

APPENDIX H

Bibliography

H.1 Summary

Rather than a traditional bibliography format, resources are listed by category to speed the location of information on a specific subject. These include all aspects of airport restrooms and amenities, both within the space and leading to them, and encompass fixtures, materials, systems, and operations. While the research team was able to find information on nearly every topic sought, it was not surprising to find that a comprehensive resource specifically for airport restroom and amenity spaces did not exist. The assumption of need for this guidebook was confirmed. Resources are separated for restrooms and for amenities.

H.2 Restrooms Resources

Sociopsychological

There are two “must read” books if you want an in depth of how people use and respond to public restrooms. At the top of the list below is “The Bathroom” and “Toilet.” The late architect, Alexander Kyra, first wrote the academic treatise, “The Bathroom” at Cornell University in 1966. The focus was originally on residential bathrooms but in 1976 section on public restrooms and how bathrooms are used by people with disabilities were added. The hard to find book is an unparalleled resource including the history of personal hygiene facilities, social and psychological aspects of using bathrooms, and how we use them anatomically and physiologically. Many frustrations with restroom fixtures and accessories might be minimized if product developers read this book.

Molotch and Noren’s book “Toilet” is a collection of largely academic essays on a variety of aspects of public restrooms. It’s a great accounting of the evolution and often revolution of public restrooms, a process that continues today, perhaps even with this guidebook, especially in regards to gender and access.

- Alexander Kira, “The Bathroom – Criteria for Design,” revised 1976.
- gutsytraveler.com, “Women Travel Statistics Explained by Travel Expert,” February 2013, <http://gutsytraveler.com/women-travel-statistics-2/>.
- Harvey Molotch, Laurfen Noren, “Toilet: Public Restrooms and the Politics of Sharing,” 2010.
- Kathryn H. Anthony, “A Quiet Revolution: Women’s Public Restrooms in America,” *bathroom today*, May – September 2006.
- Kathryn H. Anthony and Meghan Dufresne, “Potty Parity in perspective: Gender and Family Issues in Ngee Ann Polytechnic’s School of Business and Accountancy, “Toilet Survey Study,” 2011.
- Planning and Designing Restrooms.
- renewamerica.com, “Airport Toilets, Suitcases, Homosexual Signals, and the Law,” Mary Mostert, August 29, 2007.
- refugerrestrooms.org, Web application that seeks to provide safe restroom access for transgender, intersex, and gender nonconforming individuals.
- Students of Dept. of Social Work, P.G. College, Osmania University, Secunderabad, “Why Women Don’t Use Public Toilets,” 2006.
- ustravel.org, “Travel Facts and Statistics,” posted May 2013, <http://www.ustravel.org/news/press-kit/travel-facts-and-statistics>
- Ventura County Airports, “Required Minimum Standards for Aeronautical Services,” March 2006.
- wikipedia.org/wiki/Toilet_paper_orientation, Toilet paper Orientation.”

Customer Service

For a comprehensive study people's attitudes toward airport restrooms, another "must read" document is the 2008 study by AIR, "In Search of the Perfect Restroom." The group works with 40 airports worldwide and conducted a survey of travelers, meeter/greeters/well-wishers, and vendor employees for both airports and airlines. The survey results consist of representative comments from the participants regarding the major components of airport restrooms such as signage, stalls, lighting, odors and noise, etc.

- Airport Interviewing and Research, Inc., "In Search of the Perfect Restroom," 2008.
- Airports Council International (ACI), Airport Service Quality (ASQ) Survey.
- "Busy US Airports Are Rated for Longest Walks, Bathrooms," The Wall Street Journal, January 21, 2001.

Codes

There are three building codes that restrooms must follow. The two fundamental codes are listed below. The third is the local building code, whether state or municipality, which may amend the two below or reference one of the older building codes still in existence. Mechanical and electrical codes are cited in those sections below.

- American National Standards Institute (ANSI) a117.1, 2003 (2009 published but not universally adopted yet)
- International Code Council, "International Building Code," 2012.
- International Code Council, "International Existing Building Code," 2012.

Planning

The resources that follow encompass Airport Terminal Planning as a whole. Sections within these sources only briefly, if at all, discuss the topic of restroom planning and design. See the "Guidelines/Standards" section for more detailed information which specifically pertains to restrooms.

- Airport Cooperative Research Program (ACRP), "ACRP 25 – Airport Passenger Terminal Planning and Design," 2010.
- Federal Aviation Authority (FAA), "FAA AC 150-5300-13," 1988.
- Norman Ashford, Saleh Mumayiz, Paul H. Wright, "Airport Engineering: Planning, Design and Development of 21st Century Airports," 2011.
- Richard de Neufville, Amedeo Odoni, "Airport Systems: Planning, Design, and Management," 2003.
- Robert Horonjeff, Francis MvKelvey, William Sproule, Seth Young, "Planning and Design of Airports, Fifth Edition," 2010.
- Seth Young, Alexander Wells, "Airport Planning and Management," 2011.
- US Customs and Border Protection (CBP), Airport Technical Design Standards Passenger Processing Facilities, 2006.
- <https://www.rsph.org.uk/uploads/assets/uploaded/e6cda5d7-bc38-4479-9a517703c22b1316.pdf>, "Taking the P***," Royal Society for Public Health, May 2019.

Guidelines and Standards

While there are only a few, the design standards and guidelines by some of the larger airports provide an excellent basis for an airport to develop its own standards. The scope is typically comprehensive, thorough, and the products well vetted. The standards published by the Los Angeles World Airports (LAWA) and Dallas-Fort Worth International Airport (DFW) are probably the most well-established. Other airport guidelines are provided below as well as standards from government agencies. A draft guideline by the ICC is listed and has an intriguing scope, however the material is primarily distillation of the ICC building code requirements.

- City of Dallas Airport System, "Design Standards Manual," October 2009.
- Dallas/Ft. Worth International Airport, Planning & Real Estate Department, "Guidelines for Public Terminal Toilets. September 2003.
- Federal Aviation Administration, "Airport Design," advisory circular, September 29, 1989.
- Fort Lauderdale-Hollywood International Airport, Broward County Aviation Department, "Terminal Design Guidelines Manual," April 2012.
- International Code Council (ICC), "Global Guideline for Practical Public Toilet Design - DRAFT," 2011.
- Los Angeles World Airports, Construction and Maintenance Division and Maintenance Division, "LAWA Public Restroom Design Guidelines and Specifications," July 2008.
- Port of Portland, "Terminal Design Standards," November 2010.
- Salt Lake City Department of Airports, "Fixture and Finish Standards," March 1, 2013.

- U.S. Department of Homeland Security and U.S. Customs and Border Protection, “Airport Technical Design Standards – Passenger Processing Facilities,” August 2006.
- Washington Dulles International Airport, Metropolitan Washington Airports Authority, “Airport Design Standards and Signing Guidelines,” IAD Volume 2, January 2010.

Design

There are few resources that focus specifically on airport restrooms, but there are many books, articles, and websites devoted to public restrooms in general. A great organization is the American Restroom Association with numerous resources on public restroom design, initiatives, regulations, guidelines, etc. FacilitiesNet is another useful resource for articles on a wide variety of facilities-related topics including restrooms. Many of the citations below provide detailed insights into particular aspects of the restroom while other articles and books are more oriented to glossy photos, which can be invaluable for generating ideas.

- Alexander Kira, “The Bathroom,” revised 1976.
- American Restroom Association, “Public Restroom Design Issues,” posted 2013.
- apa.org/monitor/2013/11/cover-design.aspx, “Design in Mind,” November 2013.
- Britloos.co.uk, British Toilet Association.
- CC Sullivan and Barbara Horwitz-Bennett, “Commercial Restrooms That Work Right,” *Building Design + Construction*, November 2008.
- cnbc.com, “Best public bathrooms: Where to go when you’re on the go,” Harriet Baskas, www.cnbc.com/id/101085041/page/4
- Cristina del Valle Schuster, “Public Toilet Design: From Hotels, Bars, Restaurants, Civic Buildings and Businesses Worldwide,” 2005.
- DAAB Media, “Restroom Design,” 2008.
- Dr. Clara Reed, “A Code of Practice for Public Toilets in Britain,” University of the West of England.
- dimensionsinfo.com, “Dimension of a Restroom,” 2013.
- educatedguesswork.org, “Why Do Airport Bathroom Stalls Open Inward?” October 2012.
- facilitiesnet.com, “High Traffic Restroom Design,” Lynn Proctor Windle, January 2005.
- facilitiesnet.com, “Restroom Choices Guided by Experience in Health care Facilities,” April 1, 2013.
- facilitiesnet.com, “Restroom Design – Updates, Tips, Insights, Strategies, Best Practices,” posted 2013, www.facilitiesnet.com/keywords/keywords.asp?keywords=restroom%20design#.
- Gilbert Consulting Pty Ltd with Bayside Staff and Contractors, “Bayside Public Toilet Strategy,” 2012.
- Hedy Khoo, “Our Toilets are Top-notch,” *The New Paper*, June 22, 2009.
- helium.com, “Airport Restrooms,” Posted October 17, 2009, <http://www.helium.com/items/702416-airport-restrooms>.
- Jennifer Hudson, “Restroom: Contemporary Design,” 2008.
- nbcnews.com, “Fresh amenities for pooped out travelers,” Harriet Baskas, October 2, 2008, www.nbcnews.com/id/26962159/#.UmWTV_msim4
- npr.org, “Cincinnati’s Airport: Best in the US?” Brian Naylor, September 2, 2013.
- philly.com, “Philadelphia Airport Starting to Upgrade Its Many Bathrooms.” Posted March 25, 2013. www.articles.philly.com/2013-03-25/business/37983917_1_bathrooms-ceramic-tiles-city-owned-airport.
- Relief Works, “Going Public! Strategies for Meeting Public Restroom Need in Portland’s Central City,” 2006.
- shoppingandflying.blogspot.com, “Fresh Restroom Design Solutions for Airports,” November 10, 2008.
- uclue.com, “Question: Bathroom Stalls,” posted November 29, 2009.
- Virginia A. Green, “Designing Public Restrooms: Privacy is in the Details,” *Architectural Record*, November 2003.
- answers.yahoo.com, “Best Restroom at LAX Airport,” posted 2011, answers.yahoo.com/question/index?qid=20110701000855AAi1fWb.

Passenger Comfort

Many aspects of public restrooms cause unease: the perception of being unclean equals rampant germs; privacy also means potentially unsafe, lines to get in after delayed deplaning, etc. There has been a rise of articles and blogs devoted to praises and rants about experiences in public restrooms, even those in airports. Below is a sampling.

- American Restroom Association, “Plight of Airline Passengers,” posted 2002.
- Concur, “Concur Study Reveals Most Stressful Airports in U.S.,” November 14, 2012.

- ehow.com, “How to Minimize Germs While Using Public Restrooms.”
- ehow.com, “How to Protect Yourself from Germs in Public Restrooms.”
- ehow.com, “How to Stay Safe in a Public Restroom.”
- ichelp.com, “Public Restrooms & Travel Tips,” posted October 23, 2010.
- joewrites.com, “The Meltdown,” posted June 9, 2012.
- lifetips.com, “Public Restroom regulations Tips,” 2013Phc News, “Unappealing restrooms discourage hand washing, drive consumers to other facilities,” 2010.
- Places2poop.tumblr.com, “Pooping in Airports,” posted May 20, 2013.
- Tracey Greenstein, “How Facebook is Shaping Your 2012 Travel Decisions,” *Forbes*, July 6, 2012.

Accessibility

The Americans with Disabilities Act remains the core design standard for providing unhindered access to facilities to people with disabilities. The American National Standards Institute ANSI a117.1 is the document that codifies the ADA legislation, which most building codes use as a basis. Remember to verify amendments that local codes may have adopted. As with all building codes, ANSI a117.1 is the minimum requirement. Every disability has unique needs that often go beyond the minimum and sometimes conflicts with the needs of other disabilities. The resources below provide a starting point for further study.

- "Airport Cooperative Research Program (ACRP), "ACRP 51 – Impacts of Aging Travelers on Airports," 2014.
- Alexander Kira, “The Bathroom,” revised 1976.
- American National Standards Institute (ANSI) a117.1, 2003 (2009 published but not universally adopted yet)
- Americans with Disabilities Act, “ADA Standards for Accessible Design,” 2010.
- Association for Airline Passenger Rights. “Air Carrier Access Act of 1986,” 1986.
- cae.org.uk/itaaltransfer.html, “How Do Wheelchair Users Transfer To and From the WC?”
- crs.gov, “Overview of the Air Carrier Access Act,” 2009.
- disabilitytravel.com/airlines/air_carrier_act_details.htm, “Accessible Journeys – Making the World More Accessible | Details of the Air Carrier Access Act.”
- dot.gov, “Answers to Frequently Asked Questions Concerning Air Travel of People with Disabilities Under the Amended Air Carrier Access Act Regulation,” 2009.
- flyfriendlyskies.com, “Briefing on new European legislation that gives greater rights to air passengers with disabilities or reduced mobility.”
- flyfriendlyskies.com, “DOT Technical Assistance on ADA Regulations for Service Animals and Mobility Devices.”
- flying-with-disability.org, “Flying with a Wheelchair & Other Mobility Aids.”
- gimpgear.us/travel.htm, “Broadened Horizons.”
- Robert Dupuy, Greg Guarnaccia, Eunice Noell-Waggoner, “Lighting, Low Vision & Building Codes,” National Institute of Building Sciences Low Vision Design Symposium, January 10, 2013
- skift.com/2014/04/04/industry-experts-consider-new-standards-to-ease-challenges-for-disabled-travelers/, “Industry Experts Consider New Standard to Ease Challenges for Disabled Travelers.”
- travel.cnn.com, “Disabled but Not Deterred: How to Travel When the Industry Doesn’t Want Me To,” Rob Cossan, January 24, 2013.
- tsa.gov/travelers/airtravel/specialneeds/editorial_1909.shtm, “TSA - Military Severely Injured Program.”
- unitedspinal.org/publications/action/2006/05/01/guidance-for-group-travelers-with-disabilities/, “Guidance for Group Travelers with Disabilities,” 2006.

Surfaces

There are numerous standards organizations that regulate the manufacturer of the products that end up in restrooms – ASTM, ISO, ANSI, etc. But the best starting point to understanding the properties, installation methods, and maintenance requirements for floor, wall, ceiling, and counter products are the professional associations specific to those materials. The primary organizations for products typically used in restrooms are listed below.

- Metalwork: National Association of Architectural Metal Manufacturers (NAAMM)
- Stainless Steel: International Stainless Steel Forum (ISSF)
- Millwork: Architectural Woodwork Institute (AWI)
- Solid Surfacing: ICPA Solid Surface Council

- Metal Doors: Hollow Metal Manufacturers Association (HMMA)
- Door Hardware: Door Hardware Institute (DHI)
- Glazing: Glass Association of North America (GANA)
- Veneer Plaster and Gypsum Board: Gypsum Association
- Tile: Tile Council of America
- Acoustic Ceilings: Ceilings and Interior Systems Construction Association (CISCA)
- Epoxy Terrazzo: The National Terrazzo and Mosaic Association (NTMA)
- Signage: International Sign Association (ISA)
- Stall Partitions: American Restroom Association

Plumbing

Plumbing is what makes our modern day restrooms operate. The plumbing of a public restroom includes the following: toilets, urinals, sinks, soap dispensers, floor drains, and piping to each of those. There are many advances in plumbing fixtures to reduce water usage while remaining sanitary. The more touchless the bathroom, the less likely is the transfer of germs. Automated systems include flush valves, dual flush valves, self-cleaning toilet seats, faucets, and soap dispensers. Another plumbing improvement in public restrooms is the electric tank-less water heater. These provide warm water immediately while using less power and reducing water usage. The American Disabilities Act provides standards for all plumbing fixtures. Also, a public restroom must comply with the International Building Codes.

- CC Sullivan and Barbara Horwitz-Bennett, “Commercial Restrooms That Work Right,” *Building Design + Construction*, November 2008.
- International Code Council, “International Building Code,” Section 2902 - Minimum Plumbing Facilities, 2012.
- International Code Council, “International Plumbing Code,” 2012.
- John A. Clark, “Commercial Restroom Design Considerations,” *Plumbing Engineer*, October 2013.
- John A. Clark, “It’s the Little Things that Count in Good Plumbing System Designs,” *Plumbing Engineer*, November 2012.
- Kevin Ruppelt, “Water Heating for Commercial Buildings,” *Coalition for Energy Efficient Electric Tankless Water Heaters*, August 2010.
- Kris Alderson, “Today’s Commercial Restroom Design Trends Speak to User Wants and Needs,” *Bradley Corporation*, September 2012.
- Michael Ivanovich, “Lean, Clean Restroom Machines,” *HPAC Engineering*, April 2003.
- Mark Knurek, “Recreational Restrooms: Take Your Cues from some of the Best Restrooms in the Sporting World,” *Plumbing Engineer*, October 2012.
- “Planning Guide for Accessible Restrooms,” *Bobrick*, September 2010.
- “Public Restroom Design Issues,” *American Restroom Association*, March 2005.
- Vivian V. Enriquez, “Designing Smart Restrooms,” *CSE Mag*, June 2011.
- Winston Huff, “Plumbing Engineering,” *WBDG*, July 2010.

Heating, Ventilating, and Air Conditioning

Heating, ventilating, and air conditioning of public restrooms are key to making them comfortable and odor-free. There are numerous air freshening systems that can be installed inside and outside to help freshen the area. A public restroom must comply with the International Building Codes.

- CC Sullivan and Barbara Horwitz-Bennett, “Commercial Restrooms That Work Right,” *Building Design + Construction*, November 2008.
- Greenheck Fan Corporation, “Fans Provide Energy-Efficient and Low-Maintenance Way to Exhaust Air,” *HPAC Engineering*, April 2013.
- International Code Council, “International Mechanical Code,” 2012.
- Prolitec Advanced Air Treatment Systems, “Case Study: Airport Restroom Odor Remediation,” 2012.

Electrical

Power requirements for restrooms may not seem like a big item, however, safety and convenience are essential to the user’s experience, from providing outlets for maintenance to additional outlets for travelers adjacent to mirrors and make-up counters. Power is also required for the mechanical equipment, powered accessories, and is integral with

the technology systems incorporated into the restrooms. The codes below provide guidelines for working in “wet” spaces and low voltage systems.

- International Code Council, “International Electrical Code,” 2012.
- NFPA 70, National Electrical Code, 2011.
- Stuckattheairport.com, “Posh Public Potties in Airports, Hotels & Parks,” October 6, 2013.

Lighting

Lighting has a powerful effect on the traveler’s experience, setting the overall mood of the space, even adding to the perception of cleanliness. Occupancy sensors and daylight controls can provide energy savings. The IES reference listed below provides the industry’s technical standards and guidelines to provide effective and efficient lighting.

- Illumination Engineering Society (IES), “Lighting for Common Applications – Toilets/Locker Rooms,” 10th Edition.
- Lightolier, “Bath: What to Light & How to Light It.”
- US Customs and Border Protection (CBP) Security Policy & Procedures Handbook, 2009.

Technology

Resources for integrating technology with restrooms are limited but growing as new technologies are developed. The majority of resources are focused on customer service instead of technology within the restroom itself. The technologies that provide increased customer service include mobile applications for locating restrooms, providing feedback on restroom facilities, or delivering messages to customers from the restroom mirrors. Most information available is provided by the application vendors as little is available from independent sources.

- Conversation.net, “There is a QR Code in a Public Toilet Near You,” J-P De Clerck, August 22, 2011.
- Decorushospitality.com – mirror TVs, <http://www.decorushospitality.com/spasalonmirrortv.cfm>
- Hannah Chanpong, “O’Hare Bathrooms Getting Mirror Ads,” January 21, 2011.
- pcmag.com, “The Bathroom of the Future,” Meredith Popolo, posted January 26, 2013, <http://www.pcmag.com/slideshow/story/307325/the-bathroom-of-the-future/5>.
- publicrestrooms.lifetips.com/cat/61825/automatic-hand-dryer-tips/index.html, “Affordable Hand Dryer.”
- sitorsquat.com—app for finding clean public restrooms
- stuckattheairport.com, “Rate the Bathroom at Singapore’s Changi Airport,” Harriet Baskas, posted January 24, 2012.
- Toiletocity by thebathroomdiaries.com – app for finding clean public restrooms

Sustainability

The LEED program run by the USGBC is the grand parent of the sustainability movement. Its list of initiatives is a great place to look for ideas that can be applied in restrooms. Numerous other resources exist, such as the two listed below, that provide links to green product manufacturers and guidelines for greener construction.

- Green Building Initiative (GBI).
- Green Building Pages.
- US Green Building Council (USGBC), Leadership in Energy & Environmental Design (LEED) program.
- wbdg.org/ccb/GREEN/REPORTS/cgrtissuesetowel.pdf, Green Seal’s Choose Green report, “Bathroom Tissue and Paper Towels.”

Cleaning

Restrooms in airports are among the most intensely cleaned in our built environment, often cleaned several times a day. A clean restroom is inviting and comforting to travelers, while restrooms that are improperly cleaned can cut years from the life of the materials. Ideally every airport should have a Standard Operating procedure (SOP) for cleaning such as the example from Blue Grass Airport included in the Case Studies section. The American Restroom Association has a numerous resources to guide in the development of such a manual as does Clean Link.

- American Restroom Association, “Air Travel Restrooms and Cleaning Rates,” 2006.
- bsmmag.com/Main/Articles/2011/03/Image%20Enhancement.htm, Building Services Management, “Best Practices for Maintaining Clean restrooms, Infection prevention.”
- cintas.com/FacilityServices/Press-Releases/Cintas-White-Paper-Showcases-Strategies-Becoming-Americas-Best-Restroom.aspx, “Cintas White Paper Showcases Strategies for Becoming America’s Best Restroom,” September 2012.

- cleanlink.com, “The Professional Cleaning Industry’s Online Resource.”
- facilitiesnet.com/keywords/keywords.asp?keywords=housekeeping#, “Housekeeping – Updates, Tips, Insights, Strategies, Best Practices.”
- Gary Stoller, “Airport Restrooms: When and How Often They’re Cleaned,” *USA Today*, 2011.
- Wetton Cleaning Services Limited, “Brighton & Hove Public Toilets Questionnaire,” 2012.

Maintenance

As with cleaning, keeping fixtures and accessories in good working order will add years to the life of the products and minimize the frustrations of visitors who encounter broken or faulty equipment.

- app2.nea.gov.sg/docs/default-source/training-knowledge-hub/a-guide-to-better-public-toilet-design-and-maintenance.pdf?sfvrsn=0, “A Guide to Better Public Toilet Design and Maintenance,” Restroom Association (Singapore).
- eere.energy.gov/femp/program/waterefficiency_bmp6.html, “Best Management Practices: Toilets and Urinals.”
 - a. Los Angeles World Airports, Construction and Maintenance Division and Maintenance Division, “LAWA Public Restroom Design Guidelines and Specifications,” July 2008.

Terminology and History

What do we call these rooms where we use the toilet, wash, bath (at home anyway). Do we really rest there? It seems every English speaking country has its own favorite. “Restroom” appears to be the norm in the US. The Canadians are fairly protective of the term “washroom,” and the Brits are fond of “loo.” In this guidebook, we have opted for the contextual norm and use “restroom.” If you are curious about the etymology of these terms, the following resources provide some interesting insight.

- Alexander Kira, “The Bathroom – Criteria for Design,” revised 1976.
- English Language & Usage, “Washroom, Restroom, Bathroom, Lavatory, Toilet, or Toilet Room,” posted September 2011, <http://english.stackexchange.com/questions/8281/washroom-restroom-bathroom-lavatory-toilet-or-toilet-room>.
- Harvey Molotch, Laurfen Noren, “Toilet: Public Restrooms and the Politics of Sharing,” 2010.
- ideafinder.com/history/inventions/papertowel.htm, “Paper Towels.”
- wikipedia.org, “Toilet,” May 2013.

H.3 Amenities Resources

Ablution

This space accommodates the Muslim ritual of foot washing. It is preferably in a dedicated space adjacent to a restroom and worship space.

- Mokhtar, A., “Architectural Design Standards for Muslim Prayer Facilities in Airports.”2010.
- <https://archnet.org/system/publications/contents/5190/original/DPC1927.pdf?1384788706>, Information on ablution spaces.
- <https://studentcenters.gmu.edu/foor-washing-stations/>, “Foot-Washing Stations in Student Centers Restrooms,” June 2017.
- <https://campus-climate.umn.edu/content/three-multi-use-facilities-now-available-foot-washing>, “Three multi-use facilities now available for foot washing,” April 2018.
- <http://www.statepress.com/article/2017/10/spcampus-new-foot-baths-display-religious-accommodations-on-campus>, “Memorial Union renovations feature foot baths for religious students,” October 2017.
- site.bradleycorp.com/aboutus/pressrelease/107, “Bradley Introduces Ablution Cleansing System Design with Soothing, Efficient and Customizable Flow of Water,” October 2014
- [Link.springer.com/chapter/10.1007%2F978-981-10-0237-3-48](http://link.springer.com/chapter/10.1007%2F978-981-10-0237-3-48), “Ablution Design: The Concepts and Design Criteria,” March 2016.

Changing Table Restroom

This space is intended for any person who typically wears a diaper or similar garment that requires periodic changing, not just adults. While a baby changing table will accommodate an infant and a small toddler, the table in this type of space can accommodate most adults. In addition to a toilet and lavatory, the space provides an electronic,

height adjustable changing table accompanied with features such as a hoist, handheld shower head for cleaning, and privacy curtain. It is essentially a larger version of the Companion Care Restroom.

- <https://www.lifemattersmedia.org/2017/05/airports-install-adult-changing-tables-aid-caregivers/>, “Airports Install Adult Changing Tables to Air Caregivers,” May 2017.
- https://marylandaviation.com/_media/client/doingbusinesswithmaa/construction/2015/2015%20DST-03,%20Section%2011.8.4%20Adult%20Changing%20Rooms_20150807.pdf, Supplement to Supplement 2015-03 to the MAA Design Standards Manual indicating Adult Change Room design standards, August 2015.
- Changingplaces.org.au, Website for organization for changing spaces for all people,
- https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB662, Assembly Bill No. 662, Chapter 742, October 2015.

Children’s Play Area

Children who are traveling often must endure long stretches of waiting and sitting in cramped seats and spaces. A lot of energy is pent up and needs release. Many airports, especially larger ones with more space, are providing one or more play areas to engage families. These often contain larger play structures for climbing and sliding, and sometimes offer other attractions, like aquariums.

- <https://www.flipkey.com/blog/2013/04/25/stuck-in-the-airport-with-kids-top-10-u-s-airports-for-long-layovers/>, “Stuck in the Airport with Kids: Top U.S. Airports for Long Layovers,” April 2013

Companion Care

This is the room with many names. In addition to the one above, they have been and/or are called Family, Unisex, All-gender, Handicap, Accessible, and Special Needs; all of which focus on a physical attribute or who is traveling with them. The implications of the room name are subtle and significant and will be a topic covered in this guidebook. These spaces offer a variety of accommodations that typically include lavatory and baby changing space but can sometimes include an adult and child’s toilet or seating for companions. Data on locations and quantities of these spaces in airports is scarce, especially in the US where they have become an expectation in all public spaces. In addition, these spaces are almost always collocated within the Men’s and Women’s restroom block. The 2015 International Building Code now allows the fixtures in these spaces to be included in the male or female plumbing count in assembly and mercantile occupancies. Airports are Assembly occupancies.

- <https://twincities.citymomsblog.com/open-letter-to-the-man-using-the-family-restroom-at-the-airport/>, “Open Letter to the Man Using the Family Restroom at the Airport,” November 2014.
- <http://www.findfamilyrestroom.com/>, Directory for locating public Family Restrooms in US.
- <https://www.lawa.org/-/media/lawa-web/tenants411/file/public-restroom-design-intent-july-2017.ashx?la=en&hash=53F8B16BB025E6CC5F4218F4EA3DD8ECEC4A688E>, Requirements for Single User Facility, All Gender, Family Restrooms including reference to State of California, July 2017.
- http://articles.chicagotribune.com/2008-01-09/features/0801070190_1_restrooms-plumbing-and-mechanical-officials-international-code-council, “Family restrooms ease growing safety worries,” January 2008.
- http://transequality.org/sites/default/files/Letter%20to%20NC%20Airports_0.pdf, Letter to airports in North Carolina citing state statutes that violate OSHA requirements for access to restrooms specifically for every person’s identified gender, April 2016.
- <https://www.buildings.com/article-details/articleid/1701/title/facilities-for-families>, “Family Restrooms Make Facilities More Accessible,” January 2004.
- https://www.msnaairport.com/dining_shopping/services/lounge, Describes Dane County Airport’s Family Lounge

Fitness Area

Airport fitness centers cater to exercise and health-conscious travelers. They are also appreciated by the travel weary, who just need some motion to perk up. It’s an appealing way to fill a long layover. There is typically a fee charged (monthly for frequent flyers) and the center offers lockers, showers, etc. Healthy food concessions are also typically collocated or nearby.

- <http://www.airportgyms.com/airport-gyms-usa.php>, Listing of airports by state and country.
- <https://www.entrepreneur.com/slideshow/227513#1>, Lists 10 of the best airport gyms in the world.

- <https://www.usatoday.com/story/travel/flights/todayinthesky/2017/02/06/long-layover-workout-airport-gyms-court-frequent-fliers/97534100>, “Long-layover workout? Airport gyms court frequent fliers,” February 2017.

Health/Urgent Care

This amenity is quickly finding its way into larger airports. Given that airports can be the size of a small city with the combination of passengers and workers throughout the complex of buildings, health care providers are seeing an opportunity to profitably service a steady influx of a variety of customers from the airport, the airlines, and the traveling public. Typical medical services include the treatment of minor (and to an extent major) injuries and ailments, fulfillment of prescriptions, and drug testing for airport employees

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Lactation and Nursing Mothers

These two amenities are frequently, and incorrectly, assumed to provide the same function and service. Lactation rooms offer mothers who need to pump breastmilk while traveling, a private space to perform this task. Nursing Mothers spaces, on the other hand, are communal and offer breastfeeding moms dedicated space to nurse their child. Most US states have legislation requiring lactation space be provided for employees. Passenger inclusion in airports is typically considered an equivalent accommodation, particularly if they are required for airport employees. The FAA requires lactation rooms for airports.

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Meditation/Quiet/Yoga

These amenities provide a restful pause for travelers, especially those on long, multi-stop flights. Quiet spaces may simply be a space without audio-visual distractions that include comfortable seating with "personal space" between seats. Yoga rooms may have mats and changing spaces.

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Multi-Sensory

These rooms offer people with cognitive impairments and other challenging conditions the opportunity to enjoy and control a variety of sensory experiences. These populations rarely, if ever, experience the world as most of us do. Limitations of movement, vision, hearing, cognitive ability, constrained space, behavioral difficulties, perception issues, pain, and other problems create obstacles to their enjoyment of life. Multi-Sensory stimulation provides opportunities for bridging these barriers, especially in an airport environment.

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Public Showers

Some airports that do not offer a fitness center still provide showers. These are more prevalent in Asia where flights are long and can have multiple stops. Like many non-airport shower facilities, the showers are private compartments clustered together. Some are individual, self-contained compartments, and others are well-appointed and spa-like.

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Service Animal Relief Area (SARA)

The FAA requires a SARA in each non-secure area in airports with 10,000 or more annual enplanements. The intent is to provide relief space while not discriminating access to owners, who typically have one or more disabilities. They are typically indoors as inclement weather creates an obstacle for use. Accommodations range from small boxes with artificial turf to large spaces that accommodate numerous animals.

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Sleeping

Taking a nap for any length of time at an airport has always been a challenge. Many airports are seeing a customer service (and revenue-generating) opportunity to provide sleeping facilities, especially at large hubs. These can range from individual beds or pods (some enclosable) to multilevel cubicles.

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Worship Space

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Other Amenities

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