



16 April 2012

Mr Dan Hudson  
Development Plans Manager  
South Lakeland District Council  
Lowther Street  
Kendal  
LA9 4DL

Dear Mr Hudson

**OBJECTION TO THE SOUTH LAKELAND DISTRICT COUNCIL LAND ALLOCATIONS DPD**

**PROPOSED HOUSING ALLOCATION, LAND BETWEEN CASTLE GREEN ROAD AND  
SEDBERGH ROAD, KENDAL (R121M - mod)**

**SUBMITTED ON BEHALF OF SOLEK (SAVE OUR LANDSCAPE EAST KENDAL)**

I refer to my detailed objection to the proposed allocation of Site R121M for residential development, submitted on behalf of SOLEK on 14 April 2011, and also to my further submission dated 8 September 2011.

In my original submission I concluded that the perceived benefits of developing Site R121M, in terms of seeking to meet the aspirations of the Core Strategy, could not possibly outweigh the substantial harm that would be caused to the landscape character of the area, the potential loss of the biodiversity value of the site and the almost certain adverse impacts upon drainage and flooding. Whilst it is acknowledged that in the revised DPD, the proposed site (Policy LA2.3) has been reduced in both area and indicative capacity, it nevertheless remains a significantly harmful proposed allocation for 60 new dwellings.

Section 20(5) of the 2004 Act provides that the purpose of the forthcoming examination is to determine whether the DPD:

- (a) satisfies the legal requirements relating to its preparation; and
- (b) is sound.

This submission on behalf of SOLEK is to be read alongside those made by the **Green Spaces Committee** and **Kendal Town Council** (which includes the following documents - 'Sustainable Development in Kendal' and the 'Kendal Local Level Landscape Character Assessment').

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For the following reasons, I am of the opinion that allocation R121M-mod (and thus Policy LA2.3) of the South Lakeland District Council Land Allocations DPD does not satisfy the legal requirements relating to its preparation, and that it is unsound.

## THE TEST OF LEGAL COMPLIANCE

The DPD in this respect has **not** had regard to national policy and does not conform generally with the adopted **Core Strategy** and the **Regional Spatial Strategy** (at the date of this submission the RSS has not yet been abolished).

The Core Strategy was adopted on 20 October 2010 and the DPD states (in paragraph 2.21) that sites will not be allocated if their development would be a clear breach of its policies. All of the sites proposed in the DPD should therefore have been assessed against a range of detailed criteria including **landscape and settlement** considerations, including the potential impact of development on landscape and views, and local and wider **community views**, including those expressed through Community engagement and through Parish Plans and the Sustainable Community Strategy. Allocations should also not impact upon **protected site or species**, or exacerbate **flood risk**.

### ***Landscape Impact:***

The fields that comprise the proposed allocation have an important role to play in influencing the essential landscape character of the setting of this part of Kendal in as much that they bring agricultural land right to the established developed edge of the town. They are particularly important in this respect in that they mark the transition between the town, the steeper, more wooded ground to the south and the east, and the strong physical feature of the West Coast Main Line railway. Were this site to be developed, the visual and perceptual link to the agricultural landscape would become eroded, and the important juxtaposition of pasture and urban area would be significantly diluted and degraded.

In order to fully understand the landscape objection to the proposed allocation it is necessary to know a little about its 'planning history'. Site R121M-mod is comprised of parts of 2 former sites, R56 and R141, and all of former Site R121.

In the Council's 1996 Deposit Local Plan, R56 was put forward as a potential housing allocation. This was because it was excluded from the County Landscape Area, and was therefore regarded as acceptable "infill". Both of these arguments were strongly rejected by the Inspector following the subsequent Public Inquiry. He noted that the land provided a visually important link between the open land west of Castle Green Road, and the higher slopes of the hillside to the east, and concluded that "notwithstanding its omission from the Landscape Character designation I believe that the allocation site has a visual quality of some considerable local importance which outweighs the very small contribution which it can make to the housing land need"



The Council in their current assessment of R56 (**Kendal Fact File** – Appendix 1) note that the site merges with Site R141, and provides a visual break in the built form of urban development between the Castle Green Hotel and its grounds (and the cluster of buildings just to the north on the A684) and the main urban area of Kendal. The site provides views up to the woodland beyond site R141 and this is an important feature to consider in the context of assessing site suitability i.e. impact of development on landscape setting and visual amenity/views.

Site R121 is wholly within the currently proposed allocation. In correspondence dated 14 December 1999, it was confirmed by the County Council's Landscape Officer that this site merited a similar level of protection as Site R141 to the south, which was then designated as a **County Landscape Area**. In the District Council's submission to the 1997 Local Plan Inquiry, in attempting to justify the allocation of Site R56, it was stated that the development of Sites R121 and R141 would be unduly prominent.

The **Kendal Fact File** further states that there is a need to think carefully about potential adverse visual impact of developing R56 and R121, on views and landscape character/setting, and under the heading 'comments' records that the sites have many constraints and large scale public opposition. **Cumbria Council** state that the sites should only be considered if a strategic allocation is required, and following a landscape character assessment to determine its suitability (60 houses is not considered to be a strategic allocation).

The **Core Strategy** states in Paragraph 9.3 that the visual character of South Lakeland's landscape, seascape, townscape is highly valued by residents and visitors and that high priority must be given to the protection, conservation and enhancement of this landscape character. Core Strategy **Policy CS8.2** (Protection and Enhancement of Landscape and Settlement Character) then states that proposals for development should be informed by, and be sympathetic to, the distinctive character landscape types identified in relevant settlement studies and local evidence, and should demonstrate that their location, scale, design and materials will protect, conserve and, where possible, enhance the special qualities and local distinctiveness of the area, distinctive settlement character and the pattern of distinctive features such as hedges, walls, traditional buildings, woodlands, hay meadows, wetlands ... and their function as ecological corridors for wildlife.

Notwithstanding the recent publication of the NPPF, at the date of this submission, the Regional Spatial Strategy (and the retained Cumbria and Lake District Joint Structure Plan Policies) have not yet been abolished.

**Policy EM1** of the **Regional Strategy for the NW of England** (Integrated Enhancement and Protection of the Region's Environmental Assets), states that the Region's environmental assets should be identified, protected, enhanced and managed, recognising the need to deliver an integrated approach to conserving and enhancing the landscape, natural environment, historic environment and woodlands



of the region. Priority should be given to conserving and enhancing areas, sites, features and species of international, national, regional and local landscape, natural environment and historic environment importance, and the following should be taken into account:

***"Policy EM1(A):** Plans, strategies, proposals and schemes should identify, protect, maintain and enhance natural, historic and other distinctive features that contribute to the character of landscapes and places within the North West. They should be informed by and recognise the importance of: detailed landscape character assessments and strategies, which local authorities should produce, set in the context of the North West Joint Character Area Map. These will be used to identify priority areas for the maintenance, enhancement and/or restoration of that character and will under-pin and act as key components of criteria-based policies in LDFs."*

Retained **Policy E37** of the **Cumbria and Lake District Joint Structure Plan** (Landscape Character) states that development and land use change should be compatible with the distinctive characteristics and features of Cumbria's landscape types and sub types, and that all proposals will be assessed in relation to:

1. Locally distinctive natural or built features,
2. Visual intrusion or impact,
3. Scale in relation to the landscape and features,
4. The character of the built environment,
5. Public access and community value of the landscape,
6. Historic patterns and attributes,
7. Biodiversity features, ecological networks and semi-natural habitats, and
8. Openness, remoteness and tranquillity.

Having regard to the significant harm that would be caused to the landscape setting of Kendal, the allocation of this site would conflict with the provisions of the Core Strategy, and is therefore not legally compliant.

### **Community Views:**

The processes of community involvement in developing the DPD are **not** in general accordance with the **Statement of Community Involvement** (SCI). This states, under the heading of **Commitment**, that the District Council is committed to early and ongoing community engagement in the planning process - to make sure the needs and aspirations of the community and stakeholders are taken fully into account in the documents and decisions which help shape development and protect South Lakeland's outstanding environment and culture.

Whilst the consultation process itself is not being criticised, it is however considered that its findings are not being given sufficient weight. **Kendal Town Council** are strongly opposed to the allocation. So are the **Friends of the Lake District** (Cumbria



CPRE), who noted in their initial response that the site is located upon rising land and forms part of the undeveloped valley side surrounding Kendal, glimpses of which evoke the strongly rural feel identified by local people as a key characteristic of the town. They therefore concluded that the development of the site would result in a detrimental impact upon the character of the open countryside, and the setting and character of Kendal, and would raise conflict with both extant Development Plan Policy and the PPS7 presumption of protecting the countryside for its intrinsic character and beauty.

As well as the objections to the allocation from the Town Council and the Friends of the Lake District, approximately 150 individual objections (and a petition containing nearly 300 signatures were also submitted to the Council. This can be contrasted with just 2 submissions in support.

Having regard to the widespread local opposition, the allocation of the site does not comply with the SCI, and is therefore not legally compliant.

### **Protected Species:**

A survey of the local area was undertaken by Derek A Whitcher Ltd ([www.whitcher-wildlife.co.uk/](http://www.whitcher-wildlife.co.uk/)) in late April/May 2008, on behalf of Network Rail. The pond in the adjacent field was found to be home to **Great Crested Newts** (one of only 2 colonies in Kendal), a species protected by virtue of the provisions of Section 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally or recklessly kill, injure, take, or recklessly damage, destroy or obstruct access to places of shelter or protection used by them, including their breeding ponds and their surrounding terrestrial habitats. Great Crested Newts typically require a 500 m "emergence zone" around their breeding pond, consisting of permanently damp, unmaintained land. This is essential to provide young newts with a source of food and shelter.

Since the 2008 survey the topography of the area has changed markedly, with flood water from the original breeding pond to the south having eroded a large gully running north-west into the proposed allocation. This created a number of subsidiary ponds, which are now becoming vegetated, and it is therefore very likely that newts will be making use of these, and extending the size of their colony. Newts are now regularly being found in the gardens of Rowan Tree Crescent and Oak Tree Road, and a potential linked colony has recently been discovered in the vicinity of Broom Close (to the north of Sedbergh Road).

**Policy CS8.1** of the Core Strategy (Green Infrastructure) states species and habitats will be protected where biodiversity is affected by development; and **Policy CS8.4** (Biodiversity and Geodiversity) states that all new development should protect, enhance and restore the biodiversity and geodiversity value of land and buildings; and that proposals that would have a direct or indirect adverse effect on nationally, sub-regional, regional and local designated site and non-protected sites that are considered to have geological and biodiversity value, will not be permitted unless



the benefits of the development clearly outweigh the impacts on the features of the site and the wider network of natural habitats. The attached document "**Updated Biodiversity Information**" illustrates the potential areas of Great Crested Newt habitat, the majority of which would be destroyed should the proposed allocation be developed (see separately submitted Appendix 2).

On this basis the allocation of this site would conflict with the provisions of the Core Strategy, and is therefore not legally compliant.

### **Flood Risk:**

The proposed allocation currently absorbs a significant amount of rainfall, and the streams which flow through the site flood on a regular basis. The fields above and to the east of the railway line are noticeably waterlogged due to the presence of a spring just below the woodland half way up 'The Greyhound', and water from this finds its way into a cistern in the field opposite Broom Close, which is also fed from the Broom Close Pond and its catchment. In addition to this there is a second spring in the field immediately below the railway line, south of the Greyhound bridge. These various sources of water combine to form a small beck which flows towards Oak Tree Road, and then south and west towards Castle Green Road, before which it also picks up ground water from the ponds behind Castle Green Farm. Residents on Oak Tree Road already complain of flooding from this watercourse following periods of heavy rain and any development of this site is likely to increase the speed and amount of run-off, leading to a possible increased risk of flooding in the vicinity and elsewhere

**Policy CS8.8** of the Core Strategy (Development and Flood Risk) states that new development will only be permitted if it can be demonstrated that it would not have a significant impact on the capacity of an area to store floodwater, that measures required to manage any flood risk can be implemented. The attached document "**Preliminary Expert Report – Sept 2011**" concludes that there appear to be a number of significant uncertainties with respect to potential flood risk (see separately submitted Appendix 3).

On this basis the allocation of this site would conflict with the provisions of the Core Strategy, and is therefore not legally compliant.

### **THE TEST OF SOUNDNESS**

The DPD in this respect is **not** justified because it is not founded on a robust and credible **evidence base** and/or is not considered the most appropriate strategy when considered against the reasonable alternatives.

In order to inform their objections to the "Emerging Options DPD" Kendal Town Council commissioned Galpin Landscape Architects to undertake a **Kendal Local Level Landscape Character Assessment** ("LCA"). This detailed piece of work seeks to



establish how the various open spaces that currently exist round the periphery of Kendal add value to the lives of its residents, and provides an evidence base and methodology so that decisions can be made on development sites transparently, openly, and in accordance with the wishes of the residents of the town as a whole. The LCA defines the character and potential significance of the open spaces being promoted through the DPD on the basis of their "functionality". Each unit has been assessed against its capacity to supply benefits with regard to access, historic environment, biodiversity, recreation, visual amenity, flood storage, economic productivity etc. through using simple measures such as agricultural land grade, presence or absence of historic monuments/finds, quality of habitat, presence of species, flood risk data, all of which were obtained from existing publicly available datasets.

The site falls within a slightly larger area of land identified in the LCA as "D3" and classified as "Drumlin Pasture" with hedgerows, dry stone walls and occasional trees. The LCA concludes that this land is of medium/high sensitivity due to its biodiversity and rural environment, and that it has **limited scope** for development. In their response to the Emerging Options DPD consultation, and using the results of the LCA, Kendal Town Council noted the **high sensitivity** and **low capacity** of the site. It was the only one of the then 19 Emerging Options to receive such a conclusive rating, clearly confirming its complete unsuitability as a potential housing site.

The brief for the undertaking of the LCA was developed with input from the Council's officers, and it was fully anticipated by the Town Council that once completed the LCA would form part of the DPD evidence base. It is therefore extremely disappointing to note that the Council have now decided that the LCA "is an independent piece of work undertaken on behalf of Kendal Town Council and does not form part of SLDC's landscape evidence base".

In my opinion this leaves a gap in the evidence base, undermining the process used for the selection of sites in and around Kendal. In this respect it is particularly pertinent to note that **Policy CS8.2** of the Core Strategy states that proposals for development should be informed by, and be sympathetic to, the distinctive character landscape types identified in relevant settlement studies and local evidence. The LCA is precisely the type of "local evidence" envisaged by this policy, and it is therefore requested that the appointed Inspector takes full account of its findings.

Because of the Council's failure to have regard to the LCA, the proposed allocation is not founded on a robust and credible evidence base, and is therefore unsound.

## CONCLUSION

It is clear that any allocation of land to the east of the town, between Castle Green and Sedbergh Road, was not originally envisaged by the Council (see plan at Appendix 1 to this submission). The Council's subsequent decision to ignore the

'planning history' of the site, the significant landscape impact of its development, its biodiversity value and flood risk implications – and more importantly the wishes of the Town Council and local residents is not legally compliant, and renders the allocation unsound.

The Council should be placing a much greater emphasis on the need to maintain, and wherever possible enhance, the visual amenities and landscape setting of the town. Kendal's future prosperity depends upon it being able to attract employment, based on the "quality of life" on offer, and the area's scope for sustainable tourism. In order to ensure that these objectives are able to be delivered it is requested that the appointed Inspector **removes** allocation R121M-mod from the Land Allocations DPD.

Yours sincerely



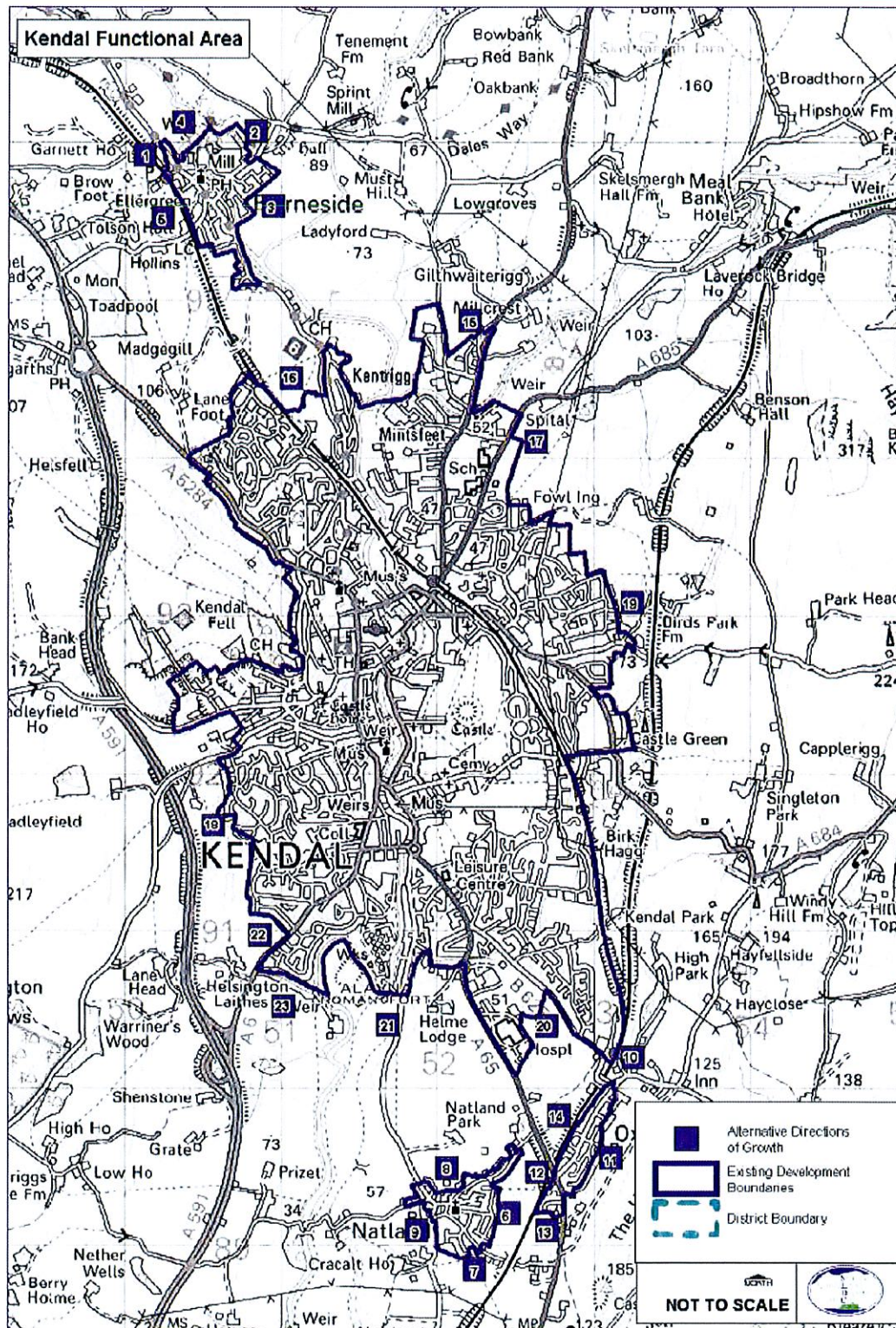
Michael Hyde MRTPI  
**MH Planning Associates**

cc Mr Austen Robinson, SOLEK



**FIGURE 20: ALTERNATIVE DIRECTIONS OF GROWTH FOR KENDAL FUNCTIONAL AREA**

The symbols on the map do not relate to a specific site but denote a broad location.







## **UPDATED BIODIVERSITY INFORMATION - SDLC Proposed Final Land Allocations, Kendal, Area R121M – ON50 & RN30**

The aerial photograph of Figure 1 illustrates the general layout of this site, for comparison with the line drawing maps provided by SDLC which do not clearly indicate elevation or landscape.

This proposal identifies a Biodiversity issue (linked to the colony of Great Crested Newts which have been previously been identified by several surveys). These have concentrated attention on the large pond shown to the South in Figure 1 below, next to the northern access road to the Castle Green Hotel; this is explicitly marked in Figure 2.

Since these surveys it is evident that the habitat has changed markedly, perhaps exacerbated by major surface water incursion and poor drainage. Flooding from the large pond on the higher ground to the South has caused water erosion to create a large gulley which runs North-West towards the field previously annotated as R56 that abuts Castle Green Road. The gulley forms a large conduit and has created and maintains further subsidiary ponds in this area. These feature extensive water vegetation, reeds etc. Figure 2 shows the location of previously identified pond (Blue), the new gulley (Red) and current extended (Green) pond areas.

Advice from licensed naturalists is that Great Crested Newts are highly likely to make use of newer ponds and so extend the size of the colony. The final proposed plans for R121M rely upon the use of a significant part of the previously noted R56 field for new road access. This takes the form of a link road to the major new development of 60 properties on the prominent high ground to the East from the existing terminus of the narrow Oak Tree Road. This was also the case for a previous proposal which involved an increased incursion into the green space by creating an access directly from Castle Green Road. It is clear from this figure that either access mode would have a major impact on the extended pond habitats for the colony of Great Crested Newts.

Advice from licensed naturalists is that the Great Crested Newts will occupy habitat with the respect to the ponds that they use. Guidance from Natural England is that they will occupy suitable unconstrained land as habitat to a distance of up to 500m from the ponds. Figure 3 illustrates the 500m habitat extent, as constrained by major obstacles walls etc.

As a protected species in the UK with the highest level of protection, it is a criminal offence to interfere with the habitat of the Great Crested Newt. Hence the suggestion that the residual spaces surrounding R121M may be assigned for 'Open Public Access' may well be tantamount to encouraging the public to break the law.



Figure 1  
Area  
surrounding  
R121





Figure 2

Pond and  
gully sites

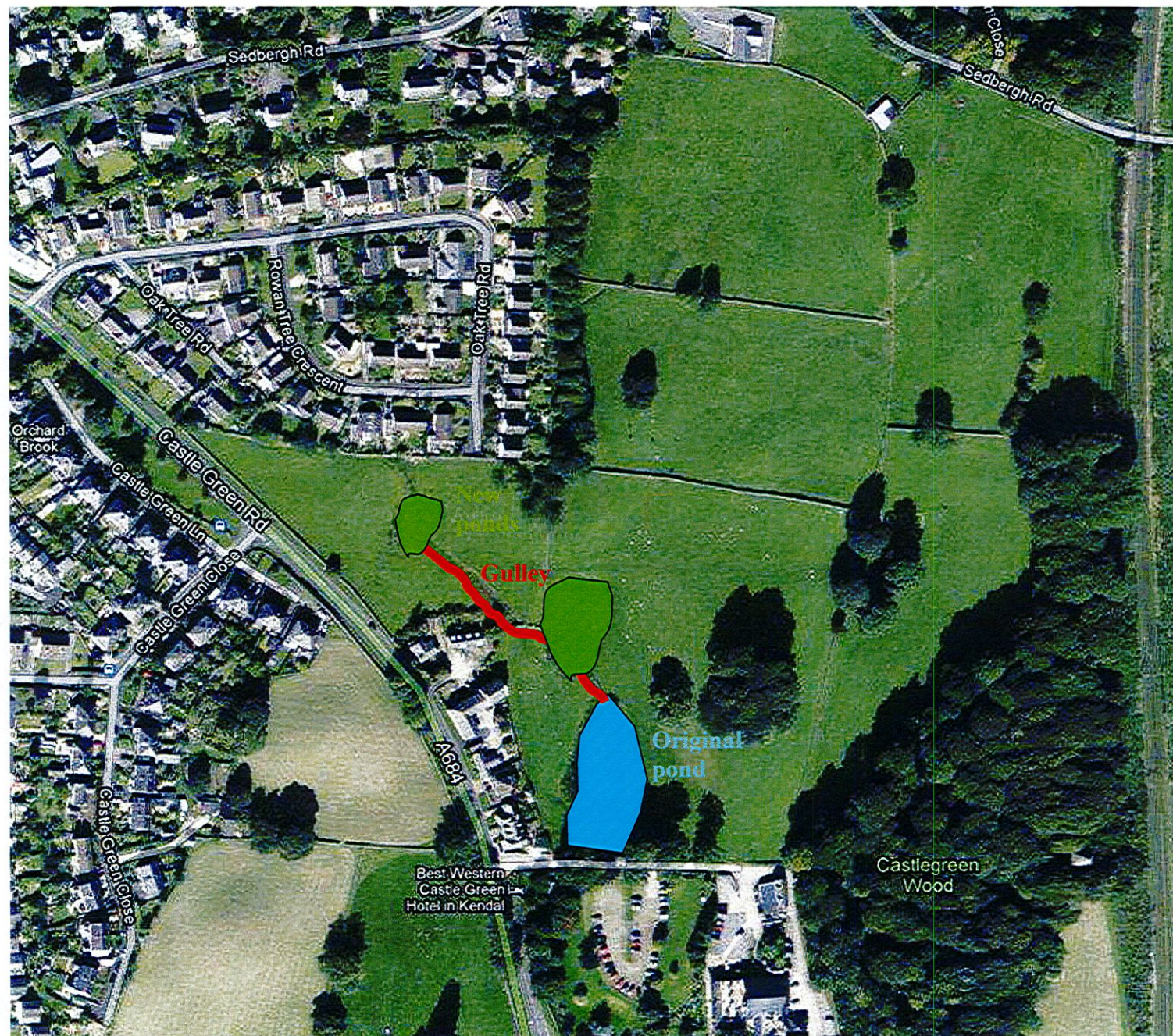




Figure 3

Expected  
habitat





**RECORDED DELIVERY**

South Lakeland District Council  
Development Plans Officer  
South Lakeland House  
Kendal  
LA9 4DL

Our ref: JH/CS/A00759-4

Your ref:

17 November 2011

Dear Sir/Madam

**South Lakeland Local Development Framework  
Site Reference Numbers : R121, R141 and R56**

We have been consulted by Frances Astor of Greystead, 93 Sedbergh Road, Kendal who last wrote to you on the 5 September 2011 (copy letter enclosed). In that letter Mrs Astor indicated that she was in the process of commissioning her own expert advice and she has now done so.

We enclose a copy of a Preliminary Expert Report produced by Professor Robert Jackson which is dated the 29 September 2011 and, whilst the last round of consultation closed on, we believe, the 9 September 2011 we ask that this Report be logged and considered as part of the process.

Although we have sent this letter by recorded delivery we would be grateful if you could acknowledge receipt of it (and in particular the Expert Report) and confirm that the contents of the Report will be considered as part of the process.

Yours faithfully

**Thomson Wilson Pattinson**  
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APP 15.

**Independent Expert Opinion in  
Water, Construction & the Environment**

**South Lakeland District Council  
Proposed Housing Development - Kendal  
Preliminary Expert Report – Sept 2011**

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\*Former Member of Council - The Academy of Experts



## **1.0 South Lakeland Local Development Framework**

### **1.1 The Allocations of Land Development Plan dated November 2008 states**

1. It is the Council's aim to find the most sustainable sites for development.
2. The Council is committed to conserving and enhancing the distinct character of the District ...
3. The key challenge will be to identify sufficient land to accommodate this development whilst at the same time affording appropriate protection to South Lakeland's high quality environment.
4. In order to achieve a sustainable distribution of development, the preferred locational strategy ..... suggests that development be focussed primarily in the towns of Kendal and Ulverston
5. Limited development in rural areas will be supported under certain circumstances.
6. Evidence base studies and consultation with local residents have demonstrated that the District faces major challenges to address issues of affordability of housing.
7. A quality environment, accessible countryside, water areas, green space and good leisure and cultural facilities will be an important factor in attracting new investment to the area, enhancing the quality of life for existing and future communities, supporting wildlife and providing natural adaptation and mitigation mechanisms against the effects of climate change.
8. The scale of housing and employment growth required in the plan period is likely to result in considerable pressure for development within settlements. In many circumstances, this may be preferable to development of green-field sites and consistent with acceptable principles of sustainable development.

## **2.0 Flood Risk**

2.1 Even in areas generally free from flooding, local conditions and exceptional rainfall can lead to flooding. Developers and planning authorities should therefore take a precautionary approach in taking decisions when flood risk is an issue.

2.2 The drainage catchment is already susceptible to intermittent flooding as evidenced by the Stock Beck Action Group and further upstream urbanization is likely to exacerbate these problems rather than alleviate them.

2.3 Consequently, there is a need to adopt a precautionary approach by ensuring that both the available scientific evidence and the scientific uncertainties which exist in relation to flood risk are taken into account when determining planning applications. Proceeding from the known facts and taking a precautionary approach to the uncertainties inherent in the decision-making process, will enable more open and better informed decisions to be made.

2.4 The precautionary principle requires that if a threat of serious or irreversible damage to the environment or human health exists, a lack of full scientific knowledge about the situation should not be allowed to delay containment or remedial steps if the balance of potential costs and benefits justifies enacting them. The precautionary principle is particularly relevant to dealing with the hazard of flooding since, because of local variability and uncertainties, it is often difficult to be prescriptive about the levels of risk. Hence, its application acknowledges the uncertainty in flood estimation.

2.5 The above begs the question, was a formal Flood Risk Assessment requested by South Lakeside District Council with the planning application for the proposed development?

2.6 An assessment of the risk of flooding to the proposed development was made by reference to the Environment Agency's (EA) flood map website. This revealed that the proposed development is adjacent to an area subject to flooding from rivers or sea without defences. However, the EA employs low resolution flood mapping to create indicative flood maps in order to provide a cautious estimate of flood risk but, on a more local scale, this mapping may not be accurate.

2.7 Due to their size, some watercourses are sometimes not modelled as part of the EA Flood Map. Consequently, as the modelling undertaken by the EA to derive an 'indicative' flood map may not include some local watercourses, the EA modelling may have limitations with regard to the area under investigation. Such potential limitations may give rise to significant uncertainties with respect to catchment flooding.

2.8 As well as assessing the risk to the site posed by fluvial (river) flooding, a comprehensive Flood Risk Assessment would need to consider flooding from other sources including groundwater. Any detailed flood modelling of the local drainage catchment within a Flood Risk Assessment would therefore be able to challenge the EA's modelled flood levels and its corresponding indicative flood zones.

### **3.0 Climate Change**

3.1 The risk of potential future flooding is compounded by gaps in the understanding of how the changing climate will affect areas currently at risk of flooding. This risk is expected to increase significantly over time with the danger of flooding becoming more real each year with wetter winters and more frequent storms.

3.2 There is an increasing body of scientific evidence that the global climate is changing as a result of human activity. The nature of climate change at a regional level will vary: for the UK, projections of future climate change indicate that more frequent short-duration, high-intensity rainfall and more frequent periods of long-duration rainfall of the type responsible for the 2000 floods could be expected. These kinds of changes will have implications for river flooding and also for local flash flooding.

3.3 These risks, coupled with the risk of rising groundwater levels, must be addressed as part of the planning application process since development which would have a significant probability of being affected by flooding or would increase the probability of flooding elsewhere should not be permitted.



3.4 With changing climate the risk of flooding is expected to increase significantly over time. The UK floods of 2007 caused 55,000 properties to flood, 7,000 people had to be rescued and 13 people died; the resulting insurance bill topped £3.5bn.

#### **4.0 Hydrogeology**

4.1 Within an aquifer, the water table is rarely horizontal, but reflects the surface relief due to the capillary effect in soils, sediments and other porous media. When water reaches the zone of saturation the movement of water is no longer vertical but is horizontal in the direction of the slope of the water table; the slope of the water table, or hydraulic gradient, depends on the rate at which water is added to the system and the permeability of the material. Notably, perched aquifers reduce rates of recharge to underlying regional aquifers and redirect subsurface water flow along horizontal flowpaths.

4.2 The proposed development site to the south of Sedbergh Road comprising fields R121; R141 and R56 contains numerous land drainage ditches together with springs and seepages, and ponds. Springs and seepages occur whenever water-bearing conduits intersect the ground surface and these features serve to confirm that the area has a complex hydrogeology.

4.3 The relationship between rainfall and water levels within the ponds needs to be established and forms another unknown that should have been resolved at the planning application stage since the planning authority must take the probability of flooding from groundwater into account when determining planning applications; the interaction between surface waters and ground waters is of fundamental importance to flood risk in the area of the proposed development.

4.4 It is interesting to note that the 1968 OS Map (1:2500) confirms two ponds to the south of the development site (R141) yet subsequent ordnance mapping only confirms the presence of a single pond. This suggests that one of these ponds has, since 1968, dried out.

4.5 Given the above observations, it is likely that this pond is a Temporary Pool, sometimes referred to as a Vernal Pool or Pond that is hydraulically connected to a perched water table located beneath the site. These pools are temporary bodies of water that are usually devoid of fish. They are termed 'vernal' because they are often, but not necessarily, at their peak in the spring ('vernal' - of, relating to, or occurring in the spring).

4.6 Most Vernal Pools are dry for at least part of the year and fill with winter rains. Some pools may remain at least partially filled with water throughout the year but all dry up periodically. Relatively little is known about how perched aquifers regulate hydrogeological processes in Vernal Pool landscapes. However, it is likely that a perched aquifer maintains a saturated connection with local Vernal Pools and that perched aquifer hydrology plays an important role in stream base flow and Vernal Pool function.

4.7 Any significant changes in the management of the local aquifer, for instance by substantially increasing pumping to abstract groundwater, would have no effect on a Vernal Pool since perched groundwater flows laterally and downward at rates that are unaffected by the position of the regional water table. However, the presence of a Vernal Pool in the area would further suggest a complex hydrology/hydrogeology.



## **5.0 Conclusion & Recommendations**

### **5.1 A detailed site inspection revealed that**

1. the proposed development sites do not constitute the most sustainable sites for development;
2. the proposed development will not conserve and enhance the distinct character of the District;
3. the proposed development will not afford appropriate protection to South Lakeland's high quality environment;
4. the circumstances that warrant the proposed development in a rural area are unclear;
5. the proposed development will not address issues of affordability of housing;
6. the proposed development will not support wildlife nor provide natural adaptation and mitigation mechanisms against the effects of climate change;
7. the proposed development of a green-field site is not consistent with acceptable principles of sustainable development; and in so doing
8. the proposed development does not comply with the provisions of the South Lakeland Local Development Framework Allocations of Land Development Plan November 2008.

5.2 Specifically, there would appear to be numerous uncertainties with respect to flood risk and further investigative works are suggested to permit the preparation of a detailed report on this matter.

5.3 Further investigative works should comprise a detailed desk study which includes, but is not limited to, an inspection, review and assessment of

1. Environment Agency Drainage Catchment Modelling Data
2. Environment Agency Catchment Abstraction Management Strategies (CAMS); six year plans that record how the Environment Agency is going to manage water resources within a relevant water catchment
3. Environment Agency Groundwater Source Protection Zones
4. British Geological Survey Hydrogeology Maps (Major & Minor Aquifers)
5. British Geological Survey Superficial Deposits Distribution Maps
6. British Geological Survey Superficial Deposits Engineering Geology Maps
7. British Geological Survey Geomorphology & Drainage Maps
8. British Geological Survey Hydrogeology & Flood Limits Maps
9. Further Hydrological and Hydrogeological data and memoirs held at the British Geological Survey in Keyworth, Nottinghamshire