How to get it right: Removing a chimney the right way (with video showing the wrong way...)

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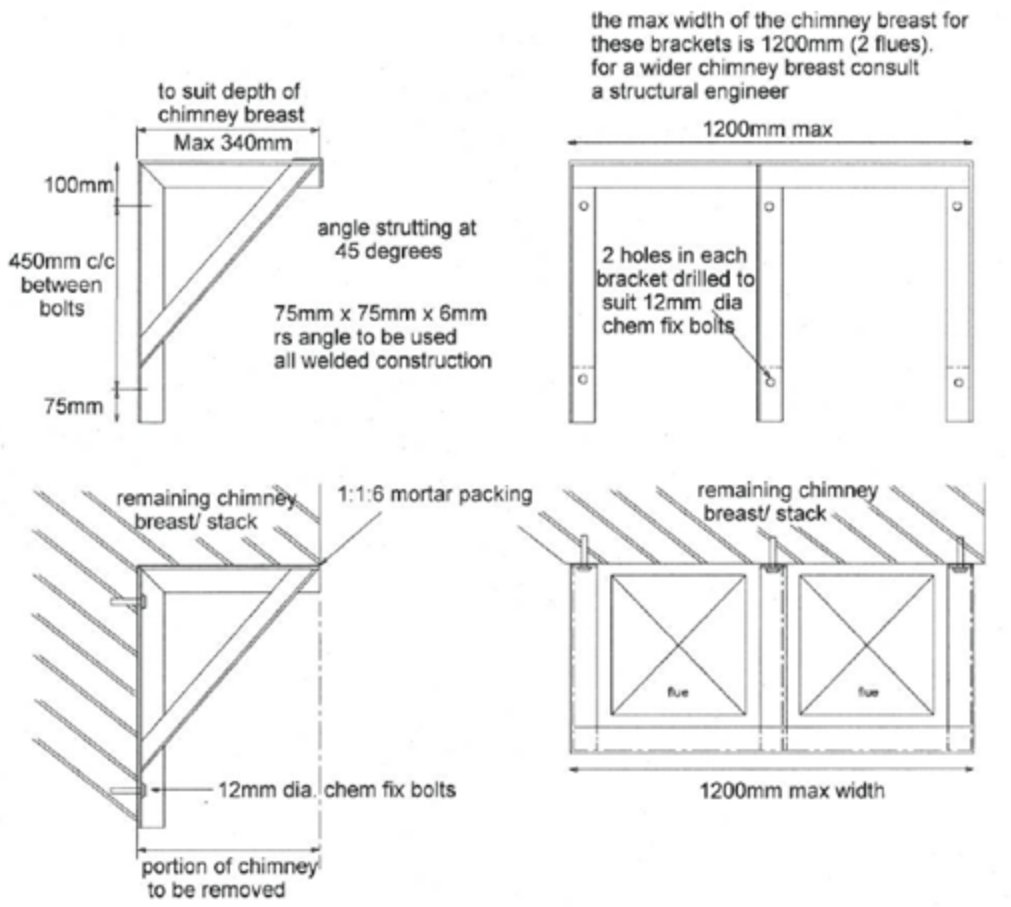
One of the most common internal alterations carried out is to remove an obsolete chimney breast at ground floor to create more floor space. Quite often the chimney is also removed at first floor level leaving just the roof void and external section of the chimney in place. Building Regulations apply to this work because it is a 'material alteration' to the structure ensuring the remaining part of the stack is properly supported.

If the entire chimney is removed it is essential to take professional advice to determine the structural implications. Planning permission may also be needed for its removal.

Care needs to be taken where this work also falls into work covered under the Party Wall etc Act 1996 and notice needs to be served on the adjacent property. This is so that shared flues and structural adequacy can be considered before work starts.

Removing a chimney

To remove a chimney breast at ground or first floor you must first support the chimney adequately. The stack must be properly supported and the gallows bracket illustrated below is a common method.



Gallows brackets should only be used if...

- The stack is not completely vertical (i.e. a gathered flue to a central stack).
- The neighbours' chimney breast on the other side of the party wall has not been removed (or partly removed). If it has then the whole of the chimney above the roof should be removed and the roof made good as there is a possibility that the party wall may only be 100mm thick above the ceiling line.
- The party wall supporting the gallows bracket is a minimum of 215mm thick, in brickwork, and in sound condition.
- The maximum width of the chimney breast is less than 1200mm. For wider chimney breasts a structural engineer should be consulted.
- The chimney breast should project no more than 340mm into the room.
- The chimney is no more than two storeys high plus roof space.
- The relevant notices required under the Party Wall etc Act 1996 have been served on the adjoining owner (where the chimney is on a party wall).

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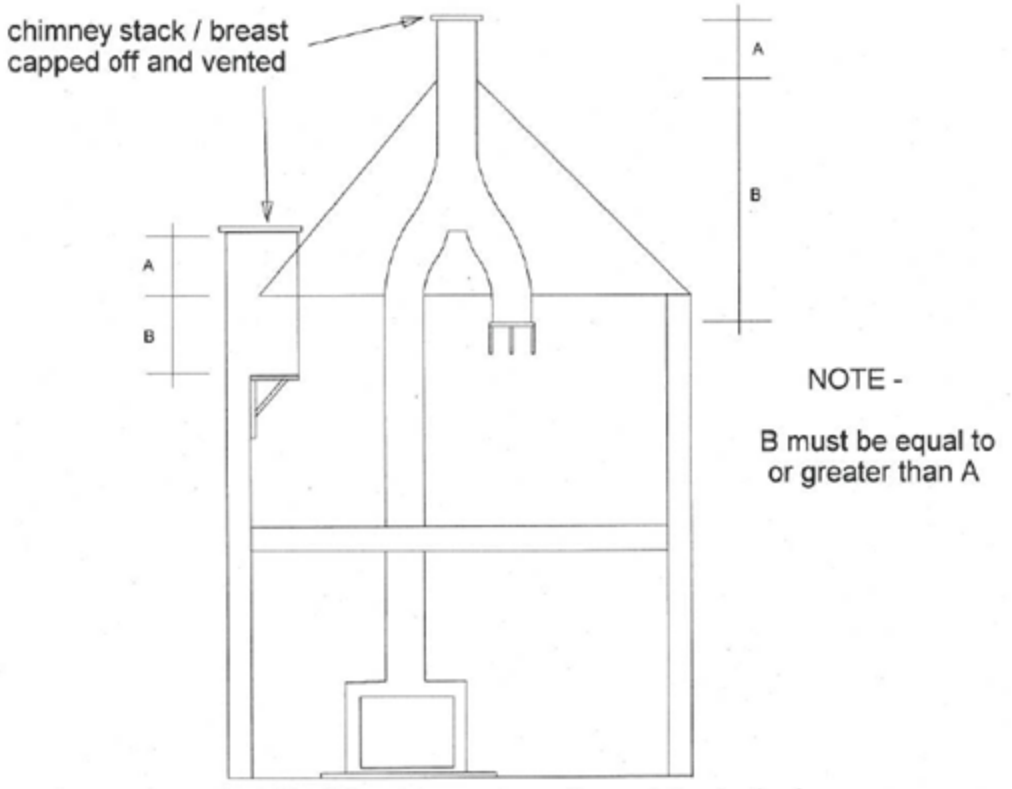
Things you need to consider when removing a chimney

- The bracket members should be 75mm x 75mm x 6mm mild steel angles with 6mm fillet shop welded joints with the angles pre-drilled to take a minimum of 2no M12 chemical or resin anchor bolts. (e.g. Chemfix or similar).
- The bolts must be drilled into sound brickwork, not mortar joints. The condition of the brickwork is critical and there may be areas of the country where this option may not be acceptable to building control due to known problems.
- A plate (e.g. 10mm steel plate) should be placed on the top of the brackets to prevent soot and debris falling from the remaining chimney.
- The minimum height of the retained chimney breast below the roof line must be equal to or greater than the height of brickwork above the roofline. (See diagram below).
- To ensure any rain or condensation passing into the flue will dry out by natural convection; the chimney pot should be capped with a ventilated cowl and insertion of an air brick at lower level.
- Fireplace hearths at ground or first floor level should be removed. Additional timber joists must be installed and adequately supported by the existing timber floor trimming joists.



the maximum height of the chimney breast remaining in the house (below the roofline) must be equal to or greater than the hight of the brickwork in the stack above the roof

Why is this important

One of our officers recently visited a site for unauthorised work after a phone call from concerned neighbours who could hear a cracking sound.

On arrival the completely unsupported chimney breast was being removed from the ground floor up through into the roof space and was already showing signs of severe stress. He instructed the 'builder' to get out of the property whilst trying to secure a structural engineer to design a solution.

Insertion of steel beam(s)

Where gallows brackets are unsuitable then the use of a structural steel beam or beam and posts may be required. This will involve the submission of structural calculations by your structural engineer to justify the design and size of the steelwork.

Fire protection

Any gallows brackets or steel beams used should be provided with a minimum of 30 minutes fire protection (unless they are fully within the roof above the ceiling). The easiest way to achieve 30 minutes fire resistance to steelwork in domestic properties is to use two layers of 9.5mm plasterboard with a skim coat or a single layer of 15mm Gypsum fireline or similar fire rated plasterboard. Plaster adhesive dabs is not an acceptable fixing method and mechanical fixing will be needed. You should speak to your local building control team for installation requirements.

Maintenance of the neighbours' chimney

If the separation between flues is damaged during removal there is a possibility of carbon monoxide or dioxide leaking from the neighbour's flues. All poor brickwork should be replaced and re-pointed and, if possible, a smoke test carried out on the neighbour's flue to check for any leakage (flue test to be done by GasSafe registered engineer).

Finally you should *not* consider any of these...

- Corbelled Brickwork – into existing brickwork should not be attempted as it will not be possible to gain a sufficiently strong bond between the new and existing brickwork.
- Timber bearers onto the existing floor or ceiling joists – as the point load passed onto the floor or ceiling timbers will be significant and may lead to collapse.

If you are in doubt ask please just ask your local building control team.