
Potty Parity in Perspective: Gender and Family Issues in Planning and Designing Public Restrooms

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Public restrooms are among the few remaining sex-segregated spaces in the American landscape, tangible relics of gender discrimination. This article describes how public restrooms have historically discriminated by class, race, physical ability, sexual orientation, as well as gender. It examines how public restrooms pose special health and safety problems for women, men, children, elderly, persons with disabilities, and caregivers. It chronicles potty parity legislation, examining impacts of and backlash from recent laws. It presents new developments signaling a growing international movement and a quiet restroom revolution: the newly formed World Toilet Organization, American Restroom Association, increased family and unisex restrooms, and technological inventions such as automatic self-cleaning public toilets. It proposes innovative solutions about how twenty-first-century public restrooms can make cities more livable; offers roles for planners, designers, and civic officials, and suggests new research directions. Sources include an extensive literature review of relevant legal research, scholarly publications, and media coverage.

Keywords: toilets; public restrooms; gender; discrimination; livable cities

INTRODUCTION

Although we are all forced to use them whenever we are away from home, public restrooms raise a host of problems for women as well as men, adults as well as children. Restrooms are among the few remaining sex-segregated spaces in the American landscape, and they remain among the more tangible relics of gender discrimination. How many times have women been trapped in long lines at public restrooms? How many times have men been forced to wait for their female companions? Why must women be forced to wait

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FIGURE 1. Longer Restroom Lines for Women

SOURCE: Kathryn H. Anthony.

NOTE: Around the world, women are forced to wait in long lines to use public restrooms while men zip in and out in a flash, a subtle form of gender discrimination. Although about twenty-one states now have potty parity laws, all fifty states need them. Other countries need them, too.

uncomfortably to relieve themselves, whereas men are not? (See figure 1.) Gender-segregated restrooms no longer work for a significant part of the population. Yet, family-friendly or companion-care restrooms that allow males and females to accompany each other, as well as unisex restrooms, are still all too rare.

Why is this the case? And why have these problems persisted for so long? The absence of potty parity—equal speed of access to public restrooms—mirrors the power structure reflected in the planning and design of restrooms that privileges men over women. Historically, architects, contractors, engineers, and building code officials rarely contacted women to learn about their special restroom needs, and, until recently, women were rarely employed in these male-dominated professions or in a

position to be able to effect change. Even today, these professions remain male dominated. For example, as of 1999, women comprised approximately 14 percent of all tenured architecture professors and only 13 percent of the American Institute of Architects (Anthony 2001). By 2002, the percentage of licensed architects who were women had increased to almost 20 percent (Frangos 2003), and by 2005 the percent of tenured women faculty rose to 17 percent (“Women in Architecture” 2005). As more women gradually enter these professions, they increase the potential for change. It is often a rare female legislator who has taken the lead to address these pressing issues.

We begin by describing how public restrooms historically have been settings for privileging one group and discriminating against another. We turn our focus to gender issues and how restrooms have tended to discriminate against women. Yet at the same time, we discuss how restrooms have been troublesome for men, posing serious problems that can no longer be ignored. We examine how public restrooms have presented special health and safety problems for women, men, children, the elderly, persons with disabilities, and caregivers—family issues that span across a myriad of users. Next, we address events leading to the passage of recent potty parity legislation, examining the impacts of and backlash resulting from these new laws. We then present new developments that signal an increasing international movement to address restroom issues. We conclude by discussing technological inventions, proposing solutions for public restrooms in the twenty-first century, and discussing roles that planners, designers, and civic officials can play. Finally, we suggest new research directions to reexamine the issues presented here. Primary sources of information include an extensive literature review of legal research and media coverage about these issues, as well as related scholarly research. We spent six years searching several library databases, including LexisNexis Academic Universe, Wilson, Article1st, and NetFirst, along with a myriad of Internet sources. This research is an outgrowth of the authors’ prior work in designing for diversity (Anthony 2001, 2006; Anthony and Dufresne 2004a, 2004b, 2005).

Lawrence Wright (1967) was among the first scholars to describe the history of the bathroom and the toilet in his seminal work *Clean and Decent*. Alexander Kira (1976) examined both public and private restrooms in his landmark book *The Bathroom*. He covered the subject from a myriad of perspectives, including social, psychological, historical, and cultural.

Since then, however, relatively little scholarly research has been written on social and psychological issues in restroom design. In the planning, architectural,

interior design, or environment-behavior literature, people's needs in restrooms have been paid short shrift.

A few notable exceptions follow. Clara Greed's (2003) *Inclusive Urban Design: Public Toilets* is the first book to address toilets as an integral part of urban design. Greed argued that toilets should be seen as a core component of strategic urban policy and local area design. She provided compelling evidence that toilets are valuable features in their own right as manifestations of civic pride and good urban design that add to the quality and viability of a city. According to Greed (2003, 4),

designing toilets has been seen by some architects as the equivalent of doing latrine duty in the Army. The provision of public toilets should not be seen as an unpleasant low status function, typically in with local authority cemeteries, allotments and waste disposal departments and carried out, albeit with good intentions, by the public works and plumbing fraternity alone. . . . Such precepts appear detached from the wider world of urban design and policy. They deal with internal specifications for individual toilet blocks in isolation from the surrounding environmental situation, locational context and modern user needs.

Greed's focus is primarily on British toilets, yet she also drew on material from recent World Toilet Organization conferences in Asia to provide a wider perspective (see also Greed and Daniels 2002). Elsewhere, Greed (1996, 2004, 2005; Greed and Daniels 2002) argued that inadequate provision of toilets for women, children, and what she refers to as other "disenabled" groups can be viewed as part of a broader dilemma: why gender is not effectively mainstreamed into the work of local planning authorities.

Marc Linder, a labor lawyer and political economist, and Ingrid Nygaard, a physician specializing in urogynecology, coauthored *Void Where Prohibited: Rest Breaks and the Right to Urinate on Company Time* (Linder and Nygaard 1998). Although their focus is not on restrooms per se, they stress the physiological consequences that workers without legal protection face when not allowed rest breaks to urinate.

One topic that has generated a substantial amount of restroom research, albeit not specifically on restroom planning or design, concerns graffiti. Anthropologists and psychologists have long examined gender differences in graffiti. Recent examples include Green (2003) and Otta et al. (1996). Another body of research compares gender differences in restroom hand-washing behavior (see, for example, Johnson et al. 2003).

Next, we turn to a historical analysis of how public restrooms in the United States have privileged one social group over another.

PUBLIC RESTROOMS AS SETTINGS FOR DISCRIMINATION BY CLASS, RACE, PHYSICAL ABILITY, AND SEXUAL ORIENTATION

Placed in a broader framework, throughout American history public restrooms have reflected various forms of discrimination. Not only have they embodied gender discrimination, favoring the needs of men over those of women, but also they have mirrored social discrimination among classes, races, levels of physical ability, and sexual orientations. Regarding class, for example, archeological digs in ancient Greece and Egypt identified social class distinctions in the privies used by high public officials compared to those used by more ordinary citizens (Kira 1976). In contemporary society, similar class distinctions can be found. Public restrooms provided by airports—for those who can afford to travel by air—are a far cry from those found in Greyhound stations for those less well-off who travel by bus. Restrooms in a Ritz-Carlton hotel lobby differ sharply from those of a Motel 6. Furthermore, building service workers who clean public restrooms are generally paid minimum wage. They are disproportionately drawn from the lowest economic ranks of society and from racial minority and immigrant populations.

Homeless people always need public restrooms. Yet, in most American cities, restrooms are hard to find. To make matters worse, homeless persons are often denied access. Gas stations are among the most available public restrooms in today's American cities, yet many are locked and require a manager's key. In dense cities like Chicago and New York, gas stations are unlikely to be found in central city areas with large homeless populations. Instead, they are concentrated along urban edges near major highways leading to the suburbs. Urban homeless people are more likely to be circulating on foot than in a car, and they are often denied management's permission, so in many cases, gas station restrooms are not available to them. Public restrooms can also be found in large cafés and bookstores and in hotel lobbies. But to the homeless population, depending on their attire, places like Barnes & Noble, Borders, or hotel lobbies may also be off-limits. If they are lucky, they can sneak into a crowded McDonald's or other fast-food eatery. As a last resort, they relieve themselves on the street. Often, they simply have no place else to go. (For a compelling account of how homeless persons in Halifax, Nova Scotia, confront this problem, see Lowe 2005.)

Concerning race, throughout much of the American South, African Americans were long forced to use separate restroom facilities from those of whites. This distinction was true not only in the pre-Civil War era when African Americans served as slaves of wealthy white owners but also in the post-Civil War era

through the enactment of the infamous Jim Crow laws that persisted for decades. Such laws called for racially segregated places of public accommodation, including hotels, motels, restaurants, movie theaters, stadiums, concert halls, as well as transportation cars. In each of these environments, African Americans were either denied access to public restrooms altogether or forced to use racially segregated restrooms of their own. Restrooms designated for “Blacks Only” were much more poorly maintained than those for whites. Despite the 1946 U.S. Supreme Court’s ruling to outlaw segregation on interstate buses, African Americans traveling in the South were still not permitted to use “Whites Only” restroom facilities in bus terminals. By 1961, such discriminatory treatment sparked the rebellion of the first group of thirteen Freedom Riders, who traveled in two buses from Washington, D.C., through Georgia, Alabama, and Mississippi on their way to New Orleans. Both buses were attacked, and one was firebombed. In fact, Jim Crow laws, including those requiring racially segregated public restrooms, were not dismantled until the passage of Title II of the Civil Rights Act in 1964.

Yet even today, problems still remain. For example, Frank Bilello, a white man, filed a case against Kum and Go LLC and its parent company, Krause Gentle Corporation of West Des Moines, Iowa. Bilello alleged that the company violated his civil rights by refusing patrons access to restroom facilities at its stores located in one neighborhood in Omaha, Nebraska, while permitting patrons access to facilities in its stores in an adjacent neighborhood. He claimed that the chain store had different policies for neighborhoods that were racially mixed and economically distressed. The 8th U.S. Circuit Court of Appeals ruled against Bilello, stating that he was not the direct target of discrimination (O’Hanlon 2004).

Regarding physical ability, public restrooms were completely inaccessible to those with physical disabilities, especially those using wheelchairs, prior to the passage of the Architectural Barriers Act (ABA) of 1968. The ABA required that buildings constructed or altered by or on behalf of the federal government, leased by the federal government, or financed by federal grants or loans be designed and constructed to be accessible by persons with disabilities. Although the ABA was poorly enforced, subsequent congressional action linked this policy to civil rights by creating the Architectural and Transportation Barriers Compliance Board in 1973 under Section 502 of the Rehabilitation Act. Yet public accommodations in the private sector were still not addressed, so that except for those in federally funded public buildings, the vast majority of public restrooms still remained inaccessible. The Fair

Housing Amendments Act of 1988 called for accessible and usable public and common-use areas—including public restrooms—in all multifamily housing units that are not owner occupied and house more than four housing units. It also called for wheelchair-maneuverable kitchens and bathrooms in ground-floor apartment units. Yet it was not until the passage of the Americans with Disabilities Act (ADA) in 1990 that public accommodations in the private sector—including public restrooms—were required to eliminate physical, communications, and procedural barriers to access. The ADA reached a broad range of sales, rental, and service establishments, along with educational institutions, recreational facilities, and social service centers (Wodatch 1990). Nonetheless, although the ADA succeeded in providing greater *accessibility* for persons with disabilities in public restrooms, the problem of *availability* still remains. For many persons with disabilities (for example, those with spinal cord injuries who have less control over their urinary or digestive systems), finding a restroom in a hurry is essential.

Concerning sexual orientation, public restrooms have long provided a venue for derogatory graffiti as well as hate crimes for gays and lesbians. In addition, today’s transgender population can be at a loss in deciding which public restrooms to use, because they do not fit neatly into either of the existing categories, men or women (Kelly 2004). A 2005 lawsuit in New York City centered around whether five security guards at the Manhattan Mall at Herald Square had the right to question a transgender woman, “Are you a man or a woman?” demanding to see her identification. A second case concerned a similar incident at a different location. The case was settled when the security company agreed to pay each complainant \$2,500. New York City’s Commission on Human Rights administered the settlement, citing a 2003 amendment to the New York City Human Rights Law forbidding “discrimination based on sexual identity whether or not it differs from the person’s biological sex” (Confessore 2005).

In sum, although American public restrooms have reflected discrimination among genders, classes, races, levels of physical ability, and sexual orientations, only issues of race and physical ability have been addressed through federal legislation. The 1964 Civil Rights Act and the 1990 Americans with Disabilities Act provided equal access to public restrooms for African Americans and persons with physical disabilities. Yet, no such federal legislation provides equal access to public restrooms for women. Restrooms still remain relics of gender discrimination, and availability for all is still a dilemma.

PUBLIC RESTROOMS AS SETTINGS FOR GENDER DISCRIMINATION

In the Workplace

Gender discrimination in public restrooms can be seen in several spheres. In the workplace, to a certain extent, the disproportionately low number of women's restrooms reflects an aging building stock that has not kept pace with changing demographics of the past half century, when more women entered the workforce than ever before. Legal scholar Sarah Moore (2002) argued that restroom inequality is a form of subtle sexism or sex discriminatory behavior. It often goes unnoticed and is considered normal, natural, or acceptable. Its effect is to maintain the lower status of women. Moore identified four types of restroom inequity in the workplace and described the results of courtroom battles for each of these:

- *Unequal restrooms*, in which women's restrooms are fewer in number, smaller in size, or more distant than men's.
- *Inadequate women's restrooms*, in which women and men have equal facilities but lack of soap or running water makes restrooms unhealthy for women.
- *Missing women's restrooms*, in which women must share facilities with men.
- *No restrooms at all*, in which women must either "hold it" or seek whatever privacy nature might provide.

Unequal restrooms often can be found when women are new to a particular work environment, such as politics. The Capitol Building in Washington, D.C., is one such example. Here, according to Moore, congresswomen had to walk down a long hallway, go through then U.S. Representative Richard Gephardt's offices, turn left, and then turn right into a small windowless bathroom with only three stalls. By contrast, congressmen walked only a few feet away from the House floor to their restroom with six stalls, four urinals, gilt mirrors, a shoeshine, a ceiling fan, a drinking fountain, and a television. The ladies' restroom on the first floor of the House side was remodeled in 2000, just in time for the Million Mom March, resulting in seven stalls where there had been four (Moore 2002).

In the early 1990s, to accommodate the growing number of women senators, Senate Majority Leader George Mitchell announced that he was having a women's restroom installed just outside the Senate chamber in the U.S. Capitol in Washington, D.C. At that time, only a men's restroom was located there, with the telling sign "Senators Only," an implicit assumption that all senators were men. Nancy Kassebaum and Barbara Mikulski, the two women senators who did not qualify for admission, had to trek downstairs and stand

in line with the tourists (Collins 1993). For women legislators across the country, from the U.S. Capitol to the fifty state capitals, potty parity has often been a pressing issue. According to one New York State assemblywoman reminiscing about the not-so-good old days,

We had to tell the doorman whenever we were leaving the floor to visit the restroom—it took so long to get there and back, we were afraid of missing a vote. . . . It was like getting a permission slip from your teacher. (Collins 1993, 93)

It was not until 1994 that the U.S. Supreme Court, built in 1935, was renovated to include gender-equal facilities (Kazaks 1994).

Unequal restrooms are also part of the history of Harvard Law School. According to one of its faculty members, well-known attorney Alan Dershowitz (1994b, 23),

A decade and a half before I arrived in Cambridge, there were no women students at the law school, and some faculty opposed their admission on the ground, among others, that there were not enough ladies' rooms. It was easier to keep women out—went this argument—than to convert a few urinals into women's toilets. Finally, in 1950, reason and fairness prevailed, and women were finally admitted. But even by the mid-1960s when women were being appointed to the faculty, there was only one "faculty" restroom. It didn't even have to be identified by gender. Everyone knew what gender the word "faculty" referred to.

Dershowitz argued for potty parity in a chapter in his book, *The Abuse Excuse: And Other Cop-Outs, Sob Stories and Evasions of Responsibility* (1994a).

The Architecture Building at the University of Illinois at Urbana-Champaign (UIUC), built in 1926, is another example of unequal restrooms. The building contains two women's restrooms (on the first floor and third floor) versus three men's restrooms (in the basement, and on the second and fourth floors). Men's fixtures still outnumber those for women, despite the fact that women are currently approaching nearly half the undergraduate architecture student enrollment.

Inadequate women's restrooms occur when a dirty portable toilet may suit men's needs but puts women at risk for infections and other health problems. Women in construction work and other male-dominated fields that require them to work outdoors may often face such unpleasant situations. Women firefighters are often forced to use unisex restrooms and share sleeping quarters and shower facilities with their male counterparts. An example of missing restrooms in the workplace could be seen on the popular television show *Ally*

McBeal (1997-2002), on which women and men shared a unisex restroom. The restroom became one of the centerpieces of the show.

No restrooms at all poses problems for women like Audrey Jo DeClue, the first Chicago female lineman for an Illinois power company. She was forced to relieve herself on the side of the road, with no trees or shrubs for privacy, in the presence of coworkers. Yet her sexual harassment case to the 7th U.S. Court of Appeals was voted down in a two-to-one gender-divided ruling. Two male judges voted against DeClue, whereas one female judge voted in favor. In her dissent, Judge Ilana Diamond Rovner wrote,

The fact is biology has given men less to do in the restroom and made it much easier for them to do it. If men are less reluctant to urinate outdoors, it is in significant part because they only unzip and take aim. (Simpson 2000)

New York female taxi drivers are often forced to find another line of work due to the lack of public restrooms, whereas male cab drivers apparently have "a little glass jar under the seat" (Moore 2002).

Some women have lost their jobs as a result of restroom controversies. For example, in Texas, a Fort Worth-based athletic cap manufacturer, Pro-Line Cap Company, had only one toilet for all eighty workers, 95 percent of whom were female. The company fired twenty women employees rather than construct more toilets as the Occupational Safety and Health Administration had required. The Equal Employment Opportunity Commission filed a federal lawsuit against the firm, seeking back pay and damages for the women involved (Swisher 1994; Younge 1997).

Many workplaces still deny women restrooms that are convenient or adequate. Constructed in 1995, Temple Buell Hall, headquarters of the University of Illinois at Urbana-Champaign's School of Architecture, Department of Landscape Architecture, and Department of Urban and Regional Planning, provides equal numbers of men's and women's restrooms. Public restrooms were omitted from the first floor, however, where all administrative offices and predominantly female secretarial staff are located. Receptionists, secretaries, accountants, and other administrators must travel up or down a long flight of steps to find a restroom. This poses special problems for pregnant employees who must use the bathroom more frequently. Female staff arriving before 8:00 A.M., when the building is largely unoccupied, tend to use a secluded restroom on the ground floor, a location that does not feel safe when students are not around. Workplaces are not, however, the only setting in which women face discrimination in public restrooms.

Places of Assembly

The lack of potty parity can also be readily seen at places of assembly such as sports and entertainment arenas, musical amphitheatres, theaters, stadiums, airports, bus terminals, convention halls, amusement facilities, fairgrounds, zoos, institutions of higher education, and specialty events at public parks. Anywhere that crowds of people need to use the restroom at the same time—such as when an airplane arrives or when a theater lets out for intermission—women are forced to wait in long lines to use restrooms while their male counterparts zip in and out in a flash.

While a graduate student at Virginia Polytechnic Institute and State University, Sandra K. Rawls wrote a fascinating dissertation on this topic. Her advisor, Savannah S. Day, was interested in this issue after having missed a flight while waiting in a restroom line at an airport (Woo 1994). Rawls stood outside public restrooms, timed those who entered and exited, and surveyed users about their restroom habits. Her research sample included 230 men and 234 women at four different sites: an airport, a highway rest area, a sports arena, and a conference center. Her research painstakingly documented the obvious: women take about twice as much time as men to use restroom facilities. Whereas men took a mere 83.6 seconds, women took almost three minutes (Rawls 1988).

Edwards and McKie (1996) cited research collected by Kira (1976) comparing the length of time it took men and women to urinate, from entering to exiting a toilet. Eight studies of men's urination times showed averages of between 32 and 47 seconds, whereas six studies of women showed averages between 80 and 97 seconds. On average, women take twice as long to urinate as men. Note the different measurements in these studies: Rawls' (1988) research measured the time needed to enter and exit the restroom, which for some individuals included hand washing and drying, whereas Kira's (1976) studies measured the time needed only to enter and exit a toilet.

Rawls' (1988) work sparked public awareness of an issue that was already all too familiar to women, and her research has often been cited in media articles. For example, in a nationally syndicated article entitled "It's a Fact: Women Designed to Spend Time in Restrooms," author Erma Bombeck recognized that women need more time simply to get undressed and dressed in a confined space (Bombeck 1994). Women also often are juggling purses, coats, and children in small stalls.

Edwards and McKie (1996) analyzed myths surrounding why queues build up around women's public toilets. They point to both social and biological differences. Regarding social differences, women urinate

sitting down in an enclosed cubicle and use toilet paper, whereas men simply walk to an unenclosed urinal. Biologically, the female genitourinary system is internalized, whereas that of the male is externalized. Furthermore, because about a quarter of all adult women are menstruating at any one time, this adds to the length of time spent in the toilet as well as the number of toilet visits required in comparison to men.

Menstruation, in contrast to urination and defecation, is not subject to conscious control. As a result, whereas men may tolerate a time lag in searching for a toilet, women who are menstruating cannot. On days of heavy menstrual flow, if a woman delays attending to her menstrual needs, she may bleed through her clothes, a situation causing both discomfort and embarrassment. Changing a tampon or sanitary pad requires a several steps: searching for and retrieving it from a purse, unwrapping and opening it, throwing away the wrapper, inserting it properly, and disposing the used tampon or pad by either dropping it into the toilet or putting it in a wastebasket, if provided. Some public restrooms have signs requesting that tampons not be flushed away, because they often clog plumbing systems. Sanitary pads must be rolled up and disposed of in a trash can. After changing a tampon, a woman may need extra toilet paper. Each step adds more time in the restroom.

Some women have given up waiting in lines altogether. When, out of desperation, they choose to enter the men's restrooms, they can pay a hefty price. The most famous case is that of Denise Wells, a legal secretary. In 1990, Wells was arrested on entering the men's room after waiting in a long line at a concert at Houston's Summit, a 17,000-seat auditorium. The charge: violating a city ordinance. She had to plead her case in a court of law. A police officer testified that twenty women were waiting to enter the ladies' room and that the line spilled out into a hallway, whereas the men's room line did not even extend past the restroom door. The jury, two men and four women, deliberated for only 23 minutes and found Wells not guilty (Woo 1994). Her case attracted widespread attention and letters of support from women all over the world (Weisman 1992). Yet elsewhere, similar legal complaints have sometimes been thrown out of court.

In 1995, Bob Glaser sued the City of San Diego for \$5.4 million after fed-up women stormed the men's restroom during a Billy Joel and Elton John football stadium concert. Glaser claimed that he was "angered, upset, embarrassed, distraught, and (felt) violated" (Jackson 2000). A federal judge dismissed his case.

Long lines in women's restrooms have commercial implications. Rather than face a long wait, many women feel compelled to curtail or avoid liquid intake

during sport events. As a result, whereas their male counterparts can purchase as many hot dogs, sodas, and beers as they wish, women are less likely to spend money on concessions.

Several journalists and articles have argued for gender equity in restrooms (Cassidy 1987; Collins 1993; "Inequality in Restrooms" 1988; Mariani 1996; Myrie 2001; Page 1994; "Restroom Inequity" 1998; Shafer 1988; "Study Confirms" 1988; "We Are Where" 2003; Wolf 2000; Woo 1994). The articles have appeared in the *New York Times*, *Redbook*, the *Wall Street Journal*, and *Working Woman*, and on ABC and BBC television and elsewhere. One of the more vivid accounts appeared in the *New York Times Magazine* (Tierney 1996, 34):

I've seen a few frightening dramas on Broadway, but nothing on-stage is ever as scary as the scene outside the ladies' room at intermission: that long line of women with clenched jaws and crossed arms, muttering ominously to one another as they glare across the lobby at the cavalier figures sauntering in and out of the men's room. The ladies' line looks like an audition for the extras in *Les Misérables*—these are the vengeful faces that nobles saw on their way to the guillotine—except that the danger is all too real. When I hear the low rumble of obscenities and phrases like "Nazi male architects" I know not to linger.

More memorable quotes include "It's a big mistake to drink a lot when you're up there" (Carol Schumacher, in line at a restroom shortly before halftime of the Ohio State University–Missouri football game) and "It's always a problem, but especially this year" (Rachel Risko, eight months pregnant and waiting in line at the same game) (Edwards 1998).

Even the landmark Getty Center in Los Angeles, designed by world-famous architect Richard Meier, was plagued by restroom problems soon after opening in December 1997. *Chicago Tribune* architecture critic Blair Kamin (2004) acknowledged that

any space that doesn't attend to the basics is setting itself up for disaster. In 1998, that happened at the Getty Center in Los Angeles, which, despite years of meticulous planning and a cost of \$1 billion, wound up infuriating visitors because restrooms were scarce and visitors were forced to endure long waits.

No restrooms were included in the North or South Pavilions, causing long lines to form at a small set of women's restrooms in the West Pavilion. More restrooms have since been added (Creamer 2003; "Posh Museum Has Pictures" 1998).

John Banzhaf III, a professor at the George Washington Law School, is considered the "father of

potty parity" after authoring "Final Frontier for the Law?" in which he presented major cases, studies, and products related to potty parity across the United States. He has discussed potty parity as the new frontier of feminism (Banzhaf 1990).

Banzhaf has filed the first federal "potty parity" complaint against the University of Michigan, alleging illegal sex discrimination. He claimed that the university provided insufficient restrooms at Hill Auditorium, a building undergoing renovation that had almost 40 percent more men's restroom facilities than women's, resulting in long lines at the women's restroom during breaks. A woman sued the university, and Banzhaf joined the suit. Banzhaf has argued "that imposing a heavier burden on females than upon males with regard to urination constitutes unlawful gender discrimination under federal statute law" (Banzhaf 1990). The University of Michigan's renovation plans called for increasing the number of male restroom facilities from fourteen to twenty-two, but adding no additional female restroom facilities beyond the existing ten. Banzhaf accused the university as well as officials of state and federal governments because they provided the money for the renovations. The complaint was accepted by the Office of Human Rights in the Department of Education; however, because the university announced that it would renovate the facility and add more female restrooms, the agency failed to make a final ruling (Banzhaf 2002a, 2006; Mathis 2002). Banzhaf has focused much of his career on gender issues, such as the discrepancies in dry cleaners and hairdressers who charge women more than men. He has also sued nightclubs for holding "ladies' nights" during which women are given free drinks to lure more men out. His work has attracted national media attention, including on CNN's popular television show *Crossfire* (Begala and Novak 2002).

Banzhaf argued that limited restroom facilities impose a burden on females in many ways. For one, a significant number of females at most public places will be actively menstruating, and a significant number of women may be pregnant. In either case, waiting could lead to medical and health complications. Pregnant women feel an increased need to urinate, and many suffer health consequences if they are forced to hold their urine (Banzhaf 2002b).

PUBLIC RESTROOMS AND HEALTH

Public restrooms pose a myriad of health and safety issues for women, men, adults, children, the elderly, persons with disabilities, and caregivers. Anyone who is forced to use filthy public restrooms may be put at a significant health risk. Yet for several reasons—only women must attend to feminine hygiene needs, only

women breast-feed babies, women are more likely to accompany small children, and women are more likely to be forced to wait in line—public restroom deficiencies affect women and children even more adversely.

A survey of 1,192 parents and children contacted through the University of Michigan revealed that the age at toilet training ranged from 0.75 to 5.25 years, with an average at 2.4 years. The number of voids per wakeful day ranged between 1 and 12, with an average of 5.4. Voiding frequency was inversely related to age (Bloom et al 1993; note that elderly persons were not surveyed). Consequently, when parents are out in public places for a few hours or more, chances are that they or their children will need to find a restroom.

According to a 2000 World Health Organization study, 18 percent of the world's population is without adequate water supplies and 40 percent lack adequate restrooms. More than 2 billion people in developing countries lack adequate sanitation, leading to high mortality rates (Mara 2001). Restroom sanitation problems plague both rural and urban areas. For example, Danish Khan, a reporter in Bombay, India, recently surveyed a number of public toilets at his city's railway stations. He found that most of these toilets were closed due to clogged drains, that some stations lacked toilets for women, and that "[m]ost women in the city would prefer a bursting bladder to using public toilets at railway stations. But those willing to brave it will just have to grimace and bear it like the rest of us" (Khan 2004).

Studies have shown some health benefits for what may appear to Westerners as unsophisticated hole-in-the-floor restrooms. A recent study revealed a 12 percent prevalence of incontinence throughout the Asian population, among whom the disorder is twice as prevalent in women as in men. Researchers discovered, however, that squatting toilet use decreases the prevalence of incontinence by one third. This tends to suggest that squatting hole-in-the-floor toilets might offer some benefits in exercising the pelvic floor muscles (Lim 2001).

In many societies throughout the world—including our own—women's hygienic needs have often been ignored. In the Muslim and Hindu religions, as well as in Orthodox Judaism, for example, women are taught to view themselves as unclean while menstruating. According to Germaine Greer (1971, 41), "[W]e still have a marked revulsion for menstruation principally evinced by our efforts to keep it secret. The success of the tampon is partly due to the fact that it is hidden."

Such "unspeakable" problems tend to be brushed under the rug as women maneuver around inadequate restroom facilities. In contemporary Western society, today's skintight women's fashions do not provide adequate space for feminine hygiene products in pants or shirt pockets. Women conceal tampons and sanitary napkins in purses, bags, and other gear—along with

wallets, cash, identification cards, and personal grooming items—that inevitably accompany them to the restroom. All too often, women are forced to place such paraphernalia on a filthy bathroom floor.

Even worse—and all too often—babies and small children end up sprawled out on filthy toilet stall floors. When handicapped-accessible facilities are available, parents have space to accommodate both themselves and small children. But this poses problems, too, because tying up handicapped stalls makes toilets unavailable to persons with disabilities who have no other options. Furthermore, when handicapped stalls are occupied, or in parts of the world where they are not required, parents have no choice but to squeeze children with them into a standard stall.

Filthy toilets pose greater health problems for women than for men because women have greater contact with restroom fixtures. Even when urinating, women contact the toilet seat, whereas men do not. Fear of contaminated toilet seats causes many women to hover over the toilet rather than actually sit on it. This can slow the flow and result in the bladder not fully emptying (Edwards and McKie 1996). Although toilet seat covers are standard features in most of California's public restrooms, they are rarely found elsewhere. New and newly remodeled restrooms featuring automatic-flush toilets and touch-free faucets reduce contact with fixtures, such as toilet handles and faucets. Most restrooms do not yet have them, however. In addition, auto-flush toilets, unfortunately, do not always work properly. Even the slightest body movement triggers them to flush away gallons of water unnecessarily, a feature that can make them terrifying to toilet-training toddlers.

The case of *Lynch v. Freeman* (1987) illustrates the health dangers to women caused by dirty public restrooms. Eileen Lynch was hired as a carpenter's apprentice by the Tennessee Valley Authority's Construction Service Branch in 1979. She worked on a construction site covering three acres with only two portable toilets for women, one at each end of the work area, along with twenty-one other portable toilets not designated by sex but primarily used by men. The portable toilets often lacked toilet paper, running water, or sanitary napkins. The two women's toilets had no locks or bolts on the door, and one had a hole punched in the side. To avoid using the filthy portable toilets, Ms. Lynch began holding her urine on the job, and within three days she began experiencing pain. After being diagnosed with cystitis, a urinary tract infection, she occasionally used the large, clean, fully equipped restrooms in the powerhouse, a building that was off-limits to construction workers. Despite the fact that some of her male coworkers used the powerhouse facilities regularly and were not disciplined, Ms. Lynch was fired

for doing so. The court found that "all females were placed at a higher risk of urinary tract infections by using unsanitary portable toilets or by avoiding the use of such toilets and holding their urine" (*Lynch v. Freeman* 1987).

Health dangers abound in restrooms at work and school. According to a recent study conducted by the Opinion Research Corporation on behalf of Kimberly Clark, almost 20 percent of middle and high school students avoid using school restrooms (North Carolina Department of Juvenile Justice and Delinquency Prevention 2002). Their survey used a national probability sample of 269 adults who were parents and guardians of children from seventh to twelfth grades. According to Tom Keating, coordinator of Project CLEAN (Citizens, Learners, and Educators against Neglect), an effort dedicated to improving the safety, cleanliness, and hygiene of student restrooms in public schools, "The state of school restrooms in this country is a national disaster" (InfectionControl.com 2002; Keating 2002, 2006). Given that by the year 2000, the United States contained approximately 15,000 school districts with a total of more than 90,000 schools, each of which included about 10 restrooms, this yields a total of about 900,000 school restrooms. Estimates are that at least 20 percent, or 180,000, of these are unacceptable (Keating 2002, 8). In this regard, one kindergarten teacher, a relative of the second author, cited an extreme case: a mother who sends her son to school in diapers so that he avoids using the dirty restrooms.

Additional research found that more than one third of restrooms at middle and high schools in the United States lack basic sanitary supplies such as toilet paper, soap, and paper towels. A survey of 256 students found that teenage girls were most likely to complain about inadequately stocked restrooms, with 55 percent of girls aged 15-17 stating that their restrooms lacked basic amenities. Forty-three percent of the students surveyed said that students who avoid using the restrooms at school can't concentrate on their schoolwork, causing their grades to suffer, whereas 42 percent said students get sick from holding it in all day. Other problems students noted in restrooms are foul odors, clogged toilets, and "scary or dangerous" conditions (Barlow 2004; "Teens Blast" 2004). The United States, however, is not the only country where school restrooms pose problems for students. In Sweden, surveys of 385 schoolchildren ages six to sixteen revealed that overall, 15 percent of respondents always avoided using the school toilet. The tendency to avoid school toilets increased with age; 16 percent reported that they never urinate in the school toilet, and 63 percent said they never defecate in it. Researchers found that students' emotional reactions to unpleasant sensations of sight and smell, as well as embarrassment and fear, formed the basis for children's reluctance to relieve

themselves at school. They expressed concern for children at risk for urinary tract infections, as well as those undergoing treatment for bladder and bowel dysfunction, who may be prescribed regular toilet visits or experience frequent urgent need to use a restroom (Lundblad and Hellstrom 2005).

Furthermore, even if the restroom is sparkling clean, when a woman holds her urine while waiting in line, she becomes a potential candidate for cystitis and other urinary tract infections that, if left untreated, can cause renal damage. Waiting in long restroom lines poses additional health problems for pregnant women (Banzhaf 2002b). Urinary tract infections during pregnancy are associated with low birth weight babies at risk for medical complications (Naeye 1979). Constipation, abdominal pain, diverticula, and hemorrhoids can result if individuals delay defecation (National Institutes of Health 1995).

Many individuals—both women and men—suffer from invisible disabilities, intermittent or chronic medical conditions requiring excessive restroom use: overactive bladder, urinary tract infections, and chronic digestive illnesses such as irritable bowel syndrome, ulcerative colitis, diverticular disease, and Chron's disease (Benirschke 1996). The availability of public restrooms—or lack thereof—severely hampers their daily activities, causing many to stay home. Cold weather and side effects of medications can also lead to more frequent restroom visits. Small children, the elderly, and persons with medical conditions often face emergencies when they suddenly need to relieve themselves (Schmidt and Brubaker 2004).

Although few discuss it publicly, some men question the lack of privacy in the standard men's room lineup of urinals, with users in full view of each other. In fact, a disorder called paruresis, making it impossible for someone to urinate in public if others are within seeing or hearing distance, affects more than 20 million Americans, or about 7 percent of the U.S. population. This disorder is also known as shy bladder syndrome (SBS), bashful bladder syndrome (BBS), bashful kidneys, or pee-phobia (Soifer et al. 2001; Stapells 1999). Nine of ten sufferers who seek treatment are men, although women, too, can have extreme cases (de la Cruz 2000). According to Steven Soifer, a professor of social work at the University of Maryland who specializes in this disorder, about 2 million people suffer so seriously from BBS that it interferes significantly with their work, social relationships, and other important activities. The emotional pain associated with paruresis is severe and crippling. From the father who avoids taking his son to a ball game because he can't use the urinal "troughs" at the stadium, to the mother who doesn't

take her daughter clothes shopping because she can't use a department store bathroom, to the executive who loses promotions because he or she cannot travel distances from home, to the applicant who loses a job opportunity because he or she can't provide a urine sample for prehire drug testing, paruresis destroys lives (Soifer et al. 2001, 2). Soifer argued that some boys become targets for bullying—not perceived as being "manly" enough to stand up, show their equipment, and use a urinal—merely by entering a toilet cubicle. The result can lead to lifelong problems stemming from feelings of powerlessness (Soifer 2005). As a result, some men's rights advocates find men's rooms inadequate, arguing that improved restroom design can have a strong impact on the symptoms of paruresis sufferers. They call for an end to urinal troughs in men's restrooms, greater space between urinals, the construction of floor-to-ceiling partitions between urinals, and doors on all toilet stalls. Soifer also recommended a white noise device such as a fan to help users feel more comfortable. Finally, attendants make paruresis sufferers extremely ill at ease (Soifer et al. 2001; Wolf 2000).

Along these lines, a student in Sydney, Australia, conducted one of the few existing studies of how the design of male public restrooms affects users (Rez 2002). In an exploratory investigation of gender differences in persons with social phobias, Turk et al. (1998) discovered that, compared to women, men reported significantly greater fear of urinating in public restrooms. Hammelstein and Pietrowsky (2005) developed and evaluated a paruresis scale within the context of social-phobia research.

In this regard, the 2006 editions of the International Code Council's (ICC) *International Plumbing Code* (IPC) and *International Building Code* (IBC) respond to this long-standing problem. The 2006 IBC (ch. 8, "Interior Finishes," sec. 802, "Interior Wall and Ceiling Finish"; International Code Council 2006a) definition, which applies to all occupancies, now calls for "toilet room privacy partitions." IPC section 310 ("Washroom and Toilet Room Requirements," para. 310.5, "Urinal Partitions"; International Code Council 2006b) now states that each urinal shall occupy a separate area with walls or partitions to provide privacy, and those walls or partitions should begin not more than 12 inches from and extend not fewer than 60 inches higher than the finished floor surface, and shall extend from the wall surface at each side of the urinal a minimum of 18 inches or not fewer than 6 inches beyond the front lip of the urinal, whichever is greater. Urinal partitions are not required in single-occupant or unisex toilet rooms with a lockable door or in day care facilities with two or more urinals. These codes are not

yet enforceable until the authority having jurisdiction, that is, the state, county, or city, adopts them into law or as a building code (csemag.com 2006).

PUBLIC RESTROOMS AND SAFETY

In the worst instances, the lack of alternatives to the standard men's room and women's room poses a serious risk to our personal safety. Rather than simply shutting down public restrooms, this calls for a fundamental shift in the status quo and a new paradigm for public restroom design. What happens when a single mother takes her young son to a restroom or when a single father accompanies his young daughter? Sometimes, allowing unaccompanied children to use a public restroom can place them in harm's way—and even lead to their death.

Take the tragic case of nine-year-old Matthew Cecchi, in Oceanside, California, a 1998 story that made national headlines ("Police Ask for Help" 1998). Matthew's aunt waited for him outside a public restroom at a paid camping area at the beach. While the boy was using the men's room, a man entered, exited minutes later, and walked away. When Matthew failed to appear, his aunt realized something was wrong. Her nephew had been brutally murdered by a 20-year-old drifter who slashed young Matthew's throat from ear to ear. Although a rare occurrence, this could theoretically happen to any child when his or her caregiver of the opposite gender is forced to wait outside a public restroom. It could also happen to the elderly, the infirm, or anyone with the misfortune of being in the wrong place at the wrong time.

In fact, public restrooms provide convenient hiding spots for criminals. In Champaign, Illinois, in 2004, Samuel Pettis was sentenced to twenty-five years in prison after robbing at gunpoint a man who was sitting on a public restroom toilet at Market Place Mall, the region's major shopping center. After pacing back and forth in front of the victim's stall, Pettis kicked open the door, pointed a gun, and demanded his money. The victim said he felt "pretty vulnerable because I had my pants around my ankles." A mall security guard and the police caught Pettis, a heroin addict (Schenk 2004).

While using urinals, men are prime targets for crime. Public men's rooms have long been recognized as venues for dangerous drug deals and other criminal activities, such as those depicted in Kenneth Anger's 1947 film, *Fireworks*.

Other individuals are vulnerable due to their fragile mental or physical condition. As the baby boomer population reaches retirement age, the numbers of those with Alzheimer's disease, Parkinson's disease, cancer, and other mental and physical disabilities are

increasing rapidly. Today, more than 5 million persons suffer from Alzheimer's; in the past decade, the numbers have skyrocketed to epidemic proportions. Those afflicted by such infirmities are often unable to use a restroom alone—yet now they are forced to do so. An anxious family member of the opposite gender must wait outside. Otherwise, this dilemma forces them to remain homebound, causing both patient and caregiver to become increasingly isolated from the everyday world.

For example, suppose an elderly man with early- to midstage Alzheimer's suffering from disorientation and confusion needs to use a public restroom, and his wife is with him. She is faced with the quandary of either bringing him into the women's room, and making other women users feel uncomfortable, or escorting him into the men's room. More likely than not, she will send him into the men's room alone and wait for him to come out. This was the case for the first author's then-80-year-old aunt and 84-year-old uncle. During one restaurant outing, my aunt waited too long for my uncle to come out of the restroom, so she asked a waiter to check on him. The waiter found my uncle, fallen on the floor.

The first author realized the deficiencies in public restrooms while her late husband, Barry, age forty-six, was in the final week of his life. Plagued by a rare form of cancer that spread throughout his body for seven years, Barry had always been an avid walker—often clocking up to five miles per day. Near the end, however, shortness of breath and weak muscles made it impossible for him to walk at all. While he was in a wheelchair, we tried to lead a normal life and venture out of our home whenever he felt up to it. Fortunately, we had a number of male visitors during these grueling final days. Otherwise, how would I have gotten Barry into the public restroom while we were meeting our friends in a hotel lobby? I could wheel him to the restroom entry, but no farther. By this time, his arms were too weak to attempt to move his own wheelchair. I couldn't bring him into the ladies' room, and I didn't want to enter the men's. Must we all face experiences like these to wake up to the reality that family-friendly restrooms are a right, not a privilege, that we all deserve?

POTTY PARITY LEGISLATION AS A RESPONSE

Potty parity legislation first made national headlines in 1974 when California Secretary of State March Fong Eu smashed a toilet bowl on the steps of the state capitol in Sacramento as part of her successful campaign to ban pay toilets in her state. During her eight years in the state assembly, Eu had her fill of squeezing under bathroom stalls and scrounging for dimes to

relieve herself. Although pay toilets generated revenue for the state, this income came at the expense of women (Hardisty 2002; Infoplease.com 2004). In 1975, New York State outlawed pay toilets in response to charges that they discriminated against women. A New York State court ruled that pay toilets are unfair to women because men can avoid any charges by using urinals. They have since been outlawed across the United States. In many parts of the world, however, pay toilets for women are still commonplace.

Potty parity laws requiring greater access to women's restrooms have been emerging in several states and municipalities. As of 2006, at least twenty-one states had statutes addressing potty parity. Although these laws have made great strides for women by increasing the quantity of available toilet stalls, they have not yet improved the quality of restrooms for women or men. As a result, many public health and safety problems still remain unresolved. Furthermore, almost all potty parity laws apply only to new construction or major renovations of large public buildings in which at least half the building is being remodeled. Although these laws represent substantial progress, most of the older building stock remains unaffected.

Some state legislators have taken action by requiring architects to design a greater, or at least equal, number of toilet stalls in women's restrooms compared to men's in newly constructed or remodeled public buildings. Who initiated such legislation? It is often either the rare female legislator or the enlightened male legislator inconvenienced by waiting for his female companion.

In 1987, California led the way when State Senator Art Torres (D-Los Angeles) introduced such legislation after his wife and daughter endured a painstakingly long wait for the ladies' room while attending a Tchaikovsky concert at the Hollywood Bowl. The bill became law that same year (Woo 1994).

In Texas, an aide to State Senator Gonzalo Barrientos prompted legislation after having spent forty-five minutes keeping his girlfriend company while she anxiously waited to use the ladies' room at an evening festival (Woo 1994). As a result, a Texas code adopted in 1993 and established in consultation with the Texas State Board of Plumbing Examiners specifies that the restroom ratio must be

not less than 2:1 women's-to-men's restrooms in facilities where the public congregates, and on which construction is started on or after January 1, 1994, or on which structural alterations, repairs, or improvements exceeding 50 percent of the entire facility are undertaken on or after January 1, 1994. (Vernon's Texas Codes Annotated 1997)

In Missouri, State Senator Irene Treppler was quoted as saying,

Years ago women didn't go to sports events or they wouldn't drink beer or soda so they wouldn't have to go to the bathroom. . . . If men ever had to wait in line they would be fuming. . . . They couldn't stand the inconvenience. (Karp 1995)

In 1995, Treppler introduced a bill requiring that twice as many women's toilets as men's toilets be installed in new stadiums, arenas, auditoriums, and assembly halls that seat more than 400 people. In new facilities that seat fewer than 400, the numbers of women's and men's toilets (toilets and urinals combined) would have to be equal. Stadiums and areas already in operation or under construction would have to meet the new standards when undergoing major renovations or by January 1, 2002. An amendment was added to the bill requiring that diaper-changing stations be installed in men's bathrooms as well as women's (Karp 1995).

The nature of potty parity laws differs in various states. Most states require new ratios of two women's toilet stalls to one men's stall, whereas others require a 3:2 or simply a 1:1 ratio. A range of definitions exists about which places are and are not required to achieve potty parity. A key question has been raised in the legal literature about exactly what equality in restrooms means: is it equal square footage, equal toilets, or equal waiting time? In our opinion, Wisconsin's law is a model because it defines potty parity in terms of *equal speed of access* for women and men:

The owner of a facility where the public congregates shall equip and maintain the restrooms . . . with a sufficient number of permanent or temporary toilets to ensure that women have a speed of access to toilets . . . that equals the speed of access that men have to toilets and urinals . . . when the facility . . . is used to its maximum capacity. (Moore 2002)

In Chicago, Building Commissioner Mary Richardson-Lowry introduced potty parity and spearheaded its integration into the city's Municipal Building Code. Chicago's "potty parity" ordinance passed in 2001 and was applauded by women in Chicago and around the country (Spielman and Hermann 2004). It calls for more women's restrooms than men's in newly constructed or remodeled restaurants, nightclubs, theaters, malls, museums, arenas, churches, and stadiums. Places of employment must provide proportional numbers of restrooms (Moore 2002). As one Chicago alderwoman acknowledged, "I've stood in line having to go. I've been with children who have had to go, and sometimes they haven't made it" (Spielman 2001).

In 2004, Georgia state legislators defeated proposed potty parity legislation calling for new state-, county-, and city-owned buildings to have twice as many toilets for women as for men (Campos 2004; National Model Comprehensive Building Toilet Code 2005).

In 2005, legislators in New York City passed the Restroom Equity Bill (Adler 2005; Anderson 2005; "NY Considers" 2003). It amended the city's building code by calling for all new city bars, sports arenas, movie theaters, and similar venues to have a 2:1 ratio of women's to men's stalls. Honolulu officials approved a similar measure late in 2005 (Bradley 2006). New York's initiative was watched closely even in the United Kingdom, where some have called for a revision of British standards and building regulations (Wapshott and Lister 2003). Family-friendly legislation was introduced in Maryland in 1997, when Adrienne Mandel sponsored House Bill 642. The bill, entitled the Family Friendly Workplace Act, calls for breast-feeding facilities in all places of employment (Brennan 1997).

But is potty parity legislation the only means by which gender discrimination in public restrooms can be remedied? In fact, a more powerful means exists in the revision of building codes that could set the standards for all buildings in all states. The Uniform Plumbing Code (UPC) responded in 1988 with "Minimum Plumbing Facilities," stating, "The total number of water closets for females shall be at least equal to the total number of water closets and urinals required for males" (Moore 2003). But because equality of fixtures for both genders is not enough, some cities and states have since adopted their own numbers: Alaska adopted a 2.7:1 ratio; Pittsburgh adopted a 3.75:1 ratio; Tennessee, Texas, and six other states adopted a 2:1 ratio, Minneapolis–St. Paul adopted a 3:1 ratio; and Washington State adopted a 4:1 ratio. The current UPC requires a 4:1 ratio in theaters, based on an occupancy of 100 persons (Inlow 2003). To further complicate matters, discrepancies remain between the UPC and the IPC. For example, in a restaurant with 100-person occupancy, the IPC requires two water closets for males and two water closets for females, whereas the UPC requires two water closets and one urinal for males and three water closets for females. In a restaurant with 1,000-person occupancy, both codes require fourteen fixtures for males and fourteen fixtures for females (Moore 2003). The 2003 IPC calls for equal ratios of male-to-female water closets in several building types, including nightclubs, restaurants, businesses, educational facilities, faculty/industrial buildings, residential care, and dormitories. Yet in assembly occupancies, a 3:2 women-to-men ratio must be provided, in which male facilities include the total of water closets and urinals combined (International Code Council 2003c).

The 2003 *International Building Code* (IBC; International Code Council 2003b) called for more water closets for both men and women in stadiums than had been previously required. In stadiums with fewer than 3,000 seats, those regulations call for one water closet for every 75 males in the first 1,500 seats and one water closet for every 120 males for additional seats, and, by contrast, one water closet for every 40 females for the first 1,500 seats, with one for every 60 females for additional seats. Similar changes were called for in coliseums as well. The 2003 IBC's "Minimum Number of Required Plumbing Facilities," however, still called only for equal numbers of water closets for men and women in nightclubs, bars, taverns, and dance halls (one fixture for 40 occupants), as well as in restaurants, banquet halls, and food courts (one fixture for 75 occupants) (International Code Council 2003a).

In the international context, Wang and Huang (2005) proposed a conceptual framework for an equal opportunity restroom code in an attempt to improve the Taiwan Building Code, IPC, and UPC. In the United Kingdom, Edwards and McKie (1996) chronicled the history of All Mod Cons (AMC), a group of women in Cardiff who began a letter-writing campaign in the early 1980s to the local press complaining about the underprovision of public toilets and their impacts on women with small children. The group bombarded the British Standards Institute (BSI), which regulates the design and construction of toilets in public buildings, and consequently in 1991 the BSI invited AMC representatives to serve on a committee revising one of its standards. This was the first time a woman had sat on that committee. The revised British Standards, BS 6465, reflected substantial improvements in the construction and location of women's public toilets, but it did not mandate that local authorities provide them, nor did it require twice the number of women's toilets as men's.

Barkley and Greed (2006) reported on further revisions to these standards. Through their membership on the British Standards revision committee for BS 6465 Part 1 (BS 6465-1), their hope was to improve restrooms so that women could do away with waiting in queues and using poorly maintained, poorly designed facilities. Recent revisions to BS 6465-1 update guidance on the number of fixtures that should be included in private residences, housing for the elderly, workplaces, shops and shopping malls, schools, hotels, restaurants, bars, swimming pools, and gas stations. In newly constructed workplaces, for example, the latest revisions call for an increased number of women's toilets so that the total number of fixtures for women (toilets) and men (toilets plus

urinals) is now equal. The provision for public buildings addresses two types: first, buildings like sports stadiums and movie or drama theaters, in which most intense use occurs during intermissions; and, second, buildings such as libraries and exhibition centers, in which restroom use is spread more evenly throughout the day. In theaters, for example, women will have more fixtures than men. Barkley and Greed recommended that local authorities undertake surveys of local need by calculating the numbers and types of people likely to use the facility in light of local land use and development, and use this information to establish a "toilet hierarchy" of provision appropriate for each locale. Although these latest revisions only apply to new developments, they represent an important first step that will benefit future generations of restroom users in the United Kingdom.

Although changes in building codes are steps in the right direction, they have not gone far enough. In many building types, codes still call for only equal numbers of fixtures for men and women, and fail to recognize that women need more. The design of public toilet stalls remains fundamentally unchanged. And in most buildings, family-friendly or companion-care restrooms are not yet required. Further changes to international building codes could lead to sweeping improvements in restroom design in the United States and around the world.

IMPACTS OF POTTY PARITY AND ITS BACKLASH

What have been the impacts of potty parity legislation? In 1997, the *Ladies' Home Journal* included whether a state had passed potty parity laws as one of several factors in determining the ten best cities for women (Mitchard 1997). But although women rejoiced, in some high-profile cases, men soon protested.

Denver's new Invesco Field at Mile High, home of the Denver Broncos football team, opened in 2001 with a ratio of one stall for every 100 male visitors but one stall for every 57 female visitors ("Kickoff" 2004). Denver's old Mile High Stadium, since demolished, had one stall for every 200 male visitors and one for every 150 female visitors (Brovsky 2000).

As a result of the Tennessee Equitable Restrooms Act, Nashville's new Adelphia Coliseum, built in 1999 for the Tennessee Titans football team, has 26 restrooms with 288 units for men (70 toilets and 218 urinals), compared to 40 restrooms with 580 toilets for women. It also includes 12 family restrooms spread throughout its main concourse, upper concourse, and club levels. The result: according to a reporter for the *Tennessean*, a snakelike line of 40 men formed at the top level, forcing some to wait 15 to 20 minutes to use the restroom.

Security officers had to station themselves at the exits to some men's rooms to stop those who tried to avoid the line by entering the wrong way. One police officer was quoted as saying, "We're just trying to keep fights down." Among the comments from women visitors: "For years, I've had to sneak into the men's rooms at events. This is the first place there's no waiting." Yet a male visitor complained, "We hate it. If we had a tree, we'd be OK. This is not right. It's not funny, either" (Paine 1999).

Soon after it was built, an exemption was filed for Adelphia Stadium from the state's new mandate of two women's toilets for every man's toilet (2:1 ratio). Even the state architect acknowledged that the state's potty parity law needed more flexibility. Yet State Senator Andy Womack argued against the bill, saying that lawmakers were "micro-managing. . . . The intent of the original bill is to give parity. Now we're carving out exceptions to parity" (de la Cruz 2000; Jowers 2000; "State's Potty Parity" 2000). Ironically, in a matter of months, men could undermine a law that reflected decades of discomfort from women.

Soldier Field, the renovated stadium for the Chicago Bears, which reopened in 2003, has also prompted heated controversy. The stadium boasts a total of about 900 toilets. Here, too, recent potty parity legislation proved detrimental to a large number of male football fans. Men comprise about 75 percent of the audience at Soldier Field, a statistic higher than the norm at most other stadiums. As a result of the new construction that improved wait times for women's restrooms, men were forced to wait 15 minutes or more at some restrooms, especially in the end zone sections (Spielman and Hermann 2004). In response to complaints, five women's restrooms (71 fixtures) were converted to men's rooms, resulting in 388 fixtures for men and 246 for women on the mezzanine and colonnade levels. Measurements taken in the summer of 2004 after the change revealed that whereas the wait for men was reduced to one to two minutes, the wait time for women increased to 21-32 minutes. The city planned to assess the situation at the end of 2004 to ensure that average wait times were balanced between male and female fans (Hermann 2004).

Despite the passage of potty parity legislation in numerous states, women are not always reaping the intended benefits. In Florida, the *Daytona Beach News-Journal* reported that even after a decade of having potty parity laws in place, the newly required ratios of women's to men's toilets were not always properly enforced. Many large building projects in Daytona Beach, such as the Bethune Performing Arts Center, Flagler Auditorium, and Peabody Auditorium, avoided potty parity laws due to bureaucratic delays and were constructed under prior regulations (Callea 2003).

Los Angeles Times reporter Carla Hall lamented that “the laws governing women’s bathrooms seem to change only when men are inconvenienced.” She noted that although the situation has improved slightly for women across the United States throughout the past decade, potty parity laws only apply to certain types of buildings such as sports venues, concert halls, and theaters, but restaurants and clubs are generally omitted (Hall 2001).

In light of the above, one might speculate about the different ways in which women and men have reacted to long waits for public restrooms. Whereas women have waited patiently for years, commiserating about their plight with other women in line, in recent instances some men reacted aggressively by cutting in line, entering in the exits, and fighting. Our literature review revealed no such aggressive behavior for women except for the occasional takeover of the men’s room. More important, some men rushed to undo or water down brand-new potty parity laws. The potty parity backlash and bureaucratic loopholes described here lead us to ask, Will gender equity in restrooms ever be possible, or will it remain just a “pipe dream”?

NEW DEVELOPMENTS: A QUIET RESTROOM REVOLUTION

Recent developments signal a growing international movement to address restroom issues. The newly formed World Toilet Organization (WTO), led by self-proclaimed “toilet evangelist” Jack Sim, is attempting to address restrooms at a global scale (World Toilet Organization 2004). In 2001, its first summit was held in Singapore, with 200 representatives from 15 different countries. The choice of Singapore as its initial venue was significant. Its government fines those who fail to flush a toilet, and Singapore’s lavatories are now among the cleanest in the world. WTO focuses on various aspects of restrooms such as health, disease, and the latest ventilation, sanitation, maintenance, and conservation issues (Myrie 2001). Representatives declared November 19 World Toilet Day to promote the “importance of good toilets around the world” (“Singapore Symposium Flush” 2001).

Subsequent World Toilet Organization summits have been held in Seoul, South Korea; Taipei, Taiwan; Beijing, China; Belfast, Northern Ireland; and Moscow, Russia (Knobel 2006). Beijing’s 2004 summit attracted 400 delegates. Beijing’s municipal government plans to spend more than \$12 million a year to improve public toilets in advance of the 2008 Olympics. Currently, about 2,800 public toilets, nearly one third of those in the city, are holes in the ground located in *hutongs*, ancient lanes or alleys. Even in many upscale restaurants and Internet cafés, the standard toilet is still a hole in the ground. The



FIGURE 2. World Toilet 2005 Expo and Forum Logo

SOURCE: Credit: MP Asia Pte Ltd.

NOTE: Note that the logo features a roll of toilet paper. The newly formed World Toilet Organization and the American Restroom Association call attention to the need to improve public restrooms around the world.

municipality promised that by 2008, 4,700 public toilets would be available and that in business areas, no one would be more than an eight-minute walk away. Some have called the plan “a new cultural revolution” (Goodenough 2004; Rosenthal 2002) or a “public toilet revolution” (Geisler 2000).

The first World Toilet Expo and Forum was held in Shanghai, China, in 2005 and drew about 250 participants, including the first author (World Toilet Organization 2005a, 2005b; see figure 2). The event included a technical visit to several of Shanghai’s state-of-the-art public restrooms, including those at People’s Square and the Bund, two of the city’s prime tourist attractions. One such facility featured a digital indicator in flashing red lights atop each toilet stall indicating the number of minutes and seconds during which it had been occupied. It offered generous-sized family restrooms even with a shower. Another featured historical photos of Old Shanghai, providing an educational resource for tourists. All employed attendants who maintained their facilities in sparkling condition. (One notable shortcoming: although toilet paper was available for purchase at the cost of 1 yuan, most women pay, whereas most men do not—a situation, no doubt, that March Fong Eu would not approve.) Among the more intriguing issues discussed at the World Toilet Expo and Forum were preparations for the upcoming 2010 World Expo and Forum in

Shanghai and related efforts to upgrade the city's toilet facilities; in 2004, the city developed an electronic toilet guidance map of ten central urban districts covering 1,825 public toilets (Chuangyang 2005).

Along similar lines was a presentation of the Australian National Public Toilet Map (2005), showing the location of more than 14,000 public and private toilet facilities across the country. It provides useful information about each toilet, such as location, opening hours, availability of baby change rooms, accessibility for people with disabilities, and details of other nearby toilets. The development of the map and the Web site is funded by the Australian government through the Department of Health and Ageing as part of the National Continence Management Strategy. Representatives from Japan and Taiwan presented examples of innovative toilet design from their respective countries; with long-standing organizations addressing toilet issues (the Japan Toilet Association formed in 1985, and the Taiwan Toilet Association in 2000), these countries appear to be among the world leaders in this regard (Ue 2005; Yu 2005).

The American Restroom Association was formed in September 2004 as a new member of the World Toilet Organization. Its mission is to advocate for the availability of clean, safe, and well-designed public restrooms. It aims to provide more privacy, comfort, and sanitation by keeping abreast of the newest technology and design for toilets/restrooms. It serves as a clearinghouse for companies and individuals promoting these products and designs and develops lines of communication with mall and building managers, architects, builders, manufacturers, vendors, and other groups that can change restroom design. Interests represented include the Public Restroom Initiative, the International Paruresis Association, Project CLEAN, and the Simon Foundation for Continence. The American Restroom Association has attracted widespread international attention. As of August 2006, its Web site, <http://www.americanrestroom.org>, had logged 1.9 million hits (American Restroom Association 2006).

Recent accomplishments of the American Restroom Association include the following:

1. *Promoting code change*: the association has advocated for the enforcement of existing codes concerning toilet access for customers or visitors to business establishments. It has supported codes requiring urinal partitions.
2. *Communicating with and developing relationships with related organizations*: as part of Project CLEAN, board member Tom Keating has established ongoing relationships with school administrators around the United States during a ten-year effort to improve the United States' public school restrooms. Since 2002, approximately twenty schools in five states have adopted specific improvements resulting from their

participation in Project CLEAN. Board members are establishing relationships with the AARP, formerly the American Association of Retired Persons, an organization that provides benefit, advocacy, and information on aging for people age fifty and older.

3. *Documenting Americans' perceptions of public restrooms*: the Web page maintained by the program manager includes extensive documentation of specific issues that restroom consumers have raised in numerous e-mails and phone calls. It contains an extensive review of media coverage of public restroom issues. Several board members have published accounts about perceptions of public restrooms in books, scholarly articles, articles in professional and trade journals, and elsewhere.
4. *Implementing public relations campaigns for media coverage*: board members of the American Restroom Association have received national coverage on television (ABC *World News*), radio (National Public Radio), and major newspapers such as the *Chicago Tribune*, *Wall Street Journal*, and *Washington Post* (Anderson 2005; Bounds 2005; Layton 2002).
5. *Creating an interactive public restroom site on the Web*: the American Restroom Association Web site contains extensive public restroom anecdotes culled from media accounts and from written and phone communication to the association.

Sparked by her research into the history of constitutional arguments for equal protection of the sexes, University of Chicago Law Professor Mary Anne Case conducts ongoing research about men's and women's activities in public restrooms. Case believes that a better method than measuring square footage is needed to equalize restrooms between the genders. According to Case, "Men are almost always offered more excreting opportunities than women" because urinals take up less space, and oftentimes a lot of space in women's rooms gets taken up by couches, baby-changing stations, and vanity tables. Case believes that unisex toilets provide a viable alternative so that women and men must wait in the same line, as they do on airplanes (Case 1999; Braverman 2004).

The movement to incorporate gender-neutral or unisex restrooms is gaining momentum, in part as a response to the need to make transgender users feel more comfortable and also as a response to the pressures of potty parity. In 2001, Ohio University designated about thirty restrooms across campus as unisex ("Ohio U. Designates" 2001). In 2004, the Memorial Union Building at the University of New Hampshire reassigned the men's and women's restrooms on its first floor to gender neutral. There, the student senate passed a resolution in early 2004 asking for one gender-free restroom in each academic building (Kelly 2004). Similar efforts have been or are currently underway at Beloit College, Bowling Green State University, Brown University, Oberlin College, San Diego State University,

Sarah Lawrence College, the University of California's multiple campuses, the University of Chicago, the University of Massachusetts Amherst, the University of North Texas, the University of Pennsylvania, the University of Southern Maine, and elsewhere (BG News Editorial Board 2005; University of California Lesbian, Gay, Bisexual, Transgender, and Intersex Association 2005; Ward 2005; Whitacre 2004). One reporter has labeled this phenomenon a "restroom revolution" (Ward 2005).

A similar trend toward mixed-gender restrooms can be found at some upscale restaurants sprouting up across the country. Benefits appear to be shorter lines as well as an easier and cheaper way to meet building codes, especially when more handicapped-accessible stalls required by the Americans with Disabilities Act are called for. Some mixed-gender restrooms have also become drawing cards due to their unusual décor. At New York City's Bar 89, owners spent \$40,000 building five spacious individual restrooms that either gender can use. A transparent glass door encloses each restroom, and the toilet can be seen from the outside. Once the door is locked, though, the glass fills with a milky fog and the occupant is hidden from view. Nonetheless, such shared restrooms are still considered risks for most restaurant owners, because many individuals are likely to feel uncomfortable ("Gender" 2004).

Family restrooms are also slowly on the rise and are long overdue. Legislation for family restroom construction was passed in 2003 for those states that have adopted the 2003 *International Building Code*. Such legislation requires unisex restrooms for all newly constructed or renovated—when restrooms are added—assembly and retail spaces like malls, theaters, airports, and stadiums (Renner 2004; International Code Council 2003b). The building code's section 1108.21 requires such facilities with six or more male and female water closets to provide a unisex restroom. State potty parity requirements also boost the need for these types of restrooms, because they increase the number of toilets needed. In a recent article, "Facilities for Families," Renner (2004) distinguished unisex from family restrooms:

Unisex restrooms are single-user toilet rooms that can be used by either men or women—the term is more universal for code purposes. Family restrooms can have multiple unisex toilet rooms within them, but may also have space allocated for other amenities and often share a common hand-washing and diaper-changing area. In addition, upscale family facilities may include family lounges, private nursing rooms, and baby changing areas.

Some family restrooms double up child- and adult-height toilets, lavatories, and hand dryers. Family restrooms serve as selling points for commercial establishments and are even touted on Web sites such as for



FIGURE 3. Women's Restrooms at Carlsbad Factory Outlet Mall, Carlsbad, California

SOURCE: Kathryn H. Anthony.

NOTE: These women's restrooms feature an upscale décor with louvered doors on all toilet stalls and attractive tiled walls. Behind each toilet is a recessed shelf covered by guard rails to keep purses and shopping bags off the floor—a rare design feature that should be required elsewhere.

San Diego's Petco Park, home of the Padres baseball team; Pigeon Forge, home of Tennessee's Dollywood theme park; and the Minneapolis–St. Paul region's Mall of America, the largest shopping mall in the country.

Some state-of-the-art, family-friendly, and women-friendly restrooms can now be found at regional shopping centers. For instance, the women's restrooms at Carlsbad Factory Outlet Mall in Carlsbad, California, just north of San Diego, feature upscale amenities with louvered doors on all toilet stalls such as one might find at a luxury hotel. Inside each toilet stall is an attractive tiled wall. Behind each toilet is a wide, recessed shelf, covered by guardrails, to keep purses and shopping bags off the floor. Grab bars assist elderly persons and persons with disabilities (see figure 3). Market Place Mall in Champaign, Illinois, features family restrooms



FIGURE 4. Family Restrooms, Market Place Mall, Champaign, Illinois

SOURCE: Meghan Dufresne.

NOTE: Market Place Mall features family restrooms allowing family members to use the restroom at the same time—a necessity for parents or grandparents accompanying small children of the opposite gender, and an excellent response to the growing numbers of single-parent families. Family restrooms can be lifesavers for opposite-gender caregivers of the elderly, persons with Alzheimer’s, and those with other mental or physical disabilities.



FIGURE 5. Waiting Area, Market Place Mall, Champaign, Illinois

SOURCE: Meghan Dufresne.

NOTE: Market Place Mall also features an attractive waiting area adjacent to the men’s, women’s, and family restrooms, all of which receive heavy use.



FIGURE 6. Companion Care Toilets

SOURCE: Kathryn H. Anthony.

NOTE: Companion care toilets found at Chicago’s O’Hare Airport on the remodeled G concourse allow caregivers to accompany persons who need special assistance in the restroom.

that allow parents and children to use the restroom at the same time—an unusual convenience for parents accompanying small children of the opposite gender (see figure 4). It also features an attractive waiting area outside the family, men’s, and women’s restrooms (see figure 5).

Less luxurious, but equally functional, are the family companion care toilets recently constructed at airports. At Chicago’s O’Hare Airport, the first such facility opened on the E/F Concourse Apex in 2000, followed by one on the G Concourse in 2001 (see figure 6). As of January 2006, O’Hare had eight family companion care facilities. Three new facilities in Terminal 2 opened later in 2006, and another facility began construction in Terminal 3, scheduled to open in 2007 (Wendy Abrams, assistant commissioner, media relations, City of Chicago, Department of Aviation, personal correspondence, December 6, 2006). These can accommodate children and parents, as well as adults who require special assistance. By December 2005, Seattle’s Sea-Tac Airport renovated thirty-two restrooms, all of which now include family restrooms. Sea-Tac Airport’s new restrooms include baby-changing tables, touchless faucets, convenient bag shelves, attractive tile finishes, and Pacific Northwest artwork in glass and ceramic tiles. According to the Port of Seattle (2005), “[W]hen travelers are asked what most shapes their impression of an airport, the answer is always the same: its restrooms.”

Yet one can still ask, Why is it that family restrooms like these, sprouting up in airports catering

to upper- and middle-class visitors, are still missing from most transportation venues that serve less well-heeled travelers, like Amtrak train stations or Greyhound bus stations? Parents traveling with children on these forms of public transportation may be even more vulnerable to crime and theft. Parking an unattended baby stroller in a bus station restroom for only a few minutes may mean that by the time one exits the toilet stall, it has disappeared. Sadly, such public facilities are grossly underfunded and are much less likely than airports to receive allocations for these much-needed renovations.

Even some dreaded portable sanitation units, or porta-potties, are undergoing a design revolution. For example, the 2004 Colorado State Fair featured a sky-blue Charmin Ultra Potty Palooza, a 53-foot semi-trailer housing twenty-seven individual bathrooms featuring air conditioning, hardwood floors, running water, individual sinks, flushing toilets, scented air, a baby-changing station, and even a plasma television screen showing a "Charmin Video." A staff member cleaned up after each visitor (Vigil 2004). German artist Gerhard Bar and his group, Bar + Knell, designed recyclable porta-potties for the 2005 World Youth Day in Cologne, an event that drew about 1 million attendees, including the pope. Recognizing that toilets have always been places in which communication takes place, the artists completely covered both the outside and the inside of each of the 999 porta-potties with twelve different antismoking messages, including jarring photos of cancer-filled lungs and victims of throat cancer. Each porta-potty is foldable and can be installed and dismantled within just a few minutes. Bar stated that he views his mobile toilets as an interface among art, culture, and economy (Bar 2005).

TECHNOLOGICAL INVENTIONS

Various technological inventions have been under development, which address potty-privileging issues such as waiting time and cleanliness. Designers are creating new fixtures that relate better to female anatomy and clothing than do conventional toilets. The female urinal is among the most promising. In 1898, "urinettes" were installed in one lavatory in the United Kingdom on a trial basis, and they continued to be installed until the 1920s. They never gained widespread acceptance, however (Penner 2005). The urinette's design was similar to that of a toilet but narrower, it had a flushing rim in front of it, and it was concealed by a curtain instead of a door (Levinson 1999). In 2004, at one of Britain's major music festivals, Glastonbury, the "She-Pee," a pink fenced-off enclosure containing urinals for women only, was introduced.

There, women were provided with a P-mate, a cardboard prosthetic allowing them to urinate while standing up (Penner 2005).

In the United States, a female urinal was developed in the 1970s that was cleaner and neater than conventional toilets and reduced the cost of restroom maintenance. The problems with this fixture, called the Sanistand, however, were that it used eight gallons of water per flush, it was not able to handle bowel movements, it required some training to use, and it took up the same amount of space as a conventional toilet. An attempt was made again in the early 1990s by an American company, Urinette, which created an invention called the She-inal. Nonetheless, this too was problematic because it required women to press a communal funnel-like plastic piece against their genital area ("Does It Make Sense" 2000). Architects Sunil Bald and Yolande Daniels developed a FEMME pissoire, an ensemble installed in several locations between 1996 and 1998. It requires women to stand directly over a toilet bowl and direct their stream as men do. It comes with a pair of redesigned trousers including two flaps—one that opens conventionally, and another opening at the crotch—thus avoiding the dreaded "pants around the ankles" dilemma (National Building Museum 2000; Penner 2005). The National Aeronautics and Space Administration has developed a system that female astronauts can use to relieve themselves while standing up (Moore 2002). For a female urinal to be successful, it must be designed so that it is easily accessible, uses less water than a conventional toilet, and takes up much less space than a standard water closet.

It is possible for women to stand up and urinate and control their stream. One Web site explains this technique ("Restrooms of the Future" 2002), and a grandma's advice book for standing and urinating has sold more than 300,000 copies in the United States (Levinson 1999). Devices such as TravelMate are available to help women urinate on the go (e.g., when camping, when driving, or when there is no restroom available). These are soft, plastic, noninvasive urinal devices with optional two-foot sections of latex rubber tubing attached. The benefits of this device are that (1) women can avoid contact with public restroom surfaces, (2) it minimizes undressing, and (3) supposedly toilet paper isn't required (Travelmateinfo.com 2003). The drawback is that it is one more piece of baggage to transport.

Yet another relatively new product is Hygolet, a brand of plastic rotating protective toilet seat covers. Company owners hope that this invention will speed up queues for the ladies' room, reduce the amount of toilet paper that is used (i.e., that women use to cover



FIGURE 7. Electronic Sit-Down Public Toilets, Japan

SOURCE: Kathryn H. Anthony.

NOTE: Heated toilet seats that spray water to clean the genital area are surprisingly common in Japanese public restrooms. Some of the world's best public restrooms can be found in Japan.

the toilet seat), and reduce the amount of toilet paper that falls on the floor and needs to be cleaned up (Hygolet.com 2003).

Other inventions are beginning to address hygienic issues in public restrooms that can, in some cases, speed up lines. Many developing countries attempt to incorporate their customs and practices with the convenience of a Western toilet. Many new restrooms incorporate a "touchless" approach by using sensors and creating a mazelike entrance instead of having a bathroom door. Enclosed bathroom tissue and paper towel systems enable users to touch only the product that they will be using, reducing the potential for cross-contamination. Sensors are used for sinks to start the water flow and on toilets so that users don't have to touch the handle. New cleaning systems have been developed for housekeeping professionals to clean (power wash) without directly touching any surfaces. Ultimately, the less often a person touches restroom fixtures, the cleaner the restroom will stay (Clement 1999).

Although Asian squat toilets still dominate Japanese public restrooms, Western-style toilets are on the rise, many of which are far more sophisticated than those actually found in the West. Many electronic sit-down toilets can be found in public restrooms (see figure 7). The toilet seat includes a heater, a welcome feature during wintertime when restrooms remain unheated even in most private homes. The toilet also

features hydraulic jets that spray water at different strengths to clean the genital and anal areas, a feature that Kira (1976) found superior to toilet paper. The downside is that such toilets include only Japanese symbols, so if visitors do not know how to use them properly, they may be unable to stop the jet of water and end up being sprayed in the face if they turn around to face the toilet bowl (Wei 2003). By comparison, the *Chicago Tribune's* recent feature article, "Super Bowls," discussed the latest developments in American toilet design, but it focused mainly on water-saving abilities and nothing near as revolutionary as that found in Japan (Daniels 2004).

Automatic self-cleaning public toilets (APTs) are also becoming increasingly popular. They have been used often in Europe and are spreading to the United States as the high-tech version of what used to be the small-town comfort station. According to one report, as of 2001, more than 600 cities had APTs, including 750 in Singapore, 678 in London, and 500 in Athens (Webber 2001). American cities with APTs include Pittsburgh and Seattle. Pittsburgh's APTs were provided and installed free of charge by Clear Channel Adshel in exchange for advertising rights. The city receives a cut of the advertising and was expected to raise more than \$2 million a year from Adshel by the end of the ten-year contract. Visitors pay 25 cents to use them for up to twenty minutes (Fuoco 2003). After each use, the bathroom goes through a cleaning cycle by using high-pressure water jets and sanitizer (Bianchi 1992). Unlike porta-potties, these units are installed in fixed locations and require electrical, water, and sewer connections. They require occasional servicing but are unattended. Although they are more expensive to operate than porta-potties, they are far more desirable because they provide clean toilet seats and floors along with running water.

Another invention addressing problems outlined here is moveable restroom walls, which are especially useful when a large influx of people arrives at once. These walls can adapt to a greater number of men or women, depending on the gender mix of users at hand. If a line forms for the women's room with no wait for the men's, then walls can be moved to convert some men's toilets to the women's room. Architect Curt Fentress incorporated this feature into the Colorado Convention Center at Denver, built in 1990. When groups whose membership is primarily women—such as the Intravenous Nurses Society—hold their conventions, walls can be moved so that the women's rooms are three times larger than the men's. Conversely, when a group like the American Association of Petroleum Geologists arrives, the ratio can be reversed (Woo 1994).

PUBLIC RESTROOMS FOR THE TWENTY-FIRST CENTURY: SOME SOLUTIONS

Aside from increasing the number of states with potty parity laws, improving building and plumbing codes, and implementing technological innovations, what else can be done to address the gender and family restroom issues presented here? In addition, what role can planners play?

First and foremost, all those involved in the planning, design, and management of public restrooms must undergo a fundamental shift in attitude. In the United States, the trend in the latter part of the twentieth century has been to shut down public restrooms altogether. Ironically, though, with an increasing and more diverse population, the demand is greater than ever. We now need more of them, but in the form of newer and improved versions from what we knew before. As Greed (2003) has argued, instead of viewing restrooms as last priorities, places to cut costs, and mere public conveniences that waste space and fail to generate revenue, they must now be seen as opportunities that can enhance buildings and urban landscapes, making cities more livable. And, as in the case of APTs that allow advertising, they can even be money makers. In the twenty-first century, these former eyesores can become future assets.

Second, along these lines, traditional planning and design practices regarding restrooms must be reexamined and revised to reflect greater sensitivity to diverse gender and family needs. Public restrooms for men should eliminate trough-type urinals and inadequate urinal partitions that fail to provide adequate visual and auditory privacy, thus preventing boys and men from ridicule, bullying, and violence. Special restroom needs of women, who differ biologically from men due to menstruation, pregnancy, and motherhood, need to be taken into account. A woman having her period cannot afford to waste time hunting for the nearest restroom, lest she have an accident; she needs quick, safe access to public restrooms no matter where she may be. A baby whose diaper needs to be changed deserves a better environment than a germ-infested bathroom floor. Baby-changing stations located near sinks and trash cans must become standard fixtures. Built-in recessed shelving behind toilets allows purses and shopping bags to be safely stowed from filthy bathroom floors; the prototypes at California's Carlsbad Factory Outlet (see figure 3) should become standard features. Also, parents need to rest assured that by using a public restroom, their children are not in danger.

Third, to accommodate parents and grandparents with opposite-gender children and grandchildren, as well as caregivers of elderly persons or persons with disabilities, more free-standing companion-care, family-friendly, and unisex restrooms should be provided. Although family restrooms



FIGURE 8. Kellogg Park Comfort Station, La Jolla Shores, San Diego, California

SOURCE: Kathryn H. Anthony.

NOTE: These unisex restrooms at La Jolla Shores, one of San Diego's most popular public beaches, opened in 2005 after local citizens intervened in a highly controversial planning and design process. Through its environmental sensitivity and design in response to gender and family needs, it represents a new paradigm for public restrooms and a national prototype that should be emulated elsewhere.

are now required in some states for newly constructed or renovated assembly and retail spaces such as malls, theaters, airports, and stadiums, they should be required in all states, and they are also needed elsewhere. They should be mandated in places like large restaurants as well as bus and train stations not yet slated for major renovations. Even college campuses need them. Professors who bring their small children to campus need to find a convenient place to change and dispose of infants' diapers other than their office or a bathroom floor.

In venues with single-stall restrooms, such as a small restaurant with only one women's room and one men's room, a typical layout that disadvantages women, both restrooms should be transformed into free-standing unisex facilities. This can be easily accomplished simply by changing existing signage. By so doing, either no one waits or both women and men wait—but equally.

Fourth, planners and city officials should view free-standing, gender-neutral, unisex restrooms as potential cost savers compared to traditional gender-segregated design. When well planned, designed, managed, and maintained, they can save strapped city budgets considerable funds. Kellogg Park Comfort Station, opened in 2005, could serve as a national prototype (see figure 8). Located at

La Jolla Shores, one of San Diego, California's most popular swimming, surfing, and diving beaches with more than 2 to 3 million visitors annually, the new restroom replaced an aging 1960s building with separate men's and women's facilities at which long lines of women formed outside. It was replaced by two ADA/family restrooms with diaper-changing stations, along with nine unisex stalls directly entered from the outdoors, outdoor sinks, and six outdoor showers, each with foot showers, facing the ocean. The case proved highly controversial because city officials had initially approved a traditional design occupying a much larger footprint in valuable parkland, obstructing ocean views. Local resident Mary Coakley and local architect Dale Naegle, a fellow of the American Institute of Architects, intervened in the process, leading the effort to redesign, construct, and landscape the new facility (which will soon include a major work of art, a lithocrete map of the nearby underwater park and marine reserve). They collaborated with the nearby Scripps Institution of Oceanography, the Birch Aquarium, and local sculptors, artists, and landscape designers to turn this new restroom facility into an artistic showpiece, an educational resource, and a tourist attraction. The new unisex design resulted in a much smaller, more functional building that reduced long lines and better accommodates huge beach crowds. It also yielded a significant cost savings for the City of San Diego Park and Recreation Department (Mary Coakley, personal correspondence, August 16, 2005; see also American Restroom Association 2006).

Fifth, greater sensitivity is needed to the planning, design, and management of restrooms in different types of settings. The two types of restrooms discussed here, those in workplaces and schools and those in places of assembly, underscore special concerns. Each calls for a different approach. In workplaces and schools, proximity and cleanliness are critical. In places of assembly, eliminating lines for women is paramount.

Sixth, planners, designers, and building and plumbing code officials need to encourage creativity and innovation in restroom planning and design, and they must be more accepting of new technologies and modern-day culture. In the second author's architectural practice, a colleague designed four unisex toilet stalls along with a communal sink for men and women. Although nothing in the codes prohibited this design, code officials scoffed at the architect's proposal. Planners can also encourage design competitions, attractive public artwork, and rotating art exhibits in and around public restrooms to enhance users' experiences.

Seventh, planners can develop ordinances to ensure that public restrooms are safer and easier to find. In shopping

malls, for example, a trip to the restroom often requires traveling through a maze of empty hallways. Such long walks to dead-end corridors make restroom users potential targets for crime. They also make the trip to the restroom all the more stressful for the elderly, parents with small children, and persons with disabilities. Planners can pick up where architects leave off. Although architects may design accessible restrooms that technically meet ADA requirements, planners can develop guidelines requiring that architects design routes to restrooms that are easy to find and safe to use. The increasing aging population underscores the need for clear and well-defined way-finding systems in public restrooms.

Eighth, planners can develop specific procedures for responding to and acting on complaints about problems in public restrooms. It is often unclear exactly who is in charge, whether it be the building manager, public health department, or some other agency. What is the mechanism for responding, and who is accountable?

Ninth, following the lead of Beijing, planners in high-density cities throughout the United States and around the world could develop ordinances and institute similar policies requiring that public toilets be no more than an eight-minute walk away. Depending on the level of density, planners can establish what should be the appropriate distance between restrooms. Following the lead of Australia, American federal, state, or city officials should publish and post maps, both in hard copy and on the Internet, indicating specific locations at which public restrooms can be found. The need for available public restrooms that are clean, safe, and well designed cuts across all cultural boundaries. Just as China's and Australia's citizens need public toilets, so too do citizens of New York City, Chicago, and San Francisco.

Tenth, on a broader scale, the federal government should provide funds to construct, staff, manage, and maintain public restrooms throughout the nation's major cities. A new Public Restroom Administration (PRA) could be established, modeled after the Works Progress Administration (WPA) begun in 1935 to provide economic relief to citizens reeling from the Depression. In cities with widespread layoffs and high unemployment rates, this is one way of putting massive numbers of Americans back to work. Employing paid attendants will help make these new facilities more attractive and safe, just as they are in Shanghai. With some creativity, artistic talent, and imagination, they can even become tourist attractions.

In addition, the federal government, private corporations, and philanthropic entities must support organizations that seek to improve the nation's restrooms. One reason why international organizations such as the

Japan Toilet Association (JTA) and other members of the World Toilet Organization (WTO), especially in Asia, have been so successful in initiating change in a relatively short time is that they receive government support. By contrast, the American Restroom Association is currently an all-volunteer, privately funded organization. As such, its ability to effect widespread improvement is limited.

Lastly, restroom planning and design should be incorporated into the curricula of architecture, planning, facility management, and public administration programs. One way to ensure this is to incorporate it as a criterion for accreditation so that outside evaluators can assess the extent to which it is covered. For example, planners write and evaluate codes, and planning educators conduct research to guide the development of such codes. Just as students in environmental and urban design are increasingly exposed to new urbanism, traffic calming, universal design, and sustainability, they should now be exposed to the importance of public restrooms in the urban landscape—and their yet unrealized potential.

FUTURE RESEARCH

Regarding the role of public restrooms in the twenty-first century, now is the time for experimentation and reexamination of research issues raised here. Some new directions for future research include the following.

To what extent does the need for available public restrooms conflict with national security issues? For example, the Washington Metro public restrooms were closed after the terrorist attacks of September 11, 2001, yet reopened after public protests from local citizens' organizations, including Metroped. As of January 2006, however, restrooms are only available for "emergencies" for children, the elderly, and those with physical disabilities. Several groups argue that these policies violate state commercial building codes. A 2005 survey found that a majority of station managers denied visitors access to restrooms without justification (Metroped 2006; Rupert 2006; for more on the controversy, see Layton 2002). How can restrooms be both available and secure from terrorists?

Exactly under what circumstances and where should the public be allowed to use restrooms? The story of a Rochester, New Hampshire, woman who was denied access to an "employee-only" restroom in a Salvation Army thrift store was reported in a *Wall Street Journal* article (Bounds 2005). Unable to find another accommodation in time, the shopper had an accident in the store. Police were called to the scene, and the state's building inspector later informed the Salvation Army that

according to state code, merchants located in spaces built since the early 1980s, or brought up to code in the meantime, must provide customers and visitors with restroom access or face up to a \$1,200 fine. Many U.S. merchants unwittingly violate plumbing codes adopted in most states that require customer access to restrooms in mercantile and business spaces. How can these codes be properly enforced to prevent future accidents for both adults and children? To what extent does the need for available public restrooms conflict with the safety and security of small business owners?

In states and municipalities with new potty parity laws in effect, how effective are they? What are the new average wait times for men and women in major places of assembly, like stadiums and theaters? Which ratios are most effective in reducing or eliminating lines? What other building types not yet covered by new potty parity laws may merit them in the future? How about restaurants and clubs, at which lines for ladies' rooms are still problematic? How should the appropriate sex ratio of facilities for different types of venues be determined?

What are the most effective ways for groups to achieve parity? Which action is more worthwhile, passing more potty parity laws or revising building codes? As we have demonstrated here, potty parity laws are subject to backlash, and building codes are not universally adopted. How could lessons from the American experience with potty parity be adapted in other countries that still discriminate against women with pay toilets and long lines for ladies' rooms? How do ethnic and cultural differences come into play?

What are the special needs of parents with young children, and how well or poorly are they met in today's public restrooms? How adequate are these spaces for changing diapers and breast-feeding? When parents use handicapped stalls for diaper changing or assisting small children, to what extent does this force persons with disabilities to wait in line? How effective are the new family and companion-care restrooms? Where else are they needed?

What are the potential roles of public restroom attendants? Although they may pose problems for men with paruresis, they may help women feel safer. Large, new public restrooms in Shanghai feature restroom attendants who keep them clean and safe. Were this to be standard practice in the United States, could restrooms be transformed from dreaded spaces into pleasant places?

How do men and women react to gender-neutral or unisex facilities? To what extent do women and men mind sharing toilets and/or sinks? Is gender segregation still necessary? For example, in highly populated but restrictive environments such as airplanes, trains, and buses, restrooms have always been unisex.

CONCLUSION

Whether we want to or not, we must visit restrooms several times a day. Women and men, girls and boys, of every ethnic background and every social role all use them. Virtually every building type, whether it is a school, office, hospital, hotel, or shopping center, must have them. In fact, they are among the most prevalent spaces in our built environment—and places that affect us all.

As we have shown, because of thoughtless design decisions, uninformed by women users, clients, code officials, planners, and designers, millions of women, men, and children around the world suffer from unavailable, unsafe, poorly designed, and poorly maintained restrooms. As increasing numbers of women infiltrate the design and building construction professions, and as more women legislators enter the political system, women's restrooms have gradually begun to improve. Compared to the sweeping changes prompted by the Americans with Disabilities Act that benefited persons with disabilities, however, changes benefiting women and families have been achieved at a snail's pace. Most public restrooms still remain woefully inadequate for women's special needs—menstruation, pregnancy, and breast-feeding—and men's basic needs for privacy.

Pioneering efforts are already underway to improve public restrooms in some of Asia's largest cities. Why can't they happen in the United States? If today's public restrooms are a reflection of our culture and civilization, the United States' restrooms still have a long way to go. At present, they reflect a Darwinian philosophy of survival of the fittest rather than one that promotes the public good.

Gender and family issues in public restrooms must no longer be cloaked under the guise of modesty. They can no longer continue to be swept under the rug, as they have been for so long. Perhaps because they serve as public settings for our most private behavior, public restrooms remain a taboo topic, often the butt of jokes, but rarely the topic for serious discussion and political action. The twenty-first century is the time for that to change, an opportunity to both reignite old issues and launch new initiatives. Visionary planners, architects, building construction officials, and legislators around the world must usher in a new era of more sensitive restroom planning, policy, and design that will benefit all of us. In sum, to respond to the nation's changing demographics and to better meet family needs that have been ignored for far too long, public restrooms must become more plentiful, diverse, and available than they are today. A new paradigm is needed and is long overdue. For using the restroom is a right, not a privilege, which we all deserve.

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