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Prepared on behalf of

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FLOOD RISK ASSESSMENT

Proposed Domestic Extension
18, Monksbrook Close, Eastleigh, Hampshire

Flood Risk Assessment

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Acknowledgements:

Environment Agency

Disclaimer

The methodology adopted and the sources of information used by Sanderson Associates (Consulting Engineers) Ltd in providing its services are outlined within this Report.

Any information provided by third parties and referred to herein has not been checked or verified by Sanderson Associates (Consulting Engineers) Ltd, unless otherwise expressly stated within this report.

This report was checked and approved on the 5th February and the Report is therefore valid on this date, circumstances, regulations and professional standards do change which could subsequently affect the validity of this Report.

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Report Ref:	8479/KB/001/01		January 2015
Author:	Kieran Breheney		
Checked & Approved:	Darren Hawkyard	**Date:**	5th February 2015

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1 Introduction

1.1 Sanderson Associates (Consulting Engineers) Ltd have been appointed to undertake a Flood Risk Assessment for a proposed household extension to an existing residential property at 18, Monksbrook Close, Eastleigh, Hampshire. The location of the property is shown on drawing 8479/001, contained within Appendix A.

1.2 This Flood Risk Assessment has been undertaken in accordance with the National Planning Policy Framework (NPPF) and the associated Planning Policy Guidance 2014.

1.3 Due to the scale of the proposed works (28.1m² additional impermeable building floor area with an additional 14.8m of hardstand) consultation with the Environment Agency has not taken place as the development is considered to be minor development in line with the Planning Policy Guidance. The report is produced in line with the Environment Agency general advice notes for domestic extensions and minor development, which is contained within Appendix B.

2 Existing Situation

2.1 Existing Site Description

2.1.1 The property is located on Monksbrook Close in Eastleigh, Hampshire, SO50 9NQ. An O.S. reference for the site is: 444332,118000.

2.1.2 Drawing 8479/001, contained in Appendix A, shows the location of the site and its surroundings.

2.1.3 The site is currently occupied by a single storey dwelling on a residential street. An existing 28.1m^2 decking area is located to the rear of the property, this will be removed as part of the proposed extension works.

2.1.4 The nearest main watercourse to the property is the Monks Brook, which is located approximately 60m to the west of the site at its closest point. Monks Brook generally flows from north to south in the vicinity of the site.

2.2 Existing site Analysis

2.2.1 The property is to remain unchanged in terms of use (C3 dwelling house). The existing floor area of the dwelling is approximately 108m^2.

2.2.2 The rear of the property is located within Flood Zone 3 meaning it has a greater than 1 in 100 (1%) annual probability of flooding from a fluvial source in any given year.

3 Consultation

3.1 As previously stated in this report, consultation with the Environment Agency (EA) has not taken place. On reviewing the EA document "Flood Risk Assessment and other general advice for applicants and agents". The proposed works are covered by the advice given in the document under the section "Householder and other minor extensions in Flood Zone 2 and 3", as the work proposed is a domestic extension that will not exceed 250m² of additional floor area and will not create any additional dwellings within the boundary of the site.

3.2 In this section of "flood risk assessment and other general advice for applicants and agents" the Environment Agency details two measures that an applicant or agent must choose between in order to provide a level of protection for the minor works;

a) Floor levels within the proposed development must be set no lower than existing floor levels and flood proofing is incorporated where appropriate.

b) Floor levels must be set 300mm above modelled 1 in 100 annual probability river flood levels.

3.3 This proposed development should be designed and constructed in accordance with option a) with the finished floor level of the proposed extensions set no lower than the floor level of the existing dwelling. The completed Environment Agency form is included in Appendix B.

4 Proposed Development

4.1 The proposals for the property are for the construction of a single story 'conservatory' extension to the southern elevation of the existing dwelling. The proposals will not introduce any additional ground floor bedrooms to the property or be used to implement the division of the dwelling into multiple dwellings.

4.2 The total floor area of the extension is 28.10m² with an additional hard stand of 14.8m^2. Meaning a total of 42.9m^2 impermeable area as shown on the received architects drawing contained in Appendix A.

4.3 The proposals will utilise the existing drainage points currently in the building, therefore no new connection into the adopted sewers are necessary.

4.4 As the extension will be constructed over the existing permeable garden and decking area the property's impermeable area will increase. There will be a minor increase in surface water runoff due to the additional building area being 28.10m^2 and will not have an adverse effect on the existing drainage system. The additional hard standing area of 14.8m^2 will shed water informally into the garden area.

5 Sequential and Exception Tests

5.1 Sequential Test

5.1.1 As the total footprint of the proposed extension is less than 250m², which is classed as 'minor development', the Sequential and Exception Tests do not need to be applied in this instance. This is in accordance with the National Planning Policy Framework paragraph 104 (page 24).

6 Assessment of Flood Risk

6.1 Pluvial Flooding

6.1.1 The alterations to the property increase the floor area of the property by 28.10m². Therefore the alterations are considered to be minor development and will not increase the flood risk to the property or the surrounding. Existing drainage connections are to be used and measures have been included in Section 7.

6.1.2 The Environment Agency online surface water map shows the site is within an area with less than 1 in 1000 annual probability of surface water flooding during an extreme storm event in any given year. In accordance with the EA mapping the risk is deemed to be very low and is the lowest classification of surface water risk.

6.2 Fluvial Flooding

6.2.1 The main risk of flooding to the site is from the Monks Brook which is approximately 60m to the west of the site.

6.2.2 From the Environment Agency online flood map. The rear of the site is indicated to be wholly within Flood Zone 3. Therefore the site has a greater than 1 in 100 (>1%) annual probability of flooding in any given year.

6.2.3 Due to the scale of the development it will not increase the flood risk to the property or the surrounding area from this source. The proposals will not introduce any ground floor bedrooms/sleeping areas to the dwelling.

6.2.4 Specific measures are recommended in Section 7 to improve the flood resilience of the proposed extension.

6.3 Flooding from Groundwater

6.3.1 From the British Geological society online data records, the closest borehole recorded (80m north of the site) show that groundwater levels are around 7m below the surface. A thick strata of clay strata above the water table meaning there would be minimal risk from groundwater flooding.

6.3.2 In addition there are no proposed changes to the finished floor level of the dwelling, therefore the risk to the property remains unchanged.

6.4 Flooding from Infrastructure Failure

6.4.1 The site lies out of potential extents of modelled flooding as shown on the EA Risk of flooding from reservoirs mapping therefore flooding is extremely unlikely to happen.

6.5 Flooding from Sewers

6.5.1 The dwelling remains at the same finished floor level therefore risk of flooding to the property from this source remains unchanged.

6.6 Flooding from Climate Change

6.6.1 The intensity of rainfall is estimated to increase by up to 10% by the year 2055 and up to 30% by the year 2115 based upon current projections. As the dwelling increases in floor area by 28.10m², it is considered that the effects of climate change will not significantly increase the flood risk to the site.

7 Mitigation of Flood Risk

7.1 It is important that any proposed development that has the potential to change the flood mechanisms on a site is designed such that there is no increased flood risk to the site itself, or sites in the vicinity.

7.2 As stated previously in this report the Environment Agency document “Flood Risk Assessment and other general advice for applicants and agents” has been used as guidance for a development of this scale. In the “Householder and other minor extensions in Flood Zone 2 and 3” section of this document, it states the following mitigation measure that must be applied to the development “Floor Levels within the proposed development will be set no lower than existing levels and flood proofing of the proposed development has been incorporated where appropriate”. The following section outlines a number of measures that can be employed to help protect the development and more importantly the end user from a flood event.

7.3 The developer should refer to the publication 'Improving the Flood Performance of New Buildings' published by the Department for Communities and Local Government in May 2007.

7.4 External landscaping areas should fall away from the entrance points into the buildings wherever possible, with a minimum gradient of 1 in 100. This should apply to the proposed extension at the rear of the house to ensure that surface water is shed onto permeable garden areas.

7.5 It is recommended that solid concrete floors with damp proof membranes are installed. This is because they are generally regarded as the most flood resistant floor types with effective connections between the damp proof course and the damp proof membranes. Alternative resistant floor construction details can be found in 'Improving the Flood Performance of New Buildings' along with other flood resilient construction methods and material specifications.

7.6 Fixtures and fittings should be plastic or steel to decrease the need for replacement after a potential flood event.

7.7 Consideration should be given to introduce a removable flood gate to all ground floor doorways and air brick covers which can be installed quickly should the property become at risk of flooding to stop the ingress of flood water below 0.6m.

8 Conclusion

8.1 This report serves to review and assess the sources of potential flooding to the site, the impact of the proposed development on the flooding mechanisms of the site and the impact on existing development in the vicinity of the site.

8.2 The Sequential Test and Exception Test do not need to be applied as this development is classed as minor development in accordance with paragraph 104 the Planning Policy Guidance.

8.3 The proposed development falls within defended Flood Zone 3 which means it has greater than 1% annual probability of flooding in any given year.

8.4 The mitigation measures recommended in Section 7 will help reduce the effects of flooding should an event occur.

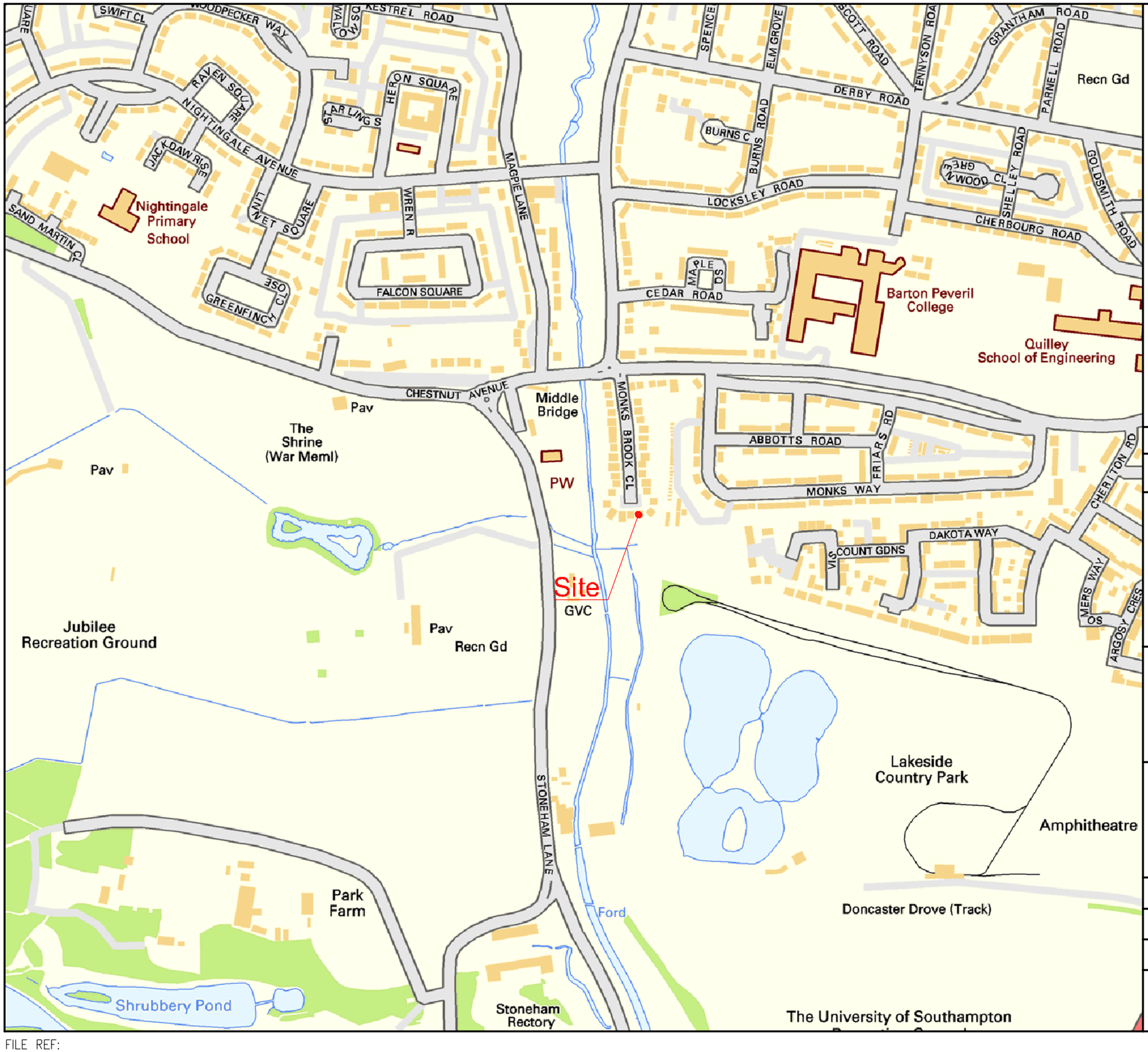
8.5 The proposed finished floor levels of the proposed extensions are to be set no lower than the existing floor levels.

8.6 This report concludes that the proposed development can be constructed without being at an unacceptable risk of flooding and without increasing the risk to the site itself or other sites in the vicinity, Inline with the NPPF, PPG and Environment Agency standing advice for developments of this type.

APPENDIX A - Drawings

Location Plan: 8479/001

Architects Drawings



O.S. Grid Reference
444332, 118000

Rev	Amendment	Drawn	Date	Checked

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Project Name

18 Monksbrook Close
Eastleigh, Hampshire

Drawing Title

Site Location Plan

Scale 1:1500		Drawn By	KB
Drawing Size	A3	Checked By	DH
Date	05-02-15	Approved By	DH

QiMS ISO 9001 REGISTERED FIRM

Drawing Number 8479-001

Rev

FILE REF:

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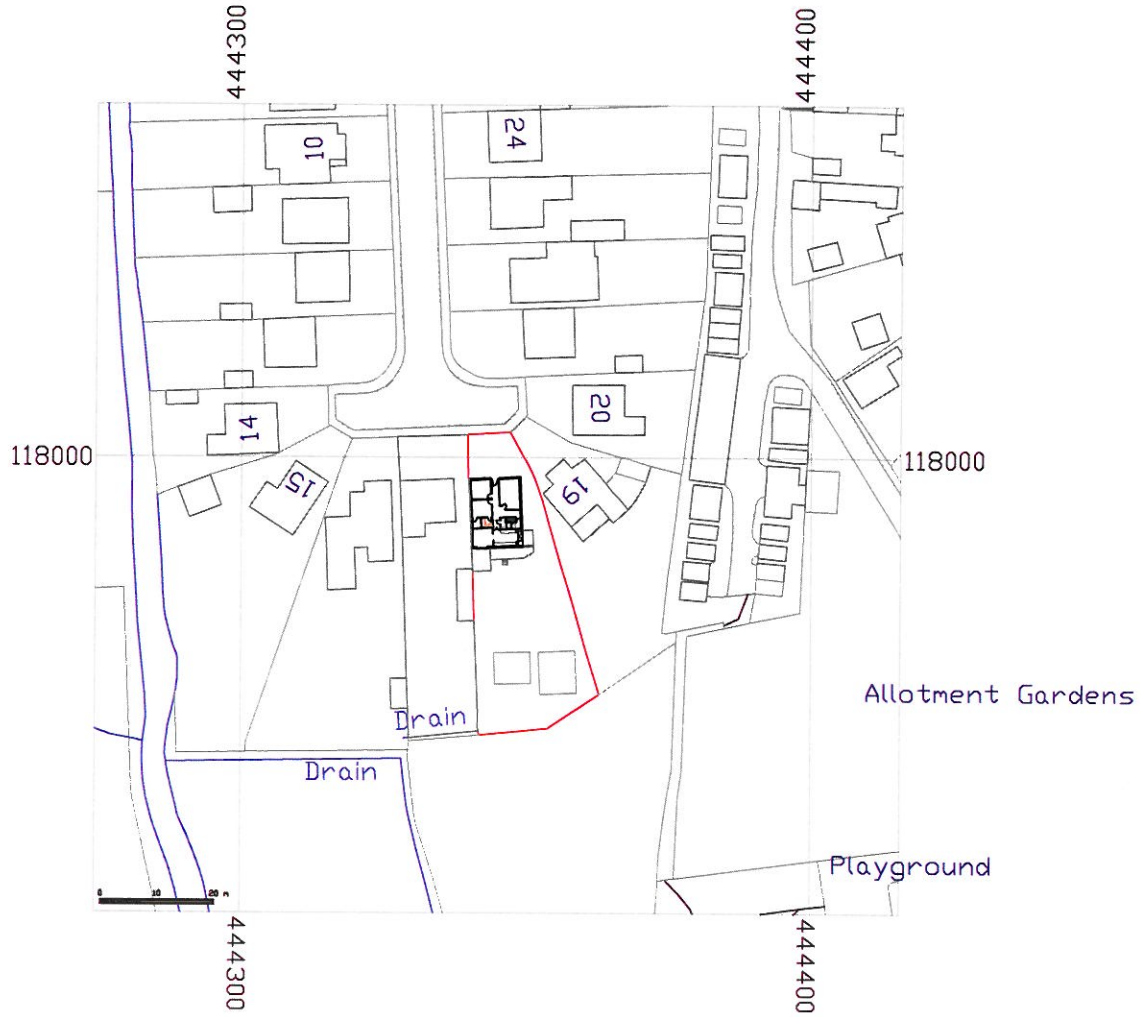



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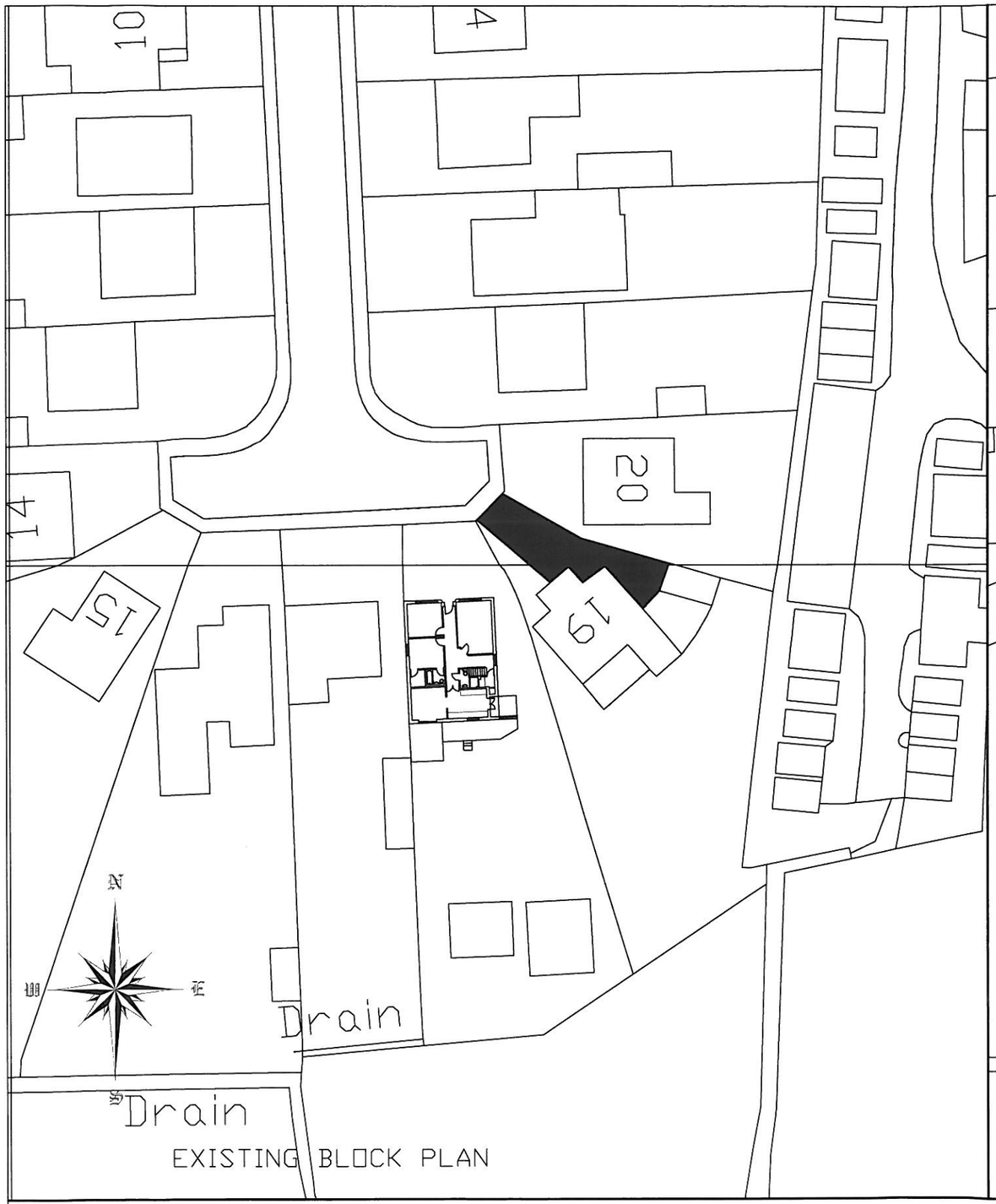
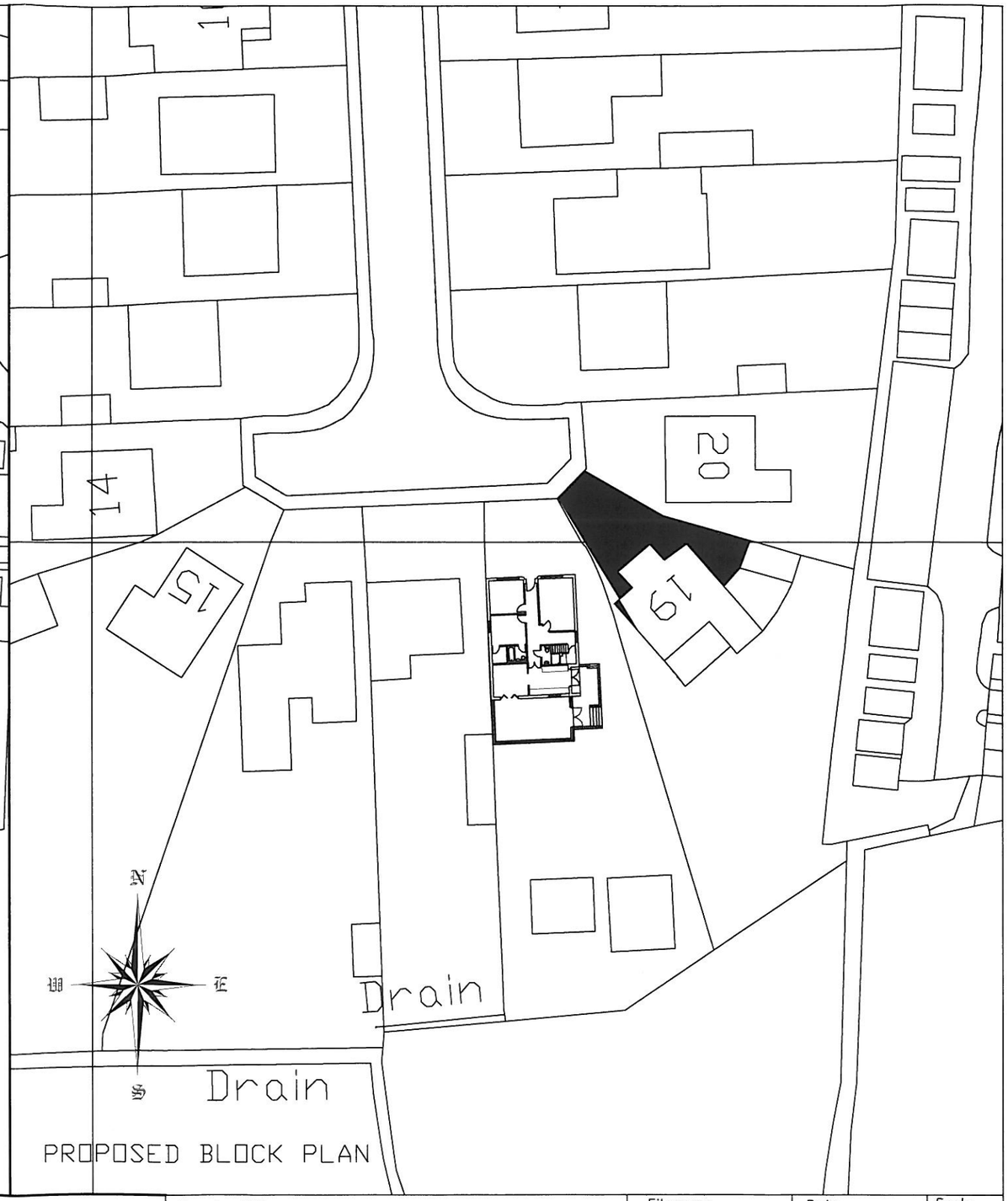


EXISTING BLOCK PLAN



PROPOSED BLOCK PLAN

Drawing Title:

BLOCK/SITE PLANS

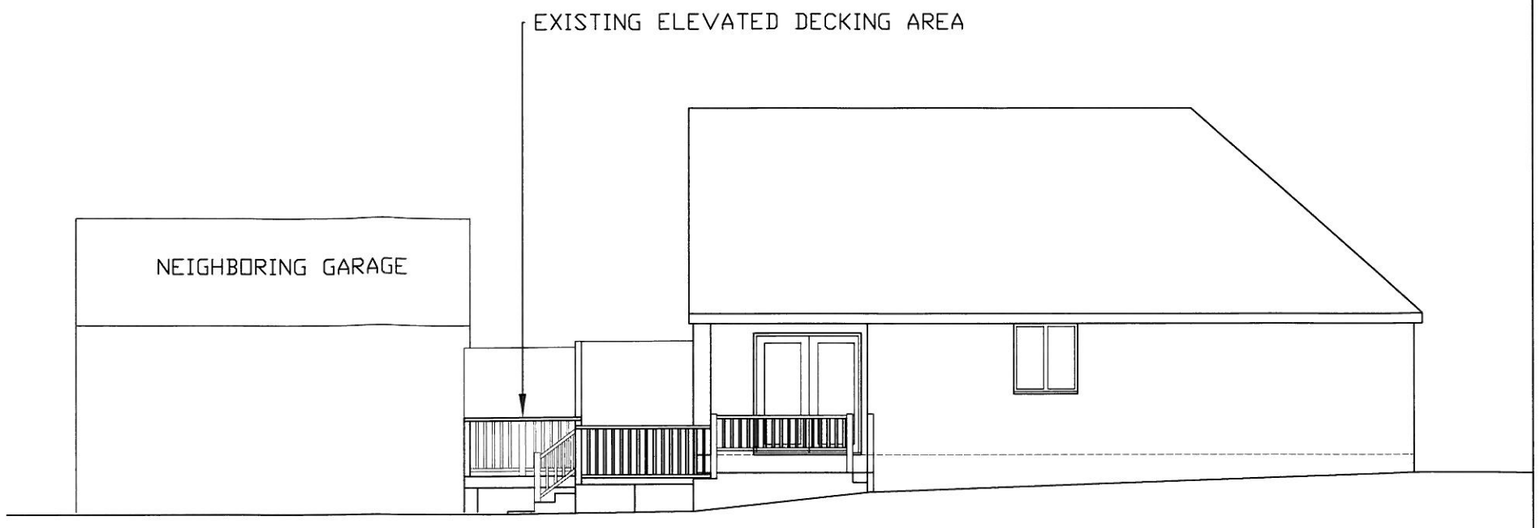
Filename	Date	Scale
A3/18MC/03	DEC 2014	1:100

Client Details:

RevNo	Revision note	Date	Signature	Checked



EXISTING REAR ELEVATION



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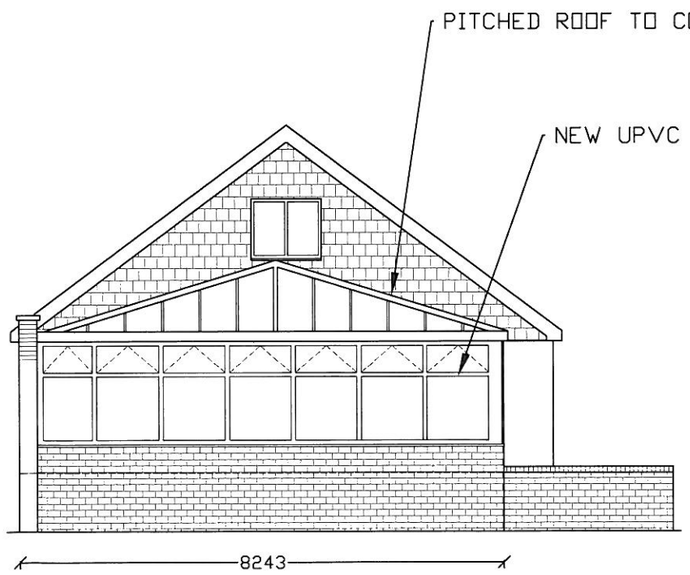

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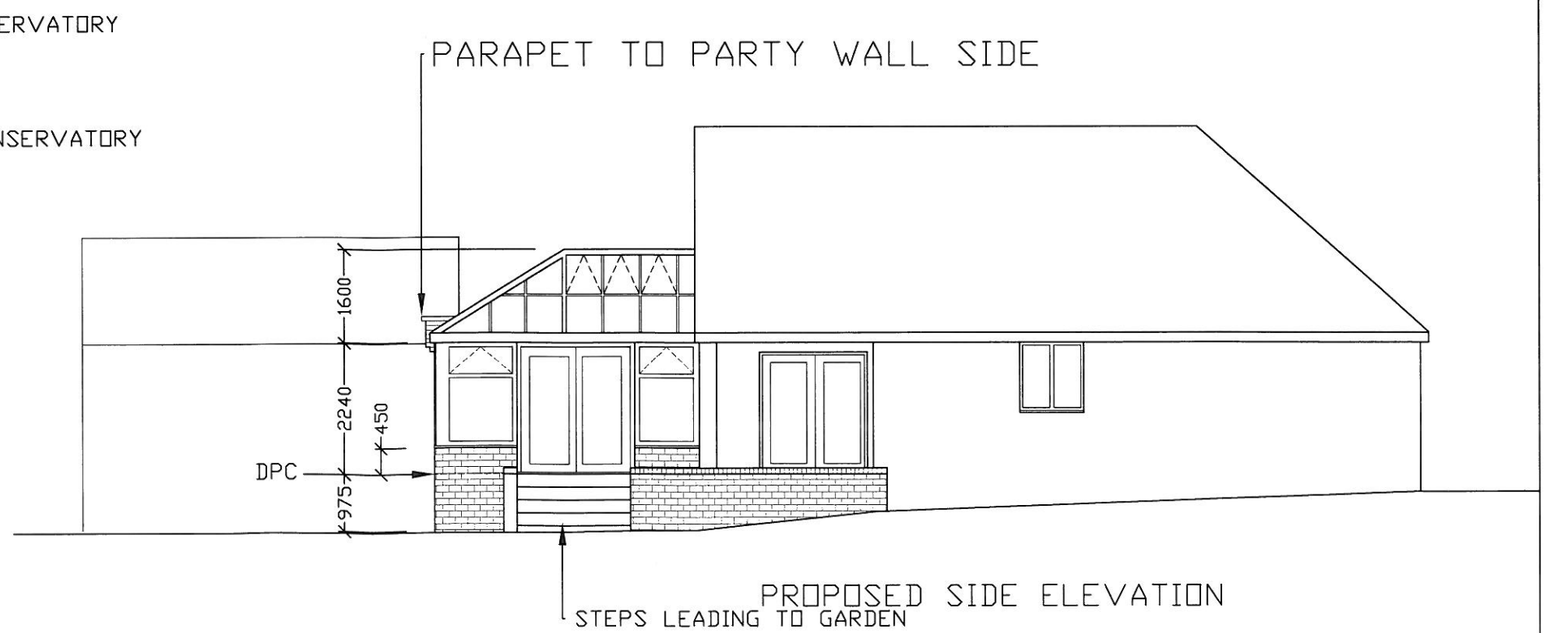

PROPOSED SIDE ELEVATION

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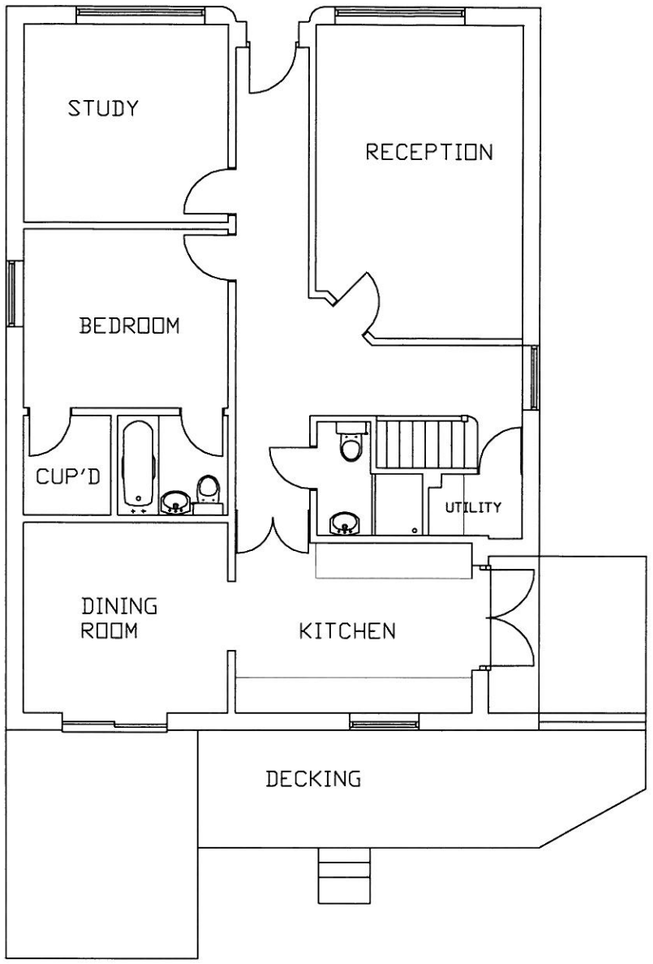
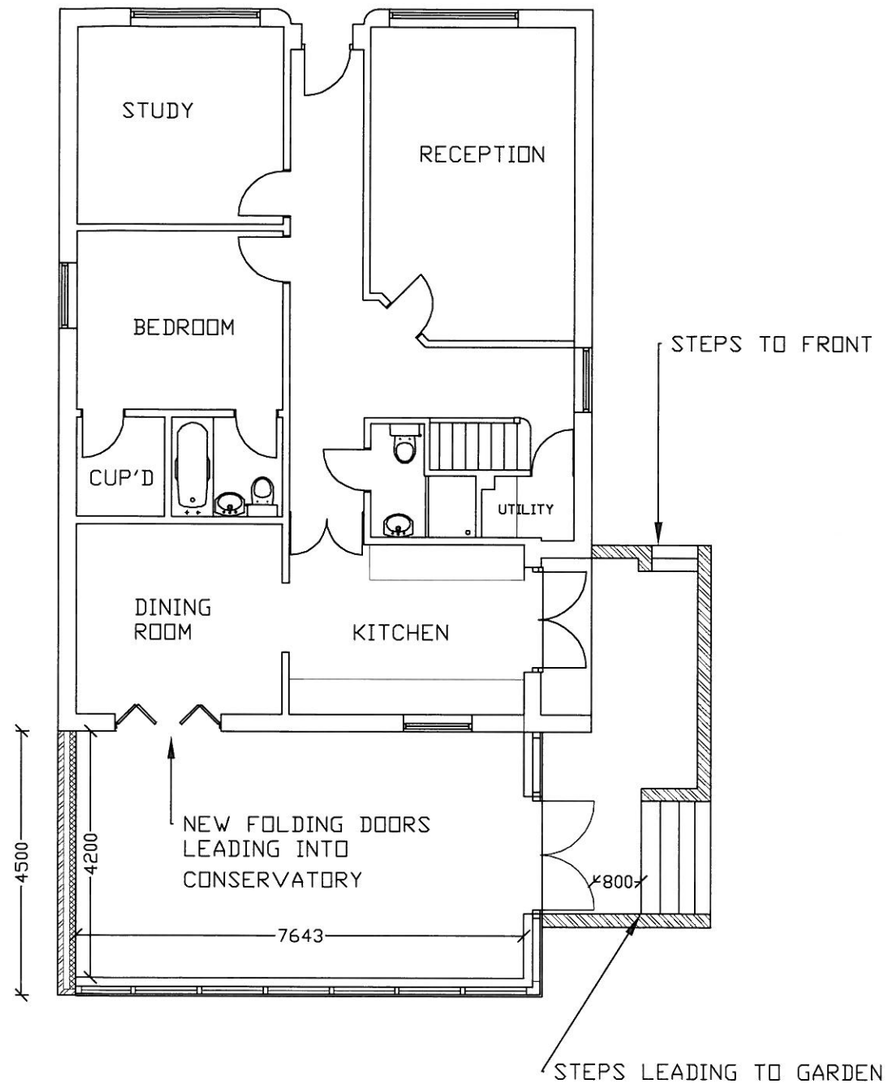
RevNo	Revision note	Date	Signature	Checked



EXISTING FLOOR PLAN



EXISTING FLOOR PLAN

Drawing Title:	Filename	Date	Scale
FLOOR PLANS	A3/18MC/02	DEC 2014	1:100
	Client Details:		

APPENDIX B – Environment Agency Form

Environment Agency

Route to this page

Restart Print Form

Householder and other minor extensions in Flood Zones 2 and 3

This guidance is for domestic extensions and non-domestic extensions where the additional footprint created by the development does not exceed 250 sq. metres. It should NOT be applied if an additional dwelling is being created, e.g. a self contained annex. In this instance consult the Environment Agency.

We recommend that:

Planning Authorities:

1) Refer the applicant to the standing advice pages on the Environment Agency website or provide them with a copy of this page for them to include as part of the planning application submission.
2) Check the planning application to ensure that one or other of the mitigation measures from the table below has been incorporated.

Applicants:

Complete the table below and include it with the planning application submission. The table, together with the supporting evidence, will form the Flood Risk Assessment (FRA) and will act as an assurance to the Local Planning Authority (LPA) that flood risk issues have been adequately addressed.

Applicant to choose one or other of the flood mitigation measures below	**Applicant to provide the LPA with the supporting Information detailed below as part of their FRA**	**Applicant to indicate their choice in the box below. Enter 'yes' or 'no'**
Either ; Floor levels within the proposed development will be set no lower than existing levels AND, flood proofing of the proposed development has been incorporated where appropriate.	Details of any flood proofing / resilience and resistance techniques, to be included in accordance with `*Improving the flood performance of new buildings*' CLG (2007)	YES
Or; Floor levels within the extension will be set 300mm above the known or modelled 1 in 100 annual probability river flood (1%) or 1 in 200 annual probability sea flood (0.5%) in any year. This flood level is the extent of the Flood Zones	This must be demonstrated by a plan that shows finished floor levels relative to the known or modelled flood level. All levels should be stated in relation to Ordnance Datum[1]	NO

Subterranean/basement extensions

Due to the risk of rapid inundation by floodwater basements should be avoided in areas at risk of flooding. The LPA may hold additional guidance for basement extensions.

Self-contained basement dwellings are `highly vulnerable' development and should not be permitted in Flood Zone 3. We are opposed to these developments.

Continued...

[1] Ordnance Datum or the abbreviation 'OD' is the mean level of the sea at Newlyn in Cornwall from which heights above sea level are taken. The contour lines on Ordnance Survey maps measure heights above OD for example, though these are not accurate enough for a flood risk assessment..

Cumulative impact of minor extensions and the removal of Permitted Development rights.

There is potential for cumulative impact of minor extensions to have a significant effect on flood risk. Where local knowledge (Strategic Flood Risk Assessment held by the LPA/information provided by the parish council) suggests this is the case the guidance contained in FRA guidance note 2 should be applied. FRA guidance note 2 can also be applied where permitted development rights have been removed for flood risk reasons. The Environment Agency does not usually comment on minor development in this category.

Permeable paving and changes to permitted development rights for householders

On the 1st October 2008 the General Permitted Development Order (GPDO) in England was amended by the Government (Statutory Instrument 2008 No. 2362).

One of the changes introduced by the GPDO amendment is the removal of permitted development rights for householders wishing to install hard surfacing in front gardens which exceeds 5sq. metres (i.e. 1m x 5 m) without making provision to ensure permeability. This means that use of traditional materials, such as impermeable concrete, where there is no facility in place to ensure permeability, requires an application for planning permission.

In order to help and advise householders of the options for achieving permeability and meeting the condition for permitted development status the Department for Communities and Local Government (CLG) has produced guidance on permeable paving which can be found on the following link http://www.communities.gov.uk/publications/planningandbuilding/pavingfrontgardens

The Environment Agency supports the GDPO amendment as it is in line with the recommendations of the Pitt Report regarding the need to better tackle the impact of surface water flooding. However, Local Planning Authorities should determine these applications in accordance with the CLG guidance **without** consulting the Environment Agency.

End of comment