

Project Name: Cascades Leisure Centre, Gravesham
Project No. 331510051
Document Title: Noise Impact Assessment Planning
Addendum

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Introduction

This Noise Impact Assessment Planning Addendum has been prepared by Stantec UK Ltd to accompany an application made under Section 73 of the Town and Country Planning Act (1990) for an amendment to planning permission ref. 20221293 for the redevelopment of the Cascades Leisure Centre site in Gravesend. The application is submitted on behalf of Gravesham Borough Council.

The original application was subject to several conditions, of which conditions 10 and 23 relate to noise.

This document provides an updated noise impact assessment based on the proposed changes and covers the following aspects:

- Traffic Noise Impact Assessment
- Plant Noise Emission Limits

A discussion on the planning conditions imposed for the original scheme is also provided, along with recommended variations to suit latest British Standard guidance and initial comments relative to control of activity noise impacts. If similar conditions are proposed on the Revised Scheme, it will be necessary to fully assess these aspects once the development's design is sufficiently developed.

A glossary of relevant acoustic terminology is provided in Appendix A.

Revised Scheme

The original scheme's description will be revised to the following. Strikethroughs are included for ease of comparison against the original description.

"Demolition of the existing Cascades Leisure Centre and public house and redevelopment of the site to provide a new leisure centre with community pool, leisure water, cafe, soft play, ~~'clip n climb' facility~~, a six court sports hall, fitness suite, spin studio, 2 no. fitness studios, 2 no. ~~squash courts~~, a new tennis/netball court, ~~improvements to the existing play area~~, landscaping across the site and associated car parking".

Key changes also include the following:

- A reduction in gross internal area from the approved 7,316 m² to 6,037 m²;
- Removal of sauna and steam room,
- External changes (window treatment, glazing, external slide, etc.), and
- Relocation of plant items to the roof of the facility.

The size of the car park will not change.

Reference: Cascades Leisure Centre, Gravesham

Changes to National and Local Planning Policy

Since the original application, a revised version of the National Planning Policy Framework was released in December 2024 and updated in February 2025. Revisions to acoustically relevant sections were limited to paragraph numbers only and the content remains as per the previous version, so there is no impact on the findings or assessment based on this. Other acoustically relevant National and Local Policy Guidance of British Standards remains unchanged from that referenced in the original noise impact assessment.

Traffic Noise Impact Assessment Update

As noted in the Transport Assessment Addendum dated 11th December 2025 (a copy of which is provided in Appendix B), the revised scheme has a smaller overall footprint than both the permitted and existing leisure centre and, as a result, the expected traffic generation will be lower with a commensurate reduction in peak hour traffic volumes.

As the Noise Impact Assessment submitted in support of the original application already assessed traffic volumes for a larger scheme and concluded that this would have a negligible impact on surrounding noise sensitive receptors, the revised scheme can also be said to have a **negligible** noise impact due to it being expected to generate a lower level of traffic generation than either the existing or permitted development.

Plant Noise Emission Limits

To maximise internal space and optimise layouts, the proposed scheme sees the relocation of some equipment from internal plantrooms to a new plant compound on the roof. The roof compound is proposed to house several air source heat pumps and other items of ventilation and heat rejection equipment, which will be enclosed with a suitably rated acoustic screen.

Plant noise emission limits were proposed in the original planning application to control noise from new plant items to no more than existing background sound levels at surrounding noise sensitive receptors. Based on British Standard BS 4142:2014+A1:2019, designing to this level would indicate that the new sound sources would have a **low impact**, assuming no acoustic characteristics or tonality.

The same limits are therefore proposed, as follows:

Receptor	Time Period	Proposed Plant Noise Emission Limit (L _{Ar,Tr} * dB)
Residential receptors on Thong Lane	Daytime (07:00 – 23:00 hours)	38
	Night-time (23:00 – 07:00 hours)	34

* T_r = reference time period of 1-hour during the daytime and 15-mins at night.

The above limits should be met with all plant operating simultaneously. In line with guidance within BS 4142:2014+A1:2019, all sources should be controlled such that they do not produce any “distinguishable, discrete or continuous note (whine, hiss, screech, hum, etc.) or distinct impulses (bangs, clicks, clatters or thumps)” at any noise sensitive façade. Where they do contain such features, appropriate corrections should be applied as defined in BS 4142:2014+A1:2019.

Reference: Cascades Leisure Centre, Gravesham

It is understood that no items of emergency plant are currently proposed, but a relaxed criterion is often applied to such items, on the basis that they only operate intermittently and should be considered, if later proposed.

It should be noted that the above approach does not align with Planning Condition 23 imposed on the original scheme. Given that Condition 23 references a superseded version of the relevant British Standard and represents an outdated approach to limits relative to background sound levels, it is suggested that, if a similar condition is to be imposed on the revised scheme, it be amended to the following. Proposed amendments are emboldened and underlined for clarity.

"Notwithstanding the submitted information, and prior to the bringing into use of the development herein approved, a noise impact assessment which looks at the impact of the plant related to the heating, building ventilation, pool water treatment, kitchen extraction and any other plant that will be installed, including the cumulative impact of the plant, to include recommendations that need to be implemented in order to comply with the following shall be submitted to and approved in writing by the Local Planning Authority:

- The internal ambient noise levels in all habitable rooms of the nearest residential dwellings to the development shall not exceed the guideline L_{Aeq} values found in Table 4 of BS8233:2014.*
- The maximum internal noise levels in all habitable rooms of the nearest residential dwellings should not exceed 45dB L_{Amax} more than 10 times per night in accordance with the Professional Practice Guidance on Planning & Noise and the WHO Guidelines for Community Noise.*
- If relevant, the rating noise from fixed building services/mechanical plant/equipment associated with the development shall **not exceed** the existing L_{A90} background level at the nearest noise sensitive receptors (i.e. dwellings) when measured and assessed in accordance with BS 4142:2014+**A1:2019**.*

The assessment shall also cover the noise impact from the leisure activities of the site particularly from outside activities taking place such as loud music, sporting activities, PA systems, etc. and include recommendations for measures to prevent or mitigate the impact on the neighbouring residential properties from leisure activities that will take place in the new development, especially if taking place outside.

Within three months of the building being brought into use a verification report showing compliance with a shall be submitted to and approved in writing by the Local Planning Authority.

Reason: *To ensure the development does not prejudice neighbouring amenity in accordance with Policy CS19 of the Gravesham Core Strategy 2014."*

Similarly for Condition 10, we would recommend the following amendments, as emboldened and underlined:

"Prior to the commencement of any above ground works, the applicant shall:

Submit a scheme in writing, including a noise survey, to the Local Planning Authority for approval in relation to noise control. The extraction system must be designed and installed in accordance with the "EMAQ/Defra Control of Odour and Noise from Commercial Kitchen Exhaust Systems (2018 update)

The noise survey should assess the worst-case scenario noise impact from the proposed extract and ventilation system, on nearby residential properties and must:

- (i) Assess the whole system and any tonal elements associated it; a 1/3 octave band analysis may be necessary.*

Reference: Cascades Leisure Centre, Gravesham

(ii) *Assess structural transmission with the use of anti-vibration mounts where necessary, linings to ductwork to prevent noise transmission, any inline silencers and provide details of where they have been installed.*

(iii) *Use the results of the noise survey to ensure that the noise generated at **1m from the worst-affected window** of any noise sensitive property meets the requirements laid down in BS4142:2014+A1:2019 "Method for Rating and Assessing Industrial and Commercial Sound*

Install and commission the extract system using a competent ventilation engineer in accordance with approved details. Provide a commissioning report to the Local Planning Authority to verify the installation, including post completion noise levels.

The equipment shall be maintained and operated in a condition such that the requirements of BS4142:2014+A1:2019 continue to be met."

Further discussion on Conditions 10 and 23 and their context relative to the current version of the British Standard BS 4142:2014+A1:2019, is provided in Appendix C for reference.

Activity Noise Impact Assessment

Condition 23 of the Consented Scheme includes a requirement to consider the impact of future activity noise on surrounding noise sensitive premises. Details are not yet available on internal room layouts or proposed building envelope constructions for the Revised Scheme and therefore the impact of noise break-out from the future facility will need to be assessed once the design is sufficiently developed.

At the correct point in the programme, façade performance specifications will be based on not only controlling external noise ingress to suitable levels based on the proposed internal activities, but also to result in a low noise impact from facility noise break-out to surrounding noise sensitive premises.

Externally, it is understood that no external Public Announcement or speaker system is proposed, and the only external sports area will be a single netball/tennis court.

Information on proposed timings, frequency of use and relative proportion of time that the court will be used for netball versus tennis is not yet available, and therefore an assessment has not been undertaken at this time. Inclusion of suitable screening is anticipated to be a reasonable noise control measure, if it is found that the noise impact from this court requires mitigation. Details are subject to confirmation once sufficient information becomes available.

Appendix A Glossary of Relevant Acoustic Terminology

Ambient Sound Level ($L_a = L_{Aeq,T}$)	Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T.
A-Weighted Decibel (dBA)	A decibel level that has been corrected for the A-Weighting curve.
A-Weighting	Octave band and 1/3 octave band filters that correlate to the response of the human hearing system to sound pressure levels at different frequencies.
Background Sound Level ($L_{A90,T}$)	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using a fast time-weighting and quoted to the nearest whole number of decibels.
Decibel (dB)	A logarithmic unit used to describe the ratio between the measured level and a reference level of 0 dB. The ratio can be sound pressure, intensity or power. The reference value for sound pressure is 20 μ Pa and for sound power is 1 μ W.
Equivalent Continuous A-Weighted Sound Pressure Level ($L_{Aeq,T}$)	Value of the time-averaged A-weighted sound pressure level, in decibels (dB), of a continuous steady sound for the duration of the specified time interval, T.
Façade Level	The sound pressure level at a distance of 1 metre from the façade
Fast Time Weighted	The speed at which the instrument responds to changes in amplitude of the measured signal. The response time of a fast time-weighted instrument is 0.125 seconds.
Free-Field Level	The sound pressure level measured away from any reflective surfaces.
Frequency (f)	The number of cycles of pressure fluctuations within a given period of time. Measured in Hertz.
Hertz (Hz)	The unit of frequency or pitch of a sound. One hertz is equal to one cycle per second.
Octave Band	Band of frequencies where the upper limit of the band is twice the frequency of the lower limit. E.g., the 1000 Hz band contains noise energy at all frequencies from 707 to 1414 Hz.
Reference Time Interval (T)	Specified interval over which the specific sound level is determined.
Sound Power Level (L_w)	The logarithm of the ratio of the sound power (W) to the reference sound power level (W_0). The reference value for sound power is 1 μ W. Defined as: $L_w = 10 \log \left(\frac{W}{W_0} \right)$
Sound Pressure Level (L_p)	The logarithm of the ratio of a given sound pressure (p) to the reference sound pressure (p_0). The reference value for sound pressure is 20 μ Pa. Defined as: $L_p = 20 \log \left(\frac{p}{p_0} \right)$

Appendix B Transport Assessment Addendum



Framework Travel Plan Addendum

Cascades Leisure Centre, Gravesend

5th January 2026

Prepared for:
Willmott Dixon Construction Ltd

Prepared by:
Stantec UK Ltd

Project Number:
331510051

Framework Travel Plan Addendum

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date



Framework Travel Plan Addendum

The conclusions in the Report titled Travel Plan Addendum are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Reviewed by: _____
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Printed Name

Approved by: _____
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Printed Name



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1 Introduction

- 1.1.1 Stantec UK Ltd (Stantec) have been appointed by Willmott Dixon Construction Limited to support a S73 application. The S73 application relates to planning permission 20221293 for a leisure centre redevelopment at Cascades Leisure Centre, Gravesend. Planning permission was granted on 3rd March 2023 for:

“Demolition of the existing Cascades Leisure Centre and public house and redevelopment of the site to provide a new leisure centre with community pool, leisure water, cafe, soft play, 'clip n climb' facility, a six court sports hall, fitness suite, spin studio, 2 no. fitness studios, 2 no. squash courts, a new tennis/netball court, improvements to the existing play area, landscaping across the site and associated car parking.”

- 1.1.2 Following granting of planning permission a number of adjustments have been made to the development proposals and this has triggered the need for a S73 application being submitted for variation of planning conditions.
- 1.1.3 The following addendum report has been written to accompany the S73 application submission. This addendum report considers the proposed changes to the permitted development and the implications of these with respect to the Framework Travel Plan report supporting the current permission.

1.2 Approved Scheme ref. 20221293

- 1.2.1 The approved scheme comprises:
- 7,316m² floorspace (GIA) within the building
 - Vehicle parking provision of 232 spaces
 - Cycle parking provision of 35 spaces
 - Motorcycle parking provision of 13 spaces
 - The existing 25 space car park at the site entry will also remain as existing

1.3 S73 proposed layout

- 1.3.1 Stantec have been advised that the S73 application will comprise the following quanta:
- 6,037m² floorspace (GIA) within the building
 - Vehicle parking provision of 232 spaces (same as permitted)
 - Cycle parking provision of 35 spaces (same as permitted)
 - Motorcycle parking provision of 13 spaces (same as permitted)
 - The existing 25 space car park at the site entry will also remain as existing (same as permitted)
- 1.3.2 Hence, the difference between the permitted development and proposed development (in terms of quanta) is the reduction in floor area of 1,279m². This represents a 17.5% reduction in floor area.



1.4 This addendum report

- 1.4.1 The following addendum report considers the content of the Framework Travel Plan report that supports the extant planning permission (dated November 2022) and how this may change as a result of the S73 application proposals.
- 1.4.2 Hence, this addendum report should be read in conjunction with the original Framework Travel Plan report (November 2022) accompanying the planning application 20221293.
- 1.4.3 The following review is conducted on a “chapter by chapter” basis with comments and calculations as appropriate for each chapter.



2 Background information and context

- 2.1.1 The following paragraphs consider the first three chapters of the Framework Travel Plan report in the context of the S73 proposals.

2.2 Chapter 1 - Introduction

- 2.2.1 Only minor commentary changes apply to this chapter with respect to the development description. The development description is now as follows:

“Demolition of the existing Cascades Leisure Centre and public house and redevelopment of the site to provide a new leisure centre with community pool, leisure water, cafe, soft play, a six court sports hall, fitness suite, spin studio, 2 no. fitness studios, a new tennis/netball court, landscaping across the site and associated car parking”.

2.3 Chapter 2 - Policy context

- 2.3.1 The policy context of the site has changed since the approval of application ref. 20221293. This section considers the latest NPPF document, the latest KCC LTP5 document and updated KCC parking standards 2025 document as considered by the paragraphs below.

National Planning Policy Framework (December 2024)

- 2.3.2 The National Planning Policy Framework (NPPF) was published in March 2012 and most recently updated in December 2024 and is the current over-arching planning framework for Local Planning Authorities.
- 2.3.3 The NPPF highlights that sustainable development is made up of three elements that are mutually dependent on each other – economic, social and environmental. It further states that:

“Planning policies and decisions should play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area.”

- 2.3.4 In terms of transport, the key theme of the NPPF is to promote sustainable modes of transport, with development sustainably located and notes that smarter use of technologies can reduce the need to travel. The NPPF does, however, recognise that different policies should be applied in different communities in order to achieve this balance and that opportunities to maximise sustainable modes of transport will vary between urban and rural areas.
- 2.3.5 Paragraph 115 lists a number of considerations for planning authorities to apply in their decision making when reviewing Transport reports. These include the need to consider that opportunities for sustainable transport have been taken up, if the access arrangements are safe and suitable and if any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach.

- 2.3.6 Paragraph 116 of the NPPF states that:

“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe. Taking into account all reasonable future scenarios.”

- 2.3.7 Importantly, the NPPF advises that development should only be refused on transport grounds if the residual cumulative impacts are likely to be “severe”. The definition of “severe” in this context is unique to the individual site under consideration. However, it may be helpful to



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consider that within the context of the Environmental Impact Assessment “severe” impacts are often described as those that would have a national or regional significance. In this respect, it is clear that the NPPF is seeking to strike a positive balance between potential local traffic impacts and local economic or social benefits.

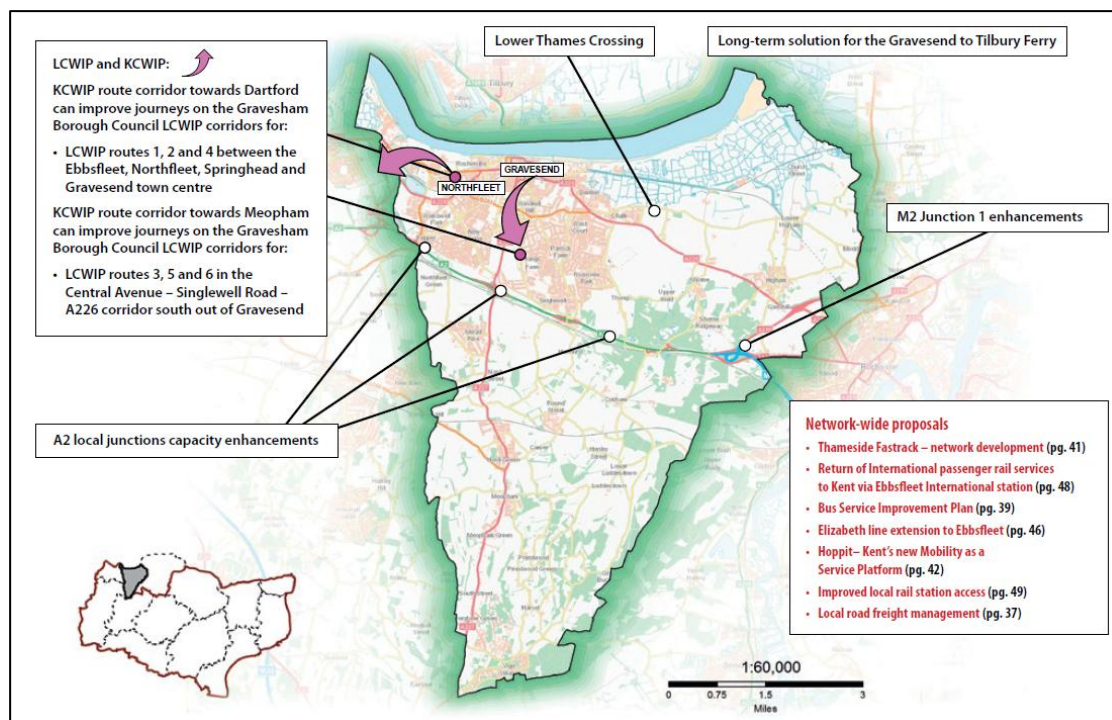
- 2.3.8 It is reasonable to suggest that within many settings, the existing traffic conditions will be busy, with congestion at peak periods. However, the NPPF is suggesting that planning authorities should not allow this to stifle valuable economic development. The test is whether any residual impacts could be considered “severe” in the context of NPPF, and it is clear from the Transport Assessment report and its review that follows that this is not the case.
- 2.3.9 Paragraph 117 of the NPPF requires opportunities for sustainable travel to be exploited and developments should therefore give first priority to pedestrians and cyclists within the scheme and neighbouring areas. Second priority, so far as possible, should be given to facilitating high quality public transport. Developments should also create safe, secure and attractive layouts which minimise conflicts between pedestrians, cyclists and vehicles. The masterplan responds to this through provision of walking and cycling infrastructure on site that connects to the external network and on site bus stop provision.
- 2.3.10 The connectivity of this site with the existing walking network will facilitate movement by this mode. In addition, the site has a bus stop located within the site, as existing, providing excellent connectivity with local bus services.
- 2.3.11 Paragraph 118 of the NPPF states
- “All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored.”*
- 2.3.12 This planning application is supported by a Framework Travel Plan document as well as this Transport Assessment.

Local Transport Plan for Kent 5 (LTP5)

- 2.3.13 Kent’s fifth Local Transport Plan was adopted during December 2024. The main aim of LTP5 is to improve the health, wellbeing, and economic prosperity of lives in Kent by delivering a safe, reliable, efficient, and affordable transport network across the county and as an international gateway. With respect to Gravesham District it presents the following graphic.



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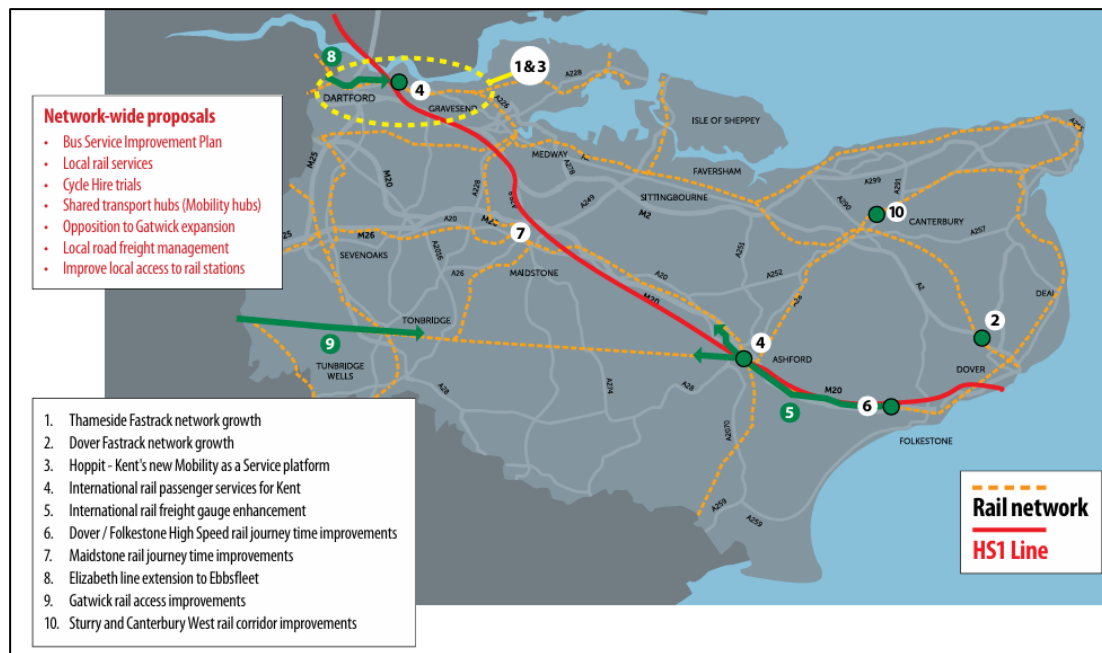


2.3.14 With respect to walking and cycling the LTP5 includes the graphic below. It references the Meopham cycling corridor and the Dartford to Gravesend cycling corridor.



2.3.15 With respect to public transport the LTP5 includes the graphic below. It references the Thameside Fastrack network growth.





- 2.3.16 The proposed development will support the outcomes defined within LTP5 by promoting sustainable travel opportunities, connecting the site to walking and cycling infrastructure, continue supporting public transport through patronage from on site bus stops.

Car parking policy – KCC

- 2.3.17 Reference has been made to the current KCC parking standards guidance, which were adopted during early 2025. These parking standards supersede the Kent and Medway Structure Plan: Supplementary Planning Guidance 4 (2006) and the Kent Design Guide: Interim Guidance Note 3 (2008).
- 2.3.18 The following paragraphs provide a summary of the key points within this document relevant to the development proposals at Newtown Works.
- 2.3.19 The first paragraph of the document sets the context that the KCC parking standards are a starting point to discuss with KCC officers with respect to an appropriate level of parking provision. It states:

“This guidance sets out the parking standards for new developments in Kent. It considers parking for all types of vehicles and seeks to balance the need to provide an appropriate parking provision, ensure the safe operation of the public highway and encourage travel by sustainable modes. It represents a starting point for engagement with the Local Planning and Highway Authorities on parking and layout matters and promotes a pragmatic approach that can also be informed by site-specific considerations as appropriate.”

- 2.3.20 Table 2 in the Appendix to the KCC document suggests the following parking standards for indoor sports facility. These standards are the same as per the previous KCC parking standards for this use and hence the same as included in the Transport Assessment document. Hence, no update to the Transport Assessment report is required with respect to the standards.



Indoor sport, recreation or fitness (not involving motorised vehicles, firearms, or use as a swimming pool or skating rink) – E(d)	
	Car Parking
Multi-Activity Sports & Leisure Centres, Health & Fitness Centres, Gymnasias, Social Clubs, Discotheques, Dance Halls, Ballrooms.	1 space per 22m ² + 1 space per 15 seats where appropriate
Notes:	1. Adequate facilities should be provided to enable delivery vehicles to park and manoeuvre clear of the public highway. 2. Provision should also be made for coach parking with a maximum standard of 1 coach space per 300 seats. Such provision is to be provided as an alternative to car parking provision. 3. Where provisions are made within the development to accommodate spectators then an additional parking provision of 1 space per 15 seats should be provided. 4. Provision should also be made for coach parking with a maximum standard of 1 coach space per 5,000 visitors per annum.

2.3.21 On the basis of the parking standards above the proposed development would be permitted to provide a maximum of $6037 / 22 = 274$ spaces, plus $250 / 15 = 17$ for spectators. This equates to 291 spaces in total.

2.3.22 With respect to mobility impaired drivers. The standards require the following parking provision, which remains unchanged from the Transport Assessment report:

- Car Parks up to 50 spaces - 1 designated space + 2 spaces of sufficient size but not specifically designated.
- Car Parks with 50 to 200 spaces - 3 designated spaces or 6% of the total capacity, whichever is greater
- Car parks with greater than 200 spaces - 4 designated spaces + 4% of the total capacity

2.4 Chapter 3 - Transport network serving the site

2.4.1 No updates are required with respect to highway access and walking and cycling access.

2.4.2 With respect to rail services the closest rail station to the leisure centre remains Gravesend, continuing to provide services operated by Southeastern and Thameslink trains and include high speed services to London St Pancras International.

2.4.3 With respect to local bus services, Cascades Leisure Centre provides a bus stop within the site and this facility will be retained within the new masterplan. Local bus services are operated by a number of operators, including Arriva, and an extract from the route map is shown below.

2.4.4 Within the site the 481 and 491 bus services provide direct access to the leisure centre. The table below provides a summary of the service offered.

Bus Number	Origin	Destination	Frequency
481	Ebbsfleet station	Cascades	Every hour 07:30 – 18:30 on Mondays and Tuesdays during school holidays



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491	Singlewell	Gravesend	Half hourly 07:52 – 22:15 on Monday to Saturday. Hourly on Sunday.
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- 2.4.5 External to the site, additional bus stops are provided at the site vehicular entry on Thong Lane and also Leander Drive, around 200m from the site entrance. These stops provide access to the 735 and 111 service (as well as the 481 and 491) as detailed within the Transport Assessment report.
- 2.4.6 Any changes to the bus services since the submission of the Transport Assessment report do not have a bearing on the junction modelling completed within the Transport Assessment document.



3 Objectives and targets

- 3.1.1 The following paragraphs consider chapters 4 and 5 of the Framework Travel Plan relating to the Travel Plan objectives and targets.

3.2 Chapter 4 - Travel Plan objectives

- 3.2.1 This chapter remains unchanged from the Framework Travel Plan supported the existing planning permission. The objectives of the Framework Travel Plan would remain consistent with the objectives encapsulated within the NPPF to encourage sustainable travel.

3.3 Chapter 5 - Trip generation and targets

- 3.3.1 This chapter requires a minor update based upon the revised Transport Assessment predicted traffic generation. Two-way traffic generation targets for year 1 have been set in accordance with the updated S73 proposed development generation. Trip generation targets for the developer supported final year will remain unchanged insofar as the percentage reduction of 10% over the five years following occupation.

Target trip generation – Year 1

- 3.3.2 On the above basis, vehicular trip generation for the S73 proposed development is summarised below. These represent the Year 1 targets.

	AM Peak			PM Peak		
	In	Out	2 way	In	Out	2 way
Trip generation	24	22	46	113	91	204

Target trip generation – Developer supported final year

- 3.3.3 The proposed development will seek to reduce traffic generation from the development by 10% over the developer supported period of the Travel Plan when compared to the Transport Assessment. This will represent the trip rate targets at five years following occupation.
- 3.3.4 Vehicular trip generation targets for the proposed development at Final Year will hence be as summarised below.

	AM Peak			PM Peak		
	In	Out	2 way	In	Out	2 way
Trip generation	22	20	41	102	82	184

- 3.3.5 Hence, trip generation targets for the intervening periods can be calculated through interpolation between year 1 and year 5.



4 Travel Plan Co-ordinator and measures

- 4.1.1 The following paragraphs consider chapters 6 to 8 of the Framework Travel Plan, which consider the Travel Plan Co-ordinator and measures and monitoring.

4.2 Chapter 6 - Travel Plan Coordinator

- 4.2.1 The chapter remains unchanged. The developer will appoint a TPC to manage the Framework Travel Plan and to actively pursue initiatives and ensure the plan is regularly monitored and reviewed during the lifetime of the plan.
- 4.2.2 The TPC post will be appointed prior to occupation on site and will be supported by the developer for a 5 year period.

4.3 Chapter 7 - Action Plan

- 4.3.1 This chapter remains unchanged as a result of the S73 application proposals. The action plan proposed remains relevant and appropriate to the development now proposed.

4.4 Chapter 8 - Monitor and Review

- 4.4.1 This chapter remains unchanged as a result of the S73 application proposals. The Travel Plan will be monitored in order to assess the effectiveness of the measures in achieving the targets.



5 Summary

5.1 Chapter 9 - Summary

- 5.1.1 The findings of the 2022 Framework Travel Plan report do not change as a result of this Addendum report.



Appendix C Original Scheme Planning Conditions

As part of the consented scheme, two planning conditions were imposed relating to noise emission from plant items associated with the development.

Condition 10 relates to noise emission from the proposed extract and ventilation system, as follows:

"Prior to the commencement of any above ground works, the applicant shall:

Submit a scheme in writing, including a noise survey, to the Local Planning Authority for approval in relation to noise control. The extraction system must be designed and installed in accordance with the "EMAQ/Defra Control of Odour and Noise from Commercial Kitchen Exhaust Systems (2018 update)

The noise survey should assess the worst-case scenario noise impact from the proposed extract and ventilation system, on nearby residential properties and must:

(i) Assess the whole system and any tonal elements associated it; a 1/3 octave band analysis may be necessary.

(ii) Assess structural transmission with the use of anti-vibration mounts where necessary, linings to ductwork to prevent noise transmission, any inline silencers and provide details of where they have been installed.

(iii) Use the results of the noise survey to ensure that the noise generated at the boundary of any noise sensitive property meets the requirements laid down in BS4142:2014 "Method for Rating and Assessing Industrial and Commercial Sound

Install and commission the extract system using a competent ventilation engineer in accordance with approved details. Provide a commissioning report to the Local Planning Authority to verify the installation, including post completion noise levels.

The equipment shall be maintained and operated in a condition such that the requirements of BS4142:2014 continue to be met."

The above condition does not include a specific criterion to be met by the extract and ventilation system, but it is assumed that the intention is to minimise the noise impact of such systems at the nearest noise sensitive property. It is noted that the condition refers to a superseded version of BS 4142 and it is assumed that if a similar condition is to be imposed on the revised scheme, that this would be updated to the current version of the standard – BS4142:2014+A1:2019.

Condition 10 also references assessment to the "*boundary of any noise sensitive property*", whereas it is best practice to assess plant noise emission to a location 1 m from the face of the worst-affected window on the basis that glazing is the weakest acoustic element of a building envelope and offers the potential for most disturbance to be caused to occupants. In cases where the assessment location is specified as the site boundary, this would normally be stated as such to protect use of external amenity areas. Given that existing background sound levels - and associated plant noise limits set in relation to such levels - are already below best practice guidance limits for external amenity areas, assessment to a location 1 m from the worst-affected residential window should inherently provide sufficient protection of the use of residential gardens during the daytime.

Reference: Cascades Leisure Centre, Gravesham

Condition 23 relates to the cumulative noise impact from all items of building services plant and sets requirements, as follows:

“Notwithstanding the submitted information, and prior to the bringing into use of the development herein approved, a noise impact assessment which looks at the impact of the plant related to the heating, building ventilation, pool water treatment, kitchen extraction and any other plant that will be installed, including the cumulative impact of the plant, to include recommendations that need to be implemented in order to comply with the following shall be submitted to and approved in writing by the Local Planning Authority:

- The internal ambient noise levels in all habitable rooms of the nearest residential dwellings to the development shall not exceed the guideline LAeq values found in Table 4 of BS8233:2014.*
- The maximum internal noise levels in all habitable rooms of the nearest residential dwellings should not exceed 45dB L_{Amax} more than 10 times per night in accordance with the Professional Practice Guidance on Planning & Noise and the WHO Guidelines for Community Noise.*
- If relevant, the rating noise from fixed building services/mechanical plant/equipment associated with the development shall be at least 10dB below the existing LA90 background level at the nearest noise sensitive receptors (i.e. dwellings) when measured and assessed in accordance with BS4142:2014*

The assessment shall also cover the noise impact from the leisure activities of the site particularly from outside activities taking place such as loud music, sporting activities, PA systems, etc. and include recommendations for measures to prevent or mitigate the impact on the neighbouring residential properties from leisure activities that will take place in the new development, especially if taking place outside.

Within three months of the building being brought into use a verification report showing compliance with a shall be submitted to and approved in writing by the Local Planning Authority.

Reason: *To ensure the development does not prejudice neighbouring amenity in accordance with Policy CS19 of the Gravesham Core Strategy 2014.”*

Again, this condition references the superseded version of British Standard BS 4142 and it is assumed that if a similar condition is proposed, that it will reference the most recent version.

In this situation, a limit is proposed at a level that is 10 dB below existing background sound levels. This is deemed to be unnecessarily stringent in the context of British Standard guidance in British Standard BS4142:2014+A1:2019, which states the following:

“The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.”

There are environmental impacts to designing to achieve more stringent limits, with increased embodied carbon loads due to additional system mitigation measures required and increased operational carbon loads because of greater flow resistance through the system, meaning that equipment has to work harder for the same result. Given this, and the fact that the British Standard guidance that states a low noise impact is achieved with rating levels set to existing representative background sound levels, it is recommended that the condition be updated to the proposed text included in the main body of this document if imposed on the Revised Scheme.