IgnacioSlocker & Victoria Risso [redacted]
Property:
8 Epsom Way
OX26 1BN
Bicester

Outbuilding Garage Garden Room Conversion

The purpose of this document is to explain the works I would like to carry out in my property, to convert an existing garage outbuilding used as storage into a garden room for a possible kid's playroom, home office or gym and get a Lawful Development Certificate (LDC) or a confirmation that this is permitted development, and no planning permissions or other permissions are required to carry out these works. No parking space will be lost as the garage is only used for storage. Two parking spaces will remain as shown in Image 3 and Image 11. No plumbing/water or drainage systems will be installed in this space. All 3D rendered pictures shown in this document are modelled to exact dimensions of the property. The outbuilding is not going to be extended and the footprint will remain the same. All works to be done by hiring a professional certificate building company.

The internal space will be insulated as per building regulations and floor will be added. Examples of garage outbuilding conversions in the UK and advertised by building companies are shown at the end of this document. Also, a video link to show the type of work I would like to do in my property is shown here (same type of property): https://www.youtube.com/watch?v=eJ2q1QZ73oI

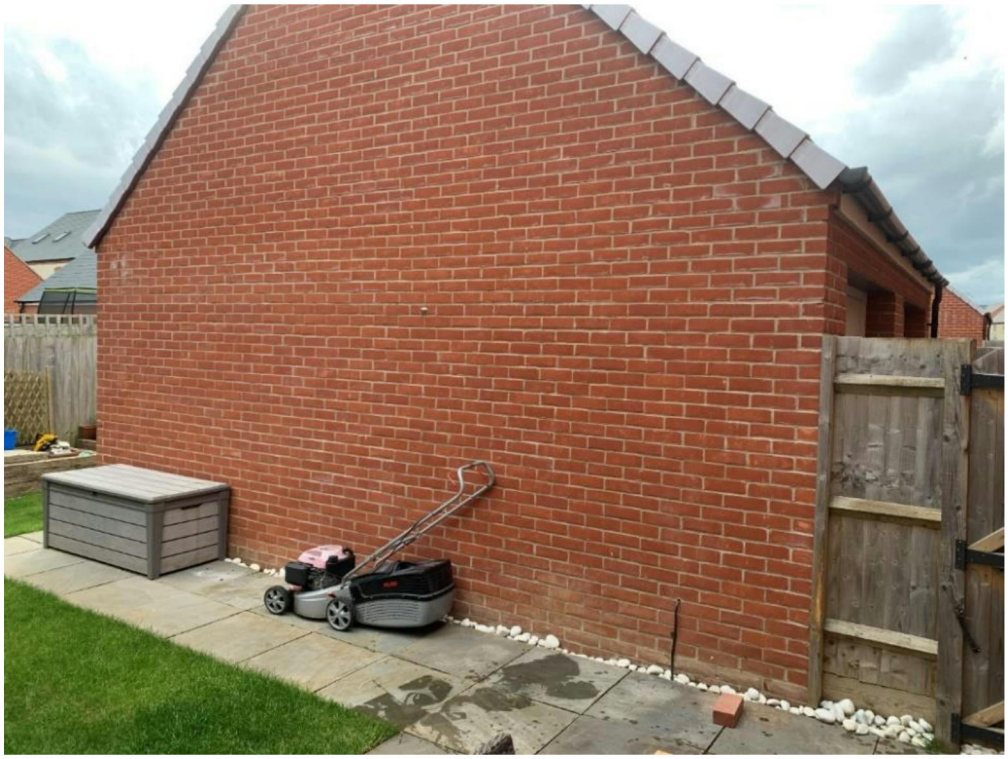


Image 1: Current Garage wall facing the garden

Image 2: Current Garage door

Image 3: Original car port and front parking space for 2 cars (see image 11)

Garden room conversion explained.

Garage wall facing the garden to be cut in order to install bi-folding doors.

Image 4: Garage to garden wall cutout size for bi-folding doors in mm. (not to scale)

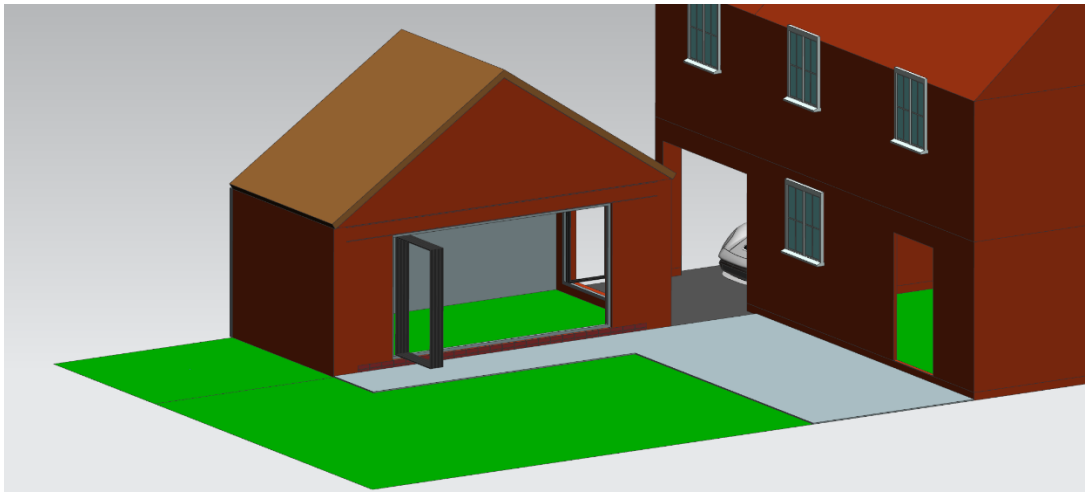


Image 5: Garage wall cutout 3D representation with bi-folding doors installed

Catnic single leaf wall lintel will be added to hold load from upper part of the wall as per report done by structural engineers. Structural engineers report added into the appendix.

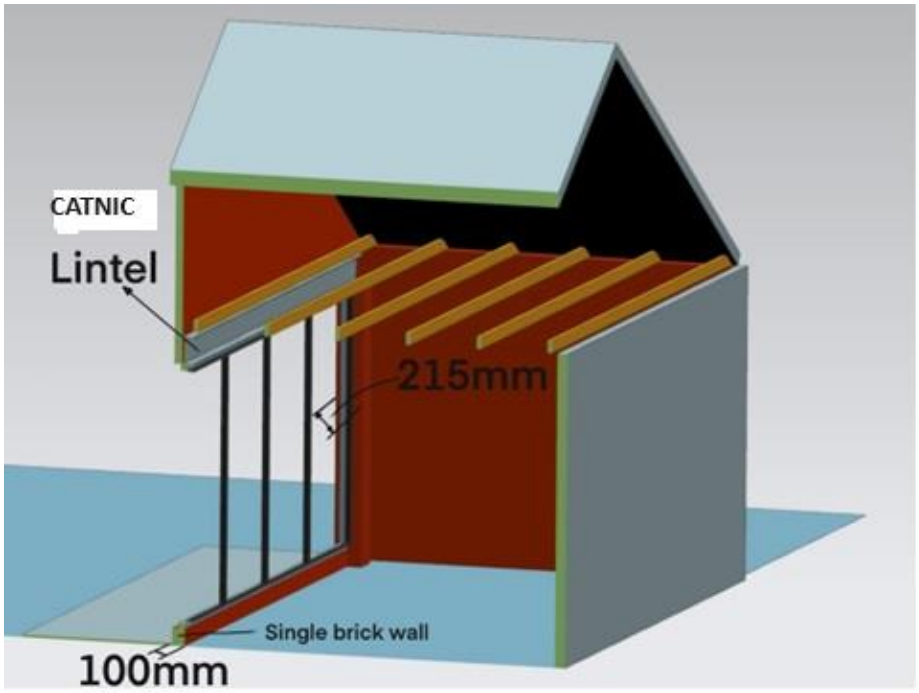


Image 6: Section view of garage to show lintel detail and wall thickness

On the garage door side, two courses/rows of bricks will be added and current garage door will be replaced by bi-folding doors.

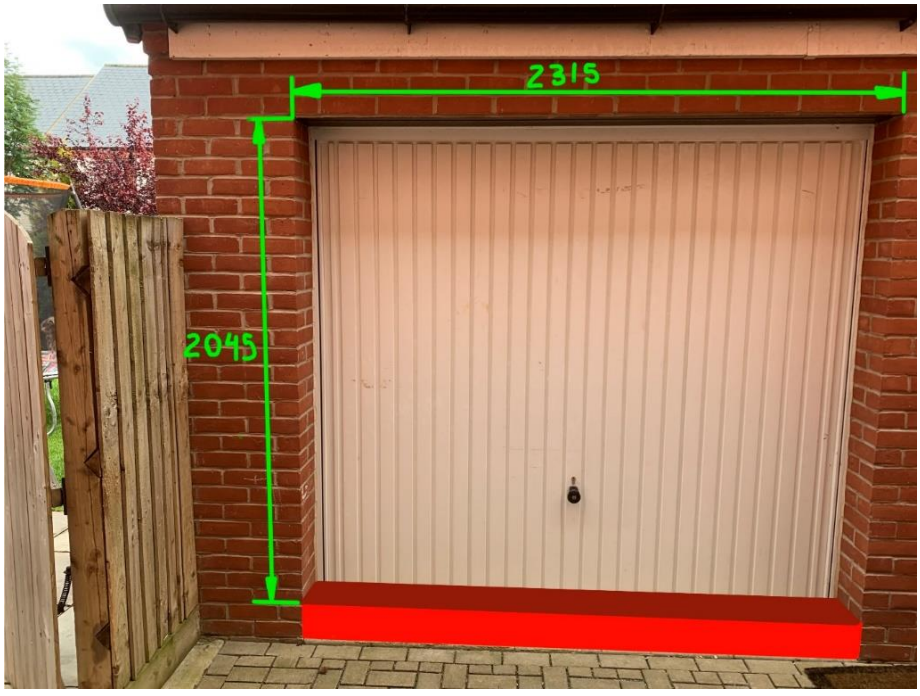


Image 7: Current garage door and final dimensions of the opening

Current white metal garage door (Image 7) to be removed. Garage threshold shown in red will be added (two rows of bricks)

Final opening size shown in Image 7.

Bi-folding doors to be installed

First set**: 4100W x 2071H (brick wall Opening size)** on garden side as per Image 5.

Set of bi-folding doors in RAL7006 by ‘SMART’ 4 leaf as shown in Image 9.

'Smart' Aluminium Grey
Bi-folding Doors

Frame Measurements:

Unit of measurement	CM	MM	FT	INCH
Height:	207.1	2071	6.79	81.54
Width:	410	4100	13.45	161.42
Depth:	7	70	0.23	2.76

Image 8: ’SMART’ Bi-folding doors dimensions

Image 9: Bi-folding doors to be installed

Second set: **2315W x 2045H (brick wall Opening size)** on current garage door shown in Image 7.

3 leaf bi-folding doors. Brand and model to be confirmed.

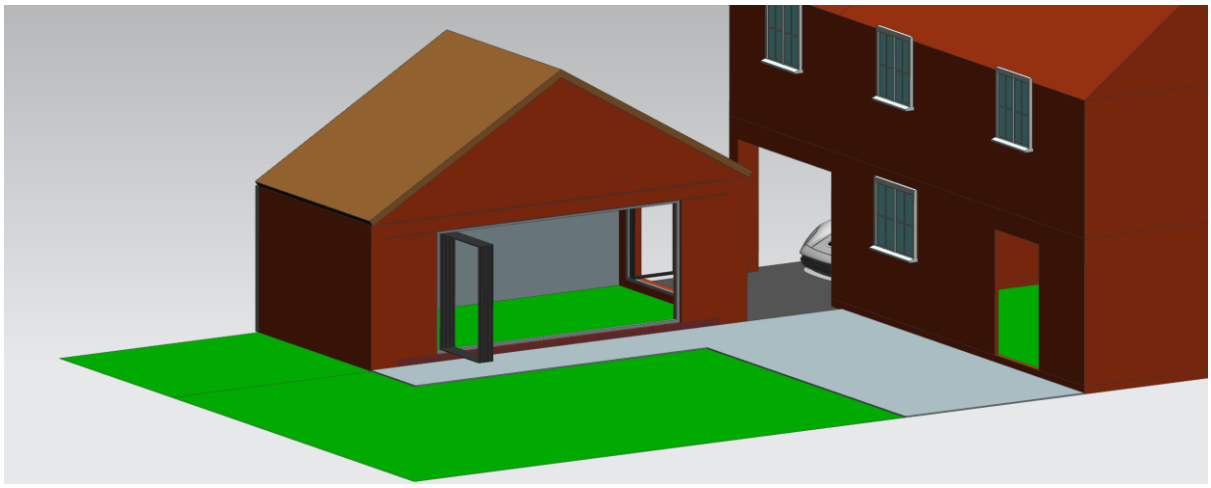


Image 10: Bi-folding doors in the open position (garden side)

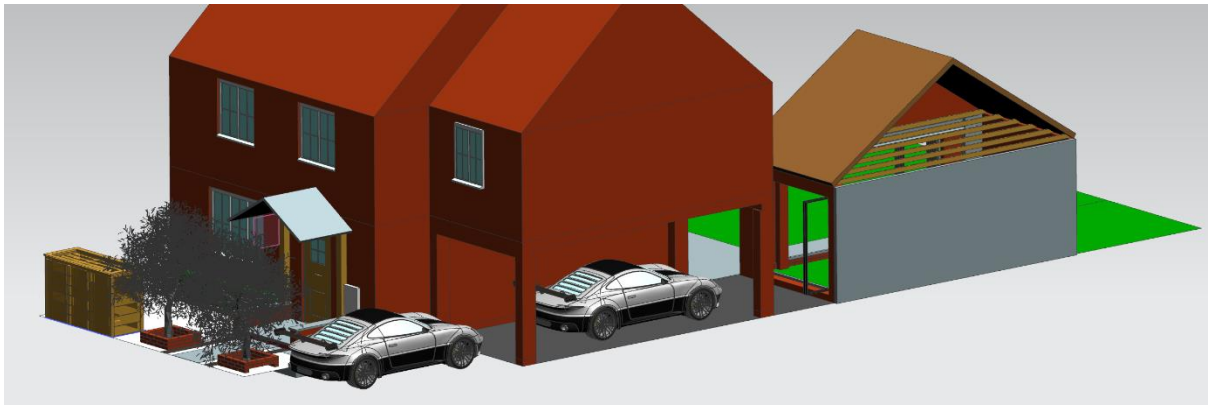


Image 11: Bi-folding doors in the open position garage door side

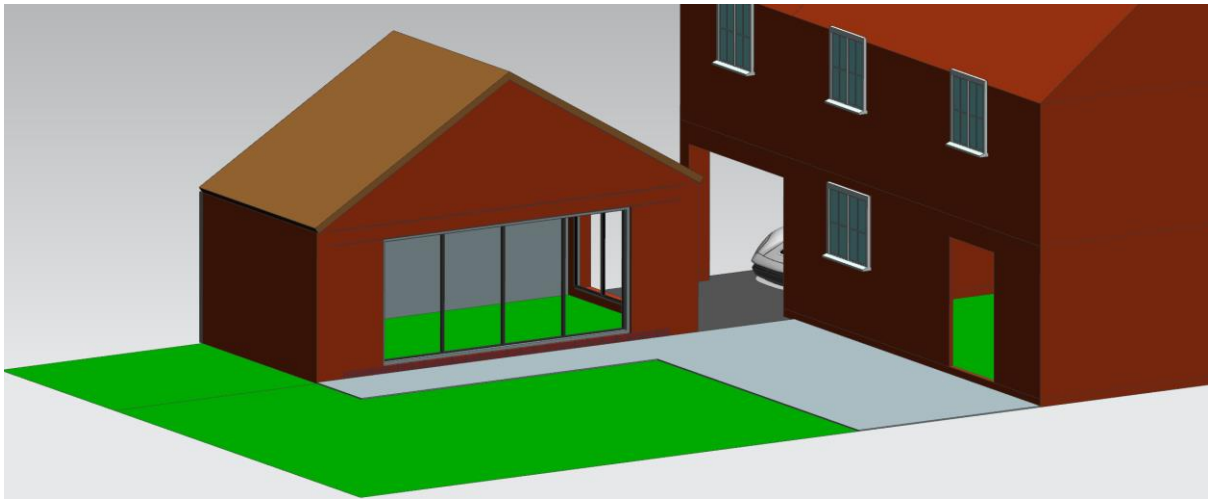


Image 12: Bi-folding doors in the closed position garden side

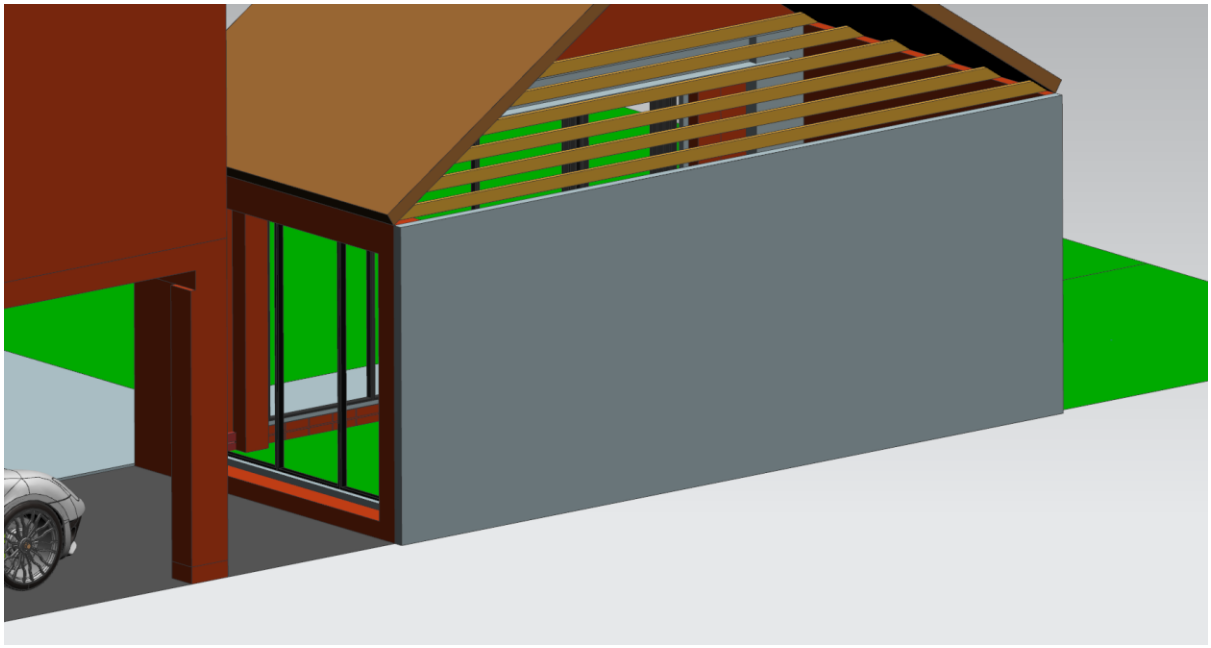


Image 13: Bi-folding doors in the closed position garage side

Window to be added to far side of the garage outbuilding

Optional will be a ‘glazed’ side window as shown in the 3D render picture below. I would like to know if a window can be added to the side of the garage and if planning permission will be required for this addition or if this is permitted development also. Window is to be glazed and is not overlooking any property but my garden fence (image 17). Window size to be confirmed but probably will be a 900x900 mm one as shown in Image 15. The view from the window is shown in Image 17.

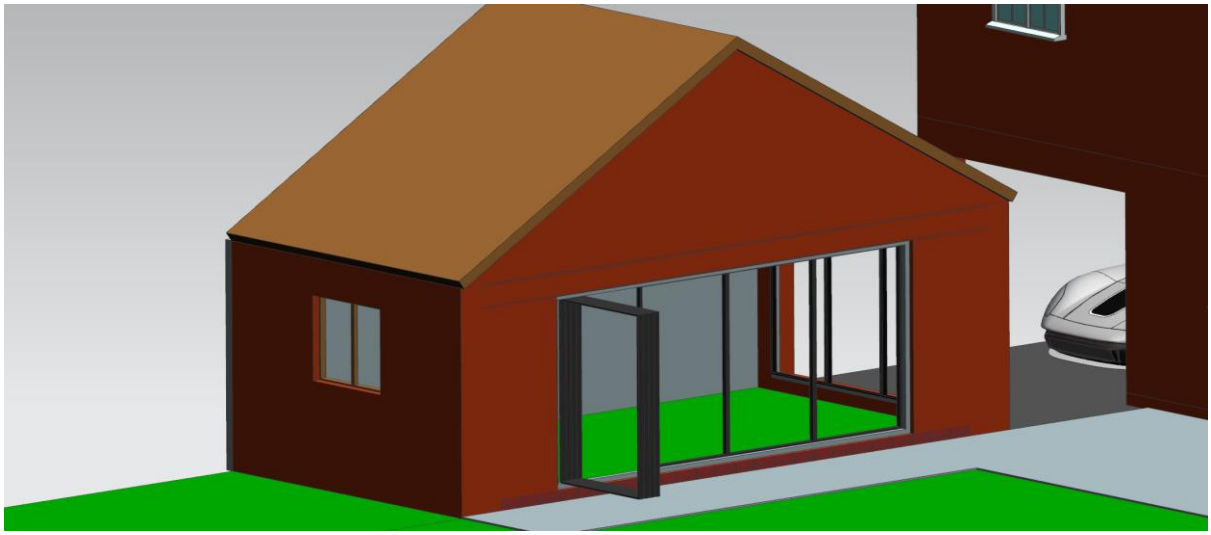


Image 14: Window far side of the existing garage outbuilding

Image 15: Window to be added to the far side wall of the garage outbuilding (900x900mm)

Image 16: Wall where window will be installed

Image 17: View from potential window to the back fence

Examples of similar projects found online

The first example is the most similar one given in this document to the conversion I would like to do.

Image 18: Example of a 3 leaf bi-folding doors

Image 19: Example of a set of bi-folding doors

Image 20: Example of multiple bi-folding doors

Image 21: Example of off-centered 3 leaf bi-folding doors

Image 22: Example of 4 leaf bi-folding doors

Image 23: Example of 4 leaf bi-folding doors

Appendix

Structural engineers report for main opening

Job Details

Project:	8 Epsom Way Bicester
Our Ref:	6507
Date:	Aug-23
Enclosures:	Calcs & Drawing
Produced by:	Lee Bampfield
Checked by:	Lee Bampfield
Signature:	*[Original Signed]*

Notes:

1. These papers have been prepared for Building Regulations submission.
2. Work on site should await receipt of the appropriate Building Control approval, or may be started in advance on the written authority of the building's owner.
3. A copy of these papers should be on site for the Contractor's use during the works.
4. Dimensions quoted in these papers are for design purposes. Design dimensions will not necessarily equate to site dimensions. Dimensions must be confirmed on site before commencement of construction or before off-site manufacture is undertaken. Significant differences should be referred back for possible re-design.
5. Do not scale dimensions off drawings/sketches within these papers.
6. The Building Inspector may carry out inspections or require exploratory work in connection with these proposals especially near new or changed load locations.
7. It is the Client's responsibility to ensure that a competent person is engaged to act in the role of Principal Designer in compliance with the current CDM regulations.

SDS consulting
civil & structural engineers

Design Summary

General Job Description (Type of Building, materials, construction methods)	Masonry & timber garage. Design of gable wall opening support.	
Structural form, Stability & Robustness	Stability achieved through traditional load bearing, buttressing masonry.	
Specific Design Assumptions	Full structural survey not carried out therefore structural elements concealed and/or not directly affected as part of the works are assumed to be structurally adequate.	
Design Methodology	Standard ULS/SLS design in accordance with latest British Standards	
	☑ **British Standards**	☐ **Eurocode**
Computer Program Used	☑ Company produced Excel spreadsheets	☐ Ayrshire - AyrSuite
	☐ CADS – A3Dmax	☐ Metsec - MetSPEC
	☑ CADS – Steelwork Member Designer	☐ Metsec - LatticeSPEC
	☐ CADS – Steelwork Moment Connections	☐ Metsec - FrameSPEC
	☐ CADS – SMART Portal 3D	☐ Sand
	☐ CADS – RC Pad Base Designer	☐ Scia Engineer
	☐ CADS - Masonry Wall Panel Max	☐ BDES Composite steel & concrete
	☐ CADS - SMART Engineer	☐
	☐	☐
Design Codes Used	☑ BS 648 - material weights	☑ BS5950 - Steel
	☑ BS6399-1 - Loading on Buildings (Dead & Imposed)	☐ BS5268-1&2 - Timber
	☐ BS6399-2 - Loading on Buildings (Wind)	☐ BS5268-4 - Fire resistance of Timber
	☑ BS6399-3 - Loadings on Buildings (Imposed Roof)	☐ BS5268-5 - Timber preservative treatment
	☐ BS8004 - Foundations	☐ BS5268-6 - Timber framed walls
	☐ BS8002 - Earth retaining structures	☑ BS5628 - Masonry
	☐ BS8110-1 - Concrete	☐ BS5977-1 - Lintel Design
	☐ BS8110-2 - Concrete (Special circumstances)	☐ DMRB & MCHW Series
	☐ BS8500-1&2 - Specifying Concrete	☐ NHBC Pt.4 - Building near Trees
	☐ BS5328 1&2 - Specifying Concrete mixes	☐
	☐ BS8102 - Protection against ground water	☐
	☐ BS8007 - Water retaining structures	☐

	Project	8 Epsom Way Bicester	**Job No.**	6507	SDS consulting civil & structural engineers
			Made By	LB	
			Date	Aug 23	
	Design Element	Loadings	**Sheet No.**	1	
			Rev.		

REF		Output
	Brick Wall	
103mm	Brick (Facing)	2.32
	Total Gk	2.31 kN/m²
	Total Qk	0 kN/m²

	Project	8 Epsom Way Bicester	**Job No.**	6507	SDS consulting civil & structural engineers
			Made By	LB	
			Date	Aug 23	
	Design Element	Loadings	**Sheet No.**	2	
			Rev.		

REF			Output
			kN/m
	To Read in conjunction with loading sheet previous.....		
Lintel			
@Support	300mm x Brick Wall Dead		
DL	TOTAL Gk/Qk/W	From 0mm for mm	0.69 / 0 / 0
Lintel			
@midspan	1725mm x Brick Wall Dead		
DL	TOTAL Gk/Qk/W	From 2050mm for mm	3.99 / 0 / 0

SDS consulting civil & structural engineers	S1	Job No	6507
		Job Ref	8 Epsom Way
		Designed By	LB
		Checked By	
		Date	August 23
		Revision No	
		Calc No	
		Page No	1

Calculations for strength, stability and stiffness of steel members to BS 5950 Part 1
Member Details

Member profile	Uniform	
Member length	4250	mm
Member type	Beam	
Member slope	-0.0	deg
Section - reference	178x102 UB19	
- type	Rolled I-section	
- axis	Major	
Steel - grade	grade S275	
- ult. tensile strength	410	N/mm2
- yield stress	275	N/mm2
- design strength	275	N/mm2
- Youngs E. modulus	205000	N/mm2

Support Conditions

Degree of Freedom		*End 1*	*End 2*
Displacement	- normal	fixed	fixed
	- lateral	fixed	fixed
	- axial	fixed	free
Rotation	- normal	free	free
	- lateral	free	free
	- axial	fixed	fixed

Lateral Restraints

No.	*Type*	*Connection*	*Offset mm*	*Start mm*	*Length mm*	*Spacing mm*
1	End 1	Both flanges				
2	End 2	Both flanges				

Effective Length Factors
Major axis effective length factor on full member length = 1.00
Minor axis effective length factors on division length and member depth

Division Number	*Position*		*Moment*				*Axial Compression*	
	Start	*End*	*Sagging*		*Hogging*		*Length*	*Depth*
	mm	*mm*	*Length*	*Depth*	*Length*	*Depth*		
1*	0	4250	1.40	2.00	1.40	2.00	1.00	0.00

Note: * indicates Destabilising Loads

Stiffness Criteria (Length/Deflection Ratios)

Member type	Normal			Lateral		
	Length	Ratio	Defl.	Length	Ratio	Defl.
	mm	L/Defl.	mm	mm	L/Defl.	mm
Plaster finish beam	4250	360.00	11.81	4250	360.00	11.81

Load Details (Units: kN and m)

No.	*Name*	*Load No.*	*Type*	*Start Pos. mm*	*Loaded Length mm*	*Start Value*	*End Value*	*Load Description*
1	Dead	1	DN	0	2225	0.69	3.99	
		2	DN	2225	2025	3.99	0.69	
		3	UN			0.19		Self weight
		4	UA			0.00		Self weight

Load Combinations

Load Case	*Safety Factors*										
	Comb 1 ULS	*Comb 2 SLS*									
1	1.40	1.00									

Summary of Critical Results for Member (178x102 UB19) - File name: S01

Design Criterion	*Utilization Ratio*	*Load Combination*	*Position*	*Status*
Local capacity / strength	0.207	1	2150	OK
Lateral buckling	0.765	1	2150	OK
Torsional buckling				n/a
Deflection	0.386	2	2130	OK

End 1 Effects for Member S01

Comb No.	*Axial Fz*	*Shear*		*Bending*		*Torsion Mt*
		Fvx	*Fvy*	*Mx*	*My*	
1	-0.0	7.4	-0.0	0.0	-0.0	0.0
2	-0.0	5.3	-0.0	0.0	-0.0	0.0

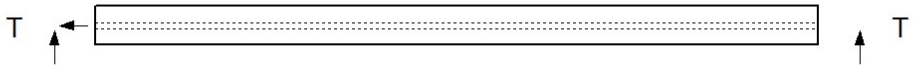
End 2 Effects for Member S01

Comb No.	*Axial Fz*	*Shear*		*Bending*		*Torsion Mt*
		Fvx	*Fvy*	*Mx*	*My*	
1	-0.0	-7.6	-0.0	0.0	0.0	0.0
2	-0.0	-5.4	-0.0	0.0	0.0	0.0

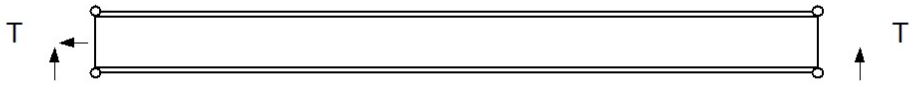
Maximum Effects for Member S01

Comb	Axial	Shear		Hogging		Sagging		Torsion
No.	Fz	Fvx	Fvy	Mx	My	Mx	My	Mt
1	0.0	-7.6	0.0	-0.0	-0.0	9.7	0.0	0.0
2	0.0	-5.4	0.0	-0.0	-0.0	6.9	0.0	0.0

Combination 1 X Graph

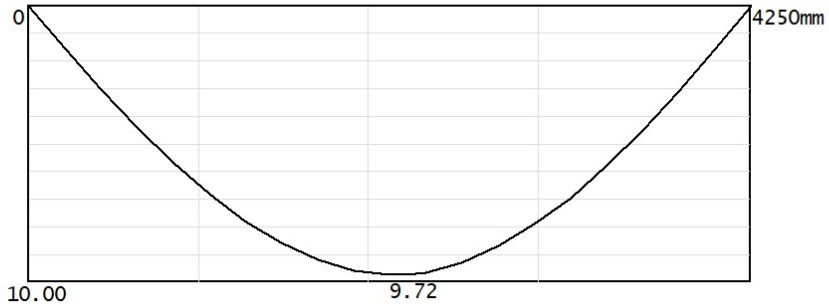


Flange View



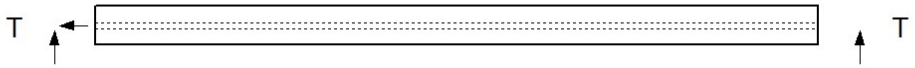
Web View

Normal Moment Mx

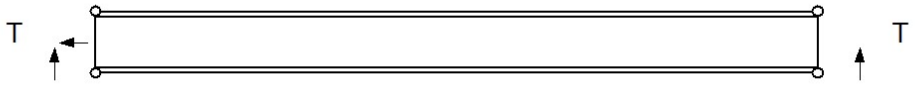


Normal Shear Fvx

Combination 2 X Graph

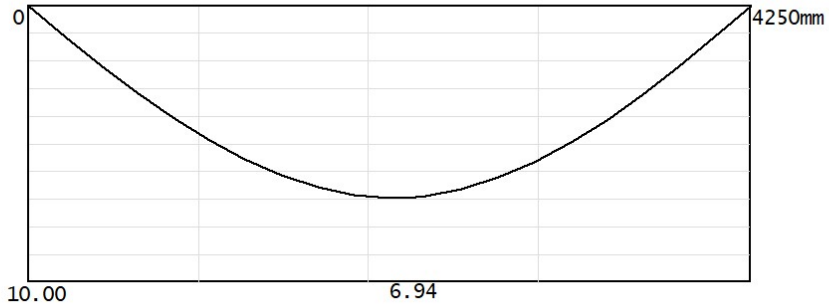


Flange View



Web View

Normal Moment Mx



Normal Shear Fvx

SDS consulting civil & structural engineers	Job Title :	8 Epsom Way Bicester	Made by	LB	Job No.	6507
			Checked			
	Subject :	Bearing Checks	Sheet No	1	Date	Aug-23
			Rev.	-	Rev Date	-

			Bearing			Load				Bearing Stress			Padstone Provided	Min. Thickness	Bearing Stress			
Beam	Section	Reaction	Width	Length	γ_m	Perp.	Par.	Masonry	Fk	Allowable	Actual	Padstone			On Padstone		Under Padstone	
		kN (ULS)	mm	mm					N/mm^2	1.5 F_k / γ_m	N / Bw x Bl				N/mm^2		N/mm^2	
S1	178x102x19	8	100	150	3.5		x	Brick	5.8	2.49	0.53	NO	330x100 Precast		8.57	OK	0.24	OK
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catnic®
A Tata Steel Enterprise

Single Leaf Wall Lintels - CCS

Single leaf wall lintels

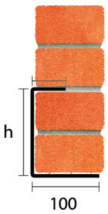
Benefits

Duplex Corrosion Protection System
Ensures optimum durability and longevity

CCS lintels are fully built into wall construction for use with single leaf face brick or block walls.

Channel Sections

Standard Duty



CCS lintels should be suitably propped and laterally restrained during construction. Standard lengths are available in increments of 150mm at lengths up to 3000mm, 300mm at 3000mm to 4800mm.

CCS			
Standard lengths (mm)	**750-1800**	**1950-3000**	**3300-4800**
SWL (kN)	15	20	20
Weight (kg/m)	4.7	7.3	11.7
Nominal height 'h' (mm)	154	229	229

Alternativly...

Total SLS load based on steel reactions
5.32+5.43 =10.75kN

Within lintel capacity therefore OK.

Catnic
Pontypandy Industrial Estate
Caerphilly
CF83 3GL
T: 029 2033 7900
F: 029 2086 7796

01/2015

www.catnic.com