SUNLIGHT AND DAYLIGHT REPORT

AMERICAN CHURCH IN LONDON
TOTTENHAM COURT ROAD

MARCH 2007

SCHATUNOWSKI
BROOKS

CHARTERED BUILDING SURVEYORS

IA/LRN/AM07

Andy Summers Esq
Terry Pawson Architects
12 Gt Titchfield Street
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14 March 2007

Dear Mr Summers

American Church in London, Tottenham Court Road – Sunlight and Daylight

Further to instructions we confirm that we have completed our assessment of sunlight and daylighting in respect of the proposed scheme at the American Church.

The proposed scheme does not impinge on any sunlight and daylight in respect of any nearby residential properties. However, we have tested the daylight to the adjacent building to the north, this being a pre-existing nursery school. We have also included in our report testing for the proposed nursery to be located in the basement of the existing American Church.

To undertake this study we have used site photographs, survey Drawings No. 4075, S1F, PUBF, F2F, E1F, E2F, PSF, PBF, PGF, P1F, E3F, PRF, Terry Pawson Architect's Drawing Nos. 227A0204, plans and elevations of existing and proposed scheme, and adjoining nursery plan as supplied by Terry Pawson Architects.

BRE REPORT 1991 CRITERIA

The BRE Guide covers amenity requirements for sunlight and daylight to residential buildings around any development site.

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ALEX SCHATUNOWSKI FRICS, I.C.ABSOLON BSc MRICS, A. COE ASSOCIATE: C. GILLINGS MRICS,

Before dealing specifically with the requirements of the Guide under the various headings, we would note certain relevant aspects set out in the Introduction to the Guide which are as follows:-

"While this guide supercedes the 1971 Department of the Environment document 'Sunlight and Daylight' which is now withdrawn, the main aim is the same - to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.

The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

DAYLIGHTING

The requirements governing daylighting to existing residential buildings around a development site are set out in Part 2.2 of the Guide. The amount of light available to any window depends upon the amount of unobstructed sky that can be seen from the centre of the window under consideration. The amount of visible sky and consequently the amount of available skylight is assessed by calculating the vertical sky component at the centre of the window. The Guide advises that bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. As regards distribution of daylight within rooms the Guide advises that bedrooms are considered to be less important.

The vertical sky component can be calculated by using the skylight indicator provided as part of the Guide or by mathematical methods using what is known as a waldram diagram. The use of the skylight indicator is, in our view, the less accurate and can only be relied upon for indicative results. The mathematical method which actually measures the amount

of visible sky gives far more accurate and truly representative results, and this is the method we have used.

The Guide states the following:-

"If this vertical sky component 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."

It must be interpreted from this criterion that a 27% vertical sky component (VSC) constitutes adequacy, but where this value cannot be achieved a reduction of up to 20% of the former value would not be noticeable and would not therefore be considered material.

The VSC calculation only measures light reaching the outside plane of the window under consideration, so this is potential light rather than actual. Depending upon the room and window size, the room may still be adequately lit with a lesser VSC value than the target values referred to above.

Appendix C of the BRE Guide sets out various more detailed tests that assess the interior daylit conditions of rooms. These include the calculation of the average daylight factors (ADF) and no sky-lines. The ADF value determines the level of interior illumination that can be compared with the British Standard, BS 8206: Part 2. This recommends a minimum of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

The no sky-line, or daylight distribution contour shows the extent of light penetration into the room at working plane level, 850mm above floor level. If a substantial part of the room falls behind the no sky-line contour, the distribution of light within the room may look poor.

SUNLIGHTING

Requirements for protection of sunlighting to existing residential buildings around a development site are set out in Part 3.2 of the BRE Guide. There is a requirement to assess windows of surrounding properties where the main windows face within 90 degrees of due south. The calculations are taken at the window reference point as recommended in British Standard BS8206: Part 2, at the centre of each window on the plane of the inside surface of the wall. The Guide further states that kitchens and bedrooms are less important in the context of considering sunlight, although care should be taken not to block too much sun. The Guide sets the following standard:-

"If this window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21st September and 21st March, then the room should still receive enough sunlight. The sunlight availability indicator in Appendix A can be used to check this.

Any reduction in sunlight access below this level should be kept to a minimum. If the available sunlight hours are both less than the amount given and less than 0.8 times their former value, either over the whole year or just during the winter months then the occupants of the existing building will notice the loss of sunlight."

Our computer software has been designed to calculate the percentage of annual probable sunlight hours on the basis of the sunlight availability indicator, which in this instance is the indicator for London having a latitude of 51.5 degrees north. The total of annual unobstructed sunlight is 1,486 hours.

Results

Adjoining Nursery Buildings

The results for testing of the adjoining nursery building are shown on our Drawing No. AM07/BRE/CAD08.

As will been noted from the preamble above on the BRE, there are no set standards for sunlighting and daylighting for a building use such as this.

We believe one should therefore assess each room individually and on that basis, have tested the daylight as it strikes the window, this being the vertical sky component figure, the daylight penetration which are the green and red contours plotted within each room for the proposed and existing daylight penetration, the sunlight and also the average daylight factor for the room sizes we have used.

The average daylight factors are shown in the large double-edged boxes behind each room.

The changes in daylight and sunlight figures to Rooms 4, 5 and 6 are absolutely marginal and in our view, the light here does not change at all to any noticeable degree.

Room 1 is lit from two sides and consequently still retains exceedingly high levels of sunlight, daylight penetration and average daylight factor.

There is slightly more change to the daylight penetration of Room 2, although this still does cover the majority of the room. The retained average daylight factor is 1.2% which when compared to the ideal level for residential use at 2%, we would suggest compares favourably.

Room 3 sees the large alteration and effectively this retains light through one window as opposed to two, although we would suggest that a reasonable amount of room is still well-lit by the daylight contour. The average daylight factor here does fall below 1%, but we have not suggested that the light for its use is necessarily poor.

Proposed Nursery

We have tested the daylight again using the BRE and British Standard methods and the results for this analysis is shown on our Drawing CAD09. This shows penetration of direct sky by a plot of the daylight distribution contour. These contours are shown in green. Plotted outside each window is a vertical sky component percentage and adjacent to each room is an average daylight factor figure shown in double-edged boxes.

In respect of the daylight distribution it shows that approximately one-third of the nursery room and one half of the kitchen will receive direct daylight. The vertical sky components will be 10%, whilst the average daylight factors are both over 2%.

The latter figure being the percentage that the British Standard suggests, should be available if the room has electric light available to it.

On that basis we believe the rooms will be perfectly well-lit for their uses.

Our Drawing CAD10 shows a section across the street which while useful, is a little deceptive, given that the building in question being tested, overlaps with the end of a street at right angles to Whitfield Street and consequently benefits from light penetration greater than the angle shown on that particular drawing.

Our Drawing CAD11 shows a 3-D view for the nursery windows, the accompanying plan indicating the location of those views from within the room.

CONCLUSION

In respect of the two scenarios we have tested, we feel that the adjoining nursery building still has the opportunity to receive sufficient lighting to its rooms and the proposed basement nursery will be more than adequately lit for its purpose.

We trust the foregoing is satisfactory, but please do not hesitate to contact us if you require anything further.

The liabilities of Schatunowski Brooks do not extend to any third parties.

Yours faithfully

Schatunowski Brooks

Schatunowski Brooks

SOURCES OF INFORMATION

THE RED DAYLIGHT FACTOR REPRESENTS THE EXISTING 0.00%

THE GREEN DAYLIGHT FACTOR REPRESENTS THE PROPOSED 0.00%

THE RED SUNLIGHT REPRESENTS THE EXISTING SUMMER AND WINTER PERCENTAGES 0% 0%

THE GREEN SUNLIGHT REPRESENTS THE PROPOSED SUMMER AND WINTER PERCENTAGES 0% 0%

THE RED VERTICAL SKY COMPONENT REPRESENTS THE EXISTING PERCENTAGE VSC 00.00

THE GREEN VERTICAL SKY COMPONENT REPRESENTS THE PROPOSED PERCENTAGE VSC 00.00

THE RED NO-SKY LINE CONTOUR REPRESENTS THE EXISTING

THE GREEN NO-SKY LINE CONTOUR REPRESENTS THE PROPOSED

ROOM LAYOUTS ESTIMATED

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JOB	American Church London
TITLE	BRE & Daylight contours for the adjancent nursery
SCALE	1:100@ A3
DATE	JULY 06
DRAWN	Arnold H.
REVISION	
DRAWING NO	AM07/BRE/CAD08

SOURCES OF INFORMATION

THE GREEN DAYLIGHT FACTOR REPRESENTS THE PROPOSED 0.00%

THE GREEN SUNLIGHT REPRESENTS THE PROPOSED SUMMER AND WINTER PERCENTAGES 0% 0%

THE GREEN VERTICAL SKY COMPONENT REPRESENTS THE PROPOSED PERCENTAGE VSC 00.00

THE GREEN NO-SKY LINE CONTOUR REPRESENTS THE PROPOSED

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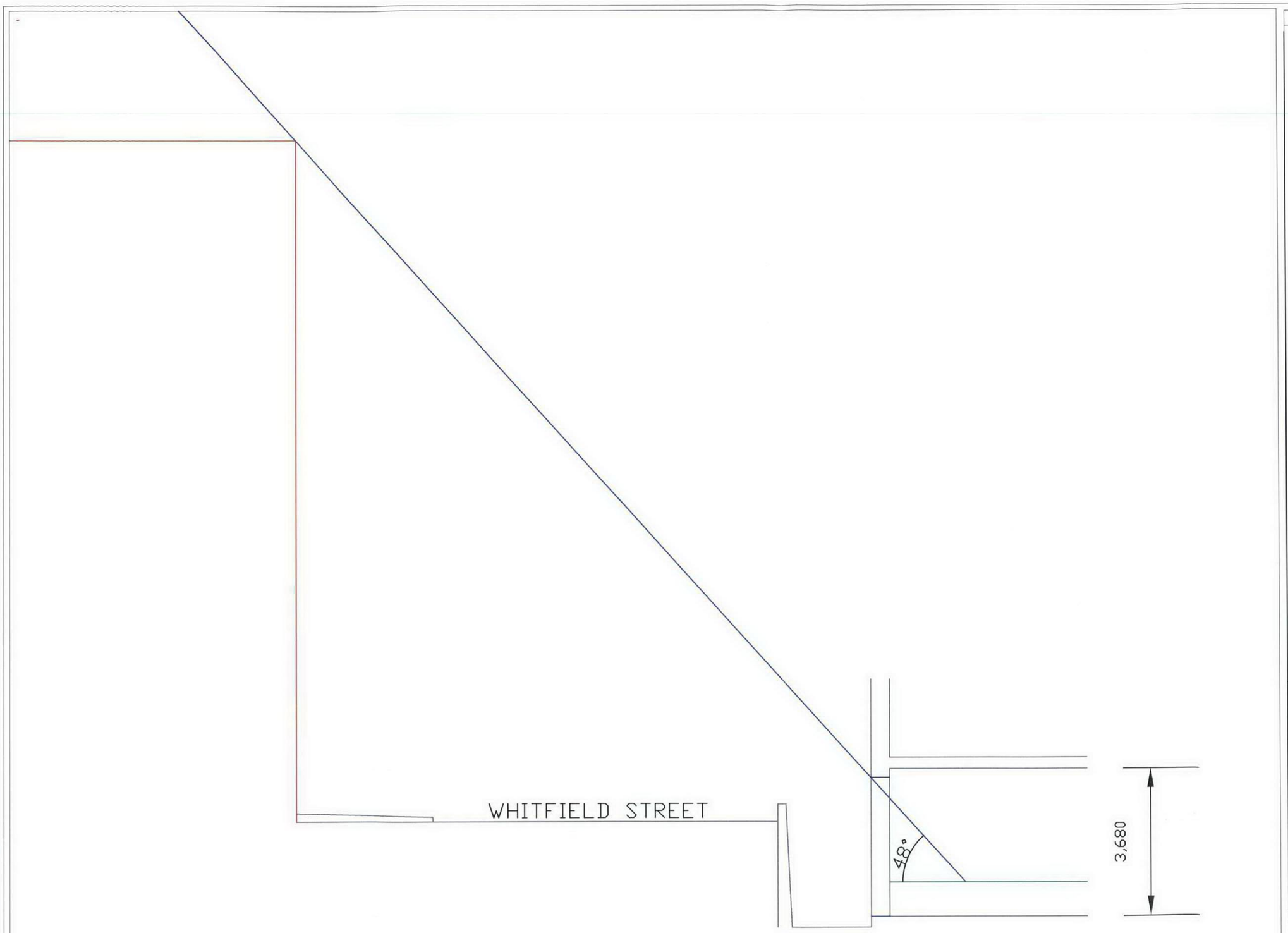
JOB	American Church LONDON
TITLE	BRE & Daylight contours for Whitefield Memorial Church
SCALE	1:100
DATE	JAN 07
DRAWN	Arnold H.
REVISION	
DRAWING NO	AM07/BRE/CAD09



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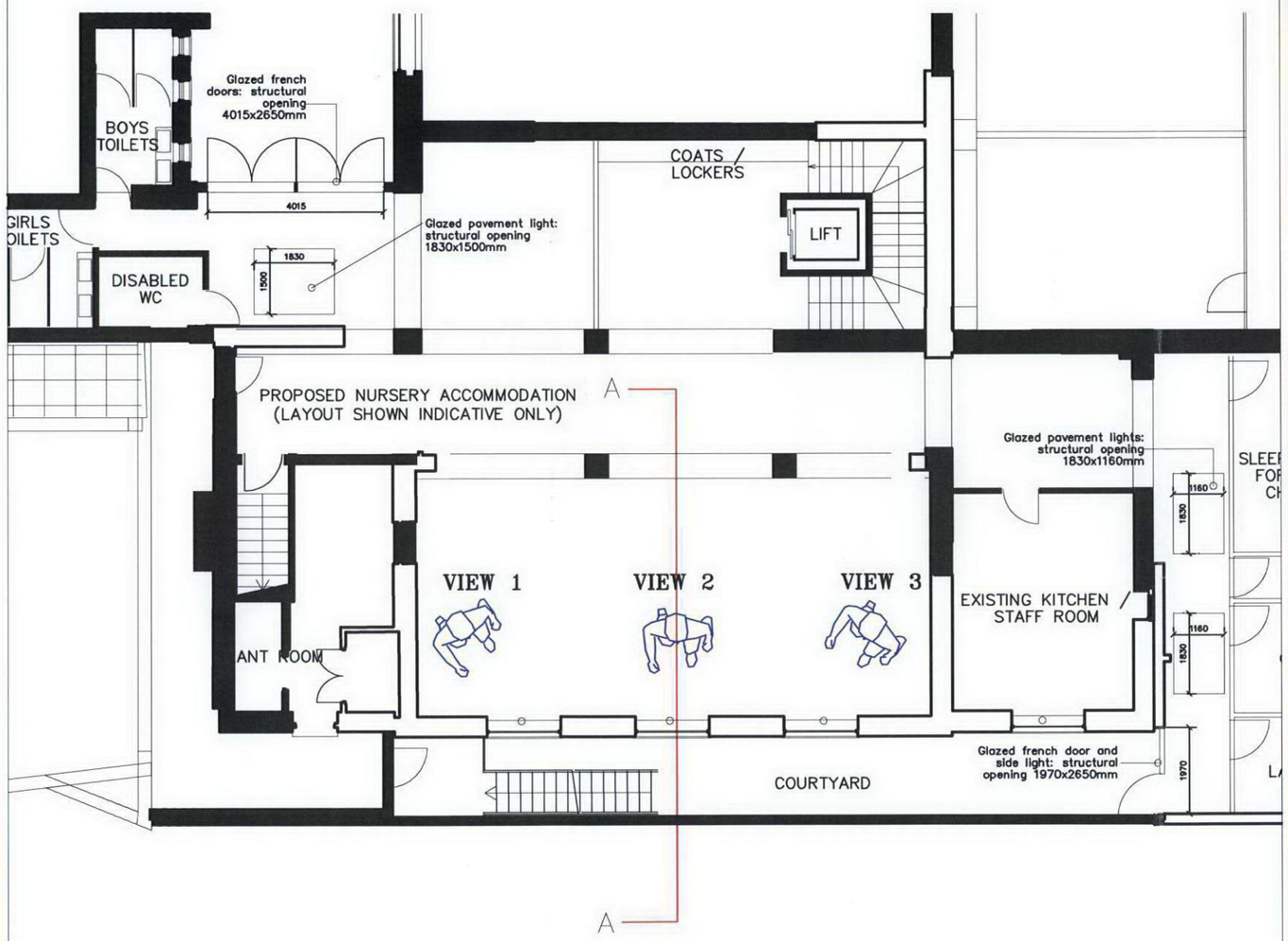
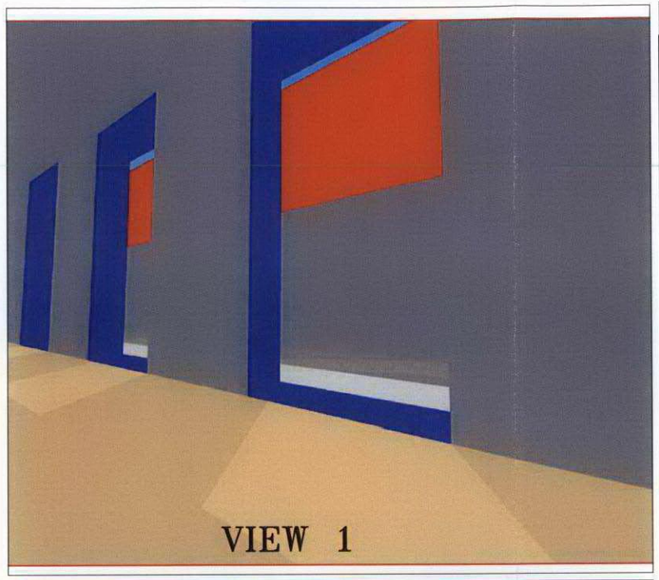
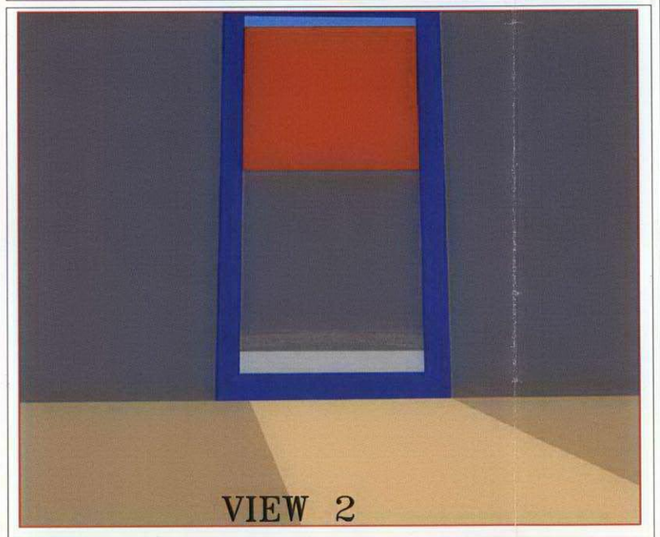
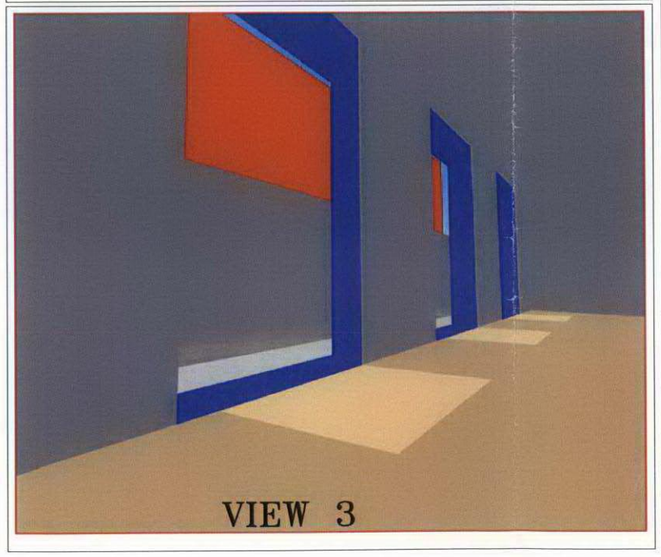
JOB	American Church LONDON
TITLE	Section A-A for Whitefield Memorial Church
SCALE	1:100
DATE	JAN 07
DRAWN	Arnold H.
REVISION	
DRAWING NO	AM07/BRE/CAD10









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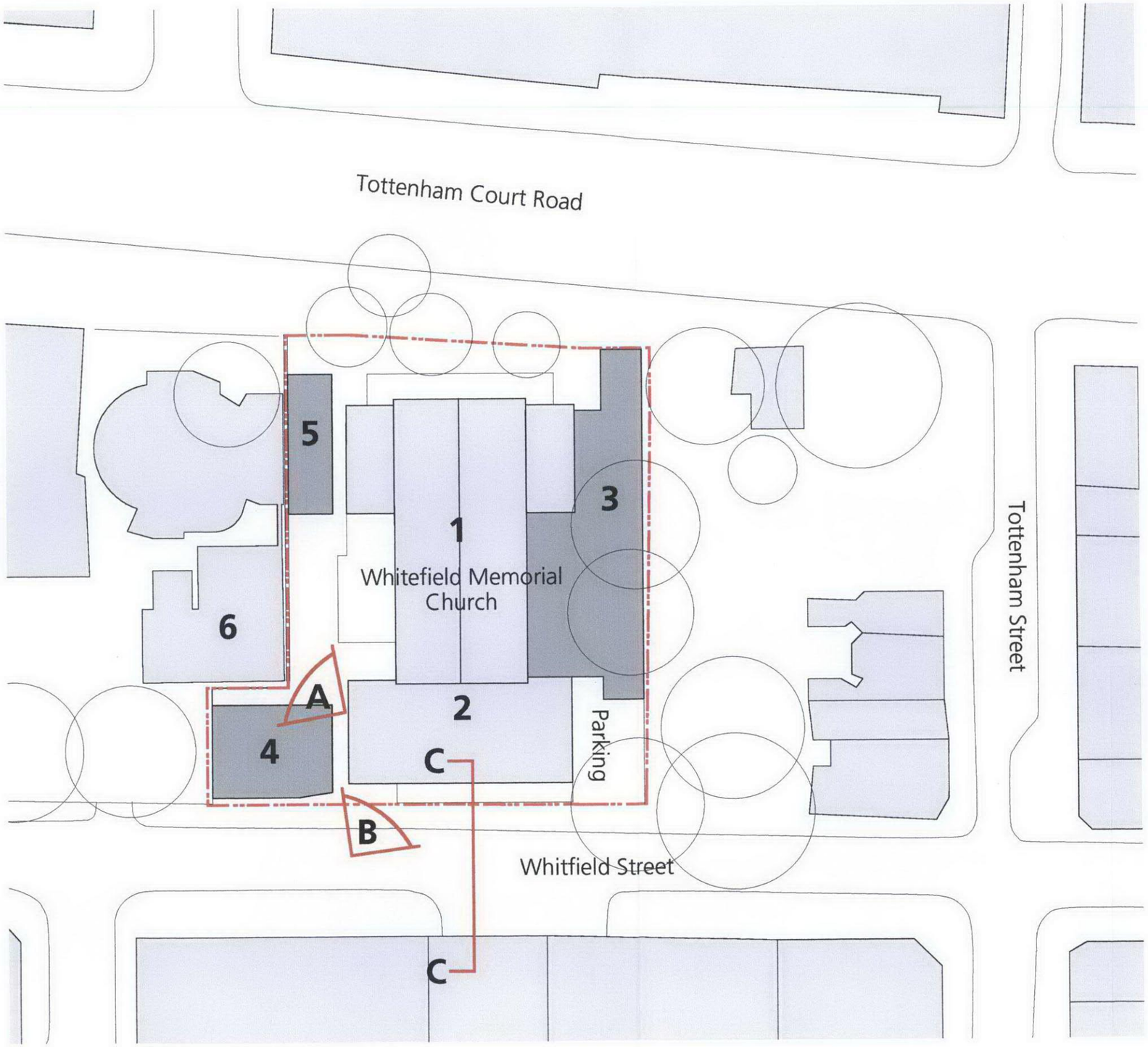
JOB	American Church LONDON
TITLE	Views from the the nursery in Whitefield Memorial Church
SCALE	1:100
DATE	JAN 07
DRAWN	Arnold H.
REVISION	
DRAWING NO	AM07/BRE/CAD11



A - Please refer to drawing AM07/BRE/CAD08 enclosed within the Daylight / Sunlight report
B - Please refer to drawing AM07/BRE/CAD09 enclosed within the Daylight / Sunlight report
C - Please refer to drawing AM07/BRE/CAD10 enclosed within the Daylight / Sunlight report

Notes

PLANNING APPLICATION
31/01/2007

1 WHITEFIELD MEMORIAL CHURCH
2 EXISTING CHURCH ANNEX
3 PROPOSED NEW CHURCH ANNEX
4 PROPOSED NEW APARTMENT BLOCK
5 PROPOSED NEW COMMERCIAL UNIT
6 DISUSED NURSERY BUILDING ADJACENT

Revision

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client: **THE AMERICAN CHURCH**
job: **WHITEFIELD MEMORIAL CHURCH**
drawing title: **RIGHTS OF LIGHT / DAYLIGHT SUNLIGHT COORDINATION PLAN**

job	origin	no	revision
227	A	0321	
status: PLANNING			
checked:	date: -	scale: 1 : 500 @ A1 1 : 1000 @ A3	