INTERNAL DAYLIGHT REPORT

148 FELLOWS ROAD, LONDON, NW3

Prepared by: Barry Hood

Reference: 2913

Date: 16/01/06

BH/2913/060116

16th January 2006

Mr Chiki Surkis
ASTS Ltd
2 Magdalen Mews
London
NW3 5HD

Dear Sir,

RE: 148 Fellows Road, NW3

1.0 Instructions

You have instructed this practice to consider whether a proposed subterranean scheme at the above mentioned address will receive adequate daylight. I understand that Camden development Control Planning Services have raised concern that "...the *proposed habitable rooms at basement level would not receive adequate daylight.*"

To this end we have three-dimensional computer modelled the proposed scheme in relation to neighbouring properties, and analysed the quantum of light enjoyed in each of the rooms.

2.0 Introduction

Local authorities assess the quantum of daylight enjoyed within a room by reference to the BRE document entitled *Site Layout Planning for Daylight and Sunlight* by PJ Littlefair, henceforth referred to as the BRE Guidelines. This is also the method that we have employed in analysing the proposed scheme. To aid your understanding of the basis or our analysis I have included a document entitled Principles of Daylight and Sunlight in Appendix i.

The BRE Guidelines set out three criteria for evaluation within the internal space within a new development is adequately daylit. These are contained within Appendix C of the BRE Guidelines. The three criteria are:

2.1 Average Daylight Factor

The average daylight factor (ADF) is an accurate method of evaluating the quantum of daylight within a space where internal dimensions, room use, reflectance and glazing transmittance values are known.

The ADF is defined in Appendix H of the BRE Document as:

Ratio of total daylight flux on the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE Standard Overcast Sky.

If a predominately daylit appearance is required, then the daylight factor should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. There are additional recommendations for dwellings, of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

The ADF is considered by the author of the BRE Guidelines, PJ Littlefair, to be the most accurate method for measuring daylight within a proposed building, as it considers the total amount of diffuse daylight within a space.

2.2 Room Depth

The BRE Guidelines provide a formulae for calculating whether a room which is served by one window wall only is adequately daylit. It takes into account the room width, the window head height above floor level and the average reflectance of surfaces in the rear of the room. From this one can calculate whether the room is adequately lit at its rear.

If the room is deeper than the limiting value provided by this formula, then the rear half of the room with tend to look gloomy and supplementary electric lighting will be required more of the time.

2.3 No Sky-Line

The No Sky-Line is defined by a contour within a room which links points at which one may glimpse a view of the sky at working plane height, which is taken to be 850mm above floor level.

The BRE Guidelines do not specify a target value for this, but simply say that

"If a significant area of the working plane lies beyond the no-sky line (i.e. it receive not direct skylight), then the distribution of daylight in the room will look poor and supplementary electric lighting will be required."

3.0 Sources of Information

Gordon Ingram Associates – Three dimensional computer modelling and analysis.

ASTS Ltd – Drawings numbered

1148(PLA_EXI) 100, 200, 201, 202, 203, 204, 205
1148(PRO_LAY) 100, 101, 102
1148(PLA_PRO) 200, 201, 202, 300, 301, 302, 203, 204, 206, 205

Camden Development Control Planning Services – Letter dated 3 Nov 2005 from Marilet Swanepoel, Planning Officer

Ordnance Survey – Site Plan

4.0 Unitary Development Plan

In assessing the daylight enjoyed by rooms with a scheme The London Borough of Camden states the following in section EN19 of their Unitary Development Plan:

4.53 *"The design of development should allow sufficient daylight and sunlight into buildings and land, give consideration to the potential effects on visual privacy and safeguard the outlook from premises. The Council will apply the standards recommended in the Building Research Establishment report: Site Layout for Daylight and Sunlight – A Guide to Good Practice (1991), which gives advise on sunlight and daylight."*

5.0 The Sited

The sited is located at 148 Fellows Road, in the NW3 postcode of London. It is surrounded by four and five storey Victorian residential properties, and the site is defined by Fellows Road to the South, and the cartilage of 22-32 Winchester Road to the West, the rear garden of 69 Eton Avenue to the North, and the boundary of the adjacent property at 146 Felllows Road.

6.0 Analysis

Our understanding of the existing site is shown in drawings 2913/01, 2913/02 and 2913/03 which can be found in Appendix ii. To aid your understand of the daylight distribution within the subterranean space we have provided a plan of the proposed rooms, and labelled each of the windows which serve those rooms. This can be found on drawing 2913/04 in Appendix iii.

Our analysis focus on the six habitable rooms below ground, as required by Camden Development Control Planning Services, and it considers the quality of daylight enjoyed by these rooms with reference to the three criteria laid down in Appendix C of the BRE Guidelines.

We will systematically work through each of the BRE criteria to determine adherence. The statistical results, upon which this report is based, can be found at the back of this report in Appendix iii.

Average Daylight Factor

The results of the ADF analysis for each rooms is as follows:

- The kitchen / dining room to the South of the site achieved an ADF of 2.58% comfortably above the BRE Guidelines recommendations for the kitchens of 2%.
- Bedroom R2 achieves an ADF of 2.07%, again above the BRE recommendation of 2%, and more than double the 1% minimum ADF advised for bedroom space.
- Bedroom R 3 achieves an ADF of 4.02% well above the BRE recommendation of 2%, and four times the 1% minim advised for bedroom space.
- Bedroom R4 achieves an ADF of 3.79% well above the BRE recommendation of 2% and almost four times the 1% ADF which is the minimum recommended for bedroom space.
- Bedroom R5 achieves an ADF of 3.94% well above the BRE recommendation of 2% and almost four times the 1% ADF which is the minimum recommended for bedroom space.
- The Family room achieves an ADF of 8.41%, well above the BRE Guideline ideal daylight recommendations of 5%.

Room Depth

Only one room, bedroom R3, is served by one window wall only, and thus needs to be tested against the room depth criteria. Dimensions were taken at their widest point to illustrate the worst case scenario.

When tested against the limitation formula for room depth this room produces a limitation depth of 7014mm beyond which the room would appear gloomy. The actual proposed depth, at its deepest point, is 4644mm. Thus the proposed room is 2370mm within the limitation room depth.

Therefore none of the six rooms will appear gloomy at the rear.

No Sky-Line

The No Sky-Line describes a contour which links points with a room at which the sky can be seen at working plane. The subsequent percentage represents the amount of the room from which inhabitants can enjoy a view of the sky at working plane height.

- The kitchen / dining room enjoys views of the sky-line at the working plane in 97.8% of the room.
- Bedroom R2 enjoys views of the sky-line in 47.7% of the room.
- Bedroom R3 enjoys views of the sky-line in 50.8% of the room.
- Bedroom R4 enjoys views of the sky-line in 49.4% of the room.
- Bedroom R5 enjoys views of the sky-line in 44.2% of the room.
- The Family room enjoys views of the sky-line in 99.7% of the room.

The rooms which will be in use during the day, the kitchen / dining room and the Family room, enjoy a view of the sky at almost every point with the room at working plane.

All four bedrooms, which will be in substantially less use during the day, will enjoy visibility of the sky over approximately half their area, which we feel is adequate to provide fair daylight distribution, particularly given the good ADF results.

7.0 Summary

The information contained in section 6.0 is compiled here in a tabulated form for your ease of reference:

Room	ADF Minimum	ADF Proposed	Room Limitation depth	Proposed room depth	No Sky-Line Proposed
Kitchen / Dining Room	2%	2.58%	n/a	n/a	97.8%
Bedroom R2	1%	2.07%	n/a	n/a	47.7%
Bedroom R3	1%	4.02%	n/a	n/a	50.8%
Bedroom R4	1%	3.79%	7014mm	4644mm	49.4%
Bedroom R5	1%	3.94%	n/a	n/a	44.2%
Family Room	1.5%	8.41%	n/a	n/a	99.7%

8.0 Conclusion

The BRE Guidelines provide three criteria to assess the quality of daylight within a room. The ability of the room to comply with these criteria will inform the degree to which the space appears well daylit.

The first benchmark is the Average Daylight Factor. All six rooms comfortably exceeded the minimum ADF requirement laid down for each room type. Al l rooms also exceeded the more onerous 2% ADF requirement. In addition bedrooms 3, 4 and 5 are all approaching the ideal level of daylight factor of 5% which one would more usually associate with spaces in high use during daylight hours. Finally the family room exceeds the ideal level of daylight factor recommended by the BRE Guidelines by 68%, and will enjoy an ADF of 8.41%.

The second benchmark seeks to ensure that rooms which are lit by windows in just one wall receive adequate daylight at their rear. It proves a formula for calculating a limiting factor or value. The room depth should not exceed this limiting value if the rear of the room is to avoid appearing gloomy. Only one of the rooms, bedroom R4, is serviced by a single window wall and thus needed testing. This room is well within the room depth limiting factor, and therefore all rooms comply with the BRE Guidelines on that basis.

The third benchmark is the position of the No-Sky Line. The BRE Guidelines state that if a

"significant area of the working plane lies beyond the no-sky line then the distribution of daylight in the room will look poor".

All the bedrooms enjoy visibility of the sky at working plane over approximately 50% of their area, which given the usage we feel is adequate. The rooms which will be most heavily used during the day, i.e. the Family room and the Kitchen / Dining Room, enjoy a view of the sky over 99.7% and 97.8% of their area respectively. A level which more than meets the BRE Guideline recommendations.

The BRE Guidelines state that:

"... all three of the criteria need to be satisfied if the whole room is to look adequately daylit. Even if the amount of daylight in a room is sufficient, the overall daylit appearance will be impaired if its distribution is poor."

Our analysis illustrates that the proposed scheme will exceed the BRE Guideline recommendations on all three daylight criteria, and in any areas exceed the ideal daylighting recommendations. Consequently rooms will appear well daylight and the light will be evenly distributed with the proposed rooms.

Yours faithfully
For and on behalf of GIA

Barry Hood

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PRINCIPLES OF DAYLIGHT AND SUNLIGHT

BACKGROUND

The quality of amenity for buildings and open spaces is increasingly becoming the subject of concern and attention for many interested parties.

Historically the Department of Environment provided guidance of these issues and, in this country, this role has now been taken on by the Building Research Establishment (BRE), the British Standards Institution (BSI) and the Chartered Institute of Building Services Engineers (CIBSE). Fortunately they have collaborated in many areas to provide as much unified advice as possible in these areas.

Further emphasis has been placed on these issues through the European directive that Environmental Impact Assessments (EIA's) are required for large projects. Part of these assessments include the consideration of the micro-climate around and within a proposal. The EIA requires a developer to advise upon, amongst other matters, the quality of and impact to daylight, sunlight, overshadowing, solar glare and light pollution.

It is also clear, particularly through either adopted or emerging Unitary Development Plans (UDP's), that local Authorities take this matter far more seriously than they previously did. There are many instances of planning applications being refused due to impact on daylight and sunlight to neighbouring properties and proportionately more of these refusals are appealed by applicants.

Where developers are seeking to maximise their development value, it is often in the area of daylight and sunlight issues that they may seek to 'push the boundaries'. Local Authorities vary in their attitude of how flexible they can be with worsening the impact on the amenity enjoyed by neighbouring owners. In city centres, where there is high density, it can be the subject of hot debate as to whether further loss of amenity is material or not. There are many factors that need to be taken into account and therefore each case has to be considered on its own merits. Clearly, though, there are governing principles which direct and inform on the approach that is taken.

These principles are effectively embodied within the UDP's and the guidance they expressly rely upon. For example, in central London, practically all of the Local Authorities expressly state they will not permit or encourage developments which create a material impact to neighbouring buildings or amenity areas. Often the basis on what is constituted as 'material' will be derived specifically from the BRE Guidelines. Their guidelines were produced in 1991, as a direct commission from the Department of the Environment, and entitled 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'.

These guidelines are normally the only official document used by local Authorities and consequently they are referred to extensively by designers, consultants and planners. Whilst they are expressly not mandatory and state that they should not be used as an instrument of planning policy, they are heavily relied upon as they advise on the approach, methodology evaluation of impact in daylight and sunlight matters.

THE BRE GUIDELINES

The BRE give criteria and methods for calculating daylight, and sunlight and to some degree overshadowing and through that approach define what they consider as a material impact. As these different methods of calculation vary in their depth of analysis, it is often arguable as to whether the BRE definition of 'material' is applicable in all locations and furthermore if it holds under the different methods of calculation.

As the majority of the controversial daylight and sunlight issues occur within city centres these explanatory notes focus on the relevant criteria and parts of the Handbook which are applicable in such locations.

In the Introduction of 'Site Layout Planning for Daylight and Sunlight' it states that:-

> *"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 designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design (see Section 5). In special circumstances the developer or Planning Authority may wish to use different target values. For example, in an historic city centre a higher degree of*
> *obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".*

Again, the second paragraph of Chapter 2.2 of the document states:-

The reason for including these statements in the Report is to appreciate that when quoting the criteria suggested by the BRE, they should not necessarily be considered as appropriate. However, rather than suggest alternative values, consultants in this field often remind local Authorities that this approach is supportable and thus flexibility applied.

MEASUREMENT AND CRITERIA FOR DAYLIGHT & SUNLIGHT

The BRE handbook provides two main methods of measurement of calculating daylight which we use for the assessment in our Reports. In addition, in conjunction with the BSI and CIBSE it provides a further method in Appendix C of the Handbook. In relation to sunlight only one method is offered for calculating sunlight availability for buildings. There is an overshadowing test offered in connection with open spaces.

DAYLIGHT

In the first instance, if a proposed development falls beneath a 25° angle taken from a point two metres above ground level, then the BRE say that no further analysis is required as there will be adequate skylight (i.e. sky visibility) availability.

The three methods for calculating daylight are as follows:

(a) Vertical Sky Component (VSC)

(b) No Sky Contours (NSC)

(c) Average Daylight Factor (ADF)

Each are briefly described below.

(a) Vertical Sky Component

Methodology

This is defined in the Handbook as:-

Ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from a CIE Standard Overcast Sky, to illuminate on a horizontal plane due to an unobstructed hemisphere of this sky.

"Note that numerical values given here are purely advisory. Different criteria may be used, based on the requirements for daylighting in an area viewed against other site layout constraints".

The ratio referred to in the above definition is the percentage of the total unobstructed view that is available, once obstructions, in the form of buildings (trees are excluded) are placed in front of the point of view. The view is always taken from the centre of the outward face of a window.

This statement means, in practice, that if one had a totally unobstructed view of the sky, looking in a single direction, then just under 40% of the complete hemisphere would be visible.

The measurement of this vertical sky component is undertaken using two indicators, namely a skylight indicator and a transparent direction finder. Alternatively a further method of measuring the vertical sky component, which is easier to understand both in concept and analysis, is often more precise and can deal with more complex instructions, is that of the Waldram diagram.

The point of reference is the same as for the skylight indicator. Effectively a snap shot is taken from that point of the sky in front of the window, together with all the relevant obstructions to it, i.e. the buildings.

An unobstructed sky from that point of reference would give a vertical sky component of 39.6%, corresponding to 50% of the hemisphere, and therefore the purpose of the diagram is to discover how much sky remains once obstructions exist in front of that point.

The diagram comes on an A4 sheet (landscape) and this sheet represents the unobstructed sky, which in one direction equates to a vertical sky component of 39.6%. The obstructions in front of a point of reference are then plotted onto the diagram and the resultant area remaining is proportional to the vertical sky component from that point.

<u>Criteria</u>

The BRE Handbook provides criteria for:

(a) New Development

(b) Existing Buildings

A summary of the criteria for each of these elements is given and these are repeated below:-

(b) No Sky Contours

This is the part (b) of the alternative method of analysis which is given under the Vertical Sky Component heading in this Appendix. It is similar to the VSC approach in that a reduction of 0.8 times in the area of sky visibility at the working plane may be deemed to adversely affect daylight. It is however, very dependent upon knowing the actual room layouts or having a reasonable understanding of the likely layouts. The contours are also known as daylight distribution contours. They assist in helping to understand the way the daylight is distributed within a room and the comparisons of existing and limitations of proposed circumstances within neighbouring properties. Like the VSC method, it relates to the amount of visible sky but does not consider the room use in its criteria, it is simply a test to assess the change in position of the No Sky Line, between the existing and proposed situation. It does take into account the number and size of windows to a room, but does not give any quantative or qualative assessment of the light in the rooms, only where sky can or cannot be seen.

(c) Average Daylight Factor

This is defined in Appendix H of the BRE Document as:

Ratio of total daylight flux incident on the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE Standard Overcast Sky.

This factor considers interior daylighting to a room and therefore is a more accurate indication of available light in a given room, if details of the room size and use are available.

<u>Criteria</u>

The British Standard, BS8206 Part II gives the following recommendations for the average daylight factor (ADF) in dwellings.

The BRE Handbook provides the formula for calculating the average daylight factor. If the necessary information can be obtained to use the formula then this criteria would be more useful.

Room	Percentage
Kitchen	2%
Living Rooms	1.5%
Bedrooms	1%

It is sometimes questioned whether the use of the ADF is valid when assessing the impact on neighbouring buildings. Firstly, it is often the case that room layouts and uses may not have been established with certainty. Additionally this method is not cited in the main body of text in the BRE Guidelines but only in Appendix C of that document. It is however, the principal method used by both the British Standard and CIBSE in their detailed daylight publications with which the BRE guide recommends that it should be read.

The counter-argument to this view is that whilst room uses and layouts may be not definitely established, reasonable assumptions can easily be made to give sufficient understanding of the likely quality of light. Building types and layouts for certain buildings, particularly residential, are often similar. In these circumstances reasonable conclusions can be drawn as to whether a particular room will have sufficient light against the British Standards. In addition, the final result is less sensitive to changes in the room layout that the No Sky Contour method as it is an average and this element represents only one of the input factors. It is in cases where rooms sizes have been assumed a more reliable indicator than the No Sky Line method.

Clearly if a room which is being designed for a new development is deemed to have sufficient light against the British Standards, then it should equally follow for a room assessed in a neighbouring existing building.

The average daylight factor considers the light within the room behind the fenestration which serves it. The latter is therefore likely to be more accurate because it takes into account the following:-

a) All the windows serving the room in question.

b) The room use.

c) The size and layout of the room.

d) The finishes of the room surfaces.

Summary

The VSC (which forms part of the ADF formula) is helpful as an initial first guide, especially where access to the rooms in question is not available. Where the room layouts and uses are established or can be reasonably estimated we consider it appropriate to analyse the average daylight factor as well as the vertical sky component.

SUNLIGHT

(a) Annual Probable Sunlight Hours (APSH) method

Sunlight is measured in the Handbook in a similar manner to the first method given for measuring the VSC.

A separate indicator is used which contains 100 spots, each representing 1% of annual probable sunlight hours.

The BRE calculated that where no obstructions exist, the total annual probable sunlight hours would amount to 1486. Therefore, each dot on the indicator equates to 14.86 hours of the total annual probable sunlight. Again, to use this indicator the obstructions need to be scaled down and overlaid onto the sunlight indicator.

Those spots which remain uncovered by the scaled obstructions are counted and this gives the percentage of total annual probable sunlight hours for that particular reference point. Again, like the VSC, the reference point is taken to be the centre of the window.

Criteria

Again, the BRE Handbook gives criteria for:

(a) New Development

(b) Existing Buildings

A summary is given in the handbook on page 12 and this is as follows:-

New Development

Summary

In general, a dwelling or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided that:

(a) at least one main window wall faces within 90 degrees of due south;

and

(b) on this window wall, all points on a line 2m above ground level are within 4m (measured sideways) of a point which receives at least a quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months, between 21 September and 21 March.

Existing Buildings

Summary

If a living room of an existing dwelling has a main window facing within 90 degrees of due south, and any part of a new development subtends an angle of more than 25 degrees to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if a point at the centre of the window, in the plane of the inner window wall, receives in the year less than one quarter of annual probable sunlight hours including at least 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.8 times its former sunlight hours during either period.

It will be noted that the BRE clearly separate summer from winter and indicate that a 20% reduction for either may be material. The Handbook also states that *"To find out whether an existing building still receives enough sunlight, the British Standard can be used. It is suggested that all main living rooms of dwellings and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun ..... The British Standard recommends that a 'window reference point', at the centre of each window on the plane of the inside surface of the wall, should be used for the calculations"* and thus this practice gives greater consideration to the effect on the main window of a living room.

(b) Area of Permanent Shadow

The BRE Handbook, 'Site Layout Planning for Daylight and Sunlight' also provides criteria for open spaces.

In particular it gives guidance for calculating any areas of open space that may be in permanent shadow on 21 March. There is no criteria for the overshadowing of buildings.

In summary the BRE document states the following:-

"It is suggested that, for it to appear adequately sunlit throughout the year, no more than two-fifths and preferably no more than a quarter of any garden or amenity area should be prevented by buildings from receiving any sun at all on 21 March. If, as a result of new development, an existing garden or amenity area does not meet these guidelines, and the area which can receive some sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable".

In relation to general overshadowing we often provide, where appropriate, an hourly record for existing and proposed situations, the effect of overshadowing on December 21st. March 21st and June 21st.

For open spaces the permanent shadow criteria is naturally adopted but this offers limited understanding of how a space will feel or appear generally.

CITY CENTRES

The introduction of the BRE document gives the example of *'historic city centres'* being a case where there is the need for flexibility and altering the target values for criteria when appropriate, to reflect other site and layout constraints.

To explain why it is appropriate to alter these values, one needs to go further into the BRE Handbook to examine how the criteria for the vertical sky component criteria was determined and the reason therefore for varying the criteria in City Centres.

Appendix G of the document is dedicated to the use of alternative values and, it also demonstrates the manner in which the criteria for skylight was determined for the Summary given above, i.e. the need for 27% vertical sky component for adequate daylighting.

This figure of 27% was achieved in the following manner:

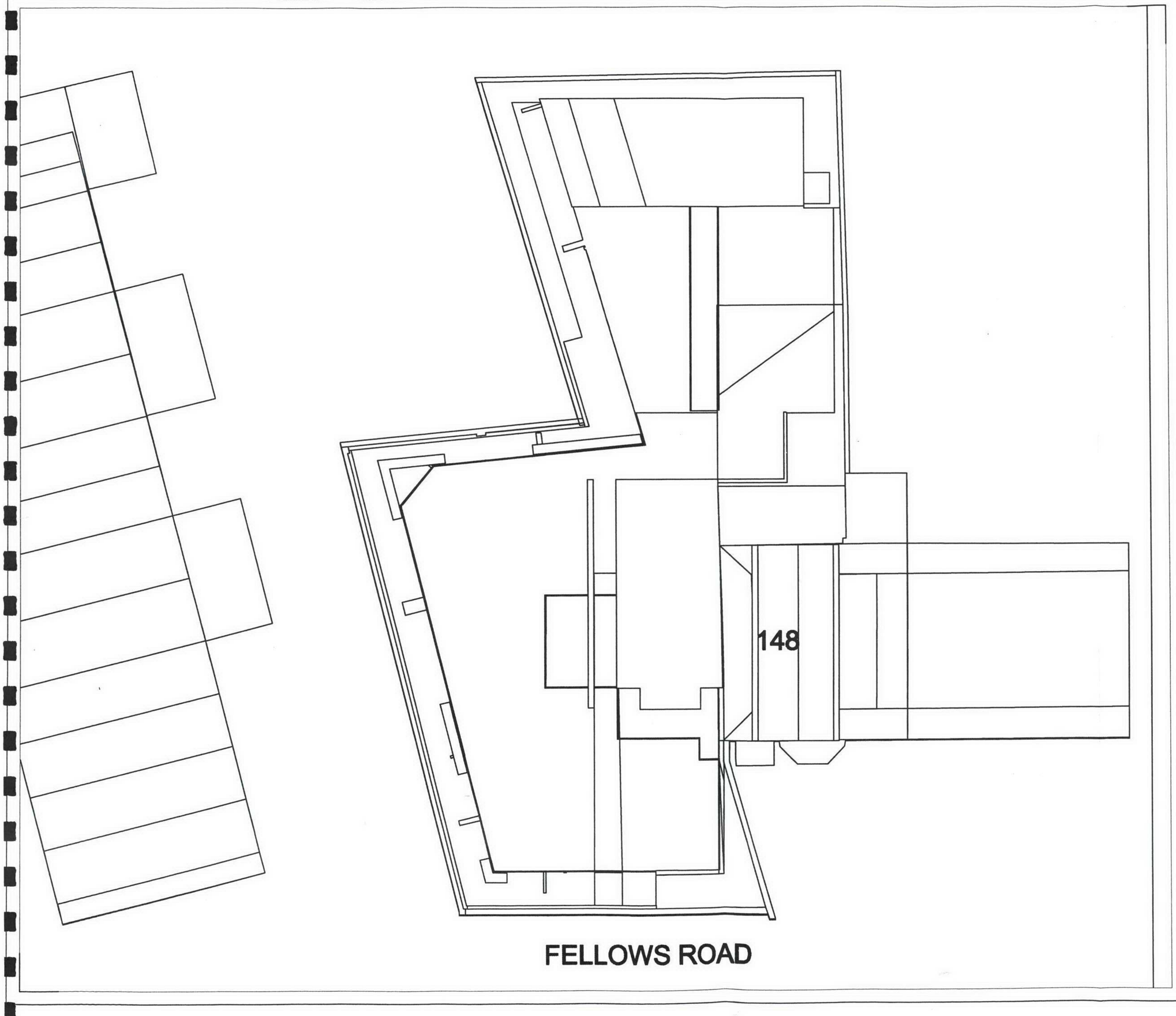
A theoretical road was created with two storey terraced houses upon either side, approximately twelve metres apart. The houses have windows at ground and first floor level, and a pitched roof with a central ridge.

Thereafter, a reference point was taken at the centre of a ground floor window of one of the properties and a line was drawn from this point to the central ridge of the property on the other side of the road. The angle of this line equated to 25 degrees (the 25 degrees referred to in the summaries given with reference to the criteria for skylight).

This 25 degrees line obstructs 13% of the totally unobstructed sky available, leaving a resultant figure of 27% which is deemed to give adequate daylighting. This figure of 27% is the recommended criteria referred to earlier in this report. It will be readily appreciated that in a City Centre, this kind of urban form is unlikely and is impractical. It would therefore be inappropriate to consider values for two storey terraced housing in a City Centre.

It is therefore sometimes necessary to apply different target criteria or at least acknowledge that the recommendations in the BRE cannot be achieved.

In addition, it is often the case that residential buildings within city centres are served by balconies. Balconies restrict lighting levels even more and thus if they were to be rigidly taken into account, a neighbouring proposal would be artificially and inappropriately constrained. This view is supported by the BRE and is equally another reason for flexible and sensible interpretation of the guidelines.



SOURCES OF INFORMATION:

ASTS Architectural and Design Services
Site Survey
1148(PLA_EXI) series dated 01/12/05
Proposed Plans/Elevations
1148(PLA_PRO)100.dwg
1148(PLA_PRO)200-300.dwg, Dated 01/12/05
Site Photography

REV.	DESCRIPTION	DATE

KEY

N

Gordon Ingram Associates
Chartered Surveyors
The Whitehouse
Belvedere Road
London SE1 8GA
t: 020 7202 1400 f: 020 7202 1401
e: mail@gingram.com

PROJECT
Fellows Road

TITLE
Site Plan
Proposed Development

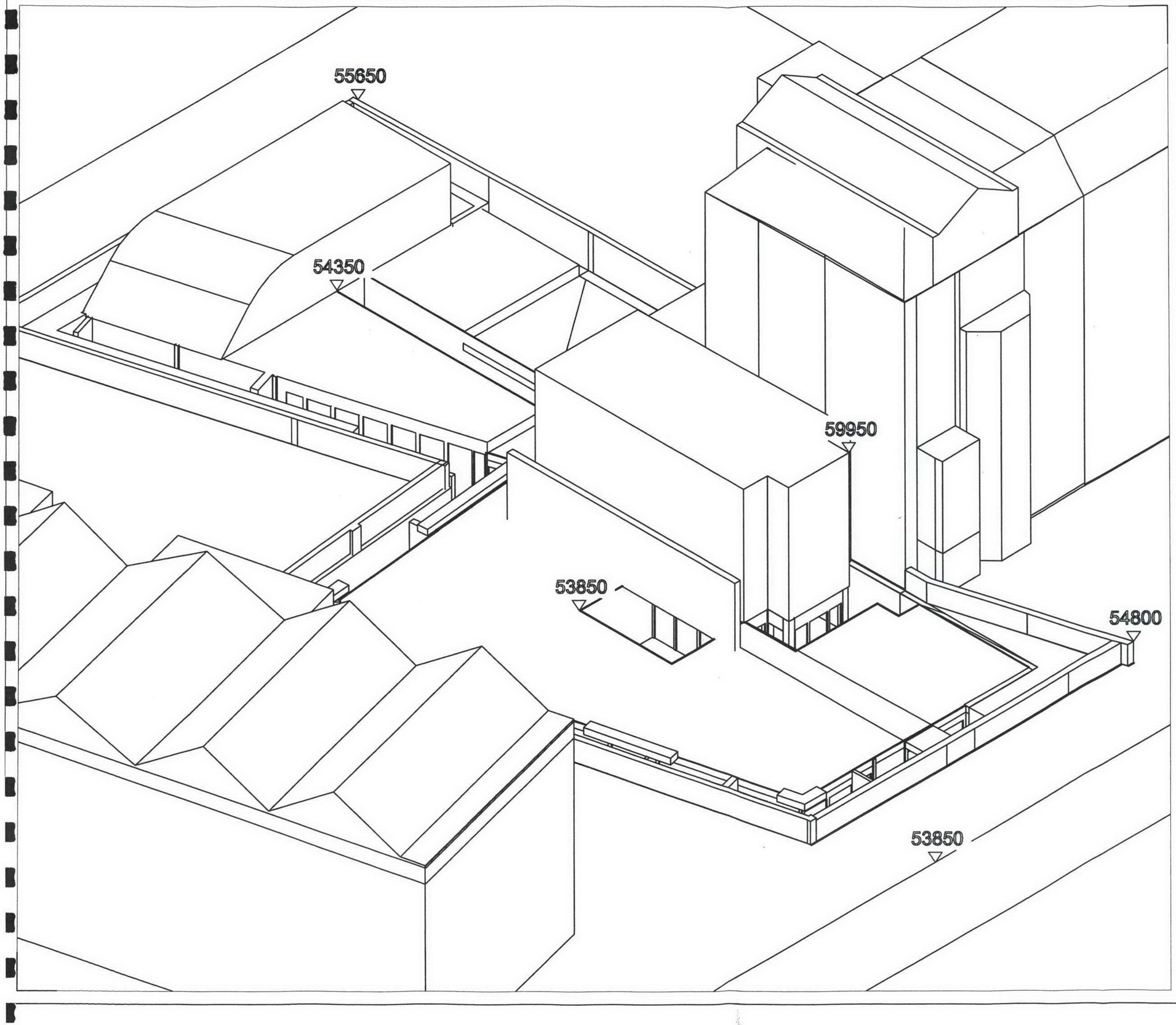
SCALE
1:200

DRAWN
CJ

DATE
JAN 06

REVISION

DRAWING No.
2913/01



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PROJECT
Fellows Road

TITLE
3D View
Proposed Development

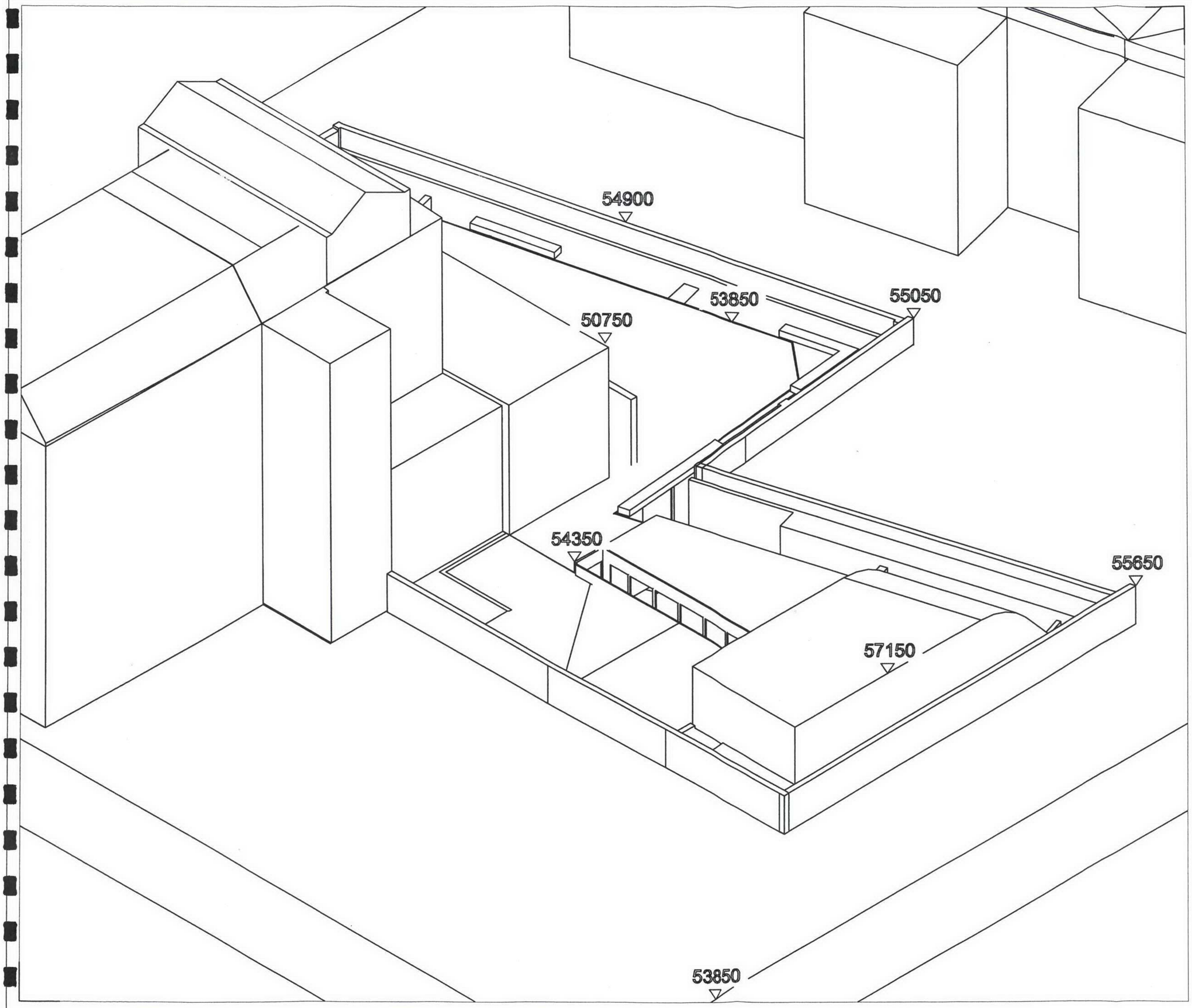
SCALE
NTS

DRAWN
CJ

DATE
JAN 06

REVISION

DRAWING No.
2913/02



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Fellows Road

TITLE
3D View
Proposed Development

SCALE
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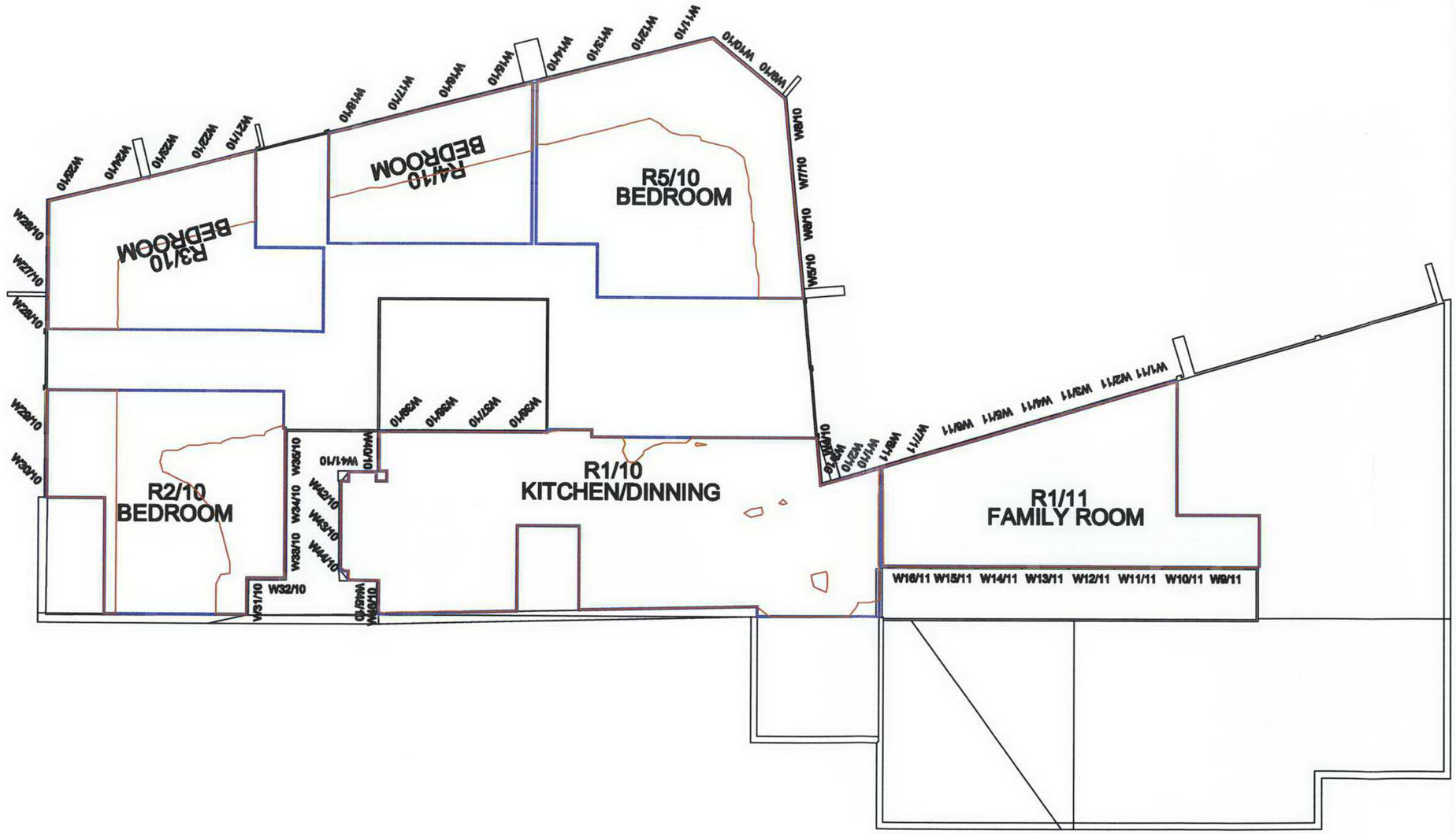
REVISION

DRAWING No.
2913/03



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REV.	DESCRIPTION	DATE

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PROPOSED
Contour

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PROJECT
Fellows Road

TITLE
Room Layout and Daylight Distribution Contours

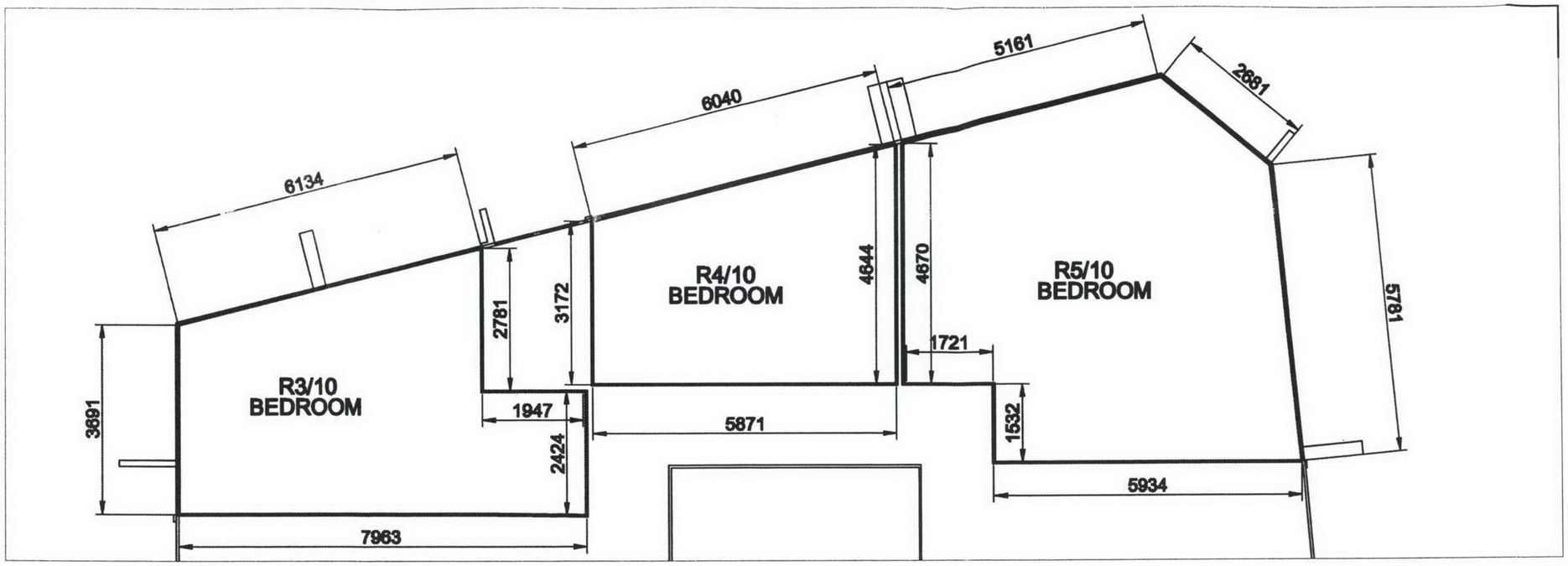
SCALE
1:150

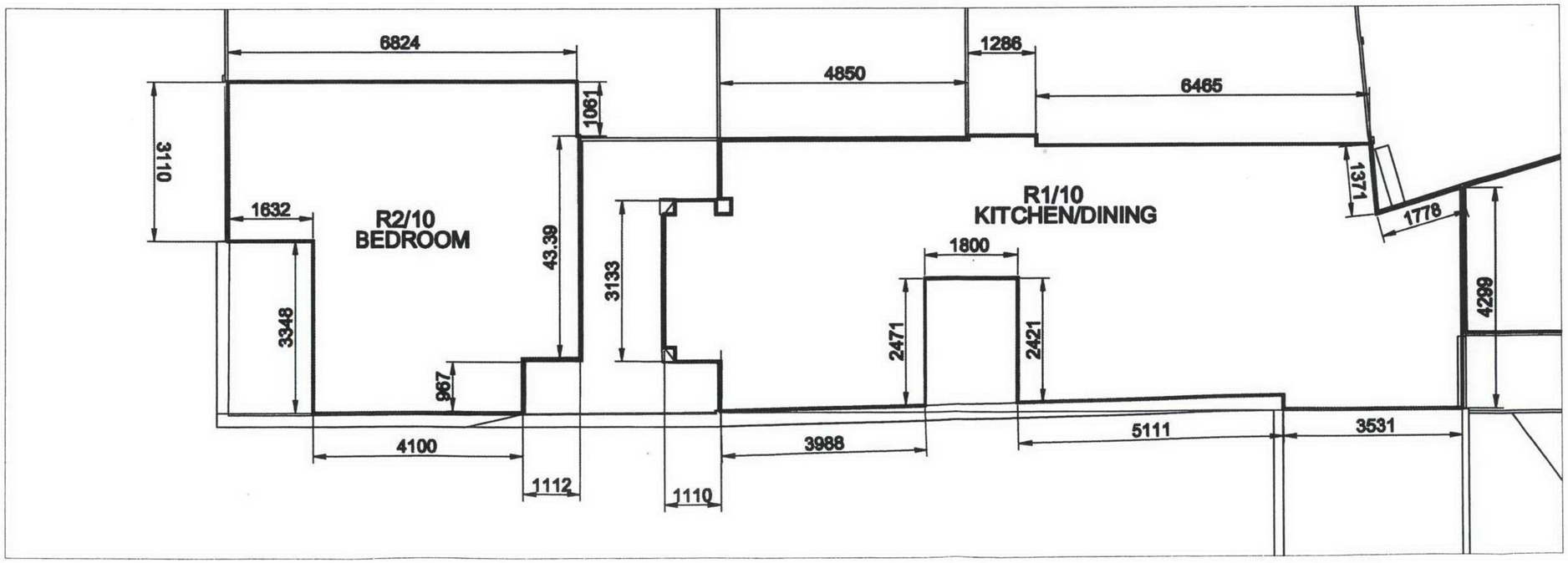
DRAWN
CJ

DATE
JAN 06

REVISION

DRAWING No.
2913/04





SOURCES OF INFORMATION:

ASTS Architecturall and Design Services
Site Survey
1148(PLA_EXI) series dated 01/12/05
Proposed Plans/Elevations
1148(PLA_PRO)100.dwg
1148(PLA_PRO)200-300.dwg, Dated 01/12/05
Site Photography

REV. DESCRIPTION DATE

KEY

ALL WINDOWS 2500mm HIGH

Gordon Ingram Associates
Chartered Surveyors
The Whitehouse
Belvedere Road
London SE1 8GA
t: 020 7202 1400 f: 020 7202 1401
e: mail@gingram.com

PROJECT
Fellows Road

TITLE
Room Dimension Diagram

SCALE
1:100

DRAWN
CJ

DATE
JAN 06

REVISION

DRAWING No.
2913/05

APPENDIX 3

148 Fellows Road
ASTS Ltd Scheme
INTERNAL DAYLIGHT ANALYSIS

Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
148 Fellows Road					
R1/10	KITCHEN/DINNING	W1/10	10.88	0.17	
R1/10	KITCHEN/DINNING	W2/10	8.42	0.12	
R1/10	KITCHEN/DINNING	W3/10	0.13	0.01	
R1/10	KITCHEN/DINNING	W4/10	0.02	0.02	
R1/10	KITCHEN/DINNING	W36/10	6.91	0.24	
R1/10	KITCHEN/DINNING	W37/10	8.79	0.29	
R1/10	KITCHEN/DINNING	W38/10	8.85	0.29	
R1/10	KITCHEN/DINNING	W39/10	7.63	0.18	
R1/10	KITCHEN/DINNING	W40/10	7.18	0.25	
R1/10	KITCHEN/DINNING	W41/10	3.68	0.14	
R1/10	KITCHEN/DINNING	W42/10	9.23	0.18	
R1/10	KITCHEN/DINNING	W43/10	9.42	0.27	
R1/10	KITCHEN/DINNING	W44/10	9.58	0.18	
R1/10	KITCHEN/DINNING	W45/10	0.94	0.07	
R1/10	KITCHEN/DINNING	W46/10	6.51	0.18	2.58
R2/10	BEDROOM	W29/10	3.83	0.47	
R2/10	BEDROOM	W30/10	5.45	0.52	
R2/10	BEDROOM	W31/10	0.75	0.13	
R2/10	BEDROOM	W32/10	0.68	0.12	
R2/10	BEDROOM	W33/10	1.39	0.24	
R2/10	BEDROOM	W34/10	1.97	0.29	
R2/10	BEDROOM	W35/10	2.06	0.30	2.07
R3/10	BEDROOM	W21/10	5.85	0.28	
R3/10	BEDROOM	W22/10	7.42	0.58	
R3/10	BEDROOM	W23/10	6.04	0.47	
R3/10	BEDROOM	W24/10	6.03	0.58	
R3/10	BEDROOM	W25/10	7.05	0.65	
R3/10	BEDROOM	W26/10	7.00	0.59	
R3/10	BEDROOM	W27/10	5.99	0.56	

148 Fellows Road
ASTS Ltd Scheme
INTERNAL DAYLIGHT ANALYSIS

Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
R3/10	BEDROOM	W28/10	5.79	0.32	4.02
R4/10	BEDROOM	W15/10	6.65	0.77	
R4/10	BEDROOM	W16/10	8.83	1.08	
R4/10	BEDROOM	W17/10	9.03	0.99	
R4/10	BEDROOM	W18/10	8.22	0.95	3.79
R5/10	BEDROOM	W5/10	3.22	0.27	
R5/10	BEDROOM	W6/10	4.55	0.42	
R5/10	BEDROOM	W7/10	4.66	0.42	
R5/10	BEDROOM	W8/10	3.87	0.35	
R5/10	BEDROOM	W9/10	3.50	0.30	
R5/10	BEDROOM	W10/10	5.61	0.38	
R5/10	BEDROOM	W11/10	8.09	0.45	
R5/10	BEDROOM	W12/10	8.77	0.51	
R5/10	BEDROOM	W13/10	8.39	0.52	
R5/10	BEDROOM	W14/10	6.16	0.32	3.94
R1/11	FAMILY	W1/11	8.89	0.35	
R1/11	FAMILY	W2/11	10.66	0.53	
R1/11	FAMILY	W3/11	11.69	0.56	
R1/11	FAMILY	W4/11	13.24	0.60	
R1/11	FAMILY	W5/11	14.74	0.63	
R1/11	FAMILY	W6/11	15.44	0.65	
R1/11	FAMILY	W7/11	15.69	0.66	
R1/11	FAMILY	W8/11	15.27	0.30	
R1/11	FAMILY	W9/11	6.00	0.37	
R1/11	FAMILY	W10/11	7.40	0.51	
R1/11	FAMILY	W11/11	8.42	0.56	
R1/11	FAMILY	W12/11	8.90	0.57	
R1/11	FAMILY	W13/11	9.01	0.58	
R1/11	FAMILY	W14/11	8.90	0.57	
R1/11	FAMILY	W15/11	8.65	0.55	
R1/11	FAMILY	W16/11	8.24	0.43	8.41

Project No: 2913
Internal Analysis

148 Fellows Road
ASTS Ltd Scheme
DAYLIGHT DISTRIBUTION ANALYSIS

JAN 2006

Room / Floor	Room Use	Whole Room	New sq ft	%Room
148 Fellows Road				
R1/10	KITCHEN/DINNING	760.6	743.9	97.8%
R2/10	BEDROOM	404.8	193.2	47.7%
R3/10	BEDROOM	336.5	170.9	50.8%
R4/10	BEDROOM	247.0	121.9	49.4%
R5/10	BEDROOM	510.0	225.3	44.2%
R1/11	FAMILY	415.3	414.2	99.7%