MAX FORDHAM

88 & 100 Gray's Inn Road and 127 Clerkenwell Road

Ventilation & Extraction Statement

P02 – Planning Issue

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ISSUE HISTORY

Issue	Date	Description
P01	28/09/22	Draft for comment
P02	29/09/22	Planning Issue

CONTENTS

INTRODUCTION

This Ventilation & Extraction statement has been produced in support of the application for full planning permission for the development of 100 & 88 Gray's Inn Road (GIR), 127 Clerkenwell Road. It describes the methods by which the requirements for ventilation will be met in the proposed scheme.

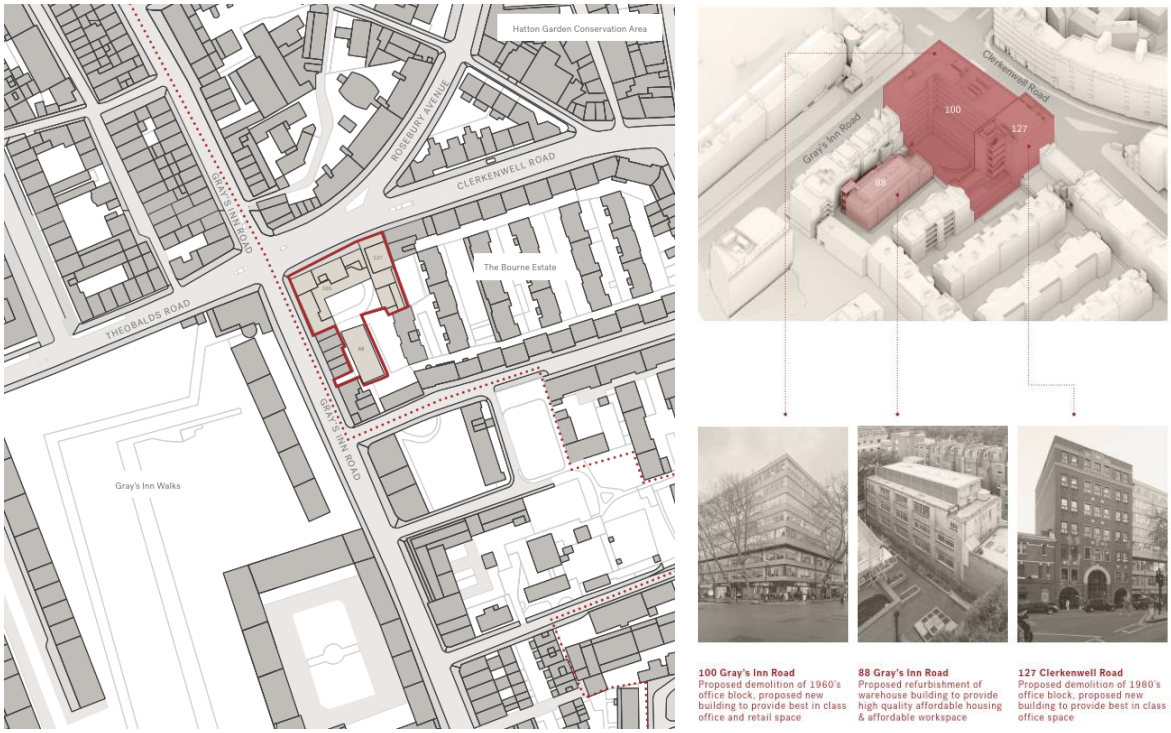

Figure 1: Existing site area plan

The proposed development comprises of the demolition of 100 Gray's Inn Road and 127 Clerkenwell Road and the erection of a mixed-use office led (Class E) development comprising a basement, ground plus eight storey building for flexible retail / restaurant uses at ground and basement (Class E), basement excavation, provision of roof terraces, external plant equipment and enclosures, servicing bay, waste storage, cycle parking, public realm works; use of upper floors of 88 Gray's Inn Road for housing (Class C3) and ground floor as offices (Class E) and associated external alterations."

Details of the air quality and acoustic conditions around the site are covered in detail within the associated Air Quality Assessment and Noise Impact Assessment planning reports of this planning submission. All ventilation systems will be designed to consider the source of pollution and with attenuation and air speeds to meet these acoustic requirements.

88 GRAY'S INN ROAD BUILDING

Uses & Proposed Ventilation Systems
The proposed building at 88 GIR will be refurbished into 6 residential dwellings with a ground floor affordable workspace.

Figure 2: 88 GIR proposed redevelopment CGI courtyard view

Residential apartments
The proposed ventilation strategy for all residential dwelling is summarised below:

- Mechanical ventilation with heat recovery (MVHR). Provided to each dwelling to offer efficient whole dwelling fresh air ventilation whilst reducing heat loss especially in winter. Air shall be extracted from toilets, bathroom, utility rooms and kitchens, with fresh air provided to bedrooms,
- Natural ventilation, using openable windows and doors to allow air flow, particular to mitigate summertime overheating. The majority of dwellings are provided as dual aspect to promote cross flow ventilation.

Apartment MVHR units shall be installed within dwelling utility cupboards with duct work installed concealed within ceiling voids. Duct connection to the external façade shall be installed to air bricks or wall louvres.

Affordable workspace
The proposed ventilation strategy for the affordable workspace dwelling is summarised below:

- Natural ventilation, using openable windows elements in the facade to allow air flow, particular to mitigate summertime overheating.
- WC and sanitary accommodation shall be provided with local mechanical extract to control room odours and moisture generated.
- Basement plantrooms shall be provided with mechanical supply and extract fans systems to control moisture and air quality.

100 GRAY'S INN ROAD AND 127 CLERKENWELL ROAD SITE

Uses & Proposed Ventilation Systems
The proposed site at 100 Gray's Inn Road and 127 Clerkenwell Road will form a single mixed-use office with flexible retail/restaurant use at ground floor and basement.

Figure 3: 100GIR proposed development CGI streetscape view

Due the nature of the building use, and location of the building position alongside major highways on Gray's Inn and Clerkenwell Road, the use of natural ventilation opportunities are limited at this time. The acoustic noise survey shows that daytime façade noise level on Gray's Inn Road and 127 Clerkenwell Road are too high to justify openable windows.

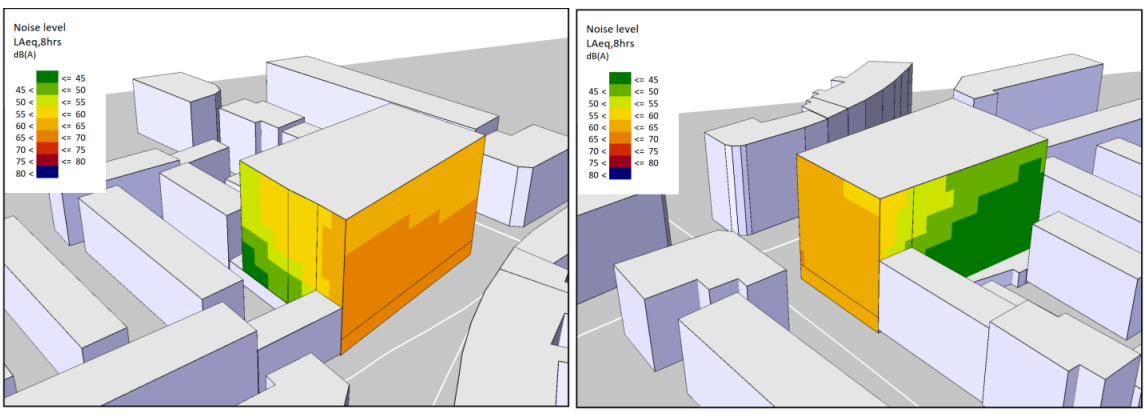

Figure 4: 100 GIR daytime background noise levels on facade

However, future consideration for natural ventilation shall be incorporated with opened windows included into the façade design at the office levels 01 up to 08.

Office floors
Each office floor from ground level up to level 08 is provided with an individual fresh air AHU with heat recovery on floor. The AHU is located within an on floor plantroom with supply and extract ductwork provided out to the accommodation. Exhaust and fresh air connection are made on the south and east facades and with attenuation and controlled air speeds to meet local acoustic requirements.

Ventilation is controlled on floor occupancy and regulate using space CO_2 and air quality sensors, with variable speed fans to adjust to the demand.

Office WC
Mechanical extract shall only operate during accommodation use on occupancy control. Make up air is provided from the adjacent office. Acoustic duct attenuators are to be provided on all room and atmosphere side ducts.

Main Entrance Foyer
The entrance foyer is services by a fresh air AHU with heat recovery located in the basement plantroom. Duct work from the basement provides supply and extract air. Exhaust and fresh air connection are made on the south façade towards the courtyard with 88 GIR with attenuation and controlled air speeds to meet local acoustic requirements.

Basement Areas
The basement level plantroom and accommodation areas are serviced by a fresh air AHU with heat recovery located in the basement plantroom. Duct work from the basement provides supply and extract air out to individual basement accommodation including showers/WCs, plantrooms, back of house offices and circulation. Exhaust and fresh air connection are made to atmosphere on the south facade toward the courtyard with 88 GIR with attenuation and controlled air speeds to meet local acoustic requirements.

The basement ventilation ductwork is also utilised for mechanical basement smoke extract to be designed in accordance with the building's fire strategy. Extract air ductwork shall be fire rated and classified with certified smoke extract fans used to exhaust out to atmosphere.

Retail areas
Ground floor retail units are provided with a high level ventilation louvre band above the street facing glazing to provide fresh air and exhaust air ventilation to atmosphere. Ceiling mounted MVHR units are proposed to meet the fresh air requirements of the space and controlled using space CO_2 or air quality sensors, with variable speed fans to adjust to the demand.

A dedicated riser for ventilation is provided for a future ductwork from the basement level retail up to the top roof level. This allow the potential for future system ductwork to be safeguarded in the building.

CONCLUSIONS

Based on the information presented in this report it is concluded that the ventilation and extract strategies for this proposed development are in accordance with London Borough of Camden planning guidance.