Cleaning and Repair Methodology Statement in response to Condition 26 of Planning Approval Ref: S.22/0626/VAR, dated 08/11/2022 as set out below:

Retain Eastern Frontage of Site

With the exception of the section of wall to be filled with concrete blocks(approximately 500mm X 1.5 m on the gable end of block C), the eastern A46 frontage wall (Block C) shall be retained. Lime mortar repointing, steam cleaning and the replacement of any failed bricks or masonry will be undertaken in accordance with a timescale, samples and methodology submitted to and agreed by the Local Planning Authority beforehand. For the avoidance of doubt this does not include the section filled with concrete blocks approximately 500mm X 1.5 m on the gable end of block C opposite The Old Fleece.

Proposed Methodology as Follows:

Cotswold Stone and Red Brick Cleaning Works

Before conducting a full clean of all the wall surfaces to both structures, conduct cleaning to a test area of the two walls for approval. Wall Face and Elevations sizes are: - Gable end [N/W] At 45 m2 over two storey levels [Cotswold Stone]; - Front elevation [N/E] At 28 m2 single storey [Cotswold Stone]; - Front boundary wall At approx 128 m2 [Blue and Red Brick].

Testing Cleaning Methods

In order to determine the gentlest means possible to the historical structure, several cleaning methods shall be conducted prior to selecting the best method, whereby to agree upon which system offers a satisfactory level of cleanliness, that will serve as the standard for the whole of the project. The results of the tests may indicate that several methods of cleaning such as chemical and water systems may need to be used on the single building.

Note: Testing should always begin with the gentlest and least invasive method proceeding gradually, if necessary, to more complicated methods. The method, such as a low-pressure water wash, which are frequently effective, safe, and not expensive is deemed the most feasible. Consideration to the tests will review how the removal of dirt will affect the weathering qualities of the stone and what remedial works might be necessary to both the fabric and the jointing of the surface.

The test patches shall be conducted to the main cottage wall [Cotswold stone] and the front boundary wall [historical red brick], locations to be confirmed on site. The methods for cleaning stone are similar to those for cleaning brick work. Cotswold is a softer stone, and based on the age of the structure C170 years old is therefore at greater the risk of damage when cleaning.

Masonry cleaning methods are divided into three major groups: **water**, **chemical**, and **abrasive**.

Water Cleaning

Water cleaning is considered the gentlest to safely remove dirt from types of historic masonry.

1. Method One: Soaking; [not deemed feasible]

2. Method Two: Pressure water washing;

3. Method Three: Water washing supplemented with non-ionic detergent;

4. Method Four: Steam, or hot-pressurised water with cleaning solution.

METHOD 1: Soaking This method is considered too time consuming and therefore deemed unfeasible unless the Sub-contractor determines this method is the only way to clean without damaging the historical building.

METHOD 2: Water Washing [Preferred method] Washing with low-pressure or medium-pressure water is probably one of the most commonly used methods for removing dirt or other pollutant soiling from historic masonry buildings. Starting with a very low pressure (100 psi or below), generally no higher than 300-400 psi. Scrubbing with natural bristle or synthetic bristle brushes to clean areas of the masonry that are especially dirty.

METHOD 3: Water Washing with Detergents [Preferred method] Non-ionic detergents e.g., D/2 Biological Solution, NP40, Triton X-100, Orvus, or Tween20 are recommended by many experts for cleaning stone). Please specify the product which is intended for use prior to conducting the works. Pressure washers must be set at low-medium power to aid in the cleaning process is recommended. A non-ionic detergent, unlike most household detergents, does not leave a solid, visible residue on the masonry, however, after application the detergent should be followed with a final water rinse.

METHOD 4: Steam/Hot-Pressurised Water Cleaning: Steam cleaning is a gentle and effective method for cleaning stone and particularly for acid-sensitive stones. Steam may be used in removing built-up soiling deposits and dried-up plant materials, such as ivy disks and tendrils. This method will be subject to test samples. Once water cleaning has been completed on all the above, a follow up with a water rinse to wash off loosened soiling material from the masonry is deemed necessary and should be included in the price of works.

FOOTNOTE: Any cleaning with water shall not be conducted in cold weather below 4 OC or if there is any potential risk of frost or freezing the next day which will result in further spalling and cracking to the historical walls.

Chemical Cleaning Chemical cleaners, subject to the above methods not being satisfactory, the method to using acids and/or organic compounds will be considered. Submit data sheets on Acidic or Alkalies cleaners for review prior to any testing on the stone or brick work. Method Statements and Risk Assessment documents will also be required for H&S approval. Acidic Cleaners Acid-based cleaning products to be used on non-acid sensitive masonry ONLY, generally includes: granite, most sandstones, slate, unglazed brick and unglazed architectural terra cotta, cast stone and concrete. Alkaline cleaners Alkaline cleaners should be used on acid-sensitive masonry ONLY, including: limestone [Cotswold Stone], polished and unpolished marble, calcareous sandstone, glazed brick and glazed architectural terra cotta, et cetera.

Abrasive and Mechanical Cleaning - is not permitted unless all the above methods fail.

Stone work repairs and Pointing

Carefully hack-off Cotswold stone where sections have spalled. The loose and spalling stone will likely be removed during the cleaning process, however to areas which are clearly showing visible de-bonding and have not failed durn the cleaning phase, work shall include finger tap tests to areas and confirm if the material is still bonded.

Allow for the following repairs to the North-West Side [Gable end] AT circa 52 m2: Plastic stone repairs to the degraded facing of the Cotswold stone which has delaminated and where the stone loss is deeper than 20 mm from the outer face but no more than 80 mm e.g.,the string corse and pronounced stone window reveals: the approx area for repairs are approx 4 m2.

Rake out previous cementitious mortar to the stone face and repoint using lime and sand mix [conduct a sample area with new lime/sand first for sign-off and approval] Conduct re-pointing to areas of wall where the bonding has spalled and is missing. Plastic stone repairs to the degraded facing to the Cotswold stone which has delaminated and found deeper than 20 mm from the outer face but no more than 80 mm e.g.,the plinth course damaged by road salt and lower r/h/s by the quoin stone detailing.

Rake out cementitious mortar to the stone wall face, stone window arches and repoint using lime and sand mix. Parapet wall repairs to include removal of foliage and coping stones. Make good repairs, remove fractured and spalled Cotswold stone and replace with stone fill-in. Repoint the walls bonding ready to accept the coping stones.