



JD Wetherspoon plc

The Ford Maddox Brown, Manchester

Noise Impact Assessment

DC4233-NR1



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Limitations to this Report

This report entails a physical investigation of the site with a sufficient number of sample measurements to provide quantitative information concerning the type and degree of noise affecting the site. The objectives of the investigation have been limited to establishing sources of noise material to carrying out an appropriate assessment.

The number and duration of noise measurements have been chosen to give reasonably representative information on the environment within the agreed time, and the locations of measurements have been restricted to the areas unoccupied by building(s) that are easily accessible without undue risk to our staff.

As with any sampling, the number of sampling points and the methods of sampling and testing cannot preclude the existence of “hotspots” where noise levels may be significantly higher than those actually measured due to previously unknown or unrecognised noise emitters. Furthermore, noise sources may be intermittent or fluctuate in intensity and consequently may not be present or may not be present in full intensity for some or all of the survey duration.

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1.0 INTRODUCTION

JD Wetherspoon plc (JDW) have appointed Dragonfly Consulting to carry out a Noise Impact Assessment for the extension of operating hours associated with their external seating area at The Ford Maddox Brown Public House, Manchester.

The noise assessment has been conducted with reference to the National Planning Policy Framework and the appropriate British Standards, and recognised guidance.

This report describes a noise survey of the site and the subsequent analysis to determine the noise environment of the proposed development. It then compares the results with the adopted criteria.

A glossary of technical terminology is included in Appendix A to support this document.

1.1 Site Conditions

1.1.1 Existing Site Conditions

The site is situated on Oxford Road, a busy city centre bus route, within the Ardwick district, approximately 1.5 miles southeast of Manchester city centre. The immediate vicinity is predominantly residential, comprising a mix of houses, apartments, and a few small-scale commercial establishments. Notably, the site is directly below the 'iQ Student Accommodation Wilmslow Park', a five-story student accommodation facility starting from the first floor (approximately 4.0 meters above ground level (AGL)).

1.1.2 Development Proposals

The planning application seeks to extend the operational hours of the external seating area. Currently, the permitted opening hours for the external seating area are as follows:

- Sunday to Thursday: 0900h-2200h;
- Friday and Saturday: 0900h-2230h.

The proposed permission aims to expand these operational hours to encompass the following timeframes:

- Monday to Sunday: 0800h-2300h.

1.1.3 Noise Sensitive Receptor (NSR) Locations

Noise contributions will be considered at the following sensitive receptor locations based on its proximity to the site:

- NSR1 – iQ Student Accommodation Wilmslow Park

A building evaluation has been undertaken to determine the point with the highest noise impact along the iQ Student Accommodation façade.

The NSR location is shown in Appendix C.

2.0 GUIDANCE

2.1 National Policy

2.1.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development. It requires Local Plans to be consistent with the principles and policies set out in the NPPF with the objective of contributing to the achievement of sustainable development.

The NPPF states that the planning system has three overarching objectives in achieving sustainable development including a requirement to 'contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.'

Paragraph 174 of the NPPF states:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

...

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability."

Additionally, Paragraph 185 of the NPPF states:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life..."

2.1.2 Noise Policy Statement for England

The document 'Noise Policy Statement for England' sets out the following vision for ongoing noise policy:

"Promote good health and a quality of life through the effective management of noise within the context of Government policy on sustainable development."

This vision should be achieved through the following Noise Policy Aims:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *avoid significant adverse impacts on health and quality of life;*

- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life.”*

To achieve this vision, the Noise Policy Statement sets 3 noise levels to be defined by the assessor:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms: below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

The Noise Policy Statement considers that noise levels above the SOAEL would be seen to have, by definition, significant adverse effects and would be considered unacceptable. Where the assessed noise levels fall between the LOAEL and the SOAEL noise levels, the Policy Statement requires that:

“...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development... This does not mean that such adverse effects cannot occur.”

Where noise levels are below the LOAEL, it is considered there will be no adverse effect. Once noise levels are below the NOEL, there will be no observable change.

2.2 Local Policy

2.2.1 Manchester City Council (MCC) - Local Development Framework Core Strategy Development Plan Document

The MCC Local Development Framework, as adopted January 2012, provides a policy framework for the Trafford area near Manchester. Most relevant to this assessment is ‘Policy C 10 - Leisure and the Evening Economy’, the pertinent point to which is replicated below:

“New development and redevelopment that supports the evening economy, contributes to the vitality of district centres and supports a balanced and socially inclusive evening/night-time economy will be permitted, subject to the following considerations:

...2. Residential amenity – the proposed use should not create an unacceptable impact on neighbouring uses in terms of noise, traffic and disturbance.”

2.3 Best Practice and Other Relevant Guidance

2.3.1 British Standard (BS) 7445-1:2003 – Description and Measurement of Environmental Noise – Part 1: Guide to Quantities and Procedures

This document defines the basic quantities to be used for the description of noise in community environments and describes basic procedures for the determination of these quantities.

The methods and procedures described in this British Standard are intended to be applicable to sounds from all sources, individually and in combination, which contribute to the total noise at a site. This British Standard does not specify limits for environmental noise.

2.3.2 IEMA Guidelines for Environmental Noise Impact Assessment

The guidelines state that, for any assessment, the noise level threshold and significance statements should be determined by the assessor, based upon the specific evidence and likely subjective response to the noise.

The impact scale adopted in this assessment is shown in Table 2.1 below.

Table 2.1
Impact Scale for Comparison of Future Noise against Existing Noise

Degree of Effect	Effect Descriptor
None / Not Significant	Less than 2.9dB LAeq change in sound level and/or all receptors are of negligible sensitivity to noise or marginal to the zone of influence of the proposals
Slight	A 3.0 to 4.9dB LAeq change in sound level at a receptor of some sensitivity
Moderate	A 3.0 to 4.9dB LAeq change in sound level at a sensitive or highly sensitive noise receptor, or a greater than 5dB LAeq change in sound level at a receptor of some sensitivity
Substantial	Greater than 5.0dB LAeq change in sound level at a noise sensitive receptor or a 5.0 to 9.9dB LAeq change in sound level at a receptor of great sensitivity to noise
Very Substantial	Greater than 10.0dB LAeq change in sound level perceived at a receptor of great sensitivity to noise

The criteria above reflect key benchmarks that relate to human perception of sound. A change of 3dB(A) is generally considered to be the smallest change in noise that is perceptible. A 10dB(A) change in noise represents a doubling or halving of the noise level.

It is considered that the criteria specified in the above table do provide a good indication as to the likely significance of changes in noise levels in this case. Therefore, the above noise threshold levels and significance statements have been used to supplement the criteria provided by the British Standard to assess the impact on a listener.

3.0 ASSESSMENT METHODOLOGY

3.1 Potential Sources of Environmental Noise

The following sources of environmental noise have been considered within this assessment:

Table 3.1
Assessed Sources of Environmental Noise

Potential Noise Source	Relevant Assessment Methodology
Patron Noise – External Seating Area	IEMA Guidelines for Environmental Noise Impact Assessment

3.2 Selection of Assessment Criteria

The following criteria have been selected to determine the threshold of effect levels in the context of the National Planning Policy Framework and Noise Policy Statement for England.

Table 3.2
Assessment Criteria: IEMA Guidelines (L_{Aeq})

Effect Level	Criteria	Justification
Lowest Observed Adverse Effect Level (LOAEL)	Less than 2.9dB L_{Aeq} change in sound level at adjacent sensitive receptor locations	IEMA degree of effect – None/ Not Significant
Significant Observed Adverse Effect Level (SOAEL)	More than 5.0dB L_{Aeq} change in sound level at adjacent sensitive receptor locations	IEMA degree of effect – Substantial Mitigate and minimise adverse effects on health and quality of life

4.0 ENVIRONMENTAL NOISE SURVEY

Daytime and night-time measurements were undertaken from the 5th to the 9th of May 2023. The noise measurements established typical external ambient and background noise levels at the site.

4.1 Survey Methodology

The equipment used during the survey is detailed in Appendix B. The sound level meter was calibrated before and after the measurements and no significant calibration drifts were found to have occurred (>0.2dB). The noise monitoring equipment had been calibrated to a traceable standard within the twenty-four months preceding the survey. Calibration certificates are available on request.

One measurement location was surveyed in order to establish the typical ambient and background noise levels at the proposed development site. The measurement location is hereby referred to in this report as follows:

- 'Location 1' – sound level meter positioned directly in front of JDW Ford Maddox Brown at approximately 3.0m AGL.

The measurement location is shown in Appendix C.

4.2 Survey Results

All monitored noise data has been screened to remove samples influenced by adverse conditions. Table 4.1 provides a summary of periods excluded from the results due to adverse weather conditions; all other periods not excluded were considered suitable for noise monitoring.

Table 4.1
Excluded Periods

Excluded Monitoring Periods
06/05/2023 1415h to 1445h
06/05/2023 1545h to 1630h
06/05/2023 1745h to 1930h
06/05/2023 1900h to 1930h
06/05/2023 2100h to 2115h
08/05/2023 1500 to 1630h
08/05/2023 1830h to 1915h
08/05/2023 2315h to 2345h

Summaries of the measured noise levels are given in Table 4.2, overleaf. A full dataset can be provided on request.

Table 4.2
Summary of Measured Noise Levels – 05/05/23 to 09/05/23 – Free Field, dB(A)

Date	Period	Time (h)	L _{Aeq, T}	L _{A10}	L _{A90}	L _{AFMax}
05/05/2023	Daytime	1315h-2300h	70.5	72.3	62.0	107.9
05/05/2023 - 06/05/2023	Night-time	2300h-0700h	69.2	69.2	52.9	104.1
06/05/2023	Daytime	0700h-2300h	70.8	70.7	57.7	109.0
06/05/2023 - 07/05/2023	Night-time	0700h-2300h	69.7	70.6	54.1	107.8
07/05/2023	Daytime	0700h-2300h	68.6	70.2	57.8	101.4
07/05/2023 - 08/05/2023	Night-time	2300h-0445h	68.1	69.6	53.2	104.5
08/05/2023	Daytime	1100h-2300h	70.4	71.6	58.9	105.4
08/05/2023 - 09/05/2023	Night-time	2300h-0700h	65.8	69.5	52.9	100.3
09/05/2023	Daytime	0700h-1030h	68.1	71.1	56.9	95.9

4.2.1 Observations and Comments

The noise environment at the measurement location was dominated by pedestrian noise from the surrounding area, and road traffic noise from Oxford Road; it was noted that Oxford Road is a major bus route through the centre of Manchester.

For the assessment, it is considered that the levels measured are representative of the typical acoustic environment at the survey location for the daytime and night-time periods.

5.0 NOISE MODEL INPUT DATA

Modelling calculations have been undertaken based on the spatial settings and data sources identified in the Table below.

Table 5.1
Noise Model Input Data

Parameter	Data Source	Assumptions
Site Plans	<i>OS Mapping Data</i>	Existing building heights measured using Google Earth
Ground Heights	Environment Agency Open Data LiDAR Digital Terrain Model (2.0m resolution)	None
Ground Absorption	<i>n/a</i>	Hard ground conditions on and off site (G=0),
Reflections	<i>n/a</i>	3 rd order reflections have been accounted for within the noise model

5.1 Source Noise Assumptions

5.1.1 Patron Noise

A detailed assessment of modelling methodologies for noise emissions from beer gardens and terraces (ref: Comprehensive Noise Assessment for Wetherspoon) undertaken by Dragonfly Consulting and Spectrum Acoustics, on behalf of JDW, determines the noise emissions from use of terraces and beer gardens by consideration of 18 sites associated with JDW. The results of the analysis demonstrate that two trading scenarios are considered typical for each JDW premises, these are 'normal trading' and 'busy trading'. The sound power levels per square meter for each of these scenarios have been calculated and are utilised for assessments of outdoor amenity spaces.

The sound power level, per square meter, for each scenario is provided in Table 5.2 below.

Table 5.2
External Patron Noise: Source Sound Power Levels

Scenario	Sound Power Level, dB L_w/m^2
Normal Trading	67.0
Busy Trading	74.0

5.2 Uncertainty

5.2.1 Survey

Given the duration of the survey, it is considered that the limits of Class 1 sound level meters are the only limiting factor when considering survey uncertainty.

Standard equipment uncertainties have been considered by applying allowable tolerances minus the maximum allowable test laboratory uncertainties given in IEC 61672-1, as defined by Narang and Bell

(Narang, P. and Bell, T., 2008. *New IEC standards and periodic testing of sound level meters. Proceedings of the Internoise, Shanghai, China, pp.26-29*).

The following table provides an overview of standard equipment uncertainties relevant to the SLM class utilised within the survey.

Table 5.3
Standard uncertainties using allowable tolerances minus test laboratory tolerances given in IEC 61672-1 (source: Narang and Bell, Table 14)

SLM Class	Frequency Weighting	Directional Response	Level Linearity	Toneburst Response	Calibrator (IEC 61672)	Supply Voltage	Combined Standard Uncertainty +/- dB
Class 1	0.5	0.5	0.4	0.25	0.125	0.05	0.9

5.2.2 Modelling

CadnaA noise modelling software has been utilised to ascertain how noise propagates throughout the proposed development. The software directly incorporates the ISO 9613 calculation procedure which has an uncertainty rating of +/- 3dB.

5.2.3 Combined Uncertainty

Based on the information provided above, the combined Root Sum Squared (RSS) uncertainty for the assessment has been calculated as +/- 3.1dB.

6.0 ASSESSMENT

6.1 Assessment of External Seating Area

To appropriately assess the site, three separate noise assessments have been developed to determine the predicted noise impact from the proposed external seating area.

The assessments have been completed considering 'Normal' and 'Busy' scenarios, as detailed within Section 5.1. For this site, it is considered that 'Normal Trading' will occur from Sunday-Thursday 0800h-2300h and from 0800h-1700h on Friday and Saturday. It is considered that 'Busy Trading' will occur on Friday and Saturday 1700h-2300h.

To present a worst-case, the lowest measured $L_{Aeq,1hr}$ period covering the proposed operating hours extension has been used to form the basis of the assessment, with the exception of Friday – Saturday (2230h-2300h) where the lowest measured $L_{Aeq,30min}$ period has been used to prevent influence from existing trading hours.

The results of the assessment are presented in Tables 6.1 – 6.3 below:

Table 6.1
IEMA Assessment of Noise Impact
(0800h – 0900h Monday – Thursday) – NSR1 Free Field, dB

Scenario	Existing Ambient Noise Level, dB(A)	Predicted Future Ambient Noise Level, dB(A)	Difference, dB
Normal Trading	64.5	64.7	+0.2

Table 6.2
IEMA Assessment of Noise Impact
(2200h – 2300h Sunday – Thursday) – NSR1 Free Field, dB

Scenario	Existing Ambient Noise Level, dB(A)	Predicted Future Ambient Noise Level, dB(A)	Difference, dB
Normal Trading	69.5	69.6	+0.1

Table 6.3
IEMA Assessment of Noise Impact
(2230h – 2300h Friday – Saturday) – NSR1 Free Field, dB

Scenario	Existing Ambient Noise Level, dB(A)	Predicted Future Ambient Noise Level, dB(A)	Difference, dB
Busy Trading	69.9	69.9	0.0

As shown in Tables 6.1 – 6.3, the proposed extension of operating hours associated with the external seating area is predicted to give rise to a change (increase) of 0.2dB in ambient noise levels at iQ Student Accommodation (NSR1).

The IEMA impact scale categorises a noise increase impact of less than 2.9dB as “None/Not Significant”. It is therefore considered that the predicted noise impact from use of the external seating area will fall below the LOAEL.

6.2 Assertion of Competence

This assessment has been completed by Mark Smith, Senior Acoustic Consultant with responsibilities for completing acoustic reports on behalf of Dragonfly Consulting.

I hold a Master of Science in Acoustics and a Bachelor of Science in Music Technology from Leeds Beckett University and the Institute of Acoustics (IOA) Diploma in Acoustics and Noise Control. I am a corporate member of the IOA (MIOA).

7.0 CONCLUSION

JD Wetherspoon plc have appointed Dragonfly Consulting to carry out a Noise Impact Assessment for the extension of operating hours associated with their external seating area at The Ford Maddox Brown, Manchester.

The noise assessment has been conducted with reference to the National Planning Policy Framework and the appropriate British Standards, and recognised guidance.

The proposed extension of operating hours associated with the external seating area is predicted to give rise to a change (increase) of 0.2dB in ambient noise levels at the adjacent iQ Student Accommodation.

The IEMA impact scale categorises a noise increase impact of less than 2.9dB as “None/Not Significant”. It is therefore considered that the predicted noise impact from extended use of the external seating area will fall below the LOAEL.

Appendix A – Glossary of Terminology

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table A-1
Sound Levels Commonly Found in the Environment

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

Acoustic Terminology

dB (decibel) The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (2×10^{-5} Pa).

dB(A) A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

L_{Aeq} This is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.

L₁₀ & L₉₀ If a non-steady noise is to be described, it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time. L₁₀ is the level exceeded for 10% of the time and is often used as a descriptor for road traffic noise. Similarly, L₉₀ is the level exceeded for 90% of the time and is often used to describe the background level.

L_{AMax} This is the maximum A-weighted sound pressure level recorded over the period stated. L_{AMax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment.

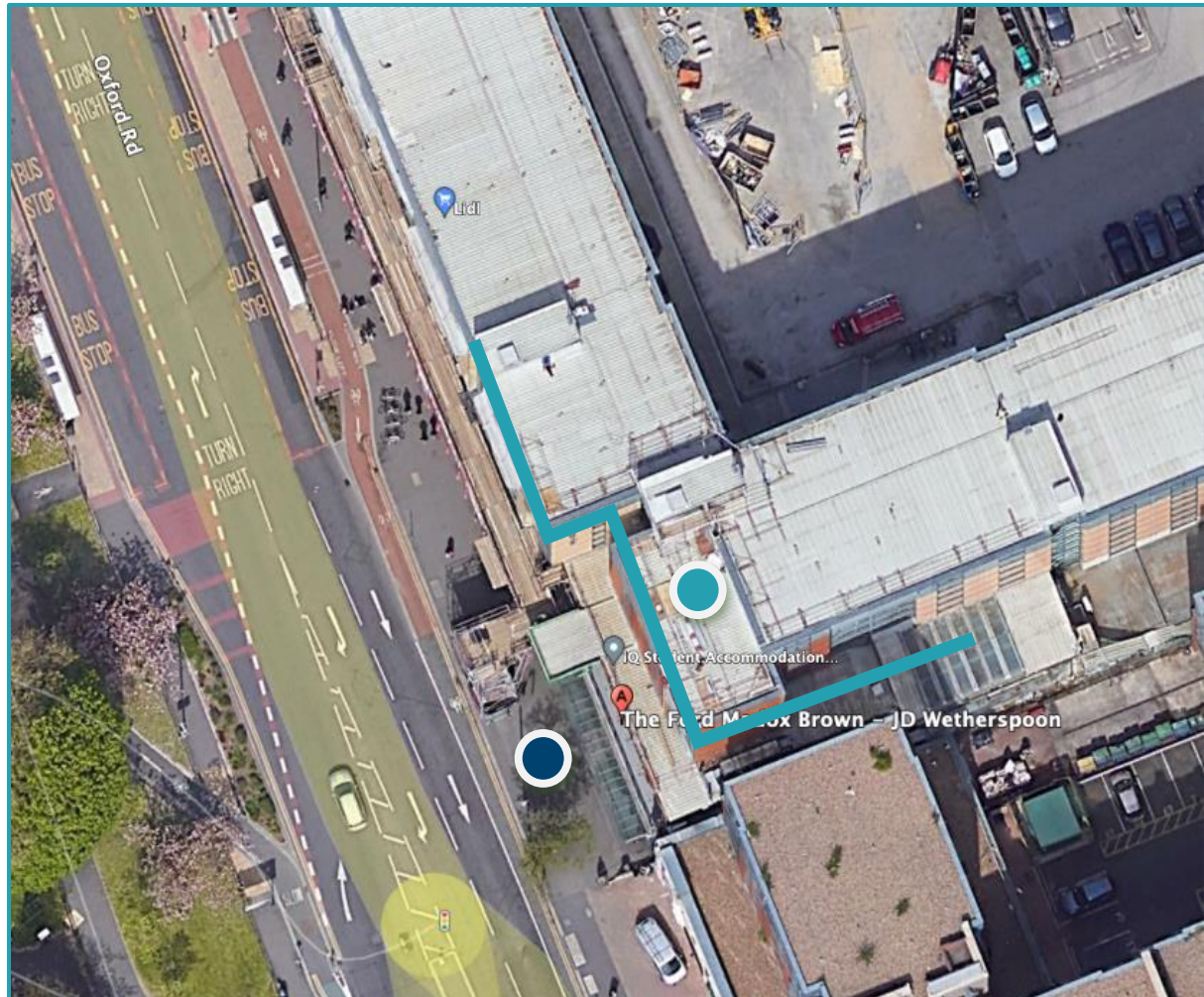
Appendix B – Noise Monitoring Equipment

Table B-1
Noise Monitoring Equipment

Equipment	Serial Number
Svantek SV307 Noise Monitoring Station	87841
Svantek ST30 Microphone	113978
O1dB Cal31 Acoustic Calibrator	89089

Appendix C – Noise Monitoring and Receptor Location Plan

Figure C-1
Noise Monitoring and Sensitive Receptor Location Plan



-  Measurement Location
-  NSR Location
-  NSR Façade Extent