

## Case Studies—Amenities

### C.2.1 Process

As part of the Literature Review process, our team developed a list of proposed case study airports from around the globe that feature amenities. Finding the airports that currently offer the most amenities was daunting. We had determined at the outset of our research that it would be important to gather an international sampling for two reasons. First, our team recognized that there are many exciting airport initiatives outside the U.S. Second, we were curious how varying cultural differences influence attitudes towards and features of amenity spaces.

To wade through the locations, we developed a multi-pronged method that would ultimately yield our proposed listing of airports for our case studies. Our process included following these steps:

1. Our team compared the 2,416 International Air Transport Association (IATA) airports around the world to those with Airports Council International (ACI) Airport Service Quality (ASQ) awards and/or high Skytrax airport ratings.
2. Our team tasked one of our researchers with validating amenities at each airport by reviewing all potential airport's websites and noting airport amenities in a master spreadsheet.
3. Our research team conducted internet searches to determine the quantities of amenities at each airport considered and determined amenity locations within each airport whenever possible.

Information that derived from our internet research in items 2 and 3 above proved to be inconsistent as airport website information did not always indicate the amenities that were documented on awards and ratings websites.

Our team's last step was to develop a global list of potential airports for our case studies. We grouped our case studies in the following regions:

- Asia-Pacific
- Europe
- Middle East
- North America

While we wanted to ensure all continents were represented in our research, we could not find amenities from our list at major airports in South America and Africa at this time. In addition, we were very interested in studying airports in the Asia-Pacific region. However, attempts at contact at numerous airports in countries throughout the region yielded no response. Time constraints forced our team to abandon this region and focus on the airports that did respond.

We closely considered airports that were recently featured in the media for having new or innovative terminals, concourses, and/or specific amenities. We also considered airports with a reputation for providing high customer service.

Our final list of ten case study airports are shown in Figure C.2-1 and included the following airports:

#### Europe

- Gatwick Airport (LGW)
- Heathrow Airport (LHR)

#### Middle East

- Hamad International Airport (DOH)

#### North America

- Dallas/Ft. Worth International Airport (DFW)
- McCarran International Airport (LAS)
- Minneapolis-St. Paul International Airport (MSP)
- Orlando International Airport (MCO)
- San Francisco International Airport (SFO)

- Toronto Pearson International Airport (YYZ)
- Vancouver International Airport (YVR)

For continuity purposes, Jens Vange and Rose Agnew conducted the case studies as they both did previously for the airport restroom-focused case studies. The airport visits were geographically grouped as indicated below:

- DFW
- MCO and YYZ
- LAS (in conjunction with Future Travel conference in Las Vegas for stakeholder outreach task)
- SFO and YVR
- LGW and LHR
- MSP
- DOH

Our case study structure typically followed the agenda in Figure C.2-2 and included the following:

1. **Business Drivers.** A discussion on understanding the context for providing amenity spaces and how airport governance, finances, etc. influenced amenity-related decisions.
2. **Design and Planning Goals.** A discussion on understanding the goal(s) of: amenity initiatives, customer service, accessibility and community outreach, among others.
3. **Amenities Discussion.** Our typical agenda is shown in Figure C.2-2. We grouped the amenities into three groups. The first group was “Regulated Amenities.” In the U.S., most of these spaces have building code, accessibility, or FAA requirements that regulate them. Those that do not (e.g., change table restrooms), may very well in the future. The second group, “Waiting-related Amenities,” provides activities or distractions while waiting for a connection or delayed flight. “Layover-related Amenities” accommodate long waits between flights, including overnight stays at the airport. We also asked about other amenities spaces that are either an innovation in development or unique to an airport.

4. **Other Aspects** The reminder of the agenda probed maintenance practices and stakeholder involvement in the amenity spaces. Comments provided were often related to the business drivers and design/planning goals, so notes on these topics were captured in the first section of each case study.

As our team compiled the list of amenities, we decided to add two that were not in the original scope: smoking areas and business centers. While both are waning in prevalence, they remain a needed amenity that receive requests from travelers. As will be seen, some accommodations of these needs have solutions that are decidedly non-traditional.

## C.2.2 Findings

As with our previous restroom case studies, we used the agenda as a guide for each session. However, we also allowed the discussion to gravitate to where the energy was. Interestingly, the goal of nearly every airport we met with was to be “The Most Accessible Airport.” An admirable goal that we encouraged because everybody wins! Most of the airports had some sort of Service Animal Relief Area and either had or were seriously considering Change Table Restrooms. Sensory Rooms were also on the radar of most of our interviewees.

Clearly, customer service has risen to the top of airport planning goals. Equally clear is that there is a lot of challenges with trying to determine: where to start with amenity decision-making, what priorities are, and what features are essential. Stakeholder engagement is a common first step that airports expressed they need to take in order to get a sense what various airport stakeholders (e.g., executives, trades managers, airlines, etc.) are seeking. Airports are also looking into customer requests/complaints, social media comments, and at other airports to see what are doing as part of their initial planning. Community engagement is also a common effort that airports are conducting as well. In addition, some airports are in the process of developing prototypes for the amenity spaces as a way to figure out what strategies and features are most successful and useful. It is clear that there is an audience in need of this guidebook.

A common challenge expressed among airports is finding adequate space for amenities in already squeezed terminals. Many are looking at upcoming new construction or renovations as opportunities to introduce new spaces. Most of the airports did tests to

confirm the need for these. Portable lactation rooms, for example, while not a recommended permanent solution, typically have a counter to track usage. This allows the airports to not only determine the demand but also test different locations throughout the airport to see where most use occurs.

Maintenance is, of course, a driving consideration for most of the amenity spaces, particularly with Service Animal Relief Areas where odors are a ubiquitous concern. Most airport maintenance and cleaning crews are stretched thin, so adding more, sometimes complex, spaces may significantly impact the residual costs of the spaces.

Technology to monitor airport spaces like restrooms (e.g., paper supplies, cleaning schedules, etc.) are high on the list for the airports to explore. As amenity spaces are considered and implemented, connection to existing or planned technology infrastructure can be a determining factor.

Hub airports typically have a broader range of amenities to consider since people with longer layovers, especially overnight, need and often expect spaces to sleep, shower, workout, etc. Almost universally, these “Layover Spaces” as we called them in our case studies, were vendor-managed concessions. In busy hubs, these are generally successful. These types of spaces are also often offered at airline clubs.

Accommodating waiting travelers, in general, is a motivator for airports to provide a range of activities to occupy their time. Shops and bars are interesting only for so long. Creative spaces have cropped up in several airports and these spaces include yoga/fitness facilities, short film theaters, museum branches, slot machines, and computer gaming lounges.

Some airports offer services that border on an amenity. For example, Heathrow and Gatwick Airports both have a robust and very visible “Special Assistance” program; however, they are both considering striking the word “Special.”

## **1. Regulated Amenities**

### Service Animal Relief Areas

This FAA-required space (on the secure side) is going through an evolution and most of the airports are providing their best interpretation of current requirements. Solutions we saw ranged from 2 ft. by 4 ft. portable boxes (YVR has these on demand) to fully decked out rooms on the

secure side. Most airports also have an outdoor area on the non-secure side. Airports generally have, or are planning to have, a space in each concourse/terminal. Non-North America airports do not currently have regulations, but they are aware of the need for accommodation and are developing programs for these spaces.

A common concern raised is how best to deal with the waste. The “deluxe” versions have an accessible artificial turf area, up to approximately 10 ft. by 10 ft. with an automatic flushing system and floor drain below. Some turf areas are set on the slab with a concrete curb to contain water when cleaning. The majority of SARAs have a mock-hydrant (e.g., SFO had a sculptural interpretation) within the turf area.

Most offer a hose for the cleaning staff. Some also provide a hose for passengers to rinse their pet’s paws as well as offer a fold-down bench to make this job easier. Most have a circulating attic stock of turf stored nearby. MSP has a door contact so the cleaning staff can be alerted whenever the room has been used.

A hand sink is typically provided with paper towels and trash as well as dispenser with free pick-up bags. A separate, covered waste can for these are sometime provided. Some offer coat hooks as well. Odors are generally managed well with ramped up exhaust fans and/or air purifiers. Some locations have automatic door operators to accommodate accessibility needs (YVR has a touchless version). Doors are typically unlocked and usually have a window to see if the space is occupied.

### Lactation and Nursing Mothers

These spaces have two distinct functions and are treated separately in this guidebook. However, there is considerable confusion about these relatively new spaces, so they are combined here. Lactation rooms are another recently required FAA space. The distinction between the two spaces is that lactation rooms are for a mother to pump breast milk, typically in private. A nursing room has comfortable seating for nursing babies.

These tend to be more communal with multiple chairs.

These spaces are in high demand. Many airports, including a few on our visits, use portable pods. These come in single user and accessible models, which also accommodates multiple companions. As these are considered temporary solutions and features are readily available on websites, the focus of this write-up is on built spaces.

Lactation rooms, when separate from Nursing Mothers spaces, typically feature a counter with an outlet(s) for phone charging, an upright chair on wheels, a sink for handwashing and cleaning the pumping apparatus, a baby changing station, and a privacy lock. MSP provides a taller gooseneck faucet to make equipment cleaning easier. Nursing Mothers spaces also have baby changing and a sink. They typically have one or more chairs, usually with a side table. The chairs are usually soft and sometimes included the ability to rock. YVR is considering having a variety of chair styles for different body types. DOH provides water/milk warmers and SFO provides diaper dispensers for a fee of 25 cents.

Both of these spaces often have artwork, piped in music, and dimmable lighting to create a calming atmosphere. Sometimes there are small play areas for older children traveling along. Some have automatic door operators. MSP and DFW require gaining entry via a nearby information desk or calling for an unlock-code.

#### Companion Care

These spaces are typically located adjacent to the primary restroom sets and have an accessible toilet, sink area, and baby changing area as well as a full-height mirror. Some airports provide a fold-down bench and biohazard disposal. The biggest difference these spaces is the naming: Family Room, Assisted Care, Washroom Toilette, and most commonly, Companion Care

DFW provides a child step-stool and just added a new space with both an adult and child toilet. MSP provides a sanitary napkin dispenser at a cost of 25 cents per item. LGW has a separate

baby changing room next to the Family Room. YVR provides two “Washroom Toilettes” at each restroom set with an emergency call button in each.

#### Change Table Restroom

This is a new space that several airports are now providing. England has a strong organization, called “Changing Spaces,” that provides resources for developing these areas. LGW and LHR provides space that models the Changing Spaces guidelines. However, LGW recommends not combining this space with a Family Room so a person in need will not have to wait. Other airports that are considering providing or have already constructed these spaces are using Changings Spaces as a primary reference. SFO noted that California is planning to issue a code requirement to have 3 feet of space on each end of a table for companion access to the person on the table.

These spaces are essentially Companion Care Restrooms with the addition of an adult-sized, powered change table, paper dispenser for table, hand-held shower, privacy curtain, and a ceiling track-mounted multidirectional hoist for assisting individuals from their wheelchair on to the table or onto the toilet. LGW and LHR also have height adjustable lavatories and emergency call strips along the walls. YVR also provides a fold-down bench.

Several airports expressed concerns about potential abuse of the showers and hoists and are unsure if they will provide those. Partially for this reason, both LGW and LHR provide a phone number to call for the access code to the showers.

#### Restrooms

As a follow up to the airport restroom guidebook, we asked about unique strategies or features at each airport. Numerous airports expressed interest in all-gender restrooms. SFO is considering an all-gender stall in the middle of each Men’s and Women’s restroom.



The accessible stalls at YVR have standard rear- and side-wall mounted grab bars as well as a fold-down grab bar for those needing parallel bars. They also provide a fold-down bench and a stall with a child-size toilet in each restroom. Their drinking fountains also dispense hot water since many Asian travelers make soup during their layovers.

## 2. **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

These are seating areas provided near restroom entries that provide comfortable places to wait for travel companion(s), thus avoiding the typical congested entry points where waiting passengers often obstruct traffic flow in the concourses/terminals. Most of the airports assume companions will use adjacent hold room seating. SFO provides a bench and artwork on each side of entries. MSP provides an alcove with a bench and art glass across the concourse. MSP is considering a leaning rail in place of the bench for more capacity as well as to provide space for wheelchairs.

### Children's Play Area

All of the airports interviewed provide some form of a children's play area. They range in size from small activity areas to large spaces with elaborate play structures to release energy. There is usually also an area with "mental" activities like board games. Some feature computer games and offer charging outlets for adult companions. TVs are generally not provided to discourage passengers from camping out there.

Play areas are typically located near hold rooms or food courts for better monitoring by companions. More than one airport recommended that play areas not be located near restrooms since companions can have a difficult time monitoring children from there.

Some airports have to follow local/regional building code constraints, which includes providing specific flooring materials. Usually

there is a partial-height barrier surrounding the play area to corral the play.

YVR uses their play spaces as an opportunity to showcase local craftsmanship with the play structures. SFO has elements that were curated by the airport's museum. YYZ provides a woodlands theme highlighting beloved Ontario tourist spots. MCO originally had areas throughout airport but building code officials were concerned about risk, so they were removed. A code-approved version is planned for MCO's new terminal. MCO has a 3,000 gallon aquarium and game arcade as alternative attractions.

### Sensory Room

Another new space that is gaining interest is sensory rooms, but there is limited information available for this type of space. LGW is the only airport that has constructed this type of space. They worked with a UK sensory company, Rompa, as well as local autism and Alzheimer's organizations to develop the space.

LGW's design is not focused on a specific disability, but instead includes a variety of nodes and variable lighting "scenes" for different needs from calm to excitement, and classical music is piped in. A ceiling hoist was initially considered to help someone out of a wheelchair, but in lieu of that, the room features removable floor cushions that can be used by wheelchair users.

The room's capacity at LGW is 12 people. While there is no fee for use of the space, 45-minute long sessions can be booked. There is concern about the space being abused if open to all, so the room is accessed by staff via card reader.

DOH is also developing a "Special Handling Lounge" with a local organization called "Shafallah Center." It will feature certain aspects of sensory rooms for children with special needs, including autism, who have limited communication skills. One feature will be electronic carpets for games and activities.

YVR is designing a “Quiet Space” for everyone, not just autism.

#### Meditation/Quiet

While worship and yoga spaces sometimes use these names and may share these spaces, this type of space is typically located among the hold rooms. It is intended for reading, resting, and meditation. It is typically an area with comfortable seating, no TVs or aromas, dim lighting, maybe artwork and/or a view over the airfield and is ideally separated from heavily trafficked circulation routes by a glass or solid partition.

LHR has adapted an abandoned hold room and provides broadly spaced seating, tables, and lamps. They are considering adding carpet to dampen sound and adding perimeter walls for semi-privacy.

DFW has temporarily repurposed general-use seating alcoves along some concourses as a test until the spaces are leased. They are developing standards for future spaces (e.g. no TVs, sounds, etc.).

DOH is considering updating their current quiet spaces. There are currently four rows of recliners that separate men, women, and families, following cultural protocol. Low lighting and comfortable temperature are provided there as well. DOH just added frosted glass panels between seating areas in Concourse A for privacy and light control as they discovered the exterior windows in this area were too bright, so passengers were avoiding this space. They are also adding vending that provides sleep kits (water, mask, etc.). These spaces now fill up at peak times.

#### Yoga

Space for Yoga as an emotional and physical travel-stress reliever are provided in a few airports. Service is provided most commonly by fitness center concessions, but a few airports have designated semi-private areas for individual and/or instructed sessions.

SFO provides spaces that are dimly lit and temperature controlled. They are mostly used pre-travel and have received good reviews. YVR provides an alcove within the C-Pier. Mats are provided there, and instructors are available at certain times. Yoga classes are provided by a local yoga and wellness company and are free. DFW provides mats, bands, and balls. They have noticed that this space has not been used as much as they hoped.

#### Worship

Most of the airports interviewed provide some form of worship space, from general space to well-appointed areas. A variety of names are used among airports including: Chapel, Reflection Room, and Prayer Room.

These spaces are typically multi-faith with no religious symbols portrayed in the space. Most have a seating area with a pulpit and a separate, open space, typically with prayer rugs and shelves for shoes. Some offer separate male and female entrances. A few offer ablution facilities within the complex or in a nearby restroom. Larger spaces have multiple chaplains available and/or volunteers from private offices who offer counseling services. Most have a small reception area with religious texts and pamphlets. Storage space(s) is sometimes also available. Most are available for travelers and staff and are open 24/7.

YYZ and DFW can conduct weddings on site. LHR is planning to provide a space on the non-secure side well. DFW provides kneelers.

#### Ablution

Several airports provide ablution facilities for ceremonial foot-washing either in the worship space or in a restroom nearby. A floor mat, soap dispenser, and hand drying are typically provided as well.

DOH provides this space near prayer rooms or in restrooms near prayer rooms. Men and women have separate but identical spaces. These spaces include a row of individual tile seats with access to a continuous “trough” that collects water.

They do not meet accessible standards but have not had requests for that. SFO currently offers access to this space for employees at the taxi area.

#### Smoking

Smoking is not permitted inside public spaces as it is a law in the U.S. Therefore, most U.S. airports typically have a designated area for smoking located outdoors on the non-secure side of the airport away from the doors. One airport noted that biases and cultural expectations are a tricky balance.

SFO is opening a new observation terrace at the end of one of its concourses. It is not intended to be smoking area, but they feel it likely will become one since it is outside. Travelers from Asia are used to smoking whenever desired, so it has been a challenge at non-Asian airports to meet their expectation.

DOH provides an enclosed smoking room on each concourse. Each are enclosed with glass walls to the concourse and provide charging stations. LHR provides a smoking area in Terminal 4. YYZ permits smoking in restaurants and bars.

LAS is an exception in the U.S. because it draws travelers from all over the world. A concessionaire provides “Game Lounges” that are located in Concourses B, C, D, and E that are intended to bring together all the “sins” – smoking, betting, and drinking. These are free-standing, well-ventilated, glass-enclosed rooms with rows of slot machines that bring in approximately \$23 million per year. The rent from this concession pays for many of the airport’s CIP items.

### **3. Layover-related Amenities**

#### Sleeping

For those that provide this accommodation, this is either fulfilled via an on-site hotel (e.g., MSP, MCO, DOH, LGW, and YVR) or via a concession (e.g., DFW, SFO, LGW). Typically,

concessionaires offer small rooms for naps of varying time durations. One offers overnight stays. These rooms often feature a desk, chair and a slide-out bed. Sometimes larger accessible room or pairs of rooms can be joined with an interlocking door for families in some airports as well. Separate restroom and shower facilities are available at some airports as are various sundries at the check-in desk. Some airline and airport lounges are also providing sleeping accommodations, typically for members. Regrettably, we were not able to visit any airports that had compact, manufactured sleeping pods.

#### Fitness Center

Fitness Centers are typically provided by a concessionaire offering various gym equipment and work out spaces, some with scheduled sessions. SFO is constructing a pilot project that will offer 15-20-minute sessions using various workout equipment. Some onsite hotels and lounges are also providing access to fitness facilities for a fee. LGW is considering providing a facility. Staff discounts are often available.

#### Public Showers

These are typically available in fitness centers, lounges, concession sleeping rooms, and in spas as well as at some onsite hotels for a fee. DOH uses a concession provider with a variety of services (see DOH write-up).

#### Clothes Changing

These are typically available in some restrooms, fitness centers, lounges, concession sleeping rooms and in spas, as well as at some onsite hotels. DFW is considering providing this accommodation.

#### Business Centers

With the advent of charging stations in hold rooms and elsewhere in airports, these spaces are waning in need. Travelers are likely to work at their laptop at the gate or in restaurants. Still, hub airports like LGW and LHR have fairly extensive concession providers that offer a variety of conference nodes with private rooms, eating areas as well as work stations, printing

facilities, etc. Also, onsite hotels often offer these services.

#### Health / Urgent Care

These are becoming more common, especially at larger airports where they have both the travelers and staff to justify the need. These are typically provided by a concessionaire or a local provider, but LHR's urgent care is operated by a local charity. Typically, clinic services are provided, but some offer a pharmacy as well. Some are open 24 hours per day. While a concessionaire at YVR offers dental services, both MSP and MCO tried this, but it was not a sustainable enterprise.

#### **4. Other Spaces**

##### Gaming

A few airports are or are considering providing concessions that provide computer gaming and virtual reality experiences. DFW has a concessionaire, "Gameway," that offers 14 game stations in Concourse B and 22 in E. They are extremely popular and primarily target business professionals of both sexes. Some travelers come 5 to 6 hours prior to their flight to play. Food and drinks are also available in these spaces.

##### Assistance Areas

The airports we visited in the UK and Qatar have specific and very visible areas designated for travelers who need assistance. This area is

provided not only for disabled travelers, but also for large groups or families to help them get through security in a timely manner. These areas have comfortable waiting areas with a variety of seating and tables. LHR has a corral of push-chairs so they are readily available.

DOH also has an unaccompanied minors lounge operated by the airlines that provides food, videos, games, garden space, and an accessible children's restroom. It has a secure desk and is staffed by three staff. DOH is considering a lounge for delayed travelers with a sleeping area (not a hotel).

##### Arts

A few airports are providing screening rooms to watch curated short films and videos. Theater-style or comfortable seating are typically provided in these spaces.

SFO has partnered with a local museum to provide revolving exhibits in a primary space off the departure hall as well as small displays throughout the airport.

##### Child Care

Some airports are considering providing childcare facilities, especially for passengers with longer layovers.



**Figure C.2-1.** Locations of Case Study Airports.

# ALLIANCE

## MEMORANDUM

400 Clifton Avenue  
Minneapolis, MN 55403

COMMUNICATION  
p 612.874.4100  
f 612.871.7212

WEBSITE  
www.alliance.us

**Date:** 18 October 2018

**Comm. No:** 2018051

**Re:** **LHR CASE STUDY**  
ACRP Project 07-16: Airport Terminal Restroom  
Ancillary Service Spaces Planning & Design

## AGENDA

1. Business Drivers
2. Design & Planning Goals
3. Amenities Discussion
  - Regulated Amenities
    - Service Animal Relief Area (SARA)
    - Lactation
    - Nursing Mothers
    - Companion Care / Family
    - Change Table Restroom
    - Restrooms Update
    - Future Spaces
  - Waiting-related Amenities
    - Companion Waiting at Restrooms
    - Children's Play Area
    - Sensory Room
    - Meditation / Quiet
    - Yoga
    - Worship Space
  - Ablution
  - Smoking
  - Future Spaces
  - Layover-Related Amenities
    - Sleeping
    - Fitness Area
    - Public Showers
    - Clothes Changing
    - Business Centers
    - Health / Urgent Care
    - Future Spaces
  - Other Activities, Functions, or Spaces
4. Maintenance Goals
5. Cost-effective / Lifecycle Cost Parameters
6. Airline Partners / Stakeholders Impact on Decisions
7. Other Considerations

**Figure C.2-2.** Sample Agenda for Case Study Session.

# ***UNITED STATES CASE STUDIES***

Dallas/Ft. Worth International Airport (DFW)  
McCarran International Airport (LAS)  
Minneapolis-St. Paul International Airport (MSP)  
Orlando International Airport (MCO)  
San Francisco International Airport (SFO)

## ***Dallas/Fort Worth International Airport (DFW)***

### ***“Design the Airport as a City”***

#### **Overview**

Hub Type: Large

Hours of Operation: 24

2019 Annual Enplanements: 37,525,464

Airport Size (sf): 4,116,909

Number of Gates: 164

Date of Case Study: August 1, 2018

#### **Background**

DFW is the primary international airport serving the Dallas–Fort Worth metroplex area. It is the largest hub for American Airlines, which is headquartered near the airport. It is the fourth busiest airport in the world by aircraft movements and the fifteenth busiest airport in the world by passenger traffic in 2019. It is the ninth busiest international gateway in the United States. DFW is larger than the island of Manhattan and is the second largest airport by land area in the United States, after Denver International Airport. As of December 2019, DFW Airport had service to 259 destinations, including 67 international and 192 domestic destinations within the U.S. There are five terminals with 164 gates. The airport recently completed T.R.I.P. (Terminal Renewal and Improvement Program) to renovate terminals A, B, and E.

#### **Strategies**

Customer experience has been the primary focus since the implementation of a new strategic plan for 2016-2020. It is the umbrella over business performance, employee engagement, operational excellence, and community engagement. An important underlying goal is to make staff and customers feel safe and secure. The prior plan was revenue focused with most initiatives concessions. Consolidating office spaces to make room for new 12,000 square foot Innovation Lab to test ideas. Collaborative projects involving customer experience and concessions. Seek airline input on new construction, but airlines have no vote on Capital Plan. Want to design the airport as a city with broad experiences not just for travelers, but for local residents and staff as well.

The airport is developing new concepts for restroom block and gate hold rooms, including creating “Ambiance Guidelines” for restrooms. Studying all-gender restrooms at gate hold areas based on ACRP Report 130 “Restroom of the Future.” Concept is proving very expensive and takes up a lot of space. Scaling back scope while keeping the fixture count is a high priority. Anticipate being able to accomplish 90% of concept. Researching concept that has a vendor sponsor restroom fixtures to offset cost.

Up to 40-year old terminals make it difficult to move walls, which is a limiting factor with most concepts. Looking at replacing old airline club sites with new experiences, e.g. new urgent care concession. High interest in smart technology. As part of study of wait times at checkpoints, installed four pilots with different technology. Have three staff that monitor data analytics. Currently in design process for an Integrated Operations Center (IOC). DFW Authority procurement laws also limit what they can pilot.



## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- One on each terminal, except C. Located away from restrooms. Inside security.
- Turf on drain basin with rubber ramp-edge. Push-button on wall to drain.
- Plastic cone on turf as “hydrant.”
- Lavatory, paper towel dispenser, pick-up bag dispenser, trash.
- Hose for rinsing paws and mat.
- No ventilation. Urine smell an issue.
- Exterior relief areas pre-security.

### Lactation

- See Nursing Mothers.

### Nursing Mothers Check

- One each on Concourses A, B, and E.
- Requires access code via phone call.
- High demand.
- Reclining chair and other standard chairs.
- Counter with sink, trash, and baby changing.
- Wall with chalkboard and activities for other non-nursing children.
- Wall phone for assistance.
- Arrangement for Mom’s to use Minute Suites (see “Sleeping”) rooms for 30 minutes when available.

### Family Room

- “Assisted Care”
- Toilet, lavatory, step stool, built-in bench.
- Two new Assisted Care restrooms added that have an adult and child toilet and lavatory.
- Built-in baby changing.

### Change Table Restroom

- Planning one in each terminal.
- Following Changing Spaces (UK) guidelines.

### Restrooms

- Using more data analytics to track restroom usage, e.g. people counters.
- Trying new paper dispensers located next to sink.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- Use adjacent hold room seating.

### Children’s Play Area

- One on D concourse by McDonalds.
- One of their biggest requests.
- Half-wall surrounding foam playscape and seating. Charging outlets.
- See “Gaming Area” under “Other Activities, Functions, or Spaces.”

#### Sensory Room

- Considering.

#### Meditation / Quiet

- “Comfort Zone.”
- Alcoves with comfortable seating along concourse currently in non-leased space. Temporary until leased.
- Developing standards, e.g. no TVs or other sounds.

#### Yoga

- Two locations in semi-private studio areas by gates B3 and E31.
- Mats, bands, and balls available.
- Provided because other airports are doing it. Not as successful as hoped. 10-12 users per day.

#### Worship Space

- Non-denominational chapels Terminals A, B, C, D, and E. Provides Sunday services.
- Seating for about 20 people. Kneelers also provided. Prayer mats and shelving for shoes.
- No symbols.
- Chaplain available. Can hold weddings.

#### Ablution

- Two stations added in restrooms adjacent to Terminal D chapel.

#### Smoking

- Outside, non-secure.

### **Layover-Related Amenities**

#### Sleeping

- Concession – “Minute Suites” in Terminal D. Variable rates for naps to overnight stay. Free to nursing mothers for 30 minutes if room is available.
- 10 rooms on D (2 larger accessible rooms), 7 on A (no showers available). Two suites can be shared for a family.
- Fold out sofa-bed sleeps two. Desk and chair. TV.
- Shared restroom and accessible shower with bench.
- Assorted sundries sold at check-in desk.
- Public restrooms next door.

#### Fitness Area

- None.

#### Public Showers

- In Minute Suites.

#### Clothes Changing

- Considering.

#### Business Centers

- None.

#### Health / Urgent Care

- Concession in Terminal D – “Code 3 Urgent Care & Pharmacy.”
- People love it.
- Pharmacy, four exam rooms, and X-ray.
- Open 5:30 am – 10:30 pm.

#### **Other Activities, Functions, or Spaces**

##### Gaming Lounge

- Concession - “Gameway.”
- At gates B42 and E16.
- B has 14 stations, E has 22. Each station has an Xbox One with 19 games. Can log into personal account or Gameway’s. Cost: 4 cents per minute or \$20 unlimited.
- Extremely popular. Targeting mostly business professionals, males and females, mid-30s to mid-40s. Some travelers come 5-6 hours before flight to play.
- Some drink and food concessions available. Liquor may be provided in the future.



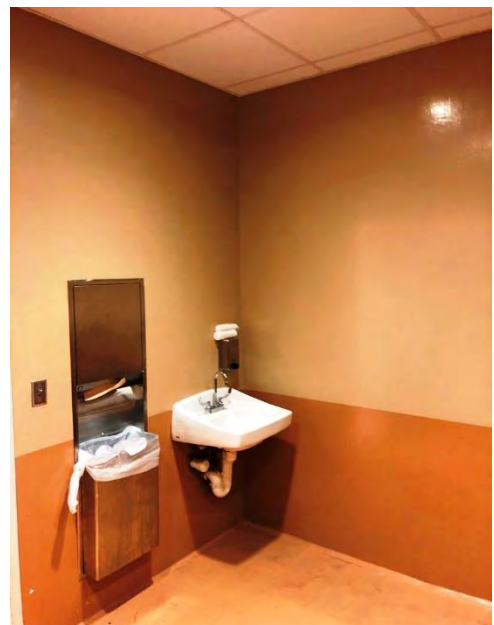
**SARA Entrance**



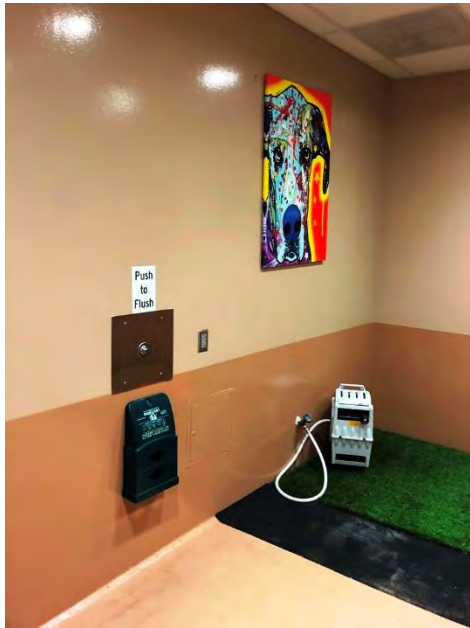
**SARA Room Sign**



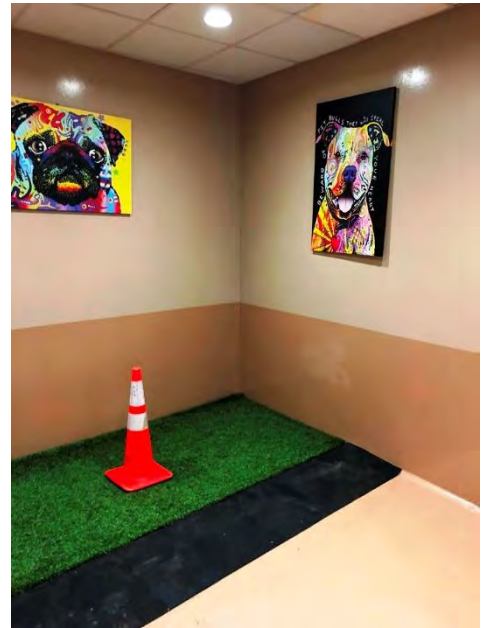
**SARA Entrance Door and Trash**



**SARA Trash and Lavatory**



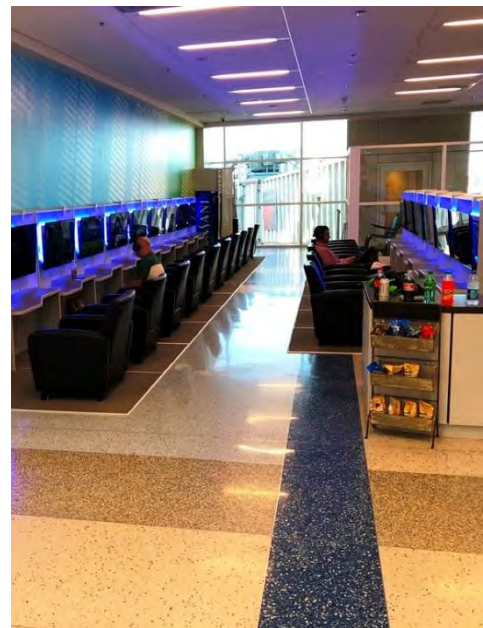
**SARA Bag Dispenser and Turf Area**



**SARA Turf Area**



**PLAY Gameway Video Area**



**PLAY Gameway Video Area**





**YOGA Signage**



**YOGA Privacy Screen in Front of Mat Area**



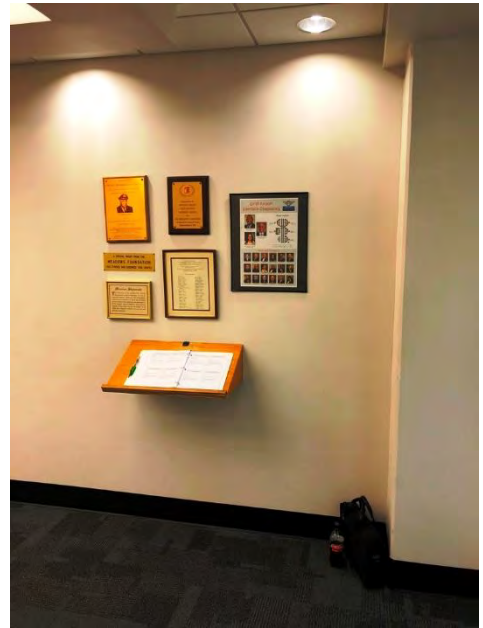
**YOGA Mat Area**



**YOGA Sign-in Table**



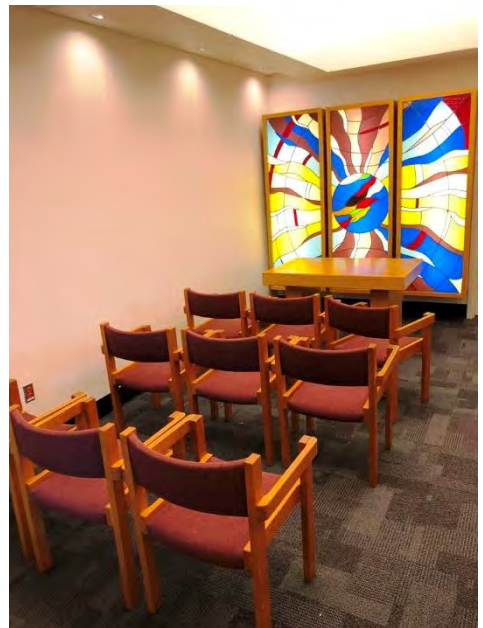
**WORSHIP Entrance**



**WORSHIP Sign-in**



**WORSHIP Entrance and Seating**

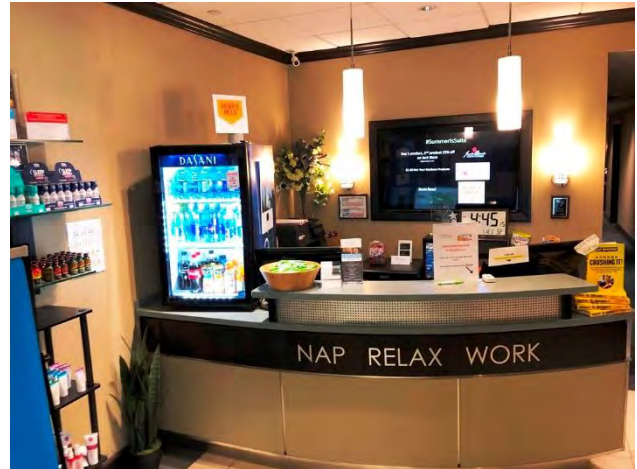


**WORSHIP Seating and Dais**





**SLEEPING Entrance**



**SLEEPING Check-in Desk**



**SLEEPING Sundries**

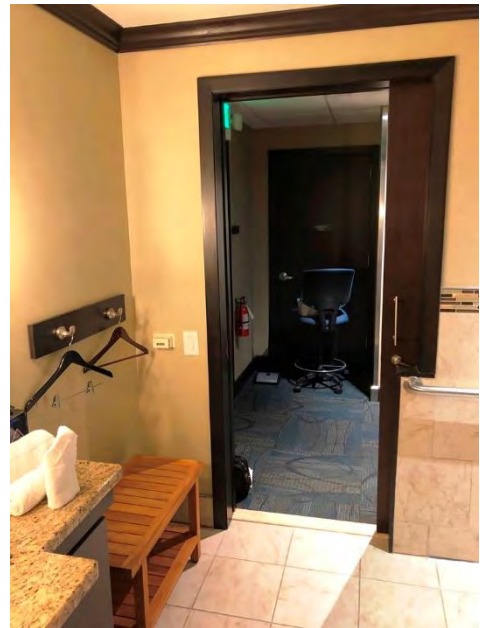


**SLEEPING List of Services**





**SLEEPING Hall to Rooms**



**SLEEPING Door into Room**



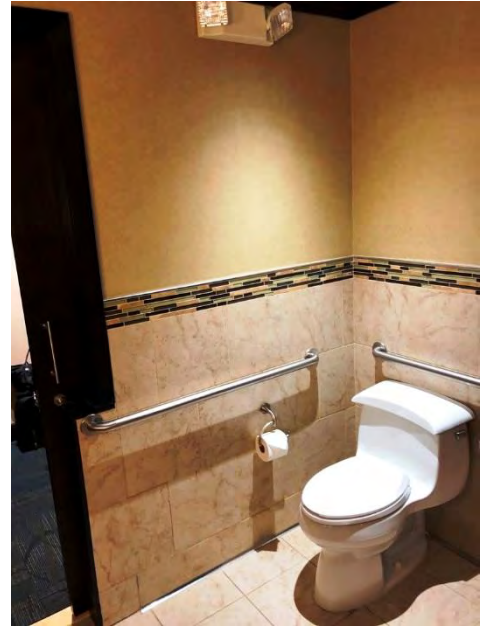
**SLEEPING Slide-out Bed**



**SLEEPING Bed and Desk**



**SLEEPING Desk and TV**



**SLEEPING Communal Bathroom**



**SLEEPING Communal Bathroom**



**SLEEPING Communal Bathroom  
and Shower**



**SLEEPING Communal Bathroom**



**SLEEPING Communal Bathroom Shower**

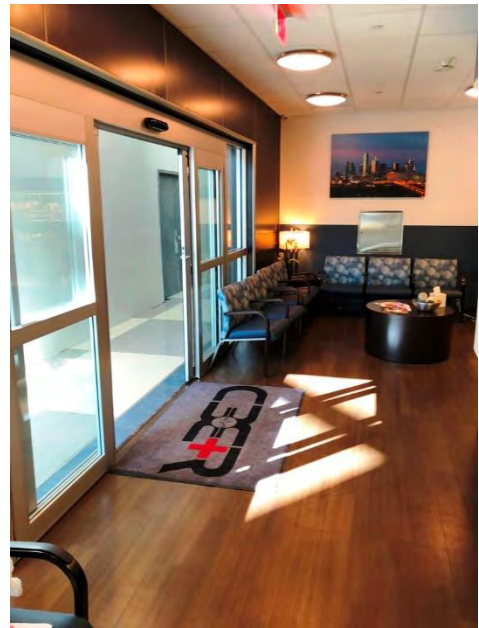


**SLEEPING Communal Bathroom Shower**





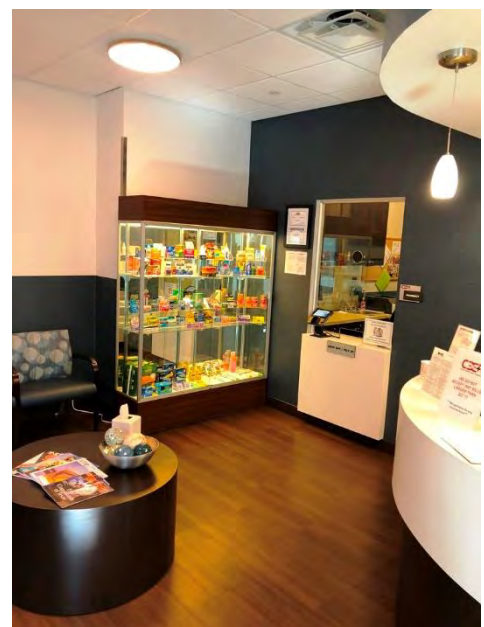
**URGENT CARE Entrance in Hall**



**URGENT CARE Waiting**



**URGENT CARE Reception Desk**



**URGENT CARE Sundries and Prescription Window**

## **Participants**

### Airport

Jonathan DeJesus, Senior Customer Experience Development Manager, Dallas Fort Worth International Airport

### Moderators

Rose Agnew – Aviation Innovation

Jens Vange – Allliance

## ***McCarran International Airport (LAS)***

### ***“Traveler-driven Development.”***

#### **Overview**

Hub Type: Large

Hours of Operation: 24

Annual Enplanements: 24,867,000

Airport Size (sf): NA

Number of Gates: 92

Date of Case Study: September 12, 2018

#### **Background**

McCarran International Airport (LAS) is the primary commercial airport serving Vegas Valley, Nevada. The airport was built in 1942 and has undergone significant expansion since then. The airport consists of four runways and two passenger terminals: 1 and 3. Terminal 1 is composed of concourses A, B, C, and D. Terminal 3 contains Concourse E. A people mover system moves between post-security Terminal 1 C and D Gates as well as between the Terminal 3 D gates. LAS is the 30th busiest airport in the world by passenger traffic and the 8th busiest by aircraft movements. The airport has nonstop air service to destinations in North America, Europe, and Asia.

#### **Problems/Solutions**

LAS is looking at other airports for ideas. The airport is interested in European products and practices (e.g., finishes). LAS is working on a strategic plan for improving “landlocked” spaces (e.g., restrooms). The airport was one of the first to provide “common-use” facilities. All amenities currently follow common-use protocols.

Customers are involved in restroom development through social media. LAS staff monitors social media to determine the “hassle factor.” LAS has received many tweets for the need for nursing mothers spaces, then acted on it. They are looking into using robots for cleaning (as they are used in Asia) to augment staff. LAS is more efficient in certain areas. Their custodial staff is comprised of airport staff and is not outsourced. LAS is working with airlines on accessibility initiatives.

## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- Terminal 1 – A, B, C, D gates. Terminal 3. Also, enclosed outdoor locations.
- Interior – 30 SF turf area.
- Cleaning the turf – sprinkler underneath on timer plus hose-down.
- Scent-misting in ventilation system takes care of odors.

### Lactation

- Combined with Nursing Mothers.

### Nursing Mothers Check

- Three accessible portable units.

### Family Room

- “Companion Care.”
- At each restroom set.

### Change Table Restroom

- None, but considering.

### Restrooms

- People counters.
- Monitors in paper towel dispensers.
- Use automated occupancy indicators on stalls.
- Looking at wait-time beacons.
- Likely moving to no paper.
- Use one-ply toilet paper. “Sweet spot” between quantity and quality.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- None.

### Children’s Play Area

- At D Gates.
- Various play stations and activity carrells.

### Sensory Room

- None.

### Meditation / Quiet

- Considering. Politically sensitive but may be more acceptable than a worship space.

### Yoga

- None.

### Worship Space

- None. Foot washing and worship have been a delicate topic for our County Staff and Airport Staff.
- Church and mosque near airport.

#### Ablution

- None. Foot washing and worship have been a delicate topic for our County Staff and Airport Staff.
- Needed because of Qatar and Emirates Airlines.

#### Smoking

- Concession. “Game Lounge.”
- Glass enclosure in middle of concourse. Very visible but smoke ventilated from within.
- Slot machines pay for many CIP items. \$23,000,000/yr. A percentage goes to rent.
- Work to keep the sins together – smoking – casino – drinking.

### **Layover-Related Amenities**

#### Sleeping

- None.

#### Fitness Center

- Concession. “Zero Level Fitness.”
- Struggling.
- Provides staff discounts.

#### Public Showers

- In Fitness Center.

#### Clothes Changing

- In Fitness Center

#### Business Centers

- Never took off – not a good fit for traveler profile.

#### Health / Urgent Care

- Concession. “Code 3 Urgent Care.”
- Non-secure side.
- Provides pre-employment drug screening.

#### Future Space

- Looking at virtual reality concession for waiting travelers. Used at nearby resort. Very expensive.

### **Other Activities, Functions, or Spaces**

#### Comfort Zone

- Adding for meeters & greeters.
- Phone charging, comfortable seating.
- Non-secure side.
- Problem with homeless sleeping there.

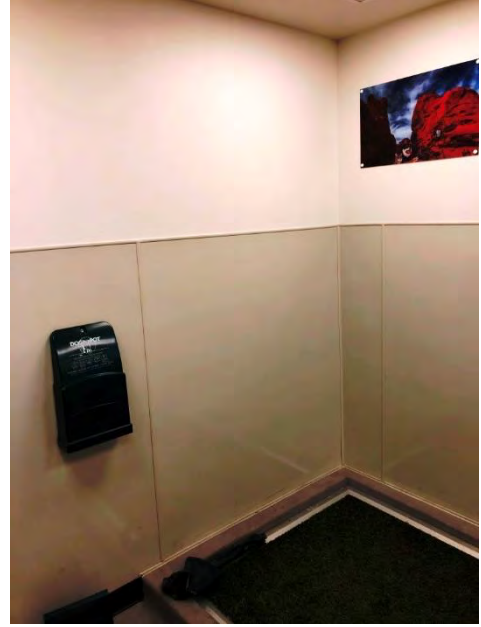
#### Lockers

- Frequently requested but can’t provide post-9/11.





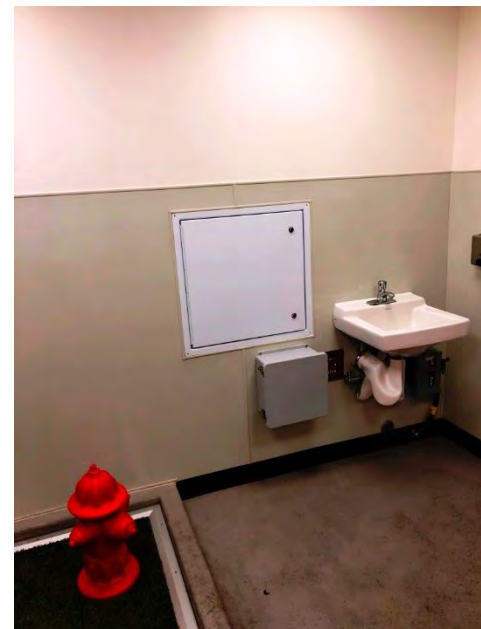
**SARA - Entrance**



**SARA – Disposal Bag Dispenser**



**SARA – Turf Area with Hydrant**



**SARA – Plumbing Cabinet, Hose Cabinet, Sink**



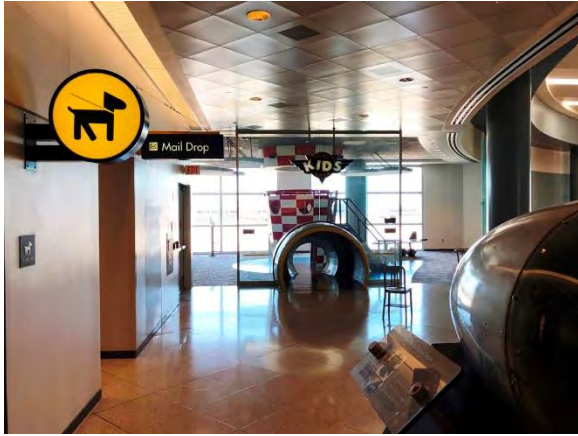
**SARA – Sink, Soap Dispenser,  
Paper Towel Dispenser, Trash Can,  
Air Freshener Above**



**SARA – Paper Towel Dispenser,  
Trash Can, Air Freshener Above**



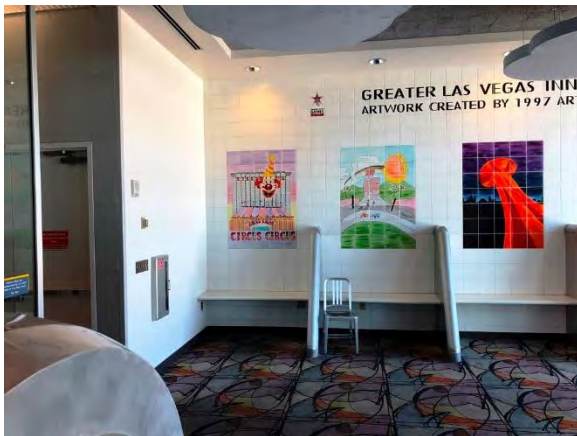
**SARA – Air Freshener**



**CHILDREN'S PLAY AREA**



**CHILDREN'S PLAY AREA**



**CHILDREN'S PLAY AREA**



**CHILDREN'S PLAY AREA**

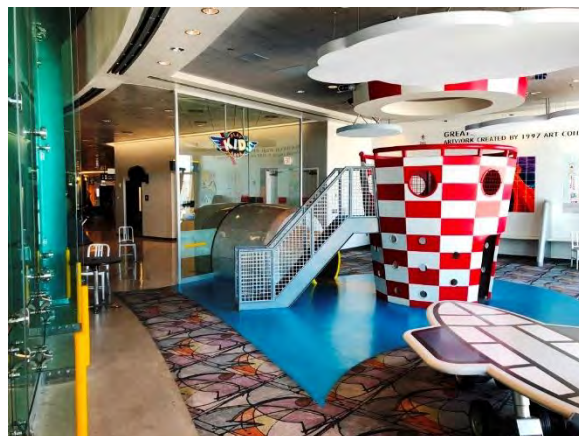




**CHILDREN'S PLAY AREA**



**CHILDREN'S PLAY AREA**



**CHILDREN'S PLAY AREA**



**SMOKING ROOM**



**SMOKING ROOM**

## **Participants**

### Airport

Ralph LaPore, Assistant Director, Terminal Operations Division, McCarran International Airport

### Moderators

Jens Vange – Alliance

Rose Agnew – Aviation Innovation

## ***Minneapolis-Saint Paul International Airport (MSP)***

### ***“Prototypes are Living Laboratories.”***

#### **Overview**

Hub Type: Large

Hours of Operation: 24

Annual Enplanements: 19,019,000

Number of Gates: 131

Date of Case Study: November 2, 2018

#### **Background**

MSP is not part of any city but is nestled among several. The airport is surrounded by Minneapolis, St. Paul and the suburban cities of Bloomington, Eagan, Mendota Heights and Richfield. It has one airfield with four runways and two terminal buildings - Terminal 1-Lindbergh and Terminal 2-Humphrey - each with adjoining parking ramp facilities. Lindbergh Terminal (now part of Terminal 1) opened in 1962. Terminal 1 added five concourses (A-G), with the most recent in 2002. Terminal 2, with one concourse, was built in 2001 and is used primarily for charter and low-cost airlines. The airport is managed and run by the Metropolitan Airports Commission (MAC), a public corporation established in 1943 by the Minnesota State legislature to provide for coordinated aviation services throughout the Twin Cities metropolitan area.

#### **Problems/Solutions**

MSP has culture for customer service and equity but needs a champion. MSP has many champions. Innovation process is to get the right people in the room to get to the issues – stakeholder outreach. Airlines are an integrated constant - two-way conversations. Discussions start with asking what the gaps in service are. Example: autism accommodation was a gap they had. The team supported it and it “has really established itself.” The team supported the initiative by not blocking it.

Accessibility is a primary focus: aim to provide equitable experience for all travelers. “It’s the right thing to do.” This attitude is integrated in all their strategic goals and initiatives, e.g. Aira glasses for the visually impaired recently provided. They’ve received very positive feedback. MSP is eager to provide accessibility-focused amenities like SARA’s and change-table restrooms.

MSP is not considered a top tier international hub, which shapes their amenity initiatives. Travelers typically spend 90-120 minutes in the airport. They use inputs and insight from outreach along with data analytics. Innovation process: get the right people in the room to get to the issues – stakeholder outreach. The Facilities group thinks a lot about the four W’s – washrooms, waiting, wayfinding, and walking distance – their targeted top ASQ scores. They get complaints about the distances, but that remains a lower priority. There are trams and moving sidewalks ease that. “Where do you draw the line of accommodation?”

## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- Terminal 1 - three, Terminal 2 – one.
- Has outdoor location each terminal, on non-secure side.
- Accessible artificial turf over recessed draining pit. User-operated button-powered automatic flushing.
- Sink with paper-towel dispenser and trash, coat hooks.
- Pick-up bag dispenser.
- Coat hooks.
- Hose in cabinet for cleaning by staff.
- Automatic operator on door.
- Door contact alerts cleaning staff when space is used.
- Some have storage room for extra turf rolls.

### Lactation

- Terminal 1 – four (three new prototype), Terminal 2 – one new prototype.
- Typically separate from Nursing Mothers. New versions to be located within Nursing Mothers, space permitting.
- Access via assistance from nearby Traveler's Assistance stations. Card-reader prevents unauthorized access.
- Accessible counter and upright chair for pumping. Chair on wheels to move out of way for wheelchair. Outlets and light dimmer at counter.
- Piped in music.
- Sink with tall gooseneck faucet for cleaning apparatus. Paper towel dispenser, trash, coat hooks.
- Baby changing table.
- Automatic operator on door.

### Nursing Mothers

- Three new prototypes.
- Semi private entrance.
- Comfortable chairs with side table(s) and charging outlet.
- Piped in music.
- Sink, paper towel dispenser, trash, coat hooks.
- Baby changing table.
- Passengers frequently can't tell the difference between Nursing Mothers and Lactation spaces.

### Family Room

- Typically, at each restroom set.
- Accessible bariatric toilet, toilet paper dispenser, paper seat cover dispenser, disposal, coat and bag hooks.
- Sink, paper towel dispenser, trash, coat hooks.
- +Ostomy hook options and shelf at sink.
- Baby changing table.
- Biohazard disposal.
- Sanitary napkin dispenser.
- Automatic door operator with push-button lock.



#### Change Table Restroom

- New prototype. Also serves as Family Room.
- Two under construction – one secure on D Concourse at existing restroom set and one non-secure at baggage claim restroom set.
- Powered full-size changing table.
- Handheld shower.
- Privacy curtain between toilet/change table and sink.
- Accessible bariatric toilet, toilet paper dispenser, paper seat cover dispenser, disposal, coat and bag hooks.
- Sink, paper towel dispenser, trash, coat hooks.
- Ostomy hook options and shelf at sink.
- Baby changing table.
- Biohazard disposal.
- Sanitary napkin dispenser.
- Automatic door operator with push-button lock.
- Overhead powered multi-directional hoist in upcoming versions to transfer from wheelchair to toilet and change table.

#### **Waiting-related Amenities**

##### Companion Waiting Area at Restrooms

- Bench at several new restrooms.
- Typically, in alcove off concourse opposite restroom entrances.

##### Children's Play Area

- Two in Terminal 1 (secure and non-secure), One in Terminal 2 (secure).

##### Sensory Room

- Considering.

##### Meditation / Quiet

- Two Terminal 1 on the Mezzanine Level overlooking Airport Mall.
- Comfortable chairs. Suitable for reading, resting, meditation, or prayer.

##### Yoga

- None.

##### Worship Space

- Small space on mezzanine level.
- Counseling space.

##### Ablution

- None.
- Most requests from employees.

##### Smoking

- None.
- Biases vs. cultural expectations is a tricky balance to find.

## **Layover-Related Amenities**

### Sleeping

- Hotel on site. “Intercontinental”
- Separate security checkpoint between hotel and Concourse C.
- Considering sleeping pods.

### Fitness Area

- None.

### Public Showers

- Available through “Express Spa” concession.

### Clothes Changing

- Available through “Express Spa” concession.

### Business Centers

- Airport Conference Center. Individual workstations and meeting rooms for rent by the hour. Copier, laptop rentals, and postage stamp sales
- Mostly used in airline clubs.
- Have been removing existing business centers on each concourse.

### Health / Urgent Care

- Tried, but business case didn’t prove out.

### Future Spaces

- Performance space planned for G concourses for any kind of performance.

## **Other Activities, Functions, or Spaces**

### Film Screening Room

- Shows around-the-clock short films and documentaries.
- Multiple large and small screens in separate areas.
- Variety of comfortable seating types and configurations.
- Curated with help from The Film Society of Minneapolis-Saint Paul.
- Also used for art exhibitions, lectures, and intimate stage performances.



**NURSING MOTHERS & SARA – Entry off C-G Connector Bridge**



**NURSING MOTHERS - Entrance**



**NURSING MOTHERS – Chair 1 and Table**



**NURSING MOTHERS – Handwashing and Trash**



**NURSING MOTHERS – Lavatory and Baby Changing**



**NURSING MOTHERS – Chair 2 and Entrance Door**



**SARA - Entrance**



**SARA – Entrance Door and Lavatory**





**LACTATION – Entry by Hold Room**



**LACTATION – Entrance Door, Baby Changing, and Lavatory**



**LACTATION – Lavatory and Lactation Counter**



**LACTATION – Door Controls**



**FAMILY - Entrance**



**FAMILY – Baby Changing and Lavatory**



**FAMILY – Hand Drying and Toilet Beyond**



**FAMILY – Toilet Area**

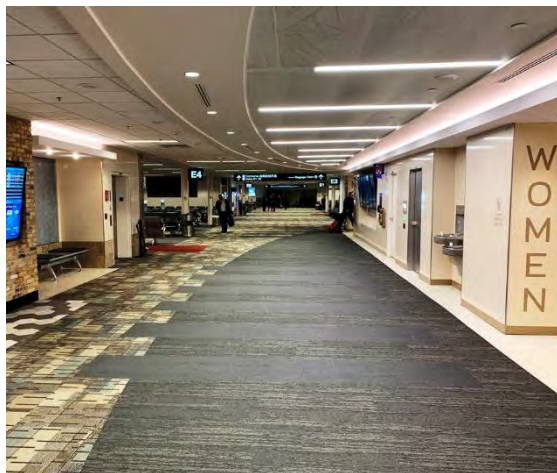




**FAMILY – Entrance Door**



**FAMILY – Door Controls**



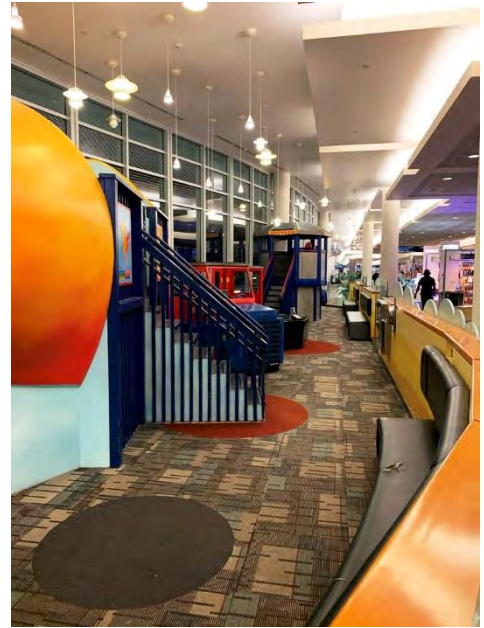
**COMPANION WAITING – On Left Side**



**COMPANION WAITING**



PLAY AREA



PLAY AREA



PLAY AREA

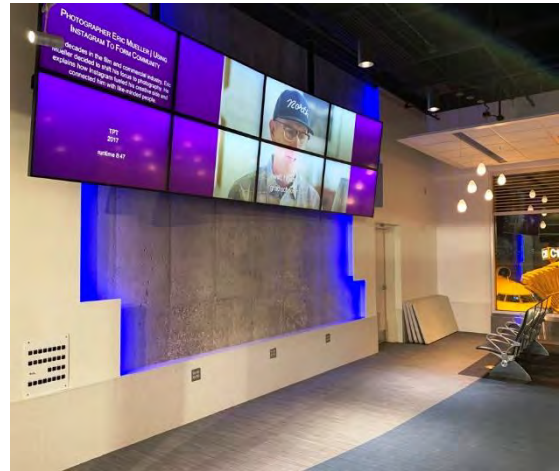


PLAY AREA

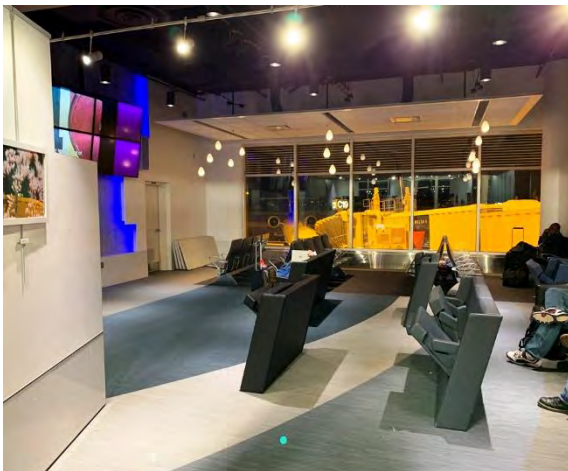




**FILM SCREENING ROOM - Entrance**



**FILM SCREENING ROOM – Screen**



**FILM SCREENING ROOM – Seating**



**FILM SCREENING ROOM - Screen and Seating**

## **Participants**

### Airport

Phil Burke, Assistant Director, Customer Experience, Metropolitan Airports Commission

Scott Skramstad, Manager, Terminal 2 Operations/Facilities, Metropolitan Airports Commission

Steven Gentry, Customer Research Analyst, Metropolitan Airports Commission,

### Moderators

Jens Vange – Alliance

Rose Agnew – Aviation Innovation

## **Orlando International Airport (MCO)**

### ***“Transformation Versus Renovation”***

#### **Overview**

Hub Type: Large

Hours of Operation: 24

Annual Enplanements: 23,848,000

Airport Size (sf): 6,500,000

Number of Gates: 129

Date of Case Study: August 20 17, 2018

#### **Background**

Orlando International Airport (MCO) is located six miles southeast of Downtown Orlando, Florida. It is the eleventh-busiest airport in the United States. Southwest is the airport's largest carrier by passengers carried. The airport is also a major international gateway to the mid-Florida region, serving 135 domestic and international destinations. It is one of the largest commercial airports in the US. As an O&D airport, travelers come from all over the world for Disney World and other mega-attractions in the area. Many of the travelers to and from MCO are family groups. They broke ground in 2018 on a \$2.1 billion new South Terminal (JetBlue will be the main tenant). This new terminal will have enormous skylights and windows and gives the airport the potential to handle up to 100 million passengers annually.

#### **Problems/Solutions**

MCO watches what airports around the world are developing and how those initiatives are working. They feel that it is time that US airports catch up with the rest of the world on services. Their primary focus is on customer service. The Orlando area is the “happiest place on earth” with all the family-oriented destinations a short distance away. This creates very high expectations from travelers. The airport staff tries to remain flexible and accommodate needs. The Executive Director and COO are very supportive of providing ancillary services, but they admit that it is still challenging to fund the desired improvements. The “why” must be proven to the entire group.

MCO conducts an annual walk-around survey to assess facility conditions, and usage as well as observe travelers. The airport also uses opinion cards from travelers to inform the airport's priorities. There have been many requests recently for SARAs and Nursing Mothers spaces. Airlines do not tend to push much. They are required to be on the airport board, so they are part of the decision-making process. MCO's last renovations have been completed in stages. In the first round, they met ADA requirements. In the second round, they made some corrections to ADA. In the third round, they had a good budget to refresh.



## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- One on each concourse 100 sq ft. Also, two landside outdoors.
- Epoxy floor up wall 4”.
- Portable artificial turf - 2’ x 4’.
- Sink and wash down hose.
- Covered bin for waste for odor control and open bin for paper towels at sink.
- Bench.
- Over sanitized (strong cleaning smell). Dogs don’t use the space.

### Lactation

- Part of Nursing Mothers.

### Nursing Mothers

- Two portable units airside, one in each wing.
- Off Women’s restroom.
- Accessible.

### Family Room

- “Companion Care”
- Added to restroom four years ago when new leadership changed focus to customer service.

### Change Table Restroom

- Two on secure side and two on non-secure.
- Installed in existing companion care restrooms
- British passengers request them.
- Will not be providing shower or hoist (British recommendations)

### Restrooms

- Watching all-gender restrooms coming at City Hall.
- Deeper stalls now (66”).
- Likely moving away from hand dryers back to paper towels.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- None.

### Children’s Play Area

- Originally scattered through airport, but code official took them away. Too much risk. One planned for new terminal to open 2021.
- Has 3,000 gallon aquarium (Main food court, Level 3, Main Terminal); and game arcade (Main Terminal)

### Sensory Room

- Considering.

### Meditation / Quiet

- None.

#### Yoga

- None.

#### Worship Space

- “Reflection Room.”
- Original space non-denominational on landside.
- New Reflection Room – Airside Terminal A.
- Emirates – requested prayer room as a service requirement.
- Terminal C: two spaces – Muslim and other denominations. Large Muslim population, common area, male and female entrances.
- Full time Catholic Priest.

#### Ablution

- In Reflection Room.
- Plumbed fixture.

#### Smoking

- Only on landside – South.

### **Layover-Related Amenities**

#### Sleeping

- Airport owns onsite hotel. Operated by Hyatt.
- 90% booked.
- Sleeping also in airline clubs.

#### Fitness Area

- In airline clubs and airport hotel

#### Public Showers

- In airline clubs and airport hotel

#### Clothes Changing

- In airline clubs and airport hotel

#### Business Centers

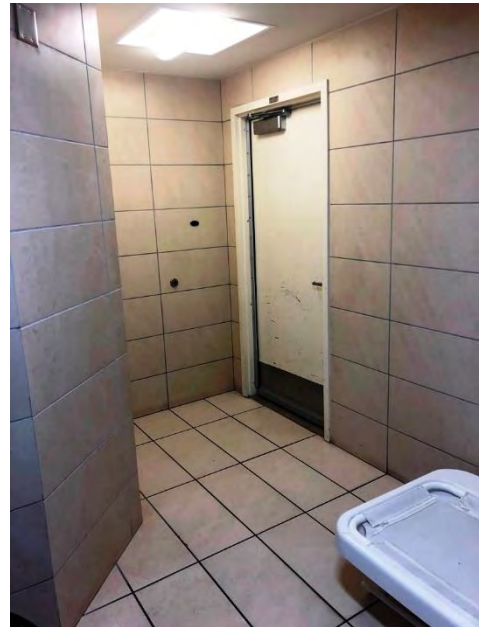
- Was a concession. Went out of business - not a priority.
- People use charging tables in hold rooms.

#### Health / Urgent Care

- Was a concession. Didn't last long.



**CHANGE TABLE RESTROOM - Sign**



**CHANGE TABLE RESTROOM - Entry**



**CHANGE TABLE RESTROOM – Change Table**



**CHANGE TABLE RESTROOM – Change Table**



**CHANGE TABLE RESTROOM –  
Toilet**



**CHANGE TABLE RESTROOM –  
Lavatory**

## **Participants**

### Airport

Mark W. Birkbak AIA, Director of Engineering, Greater Orlando Aviation Authority

Mike Rodriguez, AIA, Associate, Schenkel Shultz Architecture

### Moderators

Jens Vange – Alliance

Rose Agnew – Aviation Innovation



## ***San Francisco International Airport (SFO)***

### ***“Journey Moments and Values”***

#### **Overview**

Hub Type: Large

Hours of Operation: 24

Annual Enplanements: 28,897,000

Airport Size (sf): NA

Number of Gates: 115

Date of Case Study: September 25, 2018

#### **Background**

SFO is the largest airport in Northern California and the second busiest in California. It is the fifth-largest hub for United Airlines and functions as United's primary transpacific gateway. It also serves as a secondary hub for Alaska Airlines. It is a major maintenance hub for United Airlines and houses the Louis A. Turpen Aviation Museum and Library. SFO is owned and policed by the City and County of San Francisco. The airport has four terminals (1, 2, 3, and International) and seven concourses (Boarding Areas A through G) with a total of 115 gates. SFO is currently in a 5-year construction program to update Terminal 1 and provide additional gates. The program also includes integrated technology throughout the airport, new play areas, an outdoor terrace, and a new on-airport hotel.

#### **Problems/Solutions**

SFO has a strong customer service focus and say, “It’s in our DNA.” Most of the airport’s space-related initiatives are a result of reading passenger comment cards. There is so much built space that SFO does not have much room for innovation. The airport is primarily focused on meeting legislative requirements as California laws tend to be more restrictive/progressive than other US states. Airlines and other stakeholders are often design partners in building projects.

SFO worked with Gensler to develop a comprehensive, online design guide in 2013 entitled “REACH” (Revenue Enhancements and Customer Hospitality). It is intended to provide both pragmatic and aspirational information. It is based on passenger experience and SFO’s values. SFO recently completed version 2.0, which “focuses on the human, physical, and digital realms and is a means to operationalize our guest experience plan.”

SFO’s in-house maintenance staff makes a big difference on cleanliness. They do not outsource maintenance. SFO is eager to learn more about amenity-space lifecycle costs and other unanticipated challenges or design/maintenance issues they may encounter.

## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- Single user rooms. Newer ones have turf with flush system beneath and hose to rinse top of turf. Have not had complaints about cleanliness or odors. Sculptural hydrant called “Peccaso.”
- 4 post-security – one per terminal.
- Janitorial closet nearby.
- Keeping them clean is key.

### Lactation

- See Nursing Mothers.

### Nursing Mothers

- Permanent facilities and nursing pods: Terminal 1 - 3, Terminal 2 - 6, Terminal 3 - 6, International – 3.
- Sink, chair, diaper dispenser (\$2, quarters only), baby changing table, electrical outlet by the sink.
- At nurseries. Would like to have one near each restroom set. Single user. Getting Mamava unit for post-security in International Terminal. International travelers request them, Issue at pre-security locations with homeless people sleeping in them. Looking at special locks. They have a sink, baby changing table, and lounge chair.

### Family Room

- At each restroom.

### Change Table Restroom

- In development. Plan to combine with Family Room. California Building Code planning to issue requirement for 3’-0” clear space at each end of change table. This will provide room for companion to maneuver person onto table and to pull off clothes.

### Restrooms

- Looking at providing an all gender restroom(s) in between each male and female restroom pair.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- Small seating area with bench and artwork on either side of restroom entry.

### Children’s Play Area

- In domestic terminal. Curated by museum (in airport) staff. Focus on activities vs. energy release.

### Sensory Room

- Considering.

### Meditation / Quiet

- Try to make them a welcoming, “personal space.” Artwork. No TVs. No aromas. Wish they had more ambience options for “quiet” such as an observation deck.

### Yoga

- Mostly used pre-travel. Get good reviews. Dimly lit. Temperature controlled.

### Worship Space

- Called “Reflection Room.” Non-denominational.

- Meeting room - Catholic Service every other Saturday.
- Multiple quiet seating areas.

#### Ablution

- Only at taxi area for employees.

#### Smoking

- Smoking outside in non-secure area.

### **Layover-Related Amenities**

#### Sleeping

- Concession. “Freshen Up.”
- Nap pods. No overnight accommodations. Six showers. Located in tenant

#### Fitness Area

- Developing pilot project. Equipment delivered. Planning for 15-20 minute sessions.

#### Public Showers

- In Freshen Up.

#### Clothes Changing

- Changing stall in most restrooms. Can’t justify extra space at all locations.

#### Business Centers

- Get many requests. Rentable conference space in newly opened Grand Hyatt at SFO.

#### Health / Urgent Care

- Concession. “SFO Medical Clinic.”
- Clinic only. Tried pharmacy but it didn’t work.
- Not open 24 hours.

### **Other Activities, Functions, or Spaces**

#### Museum/Library

- SFO Museum has revolving exhibits in primary space as well as throughout airport. Very successful.
- Collaboration with Fine Arts Museums of San Francisco. Accr5edited by American Alliance of Museums.
- Additional 20 galleries throughout airport displaying a rotating schedule of art, history, science, and cultural exhibitions.
- Also houses San Francisco Airport Commission Aviation Library and Louis A. Turpen Aviation Museum, which houses a permanent collection dedicated to preserving the history of commercial aviation.

#### Video Arts

- One screen to show short films. Benches for 15-20 people.

#### Observation Deck

- Post-security public observation deck in International Terminal G and a pre-security outdoor rooftop observation deck at T-2.



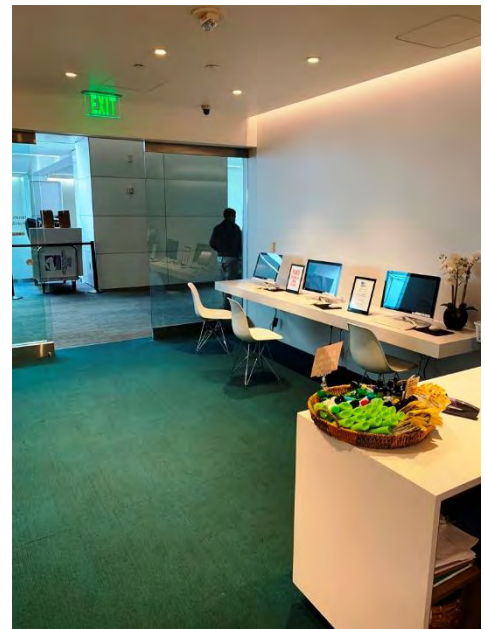
**SARA – Entrance**  
*Photo courtesy of SFO*



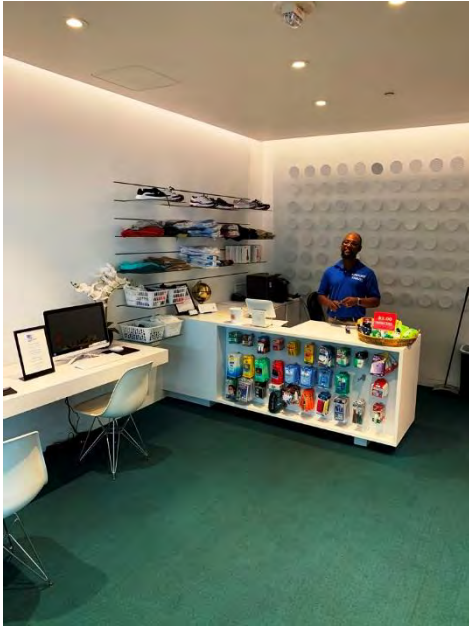
**SARA – Turf Area and Sculptural “Hydrant”**  
*Photo courtesy of SFO*



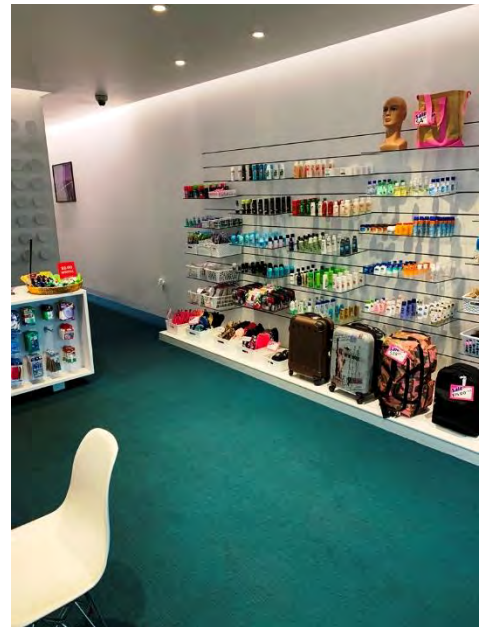
**NAP ROOMS – Entrance**



**NAP ROOMS –Waiting**



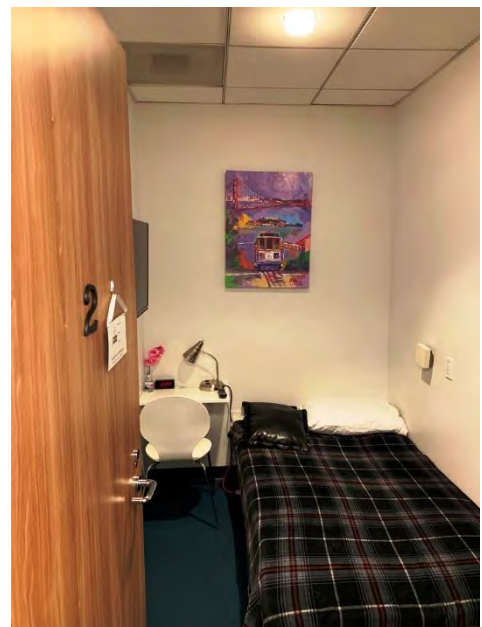
**NAP ROOMS – Check-in**



**NAP ROOMS – Sundries**

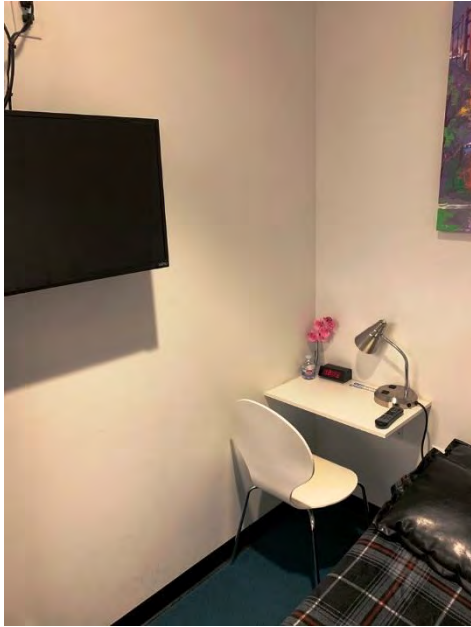


**NAP ROOMS - Sundries and Entrance**



**NAP ROOMS –Bed**

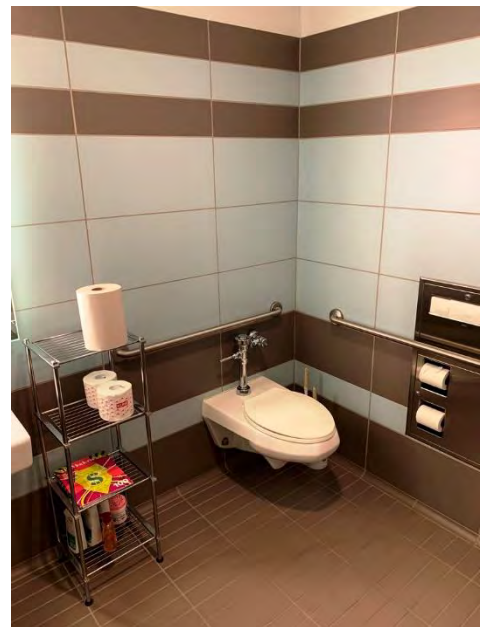




**NAP ROOMS –Desk**



**NAP ROOMS – Restroom**



**NAP ROOMS – Restroom**



**NAP ROOMS - Lavatory**



**NAP ROOMS - Shower**



**NAP ROOMS - Shower**



**NAP ROOMS - Lavatory**



**REFLECTION - Entrance**



**REFLECTION – Rules**



**REFLECTION – Circulation Through Quiet Spaces**

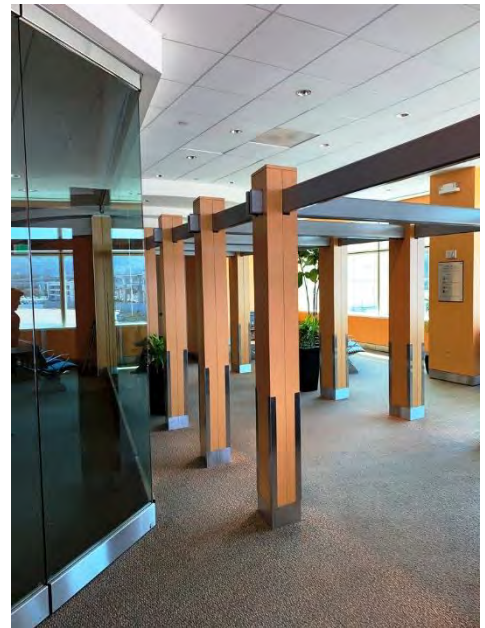


**REFLECTION – Quiet Seating**

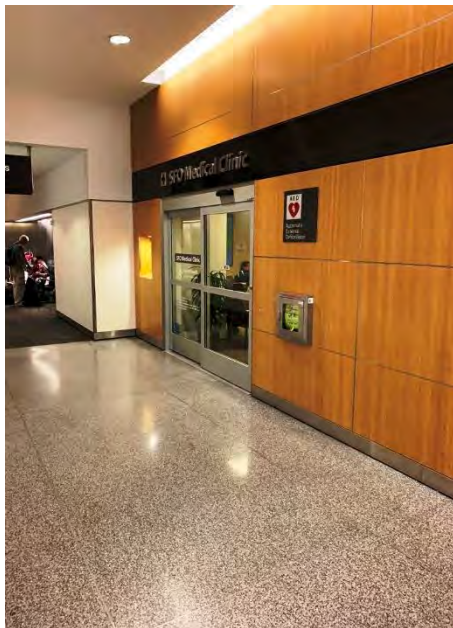




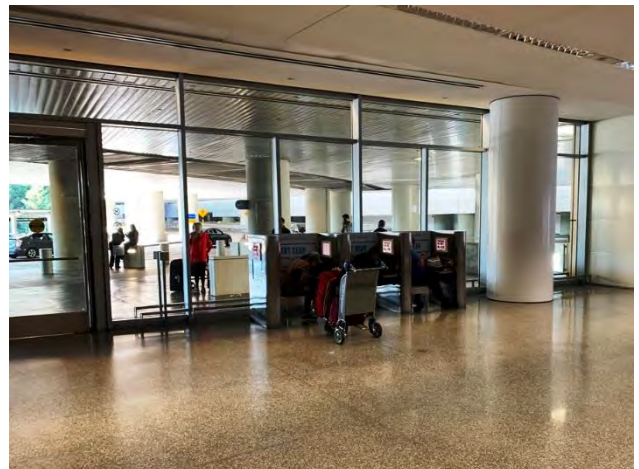
**REFLECTION – Enclosed Meeting Space on Right**



**REFLECTION – Quiet Seating Beyond**



**CLINIC – Entrance**



**EQUIPMENT RENTAL – Repurposed Phone Carrels**



**FILM THEATER - Entrance**



**FILM THEATER – Screen and Seating**



**ALL GENDER RESTROOM – Sign 1**  
*Photo courtesy of SFO*



**ALL GENDER RESTROOM – Sign 2**  
*Photo courtesy of SFO*





**OBSERVATION DECK**  
*Photo courtesy of SFO*



**SARA**  
*Photo courtesy of SFO*

## **Participants**

### Airport

Chris Birch IAP, Director Guest Experience, Chief Operating Officer's Office, San Francisco International Airport

### Moderators

Jens Vange – Alliance

Rose Agnew – Aviation Innovation

# ***CANADIAN CASE STUDIES***

Toronto Pearson International Airport (YYZ)  
Vancouver International Airport (YVR)

## ***Toronto Pearson International Airport (YYZ)***

### ***“Happy Passengers (Will Spend More Money)”***

#### **Overview**

Hub Type: N/A

Hours of Operation: 24

Annual Enplanements: 24,754,000

Airport Size (sf): 5,640,000

Number of Gates: 104

Date of Case Study: August 23, 2018

#### **Background**

Toronto Pearson International Airport has two terminals: Terminal 1 and Terminal 3. Both terminals provide domestic, transborder, and international travel. Terminal operations are grouped by airlines and airline alliances. Terminal 2 was demolished and replaced with an expanded Terminal 1. The Infield Terminal (IFT) currently serves as an extension of Terminal 3, providing additional bridged gates.

#### **Problems/Solutions**

Traveler capacity is growing, and it is a challenge for the airport to keep up with growth. Airport usage has changed and now security has increased and there are more international travelers. YYZ has been focused on trying to make passenger connections easier. The airport is also looking at Asia and Europe for more forward-thinking ideas to incorporate, such as providing more amenities both within the airport and beyond (e.g. bag pick-up at hotel or home).

A new Greater Toronto Airport Authority (GTAA) Risk Management Program was implemented to instill risk awareness among employees and partners. The Program assists with identifying key inputs for use in developing strategies and for decision-making purposes. Risk considerations include cyber security, people, business resilience, safety, industry, strategy development, commercial relationships, infrastructure management, community and stakeholder relations, financial sustainability, business model, financial management, and funding.

YYZ needs to maximize limited, so it is focused on refreshing old programs. It is currently performing pilot tests on design initiatives first (e.g., building a “mock-up” pilot to test different fixtures) as design/planning is an integrated approach. The airport is also trying to balance aesthetics with maintenance while creating an overall, cohesive vision of a community center for employees and travelers. They are employing use “experts” in each type of space to assist with the design/planning of each area as well as creating design/planning standards for airport amenities (like concession standards).

Maintenance is a big issue for YYZ. First, the airport needs to create more space dedicated for maintenance. Second, restrooms are posing many maintenance challenges. For instance, people use paper towels for seat covers or flush hazardous items, both of which clog toilets. Soap is also frustrating for the airport because there are various soap dispensers used throughout the bathrooms and each requires a specific soap type. Also, drinking fountain bottle-fillers used to have a red “change filter” light on them, which made it appear as though the water was bad, but now the indicator light is no longer on the bottle fillers. Adding to this, maintenance staff are primarily male. Third, the airport is focused on improving recovery and becoming more sustainable. They are seeking long-lasting fixtures and standard products, looking for plug-n-play replacements, (e.g., back-lighted mirrors, durable specialty tiles, and solutions for other easily damaged products), seeking easy-to-clean materials, and are developing standards for products. They are doing this while contending with challenges such as more fat/oil and plastic use in restaurants.

The effective flow of passengers and aircraft operations requires coordinated and aligned processes between GTAA and government agencies, air carriers and stakeholders to deliver superior passenger service. Improving accessibility is also an ongoing initiative. YYZ is focused on developing a wheelchair program, adding SARA space, providing changing tables in the restroom areas and creating standards for these. The airport needs clarification related to

accessibility goals: do they want to meet the basics or achieve “Gold Star” status? They need a similar approach to all initiatives, like the restroom program.



## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- Currently a pilot in T1 domestic. Adding one more in 2020 to T1.
- T1 and T3 each have an exterior public location.
- Located by guard station out in open.
- Prefabricated 2' x 4' boxes with "hydrant."
- Smell an issue.
- No data yet on number of uses.
- Currently have non-secure pet relief at exterior curbs.

### Lactation

- Portable units.
- One on T3. Adding five additional portable units by 2020 – one unit per sector in both terminals.
- Evaluating need.

### Nursing Mothers

- See Lactation.

### Family Room

- "Companion Care."
- Near restrooms – six currently.

### Change Table Restroom

- "Assisted Changeroom"
- Available in both terminals and accessible to the public.
- Future retrofitting of Family Rooms with a change table.
- 24-hour access granted remotely.
- Based on "Changing Places" (UK) guidelines.
- Wall mounted change table. Table has a separate drain.
- Toilet – bidet and standard types with raised pan and back support.
- Fold-down and vertical grab bars.
- Range of high/low lavatory basins.
- Electric shower.
- Privacy screen.
- Call button for cleaner to come. They come right away.
- Evaluating spacing of locations.

### Restrooms

- Recently completed pilot prototype that will be used and evaluated by travelers.
- Mixed gender restroom located in transborder area.
- No zero-water urinals (smells)
- No mixed gender yet.
- Targeting one minute in-and-out.

### Smoking

- Outside – post-security, 10 meters away from curb.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- None.

### Children's Play Area

- One in T1 domestic. Custom play areas and soft play elements replacing existing in T1.
- Indoor playground has woodlands theme reminiscent of much-beloved tourism and vacation spots in Ontario.
- Custom-designed carpeting and soft play elements.

### Sensory Room

- Considering.

### Meditation / Quiet

- Creating a layover space in T3. Concierge program with sleep space, comfortable seating, yoga, quiet space, printing area.
- Creating a layover lounge in T1.

### Yoga

- See Meditation / Quiet.

### Worship

- Interfaith chapel in T1 and T3.
- Waiting areas
- Separate worship spaces for Christians and Muslims. GTAA feels there is too much space. Re-evaluating.
- Storage area behind pulpit.
- In each terminal: two priests on GTAA staff to meet needs of travelers and approximately 49,000 people who work at GTAA.
- Large worship spaces.
- Weddings onsite.
- Clergy offices, storage, etc.

### Ablution

- Ablution near chapel in T3. Future plan to incorporate one in T1.

## **Layover-Related Amenities**

### Sleeping

- See Meditation / Quiet.

### Fitness Area

- Concession.

### Public Showers

- Plaza premium lounges and Maple Leaf lounges have showers.

### Clothes Changing

- In Fitness Area.

#### Business Centers

- Currently available in airport lounges.
- Benchmarking what has worked and what has not.
- Considering in future development.

#### Health / Urgent Care

- Concession. “Appletree Medical Centre” in Terminal 1 with wide range of medical services.
- Concession “DrugSmart Pharmacy” for prescriptions and over-the counter medications.
- Concession “Skyhealth Express” kiosks in Terminals 1 and 3 with on-the-go health and wellness necessities.

#### Future Spaces

- Considering child care.
- Considering regional multi-cultural needs. Developing measurements.
- Future interactive art museum and park spaces.

### **Other Activities, Functions, or Spaces**

#### Video Arts

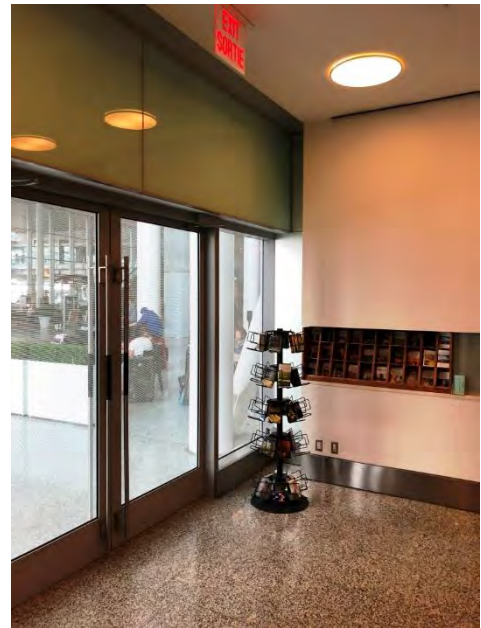
- One screen to show short films. Benches for 15-20 people.

#### Child care

- Considering.



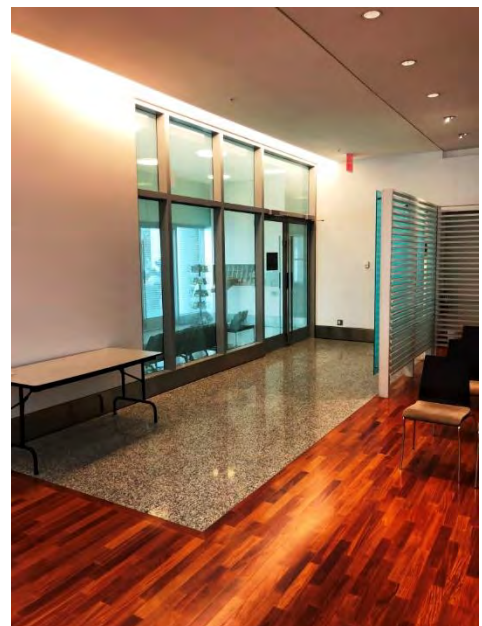
**WORSHIP - Entrance**



**WORSHIP – Lobby with Brochure Racks**



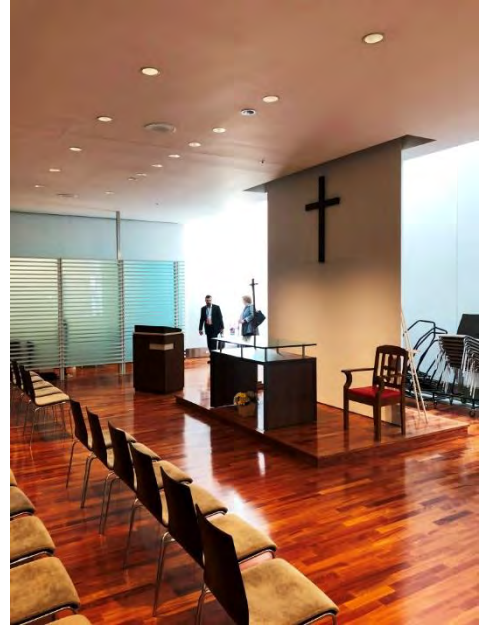
**WORSHIP – Waiting Area**



**WORSHIP – Assembly Space with Privacy Screen at Entrance**



**WORSHIP – Assembly Area**



**WORSHIP - Pulpit**



**WORSHIP - Pulpit**

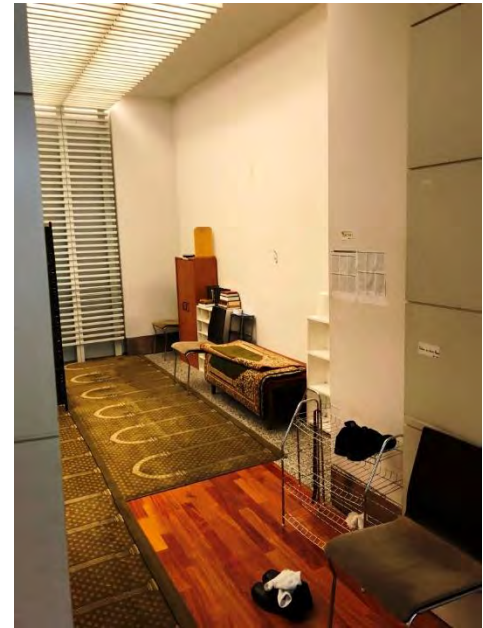


**WORSHIP – Assembly Storage**





**WORSHIP – Passage to Mosque**



**WORSHIP – Mosque Entry**



**WORSHIP – Office and Waiting**

## **Participants**

### Airport

Stuart Bricknell, Director, Engineering & Architectural Services

Jonathan Lock, Manager Structural Integrity, Airport Planning and Technical Services

Hasan Wahab, Manager Architectural Services, Airport Planning and Technical Services

Giovanna Verrilli, Assoc. Director Retail & Passenger Development, Airport Planning and Technical Services

Dimitri Xourafas, Manager Commercial Activations, Airport Planning and Technical Services

Clarence Walters, Manager Mechanical Systems, Airport Planning and Technical Services

### Moderators

Jens Vange – Alliance

Rose Agnew – Aviation Innovation

## ***Vancouver International Airport (YVR)***

### ***“Everyone is in Customer Service”***

#### **Overview**

Hub Type: N/A

Hours of Operation: 24

Annual Enplanements: 12,968,000

Number of Gates: 81

Date of Case Study: September 26, 2018

#### **Background**

Vancouver International Airport is located on Sea Island in Richmond, British Columbia, Canada, about 12 km (7.5 mi) from Downtown Vancouver. It is the second busiest airport in Canada. It has non-stop flights daily to Asia, Europe, Oceania, the United States, Mexico and other airports within Canada.] It is a hub for Air Canada and WestJet. YVR is owned by Transport Canada and is managed by Vancouver Airport Authority. The main terminal was completed in 1968 and has since been expanded to include separate domestic and international terminals. YVR is called the “Pacific Gateway” due to its proximity to Asia as well as the large Asian population in the region. It is the primary gateway between Canada and Asia.

#### **Strategies**

Vancouver International Airport is a community-focused and financially independent organization. It supports the region by providing economic and social benefits, driving innovation and bringing technologies to market that improve the airport experience at home and around the world. YVR has strong executive support for initiatives. Partnering with airlines and relevant organizations is key.

Looking at big airports in Asia for trends. Accessibility and universal access are the top considerations. Go beyond codes (new Canadian Regulations coming out). Their experience has been that this a good practice. Has had a consultant in place on this since the 90s. Get 24/7 feedback through social media and call center. Looking hard at IT interfaces. Tests new products in existing locations.

## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- “Animal Relief Area.”
- Looking at US regulations.
- One D-Pier, One exterior, non-secure.
- Portable units available on demand.
- Turf area separated by main floor area by curb with flush/drain below.
- Lever flush for users.
- Hose available for cleaning paws/maintenance.
- Fold-down bench next to turf.
- Sink, paper towel dispenser, trash, dog waste pick-up bag dispenser with separate disposal.
- Door opened by waiving hand in front of sensor.
- Consulted local guide dog school and groups during design.

### Lactation

- See Nursing Mothers.
- Planning to use a portable unit as a test.

### Nursing Mothers

- Constructing Lactation/Nursing Mothers on D-Pier.
- Comfortable chair and side table. Considering two different types of chairs for better accommodation.

### Family Room

- “Washroom Toilette”
- Two at each restroom set.
- Toilet, disposal, shelf.
- Sink with counter disposal and built-in baby changing area, paper towel dispenser, hand dryer, biohazard disposal.
- Call-button by toilet. Summons staff. They get several calls per day, but occasionally have an emergency.
- Rack with hooks.
- Fold-down bench.

### Change Table Restroom

- “Family Room Plus.”
- Power-operated, 6-foot long change table. Need to fix hinge periodically. Had 4-foot table originally. Too short.
- Hoist.
- Receiving requests for the room.
- Eventually at all restroom sets.

### Restrooms

- Reduced mobility stall has back, side, and fold down crab bars. 6’ x 5’ to accommodate electric wheelchair.
- Kid’s stall.
- Fold-down bench.
- Everything touchless.
- Custom hot-water dispenser at drinking fountains. Many Asian travelers prefer to drink hot water and want to make soup.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- Restrooms typically near hold rooms so seating is available there.

### Children's Play Area

- One on Pier B, two on C-Pier, two on D-Pier, one on Pier-E.
- Combination of “active” activities (slides) and “mental” activities (large scale chess game).
- Located near food courts, not by washrooms (can't watch kids from there) or gates (too congested).
- Custom made components by local woodworker.
- Need 6-feet clear radius at bottom of slide by local code official.
- Special flooring to protect against falls – poured sports floor at new installations.
- Important to provide elements of play - avoid TVs.
- Recommend using Canadian Standards Association (CSA) Playground Standard as a guide.

### Sensory Room

- Developing. Designing for everyone, not just autism.
- Calling it “Quiet Space.”

### Meditation / Quiet

- Planning to locate flexible space in new expansion area along with other quiet spaces: chapel and yoga.

### Yoga

- Alcove on C-Pier.
- Sponsored by YYoga, a yoga and wellness company.
- Free. Mats available. Instructor available certain times.

### Worship Space

- “Chapel Reception and Prayer Room.”
- Interfaith chapel, International Terminal, Arrivals.
- For travelers and staff.
- Open 24/7. Team of chaplains and volunteers available 9:00 am to 7:00 pm daily.

### Ablution

- In chapel.
- Faces east.

### Smoking

- Designated outside area – non secure side.

## **Layover-Related Amenities**

### Sleeping

- Hotel inside International Terminal. Day rates available.
- Looking at pods.
- Variety of seating accommodations.
- Napping room in Plaza Premium Lounge.

### Fitness Area

- In hotel. \$20/day per person.



#### Public Showers

- In hotel.
- Considering providing for public.

#### Clothes Changing

- None.

#### Business Centers

- Tried but failed.

#### Health / Urgent Care

- Concession. “Ultima Medical Clinic.” Non-secure side.
- Offers primary, family, and specialized care for travelers and staff.
- Full service dental clinic.
- Adjacent pharmacy.
- YVR has bike squad paramedics.

### **Other Activities, Functions, or Spaces**

#### Nursery Room

- Cribs, playpens, baby changing area.

#### Short Film Theater

- Tried and failed.
- Showed 15-minute films.

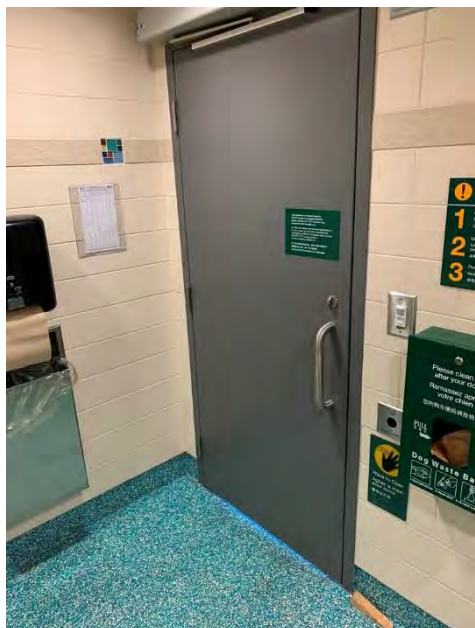
.



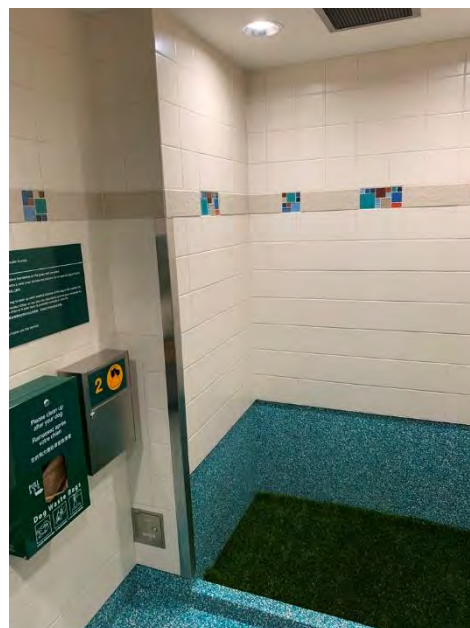
**SARA - Entrance**



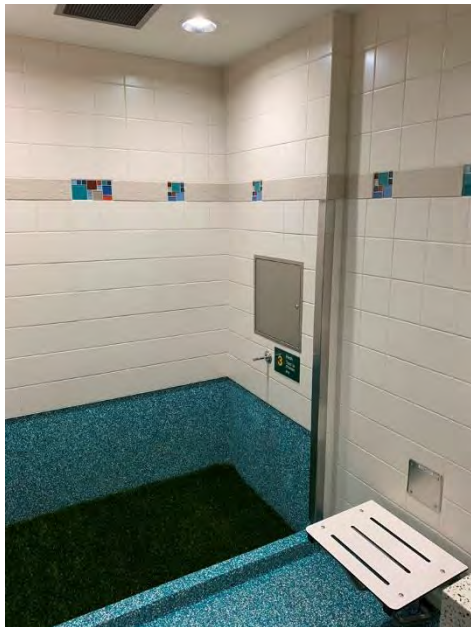
**SARA -Entrance Signage**



**SARA – Door, disposal bag dispenser, paper towels**



**SARA – Bag Dispenser and Turf Area**



**SARA –Turf Area and Folding Bench**



**SARA – Lavatory**



**SARA – Paper Towel and Waste Disposal**

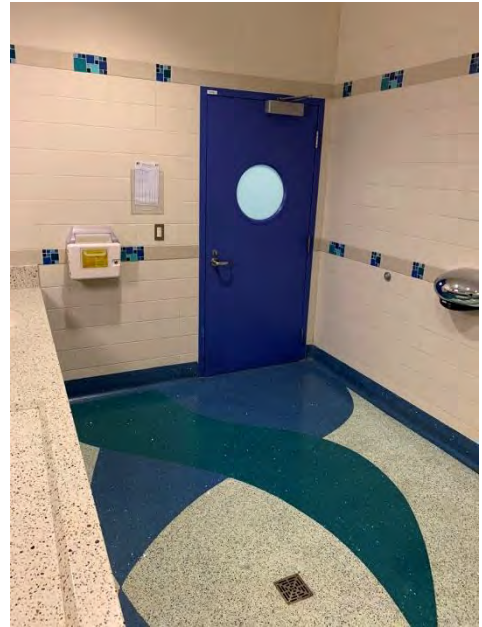


**SARA –Signage and Bag Dispenser**





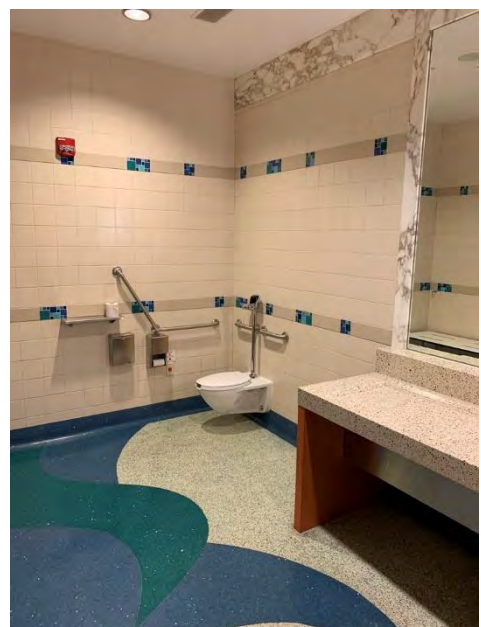
**FAMILY - Entrance**



**FAMILY - Entrance Interior**



**FAMILY - Folding Bench**



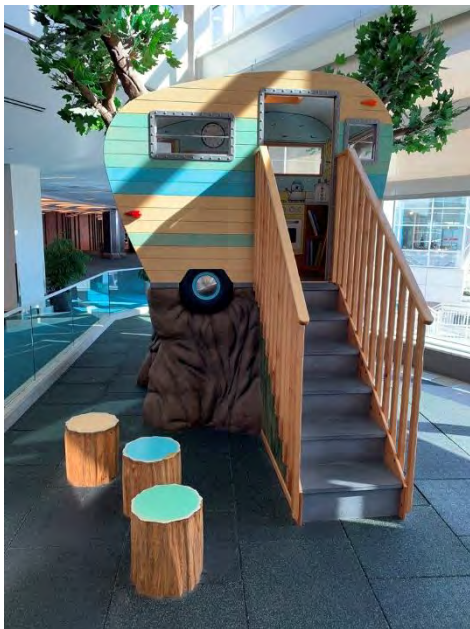
**FAMILY - Toilet and Lavatory**



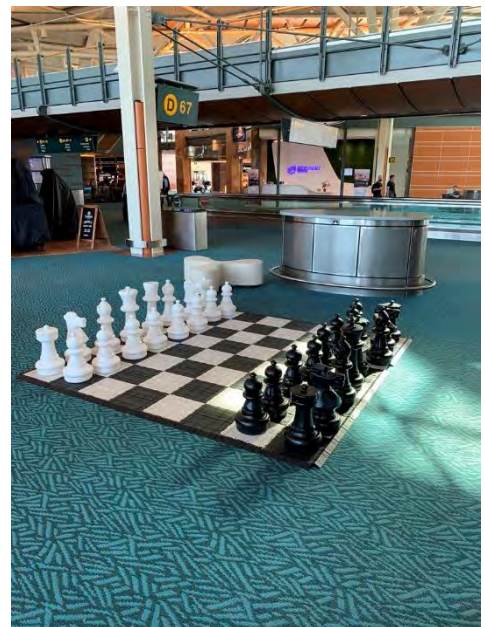
**FAMILY - Lavatory**



**PLAY - Play Area**



**PLAY - Play Area**



**PLAY - Play Area**

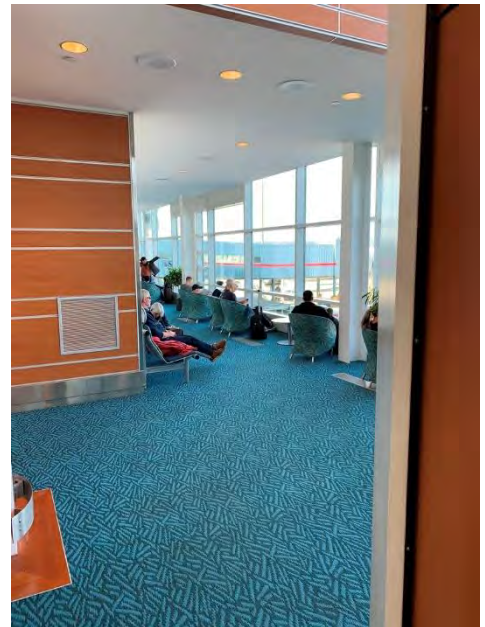




**PLAY - Play Area**



**QUIET AREA - Door Signage**



**QUIET AREA – Reclined Seating Area**

## **Participants**

### Airport

Cathy Nyfors, Manager, Customer Care/Guest Relations, Vancouver Airport Authority  
Reg Krake, Director, Customer Experience  
Cathy Nyfors, Manager, Customer Care/Guest Relations, Vancouver Airport Authority.  
Elaine Fisher, Manager, Customer Care Services  
James Blake, Manager, Engineering services  
Nancy Stern, Architect  
Alex Thureau, Contract Services

### Moderators

Jens Vange – Alliance  
Rose Agnew – Aviation Innovation

# ***INTERNATIONAL CASE STUDIES***

Gatwick Airport (LGW)  
Heathrow Airport (LHR)  
Hamad International Airport (DOH)

## ***Gatwick Airport (LGW)***

### ***“Accessible Amenities Increase Bookings.”***

#### **Overview**

Hub Type: N/A

Hours of Operation: 24

Annual Enplanements: 23,050,000

Number of Gates: 129 Contact, 57 Remote

Date of Case Study: October 17, 2018

#### **Background**

Gatwick Airport (LGW) is the UK’s second largest airport. It is the busiest single runway airport in the world serving 45 million passengers. Flights from Gatwick reach over 230 destinations, including over 60 long haul routes with over 300 flights a week to North America. The Gatwick rail station connects directly into 125 destinations. It is one of the best-connected airports in Europe by rail. It is prioritizing and investing in sustainable development and is the first carbon neutral London airport, using 100 percent renewable energy. In addition, LGW has developed a world-leading waste processing plant. As an “Airport for Everyone”, Gatwick has transformed over the last seven years under new ownership. Gatwick is owned by Global Infrastructure Partners (GIP) and a consortium of investors.

#### **Problems/Solutions**

LGW has taken a leading position to further its ambition to be the UK’s most accessible airport. LGW works with numerous charities including Alzheimer’s Society, Dementia Friends, Royal National Institute for the Blind, National Autistic Society, Crawley Autism Support, Guide Dogs for the Blind, Crohn’s & Colitis UK, West Sussex ADHD, and Action for Deafness. LGW’s special assistance bookings are going up 10 percent per year because LGW has accessible amenities.

LGW was the first airport in the UK to introduce a “hidden disability lanyard,” which was designed to increase support for passengers with autism, dementia and other hidden disabilities. Since these lanyards were introduced, more than 8,000 travelers have requested one when travelling through the airport. The lanyard provides staff with a discreet signal that travelers, their families, or caregivers may require additional assistance when travelling. The program is entirely voluntary and lanyards can be collected free of charge from any assistance desks. Following Gatwick’s lead, the hidden disability lanyard has been rolled out at 13 UK airports. Other airports across the world are also considering launching lanyard schemes of their own.

The airport regularly engages with regulatory agencies, trade bodies, and government departments on the topic of accessible travel. This enables LGW to share and learn from best practices around the industry, and ensures Gatwick is represented in the formation of regulation and legislation. Social media is a major focus for feedback.

## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- Planning.

### Lactation

- Planning.

### Nursing Mothers Check

- Planning.

### Family Room

- Separate baby changing room next to Family Room.

### Change Table Restroom

- Each terminal.
- Approx. 9' x 12' space.
- Call posted number for door keypad code.
- Ideally separate from family room. Specialized function. Don't want to make change-table user wait.
- Full-size, powered change table with paper dispenser.
- Accessible toilet and toilet paper dispenser.
- Emergency call button next to toilet.
- Wall mounted emergency strips – touch or kick to activate signal.
- Adjustable height lavatory with soap and grab bars, hand dryer, trash.
- Handheld electric shower.
- Folding privacy screen on wheels.
- Wipes mostly used for person, not table.
- Shower can be used standing or laying on bed.

### Restrooms

- Interest in all-gender restrooms.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- Considering

### Children's Play Area

- "Kids Zones." North and South Terminals.
- Elaborately painted panels around perimeter and overhead. Activity areas within half -walls.
- TVs.

### Sensory Room

- Designed by Rompa (UK sensory company) and Airport Committee. Not focused on specific disability.
- Worked with local and national autism organizations and national Alzheimer's organization.
- Capacity 8-12 people.
- Book 45-minute sessions. Free.
- Calming or exciting – flick of a switch. Very expensive but worth it.
- Chill-out zone for those needing calm setting includes floor cushions, bean bags, digital display panels (with colorful wall features).

- Interactive zone stimulates the senses through tactile panels, textures, and game to improve memory, motor skills, and encourage learning.
- Card reader entrance. Could be available to all but don't want it to be abused.
- Monitored.
- Decided against hoist (ceiling mounted, multi-directional) to help getting out of wheelchair. Room is already wheelchair accessible.
- Classical music piped in.

#### Meditation / Quiet

- None.

#### Yoga

- None.

#### Worship Space

- Each terminal.
- Multi-faith.
- Chapel with pulpit and chairs.
- Private prayer room with curtains.
- Chaplain's office.
- Information table and shelves.

#### Ablution

- In Prayer Room.
- Fixture with floor mat, soap dispenser, and hand dryer.

#### Smoking

- Outdoors non-secure.

### **Layover-Related Amenities**

#### Sleeping

- Concession. "Yotel."
- Several other chain-airports on airport grounds.

#### Fitness Area

- In Hotel. Staff have discounts.
- Considering separate facility.

#### Public Showers

- In Hotel.

#### Clothes Changing

- In Restrooms.

#### Business Centers

- Concession. "Regus Express."
- Seating areas, conference room, work nodes, printing area.



#### Health / Urgent Care

- Pharmacy.
- On-site paramedics.

#### **Other Activities, Functions, or Spaces**

##### Special Assistance

- Sorted before security. Have a separate lane.
- Dedicated seating areas and tables.
- Realizes the word “Special” should be removed. “Assistance” is adequate.

##### Baby Changing

- Separate baby changing room next to Family Rooms.
- Counter with baby changing area, paper dispenser.
- Sink, soap, trash, chair.



**BABY CHANGING - Paired with Family Room on Left**



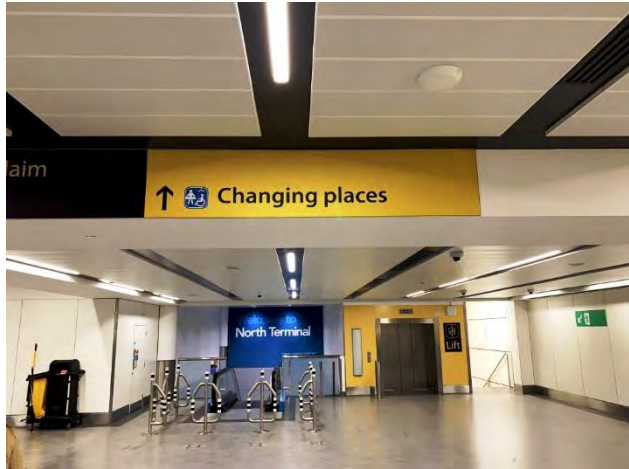
**FAMILY ROOM - Signage**



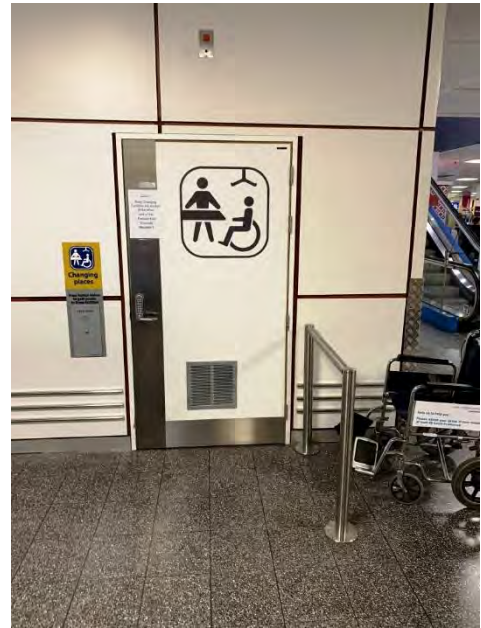
**BABY CHANGING - Changing Table**



**BABY CHANGING -Chair, Trash, and Lavatory**



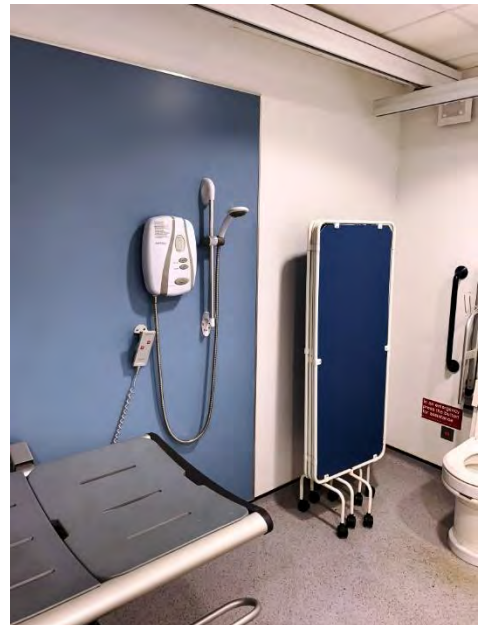
**CHANGE TABLE RESTROOM - Wayfinding Signage**



**CHANGE TABLE RESTROOM - Entrance**



**CHANGE TABLE RESTROOM - Door and Change Table**



**CHANGE TABLE RESTROOM - Change Table, Shower, and Folded Screen**





**CHANGE TABLE RESTROOM -  
Toilet and adjustable height  
lavatory**



**CHANGE TABLE RESTROOM -  
Lavatory and hand dryer**



**CHANGE TABLE RESTROOM -  
Trash, Mirror, and Door**



**CHANGE TABLE RESTROOM - Extended  
Screen**



**CHANGE TABLE RESTROOM -  
Emergency Button**



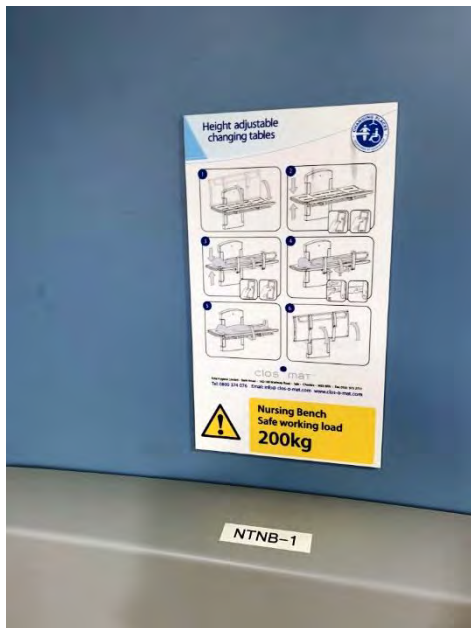
**CHANGE TABLE RESTROOM - Emergency Bar**



**CHANGE TABLE RESTROOM - Change Table  
Paper Dispenser**



**CHANGE TABLE RESTROOM -  
Shower**



**CHANGE TABLE RESTROOM -  
Instructions Signage**



**CHANGE TABLE RESTROOM -  
Instruction Signage**



**CHANGE TABLE RESTROOM - Hoist in  
Charging Position**



**CHANGE TABLE RESTROOM -  
“Return to Charging Position”  
Button**





**PLAY AREA**



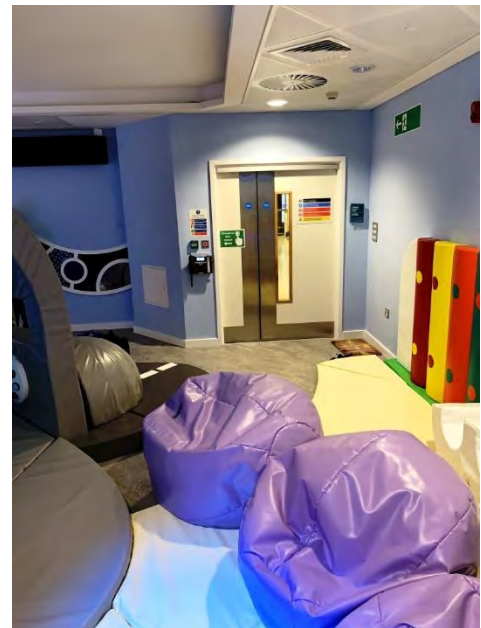
**PLAY AREA**



**PLAY AREA**



**SENSORY ROOM - Entrance**



**SENSORY ROOM - Door and Cushioned Seating Area**



**SENSORY ROOM - Varied Color Soft Walls and Alternate Seating**



**SENSORY ROOM - Lighted Activity "Room"**



**SENSORY ROOM - Non-lighted  
Activity Room**



**SENSORY ROOM - Various Activity  
and Seating Areas**



**SENSORY ROOM - Various Activity and Seating  
Areas and Door**

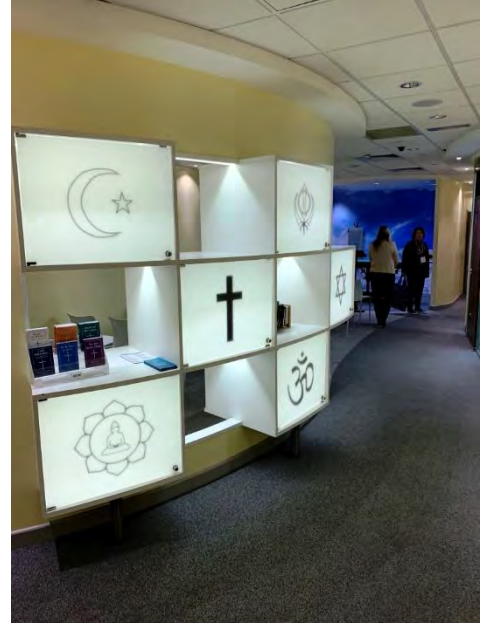


**SENSORY ROOM - Available User  
Guide**





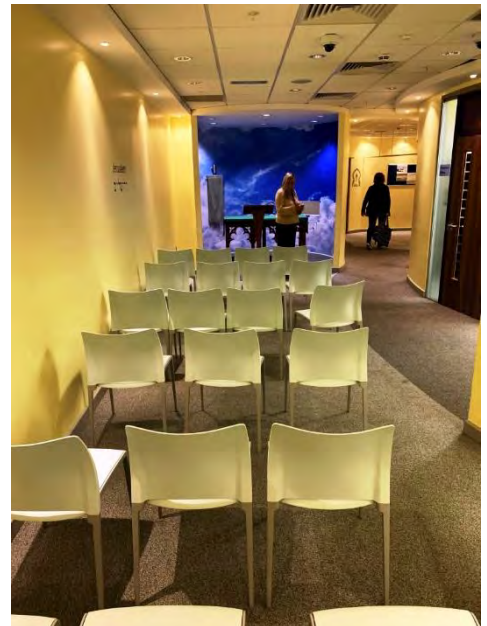
**WORSHIP - Entrance**



**WORSHIP - Multi-faith Information Area**



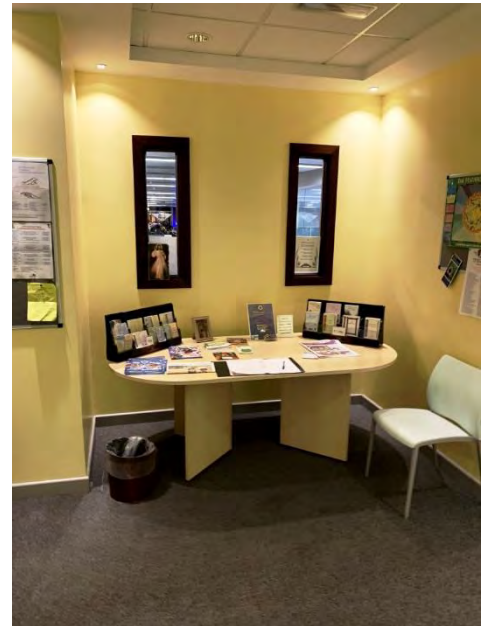
**WORSHIP - Pulpit and Seating**



**WORSHIP - Seating with view to Pulpit**



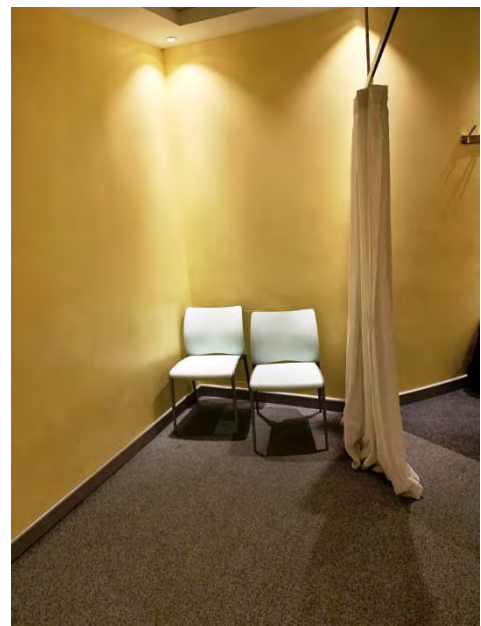
**WORSHIP - Chaplain's Office**



**WORSHIP - Resource Area**



**WORSHIP - Library**



**WORSHIP - Private Worship/  
Meditation Area with Movable  
Curtains**





**ABLUTION - Entrance**



**ABLUTION - Hand-dryer and Door**



**ABLUTION - Foot-washing and Floor Mat**



**ABLUTION - Foot-washing, Floor Mat, and Hand-dryer**



**BUSINESS CENTER - Reception  
with Work Nodes Beyond**



**BUSINESS CENTER - Seating Area  
with Movable Work Surface**



**BUSINESS CENTER - Reception Area with  
Conference Room Beyond**

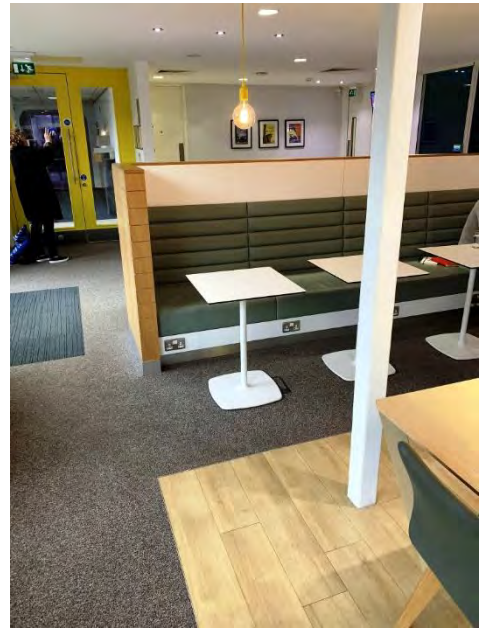


**BUSINESS CENTER - Printing Area**





**BUSINESS CENTER - Work/Meeting Tables**



**BUSINESS CENTER - Individual Work Tables**



**BUSINESS CENTER - Conference Room**

**Price list.**

Business Lounge*		Price
Hourly Rate		£8.00
Two Hours		£16.00
Daily Rate		£40.00
Weekend Day		£10.00
Shower & Lounge (1 Hour)		£20.00
Global Businesscard Gold membership (unlimited lounge usage)		£95.00

Meeting Rooms** (price per room)			
Meeting Room name	Full day	Half day	Hourly
Boardroom	£200.00	£140.00	£50.00
Luxury	£100.00	£70.00	£25.00
Executive	£50.00	£35.00	£12.50
Regency	£25.00	£17.50	£6.25
Executive/Conference (over 10 people)	£100.00	£70.00	£25.00
Executive (over 10 people)	£50.00	£35.00	£12.50

Day Office**	
Hourly Rate	£10.00
Day Office (all day)	£20.00

\*\* Prices exclude food & drink - includes tea & coffee

Your workspace on the move

**Regus**  
BUSINESS

**BUSINESS CENTER - Space Usage Rates**



**SPECIAL ASSISTANCE -  
Wayfinding Signage to Location on  
Right**



**SPECIAL ASSISTANCE - Entrance**



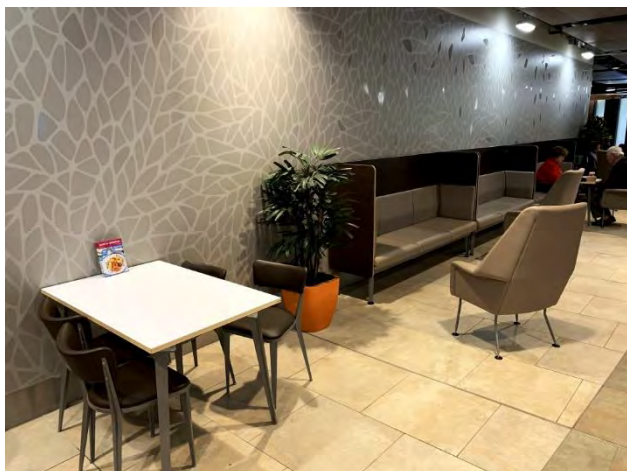
**SPECIAL ASSISTANCE - Seating Area**



**SPECIAL ASSISTANCE - Reception**



**SPECIAL ASSISTANCE - Seating Area**



**SPECIAL ASSISTANCE - Seating Areas**



## **Participants**

### Airport

Sara Marchant – Accessibility Manager, Gatwick Airport Limited

### Moderators

Jens Vange – Alliance

Rose Agnew – Aviation Innovation

## ***Heathrow Airport (LHR)***

### ***“Keep Traveler at the Center”***

#### **Overview**

Hub Type: Large

Hours of Operation: 24

Annual Enplanements: 40,063,000

Number of Gates: 141 Contact, 19 Remote

Date of Case Study: October 11, 2018

#### **Background**

Owned and operated by Heathrow Airport Holdings (previously BAA), Heathrow Airport is a major international airport, the principal international gateway serving the city of London and among the world's busiest international airports. Heathrow hosts domestic, regional and international passenger and cargo services from over 50 airlines, the airport is a hub for airlines such as British Airways, the One World alliance, Virgin Atlantic and the Star Alliance. LHR lies 14 miles west of Central London and has four terminals.

Heathrow Airport originated in 1929 as a small airfield. Development as a larger airport began in 1944. The airport now has four active terminals. Terminal 1 was closed in 2015 leaving the current Terminals 2-5. There is an inter-terminal transit service (train service) which connects all four terminals and is free to use.

#### **Strategies**

Heathrow views its role as facilitating and expediting the traveler experience. As an international gateway, it tries to accommodate people of all cultures and abilities. The entire staff (80,000 people) is trained on accessibility, equity, and diversity. This effort is spearheaded by the Heathrow Access Advisory Group (HAAG). They meet quarterly to discuss and advise the airport facilitation topics that impact travelers.

Heathrow has an Insights Team that monitors customer experience. Sustainability is also a driving factor in all initiatives. Projects are funded privately. Lists of potential initiatives are assembled and presented to the airlines and community to help prioritize. Civil Aviation Authority makes shareholder decisions.

Security measures are based on customer service versus the “one size fits all” approach. For example, numerous, very visible “special assistance” areas are located along the traveler’s path from curbside to airplane seat. A separate check-in process and lane is available for those who need additional assistance for any reason. Heathrow is at the forefront in providing change-table restrooms and is planning a sensory room. LHR is considering using the new United Nations symbol for accessibility (under ISO review).

LHR uses SignLive, a British Sign Language interpretation service which is available free of charge 24 hours a day, and AIRA, which connects people with a visual impairment via the camera in their mobile phone to an agent.

LHR considers Incheon and Zurich airports as “competitors” in terms of type and scale of operations. They monitor their initiatives for benchmarking. Heathrow also looks at new ideas at other airports, such as Copenhagen’s allergy-free walkway through Duty-free. The focus is needs versus attractions. Human biometrics is an influence on design.

## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- Just an exterior location by T2
- Currently no regulations but are in development.

### Lactation

- None.

### Nursing Mothers

- None.

### Family Room

- All terminals.

### Change Table Restroom

- All terminals.
- “Changing Places.”
- Accessible toilet and dispenser.
- Full-size, powered change table with paper dispenser, hand dryer.
- Multi-directional hoist for assistance onto change table and toilet.
- Handheld shower.
- Adjustable height lavatory, soap dispenser, and paper towel dispenser.
- Wall-mounted strips on wall to push or kick for emergency call.
- Movable privacy screen on wheels.
- Full height mirror.
- Sign indicating restroom is not for general passenger or staff use.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- None.

### Children’s Play Area

- One each terminal.
- Modular, multilevel system for physical activities.

### Sensory Room

- Hopefully in 2019.

### Meditation / Quiet

- T3.
- Unused hold room.
- Broadly spaced seating, lamps, tables.
- Plan to add carpet to dampen sound and add surrounding “walls” for semi-privacy.

### Yoga

- None.

### Worship Space

- All terminals. Goal is to have one on non-secure side as well.

- Multi-faith.
- Curtains divide space into multiple seating areas.
- Intended for reflection.
- Ablution next door.
- Multiple chaplains for different faiths.
- Waiting areas with literature/book racks.
- Also, a chapel in airport for staff.

#### Ablution

- T4.

#### Smoking

- T4 airside. Landside all other terminals.

### **Layover-Related Amenities**

#### Sleeping

- None.

#### Fitness Area

- T2
- Concession. “FlyFit.”

#### Public Showers

- In lounges and Fitness Center.

#### Clothes Changing

- In lounges and Fitness Center.

#### Business Centers

- T5.
- Concession. “Regus Express.”

#### Health / Urgent Care

- Charity. “Heathrow Travel Care” T3.
- Nurse, mental illness care, homeless care.

### **Other Activities, Functions, or Spaces**

#### Special Assistance

- Located at checkpoint, and in concourses.
- Push-chair corral adjacent to seating area.
- Realizes the word “Special” should be removed. “Assistance” is adequate.

#### Spectator Platform

- T4
- 270-degree panoramic view.
- Flight-tracking touch screens.



**CHANGE TABLE RESTROOM  
Entrance**



**CHANGE TABLE RESTROOM  
Sign**



**CHANGE TABLE RESTROOM Adjustable  
lavatory. Entrance in corner.**



**CHANGE TABLE RESTROOM  
Entrance, mirror, folded screen,  
change table**





**CHANGE TABLE RESTROOM**  
Change table and toilet. Hoist above.



**CHANGE TABLE RESTROOM Toilet and lavatory.**



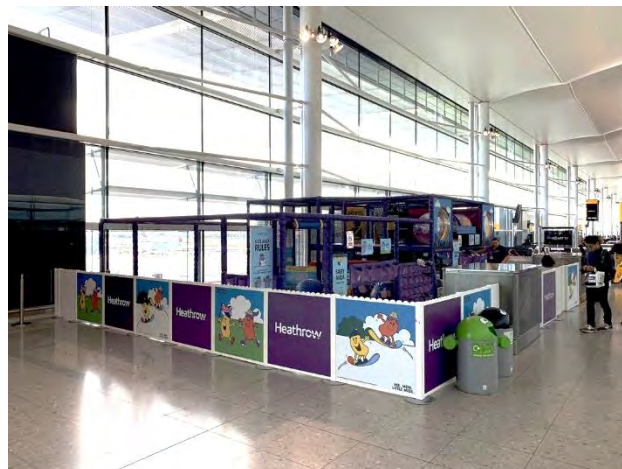
**CHANGE TABLE RESTROOM** Extended screen,



**CHANGE TABLE RESTROOM**  
Adjustable height lavatory.



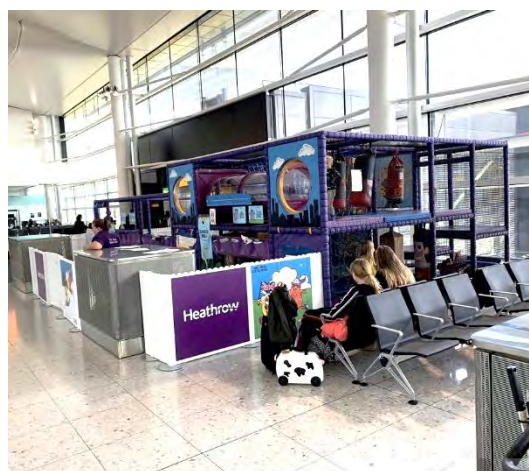
**CHANGE TABLE RESTROOM**  
Notice at entrance.



**PLAY AREA**



**PLAY AREA**

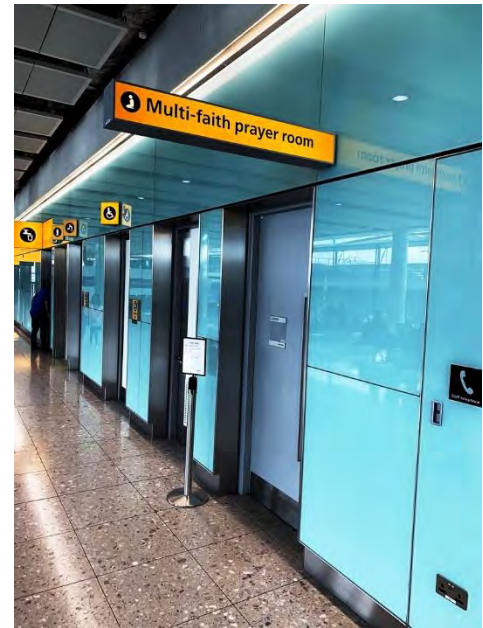


**PLAY AREA**





**QUIET AREA**



**WORSHIP Entrance**



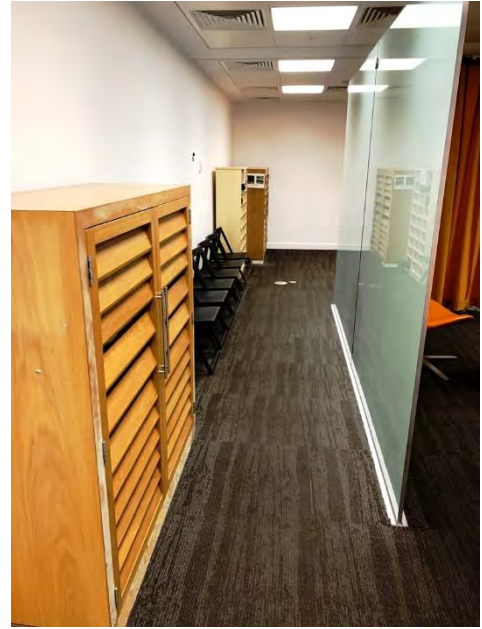
**WORSHIP SPACE 1**



**WORSHIP SPACE 2**



**WORSHIP Compass**



**WORSHIP Entrance Hall to Worship Space**

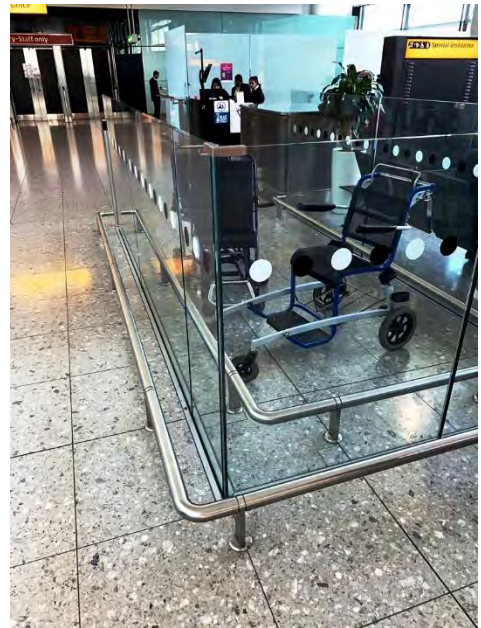


**WORSHIP Waiting**





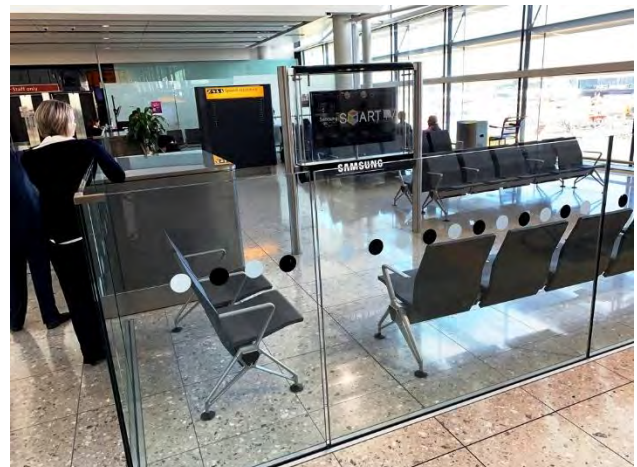
**SPECIAL ASSISTANCE Near  
Checkpoint**



**SPECIAL ASSISTANCE  
Concourse Area Push Chair  
Corral**



**SPECIAL ASSISTANCE Concourse Area  
Entrance**



**SPECIAL ASSISTANCE Concourse  
Area Seating**



## **Participants**

### Airport

Roberto Castiglioni, Chair –Access Advisory Group at Heathrow

Nicole Day, Passenger Service Manager – Performance

Claire Milburn, Passenger Experience Manager

### Moderators

Jens Vange – Allliance

Rose Agnew – Aviation Innovation

## ***Hamad International Airport (DOH)***

### ***“What is the Risk if I Don’t Do it? What is the Opportunity if I Do?”***

#### **Overview**

Hub Type: N/A

Hours of Operation: 24

Annual Enplanements: 17,233,725

Airport Size (sf): 6,384,700

Number of Gates: 41 contact, 24 bus

Date of Case Study: October 18, 2018

#### **Background**

Hamad International Airport (DOH) replaced Doha International Airport (DIA) in 2014. The airport is the primary gateway to Qatar and the hub of national carrier, Qatar Airways. It is one of the largest airports in the region and features 315,630 square feet of combined retail, food and beverage facilities, extended with an airport hotel, lounges and other leisure facilities. Its parallel runway system enables the handling of 65 aircraft per hour.

Terminal 1 has five concourses. A and B each have 10 contact gates, Concourse C has 13 Contact Gates and 10 Bus Gates, Concourse D and E have 4 Contact Gates and 2 Bus Gates each. D and E are due to be extended with a possible Concourse F in the future. Terminal 2 is planned but waiting until passenger growth justifies it. DOH is a primary hub in the Mideast with only 27% non-transfer travelers. They maintain an IATA Level of Service of A and B. HIA has a development policy that is open to innovative ideas from all staff. They also look for real-time traveler-input tools.

#### **Problems/Solutions**

DOH is looking at examples of amenities at other airports to inform future initiatives. It wants to look and feel different from other airports. It is also interested in other metrics such as drivers, alignment with business model, and life-cycle costs of maintenance.

Airport planning efforts are focused on locating amenity spaces near processing areas. They are also trying not to segregate accessible facilities or split up traveling family groups (see “Children’s Play Area” comments). HIA allocates airline lounge space to Airlines / Ground Handlers who then operate the space as per the Airport Guidelines.

Most DOH facility maintenance is outsourced. This type of service arrangement was inherited from the original terminal agreement. As the airport has refined its operations process from an input-based to output-based model, it has begun to hire specialists and has integrated the CMMS (Computerized Maintenance Management System) platform to monitor all airport maintenance. The next step on the horizon is optimizing customer satisfaction and cost effectiveness. For this, the airport’s asset management system is critical. To support this, the airport is moving to mobile devices for real-time interface management issues and needs. As a result, staff can perform live audits of standards, code compliance, efficiency, etc. Also, durability is a high maintenance priority and they perform a lot of testing of products to find the most durable ones.

HIA now sees all of its activities as risk-based: What is the risk if I don’t do it? What is the opportunity if I do? The goal is to empower individual staff to make decisions and imitative improvements. “Checkers” oversee efforts and monitor costs, tangential impacts, etc.

## **Regulated Amenities**

### Service Animal Relief Area (SARA)

- An increase in service dogs on long travels. Receive many requests. HIA knows if someone is flying in with service dog so they “host” animal and owner. Are considering amenity but working out the “clear away” process.

### Lactation

- Parent’s Room at Children’s Play Area provides diaper changing station.

### Nursing Mothers Check

- See Lactation.

### Family Room

- At restrooms.

### Change Table Restroom

- Baby changing only.

### Restrooms

- Looking at adding amenities. Lockers near restrooms for passenger use.
- Monitoring environmental impact of maintenance. Use low flow flushing.
- Employ many cleaners on staff. Use matrix to score cleaning expectations.

## **Waiting-related Amenities**

### Companion Waiting Area at Restrooms

- “Companion Care”
- Accessible.

### Children’s Play Area

- “Activity Node.”
- Family area on Concourse B (north and south node).
- Entire family can sit and wait for flight. Room for 8.
- Near restrooms and coffee shop.
- Video games provided in airline lounges. Looking for public locations here. Computer stations on two tables with chairs for internet use.
- Developing new concept that is free to use. Not sure if it will work in their culture.

### Sensory Room

- “Special Handling Lounge”
- Working with local organization, Shafallah Center. For passengers with special needs, including autistic passengers. “Will feature certain aspects of a sensory room, which is a specially designed space used for the therapy for children with limited communication skills, including electronic carpets, which allow children to play games and activities. Shafallah Center will also provide specialized training for ground handling staff at HIA on how to provide special care and assistance to passengers with special needs including those with autism.”

### Meditation / Quiet

- Areas for males, females, and families.
- Low lighting, four rows of recliners, comfortable temperature.

- Just added frosted glass panels between rows of seating.
- Fills up at peak times.
- Found that windows are too bright.
- Considering adding vending for sleep kits (water, mask, etc.).

#### Yoga

- In Fitness Area.

#### Worship Space

- Mosque/prayer rooms provided throughout airport.

#### Ablution

- Near prayer rooms or in restrooms near prayer room. Men and women have equal facilities but separated. Not accessible. Have not had requests for accessibility.

#### Smoking

- HIA has recently upgraded the branding and feel of the spaces.
- Concourse A has 1, B-1, C-2, D-1, and E-2. Room with glass walls and doors.
- Has charging stations.

### **Layover-Related Amenities**

#### Sleeping

- Airport Hotel (concession).

#### Fitness Area

- Concession. Wish they had free options to offer.

#### Public Showers

- Concession. Following other airports commercializing. North node of B closed for refurbishment. South node will follow suit. Improving maintenance quality and creating a better experience by segregating amenities so they only pay for what they use.
- Male and female areas.
- Showers, massage, pedicure.
- North node has three showers (one accessible), one massage room, two toilets. South node has five showers (one accessible), two massage rooms, and two toilets. Only one node opens at a time. Staff goes back and forth.
- Maximum 10-20 minutes.
- Massage not used much.
- Provide 700-900 showers per month.

#### Clothes Changing

- At Public Showers.

#### Business Centers

- Not used.
- Provides 2-Pin + 3-Pin + USB receptacles for passenger usage.

#### Health / Urgent Care

- Concession. Operated by Hamad Medical Corporations, principal public healthcare provider in Qatar.
- Emergency Center in arrivals and departures concourses.



- Replaces closed clinics at DOH.
- Provides urgent care and preventive care. Ambulance service.
- Paramedic system that utilizes bikes, Segways, and golf carts operate within the terminal.

#### Future Spaces

- Would like a green space with gardens, zoo, coy pond, and waterfalls. Walk-through/visual only – not interactive. Too many hazards/health -risks.

### **Other Activities, Functions, or Spaces**

#### Lounges

- Passenger's with Reduced Mobility (PRM) Lounge: Receive many passengers, particularly from India. Culture is for entire family to travel, including elders. Customer service driven accommodation – PRM lanes at checkpoint, near food court and restrooms and near transit area. At each end and middle of concourse.
- Unaccompanied Minors Lounge: Airline based and will probably stay that way. Provide food, three screens, toys, games, and garden space. Seating with table. Accessible children's toilet and lavatory. Kitchen has drinks and snacks from airline lounges. Secure desk at entrance. Three full-time staff (one is supervisor).
- Delay Lounge: Considering. Sleeping facility. Less accommodation for hotel.

#### Video Walls

- Have four large ones that play variety of videos. Comfortable chairs. Show free kid's programs and news.

#### Stroller Stations

- 53 locations with 10+ strollers each at HIA's discretion.
- Placed at the end of processes: arriving gates, security checkpoint, transit drop-off points, etc.
- The custodial staff returns carts to stations.

*All photos provided courtesy of Hamad International Airport.*



**RESTROOM**



**COMPANION CARE - Entrance**



**COMPANION CARE – Sink and Baby Changing**



**SENSORY ROOM**



**QUIET**



**WORSHIP**



**ABLUTION**



**SMOKING**



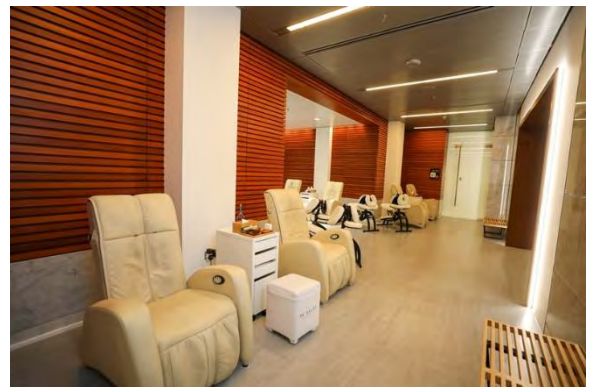
**SMOKING**



**FITNESS – In Hotel**



**SQUASH**



**MASSAGE AND PEDICURE**





**SPA**



**POOL**



**SHOWERS**



**SHOWERS**

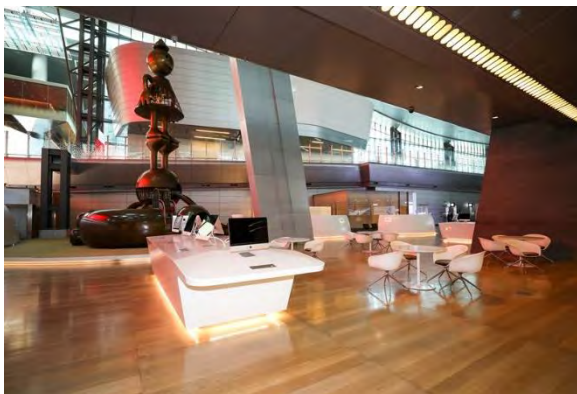




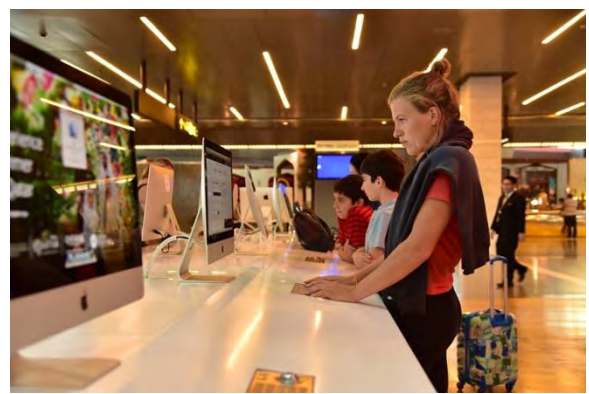
**MEDICAL CLINIC**



**GOLF SIMULATOR**



**ACTIVITY NODE**



**COMPUTER AREA**



**FAMILY AREA**



**FAMILY AREA**



**TV AREA**



**TV AREA**



**STROLLER STATION**



**LOCKERS**

## **Participants**

### Airport

Sujata Kumar Suri, Vice President, Strategy & Development, Hamad International Airport

Varun Kapur, Manager Customer Service, Hamad International Airport

Vivek V. Agarwal, Development Planning Project Manager, Strategy & Development, Hamad International Airport

Razwan Hussain, Operations Planning & Quality, Assurance Manager, Hamad International Airport

Erico Santana, Manager, Standards & Procedures, Operations - HIA, Hamad International Airport

### Moderators

Jens Vange – Alliance

Rose Agnew – Aviation Innovation