



# Longfield Solar Farm

Environmental Statement PINS Ref: EN010118

Volume 2

Appendix 11C: Construction Noise Modelling

Document Reference EN010118/APP/6.2

Revision Number: 1.0

February 2022

Longfield Solar Energy Farm Ltd

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure)  
Regulations 2009

Quality information

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# 1. Construction Noise Modelling

## 1.1 Construction works noise

1.1.1 Initial construction noise predictions are based on single items of plant working simultaneously at a fixed position. The predictions have not included any mitigation in the form of screening or reduction in the percentage on-time (i.e. equipment assumed to be in continuous use).

BS 5228-1 reference.	Plant	Noise dB(A) at 10m	Stage					
			Site preparation		Installation of PV panels		Cable route trenching	
			Qty	dB(A)	Qty	dB(A)	Qty	dB(A)
C.2-10	Dozer	80	1	80	0	0	1	80
C.2-14	Excavator	79	1	79	1	79		0
C.12-1	Push press piling	68		0	1	68	1	68
<b>Total Noise at 10m</b>				<b>83</b>		<b>79</b>		<b>80</b>

1.1.2 The distance adjustment to construction noise levels (reference distance 10m) have followed guidance from BS 5228-1 Annex F.2.2 'Method for activity  $L_{Aeq,T}$ ' using formula:

$$K_h = 20 \log_{10} R/10$$

where:

$K_h$  is the distance adjustment for hard ground conditions, in decibels (dB);

R is the distance from the activity.

Distance, m	$K_h$ , dB
10	0
25	8
50	14
75	18
100	20
250	28
500	34
750	38
1000	40

## 1.2 Construction traffic noise

1.2.1 Construction traffic noise calculations have followed guidance from BS 5228-1 Annex F.2.5 'Method for mobile plant using a regular well-defined route (e.g. haul roads)' using formula:

$$L_{Aeq,T} = L_{WA} - 33 + 10\log_{10}Q - 10\log_{10}V - 10\log_{10}d$$

where:

$L_{WA}$  is the sound power level of the vehicle, in decibels (dB);

$Q$  is the number of vehicles per hour;

$V$  is the average vehicle speed, in kilometres per hour (km/h); and

$d$  is the distance of receiving position from the centre of haul road, in metres (m).

HGV (50 per 12 hour day)		Other vehicles (330 per 12 hour day)	
$L_{WA}$	110	$L_{WA}$	99
$Q$	4	$Q$	30
$V$	50	$V$	50
$d$	3	$d$	3
$L_{Aeq,1hr}$	61	$L_{Aeq,1hr}$	59
<b>Total LAeq,1hr</b>		<b>63</b>	