PATRICK PARSONS

Noise Statement

Dublin Whitewater Course

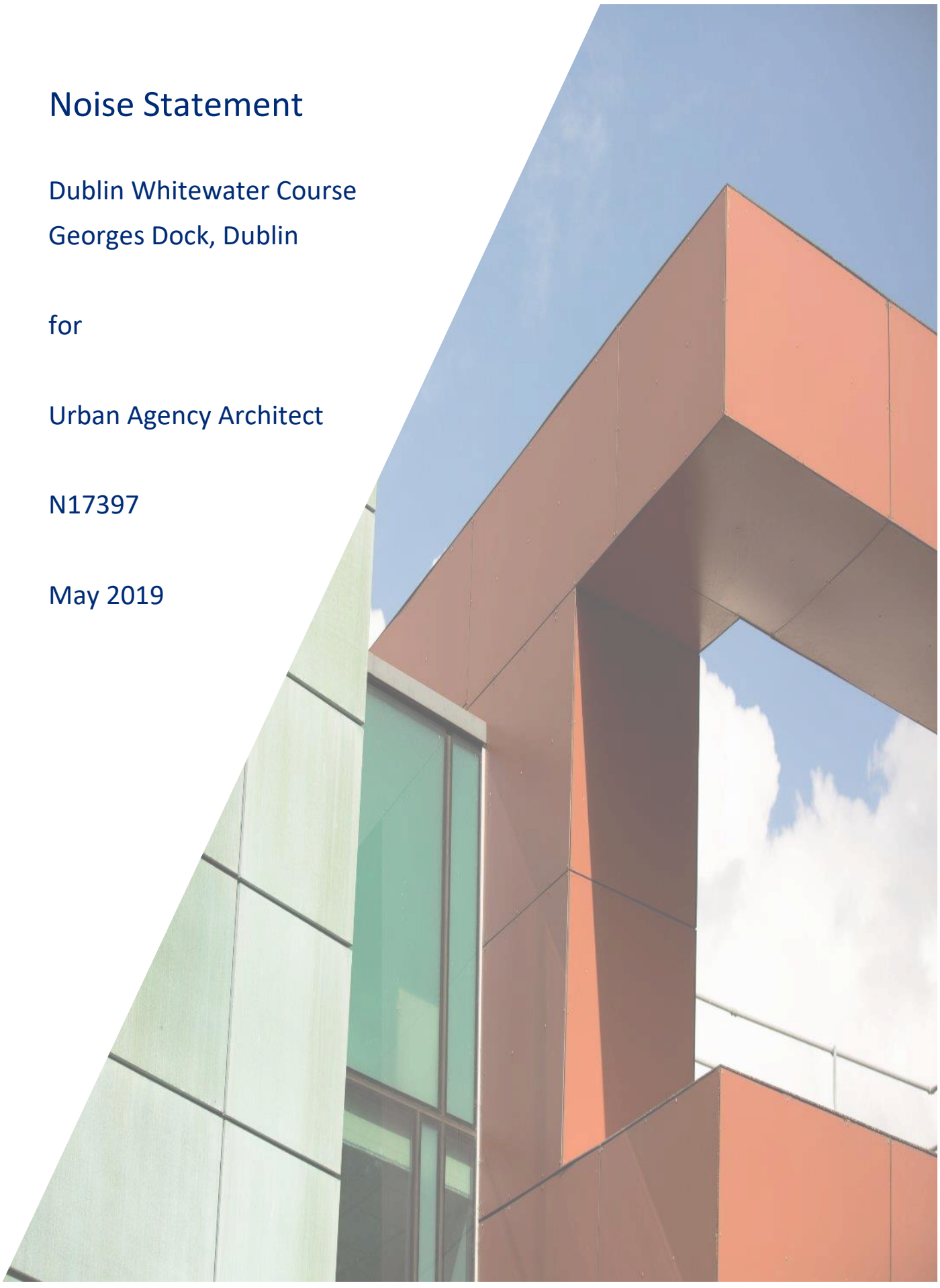
Georges Dock, Dublin

for

Urban Agency Architect

N17397

May 2019



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Revision	Date of issue	Comments	Prepared By	Checked By
0	13.05.19	Initial Issue	PVS	DH
1	28.05.19	General Update	DH	PVS
2	26.07.19	Updated further to DCC comments	TB	MH

Should you have any queries relating to this document please contact:

Darren Holmes
Patrick Parsons Limited
Fourth Floor
Central Square
Forth Street
Newcastle upon Tyne
NE1 3PJ

T: +44 (0) 191 691 8175
E: darren.holmes@patrickparsons.co.uk

1.0 Proposed Development

1.1 Physical Development

The development will provide a water based recreational facility at George's Dock and Custom House Quay, Dublin 1, incorporating the following:

1. Provision of a white-water rafting course utilising the existing George's Dock basin, which is a protected structure, including;
    a. a central flat-water training facility including water polo amenity,
    b. white water slalom course,
    c. kayak/raft conveyor,
    d. pumping station and water treatment plant,
    e. a mechanical control centre and electrical substations,
    f. enhancement of existing public lighting and provision of low illumination level floodlighting for water based activities; and
    g. swift water rescue centre with floodable urban street with mock enclosures forming a 'rescue village'.

2. The demolition of former Dublin Docklands Development Authority office building and removal of 6 no. existing trees at Custom House Quay. Construction of two new quayside buildings with a combined total floor area of 763.98m^2 and maximum height of 5.5m. The east building incorporating land-based activities including changing rooms, reception, staff amenity area, equipment storage. The west building comprising replacement offices and conference room for the use of Dublin City Council Docklands office. Ancillary landscaped public open space between these proposed quayside buildings including surface water attenuation area and quayside walkway;

3. Reconfigured and resurfaced public open space where necessary to the existing plaza at George's Dock, including the removal of 4 no. existing trees, making good any damage caused by construction work, and the provision of temporary construction compound. Connection to public surface water drainage system; and

4. Conservation and protection works to the lock gate and quay walls together with retention and protection of the triumphal arch on site and the partial removal of the timber boardwalk and insertion of access structures to the canal channel at the sea wall.

1.2 Activity Based Noise Sources

The proposed development will be used for a range of activities by a number of user types which will create a variety of noise profiles.

Elite Training Sessions

The course will be in operation each day from 8am – 10am to provide training facilities for elite users. It is anticipated that there will be a low level of noise from these experienced users who will mainly be focused on their performance.

Rafting and General Kayaking

From 10am - 9pm each day the course will be available for rafting and general kayaking and this will typically be run in standard operating slots of 2 hours. During peak summer times and depending on demand, these sessions could run up to 10pm. This kind of user may be inclined to shout and scream as they enjoy using the course.

Rescue Training

This will typically take place during office hours, but occasionally could be carried out at night with no course lighting. Training would not continue beyond 10pm. This activity is likely to produce low level noise of machinery from winches and generators. Some instructions are likely to be shouted during the training sessions.

Operation of the Course

This first session of the day will bring into use the pumping station to send the water around the white water course and also the water treatment system, mechanical control centre and electric substations, which will remain in use as long as the course is in use until either 9pm or 10pm. At the end of each day, most of the water in the course will be pumped into the central flat-water area over a period of approximately 15 minutes where this water will be held until operation begins the next morning. A kayak / raft conveyor will lift vessels from the bottom of the course to the top of the course.

Users of the Quayside Buildings

The new quayside buildings are unlikely to generate any significant noise and therefore will have low impact on the surrounding area.

2.0 Existing Noise Environment

2.1 The proposed development site is not a noise sensitive environment. The nearest residential buildings are the apartments which are approximately 105m to the north of George's Dock at Customs House Harbour within the Inner Dock. The Hilton Garden Inn Hotel, which only becomes a sensitive noise receptor during the night (between 11pm and 7am) is 80m to the east of George's Dock. In addition, the Trinity College (Stack B) Building is a potential noise receptor.

2.2 There are no other noise sensitive receptors in close proximity to the application site such as nursing homes or hospitals. The predominant building use around the proposed course area is office use which is not a noise sensitive use. It is anticipated that noise generated by users of the course is likely to be at its greatest outside of normal business hours, when the adjoining predominant offices will be vacated.

2.3 The four lane R801 (Custom House Quay) running east west along the southern boundary of George's Dock and along the northern boundary of the proposed quayside buildings is the main noise source at the sites.

2.4 Bars and restaurants line the eastern boundary of George's Dock and generate noise through the day. These are also late-night activities which will continue to produce increasing noise well after the closing time of the WWRC.

2.5 The area around George' Dock is used as a pedestrian thoroughfare at all hours of the day and night as a short cut from Mayor Street to Custom House Quay.

2.6 The George's Dock site has previously been periodically used as the venue for Oktober Fest and the Christmas Fair which had a significant late-night impact on the apartments within the Inner Dock particularly when music was played. The proposed facility will not be operating beyond 10pm and will have a lower impact on neighbouring offices and restaurants.

3.0 Noise Generation

3.1 The pumping station will pump water anti clockwise around the course from the south east corner to the southern straight at the end of the course. The sound of the water entering the course will be the main source of noise from the development. The sound of the pumps operating will not be audible above the noise of the water.

3.2 This pumping arrangement will be very similar to the system used at the Pinkston Whitewater Course in Glasgow which opened in May 2014. Noise readings taken at the Pinkston course, which is located 1 mile outside of the city centre, were as follows:

- 65 dB immediately next to the water discharge from the pumping station. When the water is running the flow is constant so there are no spikes in noise level.
- 58.9 dB 10m from the discharge point
- 45 dB 50m away from the discharge point.
- Beyond 50m the readings were all background traffic noise, which at Pinkston was significantly less than at the Dublin location.

(It should be noted that the nearest noise sensitive residential receptor at Custom House Harbour is approximately 105m away)

3.3 Noise generation for a similar conveyor to the one proposed for this development has been assessed at two other white-water courses in the UK (at Lee Valley and at Teesside). At both of these locations, the noise of the conveyor is inaudible above the noise of the water so this will also be the case for this development at Dublin.

3.4 With regards to the demolition and construction phase of the proposed works, contractors will carry out their duties in accordance with the 'Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition' which is included in **Appendix A**.

4.0 Conclusions

4.1 It has been demonstrated that the development site is not within a noise sensitive area.

4.2 The main source of noise that will be generated by the development will be the sound of the water being pumped into and around the course but as demonstrated at a similar course, this noise, beyond 50m away from the discharge point, was not audible above background road traffic noise.

4.3 There are a number of existing late-night activities in the area dominating the evening noise regime which will be in operation long after the 10pm closing time of the proposed water course.

4.4 As noise levels are not expected to be high from any proposed source and due to the lack of residential neighbours within 105m of the water course and the high level of background noise from the traffic on Custom House Quay and Mayor Street it is not recommended to provide any form of sound attenuation.

4.5 It is recommended that a detailed Acoustic Assessment Report is commissioned, to further address the noise environment detailed in the above statement. This Report will include abatement and mitigation methods for the operational phase of the facility.

4.6 The demolition and construction phase will be in accordance with the 'Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition' which is included in **Appendix A**.

Appendix A

Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition

Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition

Prior to the commencement of work on the site a construction and demolition plan must be developed. When developing the construction and demolition plan reference must be made to the requirements of the **Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition.**

This Guide has been produced with reference to the London Good Practice Guide: Noise and Vibration Control for Demolition and Construction produced by the London Authorities Noise Action Forum, July 2016.

In order to ensure that demolition and construction work does not have an adverse impact on those living and working nearby, the following best practice guidance has been developed. All construction and demolition work has the potential to have adverse environmental impacts no matter what the scale. The following best practice guide sets out the measures which all developers should consider prior to commencement of work and provides further recommendations for the control of noise, vibration and air pollution.

A risk based approached is to be used taking into account the locality, nature of the work and the expected duration of the work.

Risk Assessment A – Locality/Site Information

The site should be assessed in relation to the duration of the work, distance to sensitive receptors, ambient noise levels and working hours. Tick the field most likely to apply and add up the number of ticks in each column.

Risk Assessment B - Work Information

Tick the field that is most likely to represent the works in each category, add up the total number of ticks in each column.

Total Risk Assessment

The table 'total risk assessment' contains the sub-total numbers from 'Risk Assessment A and B. The column in total risk assessment with the most ticks indicates the risk category that should be employed for the site.

If two risk categories have an equal number of ticks, the higher category of the two shall apply. Once the risk category is known the 'good practice measures' outlined in this code of practice shall be employed.

1. Locality

Identify those who may be affected by noise, including particularly sensitive locations (hospitals/schools) and determine ambient noise levels (noise maps or noise monitoring)

	Low	Medium	High
Expected duration of work			
Less than 6 months			
6 months to 12 months			
Over 12 months			
Proximity of nearest sensitive receptors			
Greater than 50 metres from site			
Between 25m and 50m			
Less than 25 metres			
Hospital or school within 100 metres			
Day time ambient noise levels			
High ambient noise levels (>65dB(A))			
Medium ambient noise levels (55-65dB(A)			
Low ambient noise levels (<55dB(A)			
Working Hours			
7am – 6pm Mon-Fri; 8am-1pm Sat			
Some extended evening or weekend work			
Some night time working, including likelihood of concrete power floating at night			
SUBTOTAL A			

2. Work information

	Low	Medium	High
Location of works			
Majority within existing building			
Majority External			
External Demolition			
Limited to two weeks			
Between 2 weeks and 3 months			
Over three months			
Ground Works			
Basement level planned			
Non-percussive methods only			
Percussive methods for less than 3 months			
Percussive methods for more than 3 months			
Piling			
Limited to one week			
Bored Piling Only			
Impact or vibratory piling			
Vibration generating activities			
Limited to less than 1 week			
Between 1 week and 1 month			
Greater than 1 month			
SUBTOTAL B			

	Low	Medium	High
Risk Assessment A			
Risk Assessment B			
Total			

The column in total risk assessment with the most ticks indicates the risk category that should be employed for the site.

1. General Considerations

All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.	All sites
Good Quality site hoarding should be erected to maximise the reduction in noise levels	Medium and High risk sites
The contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work	Medium and High risk sites
The site entrance shall be located to minimise disturbance to noise sensitive receptors	Medium and High risk sites
Internal haul routes shall be maintained and steep gradients shall be avoided	Medium and High risk sites
Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management(i.e road closure) or health and reasons(application must be made to DCC a minimum of 4 days prior to proposed works)	All sites
Use rubber linings in chutes, dumpers and hoppers to reduce impact noise	High risk sites
Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements	Medium and High risk sites
No materials shall be burned on site	All sites
Adequate dust/debris screening should be in place at the site boundary to contain and minimise the amount of windblown dust. This must be maintained in good condition at all times.	Medium and High Risk sites
All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers must be covered during transit on and off site.	All sites
The site shall be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather.	All sites
Dust suppression equipment must be used when point source emissions are likely.	All sites
The entry and exit points to the site should be constructed of hard standing	Medium and High Risk Sites

which is regularly dampened to minimise dust emissions.	

2. Plant

Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC	All sites
Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer	All sites
Use all plant and equipment only for the tasks for which it has been designed	All Sites
Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum	All sites
Power all plant by mains electricity where possible rather than generators	Medium and High Risk Sites
Maximise screening from existing features or structures and employ the use of partial or full enclosures for fixed plant	Medium and High Risk Sites
Locate movable plant away from noise sensitive receptors	All sites

3. Vehicle activity

Ensure all vehicle movements (on site) occur within normal working hours. (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons)	All sites
Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public roads. If unavoidable engines should be turned off.	Medium and High Risk Sites
Minimise the opening and closing of the site access through good coordination of deliveries and vehicle movements	Medium and High Risk Sites
Plan the site layout to ensure that reversing is kept to a minimum	Medium and High Risk Sites
Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banks-men	Medium and High Risk Sites
Rubber/neoprene or similar non-metal lining material matting to line the inside of	Medium and High Risk Sites

	material transportation vehicles to avoid first drop high noise levels.	
	Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also be carried out by the developer, as required by mechanical road sweepers	Medium and High Risk Sites

4. Demolition Phase

	Employ the use of acoustic screening; this can include planning the demolition sequence to utilise screening afforded by buildings to be demolished.	Medium and High Risk Sites
	If working out of hours for Health and Safety reasons (following approval by DCC) limit demolition activities to low level noise activity unless absolutely unavoidable)	All sites
	Use low impact demolition methods such as non-percussive plant where practicable	Medium and High Risk Sites
	Use rotary drills and 'bursters' activated by hydraulic or electrical power or chemically based expansion compounds to facilitate fragmentation and excavation of hard material.	High Risk sites
	Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings through cutting any vibration transmission path or by structural separation of buildings	Medium and High Risk Sites
	Consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off site.	High Risk Sites

5. Ground Works and Piling Phase

	The following hierarchy of groundwork/piling methods should be used if ground conditions, design and safety allows: • pressed in methods, e.g., hydraulic jacking • Auger/bored piling • Diaphragm walling • Vibratory piling or vibro-replacement	Medium and High Risk Sites

• Driven Piling or dynamic consolidation	
The location and layout of the piling plant should be designed to minimise potential noise impact of generators and motors	Medium and High Risk Sites
Where impact piling is the only option utilise a non-metallic dolly between the hammer and driving helmet or enclose the hammer and helmet with an acoustic shroud	Medium and High Risk Sites
Consider concrete pour sizes and pump locations. Plan the start of concrete pours as early as possible to avoid overruns	Medium and High Risk Sites
Where obstructions are encountered, work should be stopped and a review undertaken to ensure that work methods that minimise noise are used.	Medium and High Risk Sites
When using an auger piling rig do not dislodge material from the auger by rotating it back and forth. Use alternate methods where safe to do so.	Medium and High Risk Sites
Prepare pile caps using methods which minimise the use of breakers, e.g., use hydraulic splitters to crack the top of the pile.	Medium and High Risk Sites

6. Monitoring

Establish pre-existing levels of ambient noise by baseline monitoring or use of the noise maps.	Medium and High Risk Sites
Carry out regular on site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include; • Hours of work • Presence of mitigation measures • Number and type of plant • Construction methods Site reviews must be recorded and made available for inspection	High Risk Sites
Monitor noise and vibration continuously during demolition, piling, excavation and sub and superstructure works at agreed locations and report to DCC at agreed intervals and in an agreed format. To comply with this the following must take place. The monitoring locations for existing sites as agreed with officers of Dublin City Council must remain in situ. If additional	High Risk Sites

monitoring is required this will be provided and the new locations will be agreed with Dublin City Council. For all new sites the monitoring locations must be agreed with Dublin City Council. The results of the monitoring must be forwarded to officers of the Air Quality Monitoring and Noise Control Unit every two weeks in the following format: • Provide the construction noise level as defined in British Standard 5228 and the peak particle velocity readings for the hours of operation of the site. This will include the construction noise level for any overtime period worked outside of normal working hours. Provide a report detailing and discussing the noise and vibration levels over the reporting period. If a breach is recorded the follow up action that took place to prevent any further breaches must be included in the report. • This information must be provided in electronic format If results are required owing to complaints the results will be provided as soon as possible by the contractor to Dublin City Council.	
Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM	Medium and High Risk Sites
The 'ABC' Method detailed in Paragraph E.3.2 of BS 5228-1:2009 shall be used to determine acceptable noise levels for day, evening and night time work.	Medium and High Risk Sites
Vibration levels must be kept below 1.0 mm/sec (PPV) where possible. Where levels are expected to exceed this value residents must be warned and an explanation given.	Medium and High Risk Sites
Appropriate dust suppression must be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways	All sites
Street and footpath cleaning must be undertaken during the demolition and ground works phase to minimise dust emissions	Medium and High Risk Sites
Continuous dust monitoring along the site boundary should be undertaken during any demolition or ground works	High Risk Sites

7. Communication and Liaison

A Community Liaison Plan should be developed by the developer in consultation with local residents/businesses and a single point of contact nominated to engage with Dublin City Council and the residents/businesses and to handle complaints and communication of site information. A copy of this plan must be sent to Dublin City Council Planning Department as a matter of urgency in the case of sites where development has already commenced and 14 days in advance of commencement of works for any other site	Medium and High Risk Sites
Contact details for the site manager and liaison officer should be displayed prominently on the site hoarding	Medium and High Risk Sites
All staff should be briefed on the complaints procedure and the mitigation requirement and their responsibilities to register and escalate complaints received.	Medium and High Risk Sites
Send regular updates at appropriate intervals to all indentified affected neighbours/ businesses via a newsletter and post relevant information on the site hoarding. Also make the information available via email/website including weekly noise monitoring reports	Medium and High Risk Sites
Arrange regular community liaison meetings at appropriate intervals including prior to commencement of the project.	High Risk Sites
Meet regularly with neighbouring construction sites to ensure activities are coordinated to minimise any potential cumulative issues.	High Risk Sites

Extensions of Working Hours in <u>exceptional circumstances</u>

Ensure at least 4 days notice is given to Dublin City Council Planning Department when applying for extensions to normal working hours. Do not undertake out of hours work unless permission to do so has been granted.	All sites
The applicant must demonstrate in writing that the works required cannot be carried out during normal working hours. The documentation sent in must be accompanied by a detailed engineering	All sites

	or/and traffic management or/and safety case as to why the works are required outside normal hours. Power floating after 6pm is the only activity that will be permitted during the extensions where they relate to required large concrete pours. All reasonable and appropriate measures to minimise noise associated with these works must be put in place and no works other than those approved may be carried out during extended working hours. The Developer/his agent must give the times and dates of the proposed work, and the mitigation measures that are to be used to minimise noise/disturbance	
	Advise neighbours about requirement for and duration of any permitted works outside of normal working hours, and associated environmental mitigation measures being put in place during the course of the extended works, following receipt of approval from DCC	All sites
	All complaints will be referred directly to the site liaison person and a reply must issue to the complaint within 3 hours of receipt of the complaint.	All sites
	A log of all complaints and a summary of how they were dealt with should be kept and be made available to DCC, as required	All sites
	Any breaches of permitted working hours or permitted extended working hours or developers or subcontractors not carrying out their requirements under this protocol may lead to enforcement action and may also result in the withdrawal of any extension of hours of works for a period that will be at the discretion of Dublin City Council.	All sites

PATRICK PARSONS

UK locations:

Newcastle upon Tyne
London
Manchester
Glasgow
Huddersfield
Chester
Birmingham
Guildford

International locations:

Dubai
Sydney

Telephone +44 (0)191 261 9000
Email newcastle@patrickparsons.co.uk
Online patrickparsons.co.uk