

# The Culture of Windows

Ivor Samuels

Architect and Town Planner; Honorary Senior Research Fellow, School of Geography University of Birmingham; Visiting Professor, Cracow University of Technology.

*Windows are a fundamental element for both architecture and urban design. Ivor Samuels discusses the impact of daylight on housing practice, particularly in the United Kingdom. He claims that while the focus of research and regulations seem to be on sustainability and energy conservation, cultural context, privacy, and surveillance are equally important in planning and urban design. He calls for more interdisciplinary work in the study of the relationships between daylight, architecture and urban form.*

In June this year, a symposium was held in the department of architecture at the Royal Institute of Technology (KTH), Stockholm, to mark the start of a project *Perceptions, daylight and urban planning*. This project is a continuation of Bengt Sundborg's work which has resulted in a book published last year. Given the extremes of daylight exposure experienced in northern latitudes, the focus of the work is the way daylight penetration can be improved in urban areas to save energy by deformations of the urban street grid, modifying the building section, and creating openings in continuous facades.

In Figure 1, Sundborg (2016) shows how a straight grid street can be cranked in plan, and the sections and profiles of its defining buildings modified to improve the daylight penetration. The focus of the symposium was on work carried out by researchers and practitioners on a range of specialised topics relating to daylight; from the effect on the perception of colours to the use of smart phone applications for evaluating daylight.

I am by no means specialised in the topic, but the invitation proved a stimulating opportunity to consider the impact of daylight on housing practice in different contexts. This essay is primarily concerned with the UK although reference is made to other European contexts.

It is noteworthy that the symposium was concerned with ordinary buildings and, in particular, housing which of course makes up by far the greatest part of our urban fabric. While it may seem self-evident that housing should be the main focus of discussion on daylight it is surprising how much energy is put into the problems of daylighting special buildings like offices, which are often set in landscaped spaces away from any neighbours and certainly not in urban streets. The cover of *Tips*

for *Daylighting with Windows*, published by the US Department of Energy and the Lawrence Berkeley National Laboratory, revealingly demonstrates this point (O'Connor et al. 1997).

Since daylight enters dwellings by the windows, their configuration to achieve the optimum conditions at different times of the year and different latitudes will differ by location. However, there is a range of other factors that impact on window design in addition to their efficiency in transmitting daylight. These include local regulatory systems and energy saving and, less tangibly, attitudes of different cultures towards privacy and overlooking which are significant factors in window design.

## Regulation

In the context of deregulation which obtains in the UK, questions of room layout and size, directly connect to the design of windows through the system of building regulations. Britain has seen a bonfire of the regulations over the last decade by neo liberal governments which have decimated the planning system as, in their opinion, is the greatest obstacle to building more houses. However, some regulations are still relevant. In particular, the one which states that "glazing to all habitable rooms should be not less than 20 % of internal floor area of the room" (Kent Design Guide 2017, p. 5.5). This might seem generous, but we have to consider that the UK not only has the smallest new houses but also the smallest average size of rooms among fifteen European countries (Evans and Hartwich, 2005). This enables the size of windows to be considerably reduced.

Figure 2 shows the windows of a new three-storey town house built for sale in the last eight years in Oxford, where the small windows correspond to the small size of the rooms

they illuminate. Even if these windows meet the building regulations, their small size obliges occupants to switch on the electric lights as early as 5 pm on a June afternoon.

These small windows have been encouraged by a concern to achieve the qualities of vernacular housing promoted, among other things, by the Prince of Wales and the development at Poundbury (Samuels, 2013). This fashion has been enthusiastically embraced by developers because of the suspicion that it is much cheaper for them to use small windows than larger ones which achieve the same thermal performance of the surrounding solid walls. Thus developments have been built which, because of their small windows, resemble prisons rather than homes (Figure 3).

### Energy Saving

The Perceptions, daylight and urban planning Swedish project is driven primarily by a desire reduce electricity consumption by optimising on daylight penetration. However, there are different climatic locations where energy is conserved by reducing daylight and, particularly, sunlight penetration, which may indicate smaller windows. In all latitudes, the performance of windows can be enhanced by their design, and this generally involves higher costs as has been noted above. Another climate controlling function of windows is that of allowing air circulation which may contradict measure to ensure heat retention by reducing the loss of heated internal air, and again this depends on their detailed design.

### Privacy

Privacy is another important factor in determining the characteristics of windows. British regulations suggest a distance of 21 metres (app. 69 feet) between new and existing homes to ensure the privacy in the existing buildings. However, privacy is not only a function of window design, but it also depends

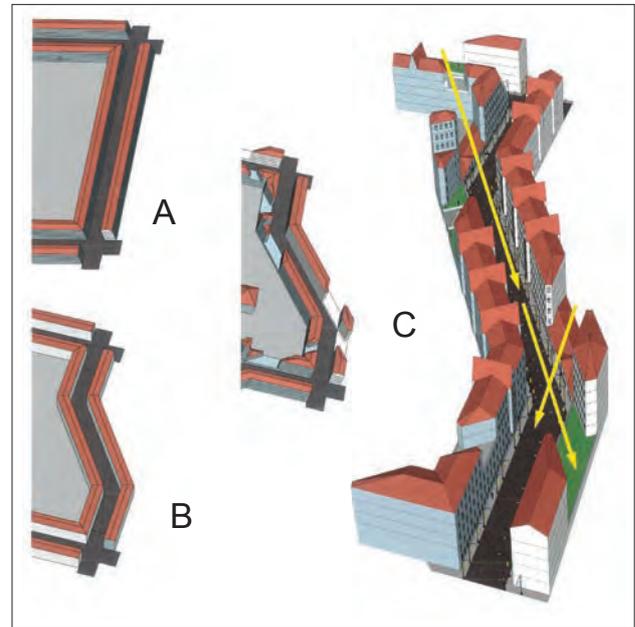


Figure 1: A grid street cranked in plan with the sections of surrounding buildings modified to improve daylight penetration. (Sundborg, 2016)



Figure 2a & b: Inspired by the neo vernacular revival, Oxford new town houses have small windows. Inside lights have to be turned on even during the day.

Figure 3: Current development patterns inspired by the neo vernacular style.





Figure 4: The ground floor windows adjacent to the public footpath always have their blinds closed, ensuring privacy but blocking daylight.



Figure 5 a & b: The viewing platform of the new Tate Modern Art Gallery tower extension provides views into the neighbouring apartments.



on the nature of the space immediately outside the window. In the new apartments illustrated in Figure 4, the ground floor windows adjacent to the public footpath are always shrouded in blinds. Any assessment of window efficiency must, of course, take this into account.

A recent demonstration of how new development can breach expectations of reasonable privacy in an existing building comes from the South Bank of the Thames in London. The residents of a block of apartments for the super rich (which now sell for around 20 million pounds sterling each) are suing the Tate Modern Gallery in the law courts. This is because Tate Modern has erected a tower block adjacent to the apartments which have a public viewing platform at a high level which gives spectacular views across the capital but also complete surveillance of the glazed living accommodation in the apartments next door (Figure 5).

These are British examples and attitudes towards privacy vary across cultures. In Muslim countries under the hot climate of the Middle East, culture and climate combine to render small openings most desirable. But even in European countries with similar temperate climates, cultural norms can foster very different attitudes. In contrast to the British, the Dutch invite passers by to examine their home interiors (Figure 6). To quote a popular, non-technical web site:

“Why don’t people in Amsterdam use blinds or curtains in their houses? Do they feel free to do whatever they want even if they can be seen by everybody?”

When you walk around the city, especially at night, it’s shocking to see so many street level houses with big windows fully illuminated which doesn’t (sic) have any kind of privacy. This would be unthinkable in most countries. Don’t Dutch people feel uneasy with that level of openness?!”<sup>1</sup>

### Surveillance

Windows not only allow daylight to penetrate into houses but also allow its dwellers to communicate beyond the dwelling. Together with doors, they are the link between the private realm of the home and the semi private realm of the garden and the public realm of the street. Under the heading of privacy, the needs of people inside the house have been discussed. However, there are also the needs of those who pass by the house. The extent to which the public realm is overlooked from neighbouring dwellings increases its safety has been widely recognised in England, including by a police led initiative under the label of Secured by Design. Among a range of other recommendations,

<sup>1</sup> <https://stuffdutchpeoplelike.com/2010/11/24/no-8-not-owning-curtains>

their guidance for new homes states that “it is important to avoid the creation of windowless elevations and blank walls adjacent to public spaces” (Secured by Design, 2014, p. 20).

As noted above there may be a conflict between privacy and the potential for surveillance. In the traditional bourgeois urban housing of the 19th and early 20th century, this was overcome by constructing basements with the main dwelling floor raised above street level. This solution offered surveillance of the street while ensuring an adequate degree of privacy (Figure 7).

Different cultures and construction methods may impact the traditions of windows differently. The US example in Figure 8 shows that the timber frame construction allows for larger windows. Also, the house in this case is raised about the level of the sidewalk for privacy; in the UK, raised ground floor arrangements are now hard to find due to the regulations for universal accessibility.

### Conclusion

The importance of daylight for homebuyers is confirmed by the results of a recent study including 25 consumer surveys, 900 online interviews, and six focus groups who “identified high ceilings and good daylight as the most sought after qualities for interior spaces” (Samuels, 2015, p. 2 ). That most familiar of building elements –the window might seem a simple target for the quantitative assessment of its performance. These can be very sophisticated, but in the field of housing, an evaluation of a window’s daylight functioning cannot be based solely on quantitative measurements. It must take into account the different roles and functions the window performs and, in order effectively to carry out this work, boundaries must be crossed. These include those between physics, with respect to the behaviour of light, sociology and anthropology, for the cultural mores of different contexts, law for the legal powers and impact of regulatory systems and economics for an understanding of construction costs and the housing market.

This all might seem obvious but in today’s academic context where, under the pressure of research reviews that tend to favour work which is ever more specialised, it is increasingly difficult to achieve cross boundary work. The study of daylight and urban form is a clear case where this type of interaction is necessary.



Figure 6: Dutch modernist homes invite passers-by to inspect the interior.



Figure 7: This Dutch town house provides privacy in the dwelling while allowing surveillance of the street.

Figure 8: The Crossings, a new urbanist residential development in Mountain View, CA. Timber frame construction allows wider windows, and regulations allow raised ground-floors.



## References

- Evans, A.W & Hartwich, O.M. (2005). *Unaffordable Housing: Fables and Myths*. London: Policy Exchange.
- Kent County Council (2017). *Design Guide*. Retrieved from [https://www.kent.gov.uk/\\_\\_data/assets/pdf\\_file/0014/12092/design-guide-foreword.pdf](https://www.kent.gov.uk/__data/assets/pdf_file/0014/12092/design-guide-foreword.pdf).
- O'Connor et al. (1997). *Tips for Daylighting with Windows: The Integrated Approach*. Lawrence Berkeley National Laboratory. Retrieved from <https://windows.lbl.gov/pub/design-guide/dlg.pdf>
- Samuels, I. (2013). Design Codes in England – New Urbanist Inspiration? *Focus 11, Journal of the CRP Department, Cal Poly*, pp. 47-53.
- Samuels, I. (2005). *What Homebuyers Want: Attitudes and Decision Making Among Consumers*. London: Commission for Architecture and the Built Environment. Retrived from <http://webarchive.nationalarchives.gov.uk/20110118150853/http://www.cabe.org.uk/publications/what-home-buyers-want>
- Secured by Design. (2014). *New Homes 2014*. Association of Chief Police Officers. Retrieved from <http://www.secured-bydesign.com/wp-content/uploads/2014/02/SBD-NewHomes14-lowres.pdf>
- Sundborg, B. (2016). *Energy Savings by Using Daylight for Basic Urban Shapes with a Case Study of Three Different Street Types*. Licenciate thesis. Stockholm: KTH, Royal Institute of Technology. Retrieved from <https://www.diva-portal.org/smash/get/diva2:1039977/FULLTEXT01.pdf>