

	Project Bournes Green			Job Ref. 263072		
K D Leach Limited	Structure Nursery Block			Sheet no. Page 1/3		
kevin@kdleach.limited	Calc. by Kevin	Date 26/05/2026	Chk'd by Kevin	Date 26/05/2026	Rev A	Date 09/06/2023

Concrete

Slab/Mat Design

Slab/Mat Design per Plane

St. Base (Base)

Slab/Mat Panels

Mat: MF 3, Panel: SI 535

Static Design Calculations

Reinforcement Design Details

Bottom-X

Summary

Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.461$

Analysis method 3D Building Analysis

Critical combination 5 STR_{3,4}-1.35G+1.5Q+1.5RQ+EHF_{Dir2}.

✓ Pass

Moment Capacity Check

$A_{s,prov} \times \text{Bottom}$ 503 mm²/m

$M_{dX} \text{ Bottom}$ -19.888 kNm/m

$A_{s,req} \times \text{Bottom}$ 231 mm²/m

Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.461$

✓ Pass

Limiting Reinforcement Parameters Checks

Check Minimum Diameter Pass

Check Maximum Diameter Pass

Check Minimum Bar Distance Pass EN 1992-1-1:2004 Section 8.2(2)

Check Maximum Spacing Tension Bars Pass EN 1992-1-1:2004 Section 9.3.1.1(3)

Check Maximum Spacing Tension Bars (h > 200) Pass EN 1992-1-1:2004 Table 7.3N

Check Minimum Area of Reinforcement Pass EN 1992-1-1:2004 Sections 9.2.1.1(1) and 7.3.2(2)

Check Maximum Area of Reinforcement Pass EN 1992-1-1:2004 Section 9.2.1.1(3)

Bottom-Y

Summary

Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.409$

Analysis method 3D Building Analysis

Critical combination 5 STR_{3,4}-1.35G+1.5Q+1.5RQ+EHF_{Dir2}.

✓ Pass

Moment Capacity Check

$A_{s,prov} \times \text{Y Bottom}$ 503 mm²/m

$M_{dY} \text{ Bottom}$ -18.355 kNm/m

$A_{s,req} \times \text{Y Bottom}$ 206 mm²/m

Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.409$

✓ Pass

Limiting Reinforcement Parameters Checks

Check Minimum Diameter Pass

Check Maximum Diameter Pass

Check Minimum Bar Distance Pass EN 1992-1-1:2004 Section 8.2(2)

Check Maximum Spacing Tension Bars Pass EN 1992-1-1:2004 Section 9.3.1.1(3)

Check Maximum Spacing Tension Bars (h > 200) Pass EN 1992-1-1:2004 Table 7.3N

Check Minimum Area of Reinforcement Pass EN 1992-1-1:2004 Sections 9.2.1.1(1) and 7.3.2(2)

	Project Bournes Green		Job Ref. 263072	
K D Leach Limited	Structure Nursery Block		Sheet no. Page 2/3	
kevin@kdleach.limited	Calc. by Kevin	Date 26/05/2026	Chk'd by Kevin	Date 26/05/2026 Rev A Date 09/06/2023
Check Maximum Area of Reinforcement Pass EN 1992-1-1:2004 Section 9.2.1.1(3) Top-X Summary Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.312$ Analysis method 3D Building Analysis Critical combination 7 STR_{6,2}-1.35G+1.5Q+1.5ψ_0S+1.5ψ_0W+EHF_{Dir1+} ✓ Pass Moment Capacity Check $A_{s,prov} \times Top$ 503 mm²/m $M_{dX} Top$ 13.460 kNm/m $A_{s,req} \times Top$ 157 mm²/m Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.312$ ✓ Pass Limiting Reinforcement Parameters Checks Check Minimum Diameter Pass Check Maximum Diameter Pass Check Minimum Bar Distance Pass EN 1992-1-1:2004 Section 8.2(2) Check Maximum Spacing Tension Bars Pass EN 1992-1-1:2004 Section 9.3.1.1(3) Check Maximum Spacing Tension Bars (h > 200) Pass EN 1992-1-1:2004 Table 7.3N Check Minimum Area of Reinforcement Pass EN 1992-1-1:2004 Sections 9.2.1.1(1) and 7.3.2(2) Check Maximum Area of Reinforcement Pass EN 1992-1-1:2004 Section 9.2.1.1(3) Top-Y Summary Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.305$ Analysis method 3D Building Analysis Critical combination 3 STR_{3,2}-1.35G+1.5Q+1.5RQ+EHF_{Dir1-} ✓ Pass Moment Capacity Check $A_{s,prov} \times Y Top$ 503 mm²/m $M_{dY} Top$ 13.661 kNm/m $A_{s,req} \times Y Top$ 153 mm²/m Utilization ratio $A_{s,reqd} / A_{s,prov} = 0.305$ ✓ Pass Limiting Reinforcement Parameters Checks Check Minimum Diameter Pass Check Maximum Diameter Pass Check Minimum Bar Distance Pass EN 1992-1-1:2004 Section 8.2(2) Check Maximum Spacing Tension Bars Pass EN 1992-1-1:2004 Section 9.3.1.1(3) Check Maximum Spacing Tension Bars (h > 200) Pass EN 1992-1-1:2004 Table 7.3N Check Minimum Area of Reinforcement Pass EN 1992-1-1:2004 Sections 9.2.1.1(1) and 7.3.2(2) Check Maximum Area of Reinforcement Pass EN 1992-1-1:2004 Section 9.2.1.1(3) Bearing Capacity 3D Building Analysis Max base pressure, q_{max} 54.18 kN/m² Critical combination 3 STR_{3,2}-1.35G+1.5Q+1.5RQ+EHF_{Dir1-} Combination type STR Allowable bearing pressure, q_a 60.00 kN/m² Bearing capacity utilization ratio 0.903 Tekla Structural Designer, version: 26.0.1.41				

