

Digital Gothic: A New Architecture of Light

by Ole Bouman

Most people who theorize about the fate of architecture, and its ongoing tendency towards lightness, focus on the constructional aspect. They talk about the use of mirrors in the 18th century, new construction techniques in the 19th, modernist transparency and screen façades in the 20th century. For these people the 21st century will mean architecture that is even lighter, using all kinds of synthetic materials and fast click systems.

There are also theorists who concentrate on the conceptual level. These thinkers explore the progressive immaterialisation of the architectural object, its gravity, its integrity and its solidity. They come up with either a sort of minimalism, a neutral, abstract space-oriented approach, or all kinds of aberrations of the platonic volumes: deconstructivism, blobs, and so on.

But there is also a social and programmatic level. And this is perhaps the most important impetus of the literal enlightening of architecture. Architecture always was a representation of power, and as such a conquest of a certain territory by definition. It also circumvented the agents of social cohesion: a church, a temple, a palace. Later, in modern times, even when secularisation challenged these agents, the new ones still needed architecture to enclose them: the family house, the factory, the office. In the best functional tradition, people moved from one situation to the other.

Today we see the next step of dissolution of social bodies. Families, firms, communities are either vanishing or changing their structure. After the melting into air of the ideologies and big moral institutions, it is now the patterns of dependency and interaction between people whose turn to be liquified has now come. They have become malleable. What we see is a loss of strong mutual engagement, defined through spatial protocols. For instance, in a remarkable reversal of the millennia-long tradition, it is the high and mighty of the day who resent and shun the durable and cherish the transient. Social disintegration is as much a condition as it is the outcome of the new technique of power, using disengagement and the art of escape as its major tools.

Having said that, it seems to be appropriate for this occasion to look to the way we can take this situation as a condition for creative design. We need to conceptualize architecture which is no longer the art of occupying space by its enclosure, but the creation of situations that become movable and thus reflecting major social tendencies. What will be the new mandate of architecture in the age of liquid modernity?

As technical facility, spatial accommodation and property investment, architecture will never become superfluous. As long as there are people, they will need shelter and

this is in itself enough to guarantee the continued existence of an entire profession. But as a cultural carrier architecture may indeed become superfluous. Culture may designate other carriers; people may satisfy their need for meaning elsewhere. On this score, architecture must prove itself over and over again and it is precisely this that makes it an art and an interesting cultural medium. How does the cultural relevance of architecture manifest itself?

Just about everything that makes architecture more than a technical construction, an accommodation, and an investment, is under pressure in the digital era. What does it mean to draw boundaries in a society where entire environments are intermixed by means of sensor and display technology and interface design? What does it mean to occupy a place when at one and the same moment you can be everywhere and nowhere, via GSM and WAP, via avatar and alias? What is there left to represent by means of buildings when there is little collective meaning anymore and messages are becoming more and more individualistic? In an age when investments must yield a profit for a large group of anonymous financiers, return and functionality are the dominant motives. The territorial is reduced to security. It is difficult to represent values when there are no longer any shared values. Ambitious clients turn into risk-shy investment companies. Spatial unity becomes impossible under a regime of extreme cost-consciousness. What remains is a building profession that falls back on its core activity and is at risk of losing its cultural relevance. Unless...

Unless architecture is able to redefine itself and to broaden the substance of its design activities. And that will only be possible when it no longer leaves the design of the digital environment to trained specialists but incorporates it into the design of the physical built environment. If the virtual world is threatening to usurp the cultural relevance of architecture, then it is logical that architecture should seek to connect with that world.

I will describe four stages in which this can happen, ending this trajectory by showing that it is possible to do all four.

1. The moving surface

What does the future hold for architecture when any of its buildings can be animated and transformed by projections and electronic displays? What is left of architecture if our architectural 'sign' language is no longer etched in stone? Façades and walls could be brought to life by designers and provided with a new, dynamic iconography. When stationary objects are visually animated, they lose their 'objectness', their fixity. However sturdy their construction may be, they appear to be moving. That really is 'lite' architecture. In addition to striving after ever lighter structures, transparent and translucent walls, and gravity-defying, curvilinear forms, architecture can now, via film, become truly immaterial. Contours fade, forms become fluid. The relationship between human beings and architecture is no longer polar or dialectical, but 'immersive.' You can quite literally be swallowed up in it... Who will be the first architect to win an Oscar for Best Director?

2. The interactive surface

How to overcome the passivity of the viewer? If the building is going to become a kind of terminal anyway, you might as well go ahead and make it an interactive medium. The introduction of sensor technology heralds a new age in which

architecture can be programmed to respond to highly specific actions. Connected by an efficient interface to the display possibilities I just described, recording cameras, scanners, electronic eyes, sound and heat detectors, infrared systems, and the like, architecture can generate a dynamism that finally eclipses the significance of the static object altogether. The architectural design encompasses not just the object, but also the reaction of that object to the subject. Architecture becomes intimately involved with experience. The building or urban environment does not move because it has been turned into an animation but because you, the actor, animate it.

3. Architecture online

Once the building is interactive, the next step is to connect the architecture to digital networks and bring it 'online'. What possibilities would be opened up if not only people, but whole environments, could be linked together in networks? Architecture online! Now that digitization processes are making headway in both the creation and experiencing of environments, it is possible to link physically separate environments to one another. Once architecture has been redefined as 'information,' this can be rendered compatible by means of a protocol-juggling interface. This in turn can be linked to other environments, analogue as well as digital. The first variant of this approach is to link up with other physical environments. A building is crossed with another location. Interestingly, the aesthetic experience can be collective as well as individual. By adopting a multimedia approach – which involves linking digital recording equipment such as video cameras, webcams, microphones, scanners, and sensors, to reproduction media such as displays, loudspeakers, or 'invisible' integrated architecture electronics – and designing an interesting interface that makes the option of exchange worthwhile and selective, it is possible to devise a new type of spatial extensibility. Places and people in those places communicate with one another. Architecture becomes a matter of moving situations. This way, architecture travels, multiplies, becomes a migrant. Rather than creating a place, designers stage-manage moving situations. The relation between individual and object becomes the relation between dynamic places and (sometimes manipulated) states of mind. This architecture belongs to neither the physical nor the virtual domain; it is a hybrid. Space becomes genuinely fluid; it forms the link by which the digital space can flow into the real space of daily life. And vice versa...

4. And, finally, full-blown internetted architecture.

This brings us to the second option for online architecture. In addition to virtually connecting two or more physically remote environments, it is also possible, to link these physical environments to virtual environments of online networks. This application will only really become interesting when the design itself utilizes the information from the Net as a fundamental component of form: animation as creation. Should an architect or an artist devise a special interface between physical environment and the Net, this application could become an essential element of the architecture. Linked to networks, the meaning of architecture actually becomes re-programmable. Reprogrammability means that a building can fulfil an important cultural role for a much greater part of its life. Updatibility is no longer a question of adaptation to new functions but has become an essential component of the architectonic character of a static, constructed object.

Transports

The question is how to design an architecture that reflects the Net society. Can we design an architecture that starts moving if you want it to do so? Can we design a building that adapts itself to different uses? Can we design environments that are linked to all kinds of remote environments? Can we conceive of an architecture that is a possible modality of Net activity? The answer is, quite simply, yes. And the prototype for such an architecture is called Trans-ports, a project developed jointly by the architect Kas Oosterhuis and myself. Trans-ports is a fully interactive visitors' pavilion that can on several counts be termed 'moving.' To begin with, the building will be constructed through a space frame of pneumatic structural components, so that the volume of the building is fully manipulable. Secondly, the interior of Trans-ports is wholly dictated by display screens. Form and image are permanently in the process of being reprogrammed via input from people and physical circumstances on the spot as well as from remote sources: distant online environments and Internet traffic on the website to which the building is 'hooked up'. This total intermixing of construction, form, image, and use, made possible by a satisfactory broadband connection, current CPU technology, and adequate interface design, spawns a building that has completely shaken off its static character. Accordingly, the pavilion is able to assume various identities. Because structure, text, and image are programmable, the interior can effortlessly adapt to intrinsically different uses. The building has several different modes, such as:

- archaic mode: the building does not 'transmit,' it is turned off.
- performance mode: the show taking place inside the pavilion determines the configuration and transmits this during the show.
- TV mode: the space is used as TV studio.
- commercial mode: active 'total commercials' of 'clients'.
- lobby mode: the space is used as reception area.
- research mode: the space is used for research into human space relationships.
- art mode: Trans-ports is 'fashioned' into an autonomous artwork.
- meeting mode: the building can be operated as an interactive conference room for teleconferences.

If a building can be taken over spatially by multiple users on the basis of appointments, so too can its meaning. The building has a continuous program, not on the walls but including the walls. The material medium becomes the program and it reacts to use. This use can therefore be multiple and as such alternate according to user and client. This is the new form of time sharing. As well as usable space, the building offers 'transmission time.' This leads to seven points for a new architecture. As a pilot project Trans-ports will be:

- * A major step in fusing spatially and digitally disparate ranges of experience.
- * An attempt to reduce the redundant character of static architecture as a 'repetitive' visual element in our existence, in favour of a more flexible, 'informative' response to the public.
- * A serious attempt to achieve a truly moving structure, governed both by direct physical and remote digital input. This implies a new human-space relationship.
- * A contribution to the development of architecture as a filmic discipline through the progressive integration of the constructional with the visual aspect.
- * A prototype for adaptive architecture capable of dragging the discipline away from its eternal obeisance to 'peak usage.' It will be possible to see what happens when the

volume contracts in response to lower usage. As such, Trans-ports is an ecological project.

However, these are all values that reside in architecture as we know it. Trans-ports is more.

* It is a wholly uploadable and updatable architecture. It puts architecture 'on air,' in the form of transmission time. This time can be reprogrammed with content from art, the market, the public sphere, and so on. As a client you don't just rent space, you rent time.

* Finally, time in terms of media can only be Internet time. This is the first architecture that not only has a website attached to it, but that is itself an attachment to a website: the Internet site of Tans-ports has architecture as its 3D-interface.

The result is the rise of Digital Gothic. This is not just lite architecture, but a full-blown architecture of light. It is multiple architecture without a contingent form, territory, client, representation, space, or iconography. Such a building doesn't need a developer. It needs a publisher.