MITCHINSON MACKEN

STRUCTURAL ENGINEER'S REPORT



39 Brighton Road
Worthing
West Sussex

Dated 1st October 2025
Ref 25448 R01

1.0 Client's Name

KTLX Ltd

2.0 Scope of Instructions

We have been instructed to prepare a Structural Engineer's survey report with regard to the structural condition of the chimney stack at the subject property.

3.0 Address of Property

39 Brighton Road
Worthing
West Sussex
BN11 3EF

4.0 Date of Inspection

1st October 2025

5.0 Structural Engineer

Guy Macken

6.0 Checking Engineer

Andrew Mitchinson
The Institution of Structural Engineers Chartered Engineer
M.I.Struct.E 1156035

7.0 Company Details

Mitchinson Macken Ltd
Unit 1, 100 North Road
Brighton
East Sussex
BN1 1YE
Tel. 01273 609742
Email: Info@mitchinsonmacken.co.uk

8.0 Introduction

This report is based upon a visual survey of the chimney externally and from below inside the building. Plaster was not completely removed internally, but we were able to see areas of exposed brickwork.

9.0 General

This is a three-storey terraced building, constructed with timber floors and a tiled timber roof supported on masonry external walls. The property is in a straight terrace of nine properties, with three to the east and five to the west. In each case the main roof is a normal duopitch roof with dividing firewalls between each property. At the rear, each pair of properties has a shared outrigger with a pitched roof set at a lower level.

The chimney in question is positioned on the rear North facing wall of the main terrace. The chimney stack would originally have served fireplaces in the rear rooms at each level, as indicated below.





The house was in poor decorative order and has not been well maintained in recent years. Full refurbishment is being undertaken by the client.

10.0 Roof level

The chimney sits at the lower edge of the pitch roof and is partially built over the full width of the external wall. The height of the stack is approximately 1350mm above the highest tile edge. On plan the stack is sized approximately 450x1500mm. These dimensions are within the normal recommended sizes for a chimney to avoid slenderness issues.

There are currently 4no. pots on the stack corresponding to a fireplace at each floor, with an extra north facing fireplace at ground floor level.

Our first observation was that the chimney has a significant lean toward the south. The BRE Good Repair Guide 15 states that a visible lean or leaning by more than 1mm in 100mm is considered “unsafe”. In this instance the lean exceeds 1mm in 100mm so remedial action is required.



The most likely cause of the movement is expansion of the mortar due to condensation in the flue resulting in sulphate attack. Movement is typically in a southern direction as observed at this location.

The above photograph shows thickened mortar joints and missing mortar joints, particularly on the perpends for the full height of the stack. The mortar was found to be weakened for the full depth of the brickwork. The exposed face of bricks was weathered and spalling in places.

At the west side of the stack, the mortar joints had similar damage, with additional damage to the brickwork at the upper corner. Bricks have shattered and moved and significant openings to water ingress have resulted.



It is our considered opinion that the existing chimney stack cannot be repair by repointing and localised repairs. The depth of deterioration is too great for surface-depth mortar repairs to be successful. We also expect that the internal flue dividers will have deteriorated strength, and these cannot be accessed for repair. In addition, we note that the angle of the stack would not be rectified by repointing or patch repairs. Therefore, we would recommend dismantling the stack to below roof level.

11.0 Second Floor

The chimney breast in the bedroom at second floor level shows signs of water ingress with damp in the plaster and deterioration of the mortar in the brick face. Water has been entering via the damaged chimney stack.



12.0 First Floor

The chimney breast at first floor level has been broken through in the past to create a door opening into the outrigger part of the building. Steel beams were observed in the face of the chimney that had been installed to support the brickwork above.

We observed evidence of corrosion of the steel beams most likely as a result of water ingress from the defective chimney stack at roof level.



These beams would need to be addressed as part of the refurbishment.

13.0 Ground Floor



The chimney breasts in the ground floor rooms are covered in plaster so we could not assess the condition of the underlying brickwork.

14.0 Conclusion

The chimney stack is visibly leaning to the south by an amount in excess of 1mm in 100mm and will therefore need remedial action. The current condition would be expected to worsen as water ingress continues. The stack is presently at risk from high winds in an exposed location close to the sea.

The movement is though to be the result of sulfate attack, and we observed weakened and missing mortar and damaged brickwork.

Water ingress has resulted in further deterioration further down the building with damp, weakened mortar and corroded steelwork observed.

In our opinion, the existing chimney stack should be dismantled immediately down to below roof level. The roof finishes should be made good to prevent ongoing water ingress.

We note that the chimney stacks have already been removed on the three adjacent properties to the west and also no.43 to the east.

Please contact Mitchinson Macken Ltd if there are any additional queries.

