

DEMOCRACY AND GLASS CONSTRUCTION

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We live for the most part within enclosed spaces. These form the environment from which our culture grows. Our culture is in a sense a product of our architecture. If we wish to raise our culture to a higher level, we are forced for better or for worse to transform our architecture. And this will be possible only if we remove the enclosed quality from the spaces ... this can be done only through the introduction of glass architecture ... through the greatest possible number of walls that are made entirely of glass — colored glass. The new environment that we shall thereby create must bring with it a new culture.

— Paul Scheerbart.¹

Glass has been the subject of architects' fascination for centuries, but since the early 19th century, glass has had various associations and connotations rich in symbolic content. As with all symbols, however, meaning is rarely clear and often contradictory. On the one hand, glass connotes openness, transparency, and accessibility and is therefore used for government buildings in both democratic and totalitarian regimes. Glass is viewed as a futuristic, visionary material and is therefore used for utopian socialist architecture such as people's palaces, and paradigmatic industrial buildings, symbols of the people's oppressors. Glass is used for skyscrapers, symbols of the collective and economic power; and for the single family home, symbol of the individual. Glass is used in sanitarium to suggest the new hygiene, progressive culture, and future science; and in museum design to celebrate history, preservation and scientific classification. Thus, glass has no single symbolic meaning, but can be used for numerous, often conflicting purposes.

From the beginning of the 19th century, the notion of the glass house was associated with utopian visions, some social, some political, some purely spatial and architectural. The first glass houses, greenhouses, were developed to preserve nature in a man-made environment where it would be possible to collect non-native species such as oranges and orchids. The large glass buildings were similar to other 19th century structures designed to accommodate a growing popular interest in classification and collection. The greenhouses were giant glass display cases, large-scale museum displays filled with life-size specimens. The greenhouses were also conceived as

retreats from the real world — built, functioning micro-Utopias whose scale made it possible for every city and town to have one. New mass production techniques developed by entrepreneurs like Samuel Hereman advertised "the new portable and economical hothouse" which permitted the average middle-class homeowner to build his own greenhouse. By the end of the century, European cities and suburbs were dotted with tens-of-thousands of "private Idahos."

There was also a correlation between the interest in greenhouses and the development of "green" proposals: public parks, green belts, and garden cities. As industrialization spread, the rural population migrated to the cities in search of higher-paid jobs and a more prosperous future. Instead, the vast migrations caused overcrowding and urban conditions deteriorated rapidly. By the 1850s, the middle and upper classes began to perceive the potential for social conflict embedded in the atrocious living conditions. Exposure to nature and fresh air were seen as necessary elements for good health as well as ethical and moral well-being.

The glass house therefore became an integral part of numerous 19th century utopian schemes, the place where the ills of the industrial revolution and class difference could be reconciled. The glass house was a metaphor for social responsibility and equality — the ring-shaped glass house used as a meeting hall in Pemberton's Happy Colony and Fourier's glass hall were all conceived in this spirit. It was referred to as a "pleasurance" or "people's paradise," suggesting once again the conceptual idea of a popular Garden of Eden. In Germany, "people's palaces" and "floras" arose at the time of the Gotha Program and innovative socialist legislation. There were three proposals in the mid-19th century to construct glass rings and covered walkways over portions of downtown London: William Moseley's 1855 Crystal Way, Frederick Gye's 1845 plan, and Joseph Paxton's 1855 Great Victorian Way. The British entrepreneur Titus Salt intended to purchase Paxton's Crystal Palace, dismantle it and rebuild it for use as a factory building in Saltaire, his utopian industrial community in order to construct a more humane factory. Ebenezer Howard's garden city proposal of 1898 includes a "wide glass arcade called the Crystal Palace. ...[T]his building is in wet weather one of the favorite resorts of the people..." It was the shopping mall, garden, recreation center, the physical, spatial and spiritual heart

of the utopian community.²

The glass house also came to represent an alternative mode of living — a foil to the traditional architectures. As a building material, glass is an industrial product, a man-made invention which together with that other icon of the industrial age, steel, made the glass houses possible. Thus glass symbolized contemporary culture and technology. Older homes were built of the outmoded, solid masonry bearing-walls, with small windows, usually covered by heavy drapes, making the interior dark at best. The benefits of natural light were not considered to be as important as the privacy which small glass surfaces and drapery afforded. With the new concern for health and better living conditions came the recognition that natural light and air are necessary to sanitary living. Thus there grew the belief that the modern house should have as much glazing as possible, bathing the interior with natural light and creating a better environment for living. The Dutch and German movements known as New Objectivity promoted these ideals. Projects like Jan Duiker's Zonestraal Sanitorium in Hilversum, Holland, his Open Air School in Amsterdam, and Walter Gropius's Bauhaus building in Dessau, used large glass and steel facades for building types that traditionally had masonry facades with punched openings. Brinkman and Van der Vlugt used glass for their Van Nelle Factory in Delft in a manner reminiscent of Titus Salt's plans for the Crystal Palace. The Van Nelle is the ultimate industrial paradise, one where light pours in from all sides balancing the negative effects of factory conditions.

Although the romance with glass and glass construction goes hand-in-hand with the development of the modern idiom worldwide, 20th century German architects have had a special fascination with the material. From 1893 onward, the German architect Paul Scheerbarth began to write obsessively about glass, initiating an intrigue with the material that continued to develop during the next 100 years. For Scheerbarth, glass was the consummate modern material, it could transform our built environment thereby changing the way we live. He glorified glass in a vision both Utopian and prescient.

Scheerbarth's vision had an undeniable influence on the first generation modernists practicing in Germany between the wars. Bruno Taut's Glashaus design for the 1914 Werkbund exhibition in Cologne, a joint project with Scheerbarth, Mies van der Rohe's 1919 design for a glass and steel office building, his 1920 and 1922 glass towers, and Gropius' 1926 Bauhaus Building, are just a few of the seminal modern designs influenced by Scheerbarth's ideas. Taut's utopian visions including the *Kristallhaus* and *Alpine Architektur* imagined glass cities whose mythical organization would reconcile the separation between spirit and body, sacred and profane.³ The German "Glass Chain" group was also inspired by Scheerbarth's writings.

A diverse fraternity including Bruno Taut, Hans Scharoun, Wassili Luckhardt, Walter Gropius, and art historian Adolf Behne, which would eventually split into two factions, the New Objectivists and the Expressionists, the members of the Glass Chain shared a vision of glass as a symbol of purity and perfection. "No material prevails over other materials so much as does glass. Glass is a

completely new, pure material in which matter is melted down and recast. Of all the materials we have it works in the most elementary way. It reflects the sky and the sun; it is like clear water; and it has a wealth of color, form, and character which is indeed inexhaustible and which can be a matter of indifference to no person," wrote Adolf Behne of the new material. "The European is easy in the very place where he has no responsibility, but in the hard environment where he would have responsibility, under a jellylike interior he is blunt and brutal. Glass will change him. Glass is clear and angular, but in its hidden richness it is mild and soft."

The Glass Chain designers adopted Scheerbarth's optimistic attitude towards glass construction, and accepted glass as the material of the future. Glass was revered for its transparency, its ability to be both material and immaterial, to literally dissolve the solid wall into a dematerialized presence. The transparent glass tower symbolized the clear and uncomplicated future; it was an icon for the beneficent triumph of modern technology.⁴

The Russian author Yevgeny Zamyatin adopted Scheerbarth's ideas in his 1921 utopian novel, *We*, in which Zamyatin critiqued an imaginary future totalitarian society where the individual will is suppressed in favor of a collective technological dream. Zamyatin's imaginary One State is completely constructed of glass: buildings, streets, furniture, are all transparent, crystalline objects whose transparent condition serves as a critique of the futuristic society where the apparent popular unity turns out to be a fiction. Private opinion is hidden behind the opaque walls of the human head; sexual encounters, the most intimate and private of human acts, are hidden behind drawn blinds. Zamyatin clearly describes man's inborn need for privacy, individuality and the personal imagination, the human qualities totalitarianism seeks to eradicate. The novel's great irony lies in the reversal the reader discovers as he progresses; utopia becomes dystopia as it becomes clear that the perfect future society is oppressive and dysfunctional. The Russian filmmaker Sergei Eisenstein also developed a concept for a movie in which glass architecture was used to critique society. In his proposal for *The Glass House*, Eisenstein envisioned a film whose action transpires entirely within a glass tower. Eisenstein's dystopia, unlike Zamyatin's, was intended as a critique of democracy rather than totalitarianism, but the message was the same: the exposure of all physical dimensions of life to public view is oppressive, rather than egalitarian or democratic.

In fact, as in fiction, the glass hall has been used to symbolize open government for both democratic and totalitarian regimes. Giuseppe Terragni's masterpiece the Casa de Fascio in Como celebrates glass and the notion of transparency as a symbol of unity, open-mindedness and accessible government. Ironically, Terragni attributed these qualities most often associated with democratic regimes to fascism. Some pioneers of early twentieth-century Soviet architecture such as Leonidov, Golotsov, and the Vesnin brothers have also utilized glass for similar symbolic purposes or, more notably, Tatlin who, in his famous *Monument to the Third International* proposal for the revolutionary Soviet parliament, envisioned a spiral, open steel structure with

rotating glass volumes suspended inside which would contain the various divisions of the Soviet government.

In the face of the absolute collapse of the German political system after World War II, German culture suffered a tremendous shock which struck at the very roots of the society. The desire to be "correct," to be responsible world citizens, to deal with a mass guilt too vast to grasp, informed a re-evaluation of every aspect of culture including the built environment. One consequence of this cultural upheaval is that glass developed a special connotation in German architectural practice. It became the emblem of democratic culture, of an architecture that is literally transparent to the masses and therefore represents an open democratic system rather than a closed autocracy or totalitarian regime. As early as 1927, the relationship between democracy and glass construction was promoted by Hannes Meyer for his League of Nations Design when he argued the building should have: "No back corridors for backstairs diplomacy, but open glazed rooms for the public negotiations of honest men."⁵

Hans Schwippert adopted a similar attitude for his 1949 *Bundestag* design in which he constructed a transparent glass chamber whose express purpose was to reveal the democratic process. Schwippert hoped the "house of openness" would be the very opposite of the solid, closed, impenetrable Reichstag. He also proposed a new layout for the delegates' seating, a substantial formal departure from historic plan types, the circular layout. Although Konrad Adenauer refused to realize the daring plan, it has served as a precedent for later German parliamentary chambers. Until Schwippert made his proposal, seating arrangements for democratic parliaments and legislatures were organized in one of two ways: the rectangular church choir modeled after the British House of Commons, or the semi-circular amphitheater modeled after the surgical amphitheater and favored in France and America. Up until the 20th century, German architects had little influence on parliamentary design because the country was late to unify under a democratic system.

The rectangular plan was seen to promote dialog and discussion across the aisle by forcing members to face and confront one another. But the ministers, and other officials were seated to the side in a position similar to that of a justice in a court of law creating a hierarchical relationship between member and minister. The semi-circular plan for a legislative assembly offered fairly egalitarian placement in a room, but still separated members along party lines and from the ministers and president. For these reasons, Schwippert found the traditional plan forms less than ideal for a 20th century democracy. He also disliked the separation of political factions to the right and left of the speaker's podium, a fact which gave birth to the political notions of left and right, terms which originally referred to the side of the aisle on which a party was seated. Schwippert favored the circle because he saw it as more egalitarian than the other two plan types. Thus Schwippert's search for the ideal form was an attempt to create a perfect, or utopian, space in which government could operate.

The circular plan and glass hall have been adopted

time and again by twentieth-century German architects. Eller, Maier, Walter & Partner's *Landtag* in Düsseldorf, Kulka's Dresden *Landtag*, and Behnisch's new *Bundestag* building are examples of three recent German parliamentary buildings which reinterpret Schwippert's approach to the type by using circular plenary chambers enclosed in transparent glazing. Behnisch and Kulka's similar approach is not surprising given their common debt to 1950s architect and pioneer of glass construction, Egon Eiermann, who began his career working for Mies van der Rohe. Thus the new generation's interest in glass construction can be directly linked to the utopian schemes of the first generation modernist visionaries. All three finalists for the *Reichstag* restoration project acknowledged the importance of glass and transparency to a German notion of democracy in their designs. British architect Sir Norman Foster proposed partially encasing the existing building in a transparent glass skin and situating the plenary chamber inside a glass box; Calatrava also provided for a glassed-in legislative chamber; as did De Bruijn, who proposed to place the chamber outside the body of the old building rather in its center, as a focal point.⁶

For the new *Bundestag*, Gunther Behnisch chose to adopt Schwippert's concepts of openness and transparency by designing a glass box within a glass box, making the workings of democracy visibly accessible to all. He hoped, as far as was possible, to dissolve all physical boundaries between government and the people. "Everything which divides has been reduced as far as possible, while every continuity is strengthened."

The actual plenary chamber was located at the center of the architectural composition in order to emphasize its importance to government, and in order to permit the maximum visual penetration as well as a physical connection to both the city and Rhein river. "The concept for the new plenary assembly area is the full embrace of the assembly room by the hall and waiting areas. This reasoning established the position of the assembly as a focal point, sandwiched between the transparent views of the whole, from the city side to the Rhein river." Behnisch calls the spatial effect he has designed the "open room" and expresses the hope that by turning public attention to the elected representatives, the individuals, his building will epitomize the democratic system.

Behnisch explains the significance of the individual by comparing the interior design to a game of Mikado, or "pick-up-sticks," which is a game of chance. "The Mikado is a meaningful metaphor for the intersection of different individuals. As in a Mikado there are chance places and directions forming preferential paths." In Mikado, each stick is a unique entity, much like each member of a democratic community, or each elected representative in a legislature. Behnisch recreates the chance encounter in his handrail details, especially the famous bird's nest, with special art installations, the variety of 20th century furnishings used rather than a single style, and with the separation and articulation of individual building elements throughout the project. The building skin is not a ten-centimeter thick traditional curtain wall but a multi-layered structure whose total thickness is several feet.⁷

Behnisch is indebted to Schwippert for another design feature, the circular plan he adopted for the plenary chamber. The perfect circle symbolizes the equality accorded to all members whether of the majority or minority parties, and the community that exists in spite of political differences. It is also thought to promote debate and discussion because members face each other from equal positions.

The choice of glass as primary building material for the *Bundestag* was a natural consequence of Behnisch's clearly stated goals for the new building: "... there are other things which ought to be retained, e.g. the old Academy building, the signs of growth reflecting the development of the republic, which is a typical feature of the existing buildings; the rural-urban setting, the character of the architecture, the unpretentious, the open-valuable qualities and ideals of our republic." Glass is not a precious or pretentious material like stones such as marble and travertine; its transparent nature makes it appear ephemeral rather than solid and immovable. Glass is an anti-monumental material which certainly helps avoid any connection with majesty and power, images the German government probably wished to avoid. Furthermore, Behnisch chose glass in part to serve another interest historically important to the German public — the green scape. Behnisch intended the transparency to allow visual connections to the green urban plaza on one side and the Rheinaue on the other. Further, the transparent quality would so dissolve the exterior walls as to physically connect these spaces removing the distinction between inside and outside or making the *Bundestag* appear to be a container sitting on the ground plane capturing human action. Behnisch wrote, "We thought the entry hall could be a part of the green plaza, open for the public, a sort of Market hall." In this case, the *Bundestag* as glass house also refers to the 19th century greenhouses and people's palaces where glass buildings symbolized man-made, earthly paradises.

Gunther Behnisch's *Bundestag* is unquestionably a good piece of architecture. At issue, however, is the strength and coherence of the conceptual argument behind the architecture. As a symbol for the democratic process and the ideals on which political democracy is founded, the glass house is appealing. But symbols are immaterial representations, as far from the real world as utopias.

According to the view supporting Behnisch's work, visual penetration of a parliament building ensures open, accessible, and honest government by exposing rather than concealing the actions of the legislature. Supposedly, this exposed condition will prevent the recurrence of fascism. Of course, proponents of this view argue that the German fascist government was in the hands of a minority whose actions were largely secret. If the larger public had been aware of the government's policies, the more egregious Nazi crimes could have been prevented. This argument ignores overwhelming evidence to support the wide dissemination of information about Nazi actions, including the infamous *Kristallnacht*, or breaking of the glass, in which Jews were persecuted and Jewish property vandalized; a night for which glass symbolizes anti-democracy and dystopia.

But more importantly the argument ignores one of

the basic prerequisites for democratic rule, namely, the participation of the people, a condition that cannot be created by transparent architecture alone. In *The Social Contract*, Jean Jacques Rousseau stresses that social order does not flow from force or from nature but from agreements in which the entire citizenry must participate. Further, these agreements will only effect lasting and stable government if they are periodically renewed by the people. Thus participation is at the foundation of a democratic notion of government. Behnisch's new *Bundestag* is clearly flawed in this regard, the legislature sits inside a round glass container, observed from galleries which are physically and spatially separate, a condition which precludes any direct public participation in the everyday proceedings. Of course, the German political system is not a direct democracy, any more than the American system, but an indirect one in which the people's wishes are represented by elected officials. In this sense, the box-within-a-box configuration of the *Bundestag* is true to the actual workings of government, a notion the architect did not intentionally address.

The irony involved in Behnisch's choice of glass must also be pointed out. German society has never fully exorcised its past. The Nuremberg trials were organized by the Americans and therefore not an "Aufarbeitung der Geschichte" for the Germans. Many former Nazi officials continued in political power after the war, including the democracy's founding father, Adenauer's right-hand man, Goebeke, who had played a leading role in the SA before 1945. Thus transparency and honesty are not necessarily attributes of the post-war German democracy.

The German parliament must have struggled with the question of symbolism and architecture as it debated the decision to remove the government from Bonn to Berlin, to abandon the newly constructed *Bundestag* for a reconstructed *Reichstag*. But the vote ultimately favored the force of one symbolic element over another by deciding to return to the symbolic center of the German state and culture. The implication is that Berlin as a positive symbol of unity is stronger than the negative history associated with the *Reichstag*. The relocation is also a rejection of Utopia, the garden city Eden Bonn represents, for dystopia, the corrupt, schizophrenic Berlin whose physical reunification has, to date, remained an unrealized desire. The hope is, of course, that relocating the parliament in Berlin will erase the memories and scars remaining from the 50-year physical and political split since Berlin was capital of a united German republic. Reconstructing and reusing the old *Reichstag* would reconnect the present democracy both symbolically and physically to the past.

In his competition entry Foster proposed to make the connection by leaving the old structure as a gutted shell, and by encasing it in glass so that the *Reichstag* would become a kind of artifact enshrined in a display case. No viewer could fail to remark the irony involved in preserving as a sacred element an object with so dubious a history. Foster says the building's "history is poor and disappointing — in the 40 years before it was burnt there was barely a decade of democracy. ... From this perspective the *Reichstag* seems to represent an architecture of false values — anti-democratic, anti-liberal

— quoting from a past which existed only in myths and Wagnerian operas.⁸ The symbol inverts itself to become its opposite once again.

In *Towards a new Architecture* Le Corbusier wrote, "The machinery of Society, profoundly out of gear, oscillates between an amelioration, of historical importance, and a catastrophe ... It is a question of building which is at the root of the social unrest of today : architecture or revolution."⁹ Le Corbusier's comment can be read as either naive or ironic — architecture or revolution — an ironic comment on his contemporary's belief in utopia, and in architecture's power, or naive faith in the impossible — architecture's ability to transcend the conceptual and act on the tangible universe.

Architecture or revolution. Democratic or anti-democratic. Utopian or dystopian. The symbolic meaning of the material, glass, is contradictory at best. Perhaps the very qualities that make glass so attractive, its transparency and immateriality, its delicacy and reflectiveness, its crystal-like appearance, ultimately render it impossible to define. Or perhaps glass is no different from other metaphors and symbols, an agent which carries meaning and whose meaning depends on the author's personal agenda rather than some universal value.

NOTES

- ¹ In translation in Ulrich Conrads' *Programs and Manifestoes on Twentieth-century Architecture* (Cambridge, MA: MIT Press, 1994), pp. 32-34.
- ² See Georg Kohlmaier and Barna von Sartory's history of greenhouse and conservatory construction, *House of Glass*, for a thorough discussion of the connection between the development of the green movement and glass symbolism, pp. 7-42.
- ³ See Iain Boyd White's *Bruno Taut and the Architecture of Activism* (London: Cambridge Univ. Press, 1982).
- ⁴ See Arthur Korn's *Glass in Modern Architecture of the Bauhaus Period* (London: Design Yearbook, 1968).
- ⁵ In translation in *Hannes Meyer* by Paul Schnaidt.
- ⁶ See "Reichstag unresolved" in the *Architectural Review* of April 1993 and "Le parlement inachevé" in *Architecture d'aujourd'hui* of February 1995 for more in depth discussions of the politics and complications surrounding the competition and eventual choice of architect and approach for the *Reichstag* renovation.
- ⁷ See *Ein Gang durch die Ausstellung: Behnisch & Partner* for Behnisch's extensive discussion of the *Bundestag* project, its aims, development and realization, pp. 75-99.
- ⁸ See "Reichstag unresolved," *Architectural Review*, April 1993, pp. 8-10.
- ⁹ See Le Corbusier. *Towards a new Architecture*, trans. by Frederick Etchells. (London: Dover, 1986), p. 270.

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