VIBRATION MANAGEMENT PLAN

Date: 4th February 2025
FI REM Project: 'Kingmoor', Bryn Lane, Wrexham
Client: FI REM
Main Contractor: FI Construction
Civils Contractor: FI Construction

Development Proposal: *The hybrid planning application for (a) outline permission (all matters reserved except for means of access) for erection of up to 3 warehouse & distribution units (Use Class B8), including ancillary office accommodation, comprising up to 93,019 sqm net floorspace, service yards, car parking, HGV parking, internal circulation, landscaping and ancillary works; and (b) detailed permission for demolition, means of access, earthworks, drainage, landscaping, ecology zone and relative ecological mitigation measures and ancillary works has been approved subject to conditions.*

Prepared by: SMc
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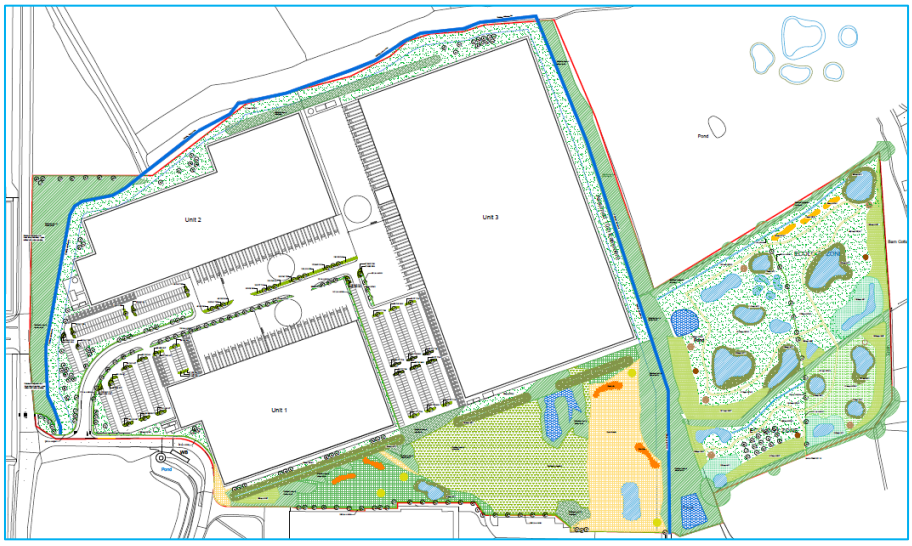
1. Introduction

This Vibration Management Plan (VMP) has been developed to discharge Planning Condition 41 for the new build industrial construction project at Wrexham Industrial Estate. The plan ensures that ground-borne vibration levels remain within the acceptable limits specified in Table 1 of BS 7385-2:1993 and that appropriate mitigation measures are implemented throughout the construction phase. The VMP is designed to be compliant, cost-effective, and practical for implementation by FI Construction.



2. Site Description

The proposal site measures 62.8 acres (25.4 hectares) greenfield land within Wrexham Industrial Estate, with approx. 45% to be dedicated 'Ecology Zone'. The site is currently unoccupied and overgrown. It borders farmland to the east, industrial units to the south and west and an industrial development site to the north.



The site is accessed via an access road shared with Very Distribution off

Bryn Lane, with anticipated construction traffic routes detailed in the Construction Traffic Management Plan.



3. Regulatory Framework

This VMP adheres to the following guidelines and standards:

- **BS 7385-2:1993** – Guide to damage levels from ground-borne vibration.
- **BS 5228-2:2009+A1:2014** – Code of practice for noise and vibration control on construction and open sites (Part 2: Vibration).
- **The Control of Pollution Act 1974** (as amended) – Provides legal requirements for vibration control.
- **Environmental Protection Act 1990** – Governs statutory nuisance from vibration.

4. Vibration Sources

The primary sources of vibration during the construction phase include:

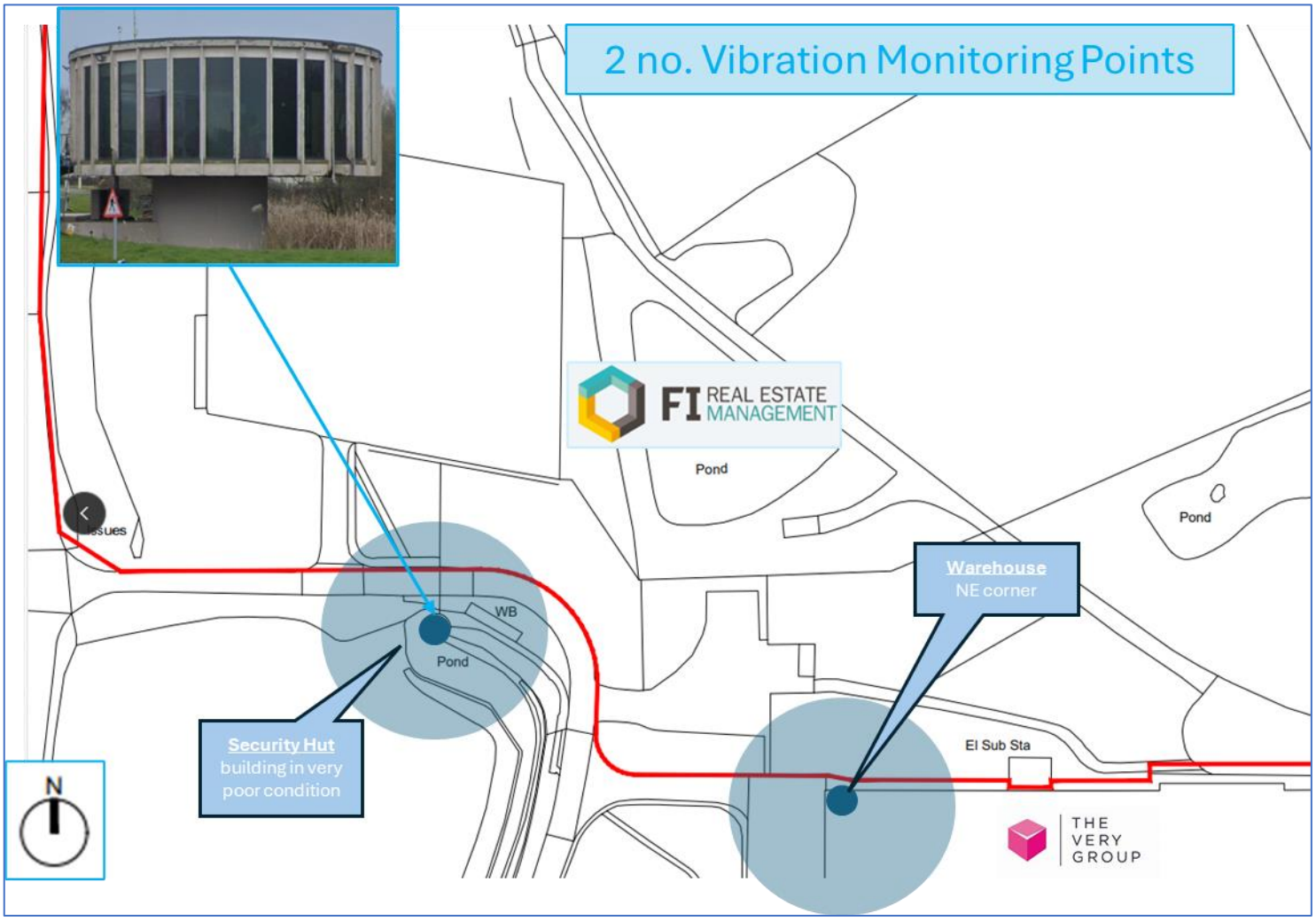
- Earthworks and excavation (including piling, ground compaction, and trenching).
- Heavy plant operation (bulldozers, excavators, and dumpers).

- Foundation works (drilling, piling, and compaction).
- Structural works (demolition of any pre-existing structures, if required).

5. Vibration Monitoring Strategy

5.1 Baseline Monitoring

Prior to construction, baseline vibration monitoring will be conducted at identified sensitive receptors- Very Distribution Security Hut and NE corner of their warehouse building adjacent the developments southern boundary to establish existing ambient vibration levels and help set thresholds for mitigation.



5.2 Monitoring During Construction

A real-time vibration monitoring system will be deployed at key locations if deemed necessary

following baseline monitoring at strategic points in the above proposed mark up, with follow up areas potentially including:

- Site boundaries (to protect adjacent properties)- Possible likelihood
- Nearby sensitive receptors (residential or commercial properties, utilities, and infrastructure)- Unlikely required
- Key construction zones (where vibration-intensive activities occur)- Unlikely required

Trigger levels for monitoring:

- Alert Level: 50% of BS 7385-2:1993 threshold.
- Action Level: 75% of BS 7385-2:1993 threshold (review and mitigate activity).
- Limit Level: 100% of BS 7385-2:1993 threshold (immediate cessation and review of methods).

Monitoring results will be recorded and made available to the Local Planning Authority (LPA) upon request.

6. Vibration Mitigation Measures

The main contractor will implement the following mitigation strategies to minimise vibration impacts:

6.1 Engineering Controls

- Use of non-percussive piling techniques (such as augered or bored piles where feasible).
- Low-vibration equipment selection (modern plant with vibration-damping features).
- Optimisation of compaction methods (rolling techniques rather than impact-based methods).

6.2 Operational Controls

- Limiting high-vibration activities to designated times (e.g., avoiding early morning or late evening works).
- Implementing exclusion zones to minimise impact on surrounding properties.
- Training site personnel on vibration-reducing techniques.

6.3 Structural Protection

- Pre-construction surveys of any nearby properties to identify potential risks.
- Protective barriers or buffer zones where necessary.

7. Reporting and Compliance

The main contractor will:

- Maintain weekly vibration reports summarising monitoring results and mitigation measures implemented.
- Submit monthly compliance summaries to the LPA if required.
- Provide vibration data to the LPA upon written request.

8. Responsibilities and Review

8.1 Responsibilities

- FI Construction Site Manager: Oversees the implementation of the VMP.
- Environmental Consultant: Conducts baseline and ongoing monitoring.
- FI Construction Operatives: Ensures compliance with mitigation measures and reporting requirements.

8.2 Plan Review and Amendments

The VMP will be reviewed:

- Quarterly or as required based on monitoring data.
- Following significant site changes affecting vibration levels.
- Upon request from the LPA.

9. Conclusion

This Vibration Management Plan ensures that vibration impacts from construction activities at Wrexham Industrial Estate remain within acceptable limits. By implementing real-time monitoring, proactive mitigation measures, and continuous compliance reporting, FI Construction will fulfil the requirements of Planning Condition 41 efficiently and effectively to safeguard the environment, the public, the construction workforce and

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Project Reference: *Kingmoor*