Proposed Repair Work to Penellick Farmhouse

Repair work pertains to three chimneys, all of which suffers from water ingress as investigated and reported by Mr Jeremy Chadburn of Chadburn Conservation Architect (Teylu, 53B Dunheved Road, Launceston, Cornwall, PL15 9JF) on 4th April 2022, with the conclusion that long-term water penetration would be detrimental to the fabric of this 13th/14th century farmhouse.

Chimney No.1 ————————————————
A 13th/14th century stone-front lateral (hall) stack with tapering top and coursed-rubble walling in a lime mortar bed. Lower widened section of stack extends to include a now-blocked clome oven. Upper narrow and tall section of stack extends from just below the eaves to above the ridge. A slate capping exists between the lower and upper stages, which forms a drip. There is another drip just above the roof line and a final drip close to the head of the stack. There is sulphur staining in various locations on the stack. It is understood that the stack was recently repointed and the very top section was rebuilt. The chimney cowl is missing.

Because the stack is no longer in daily use, it never dries adequately. The stack has been lined with a vermiculite layer between the flue and the masonry due to a stove for insulating purposes. Driving rain would saturate the stack thus causing it to draw water in rather than vent out. The slate steps are unlikely to contribute to water ingress because the stack was refurbished not long ago. The "more fashionable" exposed masonry is the likely cause of the ongoing damp issues.
Chimney stack would require scaffolding for checking both the slate cappings and the back gutter for any defects. Although the stack has been de-pointed without any surviving mortar/render, there are areas of the property where the rubble stonework had been originally finished with a generous rag rub in a lime mortar; such a similar treatment may be appropriate including a final breathable layer be applied for protection against wet/damp weather. This would return the property to an original state.
The oven capping would need to be cleared of vegetation and any gaps filled with lime mortar.
The very damp plastered stack in the upper landing within the building may be due to a failure in the chimney back gutter and/or rainwater from the saturated masonry bypassing flashings. If the render/paint coating

does fails to correct this damp issue, then removal of the damp plaster would help to eliminate the unsightly water stains and efflourescense.

This proposed repair work would help to better weatherproof the chimney, thus preserving it and also minimising the risk of recurrent damp occurring within the property, which may in turn become a health and safety issue.

Chimney No. 2 ——————————————
A 17th century cement-rendered squat stack with tapered and extended top on the ridge, slate-drip between the base and extension, and terracotta chimney pots with strapped-down terminals. The cement-render extends down to the slates, and visible flashings appear very thin.

Internally, the projecting stack to the rear first floor bedroom is clearly suffering from water penetration along the ceiling on at least three sides, especially on the west elevation. As the fireplace is blocked off, it is thus difficult to ascertain whether the stack is allowing water into the core. However, because the water-stains are confined to the ceiling location, it is likely that the water ingress is associated with external abutment detailing. The cement-render extending down to the slates may be causing capillary action, thus drawing water. The slate-capping between chimney stages may be leaking and the growth of vegetation on the flaunching may be allowing water in.

Removal of the render would damage the historic masonry, but painting of the render with a mineral paint would not affect the historic fabric and would improve weathering. Checking the slate-step drip for leaks would be necessary, and coating the slate with a bituminous paint followed with a reflective finish may be appropriate.
A more complete improvement would involve cutting away the lower section of the render (part which is in contact with the slate) by 100mm and introducing a belcast drip, new code 5 cover flashings, soakers, and aprons. The flaunch also would need to be repaired or replaced with lime mortar.

Chimney No.3 ——————————————
A 19th century stack of standard brown stock bricks, a traditional stepped thickening to the terminal, and standard terracotta chimney pots with vented cover terminals.

Rainwater is entering the stack flues as indicated by leaks into the fireplace. This may mean either a poor flaunch top and/or the stack has become porous. Water stains in the ceiling implies ineffective perimeter flashings.

It has been advised by Mr Chadburn that the stack flaunching be inspected and replaced with lime mortar NHL 3.5 as a minimum; or inspect and replace the flashings with proper stepped code 5 lead flashings chased into the mortar joins and mechanically fixed in place. The apron flashings should also be changed. It is possible that the stack is porous and would thus require painting with a mineral paint such as a Beeks, which will change the appearance of the building and the paint colour would therefore need to be agreed/approved.