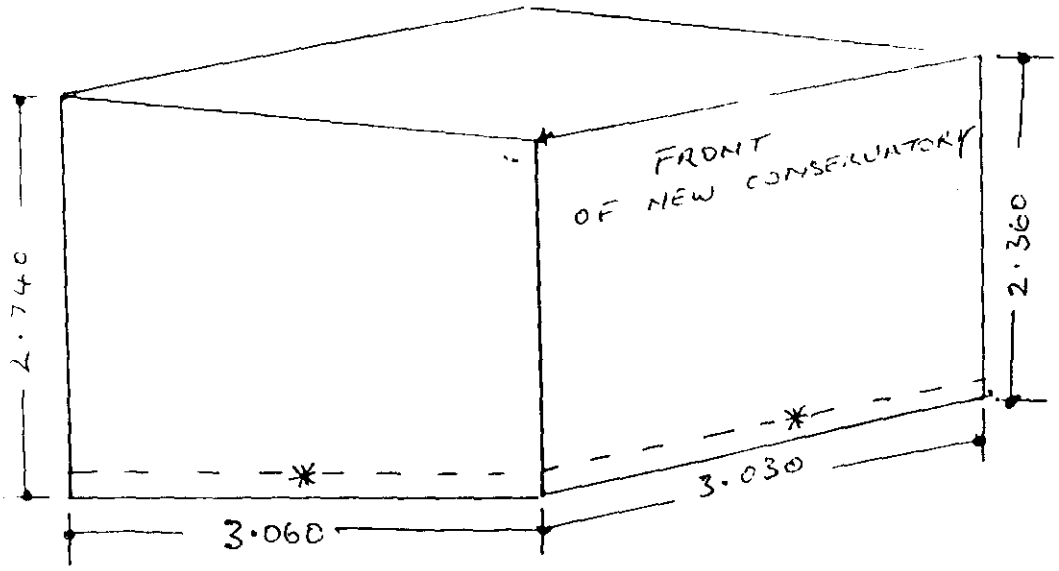
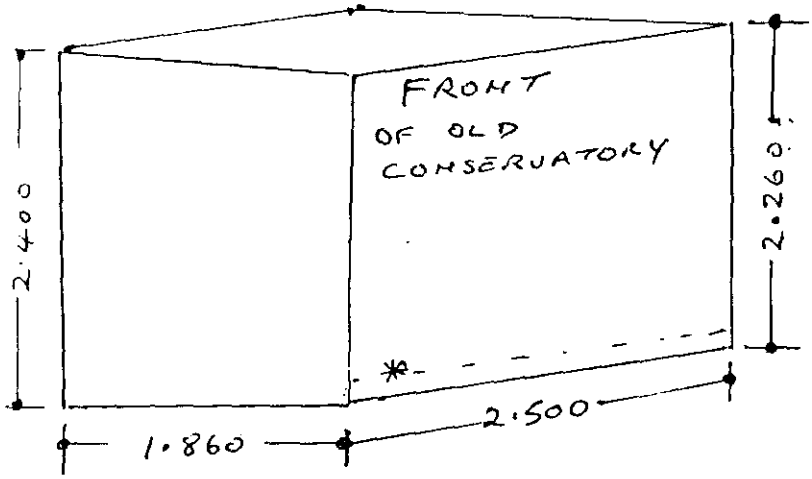


* - - - - -
220mm BELOW DAMP TO GROUND LEVEL.

25·4047 CUBIC/M
INCLUDING BRICKWORK BELOW DAMP TO GROUND LEVEL

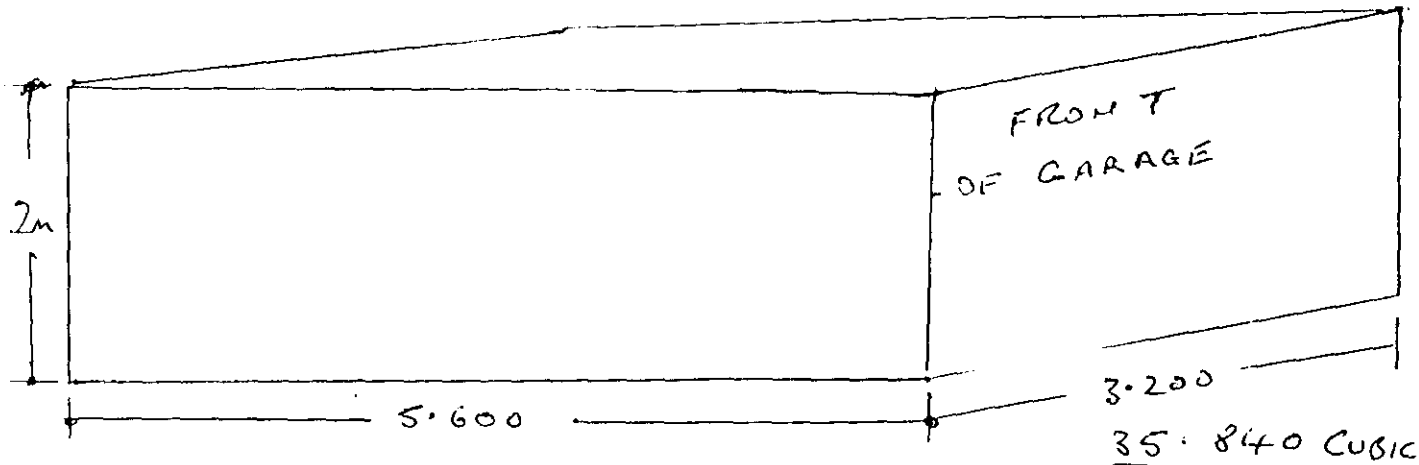
23·1795 CUBIC/M
ABOVE DAMP



* 110 mm BELOW DAMP TO GROUND LEVEL.

11·0205 CUBIC/M.

SOU... AND DC
HOU... NNING
21 ... 1995
Ref: 0754/95



35·840 CUBIC/M.

SCALE 1:50

Any reduction in the total amount of skylight can be calculated by finding the vertical sky component at the centre of each main window. If this is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the vertical sky component, with the new development in place, is both less than 27% and less than 0.8 times its former value, then occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear more gloomy, and electric lighting will be needed more of the time.

The impact on daylight distribution in the existing building can be found by plotting the no-sky line in each of the main rooms. The no-sky line divides points on the working plane which can and cannot see the sky (see Figure 3). In houses, the working plane is assumed to be horizontal and 0.85 m high; in offices 0.7 m high. The BRE report[1] gives hints on how to plot the no-sky line. If, following construction of a new development, the no-sky line moves so that the area of the existing room which receives direct skylight is

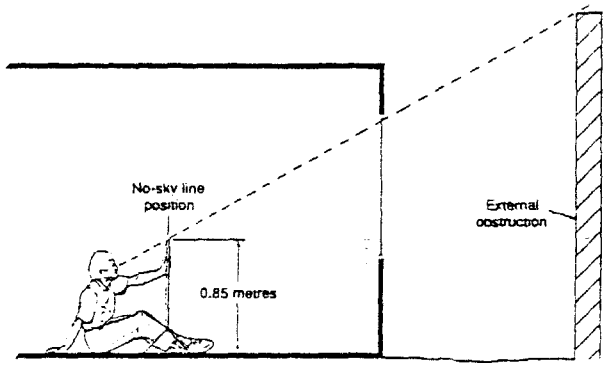


Figure 3 At the no-sky line, the last visible patch of sky above the obstructions will just disappear when the window head is sighted through a point at working plane height

reduced to less than 0.8 times its former value, then more of the room will appear poorly lit. This is also true if the no-sky line encroaches on key areas like kitchen sinks or worktops.

For domestic extensions which adjoin the front or rear of a house, a quick method can be used to assess the diffuse skylight impact on the house next door (see Figure 4). It applies only where the nearest side of the extension is perpendicular to the window, and is not valid for windows which directly face the extension, or for buildings opposite. For these cases the guidelines above should be used.

To use the quick method, take the elevation of the window wall and draw diagonally down at an angle of 45° away from the near top corner of the extension. Then take the plan and draw diagonally back at an angle of 45° towards the window wall from the end of the extension. (Note that the section perpendicular to the window is not used here.) If the centre of a main window of the next-door property lies on the extension side of both these 45° lines, then the extension may well cause a significant reduction in the skylight received by the window.

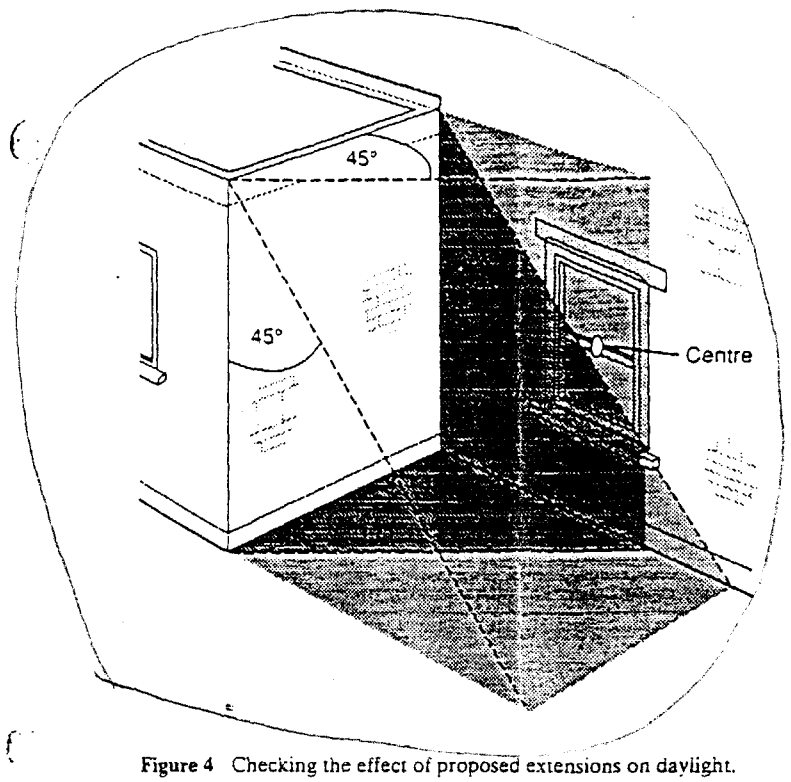


Figure 4 Checking the effect of proposed extensions on daylight. Centres of adjacent windows should be outside the dark shaded zone (the 45° guideline)

For existing buildings it is particularly important that the guidelines on natural lighting be applied sensibly and flexibly. The BRE report[1] highlights problems of successive extensions to the same building, and of a window looking out between extensions which create a tunnel effect. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light.

The windows of some existing buildings will also have Rights to Light. The BRE report describes how to check for this.

Obstruction of light from the sky is just one of the ways a new building can affect existing buildings nearby. View and privacy are also important as is obstruction to sunlight and solar gain[4].

ADJOINING DEVELOPMENT LAND

A well designed building will stand a reasonable distance back from its boundaries, to enable future nearby developments to enjoy similar access to daylight. By doing so it will also keep its own natural light when the adjoining land is developed. This applies (to future non-domestic development as well as to housing) when any main window wall, either of the current new development or of any probable future development on the adjoining site, will face over the boundary.

As a first check, draw a section in a plane perpendicular to the boundary (see Figure 5). If a road separates the two sites then the centre line of the road should be taken. Measure the angle to the horizontal subtended by the proposed new buildings at a point 2 m above the boundary. If this angle is less then 43° then there will normally still be the potential for good daylighting on the adjoining development site (but see below).

If any of the new buildings is taller than this, enough skylight may still reach the development site provided the building is narrow enough to allow adequate light around its sides. Overall, the adjoining development site should normally retain the potential for good daylight if every point 2 m above the boundary line is within 4 m (measured along the boundary) of a point with a vertical sky component of 17% or more. This corresponds to the value for a continuous obstruction subtending the 43° angle above.

These guidelines should not be applied too rigidly. A particularly important exception occurs when the two sites are very unequal in size and the proposed new building is larger in scale than the likely future development nearby. A better approach here is to estimate where the nearest window wall of the future development may be; then to carry out the 'new building' analysis above for this window wall. The BRE report[1] gives further details.

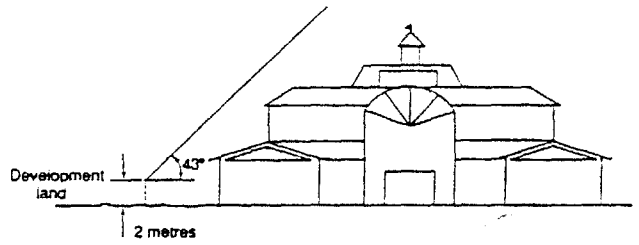


Figure 5 Angular criterion for overshadowing of development land

CONCLUSIONS

These guidelines on diffuse daylighting within site layouts are intended to form part of a coherent design strategy along with new recommendations on interior daylighting[3]. This includes ensuring enough daylight still reaches existing buildings as well as the new development itself. The guidelines may be adapted to suit the needs of the development and its surroundings.

REFERENCES

1 **Littlefair P J.** *Site layout planning for daylight and sunlight: a guide to good practice.* Building Research Establishment Report. Garston, BRE, 1991.

2 **Department of the Environment and the Welsh Office.** *Sunlight and daylight: planning criteria and design of buildings.* London, HMSO, 1971.

3 **British Standards Institution.** Code of practice for daylighting. *British Standard* BS 8206:Part 2:1992. London, BSI, to be published 1992.

4 **Littlefair P J.** Site layout planning for sunlight and solar gain. *Building Research Establishment Information Paper* IP4/92. Garston, BRE, 1992.

3030

NEW CONSERVATORY

BOUNDARY LINE

3.060

5.100

2.060

NEW CONSERVATORY 360mm FROM BOUNDARY

EXIST. HOUSE.

OLD CONSERVATORY

2.500

0981

1500

2.600

3.200

5.600

GARAGE

BOUNDARY LINE.

SCALE 1:50

SOUTH ... ND DC
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