# Design and Access Statement with Noise and Light Assessments.

Consult Construct

Maison Française d’ Oxford

2-10 Norham Road

Oxford OX2 6SE

Prepared for The French Embassy

JANUARY 2024

PROJECT NUMBER - 22.2633

## Consult Construct - Quality Management

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A This document has been produced by:

Robert Pou RIBA

Architect

Signed: Robert Pou

[redacted]

B

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| Date first issued | 25/01/24 |
| Date of this issue | 25/01/24 |
| Issue Number | 1 |

C This document has been checked and approved by:

Geoff Parslow

Building Services Engineer

[redacted]


Consult Construct Limited

Gunpowder Works, off Bysing Wood Road
Faversham Kent ME13 7UD

Registered in England at this address : Company No. 8324105

info@consultconstruct.co.uk 01227 767770

www.consultconstruct.co.uk

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# CONTENTS

# 1.0

# INTRODUCTION

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## 1.1 SUMMARY

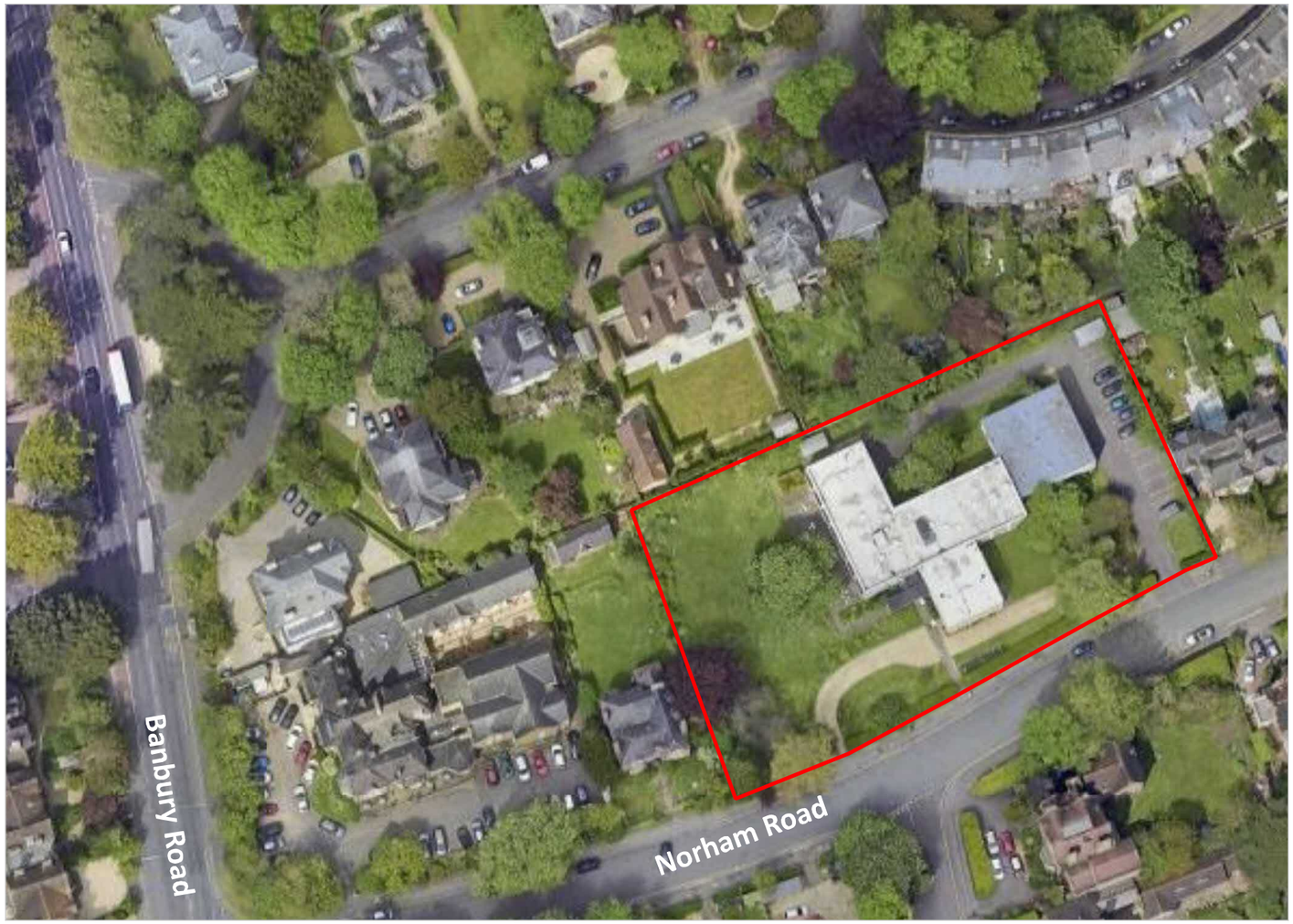
The information presented in this document has been compiled to provide further details on the proposed works at the Maison Française d' Oxford which involve the installation a new air source heat pump at the rear of the building to replace the existing heating system.

## 1.2 SITE DESCRIPTION

Maison Française d' Oxford at 2-10 Norham Road occupies a developed urban plot of land of rectangular shape and approximately 4,600m² area; the property is a two storey detached building with a footprint of 834m2 fronting Norham Road to the south, and adjoining residential boundaries to the north, east and west.

The building is surrounded by well stablished gardens and extensive lawns; the site offers off-road parking for up to 14 cars; there is also a loading bay and turning area at the rear of the property.

The property is in Flood Risk Zone 1; there no risk of flooding from rivers or the sea, with a very low chance of flooding from surface water.




Site location.

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# 2.0

# PLANNING CONSIDERATIONS

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## 2.1 PLANNING HISTORY

The property has been subject to few planning applications; they mostly relate to garden maintenance in the conservation area, with some relating to changes to fenestrations under already approved or permitted development.

The most relevant and recent applications are listed below:

-Application to certify that the proposed replacement of existing windows is lawful development. Ref. No: 22/00349/CPU | Validated: Thu 03 Mar 2022 | Status: Decided.

-Fell 3no. Cypress trees in the North Oxford Victorian Suburb conservation area. Sectional fell to ground level. Ref. No: 17/03122/CAT | Received: Fri 24 Nov 2017 | Validated: Fri 24 Nov 2017 | Status: Decided.

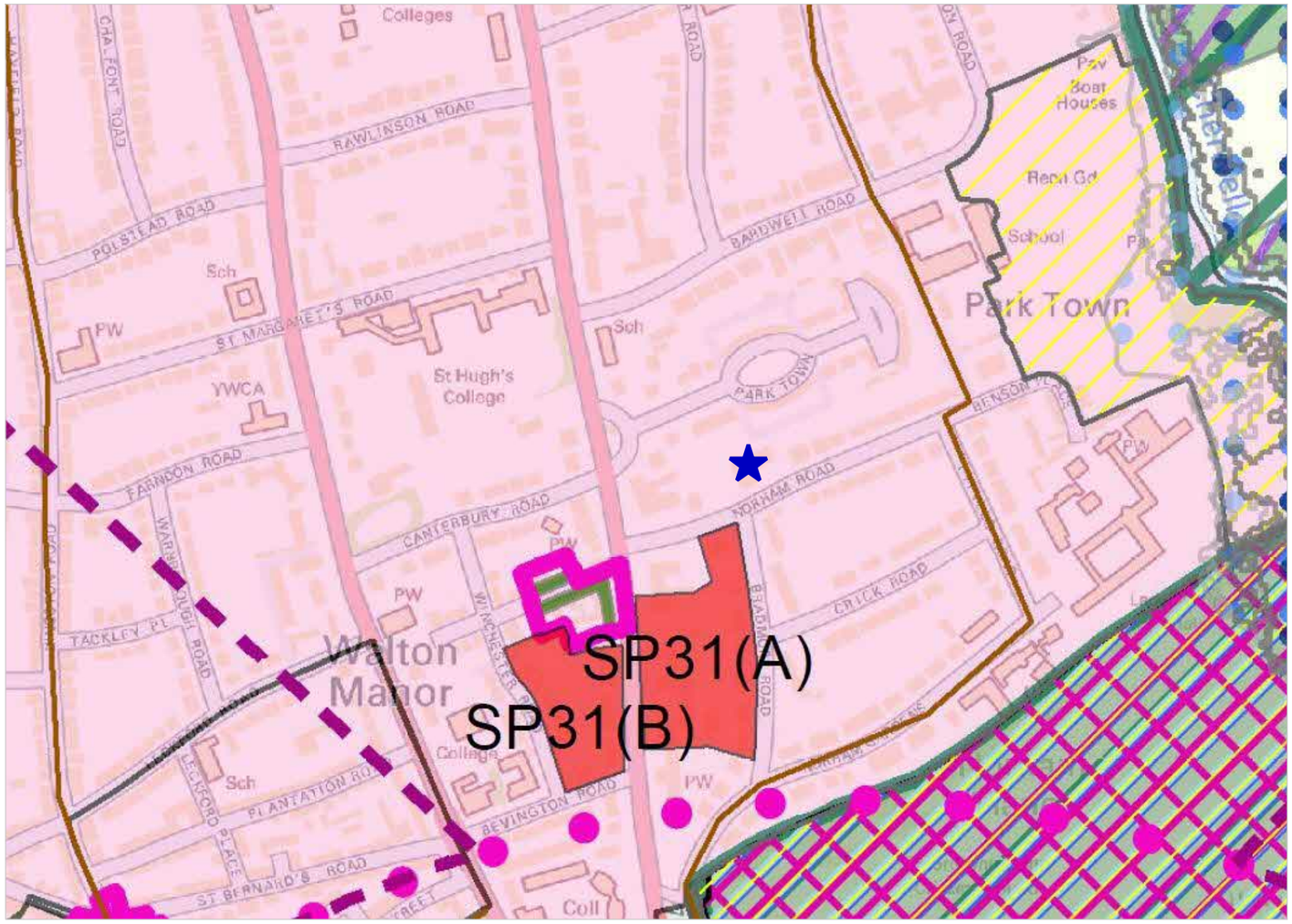
-Renewal of planning permission 06/02497/FUL for "external alteration to stable building including new fenestration, and conversion to 2 seminar rooms. Additional external doors and timber decking to lecture theatre." Ref. No: 10/00174/EXT | Received: Thu 28 Jan 2010 | Validated: Thu 04 Feb 2010 | Status: Decided.

## 2.2 MAIN PLANNING CONSTRAINTS

Maison Française d' Oxford is not a listed building but its site is located in the North Oxford Victorian Suburbs Conservation Area, a section of the city highly populated with listed buildings and other properties that contribute to the special character of the town.

Under policy DH3 of the Adopted Oxford Local Plan 2036, planning permission or listed building consent will be granted only for development that respects and draws inspiration from Oxford's unique historic environment (above and below ground), responding positively to the significance character and distinctiveness of the heritage asset and locality.

Under policy RE8, planning permission will only be granted for development proposals which manage noise to safeguard or improve amenity, health, and quality of life. Planning permission will not be granted for development that will generate unacceptable noise and vibration impacts.




Oxford Local Plan 2016-2036 Policies Map. Conservation Areas. Proposed development.

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# 3.0

# PROPOSAL

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## 3.1 INTENT

The purpose of this planning application is to obtain approval for the replacement of the existing gas boiler with a new external modular air source heat pump to generate all the heating of the building in a much more efficient and sustainable way.

## 3.2 LOCATION

The heat pump unit will be placed at the rear of the building, close to the basement where the current boiler and plant rooms are located to facilitate the connection of the units to the existing heating infrastructure.

The new units will be freestanding and surface mounted onto the turning bay at the northwest side of the building, in front of an area sporadically used as kitchenette.

## 3.3 SPECIFICATION

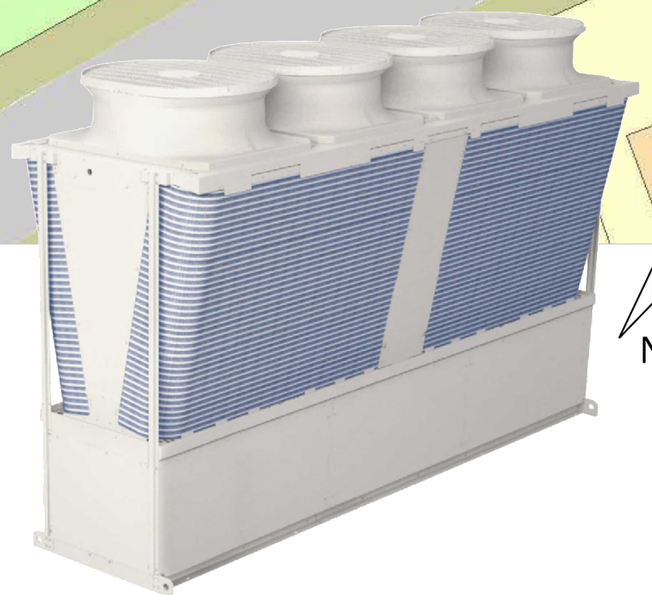
Mitsubishi R32 180kW e-Series modular heat pump allows for up to six individual units to be connected together to provide a system capacity up to 1,080kW. Available as a heat pump version, the e-Series is suitable for comfort applications.

Using R32 refrigerant, the heat pump has a global warming potential (GWP) one third that of conventional R410A refrigerant. The use of the R32-compatible compressor and flat tube heat exchanger allows for 68% reduction in refrigerant volume and approximately 89% reduction in $CO_2$ equivalent.

The Y-shaped high performance compact air heat exchangers allows for a greater surface area whilst also keeping the units much narrower than conventional chillers.

The e-Series R32 range coils are equipped with a zinc coating, offering a high level of corrosion protection.


Site plan. Proposed heat pump location (Mitsubishi EAHV-M1800)



# 4.0

# ACCOUSTIC ASSESSMENT

## 4.1 IMPACT

Any noise exceeding 70 dB is considered disturbing. Residential limits usually start at 60 or 55 dB, with time limits usually applying after 10 pm and until 7 am.

According to the specification of the product, although the proposed heat pumps incorporate fan blades with improved airflow characteristics and a newly designed trailing edge that suppresses air turbulence to increase efficiency and reduce noise levels, the specified sound pressure of 65dB measured at a distance of 1m could be too high for a residential environment, and in particular for any room in the building adjacent to the proposed heat pumps.

## 4.2 MITIGATION

The distance between the proposed heat pumps location and the closest residential property is over 25m; there will be a natural dB reduction caused by the noise travelling distance through the environment.

In order to further reduce the generated noise levels and produce a safe and comfortable environment for the users of the Maison Française d' Oxford, the heat pump units will be installed in an acoustic enclosure with perforated or louvred panels that will drastically reduce the noise to acceptable levels even for the highest frequencies when the pumps could be operating at their full capacity for short periods of time.

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DATA SHEET **E80D**

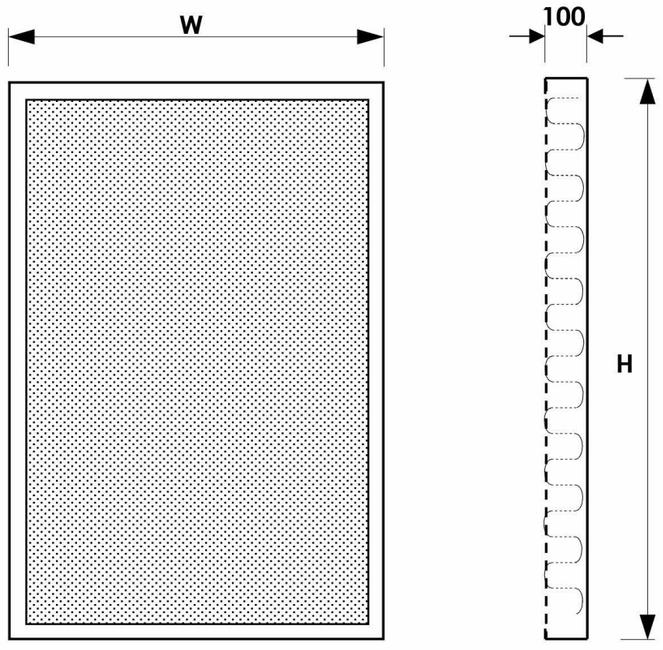
ACOUSTIC ENCLOSURE PANEL

MODEL **EP100/TYPE1**

IMPORTANT : THIS IS NOT A STAND ALONE DOCUMENT AND UNLESS REFERRED TO IN A DATED AND CERTIFIED EQUIPMENT SCHEDULE IS SUBJECT TO REVISION WITHOUT NOTICE.

allaway acoustics

### DIMENSIONS




### SPECIFICATION

THE ACOUSTIC ENCLOSURE PANEL COMPRISES A COMBINATION OF SOUND ABSORBENT MATERIALS AND HIGH MASS BARRIERS CONTAINED WITHIN A METAL CASING HAVING AN PLAIN OUTER AND PERFORATED INNER FACE, OFFERING EXCELLENT SOUND REDUCTION AND ABSORPTION PROPERTIES.

PANELS ARE CONSTRUCTED FROM PRE-GALVANISED SHEET STEEL AS STANDARD,

THE OUTER CASING IS FORMED FROM PLAIN SHEET METAL AND INSIDE FACE FROM PERFORATED METAL.

PANELS CONTAIN A FIBROUS SOUND ABSORBENT INFILL THAT IS NON-SHEDDING, NON-COMBUSTIBLE, NON-HYGROSCOPIC AND CHEMICALLY INERT. THE INFILL IS FACED WITH GLASS CLOTH TO PREVENT FIBRE MIGRATION.

THE CASING CAN BE SUPPLIED WITH A PERIMETER FLANGE FOR FIXING ADJACENT SECTIONS TOGETHER, FIXING THE PANELS INTO THE BUILDERSWORK OPENING OR FIXING INTO THE FRAMEWORK OF AN ACOUSTIC ENCLOSURE (OPTION **F**).

POLYESTER POWDER FINISH AVAILABLE (SUFFIX **P**)

### ACOUSTIC PERFORMANCE

**SOUND REDUCTION INDEX BS EN ISO 10140/2 : 2010**

| 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | HZ |
|---|---|---|---|---|---|---|---|---|
| **29** | **38** | **46** | **52** | **61** | **66** | **63** | **60** | **dB** |

**SOUND ABSORPTION BS EN ISO 354 : 2003**

| 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | HZ |
|---|---|---|---|---|---|---|---|---|
| **.3** | **.55** | **.8** | **.9** | **.9** | **.85** | **.85** | **.8** | **-** |

### SUFFIX

**P** - POLYESTER POWDER COAT

**F** - PERIPHERAL FIXING FRAME

**X** - SPECIAL CONSTRUCTION, REFER TO EQUIPMENT SCHEDULE FOR DETAILS.

### BUILDERSWORK

THE **W** AND **H** DIMENSIONS GIVEN ON THE CERTIFIED EQUIPMENT SCHEDULE ARE AS MANUFACTURED.

ADEQUATE CLEARANCE MUST BE ALLOWED WHEN CONSTRUCTING THE BUILDERSWORK OPENING, MIN 10mm IS RECOMMENDED.

### WEIGHT

ACTUAL WEIGHTS ARE GIVEN ON THE EQUIPMENT SCHEDULE.

APPROXIMATE WEIGHT: **55kg/M²**.

### STANDARD SIZES

THERE ARE NO STANDARD SIZES. PANELS ARE MANUFACTURED TO ORDER.

### NOTES

THIS DATA SHEET IS TO BE READ IN CONJUNCTION WITH THE EQUIPMENT SCHEDULE

PANELS WILL BE SUPPLIED WITHOUT SUPPORT STEELWORK, BRACKETS, FIXINGS OR MASTIC UNLESS OTHERWISE STATED.

# 5.0

# LIGHT ASSESSMENT

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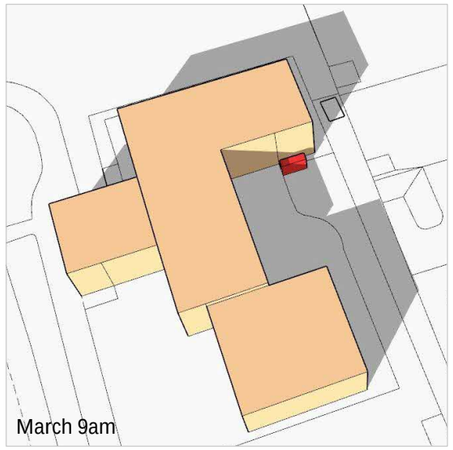
## 5.1 IMPACT

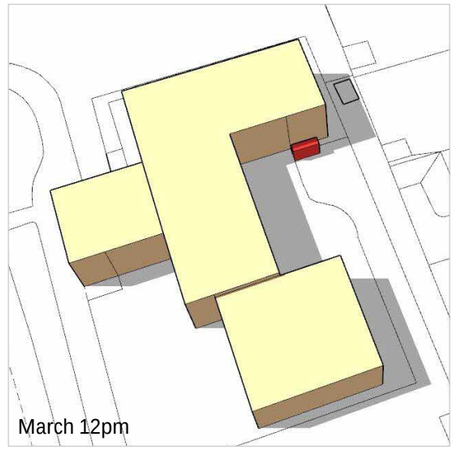
The proposed heat pump units are 2.3m hight; this is similar to a garden shed and therefore, the impact on natural light and the obstruction this would create to any habitable rooms has to be analysed through the seasons of the year.

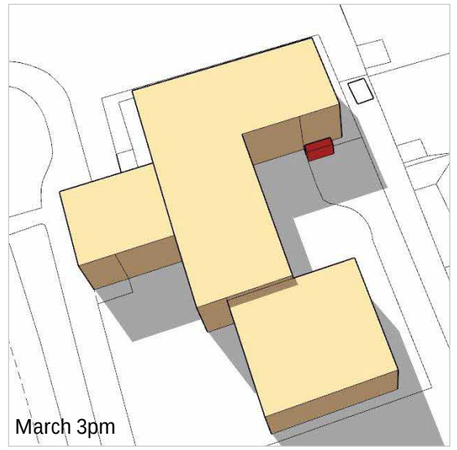
A solar calendar analysis with the most relevant months and times has been carried away as depicted on this page; the analysis shows that only at early hours of the day and during the summer time the proposed heat pumps could cast a shadow into the kitchenette. The rest of the time, it is the building casting a shadow over that proposed elevation and although the levels of natural light could still be reduced by the units acting as a barrier to ambient light, this would not be significant or relevant for the use of the room in discussion - the kitchenette.

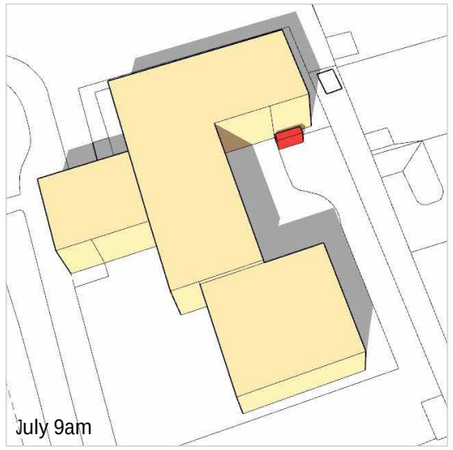
## 5.2 MITIGATION

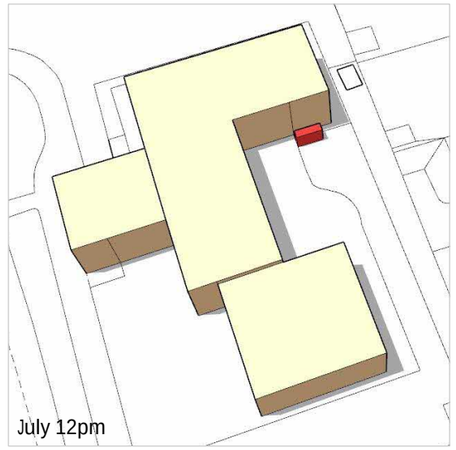
The solar calendar analysis indicates that no mitigation is required. There is no impact on neighbouring properties either.

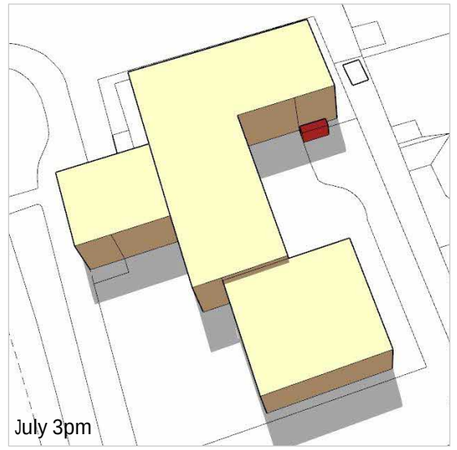


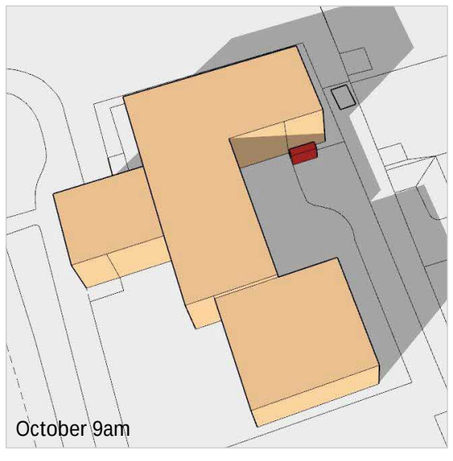



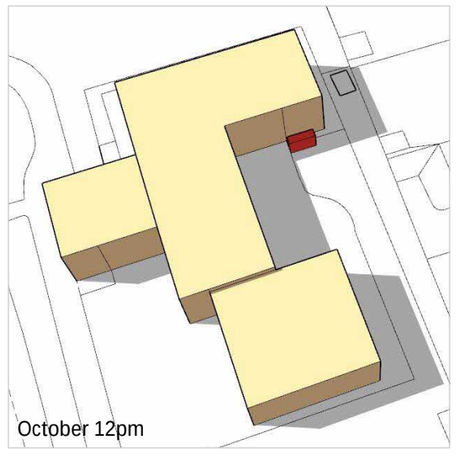



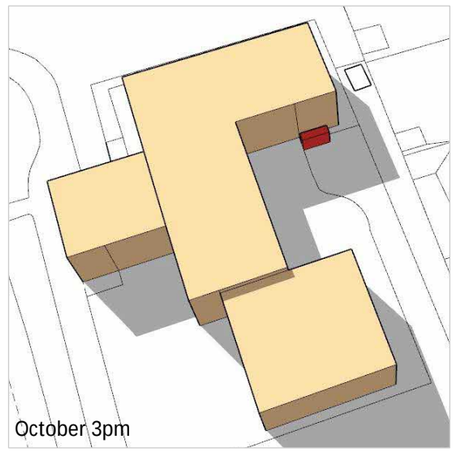



# 6.0

# CONCLUSION

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## 6.1 SUMMARY

The purpose of this planning application is to obtain approval for the replacement of the existing gas boiler with a modular heat pump unit which will be located at the rear of the building close to the current boiler and plant rooms; and surface mounted onto the turning bay at the northwest side of the property in front of an area used as kitchenette.

Under the Adopted Oxford Local Plan 2036, the propose units will have to avoid any detrimental visual impact to the character of the area; they will also have to avoid any detrimental acoustic impact to the main building and other neighbouring properties.

The proposed location to the northwest of the site will hide the units from the public domain; these will not be visible from any of the surrounding streets and will cast no shadow to any area requiring direct sun light.

The proposed heat pumps will be installed in an acoustic enclosure; this will reduce possible noise pollution to acceptable levels.

Proposed heat pump location.