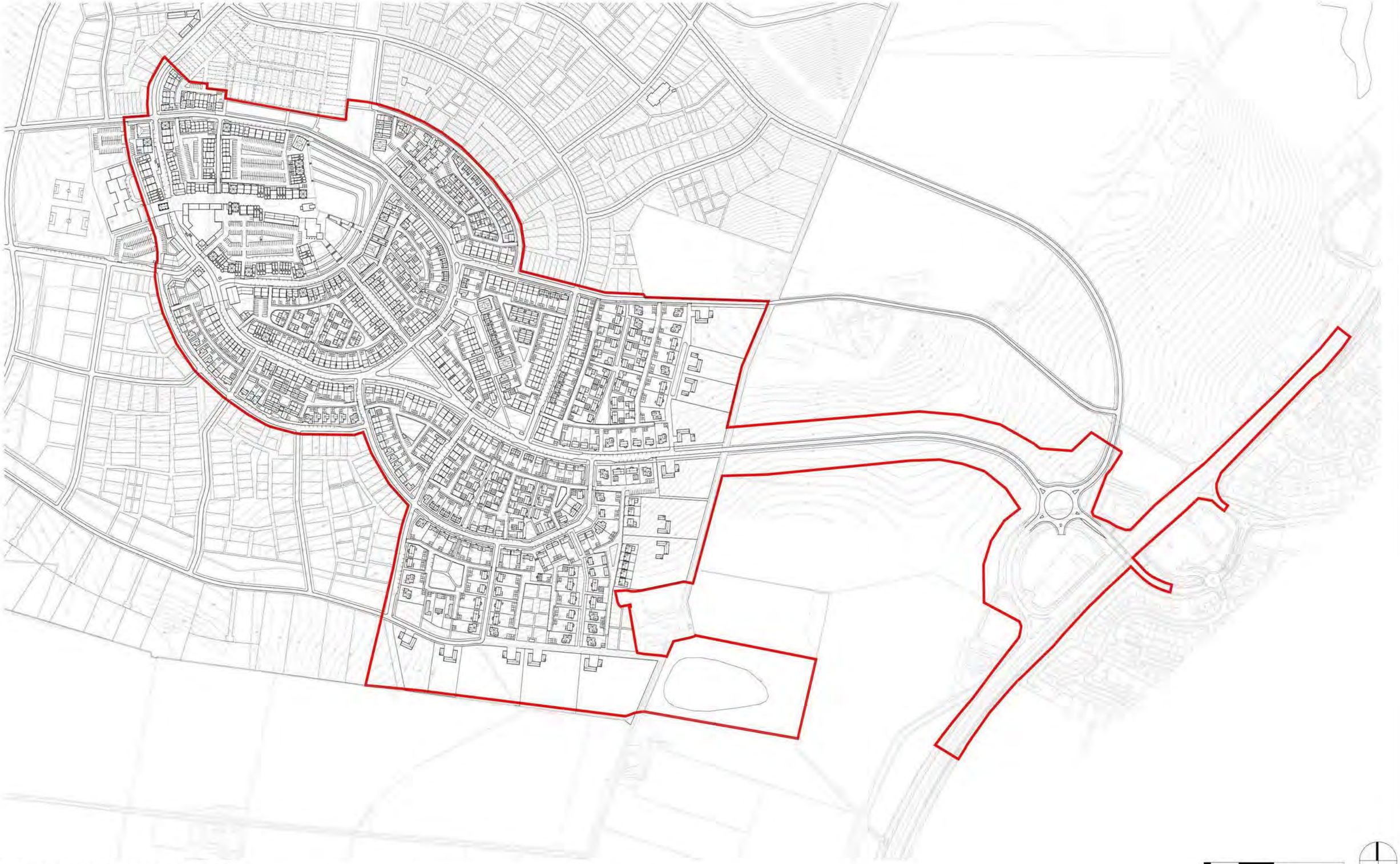
Indicative Masterplan

- Shops, Offices and Mixed-Use Buildings
- Potential Locations for Buildings of Civic Importance
- Existing Buildings
- Predominantly Residential Development
- Open Space
- Agricultural Plots
- Streets
- Ponds
- Detention Basins

N

0 50 100 200 400



BROOKS / MURRAY ARCHITECTS 8-10 NEW NORTH PLACE LONDON EC2A 4JA | TEL 020 7739 9955 FAX 020 7739 9944 | architects@brooksmurray.com

CLIENT: Elsick Development Company

DRAWING TITLE: Phase 1A Plan

JOB: Chapelton of Elsick

DATE: Aug 2011

SCALE: 1:5000 @ A3 1:2500 @ A1

DRAWING NUMBER: 859-199 A

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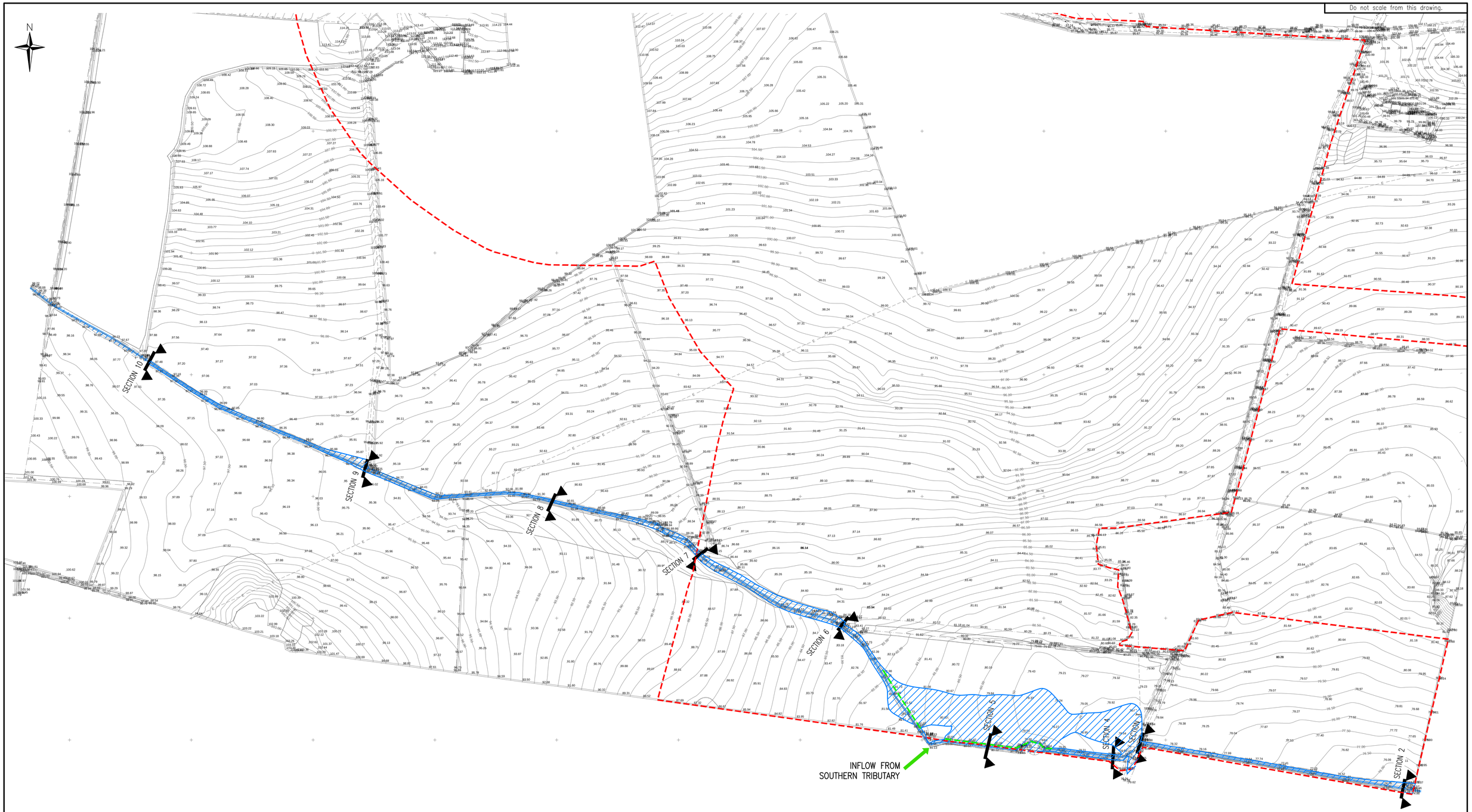


Rev.	Date	Description	Drawn	Checked	Approved
C	19/04/12	UPDATED FOLLOWING REFINED ASSESSEMENT OF OVERLAND FLOODING USING MORE DETAILED SURVEY BETWEEN SECTIONS 6 AND 3	JK	VF	KMHB
B	17//11/11	UPDATED TO REFLECT RESULTS OF DETAILED FRA.	KAB	VF	KMHB
A	31/08/11	MASTERPLAN BOUNDARIES UPDATED.	KAB	VF	KMHB

NOTES:

1. TOPOGRAPHICAL SURVEY EXTRACTED FROM SURVEY INFORMATION RECEIVED FROM DOUGLAS LAND SURVEYS Ltd, DATED 27/06/11.
2. CROSS SECTION LOCATIONS EXTRACTED FROM FAIRHURST SURVEY, DATED NOVEMBER 2011.

LEGEND:

- 1 in 200Yr FLOOD EXTENT
- 1 in 200Yr FLOOD EXTENT OUTWITH LIMITS OF SURVEY INFORMATION
- 1 in 200Yr FLOOD EXTENT WITH SPILL
- SITE BOUNDARY
- OVERLAND FLOOD ROUTE
- EXTENDED SECTION LOCATION
- SECTION LOCATION
- EXTENT OVER WHICH WATER SPILLS FROM BURN

Client: CHAPELTON OF ELSICK

Project Title: CHAPELTON OF ELSICK FRA

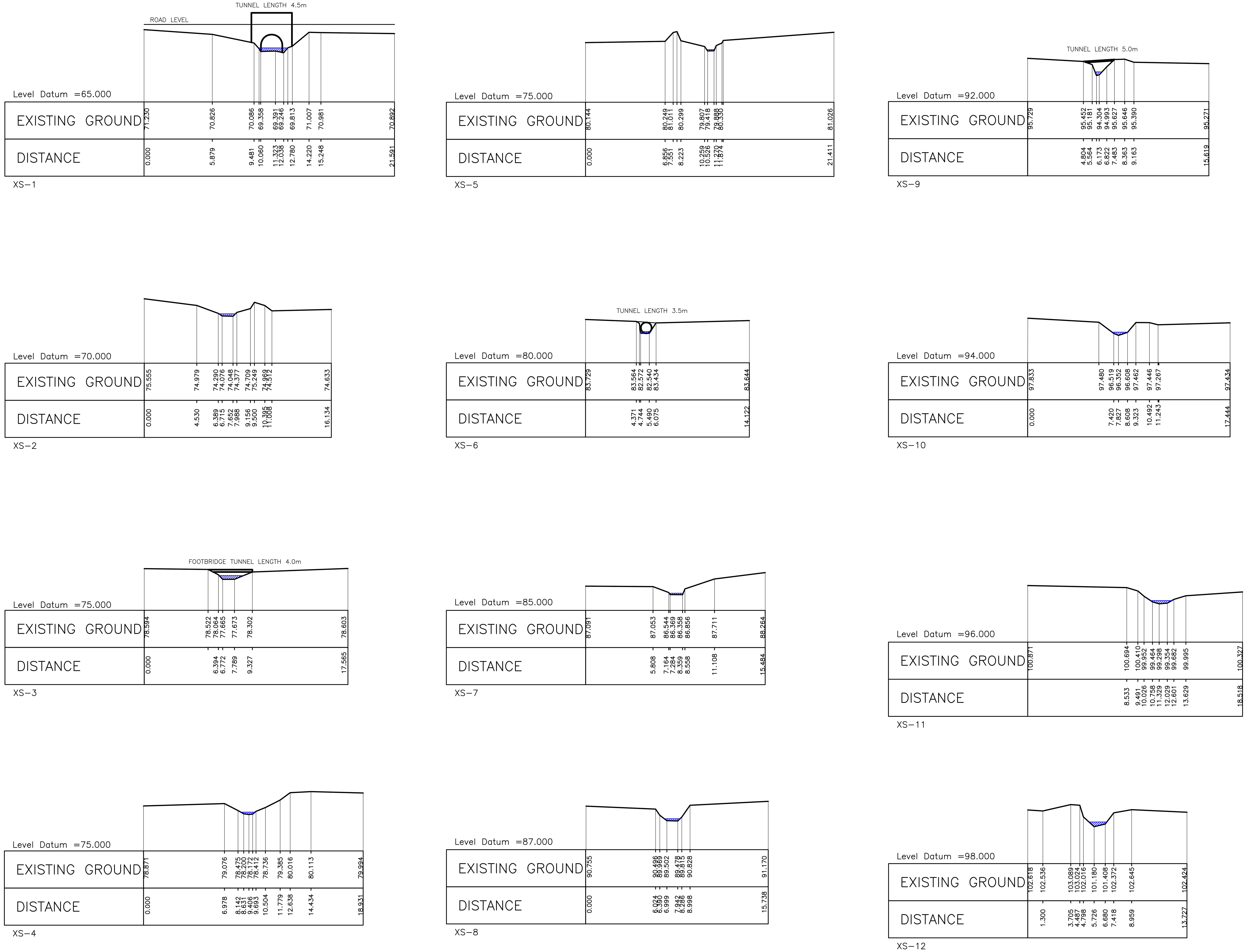
Drawing Title: EXTENT OF FLOODING PHEPPIE BURN PHASE 1A

FAIRHURST
W.A. Fairhurst & Partners
225 Bath Street, GLASGOW, G2 4GZ
Tel: 0141 204 8800 Fax: 0141 204 8801

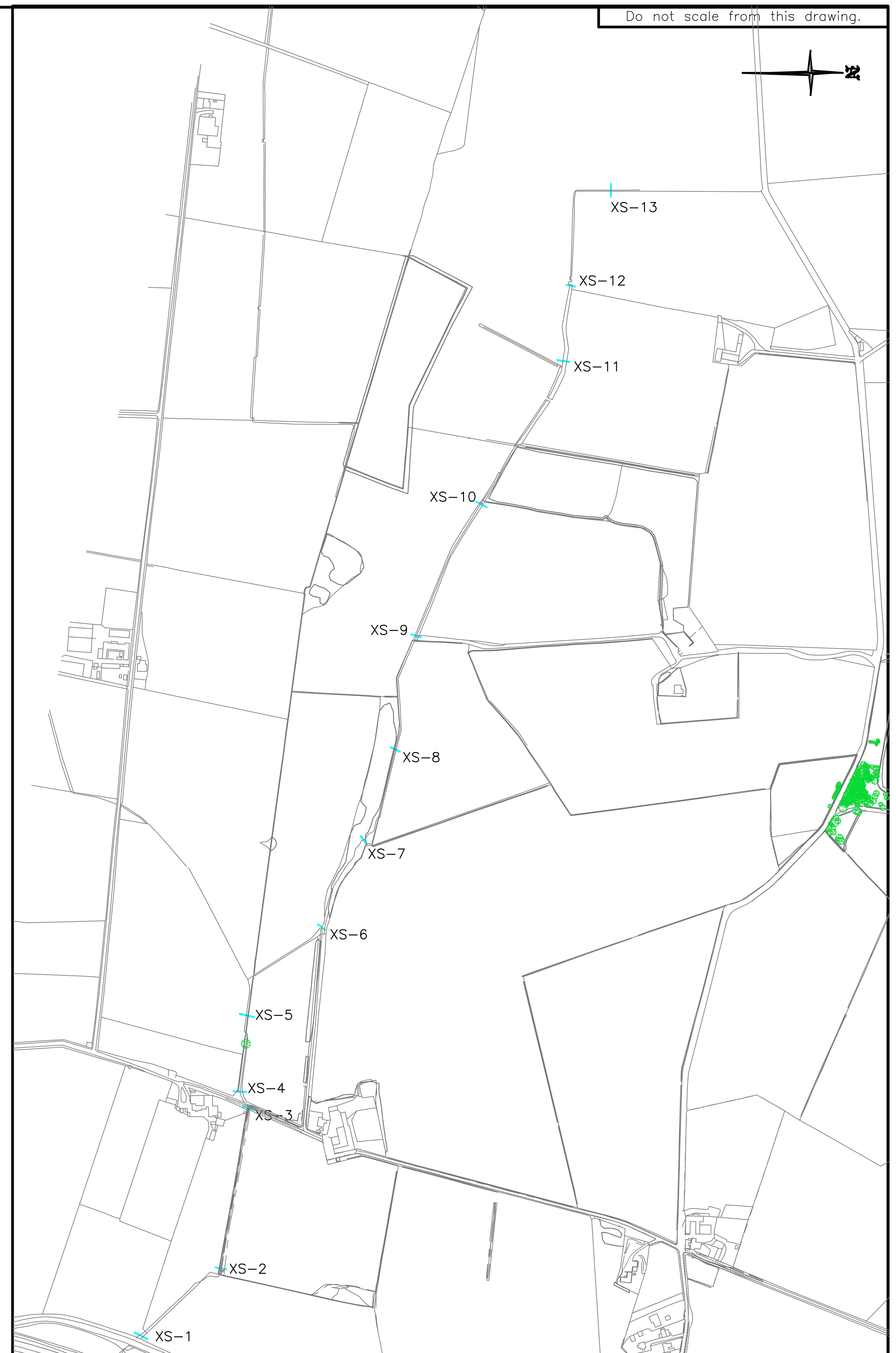
Scale at A1:	Status:	
1:1500	INFORMATION	
Drawn:	Checked:	Approved:
KAB	VF	KMHB
Date:	Date:	Date:
15/11/11	17/11/11	17/11/11

Drawing No.: 72054/2101 Revision: C

Do not scale from this drawing.



BURN CROSS SECTIONS
SCALE 1:200



SECTION LOCATION PLAN
SCALE 1:5000

Rev.	Date	Description	Drawn	Checked	Approved

Notes:

Client:

Project Title:
CHAPELTON OF ELSICK
NEWTONHILL
ABERDEENSHIRE

Drawing Title:
PHEPPIE BURN
FRA CROSS SECTIONS

FAIRHURST

W.A. Fairhurst & Partners
88 Queens Road, ABERDEEN, AB15 4YQ
Tel: 01224 321 222 Fax: 01224 323 201

Scale at A1:	Status:	
AS SHOWN	For Information	
Drawn: KF	Checked:	Approved:
Date: 08/11/11	Date:	Date:
Drawing No.: 72054/2110		Revision: –

Do not scale from this drawing.

N

Track

Nether Cairnhill

Drain

Track

Ford

Pheppie Burn

Track

Burn of Pheppie

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THIS REGISTER IS A NON-EXHAUSTIVE LIST OF RESIDUAL HAZARDS RELATING TO THE WORKS SHOWN ON THIS DRAWING THAT HAVE BEEN IDENTIFIED DURING THE DESIGN STAGE

SIGNIFICANT RESIDUAL HAZARDS	DETAILS

Rev.	Date	Description	Drawn	Checked	Approved

NOTES:

1. TOPOGRAPHICAL SURVEY CARRIED OUT BY FAIRHURST, ABERDEEN APRIL 2012.
2. ALL LEVELS TO ORDNANCE DATUM.

Client:

CHAPELTON OF ELSICK

Project Title:

CHAPELTON OF ELSICK PHASE 1a
FLOOD RISK ASSESSMENT

Drawing Title:

PHEPPIE BURN
ADDITIONAL SURVEY
AT NETHER CAIRNHILL

FAIRHURST
225 Bath Street,
GLASGOW, G2 4GZ
Tel: 0141 204 8800 Fax: 0141 204 8801

Scale at A1:	Status:	
1:500	For Information	
Drawn:	Checked:	Approved:
KAB	VF	KMHB
Date:	Date:	Date:
17/05/12	17/05/12	17/05/12
Drawing No.:		Revision:
72054/9910		–

APPENDIX B – HYDROLOGICAL ASSESSMENT

Catchment Descriptors

	Northern Catchment	Southern Catchment	Comments
AREA	**1.26**	**1.40**	FEH CD Rom area adjusted following review of OS mapping
ALTBAR	106.640	105.000	
ASPBAR	124.085	88.000	
ASPVAR	0.534	0.600	
BFIHOST	0.501	0.504	
DPLBAR	1.136	1.203	
DPSBAR	40.038	27.900	
FARL	1.000	1.000	
LDP	4.175	2.600	
PROPWET	0.370	0.370	
RMED-1H	8.764	8.600	
RMED-1D	36.700	36.700	
RMED-2D	48.764	48.600	
SAAR	810.280	807.000	
SAAR4170	825.841	816.000	
SPRHOST	47.400	47.400	Original value 27.3 - updated following Institute of Hydrology Report 101
URBCONC2000	--	--	
URBEXT2000	0.000	0.000	
URBLOC2000	--	--	
C	-0.010	-0.011	
D1	0.479	0.479	
D2	0.420	0.421	
D3	0.239	0.237	
E	0.229	0.231	
F	2.244	2.243	

Note:

Northern catchment descriptors were not available explicitly from FEH CD Rom. The figures used in the analysis have therefore been derived through manual adjustment following FEH procedures.

Northern Catchment

ISIS output data file:

```
                                          FILE=59.dat            ISIS VER= 6.1.1.38
************************************************************
ISIS
************************************************************

HYDROLOGICAL DATA

Catchment: P1
************************************************************
Catchment Characteristics
************************************************************
Easting         :         0 Northing       :         0
Area            :     1.262 km2
DPLBAR          :     1.140 km
DPSBAR          :    40.040 m/km
PROPWET         :     0.370
SAAR            :   810.280 mm
Urban Extent    :     0.000
c               :    -0.010
d1              :     0.480
d2              :     0.420
d3              :     0.240
e               :     0.230
f               :     2.240
SPR             :    47.400 %
************************************************************
Summary of estimate using Flood Estimation Handbook rainfall-runoff method
************************************************************
Estimation of T-year flood
==========================
Unit hydrograph time to peak   :     2.841 hours
Instantaneous UH time to peak  :     2.791 hours
Data interval                  :     0.100 hours
Design storm duration          :     5.300 hours
Critical storm duration        :     5.143 hours
Return period for design flood :   200.000 years
requires rain return period    :   246.667 years
ARF                            :     0.977
Design storm depth             :    66.134 mm
CWI                            :   117.028
Standard Percentage Runoff     :    47.400 %
Percentage runoff              :    49.825 %
Snowmelt rate                  :     0.000 mm/day
Unit hydrograph peak           :     0.098 (m3/s/mm)
Quick response hydrograph peak :     2.490 m3/s
Baseflow                       :     0.027 m3/s
Baseflow adjustment            :     0.300 m3/s
Hydrograph peak                :     2.517 m3/s
Hydrograph adjustment factor   :     1.000

Flags
=====
Unit hydrograph flag           : FSRUH
Tp flag                        : FEHTP
Event rainfall flag            : FEHER
Rainfall profile flag          : WINRP
Percentage Runoff flag         : FEHPR
Baseflow flag                  : F16BF
CWI flag                       : FSRCW
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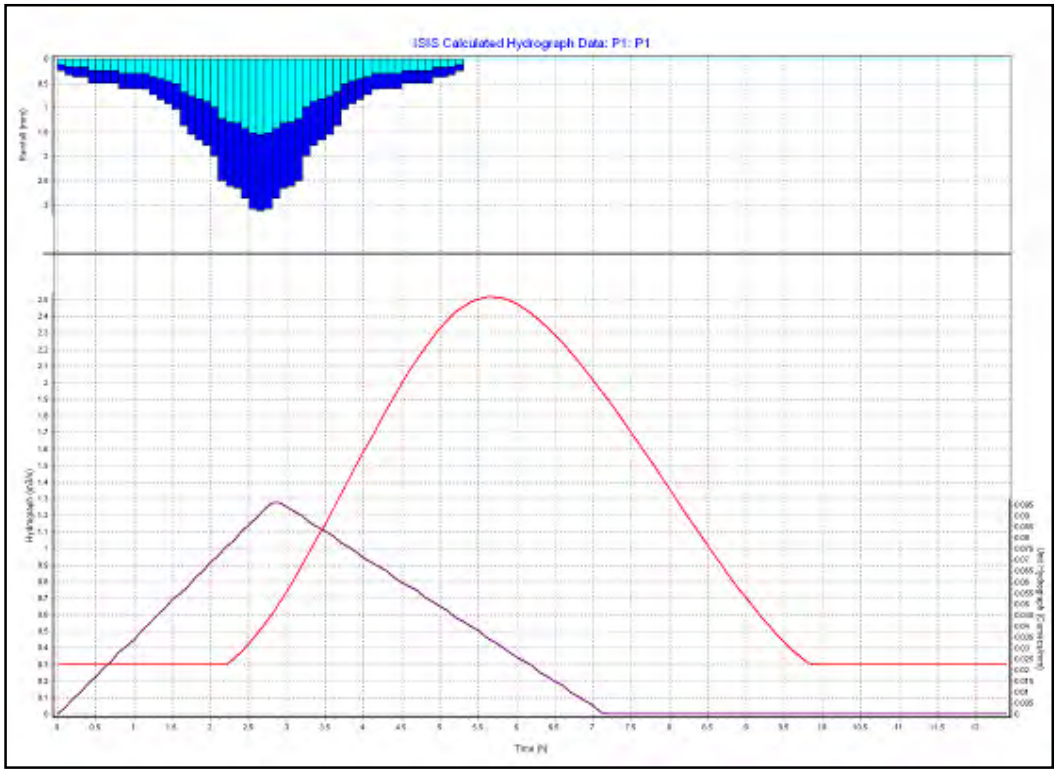
Calculated hydrograph



Southern catchment

ISIS output data file:

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ISIS
************************************************************

HYDROLOGICAL DATA

Catchment: Pheppie-S
************************************************************
Catchment Characteristics
************************************************************
Easting        :         0 Northing       :         0
Area           :     1.402 km2
DPLBAR         :     1.203 km
DPSBAR         :    27.900 m/km
PROPWET        :     0.370
SAAR           :   807.000 mm
Urban Extent   :     0.000
c              :    -0.011
d1             :     0.479
d2             :     0.421
d3             :     0.237
e              :     0.231
f              :     2.243
SPR            :    47.400 %
************************************************************
Summary of estimate using Flood Estimation Handbook rainfall-runoff method
************************************************************
Estimation of T-year flood
==========================
Unit hydrograph time to peak   :     3.310 hours
Instantaneous UH time to peak  :     3.260 hours
Data interval                  :     0.100 hours
Design storm duration          :     6.100 hours
Critical storm duration        :     5.982 hours
Return period for design flood :   200.000 years
requires rain return period    :   246.667 years
ARF                            :     0.977
Design storm depth             :    70.002 mm
CWI                            :   116.700
Standard Percentage Runoff     :    47.400 %
Percentage runoff              :    50.192 %
Snowmelt rate                  :     0.000 mm/day
Unit hydrograph peak           :     0.093 (m3/s/mm)
Quick response hydrograph peak :     2.541 m3/s
Baseflow                       :     0.030 m3/s
Baseflow adjustment            :     0.200 m3/s
Hydrograph peak                :     2.571 m3/s
Hydrograph adjustment factor   :     1.000

Flags
=====
Unit hydrograph flag           : FSRUH
Tp flag                        : FEHTP
Event rainfall flag            : FEHER
Rainfall profile flag          : WINRP
Percentage Runoff flag         : FEHPR
Baseflow flag                  : F16BF
CWI flag                       : FSRCW
************************************************************
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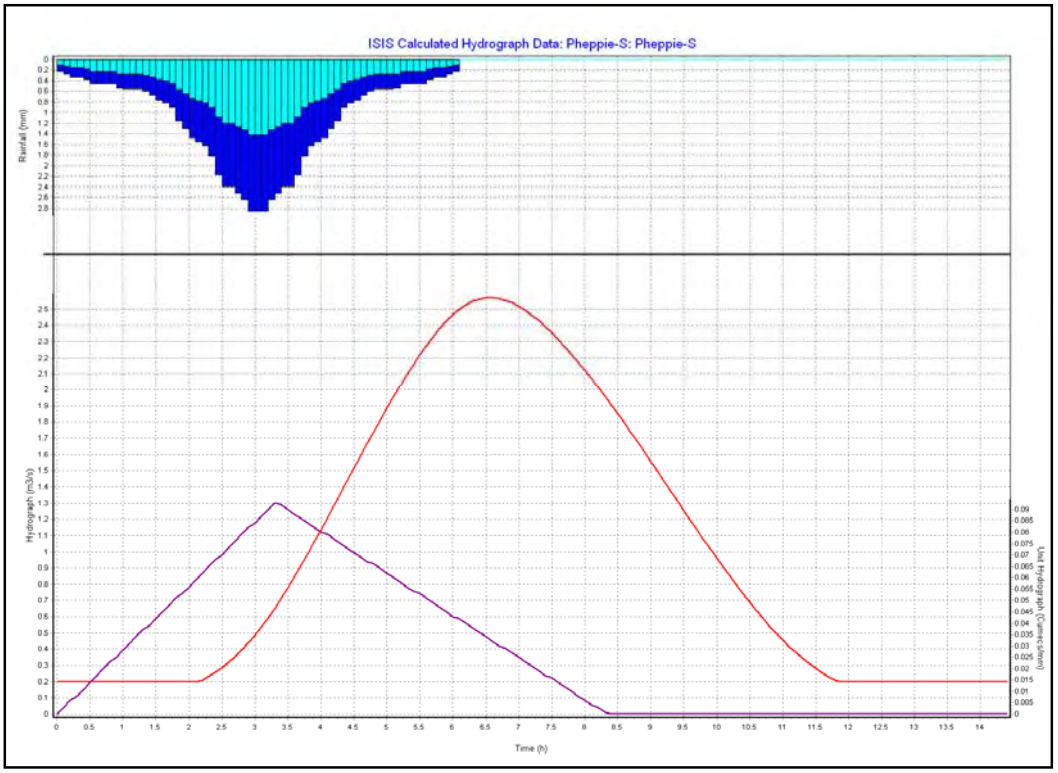
Calculated hydrograph



APPENDIX C – CORRESPONDENCE

Our ref: PCS/113021
Your ref: ENQ/2011/0525

Jamie Scott
Aberdeenshire Council
Planning and Environmental Services
Viewmount
Arduthie Road
Stonehaven
AB39 2DQ

If telephoning ask for:
Zoe Griffin

26 April 2011

By email only to: km.consultations@aberdeenshire.gov.uk

Dear Jamie

EIA Screening/Scoping Opinion for New Settlement Incorporating 4045 Dwellinghouses (Mixed House Types), Business Land (Classes 4, 5 and 6) and Associated Infrastructure

Thank you for consulting SEPA on the Environmental Impact Assessment (EIA) Scoping Report for the above by way of your email dated 29 March 2011.

As you are aware we have previously been consulted on the proposed development for this site by the applicant via the Charrette process. Although we were unable to attend any of the Charrette meetings we sent written comments at each stage of the consultation process and are pleased to note that most of the issues highlighted in our responses have been carried through to the Scoping Report where applicable.

The Scoping Report is comprehensive and we generally agree with its findings. We confirm that the following key issues should be addressed in the EIA process:

- Flood risk
- Drainage and surface water quality
- Hydrogeology (Geo-Environment)
- Waste management and pollution prevention (Utilities and Waste)

We also agree the following issues should be addressed in the EIA process in relation to our interests:

- Soils
- Ecology

One area which we consider has not been adequately addressed in the Scoping Report is hydromorphology. In the attached Appendix we have outlined why we wish to see this specifically included in the Environmental Impact Assessment (EIA) process but in summary, hydromorphology should be included in the EIA with particular consideration of the *future* condition of the watercourses on the site.

We have given further advice on each of the above issues in the attached Appendix. Please note that all of these issues should be addressed in the Environmental Statement (ES), but there may be opportunities for several of these to be scoped out of detailed consideration. The justification for this approach in relation to specific issues should be set out within the ES.

Our advice at the pre-application stage is based on emerging proposals and our formal position is reserved until the planning application is submitted. This advice is given without prejudice to any decision made on elements of the proposal regulated by us, which may take into account factors not considered at the pre-application or planning stage.

If you have any queries relating to this letter meantime, please contact me by telephone on 01224 266655 or by e-mail to planningaberdeen@sepa.org.uk.

Yours sincerely

Zoe Griffin
Senior Planning Officer
Planning Service

Ecopy to: Elsick Development Company - info@elsick.co.uk

APPENDIX - FURTHER ADVICE FROM SEPA FOR ENQ/2011/0525

1. Flood risk

1.1 We welcome the general principle shown throughout the Masterplan of creating areas of open space around the existing watercourses. However it should be noted that there are a few areas where development does encroach close to the watercourses and the proposals include a number of crossings on the watercourses. For those reasons, we would object to any planning application for the development on the site unless it was supported by a Flood Risk Assessment (FRA) to demonstrate that the development accords with the principles of Scottish Planning Policy.

1.2 However, we have already highlighted to the applicant that parts of the application site lies within the 1 in 200 year (0.5% annual probability) flood envelope of the Indicative River & Coastal Flood Map (Scotland), and may therefore be at medium to high risk of flooding. We therefore welcome the fact that within the Scoping Report it is stated in section 6.9 that a FRA will be produced which is compliant with relevant policies within Scottish Planning Policy. We provide further advice below on the undertaking of a FRA.

1.3 For further information we refer the applicant to the document entitled: "*Technical Flood Risk Guidance for Stakeholders*". This document provides generic requirements for undertaking Flood Risk Assessments and can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning__flooding.aspx. Please note that this document should be read in conjunction with Annex B in SEPA Policy 41: "*Development at Risk of Flooding, Advice and Consultation – a SEPA Planning Authority Protocol*", available from www.sepa.org.uk/flooding/flood_risk.aspx.

1.4 The FRA will (or other information) be required to demonstrate that the development accords with the principles of Scottish Planning Policy.

1.5 Other appropriate information might include pre and post development site and finished floor levels related to nearby watercourses, appropriate photographs and/or any nearby historical flood levels. However if this information is insufficient to provide a robust assessment of the risk of flooding to the development then a detailed flood risk assessment may need to be carried out by a suitably qualified professional.

1.6 Our Flood Risk Assessment checklist should be completed and attached within the front cover of any flood risk assessments issued in support of a development proposal which may be at risk of flooding. The document will take only a few minutes to complete and will assist our review process. It can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning_flooding/fra_checklist.aspx

1.7 Please note that we are reliant on the accuracy and completeness of any information supplied by the applicant in undertaking our review, and can take no responsibility for incorrect data or interpretation made by the authors.

1.8 The flood advice contained in this letter is supplied to you by SEPA under the Environmental Information (Scotland) Regulations 2004 in response to your request for information under these regulations.

2. Drainage and surface water drainage

2.1 It has been highlighted to the applicant that the treatment of surface water runoff by sustainable drainage systems (SUDS) is a legal requirement for most forms of development however the location, design and type of SUDS are largely controlled through planning. We encourage surface water runoff from *all* developments to be treated by SUDS in line with Scottish Planning Policy, PAN 61 *Planning and Sustainable Urban Drainage Systems*, PAN 79 *Water and Drainage* and Policy Inf\4B in the Aberdeenshire Local Plan. SUDS help to protect water quality, reduce potential for flood risk and release capacity in the public sewerage network where the alternative is use of combined systems. Discharges to combined sewers should be avoided to free up capacity for waste water discharges.

2.2 We are pleased to note from the Scoping Report (section 6.9) that a drainage strategy will be prepared as part of the EA process. It is important to ensure that adequate space to accommodate SUDS is incorporated within the site layout, and that this is outwith the functional floodplain. Consideration should be given to this matter early in the planning process when proposals are at their most fluid and modifications to layout can be easily made with less expense to the developer. For this scale of development, we would **object** unless a planning application is supported by a suitable Drainage Strategy or Drainage Impact Assessment to demonstrate how surface water can be acceptably drained on the site.

2.3 We have already provided the applicant with SUDS advice and have highlighted that the need to separate out SUDS from other facilities should be minimised where possible and the "pipe-free" drainage system should be encouraged. The schemes which were referred to in our previous responses is now available on the following link: http://www.gcvgreennetwork.gov.uk/component/option,com_docman/Itemid,53/gid,185/task,cat_view/

2.4 Comments from Scottish Water should be sought where the SUDS proposals would be adopted by them. We encourage the design of SUDS to Sewers for Scotland Second Edition standards and the adoption of SUDS features by Scottish Water as we are of the view that this leads to best standards and maintenance.

2.5 SUDS must be used on all sites, including those with elevated levels of contaminants. SUDS which use infiltration will not be suitable where infiltration is through land containing contaminants which are likely to be mobilised into surface water or groundwater. This can be overcome by restricting infiltration to areas which are not affected by contamination, or constructing SUDS with an impermeable base layer to separate the surface water drainage system from the contaminated area. SUDS which do not use infiltration are still effective at treating and attenuating surface water. Please refer to the advice note on SUDS and brownfield sites for further information.

3. Construction Environmental Management Document (CEMD) and pollution prevention

3.1 One of our key interests in relation to major developments like this is pollution prevention measures during the periods of construction and demolition. We have advised that the applicant, through the planning submission, should systematically identify all aspects of site work that might impact upon the environment, potential pollution risks associated with the proposals and identify the principles of preventative measures and mitigation.

3.2 We are pleased to note from the Scoping Report (section 6.10) that an assessment will be made of surface water pollution and mitigation will be adopted in accordance with our Pollution Prevention Guidelines. Details of the specific issues that we expect to be addressed are available on the Pollution Prevention and Environmental Management section of our website.

3.3 Any activities carried out on site that include the use of potential contaminants such as the use of fuel/oil should be carried out in such a manner that pollution of the whole water environment, **not just surface water**, does not occur. Any destabilisation works, excavations, ground disturbance or stripping of vegetation and or topsoil should also be carried out in such a manner to ensure that pollution of the water environment does not occur.

3.4 A key issue for us is the timing of works. Therefore, the Schedule of Mitigation should include a timetable of works that takes into account all environmental sensitivities which have been raised by SEPA, SNH or other stakeholders. Timing should also be planned to avoid construction of roads, dewatering of pits and other potentially polluting activities during periods of high rainfall. We can provide useful information such as rainfall and hydrological data through our Access to Information Team.

3.5 A Construction Environmental Management Document (CEMD) is a key management tool to implement the Schedule of Mitigation. We recommend that the principles of the CEMD are set out in the planning application drawing together and outlining all the environmental constraints and commitments, proposed pollution prevention and mitigation measures.

3.6 The CEMD should form the basis of more detailed site specific Construction Environmental Management Plans (CEMPs) which along with detailed method statements may be required by planning condition or, in certain cases, through environmental regulation. This approach provides a useful link between the principles of development which need to be outlined at the early stages of the project and the method statements which are usually produced following award of contract (just before development commences).

3.7 We recommend that the detailed CEMD is submitted for approval to the determining authority at least two months prior to the proposed commencement (or relevant phase) of development to order to provide consultees with sufficient time to assess the information. This document should incorporate detailed pollution prevention and mitigation measures for all construction elements potentially capable of giving rise to pollution during all phases of works on site. This document should also include any site specific CEMPs and Construction Method Statements provided by the contractor as required by the planning authority and statutory consultees. The CEMD and CEMP do not negate the need for various licences and consents, eg CAR and PPS, if required. The requirements from the obtained licences and consents should be included within the final CEMPs.

4. Hydrogeology (Geo- Environment)

4.1 We note from the Scoping Report, section 6.11, that a Phase 1 geo-environmental study will be undertaken

4.2 However it should be noted that the applicant will need to provide detailed plans of the proposal, with any cuttings or excavations for roads or building developments, clearly defined and address any groundwater drainage/abstraction requirement at the planning application stage and therefore we advise that this information is provided and assessed as soon as practicable.

4.3 A detailed water features survey will be required at the Environmental Assessment stage. This should include any springs, wells and abstractions, as well as discharges, surface water features and potentially sensitive habitat (ground water dependant terrestrial ecosystems – GWDTE) in the area. Grid references for all features should be provided. Wells and springs should be investigated as to condition and any current usage. Appropriate assessment of the potential risks posed by the proposed scheme to each receptor will be required. If risks are identified SEPA would expect to see proposals for any necessary mitigation measures.

4.4 A private water supply survey should be undertaken to identify any that may be present in the vicinity. If Private Water Supplies (PWS) are present, a full and site specific risk assessment should be undertaken and included within the ES.

4.5 If risk to or abstraction to a PWS or GWDTE is identified the ES should either:

- Provide a quantitative hydrogeological assessment that establishes the size of the Zone of Contribution feeding groundwater to the water supply or GWDTEs and identifies the proportion of flow that will be reduced as a consequence of any construction. This will need to be accompanied by a risk assessment that identifies whether this reduction in flow is significant. For water supplies, this will need to take account of the impact of the reduction in flow on the level of water in the supply as compared with the pump or outflow level. For GWDTEs, this will require an ecological assessment of the environmental supporting conditions of the GWDTE.
- Or demonstrate that the applicant has agreed with the owner of the abstraction to provide an alterative supply.

4.6 It is noted that an initial ground contamination assessment will be undertaken. It is recommended that the applicant identify, characterise and appropriately assess any potentially contaminated land in accordance with present regulations and SEPA guidelines. If significant contamination is identified, then remediation and/or other mitigation measures may be required.

5. Hydromorpholgy

5.1 As stated in the covering letter we request that a hydromorpholgy assessment is included within the final ES. We have stated below the reasons for this request.

5.2 The site encompasses a significant proportion of the Burn of Elsick catchment. There are also a number of small tributaries feeding both main burns within the site. The Burn of Elsick is a SEPA baseline water body (ID 23251). As highlighted previous;y to the applicant, the Burn of Elsick is presently at overall bad status and is at less than good status for morphology mainly due to channel realignment. The data on which this has been based has been partially verified by field survey so confidence in classification is high. The vast majority of the channel realignment contributing to downgrade in status sits within the development site. The Pheppie Burn is not a SEPA baseline water body. It is apparent from maps and aerial photos that much of the Pheppie Burn and the smaller tributaries of both burns have also been historically realigned.

5.3 Whilst the Water Framework Directive (WFD) is currently an obvious driver for improving the status of the Burn of Elsick, it is conceivable that the Pheppie Burn and smaller tributaries would become targets for restoration in the future, albeit the longer term. The significant change to land use proposed presents a unique opportunity to incorporate or at least allow for future restoration of the water environment.

5.4 In this regard it is welcomed that, as stated in the document, the masterplan is to leave the "valley of the burn" as open space.

5.5 Restoration of the Burn of Elsick will predominantly require re-connection of the burn with its floodplain (realignment has also caused deepening) and restoration of a sinuous planform with associated bed features such as pool-riffle sequences. Whilst this would best be achieved by physical intervention there is also an option for "self-recovery" although this is much more unpredictable and will take much longer. In both cases, however, it is vital to allow space for future change to morphology, i.e. migration of the channel, as this is fundamental to the maintenance and functioning of good channel morphology. **The EIA should therefore consider not just the current condition of the water environment but also the requirement for improvement under WFD and how the development could impact this.**

5.6 Although the masterplan should create the environment for restoration, if not deliver it, there are a number of ways in which it could also hamper restoration namely

- There may be an expectation that the burn should be "managed" within the park areas to make "attractive" water features. This would likely involve the introduction of artificial features such as weirs, bank reinforcement, bank re-profiling and realignments. Some of these may have the potential to assist recovery and restoration but most will only act to work against river processes. There is an opportunity to let the burn function naturally which is argueably more "attractive" and could be used as an educational tool.
- River crossings. The masterplan shows numerous new crossings as well as retention of several existing crossings. These all have the potential to act as "control" points on river morphology and be problematic in future either from a flooding or river processes point of view. Not only this but the proliferation of crossings has the potential to create a cumulative impact by punctuating natural processes e.g. sediment transport. This needs to be carefully considered when selecting crossing types as it could impact on restoration potential.
- Development too close to the burn (inadequate buffer). This does not look to be a problem for much of the site and a reasonable corridor has been afforded to the burn. There are however one or two locations where development and infrastructure is shown quite close. This needs to be carefully considered in the EIA in the context of long term restoration potential and development of river processes.

5.7 Although the Pheppie Burn and smaller tributaries are not baseline water bodies they are nonetheless important parts of the water environment and the latter contribute to the morphology of the baseline water body e.g. supply of sediment. There is therefore no reason why these should be treated any differently from the Burn of Elsick.

5.8 Being effectively a blank sheet of paper, this is a remarkable opportunity to "design out" many of the historic issues which normally exist between urban development and the water environment. It is therefore disappointing the scoping for the EIA does not include assessment of the physical water environment i.e. hydromorphology. We rerequest that hydrogeomorphology is included within the EIA process and it probably merits a separate section within the final ES.

6. Utilities and Waste

Waste water drainage

6.1 It is noted from section 6.20 of the Scoping Report that a sustainability and Infrastructure Report (SIR) will be prepared. The ES should include consideration of options for waste water treatment facilities. Drainage is a material planning consideration and will be assessed as part of your planning application in line with PAN 79 *Water and Drainage* and Policy Inf\4A in the Aberdeenshire Local Plan.

6.2 The waste water drainage from development within and close to the settlement envelope should be directed to that system. However we have made the applicant aware that there are infrastructure capacity issues for such a major development and there is a definite need for a new public foul sewer and associated pumping stations to transport flows to Nigg Waste Water Treatment Plant. Early dialogue with Scottish Water will be required to determine if works are planned to overcome this problem, or what developer pro-rata contributions will be necessary to remove the constraint.

Waste management

6.3 In accordance with Scottish Planning Policy and Policy Inf\6B in the Aberdeenshire Local Plan, space for collection, segregation, storage and possibly treatment of waste (eg individual and/or communal bin stores, bring banks and waste treatment facilities) should be allocated within the planning application site layout. Please consult with your local council's waste management team to determine what space requirements are required within the application site layout. Some local authorities have an information sheet setting out space requirements.

6.4 In accordance with Scottish Planning Policy, details of how waste will be minimised at the construction stage should also be outlined in the SIR and/or the ES submitted with the planning application which demonstrate that:

a) construction practices minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials;

b) waste material generated by the proposal is reduced and re-used or recycled where appropriate on site (for example in landscaping not resulting in excessive earth moulding and mounding). There may be opportunities to utilise surplus soils for sustainable purposes elsewhere.

6.5 To do this effectively all waste streams and proposals for their management should be identified, including materials excavated on site, demolition materials and the importation of any waste materials to the site. Accordingly, we recommend that a site specific site waste management plan is developed to address these points. This is in accordance with the objectives of Scottish Planning Policy and the National Waste Plan which aim to minimise waste production and reduce reliance on landfill for environmental and economic reasons.

6.6 Advice on how to prepare a site waste management plan is available on the netregs website and from Envirowise who also provide free advice on resource efficiency. Further advice on the reuse of demolition and excavation materials is available from the Waste and Resources Action Programme. Further guidance can also be found at our website. Information on waste prevention and waste minimisation is available on our waste minimisation webpage at www.sepa.org.uk/waste/resource_efficiency.aspx.

6.7 It is noted from the Scoping report that most of the site is in agricultural use and therefore it is unlikely that there will be peat on site. However, should any peat be found on site through the EIA process our interest would relate to the disposal of peat on the site as well as any impacts upon peatland hydrology as discussed below. Peat disposed at depth must be considered in the context of waste being landfilled and may not be possible under our regulatory regimes. Further guidance can be found in SEPA's Position Statement – *Developments on Peat*.

Water supply

6.8 It is noted from the allocation in Aberdeenshire Council's Proposed Local Development Plan that an upgrade to the Clochandighter service reservoir and a new reservoir may be required in association with the development of this site. We request that the Sustainability and Infrastructure Report assesses the demand for water and should an upgrade of new reservoir be required the impacts of this will need to be included in the EIA. It should be noted that on-line impoundments are regulated by us and the developer should seek additional advice should a new reservoir or upgrading of existing structures be required.

7. Ecology

7.1 We note that a considerable amount of ecological survey work has already been carried out but is not clear what has been undertaken in terms of the impact of the development on the freshwater environment and the habitat restoration potential of this development.

7.2 For a development such as this, it is important that the EIA clearly establishes the potential ecological impacts from construction of buildings, watercourse crossings, roads etc, on nearby watercourses. Although we note from section 6.10 of the Scoping Report that a qualitative assessment will be made of surfacewater pollution, **we would wish to see a method statement clearly stating the risks, likely impacts and mitigation measures to prevent pollution of the freshwater environment in terms of ecological impact.**

7.3 In order to establish the baseline ecological conditions in the freshwater environment, it is important that the EIA includes full ecological baseline assessments of the Elsick burn, Pheppie burn and any other watercourses, potentially impacted by the development. Water quality monitoring should include chemical and biological monitoring. We hold macroinvertebrate data for a site on the Elsick Burn at East Cammachmore (NGR: NO 91149 94037) from 1981-2003, this data is available from ecology on request. Monitoring of macroinvertebrates pre, during and post construction will provide a good indicator of any impacts on the ecology of the watercourse from the development.

7.4 The scoping report considers that the majority of the site is intensively managed farmland with limited habitat value (section 3.13). However, it is important that any wetland habitats present are identified. We therefore request that the EIA include an assessment of any wetlands that may be present, by using 'SNIFFER (2009) WFD95 – A Functional Wetland Typology for Scotland' (currently available for free download on the SNIFFER website). This may be used along with Phase 1 Habitat Survey. An NVC survey will also be required for wetland areas identified on the site to ensure there are no direct or indirect impacts on wetlands. The results of the habitat surveys should be shown on appropriate maps. If wetlands are identified and potentially impacted by the development, then details of appropriate mitigation measures should be included in the EIA.

7.5 The Elsick and Pheppie catchments are predominantly agricultural land, and the riparian habitats are therefore relatively degraded. The River Basin Management Plan (RBMP) for the Scotland River District sets out objectives for waterbodies to maintain or achieve good ecological status. A key objective is the 97% of all of Scotland's water should be in good condition by 2017. As the Burn of Elsick is currently at bad status for morphological pressures, we would like to see the plans for these watercourses incorporate riparian habitat restoration and enhancement, and adequate buffer strips. We see this development is an ideal opportunity to enhance the conservation value of the riparian habitat of these burns.

7.6 With regard to any new reservoir or upgrading of the existing the full ecological impacts will need to be assessed A new reservoir is likely to have implications for freshwater and wetland habitats in the locality and we would expect the impacts of this to be adequate taken into account. Additional survey work may be required to support an application which will affect those habitats.

7.6 We note that a number of open water areas are proposed – we refer the developer to our best practice guidance with regard to pond construction:
http://www.sepa.org.uk/pdf/guidance/hei/ponds.pdf

SEPA
Scottish Environment Protection Agency

Our ref: PCS/116304
Your ref: APP/2011/3103

If telephoning ask for:
Zoe Griffin

31 October 2011

Neil Mair
Aberdeenshire Council
Planning and Environmental Services
Viewmount
Arduthie Road
Stonehaven
AB39 2DQ

By email only to: km.consultations@aberdeenshire.gov.uk

Dear Neil

Town and Country Planning (Scotland) Acts
The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011
Planning Application: APP/2011/3103
Full Planning Permission for Phase 1A of New Settlement, Comprising 802 Dwellinghouses, Retail and Commercial Floorspace, Civic Buildings and Associated Landscaping at Land to West of Chapelton of Elsick, Newtonhill, Stonehaven

Thank you for your consultation email to SEPA of 30 September 2011 regarding the above planning application.

We **object** to this planning application on the grounds that it may place buildings and persons at flood risk contrary to Scottish Planning Policy and PAN 69. We will remove this objection if the issues detailed in Section 1 below are adequately addressed. In addition we **object** to this application due to lack of information on surface water drainage, hydromorphology/water engineering, and groundwater implications.

We also ask that the planning **conditions** in Section 2.1, 3.3, 3.6, 4.3 5.2, 6.1 and 7.1 be attached to the consent. If any of these will not be applied, then please consider this representation as an **objection**. Please also note the advice provided below.

In the event that the planning authority proposes to grant planning permission contrary to this advice on flood risk the application must be notified to the Scottish Ministers as per The Town and Country Planning (Notification of Applications) (Scotland) Direction 2009.

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, which may take into account factors not considered at the planning stage.

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Advice for the planning authority

1. Flood risk

1.1 We note that a 'high-level' Flood Risk Assessment (FRA) was carried out for the 4045 Masterplan, the scope of which was earlier agreed with ourselves, with a view to identifying where potential flooding may constrain development. The Flood Risk and Drainage Assessments for Phase A (Appendix 7 of the ES) states that *a detailed study is required to provide a more definitive flood outline in this area* (Phase 1A). It goes on to state that Appendix 7 is only a high level assessment and that the fluvial flood risk will be assessed in more detail once topographic survey information is available. It concludes (section8) *a detailed flood risk assessment will be undertaken to confirm the flood extent.*

1.2 The FRA submitted for Phase 1A is based on the assessment of flood risk carried out for the master plan and does not take the hydraulic capacity of the crossing on the Pheppie Burn into consideration. It depicts flooding from the Burn of Pheppie affecting mostly open ground but some properties and parts of access routes near the crossing may be at risk of flooding.

1.3 Therefore, based on the information provided, we consider that a detailed FRA has not been submitted in support of the Phase 1A proposal. We **object** to this application due to lack of information on flood risk grounds. In order to remove this objection a detailed FRA should be undertaken to accurately determine the 200 year flood envelope and therefore the associated developable area.

1.4 In terms of the additional information required for the detailed FRA, the following should be included:

a) As recommended in the 'high level' FRA, the topographic data should be updated.
b) It is also understood that a number of existing hydraulic structures which could potentially have an impact on flooding and these should be included within the model. Additionally, for any new structures proposed, in terms of design criteria, it is recommended that they are designed to convey the 200 year design flood.
c) Any proposed watercourse crossings should ideally be clear span and be designed to have a minimal afflux. As there is a proposed water crossing in Block 5 we request that the water crossing detailed design is submitted with the detailed FRA.
d) It is also recommended that climate change should be included in the hydrological modelling and we normally recommend a 20% allowance based on existing technical guidance (but it is also recommended that this is discussed with the Flood Prevention Authority).
e) Given that it appears that no significant calibration and validation has been undertaken, sensitivity analysis should be undertaken on roughness, design flows, downstream model boundary condition and hydraulic structure blockage.
f) Modelled cross sections and long profiles should also be provided to help verify the assessment.
g) It is also thought that a number of minor watercourses (with a catchment area of less than 3km^2 threshold for inclusion within the Indicative River and Coastal Flood Map (Scotland) flow through the site and it is recommended that the potential flood risk from these sources is also considered.
h) In addition finished floor levels and road levels should be provided for proposed developments located within or adjacent to the flood plain.

2. Foul drainage

2.1 We note that it is proposed to connect this phase of the development to the public sewer and it has been confirmed by Scottish Water that there is capacity in the sewer surcharging to the Portlethen South pumping station. As long as connection to this public sewer is secured by an appropriate planning **condition**, we have no comment to make on this aspect of the development.

2.2 It is noted that several properties lie within the development area that have private drainage arrangements. We would welcome any proposals that include the connection of these to the new foul sewage network.

3. Surface water drainage

3.1 We note from Appendix 7 of the ES that an adequate number of levels of treatment are proposed for each aspect of the development (one level for roof water, two levels for roads, car park areas and commercial/retail areas). In our scoping response dated 26 April 2011 we highlighted that it is important to ensure that adequate space to accommodate SUDS is incorporated within the site layout, and that this is outwith the functional floodplain.

3.2 Whilst we note a Conceptual Drainage Layout for Phase 1A has been produced (drawing number 72054/2011B), until the detailed FRA has been carried out and agreed then the location of the proposed SUDS basin (B1) cannot be finalised. In addition it is noted that some of the surface water from the northern parts of Phase 1A would drain to proposed Pond 1 but that this has not been included in the red line for the application nor can this location be agreed until detailed FRA undertaken for this phase of the development.

3.3 We therefore **object** to the SUDS proposals at present until further information is submitted in relation to flood risk as requested in Section 1 of this letter. Should the applicant wish not to produce a detailed FRA for the Burn of Elsick in relation to proposed Pond 1 at this time, we request that the part of Phase 1A where the surface water is to drain to this pond is not implemented until a detailed FRA for Elsick Burn is agreed. We would be satisfied for the latter to be ensured by **condition** once this part of Phase 1A has been clearly identified on a plan by the applicant. If such a condition is not attached please consider this representation as an objection.

3.4 Whilst we note that two levels of treatment will be provided by swales or filter trenches for the roads and commercial areas, and one level will be provided by soakaways for roof water, the Conceptual Drainage Layout does not indicate the location of these, that is, it is conceptual rather than detailed. In several areas of the proposed development is relatively dense and we are not satisfied that the applicant has demonstrated that there is adequate space to accommodate the SUDS outlined in the outline drainage assessment. Due to this lack of information on surface water drainage we **object** to this application. The objection could be removed if appropriate information as detailed in section 9 below is provided in order to demonstrate that a satisfactory Sustainable Drainage System (SUDS), with no unacceptable adverse impact on the water environment, can be accommodated on site.

3.5 The principle of SUDS is to be treated at source where possible. We recommend that the planning authority also satisfies itself that the SUDS proposals will comply with Building Regulations. From the submitted block plans it would appear that it may be difficult to locate soakaways 5m away from any building or road. Whilst it is not our remit to check this, we would highlight just a few examples where soakaway location maybe an issue:

Block 1 plan (drawing no. 859-201 E), Street B plots 30-34 for example.
Block 4 plan (drawing no. 859-204 E), Street G plots 35-40 for example.
Block 5 plan (drawing no. 859-205 E), Street C plot 20 for example.
Block 7 plan (drawing no. 859-206 E), No street name, plots 1, 66 & 67 north of Street K

We therefore recommend that indicative soakaway locations are also indicated on the revised detailed drainage plan for Phase 1A.

3.6 It is noted that a surface water management strategy will be prepared for each construction phase and that a Construction Method Statement (CMS) shall be submitted for approval for each phase of the development. We welcome this and request that this ensured by **condition.** If a condition is not attached then please consider this representation as an objection. We would be happy for the CMS to form part of the proposed Environmental Management Plan or to stand alone. If it is to stand alone we provide the following suggested wording:

Condition: *Prior to the commencement of any works, a Construction Method Statement shall be submitted for the written approval of the planning authority, in consultation with SEPA, and all work shall be carried out in accordance with the approved Statement. This statement shall provide details of how surface water run-off will be addressed during construction as well as incorporating the principles of all proposed pollution prevention and mitigation measures.*

Reason: *To ensure protection of the water environment.*

4. Hydrogeology (groundwater)

4.1 It is noted that several wells exist on the site, but there appears to be no mention of these within the ES. Chapter 12 touches upon the groundwater environment but any adverse impact to private water supplies has not been assessed.

4.2 In our scoping response dated 26 April 2011 we requested that a detailed water features survey be undertaken at the Environmental Assessment stage included any springs, wells and abstractions. Whilst the ES states that no licensed abstractions are located within or in close proximity to the site, three wells appear on the drawing Phase 1a Red Line Drawing (no. 859 – 103 M). It should be noted that Private Water Supplies (PWS) are generally small abstractions of less than 10 m^3/d and do not require authorisation by SEPA.

4.3 We therefore **object** to the application due to lack of information in relation to groundwater. We will consider removing this objection once a detailed water feature survey has been carried out as detailed in our scoping response dated 26 April 2011 which includes springs, wells and any private water supplies and more information for the applicant in this regard is given in section 10 below.

5. Hydromorpholgy and water course crossings

5.1 The Pheppie Burn runs along the southern boundary of Phase 1A. The planning authority should satisfy itself that the proposal complies with its own Buffer Strip policy. No Block 6 layout plan appears to be have been submitted for this area although a landscape strip is indicated on the Landscape Proposal for this block dated August 2011 drawing no 512_19911_10. We request a minimum 6 metre buffer strip should be maintained on either

bank. However it should be noted that this may have to be altered depending on the results of the detailed FRA still to be submitted.

5.2 It is unclear how the Pheppie Burn will be treated as it flows into Block 5 and how the proposed road will cross this. This Burn has been omitted from the Block 5 drawings in the Pattern Book for Phase 1A (dated September 2011) and hence we cannot assess if the development will have any negative impact on the Burn. We therefore **object** to the development due to lack of information on the proposed watercourse crossing and elimination of the Pheppie Burn from the Phase 1A Block 6 drawings. We will consider removing this objection if the Block 6 drawings are revised and submitted for appraisal along with detailed proposals for the proposed watercourse crossing. This will need to be assessed within the detailed FRA as discussed above.

6. Waste

6.1 It is noted from Chapter 17 of the ES that it is proposed to prepare a Site Waste Management Plan (SWMP) for each phase of the development. We welcome this and request that it is ensured by **condition**. If a condition is not attached then please consider this representation as an objection. To assist the following wording is suggested:

Condition: *Prior to the commencement of any works, a site waste management plan shall be submitted for the written approval of the planning authority, in consultation with SEPA, and all work shall be carried out in accordance with the approved plan.*

Reason: *To ensure that waste on the site is managed in a sustainable manner.*

6.2 In terms of space for waste management within the site layout, we are pleased to note that the Council's waste management team have already provided input at the scoping stage and have been consulted on this matter. We therefore have no further comment on this aspect of the development.

7. Pollution prevention

7.1 We note and welcome from section 5.45 of the ES for the Masterplan that an Environmental Management Plan (EMP) along with detailed method statements will be produced for the construction phase of the development which will consolidate the various mitigation measures proposed in the ES for the Masterplan. We request that this is secured by **condition**. If this is not undertaken please consider this representation as an objection. To assist, the following wording is suggested:

At least two (2) months prior to the commencement of any works, a full site specific environmental management plan (EMP) must be submitted for the written approval of the planning authority [in consultation with SEPA] [and other agencies such as SNH as appropriate] and all work shall be carried out in accordance with the approved plan.

Reason: to control pollution of air, land and water.

Detailed advice for the applicant

8. Flood risk

8.1 The Indicative River & Coastal Flood Map (Scotland) has been produced following a consistent, nationally-applied methodology for catchment areas equal to or greater than 3km^2 using a Digital Terrain Model (DTM) to define river cross-sections and low-lying coastal land. The outlines do not account for flooding arising from sources such as surface water runoff, surcharged culverts or drainage systems. The methodology was not designed to quantify the impacts of factors such as flood alleviation measures, buildings and transport infrastructure on flood conveyance & storage. The Indicative River & Coastal Flood Map (Scotland) is designed to be used as a national strategic assessment of flood risk to support planning policy in Scotland. For further information please visit www.sepa.org.uk/flooding/flood_map.aspx.

8.2 We refer the applicant to the document entitled: "*Technical Flood Risk Guidance for Stakeholders*". This document provides generic requirements for undertaking Flood Risk Assessments and can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning__flooding.aspx. Please note that this document should be read in conjunction with Annex B in SEPA Policy 41: "*Development at Risk of Flooding, Advice and Consultation – a SEPA Planning Authority Protocol*", available from www.sepa.org.uk/flooding/flood_risk.aspx.

8.3 Our Flood Risk Assessment checklist should be completed and attached within the front cover of any flood risk assessments issued in support of a development proposal which may be at risk of flooding. The document will take only a few minutes to complete and will assist our review process. It can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning__flooding/fra_checklist.aspx

8.4 The advice contained in this letter is supplied to you by SEPA in terms of Section 72 (1) of the Flood Risk Management (Scotland) Act 2009 on the basis of information held by SEPA as at the date hereof. It is intended as advice solely to Aberdeenshire Council as Planning Authority in terms of the said Section 72 (1). Our briefing note entitled: "*Flood Risk Management (Scotland) Act 2009: Flood risk advice to planning authorities*" outlines the transitional changes to the basis of our advice inline with the phases of this legislation and can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning__flooding.aspx.

9. Surface water drainage

9.1 Please note that we have lodged an objection to this application due to a lack of information to assess the acceptability of your proposals for surface water drainage. We request the submission of a scaled annotated site plan which demonstrates that an appropriate surface water (SUDS) scheme can be accommodated within the site layout and will include the location of grass swales, infiltration trenches, the Area of Phase 1A that will be drained to proposed Pond 1 and indicative locations of proposed soakaways.

10. Ground water abstractions

10.1 As stated above PWS are generally small abstractions of less than 10 m^3/d sourced from boreholes, spring or wells and used to supply water to houses. PWS of <10m^3/d are covered by the Water Environment (Controlled Activities) (Scotland) Regulations 2005 General Binding Rule 2 and therefore an application for authorisation is not required to be made to SEPA. Details of private supplies can be obtained from Local Authorities.

10.2 The following information for each water supply source should be submitted:

- Source location (including National Grid co-ordinates)
- Source type
- Abstraction rate
- No. of people served, or similar characteristics for industrial supplies (e.g. number of cows watered). This should also include points of use located beyond the survey radius if the abstraction source lies within the zone.

10.3 For wells and boreholes the abstraction rate should be provided for each supply based either on direct measurements or estimated by type and intensity of usage (eg no. of people served). In the absence of an abstraction rate the maximum abstraction rate for small sources, namely $10m^3/d$, should be used. For springs the application should provide an estimate of the spring yield and the abstraction rate from the spring. Complex water supplies collecting water from different spring sources should be investigated and discharge rates detailed.

10.4 If groundwater abstractions are identified i) within 100m from any roads, tracks and trenches or ii) within 250m from any foundations, the applicant needs to detail how these sensitive receptors will be protected.

10.5 Two options need to be considered. Either a precautionary approach can be taken with the development avoiding this buffer area, or further information and investigations will be required where development is proposed closer to the receptor. In the latter case we will not object on risk to groundwater where the applicant can provide one of the following:

- a quantitative hydrogeological assessment to demonstrate that the risk to groundwater abstractions is not significant. This should be carried out by establishing the size of the Zone of Contribution feeding groundwater to the water supply and identifies the proportion of flow that will be reduced as a consequence of any construction. This will need to be accompanied by a risk assessment that identifies whether this reduction in flow or water level is significant. This will need to take account of the impact of the reduction in flow on the level of water in the supply as compared with the pump or outflow level.
- where the impact is on a water supply, a demonstration that the applicant has agreed with the owner of the abstraction to provide an alterative supply.

11. Watercourse crossings

11.1 Please note that we have lodged an objection to this application due to a lack of information in relation to the proposed watercourse crossing. The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) introduced the authorising of engineering activities carried out in, or in the vicinity of, inland surface waters. Developments should be designed to leave the water environment in its natural state with engineering activities such as culverts, bridges, watercourse diversions, bank modifications or dams avoided wherever possible. We have a policy against the closed culverting of watercourses as bridging structures for transportation routes. The piecemeal loss of small watercourses can create wider cumulative impacts on the water environment, including ecology, channel form, flow regime and chemistry.

12. Site Waste Management plan

12.1 Advice on how to prepare a site waste management plan is available on the netregs website and from Envirowise who also provide free advice on resource efficiency. Further

advice on the reuse of demolition and excavation materials is available from the Waste and Resources Action Programme. Further guidance can also be found at our website. Information on waste prevention and waste minimisation is available on our waste minimisation webpage at www.sepa.org.uk/waste/resource_efficiency.aspx.

Regulatory advice

13. Details of regulatory requirements and good practice advice for the applicant can be found on our website at www.sepa.org.uk/planning.aspx. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the operations team in your local SEPA office at:

Inverdee House, Baxter Street, Aberdeen AB11 9QA Tel: 01224 266600

If you have any queries relating to this letter, please contact me by telephone on 01224 266655 or by e-mail to planning.aberdeen@sepa.org.uk .

Yours sincerely

Zoe Griffin
Senior Planning Officer
Planning Service

Ecopy to: Elsick Development Company Ltd. c/o agent Turnberry Consulting Ltd – planning@turnberyuk.com

Scottish Environment Protection Agency

Our ref: PCS/119275
Your ref: APP/2011/3100

Tom Ashley
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41-43
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By email only to: tashley@turnberryuk.com

If telephoning ask for:
Zoe Griffin

27 March 2012

Dear Tom Ashley

Planning application: APP/2011/3013
Full planning permission for phase 1A of new settlement comprising 802 units,, retail and commercial floorspace, civic buildings and associated landscaping, open space and roads infrastructure and services.
Land to west of Chapelton of Elsick, Newtonhill, Stonehaven

Thank you for your letter sent dated 12 March 2012 which SEPA received on 14 Match 2012. We note the letter addresses the issues raised in our letter dated 31 October 2011 and those discussed in our subsequent meeting to discuss the proposal on 23 February 2012.

We note you raise several issues in your letter and address these below:

1. Flood risk

1.1 We have reviewed the detailed Flood Risk Assessment (FRA) that has been submitted in support of Phase 1A of the development of Land to West of Chapelton of Elsick, Newtonhill, Stonehaven (entitled FRA Phase 1 Detailed Flood Risk Assessment Final Report November 2011 (72054/FRA/002) by Fairhursts).

1.2 The FRA estimates the flow in the Pheppie Burn (as 5.1m^3/s for a 2.66km^2 catchment). The estimated used the rainfall runoff using a precautionary estimate of the SPR value. A hydraulic model has been constructed using topographic survey information gained from the site. The previous model cross sections have been extended to prevent an over estimate of flood levels.

1.3 There are no details of the cross sections within the model, roughness values used or an allowance for blockage at structures within the hydraulic model.

1.4 The sensitivity analysis has been undertaken on roughness (increase by 20%) and design flows (increase by 20%). No allowance has been made for climate change specifically but it is noted that the increase in 20% design flows could be interpreted as this allowance (table

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4). It is noted that the Aberdeenshire Council Flood Prevention Officer (9/1/2012) has requested Climate change to be considered and should be consulted on this matter. We recommend that the resultant design flood levels and plans should reflect the requirement for an allowance for climate change.

1.5 It is stated that the structures (farm track crossings) are of limited size and are likely to be upgraded as part of the development (section 6.4). No details of the current or proposed watercourse crossing have been included. It is noted that the hydraulic model suggested that the existing structures are under-capacity (section 6.2) and blockage of flood waters would quickly find relief and spill downstream with localised results. As previously advised, whilst this could be the case it is recommended that at least photographic information is provided to verify that the structures will not have a significant hydraulic effect. Furthermore, for any new watercourse crossings (only indicative "typical" crossing have been supplied) it is recommended that these should be able to convey the 200 year design flow or ensure a neutral effect on flood risk. Any watercourse crossings should also ideally be a clearspan and be designed to have a minimal afflux.

1.6 We welcome that the majority of the development has been designed to be located outwith the areas at significant risk of flooding. However, there are at least two buildings in Block 5 which are still with an area identified at risk of overland flow from out of bank flows of the Pheppie Burn. This area is still within an area identified at significant risk of flooding and **we require them to be removed or relocated on an amended the plan.** It is also noted that in section 6.2 that there is predicted to be out of bank flow from the northern tributary in the area of lower Nether Cairnhill field to the east. "Flow water would flow overland before returning to the watercourse via the Pheppie Burn floodplain in the south east corner of the field. It is unclear where this is on any current plan or if any development is proposed at this location. As such further clarification should be provided with regards to this and we would re-iterate that the avoidance approach should be a key design principle particularly given the significant masterplan area available outwith an area at significant risk of fluvial flooding.

1.7 We note it is suggested that 600mm would be added to finished floor levels within the development. We support this recommendation and request the details of these located on final plans submitted for the development.

1.8 In summary we wish to receive clarification on the following points before we would consider removing our objection to the proposed development:

- Further information on current structures within the hydraulic model and any results of modelling of blockage at them. At least photographic information is provided to verify that the structures will not have a significant hydraulic effect.
- Details to confirm that any new or proposed upgrades to watercourse crossings can convey a 1 in 200 year flow.
- Details of where overland flow occurs both on the Pheppie Burn and the Northern Tributary indicating on relevant plans that proposed buildings are removed or relocated outwith these areas (for example revision of two buildings proposed in block 5 currently indicated within the Pheppie Burn overland flow area).
- The modelled design flood levels and layout plans and finished floor levels should reflect an allowance for climate change.
- Modification of the site layout plan to remove all buildings out of the 1:200 flood extent.

1.9 Please refer to the flood risk caveats and additional information in relation to flood risk at the end of this letter.

2. Surface water drainage

2.1 We are satisfied that the southern SUDS basin (B1) lies outwith the 1:200 floodplain associated with the Pheppie Burn but it is still unclear if the proposed SUDs basin associated with the Burn of Elsick to the north lies within the 1:200 flood plain. Until a detailed flood risk assessment is carried out for the Burn of Elsisk we cannot agree for certain that the SUDS pond P1 is located outwith the 1 in 200 year flood envelope.

2.2 Our comments in our letter dated 31 October 2011 relating to this SUDS pond therefore still stand.

2.3 In relation to the detailed SUDS arrangements proposed we look forward to receiving a revised SUDS proposal in due course. We can only recommend surface water is dealt with at source as this our preferred option but so long as adequate levels of treatment are provided we are unlikely to object in principle.

3. Hydrogeology

3.1 Whilst we note the EIA Technical Annex 8 lists mentions the private water supplies both outwith and within the site boundary it does not give the information requested in section 10 of our letter dated 31 October 2011.

3.2 Your letter relating to the application of Planning Permission in Principle APP/2011/3100 states that you agree to our request for a detailed water features survey for each phase of the development be secured by condition. We therefore look forward to receiving a full detailed water features survey for Phase 1A for review at your earliest convenience.

4. Hydromorphology

4.1 We are pleased to note that a 6m wide buffer strip can be provided on either side of the Pheppie Burn. In addition we confirm that you have submitted sufficient detail regarding the proposed water crossings to enable us to **remove our objection** in this regard as further details will be submitted at the CAR application stage.

5. Waste

5.1 We note and welcome that you are in agreement that a Site Waste Management Plan should be secured by condition.

6. Pollution control

6.1 We note your concern over our recommendation that the environmental management plan should be submitted two months prior to any commencement of works. It is up to the Council to decide on the final wording for this condition but it has been our experience that adequate time is required to allow for these Plans to be submitted, distributed to consultees and for the consultees to respond back. Any delays in this process would lead to additional constraints when a contractor is waiting to get on site. Therefore we have based this time period on experience. However we would be happy to consider a slightly shorter time period should the Council consider this appropriate.

Due to my impending year leave of absence, any future queries relating to this proposal should be directed to one of my SEPA planning colleagues either by telephoning on 01224 266600 or by e-mail at planning.aberdeen@sepa.org.uk .

Yours sincerely

Zoe Griffin
Senior Planning Officer
Planning Service

E-copy to: Aberdeenshire Council - Neil.Mair@aberdeenshire.gov.uk

Flood Risk Caveats & Additional Information for Applicant

1. We refer the applicant to the document entitled: "*Technical Flood Risk Guidance for Stakeholders*". This document provides generic requirements for undertaking Flood Risk Assessments and can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning__flooding.aspx. Please note that this document should be read in conjunction with Annex B in SEPA Policy 41: "*Development at Risk of Flooding, Advice and Consultation – a SEPA Planning Authority Protocol*", available from www.sepa.org.uk/flooding/flood_risk.aspx.

2. Our Flood Risk Assessment checklist should be completed and attached within the front cover of any flood risk assessments issued in support of a development proposal which may be at risk of flooding. The document will take only a few minutes to complete and will assist our review process. It can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning__flooding/fra_checklist.aspx

3. Please note that we are reliant on the accuracy and completeness of any information supplied by the applicant in undertaking our review, and can take no responsibility for incorrect data or interpretation made by the authors.

4. The advice contained in this letter is supplied to you by SEPA in terms of Section 72 (1) of the Flood Risk Management (Scotland) Act 2009 on the basis of information held by SEPA as at the date hereof. It is intended as advice solely to Aberdeenshire Council as Planning Authority in terms of the said Section 72 (1). Our briefing note entitled: "*Flood Risk Management (Scotland) Act 2009: Flood risk advice to planning authorities*" outlines the transitional changes to the basis of our advice inline with the phases of this legislation and can be downloaded from www.sepa.org.uk/flooding/flood_risk/planning__flooding.aspx.

APPENDIX D – SEPA FLOOD RISK ASSESSMENT CHECKLIST

Flood Risk Assessment (FRA) Checklist

(SS-NFR-F-001 - Version 9 - Last updated 30/08/2010)

This document should be attached within the front cover of any flood risk assessments issued to Local Planning Authorities (LPA) in support of a development proposal which may be at risk of flooding. The document will take only a few minutes to complete and will assist SEPA in reviewing FRAs, when consulted by LPAs. This document should not be a substitute for a FRA.

Development Proposal						
Site Name		Chapelton of Elsik - Phase 1A				
Grid Reference	Easting:	389264	Northing:	793328		
Local Authority		Aberdeenshire Council				
Planning Reference number (if known)		APP/2011/3103				
Nature of the development		Mixed Use	If residential, state type:			
Size of the development site		60 Ha				
Identified Flood Risk	Source:	Fluvial	Source name:	Pheppie Burn		
Supporting Information						
Have clear maps / plans been provided within the FRA (including topographic and flood inundation plans)		Yes				
Has a historic flood search been undertaken?		Yes				
Is a formal flood prevention scheme present?		No	If known, state the standard of protection offered			
Current / historical site use		Agricultural Land				
Hydrology						
Area of catchment		2.66 km^2				
Qmed estimate		m^3/s	Method:	Catchment Descriptors		
Estimate of 200 year design flood flow		5.1 m^3/s				
Estimation method(s) used *		Rainfall-runoff	If other (please specify methodology used):			
			If Pooled analysis have group details been included	Select from List		
Hydraulics						
Hydraulic modelling method		1D dynamic	Software used:	ISIS		
If other please specify						
Modelled reach length		1770 m				
Any structures within the modelled length?		Combination	Specify, if combination	2 bridges, 1 culvert.		
Brief summary of sensitivity tests, and range:						
variation on flow (%)		20 %				
variation on channel roughness		20				
blockage of structure (range of % blocked)		N/A %	Reference CIRIA culvert design guide R168, section 8.4			
boundary conditions:		**Upstream**		**Downstream**		
(1) type		Flow		Normal depth		
	Specify if other		Specify if other			
(2) does it influence water levels at the site?		Yes		No		
Has model been calibrated (gauge data / flood records)?		No				
Is the hydraulic model available to SEPA?		No				
Design flood levels	200 year	Vary m AOD	200 year plus climate change	Vary	m AOD	

Flood Risk Assessment (FRA) Checklist

(ES-NFR-F-001 - Version 8 - Last updated 26/04/2010)

Coastal						
Estimate of 200 year design flood level		N/A	m AOD			
Estimation method(s) used		Select from List	If other (please specify methodology used):			
Allowance for climate change (m)		N/A	m			
Allowance for wave action etc (m)		N/A	m			
Overall design flood level		N/A	m AOD			
Development						
Is any of the site within the functional floodplain? (refer to SPP7 para 16-18)		yes	If yes, what is the net loss of storage	na	m^3	
Is the site brownfield or greenfield		Greenfield				
Freeboard on design water level (m)		N/A	m			
Is the development for essential civil infrastructure or vulnerable groups?		Select from List	If yes, has consideration been given to 1000 year design flood?	Select from List		
Is safe / dry access and egress available?		Vehicular and Pedestrian	Min access/egress level		m AOD	
If there is no dry access, what return period is dry access available?		N/A	years			
If there is no dry access, what is the impact on the access routes?	Max Flood Depth @ 200 year event:	N/A	m	Max Flood Velocity:	N/A	m/s
Design levels	Ground level	Vary	m AOD	Min FFL:	na	mAOD
Mitigation						
Can development be designed to avoid all areas at risk of flooding?		Yes				
Is mitigation proposed?		Select from List				
If yes, is compenstory storage necessary?		Select from List				
Demonstration of compensatory storage on a "like for like" basis?		Select from List				
Should water resistant materials and forms of construction be used?		Select from List				
Comments						
Any additional comments:		Detailed assessment based on surveyed cross-sections.				

Approved by: **Vanora ford**
Organisation: **W. A. Fairhurst and Partners**
Date: **17/05/2012**

Note: Further details and guidance is provided in 'Technical Flood Risk Guidance for Stakeholders' CLICK HERE

**** ReFH not accepted by SEPA for flow estimates in Scotland. Any use of this method should be validated by the use of other, accepted methods.***

APPENDIX E – STRUCTURE PHOTOGRAPHS

Photograph 1 – Cross-section 1, Old Road downstream elevation

Photograph 2 – Cross-section 3, Footbridge at ford

Photograph 3 – Cross-section 6, Field access

Photograph 4 – Cross-section 9, Field access

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