

Seeing Clearly

HOW AIRPORT GLASS CHOICES AND DESIGNS INFLUENCE PASSENGER EXPERIENCE

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ALMOST ALL MODERN AIRPORTS UTILIZE GLASS-CENTRIC DESIGNS TO PROVIDE TRAVELERS WITH UNOBSTRUCTED OUTDOOR VIEWS AND ACCESS TO NATURAL DAYLIGHT, WHICH HAVE BEEN PROVEN TO HAVE A POSITIVE IMPACT ON OVERALL TRAVELER SATISFACTION. BUT USE OF GLASS CAN COME WITH A TRADE-OFF, AND SOME OPTIONS MAY HAVE UNEXPECTED CONSEQUENCES ON BOTH YOUR TRAVELERS' EXPERIENCES AND YOUR BOTTOM LINE.

DESIGN CONSIDERATIONS FOR TRAVELERS AND STAFF

Although an all-glass design provides travelers with access to desirable natural light, there are other associated considerations that oftentimes go under the radar but play an integral role in the travel experience – thermal and visual comfort. In fact, studies have shown that thermal and visual comfort, both for travelers and airport staff, are key influencers in whether they have a positive airport experience. Research studies on comfort conditions in airports revealed that thermal comfort underperformance has a negative effect on overall satisfaction. Additionally, travelers reported a strong preference for more natural light, even under conditions when it is estimated to be sufficient, particularly in the morning hours.¹

So, you may be thinking – let in more natural light; however, the solution is not that simple. Letting in natural light can result in glare and excessive heat, which can aggravate already tense and rushed travelers, creating a frustrating experience for all parties,

including airport businesses hoping to gain travelers' attention. Additionally, in our connected, digital world, travelers expect to be able to utilize devices like smartphones, tablets and laptops, and glare on these screens compromises use.

Unfortunately, blinds and shades are not typically viable options for preventing heat gain and glare because they block the daylight and outdoor views travelers expect. Additionally, while traditional solutions such as fritted (i.e. patterned) glass has been utilized at airports to help control glare, research has shown that this solution often is insufficient to control glare at many hours of the day and at times when glare is strongest. As a result, some airports are turning to dynamic glass – which changes tint in response to the sun – for its ability to provide unobstructed outdoor views while simultaneously preventing the heat gain and glare.

REAL WORLD CASE STUDIES, RESULTS

In a recent study at Dallas/Fort Worth (DFW) Airport, dynamic



DYNAMIC GLASS AT MINNEAPOLIS-ST. PAUL AIRPORT HELPS KEEP HEAT AND GLARE OFF PASSENGERS.



glass was used to reduce heat gain and improve comfort in an airport bar. Evaluating one month of data, the bar's sales of alcohol increased 80 percent year over year², directly contributing to the business success of this establishment. This increase can be attributed to passengers feeling more thermally comfortable and as a result spending more time, and thus money, at the airport bar. Since airport food and beverage locations, on average, spend 18 percent of their gross sales on rent³, as compared to the industry standard of 6-10 percent⁴, they need to ensure sufficient traffic and encourage diners to linger to increase the bill of sale to offset this rent premium.

Along with improving the travel experience and benefitting airport businesses, dynamic glass has also been demonstrated to benefit airport staff, which is mission critical, especially for those staff who are responsible for the safety and security of all travelers. For this reason, Minneapolis-St. Paul (MSP) International Airport installed dynamic glass at one of its security checkpoints

to create a glare-free, thermally comfortable work environment. Due to the positive reaction of TSA agents, the airport has now installed dynamic glass for all security checkpoints to enhance both the visual and thermal comfort of agents and travelers moving through them.

Research has echoed this sentiment for a more visually and comfortable airport work environment. In a study conducted by the U.S. General Services Administration (GSA), traditional glass windows were compared with dynamic glass at the Land Port Entry in Donna, Texas. GSA surveyed Customs and Border Protection agents working at the facility, both in the command center and inspection booth, about the impact of dynamic glass on visual comfort. Agents were unanimous in their preference for dynamic glass over static glass windows, rating it with a score of 8.66 out of 9 for the

America's airports require more than \$128 billion in infrastructure upgrades by 2023 according to ACI-NA's latest Airport Infrastructure Needs Study. This is driven not only by a need to modernize, but by the strong desire to create a more pleasant indoor environment that encourages travelers to spend longer (and more) at the airport by visiting available restaurants, bars and shopping options. According to ACI's Airport Service Quality research, an increase of one percent in global passenger satisfaction generates an average growth of 1.5 percent in non-aeronautical revenue, meaning that comfortable travelers are happier travelers and happier travelers spend more money.

following category: *Overall, the new switchable windows meet the outdoor visibility needs of my mission better than conventional windows.*

These examples illustrate how some airports have begun to explore design and glass options, and compile the research that details the effects on the traveler experience, staff comfort and airport business. Research has led to some of these airports utilizing dynamic glass in their designs to

eliminate heat gain and glare. Although visual and thermal comfort is difficult to measure, their effects on the travel experience are pointing toward long-term benefits for everyone. <

References

- ¹ Alkis Kotopoulos, Marialena Nikolopoulou, Evaluation of comfort conditions in airport terminal buildings, 2018.
- ² https://www.bloomberg.com/news/articles/2018-04-17/airports-are-using-smart-glass-to-make-you-spend-more?utm_
- ³ <https://airportscouncil.org/sites/default/files/2016-aci-na-concessions-benchmarking.pdf>
- ⁴ <https://restaurantrealestateadvisors.com/rent-for-restaurant/>

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