

East Byreleask Steading - Design brief

Objectives

- Create a comfortable home well suited to modern living
- Provide practical & accessible living and utility space
- Respect the character of the building and the locale
- Design it to be appealing to future buyers
- Subject to available budget:
 - Follow best practice
 - Ensure the home has the lowest practical energy consumption
 - Generate some of the required energy from renewable sources, with scope to increase
 - Take practical measures to minimise water consumption
 - Make the house easy to operate and to maintain

Best Practice

1. Aim for **EPC B** rating, will live with **EPC C**.
2. **Code for Sustainable Homes** (<http://www.breeam.org/>) - aim for 4* - 5*, however must fit budget.
3. **Lifetime Homes** (<http://www.lifetimehomes.org.uk/pages/revised-design-criteria.html>) - adopt the principals; C5 should not apply; C12 would expect both staircases to be suitable for stair lift but do not plan for through-floor lift.
4. **Secured by Design**, (<http://www.securedbydesign.com/>) adopt those parts that apply to sparsely populated rural areas - for example external lighting; parking; doors/windows/locks.
5. Fire/evacuation requirements?
6. Consider environmental impact of materials
7. Consider responsible sourcing of materials

Energy, environment & efficiency

8. Thermal insulation to a high standard.
9. Minimise risk of thermal bridging e.g. by running services inside the thermal envelope.
10. Windows - ?A or A+ rated softwood framed; overall U <= 1.0; single-pane windows where possible.
11. Roof lights - ?velux or equivalent; ?A rated.
12. Doors - ?A rated softwood; ?part-glazing.
13. Make structure as air-tight as practical; maintain breathability; would not expect to do pressure tests.
14. Not sure about waste air heat recovery or Heat Squirrel/equivalent to reclaim heat from showers/baths/sinks - probably not, expensive and something else to go wrong.
15. Heating - Ground Source Heat Pump (single phase so 11-12kW max) for all-year use; Woodburner/backboiler for cold weather, to supplement heating and to heat hot water. Use thermal store. Underfloor heating for all of downstairs and the upstairs en-suites. Radiators in other upstairs rooms. Heated towel rails in all bathrooms/shower rooms.
16. Hot water - immersion heater as backup when woodburner/backboiler not in use. Option to add solar collector later.

17. PV panels - on roof facing south; ?4-6kWp; aim to use all power internally, surplus power to immersion heater.
18. Use low-flow water fittings for showers/basins/kitchen.
19. Not sure about greywater or rainwater harvesting for house use - probably not, expensive and something else to go wrong.
20. Lighting - LED/CFL throughout, including outdoors; good level of lighting to compensate for limitations with natural light.

External

21. Preserve the external appearance of the 2012 design, with the exception of the west leg, which is to have the defective gable wall rebuilt in situ. Keep existing roof lines. All external materials and finishes as previous plans.
22. Natural light: As before, use existing openings wherever practical; selectively add or enlarge openings where needed for natural light.
23. Consider structures over front and back doors, for weather protection.

Roof construction

24. Existing roof replaced with trussed roof; would like 3-4m of loft space in one end of north leg, if it can be accessed to one side of the stairs.
25. Thermal board in lie-ins, mineral fibre in flat sections.
26. New slates, in style of existing slating (fixed size).
27. Concern about ceiling heights/widths in east and west legs after insulating; would like upstairs ceilings to be at least 2m over as much of the width as possible after insulation & flooring, good compromise of higher ceilings v. smaller lie-ins; could we avoid the 70mm ventilation space if we counter-batten slating on east and west legs and use breathable membrane?

Services

28. Sewage treatment - mini STP e.g. Vortex, 6 or 8 people; ? located on NE of plot (15m from steading, 5m from boundaries); outflow to ?soakaway.
29. Surface water drainage - as per previous plans, to a soakaway in centre of plot; large tanks above ground for garden water, fed from roof guttering.
30. Hot water - From thermal store, so mains pressure; could have a pumped loop running along length of north leg of steading, for fast access to hot water - have read mixed views due to heat loss.
31. Bathrooms & kitchen to be positioned/fitted to ease the supply of water/removal of waste water and sewage.
32. Header/expansion tank in north leg loft for stove/backboiler.
33. TV aerial in loft space, if signal strong enough.
34. WiFi with some sort of repeaters to improve signal throughout property.
35. Vehicle access and parking - direct access from shared track to garage; reversing/turning area close to shared track; room to turn 8m Scottish Water truck + access to within 20m of STP; three accessible parking spaces which do not get in the way of above. ?What is needed for access for emergency vehicles?

Internal construction

36. Want to minimise potential for problems with trapped damp in existing external walls; want to have very good insulation but also want to keep thickness of insulation down; non-breathable PIR-type insulation preferred.
37. Kitchen wall needs to bear wall units, bath- & shower-rooms suitable for accessibility aids in future.
38. Note some of the walling is out-of-plumb - east leg, west wall.
39. Remove existing rubble-built internal wall inside west leg, if space for garage is otherwise too short; retain the walls separating the north leg from west and east legs.
40. Ground floor - EITHER standard slab + insulation + screed/UFH OR insulation + slab/UFH
41. Upper floor - ?timber joists/chipboard; ?all loadings to be on existing walls; would consider engineered solution to reduce depth of floor & improve running wires/pipes; ?need for acoustic design (will be carpeted).
42. New internal walls downstairs - to be non-load-bearing; expect it to be block not stud; kitchen & utility need to bear wall units; ?thicker dense block wall for stoves for thermal mass; bath- & shower-rooms suitable for supporting accessibility aids in future.
43. Internal walls upstairs – stud; build cupboards between rooms OR acoustic design; bath- & shower-rooms suitable for accessibility aids in future.
44. Route wiring/pipes to minimise thermal bridging AND improve access for maintenance.
45. Smoke alarms - multi-sensor; in all public rooms, passages, tops of stairs, garage, hallway, lobby, plant room.
46. Extractor fans in bathrooms/shower rooms with humidistats.

Décor

47. Consistency/themes throughout, with individual variations.
48. Walls/ceilings predominantly painted in pale emulsion.
49. Internal doors - 'Suffolk-style' or 'Croft-style'; hardwood, probably oak; fire-resistant where needed; clear part-glazed in public areas, obscured part-glazed in private areas.
50. Wooden flooring - engineered tongue/groove planking, for UFH; hardwood surface, probably oak.
51. Tiled floors – slate or tiles.
52. Skirting, architrave, picture rail if used in lounge/diner - hardwood, probably oak.
53. Gallery rail - hardwood, probably oak.
54. Window liners/ledges - hardwood, probably oak.
55. Stairs - straight runs; hardwood, probably oak.

Internal layout

56. North leg - general
 - a. Mostly public, utility and service rooms; semi-open-plan; but want to limit air movements from front/back doors.
 - b. Retain existing openings to east and west legs, on south side; aim for visibility through entire length, with glazed doors where needed to reduce through-draughts.
57. North leg - Kitchen/Family/Utility and Lounge/Dining areas

- a. Kitchen/family room - 6-8m long?; open plan; table for 6 extending to 8; sofas/easy chairs; woodburner with backboiler; tiled flooring for kitchen, wood flooring for family area.
 - b. Lounge/dining room - 6-7m long?; open plan; room for table for 8 extending to 12; woodburner; wood flooring.
 - c. Kitchen/family room and Lounge/dining room to be adjacent; stoves on party wall; opening(s) between area on south side; possibly arch.
 - d. Utility room for laundry/storage; drying rack; tiled floor
 - e. Space for indoor recycling containers, for categories required by local authority, could be in kitchen or utility room.
 - f. Storage for household cleaning goods, toilet roll, vacuum cleaner, ironing board; could be in kitchen or utility room.
58. North leg - Entrances/hallway/cloakroom/services
- a. Existing planned door on north wall; will be the front door; opening into lobby as per existing plans (if no external weather protection); access by wheelchair i.e. no door step and with ramp access from accessible parking.
 - b. Boot/coat room to east, off entrance lobby (utility room on the 2012 plans).
 - c. Entrance lobby as per existing plans; with door to hallway; tiled floor.
 - d. Hallway pretty much as already planned, minus the long corridor; wood floor.
 - e. Expect to have glazed internal doors either side of hall.
 - f. Existing door in south wall of hallway into courtyard; will be the back door; nearly opposite front door; must be accessible by wheelchair.
 - g. Cloakroom - immediately off hallway for easy access from courtyard and front door with toilet, basin & heated towel rail; tiled flooring; must be accessible by wheelchair.
 - h. Service area for hot water (thermal store), GSHP, underfloor heating distribution panel, pumps, rising main, PV inverter, possibly electricity consumer unit.
59. East leg downstairs
- a. Dispense with east side door, convert into window.
 - b. Probably retain door on west wall to courtyard.
 - c. Public room at front, below gallery, could be 'Quiet Room'; wood flooring.
 - d. Double bedroom 2; can be smaller than bedrooms 1, 4 & 5; wood flooring.
 - e. Double bedroom 3; can be smaller than bedrooms 1, 4 & 5; wood flooring.
 - f. Built-in storage.
 - g. Shared bathroom - bath, shower, toilet, basin; tiled flooring; wheelchair accessible.
60. East leg upstairs
- a. Just about as in existing plans; with a reduced void, ?half the current planned depth.
 - b. En-suite - as existing plans, at north end; shower, toilet, basin, towel rail; tiled flooring.
 - c. Double bedroom 4 - c. 4m long; as existing plans, in middle; carpet; radiator.
 - d. Built-in storage; between rooms + in lie-in.
 - e. Private lounge/study/office at south end open to void; gallery rail overlooking the large window; c2m long; carpet; radiator.
 - f. Staircase as currently designed.
 - g. In EITHER East leg OR West leg - If there is room for access, storage space in the roof of the North leg.

61. West leg downstairs

- a. Single garage as on existing plans; limited to around half the floor area of west leg (c. 6-7m length).
- b. Master bedroom; wood flooring.
- c. En-suite bath & shower, toilet, washbasin, towel rail, tiled flooring; ?wheelchair accessible.
- d. ?Dressing room, wood flooring.
- e. Built-in storage.
- f. Retain east side external door near north leg; convert doors on south wall and east wall near south wall to windows.

62. West leg upstairs

- a. As mirror image of the East upstairs leg, without the void & gallery.
- b. En-suite - at north end, shower, toilet, basin, towel rail, tiled floor.
- c. Double bedroom 5 in middle; c4m long; carpet; radiator.
- d. Built-in storage.
- e. Private lounge/study/office at south end; 3-4m long; carpet; radiator.
- f. Staircase as per the east leg.
- g. In EITHER East leg OR West leg - If there is room for access, storage space in the roof of the North leg.

Garage

63. Door in north wall - block existing opening in west wall; electric door.
64. Construction - EITHER concrete slab no insulation; external walls un-insulated, ceiling and internal walls insulated? OR insulated concrete slab; external walls insulated?
65. Requirements for fire-resistance?
66. Room for 1 car & 2 bicycles.
67. Storage on east wall?
68. Run services down to/from upstairs bathroom.

Ancillary Store

69. Initially make water-tight & secure, repair door.
70. Glaze openings, level floor, install electricity (sockets & lighting) & water, use as store & workshop.
71. Room for two bicycles.
72. Then, clean up inside wall; re-open blocked-in side-opening, block existing entrance (overlooks boundary), restore stonework, pick & point.

Outdoors

73. Post & fence with stock netting around boundary.
74. Shrubs and native trees inside boundaries on north & east sides as wind breaks; selective planting on west side to disguise neighbouring garage and as wind breaks.
75. Courtyard - part paved, part bed.
76. Polytunnel within reach of front or back doors; power and (rain)water.
77. Raised beds for veg & fruit.
78. Composting facility.

79. Maintain area with trees, under-plant with grass and native plant species.
80. Wood store accessible from steading; space to hold current season cut logs and to season next season logs; area to store uncut timber.

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June 2014