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Schedule of Works For Listed Building Condition 3

Grange Farm, Potash Ln, Wyverstone, Stowmarket IP14 4SL

September 2021

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Introduction

This schedule of works has been prepared by Maude+Edwards Architects on behalf of Jane and Lizzie Van Djik to discharge planning condition No.3; Works to structural frame and plinth – Listed Building Consent reference DC/21/00026.

The building is Grade II* listed: List Entry 1284925

Farmhouse, latterly 2 dwellings. Mid C16 with C15 origins, extended early C17, staircase bay added c.1700, remodelled 1780, altered C19. Timber frame, plastered with some red brick. Steeply pitched plaintiled and machine tiled roofs. 4 or 5 bay core was originally part open, extended by 2 bays to left and with a 2 bay crosswing to right which was then upper or parlour end, original positon of stack or smoke hood unclear, stair wing added to rear; in late C18 parlour became service end and existing stacks built. 2 storeys and attics. Main range appears as a long 3 cell cross passage plan. Entrance is to left of centre into left bay of early core, margin glazed double doors, early C19 architrave with roundels at corners, lozenge frieze, panelled hood. 3 broadly spaced 3-light part opening glazing bar casements, ground floor hoodboards. Traces of herringbone pargetting, brick plinth, boxed eaves. 2- light gabled dormers to centre and right, C18 axial ridge stack to right of centre. Left or former service end exposed tie beam, pentice boards, bargeboards, C19 external stack. To right projecting forward slightly is former parlour crosswing with a slightly lower ridge, 4-light part opening glazing bar casements, oversailing gable. Right return has a red brick kitchen stack dated 1780 in a terracotta panel, offset plinth to large base, narrow shaft axial on a separate roof, an entrance behind stack. To rear opposite main entrance a part glazed 6 panelled door, surround with jewelled corners, behind original upper end is short c.1700 full height gabled stair bay, flanking slate roofed lean-to's with an entrance to left into crosswing. Attached to left a C19 red brick outbuilding. Interior: much of frame is concealed, hall has close studding, posts of large scantling to probable former open truss retaining tenons of arched braces, inserted floor has runout stopped quirked wave moulded crossed binding beams, joists and end beams, upper beam beyond C18 stack; former parlour now kitchen has a recessed triple roll moulded cross axial binding beam, late C18 mantelpiece. Staircase of c.1700 in an irregular dogleg has barley sugar balusters, moulded newel posts rounded on inner faces, plain handrail. Present broad 'cross entry' bay has a C19 staircase with slat balusters, moulded newel posts. First floor close studding, stop chamfered wall plates, binding beams and joists, heavily jowled corner posts, removed arched braces to tie beams. Roof has collars and halved principals clasping purlins, arched windbraces.

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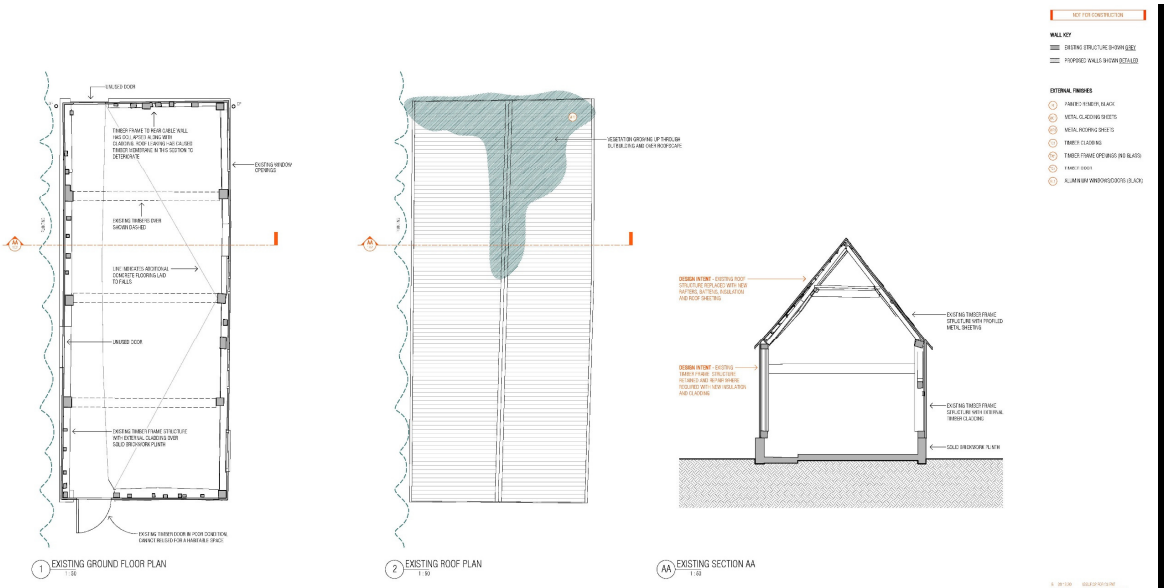
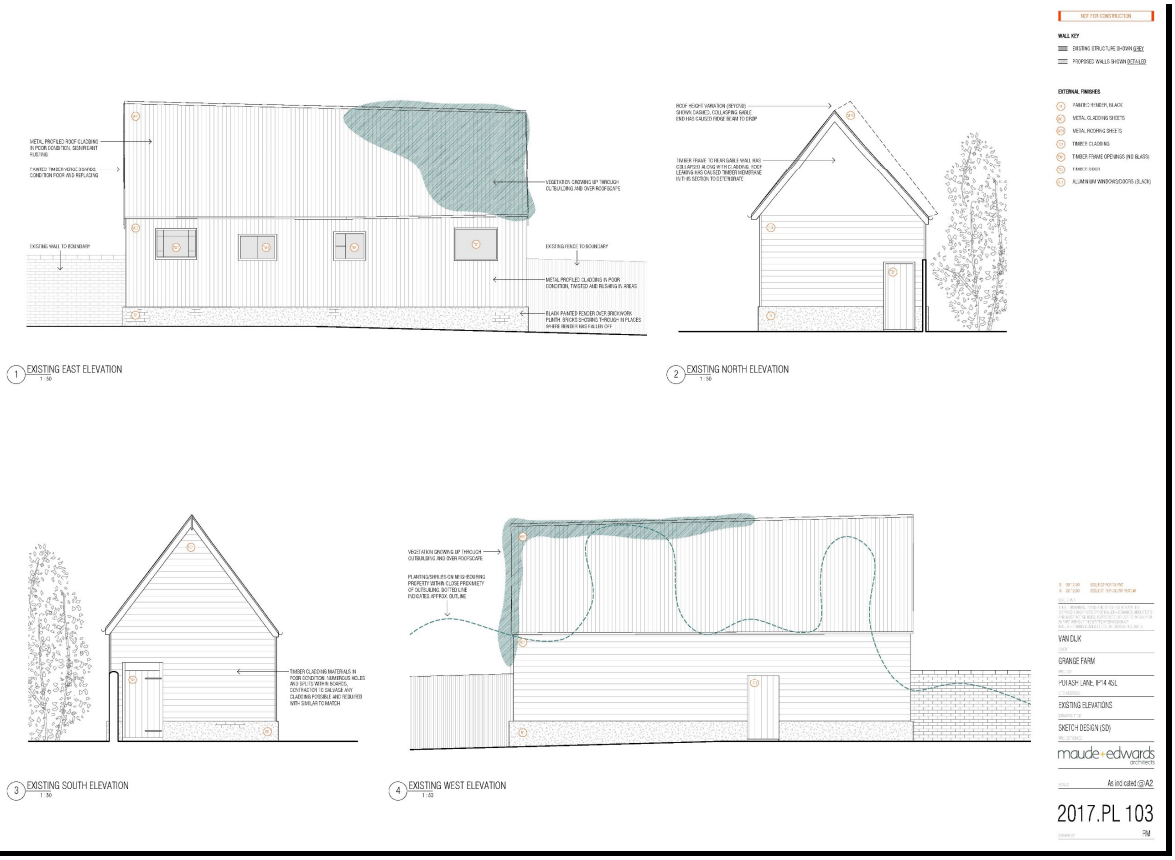
Existing Plans; Submitted under DC/21/00026





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Existing condition of Building

Submitted as part of application DC/21/00026 included a Structural Appraisal Report on the condition of the existing barn.

The report highlighted a number of key considerations to be reviewed as part of the renovation works. These are outlined below;

- Inadequate roof structure
- Stability of the building
- Timber rot, due to the long-term exposure to water ingress.
- Timber frame strengthening
- Brickwork (plinth) strengthening
- Floor replacement/ strengthening

Following the collapse of the northern gable wall the condition of the building has deteriorated further through water ingress, without intervention the existing timber frame will only worsen over time. The following schedule summaries the intended works to be carried out to the varies building sections.

Footings

Trial holes were dug in two locations during December 2020 which determined the barn had little no foundations capable of supporting the proposed renovation works, see photo 1. New underpinning details have been designed by Morrish Consulting Engineers, see appendix 1, to support the replacement ground floor and structural frame improvement works. The appointed contractor is to ensure any temporary works and the excavation of the walls is undertaken in a phased approached to not undermine existing structure.

Ground floor Construction

The existing floor is constructed from roughly 100mm of concrete, with a later 50mm poured to a section believed to be used as the animal feed area, see photo 2. This section has also been cast up the eastern (internal) plinth wall to create a trough. The existing concrete slab is to be broken out along with careful removal of the concrete trough. A new insulated ground bearing slab with screed finish is to be installed over a blinding and hardcore base, refer to floor type 01 on architects drawing 301.

Existing Plinth Construction

The barn's plinth is constructed from solid brickwork (215mm) and externally finished in painted render. The brickwork is generally in poor condition are requires repair to replace all mortar joints with the worst sections completely removed and rebuilt, see photo 02. All new mortar to be lime based 1:2:9 cement: lime: sand/aggregate mix with flush pointing.

The existing external render is to be the chipped off the brick faces and the surface made good with lime repairs (as above). A new lime based render to be reapplied and painted black to match the existing.

Internally, the visible brickwork is in reasonable condition, all repairs to replace joints are to be done with lime based mortar (as above). The concrete 'trough' is to be carefully broken away exposing the brickwork beneath, condition of bricks and mortar to be assessed on site – any broken, damaged or missing bricks to be replaced with matching.

External Wall Construction

The barn's walls are constructed from 10No. central/ gable posts supporting 5No. cross beams with smaller intermediate posts throughout and described in the engineers report as an 'H' frame. Externally, 3 of the 4 wall are finished in horizontal timber cladding (shiplap) boards fixed directly to the main and intermediate posts. To the eastern elevation the timber cladding has been replaced with corrugated steel panels.

All vegetation growing (predominantly western elevation) to be removed and timber frame treated for damage, damp or wood rot. The structural timbers from the north gable wall have collapsed causing rainwater ingress, this high level section of the gable is to be rebuilt with new timber post constructed off a replacement cross beam. Refer to photo 3 illustrating the extent of the damage.

Generally, the main posts and cross beams are in reasonable condition, however the collapsed gable wall and cross beam have caused the roof to snag and over time the asymmetrical loads has resulted in the main frame shifting. Key to the renovation works are to realign the posts and cross beam as best possible and too prevent further movement. Steel flitch plates are to be installed to all cross beams as to engineers details on drawing F477-S03 and as part of the structural improvement works, the cladding (steel and timber) is to be carefully removed and a new plywood sheeting installed to the external faces, with openings cut to suit the approved windows/doors positions. The sheathing is to be insulated externally with 50mm of Pavatex Pavatherm universal woodfibre insulation (breathable) with Tyvek wall wrap breathable membrane (or similar approval) over. New vertical softwood timber battens (treated) are to be installed over the insulation and fixed directly to the plywood sheathing. The existing timber cladding boards are to be sanded back and repainted before being reinstalled, all new boards to match existing.

Internally, the walls are to be insulated between the main and intermediate posts with 50mm Thermafleece sheep's wool insulation (breathable) and finished with a plasterboard and painted skim coat.

Roof Construction

The existing roof is constructed from modern timbers with intermittent battens supporting corrugated steel roof sheets. The structural engineers appraisal report, submitted with approved planning application DC/21/00026, recommended complete removal of the roof creating the opportunity to improve the stability of the existing timber frame. By construction a new roof off the existing wall plate the old posts and cross beams will benefit from the increased rigidity, eliminate any further movement.

The new roof will be constructed from structural timbers as to engineers drawing F477-S02 and insulated with Celotex PIR board between the rafters and insulated plasterboard to the underside as to roof type 01 on architects drawing 2017.PL-301. Externally, the roof will be finished in corrugated steel roofing sheets (black) on softwood treated battens over a Tyvek Supro breathable membrane. Steel verge trims (nominal 75x100mm) and ridge flashings (nominal 150x150mm) to finish roof cladding.

All rainwater good removed and replaced with uPVC Polypipe 'Half Round' guttering and circular downpipes,

Photo 1

Trial holes to northeast corner. 4-5No. brick courses below ground level with no foundations discovered, structural engineer has recommend underpinning to perimeter walls, refer to appendix 1.

Photo 2

Existing concrete floor with curved upstand to internal plinth brickwork face (east elevation). Concrete floor to be broken out and upstand removed.

Photo 3

Exposed external brickwork face to the South/East corner of the barn's plinth (black render over). Sections where the bricks have significantly moved, the bricks to be removed and re-laid.

Photo 3

Missing timber posts to gable (northern) wall. Water ingress has damaged the cross beam causing extensive rot. Cross beam to be carefully removed and replaced with new oak to match existing profile.

Photo 4 – Cross beam

Photo 4

Photo 05

Overgrown vegetation to western elevation/ boundary. Access agreed with neighbour to remove shrubs growing within close proximity to barn wall prior to commencing underpinning.

Photo 06

Example of rotten sole plate which requires removal. Section to be cut out and replaced with seasoned oak and match size/profile.

Photo 07

Existing steel strapping to be removed and replaced with steel flitch plates as to engineers details.

Friction fit, breathable insulation to be installed between timber post/membranes. Refer to architects drawing 2017-PL.301 for specification.