

- 7.9.57** The potential for noise and vibration arising from construction of the Proposed Development should be managed in accordance with the principles of British Standard 5228 'Noise Control on Construction and Open Sites', and referenced in contractual documentation in order to ensure compliance. The need for appropriate control measures should be stated in the contract and work should be phased in such a way so as to reduce the potential for negative effects to a minimum.
- 7.9.58** The use of each of the mitigation measures detailed in this report may not be appropriate or feasible at all receptors due to site layout and the transitory nature of construction activities, for example. It is possible, however, to reduce the potential effects of the Proposed Development through the implementation of various mitigation measures detailed in this report. Such measures would allow for potential noise and vibration effects to be controlled at source and through pro-active engineering, layout and management measures, thereby limiting the overall effect of the proposed scheme to a minimum.
- 7.9.59** Whilst piling would generate the highest source sound levels, tree felling and road construction would result in the highest received noise levels due to their respective proximity to receptors. Tree felling and road construction noise levels are predicted to exceed the recommended limit of 70dB(A) as advised in the Department of Environment's Advisory Leaflet 72, constituting a moderate effect when the duration of these activities is considered. The predicted effects for other construction activities are judged to be minor to negligible, that is, not significant.
- 7.9.60** It is predicted that construction and operational vibration levels resulting from Proposed Development would remain at a level that is not likely to cause cosmetic damage to buildings or disturb inhabitants, this aspect therefore represents a negligible, that is, not significant, effect. Piling should not be carried out within 5m of underground services (i.e. gas/water mains and sewers of brick construction). A study to establish the location of underground services should be conducted prior to commencement of piling works.

7.10 EFFECT OF NIGHT LIGHTING

Introduction

- 7.10.1** This section considers the likely significant effects of lighting, associated with the proposed new community at An Camas Mòr, on the landscape character and the visual amenity of the local area at night. This section also assess the impacts of lighting associated with the new community on designated landscapes and other landscapes of recognised value. Mitigation measures to reduce adverse impacts are identified.

Scope

7.10.2 This report includes:

- A baseline description of the study area and its planning context in terms of night-time landscape character, night-time visual amenity, topography, land use and existing light levels;
- A description of the lighting strategy;
- An assessment of predicted night-time impacts of the proposed lighting strategy on the landscape character and visual amenity of the study area;
- Mitigation measures to reduce predicted adverse impacts; and
- An assessment of residual impacts of the proposed scheme after mitigation measures have been taken into account.

Possible Effects and Inter-relationships

7.10.3 Several possible effects have been identified as relevant to the assessment of the effect of Night Lighting. Table 7.11 lists the various effects and Inter-relationships with the Environmental Impact Assessment topics. No Inter-relationships have been identified.

Influence of Periods A-D on Assessment

7.10.4 The proposed An Camas Mòr project would be developed in four Periods A to D. For the purposes of this assessment the following phases are considered to be the most relevant to the assessment of the impact of lighting pollution:

- Construction Periods A to D, night time light levels would be increased; and
- Operation, night time light levels would be increased.

Consultations

7.10.5 Letters and a Note of Scope were sent to the Cairngorms National Park Authority (CNPA) and the Highlands Council (THC) on 23 October 2008. Brief telephone discussion of the lighting aspects of the scheme took place.

7.10.6 CNPA's main concern is the pollution of the dark skies above the Cairngorms National Park. CNPA pointed out that night-hikers and astronomers value the dark skies and the 'wild land' quality of the park by night. Forestry Commission has in the past organised dark skies evenings in the Park. The view from Lairig Ghru is highly valued by CNPA and its visitors. CNPA hope that the quality of lighting in the proposed scheme would be high enough to act as an exemplar for

improving the existing street lighting in Aviemore which has currently has a deleterious effect on the CNPA.

- 7.10.7** THC is concerned about any impact of light pollution on residents of Aviemore and any interaction between lighting and wet, cloudy or misty weather conditions which might increase 'glow'.

The Study Area

- 7.10.8** The site is around 220 above ordnance datum (AOD) and is surrounded by substantial tree belts and plantations ranging from 10 to nearly 60 years old. Land use around the site includes:

- The River Spey and Aviemore in the Spey valley in the west;
- Mixed woodland, arable fields, settlements (Inverdrue and Coylumbridge), a hotel, isolated farms and a fish farm in the south;
- Steeply rising land to the east covered with dense coniferous woodland and treeless heathland rising to the peak of Creag a' Ghreusaiche, at 435m AOD in the east; and
- Woodland and the River Spey flood plain to the north.

Baseline Conditions

Land Cover and Topography

- 7.10.9** The proposed development site itself has a locally undulating topography. The site slopes gently towards the west but is mainly at around 220m above ordnance datum (AOD). The land slopes steeply west of the site down to the River Spey Valley. This bank interrupts the view of the site from much of the Dalfaber Golf Course complex.

- 7.10.10** The site is surrounded by substantial tree belts and plantations. These are largely planted with conifers, with some birch, which range from 10 to nearly 60 years old. On the east side of the site itself, parallel with the B970, there is a woodland buffer strip which has recently been planted. The trees, including Scots pine and silver birch, range between two and five metres high. Across the rest of the site there are plantations, mainly of Scots pine and birch, with an understorey, in places, of broom and gorse. The plantations vary in age and height; the oldest was planted in 1970 and the youngest in 2002 (An Camas Mòr Indicative Land Use Plan Review 2, 04/07/08). The coniferous plantations form a dense screen round the site throughout the year. Where the depth of the woodland belt is greater than 50m the screening effect is almost total; however, the clear stems of the trees allow filtered views of the site where the plantations are less than 50m wide.

- 7.10.11** There are areas of scrub (largely broom and gorse) around the west side of the site, which screen views from the west into the site, during summer and winter.

Landscape Context

- 7.10.12** To the west of the Proposed Development site is the River Spey floodplain. The land use here includes pasture and woodland. There are belts of densely growing mature tree and shrub vegetation running the length of the river. Aviemore lies on the west of the Spey. South of the site, the land use is mainly mixed-age woodland, with some arable fields and two settlements (Inverdrue and Coylumbridge), a hotel complex, isolated farms and a fish farm: they are all over 1km from the site. East of the site, the landscape gently rises for about 500 metres but then rises steeply to the peak of Creag a' Ghreusaiche, at 435m AOD. The land is marshy between the B970 and Guislich and Achnahatnich Farms where the Kinchyles Burn flows northwards to Loch Pityoulish. The wider context of the study area and beyond is predominately highland, including the Cairngorm Mountains to the south and east and the Monadhliath Mountains to the west. Wide U-shaped valleys allow long views from upland areas.

Designations

- 7.10.13** The site is within the Cairngorms National Park. And the Cairngorm Mountains National Scenic Area

Key Considerations

- 7.10.14** The key considerations in relation to night lighting are:
- Impact of lighting on night time visual amenity during construction and operation; and
 - Impact of lighting on night time landscape character during operation.
- 7.10.15** The possible impacts on, which form the key considerations for assessment, are:
- The visibility of the Increase in night lighting resulting from the proposed new community during construction and operation; and
 - Change to the night time landscape character of the area.

Assessment Methodology

Night-time Landscape Character and Quality

7.10.16 The proposed new community at An Camas Mòr is located within the Strathspey Landscape Character Area. The study area was broken down into six localised night-time landscape character areas:

- Aviemore, which is brightly lit in the town centre;
- The River Spey flood plain which is mainly dark;
- The B970 road corridor which is lit from the B970/B9152 roundabout, as far as Inverdrue;
- Loch Morlich and The Cairngorm Mountains which are dark throughout the year;
- The fields between Creag a' Ghreusaiche and the Site which are largely dark; and
- The Development Site which is largely dark, though might receive reflected glow from Aviemore on wet nights.

Night-time Visual Amenity

7.10.17 Night-time visual receptors of the development were identified. They include:

- Drivers on the B970 east of the site;
- Guislich Farm and Drumintoul Lodge east of the B970;
- Residents, visitors, rail travellers and workers in Aviemore;
- Residents in Upper Tullochgrue; and
- A small number of night hikers on the Craigellachie National Nature Reserve, the Summit of Craiggowrie and the Ski Lift Road.

Lighting Strategy

7.10.18 The Lighting Strategy is set out in the Supporting Document Indicative Land Use Plan Strategies.

- The lighting levels would be far lower than currently used in the centre of Aviemore and similar to the existing lighting levels around the Coylumbridge Hotel Complex;

- Road junctions, new roundabouts and pedestrian crossings would be lit with 6m high luminaries;
- Cycle paths would be lit with luminaires fixed to 5m high columns on one side of the cycle path;
- The paths would be lit with bollard lighting on a single side, so that they provide an even spread of light and minimise light pollution;
- The Main Street and High Street lighting would be column-mounted and wall-mounted luminaries at 5m height;
- The other areas are likely to lit by bollard lighting or not lit at all; and
- Lights may be dimmed or a number turned off after 22.00hrs.

Site Survey

7.10.19 A site survey was undertaken between 29th September and 1st October 2008, both during the day and the evenings. Viewpoints and visual receptors, identified by desktop study, were verified on site. Where possible, a photograph was taken to illustrate the each potential visual receptor's view of the site. Where this was not possible, a photograph was taken from the site looking towards the potential receptors. Potential viewpoints were then identified. Photographs were taken by day and by night. In some cases, the view was too dark for light to register in the photograph, though light was still faintly discernible by eye. In this case, the photographs are not illustrated. The photographs are all included in the Technical Appendix in Volume 2.

7.10.20 The site survey at night verified the areas of night-time landscape character identified in the desk top study and assessed the lightness or darkness of these areas. Figure 8.2 in the Technical Appendix in Volume 2 shows the night-time landscape character areas. Both nights of the assessment were clear and windy with little cloud and no mist. Light sources were clearly visible but the expected night-time glow from Aviemore was not visible, as there was little moisture in the air to reflect the light sources.

Effects

7.10.21 The Lighting Strategy, the Indicative Land Use Plans aim to prevent or reduce significant adverse effects of the development on night-time landscape character and night-time visual amenity. This aim is achieved through careful planning of the general layout of the site, the built form, the phasing of the development, the retention of existing trees and woodland belts, the creation of open space and the treatment of boundaries and the lighting strategy for the development.

Significance of Effects at Assessment Periods

Impacts on Night-time Landscape Character

- 7.10.22** The existing dense woodland vegetation of the study area, the low lux levels of the proposed Lighting Strategy and the topography of the area combine to reduce the impact of the development on surrounding character areas and visual receptors. The greatest impacts are on receptors close to the development site and on high ground such as Craiggowrie. However, the impact diminishes with distance from the site and from the Ski Road it would be difficult to distinguish the new development from the existing lights of Aviemore.
- 7.10.23** The effects at construction and operation are not significant other than a Significant effect on the Fields between Creag a' Ghreusaiche and the Site.

Significant Effects on Visual Amenity during Construction

- 7.10.24** The only significant effect of the development on night-time visual amenity during construction would be on:
- Guislich Farm.

Significant Effects on Visual Amenity during Operation

- 7.10.25** There would be significant effects on night-time visual amenity at the following locations (see Volume 2 Chapter 3 Table 4.1 for the Viewpoint List and Technical Appendix Figure 4.4):
- Eastern Site Entrance (Location 2);
 - From the direction of Creag a' Ghreusaiche (Location 3);
 - Craigellachie National Nature Reserve (Location 8);
 - Upper Tullochgrue (Location 10); and
 - Craiggowrie Summit (Location 11).

Mitigation

- 7.10.26** During the assessment process, consideration by An Camas Mòr LLP and the masterplan architects led to a reconsideration of the proposed layout and relationship of the buildings at the east end of the High Street in relation to the B970 as shown in Volume 2 Chapter 9 Annex A Figure 10. Consequently, a revised Indicative Land Use Plan 'Woodland Trees and Open Space' 8-04-2009 (Volume 1 Chapter 5 Figure 5.7 and Volume 2 Chapter 9 Annex A Figure 9) by Gehl Architects/Ben Tindall Architects (GABTA) was developed for this area relocating the proposed buildings further from the B970, allowing a 30m width of existing tree planting adjacent to the B970 to be retained, as well as

reducing the overall building heights in this area to 2.5 storeys for the proposed hotel and 1.5 storeys for the information centre. Trees would be retained in what would become the centre of the roundabout - which is wholly within the development site. The modifications are indicated on the Indicative Land Use Plan figures in Volume 1, Chapter 5, Figures 5.2 to 5.5 and Volume 2 Chapter 9.

7.10.27 In order to mitigate significant adverse effects on locations to the east of the development site, a belt of woodland planting east of the entrance roundabout and the B970 is proposed which would reduce glare and light spill from the roundabout lighting. New woodland edge shrub planting along the west side of the B970, within the retained woodland belt is proposed to increase the screening effect of the existing woodland. The locations of these areas of additional planting are shown in Figure 8.8 (Volume 2, Technical Appendix).

Significance of Residual Effects

7.10.28 The effects are described and summarised in Table 7.10.

Table 7.10: Residual Visual Impacts

Visual Receptor	Visual Sensitivity	Potential Operational Impacts without Mitigation	Likely Operational Impacts with Mitigation	Residual Significant Effects
2. Looking from East Site Entrance				
Cars on the road	Low	High	Medium	Not Significant (Moderate –slight adverse)
3. Views from the direction of_Creag a’ Ghreusaiche Summit				
Guislich Farm	Medium	High	Medium-low	Not Significant (Moderate -Moderate-slight adverse)
Drumintoul Lodge	Medium	High	Medium-low	Not Significant (Moderate -Moderate-slight adverse)
8. Looking from Craigellachie National Nature Reserve				
Night hikers and observers of the night skies	High	Medium	Medium	Significant (Major-moderate adverse)
10. Looking from Upper Tullochgrue				
Residents of Upper Tullochgrue	Medium	Medium	Low	Not Significant (Moderate – slight adverse)
11. Looking from Craiggowrie Summit				

Visual Receptor	Visual Sensitivity	Potential Operational Impacts without Mitigation	Likely Operational Impacts with Mitigation	Residual Significant Effects
Night hikers and observers of the night skies	High	Medium	Medium	Significant (Major-moderate – adverse)

Summary

7.10.29 There would be no significant residual effects on night landscape character.

7.10.30 As mitigation planting becomes established, the lighting effects of the proposed new community would gradually diminish and the only significant residual effects on visual amenity would be from the elevated viewpoints at Craigellachie National Nature Reserve (Location 8) and from Craiggowrie Summit (Location 11). In both cases receptors would be a small number of night-hikers and observers of the night skies.

7.11 EFFECT ON HYDROLOGY & WATER QUALITY

Introduction

7.11.1 This chapter assesses the impact of the proposed housing development at An Camas Mòr on surface water, ground water and water quality. The chapter considers the impacts from the new development during the construction phase (finishing in 2027) and at any stage of the operational phase. The assessment also includes consideration of the impacts of new access roads and river crossings.

7.11.2 The assessment of the proposed development on flood risk is presented as a Supporting Document and the impact on ecology at the site would be considered in Volume 2 Chapter 9 Section 4.

Scope

7.11.3 The scope of this assessment considers the likely effect of the proposed new community on the water environment at a site level, local level and in relation to the Cairngorms National Park. In particular, the assessment covers the Spey and Druie Rivers as major receptors in this development. A range of hydrological information has been used to describe the baseline conditions. The proposed new community is assessed against these conditions, in relation to a series of different stages of development and over different time periods.

Possible Effects and Inter-relationships