

Façade & Party Wall Shoring





Wentworth House Partnership



Block W8 Regent St 2002

Party walls

A Party wall is a common wall between 2 buildings. It is generally supported by both buildings



Façade Construction

- It is important to understand the materials from which the façade is constructed and its age/condition
- Contractors work under extreme time pressure – façade retention design is usually on the critical path
- The historic research into the façade is therefore best carried out by the client's design team

General causes of defects

- Service installation
- Previous alterations
- Differential movement
- Subsidence/settlement
- Change of requirements
- Deleterious materials
- Corrosion, decay, etc

Typical defects - Walls

- Solid walls delaminating (beware snapped headers)
- Rotten bonding and other built-in timbers
- Unbonded junctions of walls
- Timber lintels/bressummers (even if sound, potentially deleterious if exposed to damp in the future)
- Corrosion/absence of wall ties
- Walls not tied to floors/roofs
- Faulty boot lintels/beams, and/or inadequate bearing of brickwork
- Out of plumb

(cont)



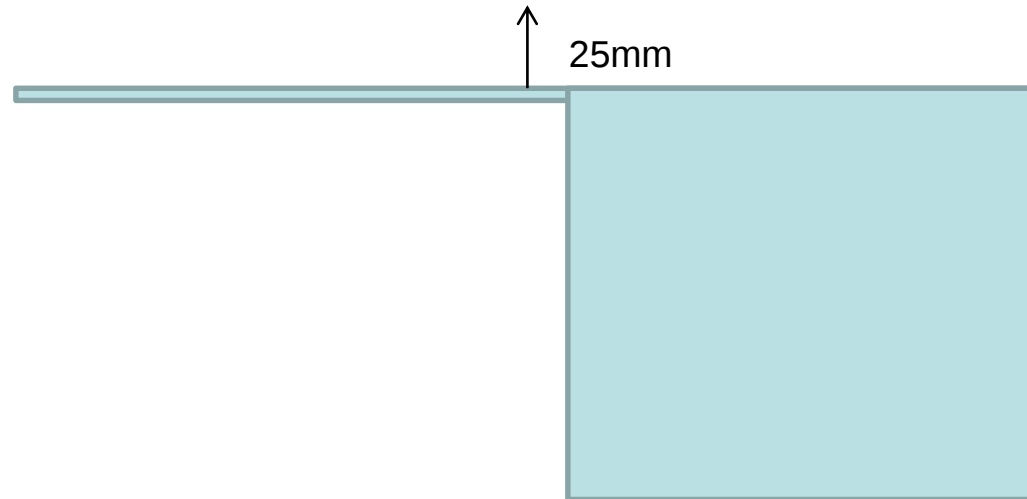


Key Design Features

- CIRIA C579
- Stiffness
- Coordination
- Loading

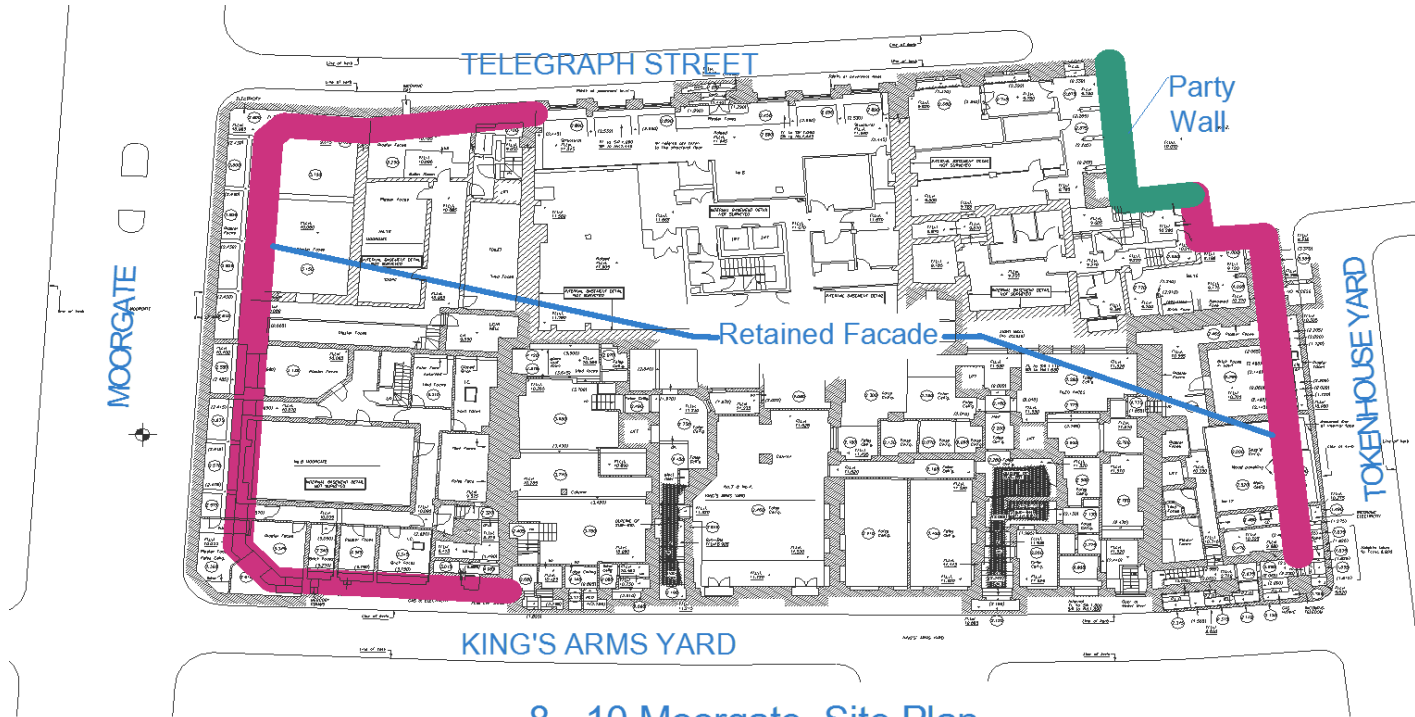
Stiffness

$h/750$ where a facade is built into the adjoining building is disastrous



The same considerations also apply to a party wall where deflections need to be limited to 5-10mm – subject to agreement with party wall surveyors.

Coordination



8 - 10 Moorgate Site Plan

- The site is bounded by roads and a party wall
- Demolition of all of the existing buildings on the site
- Retained façade at both ends of the site, and one party wall
- Archaeology over the full site footprint of varying depth
- A new basement deepening all of the existing basements.

Loading - Wind



Wind Pressure Coefficients

- BS EN 1991-1-4 Clause 7.4.1 Table 7.9 gives pressure coefficients for freestanding walls and parapets

Table 7.9 — Recommended pressure coefficients $c_{p,net}$ for free-standing walls and parapets

Solidity	Zone		A	B	C	D
$\varphi = 1$	Without return corners	$\ell/h \leq 3$	2,3	1,4	1,2	1,2
		$\ell/h = 5$	2,9	1,8	1,4	1,2
		$\ell/h \geq 10$	3,4	2,1	1,7	1,2
	with return corners of length $\geq h^a$		2,1	1,8	1,4	1,2
$\varphi = 0,8$			1,2	1,2	1,2	1,2

^a Linear interpolation may be used for return corner lengths between 0,0 and h

Stability Loads

C570 recommends the greater of 1.5% of all vertical loads, or out of plumb and offset effects plus 1.5% of applied vertical loads (i.e. excluding SW of façade).

This is to be considered as uniformly distributed over the façade surface.

Note that for local fixings to the façade 2.5% of the weight of façade above the level being considered must be taken.

Stability Loads



Other loads

- Dynamic effects from plant are not usually a design consideration. Long reach plant should not be used close to a façade as it is capable of moving the façade and causing damage.
- Impact loads must be considered, recommended as 10 kN from 1m above ground level and 25 kN below. Traffic should be kept away from a façade retention system.

Different possible layouts of façade retention

