

ENVIRONMENTAL ASSESSMENT - DORSTONE

PF 703

Project: Character Appraisal
Dorstone Parish Council
Herefordshire

Date: 24.11.14

Issue: DRAFT

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Revision: V1

INTRODUCTION

Terms of Appointment

OHA have been appointed by Dorstone PC to prepare an Environmental Assessment to complement the historic nature of Dorstone Village, to be included within their Neighbourhood Plan.

The findings of this assessment will then be used to help formulate policies and guidelines that the parish council can use within their Neighbourhood Plan, so that any future development within the settlement takes account of these guidelines and policies.

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GENERAL PRINCIPLES FOR LOW ENERGY ARCHITECTURE

The United Kingdom generally has a temperate climate, which results in certain rules and strategies towards low energy architecture, as follows (based on 101 Rules of Thumb For Low Energy Architecture, by Huw Heywood RIBA Publishing):

1.00 TEMPERATE CLIMATE

1.01 Rules for temperate climate:

- The goal is reduced heating-energy needs using buffer zones and insulation to reduce winter heat loss.
- Prevent overheating in summer with thermal mass (and nocturnal ventilation) for temperature stability, shading as needed.
- Use natural heating in winter
- Reduced air infiltration is a must: sheltered entrances and wind lobbies included.

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1.02 Strategy for temperate climate:

- Construction: high thermal mass for temperature stability, high levels of insulation, avoiding infiltration.
- Buffer zones of secondary spaces, such as Kitchens, Bathrooms, Store rooms.
- Small windows to North
- Orientation for solar gain and for ventilation
- GSHP for winter heating
- Glass and window properties:
 - High G Value (with summer shading essential)
 - Low E glazing (surface 3)
 - Low U Value
- Roof overhangs protect fabric from rain (which contributes to cooling) and may be used for rainwater collection
- Warm rooms to solar oriented face (cold rooms as buffer opposite)
- Sunspace coupled with interior spaces. Solar shading to prevent overheating in summer.
- Sheltering walls and planting as wind buffers
- Sheltered entrance with wind lobby
- Ventilation with winter heat recovery

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2.00 IMPLEMENTATION

2.01 Taking account of the above, some of these will undoubtedly be addressed by Building Control, through any Building Regulations Application. The 'Rules' are there as a starting point, and should be used as a basis for moving the project forward.

A number of the points raised under 'Strategy,' however, can be addressed in the specific context of Dorstone, and its historic built environment:

- Small windows to North: given the historic nature of Dorstone, this could be easily achieved.
- Orientation for solar gain and for ventilation: this would be more site specific, but would have a large impact on the buildings sustainability.
- GSHP for winter heating: given that GSHP are more efficient in ground that retains water, this would be an ideal choice as Dorstone sits within a valley.
- Sheltering walls and planting as wind buffers: to a large extent, this already happens in Dorstone, with stone boundary walls, and tall hedgerows.
- Sheltered entrance with wind lobby: again, this already happens, especially with the use of porches.

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