WRAPPED IN GLASS

CREATING ABSTRACTION, ILLUSION AND IMAGERY

by Hannah Fotheringham

Architektur in der Schweiz um 1989 – «forme forte» zwischen Bild und Abstraktion
Architecture in Switzerland around 1989 – «forme forte» between Image and Abstraction

ABSTRACT

Covering buildings in one type of cladding was a trend in the late 1980s and early 1990s in Switzerland. Of interest in this paper is the effect of completely wrapping buildings in glass. As part of the research five buildings by Swiss architects that were enveloped in glass around that time were analysed. In focus is how a building wrapped in glass can create abstraction, illusion and imagery. The result being that properties particular to glass such as reflectivity, translucency, transparency and the ability to pass light through it, can be exploited to increase the level of abstraction and illusion. Using glass in an unexpected manner added to the paradoxical effect. Whilst a reduction in materiality to maximise the surface area covered in glass is also key to abstraction.

Vertiefungsarbeit
In-depth Study

Wrapped in glass

Creating abstraction, illusion and imagery

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1 INTRODUCTION

Fig. 1. Bregenz Kunsthaus

1989 was a time for experimenting with the use of new materials in Switzerland, as well as giving emphasis to a building's form. Often the form was brought to the viewer's attention by wrapping one type of cladding, typically visually stimulating material, around the whole volume.[1] This paper is concerned with one particular type of cladding material, glass. Glass is an interesting material to clad an entire building with as it can offer varying degrees of translucency and the ability to bring light in. Therefore, the architect can wrap the entire form without having to break the cladding for a window. Several architects, around the late 80s and early 90s encased entire buildings in glass, despite the primary objective not being to provide views out of all this glass or let light in through it all. Glass was used in a decorative sense or as a means of creating abstraction or ambiguity. In some instances, its use builds up illusions or evokes images.

Fig. 2. Kirchner Museum

The following case studies in Switzerland and Austria, all designed by Swiss architects, were assessed as part of the research for this paper:

- Bregenz Kunsthaus in Bregenz, Austria by Peter Zumthor (built in 1997)
- Institute for Pharmaceuticals in Basel, Switzerland, by Herzog & de Meuron (built in 1998)
- Suva Haus in Basel, Switzerland, by Herzog & de Meuron (built in 1993)
- the extension for the Kunstmuseum in Winterthur, Switzerland, by Gigon/Guyer (built in 1995)
- The Kirchner Museum in Davos, Switzerland, by Gigon/Guyer (built in 1992)

Fig. 3. Institute for pharmaceuticals

Each building is wrapped almost entirely in glass, however, the means of wrapping and the extent of how much was wrapped, differs in each project. By wrapping the buildings in glass, each project achieved a level of abstraction. By examining the above examples from the buildings as a whole down to smaller details, we can better understand how glass can be used to create ambiguity, imagery and illusion.

Fig. 4. Suva Haus

Fig. 5. The extension of the Winterthur Kunstmuseum

1 Davidovici, I. (2013). Forms of practice. p.216.

2 FORM

Cladding a building with one material draws attention to the building's form, particularly when there is a lack of penetrations to the surface.[2] A prominent form is evident in the Bregenz Kunsthaus by Peter Zumthor. Situated near the lake, the building stands alone between the Stadttheater and traditional buildings along the Seestrasse. The museum tower is built up of a simple square plan of exhibition spaces stacked on top of each other, through which the visitor must walk to get to the next space.[3] The pure cuboid form is covered almost entirely in translucent glass shingles. The glass envelope touches the ground, without a base, giving the impression it is rising out of the ground.[4] The architect's decision to deny the user views out towards the lake or the city enabled minimal penetrations to the skin.[5] The homogeneous nature of the overall skin accentuates the building's shape. This minimalistic approach reduces the exterior of the building down to just its material (glass) and its form.

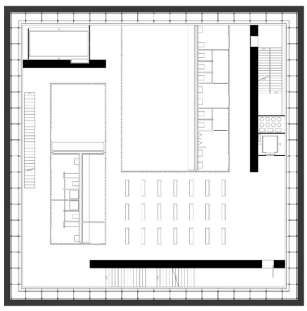


Fig. 6. Basement plan of the Bregenz Kunsthaus

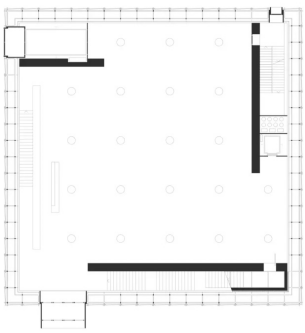


Fig. 7. Ground floor plan of the Bregenz KunsthausKunsthaus

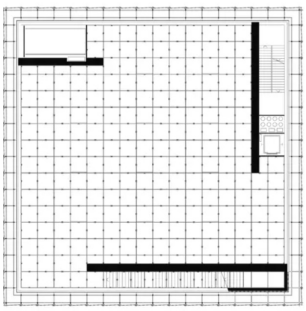


Fig. 8. 1st, 2nd, 3rd Floor plans of the Bregenz Kunsthaus

Fig. 9. Kunsthaus Bregenz facing the square

2 Davidovici, I. (2013). *Forms of practice.* p.216.
3 Loderer, B. (1997). Turm, Platz und Licht. p.31.
4 Cantz, H. (2010). *Peter Zumthor Kunsthau Bregenz.* pp.54.
5 Cantz, H. (2010). *Peter Zumthor Kunsthau Bregenz.* pp.55.

Fig. 10. View from the circulation space to the park

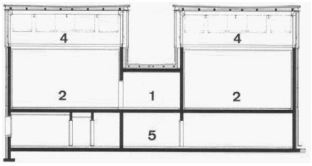


Fig. 11. Cross section through the Kirchner Museum

Across the border in Switzerland, in the picturesque mountain town of Davos, the Kirchner Museum uses glass to encase several forms into one unit. Gigon/Guyer, the architects on the projects were invited to design an art museum to house Ludwig Kirchner's work, comprising of four exhibition spaces.[6] These four volumes are ambiguously closed to the outside and staggered apart creating an in-between space that becomes the circulation.[7] The glass cladding wraps around the volumes and the circulation spaces to build one unit. The wrap becomes the windows facing onto the park from the circulation space (Fig.10). An example of how a glass wrap can provide windows without introducing penetrations or a change in materiality. Encasing the whole structure in glass gives the building a self-sufficiency, detached from, yet connected to its surroundings. The glass can be seen as an abstract reference to the differing light quality in Davos.[8] Another reason Gigon/Guyer clad the building entirely in glass was to accentuate the pavilion character of the building. As part of the concept, the collection of taller volume exhibition spaces represents a conglomerate of pavilions situated in the park.[9]

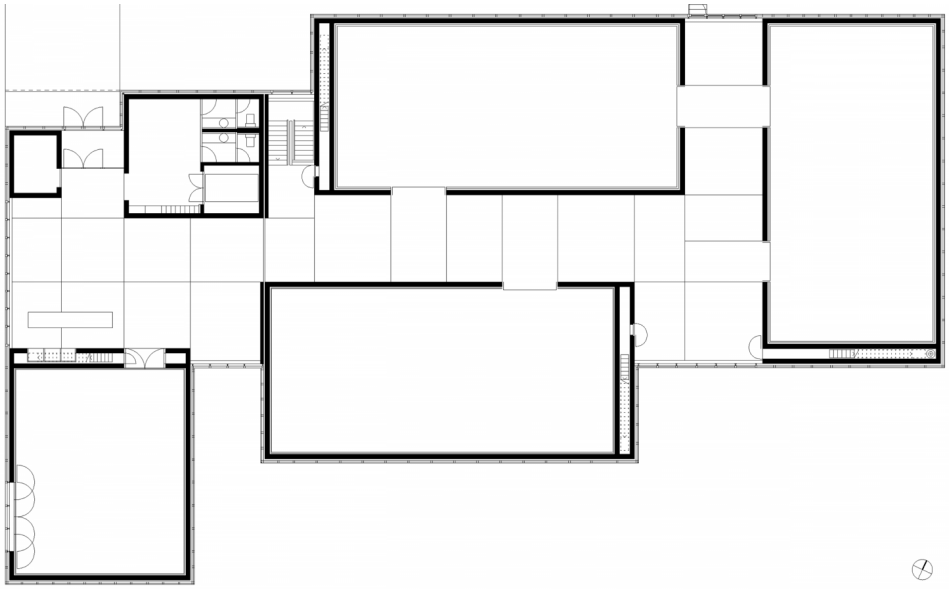


Fig. 12. Ground floor plan of the Kirchner Museum

Fig. 13. Photo of the Kirchner Museum from the street

6 Zschokke, W. (1992). Kirchner-Museum, Davos, 1992. p.24.
7 Objects in space. (1992). p.7.
8 Davidovici, I. (2013). *Forms of practice*. p.218.
9 Beisiegel, K. Gigon, A. Guyer, M. (2022). *Kirchner Museum revisited*. pp.75-76.

Fig. 14. Original Suva Haus building

Fig. 15. Suva Haus building after the rennovation

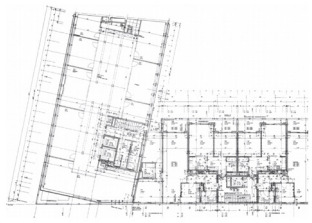


Fig. 16. Floor plan of the Suva Haus

Herzog & de Meuron were also challenged with bringing volumes together as a whole in the Suva Haus. Faced with the task of designing an extension for the insurance company, Suva, the decision to maintain the existing building or demolish it was an optional part of the competition brief. Given that the existing building was still in good condition, Herzog & de Meuron proposed to keep it and suggested wrapping the existing stone façade together with the new build behind the same glass cladding. The urban design idea behind it, being that it could then be read as one volume from the street.[10] Wrapping both buildings together blurs the lines between the two halves. The variation in colour behind the glass between the old stone and the new build's insulation is apparent yet subtle (Fig.17), it is not as contrasting as a stone building adjacent to a glass building would have been.

The stone façade becomes somewhat reduced as it is never revealed in its entirety. It is perceived in fragments through an open glass panel or through the glass itself.[11] From a distance the materiality cannot be read, only the stone's colour behind the glass. This fragmentation illudes to what is behind the skin without ever revealing it as a whole, reducing it to a fragmented image.

Furthermore, the new façade hints at a building structure. The larger glass panels at ground level form a base, the middle is made up of repeating window bands, and a roof is implied by the metal bands on top.[12] When compared to the original stone façade (Fig.14), the indication of building structure can be seen as a reduction or an abstraction.

Fig. 17. Facade of the Suva Haus showing the existing and new parts

10 Mack, G. (1996). *Herzog & de Meuron 1989-1991*. p.24.
11 Rüegg, A. (1994). *Das Neue Suva-Haus in Basel 1988-1993.* p.13.
12 Rüegg, A. (1994). *Das Neue Suva-Haus in Basel 1988-1993.* p.10.

3 SURFACE

The play of light and shade across the surface of glass, constantly changes the expression of the glass, evoking interesting sensual impressions.[13] How does the surface of glass lend itself to increasing abstraction or providing illusions in a project?

3.1 REFLECTION

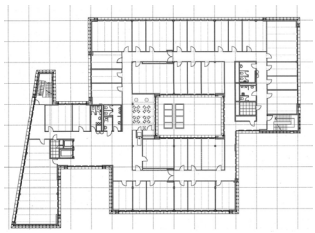


Fig. 18. Floorplan of the pharmeceutical institute.

The institute for hospital pharmaceuticals situated in the Rosetti area in Basel is comprised of an unusual ground floor, conceived as an organism with a hole in the middle forming a courtyard. The building form responds to the surrounding topography of yards, townhouses and apartment blocks, creating new open spaces in-between.[14] From a distance, the reflective glass form shimmers, emphasizing the sculptural quality of the building. The highly reflective surface of the pharmaceutical building reflects the trees and buildings onto the façade creating everchanging imagery on the surface, as the amount of reflection alters with the light intensity and position. Martin Steinmann understands the importance of the skin to be about making architecture the object of desire once again.[15] This shiny surface and the imagery on it could be seen as a way of making the building more desirable.

Fig. 19. Play of reflections on the facade of the pharmeceutical institute.

Fig. 20. Play of reflections on the street facing facade of the pharmeceutical institute.

13 Weller, B. Unnewehr, S. Härth, K. Tasche, S. (2009). *Glass in building*. p.7.
14 Mack, G. (1996). Herzog & de Meuron 1989-1991. p.135.
15 Steinmann, M. (1994). The presence of things. p.11.

Fig. 21. Open window panels at the Suva Haus showing the stone behind

In the Suva Haus the reflections on the façade add another layer to a complex project. As previously mentioned, the existing stone façade is somewhat hidden behind glass skin. So, with a closed façade, no windows open to peek through, and on a sunny day, the reflections of neighbouring buildings are in focus, rather than the stone behind. The reflections create another layer to hide behind, which prevents passersby from seeing the full materiality.

Fig. 22. Reflections on the Suva Haus facade

3.2 TRANSLUCENCY

The majority of materials that we build with are opaque. Glass is one of the few materials with transparent/translucent properties. Changing the level of opacity of glass can provide a variety of effects as can be seen in the Kirchner Museum. The museum's skin was described by Martin Steinman as paradoxical.[16] The museum takes a transparent material and uses it, not to display the interior of the building, but rather the insulation covering the exhibition rooms, to the outside. The insulation shimmers behind the matt, profiled glass giving a textile quality to the façade when close up.[17] Above the exhibition spaces, a more reflective translucent glass is used on the sides of the skylights to diffuse the light entering the space. Clear, reflective glass is only utilised in the entrance and the parts of the façade wall covering the circulation space.[18] The different types of glass each have their own function, yet from the outside, the function is still somewhat abstract. The different effects of the various types of glass adds intrigue to the project.

Fig. 23. Kirchner Museum glass panels

16 Steinmann, M. (1994). The presence of things. p.11.
17 Axel, S. Im Zauberlicht. p.7.
18 Gigon/Guyer. *Kirchner Museum Davos*.

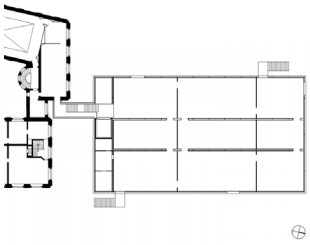


Fig. 24. First Floorplan of the extension

Also working with the illusion of materiality is the extension to the Kunstmuseum Winterthur. Gigon/Guyer designed a rectangular extension, housing nine additional exhibition rooms, to provide extra space for the artworks. The simple rectangular form was covered in green glass to contrast the existing traditional building, allowing the built structure to stand independently.[19] The translucent glass acts as a cladding to the exhibition spaces and a shield to the carpark below. The glass provides illumination to the carpark without revealing its contents fully to the outside.[20] Passersby see blurred shadows and movement within the carpark. Above the horizontality of the zinc, insulation cassettes behind the glass can be perceived.[21] The viewer receives a hint of what is behind the glass but not a complete picture. Jann Lienhart has the impression he can see into the building, when in reality that is only possible through the three windows.[22] In contrast to the glass profile's matt surface the large floor-to-ceiling windows shine. The clear view into the art museum awakens curiosity in the passersby.[23] The window openings hold more power, as the view through the rest of the glass produces merely fuzzy images.

Fig. 25. Glass facade of the extension to the Kunstmuseum Winterthur

19 Leinhart, J. (1995). 9 Räume 3 Fenster. pp.10-11.
20 Bürkle, J,C. (2000). *Gigon Guyer, Architekten Arbeiten*. p.85.
21 Mebold, A. Das Museumsprovisorium. p.12.
22 Leinhart, J. (1995). 9 Räume 3 Fenster. p.10.
23 Mebold, A. Das Museumsprovisorium. p.13.

3.3 TEXTURE

Fig. 26. Texture of the glass panels at the Bregenz Kunsthaus

Glass is naturally a smooth, flat, surface and perhaps not often associated with texture. Nevertheless, by taking multiple glass panels and overlaying them, it is possible to form a texture out of flat panels. The Bregenz Kunstmuseum did just that by overlapping 712, 1.75 x 2.93m panes of etched glass,[24] creating a more 3-dimensional skin. The resulting effect conjures up references to fish scales or ruffled feathers. It is contrary to traditional ways of cladding buildings in glass, using curtain wall systems that lay the glass flat. The scaley texture removes the hard lines from the pure cuboid form, it softens and blurs the edges of the museum.[25] The overlapping of the glass creates paler vertical stripes of glass, as the double layer is opaquer and shows off the colour of the glass more and less of the contents behind the glass. The different tones in the façade build a higher visual intensity.

Fig. 27. Close up of the glass shingles

Fig. 28. Close up of the glass profiles covering the exhibition space and the car park

Texture created using glass can also be achieved without overlapping panels. The extension to the Winterthur Museum works with green glass profiles, with rounded edges, to create a veil around the building. The bevel on the profiles, meet each other on the main body of the building, thus covering the museum in a texture that enhances the image of a veil. The screen of glass profiles below, covering the car park, are set further apart to provide ventilation to the car park.[26] Although the profiles in the upper and lower tier are spaced differently, they still bring unity to the building. The three windows that provide an orientation point and views to the

24 Kunsthaus Bregenz. (n.d.). Architektur.
25 Loderer, B. (1997). Turm, Platz und Licht. p.1.
26 Bürkle, J,C. (2000). *Gigon Guyer, Architekten Arbeiten.* p.85.

Fig. 29. Extenstion to the Winterthur Kunstmuseum

outside from within, provide openings within the veil on the outside.[27] The smooth continuous surface of the large glass windows contrasts the rippled effect created by the vertical row of glass profiles. The high box windows, flush with the glass extrusions, do not break the surface but rather provide a gap in the change in texture. The imagery of a veil surrounding the building, would not be so strong should the windows be set back.

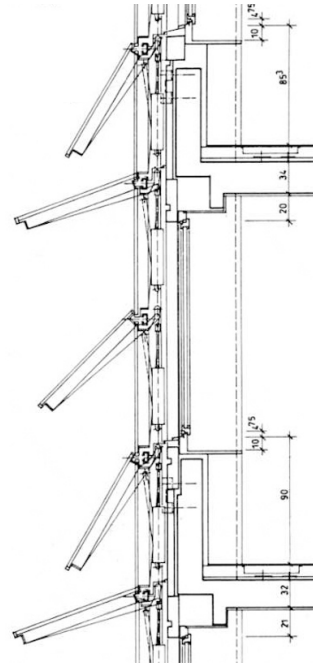


Fig. 30. Facade detail through the Suva Haus

Whilst the above examples create texture through overlapping or introducing rounded forms the Suva Haus relies on the operability of panels. The façade comprises three different repeating bands of glass, a sun protection band above (made of prism glass), the user-operable band of windows in the middle, and the strip of insulating glass below.[28] Each panel of glass can be rotated open, either by computer sensors in the case of the upper and lower band or by the users in the case of the middle band which lies in front of the existing and new windows. The rhythm and texture created by these openings differ with the seasons, time of day or the weather.[29] In winter the shell becomes a closed glass case, whilst in summer the open panels create an ever-changing texture.[30] The open panels break the reflections on the surface to reveal stone, insulation or windows behind. In a way, they break the illusion of a glass office building by revealing the surfaces and textures behind the glass wall.

Fig. 31. Open panels at the Suva Haus

Fig. 32. Facade panels

27 Bürkle, J,C. (2000). *Gigon Guyer, Architekten Arbeiten.* p.84.
28 Rüegg, A. (1994). *Das Neue Suva-Haus in Basel 1988-1993.* p.12.
29 Rüegg, A. (1994). *Das Neue Suva-Haus in Basel 1988-1993.* p.13.
30 Rüegg, A. (1994). *Das Neue Suva-Haus in Basel 1988-1993.* p.35.

3.4 PATTERN

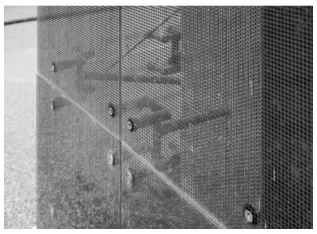
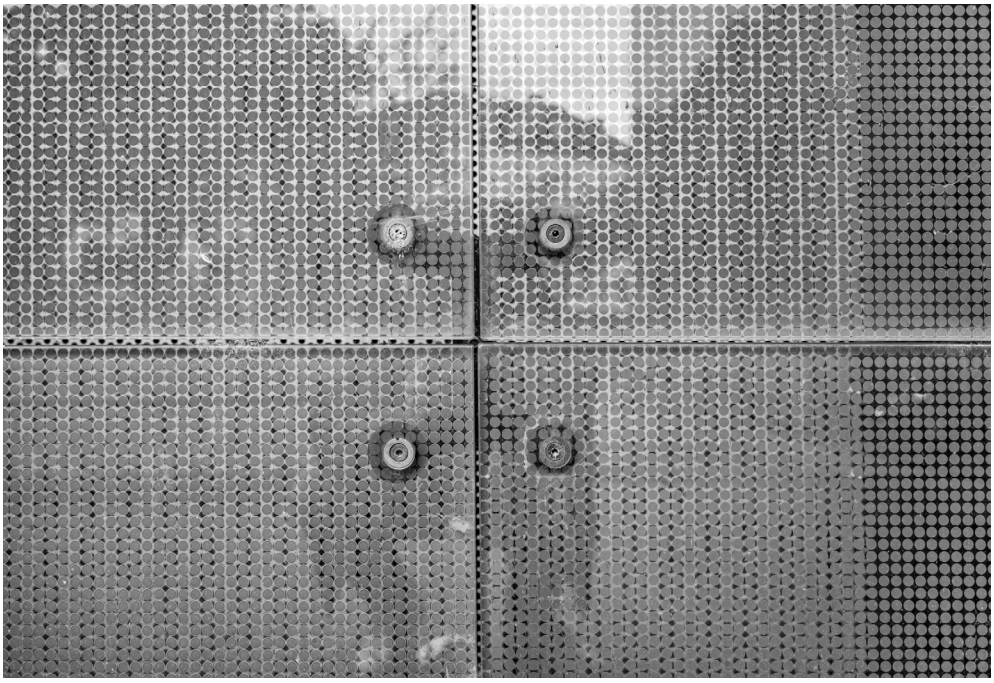


Fig. 33. Corner panels of the pharmeceutical building

Glass is not a material immediately associated with patterns, yet technology enables all manner of patterns to be printed onto its surface. Herzog & de Meuron experimented a lot with glass surfaces, treating them with sand, attempting to grow algae on glass and printing on its surface, to create new effects.[31] The glass panels of the pharmaceutical building in Basel were silk screen printed with bottle green dots, creating a filigree structure, which opposes the transparency of the glass.[32] From a distance the glass appears to be green, it is only close up that it diffuses into green spots. The green colour symbolises poison and plants from which remedies are made.[33] Beyond the glass, the insulation panels are covered by a perforated aluminium sheet,[34] which up close adds another level of depth to the pattern of the façade.

Fig. 34. Pattern print on the glass panels at the pharmaceutical institute.



31 Steinmann, M. (1994). The presence of things. p.24.
32 Mack, G. (1996). *Herzog & de Meuron* 1989-1991. p.48.
33 Mack, G. (1996). *Herzog & de Meuron* 1989-1991. p.135.
34 Herzog & de Meuron 1980-2000. (199). p.105.

3.5 LIGHT

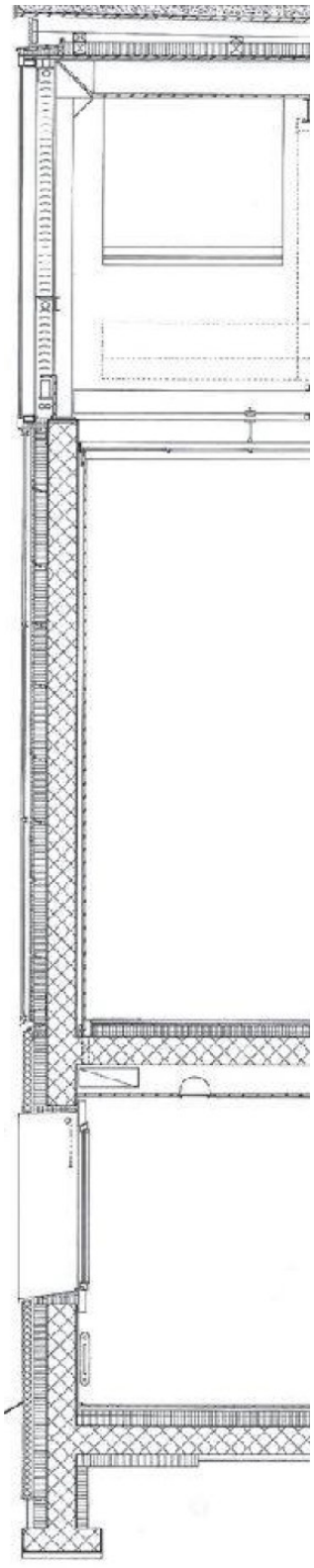


Fig. 35. Facade section through the Kirchner Museum

Glass reacts to light more than other materials. Light can pass through it, be reflected off it, produce reflections onto it and alter its colour. Bringing light into a building is often the motivating factor for using glass in architecture. Part of the biggest challenge for the Kirchner Museum was how to bring natural light in through a roof that would be covered in snow for several months of the year. The result was to build light boxes above the exhibition spaces to bring the light in through the side and down through a glass ceiling.[35] The ceilings in the exhibition spaces, therefore, become an illusion. The viewer has the impression the light is coming from above but in reality, it is coming from the side. A part of this illusion is the glass skin, like the Suva Haus, the glass skin of the Kirchner Museum covers primarily solid surfaces. During the day this is not immediately evident from afar as the different glass panels are of similar tones. Yet when lit up at night the upper bands of the light boxes create glowing strips that reveal their function. During the day the glass wrap has an abstract, paradoxical quality that lifts at night when the museum is illuminated inside.

Fig. 36. The Kirchner Museum lit up at dusk

35 Hönig, R. (2012). Das Museum als Lichtgefäss. p.13.

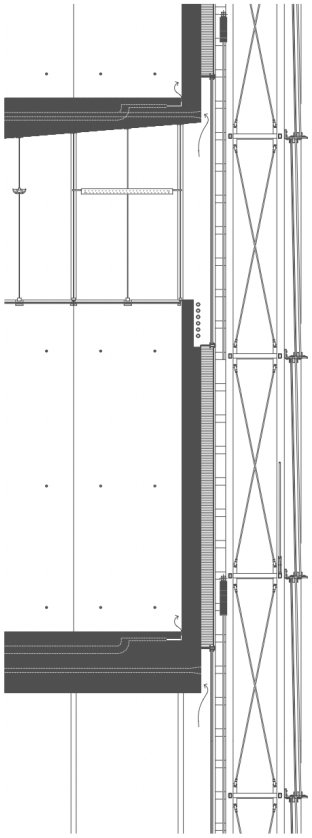


Fig. 37. Facade section through the Bregenz Kunsthaus

Much like the Kirchner Museum, Zumthor brings light into the Bregenz Kunsthaus from the side through the diffuse, quadratic, glass shingles and then a layer of insulation glass before distributing it through the glass ceiling.[36] Only here within the building, there is an extra indication that it cannot come from above, given that the exhibition spaces are stacked on top of one another. Light plays multiple roles in the building, not just illuminating the artworks but also creating shadows and different tones through the façade.

"*From the outside, the building looks like a lamp. It absorbs the changing light of the sky, the haze of the lake, it reflects light and colour and gives an intimation of its inner life according to the angle of vision, the daylight and the weather.*" - Peter Zumthor.[37]

The museum has many faces depending on the light from within and outside. When viewed from a side angle the glass takes on blue/green hues. When observed head on the matt glass gives an indication of the movement inside the buildings through shadows. At night the structure of the building becomes clearer from light omitted from within the building.

Fig. 38. Street corner of the Bregenz Kunsthaus at night

Fig. 39. South east facade of the Bregenz Kunsthaus at night

36 Kunsthaus Bregenz. (n.d.) Architektur.
37 Kunsthaus Bregenz. (n.d.) Architektur.

How a building is read during the day or night can differ, due to the light or lack of it. Glass architecture is never totally transparent, even at night one can sense the outer realms of the building.[38] During the day the stone behind the glass skin of the Suva Haus is readable in the absence of reflections. However, once darkness falls, the stone building is hidden further. When the illumination from within outshines the light outside, the core becomes stronger than the shell. Therefore, only the form, rather than the material, is visible as the glass loses some of its translucency in the darkness.[39]

Fig. 40. The Suva Haus lit up at night

38 Colomina, B. (2019). *X-ray architecture*. p.149.

39 Rüegg, A. (1994). *Das Neue Suva-Haus in Basel 1988-1993*. p.13.

4 STRUCTURE AND FIXINGS

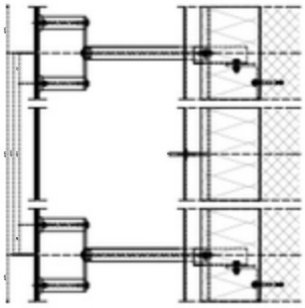


Fig. 41. Facade detail through the pharmaceutical institute

Until now this paper has primarily focused on the glass surrounding the case studies. However, glass panels cannot stand alone they require structure and fittings to support them. The connections and supporting structure can add to the level of abstraction or illusion in the projects and play a part in the overall image.

As mentioned above the glass façade of the pharmaceutical building accentuates the sculptural nature of the building. Whilst this is partly down to the reflectivity of the surface it is also a resultant factor of the continuous flat surface. The glass panes meet each other to touch without any mullions breaking the surface, which is enabled by the four-pronged steel struts that hold the glass panels to the supporting wall. The cylindrical struts also add another dimension to the pattern of printed dots and the perforated metal sheet. Under intense sunlight, the geometry of the struts cast shadows beyond the veil of green dots, whilst the steel plates shine white.[40] The four feet together with the dots and the colour evoke abstract images of organisms, hinting at the inner workings of the building.

Working further with imagery the windows of the pharmaceutical building gives the impression the windows were sliced into the facade.[41] This effect is achieved by wrapping the glass around on to the window reveal, rather than the material changing in the reveal, reducing the material changes. Fewer materials create a simplification and in turn an abstraction to the project. Although compared to other examples the pharmaceutical institute has more penetrations and is, therefore, less homogenous, it maintains unity and purity of form as the window incisions become cutouts of the form.

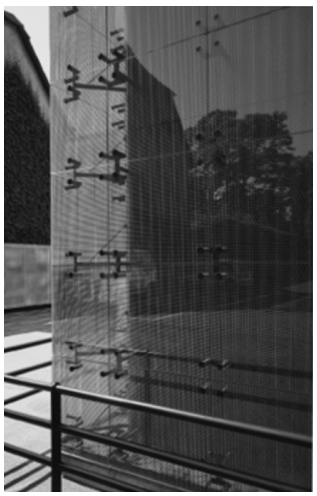


Fig. 42. Steel struts behind the glas skin

Fig. 43. Windows in the pharmaceutical institute

40 In Basel, Switzerland, Herzog & de Meuron's Rossetti hospital pharmacy casts a vivid green glow. (1999). p.89.

41 Mack, G. (1996). *Herzog & de Meuron 1989-1991*. p.135.

One further aspect of the pharmaceutical building worth discussing is the air gap. Herzog & de Meuron have experimented in many projects with the depth of the skin.[42] As can also be seen in the Suva Haus. Yet, it is more pronounced in the pharmaceutical institute, with a large visible air gap between the glass skin and the insulation. The glass acts as a container for the building, like a pharmaceutical jar holding its remedies, it becomes the outer edge of the cell holding the organism together.[43] The effect of a glass wall standing alone at the edge is more defined at the corners, where it is possible to look through two glass surfaces and out the other side (Fig.47).

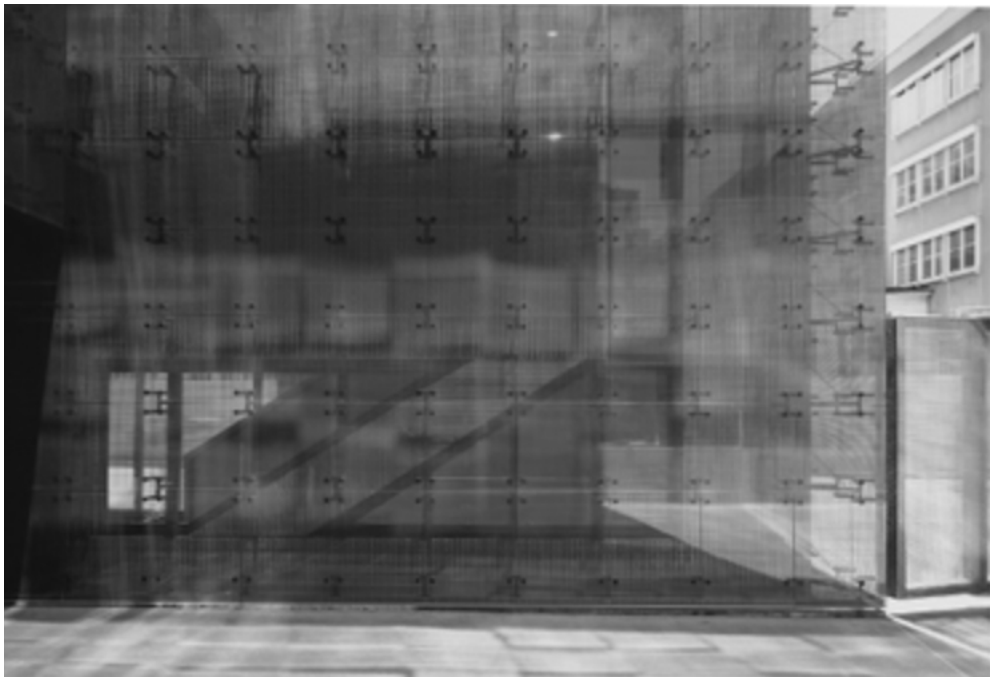
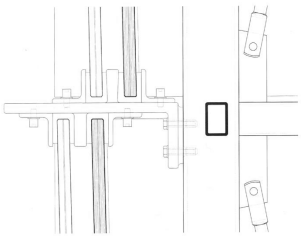


Fig. 44. Photo of the pharmaceutical institutes facade showing its depth



The 90 cm wide gap between the glass shingles and the concrete structure in the Bregenz Kunsthaus houses a steel skeleton that supports both the glass panels and the insulation. The glass acts as a weather-protective skin and is held in place by small fixings that attach back to the skeleton.[44] The fixings add another level of texture and visual stimulation to the façade. Yet their small size means it is the glass that dominates the façade and the supporting structure remains hidden.

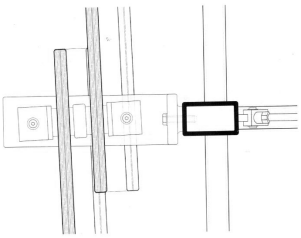


Fig. 45. Detail plan and section of the brackets holding up the glass schingles

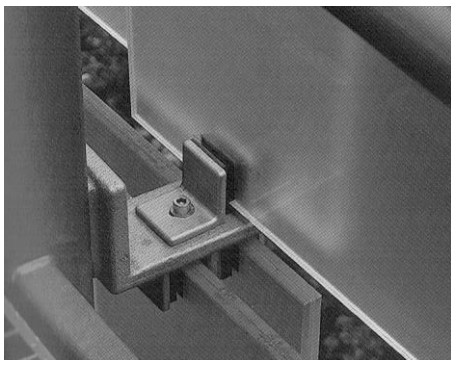


Fig. 46. Photo of the facade bracket from the inside

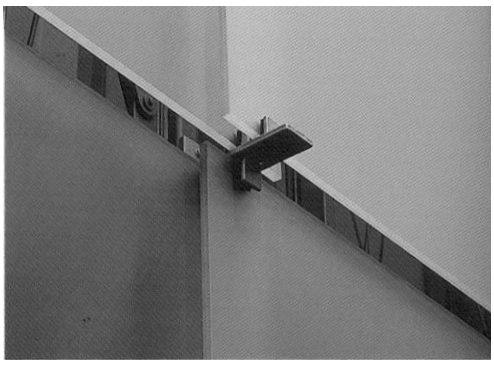


Fig. 47. Photo of the facade bracket from the outside

42 Steinmann, M. (1994). The presence of things. p.24
43 Mack, G. (1996). Herzog & de Meuron 1989-1991. p.135.
44 Kunsthaus Bregenz. (n.d.). Architektur.

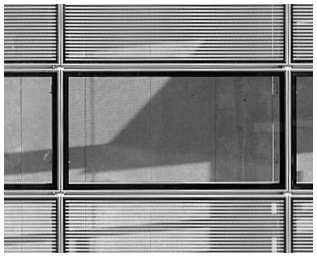


Fig. 48. Windo panel at the Suva Haus

The Bregenz Kunsthaus is not the only project with a deep structure behind its skin. The Suva Haus again possesses a continuous surface, when all the panels are closed, despite a heavy structure behind them. Although the frames of the glass panels are visible, they are fine and flush with the glass allowing for continuation. It is only when the panels lie open that the heavy structure comes to the forefront. It is a project of two faces depending on whether the windows are open or closed.

A continuous surface is important in many of the projects, without this the buildings would lose unity and the impression of being wrapped. Gigon/Guyer stated that the biggest invention in the Kirchner Museum was that the skylights are flush with the façade and don't step in like in many other museums. In doing so, it is possible to distribute even light intensity across the rooms.[45] Although the reasoning for seeking out a flush skylight was not that of an even surface around the museum, the flush surface gives the impression of a glass veil hung around the museum and completes the enigma.

Finally, the fixings in the Kunsthaus Winterthur also maximize the amount of glass on display. Due to the low budget, the extension to the Kunsthaus Winterthur was seen as a temporary solution. Therefore, the material costs were kept at a low budget, where possible recyclable and easily mountable and demountable materials were used. Ticking every box of the requirements, the glass profiles also appear to touch the ground, void of any skirting or footing. They have been slotted into a thin fixing at the base. The lack of material breaks in the project and the fact that the material seems to touch the ground adds to the image of a curtain draped around the building. It also works to ground the museum.[46] The detailing of the profiles at ground level has however led to some issues, as in some parts of the façade vegetation has begun to grow up through the profiles.

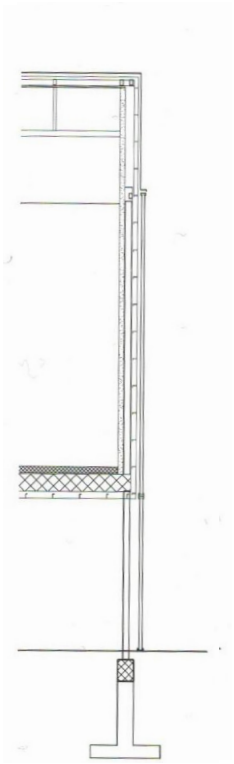


Fig. 49. Facade detail through the extension of the Winterthur Kunstmuseum

Fig. 50. Vegetation growing through glass profiles of the Winterthur Kunstmuseum

45 Beisiegel, K. Gigon, A. Guyer, M. (2022). *Kirchner Museum revisited*. p.22.
46 Bürkle, J,C. (2000). *Gigon Guyer, Architekten Arbeiten*. p.85.

5 CONCLUSION

Wrapping any cladding around the whole building results in a homogeneous and abstract appearance.[47] As we have also seen in the case studies above. So, what is different about glass, how can glass intensify the level of abstraction and how does it create illusions? Glass possesses properties that are absent in many other materials, such as transparency, translucency, reflectivity, and the ability to bring light in or omit it. Moreover, it is possible to treat the surface in multiple ways by etching it, printing patterns on it or simply adding colour to the glass.

Translucency can be used to create unexpected experiences with glass. We are used to seeing through glass into a building. Placing opaque materials directly behind translucent glass creates an enigma. The glass wrap of the Kirchner museum paradoxically mostly covers insulation, giving the building a pale bluish colour from a distance and a textile quality up close. The Bregenz Kunsthaus also creates an unexpected experience with glass, by overlapping the glass to create a texture. The overlapping of multiple translucent pieces of glass creates different levels of translucency across the building that fragments any image behind the glass. In general, translucent glass can be used to blur the materials and goings on behind it. As seen in the extension of the Winterthur Kunstmuseum, the glass blurs the car park behind at ground level. The blurring becomes an abstraction of reality. However, translucent glass can still bring daylight into a space.

Printed patterns on glass, give the illusion of different colours from afar to close up, as seen with the green dots printed on clear glass at the pharmaceutical institute. The pattern together with the struts were exploited to suggest ideas of membranes, creating abstract imagery. As with translucent glass, patterns on transparent glass can fragment or partially hide the goings on behind the glass. “The façade's layered materials are literal (authentic and exposed), but they are simultaneously the perpetrators of illusion.” [48]

Many of the projects reveal themselves in a different light during the night. The blurred images created during the day that depict the inner workings of the building are lifted at night to display a different image. In the case of the Bregenz Kunsthaus, the floor levels become more distinct at night when the building is lit. In the Suva Haus, the opposite occurs, the glass loses its translucency at night and the surfaces behind the glass become harder to read.

Hiding the materials behind the glass occurs in the Suva building through reflections. Reflections come and go depending on the light source or the viewer's angle. By hiding and revealing, materials can create different illusions. Reflections can also increase the abstract appearance of a building, as with the pharmaceutical institute the shiny reflective surface gives the building a more sculptural presence.

Of course, the pronged struts enabled the smooth, uninterrupted reflective surface of the pharmaceutical building. Noticeable in all the examples was the lack of visible structure or fittings on the façade surface. This goes back to the original

47 Davidovici, I. (2013). *Forms of practice*. p.216.

48 In Basel, Switzerland, Herzog & de Meuron's Rossetti hospital pharmacy casts a vivid green glow. (1999). p.89.

point that a continuous surface or texture covering a form creates unity and abstraction. The glass also remains the focal point and the effects from the glass, be it a pattern, reflectivity translucency or transparency, have a powerful effect when covering a large area.

In conclusion, utilizing the distinct properties of glass, particularly when covering entire surfaces in it, can increase abstraction, illusion, and imagery. The question remains, when is it appropriate to wrap whole buildings in glass? It is perhaps no coincidence that three of the examples are art museums. Creating a sense of intrigue and mystery through abstraction and illusion fits well with art, which often requires imagination and interpretation. Cladding an office building completely in translucent glass would not work, as the workers need views out. Although the Suva Haus, an office building itself, wrapped a glass envelope around the existing and new structure, there is an element of absurdity in it. Covering a weatherproof stone in another weatherproof material, seems somewhat excessive. Architects have the ability to reduce buildings down to abstract forms, to create surfaces that hide and reveal and to evoke abstract images. This method should be utilized in special pieces, and with good reason, not only because this approach would not be appropriate for everyday architecture, but with overuse, this method of wrapping in glass could lose its element of surprise and intrigue. Yet when used sparingly, wrapping in glass can delight the viewer as many of the case studies have demonstrated.

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Fig. 35. *Facade section through the Kirchner Museum*. (2012). [Drawing]. Found in Zauberlicht: das Kirchner Museum ist ein massgeschneidertes Gefäss. Vol.25. Issue.4. p.9.

Fig. 36. *The kirchner museum lit up at dusk*. [Photograph]. 52 beste Bauten. https://52beste-bauten.ch/24-kirchner-museum-davos/

Fig. 37. *Facade section through the Bregenz-Kunsthaus.* [Drawing]. Kunsthaus Bregenz. https://www.kunsthaus-bregenz.at/fileadmin/user_upload/KUB/Architektur/KUB_Architekturfolder_210520_d_web.pdf

Fig. 38. *Street corner of the Bregenz Kunsthaus at night*. [Photograph]. Kunsthaus Bregenz. https://www.kunsthaus-bregenz.at/architektur

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Fig. 40. *The Suva Haus lit up at night*. [Photograph]. Taken from Herzog & de Meuron 1989-1991: Das Gesamtwerk. Birkhäuser Verlag. p.46.

Fig. 41. Spiluttini, M. (1999). *Fassade detail through the pharmaceutical institute.* [Drawing]. Taken from Herzog & de Meuron 1980-2000. AV Monograffias. Vol.77. p.105.

Fig. 42. Spiluttini, M. (1999). *Steel struts behind the glas skin.* [Photograph]. Taken from Herzog & de Meuron 1980-2000. AV Monograffias. Vol.77. p.107.

Fig. 43. *Windows of the pharmaceutical institute*. [Photograph]. architektur Bibliothek. https://www.architekturbibliothek.ch/bauwerk/kantons-und-spitalapotheke/

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Fig. 45.*Detail plan and section of the bracketsholding up the glass schingles.* [Drawing]. Found in Peter Zumthor Kunsthau Bregenz: 6th Mies van der Rohe Award for European Architecture 1999. Ostfildern: Hatje Cantz Verlag. pp.32-33.

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Fig. 48. *Window panel at the Suva Haus*. [Photograph]. Taken from Herzog & de Meuron 1980-2000. AV Monograffias. Vol.77. p.64.

Fig. 49. Gigon/Guyer. *Facade detail through the extension of the Winterthur Kunstmuseum.* [Drawing]. Taken from Gigon Guyer, Architekten-Arbeiten 1989 bis 2000. Niggli. p.91.

Fig. 50. *Vegetation growing through glass profiles of the Winterthur Kunstmuseum*. [Photograph]. Taken by author on 17.12.2022.

8 DECLARATION OF ORIGINALITY

I hereby confirm that I am the sole author of the written work:

Wrapped in glass

Creating abstraction, illusion and imagery

and that no help was provided from other sources, as those allowed. All sections of the paper that use quotes or describe an argument or concept developed by another author have been referenced, including all secondary literature used, to show that this material has been adopted to support my thesis.

Hannah Fotheringham

Lucerne, 14.01.2023