Property and Construction Consultants

Watts.

13 January 2014

Our reference: PGL/TP/120147

Mr P. Grant
45 Collingwood Avenue
London
N10 3EE

Watts Group PLC
1 Great Tower Street
London EC3R 5AA

T: +44 (0)20 7280 8000
F: +44 (0)20 7280 8001
E: london@watts.co.uk

Dear Mr Grant

BASEMENT CONVERSION - 144 GLOUCESTER AVENUE, LONDON NW1 8JA
DAYLIGHT AND SUNLIGHT AMENITY REPORT

I refer to your proposals for the conversion and minor extension of the basement area at 144 Gloucester Avenue, London. In this regard, I understand that you are intending to submit an application for planning permission to the London Borough of Camden shortly.

I note that you have received formal notification from London Borough of Camden, by letter dated 17th October 2013, that in order to validate your application it will be necessary for it to include a report concerning the daylight and sunlight amenity that the converted accommodation will enjoy. London Borough of Camden advises that the report should take account of the recommendations described in the Building Research Establishment's Report 209 entitled "*Site layout planning for daylight and sunlight: A guide to good practice*".

1. Instructions and brief

Specifically, I believe that the London Borough of Camden wishes to obtain an assessment of the adequacy of the daylight and sunlight that will be enjoyed by the accommodation proposed.

You have commissioned me to provide the daylight and sunlight amenity assessment. This letter comprises my formal assessment report. I have been made aware that this report will be submitted to the local planning authority as part of the application documentation.

To assist in the assimilation of my findings and comments, my report is made under the separate headings that now follow.

2. Documents received

I have received and reviewed the following drawings prepared by archplan.

Drawing number	Drawing revision	Drawing title
GA / 01	--	Basement Plan - As Existing
GA / 02	--	Ground Floor Plan - As Existing

13 January 2014
Our reference: PGL/KF/120147
Your reference:

Drawing number	Drawing revision	Drawing title
GA / 03	--	Front Elevation - As Existing
GA / 04	--	Rear Elevation - As Existing
GA / 05	--	Section A-A - As Existing
GA / 06	--	Section B-B - As Existing
GA / 07	--	Basement Plan - As Proposed
GA / 08	--	Ground Floor Plan - As Proposed
GA / 09	--	Front Elevation - As Proposed
GA / 10	--	Rear Elevation - As Proposed
GA / 11	--	Section A-A - As Proposed
GA / 12	--	Section B-B - As Proposed

I understand that these drawings form the basis of the application for planning permission along with your PGP drawing entitled "Front view basement" dated November 2013.

You have also provided me with photographs, measurements, and other general information.

3. The existing property

The application site comprises, mainly, the basement accommodation at 144 Gloucester Avenue, which forms part of a terrace of properties at the northwest end of Gloucester Avenue. The basement area is currently accessed by an internal staircase that is reached from a corridor inside the ground floor of the building. The main ground floor area currently has a commercial use.

The current internal arrangement of the property at basement level is not suitable for use as residential accommodation.

The basement storey includes two, unequal-size rooms located beyond the front building facade and under the pavement that lines Gloucester Avenue. These areas are not currently habitable. These two rooms are accessed via a corridor that extends the full width of the property and which, I suspect, originally comprised a lightwell at the front of the property. The lightwell has, at some time in the past, been covered over.

At the rear of the property, at basement level, is a small patio-sized, garden area. Into this area projects a small kitchen extension at present.

4. The proposed development

13 January 2014
Our reference: PGL/KF/120147
Your reference:

It is proposed to completely re-model the interior of the basement area and alter slightly the ground floor arrangements in order to provide a single residential unit with one bedroom at basement level. The use at ground floor level will remain commercial.

At basement level, the two, unequal-size rooms beneath the Gloucester Avenue pavement will be refurbished and brought into service as bathroom and entrance lobby thereto. The entrance lobby will also have a utility function. The covered lightwell will be re-opened to the sky for most of its length and a new staircase will be installed in the open well area. The staircase will lead down from pavement level to a new basement entrance hall, the latter running down the northern edge of the property. The open edge of the lightwell will be enclosed by suitable, open steel railings.

Within the main basement area, a double bedroom with fitted wardrobes along one flank wall will be formed at the front of the property. This will have a large high-set, single window aperture looking out into the open section of the front lightwell.

The remaining space, towards the rear of the property, will provide the kitchen/dining and living accommodation. This accommodation will be extended into the small patio garden area by about 1.25 metres. The enclosing elements of the extension will comprise a combination of vertical and sloping glazing supported by an aluminium framing to form both the new wall and sloping roof elements of the extension. There will thus be a large area of glazing at the rear of the property serving the kitchen/dining and living area. The existing kitchen area will be stripped out and the area occupied by it will be incorporated into the main living area.

You have also confirmed that:

- A glazing system with a high light transmittance value. A value of 0.7 has been adopted for the purposes of the technical assessment.

- all rooms in the proposed unit will be provided with supplementary electric lighting with the expectation that this will, in such a densely developed, part of the Borough, be used regularly by the occupants of the units.

- the interior of the unit will be decorated and furnished in light colours to achieve a high internal surface reflection value. Consequently, I consider that the adoption of an average internal surface reflectance value of 0.65 will be appropriate in my technical assessment.

5. Planning authority requirements

In formulating my observations and opinions, I have considered the relevant planning policy requirements of the London Borough of Camden. Planning policy DP 26 states:

"DP26 – Managing the impact of development on occupiers and neighbours.

13 January 2014
Our reference: PGL/KF/120147
Your reference:

The Council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity. The factors we will consider include:

a) visual privacy and overlooking;
b) overshadowing and outlook;
c) sunlight, daylight and artificial light levels;
d) noise and vibration levels;
e) odour, fumes and dust;
f) microclimate;
g) the inclusion of appropriate attenuation measures."

This policy goes on to state that the local authority will also require developments to provide:

"...h) an acceptable standard of accommodation in terms of internal arrangements, dwelling and room sizes and amenity space..."

Paragraph 26.11 of the Local Development Framework gives guidance on where to find further information concerning residential design standards. It states:

"Standards of accommodation

26.11 The size of a dwelling and its rooms, as well as its layout, will have an impact on the amenity of its occupiers. Residential standards and guidance are contained in our Camden Planning Guidance supplementary document. Policy DP6 outlines our approach to Lifetime Homes and further detail can be found in Camden Planning Guidance."

Further guidance is given by the local authority in the supplementary document CPG2: Housing. Section 4 of this concerns residential development standard and, in respect of daylight and sunlight it states:

"Daylight, sunlight and privacy

4.20 Residential developments should maximise sunlight and daylight, both within the new development and to neighbouring properties.....

4.21 All habitable rooms should have access to natural daylight. Windows in rooms should be designed to take advantage of natural sunlight, safety and security, visual interest and ventilation. Developments should meet site layout requirements set out in the Building Research Establishment (BRE) Site Layout for Daylight and Sunlight – A Guide to Good Practice (1991)."

A new (second) edition of BRE Report 209 was published in 2011. It differs in only relatively minor ways from the (first) 1991 edition, which has now been withdrawn.

It is important to note that the BRE Report does not intend that its methods of assessment should be seen as absolute tests, designed to derive either a "pass" or "fail" result; the BRE Report does not refer to any of the assessment methods offered as "tests". The assessment methods recommended in the BRE Report enable a broad, qualitative understanding of the levels of natural daylight and sunlight that will be obtained by proposed development. Therefore, I consider it is more important to consider the degree and extent to which the units meet the BRE criteria for daylight and sunlight, rather than to see the assessment results as either a "fail" or a "pass" for each property.

Because the BRE Report does not set out tests that are intended to derive results classified as either "passes" or "failures", I do not present in this report the assessment results in this manner.

4. Site inspection

To assist my understanding of the development proposed I have, in conjunction with preparation of this report, inspected the application site and surrounding areas externally.

The nature and scale of the properties adjoining and surrounding the application site has been noted.

As you will be aware, I already have a lot of survey data for the property immediately behind 144 Gloucester Avenue having produced a similar daylight and sunlight amenity report for development of this property about 12-14 months ago. I have made reference to, and used, this existing survey data for the purposes of conducting my analysis.

5. Assessment methodology

In section 2.1 BRE Report 209 recommends a method for assessing the adequacy of internal natural daylight to proposed developments. Daylight amenity is measured using Vertical Sky Component (VSC) values, No-Sky Line (NSL) values, Average Daylight Factor (ADF) values and Room Depth calculations to obtain an understanding of the anticipated levels of natural light. Section 2.1 is to be read in conjunction with Appendix C of BRE Report 209.

Concerning VSC values, the Summary to section 2.1 indicates that, if the VSC value is:

- at least 27% - conventional window design will normally give reasonable results.
- between 15% and 27% - special measures (larger windows, changes in room layout) are usually needed to provide adequate daylight unless very large windows are used.
- between 5% and 15% - it is very difficult to provide adequate daylight unless very large windows are used.
- less than 5% - it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.

I note that the proposed bedroom has a relatively large window with a high-set head.

Section 3.1 of the report gives recommendations for the assessment of the affect on sunlight reaching individual windows of a proposed scheme. When considering sunlight, it should be noted that, in the northern hemisphere, it is only those windows that face within 90^{0} degrees of due south that will enjoy significant amounts of sunlight and the BRE Report limits the extent of assessments required to

these windows only. Sunlight amenity is measured in terms of Annual Probable Sunlight Hours (APSH).

I note the glazing that serves the kitchen/dining/living area does not face within 90^0 of due south. Only the bedroom window faces within 90^0 degrees of due south.

I will not explain at length here the BRE assessment methodologies; Appendix 1 and 2 to this report set out, in greater detail, the assessment methods for daylight and sunlight respectively and I would refer you to these appendices for further information.

Consistent with the methodologies explained in Appendix 1 and 2 to this report, and with regard to the proposed residential unit, I have:

1. not made assessments of the adequacy of daylight and sunlight for (1) the bathroom/toilet, (2) the utility room (3) the entrance lobby/hall ground floor areas. (These are not main, habitable areas in the conventional sense.)

2. made assessments of daylight and sunlight adequacy for (1) the kitchen living/dining area, and (2) the bedroom for the unit.

3. taken into consideration in the CAD modelling undertaken the existence of the re-opened lightwell at the front of the property.

6. Assessment results and commentary

I confirm that my assessments have been made using specialist assessment software and 3D modelling techniques.

I have not made assessments of daylight and sunlight for the bathroom because, although this has a window, it faces the main front façade of 144 Gloucester Avenue and receives no useful daylight or sunlight. The window will still allow some reflected light to enter this room. Bathrooms are not inhabited in the same sense as living and bedroom areas. Bathroom occupation is more transient and limited in time. The fact that the room does not have access to daylight and sunlight does not render the space inadequate in my opinion.

I have not made assessments for the bathroom entrance lobby/utility area, or the entrance hall of the flat. These areas do not incorporate any significant areas of glazing and their use and enjoyment is not reliant on daylight or sunlight.

Drawings resulting from my analysis are attached and are numbered 120147-01-01 to 120147-01-04 inclusive.

13 January 2014
Our reference: PGL/KF/120147
Your reference:

Drawing 120147-01-04 shows the depth to which the sky will be visible at the working plane in each room concerned. All parts of the room shown cross-hatched between the red contour and the window elevation will benefit from visible sky. The red contour shown within each room essentially denotes the "no-sky" line calculated by my computer software.

6.1 Daylight

I discuss the sunlight results derived in section 6.2 below. The results derived for daylight, are as follows:

Room / window	VSC value	No sky line (NSL) within room			Average Daylight Factor (ADF)	Room depth limiting value
		Room area	Area with sky visibility			
Bedroom - front window (W1)	10.32%	9.67m^2	8.28m^2	86%	1.85%	1.779 < 5.714
Kitchen/Dining/Living room - vertical glass wall (W2) - sloping glass roof (W3)	12.00% 23.06%	29.49m^2	23.93m^2	81%	4.25%	3.439 < 5.714

My comments and observations on the assessment results are set out below.

6.1.1 Bedroom daylight

In respect of the bedroom, the modelling, and therefore the results, takes account of the presence of the proposed new entrance steps in the re-opened lightwell and fitted wardrobes internally. The new entrance steps are assumed to be solid in nature. Although the VSC value attained (10.32%) by the window is not 27% or more, it falls within the range 5%-15% which confirms that a large window will have to be used to light the bedroom.

I believe that, as currently proposed, the window serving the bedroom will be sufficient in size because it is evident from the other values calculated that:

1. the ADF value of 1.85% exceeds the minimum value (1%) for ADF advised by BS 8206 in respect of bedrooms.

2. the window will allow sky to be seen at the working plane over an area that equates to 86% of the total room area. The depth of light penetration that should be achieved is therefore good.

It is also evident that the room depth satisfies the limiting value prescribed by the recommended calculation in Appendix C of the BRE Report.

6.1.2 Kitchen/Dining/Living Room daylight

In respect of this part of the unit, although the VSC values attained by the windows are not 27%, they fall within the range 5%-15% in the case of the vertical glazing (12.00%) and 15% - 27% in the case of the sloping glazed roof (23.06%).

This again, confirms that a large window will have to be used to light this part of the unit. The design proposed for the fenestration at the rear of the unit appears to maximise the size of aperture by which light will reach the interior.

I believe that, as currently proposed, the arrangements for admitting light to this area will, again, be sufficient in size because it is evident from the other values calculated that:

1. the ADF value of 4.25% exceeds the minimum value (2%) for ADF advised by BS 8206 in respect of kitchens. BS 8206 advises ADF vales of 1.5% for living and dining areas; a figure that will be comfortably exceeded.

2. the fenestration will allow sky to be seen at the working plane over an area that equates to 81% of the total room area. The depth of light penetration that should be achieved is therefore good.

It is also evident that the room depth satisfies the limiting value prescribed by the recommended calculation in Appendix C of the BRE Report.

6.2 Sunlight assessment results and commentary

The results for sunlight derived, are as follows:

Room / window	Probable Sunlight Hours (PSH)	
	Annual	Winter
Bedroom		
- front window (W1)	14%	2%
Kitchen/Dining/Living room		
- vertical glass wall (W2)	Not applicable	Not applicable
- sloping glass roof (W3)	Not applicable	Not applicable

6.1.1 Bedroom sunlight

The bedroom window will received some sunlight, even during the winter months. The minimum annual value (25%) and winter value (5%) recommended by BRE Report 209 will not be attained, but the use of the room must be taken into account when judging the significance of this non-compliance.

13 January 2014
Our reference: PGL/KF/120147
Your reference:

Bedrooms are occupied during hours of darkness - sunlight is not essential to enjoyment of a bedroom and is often deliberately excluded from it. Thus, I suggest that non-compliance with the recommended values is not a fundamental inadequacy in respect of sunlight amenity for the proposed development.

6.2.2 Kitchen/Dining/Living Room sunlight

Sunlight will not benefit significantly the accommodation at the rear of the unit because the fenestration serving it faces towards the north.

Because of the terraced nature of 144 Gloucester Avenue, and the fact that its compass orientation cannot be changed, it is not possible to reposition the proposed fenestration such that it can face within 90^0 of due south. The fenestration serving the proposed rear accommodation has been positioned in the only practicable location in the circumstances.

7. Interpretation of results

It is important to appreciate that the author of the BRE Report does not intend the document to be used as an instrument of planning policy. It is intended to offer guidance only.

The Introduction of the BRE Report states that it is:

> *…intended for building designers and their clients, consultants and planning officials. The advice here is not mandatory and the guide 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 since lighting is only one of many factors in site layout design."*

I suggest that any shortcomings in daylight and sunlight should be judged against the above ameliorating comments in the BRE Report and my observations.

The local planning authority should be encouraged to put the results of my daylight and sunlight assessment and this report in context with all other planning considerations relating to the scheme. My findings should be accorded the degree of importance that is commensurate with satisfaction of other planning policy considerations relating to the proposed development.

I believe that the results of my assessments demonstrate a substantially positive situation for daylight and sunlight to the proposed residential unit. The design manifestly recognises the need to achieve acceptable levels of daylight and sunlight and, I believe, satisfies this need when considered in relation to the central urban environment and setting of the application site. The design "makes the best" of its particular environment and setting.

8. Conclusions

13 January 2014
Our reference: PGL/KF/120147
Your reference:

The BRE Report indicates, in more than one location, that the criteria to be applied to the assessment of daylight and sunlight should be adjusted or varied according to the circumstances of the development. In consequence, the expectation for good daylight and sunlight in respect of the proposed residential units should be commensurate with the central London location of the development site and its constraints.

I conclude that the architectural design has been properly-considered in daylight and sunlight terms. Although there are some shortcomings in respect of the BRE target values for daylight and sunlight, these are generally limited and my assessment has **not** disclosed a serious pattern of non-compliance and poor design, but, rather, the opposite.

Yours sincerely

PAUL LOVELOCK
Director
D: +44 (0)20 7280 8136
E: paul.lovelock@watts.co.uk

For and on behalf of WATTS GROUP PLC

Enc. Appendices 1 and 2

Appendix 1

Daylight amenity – assessment methodology

This Appendix explains the Assessment Methodology for daylight amenity set out in BRE Report, entitled "*Site Layout Planning for Daylight and Sunlight – a guide to good practice*", in respect of internal areas and rooms in proposed new developments.

Assessment criteria and numerical guidelines

In respect of rooms within a proposed development, the BRE Report (page 6) advises, in the summary to section 2.1 that:

> *"Obstructions can limit access to light from the sky. This can be checked by measuring or calculating the angle of visible sky, angle of obstruction or vertical sky component (VSC) at the centre of the lowest window where daylight is required. If VSC is:*
>
> - *at least 27% …conventional window design will usually give reasonable results.*
> - *between 15% and 27% …special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight.*
> - *between 5% and 15%...it is very difficult to provide adequate daylight unless very large windows are used.*
> - *less than 5%...it is often impossible to achieve reasonable daylight, even if the window wall is glazed."*

A vertical sky component (VSC) is a measure of the amount of light falling on a vertical wall or window and it is quantified as a ratio of the direct sky illuminance falling on the vertical wall at a reference point, to the simultaneous horizontal illuminance under an unobstructed sky. The maximum possible ratio is just under 40% for a completely unobstructed vertical wall. The VSC values attained by windows of a building will not vary with the compass orientation of that building, therefore orientation is not relevant in any daylight assessment.

While a vertical sky component of 27% or more indicates only the potential for good light. It does not give an appreciation of the interior daylighting. The BRE Report essentially suggests that this is checked using methods consigned to Appendix C of the Report. Appendix C sets out three criteria, all of which need to be satisfied if the whole of a room is to look adequately daylight. These criteria are described in Appendix C of the BRE report as follows:

1. Average Daylight Factor
2. Room Depth
3. Position of the No-sky line

Average Daylight Factors (ADFs)

These are defined in BS8206 - Lighting for buildings: Part 2: 2008 as:

Appendix 1

Daylight amenity – assessment methodology

> *"The ratio of total daylight flux incident on the working plane to the area on the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to the unobstructed CIE Standard Overcast Sky."*

The ADF is a more complicated calculation than the Vertical Sky Component (VSC). The ADF calculation measures the distribution and quality of light within a room served by a window and takes account of the VSC, the size of the room, the size and number of windows, surface finishes, glazing qualities and room use. If a room is served by more than one window, the total ADF for that room will be based on the aggregate amount of natural light entering by all of the room windows together.

Where a predominantly daylit appearance is required the following minimum values for residential accommodation are recommended by BS8206:

- 5% (if supplementary electric lighting is not normally to be used during daytime)
- 2% (if supplementary electric lighting is to be used throughout daytime)

Even where supplementary electric lighting will be used, and a predominantly daylit appearance is not required in dwellings, the following ADF values should still be considered the minimum:

- 2% for kitchens
- 1.5% for living rooms
- 1% for bedrooms

Neither the BRE report, nor BS8206, gives any indications as to the types of buildings in respect of which occupiers would expect to use supplementary electric lighting to achieve a predominantly daylit appearance. We suggest that, by the standards of the day, for the following types of building, occupiers could reasonably be expected to resort to supplementary electric lighting to achieve a predominantly daylit appearance:

- Low rise dwellings in densely developed town/city centre locations
- Student accommodation, Schools, colleges and universities
- Offices
- Factories, warehouses and distribution centres
- Hospitals ad health care buildings
- Retail shops, retail warehouses and shopping centres
- Leisure centres and sports facilities
- Buildings of public assembly and public entertainment

Similarly, by today's standards, the only properties that we would NOT expect to rely on supplementary electric lighting to achieve a predominantly daylit appearance are:

- Low rise dwellings in an edge of town provincial location

Appendix 1

Daylight amenity – assessment methodology

- Low rise dwellings developed on green field site
- High-rise developments in densely developed town/city centre locations
- Nursing, convalescent and retirement homes

The formula below, taken from BS8206, derives the ADF value for a room.

$$D = \frac{TA_w\theta}{A(1-R^2)}$$

T	is the diffuse light transmittance of the glazing
A_w	is the glazed area of all windows to a room in square metres
θ	is the angle subtended by visible sky measured from the centre of the window on the plane of the internal surface of the external wall.
A	is the total area of all the walls, floor and ceiling of a room inclusive of the window area.
R	is the area-weighted average reflectance of the internal surfaces

This formula has been applied in deriving ADF values for each room assessed.

Room depth

If a room is lit by one window only, then the depth of the room should not exceed the limiting value given by the following formula.

$$\frac{L}{W} + \frac{L}{H} \leq \frac{2}{1-R_b}$$

W	is the room width
H	is the window-head height above floor level
R_b	is the average reflectance of the surfaces in the rear half of the room (away from the window)

If L exceeds this value, the rear half of the room will tend to look gloomy and supplementary lighting will be required.

Position of no-sky line

The no-sky line divides those areas of the working plane in a room (normally about 850mm above floor level), which can receive direct sunlight, from those, which cannot. It is important because it provides an indication of how good the distribution of daylight is in a room. Areas beyond the no-sky line in a room will generally look gloomy.

The BRE report does not give any absolute or target guidelines for the position of the no-sky line. Appendix D of the BRE Report sets out the means by which the location of the line may be derived.

Appendix 1

Daylight amenity – assessment methodology

Daylight assessment methodology

The BRE Report advocates the assessment of daylight for all dwellings and any non-domestic buildings where daylight is required; this would normally include schools, hospitals, hotels, hostels, laboratories, small workshops and most offices.

Trees may be ignored for calculation purposes unless they form dense continuous belts.

In relation to dwellings, rooms such as bathrooms, toilets, storerooms, staircases, lobbies and circulation areas are not occupied in the commonly accepted sense. For this reason, interior daylight adequacy has not been calculated for such areas, but is calculated for habitable rooms such a kitchens, living rooms, dining rooms and bedrooms.

Two steps for assessing the effect of a development on daylight of adjoining properties can be derived.

Step1: Obstructions subtending 25° angle and Vertical Sky Components

Firstly, it is necessary to consider whether any obstruction measured in a vertical section perpendicular to the main face, from a point 2 m above ground level, subtends an angle of more than 25° to the horizontal. This requires simple two-dimensional composite cross sections to be prepared through the proposed development and each of the neighbouring buildings.

If no obstructions subtend the angle of 25°, then there is potential for good daylighting and one can the consider Step 2 of the analysis directly.

However, if no obstructions subtend the angle of 25°, then VSC values should be calculated. To do this a 3-dimensional model of the proposed development is created by computer using CAD software. The model includes the proposed window configurations and room layouts. The envelopes of all relevant buildings and structures presently adjoining and surrounding the development site are then added to the model CAD model. The Vertical Sky Component (VSC) values for the proposed windows are then calculated using a two-dimensional Skylight Indicator contained in Appendix A of BRE Report 209, or by bespoke computer software. Watts Group uses bespoke computer software.

VSC values of 27% or more indicate the here is good potential for daylight within the rooms served by the windows, but to assess the adequacy of interior daylighting the analysis should be extended to include assessments of ADF, Room Depth and No-sky Line as recommended by the BRE Report.

Step 2: Interior daylighting

Calculation of the ADF Values, Room Depth values and No-sky Line positions can be undertaken using the formulas and assessment methods set out in Appendices C and D of the BRE Report 209, but the same values can be derived by bespoke computer software used in conjunction with 3d CAD

Appendix 1

Daylight amenity – assessment methodology

models of the proposed development and surrounding buildings and. Watts Group Plc uses this computer software and 3d model assessment methods.

Appendix 2

Sunlight amenity – assessment methodology

This Appendix explains the Assessment Methodology for sunlight amenity set out in BRE Report 209, entitled "*Site Layout Planning for Daylight and Sunlight – a guide to good practice*", in respect of internal areas and rooms in proposed new developments.

Assessment criteria and numerical guidelines

The BRE Report recommends that, for interiors, access to sunlight should be quantified. It then defers to British Standard BS8206 - Lighting for buildings: Part 2: 2008 The British Standard recommends that interiors where occupants expect sunlight should receive at least one quarter of the annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months. Higher percentage values can be adopted for buildings with a requirement for exceptional sunlight, but for most purposes, including residential properties, the values stated above are those normally adopted.

Probable sunlight hours means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question. Latitude affects the number of probable sunlight hours likely to be achieved in a year. The maximum number of probable sunlight hours available over a year for the London area (51.5N) would be 1,486; for the Manchester area (53.5N) would be 1,392; and for the Glasgow/Edinburgh (56.0 N) area would be 1,267.

In respect of the fenestration arrangements for a proposed development, the BRE Report (page 11) concludes, in the summary to section 3.1 that:

> *"In general, a dwelling or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided that;*
>
> - *at least one of the main window walls faces within 90° of due south and*
> - *the centre of at least one window to a main living room can receive 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months, between 21 September and 21 March."*

The BRE report qualifies this summary and advises that where window positions for a designed scheme are already known the centre of each main living room window may be used as the reference point for the calculation. The term "living room" is taken to include dining rooms, kitchens and bedrooms, although the BRE report does not explain the meaning of the term clearly.

In the northern hemisphere the sun path from east to west takes a southerly (as opposed to a northerly) transit. The orientation of an adjoining building's windows is therefore relevant to any sunlight assessment. The orientation of a window and therefore the building as a whole is important. A south facing window wall will receive most sunlight in a year. A north-facing wall will receive very little sunlight in the year (early morning and late evening in the summer period). A dwelling with no main window wall within 90° of due south is likely to be perceived as insufficiently

Appendix 2

Sunlight amenity – assessment methodology

sunlit. But, in developed, inner urban environments there might be little opportunity to alter the orientation of the development within the footprint of the site.

It also indicates that it is not always necessary to calculate annual probable sunlight hours to check sunlight potential. It can be shown that the British Standard criterion is met provided that either of the following is true:

1. The window wall faces within 90° of due south and no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal.

2. The window wall faces within and the reference point has a vertical sky component of 27% or more.

Sunlight assessment methodology

Two-dimensional Sunlight Availability Indicators contained in Appendix A of the BRE Report 209 are used in conjunction with plans for the scheme to calculate annual probable sunlight hours. Bespoke computer software can now replicate this process and Watts Group uses this computer software to assess sunlight amenity.

From the objective criteria and guidelines cited above for sunlight, it follows that a consideration of probable sunlight hours will only be required for:

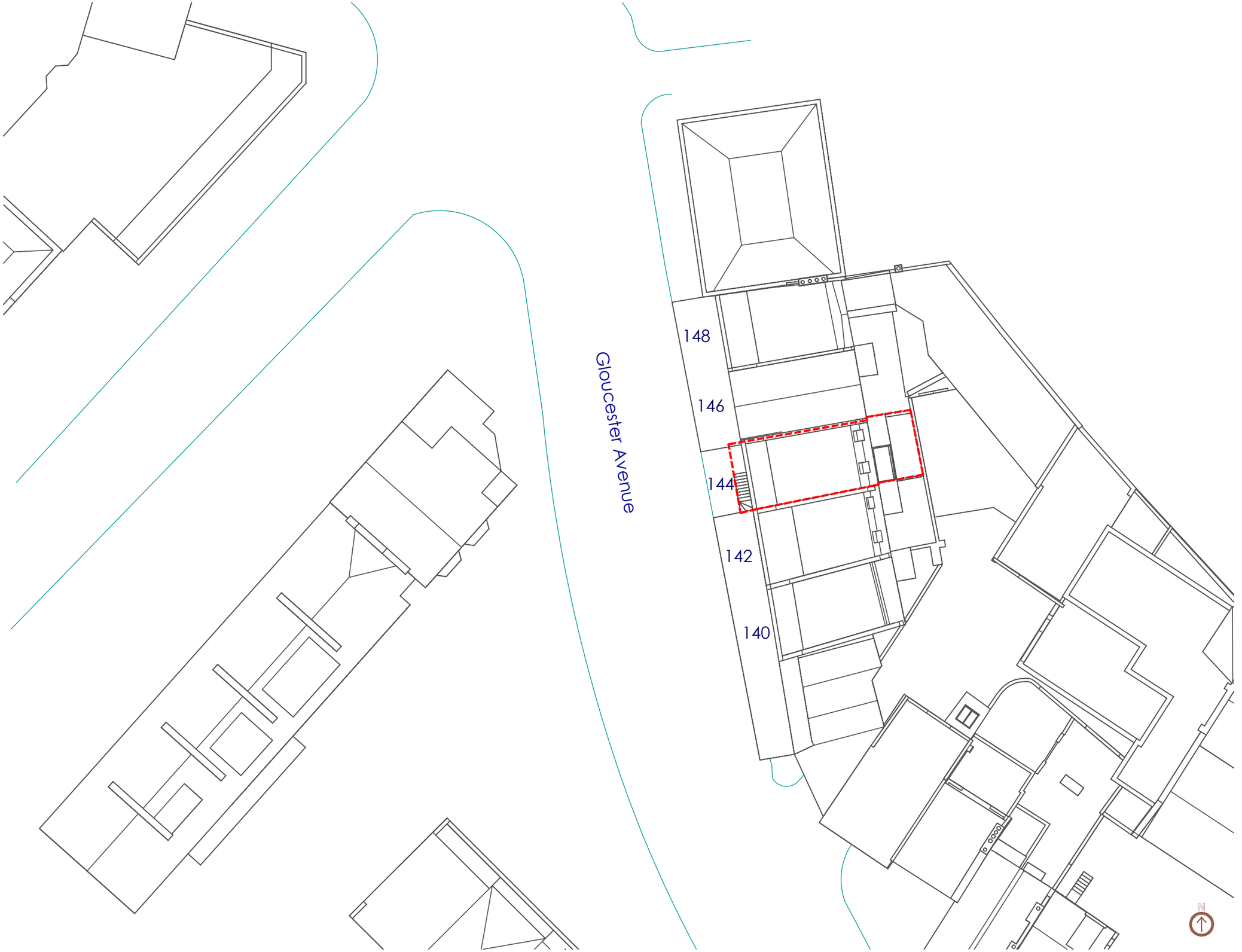
1. those windows of the proposed development that face within 90 degrees of due south,

   and which,

2. are affected by obstructions that subtend an angle of more than 25° to the horizontal, when measured in the section perpendicular to the window wall.

   and which,

3. serve main rooms within a proposed development (living rooms, kitchens, dining rooms and bedrooms)



TITLE

SCALE 1: NTS

Do not scale from this drawing

All dimensions to be checked on site

Notes:

1. ANALYSIS SOFTWARE
Produced using Waldram Ranginui developed by MBS Survey Software Ltd

2. SOURCE DATA

2.1 3d model of existing buildings derived from OS Map detail, Google Streetview & Bing Maps and supplied photography.
Ref: s144 GA skyline front and back.pdf

Massing for the properties at the rear of 144 Gloucester Avenue developed from the design information available via the web for the most recent consented scheme at 134a-136 Gloucester Avenue.

2.2 Internal room reference and dimensions are derived from the following 2d pdf data, inserted to best fit.
Ref: Archplan Ltd.
144 Gloucester Avenue As Proposed.pdf
144 proposed.pdf
144 proposed_1.pdf
Front slab. entrance 144.pdf
s144 GA skyline front and back.pdf
DESIGN AND ACCESS STATEMENT.pdf
144 Existing.pdf
144 front view basement .pdf
144 Gloucester Ave As Existing.pdf

Amendments:

Drawing type:

Client:
Mr. Peter Grant

Project:
No. 144
Gloucester Avenue

Title:
Site Plan

Scale: NTS Date: 19/12/2013

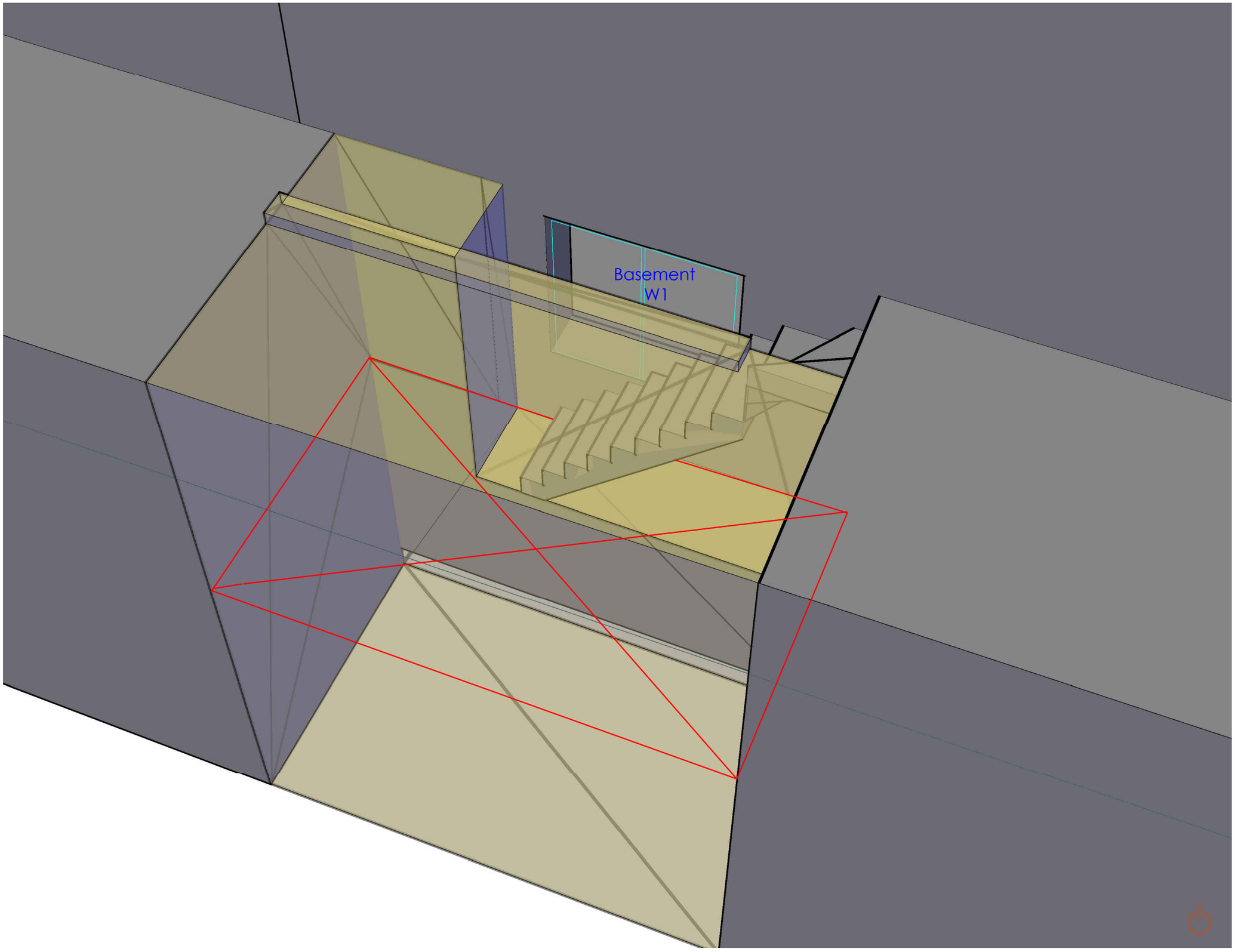
Drawn: WATTS Checked: PL

Drg.no: 120147–01–01 Rev:

Watts.

Watts Group PLC
1 Great Tower Street
London EC3R 5AA

T: +44 (0)20 7280 8000
F: +44 (0)20 7280 8001
W: Watts-international.com



TITLE

SCALE 1: NTS

Do not scale from this drawing

All dimensions to be checked on site

Notes:

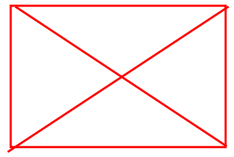
1. ANALYSIS SOFTWARE
Produced using Waldram Ranginui developed by MBS Survey Software Ltd

2. SOURCE DATA

2.1 3d model of existing buildings derived from OS Map detail, Google Streetview & Bing Maps and supplied photography.
Ref: s144 GA skyline front and back.pdf

Massing for the properties at the rear of 144 Gloucester Avenue developed from the design information available via the web for the most recent consented scheme at 134a-136 Gloucester Avenue.

2.2 Internal room reference and dimensions are derived from the following 2d pdf data, inserted to best fit.
Ref: Archplan Ltd.
144 Gloucester Avenue As Proposed.pdf
144 proposed.pdf
144 proposed_1.pdf
Front slab. entrance 144.pdf
s144 GA skyline front and back.pdf
DESIGN AND ACCESS STATEMENT.pdf
144 Existing.pdf
144 front view basement .pdf
144 Gloucester Ave As Existing.pdf



Cross-hatched area denotes floor plane.

Amendments:

Drawing type:

Client:
Mr. Peter Grant

Project:
No. 144
Gloucester Avenue

Title:
3d View of Basement
Area to Front of Property

Scale: NTS Date: 19/12/2013

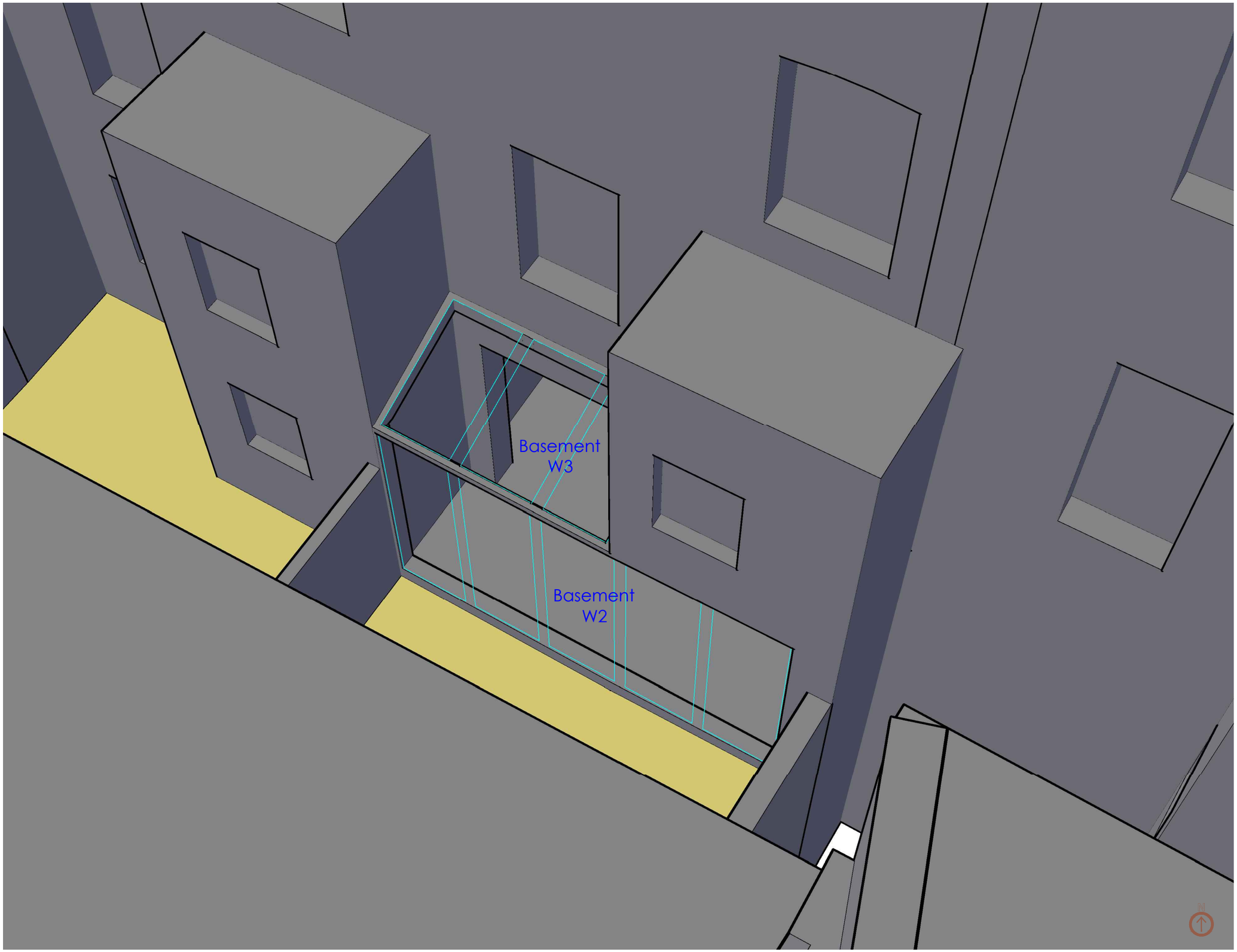
Drawn: WATTS Checked: PL

Drg.no: 120147–01–02 Rev:

Watts.

Watts Group PLC
1 Great Tower Street
London EC3R 5AA

T: +44 (0)20 7280 8000
F: +44 (0)20 7280 8001
W: Watts-international.com



TITLE

SCALE 1: NTS

Do not scale from this drawing

All dimensions to be checked on site

Notes:

1. ANALYSIS SOFTWARE
Produced using Waldram Ranginui developed by MBS Survey Software Ltd

2. SOURCE DATA

2.1 3d model of existing buildings derived from OS Map detail, Google Streetview & Bing Maps and supplied photography.
Ref: s144 GA skyline front and back.pdf

Massing for the properties at the rear of 144 Gloucester Avenue developed from the design information available via the web for the most recent consented scheme at 134a-136 Gloucester Avenue.

2.2 Internal room reference and dimensions are derived from the following 2d pdf data, inserted to best fit.
Ref: Archplan Ltd.
144 Gloucester Avenue As Proposed.pdf
144 proposed.pdf
144 proposed_1.pdf
Front slab. entrance 144.pdf
s144 GA skyline front and back.pdf
DESIGN AND ACCESS STATEMENT.pdf
144 Existing.pdf
144 front view basement .pdf
144 Gloucester Ave As Existing.pdf

Amendments:

Drawing type:

Client:
Mr. Peter Grant

Project:
No. 144
Gloucester Avenue

Title:
3d View of Basement
Area to Rear of Property

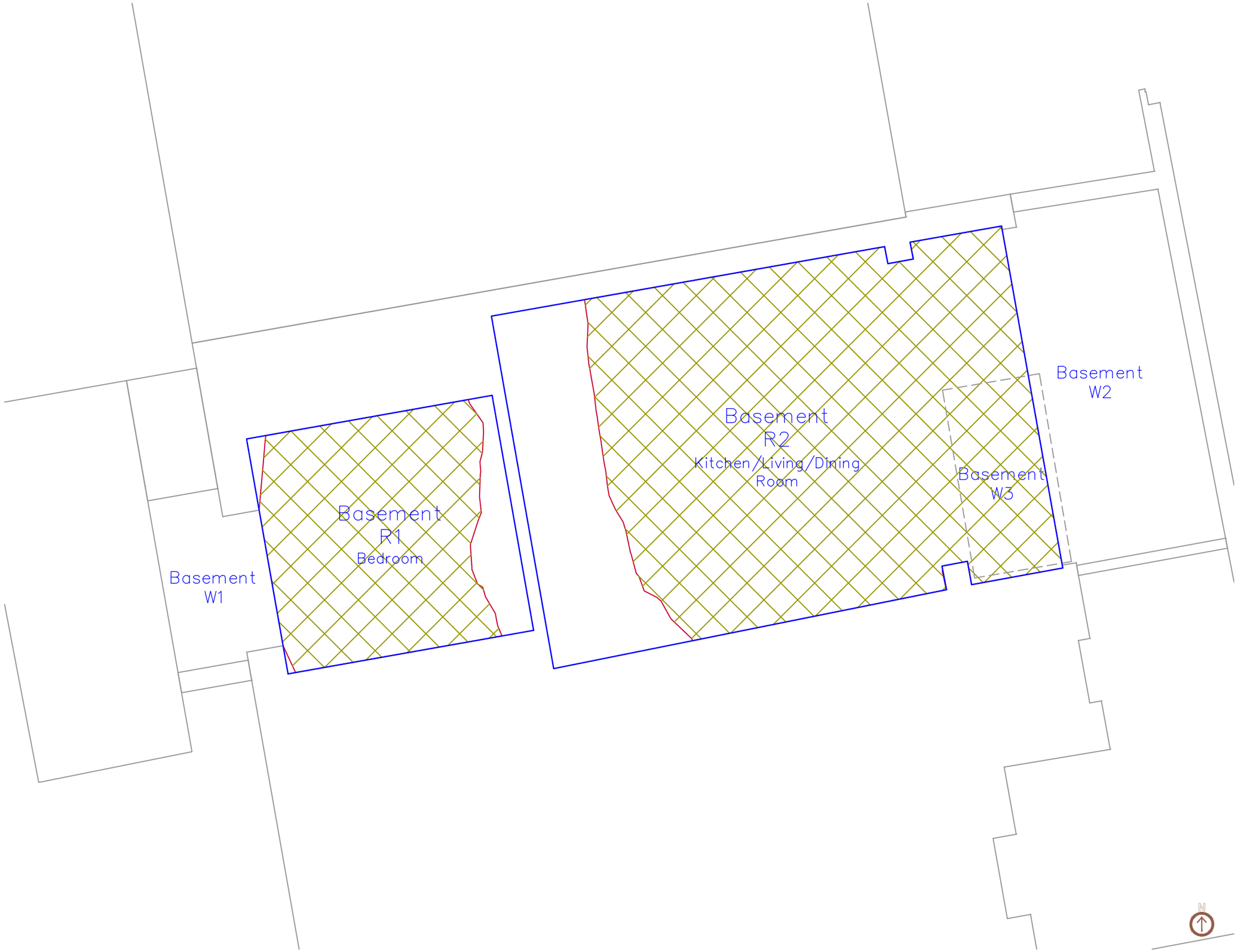
Scale: NTS Date: 19/12/2013

Drawn: WATTS Checked: PL

Drg.no: 120147–01–03 Rev:

Watts.

Watts Group PLC
1 Great Tower Street
London EC3R 5AA
T: +44 (0)20 7280 8000
F: +44 (0)20 7280 8001
W: Watts-international.com



TITLE

SCALE 1: NTS

Do not scale from this drawing

All dimensions to be checked on site

Notes:

1. ANALYSIS SOFTWARE
Produced using Waldram Ranginui developed by MBS Survey Software Ltd

2. SOURCE DATA

2.1 3d model of existing buildings derived from OS Map detail, Google Streetview & Bing Maps and supplied photography.
Ref: s144 GA skyline front and back.pdf

Massing for the properties at the rear of 144 Gloucester Avenue developed from the design information available via the web for the most recent consented scheme at 134a-136 Gloucester Avenue.

2.2 Internal room reference and dimensions are derived from the following 2d pdf data, inserted to best fit.
Ref: Archplan Ltd.
144 Gloucester Avenue As Proposed.pdf
144 proposed.pdf
144 proposed_1.pdf
Front slab. entrance 144.pdf
s144 GA skyline front and back.pdf
DESIGN AND ACCESS STATEMENT.pdf
144 Existing.pdf
144 front view basement .pdf
144 Gloucester Ave As Existing.pdf

KEY

- Room Area (Measured Layout)
- Room Area (Assumed Layout)
- Existing No Sky Area
- Proposed No Sky Area
- Area of Loss/Gain

Amendments:

Drawing type:

Client:
Mr. Peter Grant

Project:
No. 144
Gloucester Avenue

Title:
Daylight Distribution Contours

Scale: NTS Date: 19/12/2013

Drawn: WATTS Checked: PL

Drg.no: 120147–01–04 Rev:

Watts.

Watts Group PLC
1 Great Tower Street
London EC3R 5AA
T:+44 (0)20 7280 8000
F:+44 (0)20 7280 8001
W: Watts–international.com