Hunter's Moon Cottage, 8 The Street, Shoreham-by-Sea BN43 5NJ

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Change log

21/12/2018

1. Added section numbering to main sections
2. Updated contents list
3. New sections added 1.10 (Exit doors) and 3,6 (Paving)
4. Attachments added as Annex 1 and 2

09/01/2019

5. Revised section 1.7 (type of boiler)
6. Added link to section 1.7 in section 1.9
7. Status note added throughout
8. Revised section 3.3 (additional chimney pot)

21/01/2019

9. Revised section 1.6 (construction details and type of underfloor heating)

24/04/19

10. Added detail of underfloor insulation (section 1.6)
11. Minor changes throughout to reflect final plans submitted for planning Approval and Listed Building Consent

01/11/19

12. Context section updated.
13. Specification added to 1.6 (Ground floor construction). Minor changes to 1.7 (boiler location); 1.10 (exit doors); 2.2 and new Annex 3 (strengthening collared roof)
    Specification also added to 2.2 for ceiling insulation;

Context

Hunter's Moon Cottage is a thatched, two storey, semi-detached flint and brick-faced building, first constructed in the 16th century as a timber-framed house with wattle-and-daub infill.

In the early 18th century the external walls were rebuilt in brick and flint. The timber frame was removed up to first floor level and completely replaced on the north and east walls. The west wall remains largely intact and is now an internal wall. An outshot on the east wall which encloses the original timber frame has a flint and brick single storey outer wall.

With No 9, Holly Cottage, Hunter's Moon is a Grade 2 listed building in the Old Shoreham conservation area. Front porches and a single-storey linked extension were added post-listing in the 1970s. A detached garage and outbuildings were added to Hunter's Moon in the 1960s and a detached garage to Holly Cottage in 1990.

The building stood alone on the west side of The Street until the mid 1960s. New developments in the 1970s now surround the cottage with detached houses to the north, east and south. Adjacent properties on The Street are 19th century and older, but Adur Avenue, which faces the cottage to the west, is predominantly mid-20th century bungalows and houses.

Since purchasing the cottage in 2018 we have become aware that alterations and additions have been made without listed building consent. Repairs and improvements have been carried out with cheap and sometimes inappropriate materials and fittings, and poor quality of work.

In addressing these issues, we aim to reveal and restore historic features where possible, while at the same time making sure that the house is fit for purpose and sustainable for the future. This is a good opportunity to incorporate modern energy saving technologies and current understanding of the best ways to look after historic fabric. We have applied for permission to replace the detached garage with a new linked extension at the rear of the property, and to upgrade the 1970s extension, enabling us to convert the extension to a kitchen and utility room and move heating, cooking and other services out of the sensitive parts of the property.

Details

Ground floor

Living room, dining room, study area

1.1. Remove redundant wiring, clips and fittings for telephone, power, internet, alarm system and AV. Update wiring and fittings that are retained.

This is predominantly surface wiring, installed post-listing, that is no longer in use or will be replaced with wireless switching and signals.

This should improve the appearance of the old timberwork, allow access for cleaning and insect treatment, and reduce the fire risk.

Wiring that we don't remove will be updated where necessary. Spurs will be incorporated into the circuits. Socket outlets and switches will be replaced with modern fittings.

1.2. Replace secondary glazing

Secondary glazing is fitted throughout. it comprises an aged assortment of different types - aluminium sliding and fixed frames, stick on panels and plastic sheet material, and is ineffective and visually intrusive. We propose to replace it throughout the house with modern replacements in white powder-coated aluminium. The external leaded windows will be unchanged apart from overhauling the frames and furniture and will be redecorated internally in white before installation of the secondary glazing.

The main purpose is to improve thermal insulation and counter drafts from the older leaded-light sashes and casement windows. But it will also improve the internal appearance of the cottage.

Specification attached as Annex 2.

1.3. Remove ceiling coverings

The ground floor ceiling has been concealed with painted hardboard strip panels supported by half-round machined mouldings. We are removing these to reveal the first-floor timber floorboards and joists, and to treat/repair insect attack where necessary.

1.4. Remove paint from old timbers

The original oak beams and rafters have been decorated with black paint. We propose to remove the paint to reveal the timbers and to assist treatment and repair from insect attack. Paint sample analysis shows that the black paint is a 20th century addition to previously-unpainted timber elements..

Method statement attached as Annex 1.

1.5. Replacement of radiators and plumbing.

The existing radiators and valves are corroded, and connected with 8mm copper tubing which has become obstructed: no heat reaches the radiators in the downstairs living room, dining room and kitchen and the radiators in the upstairs

bedrooms are ineffective. There are no working heating controls other than a central thermostat. The pipework which runs in the void below the ground floor is uninsulated.

We will replace the radiators with new convecting units of the same size and in the same locations (but see 1.6). The plumbing will be replaced with 15mm pipework. The pipe routing will be beneath the floor in the main downstairs rooms which is of a modern construction (chipboard on suspended joists), or otherwise follow the old route through existing voids and boxed-in sections. We will add thermostatic heating controls and a 'smart' system controller, all wirelessly connected.

1.6. Improvement of ground floor insulation and installation of underfloor heating

The ground floor construction is modern, comprising chipboard panels on treated 3" x 2" joists, supported on brick sleeper walls. The chipboard flooring is in poor condition and needs replacement or repair. It has recently been overlaid with a pine planked floor. We propose to lift the flooring which will enable us to check the condition of the timberwork, footings and services in the void.

We know that underfloor heating and water supply pipes are not currently insulated, and the electric cables are dated and need replacing. We will renew or repair services, insulate pipework then install insulating material (hemp batts or woodfibre boards) between the joists supported on thin plywood sheets supported in turn on softwood battening – See Fig 1). We will then replace the floor with a new oak floor. We will also consider adding wet underfloor heating running between the joists.

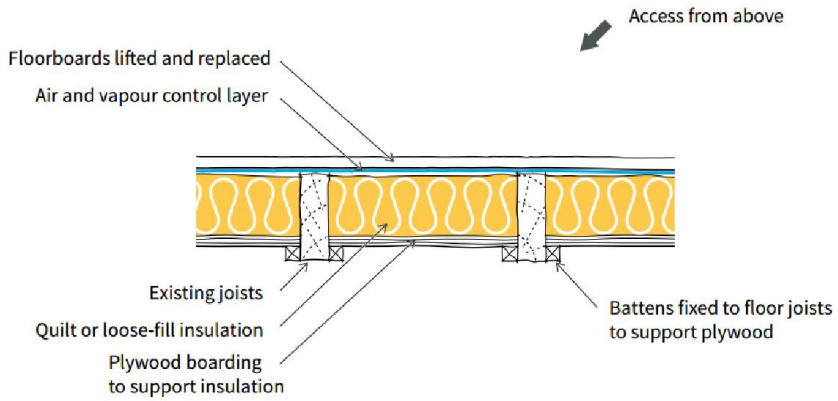


Fig 1 Historic England *Energy Efficiency and Historic Buildings: Insulating Suspended Timber Floors*

1.7. Replacement and re-siting of boiler

The current central heating system comprises a boiler (installed in 2003) which is at the end of its life and is undersized. It is an indirect system with tanks for hot and cold-water storage, and a header tank and associated plumbing/fittings (pumps, zone valves and controller) all located in an upstairs bedroom in the old cottage.

We intend to replace the boiler with a modern system boiler and thermal store, supplying direct hot water to the sinks and accessories, and locate it with other

services away from the 'sensitive' part of the building and in the 1970s extension. The tanks and associated pipework will then be removed.

If planning approval is granted the new boiler will be located in a utility cupboard in the 1970s extension, requiring a new flue, exiting through the clay-tiled roof, but hidden from view from The Street. The boiler can be connected to existing gas and water supplies which will not require rerouting.

1.8. Removal of fitted cupboards

Previous owners have added extensive bespoke fitted cupboards, in the bedrooms and living room, including a 'cabin' bed and vanity unit in one bedroom and an audio-visual unit in the living room. They are post-listing additions (some very recent) and are mostly constructed of blockboard, particleboard and hardboard with softwood framing. They conceal earlier features and hamper ventilation, and need repair We intend to remove them, repair the fixing holes on the walls and replace them with freestanding furniture.

1.9. Remodelling of rear porch

The entrance passage at the rear of the property appears to have been constructed without Listed Building Consent or Planning/Building Control approval (the cottage is in a Conservation Area and permitted rights do not apply). The addition is poorly designed and in need of repair, and currently houses the central heating boiler and cooker ventilation with exhaust vents close to the thatched roof.

We propose to reduce the size of this porch, to fit the roof lines of the cottage and extension, addressing the visual intrusion and the failing roof structure. This will involve removing the boiler (see 0 above). and re-routing the kitchen venting

1.10. Exit doors

Porches have been added to the front and rear of the house since listing (See 1.9 above). The front porch was added with Planning Permission in 1973. The external doors which have been enclosed by these additions have been replaced with glazed internal doors which are out-of-keeping with the fabric and appearance of the cottage when it was listed, are insecure and of poor thermal efficiency. We propose to replace the internal front porch door with a ‘Victorian’ style external door with half glazing and secure locks. This would reflect the original front door fitted to the house before the porch was added (see photograph below taken prior to listing and development of the cottage). The internal door to the rear porch will be replaced with a ‘cottage’ style external door with secure locks, reflecting the existing rear entrance.



Figure 2 Earlier front door prior to construction of porch

First floor

Two bedrooms and attic above

2.1. See above for:

Redundant cabling (1.1)

Re-siting of boiler and removal of tanks and pipework (1.7)

Replacement of radiators (1.5)

Removal of cupboards (1.8)

Secondary glazing (1.2)

2.2. Roof timbers

Rafters, purlins and tie beams in the roof have been attacked heavily by insects and substantial timber loss has occurred. Rafters are also fire damaged. There is some evidence that insects are active within the timbers. The ceilings to the upstairs bedrooms are mostly lath and plaster, with a horizontal boarded ceiling which is plasterboard on softwood joists in the master bedroom, but lath and plaster in the smaller room. Rockwool insulation has been placed over the horizontal ceilings and has blocked airflow over the rafters. There is no insulation in the sloping ceilings.

We have removed the insulation from the horizontal ceilings and between the rafters. Subject to further inspection we propose to:

- Treat all accessible timbers in the roof with permethrin-based insecticide, including the timbers behind the lath and plaster ceiling using a spray lance.
- Strengthen one damaged collar beam with the addition of a new oak beam (see Annex 3)
- Remove the modern plasterboard ceiling and associated joists to create a 'vaulted' roof space, exposing the gable end walls which are of wattle and daub construction.
- Insulate the sloping ceilings up to the apex using Pavatex breathable woodbase insulated boards fixed over the lath and plaster, rendered with I Conserve lime render and lime finish plaster. Insulate the horizontal ceiling in the smaller bedroom with THermafleece sheep wool batts

The objective is to create a better-insulated space without removing the historic fabric and ensuring that the loft timbers are adequately ventilated.

2.3. Ventilation

The bedroom spaces are unventilated, as is the en-suite toilet. The energy saving measures we propose (improved insulation and secondary glazing) will exacerbate this, and it would not be possible to ventilate these spaces to the outside without damaging the existing fabric.

We propose to ventilate these spaces with a mechanical 'whole house' arrangement, supplying fresh air to the bedrooms and extracting waste air from the en-suite via insulated ductwork in the attics and existing vertical boxing, connected to a heat recovery ventilation unit in the roof space of the 1970s extension.

Subject to further investigation, we believe that the ductwork can pass through from the old building to the extension via cavities previously created for an extractor fan in the kitchen which will become redundant when the kitchen is relocated.

If installed, the ventilation system will also extract waste air from the kitchen, utility and bathroom on the ground floor, and supply fresh air to the passageway between the cottage and extension

Outside

3.1. Expose and restore 'French drain', and lower soil levels

Soil levels have been raised around the north and east walls of the old cottage.

A brick retaining wall separates the raised pathway from the cottage wall. The gap - around 200mm - has been capped with slates and cement, with periscope air vents at each end of the resulting channel. However, the system does not appear to function as designed. Damp readings in the adjacent cottage walls are high, and air is not circulating.

The raised pathway covers the original drainage channel which was intended to disperse run-off from the thatch roof. Instead rainfall is intended to be directed away from the cottage via drainage channels in the concrete. In practice however, some of this is directed towards the cottage walls, and also sprays into the walls on impact with the concrete.

We are removing the capping and cleaning out the void. We propose to remove the raised path and lower the soil levels below the depth of the floors internally, relocating the retaining wall to the other side of the path. We then intend to renovate or install a French drain at the foot of the cottage walls to route surface water away from the cottage. We will then lay a permeable hard surface of Sussex clay pavers to match the existing brick path and local flint cobbles.

3.2. Remove television mast with associated wiring and equipment.

A tall mast with aerials, satellite dish and related wiring has been attached to the rear of the cottage. The equipment is mostly redundant and in poor condition. We will remove it entirely and install a low-level satellite dish on the south-facing wall at the rear of the garage This is well away from the sensitive parts of the property and will not be in view from anywhere except the rear patio. Coaxial cable already runs between the garage and house and can be reused to supply a signal to the house.

3.3. Increase chimney height

The cottage has a central chimney, with a brick stack of three flues which extends 1 metre above the thatched ridge. Two of the flues service Hunter's Moon cottage.

The height of the chimney is inadequate for modern building regulations and fire safety standards on thatched rooves, and we are unable to get building insurance for open fires.

We have arranged to install two 900mm pots on the stack to comply with regulations and improve our fire safety. This is a reversible measure, and the pots will echo a tall pot which already exists on the south wall of No 9, and can be seen in all historic photos and drawings of the cottage.

3.4. Removing cement rendering and pointing

Inappropriate repairs to the cottage walls have been made in cement mortar. We propose to gradually replace these with lime mortar. We will experiment with hacking off the cement, but if this is not possible without causing damage to the historic fabric we will replace it as and when it fails.

3.5. Rainware

Plastic gutters and downpipes are fitted to the. 1970s extension. These are ineffective and beyond repair. We will replace them on a like-for-like basis.

The downpipes currently discharge into open drains. We will take the opportunity to make direct connections to the drains.

3.6. Paving

A variety of paving materials are used around the cottage including brick, concrete, stone flags and 'crazy' paving. The older concrete paths, mostly added in the 1970s, are uneven and in poor repair and hold surface water in puddles. They also abut the cottage and appear to direct surface water into the walls, contributing to damp problems. Over time we propose to break up these paths and replace them with Sussex clay pavers to match the older pathway to the front gate. These paths will be bordered with locally-sourced pebbles and shingle to match the rubble walls, providing drainage channels to direct surface water away from the walls. A common treatment to all paths should also help to integrate the older and newer parts of the property and gardens.

Annex 1 Beam cleaning

Method statement for beam clean & restore

Micro Stripping is a gentle air and media stripping clean that uses dry media at extremely low pressures. It is a gentle process of removing products from delicate surfaces layer by layer with a controlled flow of non-abrasive, chemical free and dry media. (When working outside we can use a mist of water that will supress the dust.) The superfine media is angular in shape and produces a soft scraping action that cleans without damage, removing the paint, varnish, rust, smoke damage, dirt or grime effectively, without creating any abrasion to the timbers and will not raise the grain. These gentle processes do not remove original features such as carpenter tool marks or carvings. We can use soda (bicarbonate of soda) or chemical free aluminium silicate, both of which leave non-abrasive finishes, the choice of which one to use will be determined by the surface we are working on and around and the product to be removed.

The machine operates with a precise metering of media; which would not be possible using sandblasting techniques. All the equipment conforms to European Pressure Equipment Directive (PED). We do not work at pressures above 20psi (but can do as necessary) – a sandblaster will work at over 100psi. We can control the flow of the media, unlike traditional sandblasting methods and it will not damage surrounding areas of the rooms like plasterwork, floors etc.

Operatives wear correct protective safety gear as well as air fed helmets. The equipment is operated using a compressor which needs to be parked as close to the property as possible.

All areas worked in are protected, all waste is removed and taken away with us for disposal and on completion a thorough clean will take place.

- Prior to any project commencing, a small sample area is carried out to ascertain whether the product can be stripped completely without leaving any residue or creating any surface damage. This enables to us to confirm with the customer that they are happy with these results and more importantly to ensure that we can proceed with the project without causing any damage to the surface we are working on.
- The pressures used to begin with will be as low as possible – around 15psi, and this can be adjusted as necessary throughout the process.
- The equipment we operate has an on/off nozzle (Deadman's switch) and this ensures that at any time we can stop the flow of media immediately. This is also an added benefit when moving from one area to another as the flow is stopped and then started when in the correct position to continue.
- There is no damage to the surrounding areas such as ceilings and walls or floors, when working inside. The process is such low pressure that even new plasterwork is not marked. There is no need to protect the surrounding walls and we cover floors and areas we are working in to ensure they are protected from any working platform (which will have rubber safety feet), and the movement of equipment.
- If the surrounding walls are of a delicate nature such as wattle and daub, or have historical paintwork, markings or carvings then these areas will be protected with heavy duty plastic sheeting.

- Should the technician notice that the product is not stripping away or in the unlikely event of an issue then the Deadman's switch will be switched off and the flow of media will stop immediately.
- Should a technician have a serious issue, such as a fall or becoming ill then the equipment again will stop the flow of media immediately the minute the Deadman's switch has no pressure on it.
- The pressure can be reduced or increased as necessary.
- The skill in this process is down to the expertise and experience of the operators.
- At all times we work closely with the customer and Conservation Officers, who are welcome to visit site at any time to witness and/or approve the process.

All of our technicians are highly experienced and trained. We do not continue any project until a number of small sample areas have been carried out and agreed by the customer and the operatives and where necessary a Conservation Officer.

Beam Clean & Restore Ltd
1 Franchise Street
Kidderminster
Worcs
DY11 6RE

01982 560585 (office)
07889 548143 (mobile)
https://www.beamcleanrestore.com/

Annex 2 Secondary glazing

Supplier

Selectaglaze Ltd.
Alban Park
Hatfield Road
St Albans
Herts AL4 0JJ
Tel: 01727 837271
Fax: 01727 844053

Proposals

For the majority of the windows, we propose our Series 10 horizontal sliding unit in a 2 and 3 pane format where applicable. This unit will give you access to the primary window for cleaning and ventilation if required by sliding the units from left to right.

For the bathroom window, we propose our Series 45 inward opening side hung casement which will give you full access to the window.

For any windows that are rarely opened or are fixed, we propose our Series 30 lift out unit which will give you access for cleaning by removing the sash out of the frame.

Specification

Units will be manufactured from exclusive Selectaglaze 6063 T6 aluminium alloy profiles to BS 1474, finished in our stock HIPCA white semi-gloss polyester powder paint to Qualicoat standards.

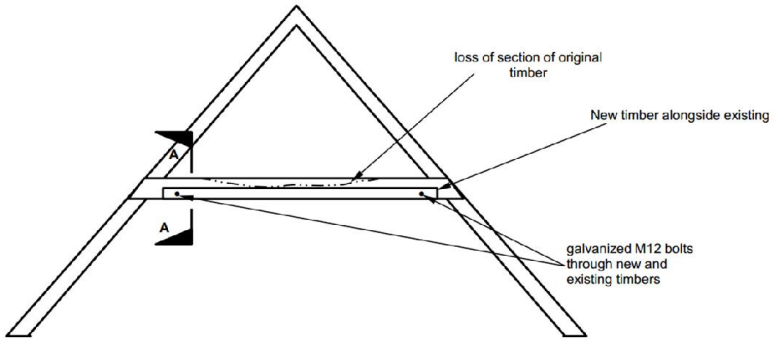
H18 low profile handle included for the Series 45.

Glazing included is 4mm clear toughened, which complies with BS 6262 Codes of Practice.

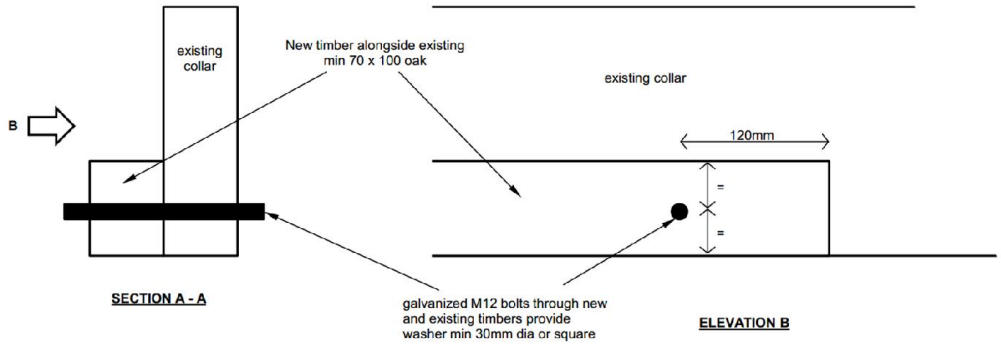
The estimate allows for fixing within square and splayed openings, suitably prepared by others via our standard 33mm x 15mm twice white primed softwood grounds. These in the most part will be covered by our odd leg main frame sections, making further decorations unnecessary and all fixings will be concealed within the main frames. Any timber visible room side will be finished decorated to match the secondary unit.

Annex 3 Roof timbers: extract from engineer's report

Detailed calculations available



COLLARED TRUSS ELEVATION



Check replacement collar for axial loading

Try Timber **100** x **70** Grade **THA**

Grade axial stress s = 10.5 N/mm^2 grade mean E = 13500 N/mm^2

modification of E for multiple members, K_9 = 1

Z = 116667 mm^3

I = 5833333 mm^4

L = 2450 mm

L/b = 35.0

E/s = 1286

From Table 22 BS5268 K_{12} = 0.372

Allowable compressive stress = s x K_{12} = 3.90 N/mm^2

Allowable compression = 27.3 kN greater than applied load so OK

Check for bolted connections

Shear Load = 3.15 kN

Compression Load = 1.90 kN

Resultant Load = 3.67 kN

M12 bolt in single shear in member min 70 mm thk = 4.65 kN when loaded perp to grain

M12 bolt in single shear in member min 70 mm thk = 4.65 kN when loaded parallel to grain

Resultant Load Capacity = **4.65** kN

Therefore 1 no M12 bolt will be adequate.