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WYMESWOLD CHURCHYARD WALL

Summary

The churchyard is raised up some 1.5m above the surrounding land.

The construction of the retaining wall is all fairly consistent. A nominally 300mm deep stone mainly Lias, with wall, no copings. Above the wall is a sloping grassed bank. Details of the construction are shown on the drawings.

Whilst much of the wall has some local displacement, it is in a satisfactory condition.

A section of eastern wall towards the north end collapsed after heavy rain some 12 months ago.

Extent of the failure

The extent of the collapse is shown on the drawings in the appendix.

The foundations are intact and stable.

Some of the lower courses are in place but have a significant outward lean and fractured mortar.

The retained walls either side of the collapse have raking cracks from the outward lean of the collapsed section of the wall.

Behind the facings the ground has been backfilled with partially bonded stone, some 300mm deep and packed in earth mortar. Where this has collapsed the line of the graveyard earth remains intact.



Reasons for the failure

The collapse of the wall followed a period of prolonged heavy rain. The failure was in part due to the building up of water pressure behind the wall and in part due to the wall's construction. The construction both contributed to the build up of saturated ground behind the wall and created weakness in the structure.

The wall had no coping and water running of grass bank saturates the wall and the ground behind the wall.

The wall is mainly constructed from Lias which has a high clay content making it both susceptible to dimensional change depending on its moisture content and have limited porosity.

The original construction of the wall used a very porous lime mortar, which was open textured with some lime particles (likely to be reused mortar aggregate). The wall had been repointed in cementitious mortar which damaged the integrity of the construction by causing:

- the lime bedding mortar to remain saturated and become uncemented (i.e., turn to dust).
- Not allowing the wall to dry out and increasing the moisture content of the Lias causing dimensional instability.
- having limited capacity to accommodate cyclical movement of the masonry.



The base of the wall had no weep holes to relieve water pressure, a problem which has been exacerbated by repointing in cementitious mortar.

Summary of the proposals

To reinstate the collapsed section of wall, taking account of the reasons for its failure without disturbing the churchyard earth and its potential archaeology.

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