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Shaping the City

By Roger K. Lewis, *Washington Post Columnist*
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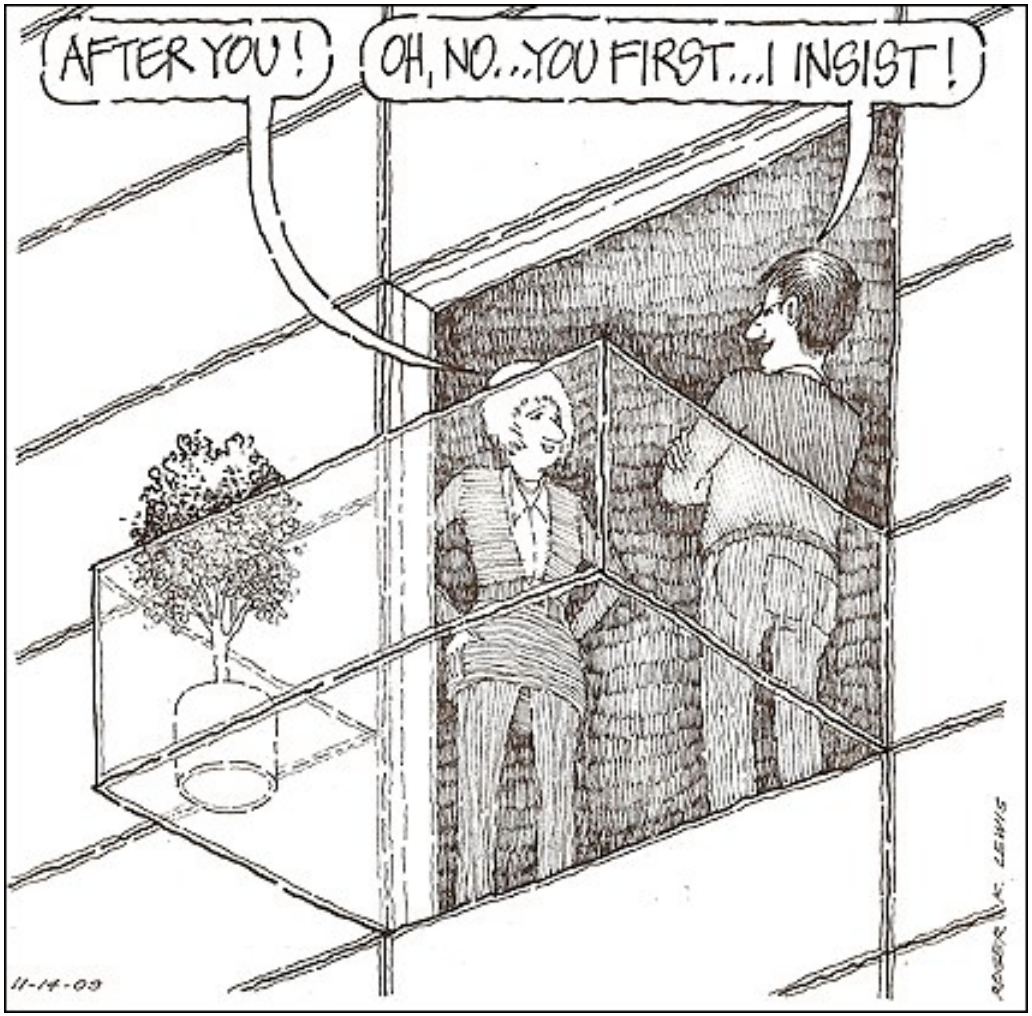
Glass rules our cities, for better and worse

Architects love glass, sometimes with a passion. Its unique qualities -- transparency, reflectivity, the ability both to divide and unify space -- are alluring. Of course, both passion and glass benefit from tempering.



Many recently built high-rise office and apartment buildings in New York, Chicago and other cities sport taut, glazed skins. Sometimes the pattern of vertical and horizontal lines, the ultra-thin joints between rectangular glass panels, is the only articulation of facades soaring skyward.

Architects' continuing love affair with glass is evident even in downtown D.C., where skyscraping is outlawed. A number of recently constructed projects -- for example new office buildings at 1999 K Street NW, and 801 17th Street N.W. -- are sheathed entirely with glass.

Large buildings with systematically composed, all-glass curtain walls can look quite elegant, like giant, scaleless cubic sculptures. A taut glass skin with crisp, minimalist detailing can reveal not only a building's structure and purity of form, but also its illuminated interior. It's akin to enveloping a building's skeleton with plastic wrap.

State-of-the-art glass and curtain wall technology makes this feasible.

highlights / comments by Jay Hellman
202 841-1944; jay.hellman@alum.mit.edu
www.VirtualAdjacency.com

Sealed panels of double and sometimes triple layers of glass, separated by argon-filled cavities, insulate very well thermally while reflecting or absorbing unwanted radiation. Patterns on glass surfaces can be etched or applied using baked-on, ultra-thin layers of ceramic -- known as "frit" -- to filter daylight and reduce solar heat gain while creating decorative imagery. A glass facade can even be "green" by allowing daylight to pour into the interior, reducing daytime electric lighting needs.

Today, enormous sheets of glass can be manufactured. Laminated with reinforcing films, glass can be used structurally as beams and floor panels. Mullions, the framing that supports glass curtain walls, can themselves be made of glass.

Meanwhile aluminum and stainless steel mullions have become less visible. Modern glass skins can be supported with hardware and structural supports attached only to the interior of glass panels, which can directly abut other panels separated by only a thin strip of sealant.

Glass is stable and impermeable. By contrast, concrete and masonry are porous materials that crack, absorb moisture and dirt, and eventually deteriorate after many freeze-thaw cycles. Metal can warp, deform, rust and react chemically with other substances. Painted materials need regular repainting. Durable glass can last indefinitely and requires little more than periodic cleaning.

Glass has been around for centuries. In medieval churches, stained-glass windows were ornamental and spiritual as well as utilitarian, providing ethereal illumination along with biblical narrative. Window glass in some of Europe's palaces, civic buildings and housing dates back to the middle ages.

With the 19th century Industrial Revolution, glass-making technology and its architectural potential advanced rapidly. That potential was demonstrated most dramatically when **Joseph Paxton**, a British engineer, designed an enormous exhibition pavilion in a London park for the 1851 World Exposition. Dubbed the Crystal Palace, the pavilion consisted of a cast iron skeleton covered totally with glass. A public sensation and technical tour-de-force, it made indoors feel like outdoors and expressed the alluring magic of transparency.

Architects were increasingly fascinated by the notion of transparent, all-glass buildings. In 1919 and 1920, as Chicago architects were constructing America's first high-rise, curtain wall buildings, Germany's Ludwig Mies van der Rohe envisioned and crafted models of hypothetical 20- and 30-story skyscrapers clad totally in glass. Amazingly prescient, his unrealized designs look like buildings currently being constructed.

202 841-1944; jay.hellman@alum.mit.edu

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But pulling a scaleless glass skin from a building's parapet down to a city sidewalk is aesthetically and functionally questionable. The bottom floors of an urban building, those first few dozen feet -- two to three stories -- rising from street level, demand different treatment than the many stories farther up.

> *This is exactly why regulating building height to any specific number is worse than wrong.*
>
> *It is an unnecessary mistake that costs at every level —*
>
> - *it restricts structural design and HVAC design for no good reason;*
> - *it limits sources and destinations of pedestrians within walking distance of rail;*
> - *it delays and distracts government review in a useless detail.*
>
> *What really matters is design and the pedestrian experience of place.*

Building entrances and canopies, along with storefront windows and doors of retail shops, cafes and restaurants, should occupy and animate the base of downtown buildings. Signage and lighting also must be part of the design of a building's base. Sidewalk level is where the public most directly comes in contact with architecture. This is where pedestrians become most aware of the visual and tactile qualities of a building's materials and details.

Thus to fulfill its streetscape obligations, the taut skin of a glass-clad urban building needs to change near the street level. To a facade's visual transparency must be added transparency of movement provided by welcoming entries. Transformation of the facade and skin may be accomplished using only glass, but it also may entail use of additional materials. In either case, the compositional challenge is making the transformation seem natural and integral to the overall design rather than appearing tacked on or retrofitted.

The quality of a work of architecture ultimately is not assured by use of glass or any other material. Rather it depends on the compositional talent and imagination of the designer and the artistry with which materials, whatever they might be, are assembled to make architectural form.

Roger K. Lewis is a practicing architect and a professor emeritus of architecture at the University of Maryland.

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When you realize that an elevator is a vertical Metro-rail — bringing pedestrians from one place to another with no car and no bus — you begin to understand just what a strategic role design can play in creating healthier more vital places.

We cannot solve our transportation problems by building more roads.

The simplest remedy to America's number one health problem — obesity — is simply walk more.

It is time that we build places smarter. We must maximize the sources and destinations of pedestrians within walking distance of rail stations. Design is the most important attribute.

Inserting tall thin buildings among short older buildings is the most intelligent way to grow an old urban neighborhood in a smart growth TOD (Transit Oriented Development) fashion without destroying it at the same time.

Neither the horizontal rail nor the vertical rail make sense without the other. They both need each other.

Please visit the Woodmont Triangle page of the website www.VirtualAdjacency.com and look at sections 9, 14, 26, 27, 28a. This will energize your brain — step one to getting your imagination in focus per Mark Twain's advice (see the Front Cover on the same web page.)

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