

Wide Open for Business

Operable Facades in the Sustainable Retail Environment

Large opening glass wall systems have become a staple in the retail environment as vendors of all types seek to minimize the transition between the street or mall and the retail space. Be it clothing, toys, electronics or dining, large opening glass wall systems provide the consumer a visual taste of the vendor's offerings before they even set foot in the store.

The options to open a wide space such as a street or patio dining area, storefront, bar, concession stand, or stadium box are legion, but not every day is springtime in paradise even in the most temperate climates. When Mother Nature doesn't cooperate and it becomes necessary to enclose the retail venue then choosing the right wall system for the job is a paramount consideration to maintain accessibility and comfort in an energy efficient, ecologically responsible space that is still attractive to customers.

With the right choices one does not have to sacrifice sustainability for wide open space. Presented here are design options that open up wide spaces in various ways yet close securely, maintain accessibility and maximize visibility and natural light.

Single-source, precision engineered large opening glass wall systems can be Energy Star certified, tested for winds up to 145mph, Dade-county hurricane certified, and even meet Zero Energy Exchange standards, making them appropriate for the harshest climates and building sites. Large areas of glass provide natural light and views for diners and shoppers alike but the ambiance of a space with open air views cannot be overestimated as part of a total consumer experience.

Minimum sustainability requirements will be dictated by state and/or local code however architects seeking LEED ratings will work to a higher standard. Codes and specifications affecting shop fronts and facades will include not only the performance of the particular operable glass system but its contribution to the sustainability

of the entire structure. Only carefully documented independent performance testing which covers the specific requirements of the law, location, and design can assist the architect in sorting through the multitude of offerings to specify a product with confidence that it will perform as desired. Wall systems with specific NFRC (National Fenestration Rating Council) ratings may have a positive effect on the overall building rating and allow for additional glass and daylight in the design as the estimate used for non-rated systems is generally higher than the specific rating on a well-insulated, engineered system.

Whether a project is LEED or not, specific product testing is necessary to prove compliance to local codes. When optimum sustainability is a priority look for large opening glass wall systems with testing and performance ratings for air and water infiltration, forced entry resistance and structural load. The more specific the testing the better able you will be to choose the system best suited to the location of the installation. Issues to be aware of when evaluating test results for multi-panel operable walls is to be sure the results are for the fully framed, installed, system and not just the individual components. A solar heat gain coefficient based on the center of the glazing can be significantly different from the complete system which will be ultimately installed. For systems which will experience extreme conditions such as hurricane force winds and flying debris the recognized standard is Miami/Dade Hurricane certification. Operable glass wall systems which pass this test are given a specific identification number for that product which will note the size restrictions to maintain compliance as well as glazing and glass. Wider and higher systems can often be approved outside of Dade County through a process of extrapolation from the original test data by a structural engineer. Hurricane systems are often used without impact glass when high wind resistance is needed such as for multi-story buildings or windy coast-side locations.





Other components of large glass opening wall systems which affect energy efficiency are glass, frame construction, and sills. Glass choices abound for maximum insulation value and heat reflection. Single, double, and triple panes are available with coatings, tints and gas fill to maximize energy efficiency. Remember when choosing non-standard glass or applied products that the performance testing will be for the glass itself and results may vary when it is framed into a door system. Aluminum is the most common panel frame material for retail facades. In almost every area in the US thermally broken aluminum frames are now required for the greatest energy efficiency. Look for polyamide thermal breaks at least 2mm thick with foam fill. Superior systems will also have thermally broken sills, jambs, and headers as well. The choice of sill will affect the overall performance of the operable glass system. Code requirements for ADA (American Disabilities Act) compliance limit sill choice to flush sills (least energy efficient) and raised sills with flanges on either side for easy wheelchair passage. The raised sill energy performance is exponentially better than the flush and is recommended for all exterior wide openings where ADA is a factor. All folding door systems and most sliding systems require a sill with a central slot to operate. ADA requirements strictly require the slot to be filled within the 36" single door area and filler strips are available to fill the slot either just within the door area when that is the sole opening or jamb to jamb when the entire system is open.

For LEED compliance operable door systems are available with aluminum components containing the highest possible recycled content allowable without compromising the strength of the unit. Woods can be from sustainable sources or FSC (Forest Stewardship Council) approved. Finishes should be powdercoat vs Kynar which requires toxic chemicals in the curing process or water-based stains on wood. It should be noted however that due to the small percentage of metal or wood in the typical large opening glass wall system the impact on LEED overall certification will be minimal. The primary contribution of large opening glass walls to LEED values is in the capacity for daylighting and natural ventilation.

In conclusion, large opening glass wall systems are a key element in sustainable design but some care must be taken in choosing a system that meets the performance standards dictated by building codes and the design requirements of the architect. Product testing is a valuable tool to avoid costly product mistakes. Know your requirements and choose a wall system with independent testing and a wide array of options that support design freedom without compromising performance.

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Who We Are

NanaWall operable glass wall systems are recognized as the brand symbolizing quality, performance, and durability. Based on a foundation of testing, research, and innovation, NanaWall is the trusted brand used by architects, builders, design professionals, and homeowners alike. Every NanaWall operable glass wall is a single-source product with components designed, produced and assembled as a complete system. With over 20 custom systems backed by 25 years of design experience, NanaWall Systems offers a solution for almost any space.

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Engineering the Exceptional

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