PROPOSED DEVELOPMENT

NEW PARK CENTRE, NEW PARK ROAD, CHICHESTER

LEVEL 1 SITE SPECIFIC FLOOD RISK ASSESSMENT

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1. Flood Risk Assessment – produced by Giffords on Kier's Shipphams Development planning reference: CC/05/00430/FUL

Issue No.	Copies	Distribution	Format	Date	Status
1	1	Boxall Sayer	E-mail	26 March 2008	Draft for comment
1	1	R Fennell Esq (email: rod.fennell@virgin.net)	E-mail	26 March 2008	Draft for comment
2	1	Boxall Sayer	E-mail	28 March 2008	Final
2	1	R Fennell Esq (email: rod.fennell@virgin.net)	E-mail	28 March 2008	Final

1.0 INTRODUCTION

1.1 Archibald Shaw was commissioned by Boxall Sayer on behalf of The New Park Centre to undertake a Flood Risk Assessment in accordance with Planning Policy Statement 25 [PP 25] on the proposed redevelopment of the New Park Centre in Chichester, which is herein known as 'the site'. The scheme comprises the refurbishment of the Victorian building and the construction of a new extension to provide additional Community Rooms, the provision of a second screen for the Cinema and a new Martial Arts and Fitness Facility. This site is shown as Figure 1 within the appendix.

1.2 This report has been undertaken in the absence of a Strategic Flood Risk Assessment [SFRA]. At the time of writing this report, Chichester District Council has not undertaken an SRFA.

1.3 Third party information has been obtained from the following sources:

- Archibald Shaw's project records
- Environment Agency
- Site Topographic survey
- Southern Water

1.4 Nothing in this report confers or purports to confer on any third party, any benefit or any right to enforce any term of this report pursuant to the Contract (Rights of Third Parties) Act 1999.

2.0 PROPOSED DEVELOPMENT

2.1 Details of the proposed development are shown on the enclosed architect's planning drawings. Whilst the design ground floor levels are not shown, it is likely that the new floor levels will be no lower than the existing site level, with a value of 14.25m AOD approximately.

2.2 A copy of the site topographic survey and planning drawings are enclosed within the appendix.

3.0 DESCRIPTION OF SITE AND SURROUNDING AREA

3.1 The site, used as a community centre, comprises a collection of buildings that date from the Victorian era, and bituminous macadam hardstandings for pedestrian and vehicular use. See photographs within appendix.

3.2 Access to and from the site is gained from New Park Road to the east and the public car park from the south.

3.3 Site pavement levels are generally flat, but with a gentle fall towards the east and the New Park Road. This gives the site a slightly elevated position in respect to the highway and the local public car park. Site pavement levels are in the order of 14.25m AOD, with local highway levels in the order of 13.80m AOD.

3.4 To the west of the site is a recent housing development constructed by Kier Property Developments Ltd. This development was subject to a Flood Risk Assessment, which was produced in January 2005 by Gifford and Partners, and was part of the planning application for that development: Application Reference no. CC/05/00430/FUL. This report concludes that the Kier development site was at a very low risk from fluvial and surface water flooding.

3.5 Evidence obtained from the New Park Centre Manager confirms that the site has not flooded in 'living memory'.

3.6 Some 150m due south of the site lies the River Lavant which, to the east of the local 'Kwik Fit' garage on St Pancras, enters a series of culverts which takes the river beneath the city. In 1994/95 and 2000 these culverts surcharged and flooded above ground level. One of the most seriously affected areas was Eastgate Square and The Hornet. Water levels in these areas reached 13.50m AOD approximately and were predominantly caused by spring fed waters from the local Downs following a prolonged period of wet weather. New Park Centre was not flooded during these flood events.

3.7 River Lavant Flood Alluvial Scheme

3.7.1 In September 2001 phase 1 of the River Lavant Flood Alleviation scheme commenced. Works were undertaken in 3 phases, with the whole project being completed in late 2003. The scheme was devised to protect the city from future flooding from the River Lavant. The catalyst for the scheme was the severe floods of 1994.

3.7.2 The operation of the scheme allows river flows of up to 4.1 cumecs to pass through Chichester. 4.1 cumecs is considered to be a safe and sustainable peak flow which should not cause out of bank or culvert flooding. This assumes that watercourses, culverts and associated structures are reasonably maintained. Flows above this rate are diverted into the Westhampnett Tunnels, through two lakes and thence to Pagham Rife and the sea.

4.0 GEOLOGY AND GROUNDWATER MOVEMENTS

4.1 The British Geological Survey of England and Wales sheets 317 and 332 'Chichester and Bognor' indicate the site to be underlain by London Clay and Cretaceous Upper Chalk, with superficial geology comprising Head Gravel Deposits of the Quaternary Period.

4.2 Flows from the River Lavant are fed by Springs that rise from the chalk aquifer beneath the South Downs. Additional flows introduced into the river are from surface water run off that enter the culverts and open watercourses within Chichester. The effect of these flows are limited and are of short duration. The dominant flow, which can remain high for relatively long periods, is the groundwater induced flow.

4.3 Whilst no infiltration testing was undertaken as part of this study, it is considered that the local infiltration coefficients would be in the order of 5×10^{-5} m/s to 5×10^{-6} m/s. Such coefficients would allow the effective use of surface water infiltration systems.

5.0 FLOOD RISK ASSESSMENT

5.1 Chichester District Council have not yet prepared their area Strategic Flood Risk Assessment [SFRA]. Consequently our references relate to information available from the Environment Agency, topographic site data, knowledge of the River Lavant's performance within the city of Chichester, and anecdotal evidence.

5.2 By inspection of the Environment Agency's flood mapping the site lies within Flood Zone 1, as defined in PPS 25. A copy of the Environment Agency's indicative plan is shown as an appendix to this report.

5.3 Below are summarized the PPS 25 definitions of Flood Zones 1, 2, 3a and 3b.

5.3.1 **PPS 25 Definition of Flood Zone 1**

This Zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).

5.3.2 **PPS Definition of Flood Zone 2**

This Zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.

5.3.3 **PPS 25 Definition of Flood Zone 3a**

This Zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

5.3.4 **PPS Definition of Flood Zone 3b**

This Zone comprises land where water has to flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood within an annual probability of 1 in 20 (5%) or greater in any year of is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes.

5.4 Climate Change

5.4.1 It is generally accepted that changing weather patterns will result in increasingly wetter winters in the UK. Table B.2 from PPS 25 summarizes the likely increases in rainfall intensities over the next 100 years. This inevitably will increase the incidence of flooding in many areas of the UK.

Table B.2 is shown, in part, below:

Parameter	**1990 to 2025**	**2025 to 2055**	**2055 to 2085**	**2085 to 2125**
Peak rainfall intensity	+ 5%	+ 10%	+ 20%	+ 30%

Table B.2 [in part] PPS 25

5.4.2 The recent flood alleviation scheme and the site's relatively high level in respect to the River Lavant culverts will protect the site from flooding, and maintain the site within a Flood Zone 1 category.

5.5 Sequential and Exception Tests

5.5.1 It should be noted that minor developments and changes of use should not be subject to the Exception Test. Nevertheless, using the principles of the Exception Test given in PPS 25, it can be seen that:

a) Refurbishment, remodelling and minor extension works to the existing site arrangement, with a finished floor level equal to or greater than existing is both a sensitive and sustainable development.

b) The proposal is on previously developed land and is for a sympathetic development without change of use.

c) The development will not increase flood risk elsewhere. Furthermore, if the new works discharge surface water via on site soakaways the local flood risk can be reduced.

d) By ensuring the maintenance file for these properties include particulars on the Environment Agency's Flood Line Warnings Direct Scheme, and that new owners sign up to the scheme, flood prevention measures may be managed in advance of a known flooding event.

6.0 CONCLUSION

6.1 From this site specific flood risk assessment it appears that this sympathetic development proposal would not increase risk from flooding, and sustainably utilizes the site. The site lies within a Flood Zone 1 as indicated in the Environment Agency's Flood Map.

6.2 The design finished floor levels of the new buildings should not be less than existing site floor levels, or 14.25m AOD, whichever is the lower.

6.3 To minimize risk from flooding more actively, the new owner/occupier should sign up to the Environment Agency's Flood Line Warnings Direct Scheme.

6.4 The use of on site infiltration systems such as soakaways and porous pavements will minimize the impact of this development on areas downstream and along the course of the River Lavant.

Prepared by Eur Ing Vincent Carpenter BSc CEng MICE FCIWEM MIHT

Date 28 March 2008

APPENDIX