic. The residual was therefore not only a theoretical construct relegated to an afterthought, but also a preemptive alibi that justified the fissure between the material and the virtual.

The current architectural discourse has been similarly muted on the subject, but this silence is not the same critical indifference that one finds in mathematics and science. The omission may be ascribed to the contradiction that the residual seems at once ubiquitous and placeless. The ubiquity stems from its ostensible physical attributes and the countless ways residual partakes in the organization of other material matters. From post-consumer wastes to inefficiently used spaces, the residual in its many forms occupies every corner of our perceptual world. On the other hand, because of its conceptual origin, the residual also lacks a specific location, instead always contingent upon the exigencies of its surroundings. There isn't a fixed, permanent and isolated phenomenon of the residual; rather, by definition, it is a general, abstract condition that tends to change over time. To discuss the residual, one risks of being too literal and not literal enough.

Rather than sidestepping these inherent difficulties, many contributors of *thresholds 36* consider them as points of departure. Having chronicled the supply chains behind some of the most universal materials and products, **Leonardo Bonanni** proposes a new design model that would encourage greater accountability from both producers and users by making information regarding the life cycle of a product transparent. **Eric Schuldenfrei** and **Marisa Yiu** experiment with recycled waste as the primary material for their architectural intervention in Hong Kong, carried out across multiple continents with the assistance of some of the latest technologies as a way to reverse the trend of rising embodied

energy consumption. Exploiting the transformative and transportable possibilities in art and architecture, **Teddy Cruz** facilitates a series of semi-spontaneous events in found spaces that culminate in a taco party in Lisbon by way of Tijuana.

Also finding opportunities in neglected urban lots are two proposals that focus on, respectively, horizontal and vertical spaces rendered inaccessible or under-utilized by infrastructural projects. By grounding his design in the political theory of a pluralistic society, **Neeraj Bhatia** envisions a two-kilometer land strip bound by an expressway and railroad tracks in the heart of Toronto as a distinct zone that has the potential to absorb and amplify cultural and urbanistic diversity. Provoked by the ubiquitous blank partition walls left behind by infrastructural corridors that had previously slashed through the city, a design collaborative in Boston devises a landscape strategy, as **Eric Höweler** recounts, to transform these window-less surfaces into vertical parks.

Several contributors of *thresholds 36* engage the residual as a historical problem, since what may seem to have come to pass often continues to linger in the present. Delving beneath the surfaces of the bucolic Buttes-Chaumont Park is **Abigail Susik**'s reading of Louis Aragon's novella, *Le Paysan de Paris*. The sordid history of this man-made scenery outside the old central Paris, as Susik resurrects for us in her text, forms the critical backdrop against which Aragon paints his surrealist tale. Also reporting from further afield, **Mark Jarzombek** highlights two built projects by Fasil Georghis, the young Ethiopian avant-garde architect whose works demonstrates the challenges of modernization in the shadow of modernism. At times, history serves as a key participant shaping the present: **Morgan Ng** juxtaposes works by Gordon Matta-Clark and those by Piranesi, and recasts Matta-Clark's *Day's End* as a historical project that at once reacts against the modernist project and anticipates a new epoch of capitalism. **Kazys Varnelis** traces Robert Smithson's footsteps back to Passaic, New Jersey, and finds that without the residue of the past - which Smithson had observed some 40 years earlier - architecture for the urban derelict has come to a dead end.

Despite its name, the residual occasionally takes precedence over all else as the protagonist. Writing on the history of the Spirometer, a 19th century device used to measure one's lung capacity, **Melissa Lo** finds that the rhetoric of the residual reveals the medical profession's distinct attitudes towards mechanized statistics and corporeal existence. Similarly, **Zameer Basrai**'s study on the accommodation of menstruating women in two Islamic prayer spaces shows a relocation of spatial boundaries that demarcates social classes. Reasserting the architect's role in the tightly controlled industrial production process, **Coryn Kempster**'s proposal for the Canadian pavilion at the 2010 World Expo in Shanghai creates a temporary vacuum in the globalized market economy. By halting a shipment of processed Canadian wood veneer from China back to North America for the duration of the expo, the design extracts a new residual value from the international trade practice. Together with all the submissions in this issue, our contributors remind us that it may not be merely sufficient, but indeed necessary for the design discourse to grapple with the residual. From the most mundane objects to the most hidden histories and beyond, *thresholds 36* marks a beginning of our exploration of the omnipresent and the elusive. •

Waiting to Exhale: *Useful Refuse and John Hutchinson's Spirometer*

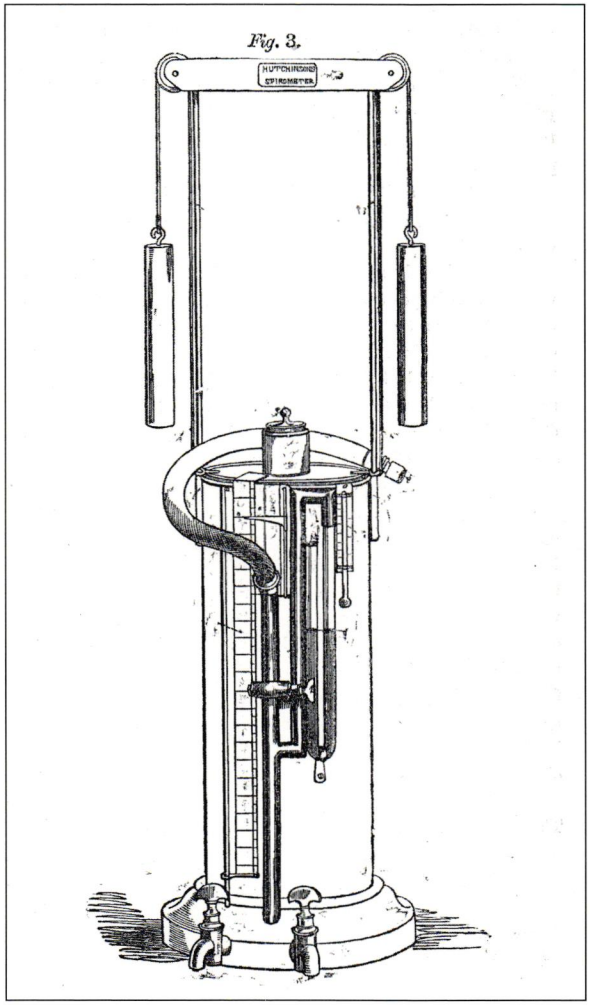
Melissa Lo

In 1844—the same year as Samuel Morse sent his first telegraph ("What hath God wrought") from Washington to Baltimore[1] John Hutchinson announced his new invention, the Spirometer, in London. Although simply a refurbished version of the gasometer, Hutchinson's three-foot tall device could measure the amount of air a patient exhaled. The instructions for its use were these: after a long and healthy inhale followed by an equally long and healthy exhale, the patient was to deposit all his exhaled breath into a long, tubular mouthpiece. The patient's breath would travel through the tube and through still more tubes piped through the Spirometer's interior, causing the water-filled, counter-weighted vessel to which it was attached to rise. The ascent of this interior vessel would compel the needle of the measuring dial to bob back and forth and ultimately settle, giving the ascent – and therefore the quantity of exhaled breath – a number.[2]

While the stethoscope, introduced by René Théophile Hyacinthe Laennec a few decades earlier in Paris, had made the lungs audible, thereby helping doctors better assess the health of the chest, Hutchinston's Spirometer promised to do everything that auscultatory investigations of the body could not: ensure mechanical objectivity by removing the doctor's potentially faulty hand (and ear) and automatically produced a number for the volume of air a patient breathed out, consequently correlating height, weight, and age with a man's lung capacity.[3] Hutchinson declared that the most promising feature of his device was its potential to detect disease. Any distinctive contraction of breath, any deviation from normal breathing patterns could evidence some manner of affliction. In an age when tuberculosis ranged widely across Europe, this machine, Hutchinson and his supporters asserted, was a pre-emptive beacon of hope.[4] Its crucial function was to alert doctors of any departure from the standard "vital capacity" – a number assigned to the amount of air the body disposed of after a long exhalation and a long inhalation. After assuring his reader that he had arrived at the normal range of numbers "by experiment, upon men of all classes in society, at all heights between 5ft. and 6ft….",[5] Hutchinson explained the ease with which his device could reveal such abnormality: "It requires no more education to discriminate the effect of such disturbing causes, than it does to distinguish a difference in the value between 3 and 4. The vital capacity should be 230, and we find it 154, as certain as 230 is not 154, just so certain is it that some abnormal cause exists to produce this difference of 75 cubic inches. Then follows the question: "What is the cause of this difference?"[6]

Most famously, he twice measured the "vital capacity" (Hutchinson's term for the quantity of breath exhaled) of a giant boxer named Freeman: once in tip-top shape before a big fight in England, and once again, when the fighter came back to London, this time in lesser health. Hutchinson reported that while other diagnostic instruments – including the stethoscope or an inspection for lesions – had detected nothing to suggest the cause of Freeman's malaise, the Spirometer, had measured that the giant had lost 40 cubic inches of "vital capacity." Clearly something was wrong. The next October, after Freeman had died, doctors discovered numerous tubercules "studded" throughout his thorax and his left lung. Measuring those 40 cubic inches, Hutchinson's Spirometer had forecast the giant's fatal tuberculosis. Even the largest among us could be cut down to – and cut down by – arithmetic. With such legibility, Hutchinson understood that the machine was not useful simply for doctors, but also for "the medical referees of life assurance offices for healthy lives."[7]

Alongside numbers, the vocabulary Hutchinson coined for the air in the lungs betrayed just how much stock he had in his machine, how much he privileged this machine over and against the individual bodies it would enumerate. The "vital capacity" was made up of three different kinds of pulmonary air: "reserve air," which he deemed a certain amount of air that typically remained in the lungs after an expiration but could be expelled with great thoracic effort; "breathing air," which helped the lungs with ordinary inhalation and exhalation; and "complemental air," which was that extra bit of air the lungs could hold after a patient had breathed in with great and still greater force. All these were subject to the mechanisms of the lungs, and could be drawn in and put to work with forcible effort. But behind all of this shallow and deep breathing, there remained a curiously permanent pocket of trapped air: "It is well known that the lungs are not capable of being emptied by the most violent muscular effort; therefore, at all times, as long as the lungs maintain their natural structure, during life or death, a certain quantity of air remains in these organs, which is termed 'residual air,' and over which we have *no* control."[8] Further, "The *residual air* is entirely independent of the will, and always present in the chest."[9] While the combination of these other "airs" could index a picture of health or pathology— and while vital capacity was changeable and susceptible to "will"—, residual air was a nothing that had to be called something— a placeholder, and, ultimately, a quantity most easily measured after death. It was something that could not be felt, missed, or forced.[10] It was simply there.



Remarkable in Hutchinson's pulmonary glossary was that the air that the body could not use – that which it had *expelled* – was "vital," and the air that simply took up permanent residence in the body was deemed "residual." Hutchinston's nomenclature, indicating usefulness or uselessness, was propelled by a certainty of measurement – what historian of science Ted Porter might call a trust in numbers.[11] "[T]he Spirometer or breath-measurer," Hutchinson wrote, "expresses this deficiency [of lung capacity] in the definite language of numbers, definite in their value, and in their comparison."[12] The stethoscope, unable to produce any calculation, was, by comparison, "branded with 'uncertainty.'"[13] And when Hutchinson referred to statistician Adolphe Quetelet, who had done much to quantify the average man, in his text, there was apparently no need for a footnote.[14] For both Quetelet and Hutchinson, it was not so much the body itself that counted, but the ways it could be measured. "Residual air" was residual because it was difficult to extract and could not service the machine. Therefore, it could not be transformed into a recognizable indicator, and could never become a socially useful fact. This "vital" parcel of breath was easily measurable, translatable, and quantifiable because the body constantly refused to contain it. Here was waste that was rendered useful, that could be recorded in doctors' ledgers of sickness and health, and plugged into actuarial tabulations from Brompton Hospital to Rotherham. One fellow physician-actuarial consultant, E. J. Shearman, summed up such steely logic in an anecdote he relayed to Hutchinson after using the Spirometer:

> *Some time ago, a gentleman called on me, as the medical referee for an insurance office, to be examined for a very large insurance on his life; he produced two certificates from two most respectable physicians, stating his health to be perfectly good, and in fact, he looked quite well: on trying him with your Spirometer, he was 85 cubic inches less than he ought to have been for his size, age, and weight; and although I could not detect any positive diseased in the chest by auscultation, I considered it right to state my reason for refusing to certify his health to be good—and his policy was refused for £2000. He is now, only eight months after, in a confirmed consumption. I saw him only a few days since. But for your invention this office would have lost the money. I now never examine a person for life-assurance without trying him on the Spirometer, and feel persuaded, if it were generally used, many lives would be refused which are now taken.*[15]

Hutchinson had his critics as well. Although the utter lack of compunction, and compassion, in his champion's etter is clear, those frustrated with Hutchinson's machine – and the tables that came along with them – were similarly unaffected by the easy numeric abstraction of the human body or the disposal of the patient-to-doctor relationship.

13

TABLE II.—HEALTHY & DISEASED VITAL CAPACITY COMPARED, FROM 400 PHTHISICAL MALES.

HEIGHT.				HEALTH.	PHTHISIS PULMONALIS.		
Ft.	In.	Ft.	In.	Cubic Inches.	1st Stage. 33 per cent.	2nd Stage. 53 per cent.	Mixed. 43 per cent.
5	0 to	5	1	174	117	82	99
5	1 —	5	2	182	122	86	102
5	2 —	5	3	190	127	89	108
5	3 —	5	4	198	133	93	113
5	4 —	5	5	206	138	97	117
5	5 —	5	6	214	143	100	122
5	6 —	5	7	222	149	104	127
5	7 —	5	8	230	154	108	131
5	8 —	5	9	238	159	112	136
5	9 —	5	10	246	165	116	140
5	10 —	5	11	254	170	119	145
5	11 —	6	0	262	176	123	149

Some doctors had continued to use the device, and refine it, and it is worth noting here that renewed types of Spirometers continue to be used in doctors' offices today.[16] My interest here is not so much the invention itself, but the rhetoric accumulated by such an invention, and how the conception of such a device revealed prevailing social attitudes toward bodies and the people who inhabited them. Certainly, Shearman's comments evidence an inclination towards counting, and, further, an abiding faith in numbers. But dissenters wrote against the machine with a similar agenda. They were frustrated with the limited numeric value of the machine – especially how Hutchinson's observed range for "vital capacity" could not hold for everyone. First, these skeptics observed that the patient's body got in the way: "The results the spirometer has yielded are of value from a physiological point of view; from a clinical, there are too many sources of fallacy and too many drawbacks to render them of great importance; and not least of these drawbacks is, that it takes too much practice to learn how to blow."[17] And, second, Hutchinson had proposed a counting law that was simply inconsistent: doctors had proved that many of those whose "vital capacities" were well outside the norm were, in fact, healthy.[18]

Physicians criticized Hutchinson's faulty charts not so much with an ethical outcry over the statistical cast of the machine, but, rather, its inability to specify, diagnose and prognosticate.[19] Implicit in its dysfunction was the reality that the Spriometer could not help construct the disease itself; it could not contribute to how any pulmonary affliction could be framed and calculated.[20] And the numbers the machine produced were neither infallible nor foolproof; they could not do the reductive work required for diagnosis. Instead, they were indications of an excess: not only did these numbers remind physicians of how difficult it was to harness disease or predict health, they simultaneously underscored many individuals and variations that could *not* be accounted for in Hutchinson's tables.[21] In other words, these leftover cases represented – and reinforced – the very undoing of numbers by individual bodies.

Hutchinson, his correspondent, and their critics privileged the statistical, probabilistic and mechanized over the corporeal, ultimately reflecting broader trends in a society increasingly run on steam, speed, and progress. Here was that on-going moment in which "manufacture" cut ties with its Latin roots, "manus" (i.e. hand), and was transformed into the grind of the machine – where the utility of the body was only as important as its service to the machine – and where society's betterment and productivity of lay in the calculated turn of steely cogs.[22] The emphasis on production was not lost on Hutchinson, and he, too, merged this widespread compulsion toward societal productivity into the analysis of his 2,130-person sample. Those whose breath he initially measured included sailors, firefighters, policemen (from both London and the Thames), gentlemen, paupers, artisans, other decorated soldiers, "pugilists and wrestlers," "Giants and dwarfs," "Printers," "Draymen," "Girls" and, the last, "Diseased cases." Hutchinson's classificatory scheme relegated "giants and dwarfs" and "girls" into socially unproductive categories. And perhaps even more damned were those 60 "diseased cases": no longer slotted by their occupation, or even by generalizations like height and sex, these statistical outliers all seem to have lost their will to do, to produce, to make.[23] In this strange substratum, they were transformed into the useless, their airs near permanent expiration, and their measurement offsetting and outside of the average. The diseased, Hutchinson implied, were not dead yet; but, soon, all that would be left in them was residual air. •

Endnotes

1. Jill Lepore, "Vast Designs," *The New Yorker*, 29 October 2007: 88-92, 88.

2. *Lancet* published surgeon-turned-actuarial consultant John Hutchinson's first paper on improved uses for the gasometer – renamed the Spirometer. Two years later he submitted a complete report to the Royal Medical and Chirurgical Society of London, recounting the many measurements he had taken with his machine. And six years after that, Hutchinson would publish his one book on the uses of his new technology. Hutchinson Spirometer, 15-18. Also see: Stanley Joel Reiser, *Medicine and the Reign of Technology* (Cambridge: Cambridge University Press, 1978): 91-95. For a comprehensive and annotated Hutchinson bibliography, see: P. J. Bishop, "A bibliography of John Hutchinson," *Medical History*, vol. 21, no 4 (October 1977): 384-396.

3. Hutchinson had excluded women from his extensive, 4400 observation, explaining the omission in plain terms: "We do not know the vital capacity of women, nor is it easy to determine it, because of their dress; independently of this we see no reason why their vital capacity should not correspond with that of men, for their chest motility appears to exceed that of man." John Hutchinson, *The Spirometer, the Stethoscope, & Scale-balance: Their Use in Discriminating Diseases of the Chest, and Their Value in Life Offices: with Remarks on the Selection of Lives for Life Assurance Companies* (London: John Churchill, 1852)6-7. This was not the only frontier for mechanical objectivity, of course, as Lorraine Daston and Peter Galison note in the second chapter of their most recent book. Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2007): 115-190.

4. John Hutchinson, "20. On the Spirometer," *The Retrospect of Medicine*, ed. W. Braithwaite (London: Simpkin, Marshall, and Co., 1857): vol. 34, July-December 1856: 80-81.

5. Hutchinson, *Spirometer*, 3.

6. Hutchinson, *Spirometer*, 11

7. Hutchinson, *Spirometer*, 38.

8. John Hutchinson, "On the Capacity of the Lungs, and on the Respiratory Functions, with a View of Establishing a Precise and Easy Method of Detecting Disease by the Spirometer," *Medico-Chirurgical Transactions*, Vol. 29 (London: Longman, Brown, Green and Longmans, 1846): 137-251:142

9. Hutchinson, "On the Capacity…,"144.

10. Bruno Latour, "Air," *Sensorium*, ed. Caroline Jones (Cambridge, MA: MIT Press, 2006): 105-107.

11. See: Ted Porter, *Trust in Numbers* (Princeton, NJ: Princeton University Press, 1995).

12. Hutchinson, "On the Spirometer," 2.

13. Hutchinson, *Spirometer*, 26.

14. Hutchinson, *Spirometer*, 66.

15. Hutchinson, *Spirometer*, 64.

16. S. W. Mitchell, "1859, Jan. 5. Improved Spirometer," *Summary of the Transactions of the College of Physicians of Philadelphia*, vol. 3 (Philadelphia: Collins, 1863): 254-55; W. E. Bowman, "A Cheap Spirometer," *Medical Times and Gazette*, 30 July 1864: 132; "Dr. Jagielski's Spirometer," *The London Medical Record*, 15 July 1879: 293. Also see: A.D.A.M. Medical Encyclopedia [Internet]. Atlanta (GA): A.D.A.M., Inc.; ©2008. "Spirometry"; [updated 2007 November 12; cited 2008 April 18]; [about 1 a.m.]. Available from: http://www.nlm.nih.gov/medlineplus/ency/article/003853.htm.

17. J. M. Da Costa, Medical Diagnosis... Eight Edition (Philadelphia: J. B. Lippincott Company, 1895): 302. Also see: William Wood Gerhard, *The Diagnosis, Pathology and Treatment of the Diseases of the Chest* (Philadelphia: J. B. Lippincott & Co, 1860): 87.

18. Walter Hayle Walshe, *A Practical Treatise on the Diseases of the Lungs* (Philadelphia: Blanchard and Lea, 1860): 51-54.

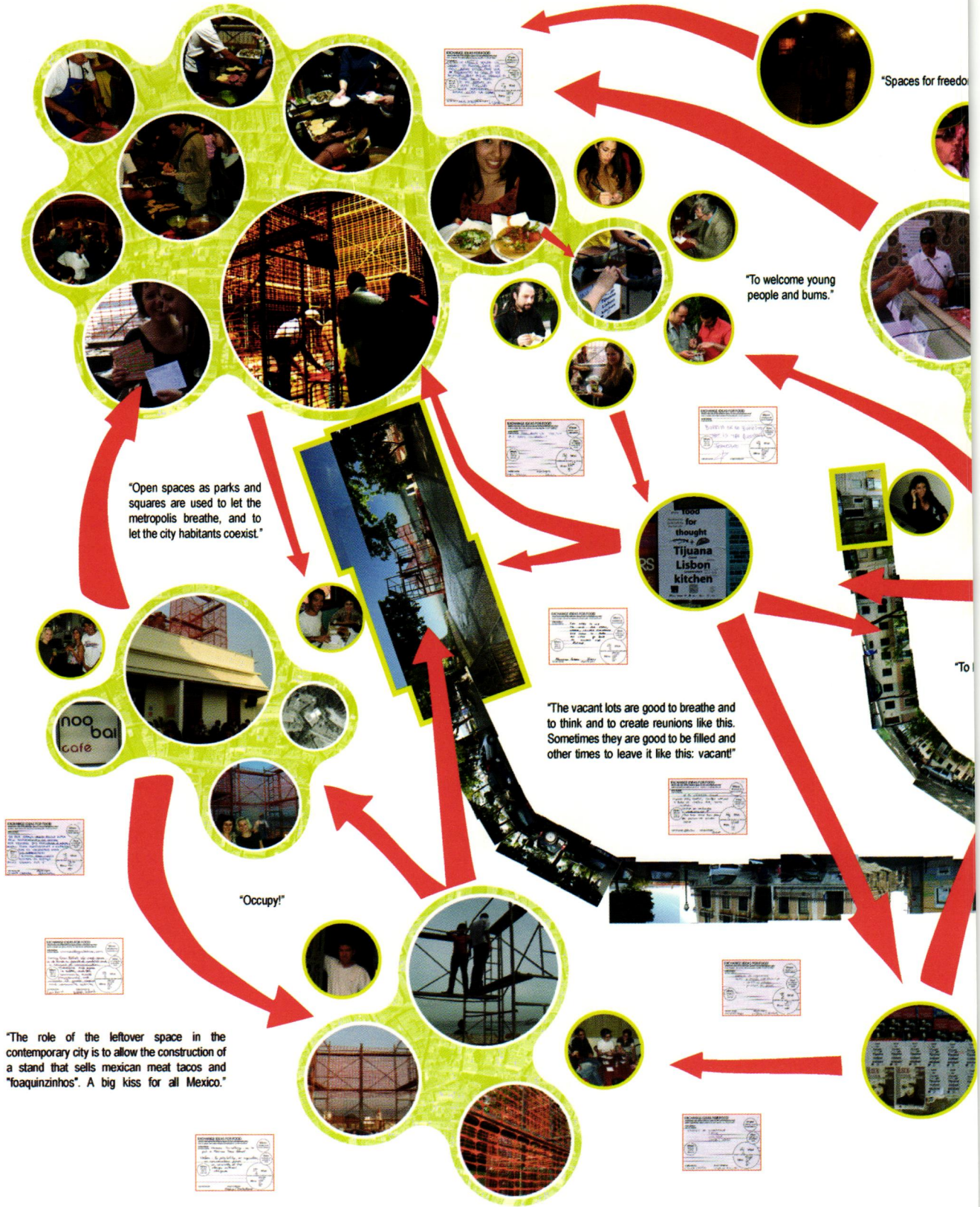
19. Reiser, 94. This seems very different from what Ann La Berge has observed in the statistical debate in Paris, around this same time. Ann La Berge, "Medical Statistics at the Paris School: What Was at Stake?," *Body Counts: Medical Quantification in Historical and Sociological Perspectives*, ed. George Weisz and Annick Opinel (Montreal: McGill-Queen's University Press, 2005): 89-108.

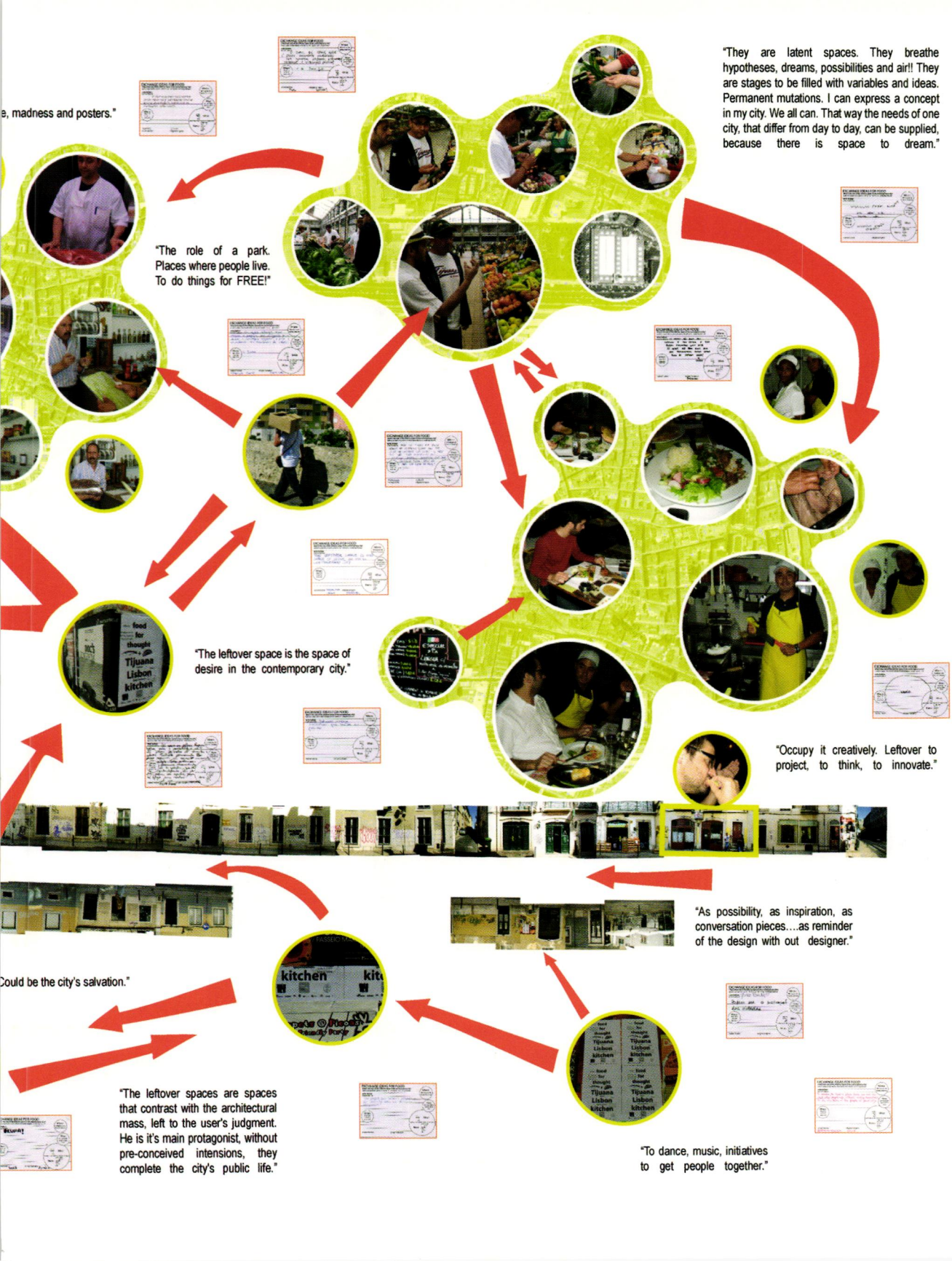
20. For more on the centrality of diagnosis and the push and pull of the construction of disease specificity, see: Charles Rosenberg, "The Tyranny of Diagnosis: Specific Entities and Individual Experience," *The Milbank Quarterly* (Vol. 80, No. 2: 2002): 237-260.

21. Mary Poovey, "Figures of Arithmetic, Figures of Speech: the Discourse of Statistics in the 1830s," *Critical Inquiry* (Vol. 19, No. 2: Winter 1993): 256-276, esp. 274-276. Peter Galison, "Objectivity is Romantic," *The Humanities and the Sciences* (American Council of Learned Societies, ALCS Occasional Paper, No. 47): 15-43, 28-39. Hutchinson himself upended himself from the grid after fleeing to Victoria, Australia – and later to Fiji – around 1853. See: Bryan Gandevia, "John Hutchinson in Australia and Fiji," *Medical History* (Vol. 21: 1977): 365-383.

Tijuana Lisbon Kitchen

Teddy Cruz




"They are latent spaces. They breathe hypotheses, dreams, possibilities and air!! They are stages to be filled with variables and ideas. Permanent mutations. I can express a concept in my city. We all can. That way the needs of one city, that differ from day to day, can be supplied, because there is space to dream."
e, madness and posters."
"The role of a park. Places where people live. To do things for FREE!"
food for thoughts Tijuana Lisbon kitchen
"The leftover space is the space of desire in the contemporary city."
"Occupy it creatively. Leftover to project, to think, to innovate."
"As possibility, as inspiration, as conversation pieces....as reminder of the design with out designer."
Could be the city's salvation."
kitchen
"The leftover spaces are spaces that contrast with the architectural mass, left to the user's judgment. He is it's main protagonist, without pre-conceived intensions, they complete the city's public life."
"To dance, music, initiatives to get people together."

Residual space as Social Indicator: *A study of women's space in the Bohra[1] Masjid - Gujarat, India*

Zameer Basrai

"*A menstruous woman who becomes clean in three nights is not to be washed till the fifth day.*"[2] Most traditional communities consider menstruating women ritually impure and restrict their access to certain domestic spaces as well as prohibit entry to prayer space. Islam too prohibits menstruating women[3] from entering prayer space (masjid) as well as from reciting prayers. As a result, the inclusion of menstruating women into the bohra masjid premises is a complex phenomenon. The bohras are 'orthodox' Muslims and their supposed 'socially progressive attitudes' are often coupled with dogmatic views in matters of religion. The case studies presented in this article illustrate the spatial mechanisms by which menstruating women are accommodated within the masjid premises without compromising on the physical and spiritual sanctity of the religious institution. Moreover, the bohra masjids chosen represent two specific conditions of inclusion in their implicit and explicit modes.

These modes can be better understood historically as congruent to the changing socio-political context of the state. In this respect, the bohras have been part of a peculiar history of Islam in Gujarat from A.D. 1650 (when they suffered greatly due to religious persecution by *Sunni* rulers in the state) to A.D. 1950 (when they prospered at the height of British rule in the country). These two conditions are represented by the *Shujai* masjid, Ahmedabad built c.1730 and the *Moti* masjid, Kapadvanj built c.1880. The '*hadd vagar no bhag*' which translates as 'the space outside the boundary' in *Gujarati* (language of Gujarat) is studied in both cases. It is a space in which menstruating women[4] are allowed to attend prayers in the bohra masjid premises. However, this implies that bohra women are allowed to enter the masjid premises and attend the proceedings, but are not allowed to pray.

The architectural articulation of the *hadd vagar no bhag* in each case will be analyzed as definition of prayer space with respect to the articulation of its boundaries (*hadd*). Initially, this space was a resultant of the physical conditions of site (a wedge-like space as in the *Shujai* masjid) but in time assumed a more formal character (a geometrically defined space as in the *Moti* Masjid) in the masjids built in the later periods. The sanctity of prayer space with respect to the profane, the inclusion of women into the masjid with respect to men and finally the acceptance of the ritually impure into the masjid premises are forces that define the community as much as determine its culture. The formalization of the *hadd vagar no bhag* into the construct of the masjid is representative of the way these forces are played out.

fig.1. The Shujai masjid nestled within the residential neighborhood

fig.2. Partitioned accessway for men from main entry to the ablution tank at back (right)

Physical cleanliness is as much a part of Islam as moral and spiritual purity. The sanctity of the prayer hall is never compromised. But the appropriation and sanctification of pre-existing space for the purpose of prayer comes with its share of complications. The making of masjids within residential environments has often created varying conditions of the residual. One can imagine the resultant conditions considering the strict geometry and orientation of a masjid (towards Mecca) juxtaposed against the nuances of medieval residential neighborhood. Between the uncompromising directionality of the prayer hall and the irregularity of boundary conditions lies the residual. And as a result the masjid, in its various negotiations with urban circumstance, is inherently required to engage the residual into its construct.

These 'other spaces'[5] at the peripheries of the masjid have functional significance. Their function is almost always determined with respect to the spaces that bring them into existence and they often assume the status of 'privileged or forbidden' spaces depending on the definition of boundaries and the situation of entry. The *Shujai* masjid, Ahmedabad introduces the concept of residual space as functional space in the making of its prayer hall. The '*hadd*' or boundary of the masjid hall is a notional (projected) rectangle that has one edge coinciding with the *West Wall* (in the direction of Mecca) and the others maximizing available space within the masonry wall enclosure of the hall. The projected rectangle (sacred space) within the irregular trapezoidal space lacks structural clarity and its definition is clearly practical. Its extents are notional and are deep-rooted in the minds of its users. This idea was first communicated to me during a visit to the masjid[6] (by an elderly person of the community); '*diwar thi bey musalla chhodi ne parjo*' which translates as 'leave space equal to two prayer mats from the wall and then pray' in *Gujarati*. A wedge-like space adjacent to the North wall was considered to be outside the masjid and assigned to menstruating women. It was *outside the hadd* of the prayer hall though within the walled enclosure and existed only in the advice of an insider to an outsider.

For an outsider, the *hadd* has no physical presence, while for the women who visit the mosque regularly, the boundaries are clear. The space is an outside even

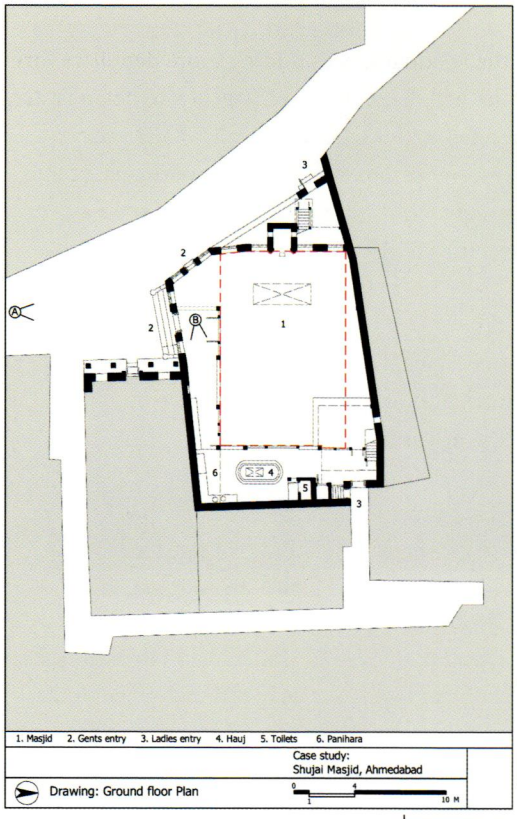


fig.3. Shujai masjid Ahmedabad ground floor plan

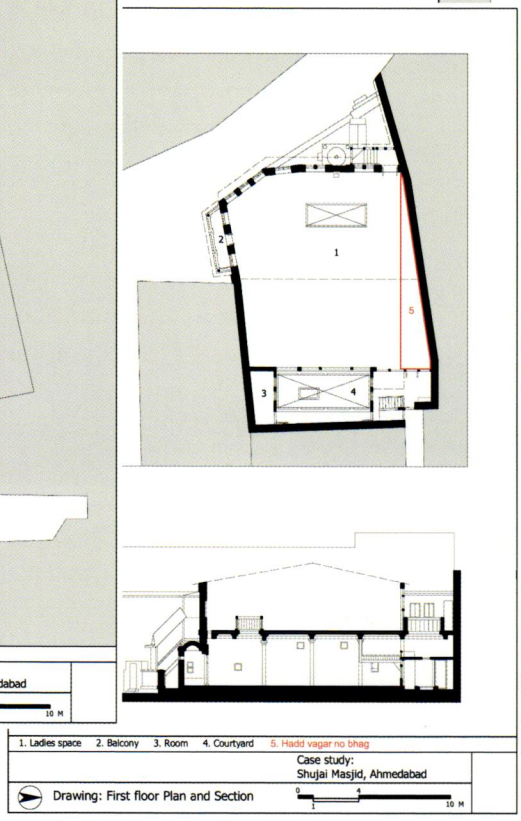


fig.4. Shujai masjid Ahmedabad first floor plan and section

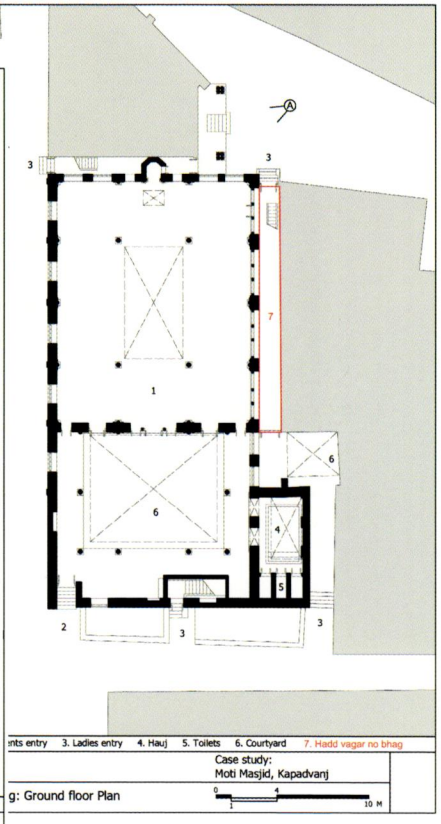


fig.5. Moti masjid Kapadvanj ground floor plan

when contained within the space of the hall only as a projection of functional difference by an imaginary plane. The boundaries are implicit. This condition becomes easier to imagine as two women seated adjacent to each other in the same hall but one would be inside and the other outside; where both understand the importance of the boundary in-between. Implicit boundaries are meant for the insider and require no representation. The *Moti* masjid on the other hand demarcates the *hadd* as a partition spanning the columns at the Northern edge of the hall. The separation between inside and outside is clear. Explicit boundaries are meant for the outsider as a mechanism to represent the set of relations between sacred and profane. The internalized communities of the bohras, within the Sunni city, elucidates a society constructed by invisible boundaries where everyone was assumed to be an insider; while the externalized communities within the British colonial city represent the boundaries clearly to the outsider. Both the insider and outsider find clearly demarcated spaces in the *Moti* Masjid while only the insider experiences the demarcations in the *Shujai* Masjid. Bohra masjids around Gujarat present various cases of formal negotiation and definition of the *hadd* with respect to the masjid hall. Thus in a way the concept of *hadd* transcends the circumstantial by its inevitable presence and representation.

An examination of the figure-ground of the masjid halls reveals this notion of bounded space more clearly. The *Shujai* masjid does not differentiate residual space in mass and void and exercises lesser

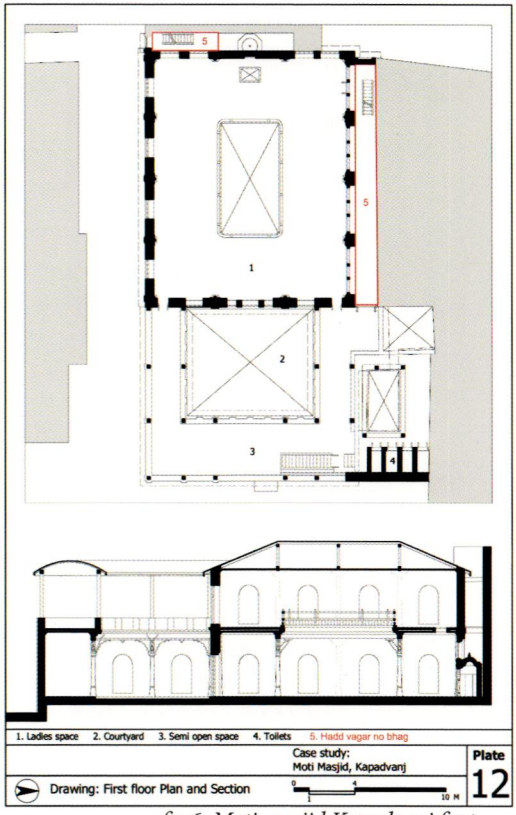


fig.6. Moti masjid Kapadvanj first floor plan and section

physical control over the immediate environment. The system of constructing shared 'party' walls limits the expression of the projected rectangular space on the outside. An attempt is made to negotiate the situation by the construction of the L-shaped partition along the South wall (fig. 2). This space also provides a passage for men to access the ablution tank on the Eastern side of the premises. It is for all practical purposes a *hadd vagar no bhag* where men who have not performed the ritual cleansing acts must circulate before entering the masjid hall. This partition defines one face of this projected rectangular enclosure within that of the masonry walls. The *Moti* masjid however clearly expresses mass and void. The relationship of inside and outside is further enhanced with the residual spaces finding more definitive form with respect to the hall. Even though the post and beam system of construction, adopted for the North wall, allows greater porosity and a gestural connection between masjid space and the residual; the *hadd vagar no bhag* is separately roofed over, emphasizing disconnection and thus complementing figure-ground (fig. 7). The form of the masjid remains separated from its residential context with the now regularized residual in between. This coincidence of projected and physical space becomes an important mechanism for the establishment of the residual within the hierarchies of the masjid.

As discussed earlier, physical definition of space has spiritual dimensions. The *hadd vagar no bhag*, is not one formed by geometrical circumstance only, but also by religious ritual. Before the masjid is declared open to the public, the head priest is invited to sanctify its precinct. It is he, who in final instance defines the boundaries of the masjid. He is said to walk the periphery of the space intended for prayer to assign its limits of sanctity. The *hadd vagar no bhag* can be located anywhere within the profane; though once defined is considered to be part of the mosque. However, it is believed that a prayer recited in the *hadd vagar no bhag* is of lesser value than that recited within the masjid boundaries. As a result, even when the masjid has reached its capacity during community festivals or during sermons of the head priest the *hadd vagar no bhag* remains empty; an outside that is not sanctified for the purpose of prayer – a space meant for the 'others' in the community. In the case of the *Shujai* masjid, the *Qibla* wall is used as reference to imply the geometry of sanctified 'inside' against the profane 'outside'. Thus, its occurrence alongside the main prayer space within a common masonry enclosure, expresses the strong sense of ritual required to sanctify and de-sanctify space within the implied geometries of the masjid.

Taharat or cleanliness is one of the pillars of Ismaili faith. The act of ritual preparation before prayer is given great importance within the masjid premises. The *Hauj* or ablution tank is normally located centrally in the courtyard of the mosque where men perform *vazu* or ritual ablution before entering the masjid hall. This involves a physical cleansing

of specified parts of the body accompanied by the recital of Quranic verses symbolic of moral cleansing. Women are prohibited from entering the courtyard of the masjid. They enter the upper levels of the masjid through staircases that are usually accessed directly from the street (usually back streets adjacent to the masjid). Women are, in a way, expected to perform their ablution at home and must be in a state of ritual purity before entering the masjid premises.[7] Menstruating women do not perform any cleansing acts since they are already in a state of ritual impurity. They use the staircases that have direct access to the *hadd vagar no bhag* thus eliminating the possibility of traversing the prayer hall as they are believed to pollute even the spaces they occupy. The presence of *the hadd vagar no bhag* makes for a complex circulation within the masjid premises. Furthermore, men and women must maintain almost[8] complete visual separation as a religious obligation. These conflicting states of cleanliness are spatially orchestrated in the accesses to and within the masjid premises. This makes for an elaborate system of entry and circulation where the 'status' of every individual is revealed. The entry to women's space in the masjid has to this day remained in the back streets where only those of the community familiar with the neighborhood can permeate. More recent access stairways have been constructed along the main roads; making access explicit to the outsider while the frequented back alleys still function as hidden access to the insider.

These hierarchies have larger implications on the position and role of women in this Islamic (minority) community. The accessibility of the masjid for women, its willingness to accept into its form the women's space in the overall experience of the masjid and of significance the inclusion of a space for menstruating women bring to light the attitude of the community through its religious institution. But in as much as it makes a clearer statement of its acceptance of women (of every status) it imposes the condition or the requirement of the space on its user. The space is marked. A space of acceptance as much as one of segregation. And because the space has such strong religious and symbolic definition that complement its geometry, by its very nature it becomes exclusive, although its very presence in the masjid is an act of inclusion – a dialectic within the form and function of the *hadd vagar no bhag* which makes it an important social indicator for the community. •

fig.7. Entry to the hadd vagar no bhag in the Moti masjid Kapadvanj

Endnotes

1. The bohras are *Shia muslims* of the *Ismaili Mustaaliam* sect. The Shias, in A.D. 765, split into two major sects; the *Ithna Asharis* and the *Ismailis*. Following this, in A.D. 1094 the Ismailis further split into the *Nazarians* and the *Mustaaliams*. This study particularly deals with the Mustaaliam sub-sect; the '*Dawoodi Bohras*' who accepted the leadership of *Syedna Dawood Bin Qutb Shah* in A.D. 1591. They mainly constitute local *brahmin* and *vania* converts in the state of Gujarat, India at the beginning of the eleventh century. Brahmins are members of the highest caste in the Hindu caste system. However Vanias are lower caste Hindu traders of small goods. As a result a majority of the bohras are petty traders by profession. The word 'Bohra' is derived from the Gujarati word '*Vohorvu*' or 'to trade'. Today, more than fifty percent of the Dawoodi Bohras live in the state of Gujarat. From Engineer, Asghar Ali *The Bohras* [Sahidabad; Vikas Publishing House Pvt. Ltd. 1980]

2. On Zoroastrian ritual beliefs. Shayest Na-Shayest (Proper and Improper) Translated by E. W. West, from *Sacred Books of the East*, volume 5, Oxford University Press, 1880 Chapter 3. As cited by www.avesta.org/

3. The common understanding of women in Islamic communities is that women are not found in the same rows as men and no prayer is obligatory for them; and that menstruating women are, according to many traditions ritually impure, and in Islam not allowed in the mosque at all. Being a trading community, bohra men have often had to leave their homes on business; as a result, women have taken greater part in neighborhood as well as masjid activities. It is in this respect that the bohra masjid expresses a special importance for women. Text adapted from Prochazka, Ajmal Bohumil *Architecture of the Islamic Cultural sphere – Mosques The Women's section in the Mosque* [MARP Switzerland 1986], Engineer, Asghar Ali *The Bohras* [Sahidabad; Vikas Publishing House Pvt. Ltd. 1980] and Desai, Madhavi *Traditional houseform of Bohras in Gujarat: Architectural response to cultural ethos* [Report 1992]

4. Bailey, Carol A. *Equality with Difference: On Androcentrism and Difference Teaching Sociology* Vol. 21, April 1993. p.121-129 as cited by http://www.jstor.org/. This article is part of my ongoing research titled 'Evolution of the bohra masjid - Gujarat A.D. 1650-1950 - An inquiry into the development of women's space in the masjid.' It is better positioned as one of many recent attempts to reconcile the absence of women and gender relations in the historiography of Islamic Architecture. Following Carol A. Bailey's critique on androcentric approaches to Sociology that centering research on menstruation as an experience unique to women, creates new frameworks to explore sociological concepts.

5. Foucault, Michel, *Of Other Spaces* 1967 ['Of Other Spaces' entitled "Des Espace Autres," and published by the French journal Architecture /Mouvement/ Continuité in October, 1984. Translated from the French by Jay Miskowiec. As cited by http://foucault.info/documents/heteroTopia/foucault.heteroTopia.en.html]. A Foucauldian reading of space pervades the various stages of this article and for these obvious instances as well I make this citation.

6. This article is based on empirical research carried out by me in 2006-07 in Gujarat, India. Masjids have been measured and drawn for the purpose of the study. Observations on site and interviews with the elderly in the community (especially older women) have been given due importance and drive the argument.

7. Masjids built in the 17th and 18th centuries were not even provided with women's toilets. However, this changed with masjids built in the later periods.

8. Women in the *zenana* are able to see the men in the hall below through the *Purdah* which could be in the form of a woven fabric or a balustrade *jaali* or trellis. Men cannot look through this visual barrier.

Images: courtesy of author

Fasil Gheorgis, Ethiopia and the Borderland of the Architectural Avant-Garde

Mark Jarzombek

Addis Ababa contains numerous fine examples of buildings that are visible evidence of the city's cosmopolitan and complex relationship to modernity. Many of these structures were designed by foreigners from as far a-field as India, Italy, Switzerland, the former East Germany, Yugoslavia, Bulgaria, the former USSR and now China. Though dozens of dissertations have yet to be written about these exchanges, I would like to highlight the work of a young, forty-three year old Ethiopian architect, Fasil Georghis, who also teaches now at the school of architecture at Addis Ababa[i] (fig. 1). Building opportunities for the country are still few, and for Ethiopians even fewer; on this account alone, his work is noteworthy, but he is also part of an emerging Ethiopian avant-garde architectural movement, the significance of which comes into focus when one recalls that during the military dictatorship era, which ended only in 1991, architecture was in the hands of the state; there were no private commissions, and architectural education received little governmental support. Architectural students were more likely than not used as convenient day laborers to be sent into the provinces to build cheap rural housing. Fasil had no choice but to leave Ethiopia in pursuit of his studies, which he did at the Finland, getting his degree there in 1991.

The demise of the communists meant that architecture, and architectural education could be nursed back to life. One sees thus the emergence of a preservation movement and of a growing interest in the Ethiopia's rich architectural history, spawned to no small degree by the growth of tourism. But Ethiopia's rapid turn into the world of globalization - with the impetus these days coming largely from the Chinese - has created an architectural production that is as aesthetically depressing as it is economically vibrant. The streets leading into Addis Ababa have become vast construction sites lined with hundreds of cheap, concrete slab buildings, surfaced with glass skins. Not all Ethiopian architects will be able to resist the Siren Call of these globalized productions. And, there will also be more than a few who will reach for the predictable rhetoric of loss and nostalgia. Fasil, as a person and as an architect, like most in his generation have thus to make profound and life-determining decisions about how to operate in this increasingly charged climate.

The two buildings of his that I will discuss, a theatre on Churchill Street and a hostel in the mountains to the east of Addis, show a high level of critical engagement with the issues and are, in many respects, almost unique in the architectural landscape of

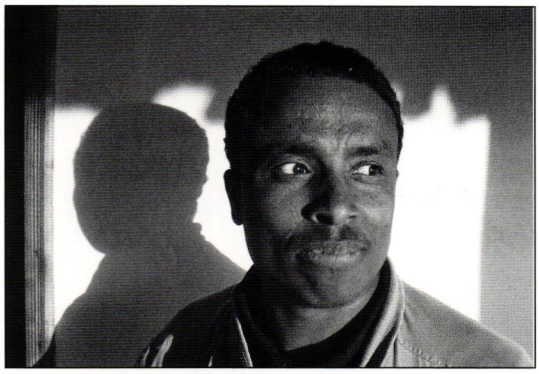


fig.1. Fasil Georghis
i. *In this paper, his name will be given as Fasil, since in Ethiopia surnames are the name of the father and thus rarely used.*

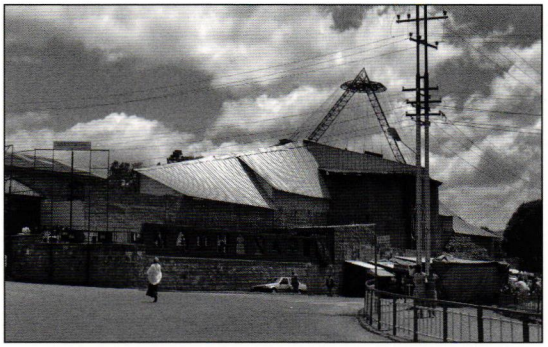


fig.2. Addis Cinema, Exterior

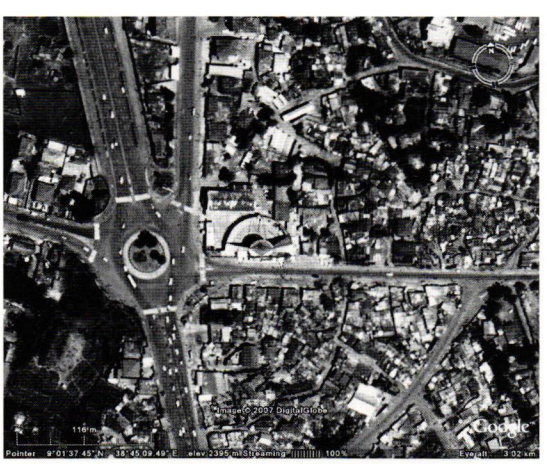


fig.3. Addis Cinema site

Ethiopia. Churchill Street was planned by the French as a 100-meter wide allee running from the early twentieth century train station up a hill to the city centre. Today it is lined with an assortment of modernists buildings, one and two storey high shops and an occasional monument. About half way up the hill there is a structure that might seem at first like a dilapidated factory typical of the shabby condition of some of the buildings around it. A more discerning eye, however, catches not only the unmistakable touch of an architectural imagination, but also certain references to the Russian Constructivists (fig. 2, 3). The building, an outdoor cinema, built on an extremely low budget, was design in collaboration with Elias Yitbarek and the engineer, Mesele Haile.

From the street, one sees a rusty wall of corrugated metal with a roof that like a broken wing of a giant mechanical bird angles its way down the street. Rising over the building is a spidery, tripod structure holding below its apex a circular mechanism through which the cables that support the canvas roof are tightened (fig. 4). The bleachers, arranged in the manner of an open-air Greek theatre, are of concrete and under them, there are rooms for a school and exhibition needs. It is not a complicated building, but ingenious in the formal decisions that were made, in its siting, and in the legibility of its elements.

Before discussing the building further, I would like to introduce another building that Fasil designed, a lodge-hotel located some 100 km to the northeast of Addis. It sits on top of a steep conical hill with spectacular views into a vast valley rimmed with lofty mountains (fig. 5). Today, the site is reached with great difficulty, but in former centuries it was an important city, Ankober, and in the eighteenth and nineteenth centuries was actually one of Ethiopia's regional capitals. The royal palace was at the top of the hill (right under where the lodge is located), and at its base a city of about 50,000 people. The palace

and city were burned in the 1860s in a power struggle with the rulers of neighbouring Gondar. The city has long since vanished.

The building, with its long thatched roof, draws on vernacular motifs, and indeed the architect used locally available materials (Ethiopian pine) and local craftsmen. The government, however, well aware of the importance of this site in the history of Ethiopia, mandated that the building be two meters above the ground so that excavations could be done some time in the future. To solve this requirement, Fasil raised the building up on pilotis, which is most certainly

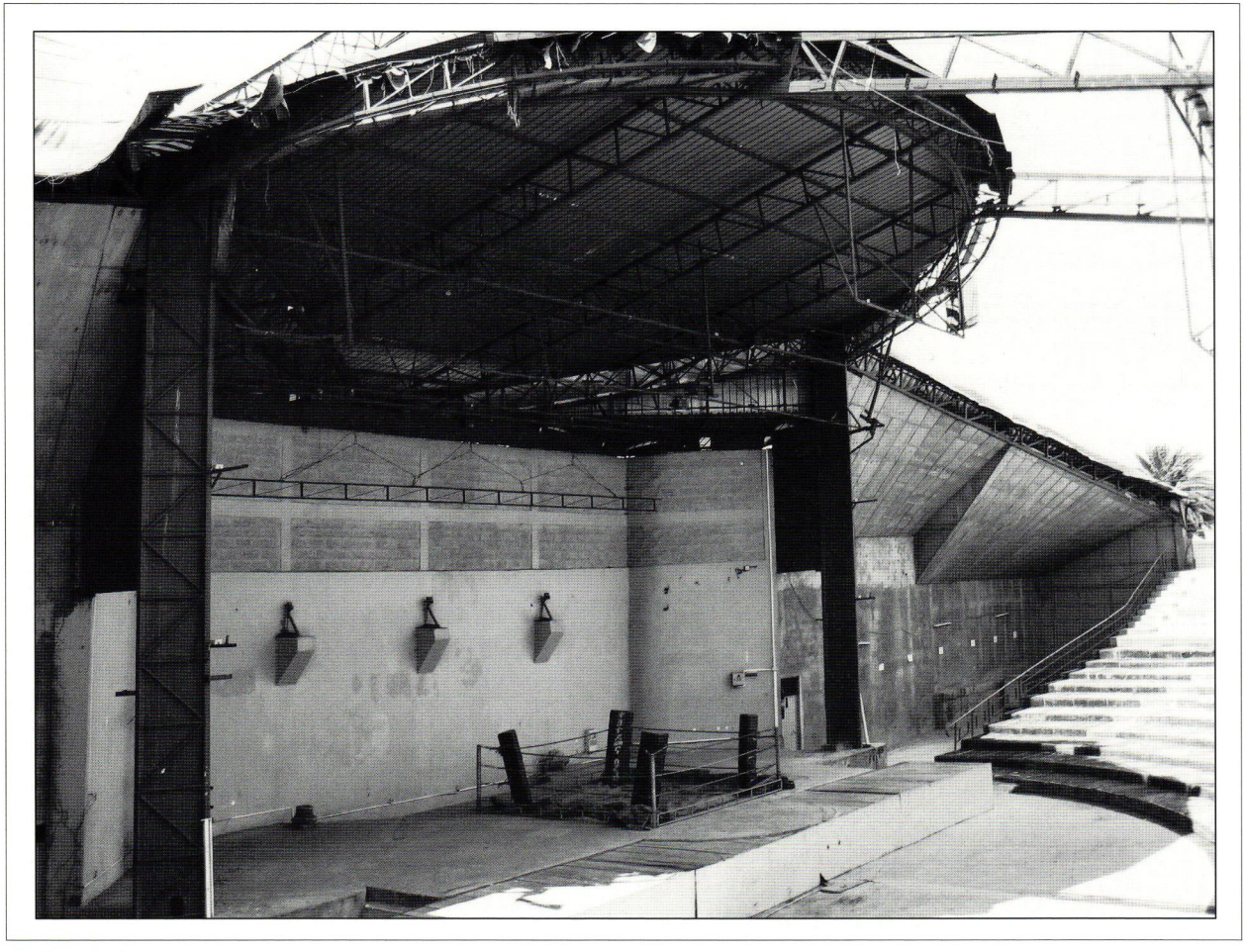


fig.4. Addis Cinema, Interior

not how vernacular buildings of Ethiopia are made. The columns rest in shallow foundations and the walls that enclose the ground-floor rooms were made with dried mud that can be easily removed by the archaeologists (fig. 6) To strengthen the posts, the builders added cross bracing making the lower floor appear like a low bridge grazing the surface of the site. The building may look traditional to the untrained eye, but it most certainly is not.

The two buildings might seem to have been built by two different people, one with a more progressive urban leaning and the other with a more conservative

fig.5. Ankober Lodge

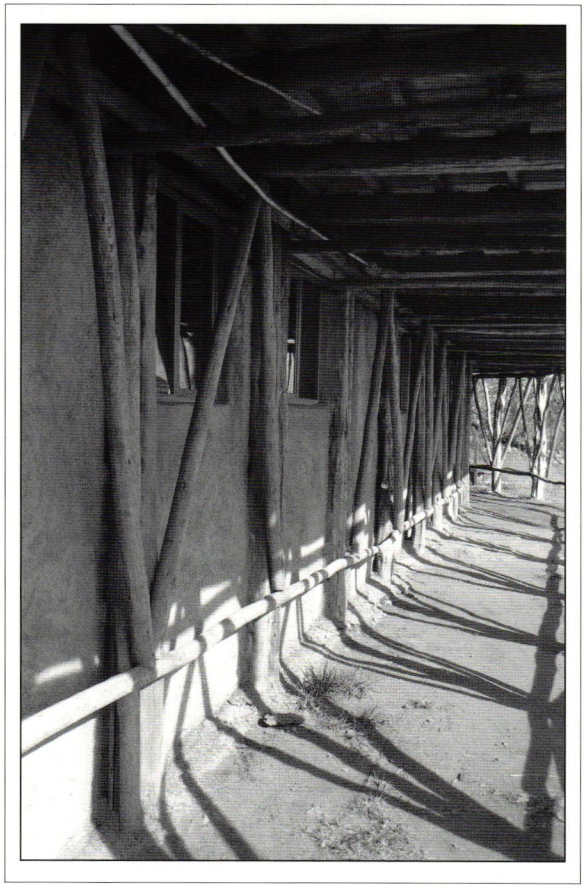


fig.6. Ankober Lodge

fig.7. House of Alfred Ilg in Addis, ca. 1890

bent, but in this case these categories do not apply. The distinction, here, between modernism and tradition, and between city and rural is not as poignant as one might assume given that both buildings are take full advantage of modernism's disruptive potential. In that sense, these buildings are not part of the discourse of modernist-as-national-progress that conditions most of Ethiopia's twentieth century architectural production. That history, and a venerable one indeed, began when King Menelik in the early twentieth century brought in a Swiss engineer and bridge builder – Alfred Ilg (1854-1916) – to help in the layout and design of Addis Ababa. Ethiopia has been on a path of modernization ever since.

The lodge references back to that moment in Ethiopian history, for the house in which Ilg lived was just such a long oval-shaped building with a traditional, thatched roof (fig. 7). Living in this way was a conscious decision on the part of Ilg, fulfilling the, for that age, standard Enlightenment-driven bourgeois desire to experience the origins of civilization. Ilg had decided, in essence, to "go native." By way of contrast, the Ethiopian princes of the period, accustomed to castles since the 15th century and to stone and wood architecture since probably as far back as 400 BC, were living in houses that were, what people in the West would call "Western." Some of these mansions still exist; many were designed by English-trained craftsmen who came from India (fig. 7). If one knows that Ilg also designed Ethiopia's first bridge, then the building, which is part bridge, can be read as a quiet homage to modernity, but fused with the tropes of tradition.

Complex reversals of the tropes of civilization and primitivism lie at the heart of the design of the Ankobar Lodge given that it supports the vernacular over and against the loss of the modern. But it is by

no means to be interpreted as a recreation of the experience of Ethiopia's anthropological history as written against the symptoms of alienation. It is only our predilection to see modernity as Western and everything that was pre-Western as "vernacular" that clouds our capacity to see the irony inherent in the design. The lodge, a native house hovering over the landscape on piloti quite literally suspends the question of the vernacular over its dual modernities, the bridge, which separates it from the ground, and below that the datum of an archaeological veritas that is, however, still unexcavated, and thus outside the field of perception.

Fasil's cinema building also places the discourses of architecture in suspension. Its minimal structure and flimsy canvas roof defies the rhetoric of stability that has been so fundamentally associated with the modernism-as-nation-building. It is thus very specifically a different type of modernity that is on view here. The building seeks out and even celebrates the space of its difference in the urban landscape. Its steely triangular apex makes it into a type of Eiffel Tower of Addis Ababa, but designed with a functionalist minimalism that leaves one uncertain about its symbolic status. If the Ankobar lodge challenges the notion of tradition, this building challenges the languages of establishmentarian modernity. It is a modern-day coliseum, part spectacle space, part monument, part ruin, and part urban symbol.

Putting the two buildings together, as I have done, admittedly defies the realities of their usage, since a visitor to Ankobar would never be found sitting in the Addis Ababa cinema, and vice versa. But the architect did not try, naively, to bring one social group into contact with the other, but to play out the theoretical issues of their separation. If the lodge was made to be read through the lens of the ambivalences of the elite, including those of the Ethiopian elite, the cinema was made to be read through the lens of the ambivalences about mass culture. Ethiopians, especially in Addis, know that just down the road of the cinema there is a vast outdoor theatre built by the communists in the 1980s that was used as a parade ground. The cinema is designed as a type of answer to that space; it is a celebration of the return to a more open and yet more intimate society, but one that is also - and I would think purposefully - meant to be read as in a state of disrepair.

These buildings may seem to be far removed from the centre of discussion about contemporary avant-gardism, but to place them in a third world periphery would do them injustice given that they are part of an architectural project that is located at the fractious borderland with modernization, the front lines of which are not in Europe and the US—and certainly not in China given its status as a quasi-colonial power - but in places like Ethiopia where one sees first-hand the dilemma that architects face in thinking through the questions of modernity. The discourses that they force into the open about Ethiopia's history and its future are by definition incomplete, standing as they do in the context of various theoretical, historical and geo-political time zones.

Buildings like these can be thus by only transitory in the discourse of the history of Ethiopian architecture which will inevitably drift, should the economy improve, in the direction of the international avant-garde where the political problematic of architecture is more often than not simulated in an aesthetic of elegant stripped-down surfaces. Here, at least with these two buildings, architecture—as an interrogation of and entanglement with the messy, cultural uncertainties of our age—is in a very real, political-economic battle to find a voice unto itself. •

fig.1. Final Design Sketch for the end of year installation. Rhino 3d modeling software was utilized to generate the installation. Main structure fabricated by 3form. The seat pod, wood deck, and planting structures were CNC at Hooke Park .The installation assembled on site at the AA exhibitions.

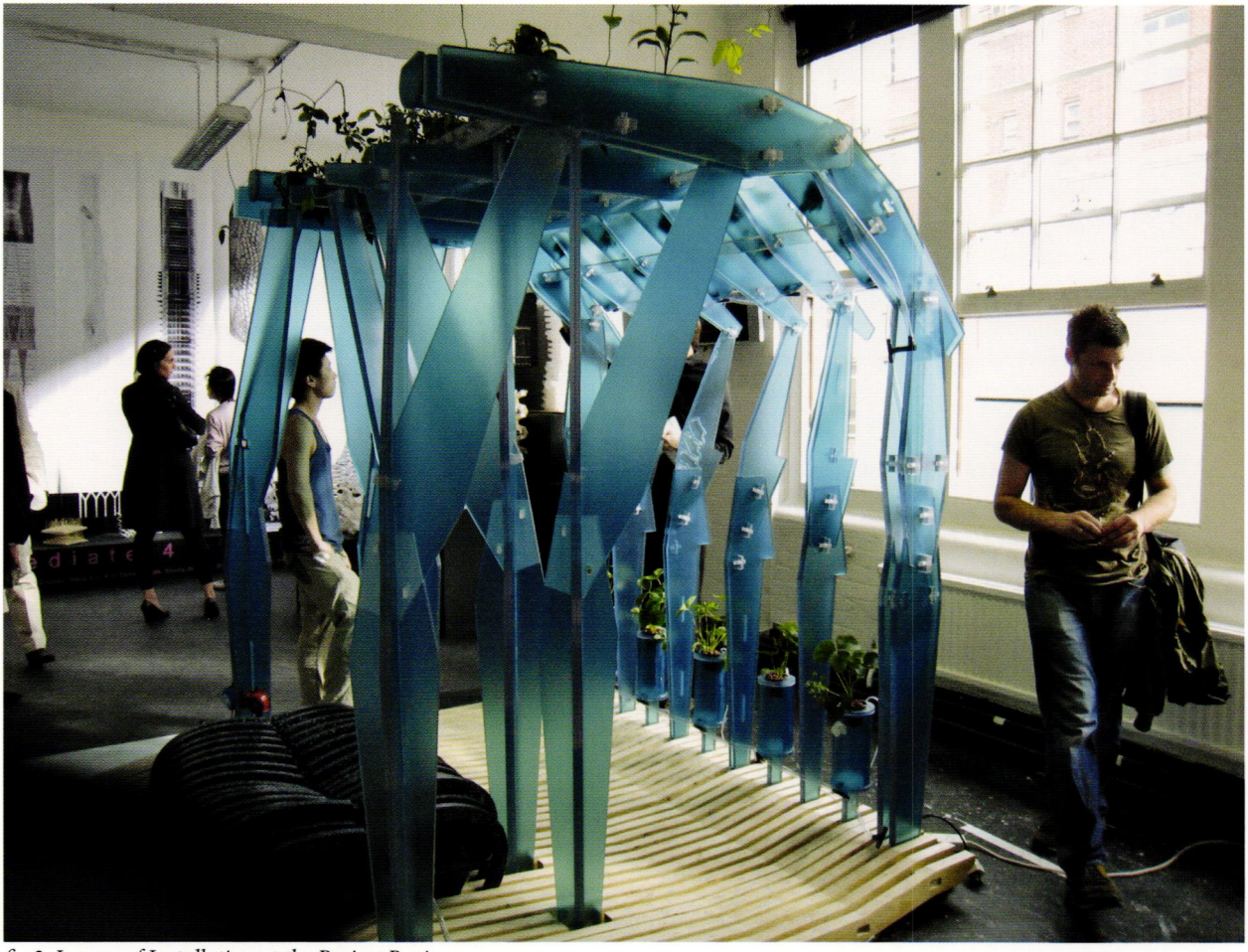
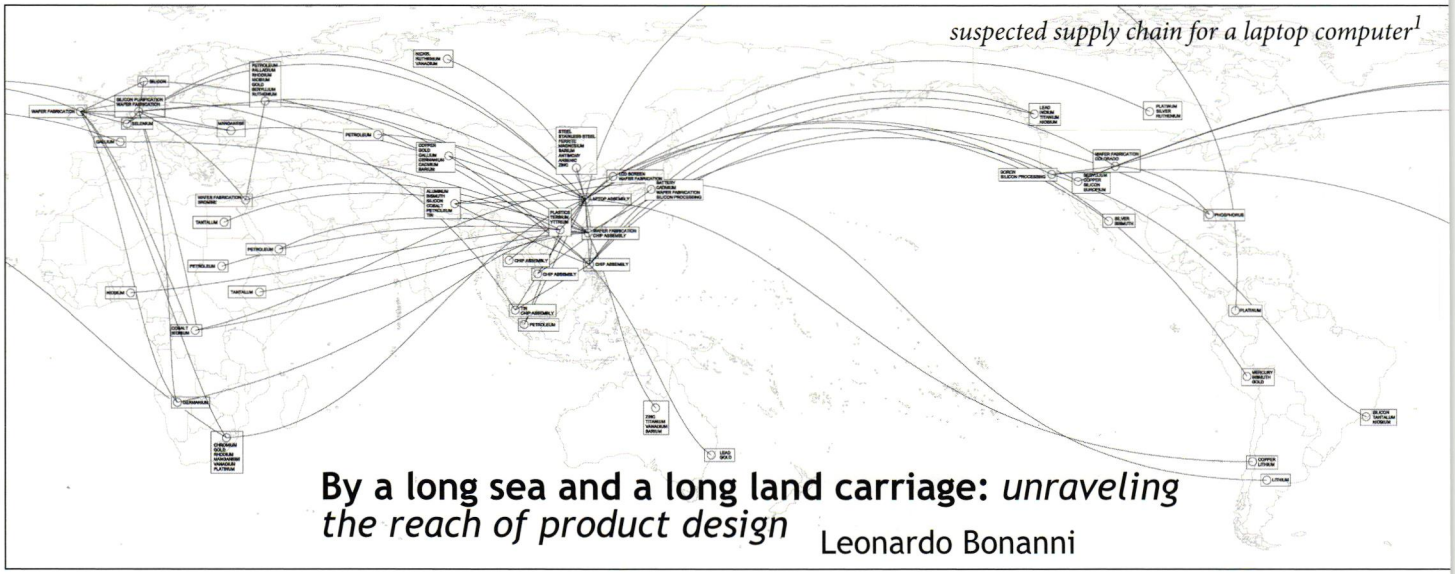


fig.2. Images of Installation at the Project Reviews Installation at the Architectural Association. The main structural components are composed of a new 3form product- for exterior use called Ecoglass™ (40% post-industrial recycled content), and 100PERCENT™ a recycled material made entirely from discarded milk and detergent packaging



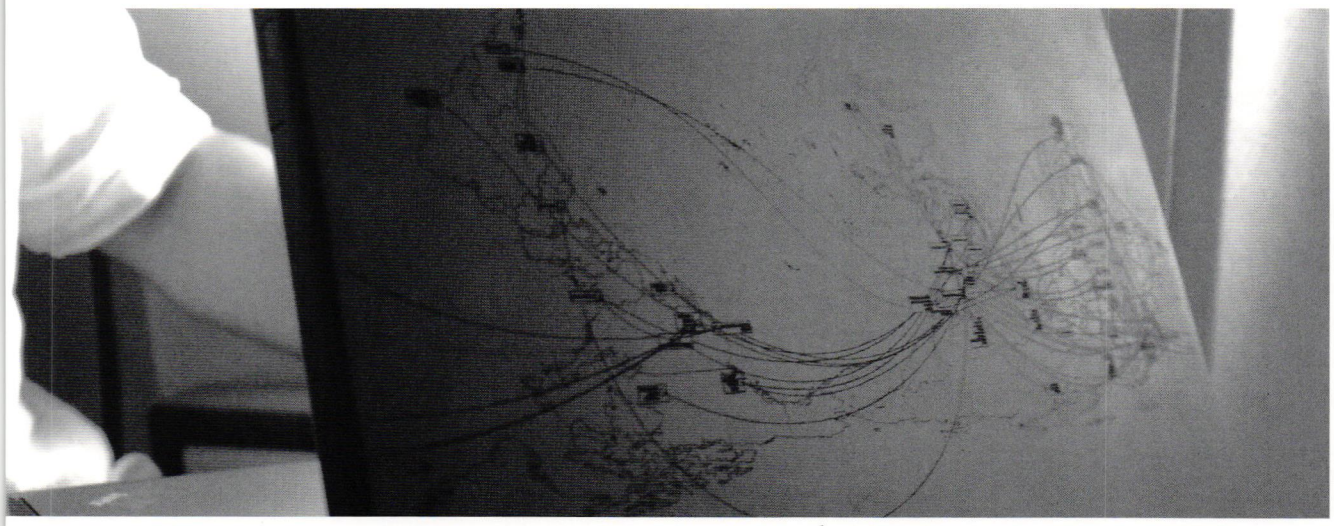
By a long sea and a long land carriage: *unraveling the reach of product design*

Leonardo Bonanni

"Were we to examine ... all the different parts of his dress and household furniture, the coarse linen shirt which he wears next his skin, the shoes which cover his feet, the bed which he lies on, and all the different parts which compose it, the kitchen-grate at which he prepares his victuals, the coals which he makes use of for that purpose, dug from the bowels of the earth, and brought to him perhaps by a long sea and a long land carriage, all the other utensils of his kitchen, all the furniture of his table, the knives and forks, the earthen or pewter plates upon which he serves up and divides his victuals, the different hands employed in preparing his bread and his beer, the glass window which lets in the heat and the light, and keeps out the wind and the rain, with all the knowledge and art requisite for preparing that beautiful and happy invention, without which these northern parts of the world could scarce have afforded a very comfortable habitation, together with the tools of all the different workmen employed in producing those different conveniences; if we examine, I say, all these things, and consider what a variety of labour is employed about each of them, we shall be sensible that without the assistance and co-operation of many thousands, the very meanest person in a civilized country could not be provided, even according to what we very falsely imagine, the easy and simple manner in which he is commonly accommodated."

-Adam Smith, On the Wealth of Nations

Our world shapes our products: politics, culture and geography determine the way we design, make and throw away objects. Take a look at your computer: inside the plastic-and-metal case are fifty materials sourced in two-dozen countries. Some are so rare that only a few tons are mined each year,[2] while others are abundant worldwide but processed at just a handful of sites.[3] The components that make up the machine have made several trips around the world before landing in your lap, and they will probably make several more after you throw it away.
Modern consumer electronics put any crown jewels to shame with their exotic materials and fine craftsmanship. But



laptop tattoo

unlike priceless heirlooms, they are disposable, many of their materials unrecoverable as a result of design. The excessive resource consumption and waste of the semiconductor industry is only the latest in a long history of short-sighted exploitation of people and the environment. Unchecked industrial production is having a catastrophic impact on this planet. Only a fundamental shift in production practices can avert disaster. But we suffer from an astonishing lack of information – and an abundance of mis-information – about products, where they come from and where they ultimately go. Industrialization has permitted vast distances to separate the sources and destinations of products. Public relations efforts have placated consumers while keeping at bay government regulation. And designers, who are the best placed to shift industrial and cultural practices, often reinforce unsustainable patterns of consumption. A one-sided presentation of production shapes our problematic practices, and only through open and shared information can we re-make the way things are made. This brief essay considers some of the traditions that have led to the opacity and un-sustainability of modern production practices, and offers hope in the form of informed and engaged product design.

Accepting Disposability

As consumers we have grown accustomed to disposing of everything we buy. How did this come about? Today Americans will dispose of 500 million plastic containers. Each bears a mobius loop, the international symbol designed by Gary Anderson in 1970 to promote recycled products.[4] Today the symbol only means that a material can be recycled. Almost no plastic containers contain recycled resin because the process of recycling itself degrades the material too much. And despite the rising cost of oil, US demand for virgin plastic continues to grow by 5% a year.[5] Not only is recycling ineffective at slowing consumption, but it was actually introduced to encourage it.

The US environmental movement has been shaped from its earliest roots by a concern for the preservation of nature. From Theodore Roosevelt's national parks to Rachel Carson's *Silent Spring*, Americans have been motivated to preserve the beauty and sanctity of virgin lands and wildlife, but not for reasons of sustainable

industry (as in Europe) or public health (as in India).[6] And while the environmental movement adopted the mantra of "Reduce, Reuse, Recycle" with the intent to lower material consumption, within three years of the first Earth Day Americans were at war with only the most visible aspect of consumption: litter. The packaging industry seized on the environmental movement's momentum to spin off a front, *Keep America Beautiful*, in order to shift the public's attention to the litter that was marring their scenic landscapes – and away from the possibility of government regulation.[7] Prior to 1960, every container in the US was refilled, so it was designed to be durable. With the introduction of the aluminum can in 1963, Americans began to use – and throw out – an ever-growing number of disposable containers. Rather than take back the cans, the packaging and beverage industries put the responsibility for *litter* on individual consumers while continuing to produce millions of containers with one-way life-cycles. Later, the same industries would push for 'recycling' as a step that *municipalities* could take to help the environment – even though the problem was caused by manufacturers. Aluminum cans, incidentally, contain no more recycled aluminum than plastic bottles, since the two alloys used in a single can melt together to form an inferior material. When plastics suffered from a poor public image in the late 1980s, the industry took out nationwide ads that introduced plastic 'recycling' – at the same time as they actively fought regulations that would make recycling mandatory.[8] Alongside recycling, the packaging industry touts 'lightweighting' or 'downgauging,' where individual containers are made with less material, as solutions to consumption problems. Cans today use less aluminum,[9] and some tap-water bottlers have begun using more efficiently-designed PET bottles.[10] While temporarily reducing material demand, efficiency improvements enable industries to maintain their sourcing strategies for a longer time – but not forever. "Relying on eco-efficiency to save the environment will in fact achieve the opposite," as William McDonough and Michael Braungart note. "It will let industry finish off everything, quietly, persistently, and completely."[11]

Depleting Resources

Plastic itself originates from the catastrophic, drawn-out exploitation of another material: ivory. In the nineteenth century, the growing European population put pressures on supplies of ivory, a material that had long been considered a luxury. Soon worldwide demand for knife handles, piano keys, combs and billiard balls exceeded 500 tons per year, with annual slaughter estimated at 65,000 elephants.[12] While it had once been possible to trade for ivory on the shores of Africa, the growing scarcity of elephants prompted traders – and the military – to advance into the interior of the continent in search of more material.

At the same time, the end-consumers (and perhaps even the manufacturers) were not aware of the significant cost and limited supply of this material. One British naval officer writing in the 1820s claims to have acquired 60 tons of ivory in one season, exclusively from dead animals all accumulated at a single location (there would have had to be at least 2,000 rotting corpses). Towards the end of the century traders began killing younger animals, prompting the further demise of animal populations. By the time England banned the import of small tusks and started requiring hunting licenses, African elephants were nearly extinct, and the ivory industry faced a major crisis. In the early 20th Century a single billiard ball, which is made from the core of the highest-quality tusks, cost the equivalent of $300 today.[13]

Manufacturers were forced to seek alternative materials – prompting one New York company to offer a $10,000 prize for a substitute. When John Wesley Hyatt heard of the competition he set

about finding a substitute,[14] leading him to the first commercial application of celluloid. Rather than submitting his invention to the contest, he patented his *Improved Method of Coating Billiard Balls by Dipping Them in a Solution of Colored Collodion* and started the first US plastic company to manufacture the balls. The ivory scourge would soon be forgotten as new synthetic materials derived from then-abundant coal tar and later petroleum promised unlimited supplies. Hyatt's *Collodion* made a much bigger impact as the *Celluloid* of cinema, itself a precursor to the recording media of the digital age.

Opacity

Computers are only the latest in a history of geographic and technological conquest ravaging the globe in search of new and better materials for more fleeting applications. And they have one of the most opaque supply chains, both as a result of outsourced manufacturing, and because major producers refuse to disclose their practices. Almost all computers are manufactured in a small area outside of Shanghai. There, Taiwanese-owned companies fill orders for American and Japanese brands.[15] While the latter employ sophisticated IT systems to communicate with their direct suppliers, a large number of parts are procured through third- and fourth-tier suppliers who have no direct communication with the global brands. Relations between manufacturers and suppliers are typically very personal (sometimes within a family); most communication is face-to-face and completely untraceable. So while Dell controls the supplier of screens and hard drives, it may have little information about the source of keyboards or power supplies.

Chinese electronics – like African ivory – can be nearly impossible to trace, not only because of geographical distance, but because cultural, political and corporate barriers inhibit communication. It makes it especially difficult to trace products when some US and Japanese brands refuse to disclose what they knowingly put in the machines. Only some computer manufacturers – led by Dell – voluntarily analyze and disclose the contents of their products. Many – most notably Apple – have continued to resist calls to disclose their products' contents. Since no regulations force them to do so, Greenpeace has developed a powerful PR campaign to rank electronics manufacturers quarterly for their 'green' behavior.[16] They have tried to publicly shame Apple for its refusal to reveal ingredients, and recently began dissecting their products in their own labs in order to diagnose and disclose hazardous materials.[17]

The lack of supply-chain transparency does not affect the environment alone: last year Hong Kong-based Students and Scholars Against Corporate Misbehavior visited several of these mystery suppliers in Shenzhen only to uncover widespread child labor, excessive overtime, pay below minimum wage and numerous occupational hazards.[18] And the lack of traceability extends to the end of these products' lives: it is estimated that half to three-quarters of our discarded electronics are smuggled to China, India and Nigeria where they are 'recycled' in the most primitive ways: crushed and burned to reclaim metals like lead, copper and gold.[19] Some of these scavenged materials find their way into lower-grade products, like the metal bracelets recently recalled in the US because their Chinese manufacturer used a high-lead alloy.[20]

Traceability

Modern industrial production alienates the consumer, and in some cases the manufacturer, from the source and ultimate destination of products. Today's shiniest and most desirable gadget is, like an ivory billiard game, a luxury built on a centuries-old practice of exploiting people and the environment worldwide. The solution to these un-sustainable and often unethical practices lies in creating transparency in supply chains.

The most stringent and progressive practices adopted by governments and industries today are focused on tracing and accounting for the impact of products over their entire life. The practice of Life-Cycle Assessment (LCA), a cornerstone of the ISO 14000 standard for manufacturers, requires that all of the materials and energy consumed over a product's life from 'cradle-to-grave' be measured, disclosed and quantified in terms of environmental impact. The even more ambitious McDonough Braungart Design Chemistry 'Cradle-to-Cradle' certification, based on LCA, awards different levels of certification based on total disclosure of direct and indirect material inputs, the proportion of recycled materials used, the recyclability and reusability of finished products, the use of renewable energy and the sustainable use of water at the production facility.[21]

We now know that manufacturers often save money by seeking out simpler processes with more recycled content while using less toxic chemicals.[22] But these voluntary guidelines do not, by and large, change the practices of industry, and neither does the market – especially when consumers feel confident in buying products because they have been led to believe in 'recycling.' Government regulation, on the other hand, has demonstrated to be effective: Germany's pioneering 'Green dot' program requires that every manufacturer selling in the country pay the cost of disposal for their product. Unfortunately, this only leads multinational companies to produce a modified version of their packaging for the German market. In the US, manufacturers actively lobby the government against environmental regulations, all the while promoting their 'green' intentions to the public. And designers, although well-intentioned in many cases, often play into the already-established systems and supply chains when making decisions about products.

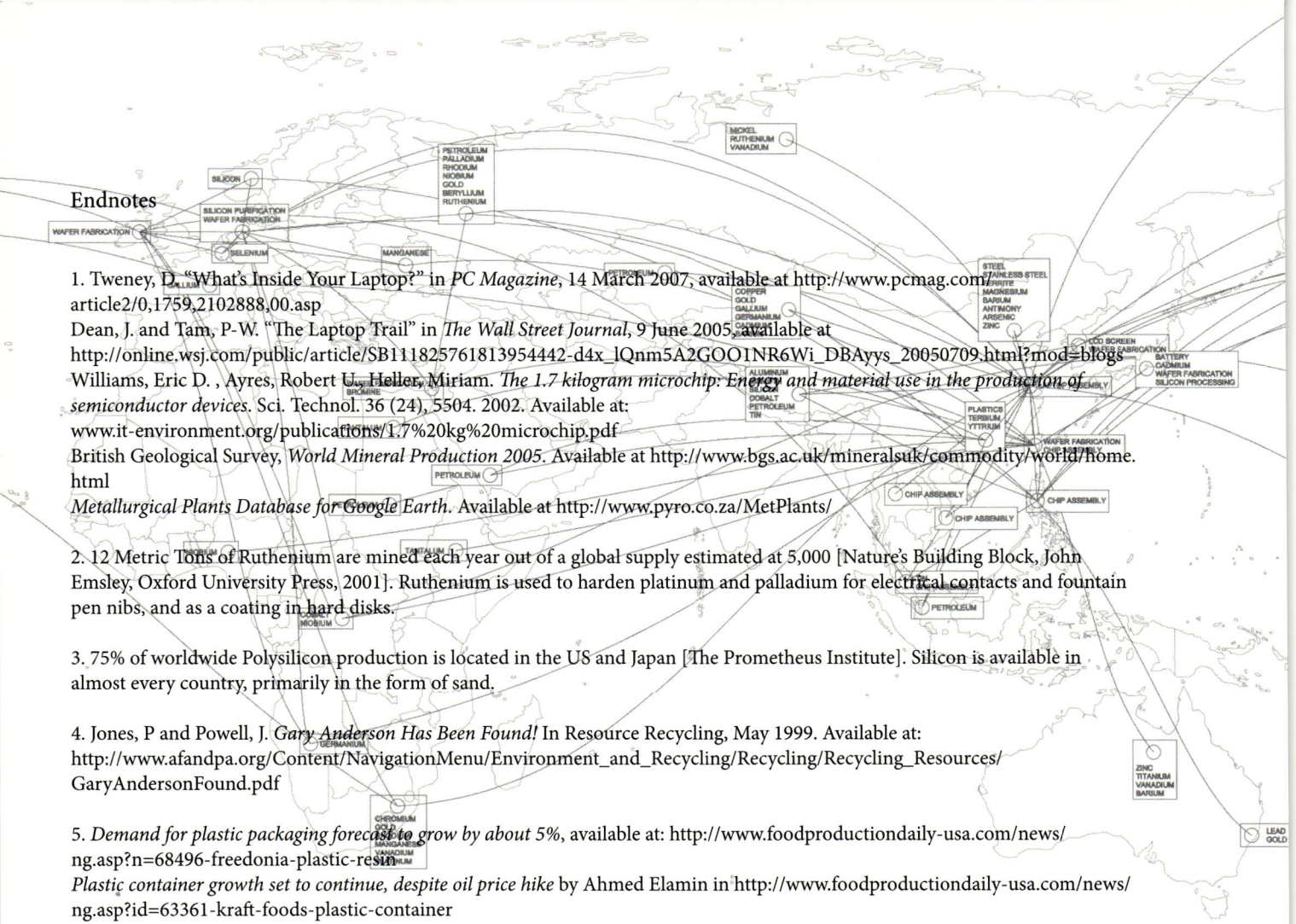
Transparency

The ivory scourge, our abuse of plastic and the lengthy laptop supply chain all suffer from a scarcity of information compounded by intentionally misleading industrial public relations. But while PR strategies have evolved, design practices have not. Whether perfectly smooth billiard balls carved from the center of the densest African elephant tusk, crystal-clear polyethylene terephthalate water bottles or glowing glossy thin-film transistor screens, product design plays a role in dissimulating the source, the manufacture and the end-of-life of a product. Greenpeace's recent video autopsy of the long-awaited iPhone makes clear, 'it's not so pretty on the inside.' Bromine, phthalates and chlorinated compounds fill the covetable

object – a shoo-in for a design award. Designers are the ones poised to make the most significant contribution to reducing environmental impact by selecting products, materials and sources that are sustainable before production even begins.

But first the concept of life-cycle accountability must become part of design practice; the source, process and end-of-life scenario part of the designer's domain. It's not easy – take the 100-Mile Suit, a valiant attempt to manufacture a man's dress suit entirely within a 100-mile radius of Philadelphia. Despite finding local wool, leather and cotton, the year-and-a-half long project failed to develop a local source of thread or rubber – forcing the designers to reveal their failings by dyeing those components bright yellow.[23] Nevertheless designers today benefit from the greatest information resources ever available to investigate, track *and publish* the sources and destinations of the objects we design. And for the first time, designers have the ability to embed designs with information about intentionality, not only in physical form but in the digital data that is increasingly tied to products as part of their function.[24] A growing number of databases reveal the ethical and environmental costs of products and provide alternative, sustainable resources.[25] Do-it-yourself websites encourage consumers to find alternative uses for products, as well as to extend their lives through 'up-cycling.'[26] On-line information can sometimes de-materialize an entire industry: the digital audio player has superseded the compact disc and the digital camera eliminated film. Services like Zipcar replace automobile ownership with open car sharing through an on-line portal.[27] The open sharing of information about products enables informed consumption, proper use and re-use, and prizes durable, high-quality products over disposables.

For the first time it is possible to design a product together with its intent, manufacture, use, and eventual disposal or re-use. Meta-data can be attached to objects through embedded software, physical 'tags' that link to on-line databases, or even physically etched information. Linking physical objects to digital information enables user-generated content, which can grow into a continuously up-to-date information resource for designers and consumers far more meaningful than today's recycling symbols and PR pitches. Consumers can buy into not only a product, but a service, a vision, a life-cycle – and a designer's vision. By employing and engaging web tools in the design of objects, services, and infrastructure, design can provide true value instead of environmental and social devastation. •



Endnotes

1. Tweney, D. "What's Inside Your Laptop?" in *PC Magazine*, 14 March 2007, available at http://www.pcmag.com/article2/0,1759,2102888,00.asp
Dean, J. and Tam, P-W. "The Laptop Trail" in *The Wall Street Journal*, 9 June 2005, available at http://online.wsj.com/public/article/SB111825761813954442-d4x_lQnm5A2GOO1NR6Wi_DBAyys_20050709.html?mod=blogs
Williams, Eric D. , Ayres, Robert U., Heller, Miriam. *The 1.7 kilogram microchip: Energy and material use in the production of semiconductor devices*. Sci. Technol. 36 (24), 5504. 2002. Available at: www.it-environment.org/publications/1.7%20kg%20microchip.pdf
British Geological Survey, *World Mineral Production 2005*. Available at http://www.bgs.ac.uk/mineralsuk/commodity/world/home.html
Metallurgical Plants Database for Google Earth. Available at http://www.pyro.co.za/MetPlants/

2. 12 Metric Tons of Ruthenium are mined each year out of a global supply estimated at 5,000 [Nature's Building Block, John Emsley, Oxford University Press, 2001]. Ruthenium is used to harden platinum and palladium for electrical contacts and fountain pen nibs, and as a coating in hard disks.

3. 75% of worldwide Polysilicon production is located in the US and Japan [The Prometheus Institute]. Silicon is available in almost every country, primarily in the form of sand.

4. Jones, P and Powell, J. *Gary Anderson Has Been Found!* In Resource Recycling, May 1999. Available at: http://www.afandpa.org/Content/NavigationMenu/Environment_and_Recycling/Recycling/Recycling_Resources/GaryAndersonFound.pdf

5. *Demand for plastic packaging forecast to grow by about 5%*, available at: http://www.foodproductiondaily-usa.com/news/ng.asp?n=68496-freedonia-plastic-resin
Plastic container growth set to continue, despite oil price hike by Ahmed Elamin in http://www.foodproductiondaily-usa.com/news/ng.asp?id=63361-kraft-foods-plastic-container

6. Guha, Ramachandra. *Environmentalism: A Global History*. Longman, 1999.

7. Rogers, Heather. Gone Tomorrow: the Hidden Life of Garbage. The New Press, 2006.

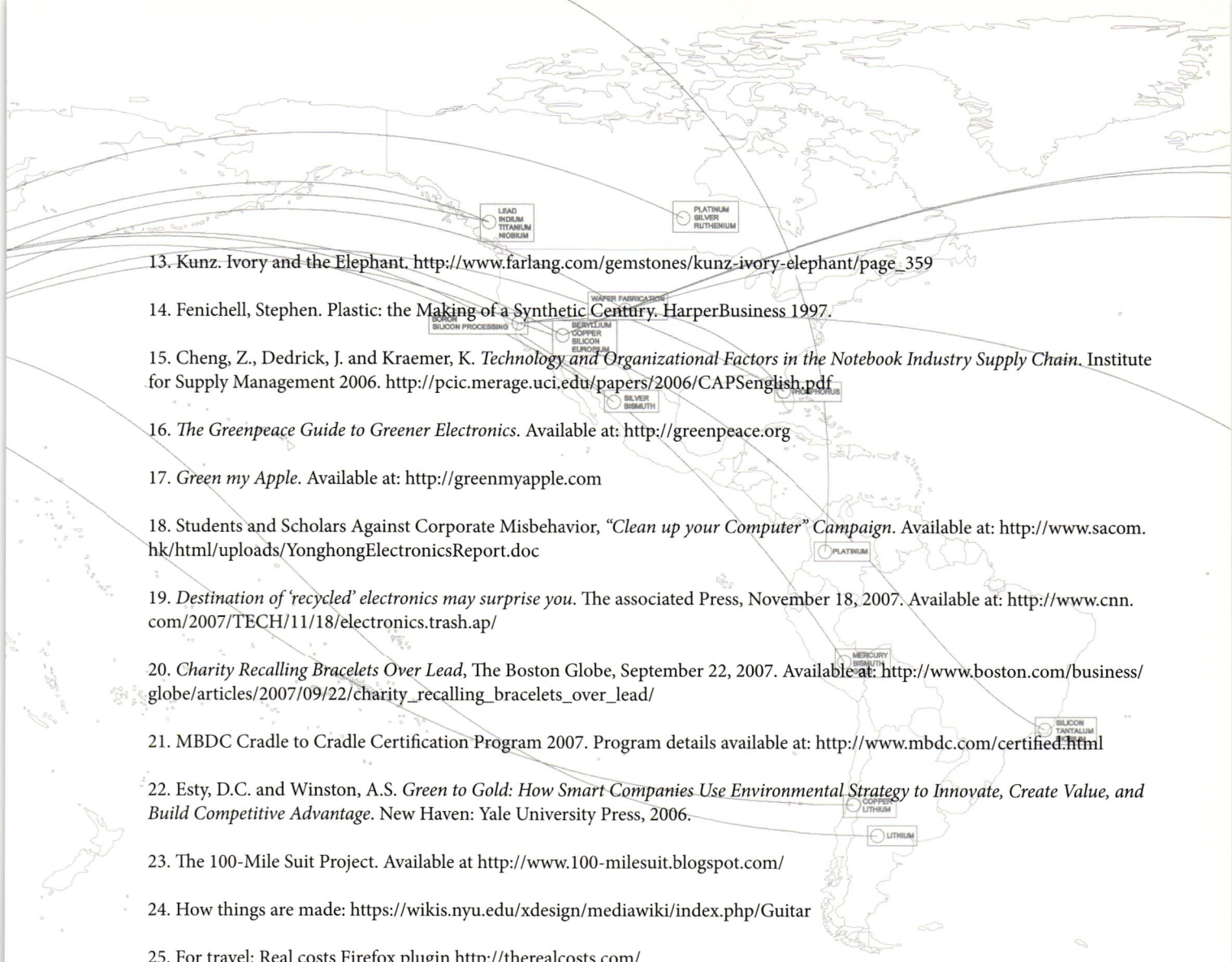
8. Elwood, Wiliam N. (editor). *Public Relations Inquiry as Rhetorical Criticism: Case Studies of Corporate Discourse and Social Influence* (Praeger Series in Political Communication)

9. The US EPA Municipial Solid Waste webpage on Aluminum: http://www.epa.gov/msw/alum.htm

10. Poland Spring, "The New Eco-Shape Bottle" http://www.polandspring.com/DoingOurPart/EcoShapeBottle.aspx

11. McDonough, W. and Braungart, M. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press, 2002, p. 62.

12. By Ship or by Camel: The Struggle for the Cameroon's Ivory Trade in the Nineteenth Century, by Marion Johnson. The Journal of African History © 1978 Cambridge University Press http://www.jstor.org/view/00218537/ap010066/01a00060/9?frame=noframe&userID=415858e7@nypl.org/01c0a8346500501cc520f&dpi=3&config=jstor



13. Kunz. Ivory and the Elephant. http://www.farlang.com/gemstones/kunz-ivory-elephant/page_359

14. Fenichell, Stephen. Plastic: the Making of a Synthetic Century. HarperBusiness 1997.

15. Cheng, Z., Dedrick, J. and Kraemer, K. *Technology and Organizational Factors in the Notebook Industry Supply Chain*. Institute for Supply Management 2006. http://pcic.merage.uci.edu/papers/2006/CAPSenglish.pdf

16. *The Greenpeace Guide to Greener Electronics*. Available at: http://greenpeace.org

17. *Green my Apple*. Available at: http://greenmyapple.com

18. Students and Scholars Against Corporate Misbehavior, *"Clean up your Computer" Campaign*. Available at: http://www.sacom.hk/html/uploads/YonghongElectronicsReport.doc

19. *Destination of 'recycled' electronics may surprise you*. The associated Press, November 18, 2007. Available at: http://www.cnn.com/2007/TECH/11/18/electronics.trash.ap/

20. *Charity Recalling Bracelets Over Lead*, The Boston Globe, September 22, 2007. Available at: http://www.boston.com/business/globe/articles/2007/09/22/charity_recalling_bracelets_over_lead/

21. MBDC Cradle to Cradle Certification Program 2007. Program details available at: http://www.mbdc.com/certified.html

22. Esty, D.C. and Winston, A.S. *Green to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage*. New Haven: Yale University Press, 2006.

23. The 100-Mile Suit Project. Available at http://www.100-milesuit.blogspot.com/

24. How things are made: https://wikis.nyu.edu/xdesign/mediawiki/index.php/Guitar

25. For travel: Real costs Firefox plugin http://therealcosts.com/
General products: True Cost Clearinghouse http://www.sehn.org/tcc.html
Corporations: Ethiscore http://www.ethiscore.org/
Architects: http://www.ecolect.net/

26. Instructables: http://www.instructables.com/
Make blog: http://www.makezine.com/blog/
Ikea Hacker: http://ikeahacker.blogspot.com/

27. Zipcar. http://zipcar.com

Images: courtesy of the author

Vertical Landscape as Performative Surface

Eric Höweler

Boston's evolving cityscape expose urban conditions where infill lots sit vacant. The bare parti walls (short for partition wall, or the lot line wall that by code may not have openings in it) walls are symptomatic of that evolving landscape—a result of uneven development activity, new infrastructural corridors, or simply neglect. The vacancy of these urban lots and their provisional uses, typically consisting of grade parking, has provoked an architectural response.

Confronted with the condition of a ubiquitous horizontal hardscape of asphalt and concrete and the pervasive blankness of parti-walls, we proposed a prototype for a vertical park that would be grafted onto these blank urban surfaces. The vertical park, which we called Parti Wall- Hanging Green consists of panels of live media—vegetation—suspended from cables and forming an overall abstract pattern. It aims to transform the character and texture of the urban environment by providing visual relief, color and texture, as well as range of ecological benefits including insulation, acoustic benefits, the reduction of storm water runoff, the mitigation of the heat island effect among other benefits.

The project is a prototype in the sense that it proposes a system of components capable of being deployed to sites across the city. After testing several varieties of grasses and groundcovers, Sedum was selected for its visual properties as well as its resilience. The panelized nature of the installation allows for the easy removal of panels and the substitution of other varieties. The hope is that the prototype will demonstrate the feasibility of vertical landscaping, as well as promote a larger discussion about urban ecologies, microclimates and vegetal effects. As such it is a performative surface- it acts as an amenity, while simultaneously demonstrating it multiple benefits.

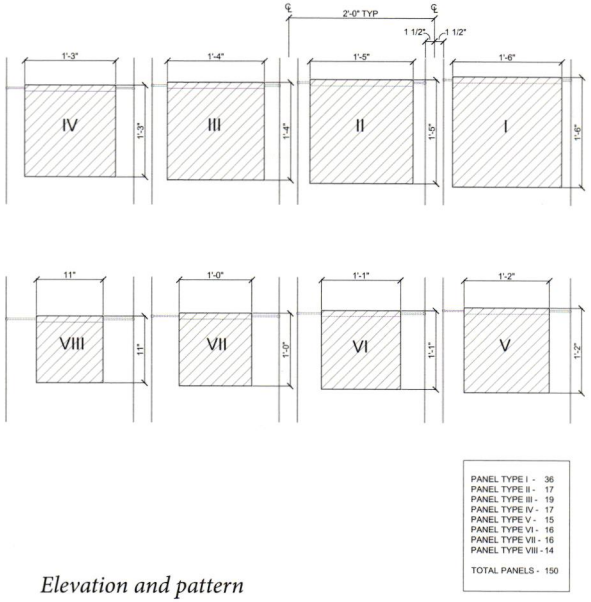
This project recasts urban architectural interventions as the production of environments that deploy a full range of materials- mineral and vegetal, to engage a public through physical experience in a larger debate about energy, architecture and the environment. •

PARTI WALL – Hanging Green
Vertical Park, temporary installation
Boston, 2008

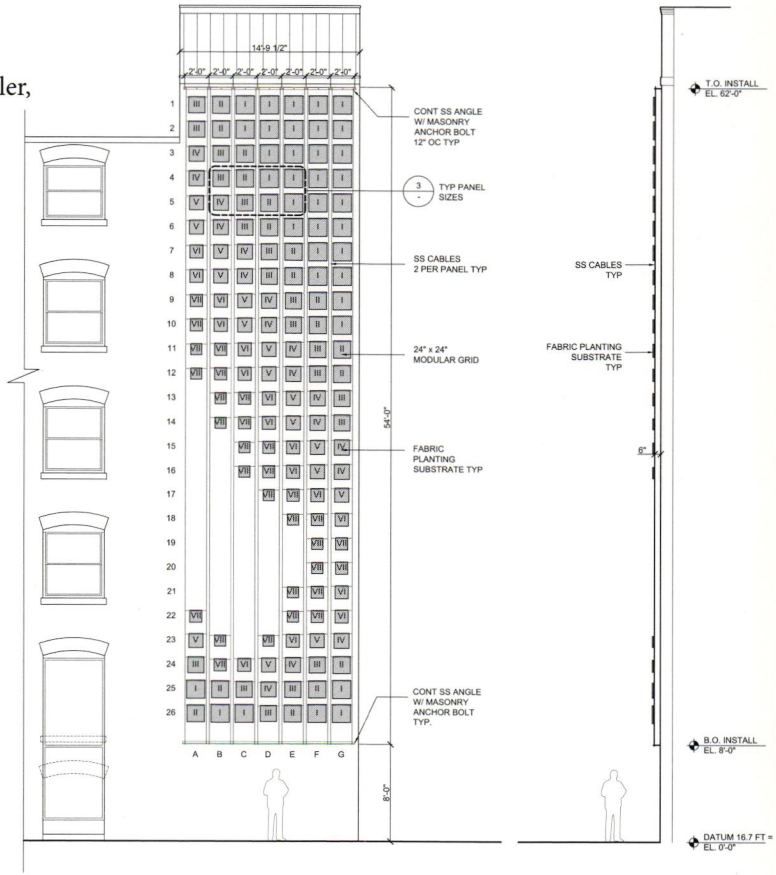
Parti Wall is a prototype vertical park project installed on a blank wall in Boston's South End. The project seeks to test out a variety of species and planting surfaces, and consists of felt panels suspended from stainless steel cables. The prototype will illustrate how Boston's scattered brick surfaces could become opportunities for zero footprint public art that improves the city visually and environmentally. The project is done as a collaboration of young architects in Boston including: Ground; Höweler + Yoon Architecture; LinOldhamOffice; Merge Architects; MoS; over,under; SsD; Studio Luz; UNI; and Utile.

Project Team: J. Meejin Yoon, Eric Höweler, Meredith Miller, Casey Renner, Ryan Pinkham, Minsoo Lee, Kate Choe

Images: courtesy of the author



Elevation and pattern



Residual Islands of Pluraity: *A Case of Toronto*

Neeraj Bhatia

The proliferation of massive infrastructures that emerged in North American cities during the 1960s, although rooted in the notion of connection, created a plethora of trapped land. These residual zones that are bounded by infrastructure have unique qualities inherent in their anatomy that make them ideal for an urban project of pluralism. More commonly, however, urban designers are inclined to "normalize" these zones to mimic the existing urban fabric. This tendency to infill and normalize these islands, attempts to reconcile the embarrassment of Modernism's brutalist conclusion. These islands, by the mere fact that they are left over, occupy an ambiguous territory within the city. The ambiguity infused in these islands is difficult to intentionally design, but of critical value to Pluralism. Instead of normalizing these pockets of land, this paper proposes to exploit the qualities of the residual. Ironically, the liberal goals embedded in Modernism are more effectively realized in these residual islands. As cities become increasingly globalized and multicultural, the residual offers the potential to bridge the gap between assimilation and complete distinction. In doing so, the promise of these residual islands is in their ability to be the shared platform for what is left of the City.

The Common Platform in the Pluralist City

Current debates on immigration policy often still focus on the number of immigrants a country can absorb without threatening the nation's overall identity. For years, immigration was predicated on the notion of the assimilating melting pot, creating a forced common bond between constituencies. From sociologist Hannah Arendt to her contemporaries such as Richard Sennett,[1] this common bond not only creates the public sphere, it reaffirms a sense of reality, reduces isolation and promotes trust. Arendt posits that the public sphere, while rooted in the common bond, also requires distinction, or plurality. For Arendt, human plurality is dialectic in nature:

> *Human plurality, the basic condition of both action and speech, has the twofold character of equality and distinction. If men were not equal, they could neither understand each other and*

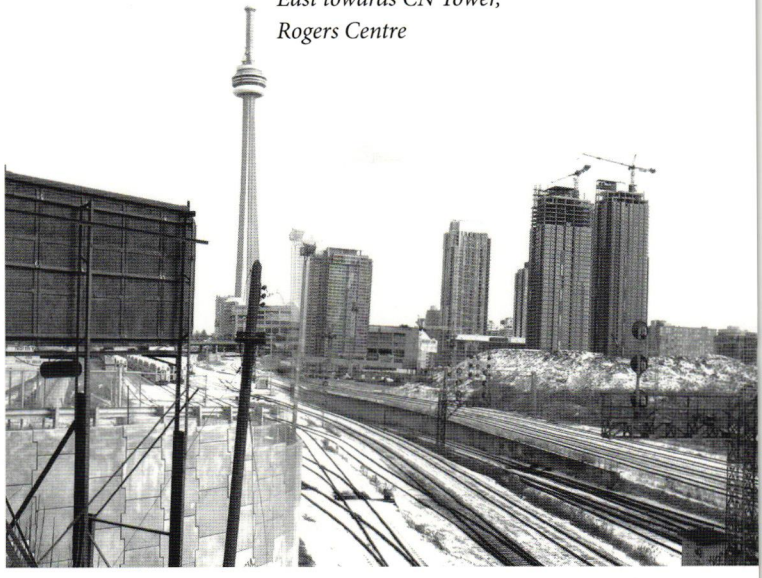


fig. 1. Image of CityPlace at Bathurst Ave. looking East towards CN Tower, Rogers Centre

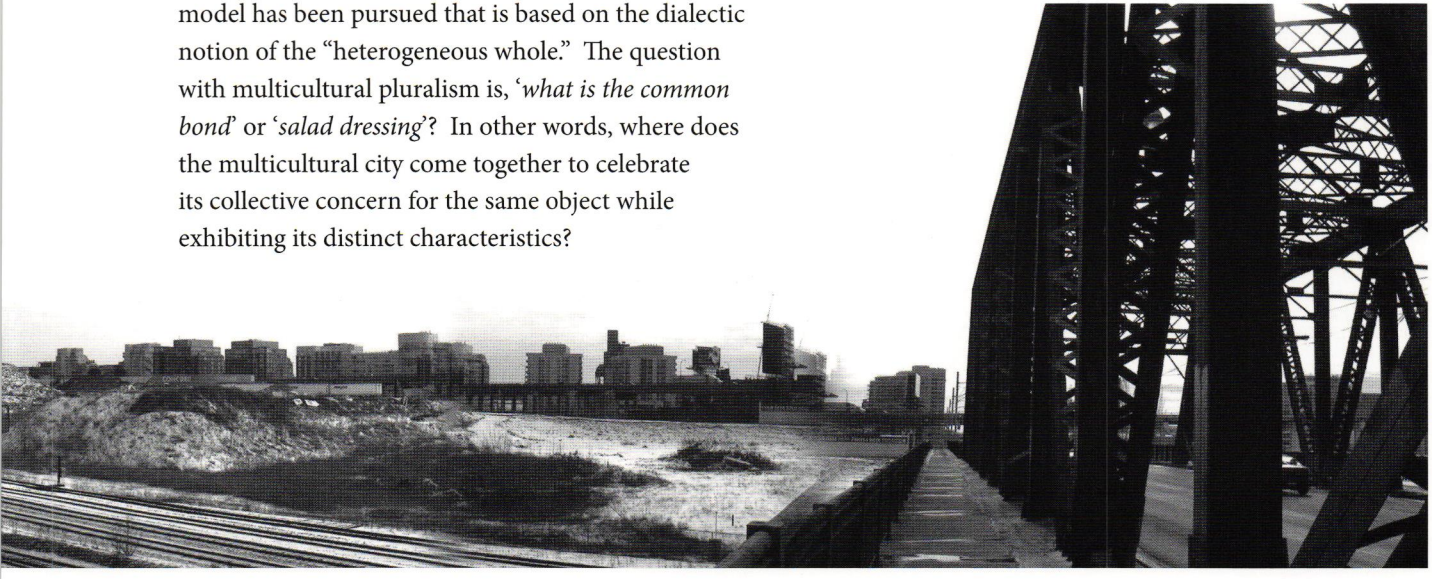
those who came before them nor plan for the future and foresee the needs of those who will come after them. If men were not distinct, each human being distinguished from any other who is, was, or will every be, they would need neither speech nor action to make themselves understood.[2]

Arendt's characterization of this complex and seemingly contradictory public sphere is perhaps best summarized through her analogy of a group of people sitting around a table. For Arendt, the table is the common world – it simultaneously connects and bonds those sitting around it while preventing them from falling over each other and assimilating belief systems. The disappearance of the table would leave strangers in a space that lacked a common bond – this would be the fall of the public realm.[3] The problem with modern society for Arendt, and increasingly witnessed in the Globalized city, is due to the fact that "the world between them has lost its power to gather them together, to relate and separate them."[4] This was, after all, the motivation of the assimilating melting pot. Instead of plurality, however, the melting pot sought homogeneity to tame the "*chaos*" of the emerging diversity. More recently, a "*salad bowl*" model has been pursued that is based on the dialectic notion of the "heterogeneous whole." The question with multicultural pluralism is, '*what is the common bond*' or '*salad dressing*'? In other words, where does the multicultural city come together to celebrate its collective concern for the same object while exhibiting its distinct characteristics?

Ambiguity as a Multicultural Sponge

It is beneficial to begin by examining cities wherein multiculturalism has been more prevalent. Not only does this allow one to identify characteristics conducive to Multiculturalism, it also reveals where this common bond is of utmost value. With regards to the number of foreign-born residents, Toronto and Vancouver top the list, only to be superceded by Miami.[5] Intriguingly, Toronto, Vancouver and Miami sit in geographically separated zones; Miami as an appendage to the United States embracing the Caribbean, Vancouver behind the wall of the Rocky Mountains adjacent to the Pacific, and Toronto in Southern Ontario – a peninsula that effectively digs into the United States.

The repercussions of Toronto's geographic location have linked it more directly to the United States than other Canadian cities. For instance, the Queen Elizabeth Way, built in 1939, was one of the first major highways in the country and was used to connect Toronto to Buffalo and its associated industry and tourism. The expressway between Toronto and Montréal, however, was not built for another twenty years. As far back as the 1920s, massive investments from American companies were being poured into



Toronto.[6] These continued into the 1950s and 60s in the form of branch plants. In 1954, Toronto had 48 foreign-owned branch plants, including Ford and American Motors. More than two-thirds of the companies in the New York City region sought sites in and around Toronto.[7] Toronto was preferred over Montréal because of its centralized location, language, and larger labor market:[8]

> *That Toronto has come to rival Montreal as a metropolis is attributable to its easy communications with New York, as well as to its situation at the convergence of corridors leaning southwest, west, north and east through a hinterland attractive for land settlement and to its early role as political center.*[9]

Whereas Miami and Vancouver sit in morphologically isolated zones, Toronto is geographically separated by an abstract political division, allowing the city to simultaneously be connected to a larger regional network. Residing in an ambivalent zone - *isolated* from its own country and *linked* to a larger regional structure of transport lines - contributed to Toronto's growth and early identity crisis. Toronto journalist, Robert Fulford describes the pre-1960s Toronto as a city, who denied that it had an identity worth exhibiting."[10] In the 1970s Toronto was said to be "too British to be American, too American to be British, and too cosmopolitan to be properly Canadian."[11] Unlike Miami or Vancouver, whose multiculturalism is more homogenous in composition,[12] Toronto's location readily absorbed a *mosaic* of immigrants - tarnishing the notion of a unified identity. The ambiguity of Southern Ontario's geographic position and the resulting location of Toronto have given the city a unique position, or lack of position. Without a coherent and overpowering identity and situated in a "neither zone", Southern Toronto was able to successfully attract and host a large number of

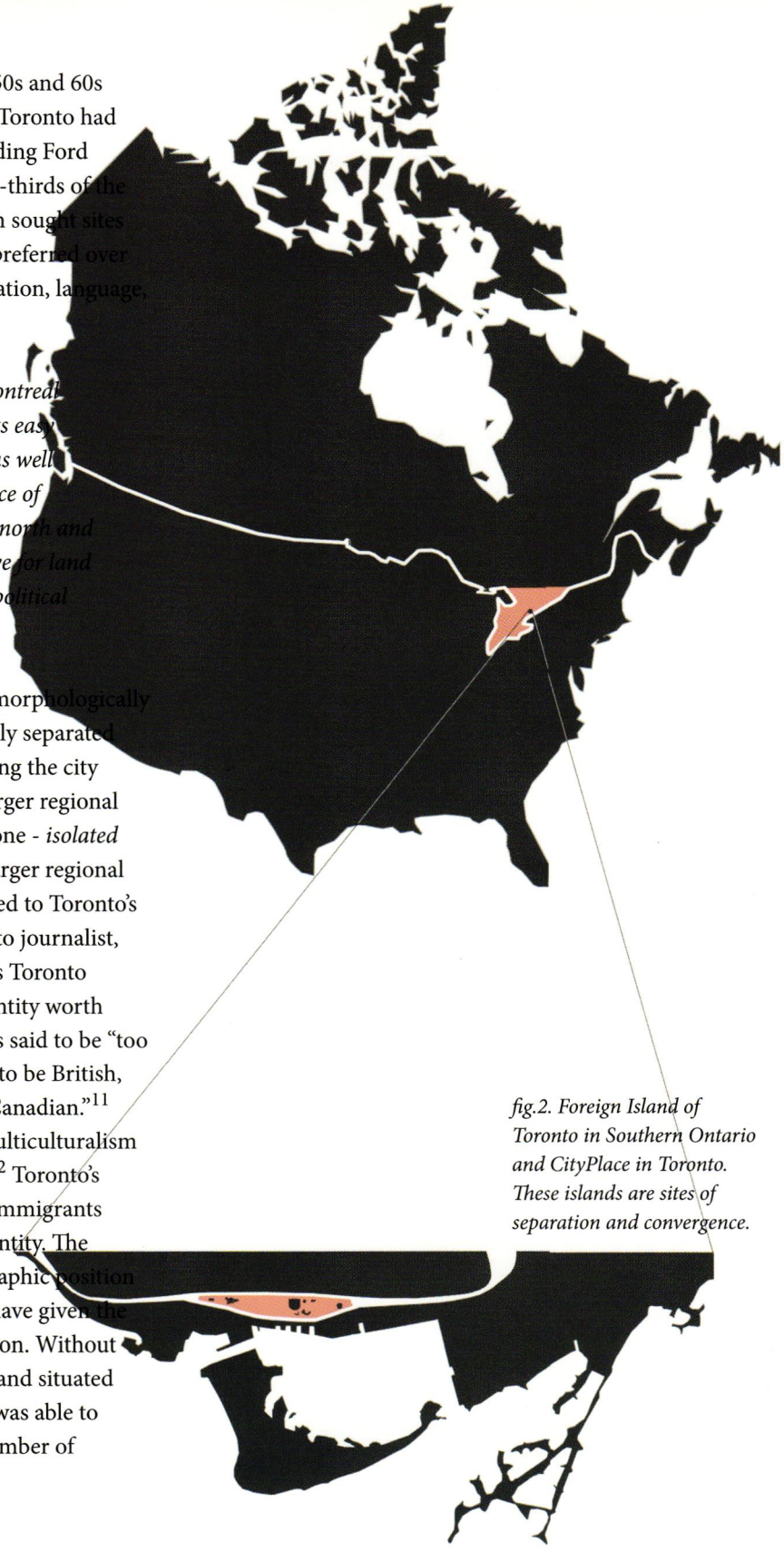


fig.2. Foreign Island of Toronto in Southern Ontario and CityPlace in Toronto. These islands are sites of separation and convergence.

immigrants without assimilation. In Toronto, the immigrant becomes the norm. Presently, Toronto is made up of 44% foreign-born residents, 43% visible minorities, and a variety of religious groups[13] - making it the most diverse of pluralistic cities and accordingly, calling into question the nature of its common bond. Where do these divergent groups gather to monumentalize their 'distinct-equality' and reaffirm trust and reality in the public realm?

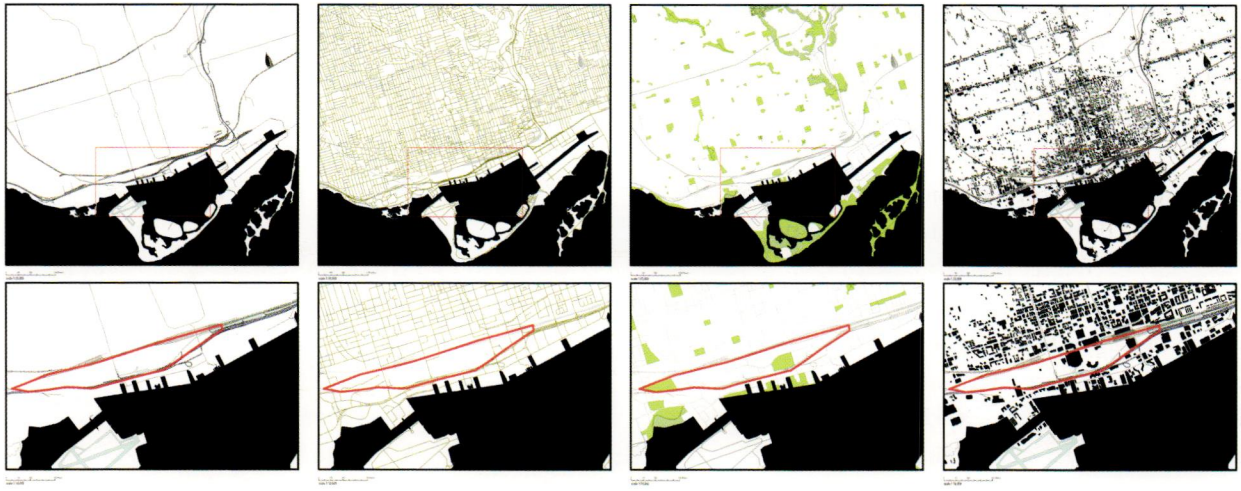
Residual Islands and the Promise of Pluralism in the City

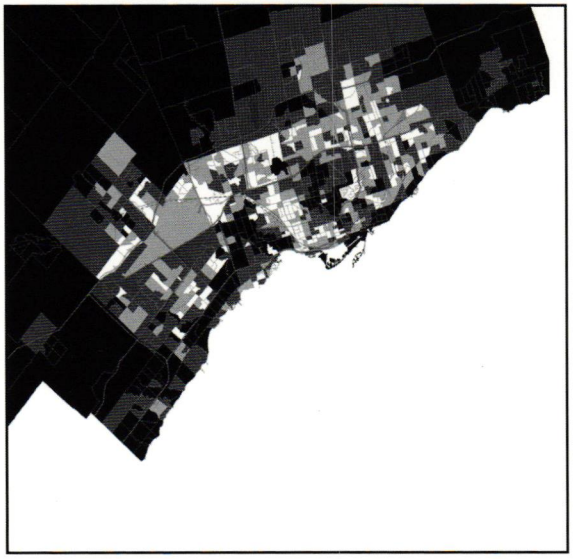
At the scale of the city, we can apply the notion of 'ambiguous zones' to isolate areas that lack a coherent identity and sit at convergence or distribution points. In Toronto, one such foreign island is CityPlace (formerly the Railway Lands) bounded by the CN Railway and the elevated Gardiner Expressway (fig. 1).

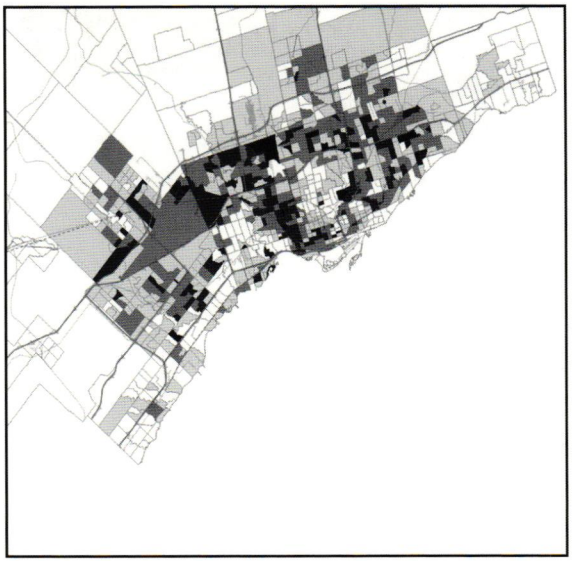
CityPlace emerged in the final years of Modernism, during the construction of the Gardiner Expressway in 1960. Named after Toronto's very own Robert Moses figure, Frederick Gardiner, the expressway was to be built parallel to the already existing railway tracks. This system of grouping the infrastructures was working seamlessly until the expressway construction encroached on the historic Fort York Military Base and Cemetery. Built in 1793, Fort York defended Upper Canada from the newly independent United States. Although out of operation since 1932, preservationists and historians forced Gardiner to reroute his expressway around the Fort. Due to the already existing urban fabric, the expressway was not able to reunite with the railway tracks for nearly two kilometers. Ironically named CityPlace, this pocket of land is a 'non-place' - trapped between these strings of infrastructure in the central downtown core of Toronto.

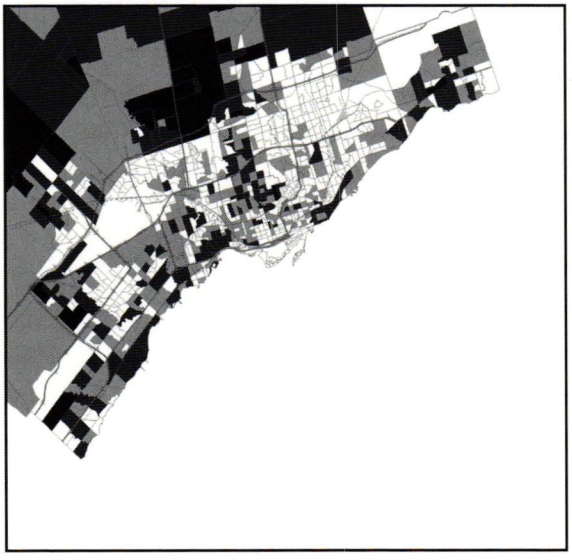
For years, CityPlace was a major distribution island for Toronto, holding and transferring cargo and train cars for transport across North America. As railway transport reduced in scale and relocated to the city's periphery, the railways lands stood both empty and trapped in the center of the city. CityPlace is emblematic of criticism waged against large scaled infrastructure – complete separation of communities and morphology. In the case of CityPlace, local street grids, park systems and built form are interrupted by the island's bounding infrastructures. Many of these systems cannot find a way around these

fig.3. Morphological Separation caused by the infrastructures that enclose CityPlace. From Left to Right: Major Infrastructures, Local Streets, Park Systems, and Built Form.









infrastructures and simply end at their intersection (fig. 3). In addition to the morphological divides produced by the major infrastructures, are demographic segregations. The pattern is such that a wealthier and more Canadian (in terms of citizenship) population lines the southern edge along the waterfront. A substantially lower income bracket lines the East and West edges of the site, while visible minorities are in higher concentration on the Southeast, Southwest and Northern edges of the site (fig. 4). What results in CityPlace is a residual island bounded by infrastructures that enforce distinct communities and morphologies on their various edges.

Residual islands like CityPlace have a peculiar quality in that while they sit separated, they are simultaneously the site of converging flows and their associated user groups. The site is bounded by local and commuter populations who use the adjacent airport, ferry, highway, buses and trains. This brings a diverse population together in close proximity along the edges of CityPlace. The intriguing dialectic quality of CityPlace both through separation, causing

fig.4. Demographic separation in CityPlace is reminiscent of the "other side of the tracks" phenomena. The distinct communities on the various edges of the islands have their own internal demographic consistency. Darker tones represent higher amounts. From left to right: Canadian citizenship, non-canadian citizenship, citizenship pattern, annual income. Second row: not visual minority, visual minority, visual minority pattern. Plotting these against major infrastructures reveals strong separations occurring along infrastructural lines.

distinct communities, and convergence, allowing for common interaction, can be read through a lens of Arendt's definition of Pluralism (fig. 5). CityPlace occupies a distinct territory within the city - because its construction was inadvertent, its purpose was continually ambiguous, enabling the island to absorb multiple readings and constituencies. Sitting as a 'no man's land' in the middle of the city, the residual quality of CityPlace makes it home to none and all. This allows CityPlace to effectively absorb a public project of plurality – a grouping of public institutions for shared use in the city. This would act as the common table, bringing the diverse city together in an ambiguous territory formed without hegemony, allowing for interaction without assimilation. The residual, because it is claimed by no one, gains its strength as the glue that holds the public sphere and its associated democracy intact.

Beyond the unclaimed and dialectic quality of CityPlace, there are other characteristics inherent in these infrastructural islands that make them ideal for a public project of plurality. More recently, CityPlace has come to collect massive public and cultural

programs in Toronto. In most cities, major public programs are too large to fit into the regular urban fabric and are therefore pushed to the periphery.[14] In Toronto's case, CityPlace offers an island for these oversized cultural and sporting complexes such as the CN Tower, SkyDome, and Air Canada Centre, which have the added benefit of direct links to public transport nodes to absorb and distribute large crowds. Other characteristics of these foreign islands are their central locations due to their first production as railway yards. This first production also means that many of these islands are government owned and could easily be fitted with public projects. Furthermore, the infrastructural isolation has allowed many to remain undeveloped. Lastly, because these islands are created by infrastructural separation, they have clear edges that are widely traversed, and are therefore recognizable entities at the scale of the city. These qualities of impartiality, convergence and separation, accommodation of large program, location, public ownership, emptiness, and legibility make residual islands like CityPlace ideal for a grouping of public projects that create a shared platform for exchange in the city (fig. 6).

Promise of an Open Work

The 'open' or 'closed' notion of art is largely characterized by the relationship between the subject (the viewer), the object (the designed artifact) and author (the artist). Umberto Eco defined the 'closed conception', as a piece of art wherein the subject was to see and interpret the object in a single manner – that which was designed by the author. Eco posits that the closed work leaves little or no room for interpretation between the author's intent and final work; the work has a completeness to it that limits individual interpretation. Eco States:

> *Aesthetic theorists, for example, often have recourse to the notions of 'completeness' and 'openness' in connection with a given work of art. These two expressions refer to a standard situation of which we are all aware in our reception of a work of art: we see it as the end product of an author's effort to arrange a sequence of communicative effects in such a way that each individual addressee can refashion the original composition devised by the author...In this sense the author presents a finished product with the intention that this particular composition should be appreciated and received in the same form as he devised it.*[15]

In contrast to the closed work, Eco speaks of the 'Open Work' as a piece of art that has been strategically and intentionally designed by the author to have a degree of 'openness', allowing each individual subject to project the final missing pieces to complete the work. Eco further defines a sub-type of Open Work as 'works in movement', which are characterized by being partially unplanned or physically incomplete.[16] The work in movement allows for the possibility of numerous personal experiences and interventions, but still maintains the "world intended by the author".[17] Thus, there is an underlying order to the work, but also an openness that arises by leaving specific parts unplanned.

When thinking about the dialectic quality of pluralism, the notion of the Open Work provides a template to allow difference to exist – each individual adding the final pieces to provide completeness – with a common goal – that which is defined by the author; the city, its laws, infrastructures and common beliefs.

Just as negative space in painting is inadvertently created with the application of the positive, CityPlace was constructed without an explicit intent. In painting, negative space shares clear edges with the positive, but its content remains undefined. Aesthetic theorists tell us that the negative space is what provides depth to an image. Similarly in CityPlace, the tension between its legible infrastructural outline, and undefined interior objective offers an openness, taking on multiple readings that provide depth to the pluralist city. Ultimately, the residual offers the pretense for an Open Work.

Modernism has bestowed residual islands like CityPlace on nearly all North American cities, each harboring the latent project of pluralism (Fig. 6).

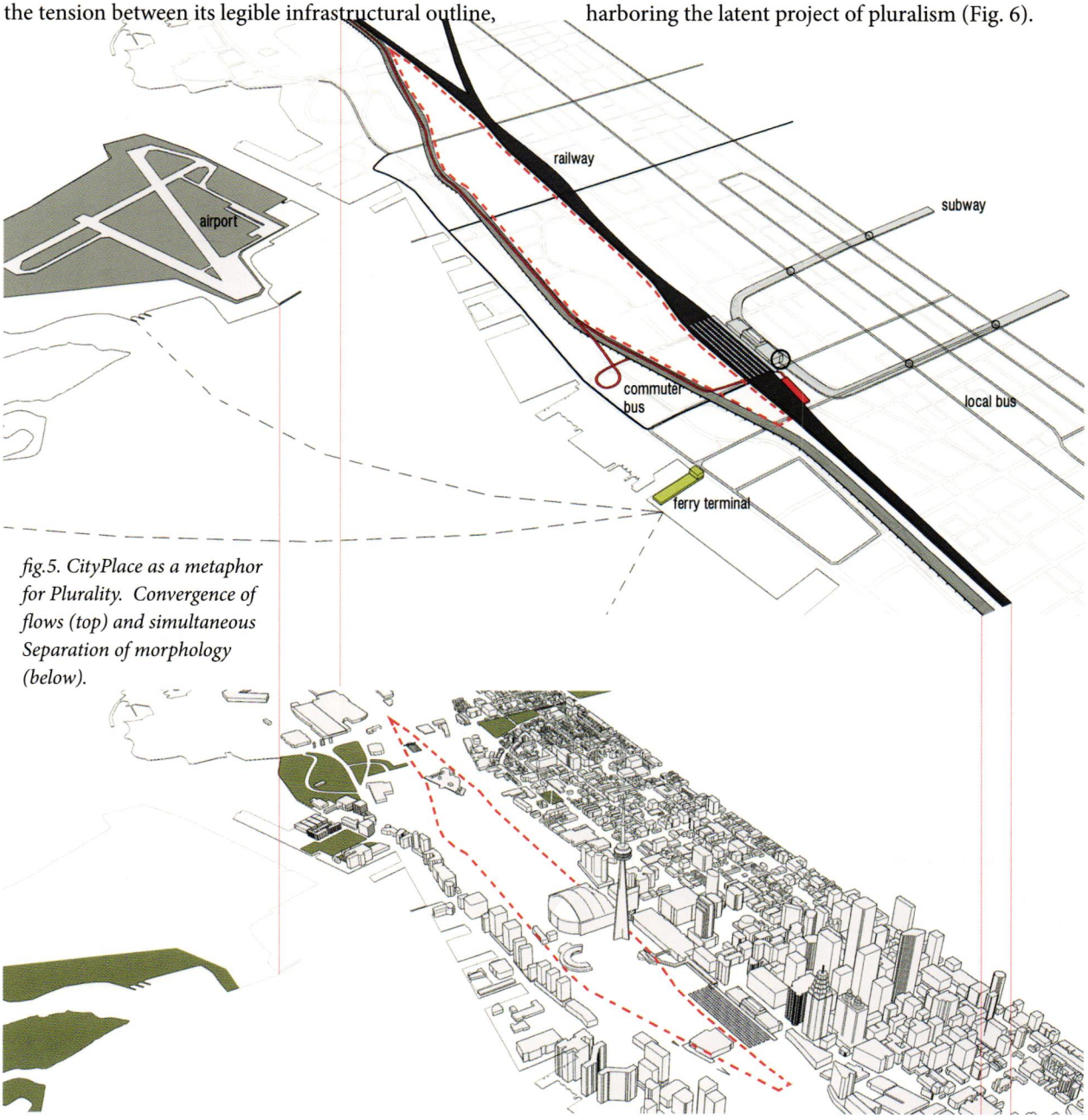


fig.5. CityPlace as a metaphor for Plurality. Convergence of flows (top) and simultaneous Separation of morphology (below).

The promise of foreign islands such as Toronto in Southern Ontario, or more locally, CityPlace in Toronto is that they lack an overpowering, closed stance (fig. 2). Without a single clear reading, the potential of these residual infrastructural islands lies in their ability to appeal to a diverse multicultural population. The multiple readings infused in ambiguity and the accompanying difficulty to design or formalize ambiguity propels one to exploit these islands for their pluralistic characteristics. Two scales of initiatives would need to occur for this project to effectively be realized. On a planning level, it would require analogous residual zones to be planned as public islands, demanding the city to abstain from privatizing the lands. On an architectural level, the transformations located on the periphery of these islands would need to not only connect their internal infrastructures but also the surrounding communities to the interior of the islands. The architectural project essentially bridges the positive and negative space, allowing the islands to benefit from the potential of gathering occurring in the space of flows. Current private condominium construction on CityPlace threatens to normalize the island flood it with a consistent affluent population. The obstruction of the emerging public project eradicates the juxtaposition and ambiguity latent in the residual. It is these qualities, after all, that invites the audience, the city, to participate in an Open Work. The lurking public project inherent in the structure of foreign islands like CityPlace is fundamental to the public realm in the increasingly globalized and multicultural city. Without it we are just a grouping of unrelated people in the space that was once known as the city. •

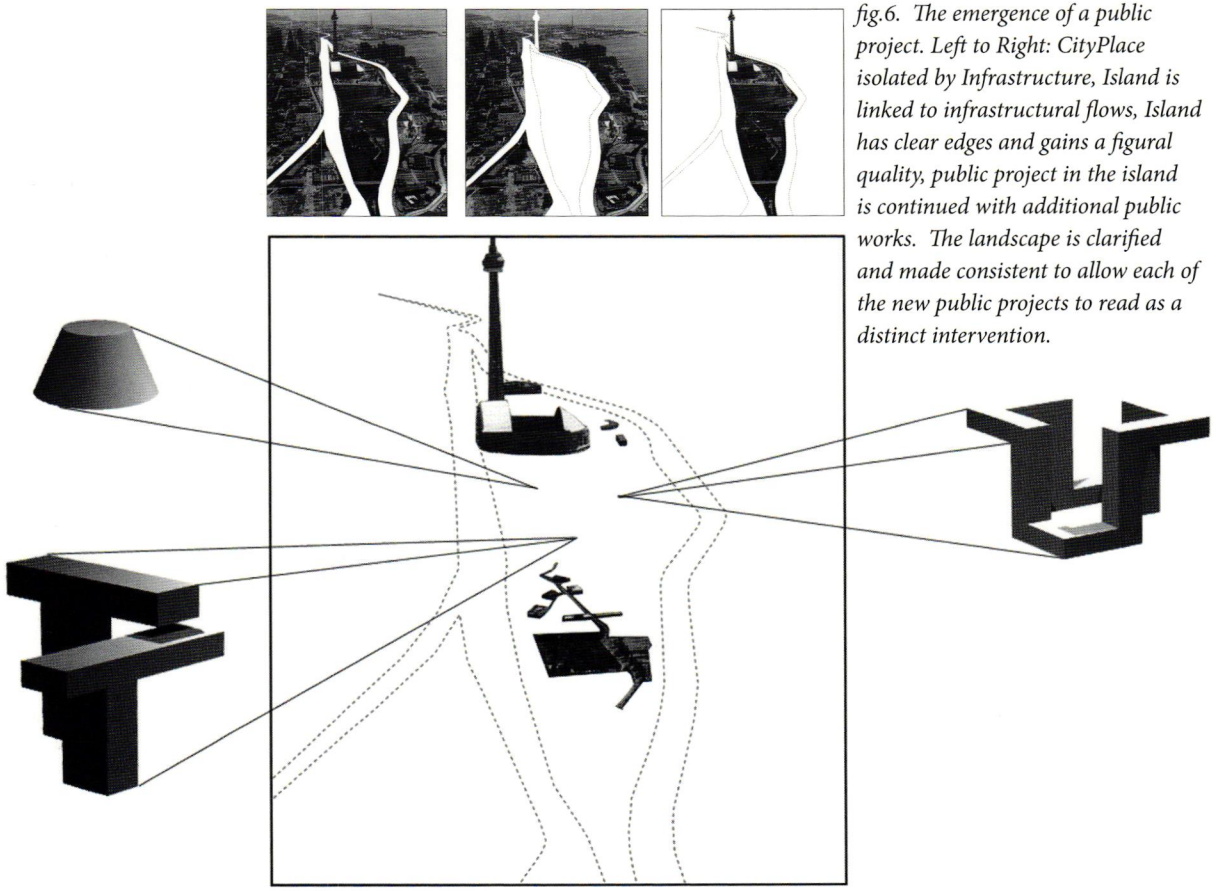


fig.6. The emergence of a public project. Left to Right: CityPlace isolated by Infrastructure, Island is linked to infrastructural flows, Island has clear edges and gains a figural quality, public project in the island is continued with additional public works. The landscape is clarified and made consistent to allow each of the new public projects to read as a distinct intervention.

Endnotes

1. See: Sennett, Richard. *The Uses of Disorder: Personal Identity and City Life.* (London, UK: Faber and Faber, 1996). and Sennett, Richard. *The Fall of Public Man.* (New York, NY: Norton and Company, 1975).

2. Arendt, Hannah. *The Human Condition.* (Chicago, IL: University of Chicago Press, 1958. 175-176). [emphasis added]

3. Ibid., p.52

4. Ibid., p.53

5. "Top 10 cities by share of foreign-born population, 2001." UN Habitat (2004); U.S. Census Bureau (2004b); World Cities Project (2002); Australian Bureau of Statistics (2001); Statistics Canada (2004). Actual numbers are as follows: Miami 59%, Toronto 44%, and Vancouver 37%.

6. Lemon, James. *Toronto Since 1918.* (Toronto, ON: James Lorimer & Company Publishers, 1985.56).

7. Ibid., p.121.

8. Ibid., p.121.

9. C.F.J. Whebell. Corridors: *A Theory of Urban Systems* in "Annals of the Association of American Geographers," Vol. 59, No. 1 (Mar. 1969), pp.1-26.

10. Fulford, Robert. *Accidental City: The Transformation of Toronto.* (Boston, MA: Houghton Mifflin Company, 1996. 1)

11. Ibid., p.18.

12. Vancouver's immigrants primarily consist of Asian groups. Immigrants from China constitute 29.9% of Vancouver's 47.1% visible minority groups. The sum of all Asian groups makes up 44.8% of the population. Source: 2001 Vancouver Community Profile from 2001 Census at Statistics Canada. http://www12.statcan.ca/english/Profil01/CP01/Details/Page.cfm?Lang=E&Geo1=CSD&Code1=5915022&Geo2=PR&Code2=59&Data=Count&SearchText=vancouver&SearchType=Begins&SearchPR=59&B1=Population&Custom= Accessed: March 23, 2008.

Miami has a similar homogeneity to its immigrant population, with most immigrants of Latin descent, particularly from the Caribbean area. 65.8% of Miami's population is Latin or Hispanic. Source: QuickFacts for Miami (city), Florida. United States Census Bureau. Year 2000. http://quickfacts.census.gov/qfd/states/12/1245000.html. Accessed: March 23, 2008.

13. "Statistics Canada." (2001). http://www12.statcan.ca/english/census01/Products/standard/themes/DataProducts.cfm?S=2&G=M&C=535&P=35&ALEVEL=3&FREE=0. (Accessed: June 19, 2007).

14. One need look no further than the New York Jets Stadium controversy in 2004. Originally planned on the Western Piers of Manhattan, the Stadium in now under construction in New Jersey.

15. Eco, Umberto. Anna Cancogni (transl). *The Open Work.* Harvard University Press, Cambridge, 1989. p.3.

16. Ibid, p.12.

17. Ibid, p.19.

Images: courtesy of the author

History in Gordon Matta-Clark's Sublime

Morgan Ng

Gordon Matta-Clark's work navigates the uneasy terrain between radical and artistic intent. Critics frequently describe the decrepit architectural environments photographically documented by artists like Matta-Clark during the 1960s and 70s - environments conditioned both by time and weathering as well as through considered violent acts - as transgressions of artistic convention. When viewed through the lens of contemporary leftist rhetoric, often leveled against the class status of "high art," Matta-Clark's brutal gashes onto the physical fabric of the city seem only comprehensible as radical challenges to aesthetic meaning; but the artist himself was well aware of their function as spectacle. For example, Matta-Clark explained his 1975 project *Day's End*, in which he sliced giant arcs and ellipses from the corrugated tin walls of an abandoned Manhattan pier warehouse, as an attempt to capture and intensify the existing structure's "play of lights and darks, sun and shade."[1] Matta-Clark saw the "industrial relic" as "an enormous Christian basilica," and the "cat-eye-like" hole he cut at its far west wall as a "rose window" that would draw in different degrees of illumination as the sun traced its trajectory across the sky[2] (fig. 1).

How do we account for this ambivalence? The historical moment in which the artist worked was marked by similar contradictions: even as revolutionary hopes ran high, the triumph of market capitalism would soon reduce the city into a site of spectacular consumption. Yet as much as cultural critics have presented the "postmodern" moment as one of total rupture, its crisis has been woven into the long history of modernity. Matta-Clark's "building cuts" on the objects of industrial modernity follow a recurrent historico-aesthetic theme; to better understand what is epistemologically at stake in these gestures, I propose returning to a previous moment of historical rupture and its effects on artistic production. Manfredo Tafuri's analysis of eighteenth-century aesthetic discourse provides a foil against which to read the questions raised by Matta-Clark's work. By reviving artifacts of the seemingly distant past and putting them in dialogue with the present, I hope to draw out the complexities and ambiguities between historicism, modernism and revolution.

Since Robert Smithson's photographs of the *Hotel Palanque*, Jeffrey Lew's unfinished industrial art space at 112 Workshop/112 Greene Street, and Matta-Clark's "anarchitecture," the gritty atmosphere of decaying architecture has been commodified as an aesthetic style—from art galleries to fashion boutiques.[3] But it is the longstanding place of architectural decrepitude in the history of Western art that makes its characterization as a kind of anti-art most surprising. One can trace its beginnings to late quattrocento representations of buildings from

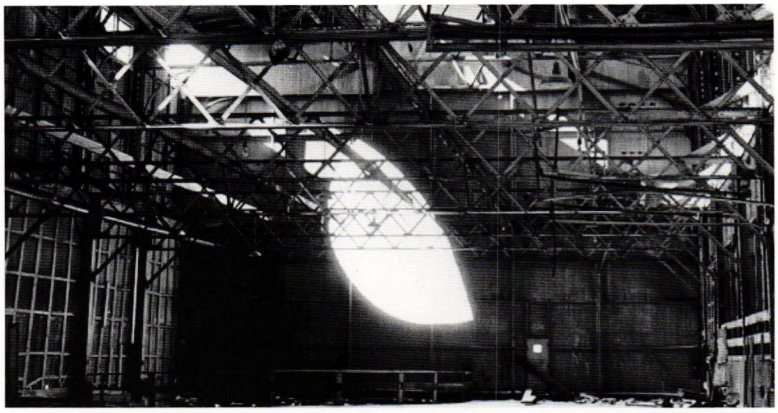


fig.1. Gordon Matta-Clark, Day's End, *1975*

classical antiquity, which even then were observable mostly in a ruinous state. But it was not until the eighteenth-century, when Edmund Burke famously distinguished the *Sublime and Beautiful* (1757)—to much different effect from Kant's later formulation in *The Critique of Judgement* (1790) of sublimity as a mode of ideal reason—that the destructive powers of an anti-humanist Nature would be fully systematized into an aesthetic stance. Whereas the classically beautiful, found in small and pleasing objects, is diminutive and fully illuminated to human understanding, the sublime is characterized by incomprehensible vastness, darkness and disorder, instilling in the viewer simultaneous feelings of terror, awe and respect.[4]

Perhaps the most famous pictorial representations in such a tradition are Giovanni Battista Piranesi's etchings from a couple decades prior to Burke's publication. The dark cavernous spaces of Piranesi's imaginary dungeons evoke Burke's descriptions of power in "despotic governments" which, "founded…principally on the passion of fear, keep their chief as much as may be from the public eye."[5] Renderings of celebrated ancient monuments, as they are swallowed by immense vegetable growth and swept by wind and weather, depict a Nature that reads ambiguously either as antithetical to the objects of human culture or, in classicist fashion, increasingly indistinguishable from them (fig. 2).

One can hardly deny the visual and conceptual affinities of these eighteenth-century images to the "raw power" of Lew's industrial spaces, Smithson's *Monuments of the Passaic* and Matta-Clark's anarchitectural building cuts, which exaggerate both the deterioration and the eerie grandeur of the "monuments" of industrial modernity. In rather sublime terms, Matta-Clark explains his attempt in *Day's End* to recreate "architecture and architecture disintegration…in an in credible state of colossus."[6] If Burke describes the

fig.2.Giovanni Battista Piranesi, Vedute di Roma, The Temple of the Sibly: the broken side of the Colonnade, ca. 1762

sublime experience as an uneasy combination of reverence and fear, visitors to Matta-Clark's *Day's End* remarked on the repressed terror that accompanied walking at precipitous heights through the "mysterious, decrepit place"—a feeling enhanced not little by the building's already dubious structural state, further undermined by Matta-Clark's violent interventions.[7]

Interestingly, the relationship between such eighteenth- and twentieth-century visions is one that architectural historian Manfredo Tafuri also grasped. It cannot be mere coincidence that while working in the 1970s—at the very moment historians and critics hailed a "crisis" in industrial modernity—Tafuri would simultaneously isolate a period of historical uncertainty in the supposedly neoclassical Enlightenment, as well as delve into the contradictions of twentieth-century architectural modernism (as exemplified by the utopian visions of Le Corbusier).[8] In each historical episode, the primacy and universality of humanistic or technological rationality is called into question. Or rather, both the crises of the Enlightenment and of twentieth-century modernity paradoxically transpire at precisely the point that rationality is pushed to its limits, unraveling reason itself into the terrifying abyss of unreason.

According to Tafuri, the Republican virtues invoked in architectural emulations of Ancient Roman "magnificence," which occurred just as Enlightenment philosophers invoked concepts of justice from

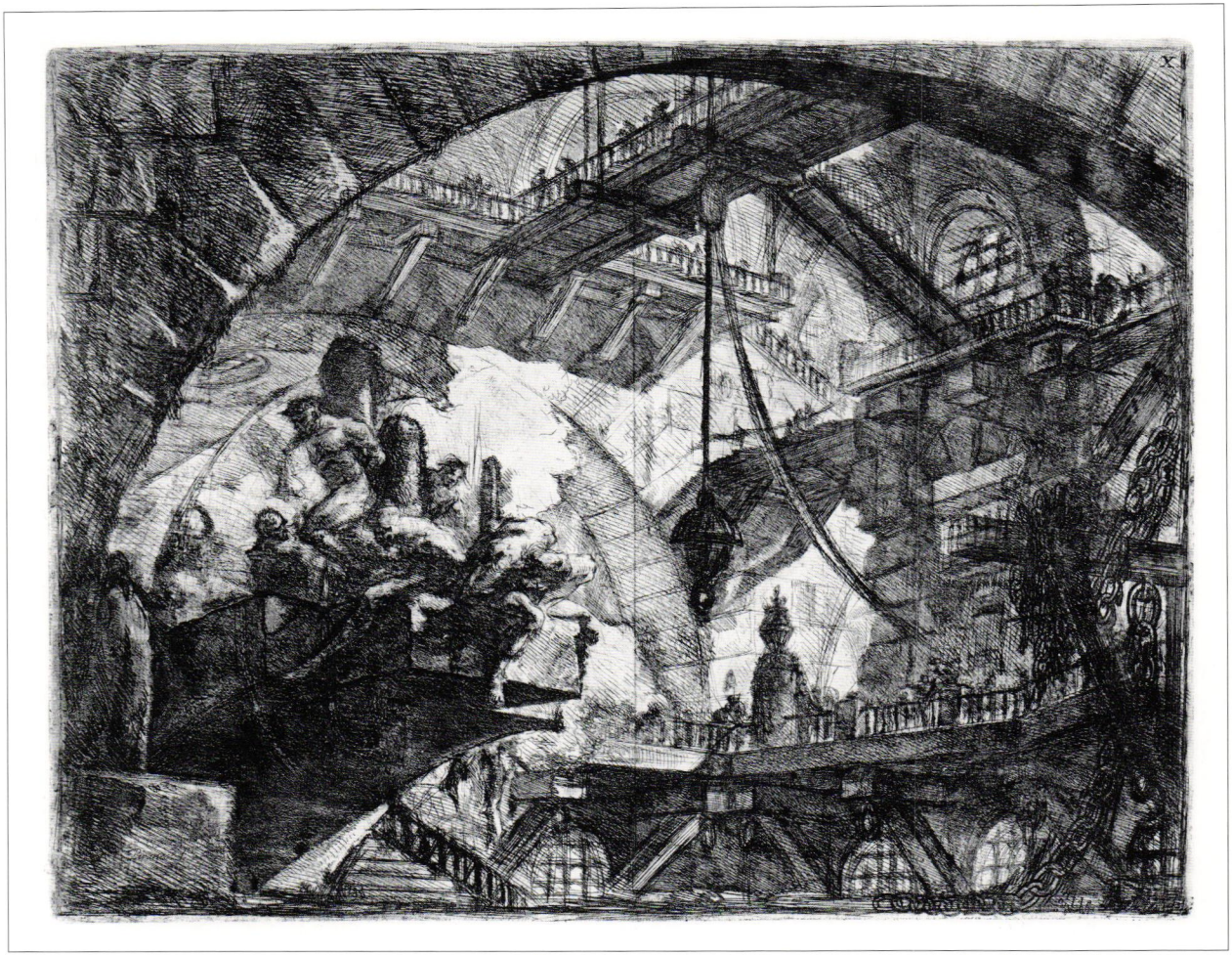


fig.3. Giovanni Battista Piranesi, The Carceri, Plate X (State II), ca. 1761

Roman law in their democratic theories, are startlingly critiqued in Piranesi's *Le carceri* etchings. Piranesi's representational recreations of ancient Rome's monumental architecture in the *carceri* display in all its horrific grandeur the brutality and "intersubjective domination" necessary to sustain such apparently enlightened ideals (fig. 3). Other etchings, including the *Pianta di ampio magnifico Collegio* and *Campo Marzio*, expose the anxieties of the early modern subject within the already emergent "machine-universe" of the eighteenth-century laissez-faire city.

Conceptually for Tafuri, these eighteenth-century images anticipate the failure, widely apparent by the 1970s, of twentieth-century modernist urban projects; as I suggest, the subject of these images parallels the operations explored by Gordon Matta-Clark on the obsolete industrial "monuments" of the fragmented contemporary city. Matta-Clark's work is a modern-day sublime that reckons with the contradictions of hyper-rational urban visions propounded by utopian figures like Le Corbusier—visions which have met with disastrous results once they are actually implemented alongside and against the problematics of political power and economic capital. Matta-Clark observed that as "[New York] City evolved in the Fifties and Sixties

into a completely architectured International Style steel and glass megalopolis, by contrast, great areas of what had been residential were being abandoned" leaving in its wake vast plots of residual "wasteland."[9] For as Max Horkheimer and Theodor Adorno have famously analyzed, the subjective alienation wrought by the total domination of industrial capitalism in our time is only the most recent manifestation of an Enlightenment project gone terribly awry.

In such a milieu, the "revolutionary" potential of the avant-garde project, as I argued earlier in the case of Gordon Matta-Clark and his circle, is not to be believed even among those who have recognized the problems and contradictions of modern capital. Several recent solo exhibitions have catapulted Matta-Clark's work into the spotlight of the art market; one now finds Matta-Clark's purportedly subversive, anarchic gestures within the immaculate confines of the world's major museums and galleries.[10] Yet even in Piranesi's day, the treacherous, politicized expressions of etchings like the *carceri* lay concealed under a distinctly consumptive function. As Tafuri explains, the works served as objects of taste within a bourgeois economy. Through time, Piranesi would hone the effects of his "etching-commodities" to ever more fantastical and exaggerated impressions of depth and atmosphere in order to please the tastes of a "tourist elite."[11]

But if architecture's instrumental capacity has vanished, one might still remain committed to the discipline as a mode of philosophical inquiry. (Though as Tafuri would argue, this recourse to philosophy is itself evidence of architecture's incapacity.) Indeed, there is little to be physically realized in the projects of either the eighteenth- or the twentieth-century sublime. The former subjects idealized restorations of classical magnificence—already an "imaginary" architecture that exists only in representation—to the total "dissolution of form." In the "negative utopia" projected by Piranesi, architecture can no longer find a stable and universal basis in Nature or antiquity. Similarly, the latter, in the words of Gordon Matta-Clark, regards "non-architecture…something that's an alternative to what's considered architecture" which "on a functional level [is] so absurd as to ridicule the idea of function."[12] Matta-Clark recognized that his projects were often construed as "occupying an ideological position diametrically opposed to [that of] the practicing architect" who is necessarily a "lackey to big business."[13] As such, Matta-Clark and Piranesi's work should not be understood as built projects, but attempts to think their historical moment within conditions that are antithetical to the making of architecture as ideological form.

Nevertheless, one can easily overstate the analogy. One may consider the aesthetic impulses of the mid-eighteenth- and late twentieth-centuries as a type of historical thinking; however, these clearly differ in their historical references, depending

on the immanent concerns of the moment. On the one hand Piranesi's work lay amidst an entire constellation of "origin theories" advanced by eighteenth-century neoclassicists who attempted to restore architectural production to an ideal state thought to be embodied in the architecture of the ancient Greeks and Romans. On the other hand, Matta-Clark's projects reacted against early twentieth-century modernist visions of a functionalist "*new* architecture" forged entirely apart from tradition, an architecture conceived by certain of its proponents to be so totalizing in its reach that its realization would replace the need for political action to address social inequality and material need. If we commit these historical preoccupations to a strict temporal line, pitting eighteenth-century historicism absolutely against twentieth-century futurism, then to all appearances the points of reference in both these periods could not be more divergent.

Against the possible objections, I argue that a comparison between these two temporal poles remains a productive endeavor. What does it mean to compare a crisis in the ideality of antiquity, which preoccupied the neoclassicists, to a crisis in the futurist aspirations of the modernists? Whereas the former concerns a past that is increasingly irrecoverable, the latter concerns a future that, in utopian fashion, is never reached. Despite the apparent difference in their historical references, these two epistemological modes bear a striking structural similarity; in each, the present is constantly and agonizingly constituted in relation to an ever-remote endpoint. For contemporary historians, the rise of a "modern" historiography in the eighteenth-century was linked to a desire among neoclassicists to systematically seek out a univocal source of civilization—in a natural basis conflated with a classical past. Yet the contradiction is such an origin's simultaneous situatedness at a particular moment in time, but also its expansion to the status of a universal, trans-temporal ontology.

In this sense, a crisis is necessary to think history at all—for a crisis in the search for universal origins requires that the flow of time be endowed with such material realness that at any moment in history there is no hope of turning back. With such temporal resistance, history necessarily becomes an immanent project that prevents the past from acting on the present as a Nature passively intuited by its subjects (classicism). But this historical thinking is fraught with its own internal contradictions. For the sake of historical objectivity, the present cannot act on the past either; the flow of time only allows the present to act on itself and on the future, so that history must paradoxically be thought with the present folding back onto itself or as a projection into the future (what Tafuri terms "operative criticism").[14] And as revisionist scholars have recently shown, Enlightenment architecture confronted the untangling of nature and culture, and the awareness of culture as a site of multiple origins—not linearly derived from abstract

philosophical "first principles," but composed of social and symbolic meaning.[15] Because all architecture is a culturally-constructed "language" which requires a particular context and social consciousness to be understood, there is no recovering its past meaning in the present.

But if Piranesi's etchings reveal a crisis in the past, Matta-Clark's burden is more unsettling: to reveal a crisis in the future. Piranesi recognized the absolute historicity of classical antiquity; but if we see Matta-Clark as Piranesi's philosophical heir, how, we must ask, does one think the historicity of the future? To understand history as an inaccessible site, in which the present and the past cannot act on one another, follows a conception of time as an unstoppable current; but does Matta-Clark force us to see even the future as a forgone project? Again I would warn against assigning such strict temporal dichotomies. Even Corbusier would, increasingly so late in his life, align his rationalist futurist project with a paradoxical return to a nobler primitive state. On the other hand, in opposing this arguably modernist impulse, Matta-Clark sought not to launch another "new architecture," but rather only establish another set of origins. His interest in medieval alchemy, his architectural "excavations," the whimsical creation of a "sun and water temple" in an abandoned pier warehouse, all suggest a desire to recover a mystical, pre-humanist past that would serve as an alternative to the modernist project.

Do we celebrate Gordon Matta-Clark's building cuts as radical acts on the urban environment? Or do these gestures merely evidence his historical prescience of a then- indiscernible trend already well underway? When Matta-Clark performed his building cuts in New York during the 1960s and 1970s, the city was in a state of economic shambles. But within only a couple decades New York would rise suddenly and unexpectedly into one of the world's uncontestable economic powerhouses. Even as it points to the failure of the Enlightenment/modernist project to provide subjective liberation, Matta-Clark's work also anticipates the complete dominion of the Enlightenment logic in the contemporary capitalist city. Not only does Matta-Clark's sublime reveal the obsolescence of the city's industrial architecture, but the work stands at an historical cusp when New York's industrial past would be transformed into a service economy we now observe. In other words, Matta-Clark's dematerialization of New York's industrial spaces literally follows the city's reconfiguration from one dependent on its strategic physical locality as an industrial port to one dependent on virtual financial markets that follow the flows of transnational economic capital. Matta-Clark's work may be a kind of historical thinking, but it is not a revolutionary project. Indeed, it was the early-twentieth-century utopians before him who sought to establish an architectural totality. But Matta-Clark explains, "I do not want to create a totally new supportive field of vision….I want to reuse the old one, the existing framework of thought and sight."[16] Corbusier's was just such a "totally new" vision. For Matta-Clark, the revolution is history. •

Endnotes

1. Gordon Matta-Clark, "Gordon Matta-Clark: The Making of Pier 52," interview by Liza Bear, first broadcast on Pacifica Radio, RPFK, Los Angeles, March 11, 1976.

2. Gordon Matta-Clark, "Interview with Gordon Matta-Clark," interviewer anonymous, first published in Gordon Matta-Clark, Internacional Cutureel Centrum, Antwerp, September 1977.

3. See discussion in Nancy Foote, "The Apotheosis of the Crummy Space," *Artforum* 15 (October 1976).

4. Edmund Burke, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (London: R. & J. Dodsley, 1757).

5. Burke, 44.

6. Matta-Clark, March 11, 1976.

7. See discussion in Pamela Lee, *Object to be Destroyed* (Cambridge: MIT Press, 2000), 128.

8. I am indebted to my friend John Minnich at Cornell for sharing his insights on this relationship, which are to be found throughout this paper.

9. Matta-Clark, September 1977.

10. These include a 2006 exhibition at Madrid's Reina Sofía, and 2007 exhibitions at New York's Whitney Museum and the Museum of Contemporary Art in Los Angeles. Matta-Clark's work belongs to the permanent collections of New York's Guggenheim Museum, Metropolitan Museum of Art and Museum of Modern Art, as well as the San Francisco Museum of Modern Art.

11. Manfredo Tafuri, *The Sphere and the Labyrinth: Avant-Gardes and Architecture from Piranesi to the 1970s*, trans. Pelligrino d'Acierno and Robert Connolly (Cambridge: MIT Press, 1978), 41.

12. Gordon Matta-Clark, "Gordon Matta-Clark: Splitting the Humphrey Street Building," interview by Liza Bear, December 1974.

13. Matta-Clark, September 1977.

14. See Tafuri's opening essay, "The Historical Project," in *The Sphere and the Labyrinth*, 1-21.

15. See the discussion in Anthony Vidler, *Writing of the Walls: Architectural Theory in the Late Enlightenment* (Princeton: Princeton Architectural Press, 1987).

16. Matta-Clark, September 1977.

Images: fig.1. courtesy of the Estate of Gordon Matta-Clark, and fig.2, 3. courtesy of Avery Architectural and Fine Arts Library, Columbia University

O! *Canada?*

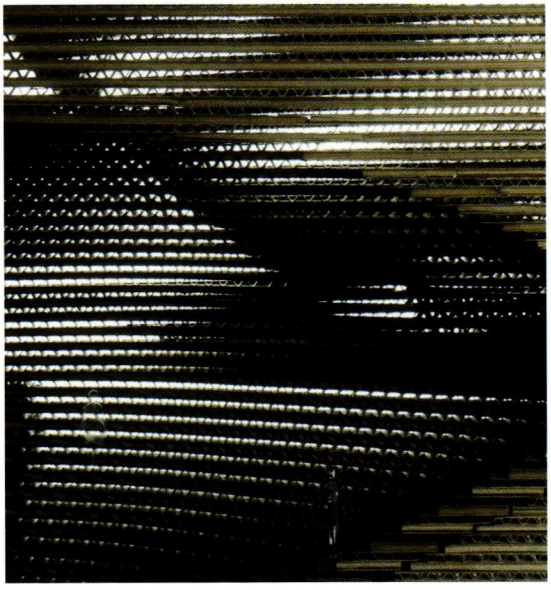
Coryn Kempster

In 2010, Shanghai will host the next Great World Exposition with the theme, "Better City, Better Life." All participating countries have been asked to use their pavilions to address this theme. Responding to this theme, as is the long tradition of World Expos, is an invitation to critique the present through projective speculation about the future.

The continuing model of urban growth in Canada is predicated on the light wood framed single-family house. This ubiquitous system for construction has remained largely unchanged in over a hundred years and is still aggregated into a model for urban development that has not been reconsidered in more than half a century. Canada builds 221,954 houses every year: an average of 608 each day.* 608 single-family homes = 146,172 sheets of plywood + 146,172 2x6 studs. Can the materials used to build houses on any given day in Canada also be used to build a pavilion for Canada in Shanghai?

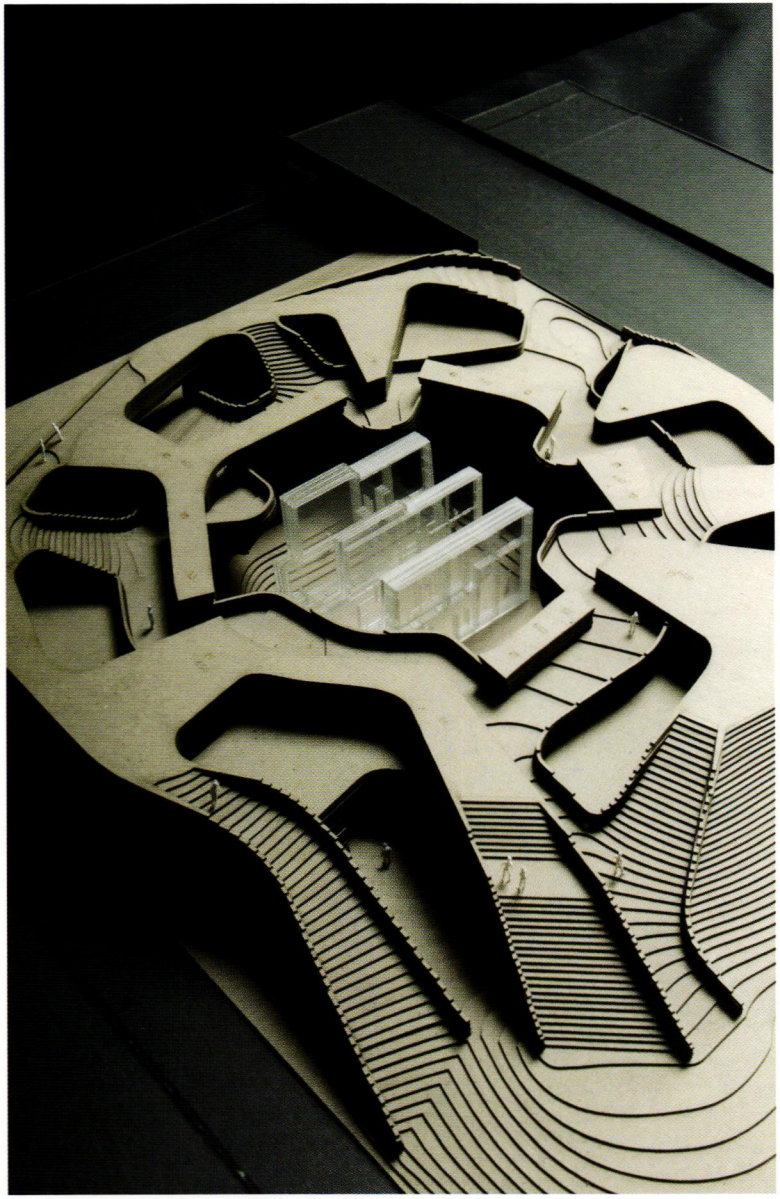
The key would be to use the same materials in a different manner, not to propose a replacement to light wood framing but rather a provocation: if the same materials, and nothing more, can be used to create an architecture that exceeds our formal expectations of them, then what else is possible?

Every year Canada exports tonnes of wood veneer to China where it is used to sandwich inexpensive south mahogany and then sold back to Canada as plywood. If just four percent of one container shipload was borrowed on its way back for the six months of the World Expo, it could be used to build the Canadian pavilion in Shanghai. The wood could then be returned to the economic flow at the end of the event.



** 221,953 (608 x 365) houses built per year based on the average of the five most recent years on record (2002-2006) from Statistics Canada Material numbers are based on an average house size of 214m2 (CANSIM Table 027-0008 http://www40.statcan.ca/l01/cst01/manuf05.htm)*

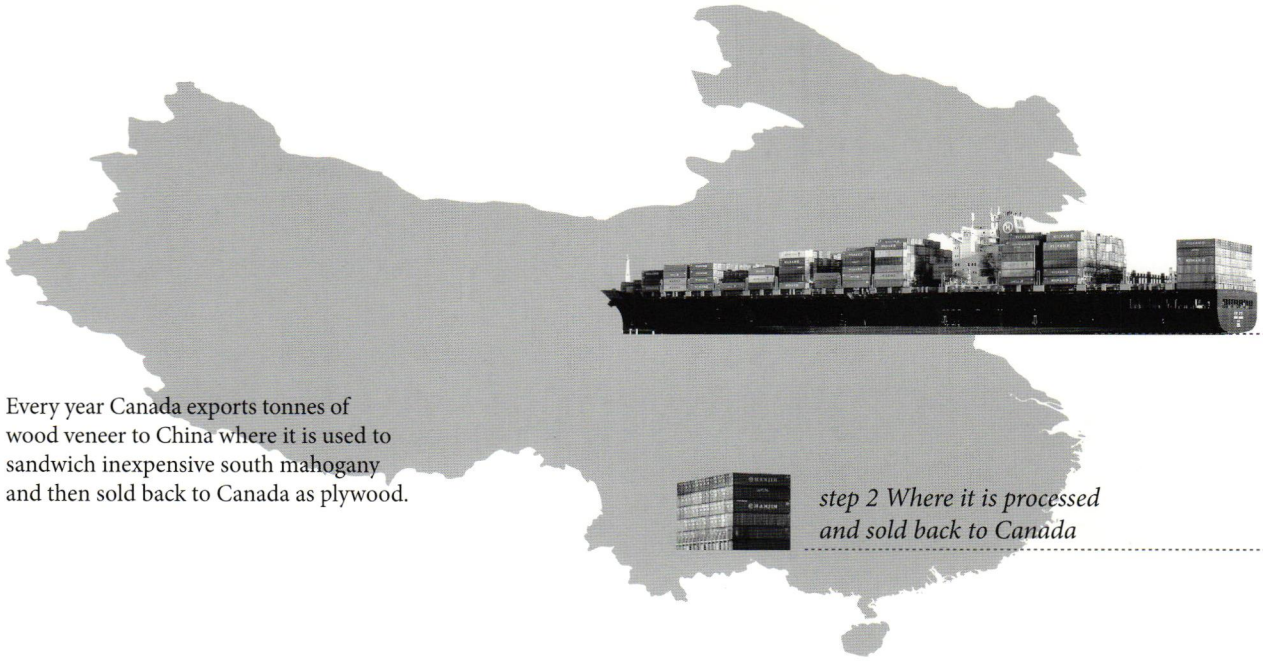
next page. concept of Canada's pavilion to the World Exposition in Shanghai, 2010. This model demonstrates stacking of Chinese-processed plywood from Canadian veneer



The pavilion could be constructed from the same materials as a light wood framed house: layers of 2x6s and plywood. Literally turned on end, the layering could become a stacking. In this manner, 2x6s are sandwiched between two layers of plywood and held 24 inches apart by pre-ripped plywood spacers. The edge of the resulting stack is then cut with any desired contour using a hand-held circular saw. Another layer is then added in the opposite direction and the process repeated.

The system affords three haptic benefits: the two orthogonal directions of the stacking lends the system a transparency that betrays its mass; any complex-curved form can be easily achieved as the system simply breaks down into layers in the z-axis and then contours easily in the xy-axes; and that at 6-1/4 inches, each layer is a potential step, every two a seat.

Like lightwood framing, the structural system relies on a high degree of redundancy. This leads to large masses of wood, 2x6s and sheets of plywood that are left whole. Because it is a friction-fit system, nails and other fasteners are avoided as much as possible or altogether. The result is a pavilion that can be disassembled efficiently. Pieces that have been cut or exposed to traffic or weather could be pulped to make new engineered lumber, everything else can then be sent back on its way to Canada to build more houses. •



Every year Canada exports tonnes of wood veneer to China where it is used to sandwich inexpensive south mahogany and then sold back to Canada as plywood.

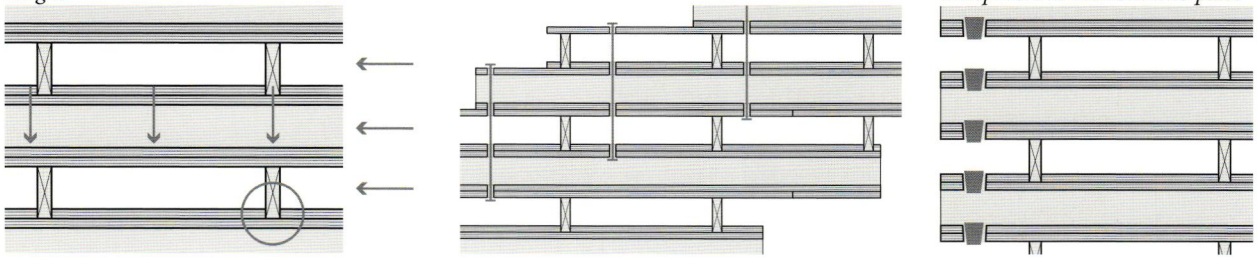
step 2 Where it is processed and sold back to Canada

step 4 By constructing the pavilion without nails it can be easily disassembled and the wood re-used or recycled

The plywood spacers grip the studs, making them cantilevered columns to resist lateral loads coupled with the dead load of the structure's own weight

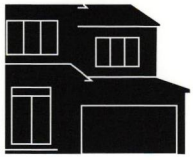
While some corbelling is possible, larger spans and vaulting are possible by pinning the layers together

Otherwise, no nails or fasteners are used in the system. The spacers at the edges are dowelled to the plywood below to lock all the spacers in between into place



Like light wood framing, the structural system relies on a high degree of redundancy. This leads to large masses of wood, 2x6s and sheets of plywood that are left whole.

Because it is a friction-fit system, nails and other fasteners are avoided as much as possible or altogether. The result is a pavilion that can be disassembled efficiently.



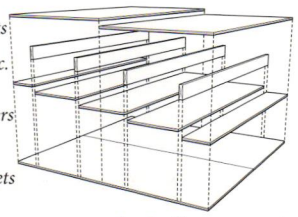
Pieces that have been cut or exposed to traffic or weather are pulped to make new engineered lumber, everything else is sent back on its way to Canada to build houses (608 to be exact).

step 1 Canada exports wood veneer to China

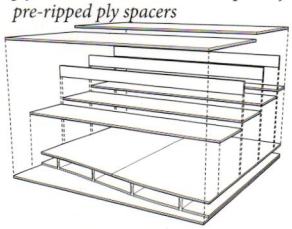
4% of one containership-load is borrowed on its way back for the six months of the World Expo to build the Canadian pavilion in Shanghai. The wood is returned to the economic flow at the end of the event.

step 3 Borrowed for six months prior to shipping back, Canada can build its pavilion from this wood

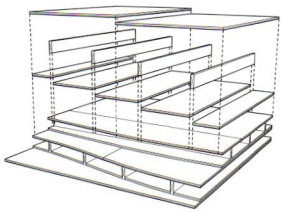
step 5 The pavilion is made from the same material as a light wood-framed house

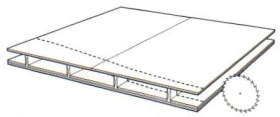


2x6s are sandwiched between two layers of plywood and held 24 inches apart by pre-ripped ply spacers

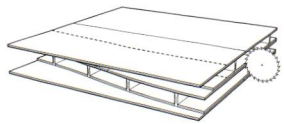


Another layer is added

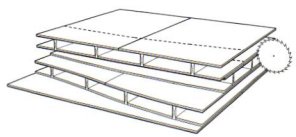


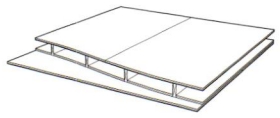


The edge of the resulting stack is then cut to the desired contour with a handheld circular saw

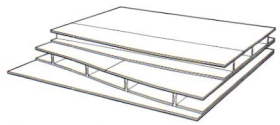


and the new layer cut

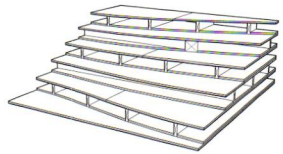


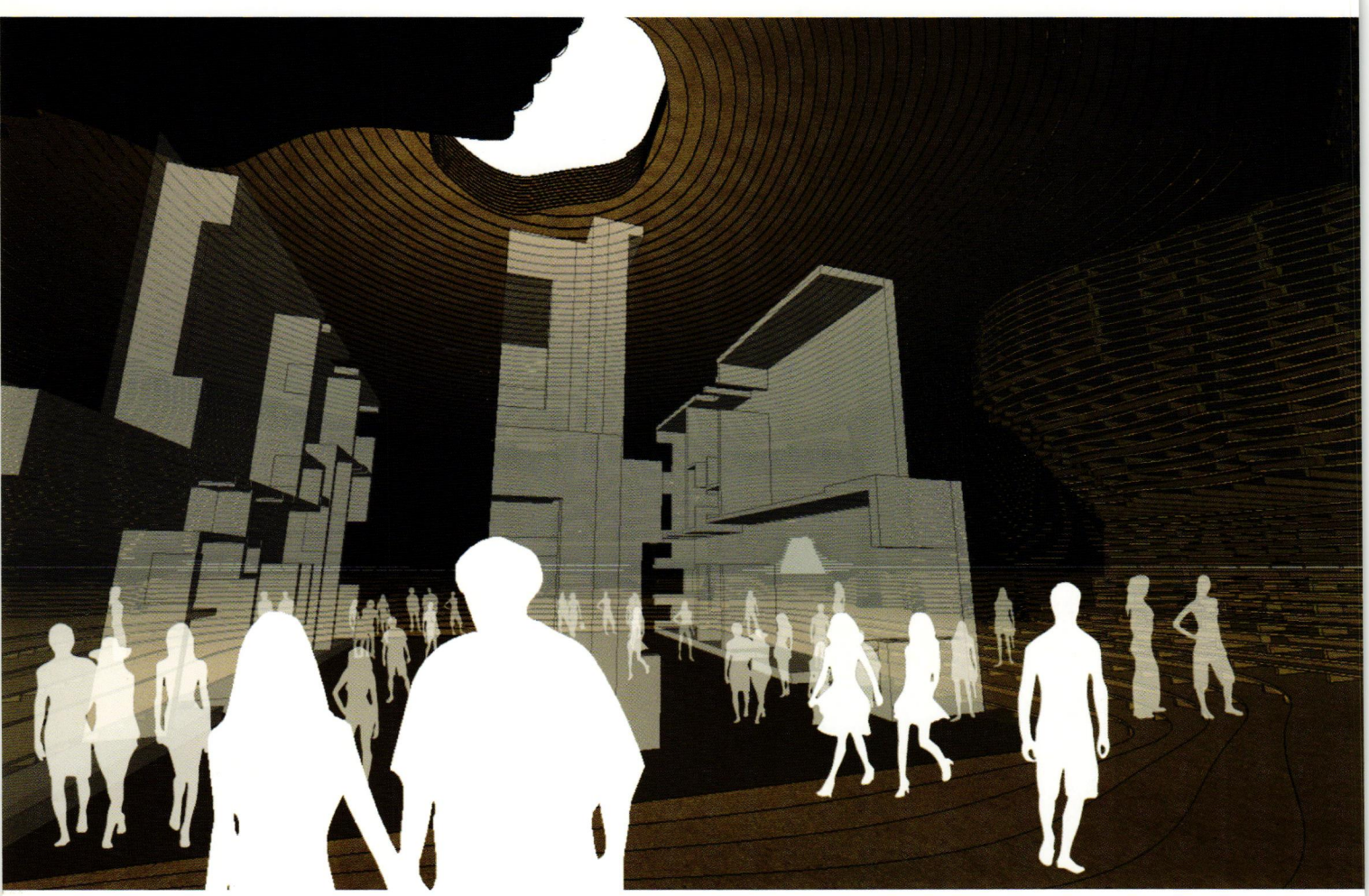


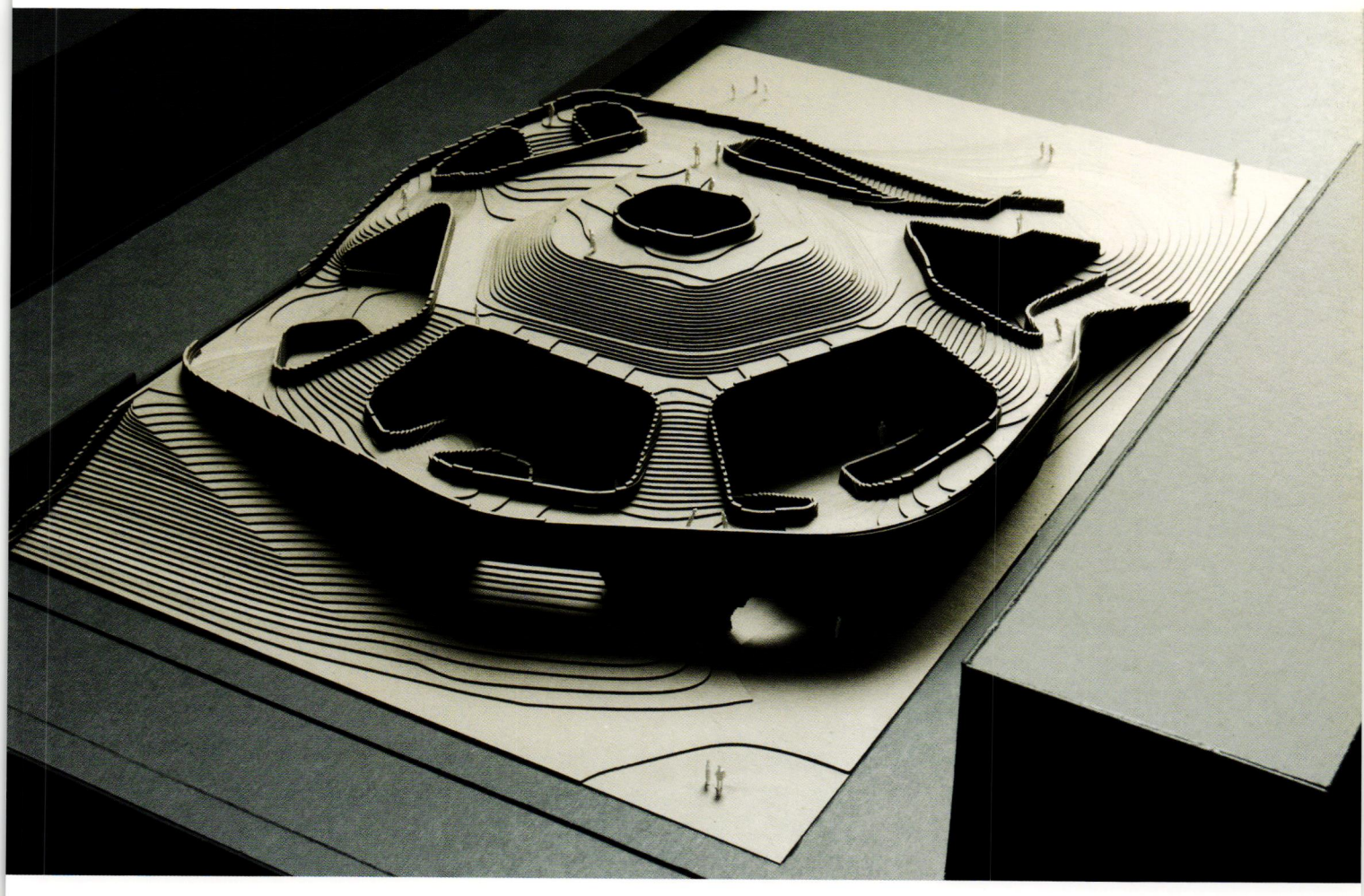
The saw is set to cut through the spacers, but not the bottom sheet of plywood



The process is repeated...







Aragon's *Le Paysan de Paris* and the Buried History of Buttes-Chaumont Park

Abigail Susik

In the second half of Aragon's experimental and semi-autobiographical novella, *Le Paysan de Paris* (1926), three friends undertake a nighttime escapade in Buttes-Chaumont Park, a sprawling green space in Paris nestled amongst what were at the time the largely working-class neighborhoods of the northeastern reaches of the city (fig. 1).[1] This outing, Aragon recounts in his retrospective narrative, takes place over the course of a foggy evening sometime during the spring or summer of 1924, when he, André Breton and Marcel Noll have reached a collective state of boredom with their usual activities at Breton's nightly salon in Montmartre. Abandoning the customary agenda of word games and automatist séances for the preferable diversion of a jaunt in a taxicab, the trio remains aimless until Breton spontaneously suggests a nocturnal stroll within the shadowy confines of Buttes-Chaumont Park.[2]

Once inside the gates, Aragon and friends experience alternating waves of excitement and trepidation as they confront the various features of this urban oasis through the disorienting veil of dampened nightfall. On the one hand, the park initially represents a "huge, naïve hope" for the expectant visitors, who envision the possibility of a fantastic or amorous encounter of some kind there.[3] However, at the same time, this sense of wonder and potential discovery instilled by the park is overshadowed from the outset by a vague but palpable sense of foreboding. Immediately upon their arrival, the young men realize they are weaponless in a desolate place, and soon the darker associations of the park's history begin to drift gradually into their collective consciousness, coloring their perception of what Aragon describes as the *romanesque*, or storybook-like, outward appearance of the park.

Indeed, although explicit allusions to the markedly curious history of Buttes-Chaumont only arise occasionally in the narrative of *Le Paysan de Paris*, it is arguable that the historical context of the park plays a crucial role in the way in which Aragon and his friends experience and comprehend t heir adventure amidst its verdure. As narrator, Aragon is demonstrably aware of at least some of the circumstances of the park's background. For example, he mentions in passing the park's prominent role in the Paris Commune in May of 1871, describing it as "a louche zone that was the site of a notorious day of murder."[4] Further on, he makes reference to the remarkable circumstances of its mid-19th century construction by Baron Haussmann, calling Buttes-Chaumont, "a crazy area born in the head of

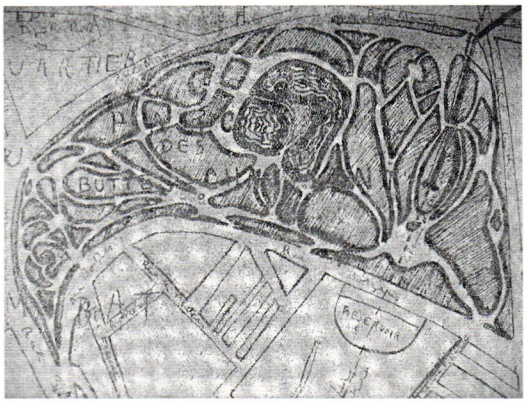


fig.1. Aragon. Untitled. No date. Published in Aragon, Le Paysan de Paris, Le sentiment de la nature aux Buttes-Chaumont, La Revue européenne, *1925. Drawing.*

an architect from the conflict between Jean-Jacques Rousseau and the economic conditions of existence in Paris."[5] Likewise, throughout the text Aragon notes the park's former popularity as a place for suicide, as well as the kitschy "modern machinery" of the park's manufactured 'natural' wonders.[6]

Along with these and other explicit references to the history of Buttes-Chaumont in Aragon's narrative, fragments of evidential knowledge which certainly structure his perception of this location, it is arguable that latent historical associations of the park's past also directly determine the tenor of the trio's nocturnal escapade. While the excursion begins in a state of optimism, the visitors soon fall prey to the connotations of the park that lie dormant beneath the surface— of both the park's rolling hills, as well as the subterranean levels of their own minds. It seems that under the cover of night in particular, the repressed nuances of the location's past gradually begin to emerge. Noll spies a ghost climbing on a rocky outcropping, and by the end of the text, Aragon is plagued by thoughts of his own suicide, an urge for auto-destruction which is fulfilled in the conclusion when the narrator figuratively decapitates himself.[7] Even the bronze column formerly installed at the highest point in the park transforms into an ancient sepulchral monument that the visitors have to decipher by match-light like "modern Champollions," its rote list of bureaucratic municipal figures suddenly morphing into magical ciphers marking an anonymous tomb.[8] The trio's journey ends abruptly on a resounding note of negativity, the dramatic mood swing of this portion of *Le Paysan de Paris* thus confirmed.

Therefore, even for all its idyllic landscaping, Buttes-Chaumont is certainly not comprehended by Aragon and his friends as a simple tabula rasa— a paradigm of pristine nature lodged within the metropolitan network, offering a convenient means of escape from the fast pace of urban life. Nor can the park merely be considered an ironic reprisal of anachronistic and kitschy Romantic aesthetics for Aragon, Breton and Noll here, as several scholars have previously argued in a convincing manner.[9] Rather, I would argue that most importantly, Aragon evokes a much more specific cache of both manifest and latent historical connotations in his depiction of Buttes-Chaumont Park. In Aragon's text, the enclosed zone of the park is so interesting and modern for these soon-to-be-surrealists precisely because it is replete with historical, cultural, and temporal contradictions resulting from the simultaneous associations of the park's vastly antinomic past and present societal functions.

As Aragon, Breton and Noll scramble through and over the park's dewy vales and rocky slopes, they become increasingly attuned, in true automatist fashion, to the buried subtext of what not long before had been the most forbidden realm of death and waste in the greater Paris area over a number of centuries. Therefore, as a profound environmental paradox, the renovated Buttes-Chaumont subliminally broadcasts the residues of its troubled history even while its manicured official façade feebly attempts to function as a protective screen against sordid mnemonic traces, layered beneath the surface like so many compressed geological strata. Indeed, it seems that the concerted societal effort

to attain a pure and timeless zone in the renovated guise of Buttes-Chaumont instead renders the lurid patina of this location's history all the more conspicuous to the three friends.

But what are the historical details of the deeply palimpsestic Buttes-Chaumont Park, which seem to have remained largely obscure for much of Aragon's generation? Before Aragon's complex depiction of this location in *Le Paysan de Paris* can be fully accounted for, it is necessary to review the past circumstances of Buttes-Chaumont, a task that surprisingly has not yet been undertaken beyond the most cursory level in scholarly discussions devoted to this text.[10] Accordingly, the discussion will now turn to a condensed overview of the background of Buttes-Chaumont, before further conclusions are drawn concerning the surrealist encounter with this location.

Presently situated near the periphery of Paris, Buttes-Chaumont Park occupies a piece of high ground between the neighborhoods of Belleville to the south and La Villette to the north.[11] The park's most notable feature is its rolling, arid hills, which rising to an altitude of three hundred feet above sea level, constitute one of the loftiest vantage points in the city (fig. 2).[12] This collection of treeless *buttes* or rocky summits comprises its distinctive topography and gives the park its name: "Chaumont" indicates the bald or *chauve* mountains that were the site of an extensive gypsum quarry for hundreds of years.

The privately owned land surrounding the ancient quarry was purchased by the city of Paris in 1862 and rapidly transformed from a barren expanse into a picturesque landscape. Long known in general by the name of Montfaucon, or Falcon Mountain, the region was officially rechristened with the new appellation of Buttes-Chaumont Park. As part of the final stage of Baron Haussmann's urban facelift of Paris under emperor Napoleon III, Buttes-Chaumont was intended to be the jewel in the cap of the Exposition universelle of 1867 in Paris, and was grandly inaugurated as part of the festivities that year. Designed by state engineer Adolphe Alphand and state gardener Jean-Pierre Deschamps, the plan for the park

fig.2. Charles Marville. Parc des Buttes-Chaumont. *No date, circa 1865. Photograph.*

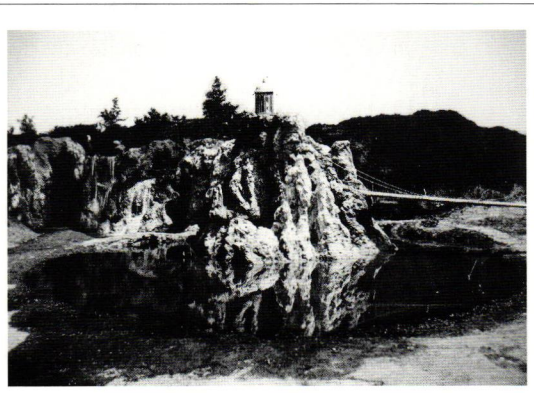


fig.3. Charles Marville. Maquette préparatoire du parc des Buttes-Chaumont [Preparatory Maquette of Buttes-Chaumont Park]. *No date, circa 1865.*

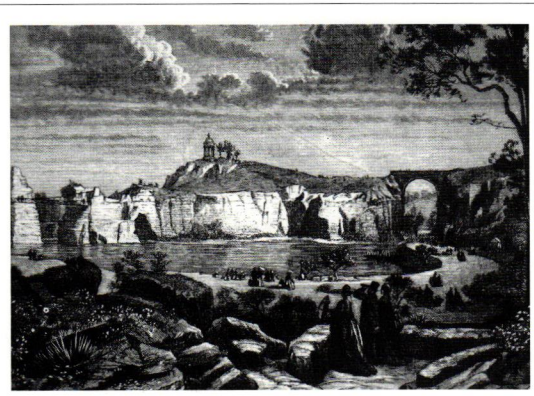


fig.4. Jean-Charles Alphand. Parc des Buttes-Chaumont, vue des falaises. *Published in, Alphand, Les Promenades de Paris, 1873. Engraving.*

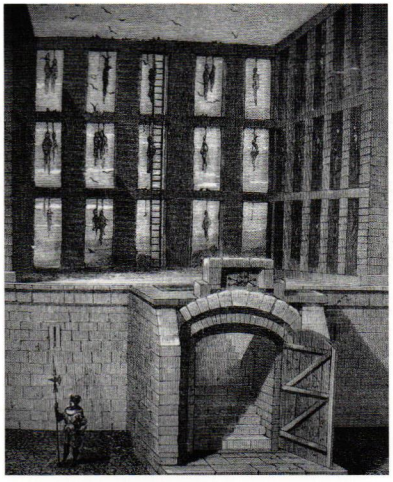


fig.5. Anonymous. Le gibet de Montfaucon. *No date. Engraving.*

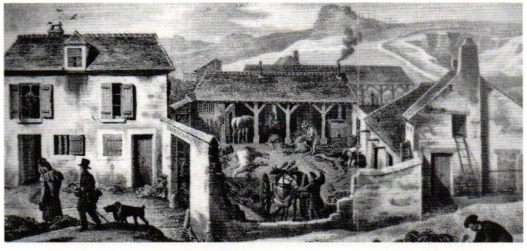


fig.6. Anonymous. L'équarrissage à la voirie de Montfaucon, le chantier de M. Dusaussois [The Horse Slaughterhouse at the Trash Dump of Montfaucon, site owned by Mr. Dusaussois]. *No date. Engraving.*

fig.7. Charles Marville. Le Parc des Buttes-Chaumont pendant la transformation [Buttes-Chaumont Park During the Transformation]. *No date, circa 1865. Photograph.*

made the most of the natural features of the terrain, but also imposed extensive modifications to the land.[13] Their combined vision transformed the looming, pockmarked face of the former quarry into a fairytale lookout topped with a faux-Grecian temple, as this photograph of an original maquette of the park shows (fig. 3).[14] Among other structures, two impressive bridges were constructed to provide access to this summit from opposing sides of the park: a narrow suspension bridge spanned the surface of the lake, while an arched masonry bridge stretched an arm out to a neighboring hillside (fig. 4). Nearby, Alphand and Deschamps constructed the most spectacular of the attractions in the park: a one hundred-foot artificial waterfall that tumbled into a grotto of false stalactites and boulders made of concrete. Branching outward from this impressive aquatic hub, mechanically churned water followed a meandering path of concrete streambeds that lined several of the park's paths at the lowest level of altitude.

However, before all this beautification came to pass, Buttes-Chaumont had a significantly dark history that it was not fully able to shake even after its remarkable makeover. As early as 880 AD, the exposed slopes of the surrounding countryside became the site for the pivotal battle of Montfaucon, which saw the Parisians successfully defeat the attacking Normans.[15] Centuries later, in the middle of the 14th century, this area also became the location of the infamous gallows or *gibet* de Montfaucon, known for its distinctive and innovative multi-tiered architecture (fig. 5).[16] Whether hung or exterminated via some other ghastly form of execution, the bodies of unfortunate victims were left to be ogled by curious onlookers and eventually picked apart by the carnivorous birds that flocked to this Parisian Golgotha. Despite the removal of the gallows once and for all during the era of the French Revolution, the domain stubbornly retained its nefarious associations for decades to come, and few people dared to settle nearby.[17] Then, at the end of March 1814, one portion of another particularly bloody battle took place in Montfaucon over the course of two days. The Battle of Paris commenced when a small army of Napoleon's men desperately attempted to fight off a massive invasion of Prussian and Russian forces, ultimately surrendering to defeat and signaling the final stages of the downfall of the empire.

Moreover, by this time the region had also become the principle dumping ground for the tidal wave of trash and excrement continuously spewing forth from the increasingly overcrowded center of Paris.[18] In particular, it was the primary place of *équarrissage* for Paris, where the corpses of dead livestock animals and horses could be legally dumped and left to decompose. Roughly fifty thousand animal corpses could be found at the site at any given time during the first half of the 19th century. Likewise, as early as the 18th century, the area became known for the particular kind of fertilizer or poudrette that eventually came to be chemically manufactured there from the available mountains of putrefying flesh, matter and human and animal waste (fig. 6).[19] For many years, Montfaucon was the sole site in Paris for this economically profitable process, which not only created a horrible stench, but also dangerously noxious ammonia fumes. Indeed, the miasma wafting from the place was legendary: a popular adage held that Montfaucon acted as an olfactory weather vane for the whole of Paris, so disgusting was the wind coming from the north of the city. Moreover, rat infestations of apocalyptic proportions plagued the *poudrette* factory and dump during the early 19th century, adding to the nearly apocalyptic atmosphere of the place.[20] By the end of the 1840's Montfaucon had closed as a result of repeated public outcries against the unsanitary conditions existing so close to the perimeter of the city.

Given these factors, it is not surprising that the land in this area remained desolate despite the fact that Paris was rapidly expanding during the first half of the 19th century. According to a strong tradition of local folklore, the ghosts of the executed were purportedly the primary inhabitants of the district.[21] From among the ranks of the living, squatters and trash pickers alone ventured to live in the caves of the abandoned gypsum quarries, and highwaymen were likewise drawn to these spaces as temporary hideouts.[22] In sum, for most of its long history, Montfaucon *cum* Buttes-Chaumont was a thoroughly hostile environment in all aspects. However, it is surely because of this sordid past that the sanitary overhaul of Haussmannization would dedicate significant energy and expense to the expedited reform of this most odious zone on the map of Paris. In a shocking three years during the third and final *réseau* of Haussmannization, Montfaucon went from being one of the most repugnant environments in Paris, to encompassing one of the fairest idylls available within the city limits (fig. 7).

Certainly for a time following this exhaustive recuperation, it must have seemed to all that Buttes-Chaumont had successfully shaken its resolutely trashy former identity. Yet, a mere four years after its renovation, Buttes-Chaumont would unexpectedly become the setting for yet another belligerent episode that instantly resurrected the long and peculiar history of combined savagery and waste dumping in this location. The coup of the Paris Commune that commenced in March of 1871 culminated in the desperate battles of *La Semaine sanglante*, much of which took place in the working class neighborhoods that surrounded Buttes-Chaumont. During the last two days of fighting the park itself became a primary battleground, until the Communards were forced to surrender due to a shortage of ammunition (fig. 8).[23] As the executions of the defeated soldiers mounted into the tens of thousands over the next week, approximately 800 bodies of Communards were thrown into the opening of a still accessible gypsum quarry at Buttes-Chaumont and cremated in a massive bonfire whose nauseating stench permeated all of Paris, in what was no doubt a disturbing echo of the former *poudrette* of Montfaucon.[24] In addition, roughly 100 bodies were buried in shallow, unmarked graves throughout the park, although potentially many more burials in the park also went unnoticed at this time.[25] Many corpses were simply thrown into the park's shallow man-made lake, only to resurface a few days later much to the horror of neighborhood inhabitants.[26]

Like the rest of Paris, Buttes-Chaumont Park eventually recovered from the aftershocks of the Commune, at least on a superficial level (fig. 9). Within just a few years of the bombardment of its vistas, the park had resumed its role as one of the most popular new leisure spots in Paris. Travel guides of the late 19th century for the most part did not even comment upon this most recent conflagration in the park. Indeed, the only vestige of the site's somber past was the curiously frequent usage of the masonry bridge that led to the faux-Grecian temple as a place of suicide (fig. 10).[27] However, by the time Aragon wrote *Paysan* in 1924-26, a metal fence had been installed along the entire length of the Suicide's Bridge preventing would-be jumpers, relegating even this last vestige of violence to the status of a haunting urban myth.

Having thus recouped the unlikely tale of the shifting cultural identity of Buttes-Chaumont Park— from a quarry site and battleground, to an execution ground, to the foulest dump and *equarissage*, to an unblemished garden, and back again momentarily to a site of extermination and expurgation— it perhaps easier now to more accurately gauge the tenor of the surrealist encounter with this location in *Le Paysan de Paris*. Indeed, it is arguable that the full thrust of Aragon's rapidly shifting narrative cannot be comprehended without such a specific contextual framing of the setting, so important for the self-professed "peasant" of Paris is a vernacular and localized approach to contemporary urban life. The initial elation felt by Aragon, Breton and Noll upon entering the gates of the night-enshrouded park can indeed be seen as a reflection, alternatingly sarcastic and sincere, of the Romantic emanations prompted by its renovated visage. However, in turn, the trio's escalating feeling of dread thereafter demonstrates their parallel awareness, primarily on a latent psychic level, of the 19th century recuperation of the badlands of Montfaucon. Despite its transformation into a pseudo-utopia during the initial stages of Haussmannization, Buttes-Chaumont stubbornly retains many of its original associations for Aragon and his friends; hence the significant critical potential of the park as a singular paradigm of surrealist irony. •

fig.8. Anonymous. Parc d'artillerie des Buttes-Chaumont [Artillery Park at Buttes-Chaumont]. No date, circa spring-summer 1871. Photograph.

fig.9. Anonymous. Paris, Buttes-Chaumont, Entre les Roches [Paris, Buttes-Chaumont, Between the Rocks]. No date, circa early 20th century. Photograph printed on postcard.

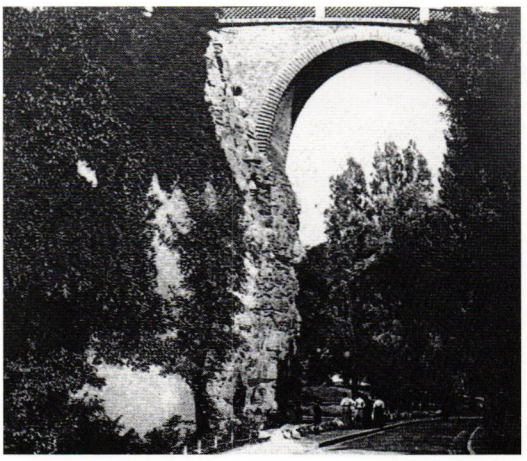


fig.10. Anonymous. Paris, Les Buttes-Chaumont, Le Pont Fatal. No date, circa early 20th century. Photograph printed on postcard.

Endnotes

1. The first two sections of *Le Paysan de Paris*, "Préface à une mythologie moderne" and Part I, "Le Passage de l'Opéra," appeared in three monthly installments in *La Revue européenne*: between June and September, 1924. The third section, Part II, "Le Sentiment de la nature aux Buttes-Chaumont," appeared in four issues of the same journal between March and June 1925. The conclusion, "Le Songe du paysan," was published for the first time when *Le Paysan de Paris* appeared in volume in 1926, in an edition produced by Gallimard.

2. See, "Le Sentiment de la nature aux Buttes-Chaumont," Part II of, Aragon, *Le Paysan de Paris* (Paris: Gallimard, 1997). For the best English translation (1971), see, Aragon, Paris Peasant, trans. Simon Watson Taylor (Boston: Exact Change, 1994).

3. Aragon, *Paris Peasant*, 133

4. Here, I use my own translation. Aragon, *Paysan*, 165.

5. Aragon, *Paris Peasant*, 133.

6. Aragon, ibid., 143.

7. At the end of Part II, the narrator's voice becomes quite distinct from the autobiographically-inflected voice of Aragon's narration that constitutes the majority of the rest of the text. Note that suicide was a prominent literary theme in Aragon's prose and poetry throughout the 1920's. Aragon attempted suicide by an overdose of sleeping pills in September of 1928 in Venice, Italy.

8. Aragon, *Paris Peasant*, 164.

9. For instance, Gindine argues that Aragon was primarily interested in Buttes-Chaumont Park for its artificial construction as a Romantic "folly." This ridiculous aspect of the park, according to her reading, relates directly to Aragon's conception of the marvelous, which she argues is primarily wielded by Aragon as a weapon against the dominance of rationalism. See the chapter, "*Le Paysan de Paris*," in, Yvette Gindine, *Aragon: Prosateur surréaliste* (Genève: Librarie Droz, 1966), 62-63. Likewise, Piégay-Gros has argued in an important article on Part II of *Paysan*, that Aragon enacts an attack on Buttes-Chaumont Park as an anti-Modernist representative of kitsch. See, Nathalie Piégay-Gros, "Paysages du *Paysan de Paris*," in *Territoires de la poésie contemporaine: mélanges offerts à Marie-Claire Dumas*, ed., Nathalie Piégay-Gros (Paris: H. Champion, 2001), 187-198. In an important article of 1978, Cardinal opined that Aragon knowingly effused about the obvious kitsch aesthetic of the park with "humorous provocation," but at the same time, relayed a sense of something "genuinely disturbing and haunting," about the place. See, Roger Cardinal, "Soluble City: The Surrealist Perception of Paris," *Architectural Design*, vol. 48, no. 2-3 (1978), 143. Ishikawa also reads this section of *Paysan* in relation to a kitsch reading of romantic aesthetics. See, Ishikawa, *Paris dans quatre textes narratifs*, 140.

Otherwise, see the following sources, listed in alphabetical order, for relevant commentaries on Part II of *Paysan* in general: Jean Decottignies, "Magique-circonstancielle, la prostituée des passages," in *L'Invention de la poésie: Breton, Aragon, Duchamp* (Lille: Presses universitaires de Lille, 1994), 142-155. Michel Meyer, Michel Meyer présente 'Le Paysan de Paris' d'Aragon (Paris: Gallimard, 2001), 82-100. Luc Vigier, *Le Paysan de Paris* (Paris: Gallimard, 2004), 274-281.

10. I have only been able to locate two sources that mention anything of the history of the Buttes-Chaumont area prior to its renovation as a city park in the late 1860's in relation to *Paysan*. Magallanes mentions only the park's "tormented quarried past." See, "Landscape Surrealism," by Fernando Magallanes in, Thomas Mical, *Surrealism and Architecture* (New York: Routledge, 2005), 222. Short comments that the park was built on the site of "Paris's biggest rubbish dump." See, Robert Short, "A Fertile Figure: *The Paris Peasant*," in *Louis Aragon: du surréalisme au réalisme socialiste, du Libertinage au Mentir vrai, des Incipit à la postérité*, eds., Gavin Bowd and Jeremy Stubbs (Manchester: AURA Publication, 1997), 19. Otherwise, if scholars mention the history of the park at all in their discussions of Aragon's text, it has been in passing reference to the innovative artificial-natural design by architects Alphand and Barillet-Deschamps.

11. For general information on the park, see, Gilles Plazy, *Le Parc des Buttes-Chaumont* (Paris: Flammarion, 2000). For a more detailed account of the history of the park and the surrounding area, see, Jean Marie Jenn, *Le XIXe arrondissement: une cité nouvelle* (Paris: Délégation à l'action artistique de la ville de Paris, Archives de Paris, 1996). Also see: Germaine Boué, *Les Squares et jardins de Paris; les Buttes-Chaumont, notice historique et descriptive* (Paris: Chez tous les libraires, 1878); Françoise Harmon, "Les Buttes-Chaumont," in *Les Parcs et jardins dans l'urbanisme parisien*, XIXe-XXe siècles, ed., Simon Texier (Paris: Action artistique de la ville de Paris, 2001), 99-105.

12. Jean Jacques Lévêque, *Guide des parcs et jardins de Paris et de la région parisienne* (Paris: P. Horay, 1980), 227.

13. For Alphand's account of the history of the site and his modifications to it, see, Jean-Charles Alphand, *Les Promenades de Paris*, vol. 2 (J. Rothschild, 1873).

14. This construction is an imitation in miniature of the Corinthian Temple of the Sybil in Tivoli, Italy. See, *Paris and Environs, with Routes from London to Paris; Handbook for Travelers*, (Leipsic: K. Baedeker, 1896), 204.

15. Marguerite Coleman, "Le Parc des Buttes-Chaumont," in *Les Jardins de Paris* (Paris: E. Figuière, 1929), 241.

16. There has been some indecision concerning the precise location of the Montfaucon gallows. In 1858, Viollet-le-Duc recorded the gallows as having been originally located on the Rue de Meaux, just beyond the gates of what is now Buttes-Chaumont Park. See, Eugène-Emmanuel Viollet-le-Duc, "Fourches patibulaires," in *Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle* (Paris: F. de Nobèle, 1967), 556. However, most contemporary historians of locate the gallows within the boundaries of the park. For instance, see Soprani below.

17. Anne Soprani, *Jardins de Paris* (Paris: M.A. éditions, 1986), 261.

18. It seems that as early as the 16th century, Montfaucon was designated as one of several refuse and excrement dumps in Paris, thus doubling its utility as a site for both execution and offal disposal (lore has it that the bodies of the executed were thrown in the dump with the rest of the trash and excrement). However, by the early 19th century, Montfaucon had grown to become the enormous epicenter for which all Parisian garbage and waste was eventually destined.

19. Soprani, *Jardins de Paris*, 261-262.

20. I am grateful to Gregory Pierrot for this point.

21. Coleman, "*Le Parc des Buttes-Chaumont*," 240.

22. *Paris and its Environs, with Routes from London to Paris, and from Paris to the Rhine and Switzerland: Handbook for Travelers*, (Leipsic: K. Baedeker, 1878), 202.

23. Jenn, *Le XIXe arrondissement*, 134.

24. Plazy, *Le Parc des Buttes-Chaumont*, 66.

25. Jenn, *Le XIXe arrondissement*, 134.

26. Jenn, ibid., 135.

27. Indeed, the number of suicides on this bridge had become such that by 1907, the English Baedeker guide remarked that it had been nicknamed "Le Pont fatal." *Paris and its Environs*, 240.

Images: Fig. 1, reprinted from *Aragon, Le Paysan de Paris, La Revue européene*, n. 26 (April 1925) (Paris: S. Kra) 37. Figs. 2, 3, 7, Marville Album GP LXXVI, 2, 4, 6, Bibliothèque historique de la Ville de Paris (hereafter abbreviated as BHVP), reprinted from, Plazy, Le parc des Buttes-Chaumont, 48, 49,118. Fig. 4, reprinted from Plazy, *Le parc des Buttes-Chaumont*, 27. Figs. 5, 8, cl. J.C Dœrr, BHVP, reprinted from, Jenn, *Le XIXe arrondissement*, 89, 136. Fig. 6, cl. Laidet, Musée Carnavalet, reprinted from, Jenn, *Le XIXe arrondissement*, 35. Fig. 9, *Cartes Postales XIX arrondissement*, vol.3, p. 37, BHVP, reprinted from, Plazy, *Le parc des Buttes-Chaumont*, 10. Fig. 10, reprinted from, Aragon, *L'Œuvre poétique*, ed. Jean Ristat (Paris: Livre Club Diderot-Messidor, 1989), 289-290.

The Potential of Passaic

Kazys Varnelis

Autumn 2007 marked the fortieth anniversary of Robert Smithson's "*Tour of the Monuments of Passaic, New Jersey*" which, according to the version printed in the University of California Press's *Collected Writings of Robert Smithson*, took place on September 20, 1967.[1] Since that is the exact date of my birth and I was living five miles from Passaic, I thought I might follow in Smithson's footsteps as a sort of rite of passage and reflection, measuring the distance between his time and ours.

More than a response to my age, I hoped that my return would help explain an historical rhythm. Almost forty years separated Smithson from the crash of 1929. A similar historical distance separates us from his day. Smithson understood that something was afoot: the long postwar boom under Fordism—and with it modernism—was coming to an end. A socioeconomic regime determined by production, manufacturing, rational consumption, and regulation was undone. Over the next twenty years the postmodern world of flexible consumption and offshore production as well as the thorough integration of capital and culture, an economy dominated by service industries and finance would rise in its stead. It was hard for me to shake the sense that a similar transition was happening in our day.[2]

Like mine, Smithson's trip to Passaic was a return, an attempt to understand the present by going into his own past. In this, it was very different from Gordon Matta-Clark's *Cutting*, in which the artist sought validation by assaulting the working-class suburbs and then bringing their fragments, like so many trophies, back to the city to be displayed in a gallery. In contrast, undertaken at the age of thirty, Smithson's tour was—as my own tour would later be—a lament for the passing of both his youth and the more ordered world he grew up in. Although Smithson's narrative might appear to be an expedition into unknown suburbia, it was actually a journey home, to the town he grew up in, to a world in which production was rapidly being replaced by residue.

During Smithson's lifetime, Passaic underwent prolonged deindustrialization. It was no accident that Smithson began his tour at the old bridge at the corner of River Drive and Union Avenue. The Passaic River, which the bridge crosses, fuels the waterfall upstream in Paterson and, providing a ready source of energy, triggered the area's rapid growth in the nineteenth century, allowing Paterson to become known as "the Cradle of American Industry." With unionization growing at the turn of the twentieth century, manufacturers fled to the open shop South

the access road

and the area began its long decline. During this time, as Smithson showed in the "Fountain Monument," industry eagerly dumped its outflow into the Passaic, leading the EPA in 1970 to declare the river the second most polluted in the country (after Cleveland's Cuyahoga, which caught on fire in 1969).[3] Although the river is much cleaner today, pipes can be sighted still dumping waste into the river. The Passaic is a river defanged. Kayakers and other boaters routinely ply the waters. But instead, the toxins have spread into the environment as a whole, infesting the planet with filth and toxicity.

Most of the Tour took place at an excavation site for state route 21. Smithson was aware of a December 1966 interview in *Artforum* in which Tony Smith recounted how in the early 1950s he had driven a car packed full of students from Cooper Union out onto the unfinished New Jersey Turnpike, emulating the joyrides popular in New Jersey at the time. The intensity of the experience stunned Smith. He observed, "it ought to be clear that's the end of art," concluding that what was important was not the object, but the experience. As what he called "an artificial landscape without precedent," the turnpike was similar to Albert Speer's vast parade ground at Nuremberg, a town in which the artist lived in 1954.[4] Smith's narrative of the car ride on the turnpike encouraged new art forms such as conceptual art and land art, but it also anticipated the experience economy emerging in the late 1960s.[5]

But Smithson's reframing of Passaic was different. Instead of driving out, he took the bus and walked, encountering an area that would be bypassed by the state highway.

the bridge

This was urban residue, deliberately left behind in a process of what economist Joseph Schumpeter had called "creative destruction."[6] Such physical and human residue, abandoned as obsolete, would be a hallmark of postmodernity's uneven development.

Almost thirty years after Smithson, theorist Ignasi de Solà-Morales Rubiò would describe such sites as *terrain vague*. Solà-Morales observed this change in attitude toward the city emerging in the 1970s as photographers—many of them following Smithson—sought out empty urban spaces produced as byproducts during the process of deindustrialization. Places of potential and excitement, generating freedom through the absence that they embody, these spaces captivated photographers and, more recently, architects. For Sola-Morales, these spaces were the last escape for art, itself a cultural residue produced by capital. The unhappy persona of the artist haunts these kindred spaces, defying the crushing sameness of the city.[7]

Capitalism is driven by the accumulation and reinvestment of surplus capital, a productive residue. But *terrain vague* is a different kind of surplus, a waste product, that, in lying abandoned, performs no function except to contain sheer potential. Foreign to the city, these are "places in which the city is no longer." *Terrain vague*, as described by Sola-Morales, reflected the essence of capital: "Void, absence, yet also promise, the space of the possible, of expectation."[8]

Sola-Morales observed that *terrain vague* was a place in which something had happened, long ago.

the meter

Abandoned, such forgotten sites retained energy from their previous uses: "seems to predominate over the present."[9] In *terrain vague*, there is promise an potential: such a site contains the trace heat of the past occupation, like a seat on a train vacated at the previous stop.

For architects the *terrain vague* served as a masculine fantasy, a site of desire, an emptiness to fill. Previously architects sought virgin territory, but with modernism discredited, the greenfield and the *tabula rasa* produced by urban renewal were as well. In the *terrain vague*, architects sought a new hope, a form of post-urban renewal, a way to reclaim emptiness by delighting in its already despoiled nature. If making such spaces was wrong, finding them could only be a delight.

Sola-Morales pointed out that the photograph was the prime means of representation by which the metropolis was apprehended, so it was no mere conceit that Smithson punctuated his tour with Instamatic photographs. In taking snapshots of seemingly banal features in the posturban terrain—pipes belching sewage, a pumping derrick, an old bridge—Smithson turned them into monuments, Duchampian objects of contemplation. Going out into the ruins of industrial America, Smithson demonstrated how experience was more important than production, that a once powerful order was being supplanted.

I sought in vain for Smithson's monuments, but the picturesque bridge over the Passaic River that Smithson started his tour with was gone, replaced by a concrete span that could have been attractive, but was made

banal through the addition of faux-historical lights meant to recall gas street lights. The Great Pipe Monument and the Fountain were gone, leaving no traces. The Sand-Box Monument vanished, childhood memories paved over.

But Smithson wouldn't have been surprised. These objects, for Smithson, were "ruins in reverse." What interested Smithson were how the monuments left by the industrial age were being enveloped by new ahistorical, infrastructural encrustations. Smithson observed that at Passaic a process of entropy was at work. The ruins would soon vanish, replaced by a world of sameness, the information in them lost. For Smithson, the monuments demonstrated how the post-urban landscape is already in a state of decline and decay, an environment without quality that demonstrates the collapse of modernist form and centralized power. Throughout, Smithson's goal was to illustrate the process of decay through entropy, the natural law whereby all forms of energy cool down, dissipating to a condition carrying minimal information and no potential.

The bridge over the Passaic is neutralized, its potential depleted by the forces of development. Just as the *terrain vague* proliferated forty years ago, it is endangered today, its spaces overspecified by massive real estate investment and an artificial building boom. In falling in love with absence, architecture killed it. Mutations are replaced by probabilities, brownfields by condominiums. Abandoned spaces are not so much pregnant with possibility as filled with plans for development. Once the bust ends, construction will begin again. The plans are already in place, factored into real estate value. Where can we find potential today? Where is our Passaic? If Passaic was a "new Rome" for Smithson, where is our own new Rome?

Today, as a diffuse global Empire has taken power, America is a superpower in decline, its economy destroyed, unable to present a new Rome to us. But rather than an American collapse, the implosion at the center is acting like an economic black hole to undo all economies. Following the principle of entropy that Smithson once observed, Passaic, New Jersey has dissipated across the continent. Whereas Smithson offered us a discrete area of urban decay, we now see not only a continent, but an entire world exhausted by the forces of capital.

Perhaps over time *terrain vague* will return. Closed malls, abandoned districts once filled with hipster boutiques, foreclosed macmansions, abandoned luxury apartment buildings by brand-name architects, towers in Dubai, corporate headquarters in Shanghai: perhaps all of these will offer up the *terrain vague* of the future. But our architecture is cheap. Nothing but drywall and plywood, today's architecture tries to physically approximate the virtual models used to design it and the empty financing schemes used to pay for it. Lacking the solidity of past ages, ours won't even register as ruins in reverse. •

Endnotes

1. That date is erroneous. In the Tour, Smithson refers to an article in the day's *New York Times* by critic John Canaday, "Art: Themes and the Usual Variations; Marlborough Showing 'New York Painter.'" The article was published on Saturday, September 30, 1967. This corroborates Smithson's statement that the Tour happened on a Saturday. September 20, 1967 is a Wednesday, something I know well since my mother used to recite to me the old adage "Wednesday's child, full of woe." Robert Smithson, "A Tour of the Monuments of Passaic, New Jersey," Jack Flam, ed., *Robert Smithson: The Collected Writings* (Berkeley: University of California Press, 1996), 68-75.

2. See Kazys Varnelis, "The Meaning of Network Culture," *Networked Publics* (Cambridge: The MIT Press, 2008), 145-160.

3. Victor Onwueme and Huan Feng , "Risk Characterization of Contaminants in Passaic River Sediments, New Jersey," *Middle States Geographer* (2006), volume 39: 13-25.

4. Tony Smith, interviewed by Samuel Wagstaff, Jr., "Talking with Tony Smith," *Artforum* 5, no. 4 (December 1966): 19. Smithson cites the essay in "Toward the Development of an Air Terminal Site," Flam, ed. *Robert Smithson*, 59.

5. David Harvey, *The Condition of Postmodernity* (Oxford, UK: Blackwell, 1989).

6. Joseph Schumpeter, *Capitalism, Socialism, and Democracy* (New York: Harper, 1950).

7. Ignasi de Sola-Morales Rubió, "Terrain Vague," Cynthia Davison, ed. *Anyplace* (Cambridge: MIT Press, 1995), 119-123.

8. Sola-Morales, 120.

9. Sola-Morales, 120.

Images: courtesy of the author

contributors

Melissa Lo recently completed her SMArchS degree at MIT, where she was awarded the SMArchS Prize. Presently she is pursuing her PhD in the History of Science at Harvard University.

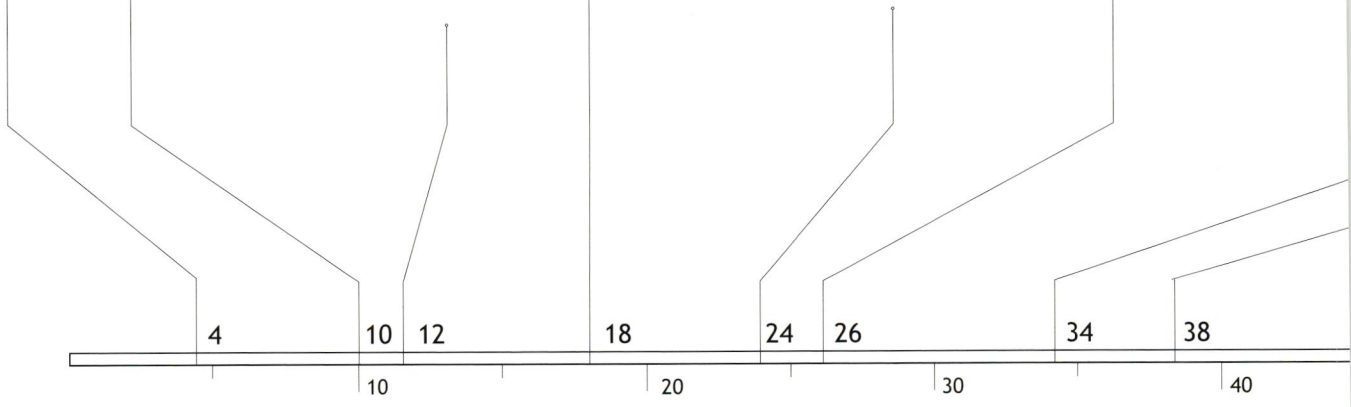
Mark Jarzombek, Professor of the History and Theory of Architecture, and also Associate Dean of MIT's School of Architecture and Planning. He has taught at MIT since 1995, and has worked on a range of historical topics from the Renaissance to the modern periods. He has recently published a textbook entitled *A Global History of Architecture* (Wiley Press, 2006) with co-author Vikram Prakash with the noted illustrator Francis D.K. Ching.

Leonardo Bonanni is a Research Assistant at the MIT Media Lab's Tangible Media Group and instructor of MIT Graduate course *MAS.962: Future Craft: Emerging Processes for Object Design*. He is a technology, branding and design consultant; he occasionally makes art and he loves to write and do carpentry. Much of his work can be found at http://leo.media.mit.edu

Teddy Cruz' work dwells at the border between San Diego, California and Tijuana, Mexico, where he has been developing a practice and pedagogy that emerges out of the particularities of this bicultural territory and the integration of theoretical research and design production. He is currently an Associate Professor in public culture and urbanism in the Visual Arts Department at UCSD in San Diego.

Zameer Basrai is a recent graduate of the SMArchS program in the Aga Khan Program for Islamic Architecture at MIT. He received his Bachelor of Architecture from the School of Architecture, CEPT University in Ahmedabad, India. His work focuses on the architecture of religious minority communities in South Asia and the Middle East.

eskyiu is a design collaborative integrating culture, community and technology founded by Eric Schuldenfrei and Marisa Yiu. Trained as architects, they are now based in Hong Kong teaching at the Department of Architecture at the University of Hong Kong, and running their practices.
Eric Schuldenfrei holds a Bachelor of Architecture from Cornell University, a Master of Philosophy from the University of Cambridge and is currently completing his PhD there. Marisa Yiu holds a Bachelor of Arts from Columbia University and a Master of Architecture from the Graduate School of Architecture, Princeton University.



Eric Höweler is a registered architect and architectural writer. He received a Bachelor of Architecture and a Master of Architecture from Cornell University. He is currently a Design Critic at the Harvard Graduate School of Design and has previously taught at City College of New York and Massachusetts Institute of Technology. Prior to forming Howeler + Yoon Architecture, Eric was a senior designer at Diller + Scofidio, and an Associate Principal at Kohn Pedersen Fox Associates. He is the author of *Skyscraper: Vertical Now*, published by Rizzoli/Universe Publishers in 2003.

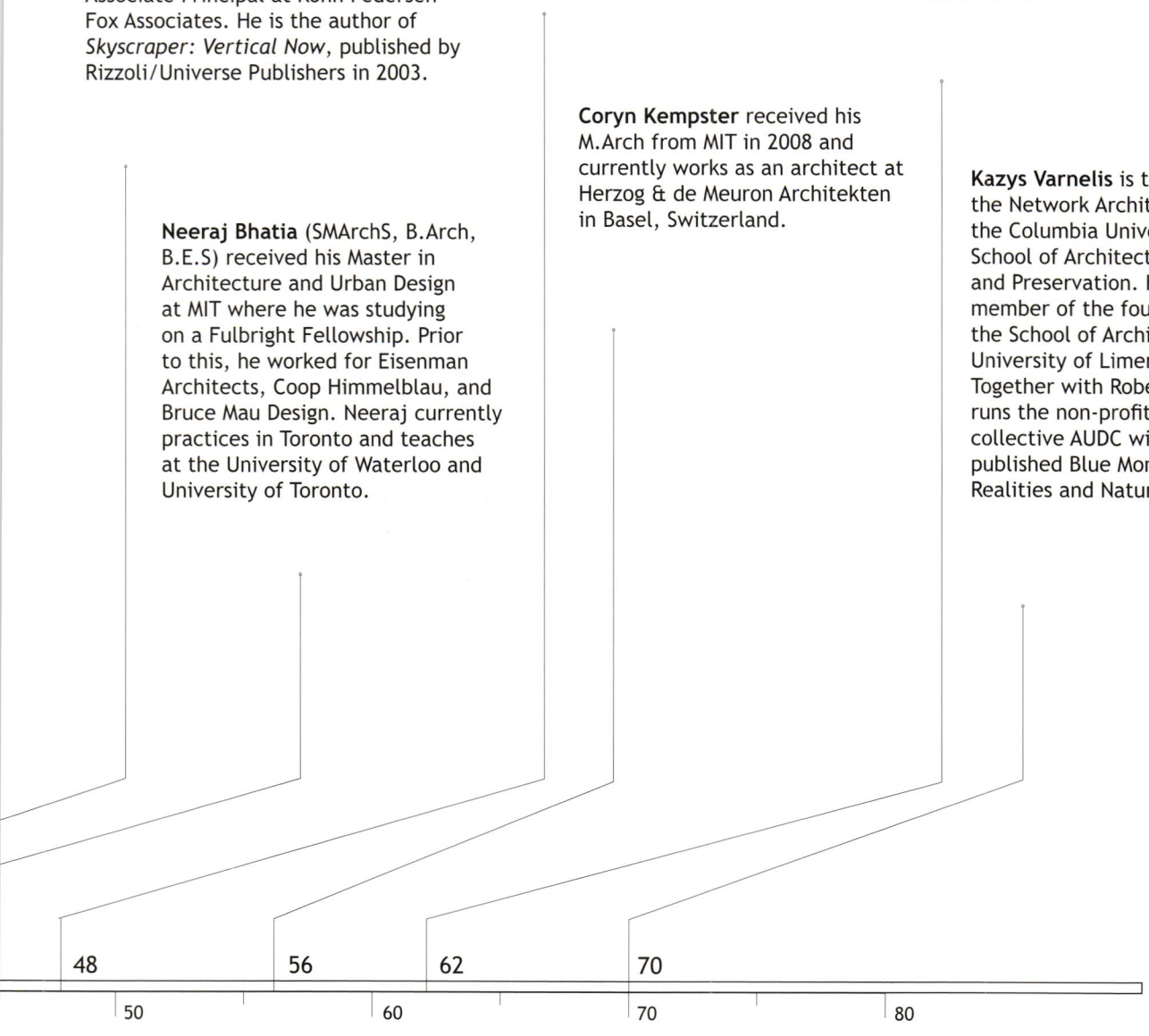
Morgan Ng is a recent graduate of Cornell University's Bachelor of Architecture program. He is studying at the Central European University in Budapest.

Abigail Susik is currently completing her dissertation, "The Vertigo of the Modern: Surrealism and the Outmoded," in the Department of Art History and Archaeology at Columbia University. She has presented related material in conferences at the Tate Modern, University of Pennsylvania, University of British Columbia, and the College Art Association Annual Conference.

Coryn Kempster received his M.Arch from MIT in 2008 and currently works as an architect at Herzog & de Meuron Architekten in Basel, Switzerland.

Neeraj Bhatia (SMArchS, B.Arch, B.E.S) received his Master in Architecture and Urban Design at MIT where he was studying on a Fulbright Fellowship. Prior to this, he worked for Eisenman Architects, Coop Himmelblau, and Bruce Mau Design. Neeraj currently practices in Toronto and teaches at the University of Waterloo and University of Toronto.

Kazys Varnelis is the Director of the Network Architecture Lab at the Columbia University Graduate School of Architecture, Planning, and Preservation. He is also a member of the founding faculty at the School of Architecture at the University of Limerick, Ireland. Together with Robert Sumrell, he runs the non-profit architectural collective AUDC with which he has published Blue Monday: Absurd Realities and Natural Histories.



thresholds catalogue

- 35 Difference
- 34 Portability out of print
- 33 Formalisms
- 32 Access
- 31 Ephemera
- 30 Microscosms
- 29 Inversions
- 28 Baroque
- 27 Exploration
- 26 Denatured
- 25 Sacrosanct
- 24 Reproduction and Production
- 23 Deviant
- 22 Fashion
- 21 Readings
- 20 Be-longing
- 19 The Invisible
- 18 Money & Design
- 17 Asian
- 16 Speed. IMPACT. Change
- 15 Creativity in Consumer Culture
- 14 Landscape and the Environment out of print
- 13 Travel and Tourism
- 12 What is a Thesis? out of print

.....

Photo: Gokhan Eryaman

thresholds 38 call for submissions

Future

Today's future seems dark, dangerous and perhaps nearer than ever.

Whether it is awaited for hope and progress, or cursed for pre-destined change and catastrophic loss, what we think as future inscribes a limit onto the present; transforming and regulating 'what it is,' we 'do' as we know by 'now.'

Future never arrives 'as is.'

Without critique, future is dogma; a sovereign institution, a blind vector driving 'what is now and present' towards silent, monotone, and prescribed experiences.
Whether it is a revolt against the futures of the past, or a curiosity towards the unknown, thresholds 38 invites methods, projects, practices and alternative kinds of critique to imagine unorthodox futures that can emerge from within this institution.

We call for other futures; introductions, utopias, dystopias, heterotopias and hope; new ways to handle unknowns, uncertainties and improbables in current cultural practice; radical speculations about the realities of a world that will always be destined to political, social, financial and ecological crises.

Submissions are due 5 March 2010. Please include a two sentence biography of each author. thresholds invites submissions, including but not limited to scholarly works, from all fields. thresholds attempts to print only original material.

TEXT/IMAGE: Essays are limited to 2500 words. Text must be formatted in accordance with The Chicago Manual of Style. Spelling should follow American conventions and quotations must be translated into English. All submissions must be submitted electronically, via disc or e-mail to thresh@mit.edu, and accompanied by hard copies of text and images. Text should be saved as Microsoft Word or RTF format, while any accompanying images should be sent as TIFF files with a resolution of at least 300 dpi at 8" x 9" print size. Figures should be numbered in the text. Image captions and credits must be included with submissions. It is the responsibility of the author to secure permissions for image use for both print and electronic publication and to pay any reproduction fees. Accompanying images should be sent as TIFF files with a resolution of at least 300 dpi at 8" x 9" print size. Figures should be numbered clearly in the text. Image captions and credits must be included with submissions. It is the responsibility of the author to secure permissions for image use and pay any reproduction fees. A brief author bio must accompany the text.

Please send materials or correspondence to:
Orkan Telhan, Editor
thresholds, MIT Department of Architecture
Room 7-337
77 Massachusetts Ave.
Cambridge, MA 02139

Inquiries, text/image submissions: thresh@mit.edu

Future Anterior

Historic Preservation's NEW POINT OF REFERENCE

Essential reading for anyone interested in historic preservation and its role in current debates, Future Anterior approaches historic preservation from interdisciplinary positions of critical inquiry. A comparatively recent field of professional study, historic preservation often escapes direct academic challenges of its motives, goals, forms of practice, and results. Future Anterior asks these difficult questions from philosophical, aesthetic, historiographical, theoretical, and practical perspectives. As the first and only refereed journal of its kind in American academia, Future Anterior engages the reader in new ways of reflecting and taking on the built past not as a constraint but as a provocation to intervene creatively in contemporary culture.

A Journal of Historic Preservation History, Theory and Criticism
Graduate School of Architecture, Planning and Preservation Columbia University

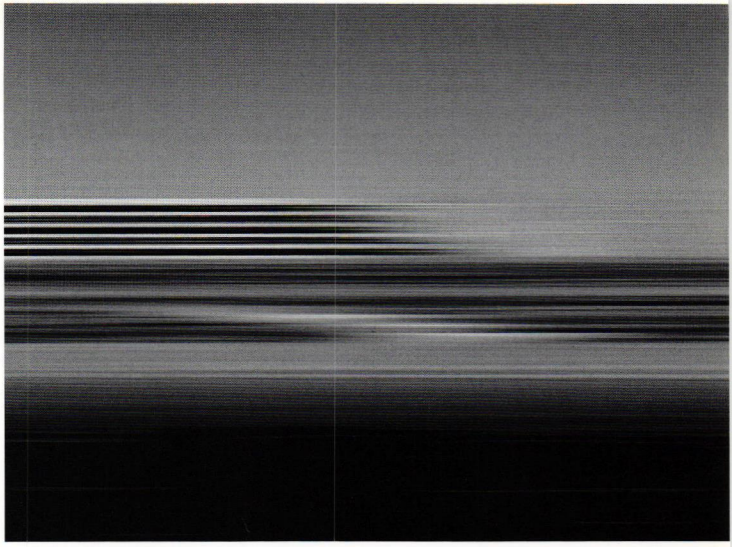
Managed and produced by Columbia University Historic Preservation students.

To subscribe or contact:

Future Anterior
Journal of Historica Preservation
GSAPP
400 Avery Hall
Columbia University
New York, NY 10027

Email: futureanterior@columbia.edu
Visit: www.arch.columbia.edu/futureanterior

Individuals: $24 in US, $34 international
Institutions: $60 in US, $70 international



thresholds

Editorial Policy
thresholds is published biannually in spring and fall by the Department of Architecture at the Massachusetts Institute of Technology. Opinions in **thresholds** are those of the authors alone and do not necessarily represent the views of the editors, the Department of Architecture, nor MIT.

Correspondance
thresholds
Massachusetts Insitutue of Technology
Department of Architecture, Room 7-337
77 Massachusetts Avenue
Cambridge, Massachusetts, 02139, USA

thresh@mit.edu
architecture.mit.edu/thresholds/

ISSN 1091-711X
PSB 09-09-0513

Printed by Puritan Press, Hollis, New Hampshire

Design by I|K studio

Jacket photographs: Delhi and Utrecht

Special thanks to:
Mark Jarzombek for his tireless advocacy and continual guidance. **Mariana Ibanez** and **I|K studio** for their patience and assistance on the graphic design. **Stanford Anderson**, **Arindam Dutta**, **Jason Goh**, **James Graham**, **Christopher Guignon**, **Simon Kim**, **Denis Ferhatović**, and **Winnie Wong** for their invaluable feedback. **Yung-Ho Chang**, **Rebecca Chamberlain**, **Jack Valleli**, **Minerva Tirado**, and **Michael Ames** for their support of ***thresholds***.