5.0 Approach & materiality

Materiality

Extensive consideration has been given to the material choices for the proposed development. Our objective is to ensure that the selected materials harmonize with the existing architectural context, while also offering durability and aesthetic appeal. The revised choices strike a balance between complementing the surrounding built environment and meeting our project's design goals.

Material precedents show a range of uses within a rural setting. Of particular note are the following:

Studland House

Studland House is a substantially renovated and extended private home in Dorset. The sloping site has views over Studland Bay, and is part of a small estate of houses within an Area of Outstanding Natural Beauty (AONB).

The house consists of two distinct volumes connected by a glazed link: materials include the northern volume clad in dark grey zinc at first floor, with Purbeck stone walls below.

The Etches Collection, Dorset

Another example of a local rural scheme with steeply pitched roofs and gable elevations, natural stone and a contemporary timber clad colonnade.

Hauser and Wirth, Somerset

The site at Durslade Farm in Somerset, southwest England, originally comprised a farmhouse, stables, cow sheds, a piggery, a threshing barn and other outbuildings dating from as far back as the 1760s. New galleries were added to the site and comprised of profiled zinc cladding for the new roofs, timber cladding, natural stone and a con-

Studland House @ Strom Architects

5.0 Approach & materiality

The Etches Collection, Dorset

Hauser and Wirth, Somerset @ B2 Architects

5.0 Approach & materiality

Principle Materials

The palette of external materials in this development keeps to a rural and natural temperament, this has been driven with a strong sustainable agenda. The palette relates to vernacular architecture giving connection within the area and an indication of availability both locally and naturally. The material palette we are suggesting for the scheme includes natural stone, timber cladding and glass - maximising daylight.

Due to the unique nature of the Knoll House site, the way in which materials are used and relate to each other are of great importance. The use of these materials were not just an aesthetic choice, but also one of locality, distance from suppliers and relation to the local architectural character of the area.

The three key materials utilised:

Zinc

The zinc cladding panel will retain reference to the commonly seen metal clad agricultural buildings within the Studland rural area.

Zinc is available in pre-weathered finishes as well as mill finish Natural Zinc. Light Reflectance Value, measures the amount of visible or usable light that reflects from a surface. LRV is expressed as a percentage from 0 to 100; the higher the number the more visible light that is reflected. Typically, lighter colours will have a higher value than dark colours, but texture can impact LRV as well. Rough textures tend to reflect less visible light.

The Zinc which will be utilised on the project will have a matt grey finish and a light reflective value of below 20 and will therefore be of low reflectance with the intention to be contemporary yet subtle in style.

Purbeck Stone

Purbeck stone has been quarried in the Swanage area since the time of the Roman empire and is utilised extensively on buildings within the Studland area. It is an understated mid grey/ beige tone and is used on all proposed buildings at Knoll House. It links to our muted natural material palette and blends to the surrounding landscape.

Timber

Timber cladding possesses many properties that make timber appealing and suitable for the site. A natural and warm material, timber creates welcoming outside spaces and again blends in with natural surroundings. Sustainability is essential to the design of this development and, timber as a renewable resource was an obvious choice.

Low light reflectance value Zinc

Pre-weathered timber cladding

Purbeck Stone

6.0 Mitigation of light spill

Protecting dark skies

Since the submission of the planning proposal in October, a diligent approach has been undertaken, leading to the adoption of supplementary research and refined strategies. This in-depth process has further enhanced the project's potential and ensured its alignment with key standards and best practices. By integrating new insights and strategies, the development now presents an even more comprehensive and refined solution. The incorporation of these additional findings and strategies signifies a commitment to continuous improvement and a proactive approach towards achieving a desired outcome for all stakeholders.

Light pollution refers to the excessive and misdirected artificial lighting that disrupts the natural darkness of the night sky. While often associated with urban areas, light pollution is increasingly becoming a concern in rural regions as well. Several key strategies can be highlighted to mitigate the impacts. By adopting these strategies the Studland area can preserve the beauty of their night skies, reduce energy consumption, protect wildlife, and promote human well-being.

These strategies were highlighted in the original design and access statement but have been investigated in further detail and responded to in the revised submission.

'South Downs National Park Authority's - Dark Skies

6.0 Mitigation of light spill

The following principles and mitigation methods have been adopted into the fabric of the buildings as listed below. These methods and their location have been highlighted on the revised elevations submitted alongside this report.

1. Glazing not to exceed 25% of the floor area

2. Avoidance of large single continuous areas of glazing such as multi-floor to eaves glazing without any mitigation methods

3. Use an appropriate visible light transmission(VLT) factor as a primary means of mitigation on different applications to reduce internal light spill. The glass with specially coated material will be similar to blackout glass or tinted windows, which can reduce visible light transmittance to ~66%.

4. Breaking up large areas of glazing by removing sections of glazing for walls, or using exterior shielding and louvres.

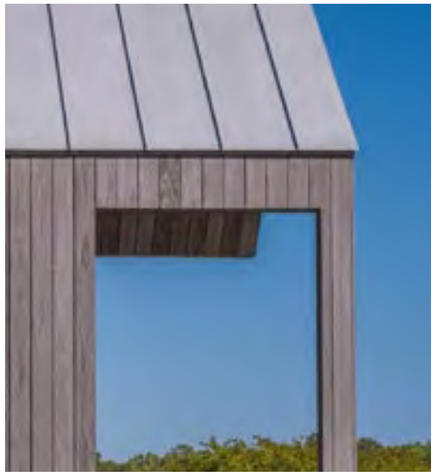
5. Balcony design to minimise impact - extending eaves, building shielding, screen development

6. Building form - raked/ crescent nature of the hotel building and villas will help shield areas of glazing

7. Surrounding vegetation screen

8. Electronically timed blackout blinds

9. Restaurant lighting specification



The images above demonstrate some of the light mitigation methods integrated into the scheme since the October planning submission

6.1 Light spill - Hotel

The elevations to the right demonstrate the location and type of light mitigation methods that have been integrated/ developed further on the façades of the main hotel and apartment building since the October planning submission.

External slatted screens are just one of the fixed measures that have been introduced to the building façades and play a crucial role in minimising light pollution as they act as a barrier between indoor and outdoor light.

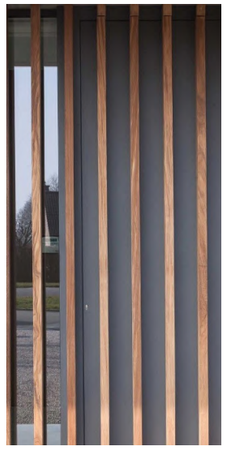
They offer convenience and precise control over light penetration. These screens can be adjusted based on the time of day to minimise light pollution and create a desired indoor atmosphere. By considering the shape, size, and placement of screens, they have been incorporated harmoniously, ensuring both functionality and visual appeal.

For detailed information on location of all integrated mitigation methods refer to the revised elevation drawings that form part of this submission.

Key

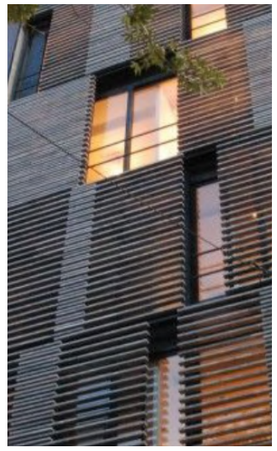
- A — All external glazing to be specified with an appropriate visible light transmittance (LVT) factor to reduce light spill
- B — Large areas of glazing broken up with solid panels
- C — Extended roof eaves to enclose balconies
- D — External slatted screens to disperse light
- E — Stepped/staggered building form
- F — Internal blackout blinds

External slatted screens

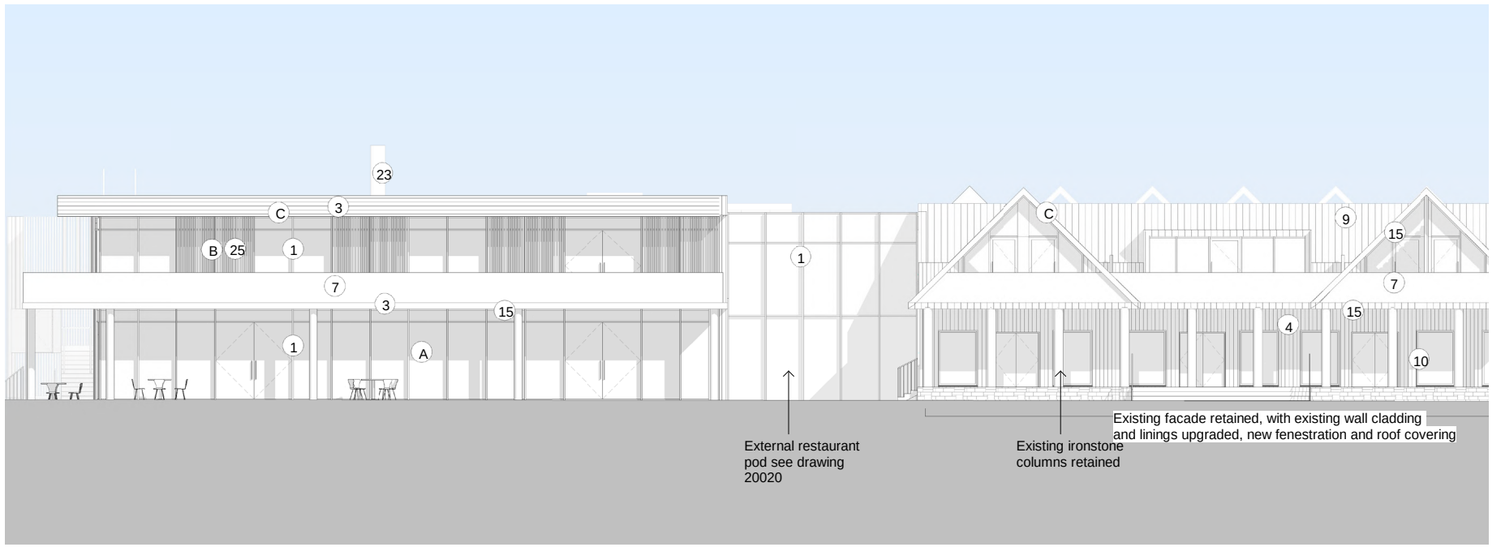


Building form

Vegetation



Glazing reduction



Proposed east elevation of the hotel highlighting adopted light mitigation methods (NTS)

6.2 Light spill - Spa & Villas

The elevations to the right demonstrate the location and type of light mitigation methods that have been integrated into the façades of the spa and villas proposals.

Large areas of glazing have been broken up by fixed panels. Building form is staggered in approach with overhanging eaves and slatted screens dividing balconies.

Crucially glazing does not exceed 25% and anti-glare coatings are integrated into areas of glazing to reducing light pollution further.

The fixed updates implemented are deemed appropriate; however to further enhance the effectiveness electronically timed retractable window screens with light blocking materials will add an extra level of protection. These screens can be extended or retracted as needed, enabling occupants to control light levels and reduce light pollution during night hours while maintaining natural light during the day. In addition visitors will be educated about the importance of window blinds design in reducing light pollution and encourage them to make informed decisions and motion sensors and timers will ensure that lights are only activated when necessary.

Key

- (A) All external glazing to be specified with an appropriate visible light transmittance (LVT) factor to reduce light spill
- (B) Large areas of glazing broken up with solid panels
- (C) Extended roof eaves to enclose balconies
- (D) External slatted screens to disperse light
- (E) Stepped/staggered building form
- (F) Internal blackout blinds

Proposed south elevation of the spa highlighting adopted light mitigation methods (NTS)

Proposed east elevation of the villas highlighting adopted light mitigation methods (NTS)

7.0 Conclusion

In conclusion, the updated proposals seek to improve the overall design approach and address the concerns raised. In summary the design approach enhances the natural environment, supports the need to protect wildlife habitats, respects the cultural and historical context, and promotes public enjoyment and well-being.

Adopting responsible design strategies with regards the integration of additional light mitigation methods, refinement of material choices and greater analysis of the southern boundary has ensured the preservation of the AONB's unique qualities while still meeting the needs of a contemporary and desirable, high quality hotel.

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