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Materiality and Meaning: AstroTurf, Progress, and the Postwar American Stadium

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AstroTurf was a carpet of half-inch nylon blades of grass, stretched across a thin rubber pad that itself was laid atop an asphalt base. Originally called "Chemgrass," it was developed in the early 1960s by a division of Monsanto Chemical. Its development was originally inspired by a Ford Foundation study that found urbanites entering the Army were less coordinated than those from suburban or rural areas; the study concluded that kids from the city needed better play areas. Chemgrass was first installed as an urban playing surface at the Moses Brown School in Providence, Rhode Island, in 1964.[1] The synthetic surface would be renamed when it was adopted by the iconic Houston Astrodome, the world's first indoor stadium.

The Astrodome opened in 1965. Its famous roof consisted of a lamella frame filled in with translucent Lucite panels—an arrangement that would allow the growth of real grass on the playing field below. It quickly became apparent that during day games the panels amplified daylight rather than diffused it, making life nearly impossible for outfielders trying to track baseballs hit with a high trajectory. Judge Roy Hofheinz and the Houston Sports Association—owners of the Houston Astros baseball club and managers of the Astrodome—responded to the problem short-term by painting over the panels. This, of course, blocked the natural grass inside from sunlight, slowly killing it off.

1965 Houston Astrodome with lucite panels.

The Astrodome needed an alternative to natural grass, and Hofheinz already had something in mind. He had installed a patch of Chemgrass at the Astros' spring training site in 1965, before the Astrodome itself had even opened, suggesting he had intended to transition to a synthetic surface no matter how well natural grass grew indoors.[2] The conversion from natural to synthetic was made in 1966 and marked a symbolic final severance from the natural world in the Houston dome. For Hofheinz—a self-described "huckster"—the laying of AstroTurf was yet another example of how his domed stadium was dragging the rest of civilization into the future. He boasted:

> *Everything about the Astrodome is unparalleled and trail-blazing. We feel the addition of this new playing surface, a product of chemistry, not only enhances our own facilities here, but should also launch a new and wondrous era in recreational engineering. The Astrodome is honored to be the original site of this extraordinary experiment.*[3]

No doubt, terms like "chemistry" and "recreational engineering" were meant to impress upon readers the fundamentally technological character of the stadium as a whole—investing it with a magically scientific aura (a point I will return to later in this paper). Astros manager Grady Hatton also framed the stadium as foundationally rational and progressive, celebrating the stadium's domination of the natural as a victory for fairness and predictability. He told stadium visitors, "This puts the icing on the cake. The Astrodome now becomes a real Utopia for baseball. No wind, no sun, no rain, no heat, no cold, and now no bad bounces."[4]

Installation of Astrodurf in Houston Astrodome

Monsanto was not the only corporation striving to build new sporting utopias. The Minnesota Mining and Manufacturing Company (or 3M) developed AstroTurf's primary competitor, Tartan Turf. Like AstroTurf, Tartan Turf was basically a half-inch-thick nylon carpet laid atop an asphalt base. Unlike its competitor, however, Tartan Turf consisted of a finely woven nylon fiber—not individual blades—and was bonded to a rubbery surface attached to the asphalt. Most agreed that Tartan Turf was a spongier, slightly more forgiving surface than AstroTurf. If you ran your hand over it, according to a reporter, it felt like "a cross between a finely knit rug and a pad of steel wool."[5] This surface was first deployed at the Universities of Tennessee and Wisconsin in 1968.

By 1970, artificial grass was fully ascendant. One hundred thirteen fields had been installed over the previous five years, at an average cost of two hundred and fifty thousands dollars each.[6] Every one of the new municipal stadiums constructed in the 1970s had artificial turf, in places like Pittsburgh, Cincinnati, Philadelphia, Kansas City, New Jersey, Seattle, Minneapolis, Buffalo, Irving (Texas) and Foxboro (Massachusetts). Some new stadiums built with natural-grass fields—in San Francisco and St. Louis, for example—replaced them with synthetics. Major universities like Michigan, Michigan State, Ohio State, and Iowa installed it in their football stadiums.

The financial bottom line—and the salesmanship of Monsanto and 3M—drove this trend. The surfaces were relatively expensive. However, after an initial costly investment, maintenance costs for synthetic fields were much lower than for natural grass. The new fields could also be used much more frequently than delicate grass surfaces—an advantage at a time of multi-purpose stadiums used not only for football and baseball, but mass revivals, music concerts, and circuses. Tex Schramm, the influential executive for football's Dallas Cowboys, argued: "Not only does [artificial turf] reduce the expense of having a large ground crew, but it might save as many as 5 or 10 dates that might ordinarily be rained out. If it stops raining an hour before the game, you can play on this stuff."[7] At a university—Wisconsin, for example—the campus's primary stadium could be used for more than just football games, but also football practices, soccer, and band practices. Wisconsin officials estimated that the maintenance savings would be twenty thousand dollars per year, plus another ten thousand in decreased laundry costs (uniforms no longer suffered mud stains). Furthermore, the ability to use the primary stadium as a practice facility allowed the university to develop two acres of practice fields adjacent the stadium—four hundred and fifty thousand dollars worth of real estate.[8]

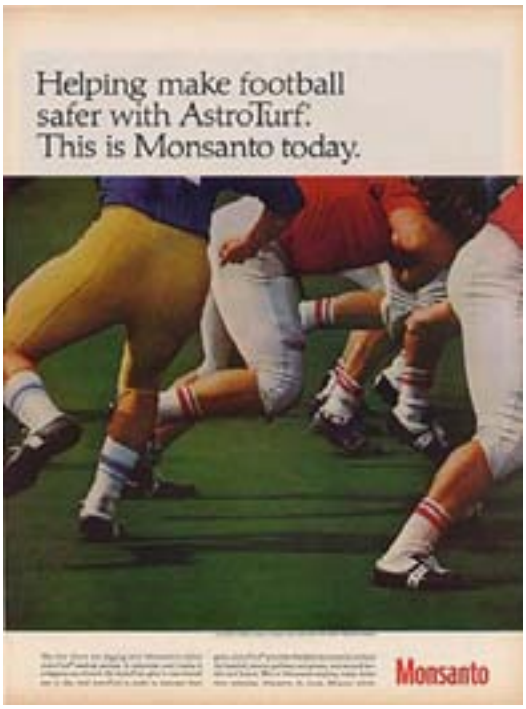
Tartan turf consists of finely woven nylon fibers bonded to a rubber surface, making it spongier than AstroTurf.

Artificial surfaces were also celebrated as healthy alternatives to natural grass. Many believed (or at least argued) that the fields would cut down on injuries due to their presumably uniform and predictable surfaces; players could rest assured that unruly clumps of grass wouldn't unexpectedly catch hold of their cleats, resulting in ankle and knee injuries. Early research presented by 3M and Monsanto, unsur-

prisingly, found that the artificial surfaces drastically cut down on injuries. Monsanto reported, having surveying 185 schools that had used AstroTurf since 1964, that teams playing on real grass suffered 9.6 ankle or knee injuries each year, compared to just 1.6 on artificial turf.[9]

Boosters for artificial surfaces wove together a range of justifications for its use. For example, when baseball's Pittsburgh Pirates were playing their final full season on natural grass at the classic old ballpark, Forbes Field, in 1969, the club prepared supporters for the reality of artificial turf at the new Three Rivers Stadium. An article in the Pirates *Yearbook*—a souvenir magazine that fans could purchase at the ballpark—catalogued the advantages of fake grass often touted by synthetic turf advocates, putting forth an official pitch for the new surface. Readers were told that artificial turf "increased functionality" because the field could be quickly adapted to other events. It produced a "uniformity of the playing surface over [the] entire field and at all times" that would allow for more consistent footing, more consistent ball bounces, and the "possibility of fewer ankle and knee injuries." Artificial turf "reduced postponements because water could be drained more quickly." When games were played in poor weather, the use of an artificial surface would eliminate "muddy and otherwise undesirable field conditions that tend to detract from the superior performance of professional teams." And finally, according to the club, it would "improve aesthetic appearance."[10]

Such a list of functional characteristics—however debatable many of them were—supported a broader discourse of "progress" prevalent at the time—a modern conception of progress as historically linear, motivated by human rationality, and often exemplified through the accessibility of consumer products. Synthetic turf advocates fully participated in this discourse, littering their descriptions of fields with terms like "future" and "progress." When baseball's All-Star game was played at Cincinnati's new Riverfront Stadium in 1970, its artificial surface became tangible evidence of modern progress. Arthur Daley of the *New York Times* suggested that teams that didn't adopt synthetic turf for their home stadiums would be left behind those that did, claiming, "The future is working against them and they may very well find themselves victimized by progress."[11] President Richard Nixon, a visitor to the All-Star game, agreed. In what must have been music to Monsanto's ears, the president plugged their product, predicting, "AstroTurf is the playing field of the future."[12] This sentiment was quite common; Bud Wilkinson, legendary football coach at the University of Oklahoma and lead color analyst for ABC's college football telecasts, likewise promised, "Artificial fields are the fields of the future." The insertion of artificial turf into a broader narrative of modern human progress was common enough to be invoked even by skeptics. Peter Carry of *Sports Illustrated* complained, "Grass, the old-fashioned, common, green growing stuff, is dying out, a lamentable death wrought of ambiguity and polyester progress."[13]



1967 Monsanto ad promoting Astroturf

Historian Michael L. Smith's theorization of "commodity scientism" provides a useful interpretive lens for understanding and contextualizing synthetic turf as a symbol and part of this distinctively modern discourse. Through his study of the marketing of the US manned space program, Smith identifies what he calls "commodity scientism" as the dominant idiom of science and technology in the 1950s and 1960s. "Scientism" refers to an absolute faith in the power of science and belief in the universal applicability of the scientific method (science becomes "magic"). Science itself, Smith argues, was commodified during this period; for example, the automobile industry relied heavily on the commodification of the seemingly scientific, its advertisements draping products in scientific-sounding jargon to impress potential customers. Smith writes, "when science itself is commodified, the products of a market-aimed

technology are mistaken for the scientific process, and those products, like science, become invested with the inexorable, magical qualities of an unseen social force." People came to see commodities, rather than choices, techniques, or labor processes, as "science itself."[14]

Artificial surfaces became tangible evidence of modern progress.

Synthetic turf was an articulation of this commodity scientism—a material and consumable manifestation of "progress" and scientific know-how—whose symbolic valence, at least for a time, overwhelmed its functional and material realities. The "display value" of this product overcame its physical realities and was fused with a hyperbolic rhetoric of progress and futurism reflecting the absolutist faith of scientism and a belief in the "magic" of science. Indeed, the synthetic playing fields, as one reporter wrote, had come to be regarded as "magic carpets by the schools that have ordered them and the companies that have developed them."[15] Monsanto explicitly mobilized this discourse by referring to itself, in advertising, as "the science company."

The materiality of synthetic grass thoroughly complicated such representations. Though the artificial turf playing field did prove the "playing field of the future," belief in the "magic" of the fields—or even that the fields indeed represented "progress"—was quickly punctured by the physical experience of the fields themselves. Synthetic grass refuted a progressive discourse in a number of ways.

A major problem with the synthetic surfaces was the intense heat generated by the fields. Unlike natural grass surfaces, which absorbed heat, synthetic turf fields reflected it, due to their asphalt foundations. This sometimes resulted in blisters to players' feet and the melting of shoe bottoms. Famed football tough Bubba Smith refrained from taking a knee on the sidelines—a standard football player posture—"because you're that much closer to the surface and it feels like it's burning your face."[16] A New York Jets player said that he was "well done, cooked from the bottom up" after a game in Miami; the temperature on the field was 120 degrees at game time.[17] On a ninety-degree day in St. Louis, temperatures read one hundred and fourteen degrees six feet above the field. Riverfront Stadium in Cincinnati reported temperatures as high as one hundred sixty degrees on the surface.[18]

Such heat wasn't just uncomfortable; it was dangerous. Researchers found that artificial turf reversed the direction of heat flow in the foot. Normally, athletes would lose heat through the feet because the natural grass fields absorbed it. On artificial turf, athletes actually gained heat through their feet. Football players were particularly vulnerable to heat-related injury given the time of year they played and the extra equipment they wore. Higher body temperatures on the turf resulted in more muscle cramping, salt depletion and exhaustion, hyperpyrexia (which leads to heat stroke), and skin lesions.[19]

One of the major selling points of artificial surfaces was their uniformity; they presumably had none of the vagaries of lumpy and patchy natural grass. This uniformity proved a myth. The surface in the Astrodome, according to one player, "had seams that had separated, leaving two- and three-inch gaps, and others that had overlapped, forming ridges high enough to trip over."[20] In Philadelphia's Veterans Stadium, the Astroturf absorbed moisture, froze, and shrunk over the winter; once the weather warmed up, the surface failed to return to its previous size.[21] Even level synthetic surfaces were unpredictable—sometimes proving too slick, at other times too grippy.[22] The variation between fields wasn't just a matter of product type either; football player Bob Lilly complained, "Even if the same firm makes them, each field is different."[23]

The most popular selling point for artificial grass fields—alongside the cost benefits—was the promise that they were safer than natural grass fields. But it was soon evident that the opposite was true. Dr. James Garrick, the orthopedist for the University of Washington football team, found that the

An illustration depicting AstroTurf "hot foot.'

rate of injury was higher on synthetic turf fields than on natural grass fields. Players' feet sometimes got caught in the turf due to the increased friction, resulting in cartilage and ligament damage to knees and ankles. Garrick found that head injuries were more frequent as well, as players could run faster on the artificial surfaces, thus increasing the force of helmet-to-helmet hits.[24] Injuries from heads hitting the hard, asphalt-based turf were another concern. After seeing the abrasion scars on the helmet of his concussed quarterback—which looked as if it had been dragged across concrete—Los Angeles Rams coach Tommy Prothro commented, "AstroTurf is like putting a throw rug over a driveway."[25] The NFL Players Association called for a moratorium on turf installations in 1971, claiming, "There has been an alarming rise in player injuries on account of the increased use of the artificial surfaces."[26] A House subcommittee investigating product safety looked into synthetic turf in November 1971; members were shown photographs of, as a *Sports Illustrated* writer put it, "grotesquely blistered palms and burned elbows; linear abrasions; second-degree burns of arms, legs and hips; and purple toenails resulting from 'feet trying to slide through the shoe' on high-traction synthetic turf."[27] Blisters, burns, concussions, and torn ligaments: these hardly seemed markers of progress.

Artificial grass briefly seemed an expression of humankind's ability to produce a chemically engineered, new-and-improved nature, an example of how, as a writer from Sports Illustrated put it, the power over the natural had "passed from the hand of God into the rubber glove of the chemist."[28] Artificial grass *as material* resisted the interpretations advocates imposed on it, as it became a symbol of "progress" run amok. For many, synthetic turf represented the failures of modern life. In a letter to the *New York Times* in 1970, reader Scott Jeffrey Soffen wrote, "I plead with the remaining owners in baseball who are un-Astroed: Please keep those dirt fields, with grass. There is too much plastic and there are too many synthetic things in life. Don't kill the grass."[29]

Artifical surfaces provide a uniform appearancce to playing fields.

Thus the materiality of the artificial turf responded to its rhetorical representation, and in doing so it implicitly critiqued a broader, modernist meta-narrative that celebrated technologically determined advancement and progress. Once the object had its say, stripping away the high promises of scientific futurism, a bloated promise of meritocratic fairness, and likely cynical appeals to health benefits and athlete protection, what remained was a coarse economical imperative—synthetic fields were cheaper to maintain in the long run. In this case, the real costs of synthetic grass were shifted from maintenance, a problem for stadium owners, to labor—the players whose careers were damaged and shortened by injury.

More broadly, this tension between the materiality and representations of artificial turf expressed cultural changes specific to that moment. Synthetic grass might be seen as a tipping point in the rationalization of stadium space and the modern urban landscape more generally; this was a time when Americans increasingly questioned high modernist built environments that were so regularized and "functional" that they were barely livable. The voice of AstroTurf joined with anti-modernist and nascent postmodernist voices that challenged bloated and unsustainable narratives of scientific conquest and human rationality.

Endnotes

[1]Mark Cannella Bechtel, "For the Record," *Sports Illustrated,* July 26, 2004, 20. "How We Got Here: Home in the Dome," *Sports Illustrated,* August 16, 1994.

[2]"How We Got Here." SI 1994. Former Astros publicist Chuck Pool later claimed, "I think he suspected all along that the grass wouldn't work." Hofheinz was certainly the type to see a marketing opportunity in the installation of synthetic turf.

[3]Houston Sports Association, Inc. *Astrodome: 8th Wonder of the World!* (Houston, 1966), 24-25.

[4]*Astrodome,* 24-25.

[5]"Football Debut of Tartan Turf Softens Opener for Tennessee," *New York Times*, September 15, 1968.

[6]Lawrence K. Altman, "Football Injuries Are Linked to Synthetic Turf," *New York Times*, September 1, 1971.

[7]Dave Anderson, "...But Artificial Turf Could Be: Artificial Field a Real Consideration," *New York Times*, January 17, 1971.

8Johnson, "Goodby to Three Yards and a Cloud of Dust," *Sports Illustrated*, January 27, 1969, 37-39.

[9]William Johnson, "Goodby to Three Yards and a Cloud of Dust," *Sports Illustrated*, January 27, 1969, 37-39.

[10]*Pittsburgh Pirate 1969 Yearbook*, 1969, 4. A. Bartlett Giamatti Research Center, National Baseball Hall of Fame.

[11]Arthur Daley, "Sports of The Times: Shape of the Future," *New York Times*, July 17, 1970.

[12]Shirley Povich, "This Morning...," *Washington Post*, July 16, 1970.

[13]Peter Carry, "A Surface Case of Bugs In the Rugs," *Sports Illustrated*, September 14, 1970.

[14]Michael L. Smith, "Selling the Moon: The U.S. Manned Space Program and the Triumph of Commodity Scientism," in *The Culture of Consumption: Critical Essays in American History, 1880*-1980, eds. Richard Wightman Fox and T.J. Jackson Lears (New York: Pantheon, 1983), 179.

[15]"Football Debut of Tartan Turf Softens Opener for Tennessee," *New York Times*, September 15, 1968.

[16]Anderson.

[17] John Underwood, "New Slant on the Mod Sod," *Sports Illustrated,* November 15, 1971. Miami used Poly-Turf, a third type of artificial grass.

[18]Carry.

[19]"Study Shows Artificial Turf Is 'Hotter' Than Grass," *New York Times*, January 24, 1971.

[20]Michael Oriard, *The End of Autumn: Reflection on My Life in Football*, (Garden City: Doubleday & Co, 1982), 195.

[21]Rich Westcott, *Veterans Stadium* (Philadelphia: Temple University Press, 2005), 137.

[22]Underwood.

[23]Anderson.

[24]Altman.

[25]Underwood.

[26]"Monsanto Denounces Call for Moratorium On Synthetic Turf," *Wall Street Journal*, October 4, 1971.

[27]Underwood. Later that month, orthopedist Dr. Harry H. Kretzler Jr. presented a study at a meeting of the American Medical Association that found some ankle and knee injuries on synthetic turf were more severe than on natural grass. It also found that the rate of injury was higher on AstroTurf than on natural grass. Additionally, high school coaches claimed that synthetic surfaces produced abrasions that often became infected and required antibiotic drug treatment. The study was based on a four-year study of high school games on AstroTurf in Seattle. "Severer Injuries On Artificial Turf Indicated in Study." *New York Times*, November 29, 1971. Kretzler's study was independent of that of Dr. James G. Garrick of the University of Washington.

[28]Johnson, 37.

[29]"From the Sports Editor's Mailbox," *New York Times*, July 19, 1970

Emily Dickinson and the Poetics of Glass

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For a poet as intensely homebound as Emily Dickinson (1830-1886), windows were extremely important objects. After the age of thirty, Dickinson rarely left her father's house and grounds, going only as far as the hedges of the family estate on Amherst's Main Street.[1] Aside from working in the garden and walking in the orchard, looking through windows and composing letters and poems while seated near windows were her primary modes of relating to the landscape around her. This talk addresses two main ideas: first, how the window – and window glass itself – shaped Dickinson's apprehension of the world; and second, how one's efforts can meld with the material with which one works so that, through physical proximity, the qualities of one's own craft infiltrates the qualities of someone else's craft.

Emily Dickinson lived in a house punctuated by windows. There were approximately seventy-five windows at the Dickinson Homestead: nineteen on the south façade, eleven on the north, twenty-two on the east, and twenty-three on the west. Of these seventy-five windows, seventy-two were functioning, three were blind, fifteen were small attic or cupola windows, four were full-length French windows, five were expansive conservatory windows (including a glazed conservatory door that doubled as a window), and two were internal windows that looked out from the dining room into the interior of the conservatory.[2]

Daguerreotype of Emily Dickinson, ca. 1846. Archives and Special Collections, Amherst College Library, Amherst, Massachusetts.

Dickinson certainly didn't encounter all these windows in her daily routine around the house, but the fact that she lived in a home where windows seemed to take up almost as much domestic space as walls meant that wherever she composed her poems, wherever she wrote her letters, wherever she did her thinking or performed her chores, there was likely to have been a window nearby. Letters, poems, and others' reminiscences of Dickinson suggest that her interactions with the windows of her home were numerous and richly associative, suffused with playful imagination, ritualistic significance, and strong emotional attachment. In a letter to her sister-in-law Susan Gilbert Dickinson in 1853, for example, the poet wrote: "I ran to the door, dear Susie – I ran out in the rain…I called 'Susie, Susie,' but you didn't [sic] look at me; then I ran to the dining room window and rapped with all my might upon the pane, but you rode right on and never heeded me."[3] In a letter to her friend Mrs. Samuel Bowles in 1859, Dickinson wrote: "I cannot walk to the distant friends on nights piercing as these, so I put both hands on the window-

pane, and try to think how birds fly, and imitate, and fail…"[4] In a letter to another friend, Mrs. Josiah Gilbert Holland, in 1884, the poet reported: "I have made a permanent Rainbow by filling a Window with Hyacinths…"[5] And in a memoir by MacGregor Jenkins, who as a child spent many hours on the grounds of the Homestead playing with Dickinson's niece and nephew, and who later became a writer and critic for *Harper's Magazine* and *The Atlantic*, he recalled that Dickinson "had the habit of standing in rapt attention as if she were listening to something very faint and far off": "We children often saw her at sunset, standing at the kitchen window, peering through a vista in the trees in the western sky…"[6]

The Dickinson Homestead in Amherst, Massachusetts.

Surely, if these windows had memories, if they were capable of registering and gathering together all their encounters with the poet throughout her lifetime – the numerous instances she opened them up for air, closed them to preserve the interior's warmth, shuttered them to block out the sun, looked through them to note the passage of the seasons, breathed on the glass in wintertime to make frost circles, pressed her palms against the panes as she scanned the landscape, gazed at their dark surfaces in the evenings as they reflected her image in the flickering lamplight – they would consolidate enough impressions of her to form a portrait more dynamic than any other we have of her today.

It would be impossible within the parameters of this talk to discuss all of the Homestead windows, but we can focus on the windows the poet was on most intimate terms with: those of her bedroom, situated on the southwest corner of the second floor. The English word "window" is derived from the Old Norse term *vindauga*, meaning "wind eye," reflecting that at one time in architectural history windows contained no glass and were essentially openings in walls that allowed for views and air to flow through.[7] Dickinson's entire room could be considered a "wind eye." It contained four large windows: two faced west towards an expansive grove of deciduous trees that lined a narrow path leading to her brother's house next door; and two faced south overlooking Main Street, a central thoroughfare carrying visitors and commercial traffic into the heart of town. Circuses such as Van Amburgh & Company's Great Golden Menagerie, Maginley's Circus, and Frost's Roman Circus and Royal Colosseum passed through this road when they came to Amherst, and throughout her life Dickinson made an occasion of staying up, sometimes as late as three-thirty in the morning, to witness their entry into town.[8]

The Dickinson Meadow. Reprinted in Polly Longsworth, The World of Emily Dickinson (New York and London: W.W. Norton & Company, 1990), p. 85.

Beyond Main Street the land dipped southward into a ravine that cradled a narrow, eastward flowing brook. Surrounding this brook was the eleven-and-a-half-acre Dickinson Meadow blanketed by hay and wildflowers, and where twice a season, usually in June and August, workers were hired to cut down the hay with scythes. Across the meadow Dickinson would have caught a glimpse of the town's industrial quarters, consisting of factories, working-class residences, and train tracks that linked Amherst to major rail routes in Massachusetts. Hovering above all this in the horizon were the gentle outlines of the Holyoke Mountains.[9]

The windows in Dickinson's bedchamber thus commanded advantageous views of the town's social, economic, and natural landscape. "By my Window have I for Scenery," she wrote in a poem from 1864 (Fr 849) – and it was true. As literary critic Diana Fuss has pointed out, Dickinson's bedroom was

Interior of Dickinson's bedroom. Photograph by Frank Ward. From Diana Fuss, The Sense of an Interior (New York & London: Routledge, 2004), p. 56.

the most optically powerful room in the house – a "panoptic center."[10] In many respects, her room can be likened to James Stewart's apartment in Alfred Hitchcock's 1954 *Rear Window*. Temporarily bereft of the use of his legs (an emasculating condition), Stewart's character becomes increasingly eager to amplify a faculty he still possesses – vision – and turns his entire apartment into one big eye, a "panoptic center," mobilizing its many windows for his visual project: to spy on his neighbors and to solve a murder mystery. Stewart's character assigns the more physical aspects of his investigation to his girlfriend (played by Grace Kelly) and his nurse (played by Thelma Ritter); they become his limbs. Dickinson had emissaries too – the family's hired servants and neighborhood children; she sent them out to deliver her messages. Still, Dickinson's condition of being homebound was not forced in the same way that Stewart's character is in the film; in fact, she may have chosen her homebound arrangements precisely because her ample windows offered what she felt to be rich exposures to the wider world, as far away as the destinations the railroad tracks could imaginatively take her.

The four windows allowed Dickinson opportunities to choose between, or to simultaneously embrace, private and public stances of relating to the world. When she looked through the two western windows facing her brother's house, she was offered a view of a foliaged sanctuary: intimate pockets of shade formed by towering trees, a pathway wide enough for just two people, and the security of privacy ensured by the decorative wooden gates that designated this land as the family's property. Alternatively, when she looked through the two southern windows facing Main Street, she encountered scenes of labor, commerce, and transportation, as well as a broader view of Amherst as one of a number of villages tucked into the fold of the Connecticut Valley. This wider view, with its networks connecting the provincial town to the rest of New England and the eastern seaboard, would have reminded Dickinson of her Congressman father's Whig politics and his party's vision for developing a stronger national infrastructure through interregional commerce and transportation. Indeed, it was her father's civic efforts that brought the railroad to Amherst in the first place. Dickinson could also position herself in between the south- and west-facing windows and partake of the private and public realms – the intensive and inward-turning sensibility as well as the extensive and outward-looking view – at the same time.

The western view from Emily Dickinson's window. Reprinted in Polly Longsworth, The World of Emily Dickinson (New York and London: W.W. Norton & Company, 1990), p. 83.

But more than an ideal instrument of vision, Dickinson's room was also an ideal receptacle for wind. The most pleasant breezes came from the southwest, sweeping across the ravine and the sweetly scented meadow before it reached the Homestead. Located at the southwest corner of the house on an elevated level, Dickinson's bedchamber would have been one of the first rooms to encounter those refreshing currents. With all four of its windows open, her chamber was a *vindauga* in the fullest sense of the word; the entire room was a "wind eye" – a window. In her poems about wind, wind is often personified as a guest – sometimes polite and gentlemanly, sometimes majestic and forceful – but nearly always a visitor or vagabond passing through the house and grounds:

The Wind – tapped like a tired Man –
And like a Host – "Come in"
I boldly answered – entered then
My residence within

A Rapid – footless Guest –
To offer whom a Chair
Were as impossible as hand
A Sofa to the Air –

No Bone had He to bind Him –
His Speech was like the Push
Of numerous Humming Birds at once
From a superior Bush –

His Countenance – a Billow –
His Fingers, as He passed
Let go a music – as of tunes
Blown tremulous in Glass –

He visited – still flitting –
Then like a timid Man
Again, He tapped – 'twas flurriedly –
And then I became alone –

(Fr 621)

Windows of the Dickinson Homestead.

In *The Poetics of Space*, Gaston Bachelard writes that "[t]hrough the poet's window the house converses about immensity with the world."[11] Dickinson's contact with the world, and her understanding of her own relation to it, was framed and mediated by the windows of her home. Although tethered to a single house, on a single street, in a single town, the windows of the Dickinson residence were a means for the poet to gain multiple perspectives; their abundance and distribution throughout the house made her inner life immense.

One of the west-facing windows of Dickinson's second-floor bedroom in the Dickinson Homestead.

Since there's a historical specificity to the design and texture of the Homestead windows, we should attend to those details by looking more closely at one of the bedroom windows. This window, one of the two west-facing windows from Dickinson's room, is of the standard double-hung sash format commonly found in early- to mid-nineteenth- century Federal-style residences such as the Homestead.[12] Such windows often featured six lights on the upper sash and six lights on the lower sash, with each light measuring ten by sixteen inches, making the total size of the window approximately two-and-a-half by five feet. Despite this regular format, each window was greatly individualized through the diversity of marks that could remain in the body of the glass. Paul Strand's 1944 photograph of the

double-sash window of an abandoned New England house captures some of the mesmerizing visual effects produced by nineteenth-century New England window glass – the kind of glass that existed in the windows of the Dickinson residence. Filled with residual particles of silica and clay and marked by bubbles and waving bands, the inherent imperfections in nineteenth-century window glass distorted nature's familiar forms into fantastical patterns. The panes in Strand's photograph appear more liquid than solid, and the tree branches reflected upon them become frenetic ink-like skeins. Looking through such glass meant seeing a world whose structures were momentarily "let loose" – an experience of nature not unlike the kind found in Dickinson's poems, where sunrises are unfurled color by color and views of the landscape are obtained in incremental fragments like shifting reflections on window glass:

A Slash of Blue! A Sweep of Gray!
Some scarlet patches – on the way –
Compose an evening sky –

A little Purple – slipped between –
Some Ruby Trowsers – hurried on –
A Wave of Gold – a Bank of Day –
That just makes out the morning sky!

(Fr 233)

I'll tell you how the Sun rose –
A Ribbon at a time –
The Steeples swam in Amethyst –
The news, like Squirrels, ran –
The Hills untied their Bonnets –
The Bobolinks – begun –
Then I said softly to myself –

"That must have been the Sun"!

(Fr 204)

Paul Strand, Window, Abandoned House, 1944.

The glass of the Homestead windows are of a finer grade and quality than those of the window in Strand's photograph, but the smokiness reflected in the panes on the upper sash in Dickinson's window reveals its kinship to Strand's window and its wilder reflected forms. Dickinson's window may *seem* more civilized because it's surrounded by visual signs of order and taste: the slim, delicate black muntins that hold the glass in place; the tidy green shutters that flank the sides; the simple, elegant lintel that crowns the top; and the neat, tight pattern of Flemish bond brickwork on the building façade. The whole presentation offers a strong contrast to the warped, deteriorating wood of the window in Strand's photograph, with its exposed patterns of rough grain and the five gaping holes of glassless panes. Yet all nineteenth-century window glass, regardless of quality or grade, had wavy, uneven surfaces; they were rarely ever uniform in thickness because the nature of window-glass production during this period did not ensure it.[13] The making of nineteenth-century window glass necessarily involved "a workmanship of risk"[14]: both crown and cylinder glass – the types predominantly used for domestic windows – were formed by human breath and human maneuvering, and thus defied absolute uniformity no matter how well-designed a window was intended to be.

The production of crown glass depended on a team of workers collaborating in a choreographic sequence: one worker to gather hot molten glass onto a blowpipe and to marver or roll it against a flat stone or metal surface to make the gathered form smooth and even; another worker to blow the liquid glass into the shape of a globe; a third to continue blowing into the pipe as he rotated it in order to flatten the globe; and a forth to rapidly whirl the flattened globe so that it opened up into a disk. The circular

sheet, once annealed or cooled, could be cut into rectangular or square panes of various sizes. The cylinder method, a much simpler process, required only two workers: a glassblower to blow the molten glass into the shape of a long hollow cylinder; and a flattener to reheat the cylinder, slit it lengthwise, and flatten it into a sheet to be annealed and cut into panes.[15] Both the crown and cylinder methods relied on the individual performance of each worker and thus involved contingency; no pane was absolutely smooth or flawless because the human factor inherently marked the finished product. And so Dickinson's window and the window in Strand's photograph were really New England cousins, born of the same era, region, and methods of glassmaking.

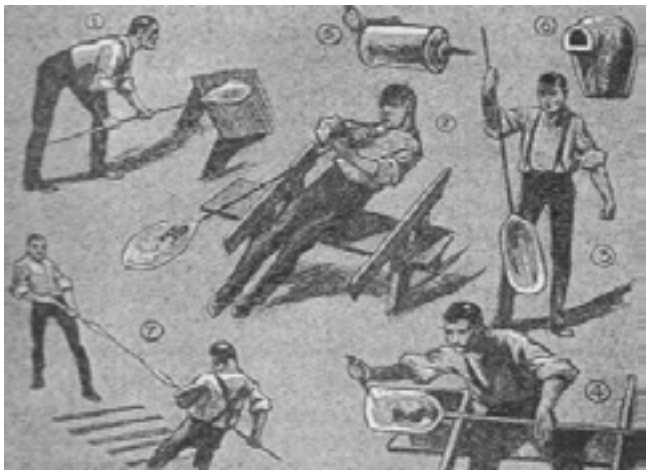
Due to the unevenness of the panes, the landscapes Dickinson saw through her windows did not seamlessly cohere; subtle variations among the glass caused the framed views to appear more like mosaics than unified pictures. These distortions may have influenced how Dickinson saw and what she composed: those "angles of landscape," those "slants of light," those "ribbons" of sunset or sunrise colors that so often appear in her poetry may have had a more material basis than previously thought. The refractive qualities of the glass may have shaped the physical form and implied movement of her compositions, such as the glinting pattern and the multi-directional dynamics of the words and dashes in the following excerpt from an 1862 poem:

'This this – invites – appalls – endows –
Flits – glimmers – proves – dissolves –
Returns – suggests – convicts – enchants –
Then – flings in Paradise –

(Fr 285)

The imperfections in window glass may have been undesirable if inevitable from the perspective of the glass manufacturers, but for Dickinson such flaws may have yielded a way of seeing the world that prompted her to search for more precise language and correspondingly precise compositional forms to transcribe what she saw.

Such material imperfections also brought her closer to a group of individuals she could only read and imagine about but never meet face-to-face. In her book *Victorian Glassworlds*, Isobel Armstrong reflects: "To look through glass in the mid-nineteenth century was most likely to look through and by means of the breath of an unknown artisan. The congealed residues of somebody else's breath remained in the window, decanter, and wineglass, traces of the workman's body in the common bottle, annealed in the substance he worked."[16] The subtle waves and miniscule bubbles in glass objects were the "spectral undulations" of bodily labor. When one breathed on window glass, one "awakened the dormant breath" of the worker.[17] There were several glasshouses that produced window glass in Massachusetts when the Dickinson residence was built in 1813 and renovated in 1855 – among them the Chelmsford Glass Company near Boston, the Franklin Glass Factory in Warwick, the New England Crown Glass Company in East Cambridge, and the Berkshire Window Glasshouses in western Massachusetts.[18] Any of these glassworks could have manufactured the window glass that became a part of the Dickinson Homestead. When the poet breathed on her windowpanes, she temporarily revived the anonymous New England artisans whose labor gave shape to the glass.



The processes of glass manufacture. Reprinted in Isobel Armstrong, Victorian Glassworlds (Oxford and New York: Oxford University Press, 2008), p. 26.

Dickinson had a passive knowledge of glassmaking. In the February 1851 issue of *Harper's New Monthly*, a periodical to which the

Dickinson household subscribed and which Dickinson herself read religiously, there was an extensive article entitled "The History and Mystery of the Glass-House." It offered – rather comprehensively, accurately, and in great detail – a historical, technical, and philosophical perspective on glass: the legend of its origin; its development through the centuries; its unique physical properties; its philosophical implications based on such properties; its diverse uses for science, industry, and the home; and its production as an art and a commercial enterprise. The article also included an exhaustive description of the interior of a glasshouse, conducted in the form of a guided tour:

Production of cylinder glass. Wood engraving from "Scenes in a Glass Foundry," by Theo R. Davies, Harpers Weekly (January 1884), Corning Museum of Glass. Reprinted in Kenneth M. Wilson, "Window Glass in America," in Building Early America, ed. Charles E. Peterson (Radnor, Pennsylvania: Chilton Book Company, 1976), p. 151.

> [W]e will now step into the glass-house itself, where the practical work of converting sand into goblets, vases mirrors, and window-panes is going forward with a celerity and accuracy of hand and head that can not fail to excite wonder and admiration…. Look round this extensive area, where you see numbers of men in their shirt-sleeves, with aprons before them, and various implements in their hands, which they exercise with extraordinary rapidity, and you will soon understand how the glittering wonders of glass are produced.[19]

Something about this working environment – the intense heat, the furnaces and caldrons, the performative virtuosity of the workers, the transformation of earthy substances such as sand and ash into refined objects, and the fusion of the makers with the tools and materials with which they worked – seemed to have made an impression on Dickinson's imagination. Years later, she would ask her sister-in-law to lend her an issue of the Atlantic Monthly specifically so that she could read Rebecca Harding Davis's anonymously published short story "Life in the Iron-Mills," a tale about an immigrant iron-mill worker named Hugh Wolfe whose inchoate artistic yearnings are suppressed through social, cultural, and economic barriers.[20] The story includes a vivid description of Hugh's working environment: it is a Vulcan-like space, with "pits of flame waving in the wind; liquid metal-flames writhing in tortuous streams through the same; wide caldrons filled with boiling fire." Here, "crowds of half-clad men" stir the "strange brewing" and throw "masses of glittering fire."[21] Hugh is an artist at heart: in his off-hours from the furnace, he chips and molds powerfully emotive human figures out of korl, a cinder waste product left after metal has been smelted from ore. At the end of the story, Hugh has died and one of his korl sculptures now resides in the library of the narrator's middle-class home. The gray cinder statue, the narrator reflects, is all that is left to remind us of Hugh's life. The statue's rough planes and strained sinews have somehow absorbed Hugh's own groping efforts to articulate his aesthetic longing for beauty through the act of sculpting.

Rebecca Harding Davis.

The idea that one's virtuosity fuses with the material substance with which one works, and that this virtuosity subsequently survives in a reduced form such as a cinder statue or the residual marks found in glass, is what binds the fictional Hugh's fate to that of real nineteenth-century glassmakers, whose breaths and bodily efforts were absorbed into the substance they worked with. Inscribed on the 1814 tombstone of John Joseph Stickelmire, a German immigrant who was a glassblower and foreman of the Chelmsford Glass Manufactory, is this epitaph:

This verse reminds the heedless as they pass
That life's a fragile drop of unnealed glass
The slightest wound ensures a fatal burst
And the frail fabric shivers into dust.
So he whom in his art could none surpass
Is now himself reduced to broken glass.
But from the grave, and fining pot of man
From scandiver and glass galls pursed again
New mixed and fashioned by almighty power
Shall rise a firmer fabric than before.[22]

This verse suggests how nineteenth-century glassmakers viewed themselves and their art: their mortal bodies as melded into and reduced to the glass artifacts they made.[23] It probably never occurred to Dickinson that there might be a kinship between the glassmaker's art and her own work as a poet, but in 1865 she composed these suggestive verses:

Example of nineteenth-century glasswork.

Ashes denote that Fire was –
Revere the Grayest Pile
For the Departed Creature's sake
That hovered there awhile –

Fire exists the first in light
And then consolidates
Only the Chemist can disclose
Into what Carbonates –

(Fr 1097)

The poetry critic Helen Vendler interprets this poem as Dickinson's meditation on her own craft: Dickinson considered her poems as only the ashes of once living and vivid experiences and observations; her poems are, in Vendler's words, "the cryptic residue of her incandescent emotional and intellectual fires." This poem, Vendler reflects, is about "an intense reduction of life to the embers of verse" – the transformation of virtuosity into reduced form. The poem requests the reader to revere this gray pile of ashes (these seemingly dry and lifeless verses) for the sake of the creature (the poet) that once hovered over it. As a chemist must study the ashes to discover the living thing that was once there, the reader of Dickinson's poems must spend time with her verses to make his or her way back to the original experience the words point to.[24]

The act of looking through nineteenth-century window glass, and through the waving bands and tiny blemishes embedded in its pellucid body, is to fleetingly make contact with the creatures (the glassmakers) that once hovered over it. It's unlikely that these glassworkers ever actively emerged in Dickinson's mind when she looked through her windows, even with her knowledge of glassmaking and her readerly interest in such intense working environments. But we can hardly judge Dickinson overlooking this, for glass itself is such a transcendent substance: its transparency is an apt metaphor for how easily its material past can be overlooked. Composed of elemental sand and ash, transformed by an intense purification process involving extreme heat, and shaped by the breaths and bodily heft of workers, glass in its final manifestation seems to erase its rather traumatic physical history. As the nineteenth-century English poet and critic Anna Laetitia Barbauld once mused: "What can be meaner in appearance than sand and ashes?...the furnace transforms this into that transparent crystal we call *glass*, than which nothing is more sparkling, more brilliant, more full of lustre. It throws about the rays of light as if it had life and mo-

tion."[25] Only those perfected imperfections – those residual marks – remain in the glass as indicators of the laboring bodies that had handled this now solid, compact object when it was still in molten form in the heat and urgency of the glasshouse.

If Dickinson indeed conceived of her creative process as the transformation and reduction of intense "emotional and intellectual fires" into a compact pile of lifeless ashes, then her small and compact poems are perfected imperfections as well – the shrunken remnants of once large and powerful conflagrations. Dickinson's physical closeness and emotional attachment to the windows of the Homestead – indeed, her reliance on them for viewing the world and for poetic expression – is in many respects a dependency on and closeness to the breaths and bodies of the glassworkers. The fusion of the glassmaker's efforts with the glass objects they shaped allowed them to later seep into the poet's own craft as she looked through her windows. Dickinson's "ribbons" of colors, "slants of light," and "angles of landscape" are as much residues of the glassmaker's craft as they are Dickinson's poetic creations. The windows of the Homestead thus not only influenced how Dickinson saw and what she composed, but were also fundamentally – if finally unknowingly – sympathetic to the creation of her poems.

[1]The biographical information on Emily Dickinson included in this talk comes primarily from two sources: Richard B. Sewall, *The Life of Emily Dickinson* (Cambridge, Massachusetts: Harvard University Press, 1974) and Alfred Habegger, *My Wars Are Laid Away in Books* (New York: Modern Library, 2001).

[2]See the Emily Dickinson Museum's Historic Structure Report, prepared by Myron O. Stachiw and Associates, June 1999, especially illustrations of the elevations of the Homestead circa 1855 in Figure 24.

[3]Letter from Emily Dickinson to Susan Gilbert Dickinson, dated 24 February 1853, reprinted in *The Letters of Emily Dickinson*, edited by Thomas H. Johnson and Theodora Ward, Volume 1 (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1955), p. 221.

[4]Letter from Emily Dickinson to Mrs. Samuel Bowles, dated 10 December 1859, reprinted in *Letters of Emily Dickinson,* Volume 2, p. 357.

[5] Letter from Emily Dickinson to Mrs. Josiah Gilbert Holland, dated early 1884, reprinted in *Letters of Emily Dickinson,* Volume 3, p. 811.

[6] MacGregor Jenkins, *Emily Dickinson: Friend and Neighbor* (Boston: Little, Brown, and Company, 1930), 38.

[7]*American Heritage Dictionary*, 4th ed., s.v. "window."

[8]For the circus in Amherst, see Daniel Lombardo, *A Hedge Away: The Other Side of Emily Dickinson's Amherst* (Northampton, Massachusetts: Daily Hampshire Gazette, 1997), 171-172. See also letter from Emily Dickinson to Mrs. J. G. Holland, dated early May 1866; letter from Emily Dickinson to Frances Norcross, dated late May 1873; and letter from Emily Dickinson to Mrs. J. G. Holland, dated May 1874: all reprinted *Letters of Emily Dickinson*), Volume 2, pp. 452, 507, 525.

[9]For descriptions of the view through Dickinson's bedroom window, see the Emily Dickinson Museum's *Cultural Landscape Report,* prepared by the Martha Lyon Landscape Architecture in 2009, especially pp.13-21. See also Diana Fuss, *The Sense of an Interior* (New York and London: Routledge, 2004), pp. 55-58; Jean McClure Mudge, *Emily Dickinson and the Image of Home* (Amherst: University of Massachusetts Press, 1975), pp. 89-94; and Daneen Wardrop, *Emily Dickinson and the Labor of Clothing* (Durham, NH: University of New Hampshire Press; Hanover and London: University Press of New England, 2009), pp.79-80.

[10]Fuss, pp. 55-58.

[11]Gaston Bachelard, *The Poetics of Space,* trans. Maria Jolas (Boston: Beacon Press, 1958, 1964, 1994), p. 69.

[12]Susan Swiatosz, "A Technical History of Late Nineteenth-Century Windows in the United States," *Bulletin of the Association for Preservation Technology* 17:1 (1985), p. 31.

[13]Ibid, p. 33.

[14]The term "workmanship of risk" was coined by David Pye to denote workmanship in which the quality of the resulting product is not predetermined, but depends instead on the dexterity, care, and judgment of the maker. See David Pye, *The Nature and Art of Workmanship* (Cambridge: Cambridge University Press, 1968), pp. 4-5.

[15]Arlene Palmer, *Glass in Early America* (Winterthur, Delaware: Henry Francis du Pont Winterthur Museum, 1993), p. 386.

[16]Isobel Armstrong, *Victorian Glassworlds: Glass Culture and the Imagination, 1830-1880* (Oxford and New York: Oxford University Press, 2008), pp. 4-5.

[17]Ibid.

[18]Kenneth M. Wilson, *New England Glass and Glassmaking* (Old Sturbridge, 1972), pp. 57-66.

[19]"The History and Mystery of the Glass-House," in *Harper's New Monthly Magazine* 2:9 (February 1851), pp. 312-313.

[20]Letter from Emily Dickinson to Susan Gilbert Dickinson, dated April 1861, reprinted in *Letters of Emily Dickinson,* Volume 2, pp. 372-373.

[21][Rebecca Harding Davis,] "Life in the Iron-Mills," in *Atlantic Monthly* 7:42 (April 1861), p. 433. Quoted in Arlene Palmer Schwind, "The Glassmakers of Early America," in *The Craftsman in Early America*, ed. Ian M.G. Quimby (New York and London: W.W. Norton & Company, 1984), p. 189.

[23]Ibid.

[24] For these quotes and Helen Vendler's interpretation of this poem, see Vendler, *Dickinson: Selected Poems and Commentary* (Cambridge, Massachusetts, and London, England: Belknap Press of Harvard University Press, 2010), pp. 400-403.

[25]Anna Laetitia Barbauld, Evenings at Home, 7th edition, Volume 2 (1807), pp. 114-115; quoted in Armstrong, *Victorian Glassworlds,* p. 5.

Ornament and Identity in the Immigrant-Built Tenements of Boston and New York, 1870-1920

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To read period observers, the tenement landscape of major American cities at the turn of the twentieth century was one of unbroken want, poverty, dirt, despair and decay. Ramshackle buildings - some old and formerly dignified, others little more than barracks - were sites of desperate struggles by the thousands of recent immigrants who passed through them - the 'shadows' for the 'sunshine' of the gilded age - and a site of morbid curiosity for the middle class and elite. Reform minded citizens intervened, we are told, vanquishing the slums with parks, model tenements and strict building codes. But, when one tries to find these landscapes a different picture emerges. The model tenements are there, of course, with their grim, cold facades. But, instead of fitting in, these buildings contrast with their surroundings. Most of the tenements in these neighborhoods are dignified, solid, and elaborately ornamented to the point of - dare I say - being beautiful. Glance at a property atlas or look up the building permit for a few of these structures and the picture comes into sharper focus - the vast majority of the tenements in these areas were not only occupied by, but also designed and built by first or second generation immigrants. These buildings, I posit, represent a distinct and identifiable building type that complicates our notion of the 'slum' as a site of unmitigated and continuing squalor, the tenement builder as only interested in quick profits, and decorative forms as only available to the gilded-age elite. And I believe the ornament is key to this reinterpretation.

At the height of the anti-slum campaigns of the 1880s to the 1910s, immigrant builders and architects - many of whom were residents of the neighborhoods they were investing in - carried out a reform program of their own - replacing the earlier landscape, poorly suited to the needs of urban tenancy, with large, purpose-built structures, profuse with industrially-produced ornament. These buildings, which I refer to as "decorated tenements," represent not only a heretofore under-acknowledged building type, but also an important cultural contact zone which confounds the usual class-based hierarchy in which elaborate decorative forms are associated with the wealthy and elite.

Left: D.W. Bishop Estate model tenement, 58 Hester St., New York, 1901. Ernest Flagg, architect. (Photo by author, 2012)
Right:Harris Fine tenement, 256 Broome et, New York, 1901. Horenburger and Straub, architects (Photo by author, 2012)

As many of these buildings were built by the very people the reformers were trying to reform, they represent an important ex-

ample of a more-or-less 'bottom-up' solution to a key urban problem of the nineteenth century. But, the type of reform represented by the decorated tenements was not the kind of tightly controlled paternalistic institution, glorifying bourgeois notions of family and home, which Progressive reformers had in mind. Indeed, the reformers quite insistently preached a 'gospel' of strict simplicity for the material culture of the working class. They were loathe to acknowledge the decorated tenement at all, when they did they usually treated them as cheap shams little better than what they replaced. The decorated tenement, therefore, is a site of contested meaning, embodying questions of taste and propriety, workmanship and honesty, class, ethnicity, and control of the built environment. These buildings are part of a larger phenomenon at the end of the nineteenth century that historian Andrew Heinze and others have described as the "new style of poverty" in which industrial production allowed the austere material culture formerly associated with the poor and working class to be replaced with items more elaborate and fashionable. While this trend has been described to a certain extent in terms of furniture, interior decoration and clothing, its manifestation in architecture is less well understood. In part this oversight is due to a lack of clarity in the class and ethic position of those involved in the creation of the working class landscape of American cities.

Figure 2: Samuel Weeks tenement, 65 Mott Street, New York, 1824. Architect unknown (Photo by author, 2011)

This paper outlines some of the issues surrounding the decorated tenement. It represents a portion of the preliminary results of a dissertation studying the ornamental schemes, construction histories and occupancy patterns of nearly 3000 surviving tenements in the North and West End of Boston and in New York below 14th Street. I use the term 'tenement' to describe any sort of multi-family building in working-class immigrant neighborhoods, following the period convention, which suggests that location, not and physical characteristics, was the difference between a respectable flat and a tenement. The sort of building I'm interested in today is a masonry structure with one or two party walls - that is, filling the most or all of the lot frontage, standing from 4 to 7 stories tall, flat-roofed, with between 1 and 4 apartment units per floor, and often storefronts in the basement or ground level. Typologically, then, these buildings are related to, but district from other common working class housing types including the large wood-frame barracks tenement block common in mill cities and the store-and-flats building on commercial streets in diverse types of settlements. Indeed, while these tenements are neither exclusive to the neighborhoods under consideration, nor even limited to Boston and New York, they are quite rare in other cities and are definitely a product of the complex economies of metropolitan settlements on constrained sites. In these cities they are the most common working- class housing type in the center city. For purposes of clarity, today I will only discuss matters related to the construction and ornamentation of these buildings, and not the issues that most reformers were interested in, such as how well the buildings plans provided air, light and privacy for their residents. It is not my goal today to evaluate how well these buildings preformed as homes. It should also be noted that due to the nature of the evidence available for this project I'm comparing what the observers and reformers said about these buildings to what the tenement builders actually did. Because there are few period sources elucidating the motivations of these builders, inferences for these motivations must be drawn from the buildings themselves.

Despite their ubiquity, the roots of the tenement are not particularly well understood. Suffice it to say that when they first appear in New York by the 1820s and Boston by the 1850s, and these meet our expectation of the aesthetics of poverty. For instance, this 7-story building on Mott Street in New York is often cited one of the first purpose-built tenements in that city, and may date from as early as 1825. Its unarticulated facade and flat lintels are illustrative of the austerity of the earliest experiments in tenement

construction in both cities. This mode of exterior ornament is closely related to contemporary utilitarian construction - the workshop and loft structures that were found throughout commercial streets of the same period. These buildings, almost certainly associated with Anglo-American investors, act as an important contrast to the later decorated tenement. Additionally, since buildings of this sort were constructed with little stylistic evolution as late as the turn of the twentieth century in both cities, they represent the mainstream view of what a tenement should look like. So even if your last name was Schermerhorn, and you pulled none other than George B. Post away from designing Cornelius Vanderbilt's house to design an east side tenement for you, this is how you built . If our image of what poverty looks like is said to be unchanging, so too was the elite image of what architecture for the poor should look like - it should look like a warehouse. In New York in 1820 , in 1884 . And in Boston in 1850 and in 1883 - all with little variation. All of these buildings were built by people who had little else but a monetary investment in these communities. It should come as no surprise, then, that when the construction of philanthropic 'reform' tenements became popular at the end of the nineteenth century, reformers were nearly unanimous in agreement that architecture that was 'too high-toned' should be 'steadfastly avoided'.

We have to look to the speculative builders of more precarious social position, therefore, to find the emergence of the decorated tenement. It is they, who, in New York in the 1860s start employing stock ornament on their buildings. These buildings feature items such as molded brownstone or cast iron window supports and sills, and cast iron or sheet metal cornices - almost universally made up of acanthus leaf consoles and panels. No essential changes could be made to the form of the tenement - these are dictated by the economics of the program. These early decorated tenements are severely limited by the availability of decorative material. In the 280 pre-1880 tenements I've looked at – almost all of which are in New York - there are only about a dozen different types of window support, and an equal number of cornice configurations. So, while these buildings can be fairly dignified and indeed quite ornamental in appearance, they do so by following a fairly limited template.

After about 1885 builders began applying a wide range of ornamentation to all available surfaces. These builders arrayed a wide variety of ornamental forms to make structures that were as highly varied, richly sculptural and as picturesque in outline as the program would allow. Sometimes over 30 different items per building were used to create this effect, and thousands of unique items can be found between the two cities. On these buildings we find not only foliate ornament, which is used in profusion – but perhaps most interestingly a large number of symbols that are broadly associated with wealth and power – shields and crowns, cartouches and eagles, the names of American presidents as well as Stars of David and a preponderance of human figural sculpture - grotesques and satyrs on keystones, caryatids on sills and door surrounds, and so on. Many of these forms had been recovered earlier in the century from historical sources by a cultural and intellectual elite who had pressed them into service to do specific social and cultural work. This ornament gives these buildings a sense of propriety, stability, cultural parity, playfulness and luxuriousness that was never before – or ever after – seen on housing for the poor. Indeed, for the most part, these buildings were built for a population that, because of the nature of their work have very little choice

Figure 3: James Louden Tenement, 7 Phillips Street, Boston, 1895. Architect unknown (Photo by author, 2012)

as to the location of their residence, and because of their rate of pay have very little extra to spend on domestic comforts. And there seems to have had little commercial rationale – in terms of property value - for the use of this sort of ornamentation, either. According to my preliminary calculations based on trade catalogs and other sources, ornament on such buildings accounted for probably about 10% of the cost of construction, far more, for example, than the 3.4% increase in the sale price of buildings with 'elaborate ornament' that Margaret Smith found in her study of Boston row houses. No wonder, then, that commercial real estate guides of the period recommended against unnecessary ornament in tenement construction.

How, then, was the decorated tenement designed? More precisely, whose taste is represented in this ornament? Since building codes both cities required a full set of building plans be filed with a building permit application, an architect is listed for each of these buildings. Rarely did the owner file his own plans, when this occurred, as with the case of German immigrant Jobst Hoffman, who designed 19 buildings in the study area , 6 of which he built for himself, they seem to be cases where a trained architect dabbled in real estate investing. Tenement house design seems to have been a specialized business, with a small number of firms - all of them relatively unknown - designing the vast majority of tenements in each city. In Boston four firms designed 73% of the tenements studied, while in New York the field was a bit wider, with the top 10 firms responsible for 54% of tenements. The common assumption, of both period observers and subsequent scholars, has been that these firms were simply 'plan mills' which quickly, cheaply and formulaically put together blueprints that were acceptable to city building inspectors and could be easily executed with unskilled labor. Yet, while they certainly worked quickly, it is clear that these firms possessed their own cultural presentations and aesthetic priorities. Each developed a fairly individualized style that complicates the apparent similarity of these buildings when you examine them closely - a Herter Brothers tenement can be distinguished from a Charles Rentz tenement . And likewise in Boston a Charles Halstrom building is recognizable from a Fredrick Norcross building. Each firm's output displays a fair amount of consistency in the amount and patterns of ornament used and the ways in which it is employed and can be seen evolving along with trends in popular architecture.

Figure 4: Alexander Stake tenement, 86 Madison Street, New York, 1889. Alexander Finkle, architect (Photo by author, 2011)

Additionally, a Boston example makes it clear that these architects and builders considered the decorated tenement aesthetic suitable exclusively for residential buildings, that is, that the ornament played a role in domesticating these structures. Take this loft building built in 1900 by prolific developers Isaac and Phillip Silverstein to the designs of even more prolific architect Fred Norcross. Just outside the core of the North End tenement district and with these associations, one might expect it to look like a decorated tenement. It does not. Instead, Norcross and the Silversteins choose a design very much in line with popular contemporary commercial architecture – a five story building with a cast iron storefront, the windows on the upper floors grouped under two broad arches in much the same pattern set by H.H. Richardson in the last quarter of the nineteenth century. Comparatively little applied decoration appears on this structure. Here is an architect and a developer who differentiated a residential building from an industrial one. This building suggests that architects and developers of the decorated tenement perceived elaborate ornamental forms as something appropriate to residential structures only. What we see in the decorated tenement, therefore, is not simply a spec-builders idea of what a generic street façade should look like, but perhaps some deeper expression of value in these neighborhoods.

Could all this attention to ornamentation, then, simply be seen as an attempt to avoid scrutiny from the reformers who seemingly wanted to but these builders out of business? If this was the builders' motivation, the period literature clearly suggests that they failed. In fact, many observers seem to have viewed the decorated tenement with not only disdain, but with the special sort of suspicion reserved for a sham. For example, Boston settlement house director Robert Woods inveighed against the "rude and flamboyant monstrosities of the Jewish builders" while Laurence Veiller scornfully said he was fighting against the "pride of the architect and the owner" and their "artistic sensibilities." Jacob Riis cites an example where the tenants of an unidentified reform housing project – who he said were the in process of being "redeemed" by "proper management" [yes, the tenants as the object of both 'management' and 'redemption'] –being lured away by the "brown-stone trimmings and gewgaws" of the buildings a speculator built across the street. Similarly, we find Riis reading noting with contempt as workers carve what he describes as 'satyr's heads' on the façade of a new Madison Street tenement house -which may be this building built in 1889 by a first-generation German immigrant . The builder's neighboring building, also 'fair to look at', had previously run afoul of health inspectors. "Is it only in our fancy", writes Riis, "that the sardonic leer on the stone faces seems to list [toward the neighboring building]? Or is it an introspective grin? We will not ask if the new house belongs to the same builder. He too may have reformed."

Riis' observations are suggestive of the biggest struggle in this project – knowing exactly how to interpret the actions and position of the tenement developer. Certainly the reformers would have you believe they were at the primary cause of many of the central urban problems of this period - the high rent and overcrowding, as well as perceived threats to bourgeois morality posed by close quarters, shared halls and noisy air shafts. While it is not my purpose to evaluate those claims, it is important to note that the implication in much of their writing is that the tenement is an imposition on the neighborhood from wealthy individuals, disconnected from their community and solely interested in profit. The data from this study, building on the work of real estate historian Jared day and others, makes clear that claim is not accurate. Not only were at least 75% of the tenements in both cities built by first or second generation immigrants, particularly from Germany, Poland, Russia, Italy and Ireland, in nearly every case immigrant- built tenements are decorated. {Chart} And in nearly every case I've found, Anglo-American builders who did not live in the neighborhood built the undercoated tenements. Far from being wealthy landowners, the immigrant developers typically borrowed quite heavily from community lending institutions to finance their projects and were often ruined by market fluctuations. It behooves us, then, to think of the decorated tenement not so much as an architectural form imposed on these communities by outsiders, but as a something of an organic solution – however flawed – to the housing problems of these neighborhoods – to the extent that the realities of the urban real estate market and the building code would allow. It is significant to note, therefore, that the average distance between these builders' homes and the site of their tenements was less than two miles, most lived in the same ward, and many on the same block. And perhaps most tellingly, whether they lived in the neighborhood or not, many of them made their own homes in tenements very similar to the ones they built.

Figure 5: Etta Lebowich Tenement, 68 Prince Street, Boston, 1896. Charles A. Halstrom, architect (Photo by author, 2012)

We're left, then, to drawn inferences on what the ornament on the decorated tenement meant to those who built and inhabited them.

We have seen that these buildings stood outside the mainstream expectations for what tenement houses should look like, that there seems to be little commercial reason for their appearance and that reformers viewed these buildings with great suspicion. What, then, finally could explain their use? A number of interpretations, none of which are mutually exclusive, can be advanced.

Certainly a desire for variety is in evidence – one can only imagine that dreary monotony of neighborhoods filled with such large buildings with very little differentiation. We can also see here see an attempt at domesticating structures that by their nature were impersonal and alienating. These almost playful and seemingly luxurious buildings must have looked a bit like palaces to their poor, formerly rural residents, even if the accommodations did not achieve level of comfort and convenience that many of them would have preferred, nor the individuality that the reformers desired for them. And, like the clothing and furniture of their occupants, these buildings represent a delight in the newfound availability and affordability of a wide variety of fashionable materials thanks to industrial production methods.

Finally, coming about in an era in which working class and immigrant neighborhoods began to be viewed a 'slums' – places outside the 'respectable' city and sites of physical and moral danger that were only appropriate for the sort of voyeuristic tourism represented by Riis's work and the 'slumming' craze of this period - the decorated tenement thwarted bourgeois expectations about what poverty looked like. As most of the tenement builders were not tourists or outsiders, they used this position – whether consciously or not – to thwart these expectations by appropriating symbols that had historically been associated with wealth and power. Their use on structures meant to house the poor and seemingly powerless, in a way, subverted the power of these symbols and challenged the reformers' power to define these neighborhoods and those in them. In this manner, then, the decorated tenement can be seen not only as a symbol of the rejection of the persistent calls for frugality and austerity in the material culture of the poor and working class, but also as a form of resistance to the cultural and spatial ghettoization of these neighborhoods and their residents.

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The Materiality of Privacy: Private Spaces in Public Places

Laura Walikainen

In 1897, New York City's Committee on Public Baths and Public Comfort Stations recommended that the city build public toilet facilities based on the example of London's underground latrines because they were "clean, inodorous, hidden from view, attractive, frequented by all ranks of society, and are provided for both men and women in separate places."

Fifteen years later, the quest for ideal public toilet facilities continued as the Engineering Review extolled the exemplary design of a "public comfort station," as they were termed at the time, in Brookline, Massachusetts. This comfort station was "ideally" located at the convergence of several streetcar lines in the most densely populated area of the city. The Review made specific note of facility's separate entrances for men and women "designed with covered vestibules and right angle turns in the staircases, thus securing the maximum of privacy."

These assessments of early public toilets highlight how privacy was defined and experienced amidst an expanding American public at the turn of the twentieth century. During the late-nineteenth and early twentieth centuries, the United States experienced an unparalleled era of growth. In 1870, the national population was 38 million, and, by 1900, that number more than doubled to 77 million. By 1920, the overall national population had increased to roughly 106 million, an increase of 279 percent in 50 years. This increase in population was due, in large part, to immigration. In 1882 alone, nearly 800,000 people came to America. By 1907, the number of newly arriving immigrants rose to almost 1.3 million people. These new arrivals often found jobs in the nation's thriving industrial core. Although 40 percent of Americans still worked in agriculture by the turn of the century, industrial work and corollary white-collar, service-sector jobs accounted for 50 percent of American jobs by 1900. The new American public of the twentieth century was increasingly populated, urban, and industrial.

"Underground Lavatory (Interior) Charing Cross, London," from "Report on Public Baths and Public Comfort Stations," Mayor's Committee on Public Baths and Public Comfort Stations, (New York, 1897): 156

These growing, urbanizing, and industrializing Americans began to increasingly work, eat, shop, and entertain themselves outside their private homes, thus necessitating changes in the built environment. Public transportation expanded to move people from their homes to their places of work and leisure and back again. Dry goods stores developed into vast department stores where people (mostly of the middle and upper classes) could shop for all varieties of clothing and furnishings under one roof. Parks, playgrounds, gymnasiums, and libraries emerged to provide enrichment for the American public.

But as Americans spent more time in these emerging public places, they also needed complementary private spaces to address the basic needs of the human body. People who were used to cleansing, dressing, and relieving their bodies within the privacy of their homes found themselves "inconvenienced" in public. Middle- and upper-class women shopping in modern department stores required spaces to try on newly available ready-made clothing. Working-class people living in tenements or industrial housing required spaces to cleanse and relieve their bodies in public. And by the early twentieth century, children learned how to cleanse and relieve their bodies as part of the developing physical education programs in public schools. Department store dressing rooms, public baths and toilets, and school locker rooms emerged as sites at the boundary of the public and private in order to fill these needs. In this way, it was the human body and its experience of the public that served to physically shape the built environment.

In order for such personal activities to be acceptably performed outside of the private home, the creators and designers of these emerging spaces needed to establish a sense of privacy for their users. Through the design, creation, and regulation of these spaces at the boundary of the public, the very meaning of privacy became materially manifested. By interrogating these private spaces in public places, we can gain an understanding of how privacy was defined during this time.

Public restrooms, department store dressing rooms, public baths, and school locker rooms were designed and implemented by business owners, government officials, architects, and social reformers who were largely members of the middle and upper classes. Thus these spaces materially reflected a middle-class vision of privacy. This vision was based on class and gender distinctions, as well middle-class understandings of morality and hygiene. These ideals were physically manifested in these public, private spaces.

"One of New York's Comfort Stations." from Donald B. Armstrong, "Public Comfort Stations: Their Economy and Sanitation," The American City 11, no. 2 (Aug., 1914): 95.

But the actual use of these emerging spaces did not always reflect the middle-class values of privacy these spaces were intended to evoke. These sites were, after all, meant to provide privacy in public. Contemporary commentators often noted concerns about the misuse of this privacy, highlighting a disconnect between the designers intentions and the reality of how these spaces were used. This distinction reveals a divide between the middle-class definition of privacy and the reality of the historic experience of privacy. This disparity was revealed in the actual performance of private activities within these physical spaces.

To demonstrate how these notions of privacy were materially manifested within these spaces, let's further interrogate the specific example of the public restroom or comfort station. The need for public toilet facilities was stated succinctly by a doctor of the time: "There is no need to insist upon or to emphasize the annoyance, the humiliating experiences and the dangers to health caused to the shopping and traveling public by this barbarous absence of modern sanitary conveniences." In reexamining the Engineering Review's praise for an exemplary comfort station, we can begin to see how an ideal privacy could be physically created

within one of these sites. The Review commended the Brookline comfort station's underground location and hidden entrances. One of the most essential ways privacy was physically created in public private spaces was visually. Social commentators at the time were concerned that, without public toilet facilities, some members of the working class were reduced to "committing nuisances in alleys and slightly out of the way corners." While these practices, resulted in "bad odors," middle-class reformers were most concerned that "such places were in view of the passing public, whose sensibilities [were] disgusted or shocked." In reaction to such practices, designs for public comfort stations highlight the use of individual stalls and walls as visual barriers for patrons. The stalls needed to have doors "large enough to afford privacy." Many social commentators were proponents of underground public comfort stations, in order to visually separate the entire building from the public sites in which they were situated. While underground comfort stations were preferred in order to completely protect toilet facilities from public view, one engineer noted that plants could shield the entrance of a comfort station "without being so very conspicuous." Other proponents called for a public comfort station building to "not be too conspicuous but should be an architectural gem, harmonizing with the surroundings." Visual privacy inside and outside the public comfort stations was an essential part of their acceptability as public private spaces.

Another important component of this definition of privacy was the prescriptive gendered separation of public restrooms. As the Engineering Review noted, "maximum privacy" could only be achieved through the total separation of men and women. Public toilet facilities were generally gender segregated and often had separate entrances for men and women. These entrances were often located as far away from each other as possible for the facilities to remain in the same building. For example, the State Board of Health of Wisconsin was tasked with providing state-mandated public comfort stations with "suitable approaches and privacy, separating accommodations afforded both sexes." Some stations were housed in completely separate buildings for male and female users. The assumption of gendered separation helped to create a sense of privacy within these spaces. And it appears that, for at least some women, this public privacy took some time before it was acceptable. Early estimates of comfort station users showed that only 15 to 20 percent were women. One doctor at the time argued that women had a "false modesty or squeamishness about being seen going to the toilet while in public places." The social norm of gendered segregation of private activities shaped the built environment of these private spaces in public.

Calumet & Hecla Bath House Showers, ca. 1912. Michigan Technological University Archives and Copper Country Historical Colections, MS003-25A-48-03829

As middle-class designers, government officials, and business owners were often responsible for the design of these spaces, their class distinctions were often implemented into the physical experience of these spaces. Within public comfort stations, there was often a class-based experience of privacy. Many of these new facilities required customers to pay to use them. Other comfort stations offered differing levels of comfort and privacy for paying customers. Social commentators recommended turnstiles to divide free and pay portions in public comfort stations so that "those paying . . . will have use of the greater space

as well as the toilet booth." Some pay closets were equipped with door locks, while the free stalls had simple bolts. In addition to purchasing "greater privacy," comfort station users could pay for "greater cleanliness and a higher grade of fixtures." In some cases, the pay stalls had doors, while the free toilets of the comfort station did not. The disparities of access and aesthetics based on price served to "class" these spaces and the level of privacy experienced within them, thus materializing the social distinctions of class during this time.

Although not always overtly stated or clearly physically manifested, there was always at least an implied assumption that public toilet facilities would be racially segregated. The idea of creating separate areas for nonwhite users was at least novel enough to a national audience to merit an article in The American Architect in 1922. In the article, titled "Dallas Public Comfort Station: A Comfort Station in Which Provisions are Made for Two Races," the author noted that "public comfort stations in Northern cities, where the race question is not raised, are simple by comparison to similar utilities in the South." According to the article, the city of Dallas answered the "race question" by creating "four separate divisions," within the facility. Although it was "desirable to have separate stairways for the two races, space did not permit," according to the article. The comfort station therefore offered only two separate stairways and entrances for men and women, which lead patrons to different sections according to race. Of more concern to the article's author was the fact that the male and female entrances were too "close together." But a large evergreen plant was placed between the two entrances and "no complaints ha[d] been made." An earlier comfort station located in Paris, Texas, did offer racially and gender segregated entrances, but the accompanying article did not make mention of these divisions. Whether overtly physically manifested or simply implied, this definition of privacy was also based on the racial segregation.

"Public Comfort Station at West Street on Boston Common for Women Only," from "The Public Comfort Station in America," Engineering Review 22, no. 4 (April 1912): 24

An expected level of cleanliness and hygiene was also part of how privacy was defined by the creators of these spaces. As Chicago's health commissioner noted in 1915, "poor toilet facilities spread disease." The same year, the president of the American Public Health Association decried "the most flagrant failure in American sanitation today is the distressing absence or utter inadequacy of public comfort stations in our cities and towns." Reformers called for these public toilet facilities to be "absolutely sanitary . . . [and] should present at all times a 'spotlessly white' appearance." Municipal officials proposed plans for public toilet facilities to be created using light-colored materials, such as white glazed tiles and white enameled brick, "to avoid dust and to give the utmost light and cleanliness." Comfort station proponents called for "toilet paper, liquid or powdered soap and paper towels to be available free at all times." In order to maintain these stations, public officials called for educating users about the proper way to keep the facilities sanitary. The designers and creators of these private spaces sought to materially impose their hygienic ideals on public comfort stations.

Related to these notions of cleanliness and hygiene, social commentators hoped these sites would be morally uplifting for the users. As one reformer argued, public toilet facilities needed to be designed and maintained in order to "create an atmosphere of absolute cleanliness and due regard for decorum." The physical equipment and layout of these spaces was directly connected to the morality of the patrons of the space. "Pure white glazed earthen fixtures set in pure white compartments foster[ed] a feeling of

decency and aid[ed] in inducing cleanly habits," according to one engineer. And the very construction and maintenance of such sites could prove morally uplifting to those without other options. In lieu of public comfort stations, many men frequented the saloon in order to find relief. In fact, so many men patronized saloons for this reason that saloon owners noted that their toilet facilities generated more business than the free lunch. Public toilet facilities offered a "moral" alternative by "the discouraging of the glass, taken often when not greatly desired, to recompense the saloon keeper." Other commentators hoped city workers and street cleaners would avail themselves of these sites, as they were largely "foreign-born" and "lacked that fine sense which prevents their committing nuisances in alleys." This middle-class understanding of morality became materialized within these spaces.

By examining the design plans, layouts and fixtures of these public comfort stations, we can gain a sense of how architects, planners, builders, and public officials intended to impress their definition of privacy onto these physical spaces. But the very privacy that these spaces afforded also created the possibility for transgression. Commentators noted a number of ways these spaces were "misused" at the time. In fact some of the later designs for public comfort stations sought to prevent unacceptable behavior through a physical redesign of the space. There was an inherent anxiety associated with these spaces because they did offer privacy to the general public. By focusing on the these transgressions, we can get a sense of how privacy within these spaces was actually experienced and how this privacy allowed users to physically reshape these spaces through their experiences.

One of the preliminary problems noted by commentators was theft and/or defacement of the public comfort station furnishings. As early as 1867, New York City instituted a $50 fine or three months in jail for "defacing or defiling" any public comfort station. And in 1919, a Wisconsin law stated that "display of indecent pictures and writing in the stations will be punishable offenses." By 1916, social commentators recommended that comfort stations "should have no loose or detachable parts liable to be tampered with or to be taken away" because, as one reformer noted, "vandals soil and destroy fixtures and fittings, while petty thieves pilfer removable parts and even wrench away fixed parts which they can sell." One public official recommended designing the toilet seats so that no one would be able to stand on them, likely so that no one could hide in the stalls or peer over the walls at other patrons. New York City officials banned "loud, profane or indecent language [and] boisterous or intoxicated persons," from the city's public comfort stations. Under accusations of noncustomers "lounging," the "carelessness and lack of consideration shown by patrons," and overall "misuse" of their public toilet facilities (especially by women), department store managers began to scale down their elaborate restrooms. Social commentators were also concerned about crimes against comfort station users. One public official warned against locating comfort stations in isolated areas "for no better lurking place could be found for a foe." They suggested that station entrances be highly visible with "the constant passing of pedestrians" in order to make them "self-policing, thus removing apprehension of danger in the use of these stations." Architects began to design these spaces to prevent illicit activity, but this very privacy allowed for activities to take place that were usually prohibited in public spaces. The variety of activities that were performed in these spaces demonstrates the limits of privacy in these public places. These transgressions highlight the contradiction between the creators' definition of privacy and the public's actual experience of privacy through the use of the space.

Public toilet in Penn Station, photograph by author (New York: April, 2010)

In order to bridge this gap between intention and reality, designers added a human element to this built environment in the form of comfort station attendants. These workers regulated and cleaned these spaces and served as "gatekeepers." Designers hoped these attendants would enforce the intended

definition of privacy within these comfort stations. Commentators acknowledged possible misuse by the station's patrons, making daily cleanings by attendants "necessary by the carelessness of the many users." Attendants were also to "be on constant lookout so that no loose or easily detached fittings are appropriated and that no loitering or defacing of the walls [took] place." One commentator suggested giving attendants police powers. Many public toilet facilities were designed with specific rooms for attendants to operate out of while on duty, thus providing constant surveillance. Often uniformed in white suits to match the light-colored fixtures of the stations, attendants functioned as human extensions of the architectural intensions of these spaces. They were another material component utilized by designers to reinforce their specific definition of privacy. And the price of this intended privacy was a constant surveillance that limited the users' experience of privacy.

Public comfort stations, along with dressing rooms, public baths, and locker rooms, arose at the turn of the twentieth century to fulfill societal needs. Although they were novel spaces, they were designed, created, and regulated according to a specific definition of privacy based on distinctions of gender, class, and race, as well as middle-class beliefs about hygiene and morality. But in noting the misuse of these spaces, we can gain a sense of the actual historical experience, not just the intended use, of these sites. In the changing social, cultural, and physical environments of the late-nineteenth and early twentieth century, these private spaces in public places became not only accepted but expected. And our continued acceptance of these spaces is revealed every time we undress, relieve, or cleanse our bodies in public.

Endnotes

[1]"Report on Public Baths and Public Comfort Stations," Mayor's Committee on Public Baths and Public Comfort Stations. (New York, 1897): 174.

[2]"The Public Comfort Station in America," *Engineering Review* 22 (May, 1912): 35-36

[3]Thomas J. Schlereth, *Victorian America: Transformations in Everyday Life, 1876-1915* (New York: HarperCollins, 1992), 28. Walter Licht, Industrializing America: The Nineteenth Century (Baltimore: Johns Hopkins University Press, 1995), xiv.

[4]Schlereth, *Victorian America,* 8.

[5]Licht, *Industrializing America,* xiv.

[6]On the development of the department store, see Susan Porter Benson, *Counter Cultures: Saleswomen, Managers, and Customers in American Department Stores, 1890-1940* (Urbana: University of Illinois Press, 1988); William Leach, *Land of Desire: Merchants, Power, and the Rise of a New American Culture* (New York: Pantheon Books, 1993); and Richard W. Longstreath *The American Department Store Transformed, 1920-1960* (New Haven: Yale University Press, 2010). On the development of ready-made clothing, see Claudia B. Kidwell and Margaret C. Christman, *Suiting Everyone: The Democratization of Clothing in America* (Washington, DC: Smithsonian Institution Press, 1974), 139 and Claudia Brush Kidwell, *Cutting a Fashionable Fit: Dressmakers' Drafting Systems in the United States* (Washington, DC: Smithsonian Institution Press, 1979), 96-8 and 137.

[7]On the development of public baths, see Marilyn T. Williams, *Washing "The Great Unwashed": Public Baths in Urban America, 1840-1920* (Columbus: Ohio State University Press, 1991).

[8]On the development of physical education in American public schools, see Mabel Lee, *A History of Physical Education and Sports in the U.S.A.* (Wiley, 1983).

[9]Dr. Woods Hutchinson, as quoted in "Public Comfort Stations for Chicago," *Bulletin of the Department of Public Welfare, City of Chicago* 1, no. 3 (October, 1916), 15.

[10]"Public Comfort Stations for Chicago," *Bulletin of the Department of Public Welfare, City of Chicago* 1, no. 3 (October, 1916), 8.

[11]Ibid.

[12]William Paul Gerhard, "Public Comfort Stations: Their Location, Plan Equipment and Care," *The American City* 14, no. 5 (May, 1916), 454.

[13]"Report on Public Baths and Public Comfort Stations," Mayor's Committee on Public Baths and Public Comfort Stations. (New York, 1897): 176.

[14]Jon Webster to Charles H.T. Collis, July, 8, 1896, New York, Map Division, New York Public Library.

[15]George W. Simons, Jr., "More Public Convenience Stations Needed," *The American City* 23, no. 5 (Nov., 1920), 474.

[16]"Public Comfort Station in Newark, N.J." *Building Age* (May 1, 1910): 219; Gerhard, 453.

[17]A. L. H. Street, "All Municipalities in Wisconsin Must Provide Comfort Stations," *The American City* 21, no. 3 (Sept. 1919): 279.

[18]"The Need for Building Public Convenience Stations," *The American Architect* 17, no. 2321 (June 16, 1920): 775; Gerhard, 452.

[19]Samuel Goodwin Gant, *Constipation and Intestinal Obstruction* (W.B. Saunders Company: Philadelphia, 1909): 60.

[20]*Comfort Stations of New York City: Today and Tomorrow,* Women's City Club of New York (New York City, 1932), 46.

[21]"Public Comfort Station in Newark, N.J." *Building Age* (May 1, 1910): 219

[22]Gerhard, 452.

[23]Gerhard, 454.

[24]"Dallas Public Comfort Station: A Comfort Station in Which Provisions are Made for Two Races," *The American Architect and the Architectural Review* 121, no. 2389 (Mary 15, 1922), 231.

[25]Ibid.

[26]See note 24 above.

[27]See note 24 above.

[28]Ibid.

[29]"Improving the Public Square in Paris, Texas," *The American City* 5, no. 2 (August, 1911), 78-81.

[30]As quoted in "Public Comfort Stations for Chicago," *Bulletin of the Department of Public Welfare, City of Chicago* 1, no. 3 (October, 1916), 15.

[31]As quoted in "Public Comfort Stations for Chicago," *Bulletin of the Department of Public Welfare, City of Chicago* 1, no. 3 (October, 1916), 8.

[32]Gerhard, 453-454.

[33]Gerhard, 454 and "Report on Public Baths and Public Comfort Stations," Mayor's Committee on Public Baths and Public Comfort Stations. (New York, 1897): 180.

[34]Simons, Jr., 473.

[35]Donald B. Armstrong, "Public Comfort Stations: Their Economy and Sanitation," *The American City* 11, no. 2 (Aug., 1914): 102.

[36]Gerhard, 455.

[37]Simons, Jr., 472.

[38]Ibid, 142.

[39]"Public Comfort Stations for Chicago," 8.

[40]"Report on Public Baths and Public Comfort Stations," 143.

[41]A. L. H. Street, 279.

[42]Gerhard, 455 and J.J. Cosgrove, "Standards for Public Comfort Stations," Public Comfort Station Bureau, (New York, 1916).

[43]"Report on Public Baths and Public Comfort Stations," 166.

[44]"What it Costs to Maintain Public Comfort Stations," *Domestic Engineering* 95, no. 1 (April 2, 1921), 11.

[45]*Comfort Stations of New York City: Today and Tomorrow,* 30.

[46]J. J. Cosgrove, "Standards for Public Comfort Stations," Public Comfort Station Bureau, (New York, 1916).

[47]*Comfort Stations of New York City: Today and Tomorrow,* 45.

[48]Gerhard, 456.

[49]Ibid.

[50]See note 48 above.

[51]"Report on Public Baths and Public Comfort Stations," 180; *Comfort Stations of New York City: Today and Tomorrow,* 45.