



March 2011

ST MARYS HALL ARUNDEL

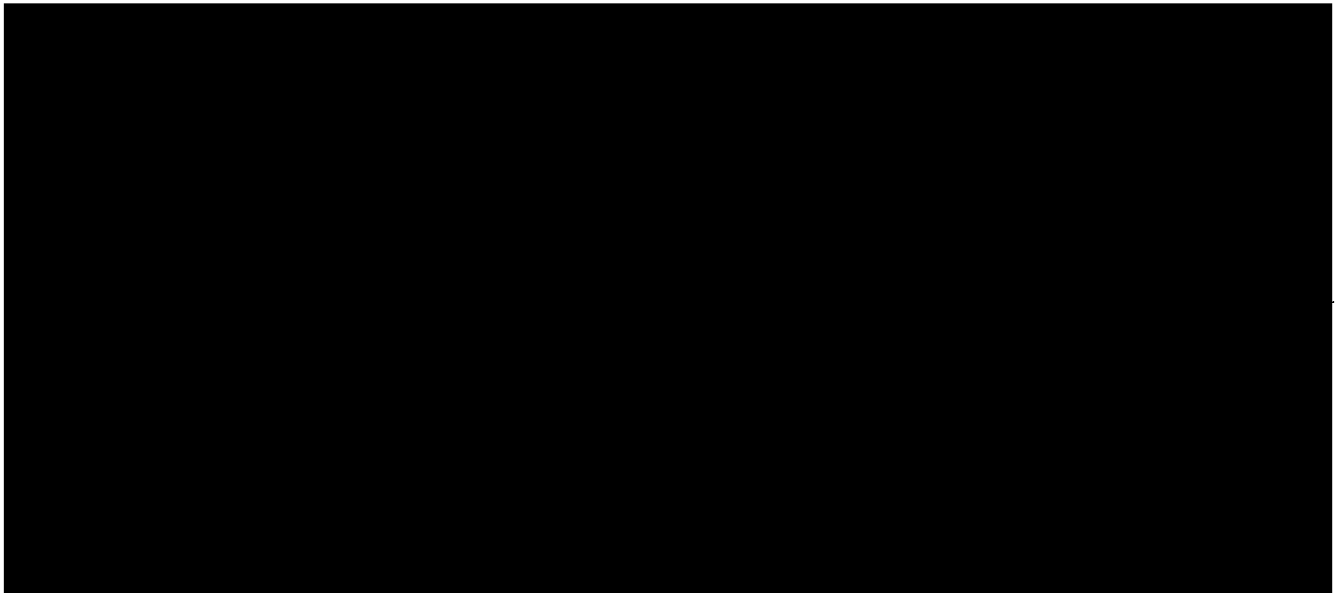
STRUCTURAL ENGINEERS PROPOSALS TO SUPPORT PLANNING APPLICATION

Diocese of Arundel and Brighton
(Building Services) Ltd
Bishop's House
The Upper Drive
Hove
East Sussex
BN3 6NB

Commercial-in-Confidence

ST MARYS HALL ARUNDEL

STRUCTURAL ENGINEERS PROPOSALS TO SUPPORT PLANNING APPLICATION



**Diocese of Arundel and Brighton
(Building Services) Ltd
Bishop's House
The Upper Drive
Hove
East Sussex
BN3 6NB**

ST MARYS HALL ARUNDEL

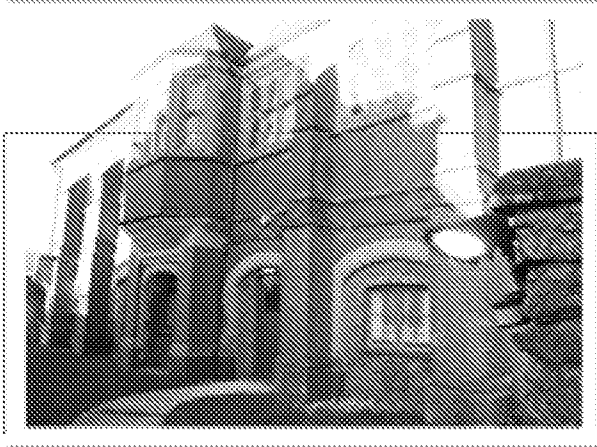
STRUCTURAL ENGINEERS PROPOSALS TO SUPPORT PLANNING APPLICATION

C O N T E N T S

	Page
1.0 Introduction	1
2.0 Design Proposals	2
3.0 Site Investigations	2
4.0 Openings in Walls	3
5.0 Lower Ground Floor – Removal of Wall	3
Appendix A – Site Investigation record drawing	

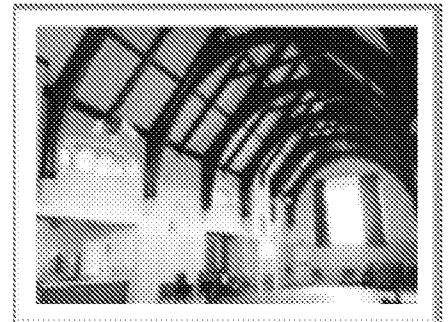
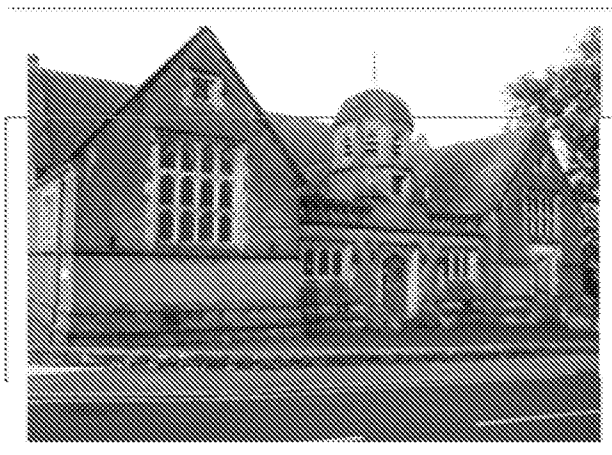
1.0 Introduction

St Marys Hall at Arundel Cathedral is a masonry building formed in a structure that can be considered in two distinct parts.



The rear (southerly) part is two storey, taking advantage of a site that slopes from North to South. At lower ground floor level there is access from the south side of the building into a large function room and some ancillary rooms. At this level the loadbearing masonry walls support a timber suspended floor which also takes intermediate support from a single and central row of tapered cast iron columns. These columns support timber and steel flitch beams which in turn support the upper floor joists

This floor forms an upper level that is the main hall. This space is of a clear span and the masonry walls provide support to open timber trusses which in turn support timber purlins and rafters.



The front part of the building is more cellular in nature and single storey. It is also of loadbearing masonry with a timber suspended ground floor. The roof is a mixture of flat and pitched construction also formed in timber, taking support from the substantial masonry walls.

2.0 Design Proposals

The design proposals by St Ann's Gate Architects are to refurbish and re-order the accommodation. Structural works are required in order to achieve this and these works feature the creation of new lower ground floor area beneath the front (northerly) part of the building, and creating new links between the two parts of building by forming new openings.

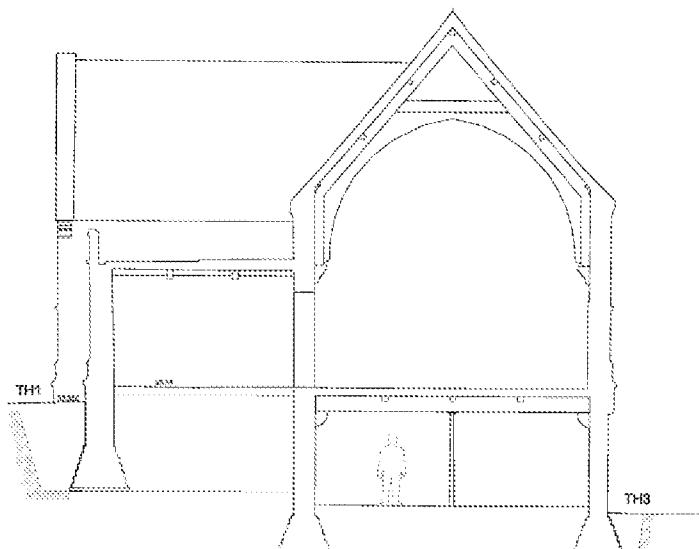
These proposals have been considered in detail, and justification is set out in the following sections of this report.

3.0 Site Investigations

A trial pit investigation was undertaken in September 2010 in order to investigate the feasibility of creating a new lower ground floor level.

Three trial pits were excavated around the building to establish the depth and geometry of the existing foundations. The results are shown in Appendix one.

The conclusion of this investigation was that the base of the foundation was approximately 2.7m below ground floor finished level. With the ground floor construction approximately 275mm deep (including finishes) it is feasible to achieve the creation of a lower floor of 2.3 - 2.4m headroom without undermining the foundations of the existing building.



A new floor level has been set to coincide with the base of the foundation. Construction is to be carried out in a planned and phased manner that will see the new slab formed in short sections to avoid exposing the formation level beneath the masonry walls. This will protect the integrity of the foundations.

In order to achieve the construction of the lower ground floor, sections of the existing timber ground floor structure will be removed in order to give sufficient access and will be replaced on completion.

4.0 Openings in Masonry Walls

There are two significant openings to be made in the north wall of the main hall to connect into a new kitchen and also to a meeting room. The removal of these sections of wall will require insertion of a new structure to carry the vertical load of the wall above and to maintain lateral support to the gable walls.

This will be achieved through the use of a multiple steel beam and column arrangement, cased in concrete, which will safely pass the loads to the remaining walls.

5.0 Lower Ground Floor – Removal of Wall

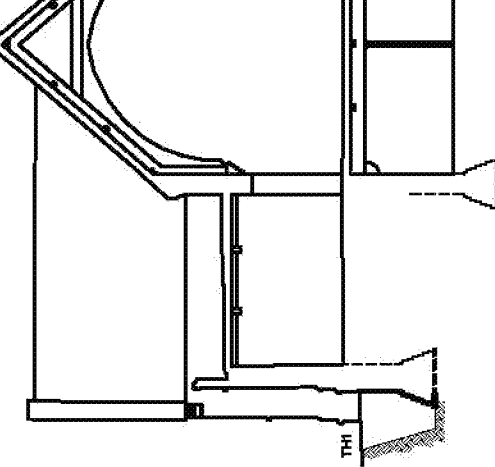
The ground floor structure to the Main Hall is of timber construction carried at lower level on a row of tapered cast iron columns. The end bay (east end) of the floor is carried on a loadbearing masonry wall. It is proposed to remove this wall and insert a new beam and column similar to existing.

The wall to be removed carries no load other than that from the floor above and therefore its removal and replacement is considered straightforward.

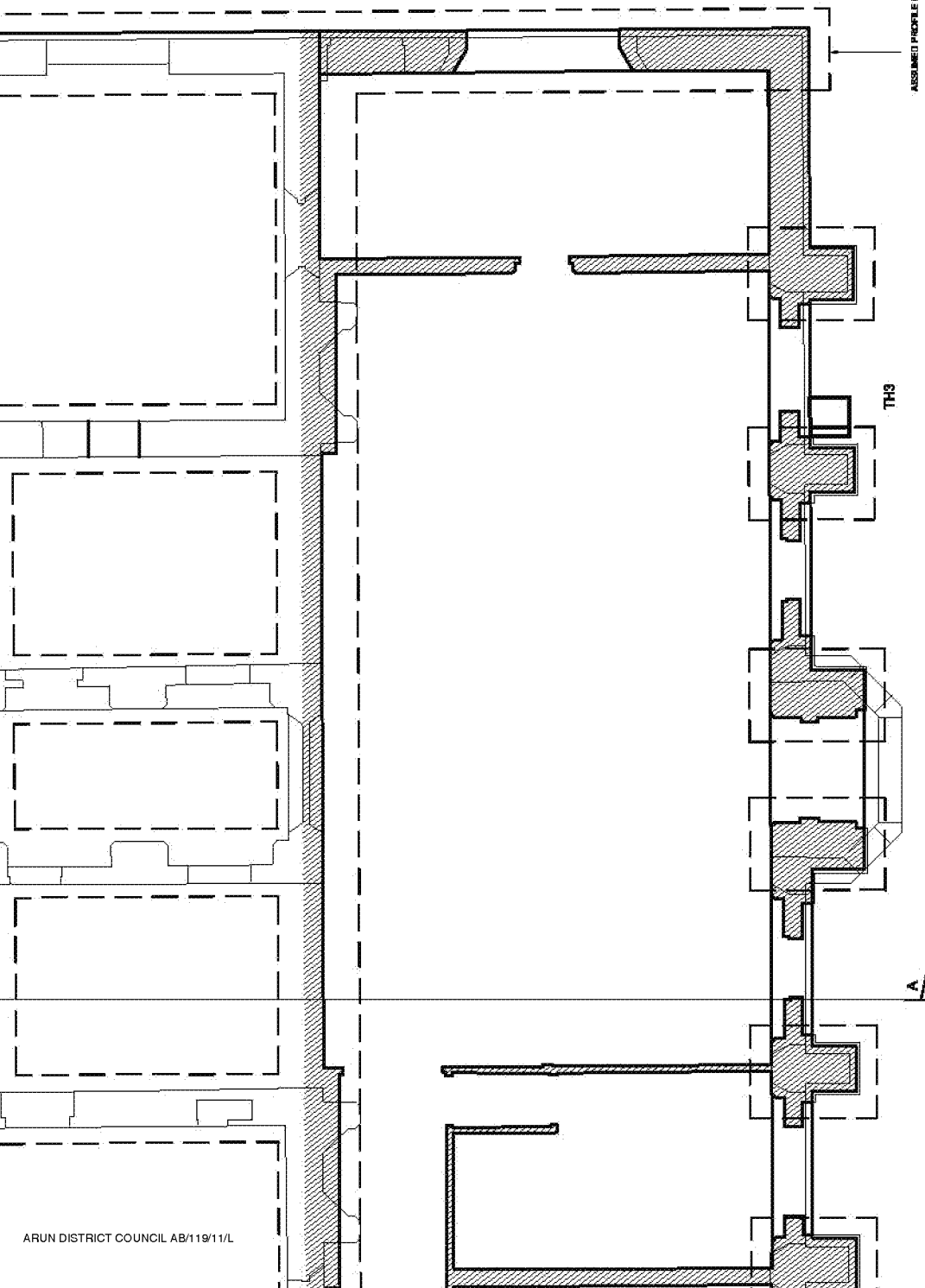
A column and beam arrangement to match the existing detail in the Function Room will be provided.

Appendix A

Site Investigation Record Drawing

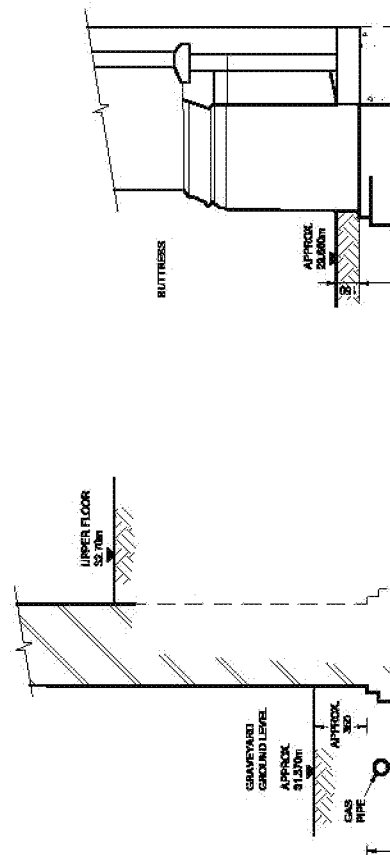


SECTION A-A
1:100



ASSUMED PROFILE OF FOUNDATIONS

BASEMENT PLAN
1:50



2. APPROX. 92.395

APPROX. 1100mm