

To whom it may concern:

Please find below our calculations justifying the existing ground floor of Barnsley Town Hall for British Standard museum loading of 4.0kN/m².

We are confident that the existing floor will take museum loading and have justified this in two ways:

1. The prevailing guidance from the Institution of Structural Engineers at the time of construction was for a design load of 100lb/sq ft. This equates to 4.79kN/m².
2. The present BS loading for offices, plus the weight of partitions to be removed, roughly equate to the required museum loading of 4.0kN/m².

Either way, our opinion is that the existing ground floor within the Town Hall is adequate for the present BS museum live load of 4.0kN/m².

Yours faithfully:


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It is proposed to convert part of the ground floor of Barnsley Town Hall from office use to a museum.

*From BS6399: Office LL 2.5kN/m²
Museum LL 4.0kN/m².*

*The Town Hall was built in 1932-3. From I. Struct. E. Live loads on floors (1927):
Upper floors in offices: 80lb/sq ft. (=3.83 kN/m²)
Ground floors in offices: 100lb/sq ft. (=4.79 kN/m²)*

Assuming the Town Hall was built to the standards prevailing at the time, the floor should have sufficient strength for use as a museum.

In addition, the existing brick partition walls between offices are to be removed, thereby reducing the dead load to the existing slab. Consider a typical area of floor: from change in level near reception to the fire doors at entrance to Registrars Office (total area 6.8m x 14.8m).

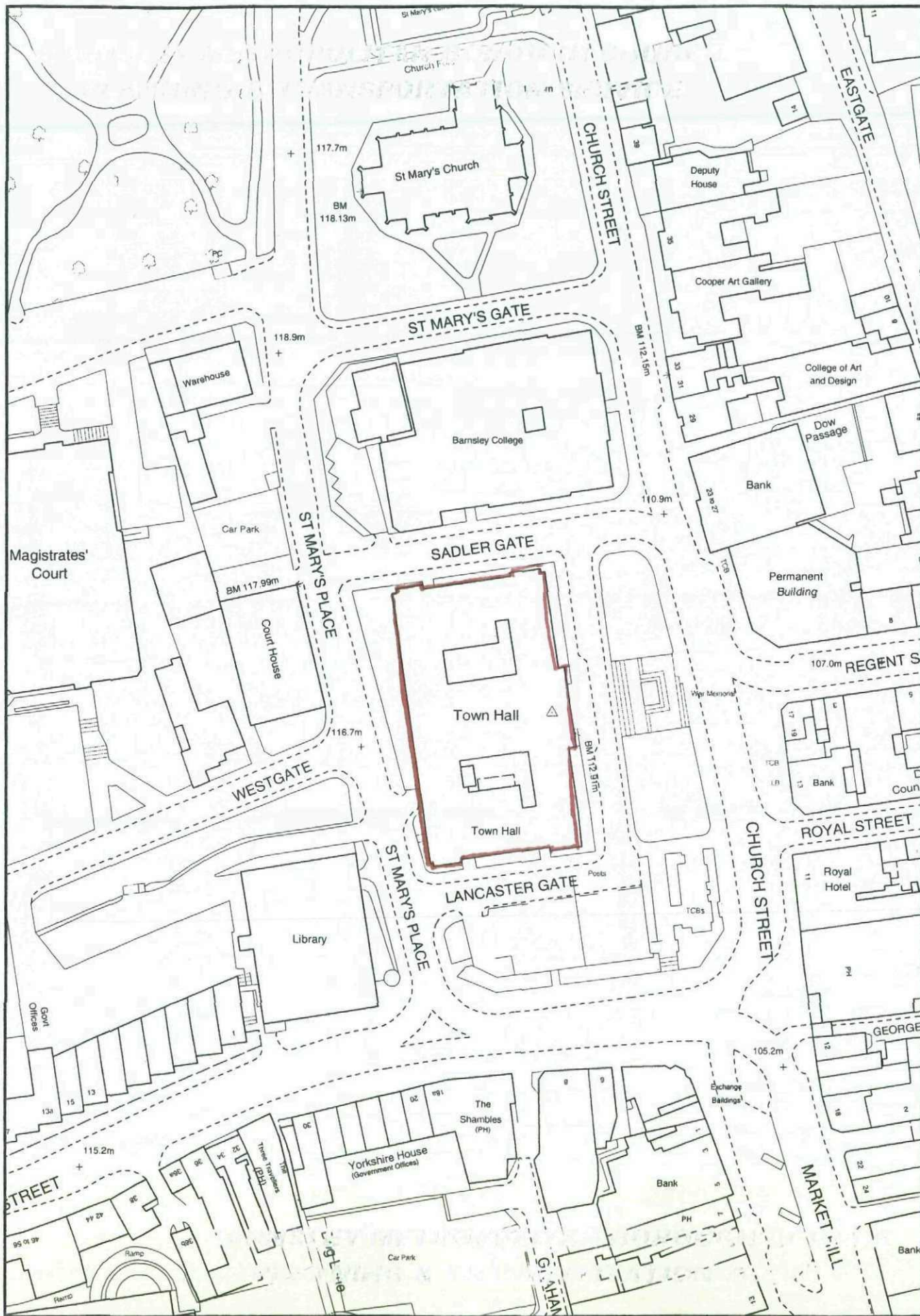
*Length of partition wall: 14.8+3x4.8m=29.2m
Weight of partitions: brick 15x0.1x3.0m(say)=4.5kN/m
Plaster 2x0.1x3.0m=0.6kN/m
TOTAL: 5.1kN/m*

Therefore total weight is 5.1x29.2=148.9kN

Distributed over full area = 148.9/(6.8x14.8)= 1.48kN/m²

Therefore total existing load to slab is 2.5+1.48= 3.98kN/m²

Although this is slightly less than required loading of 4.0kN/m², it is considered that the existing floor is adequate for the proposed use as a museum.



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Scale 1: _____