

ANGLIA RUSKIN UNIVERSITY

**INTERPRETING THE PARTY WALL ETC. ACT 1996
AND THE IMPLICATIONS FOR BUILDING BELOW GROUND**

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ABSTRACT
INTERPRETING THE PARTY WALL ETC. ACT 1996
AND THE IMPLICATIONS FOR BUILDING BELOW GROUND

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Introduction: A study of the APA Property Services Ltd data identified growing conflicting interpretations of the party wall legislation, for example, in 2015 40% of the 126 cases resulted in conflict. Independent data indicated that the conflict was not unique to the APA data and identified 17 areas of conflict. A common link identified between the two sets of data was the interpretation of special foundations and the section 7(4) veto, unique to the Act when building below ground. This common issue was selected as the research focus and a strategy was developed which included a three-stage data obtained from stakeholders which comprised surveyors, solicitors, barristers, and the judiciary. The collection process included questionnaires and structured interviews, to investigate why the conflict arose and what was required to eliminate it.

Literature review and proposed gap in knowledge: Understanding the origins and passage of the legislation identified accepted construction techniques for building below ground level, which either included or avoid special foundations. The literature review addressed five of the six objectives to achieve a holistic understanding of this unique legislation that impacts virtually every construction project. Examination and analysis of the legislations structure, the rules of interpretation, and case law specific to the research focus, identified a gap in knowledge on what does or does not constitute a special foundation. Understanding how/why the conflict arises, gaps in knowledge, and contributing new knowledge seeks to clarify and reduce the adversarial stance adopted by those practising within this field.

Method and Findings: The three-stage data collection strategy began with a deductive analysis of the APA data, later using an inductive methodology utilising both quantitative and qualitative data collection and NVivo qualitative statistical analysis techniques. The research established that the limited case law available is not generally accepted by the stakeholders, although they feel compelled not to challenge the judgment. Accordingly, they authorise works which they consider in their professional opinion trespasses on the statutory rights of adjoining owners. This has created adversarial approaches and interpretations based on a gap in knowledge. This research seeks to rectify the flawed knowledge and influence that the case law presents by contributing to that knowledge, assisting both academic and professional understanding of the issues created by the special foundation definition and the section 7(4) veto.

Conclusion and Recommendations: This thesis contributes to the extant knowledge through a rigorous analysis of the data, construction technology and surveyors' interpretations to resolve the conflict by proposing new knowledge. In addition, the thesis provides recommendations for further research and the need for either an amendment to the Act or external guidance such as the development of a British standard.

Key words: Approach, Basements, Conflict, Dissent, Dispute, Interpretation, Party Wall Act, Retaining walls, Section 7(4) veto, Special Foundations,

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LIST OF NOTATIONS

AC	Advisory Committee
ADR	Alternative Dispute Resolution
AOS	Adjoining Owners Surveyor
ANLA	Access to Neighbouring Land Act
APA	APA Property Services Ltd
AS	Agreed Surveyor
ASUC	The Association of Specialist Underpinning Contractors
All ER	All England Reports
BA	Basement Assessment
BCA	Bristol Corporation Act 1926
BIA	Bristol Improvement Act 1847
BLR	Building Law Reports
BOS	Building Owners Surveyor
BRE	Building Research Establishment
BSI	British Standards Institute
CABE	Chartered Association of Building Engineers
CAQDAS	Computer Aided Qualitative Data Analysis System
Ch App	Chancery Appeals
Ch D	Chancery Division
CI Arb	Chartered Institute of Arbitrators
CIAT	Chartered Institute of Architectural Technicians
CITB	Construction Industry Training Board
CIOB	Chartered Institute of Building
CPBRC	Council Planning and Building Regulations Committee of the Council
CPD	Continuing Professional Development
CPR	Civil Procedure Rules
DPC	Damp proof course
EDA	Exploratory Data Analysis
ER	English Reports
FCABE	Fellow Chartered Institute of Building Engineers
FPWS	Faculty of Party Wall Surveyors
GPDO	Town and Country Planning (General Permitted Development) Order 1995
GDPR	General Data Protection Regulations

GLC	Greater London Council
HGCRA	Housing Grants, Construction and Regeneration Act 1996
HHJ	His or Her Honour Judge
ICE	Institute of Chartered Engineers
IPWS	Institute of Party Wall surveyors
IStructE	Institute of Structural Engineers
JCT	Joint Contracts Tribunal
KB	King's Bench
LBA	London Building Amendments Act 1939
LBC	London Borough of Camden
LCC	London County Council
LR	Law Reports
MBA	Metropolitan Building Act 1855
NHBC	National House Building Council
PAS	Publicly Available Specification
PhD	Doctor of Philosophy
PDP	Planning and Development Policies
PPS	Planning Policy Statements
PPG	Planning Policy Guidance Notes
P&T	Pyramus & Thisbe Club
QSA	Qualitative Statistical Analysis NVivo
RBA	Rebuilding of London Act 1666
RBKC	Royal Borough of Kensington and Chelsea
RIBA	Royal Institute of British Architects
RICS	Royal Institution of Chartered Surveyors
SBBSA	Standard Bank of British South America
SM	Survey Monkey Software
SPD	Supplementary Planning Document
TLR	Times Law Reports
WLR	Weekly Law Reports

LIST OF STATUTES

Arbitration Act 1996
Bristol Corporation Act 1926
Bristol Improvement Act 1847
Building Regulations
Civil Procedure Rules
Fire of London Dispute Act 1666
General Data Protection Regulations
Housing Grants, Construction and Regeneration Act 1996
Interpretation Act 1978
Law of Property Act 1925
London Building (Amendment) Act 1939 Part VI
Metropolitan Building Act 1855
Rebuilding of London Act 1666
The Access to Neighbouring Land Act 1992
The Party Wall etc. Act 1996
Town Planning etc. Act 1909

GLOSSARY OF TERMS

Appellant	A person who applies for a High Court for a reversal of a decision.
Award	To give a judicial determination; to assign or apportion, after careful regard to the nature of the case; to adjudge.
Bressumer	Traditionally a substantial timber used as a lintel.
Chambers	Term used to refer to Judges and Barristers offices.
Forthwith	Immediately; without delay.
Functus officio	Without legal standing.
heli-fixing	Heli-fix Crack Stitching repairs and stabilises cracked masonry using stainless steel Heli-Bars bonded into cut slots with Heli-Bond grout
Injunction	A judicial order restraining a person from beginning or continuing an action threatening or invading the legal right of another or compelling a person to carry out a certain act.
in lieu	instead of or replacement of.
inter alia	Amongst other things.
nuisance	When a landowner carries out an act on his own land which affects another person's use or enjoyment of their own neighbouring land or of some right that is connected with that land.
obiter dictum	a judge's expression of opinion uttered in Court or in a written judgment but not essential to the decision therefore not legally binding as a precedent.
omne majus continent in se minus	The greater contains the less.
otiose	serving no practical purpose or result.
quasi-judicial	Non-judicial body (role) that can interpret law.
raison d'être	The most important reason or purpose for someone or something's existence.
reify	make (something abstract) more concrete or real.

res judicata	A matter that has been adjudicated by a competent Court and therefore may not be pursued further by the same parties.
respondent	Against whom a petition is filed, especially one in the appeal of a case.
right of access	A right to go on to someone else's land to access specific parts of your own property which are inaccessible from anywhere within your own land.
without prejudice	Without detriment to any existing right or claim.

LIST OF CASE LAW

Bansal v Myers [2007] Romford County Court Unreported
Bibizadeh v Dodosh [2015] Central London County Court
Bouyges v Dahl-Jensen (1999) EWHC
Chartered Society of Physiotherapy v Simmons Church Smiles (1995) 1 EGLR 155
Chaturachinda v Fairholme (2015), Central London County Court.
Crowley Civil Engineers v Rushmoor Borough Council 2009 [EWHC 2237] (TCC)
Cubit v Porter (1828) High Court, Kings Bench, [1824-34] All ER Rep 267
Davis v Trustees of 2 Mulberry Walk (2012) Central London County Court.
Dunnett v Railtrack plc [2002] EWCA Civ 303, (Practice Note) [2001] 1 WLR 2434 Court of Appeal Brooke, Robert Walker and Sedley LJJ
Farrs Lane v Bristol Magistrates Court (2016) EWHC
Ferguson and Ferguson v Lloyd-Baker (2017) Central London County Court
Gray v Elite Town Management Ltd (2015) Central London County Court.
Halsey v Milton Keynes General NHS Trust [2004] EWCA (Civ) 576
Hurst v Leeming [2001] EWHC 1051 (Ch), [2003] 1 Lloyd's Rep 379 Chancery Division
Leicester Circuits Ltd v Coates Brothers Plc [2003] EWCA Civ 333
Loost v Kremer (1997) West London County Court, 12th May (unreported)
MacLachlan v Patel (2020) Central London County Court (unreported)
Methuen-Campbell v Walters [1979] (1 QB 525 CA)
Mohamed and Mohamed v Takhar [2017] Central London County Court
Moss v Smith (1977) 76 LGR 284
Nottingham Community Housing Association Ltd v Powerminster Ltd [2000] BLR 309
Onigbanjo, A. v Mr and Mrs Pearson [2008] The Mayors and City of London Court
Pinner v Everitt (1969) 1 WLR 1266
Reeves v Blake (2009) EWCA Civ 611
Rivermere Commissioners v Anderson (1877) 2 App Cas 743
RJT Consulting v DM Engineering (Northern Ireland) Ltd [2002] EWCA Civ 270
Rusciani v Kumar & Sharma (2013) Chelmsford County Court
Russell Gray v Elite Town Management [2016] EWCA Civ 318
Seef-v-Ho [2011] EWCA Civ 186
Selby v Whitbread and Co [1917] 1 KB 736
Sell and Sell v Mills and O'Callaghan (2014) Kingston Upon Thames CC A00KT940
Standard Bank of British and South America v Stokes (1878) L.R 9 Ch D
Watson v Gray (1880) 14 Ch D 192 at 194

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Chapter 1

1.0 Introduction

The underlying decision to begin the research was generated by the researcher's experiences when operating within this niche market and his growing concerns regarding the difficulties of administering and interpreting the Party Wall etc. Act 1996 ("The Act"). This desire was coupled with a genuine belief that this issue was having a wider impact on the built environment which is controlled by various legislative Acts of Parliament, such as The Bristol Improvement Act 1847 ("BIA"), The Metropolitan Act 1885 ("MBA"), The London Building (Amendment) Act 1939 ("LBA"), The Town and Country Planning Act 1990 and The Building Regulations 2010 etc. The MBA and subsequently Part VI of the LBA historically controlled and regulated building works to the party wall. These byelaws operated within a limited jurisdiction being restricted to The Greater London Council Areas ("GLC"). Party wall works within the remaining parts of England and Wales were governed by common law principles, except for Bristol which had the benefit of the BIA. However, those professionals operating within the party wall environment recognised that greater clarity and explicit legislation would benefit the property and construction industry.

On the 23rd November 1995, a Private Bill was introduced into Parliament's first Chamber, The House of Commons by Sir Sydney Chapman, and subsequently progressed to the second Chamber, House of Lords, by the Earl of Lytton (P&T, 1996, p.II). This legislation sought to simultaneously repeal both Part VI of the LBA and the BIA, and subsequently received Royal Assent in July 1997. The Act is the first stand-alone statutory legislation that explicitly addresses party wall legislation and provides a greater degree of control over building works.

Clearly, the Act's structure is a by-product of Part VI of the LBA with minor amendments and additional sections, which for the first time this previously metropolitan regime with relatively minor modifications was extended to the whole of England and Wales (Bickford-Smith and Sydenham, 1997, p.vii). The intent being to provide an efficient procedure that enabled building works that affect neighbouring owners to be put in hand promptly and on a fair and reasonable basis (Antino, 2012, p.27). This is achieved through the procedural framework that anticipates and resolves potential areas of dispute flowing from works within three specific areas Smith (2016): — (i) building a new wall on the line of junction; (ii) works to the party wall; and (iii) excavations within either 3m or 6m. In total

there are 21 sections designed to facilitate such works, whilst protecting the rights of the property owners.

The increased jurisdiction is sufficient to capture virtually every building project undertaken within England and Wales by enabling quasi-judicial jurisdiction that supplants established common law legal principles such as trespass and nuisance. The surveyors serve an Award which allows certain building works to proceed, that would otherwise not be possible without the expressed agreement of the neighbour. However, the successful implementation of the Act will only be achieved if party wall surveyor approaches and interpretations are consistent and absent of any conflict. The administration of the Act has principally been achieved through an eclectic and unregulated group of professional and non-professional surveyors who adopt the role of party wall surveyor. The researcher is a party wall surveyor with real-life experiences of the Act and therefore has an intimate knowledge of the disputes, and conflicting approaches adopted within the party wall community. It is not unsurprising that some surveyors have simply continued with their historic approaches and interpretations, and new entrants to the field have introduced new concepts. Unfortunately, the historical approaches and interpretations encouraged by the Act, are not universally accepted and this creates conflict. The researcher has experienced this conflict between the historic and new interpretations and believes that it has been growing rather than abating as surveyors gained greater knowledge, understanding, and experience of the Act. Accordingly, the rationale that underpins the researcher's interest in this research is the hypothesis/supposition that the conflicting interpretations were growing within the wider community. The research set out to eliminate this conflict by identifying a gap in knowledge and generating new knowledge of the single common area of conflict arising from the modern-day interest in subterranean developments and the potential limitations imposed by the Act on the design of any such basement construction.

1.2 The Researcher's Professional Background and Interest in the Topic

The researcher has worked within the built environment for 42 years and achieved a broad area of expertise within the construction industry. Initially training as an indentured apprentice under a master mason, the researcher went on to operate a successful small building company for 16 years. In 1991 the researcher decided to take his career in a different direction and registered with the Open University and in 1993 began an undergraduate degree in Building Surveying at the Heriot Watt University and continued

with a post graduate MSc in Construction and Project Management. In 1997 the researcher commenced his professional career at Charles Living and Son, an RICS Chartered Surveying Practice located in East London. In 2002 the researcher formed APA Property Services Ltd (“APA”), a Chartered Building Practice operating in Chelmsford.

The researcher is a Fellow of the Chartered Association of Building Engineers (“FCABE”), a Fellow of the Institute of Party Wall Surveyors (“FIPWS”), an Associate Member of the Chartered Institute of Arbitrators (“MCI Arb”), as a professional member of the Chartered Institute of Building (“CIOB”), and a certified Mediator. In 1998 the researcher together with several colleagues formed the Essex Branch of the Pyramus and Thisbe Club, (“P&T”) holding office as the Programme Secretary between 1998 and 2010. In 2009 the researcher was invited to join the Faculty of Party Wall Surveyors (“FPWS”) and held office as a Regional Chairman and Director between 2010 and 2012. In 2013 the researcher received his MRes (Built Environment) from the University of Salford. The researcher has provided expert witness evidence in numerous party wall cases (Bansal v Myers; Sell v Mills; Mohamed v Takhar; Zaher v Patel; and MacLachlan v Patel) which have contributed the interpretation of various sections of the Act. The researcher has published two books and eleven papers, some of which are directly related to the Act and has presented numerous papers at various Continuing Professional Development (“CPD”) seminars and professional conferences.

1.2.1 Demonstrating the growth in conflict from the APA data

Early Exploratory Data Analysis (“EDA”) of the APA data between 1997 and 2016, covered the researcher’s personal involvement in 2960 professional instructions (“cases”) in various surveying and property related matters. On detailed analysis of a 20-year period between 1997 and 2016, 1469 (49%) of these cases were party wall appointments. This provided a substantial volume of research data at an unusually early stage of the research upon which to develop the research strategy.

The 1469 cases were analysed (see Table No 1) and the results presented on the following basis:

- (I) The year of appointment;
- (II) The researcher’s statutory role; and

(III) The % of cases that resulted in conflict.

Table No 1 APA data of party wall cases

	AOS	BOS	AS	TS	Disputes	Disputes %
1997	3	6	2	0	0	0
1998	6	9	5	0	0	0
1999	6	12	4	1	1	4
2000	9	14	8	1	2	6
2001	14	26	10	3	3	6
2002	12	31	6	2	4	10
2003	19	38	17	4	4	5
2004	24	46	6	4	8	10
2005	34	49	9	5	8	9
2006	22	51	4	3	9	11
2007	19	37	0	6	6	10
2008	10	22	3	11	12	26
2009	35	29	6	15	18	21
2010	24	22	10	13	15	22
2011	28	29	18	19	24	26
2012	23	18	16	16	16	14
2013	38	25	28	14	21	20
2014	48	36	26	23	46	38
2015	42	24	29	31	51	40
2016	36	41	36	29	48	34
Total	452	574	243	200	296	
The Researchers role in his party wall cases:						
Section 10(1)(a)	Agreed Surveyor	(AS)	452			
Section 10(1)(b)	Building Owners Surveyor	(BOS)	574			
Section 10(1)(b)	Adjoining Owners Surveyor	(AOS)	243			
Section 10(1)(b)	Third Surveyor	(TS)	200			
TOTAL				<u>1469</u>		

A further analysis of the data established that of the 1469 cases, 293 (20%) resulted in conflict, with 39 (13%) in the first decade and 257 (87%) in the second. It appears that

in the formative decade post Royal Assent, conflict was relatively low in comparison to the second decade.

Table No 2 APA data and five most common areas of conflict

	Section 10(5)	Section 10(11)	No Notice served	Section 7(4)	Section 12(1)
1997	0	0	11	0	0
1998	1	0	8	0	0
1999	1	0	4	0	1
2000	2	1	3	0	1
2001	1	1	1	1	1
2002	0	2	1	2	0
2003	1	1	2	1	1
2004	1	2	2	1	1
2005	1	3	3	2	2
2006	2	1	2	1	3
2007	0	3	1	0	3
2008	0	4	3	2	2
2009	2	3	4	4	4
2010	1	4	3	2	5
2011	2	3	2	5	5
2012	1	1	0	8	3
2013	3	2	0	10	3
2014	4	3	1	21	8
2015	4	5	1	26	6
2016	5	6	2	19	8
Total	32	45	54	105	57
APA Five most common areas of Conflict					
Section 10(5)	Incapacity	32 (11%)			
Section 10(11)	Costs	45 (15%)			
No notice	Injunctions	54 (18%)			
Section 7(4)	Special Foundations	105 (36%)			
Section 12(1)	Security of Expenses	57 (20%)			
TOTAL		<u>293</u>			

Of the 293 referrals, 200 (68%) were referred to the researcher in his role as the third surveyor, with 23 (12%) within the first decade and 177 (88%) in the second. The remaining 96 (32%) conflicts involved the researcher in his capacity as either the Building, Adjoining or Agreed surveyor's role. This data was further analysed and a comparison between the total number of conflicts in 1997 (0%) and 2016 (34%) demonstrates a significant increase. There is no clear evidence that explains this trend, but one view is that when new legislation is introduced any conflict from interpreting the legislation would arise immediately because of the lack of understanding and then gradually reduce as the party wall community's approach and understandings are developed adopting a consistent understanding. However, the APA demonstrated the opposite is occurring.

Of the total number of 293 cases, (see Table No 2) five distinct areas of conflict were identified. The largest number of disputes being 105 (36%), almost double the next area of conflict achieving 54 (18%), related to the section 7(4) veto which only applies when there is an intention to project "special foundations" onto an adjoining owner's land and was adopted as the research focus.

1.2.2 Scoping study

As Hart (1998) suggests, it is important to resist the temptation to make prior assumptions, therefore, validating the research on a single source of data could be perceived as a phenomenon unique to APA and not representative of the wider research topic. Demonstrating a growth in conflict within the wider party wall community would remove any perceived bias towards the APA data and form an important contribution and possibly identify any relationship between the two sets of data.

Therefore, a second line of enquiry adopting a scoping study questionnaire (see Appendix I) circulated to 200 party wall surveyors, none of which were involved in any of the 1469 cases assessed in Table No 2. The party wall surveyors were invited to respond to a broad spectrum of questions relating to the approach, administration, and interpretation of the Act. They were also invited to provide their list of the five most common areas of conflict that they had experienced.

The independent scoping study results (see Table No 3) identified a total of 17 areas of conflict, which on analysis confirmed that the conflict was not unique to the APA data.

Two clear links between the independent data were identified within Tables 1 & 2 data. The first is the widespread growth in conflict and the second is the single common area of conflict being the use of special foundations when building below ground. The term “special foundations” is unique to the Act and only becomes an issue when there is an intention by an owner to project foundations onto an adjoining owner’s property. In such circumstances section 7(4) of the Act requires the building owner to obtain the adjoining owner’s written consent, which if refused will stop the works, these can only proceed if they are redesigned to remove any the projecting foundations.

Table No 3 Scoping study matrix

	Scoping study Questionnaire Surveyors Ranking				
Area of conflict	1	2	3	4	5
Special foundations	6	3	3		
Communication between surveyors			1		
S.1(5)	1	1	2		
S.12(1)			1	2	2
S.10(17)	2	1		1	1
S.6(1) & (2)			1	1	
S.10(10)					1
S.10(2)		1			1
S.1			1		
S.10(16)				1	
S.10(8)	1	2	1	1	
S.10(4)			1		
S.2		2		1	
S.11(11)	1				
S.10(7)				1	
S.15					1
S.8(1)		1		1	

The only context in which an owner would require projecting special foundations on to an adjoining owner's property is when constructing a basement, a party fence wall, or underpinning the party wall. In all other circumstances the building owner's excavations are entirely on their land.

From the Stage I enquiries the following hypothesis/supposition was developed: -

- (1) The growing conflict was not unique to the APA data;
- (2) The growing conflict covered 20 areas of the Act;
- (3) The most common single source of conflict; and
- (4) The research focus.

1.3 Research Aims and Objectives

The researcher identified and validated conflict through the application of the Stage I (i) & (ii) data, from which it was possible to identify new and/or emerging issues worthy of investigation using traditional research methods in these new fields of investigation (Anglia Ruskin University, Research Degree Regulations, 2016). Having identified growing conflict, the researcher's hypothesis/supposition was founded on the belief that unless the conflict was resolved the conflict will continue to impact upon the interpretation of the Act and affect adjoining property owner's property rights.

The researcher recognised that resolving all (see Table Nos 2 & 3) 20 areas of conflict went beyond the limitations of a doctoral thesis. Thus, the aims and objectives (see Table No 4) were developed to focus on the single common area of conflict between the two sets of independent data which was achievable within the limitations of a Doctoral Thesis.

1.3.1 Research aims

- A1) To analyse the internal APA data to establish the extent of the conflict;
- A2) To analyse external data to establish conflict within the wider community;
- A3) To investigate the influencing factors that contribute to the conflict;
- A4) To identify any common link between the internal and external data; and

- A5) To generate new knowledge that contributes to eliminating conflict within the research focus.

1.3.2 Research objectives

- O1) To critically review and basement designs;
- O2) To understand the dynamics that influenced the origins and passage of the legislation;
- O3) To understand the Act's structure and Rules of Interpretation;
- O4) To identify the single common area of conflict;
- O5) To review Alternative Dispute Resolution procedures; and
- O6) To contribute to new knowledge that eliminates the conflict surrounding "special foundations" definition and section 7(4).

The link between the aims and objectives (see Table No 4) is supported by Table No 5 which is included within the introduction to demonstrate the relevance of the Stage I (i) & (ii) data collection, and the six objectives that were developed after the Stage I validation enquires had been completed.

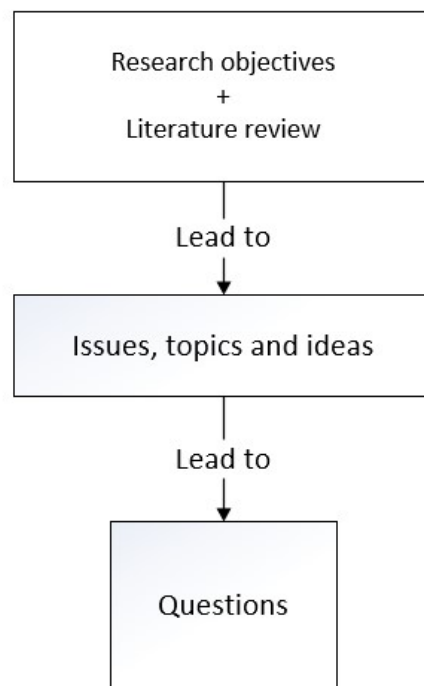
Table No 4 Relationship between the aims and objectives

Aims Objectives	A1 Analyse internal APA data to establish extent of conflict	A2 Analyse external data to establish extent of conflict within the party wall community	A3 Investigate influencing factors that create conflict	A4 Identifying common link within data	A5 Generate new knowledge to eliminate the conflict within the research focus
O1 To critically review basement designs.	✓	✓		✓	
O2 Understand the dynamics that influence the origin and passage of the legislation.			✓	✓	✓
O3 Understand the Act's structure and Rules of Interpretation.		✓	✓	✓	
O4 Identify the single common area of conflict.	✓	✓		✓	✓
O5 Review Alternative Dispute Resolution procedures.				✓	
O6 To contribute to knowledge that eliminates the conflict surrounding special foundation definition and section 7(4)			✓	✓	✓

1.3.3 Research questions

Having identified the research focus, the aims and objectives were translated into the following research questions, see Figure 1:

- 1) What are the implications of the Act when building below ground?
- 2) What are the difficulties created by the Act's terminology when applied to basement construction?
- 3) How do the party wall community interpret the special foundation and section 7(4) veto when applying the Act?
- 4) To what extent does case law clarify/influence the interpretation of the Act when building below ground?



**Figure No 1 How research objectives are translated into specific questions
(Naoum, 2013, p.62)**

Table No 5 Matrix linking the scoping study questions and research objectives

	Scoping Questionnaire common areas	O1 To review basement designs	O2 Origins and passage	O3 Structure and rules of interpretation	O4 Common areas of conflict	O5 ADR	O6 Contribution to knowledge
1	Were you involved in party wall matters under the earlier London Building Amendment Act 1939?	✓	✓	✓			✓
2	Is your experience of party wall matters limited to the Party Wall etc. Act 1996?		✓	✓			✓
3	Did you receive any formal training on party wall matters prior to accepting appointments?	✓	✓				✓
4	Are you a member of a professional body such as CABE, RICS, RIBA, CIOB?		✓				✓
5	Do you belong to any non-professional organisations that focus on Party wall matters?						✓
6	Can one Building Owner step into the shoes of another Building Owner and speak as one voice?			✓			✓
7	Should all owners be included on all notices and appointments?			✓	✓		✓
8	Should a party wall surveyor have a letter of appointment before serving notice?			✓			✓
9	Should a party wall surveyor have a letter of appointment before continuing with party wall matters after notice has been served?			✓			✓
10	If consent to a notice is given, do the owners have the right, at a later date, to appoint			✓	✓		✓

	surveyors to resolve a dispute under section 10?						
11	Can a surveyor's appointment be replaced?			✓	✓		✓
12	Can a surveyor be conditionally appointed?			✓	✓		✓
13	Can the appointed surveyors proceed without selecting a Third Surveyor?			✓	✓		✓
14	Do you inform the Third Surveyor of his selection at the time of the selection?			✓	✓		✓
15	Do you inform your appointing owners of the Third Surveyors identity?			✓	✓		✓
	(a) upon agreement with the opposite surveyor			✓			✓
	(b) when the Award is served			✓			✓
16	Do you set your fees before accepting an appointment?			✓	✓		✓
17	Can you lawfully authorise forced entry when access is refused by your appointing owner?			✓	✓		✓
18	Do you advise your appointing owners of the provisions of section 12(1) security of expenses?			✓			✓
19	Is the security under section 12(1) subject to exclusions or limitations?			✓	✓		✓
20	Do you inform your appointing owners of the Third Surveyors identity prior to an Award?				✓		✓
	(a) Do you advise your appointing owners of their s10 (11) rights?				✓		✓

21	Is a boundary location a matter of legal title?			✓	✓		✓
22	Do the appointed surveyors have jurisdiction to determine the position of the boundary (line of junction)?			✓	✓		✓
23	For the purpose of applying section 1(5), do you consider the inclusion of the word "on" is ambiguous?			✓	✓		✓
24	Do you consider for the purpose of section 1(5) that "in the vicinity of" is the same as "on"?			✓	✓		✓
25	Does an Adjoining Owner have the right to raise a type (b) party wall either vertically or laterally?			✓	✓		✓
26	Does the right of access under section 8(1) have limitations or exclusions?			✓	✓		✓
27	Can a Building Owner have access to an adjoining owner's land to execute works that are not notifiable but can be carried out simultaneously with works that do require notice?				✓		✓
28	Do you consider section 7(1) compensation when considering rights of access under section 8(1)?				✓		✓
29	Do you consider the Act's definition of foundations and "special foundations" is ambiguous in relation to basements?	✓		✓	✓		
30	Do you advise the adjoining owner of their rights under section 7(4) to	✓		✓			✓

	veto special foundations?						
31	Can the Act be applied retrospectively without the Adjoining owner's agreement?			✓	✓		
31a	Can the Act be applied retrospectively with the Building owner's agreement?			✓			✓
32	Can the surveyor(s) decide a point of law?			✓	✓		✓
33	In your opinion is the Act ambiguous?	✓		✓	✓	✓	✓
34	Does the Act require clarification?	✓		✓	✓	✓	✓

1.4 Administrating the Legislation

Following Royal Assent, the impact of the national legislation did not go un-noticed, this turned the regime that had operated in London into a country-wide regime (Antino, 2012, p.27). There were simply not enough party wall surveyors to satisfy overnight demand and the broad section 20 definition “*any person not being a party to the matter appointed or selected under section 10 to determine disputes in accordance with the procedures set out in this Act*” of a surveyor created an open invitation to anyone professionally qualified or not to administer the Act. To meet the demand professionals armed with a copy of the Act and little or no understanding of the complexities of the statutory regime started to provide ancillary services as a party wall surveyor (Antino, 2012, p.27).

1.4.1 Breadth and depth of data

An analysis of the APA data (see Figure No 2) demonstrates the diversity of the professional backgrounds of those operating within the party wall community. The 1469 APA cases, (see Figure No 2) established that those surveyors held multiple affiliations and memberships totalling 4271. The tacit and explicit knowledge of this eclectic, diverse, and unregulated community created difficulties in achieving consistent training to avoid conflict. Notwithstanding, getting to grips with the Act is very much a matter of “learning

on the job” (Antino, 2012, p.24) and unless there is a concerted approach to the generation of new knowledge through collective structured training and/or academic research, the inconsistency will encourage conflicting approaches as demonstrated by the APA scoping study (see Table No 3).

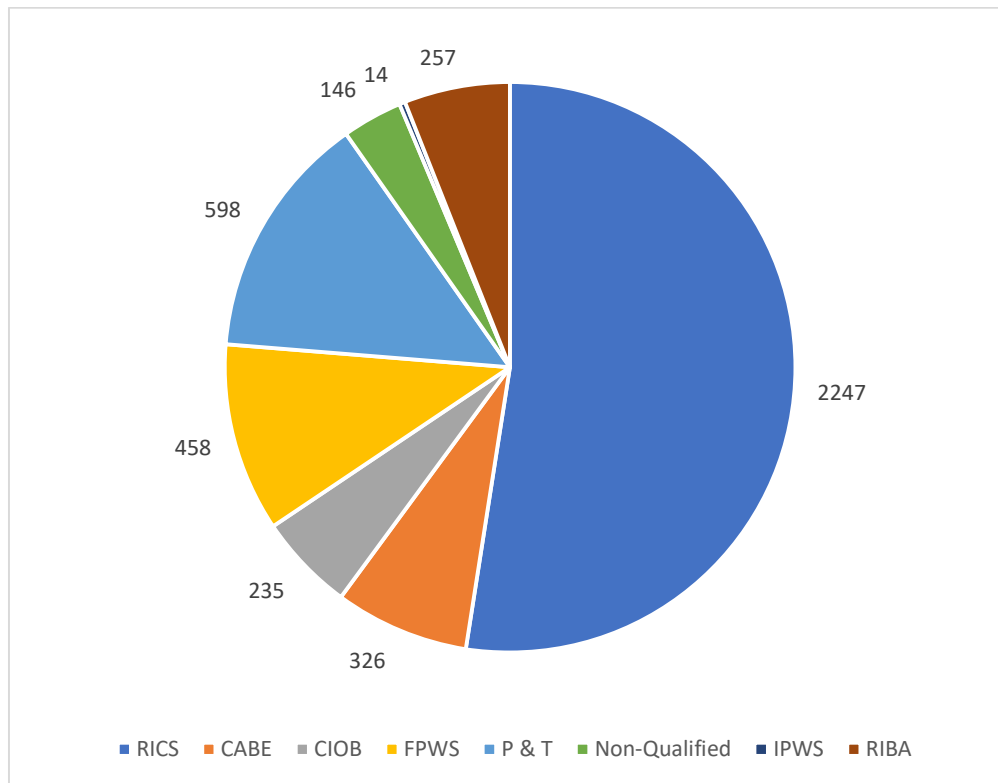


Figure No 2 APA data identifies multi-disciplined background

Understanding how the party wall surveyor’s tacit knowledge and approach to interpreting and administering the Act is generated is difficult because this unique specialism has evolved from an eclectic and unregulated body of professionals who operate within this quasi-judicial role. From the Figure 2 data, the Royal Institution of Chartered Surveyors (“RICS”) has 52% (2247) which is the largest proportion of members that operate within the party wall community. The P&T members accounting for 14% (598). The FPWS have 11% (458) with the remaining 34% divided between six other affiliations. During 1997–2016. Irrespective of whether a surveyor is a member of one or more of these organisations, the party wall surveyor remains unregulated. Indeed, given the diverse and eclectic configuration of the party wall community it is difficult to visualise whether there an existing affiliation could reasonably become the single regulatory body. If a single professional organisation such as the RICS organisation were appointed as the regulator,

it would be unrealistic to suggest that a member of the Royal Institution of British Architects (“RIBA”) could satisfy and pass the RICS criteria. Conversely, an RICS member would face the same difficulties if RIBA became the regulator. The training criteria for obtaining professional status and membership of the various professional organisations is diverse and it is extremely unlikely that professionals would want to go through extensive cross training and an assessment process. However, it is recognised within the community that there is a need for some form of standardised training/regulation.

In the seminal Gyle-Thomson case, the surveyors had made fundamental errors on very basic interpretations and approaches. This subsequently led to the formulation of the P&T Club when many imperfect reports of the judgment were circulating (Anstey, 1996, p.120). The P&T promoted what the researcher categorises as the “old school approach” whereas it is suggested that the Act requires a “new school” approach by interpreting the Act from first principles (Antino, 2012, p.26). Whilst the “P&T” is promoted as a working body for the improvement of knowledge and understanding of party walls (Anstey, 1996, p.121) appears unsuccessful, which as demonstrated by the research their remains conflicting messages, approaches and interpretations of the Act.

Accordingly, the P&T approach was not universally accepted and a group of surveyors formed the FPWS who adopted a similar structure to the P&T on the basis that their *raison d’être* is to promote and raise the standard and awareness of party wall matters through CPD seminars for its members and non-members and a two-day training seminars and assessment which if passed achieves membership. In 2015 the Institution of Party Wall Surveyors (“IPWS”) was formed to *“address the existing void in knowledge and understanding of Party wall matters and legislation”*. For the foreseeable future, it remains reasonable to assume that the various party wall community associations will continue to develop and promote conflicting approaches and interpretations from within this eclectic community which *“set it aside from other areas of building surveying services, creating a distinct community in its own right”* (Chynoweth, 2011, p.15).

1.5 Drivers Creating a Demand for Basement Construction

Subterranean extensions (“basements”) were until recently overlooked by architects, engineers, and predominantly by property owners due to the cost of construction, and the

lack of desirability to live underground. However, the most significant driver behind this growing trend is the restriction imposed by planning policies within urban areas which do not impede subterranean construction. Planning control is a creature of statute that impacts all new developments and building works, it is an imposition of restrictions on private rights of ownership of land, in the public interest.

Over the past 10–15 years the desirability to go underground has evolved for various reasons, with the trend continuing to grow, which demonstrates the importance of this doctoral research. Building below ground is now an attractive alternative to building above ground, especially when space is limited. Although retrofit basement construction is a complex process which involves the combination of geotechnical, hydrological, structural and civil engineering, health and safety and waterproofing expertise (Haslam and O'Connor, 2013, p.7). Historically, constructing a basement beneath an existing structure was unattractive due to the technical difficulties in achieving an acceptable habitable environment and the high costs associated with tunnelling below structures and achieving a long-term solution to prevent water ingress. Initially, the use of basements as part of the foundation design was limited to areas where property values are quite high (Brown, 1992, p.99). However, building beneath an existing structure whilst maximising the use of the land is now attractive due to innovative engineering and construction techniques which create affordable small-scale tunnelling operations (Narayanan and Goodchild, 2012, p.1). Advances in impermeable membranes and liquid-applied solutions to resist damp (ensuring long-term damp free environments) have also contributed to the attraction of underground living, with basements now common in many new developments, particularly in urban areas (Narayanan and Goodchild, 2012, p.1).

Thus, basements now provide the property owner with an affordable and fashionable “must have” attachment to their homes. Although, the function of a retrofit basement structure goes somewhat further than being simply a fashionable attachment, because it is designed to supplant the original foundations. Therefore, when contemplating a retrofit basement construction, understanding the overall construction process and the existing structure is important, so that its feasibility is judged not simply on a desired spatial brief, but also based on adjoining owners’ property rights (Baxter, 2013, p.13) which are recognised and enforceable under the Act’s section 7(4) veto.

1.6 Understanding, the Impact of Function upon the Performance of a Structure as a Contribution to Knowledge

The construction of a box beneath adjoining structures requires service of a notice under section 6(1), whether the section 7(4) veto is applied will depend upon the surveyor's analysis of various elements functions to establish if they fall within the "special foundations" definition. As HHJ Bailey noted obiter dictum: section 7(4) gives the adjoining owner an absolute veto to stop any work which constitutes "*special foundations*" (Chaturachinda v Fairholme, 2015, p.4) being placed on their land. Therefore, ensuring the correct interpretation of a basement design is fundamental to ensuring the rights of property owners are maintained.

1.6.1 What does function mean

The mathematical concept of "function" emerged in the 17th century in connection with the development of calculus; for example, the slope of a graph at a point was regarded as a function of the x-coordinate of the point. Some precursors to the concept can perhaps be seen in the work of medieval philosophers and mathematicians such as Oresme. The work on functions as a mathematical concept continued into the 18th century and those mathematicians typically regarded "function" as an analytic expression. In the 19th century concept between the rigorous development of analysis by Weierstarass and others, the reformulation of geometry in terms of analysis, and the invention of "set theory" by Cantor, eventually led to a much more general modern concept of "function" as a single-valued mapping between one set and another.

In the context of this research Newton's third law is helpful; "*every action has an equal and opposite reaction*". In construction every element of the building has a function, the introduction of reinforcement into concrete is an action that creates an equal and opposite reaction. Why is this relevant? Well, if we consider that the function of mass concrete is to be able to resist compressive loads, and we change the composition by introducing reinforcement, its function is now equal and opposite to compression, becoming strong in both compression and tensile strength.

Therefore, the suggestion is that "function" is an important and relevant key to understanding the performance capabilities of the individual elements of the basement box during the concept, design and construction process. This should be an important

part of the surveyor's thought process and assessment when determining which parts of the structure (if any), trigger sections of the Act.

The third surveyor's failure (see Section 2.7.2.7 below) or silence on the relevance of the various elements "function" as a concept that contributes to the structure's performance to determine how the box performs, relative to the criteria set out within the special foundation and the section 7(4) veto definitions, was a missed opportunity.

In recognition of the significance of basements within the built environment, the Concrete Centre (Narayanan and Goodchild, 2012) and several Local Authorities commissioned independent professionals (Baxter, 2013, Ove Arup, 2010 and Butcher, 2007) to produce reports and guidelines which contribute to the existing knowledge and understanding of building below ground level. Whilst this guidance assists designers and contractors, these pay scant regard to the statutory legislation, its definition of "foundations", "special foundations", and the section 7(4) veto. Identifying which elements of the basement box (if any) will satisfy the Act's definition is fundamental to establishing if the section 7(4) veto applies and ultimately how the basement can be constructed.

Is the function of the reinforced concrete ("RC") basement box individual and conjoined elements fundamental to eliminating the conflict?

- (i) What element of a basement box (if any) is a foundation?
- (ii) What element of a basement box (if any) is a special foundation?
- (iii) What is the function of the basement box as a whole?
- (iv) What is the function of the individual (vertical & horizontal) elements?
- (v) Can the box function only be assessed as individual elements?
- (vi) Is the box structure multifunctional?
- (vii) What is the function of the reinforcement?
- (viii) Do the rails provide a function of any kind?
- (ix) Is a retaining wall a foundation? and;
- (x) Does the reinforced box trigger the section 7(4) veto?

The researcher was the first to recognise and address the difficulties when using a reinforced concrete box to build below ground within any published literature (Antino, 2012, p.220–223) some three years before the difficulties were encountered within the Chaturachinda case. Several questions that arise from a basement "box" are: (i) whether

it is, by definition, a multifunctional structure? (ii) is it the new foundation to the structure above? (iii) are the walls retaining walls? (iv) what is its function? and (v) which element, if any, is the new foundation?

The two sets of independent data provide the link between the Act and basements, with special foundations when used in basements and the adjoining owner's right to veto such works under section 7(4) by withholding written consent, being the single common area.

1.7 Definitions and Vocabulary

Section 20 of the Act provides definitions and a vocabulary to describe the procedures, roles, and elements unique to the Act. Having a clear understanding of these terms is important if the party wall surveyor is to approach and interpret the Act without creating ambiguity and conflict.

1.7.1 Definitions

“Owner” includes:

- (a) a person in receipt of, or entitled to receive, the whole or part of the rents or profits of land;
- (b) a person in possession of land, otherwise than as a mortgagee or as a tenant from year to year or for a lesser term or as a tenant at will;
- (c) a purchaser of an interest in land under a contract for purchase or under an agreement for a lease, otherwise than under an agreement for a tenancy from year to year for a lesser term.

“Building Owner” This title applies to the person intending to undertake notifiable works and can apply to both the freeholder and/or tenant in occupation.

“Adjoining Owner/Occupier” This title applies to either the freehold owner and/or tenant (if they have a tenancy or lease in excess of 12 months) of a neighbouring property.

“Surveyor” means any person not being a party to the matter appointed or selected under section 10 to determine disputes in accordance with the procedures set out in this Act.

“Appointing Officer” means the person appointed under this Act by the local authority to make such appointments as are required under section 10(8). This applies when the two appointed surveyors cannot reach an agreement on the selection of the third surveyor.

“Party Wall” The Act recognises two definitions (a) & (b) for a party wall;

(a) a wall which forms part of a building and stands on lands of different owners to a greater extent than the projection of any artificially-formed support on which the wall rests;

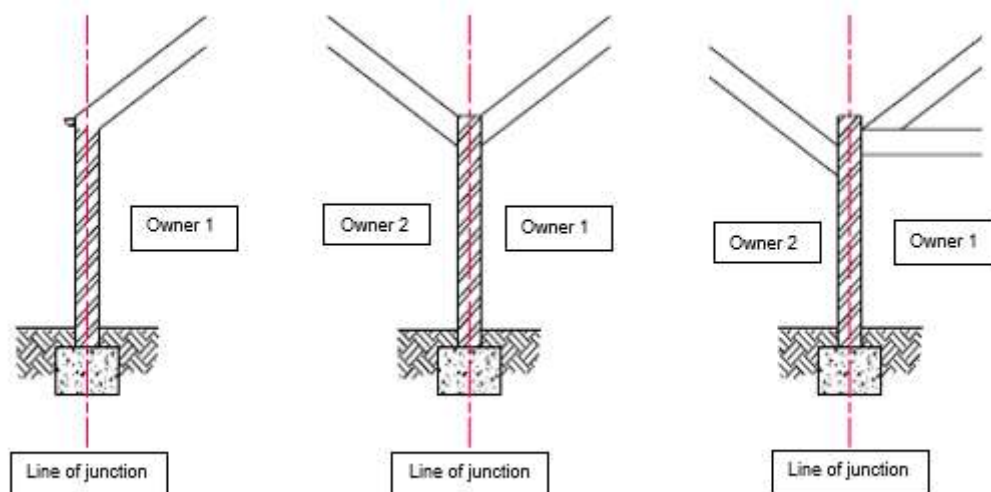


Diagram No 1 section showing various type (a) party walls (Antino, 2012, p.51)

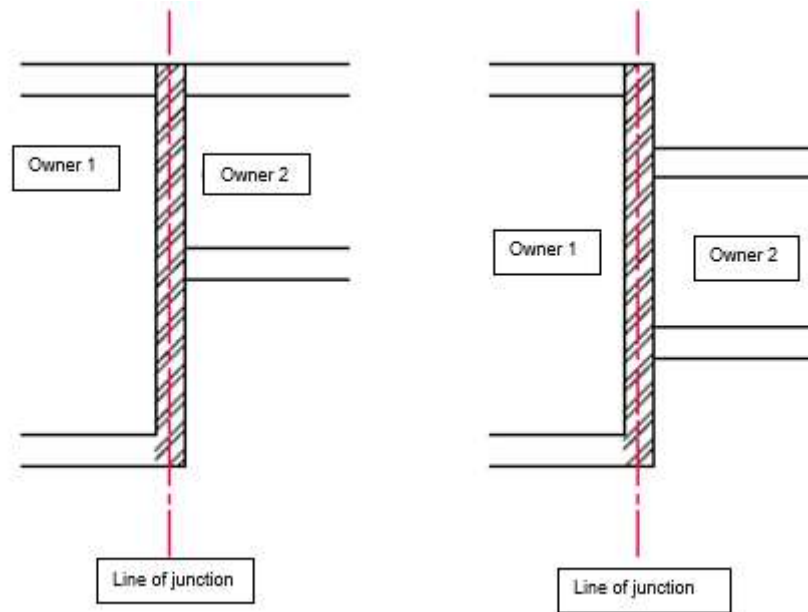


Diagram No 2 Plan showing type a party wall (Antino, 2012, p.52)

(b) so much of a wall not being a wall referred to in paragraph (a) above as separates buildings belonging to different owners;

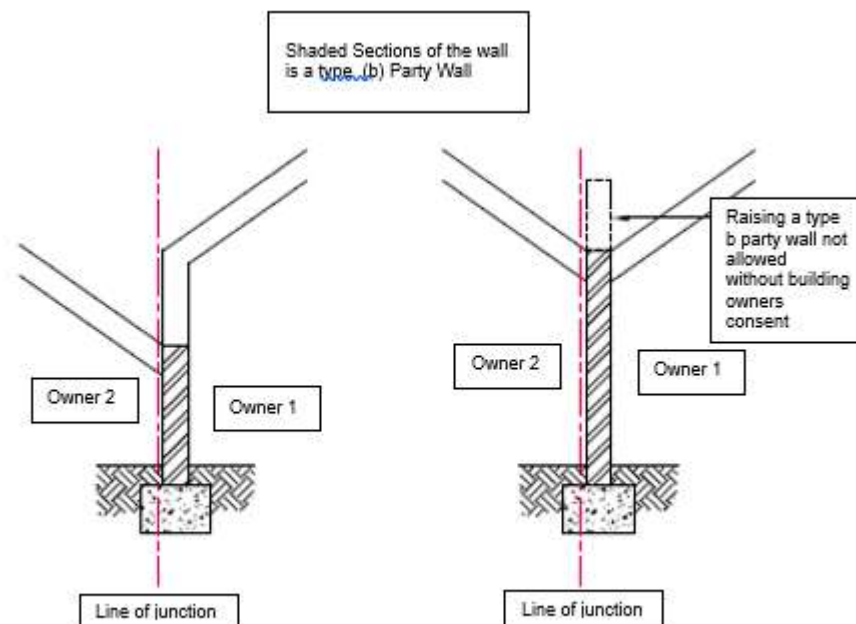


Diagram No 3 Section showing type B party wall (Antino, 2012, p.55)

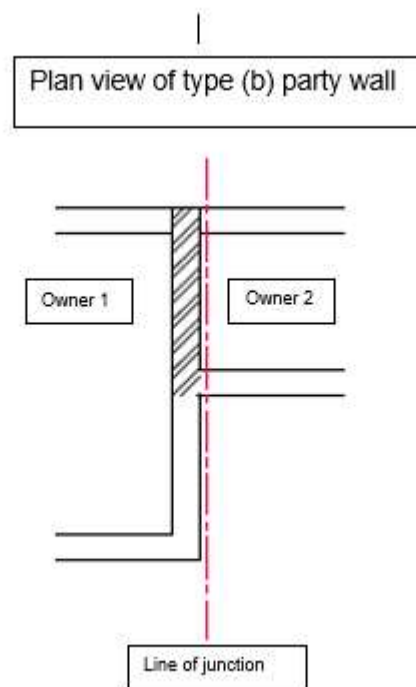


Diagram No 4 Plan showing type B party wall (Antino, 2012, p.51–52)

“Party Structure” applies to a party wall and also a floor partition or other structure separating buildings or parts of buildings approached solely by separate staircases or separate entrances;

“Party Fence wall” means a wall (not being part of a building) which stands on lands of different owners and is used or constructed to be used for separating such adjoining lands, but does not include a wall constructed on the land of one owner the artificially-formed support of which projects into the land of another owner.

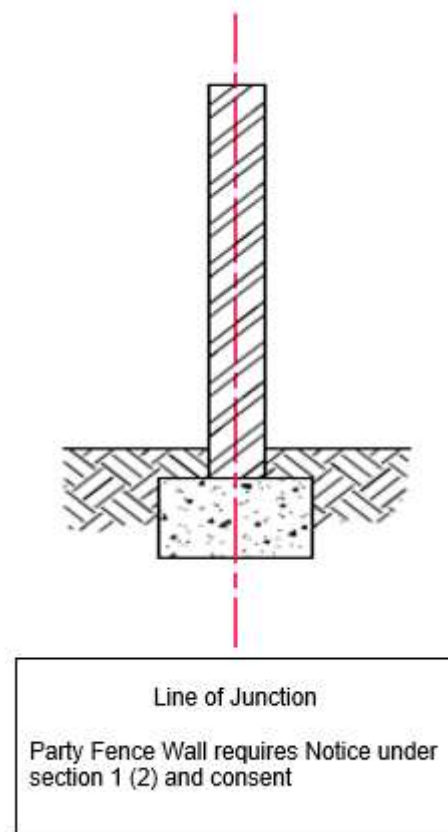


Diagram No 5 A party fence wall across the line of junction (Antino, 2012, p.45)

“Foundation”: in relation to a wall, means the solid ground or artificially-formed support resting on solid ground on which the wall rests.

“Special foundations”: means foundations in which an assemblage of beams or rods is employed for the purpose of distributing any load.

“Section 10(2)”: requires a surveyor appointment to be in writing, and in the absence of such the surveyor is *functus officio*.

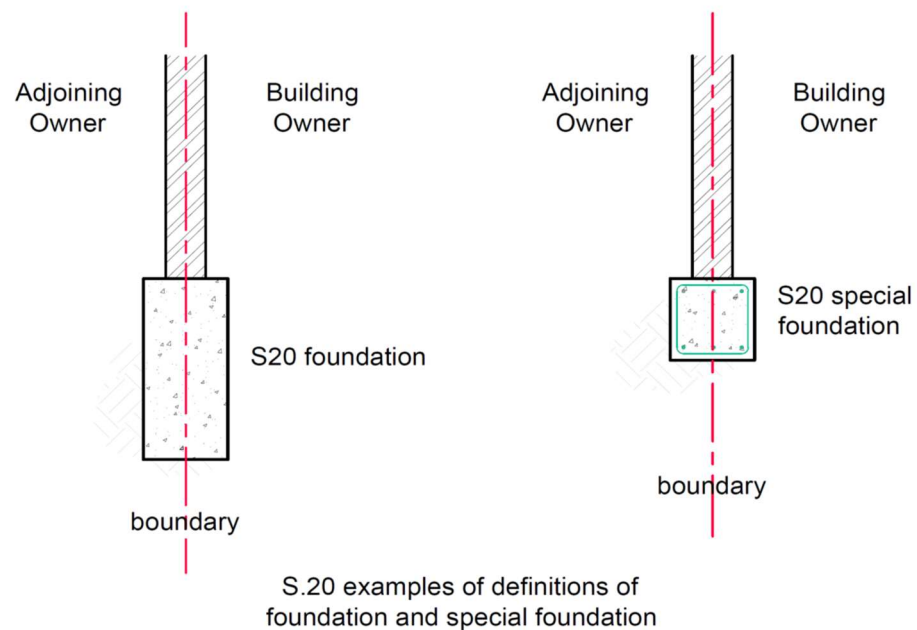


Diagram No 6 The Act's definition of foundation and special foundation astride the boundary (The Party Wall etc. Act 1996)

1.7.2 Vocabulary

“Section 7(4)” Nothing in this Act shall authorise the building owner to place special foundations on land of an adjoining owner without his previous consent in writing.

“Section 6(1) & (2)” The Act provides two criteria to determine whether or not notice must be served.

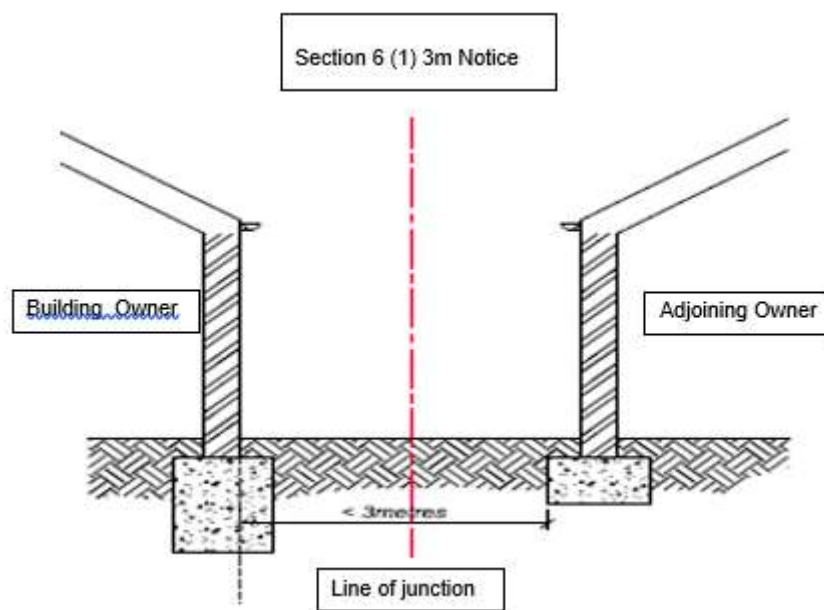


Diagram No 7 Triggers notice under Section 6(1) (Antino, 2012, p.110)

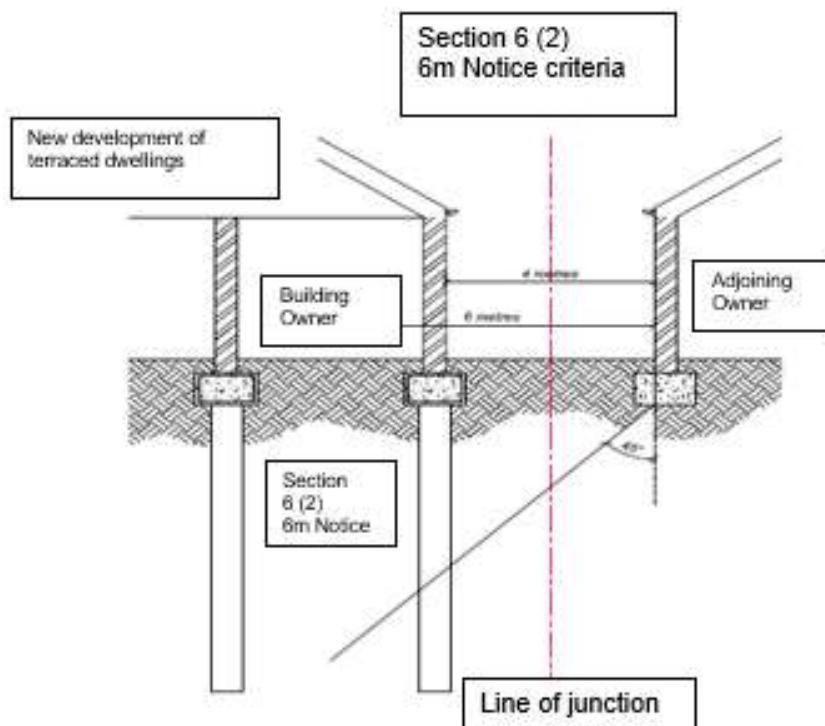


Diagram No 8 Triggers notice under Section 6(2) (Antino, 2012, p.113)

“Agreed Surveyor” This title is given to the surveyor appointed by both the building and adjoining owners/occupiers to act on behalf of both parties under section 10(1)(a). This arrangement does not create a perceived or actual conflict of interest. In *Loost v Kremer*, the learned Judge held *“that the fact that he has acted as an architect does not, in my judgment, mean that he must disqualify himself.....He changes in his capacity from being simply an agent to a quasi-arbitrator and he has to bear in mind those are his duties”* (Antino, 2012, p.57–58). The role of agreed surveyor does not remove the surveyors implied and whilst having an explicit duty of care owed to both owners also has *quasi-judicial* role.

“Building Owner’s Surveyor” This title is given to the surveyor appointed by the person undertaking the works.

“Adjoining Owner’s Surveyor” This title is given to the surveyor appointed by the adjoining owner/occupier following dissent or deemed dissent.

“Third Surveyor” This is the title given to the surveyor forthwith jointly selected by the building and adjoining owner’s surveyors under section 10(1)(b). They have no involvement unless there is a dispute between the surveyors and/or an owner makes a referral to the third surveyor under section 10(11) to resolve.

Notifiable works: The Act applies to one or more of the following three areas:

- (i) Section 1: Building a new wall on or across the line of junction;
- (ii) Section 3: Works to the party wall;
- (iii) Section 6: Excavations.

“Notice”: Depending upon the nature of the works the building owner is required to serve a notice on the adjoining owner/occupier either one (section 1 or 6) or two months (section 3) before the intended commencement date of the works. The notice should be sufficiently clear to allow the adjoining owners to understand the proposed works and indeed where appropriate under section 6(6) must be accompanied with drawings showing the depth and location of the proposed excavations.

“Dissent”: The adjoining owner has 14 days, to reply to a notice, thereafter they are deemed to have dissented.

“Dispute”: The appointed surveyor’s duty is to apply the Act’s procedures, which may create conflicting interpretations and approaches. If the two surveyors cannot reach an agreement they are in dispute and will refer to the dispute to the third surveyor.

“Conflict”: In the context of this research applies when two surveyors hold conflicting approaches and interpretations.

“Line of Junction”: the line of junction is used by the Act to define the point between two properties where they meet which may not necessarily be in the same location as the boundary. They can be one of the same but can also be in different locations. Building on the line of junction (see Diagram No 9) requires notice under section 1(5).

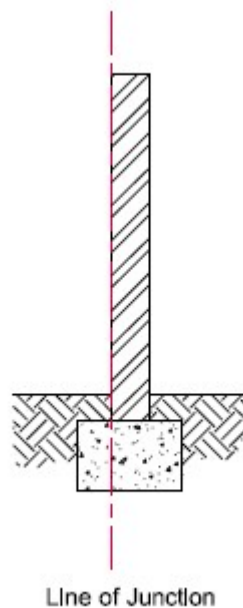


Diagram No 9 Building a wall on the line of junction (Antino, 2012, p.46)

1.8 Why this Doctoral Research is Necessary

The historical approach in England and Wales to build close to or onto a neighbouring property creates complications. Requiring access to a neighbour’s land has its own legislation under “The Access to Neighbouring Lands Act 1992” (“ANLA”) providing the

works are for preservation and repair of the existing structure and not new works. If the adjoining owner is not willing to grant access the works cannot begin. The Act attempts to remove the impasse by providing limited access under section 8, which is authorised/managed by the surveyors to avoid catastrophic problems (see Figure No 3 and Appendix VII) through inappropriate excavations and structural alterations that can cause the collapse of a building. The purpose of the Act is to ensure that party wall surveyors assess the structural risks to ensure that appropriate preventative measures are adopted inter alia including providing temporary support to the adjoining property.

Research projects often start with the researcher having some special knowledge, interest or having noticed something unusual and putting two and two together and with a spark of curiosity, a research project is ready to fly (Hart, 2011, p.86). There have been limited academic papers written on the operation of the Act which is largely predicated upon the reconfiguration of Part VI of the LBA. However, possibly due to the increased conflict, in recent years, there has been an increasing trend for party wall surveyors to express their views via social media. This research aims to continue that contribution to the gap in knowledge surrounding the special foundation and section 7(4) veto, through this doctoral research.

The researchers desire to commence doctoral research was borne out of a genuine concern that conflicting interpretations were impacting on the smooth operation of the Act (see Table No 1). Consequently, believing that Parliament's intent to introduce a process that removed conflict, was actually creating more conflict than it appeared to be eliminating. Not unsurprisingly, given the researcher's specialist knowledge, coupled with the lack of academic research into the Act, the conflict and/or the difficulties in achieving a resolution stems from gaps in stakeholders' knowledge. The scoping study identified issues (see Table No 3) that are outside of the researcher's personal experiences and/or opinions which therefore support the researcher's initial concerns that there is conflict. The subsequent decision to focus on special foundations and the section 7(4) veto is derived from an analysis of the APA data (see Table Nos 2 & 3) and the scoping study data which identified a common link between the two independent sets of rich data. There remains a genuine belief that unless the conflict is eliminated, it will continue.



Figure No 3 Structural damage caused by botched basement construction (Evening Standard, 2015)

The consequence of conflicting interpretations by party wall surveyors can be devastating and unless a cohesive approach and interpretation is achieved, property owners will continue to be exposed to the risk of damage (see Figure No 3 & Appendix VII). The Act introduces a framework that enables certain activities previously prohibited by common law (trespass, nuisance etc.) to be executed whilst maintaining the adjoining owner's property rights. The earlier legislation albeit restricted to the LBA and BIA areas had operated with considerable success.

The Act's increased jurisdiction created logistical difficulties for the built environment due to insufficient numbers of suitably qualified party wall surveyors. This created supply and demand issues that impacted upon how new entrant surveyors would interpret the Act. The introduction of the section 20 broad definition of "surveyor" (see section 1.7 above) made it possible for professionals outside the surveying profession to accept a party wall surveyor appointment and satisfying the market demands. A party wall surveyor can be any person (Smith, 2016, p.24) from any professional background i.e. (surveyor, architect, engineer, contractor) and non-professional (member of the public, relative of an owner).

However, this open-door approach and non-regulated environment created difficulties in achieving consistent training, development, and circulation of knowledge between the diverse professional backgrounds now operating within this environment. Accordingly, party wall surveyors educated themselves by reading about the earlier approaches adopted under the LBA, the 1996 Act, word of mouth, on the job learning, and case law. It is therefore not unsurprising that the theoretical interpretation and approach by the party wall community is both diverse and conflicting.

The proper administration is therefore important to the built environment, and whilst the Act itself is not the best piece of legislation ever to emerge from Parliament, the previous Common Law Rules that it expanded were far more restrictive in nature (Lewis, 2009, Vol 5). Ambiguity within the Act makes it notoriously difficult to interpret and some of these ambiguities predate the introduction of the current 1996 Act (Chynoweth, 2003, p.13). The “old school” surveyors operating within the earlier LBA also clashed with the “new school” surveyor approaches.

Section 1.7 helpfully sets out the differences between the two definitions. One being the inclusion of an assemblage of beams or rods employed for the distribution of any loadings. In all other respects their criteria and function remain the same. The absence of any explanation for having two definitions and why the section 7(4) veto only applies to special foundations adds to the conflict, with surveyors forming their own opinion on what will satisfy the special foundation definition and when the section 7(4) veto is applicable. Unless common ground is achieved, the owners will not be fully informed of their rights and the varied interpretation and approach of surveyors will continue to create conflict, thus adversely affecting the administration of the Act.

1.9 Originality and Contribution to Knowledge

1.9.1 Originality

The research data has identified growing conflict with one central issue being adopted as the focus, which is at the heart of the 21st century-built environment desire to build below ground. The desire to adopt basement construction is encountering difficulties not least with the conflicting interpretations developed and applied to the Act’s two definitions of foundation, special foundation, and whether the section 7(4) veto can apply.

The originality of the research topic and its contribution to knowledge is supported by the absence of any previous doctoral research not only on the single common area of conflict but on the Act itself. Indeed, the only doctoral research identified is Dr. Paul Chynoweth's (2011) professional doctorate thesis which focused on the professional knowledge base of chartered surveyors with regards to the legal aspects of rights of light and the Party Wall Act. Given that the data demonstrates that the party wall community comprises multi-disciplined professionals, Chynoweth's thesis contributes to the legal aspects of the generalisation of surveyors and their professional knowledge base and does not specifically focus on individual aspects of the Act, which this research seeks to rectify.

The P&T issued a guidance note on special foundations (P&T, 2015, p.12) which surprisingly provides two conflicting interpretations and therefore adds to the confusion rather than resolves it. In the latest edition of the P&T "Green Book" and the RICS 7th edition (2019) "guidance notes" on how their members should interpret the Act, neither publication provides any specific guidance on basements and the issue of special foundations. Accordingly, the absence of any specific publications, research and limited case law, signifies the originality of this research focus and clearly demonstrates that the professions need to fill the gap in knowledge.

1.9.2 Contribution to knowledge

The research explores the conflict arising from a gap in knowledge identified from the three separate data collating stages. This gap in knowledge is now at the forefront of the built environment as a consequence of points 1–5 below:

- 1 Growth in building below ground level;
- 2 Growth in conflicting knowledge;
- 3 Limited clarity provided by case law;
- 4 Ambiguity within the Act's definition of "foundations", "special foundations"; and
- 5 Understanding when the section 7(4) veto applies.

This thesis studies the investigation of the existing knowledge identifying and critically analysing accepted basement designs (see Section 2.2 below) to establish whether any satisfy or are included in the Act's definitions of a special foundation and the section 7(4) veto.

1.10 Inductive Approach to Research

All case study research starts with the same compelling feature *“the desire to derive an up close or otherwise in-depth understanding of a single or number of cases set in their real-world setting”* (Yin, 2009, p.4). This research was driven initially by the researcher’s personal experiences and a deductive analysis of the APA data (see Table No 1), placing the research within the definition of phenomenologically based research (Houshmand, 1989, p.3–79). The quantitative analysis of the APA data as a single source gave important but limited and potentially biased results. A qualitative scoping study of the EDA through a second and third line of enquiry and data collection involving the wider party wall community, subsequently supported the researcher’s hypothesis that conflict was growing. Initiating an inductive approach to identify and understand the importance and relevance of the research paradigm was fundamental in establishing a robust research strategy and demonstrating its validity.

1.11 Ethical Considerations

The introduction of the General Data Protection Regulations (“GDPR”) creates ethical issues in addition to those set out within the Anglia Ruskin University regulations and therefore required full consideration and compliance before collating, retaining, and analysing data outside the public domain. All data contains confidential and sensitive information about stakeholders and redacting their identities and commercially sensitive information prevented a breach of ethical standards. Conversely, where the research refers to case law, identities and information is already within the public domain and the issues of privacy fall away. Participating stakeholders were assured that they would be allocated a unique reference known only to the researcher. Following ethical approval, the procedures were meticulously managed throughout the research data collection period and indeed when writing the thesis.

1.12 Summary

This chapter introduces the research topic and the deductive reasoning behind the researcher’s hypothesis and professional background as a party wall surveyor over a period of 35 years. The EDA established the extent of those experiences, supporting the concern that growing conflict was detrimental to the administration of the Act. An analysis

of the APA data (see Table No 2) in comparison with independent data obtained through the scoping study data (see Table No 3) also identified 17 areas of conflict, and the five most common issues. When compared with the five issues identified from the APA data, it was possible to narrow the data results to achieve a manageable objective within the limitations of a PhD. The two sets of independent data identified a gap in knowledge relating to how the party wall community interpreted the Act's definition of "special foundations" and the section 7(4) veto, when building below ground. As the single-most common area of conflict experienced within the wider party wall community this was adopted as the research focus.

Chapter 2 investigates the origin and passage of the relevant legislation, records accepted construction details for basements and the procedures when undertaking notifiable works and addresses five of the six research objectives. Having a clear understanding of the Act's procedural mechanisms is relevant to identifying the contribution to knowledge and why conflict is arising from what is considered to be, by some (Chynoweth, 2011), an ambiguous piece of legislation. The lack of any clear authority is reinforced with Chynoweth's views (2001) that in practice, the situation has remained ambiguous. This includes examining the Act's structure, intent, and its relationship with ADR and the rules of interpretation.

Chapter 3 sets out the rationale behind the inductive research methodology, the evolution and strategy behind the data collection protocols, retention, and introduces the need for NVivo® Qualitative Statistical Analysis ("QSA") to assist with the validity of the data sources.

Chapter 4 reviews the data and investigates how the stratagem evolved during the research journey into three independent stages of data collection with NVivo® QSA and continues with a reflective analysis of the data and its relevance to the objectives.

Chapter 5 investigates the function of the structural foundation, a basement box and whether they should be treated as individual elements or whether the linking created by their reinforcement changes their function thus creating a single structure. The function of underpinning and the basement wall as a retaining wall is discussed to establish the function of the overall basement box.

Chapter 6 discusses the history behind the earliest recognition of a need for a separate definition for a special foundation that incorporates reinforcement, and why this creates difficulties for surveyors when interpreting the Act. It investigates the construction process and refers individual element functions to the explicit wording within the Act to identify any similarities or crossover.

Chapter 7 undertakes a critical analysis of the legal judgment which addresses the research focus and whether it is relied upon by stakeholders when determining whether a proposed basement design introduces a special foundation or not. The implications of a special foundation and the Chaturachinda decision is discussed, relative to evidence of stakeholders and investigates the function of underpinning, from an engineering perspective.

Chapter 8 brings together the findings and conclusions that the research has identified relative to the research and reviews the aims and objectives to present the contribution to knowledge. The use of QSA demonstrates that the research has filled the gap in knowledge and directly challenges the Chaturachinda decision on solid grounds. This chapter provides recommendations that could be adopted to move the research topic forward into the professional environment and further avoid conflicting approaches and interpretations of the research focus and perhaps those subsequent areas that were identified (see Table No 3) but not addressed within this research.

Chapter 2

2.0 Literature Review

2.1 Introduction

The literature review addresses five of the six research objectives beginning with an investigation into how the conflict may be generated through an unregulated professional environment and the current accepted practices adopted when building below ground. Therefore, the literature review is intended to demonstrate a sufficient level of prior understanding of the research topic and methodology (Hart, 1998, p.16). Tracing the origins and passage of the legislation to provide an insight into the legislation and how it has evolved requires an understanding of the language, its jurisdictional procedures, and how the rules of interpretation apply to identify whether the gap in knowledge exists and to contribute to new knowledge.

The review provides a substantive investigative analysis of the common area of conflict, and the options available to property owners and indeed surveyors to avoid and/or resolve the conflict through the Act's procedures. Understanding how and why conflict arises when basements are constructed in a certain way, flows from role the party wall surveyor plays as a dispute resolver. The review also focuses upon Alternative Dispute Resolution ("ADR") procedures, to identify if the Act sits within these recognised procedures. Notwithstanding, the role of the party wall surveyor is quasi-judicial. Regrettably some disputes are not resolved and the only redress available to property owners is to bring an appeal before the Courts. Accordingly, the review undertakes an investigation of relevant, albeit limited, case law applicable to the research focus to establish if the law assists in resolving the gap in knowledge and indeed conflict.

2.1.1 Existing conflicts in knowledge

Various organisations and party wall surveyors have developed approaches and interpretations generally to achieve property owner objectives, and accordingly some surveyors and indeed barristers have fluid views that simply change from case to case. Inconsistency will create conflict and as such indicates that existing knowledge has not achieved the necessary clarity. There have been attempts within academia (Chynoweth,

2003) and by professionals (Frame, 2007, Antino, 2012, and Anstey, 1996) to contribute to knowledge and agreement by expressing their interpretations. Inevitably the legal profession has expressed opinions (Isaac, 2014 and Bickford-Smith, 2004) which not unsurprisingly conflict. Legal cases only exist because there is conflict, in the first instance between the parties and in the second between their respective legal advisers, simply because there are as many opinions as there are people. This further demonstrates the need for new knowledge to remove the deep divisions in the broad spectrum of professionals operating within the party wall community and those on the periphery. The RICS (2019) in releasing their 7th edition Guidance Notes, do not advance any opinion on how a basement should be assessed, it is simply silent on whether it is or is not a special foundation.

2.1.2 Commercial organisations and knowledge

The desire to build underground has been growing over the past 10–15 years, driven by the ability to avoid planning restrictions with no evidence of a decline. The preferred design typically adopts a reinforced concrete box because of economical and structural advantages, which is investigated in Section 2.2 and records the accepted designs for constructing basements. Executing these works especially when tunnelling beneath an existing structure requires specialist skills, tools, and techniques and commercial and professional organisations have emerged to meet the training needs and regulatory control of those contractors specialising in this field.

The Association of Specialist Underpinning Contractors (“ASUC”) and the Construction Industry Training Board (“CITB”) are both important contributors to the generation of basement construction knowledge. ASUC have published guidelines on the construction process to reduce the impact on adjoining owners. Achieving membership to ASUC is relatively relaxed, only requiring insurance cover that provides reassurance and cover for the client, architect, and engineer. ASUC also provides an insurance guarantee for waterproofing (“tanking”) of basements but does not provide cover for damage caused to adjoining properties and/or any third-party liability. The most important party within any project is the client, who will appoint the project team. Haslam and O’Connor (2013) recognised the benefits of including a party wall surveyor within the project team, which is also supported by the ASUC guidance. However, the only recognition of the Act given within the ASUC guidance is to advise that a subterranean development requires notice

under section 6(1) or (2) of the Act. Regrettably, there is no recognition of the Act's definitions of foundation, special foundation, and the section 7(4) veto.

The National House Building Council ("NHBC") also recognised the need for improvement to skills across the whole spectrum of the basement construction process from inception to completion and commissioned Butcher (2007) to prepare a report. These works come with a need for greater site investigation and more detailed design to minimise the risk to construction (Butcher, 2007, p.3). The report addresses standards and principles that should be incorporated into the basement design and construction programme with emphasis on the risks of carrying out such works and the importance of health and safety obligations. Unfortunately, ASUC, NHBC, and Butcher pay scant regard to the Act's definitions and the adjoining owner's ability to veto special foundations.

2.1.3 Local authority control and planning permission

Planning policies within the United Kingdom have evolved through various Acts of Parliament. In 1911 Raymond Unwin, having considered the Town Planning etc. Act 1909 suggested that *"Town Planning was simply the will of the community to control town developments with a view to determining urban environments"*. Local authorities set out how planning would be managed within their borough, outlining what could be built and where (Ove Arup, 2010, p.3). Planning Development Policies ("PDP") require a detailed assessment of the Borough, with considerations to include visual impact, character, impact on public space and amenities, and privacy from overlooking structures and sunlight/daylight issues. Interference is therefore a key consideration especially with regards to the effect of the proposed development on adjoining property ownership (Baxter, 2013, p.1).

Local authorities do not have a specific planning policy nor power to reject basement developments outright, but they are aware of the issues and concerns raised by neighbouring owners regarding the impact on the area. Camden, Westminster, Royal Borough of Kensington and Chelsea local authorities now require a Basement Impact Assessment ("BA"). Addressing the usual issues of potential flood risk, interference with water table, noise, archaeological interruption, waste management, and the physical inconvenience to adjoining owners. Unfortunately, the BA does not recognise the Act. In section 5 of Westminster's guidance, they suggest *"they cannot consider non-planning issues such as loss of property value, **Party Wall**, and land and boundary disputes."*

Effectively leaving the issue for the party wall surveyors to resolve, which in reality is where it should be addressed.

In 2009 the Supplementary Planning Document (“SPD”) was adopted, because as the desire to build basements continued, there was a need to review policies in respect of their core strategies and the SPD guidance. It is the local authority’s overriding responsibility to decide whether a proposed development requires planning permission or not and to carry out the usual consultations before due consideration is given to the proposed design. The criteria that local authorities operate under are Planning Policy Statements (“PPS”) and Planning Policy Guidance Notes (“PPG”). Neither of these address basements in any sufficient detail or give the planning departments the appropriate guidance on how to deal with basement applications.

PPG14 sets out the broad planning and technical issues that the application must address in respect of developments on unstable land. However, a large volume of building works is classified as minor works and falls within the General Permitted Development Order 1995 (GPDO), avoiding the need for a formal planning consultation process. These policies, whilst contributing to the knowledge surrounding the design, construction, and lawfulness of the proposed works, still remain silent on party wall matters. Surprisingly, Ove Arup as world leaders in structural design give scant regard to the Act, specifically where special foundations are adopted and used within the design.

With a growing population and a shortage of development land and high land values “*Yesterday’s loft conversion builders are today’s basement builders*” (Pole, 2012, p.51), satisfying the supply requires innovative designs. Thus, basements are now an attractive means of increasing a building’s footprint and avoiding restrictive planning conditions, plus the desire for constructing below ground avoids planning restrictions on building heights (Narayana and Goodchild, 2012, p.1). Interestingly, there is no historical or current universal planning policy for basement construction, presumably because (i) they have no visual impact on the environment, (ii) are generally beneath the buildings footprint, and (iii) do not affect public spaces and/or amenities. The GDPO and subsequent amendments allows property owners certain development rights without requiring planning permission. When above ground extensions and adaptations have been exhausted, the development of basements in residential areas becomes a popular way of gaining additional space in homes (Ove Arup, 2010, p.1). Driven by an awareness that planning policy for below ground development (Baxter, 2013, p.13) is less stringent than

above ground level, many local authorities now include underground extensions if they meet prescribed dimensional constraints, i.e., do not extend closer to a highway than the existing house, and retain more than half the garden (Ove Arup, 2010, p.6).

The Royal Borough of Kensington and Chelsea (“RBKC”) commissioned Baxter (2013) to undertake a “scoping study” to identify an appropriate strategy to produce policies on subterranean developments—its core strategy was adopted in 2010. This was followed by a supplemental report in 2013 called the “Residential Basement Study Report”, which concluded that a subterranean development should not be viewed in isolation to other planning issues and noted that several other Boroughs’ planning policies impinged upon subterranean development even though not specifically designed to do so. The report recognises important issues relevant to the design and construction of basements, but with very little consideration other than recognising the obligation to serve notice under the Act.

Whilst “basements” avoid planning restrictions this should not be confused with the obligation to comply with Building Regulations. It is incumbent upon local authorities to take a proactive approach when basements are built. Given the potential consequences of basements going wrong (see Figure No 3 & Appendix VII), it is surprising that the procedures have not been addressed on a nationwide scale or is the built environment waiting for a “Grenfell” tragedy before the authorities take notice?

2.1.2.2 Avoiding special foundations

It is possible that an adjoining owner will consent to the construction. Furthermore, just because a building owner is proposing to construct a reinforced concrete basement box, conflict will not arise if two like-minded surveyors are appointed and accept the Chaturachinda decision. In such circumstances it therefore follows that the adjoining owner will not be advised of their right to veto special foundations under section 7(4) of the Act. However, there remains a risk that a surveyor will hold a contrary view i.e., that the Chaturachinda decision is wrong in law, and then conflict arises. The building owner’s overriding objective is to build his basement, avoiding conflict. So, using a variety of established accepted construction techniques that do not require an assemblage of beams or rods will avoid this outcome (see Section 2.2.5 below).

2.1.4 Subterranean development Bill

Given the growing demand for basements, and the absence of any statutory legislation, is it now time for comprehensive guidance and separate statutory legislation? The concerns regarding unregulated basement works were raised when a working party drafted an outline proposal for a Private Members Bill to regulate basement construction. Lord Selsdon, introduced the Bill's first reading into the House of Lords on the 8th December 2011, *"to make provision for the presumption against the granting of planning permission in respect of subterranean developments where certain conditions apply; and/or connected purposes"*. An obvious criticism of the Bill which is comprised of two (A4) pages and only six sections, is the lack of content and robust justification for additional legislation.

The Bill sought to remove the local planning authority's jurisdiction to grant planning permission under section 58 of the Town and Country Planning Act 1990, unless the applicant could demonstrate that this is reasonably necessary for the reasonable enjoyment of their property.

Section 1: defined a subterranean development as *"a development which comprises of excavation or building below ground level other than for the purposes of repairing, strengthening or supporting an existing building or structure"*. In other words, excluding underpinning and structural repairs.

Section 2: recognised the difficulties of building a basement within a flood plain (see Section 5.4.3).

Section 3: addressed the difficulties of building beneath terraced housing.

Section 4: intended to incorporate the right for local opposition to voice their concerns and/or to submit grounds to prevent a subterranean development from proceeding. Unhelpfully, the Bill did not set out what would be considered reasonable grounds for objecting.

Section 5: focused upon the perception that subterranean developments may create inconvenience and nuisance to neighbours, without providing any substantive information

as to how that perceived nuisance would be addressed, or how it differed from other building works.

Section 6: attempted to restrict the Bill's jurisdiction to England.

The Bill's second reading of the 10th February 2012 failed because the Government was unwilling to support new primary legislation. Their Lordships deferred to the current planning consultation protocols, which granted rights to reject applications where there were justified grounds to do so, and as such felt this Bill was an unnecessary piece of legislation. It was clear that the intention was to impose stricter limitations that remove or interfere with the rights of property owners desiring to improve their property, which could have raised and impeded a property owner's human rights. Therefore, basement works continue to evade stringent planning constraints, and in the absence of any specific legislative control over basement developments, it falls upon existing legislation such as the Act to control these works. Astonishingly those involved in drafting the Bill failed to recognise the importance of the Act and specifically the restrictions imposed under section 7(4), which allows a neighbour to veto such works when the basement is constructed underneath a party wall and is therefore projecting onto the adjoining owner's land.

2.1.5 Work-based learning

There is no legal requirement for a party wall surveyor to have any formal or professional training or qualifications prior to accepting an appointment. This is surprising given that this involves accepting a quasi-judicial role, subject only to challenge by way of an appeal. Whilst the majority practising in this specialism are professionally qualified (CABE, CI Arb, RICS, RIBA etc.), it does not follow that they have received specific academic or formal training under the Party Wall Act. Most of the experience in this field is gained through work-based learning and seminars. Raelin's model of work-based learning (see Figure No 4) considers the ability to *"...uncover and make explicit to oneself what is planned, observed, or achieved in practice."* (Raelin, 1997, p.567). Non-professional backgrounds also achieve learning through work-based experience, and some academic institutions now include (e.g., Anglia Ruskin University) party wall modules within their curriculum.

Raelin's conceptual model illustrates work-based learning through reflection, action to conceptualisation and experimentation, with the development and transition of theory into practice.

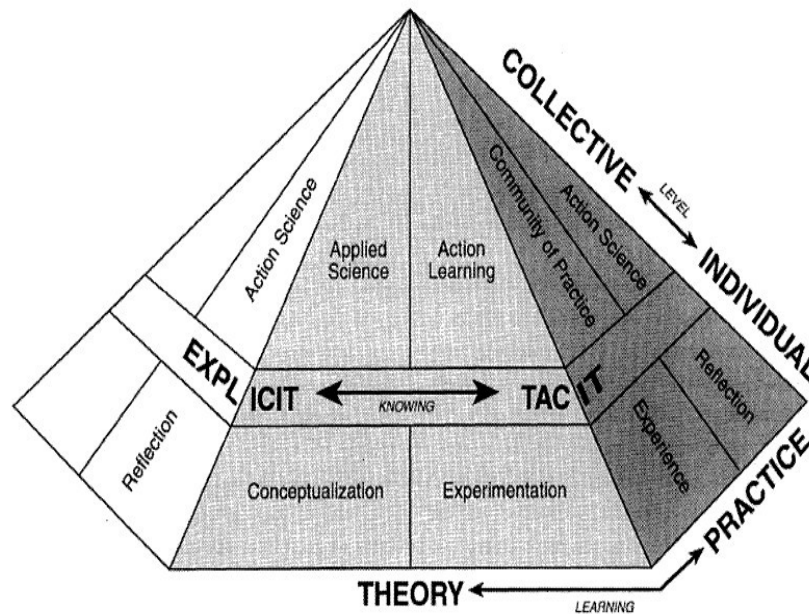


Figure No 4 Raelin's work-based learning model

2.2 Established Accepted Basement Construction Techniques (Objective 1)

Not all basement constructions are new works, some involve conversion of existing basements to create usable environments. Section 2.2.5 sets out accepted basement designs, however, the difficulty faced by the party wall community, is whether these designs trigger the section 7(4) veto. Whilst, it is unusual for party wall surveyors to have any involvement in the design process or the method of construction, early involvement will provide an opportunity to influence the design to increase the possibility that the works proceed without any dispute. Whilst it is relatively straightforward to determine whether an element of the structure is a "foundation", the question this research seeks to solve is which element triggers the special foundation and section 7(4) veto definitions?

2.2.1 Accepted basement and cellar designs

There are a wide range of accepted basement construction techniques used to form the basement walls (Butcher, 2007, p.16) and there are numerous factors influencing the design process. Most certainly the geotechnical make-up, and the construction of existing structures will influence the design and are classified as:

- (a) cellar extensions;
- (b) new single level basement;
- (c) new multi-level basements.

2.2.2 Cellar extensions

Cellars were commonplace in Victorian properties, generally used for the storage of fossil fuels, they were not designed for habitation and had low head heights, were devoid of any damp proofing and are the least complex form of construction, involving brick spreader foundations (see Figure No 5). Converting a cellar to a basement where brick spreader walls are used as both a foundation and a retaining wall requires cutting away the stepped brickwork to form a vertical plane and the introduction of traditional underpinning foundation pads to the appropriate depth, around the perimeter of the building's footprint. The underpinning is executed in a series of non-sequential gradual steps and relies on the integrity of the surface wall to share load whilst small sections are progressively undermined (Ove Arup, 2010, p.9). Once the perimeter underpins have been formed, the remaining central bulk of the soil is excavated to the appropriate depth and a new basement floor slab is formed.

Method:

- (1) expose the top of the existing foundation by removing the existing floor construction along the edge of the wall and foundation that is to be underpinned;
- (2) excavate along the existing foundation in a series of small sections typically 1–1.2 m in length but certainly not exceeding 1.2 m. The process adopts a hit and miss approach with the bays being individually excavated non-sequentially;
- (3) position reinforcement (if specified) and pour the concrete;
- (4) these pins are left to cure;

- (5) the process is then repeated until all of the pins have been formed creating a contiguous foundation; and
- (6) it is common practice to insert starter bars horizontally between the pins to bond them together unless reinforcement is specified.



Figure No 5 Stepped brick spreader foundation to basement wall

2.2.3 Single level basements

A single level basement is the formation of a new level below an existing footprint where no cellars or voids previously existed. Underpinning is the common method of construction by inserting foundations below the existing building to the level of the proposed new basement floor (Baxter, 2013, p.17). Before commencing any underpinning activities, it is appropriate to consider the practical issues that relate to the construction process for retrofit basements. Although the construction process is the same irrespective of whether mass concrete underpins (see Diagram Nos 10, 11, & 13) or a reinforced box is formed (see Diagram Nos 12, 14–16). Whichever method is adopted, both supplant the original foundations by underpinning them.

2.2.4 Multi-level basements

This involves creating multi-levels below the existing footprint and in some circumstances beyond it, which increases the probability of building below the ground water level. This is an additional complication and will increase costs to any basement construction project (Haslam and O'Connor, 2013, p.2), the method of construction is the same as 2.2.3.

2.2.5 Accepted basement construction designs

Diagram Nos 10 & 11 adopt a mass concrete underpin foundation with an independent reinforced concrete floor slab. The basement walls rest upon the slabs and therefore do not satisfy the Act's definition of a foundation.

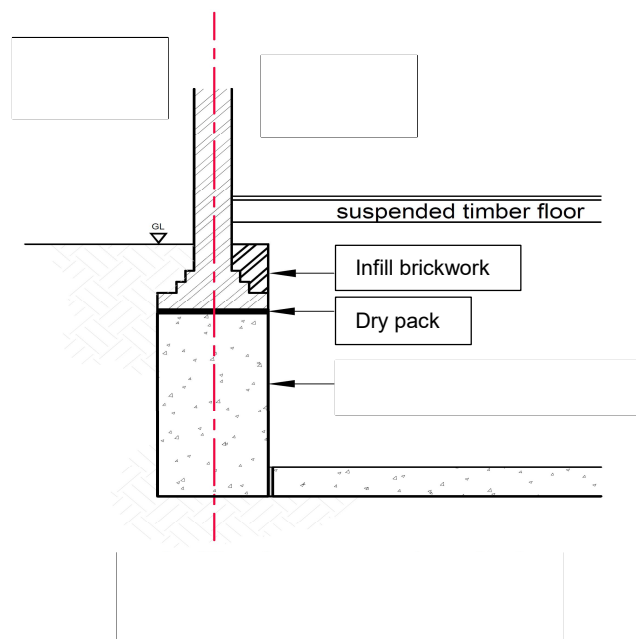


Diagram No 10 Mass concrete underpinning with independent mass concrete floor slab (Pole, 2012, p.49)

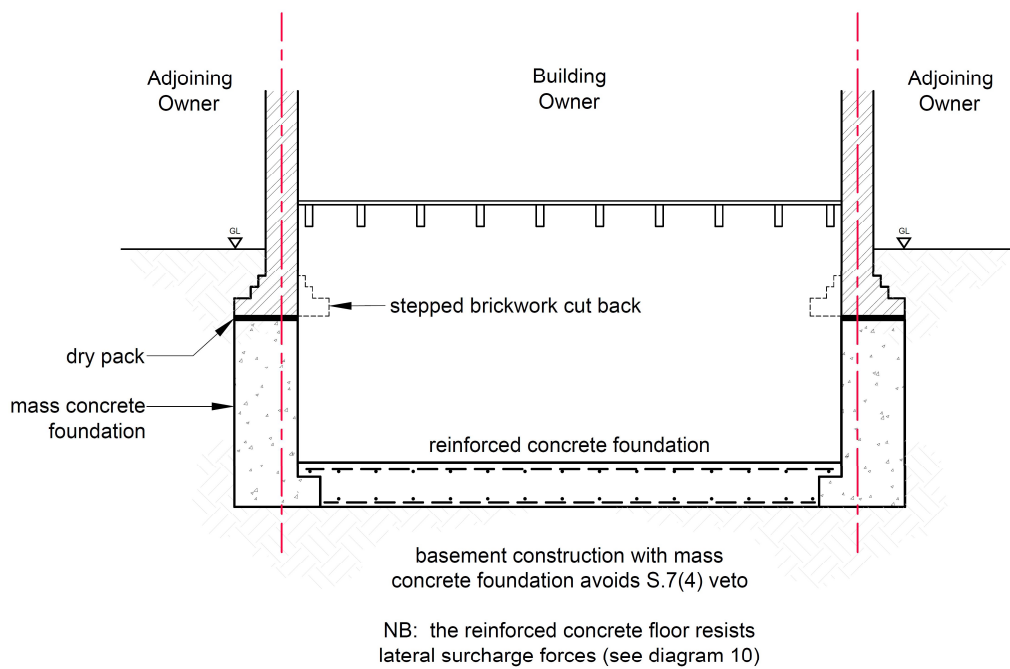


Diagram No 11 Concrete strip for full width of spreader foundations with independent reinforced slab

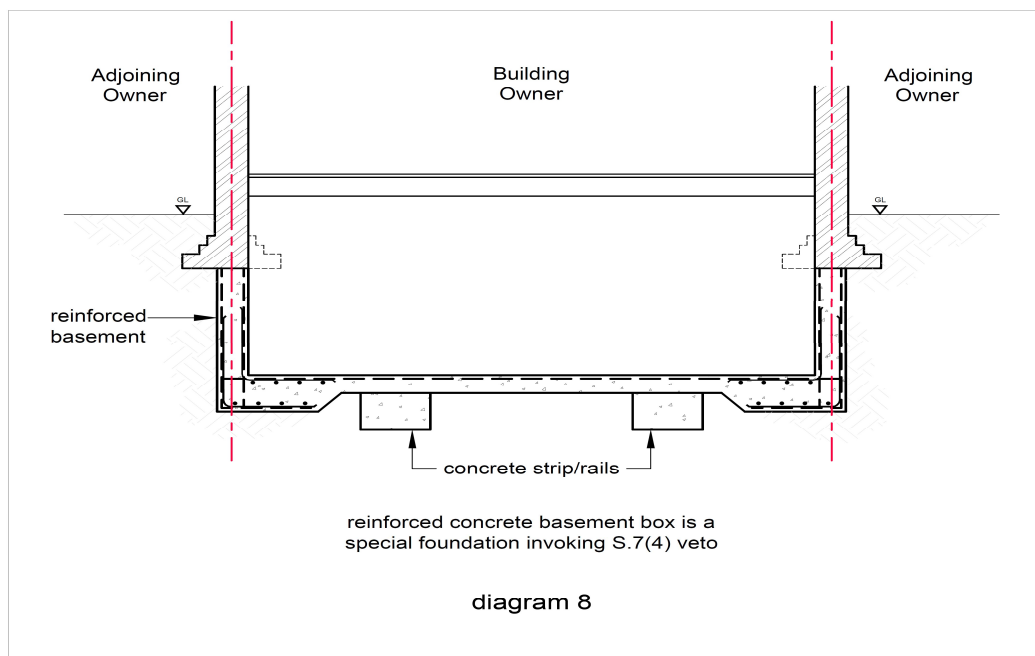


Diagram No 12 Section through a reinforced concrete box astride the line of junction, with concrete central rails beneath the floor slab (Ferguson and Ferguson v Lloyd-Baker)

Diagram No 12 has a reinforced concrete basement box beneath the party wall to create a contiguous structure when linking the vertical and horizontal elements through the reinforcement. Two mass concrete rails beneath the slab are introduced and are alleged to be the foundation to avoid the section 7(4) veto.

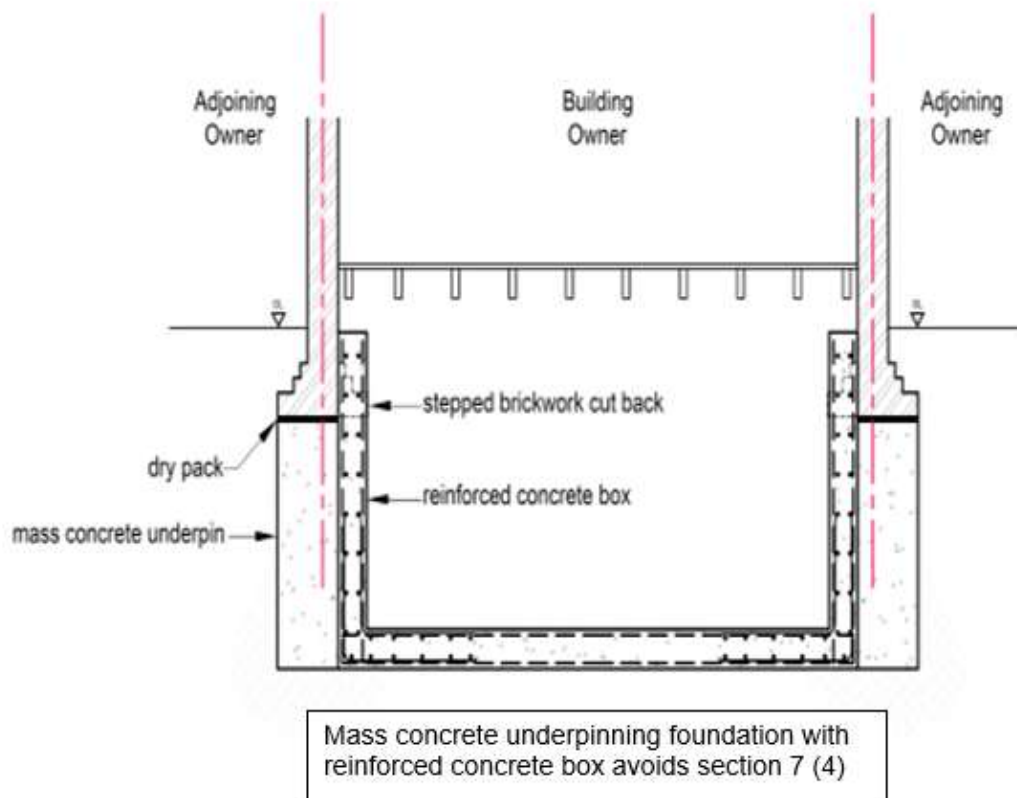


Diagram No 13 Mass concrete underpin foundation with an internal reinforced concrete box

Diagram No 13 work does not require written consent under section 7(4) because the mass concrete underpin is not reinforced. However, the mass concrete projects past the face of the party wall and therefore could be challenged by the adjoining owner.

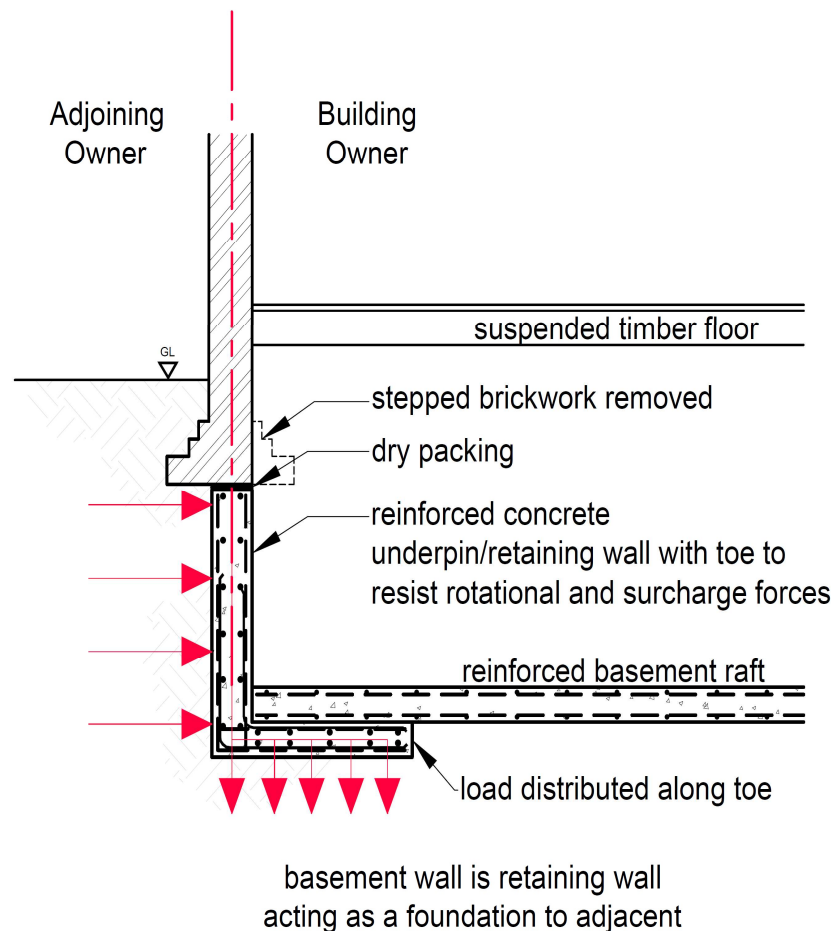


Diagram No 14 Distribution of lateral and vertical forces through a reinforced concrete retaining wall with a reinforced, unconnected concrete floor slab (Pole, 2014, p.49)

Diagram No 14, incorporates a reinforced concrete underpin foundation/retaining wall with a reinforcement concrete toe beneath the existing party wall. The function of the “toe” is to prevent rotational movement when lateral forces created by the retained soil are imposed on the concrete retaining wall. The loads are directed downwards through the vertical elements of the underpin and then distributed onto the soil through the toe, which evenly transfers any load to the ground. A reinforced concrete slab is then poured, resting upon but not tied to the underpinned retaining wall which is a special foundation.

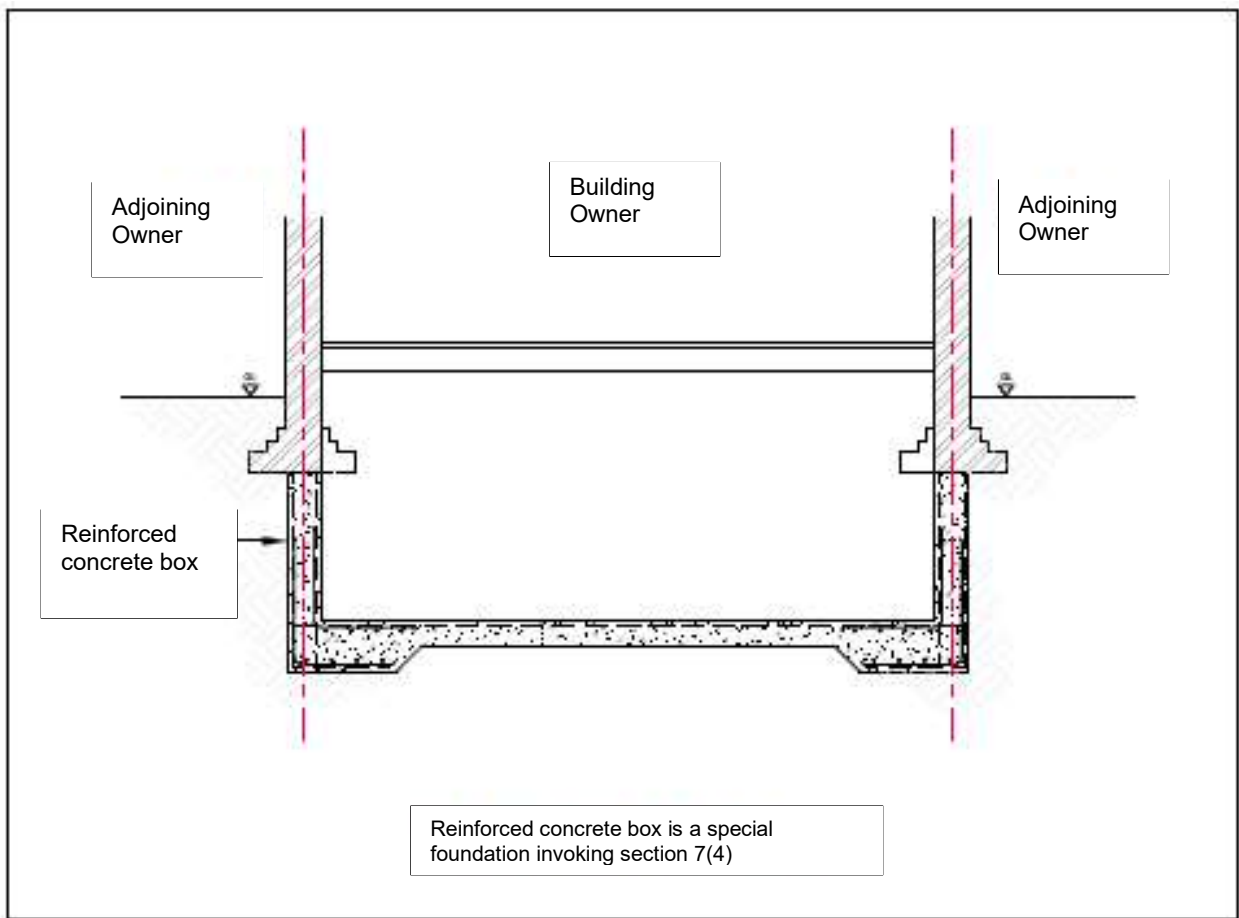


Diagram No 15 Reinforced concrete box with perimeter beam (Antino, 2012, p.221)

Diagram No 15 is similar to diagram No 12 with one significant difference being the removal of concrete rails. The thickened perimeter slab continues to distribute loads created by the combined weight of the soil and structure above the basement box and is a special foundation.

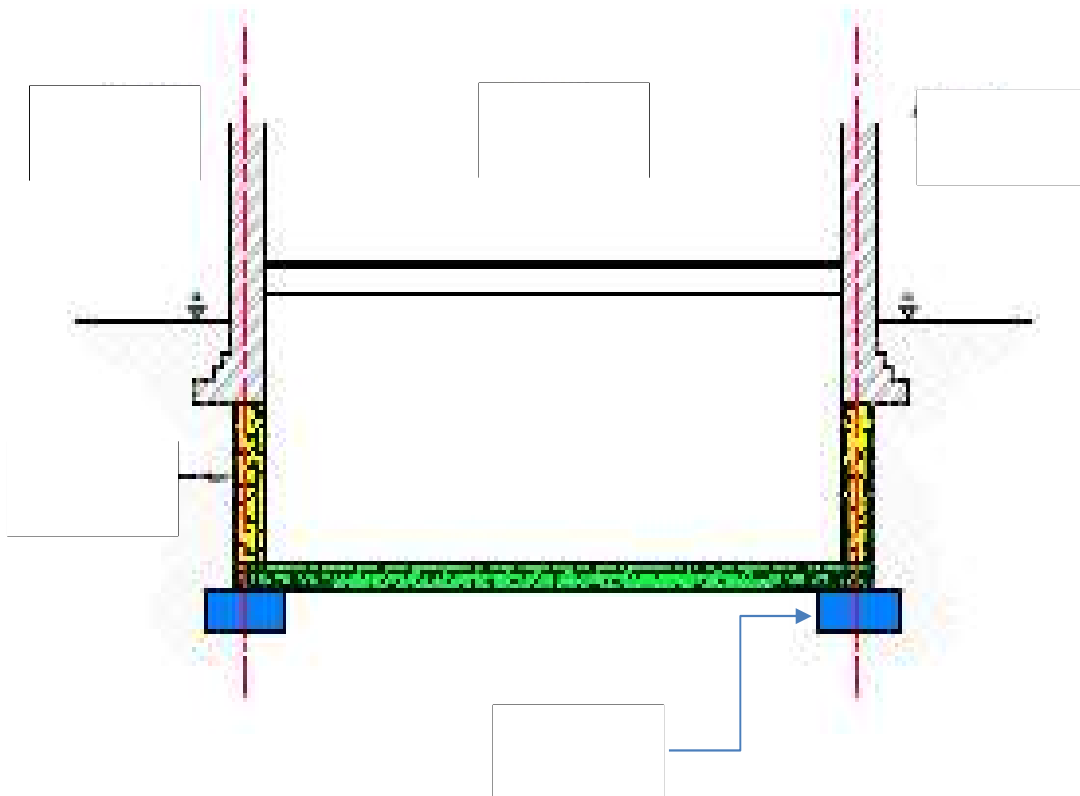


Diagram No 16 Chaturachinda (2015) approved scheme non-compliant section 1(6) mass concrete strip beneath a reinforced concrete box

Diagram No 16, the Chaturachinda design wall mass-filled concrete rails sit directly below the slab and perimeter wall. Some surveyors consider the concrete rails to be the foundation and avoid the section 7(4) veto, even when it is accepted that the function is superfluous to the distribution of loads.

Diagram No 17 is a reinforced concrete basement box with a mass-filled concrete rails up to but within the Line (boundary) of junction. The question is whether the mass concrete rails are a foundation as defined under the Act or not (see Diagram Nos 16 & 17).

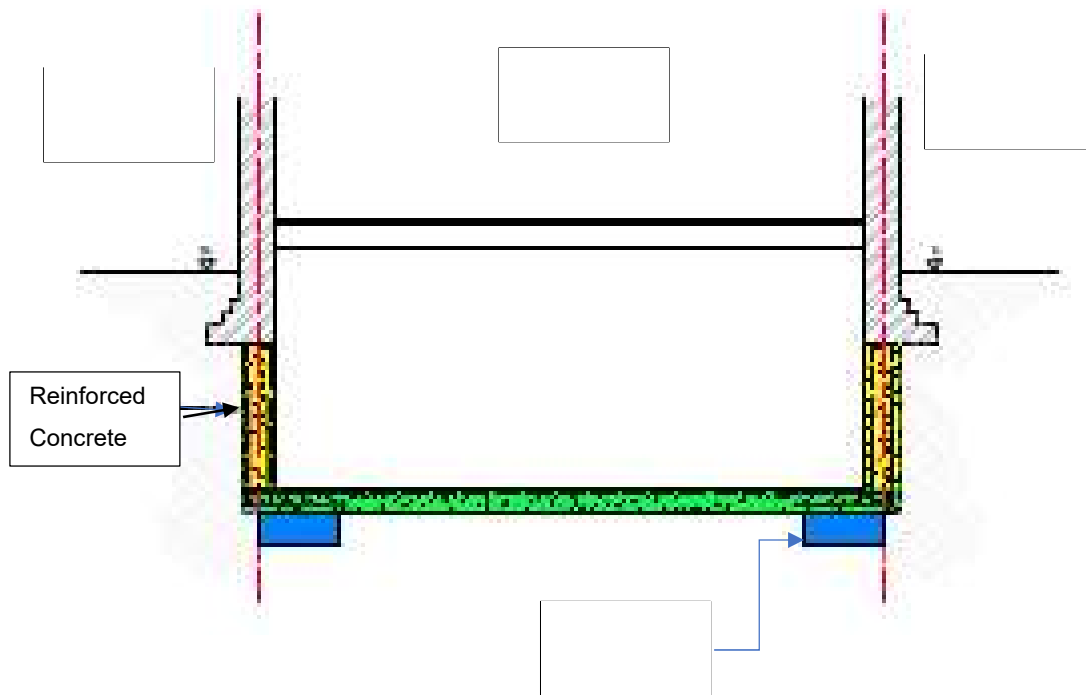


Diagram No 17 After Chaturachinda (2015) section 1(6) compliant mass concrete strip beneath a reinforced concrete box

Table No 6 discusses eight accepted basement designs and whether they are a special foundation or not, triggering the section 7(4) veto.

Table No 6 Summary of accepted basement designs and foundation classification

Diagram No	Foundation	Special Foundation	Section 7(4)
10	✓	X	X
11	✓	X	X
12	X	✓	✓
13	✓	X	X
14	✓	✓	✓
15	X	✓	?
16	?	?	?
17	?	?	?

2.2.6 Mitigation by design

If as anticipated by this research, the gap in knowledge is resolved with a coherent agreement on whether a basement is a special foundation, designing out any conflict will become a necessity to avoid the issue altogether. In 1931 the London County Council (“LCC”) formed an Advisory Committee (“AC”) to assess the potential impact of the LBA and to propose any necessary amendments. The AC suggested that the LBA could be improved to accommodate the technological advancements in construction techniques with the following narrative to assist with the establishment of various foundations:

- 1 A foundation in relation to a wall having footings means the solid ground or artificially-formed support on which the footings of the wall rest but in the case of a wall carried by a **Bressumer**, (a timber beam acting as a lintel) (emphasis added).

- 2 A special foundation is a structure **entirely below the surface** of the adjoining ground, which is employed for the purpose of distributing the load from columns, beams, or walls onto the ground and this **may include any retaining or other wall based upon the ground**, provided that it is of sufficient strength and stability to carry its own weight adequately, together with **all imposed loads and forces** (emphasis added).

- 3 **Below the level of the lowest floor of the adjoining owner’s buildings**, grillage foundations can be used to support the columns and the owner’s building, but that this power should not be exercisable without the adjoining owner’s previous consent in writing (emphasis added).

- 4 That the building owner shall have a right to construct grillage foundations for columns of the building owner under a party wall, provided they do not, without the consent of the adjoining owner, **project beyond the footings or foundation concrete** of an ordinary wall (emphasis added).

The AC believed that an element is not determined by the material components, but by its function. Therefore, the AC looked beyond the rights of building owners to achieve a greater understanding of the potential issues that may arise and considered the implications on the adjoining properties, with an emphasis on “function” rather than the narrow descriptive title given to construction techniques. For example, recognising that the function of a bressumer to support and transfer loads safely, is the same function as that of a foundation. Clearly, the AC felt it was necessary to include a bressumer (lintel) within the context of a foundation.

Applying that approach to a retaining wall with spreader brickwork (see Figure No 5) the respective functions were to support lateral loads and transfer them downwards. Having recognised that function was an important factor of the design process, the AC focused on the difficulties created by modern construction techniques, such as the inclusion and arrangement of steels (“grillages”) to form a foundation. The AC recognised the need for an additional definition (see point 2 above) to accommodate this innovative design, thus, the introduction of the word “special” was included together with a retaining wall or other wall resting upon the ground where its function is to distribute loads. Based on the AC’s interpretation any part of the structure below ground level, irrespective of the material used for its construction, would be classified as a foundation. Section 2.1 of the Building Regulations Approved Document provides guidance for the minimum thicknesses and depth of foundations. Approved Document A1 introduces the only qualification that a foundation must demonstrate, which is to “*safely transfer the loads onto the ground*” which coincides with the Act’s definition.

In general terms, greater data will be required about the soil composition and conditions when designing a basement than for a conventional foundation (Butcher, 2007, p.15). There are nearly always trade-offs between the architectural design, costs, and the value added by the space (Haslam and O’Connor, 2013, p.60). The P&T advise “*if a foundation relies on reinforcement for distributing loads, then the whole foundation is likely to be special, even if part of it does not include reinforcement*” (P&T, 2016, p.131). A foundation with limited reinforcement (see Diagram No 18) will still satisfy the special foundation definition. A raft foundation is also a special foundation. The right to project foundations onto the adjoining owners land respectively requires the projection to be “necessary”, and the adjoining owners written consent.

S.1(6) (a) & (b)

“(6) Where the building owner builds a wall wholly on his own land in accordance with subsection (4) or (5) he shall have the right, at any time in the period which-

(a) begins one month after the day on which the notice mentioned in the subsection concerned was served, and

*(b) ends twelve months after that day, to place below the level of the land of the adjoining owner such projecting footings and foundations **as are necessary** for the construction of the wall”* (emphasis added).

S.7(4)

“(4) Nothing in this Act shall authorise the building owner to place special foundations on land of an adjoining owner without his previous consent in writing.”

It is possible to avoid both qualifications (see Diagram Nos 10, 11 & 13) by mitigation through design. However, it must be recognised that reliance on section 1 can also introduce difficulties because:

- (i) Section 1 only applies to building new walls on the line of junction, which excludes a basement box because it is across the line of junction;
- (ii) Section 1(6) introduces the qualification, that the foundation must be “necessary”; if an alternative design will remove the projecting foundation is, by definition, unnecessary (see Diagram No 19).

Achieving clarity requires the engineers to be aware of the section 7(4) veto, which will only arise if the party wall surveyors are involved during the design process. A traditional “foundation” design will have the wall positioned on the centre (see Diagram Nos 1–6) of the foundation. However, increasing the width of the foundation enables it to be moved over so that the external face of the foundation and wall can be built on the line of junction (see Diagram No 19). This complies with section 1(5) whilst demonstrating that it is not necessary to project any foundation onto an adjoining owner’s land. However, that cannot work with basements, because the basement box must be directly beneath the party wall and therefore across the line of junction, which creates a trespass. It was argued in *Chaturachinda* (see Section 7 below) that no trespass has occurred because the basement wall is only an extension of the existing party wall and therefore not a foundation.

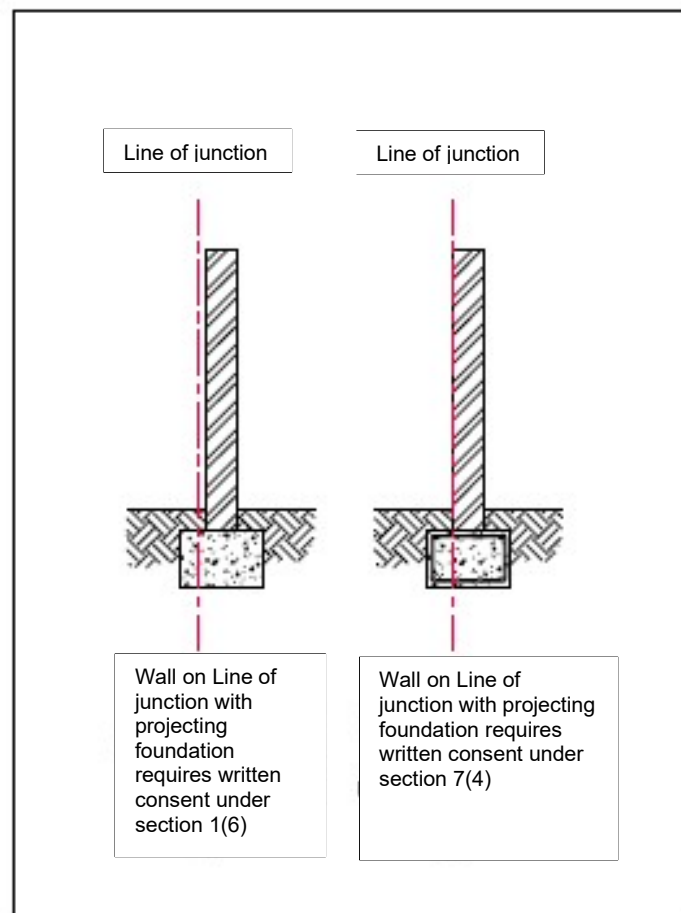


Diagram No 18 Definition of wall on the line of junction with a projecting foundation (Antino, 2012, p.45-46)

The risk of damage to both the structure above the basement and the adjoining buildings caused by induced ground movement (excavation) including the potential for legal proceedings arising from damage to third-party property and structures, is significant (Ove Arup, 2010, p.33). As evident (see Figure No 3 & Appendix VII), the opportunity for something to go wrong is increased when tunnelling beneath an existing structure. The design team has an implied duty of care to minimise this risk and should include a broad spectrum of experienced specialist contractors, engineers, and party wall surveyors as part of the team. The combined experience and knowledge would benefit the client by adopting a proactive rather than reactive approach. The structural stability and condition of any existing structures must be assessed to ensure that any zones of failure or separation can be predicted (Haslam and O'Connor, 2013, p.71). An assessment of the existing building and adjoining owner's building must be undertaken, to identify any pre-existing movement and/or damage. For this assessment reference should be made to the

Building Research Establishment Digest No 251 (1995) ("BRE") which classifies the cracks by width, pattern and means of repair.

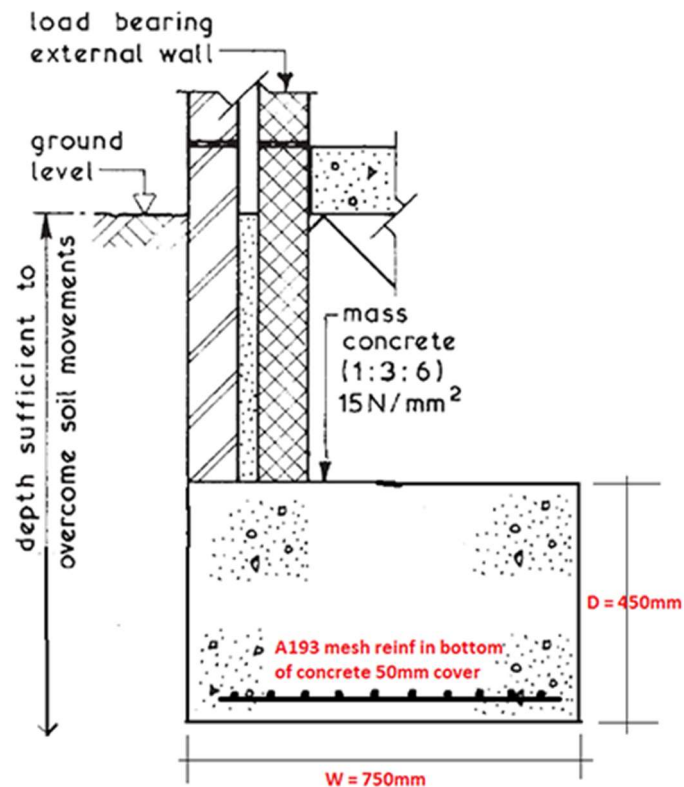


Diagram No 19 Offset foundation with reinforcing mesh (*mypropertyguide, 2018*)

A basement becomes the single integral element of the building's foundations and consideration of the building regulations approved Document A "structure" is necessary (Butcher, 2007, p.18). Understanding how the loads from the existing and adjoining structures and ground are transferred to the basement (see Diagram No 14) without causing movement is a fundamental part of the structural function. The temporary works engineer will prepare proposals for preventative works which will include (if necessary) setting up a monitoring system to record movement of the adjoining structures, before, during, and after the works. Monitoring stations will be fixed on the adjoining buildings and measurements will be recorded, applying a traffic light approach i.e., red, amber, and green measurements are referenced back to a deep datum base point. When the movement exceeds the set parameters, the appropriate response is applied:

- Red—stop all works immediately and notify engineers and party wall surveyors;

- Amber—proceed with caution notify engineers, party wall surveyors and closely monitor movement;
- Green—continue with works.

The introduction of external buttress support or some form of temporary support is also an available option to minimise or control movement.

2.3 The Origins and Passage of the Act (Objective 2)

2.3.1 Historical context

The recognition of the need for party wall legislation came about following the Great Fire of London in 1666 and the potential risk that fire posed to the populace and to the built environment. Having started at the bakery of Thomas Farrinor (or Farynor) in Pudding Lane on the 2nd September, it was actually a young Frenchman called Robert Hubert, a watchmaker, who was convicted and hanged on the 26th October 1666. Ironically, Thomas Farrinor, his wife and son are recorded as having falsely given evidence that they had seen “Hubert” cause the fire. Fires before 1666 were not an uncommon occurrence, yet the great fire was by far the worst. John Evelyn had described London as a “*congestion of wooden houses,*” and expressed alarm about the fire hazard posed by the timber construction and congestion (Tinniswood, 2003, p.1–11). London had grown organically without any formal planning or control over the methods of construction, and residential, industrial, and commercial buildings were not segregated. The street plan was essentially an overcrowded, medieval warren of narrow, winding, cobbled alleys. Building with wood and roofing with thatch, although prohibited for centuries, continued to be used (Hanson, 2001, p.11) especially by the poorer inhabitants of the City. Stone and masonry were generally used to construct the mansions of the wealthy merchants and brokers in wide open streets; this created natural fire breaks to limit the passage of fire.

The typical six or seven storey timbered tenement houses had upper floors (“jetties”) which projected beyond the ground floor footprint and as buildings rose in height, they enclosed in on each other, virtually bringing the upper levels of buildings together. Thus, bridging the limited natural fire break that existed at ground level. In 1661, Charles II issued a proclamation forbidding overhanging windows and jetties, but enforcement was largely ignored by local government. The practice of constructing a “jetty” continued until

Charles II proclaimed in 1665, authorising both the imprisonment of recalcitrant builders and the demolition of these dangerous buildings. Regrettably this was not enforced as vigorously as Charles II would have hoped.

The Roman city wall survived the city's earlier brushes with fire that ultimately decimated 13,200 of the 70,000 homes (Tinniswood, 2003, p.1–11). After three days, the conflagration had devastated St Paul's Cathedral and there were concerns that areas such as Westminster, the Palace of Whitehall, and most of the suburban slums would be raised to the ground (Porter, 1994, p.80). The fire spread towards the east and south across the river gutting the medieval City of London that existed within the old walls. Eighty-seven parish churches were affected together with St Paul's Cathedral and most of the buildings of the City authorities. The Lord Mayor (Sir Thomas Bloodworth) did not have the experience, leadership skills or natural authority to take charge of the situation (Tinniswood, 2003, p.44). His indecisiveness delayed the mass use of firefighting techniques (as basic as they were in those times) which in any event, were woefully inadequate for a fire of this magnitude. This hesitation combined with a refusal to authorise the demolition of buildings to create fire breaks, did not provide any effective resistance to the spread of the fire.

Whilst the Thames created London's wealth and development, simultaneously it created a significant risk of fire because the dockside warehouses and cellars were full of combustible materials such as Tar, Pitch, Hemp, Rosen, and Flax (Tinniswood, 2003, p.45-46). Stock piles of hundreds of tons of gun powder were stored in the Tower of London (Hanson, 2001, p.111), and the ship chandlers along the wharves also held large stocks of gun powder stored in wooden barrels. In the event of an outbreak of fire, the ability to control the spread was virtually non-existent. Conversely, the Thames also provided the most important element required in firefighting i.e., a never-ending source of water; although in 1666 firefighting personnel, equipment and techniques were limited.

2.3.2 The rebuilding of London

The Great Fire demonstrated the need to eliminate both the threat of fire and to provide an effective means of controlling the spread of fire until it could be extinguished. Given that as early 1666, it was recognised that proactive rather than reactive measures were required the Rebuilding of London Act 1666, ("RBA") drawn up by Sir Matthew Hale introduced regulations and controls. The RBA was able to (i) regulate the rebuilding, and

(ii) authorised the City of London Corporation to reopen and widen roads. However, in over 400 years, the risk of fire remains one of the greatest threats to the built environment as recently demonstrated by the Grenfell tragedy.

Encouraged by Charles II, radical rebuilding schemes for the gutted City were proposed with much of the old street plan being retained, but with improvements in sanitation and fire safety. This included wider streets with accessible wharves and unobstructed access to the river. Most importantly, walls between buildings constructed from brick and stone created fire breaks, while simultaneously but unknowingly created the concept of a wall in joint ownership, and therefore created the concept of tenants in common.

2.3.3 The birth of party wall legislation

Whilst the basis of party wall law in London can be traced back to the 12th century “Assize of Buildings” (Whittick, 2007, p.6), formal party wall agreements have existed since 1724 (Chynoweth, 2001, p.127–137). Parliament has since passed a total of 27 successive Acts, with the Great Fire considered to be the genesis of modern building regulations practices (CABE, 2016, p.27). The RBA imposed an obligation to use expensive stone and brick materials to create non-combustible structures. Property owners complied with this requirement and quite rightly took exception when an adjacent owner built onto their stone or brick wall to avoid the high cost of building their own wall. This created an opportunity to sell the right to use the wall, thus the concept of a “joint wall” was adopted. Sharing costs became an attractive prospect recorded through informal agreements, with neither owner considering the potential for later disputes over maintenance or future rights to raise or alter the wall. The development of the current party wall legislation can be followed through successive Acts up to Part VI of the London Building Act (Amendment Act) 1939 (“LBA”) as the predecessor to the current Act which only applied to the inner London boroughs (Smith, 2016, p.25).

2.4 Understanding the Act’s Structure and the Rules of Interpretation (Objective 3)

Ambiguities within the Act make it notoriously difficult to interpret and some of these ambiguities predate the introduction of the current Act (Chynoweth, 2003, p.13).

Ambiguous drafting invites conflict, and disputes, and it is only by the proper application of the Act that the “dispute” can be resolved. As Thomas L.J. observed *“experience has shown in relation to disputes between neighbours, a failure to observe proper formalities is often, as it was in this case, the source of the dispute..... the professionalism of the surveyors experienced in the Party Wall Act will result in a clear agreement as to what is lawfully required.”* (Seef-v-Ho, 2011, p.186). However, if surveyors are in dispute the Act falls at the first hurdle.

Non-compliance is not an option, as this exposes the defaulting owner to an injunction for which there is no defence (Sell and Sell v Mills, 2014). The notice triggers the section 10 procedure, which must be properly prepared to ensure that it is valid, and that the process that arises out of it is also valid (Bickford-Smith and Sydenham, 2009, p.175). The notice should be sufficiently clear and intelligible to enable the adjoining owner to decide what action to take (Antino, 2012, p.35). Surveyors have broad powers over a wide range of matters such as trespass, nuisance, easements, and boundary location (line of junction), if the proposed works are notifiable. In the researcher’s 41 years of experience, reflective analysis suggests there are four reasons why building works start prior to the service of notice:

- 1 Ignorance, although fast becoming extinct as the public and professionals become better informed of their obligations;
- 2 The surveyor’s assessment is incorrect;
- 3 To purposefully avoid the statutory procedures because of the potential costs and time implications; and
- 4 Undertaking work that is not permissible under the Act, such as placing special foundations on an adjoining owner’s land.

If notice is not served the adjoining owners should request that notices are served in compliance with the Act. This approach is the most sensible and economical way to comply with the statutory procedures. If the request is ignored or refused, an injunction forcing compliance with the Act should be obtained.

2.4.1 Notifiable works-exploring the definition of party wall structures

Few disputes will raise passions as strongly as boundary disputes and establishing the position of the line of junction (boundary) is fundamental to establishing the right to

execute works under section 1(5). The Access to Neighbouring Land Act 1992 (“ANLA”), only applies to works of repair or maintenance and not to new works, hence the need for the Act. Being notified of a potential interference with an owner’s property rights, raises a feeling of a loss of control, personal wealth, and status that most people associate with owning property (Kennedy, 2009, p.2). This inevitably creates an emotional reaction that results in an immediate declaration that they will not be allowed to undertake their works.

The Act recognises the difficulties that new works may cause to an adjoining owner’s property and provides a resolution for works under three criteria:

- (i) Section 1 building on or across the line of junction;
- (ii) Sections 2 & 3 Works to the party wall; and
- (iii) Section 6 Excavations within certain distances.

A party fence wall is a freestanding wall positioned across the boundary (see Diagram No 5). The construction of a new party fence wall requires a notice under section 1(2) and can only proceed if the adjoining owner consents. The cost of the wall and future maintenance shall be defrayed by both owners, as the wall is now in joint ownership. When building on the line of junction, notice must be served under section 1(5), which creates a right of access to construct the wall. The adjoining owners cannot stop these works, but they can through their surveyor, impose limitations such as working times, and insist on protection to their property i.e., sheeting up and the removal of materials at the end of the working day. Projecting the foundation across the line of junction is only allowable if this is deemed necessary. There is seldom, if ever a need to project foundations of a new wall onto the adjoining owners land, (see Diagram No 19).

2.4.1.1 Works to a party wall

In *Watson v Gray* (1880) the learned judge recognised the difficulties that owners face when untangling a convoluted conveyance to determine the extent of the parties’ demised property. Without the benefit of the section 20 definitions of a type (a) or (b) party wall, those problems would remain. This judgment raised the possibility of there being more than one type of party wall. The Judge raised the question: “*what is the meaning of the term party wall as their used?*” The Judge held: “*the words appear to express meaning rather than legal title, and they may, I think, be used in four different senses*”.

- (i) The first may mean a wall of which two adjoining owners are tenants in common as in *Wiltshire v Sydford* (1827) and *Cubit v Porter* (1828). I think that the judgments in those cases show that this is the most common and primary meaning of the term.
- (ii) The second term may be used to signify a wall divided longitudinally into two strips, one belonging to each of the neighbouring owners.
- (iii) Thirdly the term may mean a wall which belongs entirely to one of the adjoining owners, but is subject to an easement or right to the other to have it maintained as a dividing wall between the two tenements. The term is so used in some of the building Acts.
- (iv) The fourth term may designate a wall divided longitudinally into two moieties, each moiety being subject to a cross-easement in favour of the owner of the other moiety.

The Act recognises two types of party wall across the line of junction and a “type a” party wall (see Diagram Nos 1 & 2). The second is a wall positioned wholly on one owner’s land (see Diagram Nos 3 & 4) but enclosed upon either in part or in full by an adjoining structure, the enclosed section of wall being a “type b” party wall.

However, the section 20 definitions also include “party structures” such as a floor separating two apartments. The presumption being that the centre of the floor is the centre of the party structure. This creates the same obligation to serve notice and would also include walls that separate buildings from common areas. However, in practice establishing the degree of enclosure of the wall or the relationship between the boundary and the wall can be a complicated process to establish if notifiable works apply.

Section 2(2) states that a building owner shall have the following rights:

*“to underpin, thicken or **raise a party structure**, a party fence wall, or an external wall which belongs to the building owner and is built against a party structure fence wall”* (emphasis added).

Section 2(2)(a) clearly authorises the right to raise a party wall, and following *Standard Bank of British South America v Stokes*, (literal reading), there is no reason why the building owner cannot raise the wall downwards. An owner can resist the raising of a “type b” party wall either upwards or downwards as held in *Methuen-Campbell v Walters* (1979), *“that for one piece of land or building to fall within the curtilage of another, the former must be so intimately associated with the latter as to lead to the conclusion that the former in truth forms part and parcel of the latter.”* Careful consideration must be given to determining the correct classification of the wall before authorising such works.

The Law of Property Act 1925 (“LPA”) provides a helpful definition of a party wall, under section 38(1):

“where under a disposition or other arrangement which, if a holding in undivided shares had been permissible would have created a tenancy in common. A wall or other structure is, or is expressed to be made a party wall or structure, that structure shall be and remains severed vertically as between the respective owners, and the owner of each part shall have such rights to support and use over the rest of the structure as may be requisite for conferring rights corresponding to those which would have subsisted if a valid tenancy in common had been created”.

The above extract clarifies which parts of the structure can be defined as a party wall, where there is insufficient documentary evidence that would otherwise establish if the wall were on or across the boundary. A person can contest the validity of a party wall or structure, they may do so under section 38(2) of the Law Property Act 1925, which states as follows:

“any person interested may, in the case of a dispute, apply to the Court for any Order declaring the rights and interests under this section of the person interested in any such party structure, and the Court may make such order as thinks fit”.
(The owner’s options and rights to remedy any purported trespass or interference are defined under 38(2).)

Excavations: If excavations trigger the two criteria i.e., depth and distance detailed in section 6(1) or (2), notice must be served (see Diagram Nos 7 & 8).

Section 6(6) requires that notices must include drawings showing the location and depth of the intended excavations along with such particulars of the proposed works as are reasonable, necessary, and available at the time of preparing the notice. That implies an obligation to advise of any special foundations, and their rights to veto the works under section 7(4). Depending on the surveyor's personal interpretation the adjoining owners may never be advised of their rights under section 7(4). Structural calculations if available should accompany the notice because excavations and indeed construction will always—inherently and unavoidably—cause some movement in the surrounding ground (Ove Arup, 2010, p.33).

The reason for notification flows from the common law right of support that is entitled by an adjoining owner's ground, this is recognised as an easement. Section 9 of the Act prohibits an interference with existing easements (Bickford-Smith and Sydenham, 2009, p.157). There are numerous types of foundations (trench, mass fill, pile, raft, pad and beam), although the Act provides only two definitions, the only difference being the inclusion of an assemblage of beams and/or rods. It is therefore important that the party wall surveyors recognise the distinction between the two definitions when advising their respective appointing owners, architects, or engineers.

The obligation not to cause unnecessary inconvenience will involve consideration of the particular method to be used for carrying out the works (Hannaford and Stephens, 2004, p.57). The Act recognises and addresses this under section 7(1), which gives the surveyors jurisdiction to limit the timing and manner in which the works are undertaken. Section 7 contains five sub-sections whose unifying thread is designed to protect adjoining owners (Bickford-Smith, and Sydenham, 2009, p.61). Surveyors have a duty to require the building owners to consider an alternative foundation design to remove any inconvenience. It is irrelevant if an alternative design is more expensive or difficult to construct.

2.4.2 Administrating the Act

Penalties for breaching the statutory duty: If the building owner fails to serve notices or stop notifiable work when called to do so, the only remedy is to seek injunctive relief. Judges will take a dim view when an owner ignores the Act, and breaching an injunction is a serious offence which can carry a custodial sentence. HHJ Murfitt (*Rusciani v Kumar & Sharma*) made this quite clear, *“Bearing in mind that they were in litigation by this stage, their failure to consider any party wall notice, seems to me indicative of their dismissive approach to the Claimant’s concerns and of their cavalier regard for the terms of the injunction to which they were subject to an injunction”* and ordered the defendants to pay £10,000.

Surveyor’s jurisdiction: *“The activities of surveyors are so central to party wall proceedings that I think it is probably helpful to deal with their appointments before dealing with the rights of owners”* (Anstey, 1997, p.9). In *Reeves v Blake*, HHJ Brightman recorded the surveyor’s appointment as *“a quasi-judicial appointment with statutory powers and responsibilities.”* The surveyor’s role is to ensure the notifiable works proceed whilst protecting the adjoining owner’s property rights, and without causing unnecessary nuisance.

Upon receipt of a notice, the adjoining owners/occupiers have three options:

- (i) Consent to the works, bringing an end to the statutory process, unless damage arises after the works have commenced;
- (ii) Dissent and by agreement appoint a single surveyor referred to as the “Agreed Surveyor”; and
- (iii) Dissent and each appoint their own surveyor. They are then required to forthwith select another surveyor referred to as “The Third Surveyor”.

If option (iii) is adopted, section 10(1)(b) requires an owner to appoint a surveyor within 14 days. The letter of appointment must identify the surveyor. Section 10(2) secures the surveyor’s appointment which cannot be rescinded, and the surveyors should exchange their letters of appointment. *“The fact that an owner cannot rescind the appointment of a surveyor under section 10(2) is a regular a source of dismay to appointing owners”* (Isaac, 2014, p.101). The intent is to prevent an owner from frustrating the natural process when a surveyor does not comply with their demands.

Section 20 defines a surveyor as being “any person not being a party to the matters” which is not particularly helpful in achieving a consistent interpretation and approach, because an owner can appoint a member of their family (Sell and Sell v Mills, 2014). Such a close relationship should raise a conflict of interest. In the Sell v Mills case, Mrs. Mills’ father, Mr O’Callaghan was appointed as their surveyor, whilst also being the builder undertaking the notifiable works. The surveyor does not need to have any specific training (Hannaford and Stephens, 20014, p.31). Accordingly, anyone can set up shop as a party wall surveyor with statutory powers.

It is quite clear that an individual must be appointed because both sections 10(5) & (9)(c) make reference to the surveyor becoming incapable and or passing away. Therefore, the surveyor must be an individual (Loost v Kremer) and not a company under section 10(12)(c). If matters proceed to point (iii) above and the surveyors cannot reach an agreement on the third surveyor selection, they must adopt section 10(8) and request the local authority to appoint a third surveyor or they can ask the Secretary of State to make the selection. Thereafter, the jurisdiction of the three surveyors, (referred to as the tribunal) is defined under section 10. However, there is a subtle but important difference between the appointed surveyors and the third surveyor status, the former being statutorily appointed, whereas the latter is only selected. The third surveyor has no active role in the party wall procedure unless called upon by either of the owners or surveyors under section 10(11) to resolve any dispute. In the event that one of the surveyors is incapacitated, or in the absence of a replacement surveyor, the remaining surveyor can, under section 10(10), request the third surveyor to join with him and serve an Award.

The surveyors have broad powers as the Court of first instance to deal with “*any matter arising out of or incidental*” to these works. Once they are satisfied all reasonably foreseeable issues have been addressed an Award is served. The legal principal ‘*res judicata*’ prevents an appeal under section 10(17) after 14 days of service. Thereafter the Award cannot be challenged unless a declaration of invalidity is obtained.

Incapacity: When an incapacity under section 10(5) & (9) arises, the owner must appoint a replacement surveyor. If they fail to do so, there are fall-back methods of appointment and selection (Bickford-Smith and Sydenham, 2009, p.83). To do so, the remaining surveyor shall serve a section 10(4) (a) & (b) request upon the opposite owner requesting they appoint a replacement surveyor within 10 days, thereafter the opposite owner can appoint a surveyor on their behalf.

It was not commonly recognised until the *Bibizadeh v Dodosh* (2015) case, that a section 10(4) (a) & (b) request could be served by the adjoining owner's surveyor and served on the building owner before party wall services had been invoked or consented to. The Bibizadeh's Counsel challenged the surveyor's section 10(4) appointment on the grounds that the original surveyor's grounds for deeming himself incapable under section 10(5) were not genuine and suggested that as a prerequisite to any incapacity the surveyor should be able to demonstrate that a genuine incapacity had arisen. HHJ Bailey *obiter dictum*: "*I entirely agree*" and upheld the appointment on behalf of the building owners. However, in the *Mills v Sells* case, HHJ Bailey created conflict when considering the claimed incapacity of a surveyor, because his appointing owners claimed not to be able to pay his fees. Somewhat surprisingly HHJ Bailey suggested *obiter dictum*: "*it is entirely open to any surveyor to deem himself on any grounds*". Parties go to Court to achieve *inter alia* a decision but more importantly, consistency, when a judge as learned as HHJ Bailey provides such conflicting decisions it sends an unhelpful message to the party wall community which only encourages further conflict.

Refusal and neglect to act: A situation may arise (*Bansal v Myers*, 2007) where a surveyor refuses or neglects to act upon a request, to avoid delays of this nature the Act introduced sections 10(6) and (7). The former relates to a surveyor's refusal to act, and the latter relates to a surveyor's neglect to act and requires 10-days to pass before the right to act *ex-parte* can be adopted. Notwithstanding, all requests must be (i) clear on what is required, and (ii) explain what will happen if a response is not received. Silence, or an oral or written communication that is evasive, ambiguous, or does not address the request would be considered a refusal or neglect to act. The fact that a third surveyor has been selected does not preclude one of the party's surveyors acting *ex-parte* (*Bickford-Smith and Sydenham*, 2009, p.87). In the 2014 *Patel and Patel* case, the Court held that the 10-day period is at large until one of the surveyors proceeds on an *ex-parte* basis. Therefore, if a reasonable response is received after the 10-day and prior to any *ex-parte* Award being served, the requesting surveyor cannot act *ex-parte*.

2.4.3 Executing the works

Right of access: The concept of unrestricted access is contrary to the principle that an Englishman's home is his castle, (*Antino*, 2012, p.133) however, given the United Kingdom's propensity to historically build close to or onto another property, common laws

have evolved to facilitate such works. Providing the works are for maintenance to preserve the building, the ANLA provides rights of access under section 147 but not for new works such as extensions or basements. Access is addressed in section 8(1) for notifiable building works that require access on or through an adjoining owner's property. The Act would be self-defeating if it could not circumvent an obstructive adjoining owner refusing reasonable access. However, determining what is reasonable access requires careful consideration by the surveyors.

Nuisance and inconvenience: Building works create noise, dust, and general disruption which is often viewed as an inconvenience or nuisance by neighbours, (Antino, 2012, p.123). The Act's obligation to avoid unnecessary inconvenience is central to the working of the statutory regime (Chynoweth, 2000, p.101). Liability attaches to the person creating the nuisance (Bickford-Smith, 2015, p.209) with section 7(2) requiring the building owner to compensate the adjoining owner or occupier for any loss or damage (Isaac, 2014, p.55) but limited to matters arising out of or incidental to notifiable works. For example, constructing a new wall on the line of junction may require placing scaffolding on the adjoining owners land, although clearly inconvenient, this would be deemed reasonable. However, the scaffolding cannot be used to facilitate other works such as the construction of the roof, because the roof is not notifiable. As soon as the wall is completed, the right of access falls away and all scaffolding, building materials, and plant must be removed because the right of access falls away. The obligation to avoid unnecessary nuisance provides a practical framework for the lawful execution of the work and its implications are confronted before the works start (Chynoweth, 2000, p.101).

2.4.4 Easements

An easement is a right enjoyed by the owner of one piece of land over a piece of land owned by someone else (Wood, Chynoweth, and Adshead, 2011, p.196). There are "positive easements" which entitle an owner to perform an act on another owner's property, and "negative easements" preventing another owner from performing an act on another owner's property. Easements, such as rights of light or connections to the party wall that rely on the structural integrity of the wall, are covered by the Act. The obvious consequence of any interference is that the adjoining owner's property will be disadvantaged by such action. This became apparent in one leading case (*Selby v Whitbread*, 1917) after demolition of a public house, and following the construction of a new public house, where a section of the party wall was left exposed and unsupported.

The earlier full enclosure of the party wall had established two easements, being support and protection, Whitbread was ordered to reinstate those easements. In another case (*Crowley v Rushmoor*, 2009), the notifiable works interfered with the adjoining owner's easement of right of support.

Section 9 of the PWA prohibits interference with an easement and a party wall surveyor must be able to (i) identify an easement; (ii) the potential interference with; or (iii) to create an easement. Land enjoys a natural right of support from adjacent land (Hannaford and Stephens, 2004, p.85). Any excavation under section 6(1) & (2) interferes with that easement, hence the reason for service of notice (see Diagram Nos 7 & 8). However, section 9 cannot be unreasonably restrictive and counter intuitive to the application of the legal doctrine of easements. If the interference is temporary then the surveyors should award the works.

2.4.5 The party wall award

Surveyors are required under section 10(14) to "*settle any matter by award*". This is reinforced by section 10(12)(a), (b), (c) allowing the appointed surveyors to determine "*any matter arising out of or incidental to the works*". For example, they can determine the manner in which the works are executed, liability for costs, rights of access compensation, and in some instance's legal costs (Antino, 2013, p.43). This is more in the nature of an expert determination than an Arbitration Award (*Chartered Society of Physiotherapy v Simmons Church*, 1995). Any two of the three surveyors can cooperate to produce an Award under section 10(10)(a) & (b). It is not thought that the removal of settling matters "from time to time" has deprived surveyors of their power to serve successive Awards (Bickford-Smith and Sydenham, 2009, p.91), allowing them to issue as many Awards as they consider reasonably necessary to discharge their duty.

Section 10(14) requires surveyors to forthwith serve the Award on their appointing owners. An Award has no legal status until it is served. Historically, the test applied to service is not whether the recipient received the Award, but must demonstrate that the means of service complies with section 10(15)(a) & (b). Section 7 of the Interpretation Act 1978 and CPR Part 6 Rule 6.26 deems postal service to have occurred in the normal course of the post as 48 hours. If the Award is validly served under section 15 and the owners fail to comply with the Award, the owners and/or surveyors can enforce compliance with the Award.

Appealing an Award: Section 10(17) entitles an owner to appeal an Award under CPR Part 52, the process is a review and not a rehearing. If the Award does not demonstrate how the surveyors reached their decision, the appeal may be upheld. The right of appeal has two conditions: (i) the appeal must be filed within 14 days, after which the legal doctrine of '*res judicata*' prevents any later challenge; and/or (ii) the owners are not time barred if they believe the Award is invalid and can make an application to the Court for a declaration of invalidity. In such cases, there is a possibility that the whole process is deemed invalid, (*Gyle-Thompson v Wall Street*, 1974) where the surveyors were deemed *functus officio*.

2.4.6 Costs

Section 10 puts costs into the correct context which make it clear that the term means much the same as it does when used in relation to litigation (Bickford-Smith and Sydenham, 2009, p.115). Under the Act, the term "costs" has wide meaning and sections 10(12) and 10(13) entitle the surveyors to determine inter alia their own fees. Whilst it is generally held that the building owners should pay reasonable costs in preparing an Award, costs can be awarded against the adjoining owners. Costs can include damages, limited legal fees, external experts and checking engineers' fees and compensation. If there is a situation where for example an adjoining owner has served a counter notice under section 4 requiring building works for their benefit, then liability for those costs would not fall upon the building owner.

2.4.7 Security of expenses

Section 12(1) entitles the adjoining owner to serve a request for security of expenses upon the building owner before the works start (Hannaford and Stephens, 2004, p.63). Interestingly, the RICS (2019) in paragraph 8.8, advise their members that they are not obliged to advise the adjoining owner of this right. If an owner is unaware of the right to request security, and suffers damage, their position is weakened, and the surveyor could be exposed to a claim for negligence. The surveyor who ignores their obligation to advise an owner of their rights does so at their peril (Antino, 2012, p.196). There are no limitations on security of expenses and surveyors should include reasonable sums for costs on the balance of reasonable probabilities.

2.5 Common Area of Conflict (Objective 4)

2.5.1 Introduction to dissent/conflict

If an adjoining owner fails to respond to a notice for the 14-day period, dissent is deemed to have arisen and section 10 procedures must be applied. If an owner consents to a notice, then the issue of whether for example, special foundations are adopted, simply falls away as the Act's procedures are no longer applicable providing the use of special foundations has been properly explained away with the section 7(4) veto.

2.5.2 Consent

If an adjoining owner consents the section 10 procedures are suspended (Onigbanjo v Pearson 2008), unless a later dispute arises over damage or another aspect of the works and allows the owner to invoke section 10. This approach is based on the premise that the consent was given on the implied expectation that the works would be carried out with the appropriate duty of care and skill and without causing damage or interfering with any other common law rights that the adjoining owner enjoys.

2.5.3 Non-compliance by agreement

Despite the existence of the procedural framework, it is common for the parties or their surveyors to depart from it by agreement (Chynoweth, 2004, p.320). This is achieved in several ways, the first is by consent (see Section 2.5.2 above) before the works commence, the second is by independent agreement after commencement of the works, and the owners agree to set aside the statutory framework. Chynoweth (2004) sets out the options that are available to the owners. An agreement in lieu of a notice is commonly described as an informal agreement where the owners have contracted out of the Act. Ideally the agreement should be recorded by an independent professional (possibly a surveyor or a lawyer) and signed by the participating owners. This approach is particularly helpful when the works are minor and the cost of adopting the Act may be substantially greater than the actual cost of executing the works and any such agreement is legally binding.

2.5.4 Agreement to regularise unlawful works

The owners are at liberty to reach an agreement retrospectively to resolve issues where the building owners have started the works without serving notice, either because they were genuinely unaware of their obligation to serve notice before the works commenced, or they have been threatened with an injunction (*Zaher v Patel* 2020). In such circumstances they can accept their mistake, stop the works, and regularise matters with the appointment of a surveyor who will serve the appropriate notices. Trying to avoid the obligation to serve notice is not a sensible approach and will be extremely costly (*Bibizadeh v Dodosh*, 2015). The owners can retrospectively reach an agreement on any matter including issuing a retrospective Award to reconcile any shortcomings in the statutory procedures or any damage that occurred prior to the service of the notice, subject of course to there being an expressed agreement between the owners. However, before serving a retrospective Award, the surveyors should have the owners' written agreement as this is outside of their jurisdiction under the Act.

2.5.5 Agreement to variations

Unfortunately, construction is not an exact science, particularly with regards to foundations, and it is possible that unforeseen issues may be identified post commencement of the works that require changes to the initial design. Any agreements outside of the Act should include a process for dealing with variations. If no such allowance is made and if the variations are notifiable works, a further notice must be served, which somewhat defeats the objective of an alternative agreement in the first instance.

2.5.6 Surveyor conflicts

2.5.6.1 Overview

All litigation exists because counsel for respective clients form conflicting interpretation of facts, rules, and procedures. This conflict may flow from ambiguity in law, conflicting versions of events, or more importantly when the law is open to and indeed invites interpretation. In such cases it is neither surprising or nor unusual for conflict to arise. The resolution of conflict is for a Court to determine and indeed the

Courts will not shy away from expressing their interpretation of the law. In *Reeves v Blake* (2009) Etherton L.J. described section 10(12)(c) of the Act as “wide wording”.

In *Farrs Developments* (2016) Holdgate LJ, expanded on section 10(12)(c) and the held at paragraphs 39 & 40:

“...section 10(12)(c) is apt to include matters going beyond the ambit of the dispute between the parties and allows a complete package of provisions to be treated as binding between the parties”.

In these two cases separated by seven years, these eminent judges had recognised that the Act provided surveyors with broad but undefined powers and it is therefore neither surprising nor unusual for surveyors to form conflicting interpretations. Understanding how surveyors interpret the Act is dependent upon their professional training and education, which may consciously or sub-consciously influence their determination. There are two distinct approaches to the administration of the Act; the first is the ‘proceduralist’ approach and the second is the ‘rightist’ approach (Chynoweth, 2002, p.12). The researcher classifies surveyor approaches to party wall interpretation as either pre-1996 “old school” or post-1996 ‘new school’. The former being influenced by historic professional knowledge, practices, and interpretation and the latter, as those who study and apply the legislation from first principles and adopt a purist approach (Antino, 2012, p.26). A professional’s background, training, and knowledge may create bias and may (consciously or sub-consciously), influence their interpretation, in addition to which ambiguities within the Act make it notoriously difficult to interpret (Chynoweth, 2000, p.13). This ambiguity is recognised by other professionals and academics. There appear to be quite a few areas where the 1996 Act is not comprehensive (Burrell, 2010, p.109). This assumption is supported by the results of the Stage I enquiries (see Table Nos 2 & 3).

The data identified the Act’s definitions of a foundation, special foundation, and the section 7(4) veto as the most common area of conflict when building below ground. The origin of the prohibition on special foundations lies in the development of steel-framed buildings with foundations formed by large, reinforced concrete pads (Bickford-Smith and Smith, 2015, p.6). On the literal reading of the Act, its definitions appear straightforward and non-contradictory. The inclusion of any assemblage of bars or rods would satisfy the definition and therefore as such are deemed a special foundation (see Diagram No 19). So why does the definition create conflict? Given that the diverse backgrounds of surveyors are

embedded in multiple professional bodies and associations (see Figure Nos 1, 8 & 9), their first point of reference should be to their professional bodies. However, conflict also extends within and between these various bodies in terms of their guidance and clarity.

The P&T introduces a significantly broader definition to explore the possibility that a combination of foundation and special foundation can become one. Thus, suggesting that in certain circumstances a mass-filled concrete foundation (without reinforcement), if joined to the special foundation, would by definition be a special foundation and subject to the veto.

*“if a foundation relies on reinforcement for distributing loads then **the whole foundation** is likely to be special, even if part of it does not include reinforcement.”* (P&T, 2016, p.131)

The FPWS offers no advice on the issue, neither do the RICS in their 7th edition (2019) Guidance Notes.

Given that the Act draws a clear distinction between foundations and special foundations following a lengthy search of case law (see Section 2.7.2 below), surprisingly only one case, (*Chaturachinda v Fairholme*, 2015) addresses this conflict within the County Court, which does not set a precedent in case law (Newman, 2016, p.14).

2.5.7 Basements, foundations and special foundations

Bowden (2015) proposes a more radical approach to resolving the difficulties surrounding conflicting opinions and interpretations:

“Special foundations have had their day, and all reference to them should be repealed along with the right to place projecting any footings and foundations on the land of an adjoining owner.” (Bowden, 2015, p.1)

Bowden’s approach does not explain how that would work when considered alongside accepted designs (see Diagram Nos 12, 14–17) or when building below ground, nor

indeed how owners could undertake structural repairs such as underpinning the party wall if all projecting foundations should be removed?

The importance in clarifying the research topic is emphasised by Bailey HHJ in *Chaturachinda v Fairholme* (see Section 2.7.2.3):

“The Act’s definitions of ‘foundation’, and ‘special foundations’, is of considerable importance to house owners contemplating the construction of a basement extension to their properties and to surveyors and designers concerned with such basements”.

*“the statutory definition **does not approach the question of what constitutes a foundation from an engineering perspective.**” The definition simply limits its (engineering) objective to that “.... employed for the purpose of distributing any load”.*

What the Act does not explain is why the veto only applies to the use of special foundations and not simply a foundation, given that they both create an interference and trespass. The Oxford Dictionary synonym for substructure suggests that “.....*a foundation is a structure entirely below the surface of the ground.....*” and defines the noun foundation as “*The lowest load-bearing part of a building, typically below ground level*” and helpfully includes the following synonyms: Footing, base, substructure, under-structure and underpinning. This would typically include all elements below the DPC. The inclusion of “...typically below...” within the definition would suggest that foundations are not necessarily always defined as below ground level structures.

However, the Act does not follow this definition per se by providing the following two definitions:

- 1 A “Foundation” in relation to a wall, means the solid ground or artificially-formed support resting on solid ground on which the wall rests.
- 2 “Special Foundations” means foundations in which an assemblage of beams or rods is employed for the purpose of distributing any load.

The function of a mass concrete and reinforced concrete foundation is plainly the same (See Diagram No 20), irrespective of the Act's emphasis on special foundations. The absence of any explanation for the distinction between the two types of foundation is frustrating, because any projecting foundation will create a trespass and as such clearly impact upon the adjoining owner's rights to build up to the boundary, in order to be able to project foundations.

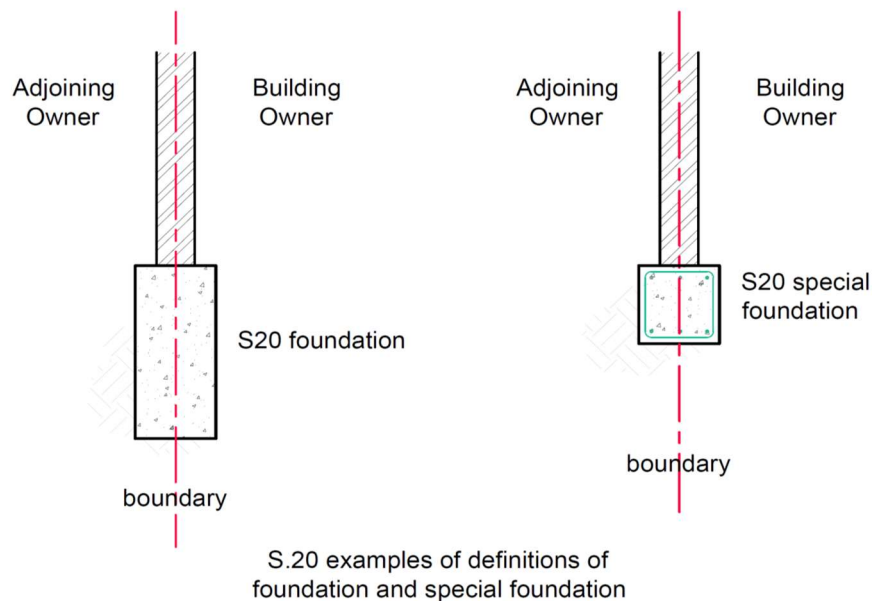


Diagram No 20 Act's definition of foundation and special foundation

The ground conditions will dictate what foundation design is required, introducing reinforcement will produce an economical foundation where ground conditions are poor. Unfortunately, concrete is not an environmentally friendly material, either to make, use, or even to dispose of, so minimising the amount of concrete through the use of reinforcement has the added benefit of meeting environmental objectives as well as reducing construction time and costs. The definition of foundation and special foundation does not provide an unqualified right to project irrespective of whether the foundation contains an assemblage of beams or rods.

2.5.8 Function of a basement box

If the excavation for a basement box is, as suggested by Bickford-Smith (2017), is to underpin the foundations, this supplants the original foundations rendering them

redundant as a functional foundation. If the preferred method of constructing a basement is to form a reinforced concrete box (see Diagram Nos 13–15) which creates a three-dimensional structure, the box must be a special foundation. Achieving an understanding of the implications of the Act's two definitions requires a thorough understanding of the function of the elements of the box, both individually and jointly. Buildings are increasingly complex structures and as new regulations come into force to meet more stringent performance criteria the complexity increases, requiring a wholistic assessment.

In the context of this research topic, establishing which elements of the basement box (if any) constitutes a foundation is identified by its function:

- 1 Excavating beneath the party wall, supplants the original foundations;
- 2 Generally, the use of a basement forms part of the foundation (Brown,1992);
- 3 The basement box creates a habitable environment;
- 4 The basement walls are retaining walls (AC), resisting the lateral “surcharge” forces created by the adjacent retained soil by directing the loads through the box and onto the ground;
- 5 The structural integrity of the “box” is determined by the linking of the horizontal and vertical elements; and
- 6 Remove the link and the box loses structural integrity and will fail to support the imposed and dead loads.

2.5.9 Avoiding special foundations

It does not necessarily follow that just because a building owner is proposing to construct a reinforced concrete basement box that conflict will arise. If two like-minded surveyors are appointed and both consider that the Chaturachinda decision is correct, then they will not be in dispute. Indeed, it therefore naturally follows that the adjoining owner will not be advised of their right to veto special foundations under section 7(4). However, there remains a risk that an appointed surveyor will hold a contrary view i.e., that the Chaturachinda decision is in fact flawed and wrong in law, thus potentially exposing the building owners to considerable delays and substantial costs in resolving the dispute. The building owner's overriding objective is to build his basement, therefore avoiding the potential conflict is possible if a proactive approach, using a variety of established, accepted construction techniques demonstrated in Section 2.2, is adopted.

Before deciding on the final scheme, it is advisable to involve the party wall surveyor within the design team thus allowing early assessment of the construction details to ensure that no potential breaches of the party wall Act arise and to identify any potential areas that may give rise to conflict. Adopting a proactive rather than a reactive approach to address particular issues after the design is completed could save time and money.

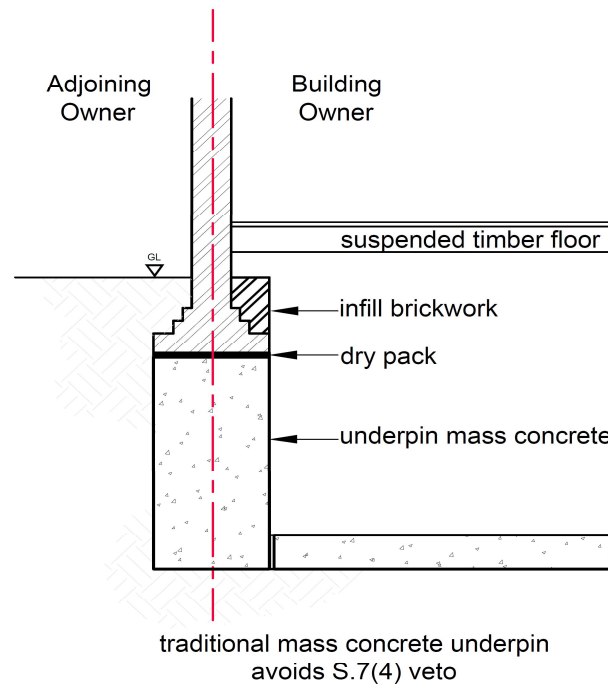


Diagram No 21 Traditional mass concrete underpinning (Pole, 2012, p.49)

In addition, it is sensible for the building owner to make pre-construction enquiries with the adjoining owners and involving them at an early stage of the proposed works will achieve an insight into their neighbouring owner's concerns and indeed whether they are going to consent or appoint a surveyor. If indeed it is the latter, they may already have a surveyor in mind. Speaking to that surveyor will establish their approach and interpretation when a reinforced concrete basement box is proposed and whether they consider it to be a special foundation. If it transpires that their view is contrary to the Chaturachinda decision and the building owner does not want to be involved in a lengthy and costly dispute, they have alternative options (see Diagram Nos 21–23). Adopting an alternative scheme that avoids projecting reinforced concrete onto the adjoining owner's land will eliminate any possibility of conflicting interpretation regarding special foundations and the section 7(4) veto being exercised.

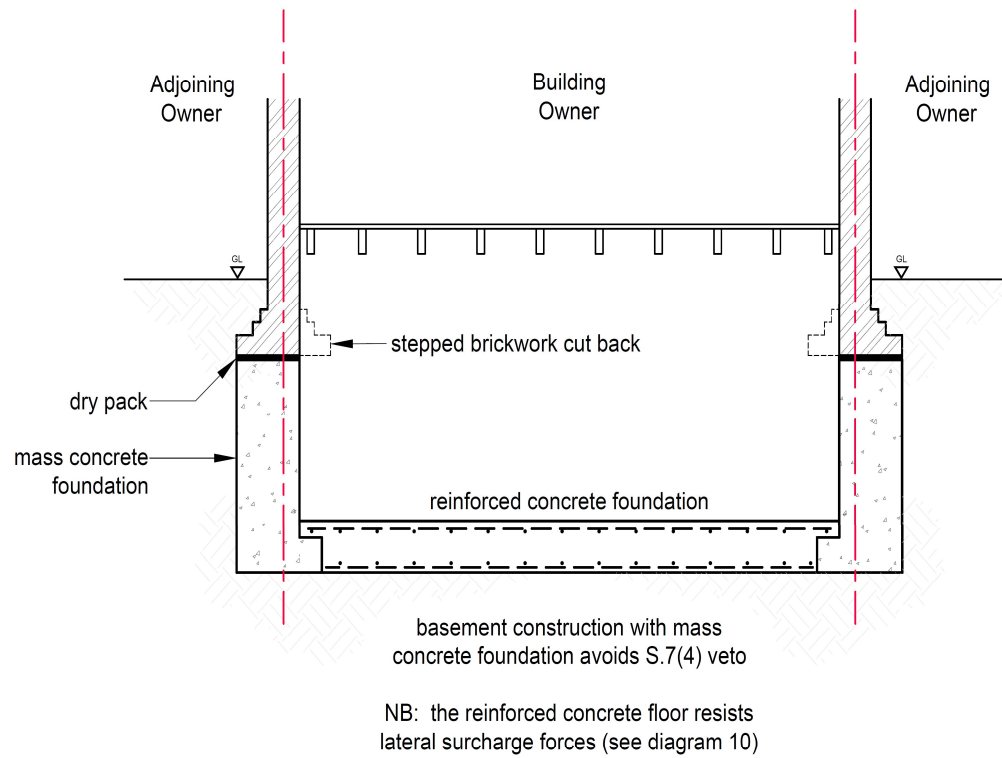


Diagram No 22 Concrete strip for full width of spreader foundations with independent reinforced concrete slab

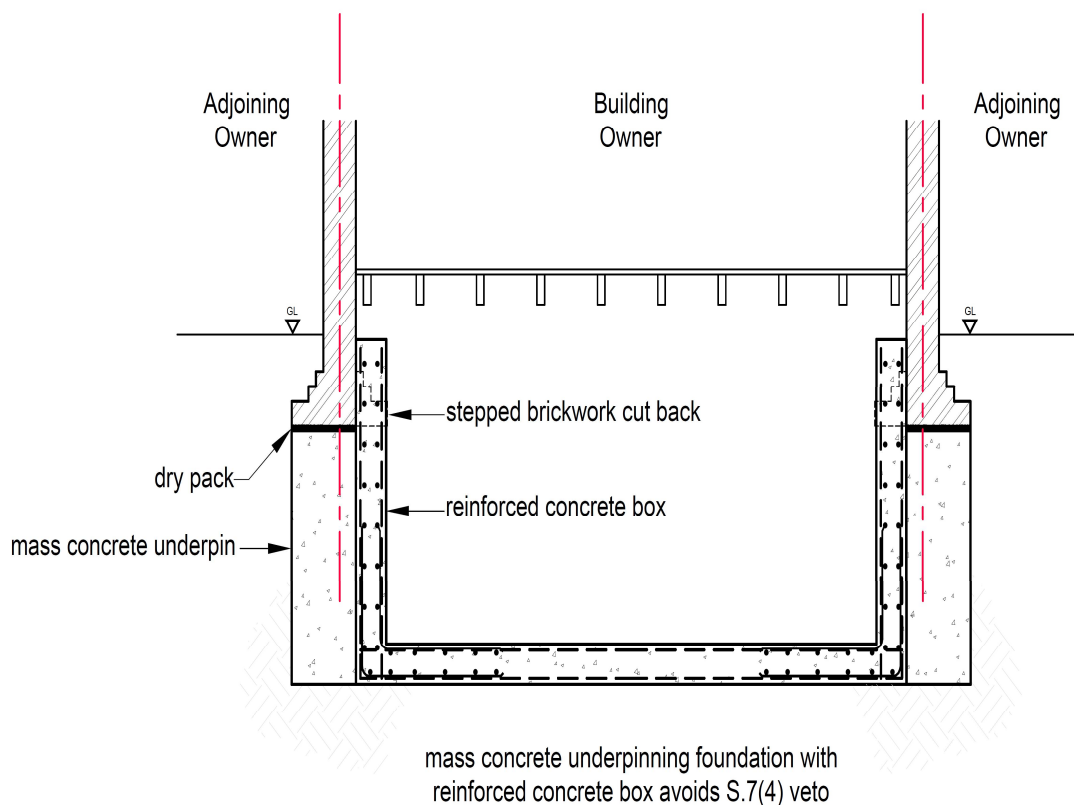


Diagram No 23 Mass concrete underpin foundation using full width of party wall with reinforced concrete box built within the underpin foundation

2.6 Alternative Dispute Resolution (Objective 5)

2.6.1 Introduction

The impact of construction disputes was the focus of Sir Michael Latham's seminal report, *"Constructing the Team"*. The construction industry accounts for 8% of the gross domestic product (Latham, 1994, p.7), and any construction dispute will cause delays and increase costs. Given that the Act will apply to virtually every construction project within England and Wales, achieving accepted approaches and interpretations within the party wall surveyor environment will eliminate disputes (Antino, 2012, p.26).

In some of the more prominent cases, party wall surveyors have been referred to as arbitrators; *"in that he changes in his capacity from being simply an agent to a quasi-arbitrator."* (Chynoweth, 2003, p.253). It is considered that the Arbitration Act 1996 does not apply to surveyors (Bickford-Smith, 2017, p.137) but there are similarities in the roles of party wall surveyors and those professionals that operate within ADR. The Chartered

Society of Physiotherapy v Simmons Church Smiles (1995) judgment concluded that the surveyor's Award was more in the nature of an expert determination rather than an Arbitrator's Award. Clearly, the Act is designed to anticipate dissent, which should not be confused with a dispute (Antino, 2012, p.33) and therefore a structured framework was produced. In the Reeves v Blake case (2009) the judge observed; *"the Act is intended to constitute a means of dispute resolution which avoids recourse to the Courts"*. There is however one important distinction between the Act and ADR, in that the latter requires a dispute before it can be adopted whilst the former creates the dissent that forces the parties to adopt the Act.

2.6.2 Adjudication

The Housing Grants, Construction and Regeneration Act 1996 ("HGCRA") only applies to commercial construction contracts, commonly referred to as adjudication, and can apply to residential disputes if the parties agree. The similarities with the Act are recognisable as there are specific time frames for the conclusion of the referral within 28 days unless an alternative time frame is agreed (Bouyges v Dahl-Jensen, 1999). The contract is not required to have a written agreement to adjudicate. If it is a commercial contract which also includes professional services made on or after the 1st of May 1998, the right to adjudication is automatic. The HGCRA adopts statutory instruments and is incorporated into standard forms of contracts to ensure adjudication procedures are compliant with the Act (Mills, 2005, p.16).

Section 107(1) introduces a pre-condition for the application of the other provisions, and not just the jurisdictional threshold for a reference to adjudication (RJT Consulting Engineers Ltd v DM Engineering). Section 105(a) & (c), provides a definition of construction operations covered by adjudication. For example, whilst adjudication does not apply to residential or more accurately "domestic contracts", it does apply to commercial services and to residential properties (Nottingham Community Housing Association Ltd v Powerminster Ltd, 2000). In this case, the claimant had been contracted to service the housing association's residential gas appliances. Following a dispute over payment, Powerminster Ltd relied upon section 108 and adopted adjudication. Nottingham Housing Association argued that supplying services in residential properties was not a commercial contract and section 108 did not bind the parties to adjudication. The Court rejected the application and held that this was a commercial operation within the scope of section 105(1)(a).

2.6.2.1 Similarities with the Act

An adjudicator does not have jurisdiction to determine liability for costs of the referral unless the parties agree, but he can determine his own fees in dealing with the referral. Similar to section 10(12) and (13)(c) of the Act. Any party to a commercial contract can refer a dispute to adjudication similar to section 10(11). The HGCRA defines a dispute at any time, as any difference between the parties, as does section 10(12)(c). A single dispute can consist of numerous grounds similar to section 10(11) of the Party Wall Act.

2.6.3 Arbitration

The Arbitration Act 1996 seeks to consolidate modern English Arbitration law and procedures into a statutory format and fundamentally change some aspects of the law. It also seeks to achieve a fair and impartial resolution without the delay and expense of litigation, similarly to adjudication, mediation and indeed the Act. One significant difference between adjudication and arbitration is that the latter must be set out in the contract documentation, such as the family of Joint Contracts Tribunal ("JCT") which includes a standard clause for arbitration.

If the arbitration agreement is referenced within a contract, it can be treated as a separate agreement to the main contract, even if the main contract is invalid for any reason. The arbitrator must rule on their jurisdiction in the first instance, and under section 31, any challenge to the arbitrator's jurisdiction must be raised by a party before the first step in the proceedings are taken.

2.6.3.1 Similarities with the Act

The arbitrator can award liability for his fees on the basis that costs follow the event or alternatively may direct that the recoverable costs and fees shall be limited to a specified amount, similar to section 10(12)(c) & (13) of the Party Wall Act. The arbitrator's Award (similar to section 10(11)) will set out the decision and can insist on payment of his fee prior to releasing the award (similar to section 10(15)).

The parties have a right to appeal an arbitrator's decision similar to section 10 (17). The Court will apply a test which must be met as to whether they are satisfied that no

reasonably minded arbitrator would not have reached the same decision based on the evidence. Where there are justified grounds of appeal, permission will not be unreasonably withheld if:

- (i) The point substantially affects the rights of one or more of the parties;
- (ii) Where the arbitrator's determination on a point of law is obviously wrong;
- (iii) If the point is one of general importance to the public and the arbitrator's decision is at least open to serious doubt; and
- (iv) It is just and proper for the Court to determine the point.

2.6.4 Mediation

Mediation is a modern concept recognised by the Courts as a precursor in avoiding costly litigation. The principle is based on a common sense approach that the intervention (by invitation of the parties) of an experienced independent and trusted person will assist the parties to settle their quarrel, by negotiating in a collaborative, rather than adversarial way. Skilled mediators can achieve results that are satisfactory to both parties, often far beyond the power of the Courts (*Dunnett v Railtrack*, 2002). Therefore, mediation is intended to be an effective alternative approach to adjudication, arbitration, or litigation. There are no similarities with the Act, mediation is voluntary with no enforceable remedy if none is agreed.

2.6.5 Negotiation

If parties are sceptical of litigation or indeed ADR, they may well attempt to negotiate their position, and this can often become a Dutch auction with offers and counteroffers. It can be a useful tactic to obtain an understanding of the opponent's position, areas of weakness or strengths to manipulate the situation to the best possible advantage and outcome. As identified in sections 2.5.2–2.5.5 the parties can enter into negotiation on any subject and reach a conclusion. If they are satisfied with the outcome, they have then negotiated their position and this is by definition a form of ADR, having operated without any structured approach or enforceable outcome, unless explicitly agreed within any negotiated settlement. If the negotiation fails then the parties simply move on to ADR or litigation and the prerequisite structures that apply. When entering into negotiations, it is sensible to do so on a "without prejudice" basis, thus protecting the party from discussions,

acknowledgements, or concessions being disclosed or relied upon at any subsequent ADR or litigation.

2.6.6 Civil Procedure Rules and directions

The Ministry of Justice introduced the Civil Procedure Rules (“CPR”) in 1998 to provide a procedural code with the overriding objective of enabling the Court to deal with cases justly. With the introduction 12 months after the Act and with the right to appeal awards coming before the Courts, an understanding of how these rules apply or assist with the administration of the Act, is important.

The overriding objective (Rule 1.1)

The Court must seek to give effect to the overriding objective when:

- (1) These Rules are a new procedural code with the overriding objective of enabling the Court to deal with cases justly and at proportionate cost.
- (2) Dealing with a case justly and at proportionate cost includes, so far as is practicable:
 - (a) ensuring that the parties are on an equal footing;
 - (b) saving expense;
 - (c) dealing with the case in ways which are proportionate;
 - (i) to the amount of money involved;
 - (ii) to the importance of the case;
 - (iii) to the complexity of the issues;
 - (iv) to the financial position of each party;
 - (d) ensuring that it is dealt with expeditiously and fairly;
 - (e) allotting to it an appropriate share of the court’s resources, while taking into account the need to allot resources to other cases; and
 - (f) enforcing compliance with rules, practice directions and orders.

Application by the Court of the overriding objective (Rule 1.2)

The Court must seek to give effect to the overriding objective when it:

- (a) exercises any power given to it by the Rules; or
- (b) interprets any rule subject to Rules 76.2, 79.2 and 80.2, 82.2 and 88.2 (of the CPR).

Duty of the parties (Rule 1.3)

The parties are required to help the Court to further the overriding objective. Under Rule 1.3 their duty is to further the Court's objective and to give serious consideration to ADR procedures. It is not obligatory nor enforceable unless it is an explicit term of a contract. As Laws LJ and Dawson LJ recorded, in (*Halsey v Milton Keynes*, 2004):

"It is one thing to encourage parties to agree to mediation, even to encourage them in the strongest terms. It is another to order them to do so. To oblige truly unwilling parties to refer their disputes to mediation would be to impose an unacceptable obstruction on their right of access to the court."

Whilst it is a voluntary process, a failure to mediate can expose the refusing party to penalties that would not have arisen if the mediation had taken place (see Section 2.6.4), irrespective of whether it was successful. In the *Mohamed v Takhar* (2016) case, their right to recover costs (subject to independent assessment) was subject to HHJ Bailey's imposed penalty that any cost was to be reduced by 10% simply because the Mohameds refused to mediate. As Lightman J (*Hurst v Leeming*, 2001) observed:

"If one party offers mediation and the other party refuses it, the party refusing mediation has to have good and sufficient reasons for doing so, otherwise they may be penalised in costs."

Mediation is confidential and on a 'without prejudice' basis, with the parties being required to sign a confidentiality clause to protect their respective positions. Nothing within the mediation can be disclosed or referred to in later litigation, thus allowing the parties to talk freely without fear of their position being weakened. The parties can mutually agree the appointment of a mediator or use a recognised intermediary body to make the appointment. The time frame and agenda being determined by the parties and not limited to a single meeting; mediation offers flexibility which is one of its key benefits.

Mediation is now being adopted by some to remove surveyor jurisdiction (*Mohamed v Takhar*, 2017). This tactic was adopted by the Mohameds' legal advisers who were coming from a weakened position. The Takhars' property had suffered considerable structural damage circa £225,000, the Mohameds' surveyor had refused to give full and

proper disclosure of drawings, specifications and method statements requested by the Takhars' surveyor. The Takhars agreed.

Once agreed, it was felt given the judgment (Leicester Circuits Ltd v Coates Brothers, 2003) of Sir Thomas Swinton LJ, that:

“The whole point of having mediation – and, once you have agreed to it, is proceeding with it – is that the most difficult of problems that can sometimes, indeed often are, resolved. It hardly lies on the mouths of those who have agreed to mediation to assert that it had no realistic prospect of success. The unexplained withdrawal from an agreed mediation was of significance to the continuation of the litigation. While it could not be assumed that mediation would be successful, there was certainly a prospect that it would have done, if it had been allowed to proceed: that therefore bears on the issue of costs.”

Effectively a party may be successful at trial, but where they have refused to mediate, they can lose on costs.

2.6.6.1 Similarities with the Act

Surveyors are often described as delivering “helpful and cheap” solutions to problems (Anstey and Vergoda, 1997, p.135) but can they reasonably be considered as dispute resolvers within the family of ADR procedures, when there are 11 significant differences (listed below) between the Act and ADR?

- 1 Adopting the Act is statutory and therefore mandatory, ADR is not;
- 2 ADR only applies after the commencement of contractual obligations and a dispute arises;
- 3 The Act creates the dispute, which it then seeks to resolve;
- 4 The Act resolves the dispute with a binding award;
- 5 Some ADR procedures such as mediation are not binding unless agreed;
- 6 The Act is binding unless appealed;
- 7 The Act is proactive, whereas ADR is reactive;

- 8 ADR and the Act resolve disputes with minimal costs;
- 9 ADR is flexible and open to the parties to agree the framework;
- 10 The Act is not flexible, the procedures and time frames are mandatory; and
- 11 ADR is contractual.

The 1974 Court of Appeal case (*Russell Gray v Elite Town*) upheld the earlier 1974 High Court decision in *Gyle-Thompson*, reinforcing the Party Wall Surveyors quasi-judicial role and demonstrating the similarities with ADR.

2.7 The Rules of Statutory Interpretation

2.7.1 Rules of interpretation

It is not unsurprising that the administration of any legislative procedure is covered by rules of interpretation which operate alongside, and assist with, clarifying CPR and how the Court receives, interprets the evidence, and manages legal arguments in order to reach a sound judgment. In English law there are four rules which allow the Court to interpret statutes to achieve their literal and ordinary sense. Denning LJ, said. *“We sit here to find out the intention of Parliament and of Ministers and to carry it out, and we do this better by filling in the gaps and making sense of the enactment than by opening it up to destructive analysis.”* (McLeod, 1984, p.1–24). Interpretation and construction (formulation) is the process by which judges determine the meaning of the statute for the purpose of applying the ordinary and grammatical meaning. As established by the CPR, it has become fashionable to divide the contents of the legal system into rules and principles (Bell and Engle, 1987, p.35). There is no uniform usage which enables a clear distinction to be drawn between “interpretation” and “construction” (McLeod, 1984, p.1-01). The days are long gone where the Courts adopted a strict-constructionist view of interpretation, which required them to adopt the literal meaning of the language (Bell and Engle, 1995, p.10).

Various Rules and Acts have been developed to assist the Court in ascertaining the meaning of statutes (the Interpretation Act 1978). Although they cannot provide clarity for every case as each will inevitably turn on the individual circumstances, these principles have been developed into *“the rules of statutory interpretation and construction”* which comprises (i) the Literal Rule; (ii) the Golden Rule; and (iii) the Mischief Rule or more

recently called the Purposive Intent. Words in statutes, such as the Act, whilst intending to be specific sometimes create ambiguity. This is the nature of language and the desire of opposing parties to create interpretations that favour their position.

However, there are no explicit rules for interpreting the Act to guide surveyors, or for allowing them to apply or follow any specific rules of interpretation. Surveyors are in effect left to their own interpretations; hence the conflicts arise. An example is Robin Ainsworth's interpretation of section 1(5) when he suggested that "in the immediate vicinity of" would satisfy "on" (Ainsworth, 2000, p.213). Mr Ainsworth's suggestion is too vague and open to abuse, and as such creates an absurdity because in the vicinity is open to interpretation (Antino, 2012, p.68).

The Literal rule: In the "Sussex Peerage" case Lord Tindal said: *"if the words of the statute are in themselves precise and unambiguous, then no more can be necessary than to expound those words in their natural and ordinary sense."* (McLeod, 1984, p.1-08). Thus, the Literal rule can be considered the least problematic method of interpretation. Where such clarity is evident, the Court will consider exactly what the legislation actually says, rather than finding a specific meaning. However, the Court cannot adjust the meaning of the statute to justify the Court's decision. As Lord Reid said in *Pinner v Everett* (1969) *"In determining the meaning of any word or phrase in a statute, the first question to ask is always what is the natural and ordinary meaning of that word or phrase in its context in the statute."* The main advantage of the Literal rule is that it fits easily into constitutional principles without causing the Court too many problems.

The Golden rule: The golden rule was developed to overcome potential obstacles created when the Literal meaning is adopted. This rule is only used if the Court finds that applying the Literal rule leads to an absurdity, inconvenience, or inconsistency. Thus, allowing the Court to modify the meaning, within the context of the statute, just as far as is necessary to avoid the absurdity. The Golden rule entitles the Court to determine what Parliament intended the statute to have meant, rather than what is actually stated. In *Rivermere Commissioners v Anderson* (1877) the Court explained: *"we are to take the whole of the statute together and construe it altogether, giving the words their ordinary signification, unless when so applied they produce an inconsistency, or an absurdity, or inconvenience, so great as to convince the Court that the intention could not have been to use them in their ordinary signification, and to justify the Court in putting on them some other signification, which, though less proper, is one which the Court thinks the words will bear."*

The Mischief rule: Jurisprudence is the study of law that provides the Court's with the ability to develop theories surrounding the law and legislature to allow them to deal with the facts of the case to reach a just and sound judgment. In *R v Judge of the City of London Court*, Lord Esher's decision was developed from the Literal rule by taking it to its extremes: *"If the words of an Act are clear, you must follow them, even if they lead to a manifest absurdity. The Court has nothing to do with the question of whether the legislature has committed an absurdity, so should not be concerned if the absurdity is so awarded."* (McLeod, 1984, p.1-08). Plainly it would go against the rules of natural justice for a Court to hand down a judgment that upheld an absurdity.

The Mischief rule provides a contextual approach, by looking for the mischief, to properly define Parliament's intention. Its real importance lies in the resolution of the "Barons of the Exchequer" which contain the classic statement on the Mischief rule (Bell and Engle, 1995, p.11), which established that for the true and sure interpretation of all statutes, four things must be discerned and considered:

- 1 Consider what the law was before the Act was passed;
- 2 Identify what was wrong with that law;
- 3 Decide what Parliament's intention was when passing the law through the statute; and,
- 4 The true reasons for the remedy.

The Law Commission concluded that there was a tendency among some judges to over-emphasise the narrow version of the Literal rule and refuse to go beyond the meaning of a statutory provision in the light of its immediate and obvious context (Bell and Engle, 1995, p.17). Because the law is continually evolving, the principle behind the Mischief rule has found renewed vigour in the guise of the purposive approach (McLeod, 1984, p.1–23). The Court will look to the statute and interpret the words to bring about that purpose by focusing on what the Courts consider was the intention of Parliament. As Lord Denning M.R. observed: *"Beyond doubt the English Courts must follow the same principles as the European Court... no longer must they examine the words in meticulous detail.....if they find a gap, they must fill it as best they can."* (McLeod, 1984, p.1–29). However, following Brexit that approach will change substantively once negotiations of the exit have concluded.

2.7.2 Relevant case law

An extensive search of case law produced sparse results relevant to the research focus with two cases having been decided in the 17th century, but remain relevant to the current legislation, because legal decisions remain until they are set aside by judicial review or a higher court having decided upon a case with similar facts.

2.7.2.1 Standard Bank of British South America v Stokes [1878] Chancery Division

In this case, Stokes intended to construct a sub-basement below the existing basement (Chynoweth, 2003, p.382) and served notice. The Standard Bank of British South America ("SBBSA") issued the appropriate notice under the Metropolitan Building Act 1855 ("MBA") but commenced the excavations without an award in place. SBBSA as the plaintiff decided to injunct and restrain the (defendant) from *"undertaking, continuing and/or commencing any removal of the soil or interfering with the natural support from beneath the party wall and/or to otherwise weaken or endanger the party wall that had been erected in agreement."* Both parties accepted they were tenants in common and as such no party had any right to do any works that affected the party wall without the others consent unless by statutory authority. Having partially excavated beneath the party wall Stokes' intention was to cut away the original concrete foundation and provide a new concrete foundation and brickwork wall beneath the party wall to form a sub-basement wall.

The claimants alleged that the defendant had no right to undermine the party wall at all and gave evidence to the effect that it was an extremely risky operation. The defendant argued that (i) if undertaken with the appropriate duty of care, the work could be safely carried out without causing damage to the party wall; and (ii) that a party could pull down the wall (Cubit v Porter, 1828), and if there was an intention to rebuild the same wall there was no action of trespass, because the works were temporary.

Counsel for the defendant argued that (i) the defendant was at liberty to make a sub-basement beneath the party wall; (ii) introducing concrete and building upon it in such a manner as to make the wall more secure; (iii) irrespective of whether the parties were tenants in common the defendant had rights and was at liberty to use the proposed sub-basement for any purpose, so long as no injury was done to the claimant's building.

Jessel M.R. considered the common law and the historical development of party wall law, and the agreement that evolved between the parties which allowed the claimants to construct the wall in the first instance. As there was no evidence to establish how the wall came to be so used or enjoyed, Jessel, M.R. applied *Cubit v Porter*, where three eminent judges held that there cannot be an action by a tenant in common against another tenant in common, merely because one pulls down the wall which belongs to them as tenants in common, when the defendant's objective was to ensure that a stronger party wall was constructed as expeditiously as could be made and that there would be no deprivation (loss) to the claimant and that no trespass could arise. Jessel held on the legal principle of *omne majus continent in se minus* (Isaac and Hearsom, 2019, p.15) that the defendant was entitled to do these works. As no such injury was intended or could be perceived to be intended if the works were carried out to the appropriate standards given section 82 of the MBA, Jessel held that whilst the defendant was a building owner under the Act, he had rights which in the Court's opinion were exclusive. Jessel undertook a detailed consideration and analysis of the various sections of party wall law and identified that there was a right to *"make good or repair any party structure that is defective or out of repair"* under subsection 2 *"a right to pull down or build any party structure that is so far defective and/or out of repair as to make it necessary or desirable to pull down the same"*. Subsection 6 provided a right to raise any party structure permitted by this Act and or any external wall built against such party structures, on condition of making good all damage occasioned thereby to the adjoining premises, or to the internal finishes and decorations thereof.

The Court was asked to consider whether the right to raise any party structure was limited to raising the party structure above ground. Jessel, M.R. suggested that he did not see the necessity to apply such limitations: *"if the party structure were all above ground, and you put anything upon it, of course the raising must be above ground, but if the party structure was underground dividing two basements, and did not reach the surface, then clearly the raising would be underground."* The question before the Court was whether it was necessary to limit the wording "raise" to putting something on the wall, did not also include putting something beneath the wall?

Jessel M.R. then looked at subsection 7:

"the right to pull down any party structure that is of insufficient strength for any building intended to be built and

to rebuild the same of sufficient strength above purpose upon condition of making good all damage occasioned thereby”.

It was held that a sub-basement required a wall of sufficient strength. Accordingly, in these circumstances the defendant could pull down the party structure, which would include the foundation and brickwork below ground level and then replace it. There is a right to cut into the party structure, a right to cut away a footing and then by subsection 11:

“to perform any other necessary works incident to the connection of party structures with the premises and these adjoining thereto”.

Jessel M.R. held that there was no reason why the Court could not, when reading the wording of the Act, answer the following questions: (i) was it possible to raise a wall downwards under the Act; and (ii) whether there is a difference between putting something on it, or underneath it in terms of the rights under the Act and whether it was correct that subsection 7 would include works underneath the wall, under the same legislation as to that on top of the wall.

2.7.2.2 Gray v Elite Town Management Ltd (2015) Central London County Court

The case began as a claim for damages and an appeal of a third surveyor’s award. The claimant (Gray) had undertaken the construction of a basement beneath his own mews property adopting a scheme that used contiguous piling inside the party wall to avoid placing special foundations beneath the width of the party wall, thus avoiding the section 7(4) veto before Elite Town purchased the adjoining property. Elite wanted to construct a basement and proposed a reinforced basement box which Gray claimed triggered the special foundations veto. As Bailey HHJ noted, Gray had a considerably greater depth of knowledge than most property owners and held a deep-rooted sense of mistrust of party wall surveyors. Gray attempted to persuade the appointed surveyors to proceed with a scheme which mirrored his basement i.e., contiguous piling away from the party wall. Works commenced as per the Award, and it was at this stage that the contractors recognised that some of the claimant’s piled foundation had deviated away from the vertical alignment and were partially beneath the party wall. An addendum award was served, proposing a reinforced concrete basement box construction which the claimant

appealed on the basis that the proposed works incorporated special foundations and he wanted to exercise his section 7(4) veto. Thereafter, the engineer proposed a further scheme involving a simple mass concrete underpin (see Diagram no. 10), again resisted by the claimant who wanted a scheme similar to his own i.e., contiguous piles. New party wall notices were served, and it was suggested that the third surveyor should be a lawyer and Mr Matthew Hearsum was proposed.

The defendants successfully challenged Mr. Hearsum's selection and another third surveyor was selected, but that was also challenged by the claimants with concerns of another conflict of interest. Another third surveyor was selected but he resigned, and it was not until 2014 that Mr James Crowley was successfully selected as the third surveyor. It was alleged that the claimant's property had started to move because of the defendant's works. A referral was made to the third surveyor whose determination referred to in the judgment as "the third award" was served, and authorising underpinning works and expressing an opinion that the proposals would not result in any unnecessary inconvenience to the adjoining owner.

In reaching his decision HHJ Bailey addressed the narrative of the first award in describing the works as follows:

"At the prescribed level form reinforced concrete foundation base as detailed on the structural engineers drawing" and in the following paragraph "upon completion of the concrete reinforced foundation prepare to raising in a downwards fashion the reinforced concrete party wall. Construct a temporary work shutter to allow the construction of reinforced concrete underpin base all in accordance with engineers' details." HHJ Bailey noted "it is clear from the plan that the works included reinforced steel foundations and were special foundations for the purposes of section 7 (4) of the Party Wall Act".

HHJ Bailey recognised that the first award described works that matched a reinforced basement box i.e., a wall formed in a reinforced concrete wall sitting on and linked to a reinforced concrete slab (see Diagram No 15). This was outside the surveyor's jurisdiction,

because the claimant had withheld written consent and that part of the award was invalid. This resolved the issue of whether a basement box was a special foundation.

The next issue was whether or not the use of special foundations rendered the whole of the award invalid. HHJ Bailey relied upon *Selby v Whitbread and Co* (1917) where, McCardle suggested “*in former days it was considered an award void in part was void in toto*”. However, section 10(17)(a) rescinds or modifies it in such a manner as the Court shall see fit. For the purposes of an appeal, an award is severable.

2.7.2.3 Cubit v Porter (1828) 8 B & C 256

The decision was appealed on two grounds, the first challenged the legal status that the Court placed upon the party wall, suggesting that the “*common user*” did not necessarily establish that the party wall was in fact owned (as suggested by the Court) as tenants in common. It was suggested that the party wall was longitudinally divided and that each party only owned that part of the thickness of the wall, that was placed upon their land, as in *Matts v Hawkins*, the wall would be regarded as a ‘longitudinally divided party wall’ (Chynoweth, 2003, p.107). The Appeal Court rejected this argument and relied on the principle that a shared wall in the absence of any explicit evidence must be presumed to be owned for the full width, by each of the parties as tenants in common.

The second ground alleged that Porter’s activities created a trespass, which (i) dispossessed or ousted Cubit from his property; and (ii) irrespective of the legal position, one tenant in common cannot be liable to the other in trespass for an interference within the common property of both parties; and (iii) Cubit further argued that the demolition of the wall and the raising in height of the wall ousted him, thus preventing him from the full and unrestricted enjoyment of the wall, so as such both activities were a trespass.

The Court found that it could and should infer common ownership of the wall from its use by both owners (Isaac and Hearsom, 2019, p.11). Irrespective of the absence of any documentary evidence to prove that each party had contributed an equal strip of land, or paid towards the construction of the wall, the Court found that there was evidence of common use, and was therefore a party wall. Accordingly, no trespass was committed in respect of common property by one tenant in common against another, so Porter was not liable (Chynoweth, 2003, p.107). It was held that the pulling down of a wall by one of the

two tenants with the clear intention of rebuilding the same wall would not entitle the other tenant to maintain an action of trespass,

“merely because he pulls down the wall which belongs to them as tenants in common, if it is a temporary thing; ‘a temporal removal with a view to improve part of the property’ on one side at least, and on perhaps both, there is no authority to show that one tenant in common can maintain an action against the other for temporal removal of the subject matter”.

Thus, joint ownership as tenants in common, entitles each tenant full unrestricted use of that wall.

2.7.2.4 Moss v Smith (1977) 76 LGR 284

This case under the Bristol Corporation Act of 1926 (“BCA”), whilst not addressing the issue of basements, clarified the law as it was then, on the right to place foundations and special foundations onto an adjoining owner’s land, and how the Courts would view:

- (i) The rights arising from a structure which might be across the line of junction; and
- (ii) Whether there are rights arising out of that structure that may not otherwise have existed unless an agreement had been explicitly made between the parties; and
- (iii) Why an adjoining owner is entitled to prevent an interference with their property rights.

The case involved a freestanding garden wall (a party fence wall) astride the boundary line. The Smiths wished to enlarge their property which involved raising a portion of the garden wall for its full width and height in anticipation of forming the side wall of the intended extension. Moss objected, alleging an encroachment onto his property, and argued that the Smiths had no right to build their extension on his half of the wall (Chynoweth, 2003, p.297). The Smiths argued that they were entitled to do the works under section 93(1) of the BCA: *“it shall be lawful for the owner or part owner of any external or party wall to raise the same, provided that the wall when raised will be of the substance required by any relevant byelaw....”* The Smiths claimed that the external wall of their extension would have to comply with the building regulations, which required, an external wall of a habitable building to have a minimum thickness and that they were entitled to use the full width to comply with building regulations.

The Court ruled in favour of the Smiths on the preliminary issue, but when referred to the Court of Appeal this was overturned on the grounds that section 31 only provided a temporary right, whereas the Smiths' structure was plainly intended to be a permanent structure. The Court of Appeal adopted the literal reading of section 93(1) and did not accept that section 31 entitled one owner to permanently deprive an adjoining owner of his property rights. The decision indicates that the Courts will view any permanent interference as unlawful.

2.7.2.5 Davis v Trustees of 2 Mulberry Walk (2012) Central London County Court

This case relates to the consent of a reinforced concrete basement in 1998. It was not until 2007 when the Trustees authorised the construction of a basement beneath their property that contractors identified that *“the concrete underpinning installed by the Davis in 1998 had extended beyond its designed width by up to 173 mm.”* (Isaac and Hearsum 2019, p.209). This triggered conflict in the same way as in the Gray case (see Section 2.7.2.2), where piled foundations had deviated away from the vertical plain and had trespassed on to the adjoining owner's property. Because the Davis basement had been consented to, the issue of whether the basement was a special foundation was not discussed, because the issue was not relevant when the works that were undertaken nor was it relevant to the dispute. This issue was about compensation because of the 173 mm of concrete described as an “overspill” of concrete. Unfortunately, this case does not assist with the research focus but does demonstrate the difficulties of building a basement without trespassing on to the adjoining owner's land.

2.7.2.6 Ferguson and Ferguson v Lloyd-Baker (2017) Central London County Court

This case involved a basement box beneath a party wall and a party fence wall. The Fergusons were the adjoining owners and appealed an award served by the building owner's surveyor and the third surveyor under section 10(10). The Fergusons' surveyor challenged the proposed works because these incorporated a reinforced concrete box and were therefore a special foundation (see Diagram No 8). The adjoining owners exercised their section 7(4) veto. The building owner conceded that the two surveyors had authorised special foundations beneath a party fence wall and party wall, ignoring the adjoining owner's section 7(4) veto. Whilst the decision to set the Award aside was a sensible approach by the building owners, it was disappointing, given the importance of

this case in relation to (i) clarifying conflicting theoretical interpretations on special foundations used in basements; and (ii) challenging the Chaturachinda case.

2.7.2.7 Chaturachinda v Fairholme (2015) Central London County Court

2.7.2.7.1 Introduction

Chaturachinda is the only legal case that has addressed the issue of the section 7(4) veto where a reinforced concrete box was being used to form a basement below an existing structure. Not unsurprisingly this case provides a substantial contribution to the literature review. The conflict began when a basement construction design adopted a traditional reinforced concrete box (see Diagram No 15). However, the adjoining owner's surveyor challenged the design, claiming that it was a special foundation (see Section 1.7.1) and therefore under section 7(4), the adjoining owner's written consent had to be obtained before the surveyors could serve their Award. The adjoining owners would not give written consent.

Following the refusal, the design was amended with the introduction of mass concrete rails of nominal depth and width being introduced beneath the outer perimeter of the box (see Diagram No 24). It was suggested by the building owner's surveyor that the rails were the foundation and because these did not contain "an assemblage of beams and/or rods for the purposes of distributing any load" the obligation to obtain written consent under section 7(4) was no longer applicable. This proposition was rejected by the adjoining owner's surveyor on the basis that the rails did not provide any structural function, which is a prerequisite for the function of a "foundation" within the Act. It was submitted that their only purpose for the rails was to circumvent the section 7(4) veto. The dispute was referred to the third surveyor under section 10(11).

In reaching his decision the third surveyor relied upon several cases (see Section 2.7.2.1) which he used to explain his approach when coming to his decision:

"Where a basement is being formed beneath a party wall, then it is not necessarily the case that the whole structure that is placed beneath the existing wall is itself a foundation. This was identified in the case of Standard Bank of British South America v Stokes [1878] in which it

was decided that a wall can be raised downwards as well as upwards. In my view, **the key issue is the primary function of the structure** in question. A vertical structure formed for the purpose of enclosing an occupied space is primarily a wall and not a foundation. The fact that **the load from the original wall is transmitted through that structure** and ultimately to the ground does not make that structure a foundation any more than a wall above ground is a foundation simply because it transmits a load from a roof to the ground.”

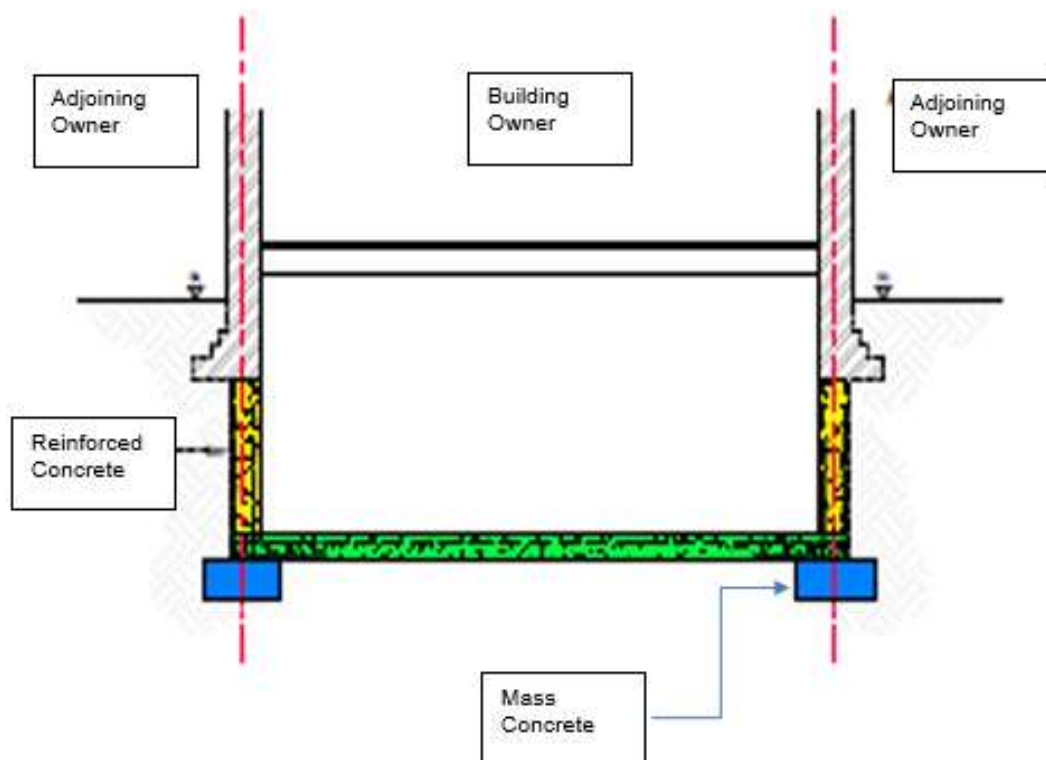


Diagram No 24 Chaturachinda (2015) with mass concrete strip beneath reinforced concrete box

The third surveyor also relied upon two earlier 18th century cases (see Sections 2.7.2.1 and 2.7.2.2) in explaining his rationale. He determined that the reinforced concrete

basement wall could be an underpin to the existing foundation, but was an extension of the original brick wall downwards because he believed that the only function the basement box wall performed was:

“the reinforced box is designed for the purpose of enclosing an occupied space, and thus, the vertical sections of the box are walls.....”

Accordingly, having reached this decision, he referred to the Act and applying section 2(2)(a), held that a party wall can be raised downwards and therefore determined that the basement reinforced concrete wall was a downward extension of the party wall and therefore allowable, without requiring written consent.

The adjoining owner’s position suggested that the mass concrete rails did not distribute any loads and were therefore unnecessary. The third surveyor recorded *“whilst having taken note of Mr. Wright’s contention that the mass concrete foundation is not a necessity...that may be the case but I do not believe that means it does not succeed in achieving that”* (emphasis added)

The third surveyor concluded that:

“the rails placed beneath the basement box transmit the load from the wall to the ground, and therefore it is the rails and nothing else that constitute the building’s foundations”.

The third surveyor also recognised that where reinforced concrete foundations extended beneath the party wall, they were, by definition, on the adjoining owner’s land and were a special foundation requiring the adjoining owner’s written consent under section 7(4). The third surveyor then suggested that, irrespective of the fact that the original loads from the structure above were now transmitted through the vertical reinforced concrete walls and not ultimately to the ground, this did not make the wall a foundation any more than a wall above ground was a foundation. Thus, coming to the decision that the elements that distributed the loads onto the ground were the mass concrete rails which do not include reinforcement, were therefore not a special foundation.

The third surveyor's Award was appealed, not unsurprisingly coming before Bailey HHJ (not retired), a recognised expert within the judiciary on the Act. The learned judge recognised that reinforced concrete is in common use in basement designs. As part of the design, the engineer had initially included a reinforced concrete basement "box" structure without rails. At paragraph 46 of the judgment, Bailey HHJ obiter dictum:

"where it is clear that a person has deployed an artifice or device purely to circumvent the clear intention of Parliament it is unthinkable that the Court will turn a blind eye to such behaviour".

Bailey HHJ, accepted at paragraph 61 that:

"While Mr Pole succeeds in demonstrating that there are forces at work, with resultant downward loads, other than the (main) downward force consequent on the weight of the building, what he does not demonstrate is that these forces bear down on the Adjoining Owners' land without passing through the mass concrete. Interestingly Mr. Pole's sketch is drawn so as to suggest that the ground reaction on applied loads in the Adjoining Owners' land is all through the mass concrete."

That was as far as the judge took that observation, irrespective of the adjoining owner's position and indeed the third surveyor's acceptance that the mass concrete rails were not a necessity, and decided that the appellants counsel had not demonstrated to the Court's satisfaction that any part of the box transmitted loads onto the adjoining owner's land.

At paragraph 57, Bailey HHJ was clearly persuaded by the respondent's (building owner's) submission:

*"it matters not where the load is distributed. Simply that the sole consideration is where the wall rests. Therefore, the wall rests on the mass concrete foundation, and as the mass concrete is not a special foundation, it may simply be asserted that the appellant's argument fails, and fails even if it were possible to **demonstrate that the load is distributed to the***

adjoining owner's land by the slab without such distribution bearing through the mass concrete." (emphasis added).

The learned judge then set out his narrative on the Act's definition of "special foundations" with a criterion that he considered satisfied the interpretations of section 7(4).

"s.7(4) Nothing in this Act shall authorise the building owner to place special foundations on land of an adjoining owner without his previous consent in writing."

"In this connection it is plainly not sufficient for the Adjoining Owner to show that load is distributed to ground alongside the mass concrete on the Building Owner's side of the foundation. It is necessary to show that load is distributed to ground which is directly beneath the party wall, which includes the basement party wall originally constructed for the basement of 30 Abingdon Villas, and which is to be deepened in the same vertical plane by the Respondents in accordance with Mr Pringuer-James' design." (emphasis added).

The judge had also presided over the Gray case (see Section 2.7.2.2) which had incorporated a reinforced concrete basement, and upheld the Award in Gray v Elite judgment (2015) expressing an altogether different view:

"it is clear from the plan that the works included reinforced steel foundations and were special foundations for the purposes of section 7(4)."

On comparison between the two cases, it is not clear why the learned judge reached conflicting judgments when: (i) the function of the box remained the same; and (ii) the third surveyor acknowledged that the mass concrete rails made no contribution to the distribution of any loads. When handing down the judgment Bailey HHJ stated:

"In coming to my decision, I have considered the interpretations [definitions] set out in Section 20 of the Act. This defines a special foundation as 'foundations in which an

assemblage of beams or rods is employed for the purpose of distributing any load'. It is appropriate to consider reinforced concrete to be a foundation within this definition and therefore a reinforced concrete foundation beneath the party wall that extends across the boundary onto the Adjoining Owner's land would be a special foundation requiring the Adjoining Owner's consent. However, the definition of foundation is 'in relation to a wall, means the solid ground or artificially-formed support resting on solid ground on which the wall rests.'"

"Where a basement is being formed beneath a party wall, then it is not necessarily the case that the whole structure that is placed beneath the existing wall is itself a foundation. This was identified in the case of Standard Bank of British South America v Stokes [1878] in which it was decided that a wall can be raised downwards as well as upwards. In my view, the key issue is the primary function of the structure in question. A vertical structure formed for the purpose of enclosing an occupied space is primarily a wall and not a foundation. The fact that the load from the original wall is transmitted through that structure and ultimately to the ground does not make that structure a foundation any more than a wall above ground is a foundation simply because it transmits a load from a roof to the ground. With this design, the feature that transmits the load from the vertical reinforced concrete wall to the ground is the mass concrete strip foundation and as a result there is not a special foundation in this design that requires the Adjoining Owners' consent. I have taken note of Mr Wright's contention that the mass concrete foundation is not a necessity for the structure being proposed and has been designed to achieve the result of this interpretation. That may be the case but I do not believe that means that it does not succeed in achieving that."

Thus, the learned judge's decision in this case held that:

- (i) The primary function of the box is to form a wall enclosing an occupied space;
- (ii) It does not form a foundation to the structure above;
- (iii) It does not transfer loads onto the ground;
- (iv) It did not transfer loads on to an adjoining owner's land;
- (v) The box walls were sitting on the mass concrete rails; and
- (vi) The mass concrete rails transmit the load to the ground and are therefore the foundation.

2.7.8 Reinforced concrete, function and form

All buildings move, this is because they are constructed from rigid materials that have limited flexibility and indeed each material presents its own unique qualities and limitations when combined to another element. When a building moves cracking will appear, to a limited or greater extent. This could materialise at the junction of walls, skirtings, between brickwork and blockwork or around window openings. Sometimes the cracking is due to thermal expansion or contraction. Whilst the construction industry has achieved great strides in designing buildings that accommodate thermal movement without significant structural failure, there is historically building stock within the UK that is founded on weak or poor foundations. Indeed, some properties have been built on unstable ground that is at a higher risk of movement. However, they remain stable until the dynamics of the situation changes.

The accurate diagnosis of any structural cracking that occurs within a property and the rate at which movement is expected to progress, is dependent on the cause. The subsequent specification of any structural repairs will be defined by the extent of the damage and the ground conditions etc. Elements of the building may move in the same plain or there may be rotational as well as downward displacement between one element or another. They can pull away and/or compress, with some cracks being wider at the top than others at the bottom. Understanding how a building moves and what could be the possible cause, is fundamental to understanding whether or not a specific material or the repair is appropriate. With foundations, subsidence is a common structural problem that is often exacerbated during extremely hot, dry periods or during wet periods when the soil swells (heave) through moisture uptake. Applying Newton's Third Law of Motion, every action has an equal and opposite reaction, so the appearance of cracks is not surprising given the rigidity of the various materials.

When a foundation is excavated and indeed formed there is an initial acceptance incorporated within the design that the ground compresses to accommodate these new loads, but this can often take several months if not years to happen and could result in minor structural cracking or settlement. During this adjustment period the ground must reach equilibrium (i.e., compress to the point that it no longer reacts to the loads), therefore creating a stable base, or else it continues until there is a total failure to stabilise. Dickinson and Thornton (2004) use the analogy of a cushion, when a person sits on a cushion it compresses to accommodate the weight of the person. Compression stops when it achieves what is considered to be equilibrium. The degree to which the cushion compresses will depend upon the weight applied and the constituency of the material within the cushion. All materials have different constituencies and will compress and displace accordingly, the principle is the same with any foundation.

When movement occurs within a building specifically at ground level it is generally associated with subsidence, and the recognised method of repairing buildings is to underpin the failed foundation/structure. However, concrete in itself is a material that is extremely weak in tensile strength, but extremely strong in compression. Therefore, concrete absent of any reinforcement has limited use, i.e., mass-filled concrete foundations. Introducing reinforcement subsequently increases the tensile strength, whilst reducing the volume of concrete required, making it more economical to construct a greater variety of designs, that otherwise would simply not be possible.

In addition, it is important to note that reinforcement within concrete is not the extent of its application within the construction industry. The ability and benefit of increasing tensile strengths is recognised and is now common practice to incorporate reinforcement within brickwork. This can be achieved through Heli-fixing bars, retrospectively inserted into cracked brickwork or by incorporating a mesh within the horizontal bed joints of the brickwork, all of which are designed to increase tensile resistance in exactly the same way as reinforcement does within concrete. Therefore, the primary function of reinforced concrete is no different to a non-reinforced concrete, other than its ability to distribute larger loads and forces by resisting tensile forces.

2.8 Reinforced Concrete

2.8.1 What is the function of reinforced concrete

The function of a structure is determined by the many elements and materials that make-up its structure, and concrete is no different. Understanding how these perform both independently and when joined with others to maintain structural integrity is important, if a cohesive and robust understanding of the function of reinforced concrete is to be achieved in the context of the special foundation definition. The linking of reinforcement will form a contiguous structure, or unique shapes (see Diagram No 15). Surveyors must understand how the function of each element operates both independently and as a single structure with each link performing a distinct function that contributes to the structural integrity and dynamics of the structure. By adopting an inquisitorial approach regarding function, surveyors will be able to establish whether the use of a reinforced concrete box satisfies the Act's definitions.

The foundations are the most important component of a structure. If they fail the structure or wall resting thereon will be compromised and, in some cases, subject to catastrophic failure (see Figure No 3 & Appendix VII). A foundation is defined under the Act as that part of the structure that is in direct contact with the ground. Therefore, the foundation will be designed so that it transmits the combined loads of the structure onto the ground, whilst accommodating any reasonably and foreseeable ground movement without causing excessive deflection, deformation or failure.

The Act's definitions of foundation and special foundation are repeated below for ease of reference:

*“foundation”, in relation to a wall, means the solid **ground or artificially-formed support resting on solid ground** on which the wall rests;*

*“special foundations” means foundations **in which an assemblage of beams or rods is employed for the purpose of distributing any load;***

The emphasis highlights the Act's explicit qualifications that must be incorporated within the design if they are to satisfy either of these two definitions. The surveyor should be familiar with these qualifications to determine how to assess any proposed foundation design and the advice they give to the property owners/architects etc. Therefore, identifying which elements (if any) of the proposed structure satisfy the Act's criteria is a necessary consideration that must be adopted if the correct determination is to be achieved.

The Building Regulations, Approved Document A1 defines the function of a foundation:

“is that the building shall be constructed so that the combined dead, imposed, and wind loads are sustained and transmitted by it to the ground: (a) safely, and (b) without causing such deflection or deformation of any part of the building, or such movement of the ground, as will impair the stability of any part of the building”.

Document A2 of the Building Regulations recognises the issues surrounding ground movement; that the building shall be constructed so that any swelling, shrinkage or freezing of the subsoil; or landslip or subsidence (other than subsidence arising from shrinkage) insofar as the risk can be reasonably foreseen, will not impair the stability of any part of the building. This definition does not limit the foundations to being horizontal, nor indeed does it eliminate vertical elements such as a wall from being a foundation. Indeed, the only criteria that is not ambiguous, is that the foundation must be able to transmit loads safely. A foundation is the only element of the structure that is in direct contact with the ground and transmits the structural loads to the ground (Brown, 1992, p.83). There is no distinction between the materials used for constructing the foundation whereas the Act includes that “... *an assemblage of beams or rods is used...*”, in which case they are classified as special foundations. Thus, the Act clearly recognises that reinforcement has a structural function. The P&T suggest that this only applies to that part of the structure that transfers load to the ground (P&T, 2016, p.131), but if the concrete wall is linked to the slab, then it applies to a basement as a single structure.

The structural function of a retrofit basement box beneath the existing structure must also ensure that the structural integrity of the building above is not compromised during and

after the construction processes. Thus, ensuring that all loads are maintained and always transferred through the combined vertical and horizontal elements of the box whilst resisting the horizontal (lateral) surcharge loads created by the adjacent ground, hydrostatic pressure, and any other surcharge loads acting on the outside walls of the basement (Haslam and O'Connor, 2013, p.15). This is achieved by transferring the loads through parts of the box as a single entity, which is only possible if the reinforcement is linked.

Because the building's original foundations are no longer in touch with the ground, they are no longer a foundation (see Diagram Nos 10–15). Understanding which new element of the basement has a structural function and therefore becomes the foundation, is fundamental to achieving a non-contentious interpretation and understanding of the structure's function.

2.8.2 What is the function/purpose of underpinning?

Underpinning is an established technique for repairing failed foundations or introducing foundations where none previously existed. In *Chaturachinda*, the learned judge accepted that the function of the basement wall is to *“underpin the previous underpinning with a reinforced concrete basement box”*. Therefore, it is unclear why the judge would not recognise that the basement box was, by definition, performing the function of a foundation. The underpin ensures that the existing structure is supported by the box, which must, also by definition, now rest upon the underpin foundation. Any loads from the existing structure are then distributed to the ground through the box and as such would also satisfy the special foundation definition as a reinforced underpinning foundation.

Irrespective of how well a foundation is designed, external factors such as root-accelerated clay shrinkage or heave can impact upon the foundation's structural capabilities. The construction industry can overcome these problems with various techniques to accommodate accepted limits of the movement. This is normally achieved by underpinning the existing foundation, it is a technique by which an existing foundation that has failed is repaired and it reinstates the structural integrity in a cost-effective manner.

Pole (2013) suggests little regard is given to the neighbour who will typically own 50% of the party wall that is being supported on a new type of foundation system. Underpinning

involves excavations, which in turn triggers the obligation to serve notice under section 6(1). This involves creating mass concrete ‘underpins’ formed in bays of approximately 1200 mm (see Diagram Nos 25 & 26), within which are linked horizontal starter dowels that project into and bond with the next underpinning bay as they are constructed to form a contiguous foundation.

The Stage II survey data asked the stakeholders if they considered the dowels between the underpins created a special foundation, (57% agreed and 43% disagreed), almost a straight split. Interestingly the P&T Club accept that dowels form the key to the adjacent pins, but then do not recognise their structural function as creating a special foundation. The dowel’s function is an intrinsic element of the structural integrity of the underpinning design, and their function is to create a contiguous foundation that ensures: “.... *distributing any load...*” between the individual pins, as incorporated within the Act’s definition of a special foundation.

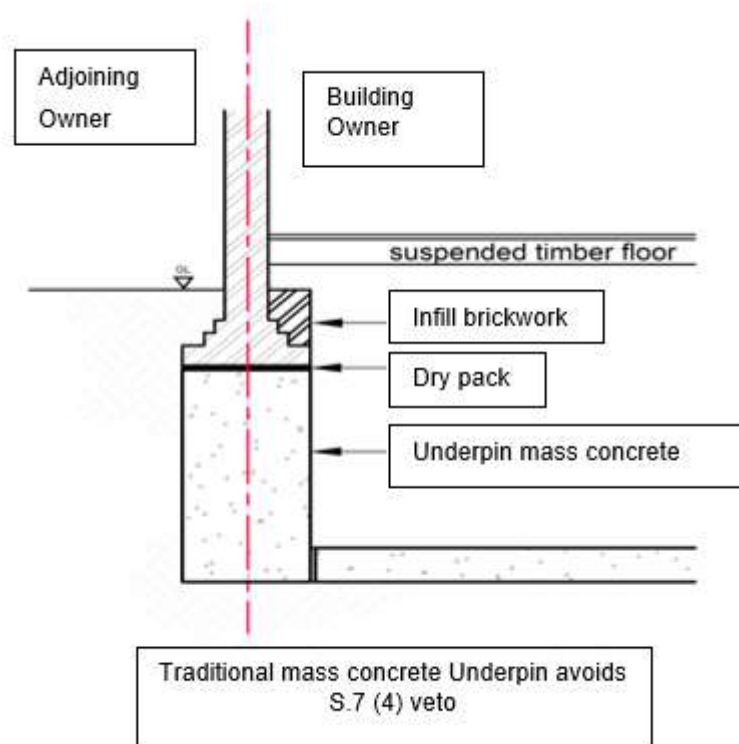


Diagram No 25 Traditional mass concrete underpin basement (Pole, 2013, p.49)

The absence of dowels will reduce the foundation’s structural ability to resist tensile loads or to safely transfer loads from one pin to another. As such, the underpin dowel is intrinsic

to the design and would appear to satisfy the special foundation definition, therefore triggering the section 7(4) veto. However, when underpinning is a necessity due to a failed foundation it is of benefit to both owners, and it is unlikely that an adjoining owner would disagree with the improvement works or invoke the section 7(4) veto.

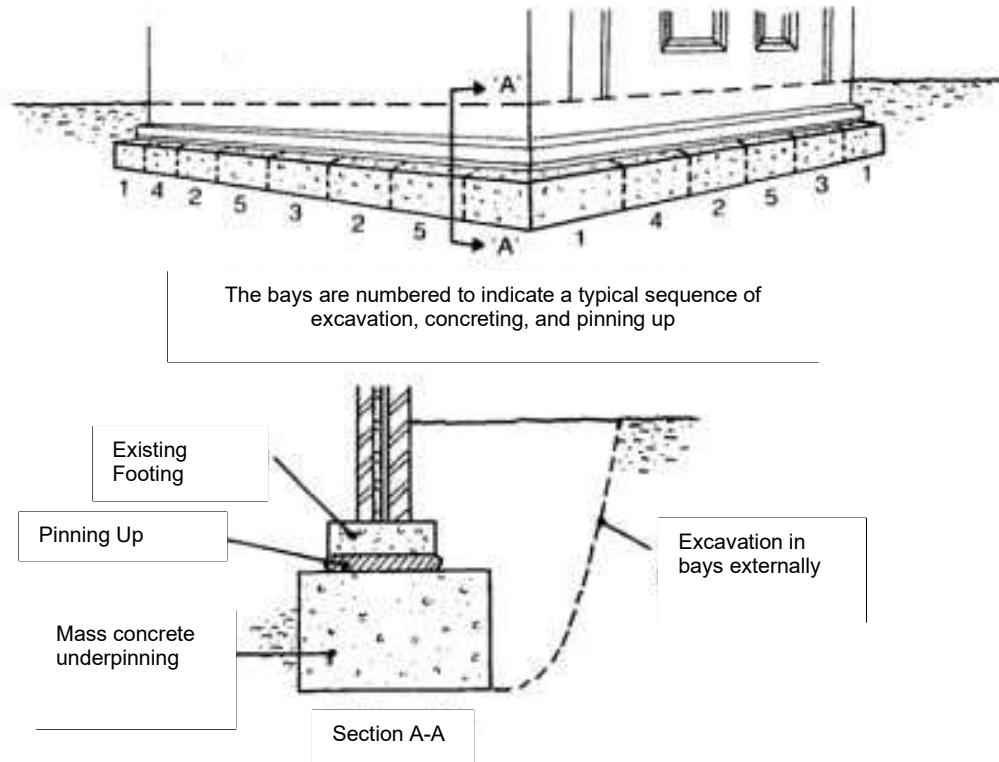


Diagram No 26 Traditional mass concrete underpin (Underpinnings, CA 2019)

2.8.3 What function is created by linking the concrete?

A basement box comprises five or more individual elements (four walls and one base) and supplants the original foundation's function. In Chaturachinda, the third surveyor recorded a clear distinction between the wall and the basement box as being separate structures or elements. Consequently, suggesting that irrespective of the fact that the basement slab is designed and constructed as a reinforced concrete structure, the vertical elements are only ever a downwards extension of the party wall and irrespective of the material used for its construction, it therefore remains a wall.

However, the wall's function is to support the adjacent (resist lateral loads) earth as well as the structure above and to transfer the loads to the ground (see Diagram No 28). When

the concrete elements are linked, they create a single entity or “box”, and it is important to recognise the structural function now generated by the three-dimensional construction. The horizontal and vertical elements are no longer mutually exclusive and plainly rely upon the reinforcement link where each element attached thereto will combine to resist “any loads”. Therefore, can a distinction be drawn between the function of the vertical and horizontal elements of the box? Can they only be classified as a separate wall and base?

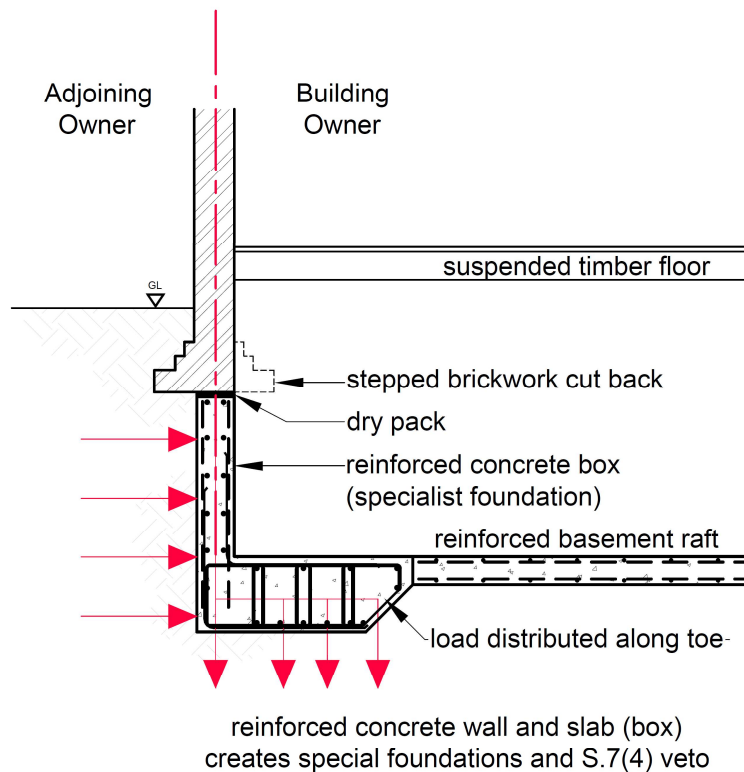


Diagram No 27 Reinforced concrete basement box with perimeter beam

Buildings are built from the ground upwards, and the ground conditions will determine the foundation design. Building below an existing structure is inherently problematic especially where ground water levels are high and will assert additional lateral and vertical forces. This will create further complications for the construction process (Haslam and O'Connor, 2013, p.30). Notwithstanding, the dead loads created by the building above must also be incorporated into the design and construction process, because the construction of the basement box temporarily interferes with the original foundations. The lateral surcharge forces created by hydrostatic pressure, must be considered in the permanent design (Haslam and O'Connor, 2013, p.15). A building's ability to resist both dead and imposed

loads (i.e., all loads) starts at the roof and accumulates downwards, so when a designer thinks about a structure, it is from the top down. This engineering approach would apply equally to the box because the existing structural loads together with the lateral loads created by the retained soil, will create forces (or loads) onto the box.

The function of linkage between the walls and the basement “box” is necessary and easily demonstrated, should not be underestimated. Take five single sheets of cardboard and try to form a box. It is impossible unless they are linked together with tape which will immediately increase the rigidity and integrity of the box. However, cutting the cardboard to a predetermined shape from a single sheet, allows them to be folded, and will achieve a phenomenally stronger structure, able to support loads many times its own weight. More importantly, the box can then resist both compressive and tensile loads. Remove the link between the base and any one of the sides and the structural integrity is compromised, causing it to fail under minimal loads. Reinstall the link and the structural rigidity is immediately reinstated.

The structural integrity and function of a reinforced concrete “box” is no different. Its ability to simultaneously resist compressive and tensile loads is only achievable through the use of reinforcing to create the “link”, which by definition cannot be mutually excluded or in Chaturachinda ignored, just to avoid the section 7(4) veto. Accordingly, because a basement box requires bonding of the floor slab and the external walls together, the loads and other factors have to be considered (Narayanan and Goodchild, 2012, p.39). The box is a contiguous structure and operates as a single unit with only one function, which is to safely transfer the loads to the ground upon which it rests.

2.8.4 Clarification of the function of a reinforced concrete retaining wall

Unsupported soil will move (or slump) until it achieves stability. The angle of the slope that consequently forms, is called the angle of repose and is the measurement at the steepest angle at which a sloping surface formed of loose material is stable (see Diagram No 29). The angle of repose will vary according to the make-up and mechanics of the material. When it is not possible to form a natural sloping earth berm as in a basement construction, a retaining wall must be constructed (see Figure No 6). Without a retaining wall the soil will move until it finds its natural angle of repose. To avoid this, the wall must be able to resist the surcharge loads forced onto the wall and safely transfer them to the ground, which unequivocally makes it a foundation.

It is therefore clear that part of the function of a basement retaining wall is to act as a foundation or as part of the foundation. If there is a lack of clarity of this point amongst party wall surveyors then this represents a critical gap in knowledge. When an owner intends to reduce ground levels, they will interfere with the adjoining owner's legal natural right of support. In common law, this is an interference of an easement, which is actionable as a private nuisance and explicitly prohibited under section 9 of the Act. A private nuisance is a civil wrong: "*it is the unreasonable, unwarranted, or unlawful use of an individual's property in a manner that substantially interferes with the enjoyment or use of another individual's property, without an actual trespass on to the land.*" (Antino, 2012, p.115). Avoiding any potential litigation arising out of interference is possible through the service of a section 6(1) notice.

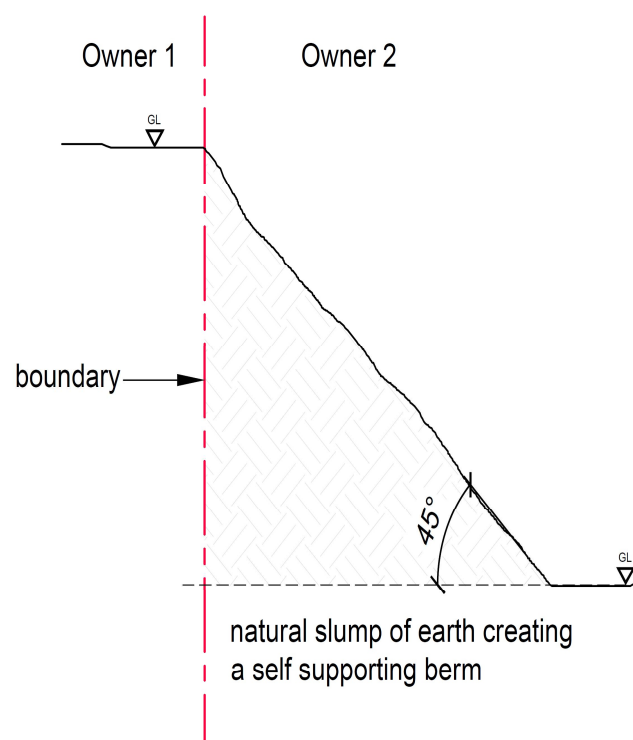


Diagram No 28 Example of a material with a 45 degrees angle of repose

Providing an alternative means of support is a legal defence against an interference with an easement because the interference is temporal (*Cubit v Porter*, 1828). Any excavation under section 6(1) & (2) must reinstate or maintain the means of support in such a way as

to safely support the adjacent soil. If not, the soil will create lateral (surcharge) forces on the wall causing it to slip inwards (see Diagram No 31). Irrespective of whether the reinforced concrete is a single box or separate elements the reinforcement function does not alter.

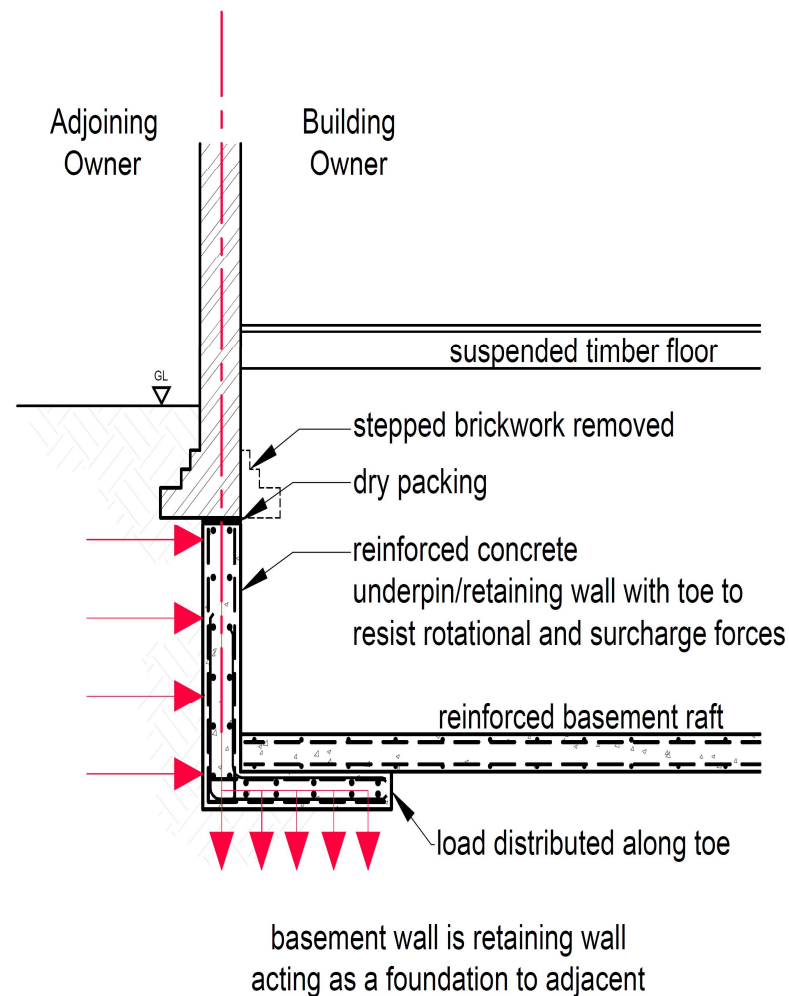


Diagram No 29 Reinforced concrete retaining wall not bonded to floor

(Pole, 2012, p.49)

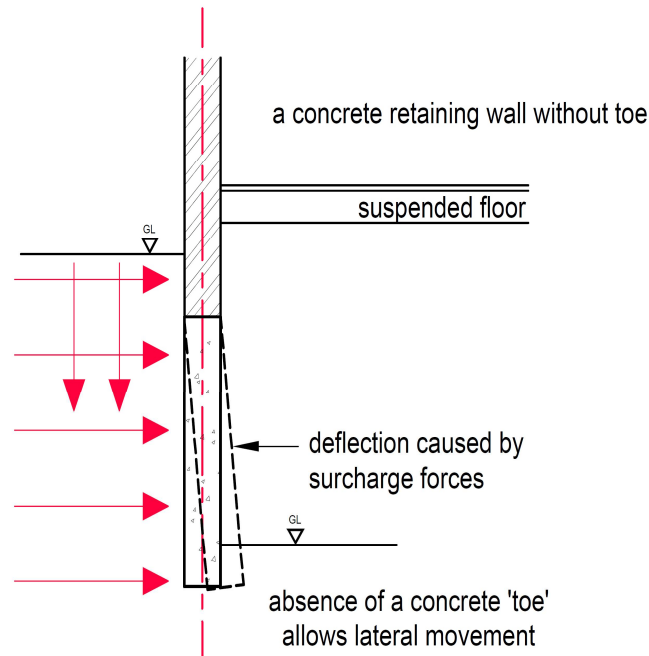


Diagram No 30 Unrestrained retaining wall

The most effective way to resist lateral forces is to create a projecting “toe” to form an L-shaped base (see Diagram No 30). The ‘toe’ is designed to prevent rotational movement by providing a counterbalance that increases the surface area over which the loads are distributed. This can only be generated if a link is created through the use of reinforcement. A basement box base performs in exactly the same manner, with the basement slab providing the counterbalance to the vertical structure (wall) safely transmitting any lateral surcharge loads created by the adjacent soil and hydrostatic pressure onto the ground, if the retaining wall is not linked to a toe or slab, it will fail. Thus, the similarities between the function of a basement wall and a retaining wall as recognised by Ambrose (1991) are the same, and this would include the findings of the AC’s proposed definition which would include any retaining or other wall.

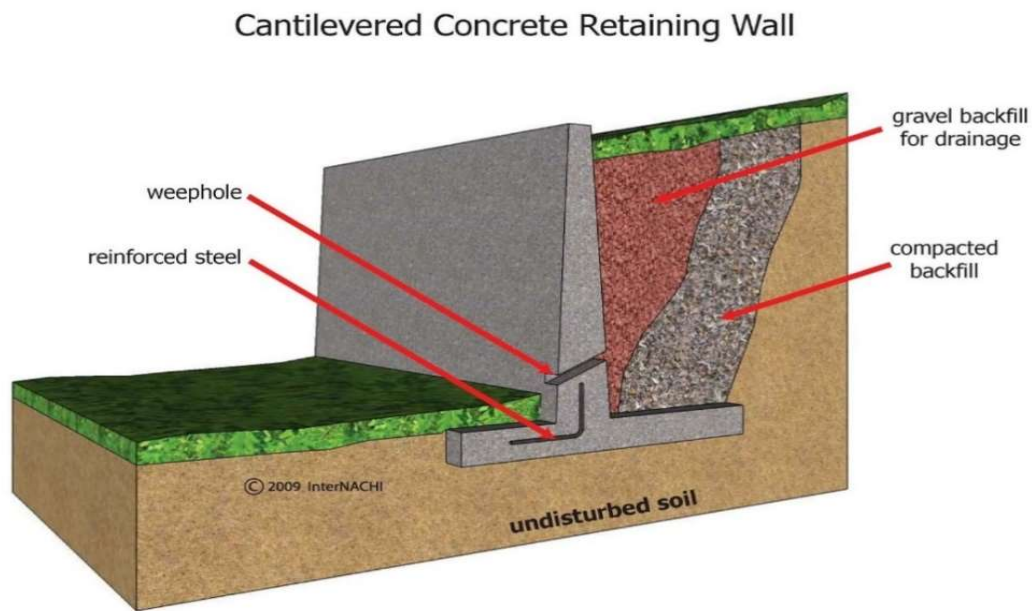


Figure No 6 Cantilevered concrete retaining wall (InterNACHI.com 2009)

2.8.5 Reinforced concretes contribution to distributing loads

A building's performance is dependent upon the interaction between various elements and materials used in its construction. This chapter has investigated one important aspect which is the function of reinforced concrete and its ability to perform within a predetermined structural criterion, so that its structural integrity and function is achieved. The foundations are the most important element of any building and if they fail, the structural integrity is compromised. This will affect all elements of the structure which are dependent on the foundation's integrity. Accordingly, there can be nothing contentious about the intent behind the Building Regulation's broad definition of a foundation, to recognise that various materials can operate in both isolation and/or in unison with other elements to create a foundation. A similar approach is introduced in section 20 of the Act, with the two definitions of a foundation designed to ensure the safe distribution of the loads onto the ground, but in different ways.

The Act's definition of a foundation being the artificially-formed support resting on solid ground on which the wall rests, is a common sense and non-controversial description. The controversy comes from the definition of a special foundation which includes an assemblage of beams or rods, when used in a basement box and positioned below the

existing structure. Does the box now become the foundation when no other part of the structure is in contact with the ground and where its primary function is to transfer any load safely to the ground. Its structural integrity is created by linking the walls and base with reinforcement and nothing else. This will satisfy both definitions within the Act and the Building Regulations without imposing any limitations or requiring any additional qualifications.

In Chaturachinda (see Section 2.7.2.7) the third surveyor viewed the basement box as having separate elements and functions so distinct and remote, that the surveyor determined that a basement wall is only ever a wall. Surprisingly, no consideration is given to the important function that the reinforcement provides in creating a retaining wall or indeed how the lateral and rotational surcharge forces are safely directed to the ground, if the link or reinforcement does not transfer 'any load'. Ambrose (1991) confirms that a basement wall is a retaining wall, performing the same function as a foundation which can resist lateral surcharge loads. This is achieved by diverting them downwards and through a wall to the perimeter beam and to the whole of the slab which is in contact with the ground.

The starting point for any assessment must begin with the Act's definition of special foundation "as including an assemblage of beams or rods" employed for the purpose of distributing any load. The explicit function that the reinforcement contributes cannot be ignored. Narayanan and Goodchild (2012) recognise that the base and walls of the box should be bonded together, and they concur with Ambrose (1991) that the lateral loads must also be accommodated within the design. A retaining wall is designed to resist the lateral surcharge loads which is only achieved by the reinforcement. Haslam and O'Connor (2013) recognise that the box must also accommodate the hydrostatic pressure and lateral forces. Thus, given the Act's requirement that a foundation must distribute "any load", the lateral loads applied to the wall in conjunction with the loads from the structure directly above would fall within the Act's definition of "... any loads". This definition introduces the importance of the function of the reinforcement, which is determined by its inclusion, but which is not defined by its quantity. All these independent opinions recognise that the structural integrity of a basement box is determined by the three-dimensional function created by the reinforcement.

Of notable concern is the absence of any recognition by the third surveyor in the Chaturachinda case that the reinforcement is fundamental to the box being able to

distribute any loads safely to the ground as a single entity. If the reinforcement is removed the structure will fail, irrespective of whether there are rails beneath the box. Given that the third surveyor accepted that the rails have no structural function, the rails cannot, by definition, be described as the foundations because they do not transfer “any load”, which is an explicit function of the Act’s definition.

This chapter has investigated the design and use of reinforced concrete and which, when incorporated into each element of the basement box, identifies and establishes the contribution that reinforcement makes to the structural integrity. Whether in part or whether conjoined with other elements to create a single structure, the inclusion of “*an assemblage of beams and/or rods*” falls within the special foundation definition. The function of the reinforcement is to increase the ability to resist tensile forces and transfer any loads to the ground. Without this the structure will fail when excessive surcharge lateral forces or loads are applied. We can therefore see that a three-dimensional basement box cannot, as Chaturachinda incorrectly found, be assessed as independent elements. Why? Because as independent elements they cannot perform the required function of distributing the loads to the ground. It is important to recognise that a three-dimensional basement box is a single entity and therefore is in fact a special foundation.

2.9 Validating the Literature Review

A presumption often made with regards to research is that the literature review should be substantial, otherwise the findings must in some way be flawed and of no value to the generation of new knowledge. But what is substantial? For some research there will be a plethora of literature available, and this may well be a valid presumption. However, there are instances where the research is so new that the only reliable literature is on the periphery and therefore limited in quantity. The Covid-19 pandemic is a prime example. However, it does not necessarily follow that this generalisation is reasonable or can be applied to all research topics. Whilst the Act is not a young subject, this research focus is driven by the absence of any previous academic study and a desire to remove some, if not all the conflict. Given that party wall matters are private, literature (on party wall Awards) is not unsurprisingly limited, but that does not diminish the importance of the research nor indeed the contribution that this research seeks to make to knowledge in the field. The purpose of all research is to contribute to new knowledge and literature through the advancement of knowledge related to the topic and associated areas.

Furthermore, the quantity of literature should be assessed on a proportional basis in the same way that the quality of data should be viewed (see Section 3.5). Not simply on the assumption that a PhD must by definition contain “x amount within the literature” before it can be considered a valid contribution to knowledge. In fact, the opposite view should be adopted, because the limited availability of literature reinforces the need for research and the contribution to knowledge. Neither should the status of the researcher where they operate within the research field be viewed as negative, indeed the case is quite the opposite, in fact, this can bring a greater degree of insight to the research which might not otherwise be obtainable. Notwithstanding, post 1997 the only academic research undertaken was by Dr Paul Chynoweth, and his research papers have been referred to where relevant to the research focus. There have been a number of publications by barristers, surveyors (including the researcher) and various non-academic papers by various practitioners and party wall surveyors. In addition to which limited case law has also been generated and referred to where appropriate, all of which reinforces the justification behind the research.

2.10 Summary Identifying the Gap in Knowledge

Whilst there is a noticeable absence of literature specifically dealing with the research topic, the literature review is not unsurprisingly lengthy and forms a considerable part of the thesis because it addresses five of the six research objectives. Commencing with establishing accepted concrete basement designs (see Section 2.2.5) the research demonstrates the variety of designs available to identify the most appropriate scheme best suited to the circumstances of the project, which could avoid or include the use of a reinforced concrete foundation projecting across the boundary. Understanding why conflicts are creating difficulties required a thorough review of the Act and the literature surrounding the subject (see Diagram Nos 2 and 4).

Understanding the Act’s procedures that establish both the surveyor’s jurisdiction and their ability to interpret the Act, begins with a review of the origins and passage of earlier legislation. This identified early concerns regarding the projecting of special foundations onto an adjoining owner’s land and why restrictive principles were incorporated within the Act. In addition, establishing and understanding the justification for the need for the Act’s two definitions of “foundations” and “special foundations” and the continuation of the section 7(4) veto, is fundamental to appreciating the difficulties the Act creates.

Having identified that the surveyor's role is to resolve disputes, the literature review investigates Alternative Dispute Resolution methodologies to identify if there are any similarities between ADR and the Act, and whether they can assist party wall surveyors in achieving a swift resolution to resolving the conflict.

The Act recognises that some party wall matters will reach an amicable resolution, and given the restrictions created by section 10(17) which entitle an owner to appeal a surveyor's Award within 14 days and investigates the relevant case law. Whilst there is a considerable volume of case law which flows from earlier legislation and indeed the current Act, the literature review only identified one case that addressed the research focus. Given that the focus of the thesis is the interpretation of special foundations and the section 7(4) veto when used for the construction of basements, the literature review has focused on specific case law that contributes to peripheral matters and how the Courts apply specific rules to interpret the law. Having undertaken a review of the limited case law, it was of notable concern that there is only one County Court case that specifically addresses the issue of special foundations and basements, and the impact that the case has on the surveyor's interpretation. Consequently, the literature review has *inter alia* identified 20 gaps in knowledge across a broad spectrum of the Act with the most common conflict being adopted as the research focus. Therefore, unless the gap in knowledge is filled, the conflict will continue.

Chapter 3

3.0 Research Methodology

3.1 Introduction

There is a broad spectrum of research methodologies that provides unique approaches to the collection and analysis of data. How the data is collected, analysed, and validated will influence the decision on which research methodology is adopted. Knight and Ruddock (2008) suggest that the mixed method approach now accounts for 11% of construction research which challenges the historic view that pure “quantitative” research is the most appropriate. The research topic is grounded within the built environment, the researcher’s theory regarding growing conflict was based on the APA data adopted and a deductive assessment of those personal experiences. To avoid issues of subjectivity and bias arising from a single source of data, introducing the scoping study to obtain additional independent data to either support or reject the researcher’s hypothesis required adopting a mixed methodology of qualitative and quantitative data analysis. Designing research studies is a challenging process in both quantitative and qualitative research (Creswell and Clark, 2011, p.54). The Stage I (i) & (ii) quantitative and qualitative data collection enabled the research methodology framework to be developed (see Figure No 6). Selecting a mixed methodology approach to maximise the breadth of data recorded would ensure a successful outcome from the research. A mixed methodology approach benefits a research topic which does not fit firmly within a single research methodology and can yield results that otherwise may not be identified. Knight and Ruddock (2008) define a mixed methodology as: “...*the combining or the integration of qualitative and quantitative research and data into a research study*”. Given the diverse and eclectic mixture of professionals in the profession (see Figure Nos 9 & 10), designing a mixed methodology was considered the most appropriate method to maximise the opportunity to collate appropriate data from a mixed professional environment.

3.2 Developing the Research Framework

As Creswell & Plano (2018) suggest, quantitative data has a propensity to be regarded as subjective, validation through qualitative analysis will test the findings which as Knight and Ruddock (2008) suggest can be considered more robust. Adopting a quantitative and qualitative mixed method approach provided the opportunity to cross reference the results between independent data to authenticate the findings. The combination of these two methodologies is a valid method for conducting research (Creswell & Plano 2018) and indeed supported the researcher's hypothesis of growing conflict. A road map was developed to assist with direction and focus to identify the gap in knowledge and the research findings (see Figure No 7).

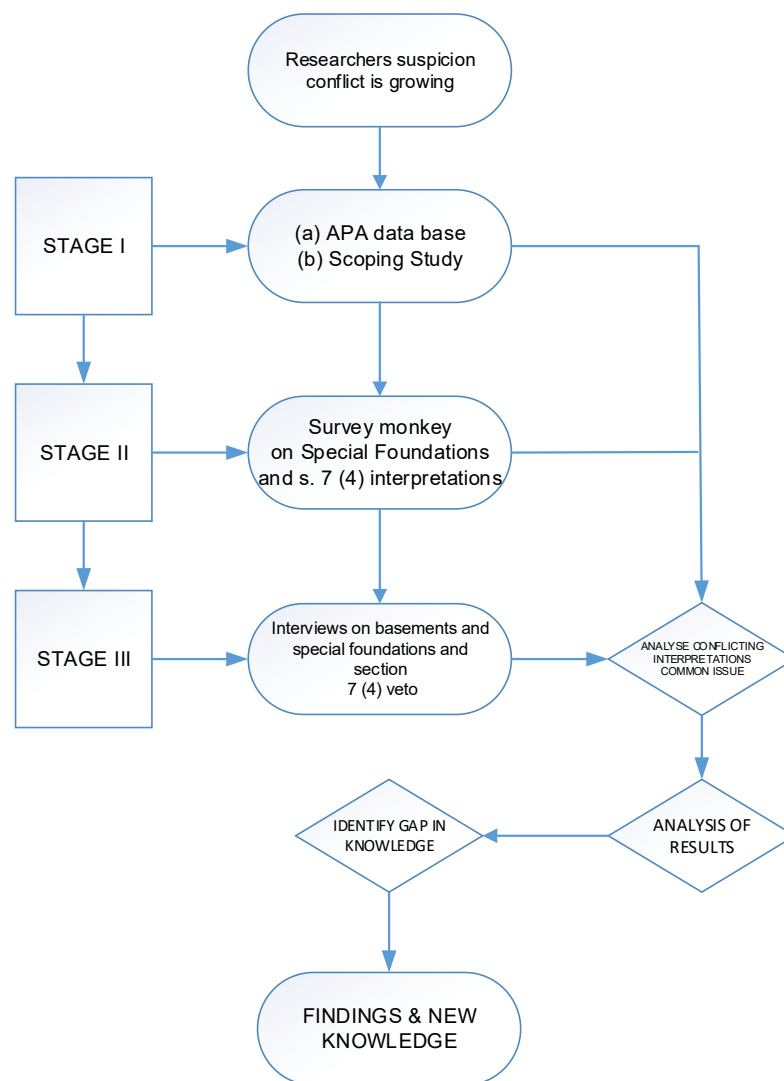


Figure No 7 The research methodology framework

3.3 Mixed Research Methodology

Quantitative data is analysed in numerical form such as statistics, percentages, etc. Used in the natural and social sciences, it is the systematic, empirical investigation of observable phenomena through statistical, mathematical, or computational techniques. It is, however, particularly useful for collecting and analysing high volumes of data, within reasonably short periods of time (see Table Nos 1 & 2). The data collated through these techniques enables testing and validation of a hypothesis. It allows early generalisation of the research questions and findings (i.e., growing conflict) when replicated within different populations. Whilst it is anticipated that the analysis of the data, together with the help of statistics will yield unbiased results, the quantitative research categories may not necessarily reflect the stakeholder's understanding, beliefs and personal knowledge, and may miss certain phenomena due to focusing specifically on the testing of the hypothesis rather than the quality of the data obtained. The knowledge gathered through the process may be too abstract because it is used to quantify attitudes, opinions, behaviours, and other defined variables through the generalisation of results gathered from a large sample population. However, in this research the qualitative Stage (i) data helped identify and validate a genuine concern of growing conflict.

Qualitative research answers the how and why certain phenomena occur rather than the regularity of the occurrence. The intention behind qualitative research is to describe and explore through narrative text (see Appendices III & IV) or visual-based data by developing theories that are exclusive to the specific set of stakeholders. It is useful for describing complex phenomena to generate individual case data that facilitates cross case comparisons and analysis, while incorporating the stakeholder's personal experiences of the phenomena in Stage I (ii) assisted with confirming the growing conflict went beyond the APA data.

Because the qualitative research is embedded within a local context i.e., a specific environment or forum it allows the researcher to specify the contextual settings and factors that are relevant to the research i.e., building below ground and the section 7(4) veto. It can identify the individual stakeholder's perception and interpretation of the phenomena to facilitate the use of the data within a natural setting. It is sufficiently diverse and responsive to the local conditions and stakeholder objectives to ensure the avoidance of bias. The researcher can introduce changes in response to the analysis of the data collection process if necessary, throughout the collection period such as NVivo® QSA.

Therefore, adopting the mixed method research introduces benefits and flexibility that allow the research to be moulded around the specific research topic and the collection of data and its analysis, and to generate enquiries that test the hypothesis. It can remove explicit limitations and subjectivity that may be perceived to exist when a single methodology is adopted. As such this recognised methodology can encourage and create a broader and more complex range of research questions.

The research can analyse which aspects of a methodology are beneficial and complimentary to ensure that the data collection process, analysis, and hypothesis are robust. This ensures rich data is not only obtained but enhances the conclusions through the corroboration of findings. By drawing upon the strengths of both methodologies, and simultaneously removing the negative aspects an improved understanding and a greater insight is generated, thus, it increases the opportunity to gather knowledge that informs and contributes to the research aims and objectives.

Mixed method research as multi-strategy research is a recognised method of research in the built environment (Knight and Ruddock, 2008, p.10–11). Whilst Stage I (i) began with a quantitative assessment of the APA data, this generated data which potentially could have been considered subjective. An additional source of data could collaborate with the APA data to overcome the risk of perceived bias and subjective criticism, so qualitative research techniques were introduced through the scoping study and subsequently reinforced through the Stage II and III enquiries.

The quantitative analysis of the APA data enabled the researcher to deduce that there was a growth in conflict. Adopting Creswell's premise that qualitative research begins with assumptions, such as the researcher's identification of growing conflict. The data having provided substantive evidence of the wider party wall communities conflict, it was possible to apply a theoretical lens to study the problems created when inquiring into the meaning of limited numbers of individuals (Creswell, 2007, p.37). Given that party wall matters generally involve more than one surveyor for a dispute to arise, the researcher's reasonable assumption was to conclude that this phenomenon was not limited to the APA experiences but was actively occurring within the wider party wall community. Because the Act invites interpretation, the focus of the research was to identify and examine human experiences and approaches in the context of understanding various interpretations. The major

characteristic of quantitative research is a focus on deduction, confirmation, hypothesis testing, explanation, prediction, standardised data collection and statistical analysis (Burke, Johnson and Onwuegbuzie, 1991, p.18).

Because qualitative paradigms are founded on personal assumptions, it follows that the research would raise concerns regarding subjectivity. An appreciation is needed of the subjective reality which enables comprehension of human behaviour in greater depth than is possible from the study of objective and quantifiable variables alone (Neimeyer and Rensnioff, 1982, p.75–85). In this research, professional behaviour, and knowledge may influence the individual interpretation of the Act, and more importantly the findings.

3.3.1 Methodological selection process

A carpenter's toolbox will contain many types of tools, each having a specific function. The carpenter will select whichever tool is appropriate to make the task easier, and quicker. This analogy is no different to the researcher's toolbox which contains numerous research methodologies, each designed to facilitate research within a given area. The reasons for selecting a methodology are no different to the carpenter, who simply wants to achieve increased quality, efficiency, and accuracy. Restricting a researcher's toolbox may impact the accuracy of the results, and whilst there are research methodologies that are suited to a specific or single type of research, there are also areas of research that are suited to a more flexible "mixed methods" approach. The flexibility when adopting a mixed method approach creates a dynamic investigative process allowing the research to continually evolve, as indicated by the three distinctive stages of data collection and thus potentially increases the reliability of the research and achieves substantively greater results.

The primary factors that have underpinned the researcher's professional experiences, evidenced through the Stage I quantitative analysis of the APA data, is a clear example of early pre-existing research material. Access to this large volume of data raised questions, such as:

- (i) Is the data reliable?
 - (ii) Does the researcher's close relationship with the research topic raise bias?
- and

(iii) How can the data be validated at an early stage of the research?

These are genuine concerns which had to be addressed to eradicate any suspicion surrounding the data. A scoping study was implemented, and enquiries were made through the Stage I & II electronic qualitative enquiries (see Appendix II) which investigated the primary hypothesis that the most common growth in conflict was related to special foundations and the section 7(4) veto.

Knight and Ruddock (2008) investigated the most common forms of research within the built environment and identified that quantitative research was adopted within 71% of research papers. However, after the Stage I (i) findings it became evident that adopting a mixed method methodology could provide significantly greater opportunities to achieve a robust, cohesive and effective investigation and analysis of the research data. Whilst the social and behavioural sciences have been dominated by positivist schools of thought on the one hand, and interpretivists on the other, these approaches can create division and often become hostile and antagonistic camps. Nonetheless a mixed methodology using an inductive approach was selected because of the ability to remove subjectivity from a single source of quantitative data, providing an opportunity to broaden the scope of the research through the collection and analysis of both quantitative and qualitative data. Cross referencing the data identified relationships such as the growth in conflict and the single common area and validated the researcher's supposition that conflict was present within the wider community.

3.3.2 An inductive approach utilising mixed research methodologies

There was a concern that the researcher's close relationship with these professional commissions (APA data) influenced the hypothesis, which may be viewed as biased. The concept used to describe the relationship between the researcher and the object of the research is reflexivity. Reflexivity is the realisation that the researcher is not viewed as a neutral observer but is implicated in the construction of the data. As such the personal theoretical ideas, interpretations, practices and conclusions are partial and as such lack objectivity and this is impartiality that a non-related researcher could demonstrate. The researcher was aware of this and introduced a second element to Stage I (ii) to mitigate this possibility. A qualitative scoping study was developed and circulated to the wider party wall community to establish if the growth in conflict was being experienced throughout this wider community.

The findings from the Stage (i) and (ii) lines of enquiry supported that hypothesis validating the basis for the research. The findings also narrowed the divide between the epistemological argument that considers qualitative and quantitative methodologies as diametrically opposed and therefore philosophically irreconcilable. In this research the data gathered indicates that the two research methods are not diametrically opposed but can in fact work in tandem and there were clear benefits in adopting a mixed methodology for this research.

Mixed method research is now the third major research approach (Johnson, 2002, p.112–33) and from a philosophical perspective, mixed method research promotes an open and pragmatic approach. This broadens the spectrum of the specific view of knowledge as derived from both the socially instructed and the reality of the world. Adopting a mode of enquiry that utilises both induction and deduction to identify patterns and test theories which do not flow from a predetermined set of assumptions or concepts, is in effect equivalent to throwing out a wide net and collectively gathering data that addresses the conflicting concepts, and theories that have been identified. Whilst a quantitative survey is usually adopted to identify groups of respondents with strong contrasting views about a subject, these polarised groups can be used for follow-up qualitative interviews. Table No 7 provides an in-depth understanding of how the differences between the two methodologies contribute to the research question.

Table No 7 Relationship between the research question and research methodology

Types of mixing	Comments
Two types of research question	One fitting a quantitative approach and the other qualitative
The manner in which the research questions are developed	Pre-planned (quantitative) versus participatory/emergent (qualitative)
Two types of sampling procedure	Probability versus purposive
Two types of data collection procedures	Surveys (quantitative) versus interviews focus groups or individuals (qualitative)
Two types of data analysis	Numerical versus textural or diagrams
Two types of data analysis	Statistical versus thematic

Two types of conclusions	Objective versus subjective interpretations
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3.4 Reliable and Accessible Data

Establishing a source of relevant and accessible research data which underpins the research topic is the most difficult element of any research. If the data is unreliable then the findings will be distorted and of limited value. The researcher was uniquely positioned to draw upon the APA data accumulated over a period of 35 years (see Table Nos 1 & 2). This volume of data is not generally available at such an early stage of the research journey and whilst the APA data validated the researcher's hypothesis, there was a gap in knowledge creating conflicting interpretations. It was recognised that a second source of data would validate the APA data and remove subjectivity as a necessary part of the validation process. The data collection process was extended to incorporate three distinct stages to address the research aim and objectives (see Section 1.3).

3.4.1 The following tables link the Stage I, II & III questions to the research objectives

A retrospective analysis (see Table No 8) following the collection of the data was undertaken to establish which questions raised during the data collection enquiries contributed to the achieving the objectives.

Table No 8 The relationship between the data and the objectives

Objective 1: Establishing the accepted basement construction techniques	
Stage I (ii) questionnaire	Q29, 30, 32, 33, 34
Stage I (ii) scoping study questionnaire	Q4, 5, 6, 7, 8, 11, 14, 16, 17, 21, 23
Stage III questionnaire	Q1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 23, 25, 29, 30, 31, 32, 34, 38, 39, 40, 41, 42, 43, 45

Objective 2: The origins and passage of the Act	
Stage I (II) questionnaire	Q1, 2, 23, 29, 30
Stage II scoping study questionnaire	Q1, 2, 3, 5, 7
Stage III questionnaire	Q1, 5, 9, 26, 35, 36, 37(i) (ii) (iii), 41, 42, 43, 46 (i) (ii) (iii) (iv)

Objective 3: Understanding the Act's structure and rules of interpretation	
Stage I (II) questionnaire	Q10, 14, 15 (a) & (b), 16, 17, 18, 19, 20 & 20(a), 21, 22, 24, 26, 27, 28, 29, 30, 31, 32
Stage II scoping study questionnaire	Q2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25
Stage III questionnaire	Q1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37(i) (ii) (iii), 39, 40, 41, 42, 43, 44, 45, 46 (i) (ii) (iii) (iv)

Objective 4: Common areas of conflict	
Stage I (II) questionnaire	Q3, 6, 7, 17, 18, 19, 21, 22, 27, 28, 29, 30, 31, 33, 34
Stage II scoping study questionnaire	Q4, 5, 8, 9, 10, 11, 12, 13, 15, 17, 18, 22
Stage III questionnaire	Q3, 6, 7, 9, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 31, 32, 34, 35, 36, 41, 42, 43, 44, 45

Objective 5: Alternative dispute resolution	
Stage I (II) questionnaire	Q8, 9, 12, 13, 14, 15, 15(a) & (b), 17, 18, 19, 20, 20(a), 27, 30, 31, 32

Stage II scoping study questionnaire	Q6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 21, 23
Stage III questionnaire	Q7, 9, 10, 11, 12, 13, 15, 19, 23, 24, 26, 27, 28, 29, 30, 31, 32, 35, 36, 41, 42, 43

Objective 6: Contribution to new knowledge	
Stage I (II) questionnaire	Q4, 5, 11, 12, 13, 14, 15, 15(a) & (b), 17, 18, 19, 20, 20(a), 23, 24, 25, 26, 28, 29, 30, 33, 35
Stage II scoping study questionnaire	Q5, 7, 8, 10, 16, 18, 24 & 25
Stage III questionnaire	Q9, 17, 23, 27, 28, 29, 30, 31, 32, 34, 35, 36, 43, 45

3.4.2 The stakeholder selection process

The party wall community comprises an eclectic mix of professional and non-professional surveyors (see Figure Nos 1, 8 & 9), therefore selecting stakeholders that represented the wider party wall community was an important factor in maximising the data gathered through the three-stage process. As such, professionals on the periphery of the Act such as barristers, solicitors and judges were also considered and included.

Assuring the stakeholders of confidentiality was paramount to securing their participation throughout the research stages, on a voluntary basis. Therefore the reliability and validity of the phenomenological data was not coloured by any misconceived loyalty flowing from remuneration. Whilst subjectivity appears to be a methodological weakness when viewed from a quantitative approach, the combined use of qualitative data would ensure a greater understanding of the point of view and could also be considered a strength. *“The solution here is not to work towards technical objectivity in questioning, but reflect subjectivity with respect to the question-answer-interaction.”* (Kvale, 1983, p.190).

Kvale (1983) opines that arbitrary subjectivity is more of an issue in the analysis of the interview data, as opposed to the interview situation itself. Thus, the coding and allocating of data (NVivo®) and results can be independently checked. The concept of content validity is generally more difficult to apply to phenomenological data and is often held to mean the extent to which the information gathered accurately represents the subject being investigated. Achieving a clear understanding of the stakeholders' experiences post analysis emerged from the qualitative data and interviews, especially where they expressed their opinions.

Accordingly, an interview with a stakeholder can never be repeated because the meaning of the subject for the interviewee may have changed, and the validity and determination of the meaning will thus depend upon the context. The validity of the data from case studies can also be viewed as subjective. Creswell (2009) views validity as a means of checking the accuracy of data by employing other processes to triangulate the findings of different data sources and research methods, to enable the researcher to validate the findings.

The selection process adopted was structured as follows, the scoping questionnaire was circulated to every 40th name from the IPWS database starting at No 1, 40, 80, 120, 160 etc. Stage II included every 40th name commencing at No 2, 41, 81, 121, 161 etc. and for the Stage III, every 40th person commencing at Nos 43, 83, 123, 163 etc. The identities of those stakeholders selected through this process were not known until the activity had been completed.

Stage I: Comprised two sub-sections (i) & (ii) with the results displayed in Section 1.2. The first element being the analysis of the APA data collected over a twenty-year period. The second element consisted of a scoping questionnaire (see Appendix I) which invited responses to questions about a broad range of the Act's 20 sections. The replies assisted with the identification of the stakeholders' experience, knowledge, and training of both the Act and the earlier legislation. Importantly, the results confirmed that the wider party wall community is also experiencing conflicting interpretations. This confirmed the researcher's opinion that conflict was not unique to APA. The results from both sets of data individually listed between five and seventeen respectively common areas of conflict (see Table Nos 2 & 3). One significant result was the confirmation that the interpretation of foundations, special foundations, and the section 7(4) veto was identified as the most common area of conflict, which subsequently established the focus of the research.

Stage II: Involved designing a questionnaire that focused upon the Act's definition of foundations or special foundations, using specialist software Survey Monkey ("SM") and asking 25 questions supported with diagrams. Each question was designed to explore the Act when building below ground. The stakeholders were invited to provide a yes/no/don't know answer (see Appendix II) with an opportunity to give a narrative interpretation to each question (see Table Nos 11 & 13). The findings replicated the conflicting interpretations and approaches in basement constructions.

Stage III: Expanded on the findings of both Stage I & II with qualitative interviews relating specifically to building below ground and the Act's two definitions, to understand the stakeholder's personal understanding and interpretation of foundations, special foundations and the section 7(4) veto. The stakeholders were invited to provide a yes/no/don't know answer to 46 questions (see Appendix III), with an opportunity to provide a narrative response (see Table Nos 10 & 12) to each question. Each question was designed to maximise an understanding of the stakeholder's approach to basements.

3.4.3 Data collection process

3.4.3.1 Ethical approach to the collection and use of the data

Assuring the anonymity of the stakeholders was critical in achieving their willingness to participate (Knight and Ruddock, 2008). As with all research, it is important that the research does not harm those participating. However, the Stage I (i) quantitative analysis of the APA data did not require ethical approval because the data belonged to the researcher. Before proceeding to the Stage I (ii) scoping questionnaire qualitative data collection, ethical approval was obtained (see Appendix VI). The Stage II enquiries used software that automatically anonymised the results. Before the Stage III interviews could proceed, ethical protocols were required to be in place to ensure stakeholder anonymity so that their views and opinions would not expose them to criticism or ridicule by disclosing their identity. Therefore, each stakeholder was allocated a numerical reference code with the index known only to the researcher. This approach assisted with the QSA when importing the data into the software so that the anonymity of the stakeholders was maintained.

3.4.3.2 The collection process

Having identified three stages of data collection, it was decided that Stage I, should comprise two sub-sections (i) & (ii). Because the data relevant to the research is based upon conflict arising out of the Act's definitions, understanding what constitutes conflict in the context of this research and the differing interpretations expressed by party wall surveyors was needed.

The APA data confirmed that the researcher has acted as an agreed surveyor in 31% of 1469 cases. The APA data indicated that between 1997 and 2016, 15% of the study disputes were referred to the researcher as the third surveyor, 12% of disputes were in the first 10 years and 89% in the second 10-year period which demonstrated a substantial growth. Appeals of surveyors' awards increased the number of disputes to 29%, although not all went to their full conclusion as the owners, were entitled to agree to set an award aside.

Given the broad areas that the Act covers, the implication flowing from the analysis raised logistical concerns about the management of the research if all areas were to be investigated within this thesis. It was therefore decided to narrow the area of research by identifying the five most common disputes (see Table No 9) accounted for in 296 (29.1%) of the areas of conflict. Of these, 105 (35%) related to the application and interpretation of the section 7(4) veto, which only arises if the proposed works involve projecting special foundations on to the adjoining owner's land.

It was decided that a scoping questionnaire would form Stage I (ii) to assist with gathering further data to explore the phenomenon identified within Stage I (i) and whether that was representative of the wider party wall community. The development of a scoping questionnaire (see Appendix II) contained 34 questions with a multiple-choice answer. The questions were specific to help reduce the survey completion time and maintain the stakeholder's enthusiasm. An important element of the data collection process was to invite the stakeholders to list what they perceived to be the five most common areas of conflict (see Table Nos 2 & 3). The results were ranked in order of the volume recorded and presented in a tabular format which identified 17 different areas of conflict within the wider party wall community with "special foundations" and the section 7(4) recorded as the most common.

**Table No 9 Comparison of the common areas of conflict gathered through Stage I
(i) & (ii) enquiries**

	Comparison of quantitative and qualitative ranking of five common areas of concern		
Ranking	APA data base (Quantitative)	Scoping Questionnaire (Qualitative)	
1	Special foundation and Section 7(4)	Special foundation	
2	No Notice/injunction	Section 10(8) Section 10(17) Section 12(1)	
3	Section 12(1)	Section 1(5) Section 6(1) & (2) Section 15	
4	Section 10(11)	Section 1 Section 2 Section 10(2) Section 10(10) Section 10(11)	
5	Section 10(5)	Section 8(1) Section 10(4) Section 10(7)	

A comparison of the two sets of data confirmed the researcher's hypothesis that growing conflict was not unique to the APA data. Furthermore, identifying the five most common areas of concern, also identified that the application or interpretation of the section 7(4) veto was the single-most common area of conflict.

3.4.3.3 Stage II Survey Monkey questionnaire

The length of the questionnaire and the format of the questions asked, will influence the stakeholder's desire to participate. Collecting information through questionnaires is often seen as a logical and easy option, however, the reality is that the response rate is out of the researcher's control and will nearly always be low. Unless the researcher has a way

of making stakeholders complete and hand in the questionnaire on the spot, the results will always be dependent on the recipient being remotely interested in taking part in the survey. A structured approach that incorporates both closed and open questions, and/or multiple-choice questions allows the participant to choose the statement which best represents their view. Creswell (2009) suggests that creating the layout is an art form in itself, because stakeholders tend to adopt a repetitive pattern when ticking boxes. The questionnaires were therefore structured to avoid repetitive patterns and to achieve a reliable method for collecting and managing the data. to enhance the data, the stakeholders were encouraged to expand on the answers (see Table No 11).

The following benchmarks were adopted during the design and development of the Stage II questionnaire.

- Demonstrate continuity within the approach;
- Randomly select stakeholders from the IPWS database;
- Select stakeholders from different professional and non-professional backgrounds;
- Create questions that are clear and free of ambiguity;
- Make it clear how to respond, i.e., yes/no/don't know, narrative;
- Gain permission to use questionnaires from the sample if necessary;
- Ensure they are anonymised but include reference codes to identify for validation purposes; and
- Maximise sample size by distributing questionnaires electronically.

3.4.3.4 Stage III personal interviews and questionnaire

The Stage III interviews focused on the stakeholder's approach and interpretation of the most common areas of conflict. Creswell (2009) suggests that a researcher's professional knowledge, training, and experience when operating within the specific field will sub-consciously influence the research approach. Whilst this research was initially driven by the researcher's involvement within this specialist subject, Stages I (ii), II, & III, independent data to support or challenge the APA data, was introduced to remove any threat of subjectivity.

Table No 10 Stage III interview results

Question	Agree	Disagree	Don't Know
1	12	6	0
2	14	1	3
3	12	4	2
4	15	2	1
5	12	5	1
6	16	1	1
7	13	4	2
8	16	0	2
9	16	0	2
10	18	0	0
11	18	0	0
12	15	3	0
13	14	3	1
14	17	1	0
15	17	0	1
16	17	0	1
17	17	1	0
18	17	0	1
19	18	0	0
20	17	1	0
21	13	5	0
22	16	0	2
23	17	1	0
24	14	2	2
25	8	9	1
26	4	13	1
27	10	8	0
28	13	5	0
29	5	13	0
30	17	1	0
31	14	4	0
32	14	4	0
33	17	0	1

34	14	14	0
35	14	4	0
36	14	2	2
37			
(i)	16	2	0
(ii)	18	0	0
(iii)	16	2	0
38	NOT A QUESTION		
39	17	1	0
40	17	1	0
41	17	1	0
42	17	1	0
43	14	4	0
44	14	4	0
45	14	4	0
46			
(i)	8	8	2
(ii)	9	9	0
(iii)	10	7	1
(iv)	8	8	2

3.5 The Evolution of the Methodology: Critical Reflection

3.5.1 The relationship between the legislation and case law

The literature review identified the origins that underpinned the need for legislative control because of the potential interference with common law rights that adjoining owners enjoy over a shared wall. A review of the common law identified limited case law that addresses the single common concern and whilst reflecting on the origin and passage of the legislation identified that as early as the third decade of the 20th century, the AC had cause to consider and report on any necessary amendments. The AC's findings identified that the projection of grillages was a concern as did the Stage I data. Notwithstanding, irrespective of the introduction of the Act there appears to have been little or no advancement in addressing the conflict caused by special foundations. "Ambiguities

within the Act make the statute notoriously difficult to interpret” (Chynoweth, 2003, p.13) and because of the lack of clarification, conflicting interpretations and approaches have evolved (see Table Nos 1, 2, & 3). The relationship between the Act and case law is therefore important because the only options available to an owner when they consider an award is wrong, is to appeal and they must do so within 14 days of service. Indeed, there has been a substantial number of Court cases arising out of conflicting interpretations by surveyors, and disappointingly only one that specifically addresses the issue of special foundations and the section 7(4) veto.

The section 10(17) appeal process plays a significant part in the generation of new knowledge, although being heard in the County Court, it does not set a precedent in case law (Newman, 2016, p.14). Chaturachinda challenged the third surveyor’s Award on various points. Bailey HHJ rejected those arguments on the basis of the third surveyor’s opinion that a wall, whether it is above or below ground level, is only ever a wall and not a foundation, therefore, concluding that a basement wall could be constructed from reinforced concrete without falling within either of the Act’s two definitions. Notwithstanding, the judge’s narrative makes it clear that the third surveyor did not specifically address the function of a wall below ground level or within a basement box as a single structure and/or its component parts. Contrary to Chaturachinda, the AC had opined that the concept of a foundation goes beyond an element of a structure being below ground level.

3.5.2 The importance of the APA data

The quantitative analysis of the APA data was important and a significant advantage to the research, confirming at an early stage that the growth in conflict on the interpretation of foundations or special foundations and the section 7(4) veto, was the most common. It was decided that Stage I (ii) would be implemented to obtain external data that either supported or rejected the APA data, and to assist with identifying the research focus. The absence of any authoritative literature supports the Stage I data analysis that there are gaps in knowledge that run throughout the Act with significant emphasis on the interpretation of special foundations and when the section 7(4) veto should apply.

3.5.3 The implications of the Stage II questionnaire

There are no hard and fast rules on how qualitative analysis should be conducted because the approach is case-specific. Of notable importance was identifying a single common area of conflict within the two sets of data which became the research focus. To achieve a greater understanding of the wider party wall communities' experience and interpretation, the Stage II questionnaire was circulated to 100 randomly selected stakeholders. It was possible to establish that their respective backgrounds and professional memberships were varied and came from a variety of associations (CABE, CIOB, RIBA, RICS). Not unsurprisingly RICS was the dominant professional body involved at 69%. The other professional bodies were less well represented, CABE 31% and CIOB 23%, P&T 31% and IPWS 31%. The FPWS accounted for only 15% of those participating in the survey. Of the rest, 8% were not affiliated to any professional association and 23% belonged to RIBA, CIAT, ICE and IStructE. These results are interesting because they demonstrate that the stakeholders' views, despite the participants' affiliation to multiple associations with access to various sources of information, the conflict continues. Most of the stakeholders' experience, training, and knowledge was obtained under the current Act with only 38% having experience under the LBA. This is not surprising given the earlier geographical limitations of the LBA.

3.6 Overview

The research topic is based on the researcher's hypothesis that conflicting interpretations amongst party wall surveyors was growing and impacting on the administration of the Act. The research methodology adopted an inductive approach to identify a gap in knowledge, which initially used a quantitative analysis of the APA data. To eliminate concerns arising out of a single source of data, a qualitative approach through a "scoping questionnaire" was circulated to 200 party wall surveyors. The two sets of data produced consistent results supporting the researcher's hypothesis of growing conflict. Having adopted a quantitative and a qualitative approach for the Stage I (i) & (ii) enquires, it became clear that mixed research methodologies assist with the collection and analysis of the research data. As the research is founded within the construction industry and as Knight and Ruddock (2008) recognise that mixed methodologies are appropriate for research within the built environment, a mixed methodology was adopted.

The conceptual framework developed from the two sets of data identified that surveyors were experiencing growth in conflicting interpretations with one common theme identified as the Act's definition of foundations, special foundation and the section 7(4) veto. The Stage II enquiry adopted a qualitative (interpretivist) approach, which focused on identifying stakeholders' individual approaches and interpretations of basement construction. The Stage III enquiries adopted a quantitative questionnaire and a qualitative interview. The inter-relationship between the three stages is represented in Figure No 7 with the various stages and outcomes.

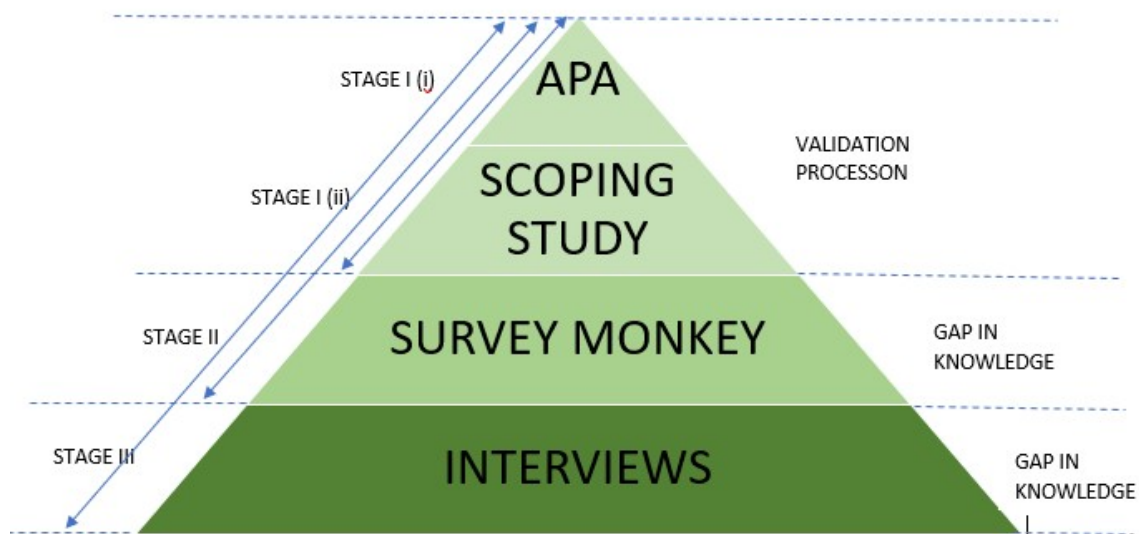


Figure No 8 Triangulation of data to demonstrate relationship

The Stage III data indicated that stakeholder knowledge appeared to be drawn from a mixture of constructionist and interpretivist approaches gathered through unrelated sources such as personal experiences, external advice, or ad-hoc unregulated training and case law. Careful consideration was paid to ensuring the process for selecting the stakeholders was both independent and random. This meant that the data were collated from a broad spectrum of professional backgrounds and from those professionals (such as lawyers, barristers, and judiciary) who operate on the periphery of the Act but who can have a dominant impact when involved in conflict.

The qualitative research method is phenomenologically based and is used to describe how human beings, (in this case the stakeholders), operate within their community and how they manage their experiences within a specific phenomenon. The research

paradigm attempts to set aside bias and preconceived assumptions about personal experiences and responses to a particular situation. Avoiding concerns that adopting a single research methodology would limit the scope of the investigation and the data collection process that might distort any subsequent analysis, was important. Therefore, the research adopted a social-constructivist approach requiring the generation of theories that focused on the creation of reality and how individuals (stakeholders) view the world. For example, is a basement box one structure or should it be assessed as individual elements? The diverse interpretations and theories on how the special foundations and section 7(4) veto were applied, related to the respondents' humanistic theories and experiences, demonstrating that they were influenced by the philosophical ideas and concepts developed by themselves or their contemporaries through the practice of what is real and what is socially constructed.

Social constructivism promotes learning through collaboration, the exchange of ideas, theories, and experiences with the overriding objective of increasing benefits and results from the interaction between individuals. The Stage II & III enquiries promoted and encouraged the sharing of knowledge between both the researcher and the participant, recognising the benefits of understanding the interpersonal and culturally historical practices adopted by the stakeholders and how that impacted upon their ability to grow through learning.

The interaction and sharing of knowledge will assist in developing the skills and new knowledge required to improve their tacit knowledge base and to facilitate cognitive growth within a democratic learning environment. Accordingly, a social-constructivist approach was adopted to generate new knowledge and thus, identify the correct approach to interpreting foundations, special foundations, and the section 7(4) veto.

Chapter 4

4.0 Findings

4.1 Discussing the Data Collection Strategy

One significant concern all researchers must consider before embarking on the research journey is the availability of data and how it is obtained. Party wall matters are private and therefore data is not readily accessible in the public domain. Having been professionally engaged in party wall matters for more than 35 years, the natural starting point was to base the first stage of the research upon the APA data (see Table Nos 1 & 2). thereafter with the expectation of expanding the data collection process to create additional stages to validate and achieve the research objectives (see Section 1.3), which of course included case law on party wall matters within the public domain. It was recognised that external independent data demonstrating both the quality and quantity of that data was paramount to validating the research.

4.2 Stage I (I) and (II) Preliminary Data

The Stage I (i) enquiries (see Table Nos 1 & 2) helped identify the growth of common conflict, although relying on the APA data through the researcher's immersion in the specialism, (what Glesne (1992) refers to as "back yard" research), may create difficulties when validating the data. Removing the subjective nature of the APA data and avoiding bias, which Pound (1930) suggests is influenced by an individual's sense of right and wrong, through additional independent data analysis was essential. Accordingly, Stage I (ii) was introduced and identified widespread conflict (see Table Nos 2 & 3) and more importantly highlighted a link to the single common area of conflict within the two sets of data, corroborating the researcher's hypotheses. The literature review identified, through the origins and passage of party wall legislation (see Section 2.3), that the AC had in 1939 raised the issue of grillages projecting onto an adjoining property. The EDA corroborated the findings of the Stage I (i) & (ii) data as a long-standing area of conflict and became the research focus.

4.3 Stage II Enquiries

4.3.1 Stage II data

To explore the phenomenon identified in Section 4.2, a scoping study was developed to achieve a greater understanding of the special foundations and the section 7(4) veto conflict through an internet-based software questionnaire (see Appendix II). Comprising 25 questions and diagrams of accepted designs (see Section 2.2.5), the following criteria formed the study structure:

- To avoid using previous stakeholders from the Stage I enquiries;
- To ensure that the stakeholders were taken from as broad a range of professional backgrounds as possible;
- To identify the stakeholder's core professional activities;
- To focus on the section 20 definitions of foundation, special foundation, and the section 7(4) veto;
- Legal authorities on special foundations;
- The function of a retaining wall;
- The function of underpinning;
- The function of a basement box;
- The function of reinforcement in a retaining wall and a basement box;
- The function of concrete rails beneath a basement box; and
- The respondents' interpretation of a special foundation and basement box.

There were technical difficulties when attempting to attach the diagrams to individual questions, so the only way to overcome the technical glitch was to attach all the diagrams within one section. This required stakeholders to refer back to the diagrams, and from the narrative responses such as: *"I cannot open the diagrams"* and *"referring back to the diagrams is frustrating and time consuming"*, this impacted on stakeholder interest, and the quantity of the responses received.

The questionnaire format invited stakeholders to provide either a yes/no/don't know answer, and an opportunity to express their tacit knowledge and interpretations through a

narrative explanation to provide a greater insight into the wider approach of the party wall communities and the administration of the Act (see Table No 11).

Table No 11 Analysis of Stage II narrative responses

Question	Stakeholder's Narrative Response
22 (i)	Refer to a Third Surveyor.
22 (ii)	Awarded special foundations and left it to the owners to appeal the award.
22 (iii)	None of the above.
22 (v)	Please explain.
22 (vi)	Building in Norfolk has few developments if any for basement construction in existing building.
22 (viii)	By negotiation with another surveyor.
22 (viii)	I only act these days as a structural engineer/adviser out to party wall surveyors and follow the guidance issued by IStructE and ICE and specifically the paper on special foundations published in the IStructE by S M Pole.
22 (ix)	Never had an owner refused to give consent for special foundations. A mass concrete one takes up more room and the CF case can always be used.
24 (i)	I feel that the Chaturachinda v Fairholme will be or should be overturned on appeal.
24 (ii)	The Act's definition of special foundations requires clarification to remove the confusion.
24 (iii)	The Act needs a radical rethink with an Amendment Act.
24 (iv)	I am content that the wall is a wall but, in my view, the bottom slab below the wall must be a foundation.
24 (v)	No.
24 (vi)	I query whether the definition of special foundation was intended to include modern reinforcement concrete. In any case, the definition is obsolete and, in every case, I have seen (a substantial number) there has been no actual detriment to the adjoining owner from the foundation being reinforced concrete.

4.3.2 Stage II discussion

The results provided an interesting insight into the wider party wall communities' approach and interpretation of the single-most common area of conflict and the composition of their respective backgrounds (see Appendix II).

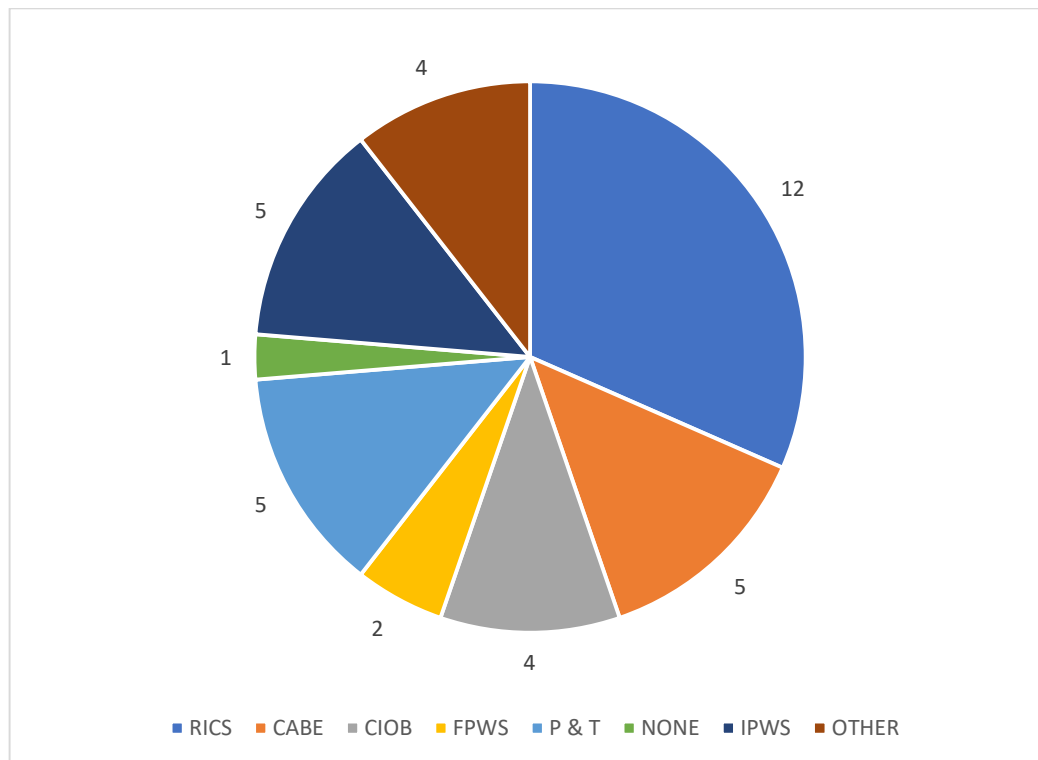


Figure No 9 Stage II multi-disciplinary background of party wall community

An analysis of the Stage II data (see Figure No 8) established that the 16 stakeholders that responded held multiple professional affiliations and memberships (38 in total) which equates to an average of 2.4 each. This was consistent with the Stage I findings that the party wall community has evolved from an eclectic and unregulated community with multi-disciplinary affiliations (see Figure No 1).

If new knowledge was to be identified, assessed, and distributed, it was recognised that a more in-depth questionnaire, allowing personal expression to the questions, was required. Therefore, the Stage II data (see Appendix II) enquiries were devised to investigate the research focus through structured questions, with the ability to give narrative responses which encouraged the stakeholders to critically assess the individual elements of the

construction process and the explicit wording within the Act. Achieving a greater understanding of how stakeholders approached and interpreted the Act's definitions, specifically when constructing a basement, identified some common ground within their interpretations.

Question 25 invited stakeholders to provide their definition of a foundation in less than 35 words with 11 (69%) of the 16 stakeholders suggesting a definition, given that the low response is a relatively high ratio. There was a spread of opinion with a general recognition that a foundation is the part of the structure in touch with the earth or that it is part of the building which is designed to transpose loads from the building safely to the ground. All of which challenges Chaturachinda, suggesting that the elements of the basement "box" are: (i) multifunctional; and (ii) act as the foundation. The following definitions were received:

- (1) A sturdy and level base underneath the structure, which prevents weakening of the structure above ground;
- (2) The base support of any structure that can safely transmit the imposed loads and lateral loads to suitable load-bearing strata;
- (3) It is the part of the building that is designed to transfer the load safely to the ground (both vertical and horizontal). Generally, but not always it is the part of the structure that is in contact with soil;
- (4) A foundation transmits the load of the building vertically to the ground;
- (5) The part in touch with the earth;
- (6) A subterranean formation to support a wall or structure above and transpose load from a building to the ground;
- (7) An element of the building transferring the loads that are applied on to it, safely to the ground;
- (8) The ground or artificially-formed support on which the wall rests, it is the structure transmitting load to the ground at the base being below the ground level does not automatically make a structure a foundation;
- (9) A ground bearing support for a wall or structure;
- (10) The element of construction designed for transferring loads directly to the ground and in contact with the ground; and
- (11) Probably yes.

4.4 Stage III Interview Data

Following the results gathered through Stages I and II, it was recognised that the full extent of stakeholder tacit knowledge and experience would only ever be fully explored through personal interviews. Stage III interviews were adopted to enhance the Stage I & II data with a questionnaire (see Table No 12), developed to explore the work-based knowledge. Obtaining the full extent of stakeholder tacit knowledge and experience could only be possible through personal interviews. Respondents' experiences would provide an opportunity to fully appreciate and achieve a greater in-depth understanding of the approaches and interpretations of stakeholders operating within this environment. The questionnaire focus and structure was developed from the single common area of conflict identified during the analysis of Tables 2 & 3. This would help in achieving a greater understanding of why the Act's definition of "special foundations" and the section 7(4) veto creates difficulties.

Table No 12 Stage III analysis of interview data

Question	Agree	%	Disagree	%	Don't Know	%
1	12	67	6	33	0	0
2	14	76	1	6	3	18
3	14	22	12	66	2	12
4	15	82	2	12	1	6
5	12	62	5	32	1	6
6	16	88	1	6	1	6
7	10	72	4	22	1	6
8	16	88	0	0	2	12
9	14	88	0	0	2	12
10	18	100	0	0	0	0
11	18	100	0	0	0	0
12	15	82	3	18	0	0
13	4	76	3	18	1	6
14	17	94	1	6	0	0
15	17	94	0	0	1	6
16	17	94	0	0	1	6
17	17	94	1	6	0	0
18	17	94	0	0	1	6
19	18	100	0	0	0	0

20	17	94	1	6	0	0
21	13	70	5	30	0	0
22	16	88	0	0	2	12
23	17	94	1	6	0	0
24	14	76	2	12	2	12
25	8	44	9	50	1	6
26	4	22	13	72	1	6
27	10	56	8	45	0	0
28	13	72	5	28	0	0
29	5	28	13	72	0	0
30	17	94	1	6	0	0
31	14	78	4	22	0	0
32	14	78	4	22	0	0
33	17	94	1	6	0	0
34	14	78	4	22	0	0
35	14	78	4	22	0	0
36	14	78	2	12	2	12
37						
(i)	16	88	2	12	0	0
(ii)	18	100	0	0	0	0
(iii)	16	88	2	12	0	0
38	NOT APPLICABLE					
39	17	94	1	6	0	0
40	17	94	1	6	0	0
41	17	94	1	6	0	0
42	17	94	1	6	0	0
43	14	78	4	22	0	0
44	14	78	4	22	0	0
45	14	78	4	22	0	0
46						
(i)	8	44	8	44	2	12
(ii)	9	50	9	50	0	0
(iii)	10	60	7	34	1	6
(iv)	8	94	8	44	2	12

4.4.1 Stage III interviews

Stage III had two purposes; first, to provide a third set of independent data and secondly, to obtain a greater understanding of stakeholders' tacit and explicit knowledge, opinions, and interpretations. However, there were concerns that unless the interviews were structured, the stakeholders could dominate the interview and sub-consciously divert the discussion away from the research focus. The interview structure was based on the following criteria:

- To identify the stakeholders, core professional activities;
- To focus on the section 20 definition of “foundations”, “special foundations”, and the section 7(4) veto;
- Legal authorities on special foundations;
- The function of a retaining wall;
- The function of a basement box;
- The function of reinforcement in a retaining wall and a basement box;
- The construction process for a basement wall;
- The function of concrete rails beneath a basement box; and
- Their interpretation of a special foundation and a basement box.

A list of 46 questions (see Appendix III) adopting the same diagrams used in the Stage II process were used for consistency but presented in a Power Point format (see Section 4.2.1). This approach ensured that each interview:

- (i) Was consistent;
- (ii) Was designed to focus on the research;
- (iii) Prevented the stakeholder dominating the interview; and
- (iv) Obtained the stakeholder's tacit knowledge.

The selection process used in Section 3.4.2 was continued to strengthen the research data and to avoid duplication of stakeholders that participated in the earlier stages, in addition to increasing the breadth of interpretation within the context of constructing a basement and the special foundation definition and section 7(4) veto. The interviews were conducted at locations convenient to the stakeholders, such as a Court (judiciary) and barrister chambers. Interviews with the party wall community were either conducted at their offices or following a party wall site meeting. Some interviews were arranged during the 2018 CAGE Annual conference at Chesford Grange Warwickshire, which had

inadvertently brought together stakeholders from a wide range of geographical locations, that might have prohibited their participation. On the first day of the two-day conference, an invitation was circulated to delegates for party wall surveyors to participate in the interviews. There was a good response, with 58% of the interviews being undertaken during the two-day event. With the stakeholder's permission some interviews were taped and later transcribed. Throughout 2018 and 2020 a total of 23 interviews were completed and all interviews were taped.

4.4.2 Stage III discussion

The data provided an interesting insight into the wider party wall community approach and the interpretation of the single-most common area of conflict and the diversity of the professional status of surveyors (see Appendix III). Consistent with Stages I & II, an analysis of the Stage III data records the percentage of each of the 18 stakeholders that responded (see Figure No 9) as holding multiple professional affiliations and memberships (54 in total), which equates to an average of three affiliations each. This was consistent with the Stage I & II findings that the party wall community remains an eclectic and unregulated community (see Figure Nos 1, 8 & 9).

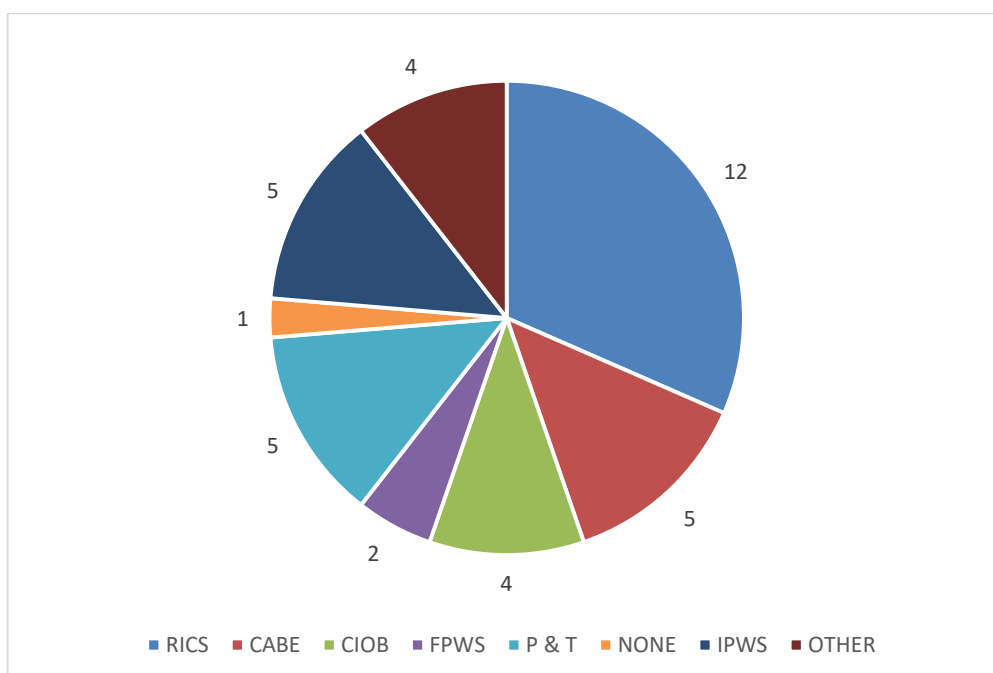


Figure No 10 Stage III multi-disciplinary background of party wall community

In 2020 another five stakeholders not previously involved in any of the earlier data collection procedures were interviewed, and these results were incorporated into Table No 13 (reproduced in Appendix III). It was recognised that the inclusion of an agree/disagree option within the questionnaire appeared confusing, as there was no doubt as to the responses provided and recorded (see Table No 13 and Appendix III). Following the COVID-19 lockdown, it was possible to undertake another five virtual interviews, giving a total of 23 overall.

The same diagrams used in the Stage II enquiries (see Section 2.2) were adopted throughout to ensure that each interview was consistent, focused, and transparent with the criteria below:

- The interview should adopt a qualitative and quantitative methodology;
- The intent of the questionnaire; would be to focus on the single common issue;
- The questions would be presented with both narrative and picture;
- To prepare research questions;
- To undertake a trial run of the questionnaire to avoid leading or biased questions;
- To consider the pros and cons of the questionnaire;
- To Manage confidentiality; and
- To collate, analyse, and display the results in tables.

Table No 13 Stage III interview narrative

Question	Stakeholder's Narrative Response
1	<p>Agree but the issue of special foundations flow from Mr Selfridge and his grillages which is a substantively different position to that now experienced with modern construction techniques.</p> <p>No why have two definitions.</p> <p>The definitions contained within the for the foundation and special foundations are not commensurate with the definition of a foundation per se.</p> <p>Yes, most definitely ambiguous.</p> <p>This again goes back to the early legislation and Mr Selfridge's design which included large pad foundations on what was described as grillages.</p>

2	<p>Agree but the issue of special foundations flow from Mr Selfridge and his grillages which is a different position to modern construction techniques.</p> <p>No why have two definitions?</p>
4	<p>Agree insofar as it specifies the assemblage of beams and rods for special foundations.</p> <p>I suspect that the introduction of a special foundations was simply to deal with what were historic foundations again we go back to Mr Selfridge and his large pad foundations and the grillages, where the reinforcement mesh would extend for a considerable distance past the face of the wall.</p>
5	<p>Agree (Chaturachinda?)</p> <p>Agree—special foundations, foundations—disagree.</p> <p>No, a foundation must always comprise of concrete.</p>
6	Yes, but why have two definitions.
7	<p>Most definitely and it is the element that the wall rests upon that are then in direct contact with the ground i.e., resting upon the artificial formed support resting on the solid ground.</p> <p>No, a foundation does not have to have anything built on it but if not what's the point of the foundation so Yes.</p> <p>No, a wall does not have to be built on a foundation as such.</p> <p>Yes, otherwise what's the point of the foundation so.</p> <p>Yes, that's the foundations function.</p> <p>Absolutely, that is the only function for foundation to form the support for the wall.</p>
8	The foundation may have reinforcing in the toe at floor which is part of it.
9	<p>No, a lintel over a drain wouldn't be a part of the wall but it would have the same function as a foundation.</p> <p>Yes, otherwise it would collapse.</p> <p>Most definitely in law there is a common law right not to cause an interference or a nuisance and removing someone's natural right of support would most certainly be a nuisance.</p> <p>Yes, otherwise it would fall into his land.</p> <p>Otherwise, there is a nuisance and a common law tort.</p> <p>Absolutely otherwise there will be landslip into the excavated void.</p>

11	<p>Agree, the retaining wall's function is most definitely to maintain the adjoining owners natural right of support.</p> <p>There are many alternative designs but in principle yes.</p> <p>In principle yes.</p> <p>correct detail although there are other ways of designing it.</p>
12	The L-shape of a wall is important to prevent collapse.
14	<p>Agree with Chaturachinda.</p> <p>Absolutely because a wall must always have a foundation you cannot have a wall bearing on to the earth unless you want it to collapse.</p>
16	<p>Disagree because the bonding between the vertical and horizontal elements creates a single structure so therefore the wall is part of the foundation or the artificially-formed support which is resting on a solid ground upon which the wall rests.</p> <p>Agree but is against Chaturachinda and Redler.</p>
17	Agree not according to Chaturachinda.
18	<p>Yes, I rely on Chaturachinda on all basements I don't see why I should go beyond the case law.</p> <p>Agree reject Chaturachinda.</p> <p>Without that you have a foundation and a wall which are two independent structures which cannot then support the forces from the soil that it is retaining.</p>
19	<p>Yes – not explained as such in Act.</p> <p>Although the wall will not fail immediately there will certainly be movement over a period of time eventually leading to structural damage.</p> <p>If you take away the reinforcing link then they are two elements that can move independently of each other.</p>
20	<p>Agree, again subject to an engineer's structural calculations but for the purposes of this yes, the linking of the steel reinforcement forms a single structure.</p> <p>disagree with Chaturachinda.</p> <p>Agree although it is against Chaturachinda judgment.</p> <p>On reflection Yes, can I change my answers to questions 12 & 13?</p> <p>If the toe is properly designed and linked to the wall it creates a single structure.</p>

21	<p>Agree not according to Chaturachinda.</p> <p>Agree, Chaturachinda.</p> <p>Agree, although it is against Chaturachinda judgment so apply that precedent.</p> <p>Agree is against Chaturachinda and Redler.</p> <p>No depends on thickness of concrete.</p>
22	<p>Agree not according to Chaturachinda.</p> <p>Agree Chaturachinda.</p> <p>Agree although it is against Chaturachinda judgment so apply that precedent.</p> <p>Elements of buildings have individual functions but when they are joined to another element or material it increases their function.</p> <p>Yes, a wall is designed to create a separate area but it can also be load-bearing and also part of the fabric of the building to keep the weather out.</p>
23	<p>Agree but not according to Chaturachinda.</p> <p>Disagree because it would depend on the engineer's design for the foundation. If the mass is increased then it could technically withstand the lateral forces, then it would be inappropriate from a construction and cost basis.</p> <p>Agree although it is against Chaturachinda judgment so apply that precedent.</p> <p>Yes, otherwise the building above will collapse.</p> <p>Yes, otherwise the structure it supports will suffer damage.</p> <p>Absolutely but Chaturachinda rejects that position.</p> <p>Absolutely but that is not its only function. I haven't really thought about it like that, but I suppose it is, yes.</p> <p>I would have to defer to an engineer that does seem a bit strange and superfluous.</p>
24	<p>Agree not according to Chaturachinda.</p> <p>Agree but not Chaturachinda.</p> <p>Agree and Disagree function being altered still retaining wall.</p> <p>Goes against Chaturachinda (sic) which is wrong.</p> <p>Agree is against Chaturachinda and Redler.</p>

	Agree, even without the structure above, the box still has to safely transfer the lateral loads acting as a retaining wall.
25	<p>Yes, according to Chaturachinda.</p> <p>Yes Chaturachinda.</p> <p>No as per Chaturachinda Redler.</p> <p>Yes, Chaturachinda says so.</p> <p>Chaturachinda I won't go behind a case and be questioned.</p> <p>Agree but Chaturachinda contradicts that position.</p> <p>Agree but not per Redler Chaturachinda.</p> <p>Agree not against Redler Chaturachinda.</p> <p>Yes, it forms the foundation to the basement floor, but if the rest of the floor is contact with the ground, then that is also a foundation.</p> <p>Yes, on Alistair Redler's opinion.</p> <p>There is no logical explanation for these other than to avoid section 7(4).</p> <p>This cannot be the foundation it is a nonsense.</p> <p>No but this is argued based on Chaturachinda which I do not accept is correct but I have to accept it until another case overrules this one.</p> <p>I would have to defer to an engineer that does seem superfluous, I do not see what it brings to the construction or the stability.</p>
26	<p>No walls can't be horizontal.</p> <p>No walls are vertical.</p> <p>Technically it is part of the retaining wall but when it is first constructed it is the foundation to the wall, the reinforcement links it so it would be the wall, although a floor is not a wall and that would be horizontal.</p> <p>It is the foundation to the wall.</p> <p>Yes, because the wall is sitting on the slab which must be the foundation.</p>
27	<p>Yes, as per Chaturachinda.</p> <p>Yes Chaturachinda.</p> <p>No, it is against Chaturachinda judgment so apply that precedent.</p> <p>Not on Chaturachinda.</p> <p>Chaturachinda.</p> <p>No Chaturachinda and Redler say so.</p> <p>No on Alistair Redler's opinion.</p>

	<p>Agree, because of the linking of the reinforcement I have never really thought about it in that context.</p> <p>No, there is no function structural or otherwise for the strips.</p> <p>Even though they are joined together they just form a box not a wall or a slab.</p>
28	<p>Disagree Goes against Chaturachinda.</p> <p>Yes, it can deflect.</p>
29	<p>No, Chaturachinda says so.</p> <p>Chaturachinda applies.</p> <p>No, Chaturachinda and Redler say so.</p> <p>Yes, on Alistair Redler's opinion, but I don't accept it.</p> <p>These cannot be foundations. No because they do not become the foundation.</p> <p>The box is the foundation.</p> <p>Not in my view this is simply not the foundation and is only put in to avoid the special foundations veto.</p> <p>I do not see why the concrete rails should be needed unless the reinforced box is not strong enough but then that would not be a satisfactory design so they are superfluous.</p>
30	<p>Agree but not according to Redler.</p> <p>Agree, subject to the engineer's design.</p> <p>Yes, like a raft foundation to resist lateral movement as well.</p> <p>Agree not against Redler Chaturachinda.</p> <p>No Chaturachinda.</p> <p>Yes, like a raft foundation.</p> <p>Yes, typical detail.</p>
31	<p>Yes, but not according to Redler.</p> <p>Yes, I refer to Chaturachinda.</p> <p>No Chaturachinda says not.</p> <p>No Chaturachinda says the opposite.</p> <p>I follow Chaturachinda until the courts say otherwise.</p> <p>Not on Alistair Redler's opinion.</p> <p>Agree, but Redler says no.</p>

	No, a wall and a floor are separate, but a wall can be a party structure and a wall can be a party wall, so that is quite confusing to the layman.
32	<p>Disagree, goes against Chaturachinda.</p> <p>Agree, but against Chaturachinda so I apply that test case.</p> <p>No Chaturachinda is wrong.</p> <p>No Chaturachinda says the opposite.</p> <p>I follow Chaturachinda until the courts say otherwise.</p> <p>Not on Alistair Redler's opinion.</p> <p>Technically yes.</p> <p>Agree, but Redler says no.</p>
34	<p>Yes, but not according to Redler/Bailey.</p> <p>Agree, so far as it must be touching the ground.</p> <p>Agree not according to Redler.</p> <p>Yes Chaturachinda.</p> <p>Agree.</p> <p>Disagree, but goes against Chaturachinda.</p> <p>Agree but against Chaturachinda so that's the case I apply.</p> <p>No Chaturachinda says so.</p> <p>I follow Chaturachinda but don't agree with it.</p> <p>Not on Alistair Redler's opinion.</p> <p>Yes, but not in Chaturachinda.</p> <p>Yes, I would be asking the adjoining owners for written consent just to cover myself and prevent me from being sued for negligence.</p>
35	<p>Yes, but Chaturachinda contradicts that position.</p> <p>Yes, Goes against Chaturachinda.</p> <p>Yes, not against Redler Chaturachinda.</p> <p>Yes, but is against Chaturachinda.</p> <p>Yes, but Chaturachinda says differently.</p> <p>Yes, makes perfect sense although technically you do not raise a wall down you just build a new wall upwards and underneath it to join to the underside of the existing wall.</p>
36	<p>Yes, not against Redler Chaturachinda.</p> <p>Yes, Goes against Chaturachinda.</p> <p>Yes, but Chaturachinda says differently.</p>

	<p>Absolutely because the wall must rest on a foundation.</p> <p>Yes, but see my answer to q. 35 so it actually terminates on the underside of the existing wall and starts on top of the slab, but I suppose if it's a concrete reinforced wall then you are pouring it all in one go, so yes.</p>
37	<p>Yes, but Chaturachinda says no.</p> <p>Dispute Redler Bailey Chaturachinda Isaac.</p> <p>Yes, but don't accept Redler Chaturachinda.</p> <p>Agree act works as best possible fill various decisions but raising downwards is an extreme interpretation.</p>
38	<p>This is how I expect a basement to be constructed.</p> <p>That is exactly how I would expect it to be built.</p>
39	<p>Yes and no, it would depend on the overall engineer's construction design criteria. in but Chaturachinda supports.</p> <p>Yes, as does Chaturachinda.</p> <p>Agree, but it is counter intuitive to the concept of raising a wall as the Act anticipates if you have a wall of a set height whether you put something on top of the wall or underneath it you still have a wall, so it does not matter for the purposes of the Act (Stokes case).</p> <p>Yes, not against Redler Chaturachinda.</p> <p>I do not see any reason why a basement wall comprising of reinforced concrete in accordance with the sketch diagrams 16 cannot proceed without invoking s.7(4).</p> <p>I do not understand what issue arises with the adjoining owner if the wall of the basement is directly below the party wall and does not extend past the outer face (adjoining owners' side) of the original wall.</p> <p>The issues often raised by the adjoining owners has very little to do with the perceived interference of their rights because unless they build a basement, they suffered no loss and if they build the basement, they have already got the wall there.</p> <p>Agree, but Bailey says no.</p> <p>That is exactly how I would expect it to be built.</p>

40	<p>The foundation upon the wall but when it is linked through the reinforcement foundation to the wall forms the toe which is a structural element of a retaining wall.</p> <p>Agree because a wall needs a foundation.</p>
41	<p>Dispute Chaturachinda.</p> <p>Not on Alistair Redler's opinion.</p> <p>By definition of the special foundation, the absence of reinforcement means it is just a foundation.</p> <p>Absolutely, I do not accept Chaturachinda is right but I am stuck with it until the Courts overrule it by appeal.</p>
42	<p>Agree Chaturachinda.</p> <p>More case law is required.</p> <p>Yes, I follow Chaturachinda until the courts say otherwise.</p> <p>We need a structured approach that everyone agrees to apply when assessing the design (not just for basements).</p> <p>Not on Alistair Redler's opinion.</p> <p>Absolutely, I do not accept Chaturachinda is right but I am stuck with it until the Courts overrule it by appeal.</p> <p>Yes, reinforcement, special foundation but I am aware of a case that Redler was involved in and he said he was not a special foundation which I do not actually accept or agree with.</p>
43	<p>Yes,</p> <p>Yes, but not if rails put under other parts like Chaturachinda.</p> <p>The Act should be explicit.</p> <p>No Chaturachinda.</p> <p>This should be straightforward but everyone has their own opinion.</p> <p>Not on Alistair Redler's opinion.</p> <p>No format to follow or apply.</p> <p>No, I follow Chaturachinda until the courts say otherwise.</p> <p>In my view it can but not on Bailey or Chaturachinda.</p> <p>Yes, but Chaturachinda says no.</p> <p>Absolutely multifunctional structure including creating a habitable environment.</p>

	<p>Absolutely, I do not accept Chaturachinda is right but I am stuck with it until the Courts overrule it by appeal.</p> <p>Yes, but Chaturachinda stops people doing so, I know surveyors that will not argue against it but feel strongly that it is wrong.</p> <p>Because I do not think the case that Redler was involved in is correct.</p>
44	<p>Yes, but not according to Chaturachinda.</p> <p>An organisation should develop a strategy for everyone to use to test.</p> <p>Yes, but not according to Chaturachinda.</p> <p>So important to have an assessment process.</p> <p>Yes, but Chaturachinda/Redler contradicts that.</p> <p>Yes, but not if rails put under other parts like Chaturachinda.</p> <p>There's too much flexibility for opinion.</p> <p>No Chaturachinda.</p> <p>We just need a process to follow.</p> <p>Not if rails put under other parts like Chaturachinda.</p> <p>Chaturachinda is bizarre.</p> <p>Absolutely multifunctional structure including creating a habitable environment.</p> <p>Absolutely, I do not accept Chaturachinda is right but I am stuck with it until the Courts overrule it by appeal.</p> <p>Yes, it is three-dimensional therefore it must be multifunctional.</p> <p>A basement box is designed to work with four walls and a base all tied together therefore satisfying all of those elements so the answer must be yes and because it has got reinforcement it must be special foundation because that's what the Act defines it as.</p>
45	<p>Yes, but not according to Chaturachinda.</p> <p>More case law is needed.</p> <p>Yes, but not per Redler Chaturachinda but Ferguson.</p> <p>Yes, but not if rails put under other parts like Chaturachinda.</p> <p>There should be an agreed way to assess the design so we all apply the same test.</p> <p>No Chaturachinda.</p> <p>Not if rails put under other parts like Chaturachinda.</p> <p>But not on Chaturachinda which is bizarre.</p>

	<p>If engineers cannot agree on what is a foundation why should it fall upon the party wall surveyor.</p> <p>I reject Alistair Redler's opinion.</p> <p>Everyone seems to overlook function there should be a section in the Act that includes function as a trigger under section 6(1) & (2).</p> <p>Yes, but I cannot challenge Bailey's decision.</p> <p>We just need a process or definitive guidance i.e., like section 6 depth and distance.</p> <p>Yes, but not per Redler Chaturachinda.</p> <p>Yes, but not according to Chaturachinda.</p> <p>Yes, but not in Chaturachinda.</p> <p>Not if rails beneath basement floor.</p> <p>Yes, but Chaturachinda ignores that.</p> <p>Yes, but I won't go against Chaturachinda.</p> <p>Chaturachinda ignores that principal.</p> <p>Not if rails are involved.</p> <p>Absolutely correct, but Redler says no, I reject Chaturachinda.</p> <p>Absolutely, I do not accept Chaturachinda is right but I am stuck with it until the Courts overrule it by appeal.</p> <p>Absolutely if I was advising a building owner, I would tell him that he would need written consent before even serving a notice because otherwise if consent is not given the notices are a waste of time.</p>
46 a	<p>The problem is that this Act has simply evolved and adopted various earlier legislation which is not commensurate with modern construction practices. Therefore, in answer to 46 I think that the definition of special foundation does require proper clarification within the legislation.</p> <p>Something needs to be done.</p> <p>No, it is clear to me.</p>
46 b	<p>Something needs to be done.</p> <p>I do not think so.</p> <p>No, it is clear to me.</p>
46	<p>Something needs to be done.</p> <p>It might help those that are confused.</p> <p>It is clear to me.</p>

	I do not think so.
46 d	Something needs to be done. No, it should stay. No, it is clear to me. I do not think so.

4.5 Overview of Research Objectives

4.5.1 Establishing accepted basement construction techniques (Objective 1).

Section 2.2 achieved the first objective by identifying through the Stage I, II and III enquiries the various designs that were accepted as established construction techniques for building below ground, and there the data did not identify any conflict. The conflict only arose when the stakeholders were asked to apply the Act's definition of "special foundations" to the designs, to establish if they could be used by a property owner to achieve a basement build without becoming embroiled in a costly and time-consuming dispute. A comparison between those designs that avoided the use of reinforcement from any part of the structure beneath the party wall, was readily recognised. Although, it was accepted that those designs had negative consequences such as increased costs, construction time, and a reduction in achievable floorspace, the benefits were the avoidance of a lengthy and costly legal dispute if the adjoining owner disagreed with the notice.

4.5.2 Trace the origins and passage of the Act (Objective 2)

The earliest origins of party wall legislation can be found within the Assize of Buildings, although it was not until the Great Fire of London that society recognised the importance of restricting and controlling the spread of fire. The uncontrolled spread and devastation that the conflagration of 1666 caused was the driver behind Charles II's demands for greater fire control and prevention when redesigning and rebuilding London. An effective remedy was to use stone for construction in replace of timber, especially between buildings. However, stone was significantly more expensive and was therefore not vigorously adopted or enforced. Not unsurprisingly adjoining owners began to enclose

onto buildings that had used stone to reduce costs. The property owner who had used stone reasonably contested the use of their wall unless a financial contribution was made, without realising that on receipt of the contribution, they also transferred certain rights over the wall to the enclosing owner, thereby creating the legal concept of a wall in joint ownership, with both owners having equal rights as tenants in common.

Where such an arrangement was made there had to be a process for dealing with matters such as maintenance, alterations, and adaptations to the wall. Thus, the need for party wall legislation emerged and has evolved through 27 successive pieces of legislation. Of notable interest in respect of the research, were the concerns raised by the AC regarding the use of grillages (now defined as special foundations), now the single-most common area of conflict. As disputes continued, those surveyors working under Part VI of the LBA recognised the benefits of providing party wall legislation beyond London and the Bristol areas. The current Act was intended to create robust legislation that would benefit property owners across England and Wales by providing a mechanism (see Section 2.6) that achieves early resolution. If an owner is dissatisfied with any outcome, their last resort is to seek the Court's judgment to provide a coherent finding and contribute to the extant knowledge. The case law whilst limited, is therefore important, however, given the vocal expressions opined (see Table No 13) and HHJ Bailey good intentions to interpret special foundations and the section 7(4) veto, conflict remains.

4.5.3 The Act's intent, structure, and the rules of interpretation (Objective 3)

This research has adopted an inductive approach using both qualitative and quantitative methodologies to investigate how surveyor interpretations are influenced by the Act's intent, structure, and the rules of interpretation (see Section 2.7.1). Given that the Act is intended to resolve conflict, it is ironic that it openly invites an adjoining owner to dissent to the works. In this way the Act promotes conflict between property owners which the surveyor's jurisdiction (see Diagram No 31) requires them to resolve through its procedures (see Section 1.7). However, if the Act is viewed by surveyors as flexible and open to interpretation conflict will continue as indicated by the data.

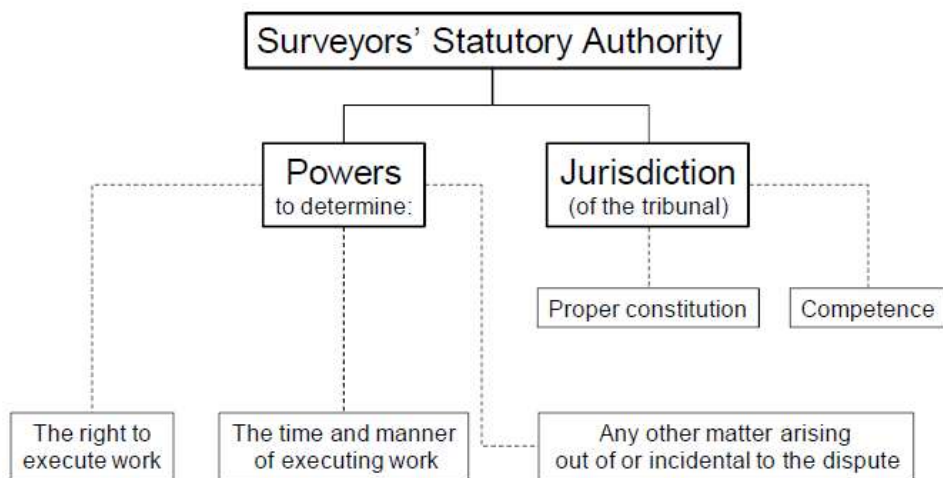


Diagram No 31 Surveyors statutory authority (Chynoweth, 2011, p.59)

In Chaturachinda, the learned judge recognised that the section 7(4) veto was of considerable importance to: (i) house owners contemplating the construction of a basement; (ii) to surveyors; and (iii) designers. Achieving consistent interpretation within the surveyor's jurisdiction (see Diagram No 24) of both the Act and the rules of interpretation is an important part of ensuring accurate interpretation is achieved. Accordingly, the various factors that influence surveyor interpretations are identified below, but are not limited to:

- (a) The surveyor's professional and non-professional background;
- (b) The type of training, knowledge and experience;
- (c) Whether applying an old or new school approach;
- (d) The number of surveyors that specialise within this field and their geographical location; and
- (e) Case law.

On the literal reading of the Act's structure and the rules of interpretation (see Section 2.7.1) the only qualification that is provided within the definition of "special foundations" is the reference to an "assemblage of beams or rods is employed for the purpose of distributing any load." Typically, a standard basement design will adopt a reinforced concrete "box" (see Diagram No 15) because it is an economical method of construction.

This requires non-sequential tunnelling underneath the existing structure (similar to the process used when underpinning), which in itself is an accepted foundation technique (see Diagram No 10). Before reaching a determination on whether the proposed design is a special foundation, surveyors must understand the function of the various elements of the basement box, to establish whether this can be classified as:

- (a) a foundation;
- (b) a wall;
- (c) both; and
- (d) not mutually exclusive.

Understanding which design creates a foundation is the issue that creates the conflict? In *Chaturachinda*, the third surveyor determined that the Act does not prohibit a wall being formed in reinforced concrete without the express consent of the adjoining owner, and that a wall could never be a foundation or a special foundation. Therefore, is the basement wall simply an extension of the existing party wall and allowable under section 2(2)(a) on the basis that the raising of a party wall applies equally to both upward and downward directions? (*Standard Bank*, 1878). Has that interpretation been manipulated within *Chaturachinda* to circumvent the section 7(4) veto? Conversely, the Act does not prohibit a wall from being a foundation nor indeed both, so which interpretation is correct? If the third surveyor's determination in *Chaturachinda* is correct then another issue requires interpretation, because under the Act a wall must rest upon a foundation. So, what part of the basement box is the foundation to the wall? Without an understanding of the Act's structure or rules of interpretation, conflict will continue.

4.5.4 Common area of conflict (Objective 4)

The research established several common factors within the independent data, first, that party wall surveyors hold multiple professional affiliations (see Figure Nos 1, 8 & 9) and secondly that the growth in conflict was not unique to the APA data. Thirdly, that conflict had spread across 20 areas of the Act (see Table Nos 2 & 3). Fourthly, there was one notable piece of data that inextricably linked the research hypothesis data, which was that the single-most common area of conflict was the interpretation of foundations, special foundations, and the section 7(4) veto when building below ground. With the Stage II enquiry the results established that 21% of the stakeholders considered that the Act's

definition of “special foundations” was clear and 79% believed that it was ambiguous and required clarification. This identified a significant gap in knowledge, but what is clear from data is that two questions keep arising during retrofit basement designs:

- (a) What makes a special foundation “special” and why does this warrant special consideration in the legislation?
- (b) Why is there conflict over the interpretation of special foundations?

The Stage III data collection addressed both interviews with a structured questionnaire approach addressing the single area of conflict. Only in recent years has the debate about expert interviews gradually become more concrete (Bognor and Menz, 2009, p.43). As such, expert interviews are an acceptable paradigm and can be a valuable tool in identifying both propositional and non-propositional knowledge. It was anticipated that the stakeholder non-propositional knowledge would provide a significant contribution to the research data.

Because of the eclectic structure of the party wall community, the interview process was designed to incorporate as many stakeholders from a variety of professional and non-professional backgrounds as possible (Bognor and Menz, 2009, p.43). The interviews were structured to ensure that each participant was asked the same questions and to avoid the possibility of stakeholders moving away from the research focus. Notwithstanding, it was of course recognised that unless stakeholders were able to express their opinion in gathering non-propositional knowledge, that could impact the validity of the data gathered, so they were encouraged to provide narrative answers.

4.5.5 Alternative dispute resolution (Objective 5)

An understanding ADR was necessary to see whether a relationship exists between the Act’s procedures and conflict within the construction industry and the measures that the industry has taken to try and create methodologies to resolve conflict. It became apparent that there is no direct relationship between the Act and ADR. However, property owners can jointly elect to move away from the Act, and they can do this in a number of ways: first, by consenting to the works in the first instance and in so doing the Act’s procedures are frozen, or alternatively, they can agree to adopt any methodology prior to, during, or

post the works, which may be seen as substantively more attractive than proceeding through the courts which is a costly and time-consuming process.

4.6 Overview

The findings of any thesis will be, by definition, substantive and understandably how these findings have been achieved, and analysed, requires careful and detailed examination. Chapter 4 therefore sets out how the data was identified, and collected, together with specific hazards, limitations or difficulties arising out of the collection, storage and use of that data. This chapter sets out the broad involvement of the stakeholders from within the party wall community and demonstrates that on a proportional basis, relevant to the research topic, sufficient volumes and quantities of data have been obtained.

Steps were taken to avoid duplication of the data by ensuring different stakeholders were used at each stage of the of data collection. This ensured that a broad spread of knowledge was gathered throughout the data collection.

In demonstrating that stakeholders' environment was wide-ranging, and not just limited or specific to professional bodies or association, the data was reasonably representative of the majority of the party wall community. This included inviting those on the periphery of the profession such as the judiciary, barristers and judges.

Having cast the data collection over a wide area, the introduction and use of QSA software to perform the analysis and more importantly to address the misconception that data is only justified if it is obtained in significant volumes and quantities, demonstrated that proportionally, in relation to those operating within this niche specialist area the quantity and quality of the data gathered and the involvement of stakeholders was indeed substantial.

Chapter 5

5.0 Qualitative Statistical Analysis

5.1 Difficulty of Analysing Large Volumes of Data

The process of collecting primary and empirical data began with the Stage I (i) quantitative “case study” assessment and the analysis of 2,960 cases obtained from the researcher’s professional practice. This open-ended approach was designed to seek a better understanding of the suspected existence of growing conflict during the administration of the Act and within the party wall community. The investigation successfully identified 1,469 (see Table No 1) cases of conflict, potentially involving 4,407 surveyors. One early concern regarding the validity of the research was the potential threat of a perceived or actual bias arising out of a single source of data. Therefore, a subsection (ii) scoping study was adopted as a secondary line of quantitative enquiry to obtain external data. An analysis of the internal and external data established the following outcomes:

- (i) Conflict was growing exponentially;
- (ii) Removed bias;
- (iii) Supported the presence of conflict in the wider community;
- (iv) Conceptualised the conflict into themes and/or topics;
- (v) Identified correlation between the internal (APA) and external (scoping study) data;
and
- (vi) Identified the research focus.

The contribution created by the large volume of APA data, rich content from the scoping data, and subsequent analysis, enabled the conflict to be conceptualised into explicit themes (see Table Nos 2 & 3). In addition, upon analysis, the five most common areas of conflict within the Stage I enquiries, and importantly the single-most common conflict along with a link between the two sets of data with the difficulties of interpreting the Act when building below ground, were identified.

A Stage II quantitative line of inquiry using a closed-structured questionnaire to obtain a greater understanding of the interpretation and approaches to the research focus, was used by adopting a context analysis approach. Therefore, Stage II questions focused on the concept, design and construction of reinforced concrete basements, and whether they created conflict or not when the issue of special foundations was raised. The data was entered into a spread sheet which enabled for example the ability to identify stakeholders, from various professional and non-professional backgrounds (see Figure No 8) and their understanding of the general perception of special foundations and associated issues (see Appendix II). The stakeholders were invited (see Table No 11) to provide narrative answers to increase the depth and understanding of their tacit knowledge which would further reinforce or challenge the research focus.

Whilst the rich data made a significant contribution to the quantitative enquiries and analysis element of the mixed research methodology, the data, whilst informative, remained inconclusive. A third line (Stage III) of enquiry was introduced using closed-structured interviews. Before embarking on the process, and aware of the influence that case law played in resolving surveyor conflict (see Section 2.7.2), the invitation to participate was extended beyond the party wall community to professionals that work on the periphery of the Act, such as lawyers, counsel and judges, to further enhance and contribute to the validation of the research enquiries.

Having identified various professional backgrounds, the possibility of undertaking the interviews within focus groups was considered, but subsequently rejected for the following reasons:

- (i) Logistics;
- (ii) It was anticipated that the stakeholder's responses/participation would be guarded;
- (iii) The judiciary have strict protocols, so their participation and availability would be uncertain;
- (iv) Concerns that stakeholders' views and opinions expressed within a focus group would be quoted externally to the research by other focus members; and
- (v) Ethical considerations and parameters would determine the individual interviews as the appropriate way forward.

The success of any interview is predicated upon the quality of the questions. Irrespective of whether the questionnaire is to be mailed or used in a one-to-one interview, the

questions must be formulated on the aims and objectives of the hypothesis (see Figure No 1). The interviews were recorded and subsequently transcribed for content analysis, which is a research method for replicating and validating inferences from data with the purpose of providing knowledge, new insights, representation of facts and a practical guide to action (Krippendorff, 1980). The intended outcome was to establish either “concepts” or “categories” that describe the phenomenon. This method is used in further quantitative statistical analysis techniques using recognised software such as NVivo®. As Kyngäs and Vanhanen (1999), it suggests, that it is the researcher who decides whether the term “concept” or “category” should be adopted. When adopted as a research methodology, content analysis is a systematic and objective means of quantifying and describing the phenomena identified within the data. This achieves both a condensed and broad description of the phenomenon that is the subject under investigation.

The Stage III approach also encouraged interviewees to provide a narrative response (when they felt inclined to do so), to obtain their tacit knowledge that would have otherwise remained undisclosed. The intent was to ensure the quality of the analysis of the large volume of rich data. No single interviewee was advised of the broad scope of the professional backgrounds of the various interviewees nor of any comments made in response to the relevant question. The strategy was also intended to prevent the interviewee from dominating the interview and raising non-related issues that were not necessarily relevant to the research focus.

5.2 Specialised Software Applications for Qualitative Statistical Analysis

Software is an integral part of any research, especially where the interviews and subsequent analysis of large volume of data is dependent upon how the data is collated, recorded and subsequently extracted through specialised analysis techniques. Creswell, (2007) proposes that computer programmes help store and organise large volumes of qualitative data. Bazeley (2013) suggests the researcher can resolve these difficulties with the use of NVivo® software. NVivo® is a commercial software package purposely designed to assist with the qualitative analysis of large volumes of data.

However, as with all technology, there is no one glove fits all solution and before deciding on which software programme to use the researcher had regard to the following:

5.2.1 Advantages

- Analyse and organise unstructured text, audio, video, or image data;
- Playback ability for audio and video files, so that interviews can easily be transcribed in NVivo;
- Ability to capture social media data from Facebook, Twitter, and LinkedIn using the browser plug-in;
- Import notes and captures from Evernote—great for field research;
- Import citations from EndNote, Mendeley, Zotero, or other bibliographic management software—great for literature reviews; and
- User interface and text analysis available in English, French, German, Spanish, Portuguese, Japanese, and Simplified Chinese.

5.2.2 Disadvantages

- Using a sophisticated software programme takes a considerable amount of time to learn, it is daunting and if not properly taught or used will distort the data and subsequently findings;
- The use of a data software programme as an interface between the researcher and the data can create an uncomfortable and uncontrollable distance between the researcher and data;
- The software programme may alter the categorisation and organisation of the data and not all computer programmes are suitable for all research;
- Not all computer programmes have the features or capability that a researcher may desire when analysing the data;
- The greater the features and capability, the more difficult the software is to learn and use correctly and more importantly effectively;
- Entering data into a software programme removes the purity of the data, because the way in which it is entered is open to the software user's bias, values, in identifying and allocating appropriate coding; and
- Users must be fully aware of sub-conscious bias and continually reflect on how they use the software to code and enter the data, to avoid distorting the findings.

When designing the interview strategy, the researcher made a conscious decision to limit the use of any specific software such as NVivo®, with the intention of maintaining the mixed methods approach. Given that this research topic is grounded within party wall surveyor interpretations, which Locke et al (2007) suggest creates intimacy, this can introduce a range of strategic, ethical, and personal issues into the qualitative research process, which have been addressed within the research and briefly summarised above.

The researcher's approach was therefore to enhance the QSA process with a combination of both recognised software (NVivo®) and neutral evaluation where the data is derived from mixed sources to avoid any perceived or actual bias that may sub-consciously influence the findings. As Creswell (2007) and Glesne (1992) recognise QSA is "interpretative research" that investigates the connections and relationship inter alia within the researcher's rich data and work product. The intention being to demonstrate that such close intimacy between the data and the researcher should not necessarily be rejected because of the unique relationship.

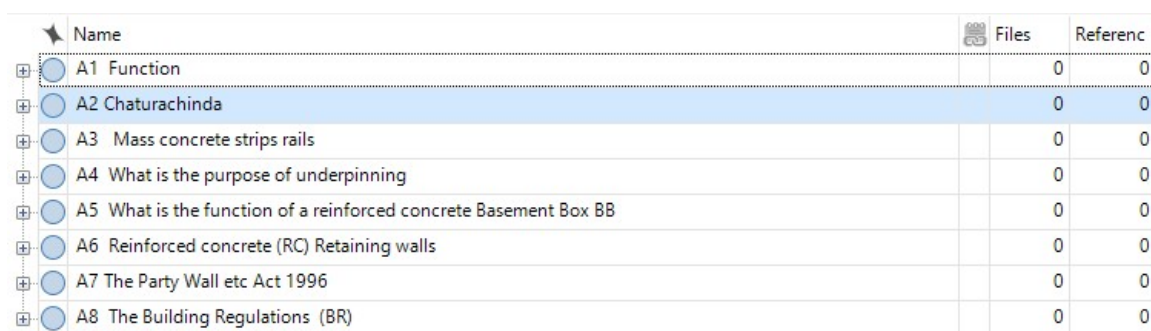
The use of spreadsheets, whilst a time-consuming process, was extremely effective within the Stage I (i) & (ii) quantitative data collection and analysis. The use of a tabular format to produce the narrative results (see Table Nos 11 & 13) and NVivo® to provide a supporting role through the use of themes and topics allowed the researcher to present the results pictorially (see Appendix V). In addition, the research adopted chi-squared testing to further demonstrate the validity of the results.

Therefore, interpreting the rich data in its purest form (see Appendices II and III) was considered by the researcher to be the most effective approach, with support provided by the various techniques and technological advancements. In addition to this removing what Creswell (2009) suggests is the enquirer's potential bias, values, and personal background was crucial to the validity of the findings. For example, question 46 (d) narrative (see Appendix III) taken from the stakeholders' views (see Table No 13) on whether the special foundation definition should be removed. The responses indicated an equal split of 44% for both its removal and retention, with 12% undecided. NVivo® cannot identify why or how a surveyor might formulate a particular opinion, this can only be achieved through pure analytical analysis of the data to find any logical link or relationship that could reasonably be inferred from the data. The researcher had justified concerns that

if the NVivo® software had been relied upon as a single source of independent assessment, the results could be misleading or distorted.

5.3 Efficiency, Transparency, Coding

The NVivo® programme allows the researcher to introduce limits through the exclusion and inclusion of propositions or, where appropriate, an emerging hypothesis through the software. However, this is not necessarily a significant benefit because it further raises the potential for subconscious-bias when entering data in a certain manner or format. The automation of the mundane and time-consuming administrative tasks associated with qualitative data analysis provided the researcher with additional time to consider and subsequently reflect on the results provided by NVivo® to a limited extent and to present the results of the subsequent sub-themes within word clouds (see Appendix V).



Name	Files	Referenc
A1 Function	0	0
A2 Chaturachinda	0	0
A3 Mass concrete strips rails	0	0
A4 What is the purpose of underpinning	0	0
A5 What is the function of a reinforced concrete Basement Box BB	0	0
A6 Reinforced concrete (RC) Retaining walls	0	0
A7 The Party Wall etc Act 1996	0	0
A8 The Building Regulations (BR)	0	0

Figure No 11 NVivo® themes and nodes

The software ensured a clear audit trail was maintained while entering the data and during the subsequent analysis process through a series of coding (nodes). Gibbs & Taylor (2010) submit that coding is the process of combining data within themes, ideas, and categories, and then marking similar passages of text with a code label so that they can be easily retrieved at a later stage for a further comparison and analysis. This makes the audit trail and the coding of data easier to follow, revisiting where necessary, and achieving logical comparisons whilst identifying specific patterns that may require significantly further detailed lines of investigation.

5.4 Non-parametric Test (the Chi-square Test)

The chi-square (symbolised as χ^2) is a test of association between two sets of data and can only be used when the data is nominal or ordinal. The test predicts how many subjects (in this research interviewees) will fall into certain categories. Most statisticians consider 20 subjects to be the minimum number required in order to apply the chi-square test (see Section 5.4.1) and the validity of any outcome is dependent on the number of subjects used to ensure that a sufficient number of subjects turn out to be allocated to each category.

The number of participants would become clearer as the data collection and subsequent analysis emerged in its entirety through to its natural conclusion. However, given that the overall number of surveyors that have directly and indirectly participated in the rich data gathered through the Stage I and II collection process, the research foundation yield was based on rich data from a large proportion of the party wall community. In total 23 separate Stage III interviews were completed, which as a percentage of the overall party wall community may appear low. However, 23 interviews are not, as noted by both Hussey (1997) and Franchuk (2004), an unreasonable level, because phenomenological research does not require a large number of participants. Indeed, according to Franchuk (2004), some research that has adopted interview techniques for gathering data has only included between 15 to 20 participants as an appropriate quantity. In summary, Guest, et al (2006) examined the suggestion that the quantity of interviews carried out must be balanced between collecting sufficient data and/or saturation. Guest concluded that large volumes of data and interviews does necessarily add anything to the research, it is the quality of the data that is important. Guest et al (2006) concluded that an average of 12 interviews was sufficient. Accordingly, the use of 23 interviews, given the spread of expertise within the wider party wall community and peripheral professions, exceeds the Guest et al (2006) recommendations by 100% supporting the estimation by both Hussey (1997) and Franchuk (2004) that this amount would demonstrate that the interviews yielded reliable qualitative and quantitative rich data.

5.4.1 Chi-squared testing

Figure Nos 12 & 13 show the clear diversity of stakeholders, following the analysis and presentation of the results relating to two specific questions at the heart of the research focus data gathered from the 23 interviewees, in relation to questions number 18 and 25 (Appendix IV).

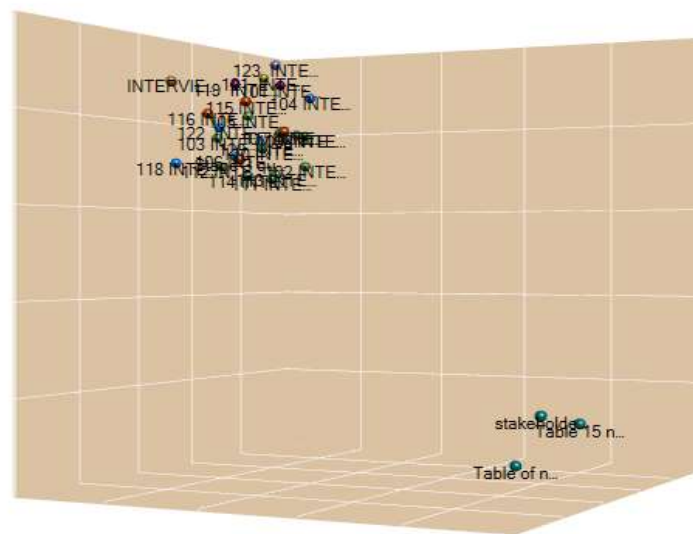


Figure No 12 NVivo® demonstrates the disparity between the data to questions 18 and 25

The function of the basement box was categorised as high (given numerate 2) and the relevance towards the rails was categorised as low (given numerate 1). The measurements of high and low were based upon the individual interviewee's responses and categorised as considering the importance of the function of the box (given numerate 2) and/or rails (given numerate 1).

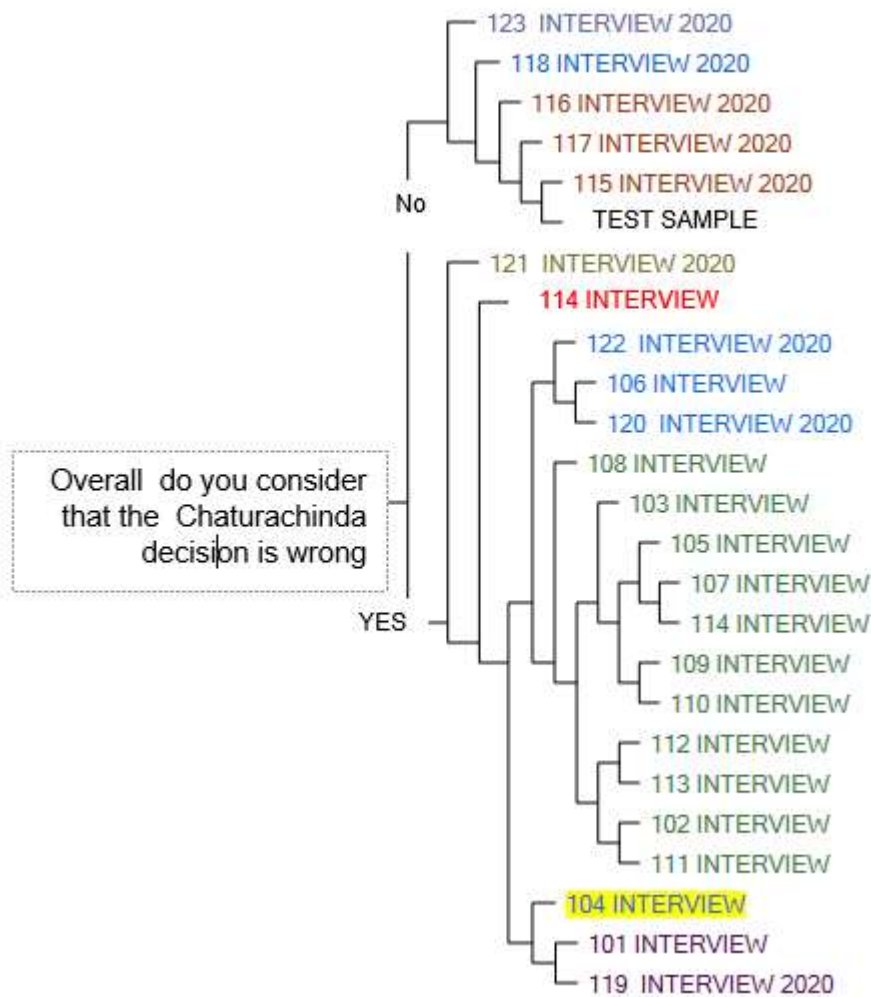


Figure No 13 Demonstrates the relationship between the interviewees' views on the Chaturachinda judgment

The research focused on whether the rails fall within the interviewee's individual professional philosophy relating to the function of the basement box and/or whether the rails "go" together, or whether there is no association between the two variables following the direction given above, therefore, the following steps will be taken:

1. To formulate the research hypotheses: The correct interpretation of the basement box's structural function will determine whether the "special foundations" definition is satisfied and triggers the section 7(4) veto;

2. By implication the null hypothesis is: The performance of the rails will satisfy the “special foundations” definition and therefore does not entitle the application of the section 7(4) veto;
3. The chi-square test is appropriate to this kind of problem, the rationale for adopting the test is that:
 - (a) The data is nominal;
 - (b) The research interviewees could be allocated to categories (in this test there are two categories), pro-basement box; pro-rails; and
 - (c) The sample is reasonably large enough (23 interviewees).
4. The calculations were carried out manually in order to be able to present the results in a clear and understandable format.

Table No 14 Relevance of the nominal chi-square coding process

Interviewee	Question No 18 (Appendix IV) Is the function of a basement box to act as both a retaining wall and a foundation to the structure above by transferring the imposed lateral loads safely to the ground?	Question No 25 (Appendix IV) Did the rails adopt the function of the foundation?
101	2	2
102	2	2
103	2	2
104	1	2
105	2	1
106	1	2
107	2	2
108	2	1
109	2	2
110	2	2
111	1	1
112	1	2
113	2	2
114	2	2

115	2	2
116	2	1
117	1	1
118	1	1
119	2	2
120	2	2
121	2	2
122	2	1
123	2	2
124	1	1

Table No 15 Adapted format of chi-squared expectancy table (Naoum,2013, p.112)

	Question No 18	Question No 25	TOTAL
Basement function (2)	1	2	15
	13	2	
	E= 10.43	E= 4.56	
Strips/rails function (1)	3	4	8
	3	5	
	E= 5.56	There E= 2.43	
TOTAL	16	7	23

(i) To calculate the expected frequency (E) for each cell is the total observed frequency surrounding columns in this example 16, 7, 14, 9 total 23 = (N).

(ii) Multiplying the two relevant marginal totals for each cell and dividing by the total number of subjects (N) to calculate the expected frequency.

Therefore, the expected frequency for foreign cells is:

Cell 1 $E = (16 \times 15) / 23 = 10.43$

Cell 2 $E = (7 \times 15) / 23 = 4.56$

Cell 3 $E = (16 \times 8) / 23 = 5.56$

Cell 4 $E = (7 \times 8) / 23 = 2.43$

$$\chi^2 = \frac{(13-10.43)^2}{10.43} + \frac{(2-4.56)^2}{4.56} + \frac{(3-5.56)^2}{5.56} + \frac{(5-2.43)^2}{2.43}$$

$$\chi^2 = 0.63 + 1.43 + 1.18 + 2.72$$

$$\chi^2 = 5.95$$

For the χ^2 , the degree of freedom (df) = (r-1)(c-1), where

r = number of rows in contingency Table No 14 r = 2

c = number of columns in contingency Table No 14 c = 2

Therefore, df = (2-1) (2-1) = 1

Chi-square = 5.95

5.5 Chi-test Results

Table B (see Appendix VIII) gives critical values against which the calculated value of χ^2 can be compared. In this instance the calculated value of df = 1,

Chi-squared Results

The value of χ^2 is 5.95 which is substantially greater than the critical value of 5.412 for P < 0.02, the results of this research are therefore significant.

5.6 Discussing the QSA data

When configuring the QSA strategy, it was recognised that introducing a section relating to the Chaturachinda case in conjunction with the three stages of data collation was important and that together with the NVivo® analysis of the narrative responses would achieve a holistic analysis of all the data, specifically dealing with the common area of conflict.

In view of Chynoweth's (2002) observations regarding ambiguity, it was anticipated that this could be a contributing factor towards stakeholders' conflicting interpretations. Ambiguity creates the opportunity to interpret, therefore, establishing whether the stakeholders agreed that the Act was ambiguous was an important aspect of the research and would assist in finding not only the gap in knowledge but in resolving it. Therefore,

focusing on ambiguity, the QSA word cloud (see Figure No 14) graphically demonstrated the strength of stakeholder opinions to question A7.2 which asked whether the Act was ambiguous? 21 stakeholders (with 25 references) agreed, and only 3 (with 3 references) rejected the suggestion.

This data was reinforced by the results to question 1 (see Appendix IV) where 100% of the interviewees expressed opinions in the narrative responses and further, to question 24 (ii) *“the Act’s Definition of special foundations requires clarification to remove the confusion”* (see Appendices II and III) to question 24 (iii) *“The Act needs a radical rethink with an Amendment Act”* (see Table No 11), and in question 1 *“yes, most definitely ambiguous”* and *“why have two definitions”* (see Table No 13). In view of such overwhelming agreement, it can reasonably be concluded that the Act is considered ambiguous and without clarity the conflict will continue.



Figure No 14 QA7.2 Is the Act ambiguous? Answer “Yes”

Introducing a separate coding topic (A2 Chaturachinda) with specific questions (see Figure No 15) applicable to the case together with the analysis of the narrative responses

(see Table No 13) given by the stakeholders, established whether the case had an impact on surveyor approaches and interpretations.

The narratives (see Table No 13) in reply to question 18 stated: *“I rely on Chaturachinda on all basements”* and to question 22 *“agree, although it is against Chaturachinda judgment so I apply that precedent”* and question 25 *“I won’t go behind a case and be questioned”* and *“based on Chaturachinda which I do not accept is correct but I have to accept it until another case overrules this one”*.

Conversely, there were some stakeholders that held conflicting opinions in reply to QA2.1 which asked: Do you accept the Chaturachinda decision? QA2.4 asked: Do you accept Redler’s analysis? Whilst the overwhelming response was “No” to both questions from 22 stakeholders (with 93 references) and 20 (with 93 references). The narrative responses (see Table No 13) to questions nos 37 & 41: *“I dispute Redler and Bailey’s decision”* and *“absolutely, I do not accept Chaturachinda”* also to question 44 *“Chaturachinda is bizarre”* and question 45 *“I reject Chaturachinda”*, is a clear indication that this judgment is not an accepted interpretation of the Acts definitions.

[-] A2 Chaturachinda		0	0	04/05/2020 15:50
[-] A2.1 Do you Accept Chaturachinda		0	0	04/05/2020 15:51
A2.1.1 Yes		9	15	04/05/2020 15:51
A2.1.2 No		22	93	06/05/2020 09:48
[-] A2.2 Do you consider it is appropriate to challenge Chaturachinda		0	0	06/05/2020 09:50
A2.2.1 Yes		7	8	06/05/2020 09:50
A2.2.2 No		23	121	06/05/2020 09:50
[-] A2.3 Are the mass concrete strips rails the foundation		0	0	04/05/2020 15:51
A2.3.1 Yes		7	11	04/05/2020 15:53
A2.3.2 No		22	106	04/05/2020 15:53
[-] A2.4 Do you accept Redler's analysis of a Basement		0	0	02/05/2020 12:15
A2.4.1 Yes		7	15	06/05/2020 09:47
A2.4.2 No		20	93	06/05/2020 09:47

Figure No 15 QA2 Chaturachinda

QA2.2.1 asked if the stakeholders considered it appropriate to challenge Chaturachinda? 23 stakeholders (with 121 references) believed it was not appropriate and only 7 (with 8

references) believed they would challenge the judgment, which demonstrates the strength of the influence that the Courts can have over people. The narrative responses (see Table No 13) in reply to question 45 are explicit: *“yes, but I will not go behind Chaturachinda”* and *“I do not accept Chaturachinda but I am stuck with it”* and *“I cannot challenge Bailey’s decision”*, reinforced the strong opinion that this decision is not accepted, although clearly there remains a reluctance amongst stakeholders to voice their opinions.

The research took the analysis of Chaturachinda further with QA2.3.1 which asked: Are the rails the foundation? Question 22 (with 106 references) overwhelmingly rejected the proposition and only 7 (with 11 references) agreed. The narrative response to question 29 (see Table No 13) *“these cannot be the foundations”* and *“the box is the foundation”* *“I do not see why the strips are needed”*, is unequivocal data that rejects Chaturachinda.

QA2.3.1 was further reinforced by the responses to A3.3.2 with 14 stakeholders (with 26 separate references) agreeing that if the mass concrete rails were removed the basement’s structural integrity would not be affected. It is therefore reasonable to conclude the QSA has established that stakeholders believe a basement box must, by definition, be the foundation.

In reply to QA7.7.1, 23 stakeholders (with 71 references) accepted that the basement wall can be extended downwards, with QA5.5.1, 23 stakeholders (with 131 references) agreeing the wall is sitting (see Diagram No 38) on the slab. In response to QA5.6.1, 23 stakeholders (with 63 references) consider the slab (not the rails) to be the foundation.

	A1.3 A wall is only ever a wall	0	0	02/05/2020 12:24
	A1.3.1 Yes	7	9	04/05/2020 13:51
	A1.3.2 No	16	27	04/05/2020 13:51

Figure No 16 QA1.3 A wall is only ever a wall?

In Chaturachinda, the third surveyor held that a wall is only a wall and did not consider the possibility of multifunctional qualities. The QSA results (see Figure No 16) in response to

QA1.3.2, indicates that 16 stakeholders (with 27 references) did not agree. In response to QA5.3, 21 stakeholders (with 22 references) agreed a basement wall is both a foundation and a wall and is, by definition, multifunctional. This result is also supported by the QA5.10, where 23 stakeholders (with 136 references) accepted that a reinforced basement “box” is multifunctional. Only 2 stakeholders (with 2 references) disagreed. The function of the individual or combined elements was not raised in Chaturachinda, which is surprising given the importance of an element’s structural function. QA5.2 asked whether an extended wall could also be a foundation? 22 stakeholders (23 references) agreed with only 2 (with 2 references) disagreeing. This is another important finding because the stakeholder’s interpretations are persuaded by the element’s function.

QA5.8 asked if the concrete rails replaced the basement box’s function? This was rejected by 19 stakeholders (with 26 references) with only 4 (with 4 references) believing that the rails were the foundation. Thus, further reinforcing the responses to QA3.3.2.

QA7.5.1 asked if a basement box was a special foundation? (see Figure No 22), 23 stakeholders (with 103 references) agreed with only 7 (with references) disagreeing. When QA7.6 asked whether the basement box triggered the section 7(4) veto, 23 stakeholders (with 100 references) agreed and only 8 (with 10 references) disagreed.

A7.5 Is a Basement Box a Special foundations SF		0	0	04/05/2020 16:04	PA
A7.5.1 Yes		23	103	04/05/2020 16:04	PA
A7.5.2 No		7	7	04/05/2020 16:04	PA
A7.6 Does a Basement Box trigger the Section 7 (4) veto		0	0	04/05/2020 16:09	PA
A7.6.1 Yes		23	100	04/05/2020 16:09	PA
A7.6.2 No		8	10	04/05/2020 16:09	PA

Figure No 17 QA7.5 Is the basement a special foundation?

Another important finding from the analysis of the Chaturachinda case was that the third surveyor had not considered the function of the basement wall as a retaining wall and whether it was a foundation, nor indeed whether a basement wall was or was not a retaining wall.

QA6.1 23 explored this observation and stakeholders (with 57 references) supported the contention that a retaining wall was a foundation, only 3 (with 3 references) rejected the function. In response to QA6.3.1, 21 stakeholders (with 32 references) agreed that a retaining wall was a special foundation, only 1 (with 1 reference) disagreed. In QA6.7, 23 stakeholders (with 100 references) agreed (see Figure No 17) that a retaining wall's function was to resist lateral loads and safely transmit them to the ground, which satisfies the Act's special foundation definition and only 4 (with 4 references) rejected this definition.

In the analysis of Q.A5.4, 23 identified 23 stakeholders (with 61 references) who considered a basement box to be a special foundation whilst only 3 (with 4 references) did not. This is another challenge to Chaturachinda.

Q6.4 asked: Does a retaining wall require reinforcement? 23 stakeholders (with 121 references) agreed and only 4 (with 5 reference) disagreed. Q6.2.1 asked; does a retaining wall required a toe? 21 stakeholders (with 28 references) agreed and only 2 (with 2 reference) disagreed. Accordingly, if the toe is the foundation (QA6.6) to the retaining wall and the toe forms part of the basement box slab, the toe must be linked to the wall through the reinforcement, and the wall sits on the slab not the steps. Therefore, based on the literal reading of the data, the elements and functions of a retaining wall (see Figure No 17) and the Act's definitions, a basement box must be both multifunctional and is a retaining wall and a special foundation.

QA6.6.1, 23 stakeholders (with 92 references) agreed that the toe is the foundation to the wall, which if removed, would affect the structural integrity of the box and reduce its ability to resist lateral loads; only 7 (with 12 references) disagreed. The narrative response to questions no 18 and 20 (see Table No 13) are clear: *"agreed, reject Chaturachinda"*, *"If you remove the reinforcing link, they are two elements that move independently"*, and *"the toe is properly designed and linked to the wall to create a single structure"*. Therefore, it is reasonable to conclude from the QSA that a retaining wall constructed from reinforced concrete, whether it is independent of or incorporated into the basement box, has the same function as a foundation and if it includes reinforcement, it must be a special foundation.


  A6.7 is the retaining walls function to resist lateral loads	1	1	04/05/2020 15:37
 A6.7.1 Yes	23	111	04/05/2020 15:38
 A6.7.2 No	4	4	04/05/2020 15:38

Figure No 18 QA6.7 Is the function of a retaining wall to resist lateral loads

In response to QA6.5, if the reinforcing link is removed will it affect the wall's structural function? 23 stakeholders (with 107 references) agreed and 5 (with 8 references) disagreed.

QA5.7 asked: Whether the basement function is dependent on the rails? 18 stakeholders (with 32 references) disagreed and only 4 (with 6 references) agreed.

QA7.6.1 asked: Does the basement box trigger the section 7(4) veto? the consensus was resoundingly clear with 23 stakeholders (with 100 references) agreeing and only 8 (with 10 references) disagreeing.

QA5.9 investigated the construction process and asked if diagrams 32–36 accurately represent the construction process, 23 stakeholders (with 30 references) agreed (see Figure No 19) word cloud. Therefore, the wall is not resting on the rails and therefore cannot be the foundation.



Figure No 19 QA5.9 Is the construction process accurately reflected in diagrams 32–36?

When asked whether a basement box triggered the section 7(4) veto (see Figure No 17), in QA7.6.1 23 stakeholders (with 100 references) agreed and only 8 (with 10 references) disagreed. Furthermore, as demonstrated by the word cloud (see Figure No 20) there clearly was overwhelming agreement that the construction of a reinforced concrete basement box triggered the section 7(4) veto.



Figure No 20 QA7.6.1 Does a basement box trigger the section 7(4) veto?

There is a reference within the Chaturachinda decision where Bailey HHJ records at paragraph 16, six points of reasoning given by the third surveyor, none of which recognised the Act's criteria, that the wall must be resting on solid ground or an artificially-formed support for it to be a foundation. Indeed, in submissions put to HHJ Bailey (at paragraph 32) obiter dictum: "*the proposal is to underpin this party wall with a reinforced concrete*". The correct question with respect to the Court is in two parts; 1) What is the function of underpinning? 2) Is one of the intended functions of the basement also underpinning?

The function of underpinning is discussed (see Section 5.3) and in response to QA4.1.1, 6 stakeholders (with 7 references) agreed (see Figure No 21) that underpinning was a foundation. There were no disputing stakeholders and exploring this assertion further QA4.3.1 asked if the basement box underpinned the structure above. In responses, 19 stakeholders (with 25 references) agreed and only 1 (with 1 reference) disagreed.

The research has therefore identified that the basement's function is also to underpin the original foundation, which if incorporating reinforcement must by definition, make it a special foundation invoking the obligation to obtain written consent under section 7(4).

□	●	A4 What is the purpose of underpinning			0		0	06
□	●	A4.1 Is Underpinning a foundation			0		0	06
	●	A4.1.1 Yes			6		7	04
	●	A4.1.2 No			0		0	04
□	●	A4.2 Can Underpinning be built from brickwork			0		0	06
	●	A4.2.1 Yes			6		6	06
	●	A4.2.2 No			0		0	06
□	●	A4.3 Does the basement box underpin the structure			0		0	06
	●	A4.3.1 Yes			19		25	06
	●	A4.3.2 No			1		1	06

Figure No 21 QA4 What is the purpose of underpinning?

5.7 Reflective Analysis Questions the Chaturachinda Decision

The research stratagem adopted a three-stage data collection protocol ensuring different stakeholders at each stage of the enquiry to avoid duplication of data results. Each stage asked a series of questions, which flowed from the Stage I (i) & (ii) results that had identified a single common area of conflict. Stage II and III both explored and confirmed the conflict created by the Act's definitions when building below ground, by ascertaining the individual stakeholder's tacit knowledge, understanding, and interpretation of the Act's two definitions of foundation and special foundation. An analysis of the only legal case which appears to be heavily contested by stakeholders throughout the data enquiries was also undertaken.

Of notable importance is the initial response to the (Stage II enquiry). When asked in question 10 if the stakeholders considered a basement box to be multifunctional, 77% agreed. In question 11, 36% accepted that a basement box reinforced concrete wall was a special foundation contrary to the Chaturachinda decision. Further enquiries were carried out into the function of the reinforcement and whether its removal would resolve

the issue of special foundations. A notable change in stakeholder positions was noted, when question 14 returned 86% now accepting that a basement wall was multifunctional, ergo acting as a foundation. When asked if they recognised the function of a retaining wall, surprisingly, contrary to the response to question 15, 55% of stakeholders did not understand the function of a retaining wall.

When asked about the Chaturachinda decision and whether rails were the foundation, 45% agreed; 36% rejected the concept and surprisingly 18% were undecided. Thus, it is correct to say that the majority, of stakeholders, 54% were not persuaded by the Chaturachinda decision. This finding was further supported by question 17 which established that 79% believed that the section 7(4) veto should be applied when a reinforced concrete box is constructed, all of which is supported by the NVivo QSA.

Having reflected upon the Stage I and II enquiries, it became clear that the line of enquiry, whilst confirming the suspicion that conflicting interpretations were prominent and growing, the research demonstrated more importantly that stakeholders' ability to change their views when asked specific questions, raised issues such as function, which was not addressed in Chaturachinda. Stakeholder indecisiveness indicated uncertainty, inconsistency, which is therefore a contributing factor to the conflict. Thus, the stratagem behind the Stage III enquiry was to focus stakeholder attention through the first eight questions on the function of foundations and retaining walls, by considering the individual and combined functions of the basement box. The combined data provided a clearer understanding of stakeholder responses which indicated a range of conflicting interpretations, albeit in the majority rejecting the findings held in Chaturachinda.

When asked if the Section 2.2 designs were accepted, 100% agreed that they were special foundations, therefore clearly challenging the Chaturachinda decision (see Diagram No 12, 14, 15, 16 and 17).

In Section 6.5 stakeholders were asked to focus on the five stages of constructing a basement, 100% agreed with the process. This was a pivotal point in the research because it provided unequivocal agreement that the wall was not sitting on the rails (Diagram Nos 16 and 17), and therefore did not satisfy the criteria set out within the Act's definitions that the wall must rest on the foundations.

Question 44 sought clarification on stakeholder views of the function of a retaining wall and whether the veto could be applied. A resounding 100% now agreed that a retaining wall was a foundation and therefore a basement box was a special foundation.

The research findings now clearly demonstrated that stakeholders' informed views are that Chaturachinda was wrong. This supports and indeed validates the research focus and findings and the original suspicion that the Chaturachinda decision had not contributed to knowledge and indeed had created conflict.

Chapter 6

6.0 Clarifying the Concept of a Special Foundation

6.1 Introduction

The literature review established that conflicting interpretations surrounding foundations is not a new phenomenon to the party wall community nor to the construction industry. The AC having first recognised and raised this conflict some 58 years prior to the Act, their primary concern related to the use of 'grillages', then an innovative construction technique introducing steel beams as a method of forming a foundation. It is therefore surprising that the Act's definition of special foundations was not fully investigated, developed and expounded, not least by those surveyors, namely Anstey, Lord Lytton et al, who vehemently believed that the party wall community required its own legislation and included this exemption with the introduction of the section 7(4) veto.

Unfortunately, the majority of Part VI of the LBA was adopted with apparently little change to the wording or its intent relating to the inclusion of the Act's two definitions of foundation and special foundation. These definitions are further complicated by the unequivocal section 7(4) veto which creates both conflict and a significant obstacle for those desiring to build below ground. Undertaking a critical analysis of the design and construction of a basement box (see Section 2.2) was an important aspect in exploring, understanding and generating new knowledge that would contribute to establishing whether a basement box is a special foundation. If found to be so, this would trigger the section 7(4) veto.

6.2 Origins of the Special Foundations and the Section 7(4) Veto

The construction industry is continuously evolving and not unsurprisingly advancements in construction techniques and materials have an immediate impact on legislation, especially where there is an explicit prohibitive mechanism contained within that legislation. However, the implication of the special foundation definition is not a new concept to the Act. In 1931 the London County Council ("LCC") formed the AC to assess the potential impact of the LBA and to propose any necessary amendments. The AC recognised that whilst the relevant provisions of the preceding statutes had worked to the general satisfaction of property owners, the LBA should be amended to accommodate

technological advancements in construction techniques because they were not adequately considered or addressed within the LBA's rigid narrative. The AC proposed introducing four amended narratives (see Section 2.2.6) to assist with clarifying the function of the foundation by reference to other elements which have multiple functions.

Clearly, the AC exercised their broad remit which allowed them to look beyond the building owner's rights and intentions and to consider what the implications (if any) the proposed works would have for the adjoining owner. Further, the AC looked beyond the traditional construction methods and materials, focusing on concepts applied to various components and the "function" of foundation rather than the narrow descriptive title given to construction techniques, the intent being to achieve a greater understanding of the potential issues that might arise. The AC recognised that an element is not determined by its material components, but by its function. Their recognition that a bressumer's function is to transfer the imposed loads from the wall above onto the lower walls safely, was no different to the function of a foundation. The AC clearly believed it was necessary to go beyond limiting the definitions to the more obvious elements of a foundation by including a bressumer (lintel) within the context of a foundation below ground level.

Having, recognised that function is an important factor, the AC were able to focus on the potential difficulties created by the use of grillages. The AC suggested the need for another definition with the introduction of the word "special" when relating to the structure below ground level. The AC also recognised that a retaining wall or other wall's primary function based on the ground, subject to it being able to support all imposed loads and forces, was a foundation. This is the earliest independent evidence that a wall does perform the same function as a foundation. Based on this literal and natural interpretation, any structure below ground level would include a basement box, irrespective of the material it is constructed from, and could be classified as a foundation.

The AC plainly foresaw the potential difficulties that projecting a special foundation could cause to an adjoining owner's property and indirectly challenged what the third surveyor's interpretation in *Chaturachinda* held: that a wall (therefore not a foundation) is only ever a wall irrespective of the material used to construct a wall. The AC believed that if a structure below ground level is part of a foundation and if using reinforced concrete must, by definition, be special, that would trigger the need to obtain consent.

The AC recognised and introduced the need for control by giving the adjoining owners the right to withhold written consent for grillage foundations to be positioned on their land. Whilst the AC's concerns were not incorporated into the LBA in their entirety, a slightly amended wording was adopted. The adjoining owner's consent was only required when the grillages were likely to project beyond the width of the party wall. Accordingly, if this qualification had been adopted into the current Act, the context of a modern basement box (see Diagram No 15) would not have triggered the section 7(4) veto because the reinforced box does not project beyond the width of the party wall.

Given that both the building and adjoining owners are tenants in common, with the right to the full use of the width of a party wall, there is no difference whether one is raising the party wall upwards, which is allowable under section 2(2)(a); for example, when constructing a loft conversion, or whether raising downwards for a basement, as held in *Cubitt v Porter* (see Section 2.7.2.3).

Had the AC's second point been adopted, a reinforced concrete basement box would have been classified as a special foundation and thus, prohibited from projecting onto the adjoining owner's land without written consent. The AC proposal demonstrates that they considered granting adjoining owners the right to be able to stop such works. Although there are established and accepted construction techniques that avoid the use of special foundations, allowing the building works to proceed albeit in an amended design, the AC introduced point 4 as a compromise to enable both the building owners and the adjoining owners to exercise their property rights without unnecessarily interfering with each other's rights. It was on that basis that the obligation to obtain written consent was incorporated into section 45(2) of the LBA, thus, since the birth of the adjoining owner's rights to veto under section 7(4), nothing has changed following the introduction of the Act.

6.3 What is a Foundation?

The synonym "substructure" as suggested by the AC that: "... *a foundation is a structure entirely below the surface of the ground...*", and that defines a "foundation" as "*The lowest load-bearing part of a building, typically below ground level*", helpfully includes the following synonyms: footing, base, substructure, under-structure and underpinning. The inclusion of "...typically below..." within the definition would suggest that foundations are not necessarily always below ground level structures, which opens the debate on retaining walls. If as suggested by the AC a retaining wall, (which may or may not be fully below

ground level) is a foundation, would this also recognise the use of spreader brickwork as a foundation? Recognising that the Act's definitions would not exclude established construction techniques or materials, is an important part of clarifying the conflict.

Section 2(e) of The Building Regulations Approved Document, helpfully sets out the various guidelines specifying the minimum thicknesses and depth of foundations etc. But as noted therein, Approved Document A1 does not specify, exclude or limit the use of specific materials, nor does it state that a "foundation" is restricted to the structure or to the lowest point of the building below ground level. The only qualification or function provided by the Building Regulations is that the foundation must: *"safely transfer the loads onto the ground"* which is extremely broad. The P&T opine: *"if a foundation relies on reinforcement for distributing loads, then the whole foundation is likely to be special, even if part of it does not include reinforcement"* (P&T,2016, p.131), a limited volume of reinforcement (see Diagram No 32) will also create a special foundation because the foundation is a single element.

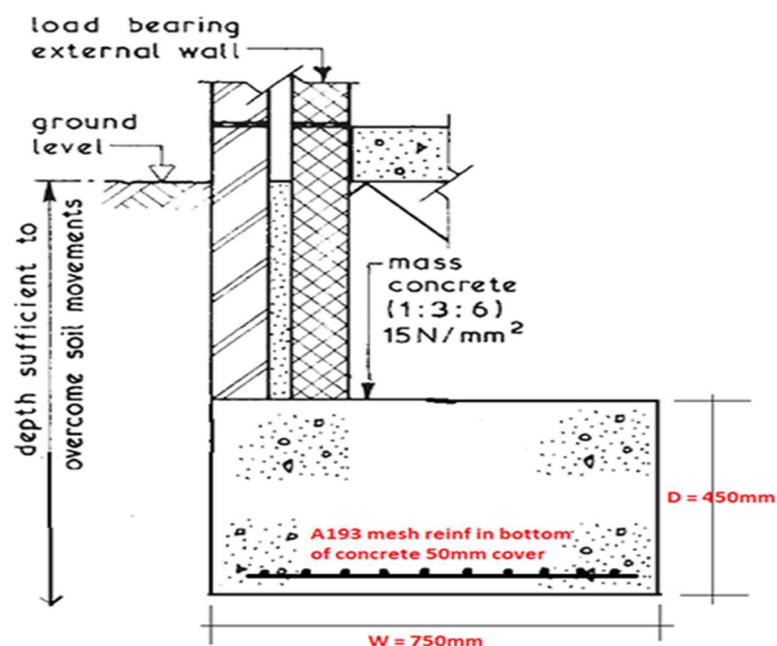


Diagram No 32 Offset mass concrete special foundation with reinforcing mesh
(<http://www.mypropertyguide.co.uk>)

Figure No 22 below is a raft foundation, its function is to accommodate ground movement by simulating a piece of floating wood (raft) in the sea. Irrespective of the location and extent of ground movement it is designed to move as a single element without fracturing or failing. Sometimes the area covered by a raft may be greater than the footprint of the

building, and the reinforcement comprises top and bottom layers of steel with links that form a reinforcement cage. These are used where the soil has a low load-bearing capacity, and is more susceptible to movement, and they are generally more economic to construct than traditional methods.



Figure No 22 Basement raft foundation under construction (Quora.com, 2019)

A raft will firstly qualify as a foundation because the walls rest upon the artificially-formed support (raft), which is resting upon the ground. Secondly, it includes reinforcement and is therefore by definition a special foundation. When the raft projects onto the adjoining owner's land, it will trigger the section 7(4) veto. A basement comprises the same components and is constructed in the same manner as a raft foundation and therefore performs the same function. If, as suggested in Chaturachinda (see Section 2.7.2.7), the wall and basement slab must be treated as independent elements irrespective of the linking reinforcement, the basement slab continues to perform the same function as a raft foundation and satisfies both the foundation and special foundation definitions.

6.4 Another Obstacle Created by the Basement Box

The rights under section 1(6) are subject to two explicit qualifications:

- (i) The foundations must be for a wall wholly on the building owner's land; and
- (ii) The projection of any footings or foundations are 'necessary'.

The general approach to the projection of foundations is the belief that section 1(6) entitles a building owner desirous of constructing a new wall wholly on his own land, in accordance with sections 1(4) or (5), to allow the building owner to place projecting footings or foundations below the level of the adjoining owners land. On closer examination and based on the literal reading of section 1(6) this imposes a qualification that must be satisfied before an owner can exercise that right.

Section 1 (6)(a) & (b)

"Where the building owner builds a wall wholly on his own land in accordance with subsection (4) or (5) he shall have the right, at any time in the period which:

- (a) begins one month after the day on which the notice mentioned in the subsection concerned was served; and
- (b) ends twelve months after that day;

to **place below the level** of the land of the adjoining owner such projecting footings and foundations as **are necessary for** the construction of the wall." (emphasis added).

Furthermore, the inclusion of the word "footings" suggests that the Act and indeed the AC recognise that they are no different to foundations. Whilst the term footing is generally associated with brick spreader footings and are an accepted construction technique, this would satisfy the definition of a foundation because it is the artificially-formed support resting on the ground that the walls of the structure above rest upon.

Therefore, the assumption that section 1(6) allows a building owner to project foundations onto an adjoining owner's land without permission is misconceived, and cannot be relied upon when constructing a basement, because the single qualification is that the projection must be "necessary".

Therefore, it is not an unqualified right and the building owner must be able to demonstrate that there is no alternative foundation technique available that avoids the projection. Only

in such circumstances can surveyors correctly authorise the projection of foundations under section 1(6). If an alternative foundation design can remove the need for any projection, then that is the design that must be awarded. One such method is to increase the width of the foundation to allow the outside edge of the foundation to be “offset” positioned on (but not across), the line of junction (see Diagram No 32). The wall can then be built on the edge of the foundation, thereby simultaneously maintaining the building owner’s right under section 1(5) to build “on” the line of junction, whilst avoiding any unnecessary projecting footing or foundation and therefore trespass. This design is widely accepted within the construction industry and the approach clearly removes any trespass or inevitable nuisance which is prohibited under section 7 (Antino, 2012, p.71).

Section 1 (7)(a) & (b)

“(7) Where the building owner builds a wall wholly on his own land in accordance with subsection (4) or (5) he shall do so at his own expense and shall compensate any adjoining owner and any adjoining occupier for any damage to his property occasioned by-

- (a) the building of the wall;
- (b) the placing of any footings or foundations placed in accordance with subsection (6).”

Clearly, the Act’s attempt to authorise a projecting foundation, whilst allowing the adjoining owner to obtain compensation for their loss, is a recognition that the projection will create a nuisance. If the projection is not a nuisance, why then is there an obligation to pay compensation? These questions go beyond the remit for this research, but nonetheless indicate the widely conflicting issues that arise under the Act. Notwithstanding, there is an implied obligation that a surveyor must inform his appointing owners of their rights. If not, how will the owners know what they are or are not entitled to receive or pay?

The consequence of a projecting foundation may not become clear until sometime in the future and only if the adjoining owner decides to build up to the line of junction, in which case, they are prevented from doing so because of the projecting foundation. Their property rights have clearly been interfered with following the incorrect interpretation of the Act. If they can cut back the projecting foundation, without affecting the structural integrity of the foundation, then it must naturally follow that projecting part of the foundation was not “necessary”. Therefore, the right under section 1(6) was wrongly applied.

Offsetting the foundations has significant merit, because it satisfies both the Act's clear intent to facilitate the building owner's works without interfering with the adjoining owner's property rights.

For the purposes of the research, section 1 has been eliminated from the Chaturachinda case because the basement wall is not a new wall but the raising downwards of an existing wall (if at all) is covered under section 2 of the Act.

6.5 Constructing a Basement Box

Understanding the basement construction process assists with establishing which elements (if any or all) would satisfy the special foundation definition. This will assist surveyors' interpretation of the Act and their understanding of the functions of the various elements that create the reinforced concrete box. The first stage of the assessment process is to identify the existing party wall foundation. The construction process is not dissimilar to the process adopted when underpinning a failed foundation (see Diagram No 25). The perimeter of the building is divided into bays which are not sequentially numbered. This allows several sections on different elevations to be excavated simultaneously without causing the structure to collapse or fail.

In this example, it is assumed that the party wall is built on a traditional brick spreader foundation (see Diagram No 33), although there may well be a concrete strip foundation.

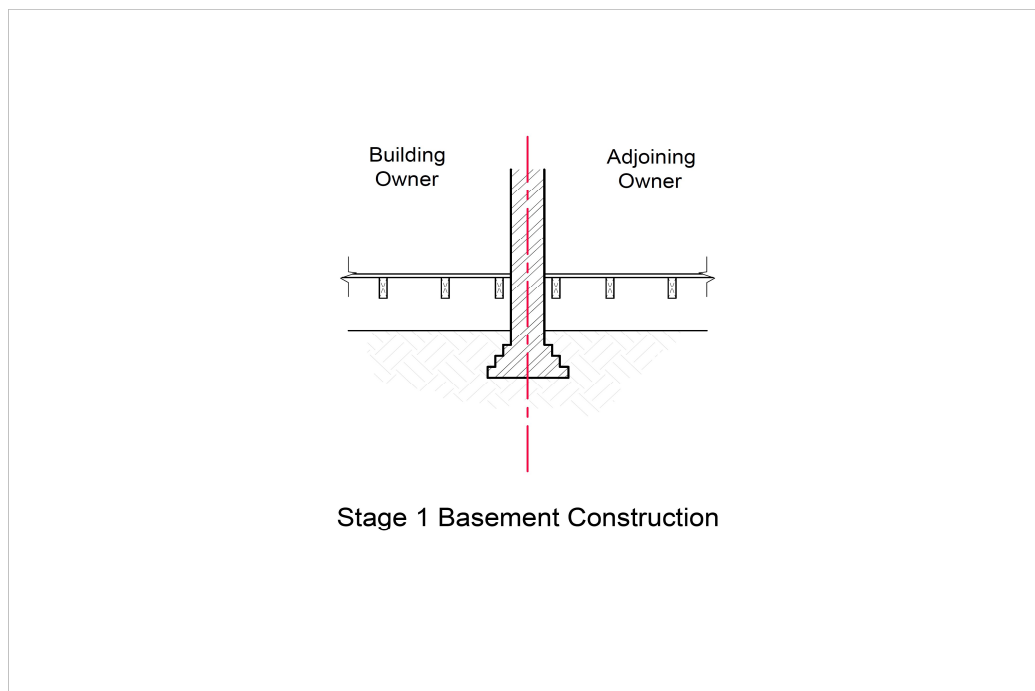


Diagram No 33 Stage 1 of constructing the box, identifying the existing foundation construction

Stage 2 (see Diagram No 34) is to excavate a working trench equal to the width of the bays. This allows excavation of the “bays” of approximately 1000–1200 mm width beneath the party wall and up to, but not beyond the outside face of the party wall. A sheet material is fitted to the exposed surface of the retained soil, which is supported with struts and props to prevent the adjoining owner’s soil slipping into the excavation. A trench is formed to increase the thickness of the perimeter basement slab beneath the proposed basement wall. This will ensure the loads imposed onto the basement “wall” and existing structure above are properly supported and is an economical construction. Thus, it creates the foundation on which the basement wall will rest and links to the reinforcement to form a contiguous structure.

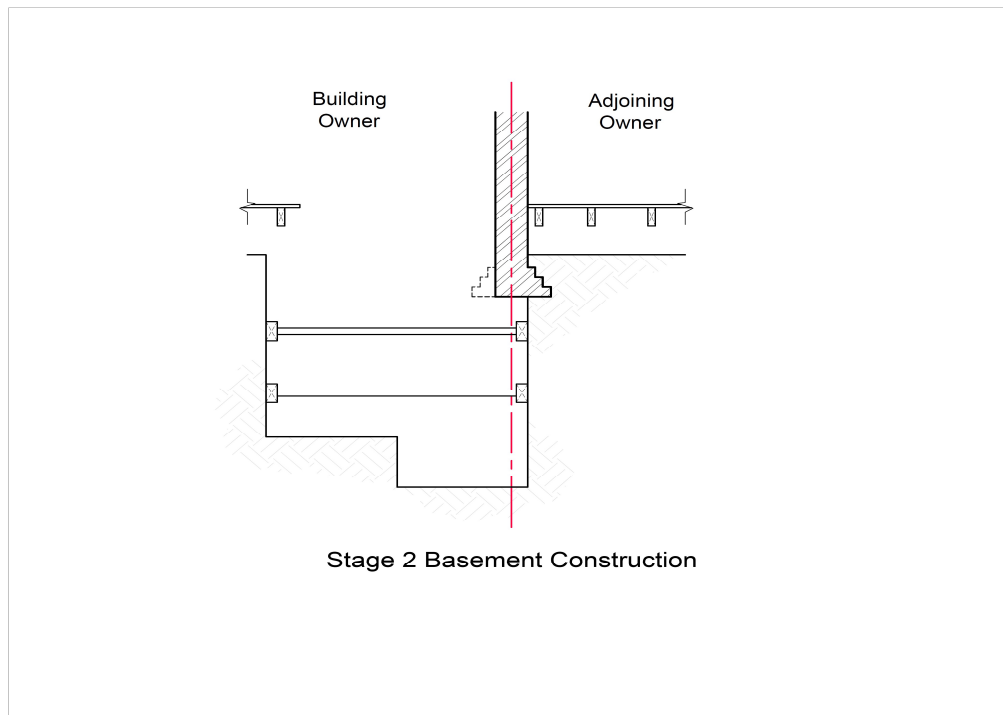


Diagram No 34 Stage 2 excavate to form thickened perimeter slab

Stage 3 is the positioning of an assemblage of rods to form the reinforcement for the perimeter trench, and it is notable that linking the wall and the adjacent bays and floor slab requires the reinforcement to project vertically and horizontally. The concrete perimeter slab (green) is poured and left to cure (see Diagram No 35).

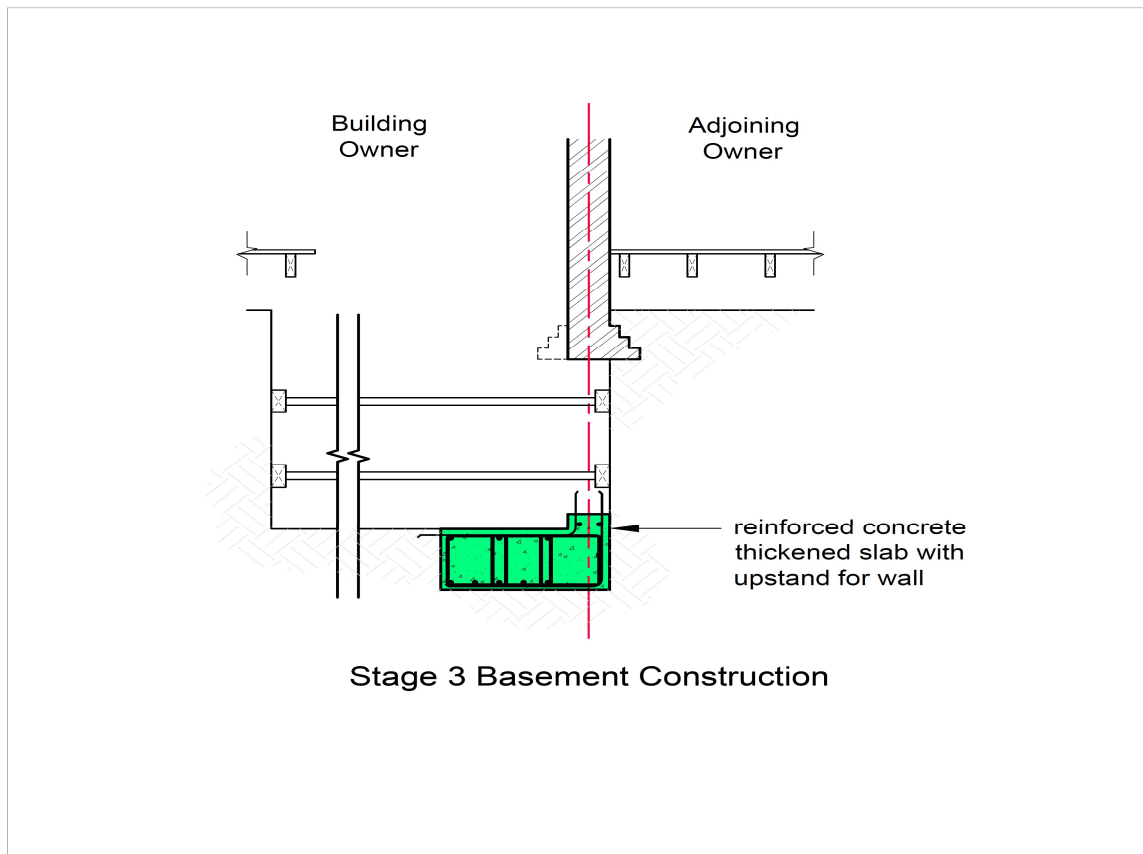


Diagram No 35 Stage 3 reinforced concrete perimeter beam upon which the wall will rest

Stage 4 having now formed the perimeter foundation, a reinforced cage is positioned directly beneath the party wall (see Diagram No 36) which rests upon and is linked to the (green) ground beam; thus, the perimeter trench is now the foundation. A timber formwork is then positioned in line with the inside edge of the perimeter beam and the existing party wall, again propped internally. The concrete is poured, creating the basement wall (orange), which is clearly resting upon the perimeter beam and when the props and formwork are removed the wall (orange), is now acting as a retaining wall whilst simultaneously becoming both a downwards extension of the party wall and the basement wall. The process is then repeated around the perimeter of the basement until all the sections of the box are connected to supplant the original foundations.

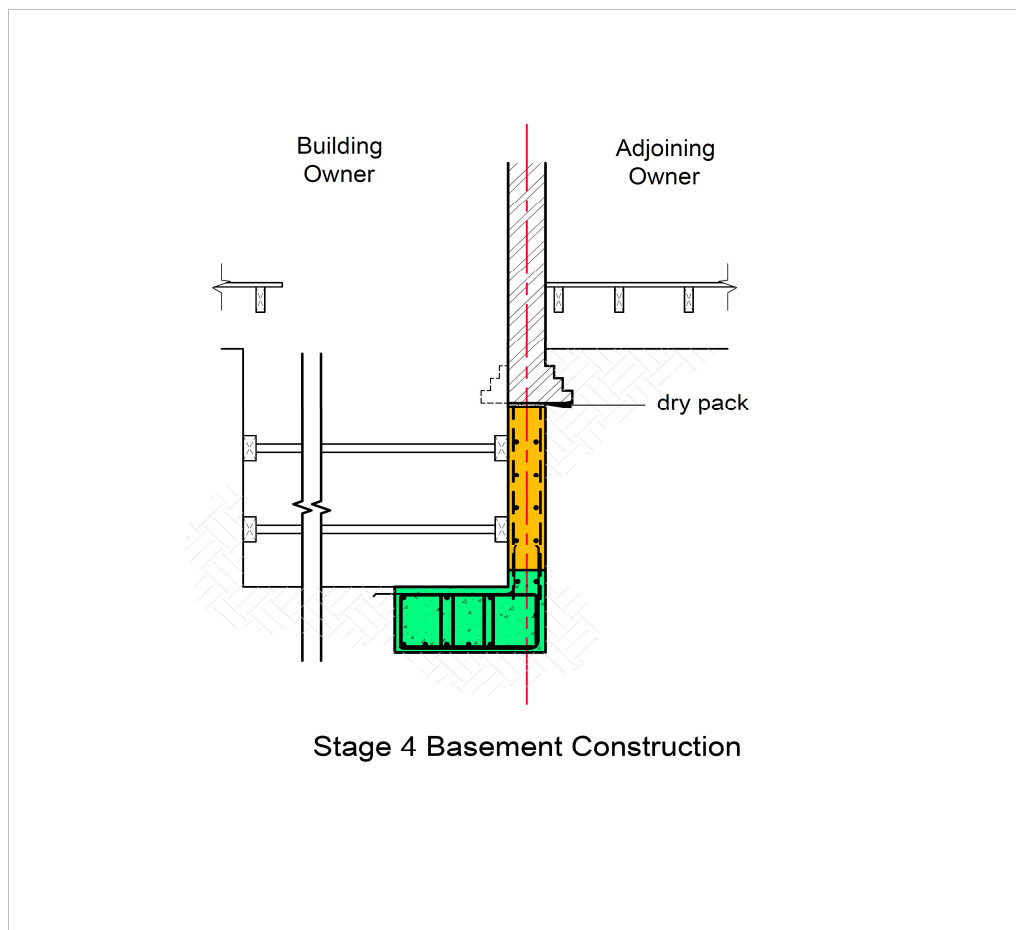


Diagram No 36 Stage 4 form reinforced concrete walls resting upon and linked to perimeter beam

Stage 5 is the excavation of the central section of earth, again in non-sequential stages (see Diagram No 37) so the reinforced basement slab can be formed when linking the bays. The reinforcement matrix is linked in the same way as a raft foundation in all directions including the (green) perimeter beam and the concrete (yellow) is poured, levelled and left to cure. This process is repeated so that no two sections of the slab are formed at the same time. Once completed, a three-dimensional structural box has been formed. Thereafter, it is a matter of installing the waterproofing membranes, insulation and wall and floor finishes.

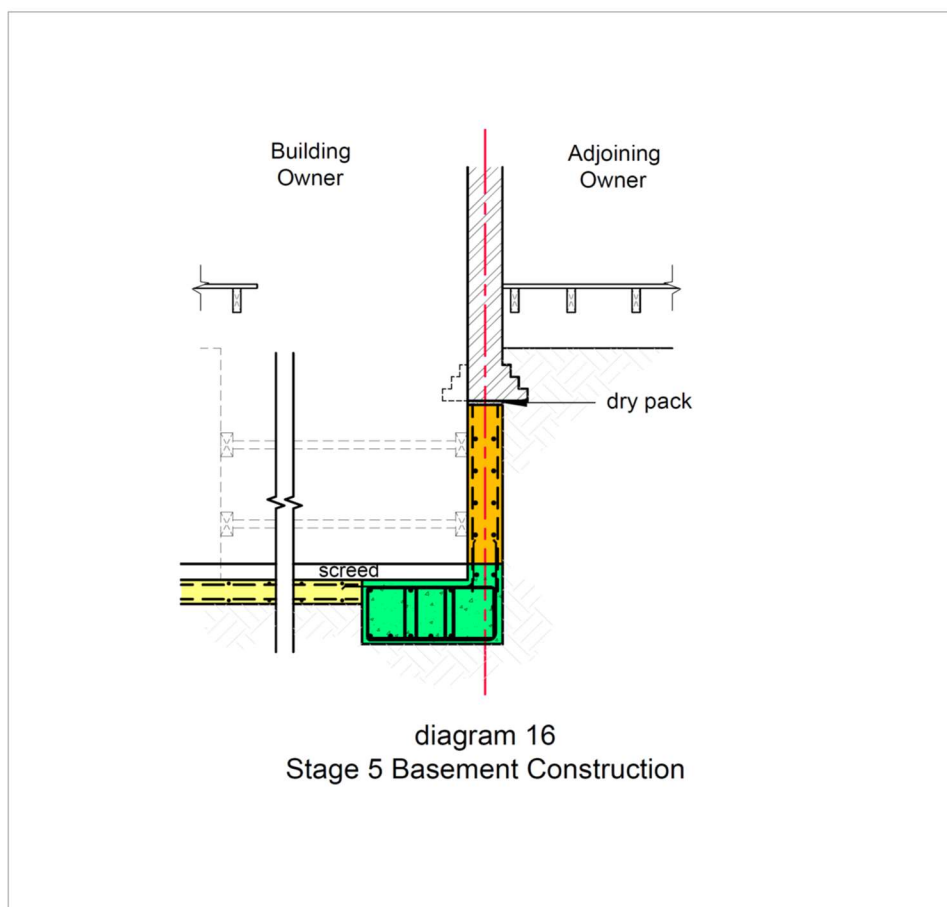


Diagram No 37 Stage 5 reinforcement projecting from the ground beam to create a single structural element

6.6 Does Raising the Party Wall Downwards Create a Foundation?

“Under section 2 (2) (a) a building owner shall have the following rights-

- (a) to underpin, thicken **or raise a party structure**, a party fence wall, or an external wall which belongs to the building owner and is built against a party structure fence wall.”
(emphasis added).

Neither the Act nor LBA imposes any limitation on the raising upwards of the party wall above ground. It is accepted that the raising of a wall is not limited to above ground level structures. Therefore, the word “raise” is not limited to putting something on top of the wall and accordingly it is accepted that a party wall can be raised downwards.

It is not uncommon to raise a party wall upwards to create a loft conversion and does not register as an area of conflict until we consider the *Chaturachinda* decision where the third surveyor held that a wall is only ever a wall and cannot be a foundation irrespective of whether it is above or below ground level. If *Chaturachinda* is correct that the wall is an extension downwards, then the basement wall (see Diagram No 39) must rest on a foundation otherwise there will be subsidence. If the wall is now resting upon the green slab the green concrete satisfies the Act's definition of a foundation which, if including reinforcement, will be a special foundation.

Constructing a basement requires walls, if the existing party wall is of insufficient height, and according to the third surveyor raised downwards and is allowable under section 2(2)(a), the dichotomy raises three issues: (i) the wall is constructed in reinforced concrete; (ii) whether these materials will determine and influence the element's function; and (iii) the link is created by the reinforcement. Does the material determine the function? Or does it just introduce another function, for example if it was constructed using bricks. Certainly, if the latter is adopted, the issue of the wall being a special foundation falls away, because brickwork does not contain reinforcement. But does it satisfy the definition of a foundation given one of its functions is to act as a retaining wall (as recognised by the AC). It is accepted that a wall must sit on a foundation (see Diagram No 39) which, if comprising reinforced "green" concrete, is a special foundation. If the wall extends across the line of junction this must, by definition, trigger section 7(4). The third surveyor's position raises numerous questions that were not addressed in his award nor in the *Chaturachinda* case.

6.7 Introducing Special Foundations as a Construction Concept

The Oxford Dictionary does not recognise or define the term special foundation, therefore making it a unique term within the Act. The AC had the foresight to recognise that the use of grillages would create an actual infringement of an adjoining owner's property rights. It is also clear from the provisions of section 7(4) that those drafting the Act, and indeed Parliament, had reached a similar opinion with the inclusion of the explicit right to restrict a building owner's rights when using special foundations. The research data has established that party wall surveyors are familiar with the Act's two definitions and the section 7(4) veto. Furthermore, party wall surveyors have had little concern when applying the Act in relation to traditional foundations beneath an above ground structure. However,

surveyors have difficulty when interpreting the definitions when building below ground level.

A comparison between reinforced and non-reinforced concrete (see Diagram Nos 10 and 12) demonstrates the obvious benefits reinforcement creates by the reduction in the thickness. These are also accepted established construction techniques (see Section 2.2.5) that avoid the use of special foundations and the section 7(4) veto. Introducing (see Diagram No 13) a reinforced concrete box inside a mass concrete underpin to the party wall (see Diagram No 11) with a toe supporting an independent reinforced concrete base, is equally acceptable. The downside of these approaches is the increased costs and a reduction in the internal spatial gains within the basement. These alternative designs, whilst avoiding the projection of special foundations on to an adjoining owner's land, remove the section 7(4) veto. Whilst they might not be wholly desirable to the building owner, this will allow the owner to proceed without becoming embroiled in a costly dispute.

The approach adopted in Chaturachinda, with rails of mass concrete placed directly under the perimeter of the box (see Diagram No 16). This approach is purported to remove the issue of special foundations but is clearly not accepted within the industry.

6.8 Summary

The origins of the right to veto special foundations that are provided in the current legislation were first raised some 58 years prior. These origins provide the basis for continuing with the veto. But understanding why the distinction between the terms, foundation and special foundation causes conflict requires careful analysis, which this research undertakes with an analysis of the complex issues created by the various elements and their functions. Identifying alternative foundation designs that do not trigger the "right to veto" in the scheme is an important contribution to knowledge which removes the issue for both sets of property owners. Ultimately, the decision will fall on the building owner, who will be given advice by various professionals before deciding which scheme to adopt, and they will of course be influenced by their respective interpretations. Construction is a complex process, none more so than when forming a structure beneath an existing building, which creates additional dynamics and logistical challenges that must be overcome before commencement.

Understanding the construction process itself assists in identifying the individual element functions. These combined functions when linked, form a three-dimensional structure. It is clear that the wall is resting upon the reinforced “green” concrete which in turn is in contact with the ground and as such, this satisfies the Act’s definition of a special foundation. The wall is also a retaining wall which is a foundation, and this is dependent on the reinforcement links to the slab, all of which will trigger the section 7(4) veto. The difficulty arises when mass concrete rails are introduced beneath the slab and whether that is considered the foundation or is simply an attempt to remove the section 7(4) veto. On analysis, the rails are superfluous and do not (when absent) prevent the basement from performing its structural function nor do they contribute to the performance of that structure.

Chapter 7

7.0 Critical Analysis of a Basement Box and the Special Foundation Relationship

7.1 Introduction

Having, obtained rich data through the three-stage collection process and established various line of enquiry, it became clear that case law plays a significant role in influencing surveyor approaches and interpretations of the relevant sections of the Act. The dominance of the Chaturachinda judgment is therefore a substantial obstacle to the researcher's legitimate lines of enquiry and hypothesis. If the research is to be recognised as credible, it must address the evidence within that case, which persuaded the judge to rule against the Act's explicit definitions. Section 2.7.2.7 sets out in detail the basis upon which the judge formed his decision. This chapter takes the line of enquiry somewhat further and investigates how the design and function of the reinforced concrete box, (with specific emphasis upon the construction process), establishes whether there is any correlation between the Act's explicit definitions of "special foundations" and the intent behind section 7(4). This line of enquiry is essential to establishing the gap in knowledge, and whether any contribution to that knowledge successfully eliminates the conflict created by the judgment. When, as in this research, certain aspects of the judgment fall within a very narrow compass, the intent is to establish whether the right under the section 7(4) veto can be legitimately withheld by the adjoining owner. This is an essential finding that will demonstrate this specific contribution to knowledge.

7.2 The Difficulties Created by Chaturachinda and the Special Foundation Definition

7.2.1 The rejection of Chaturachinda extends beyond the researcher's professional experience

As explained (see Section 6.1) the issue of foundations and the concept of special foundations was first raised by the AC in 1939, 58 years before the Act, which demonstrated a considerable degree of foresight. Following the introduction of the Act in

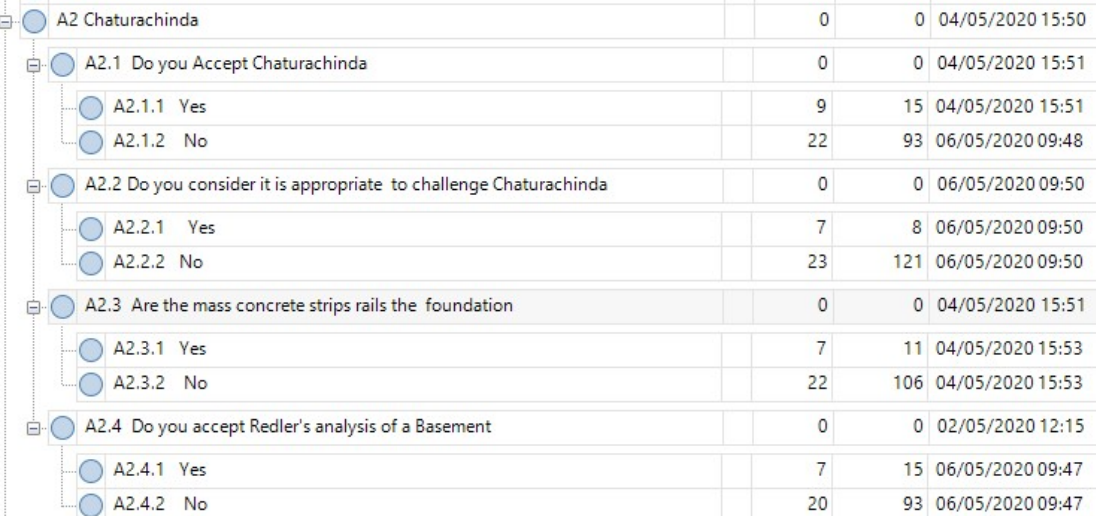
1997, the conflict simmered away without any significant impact until the boom in underground living. Three years before the *Chaturachinda* judgment was handed down, Antino (2012) had recognised the potential threat that the conflict would create when building below ground. The desire of party wall surveyors to satisfy building owner demands regularly compromised the adjoining owner's statutory rights under section 7(4) when a reinforced concrete basement box was constructed below ground. The existence of the conflict was surprising given that minimal conflict exists when using special foundations in the context of a foundation beneath a wall, where it has long been argued on behalf of adjoining owners that reinforced concrete underpinning falls within the definition of "special foundations" (Bickford-Smith and Smith, 2015, p.6). In fact, the conflict only became apparent when used to form an enclosed and occupied space. Two years after Antino's book (2012), Isaac in 2014 agreed that a reinforced concrete box was a special foundation and that the positioning of mass concrete rails beneath the box did not create a foundation nor did it remove the function of the box as a special foundation.

In 2015 a dispute arose between two surveyors, where one surveyor expressed the views held by both Antino and Isaac. Consequently, the dispute was referred to a third surveyor, who subsequently agreed with the building owner's surveyors who opposed the approach. The *Chaturachindas* were persuaded by their surveyor's opinion that their statutory right to withhold written consent under section 7(4) was being abused. Indeed, their commitment was demonstrated when at significant financial risk to themselves, they embarked upon an appeal (see Section 2.7.2.7). Clearly this was also supported by the *Chaturachindas*' legal team, who would not with good conscience advise their clients to embark upon a forlorn hope.

The judgment is not universally accepted within the wider legal community, with Hearsurn (2016); a practising solicitor specialising in party wall matters, expressing his opinion: "*with respect to the learned Judge, this decision, in my view, is wrong in law.*" The Ferguson case in 2017 (see Section 2.7.2.6), is another example of broad objection to the use of a basement box being a special foundation, however, in that case, the building owners chose not to refute the adjoining owner's challenge and agreed not to build the basement. A basement wall is one kind of retaining wall (Ambrose, 1991, p.70) which challenges the *Chaturachinda* decision, and is a further indication of the judgment that asserts that a basement is not a foundation.

However, this is not the extent of the opposition towards Chaturachinda, the rich data gathered through both Stages II & III of the research's data collection notably demonstrates the opposite. Table No 11 provides further examples: i.e., at 24: (i) *"I feel that the Chaturachinda v Fairholme will be or should be overturned on appeal."* Also, at point 24: (ii) *"The Act's definition of special foundations requires clarification to remove the confusion"*. Table No 13, further reinforces the opposition, where interviewees for example were clear, *"reject Chaturachinda"* and *"disagree with Chaturachinda."* Perhaps a more startling contrast is the fact that some surveyors whilst openly rejecting the judgment, nonetheless, will not contravene the judgment, *"Agree, although it is against Chaturachinda judgment so apply that precedent."*

The Use of NVivo® QSA software sought greater clarity on the interviewees' views regarding the legitimacy of the Chaturachinda judgment and the results are presented graphically (see Figure No 23). The external position of interviewees is unequivocally clear, there are 83 references which reject the judgment and only 15 that agree with it.



Node	Yes	No	Date/Time
A2 Chaturachinda	0	0	04/05/2020 15:50
A2.1 Do you Accept Chaturachinda	0	0	04/05/2020 15:51
A2.1.1 Yes	9	15	04/05/2020 15:51
A2.1.2 No	22	93	06/05/2020 09:48
A2.2 Do you consider it is appropriate to challenge Chaturachinda	0	0	06/05/2020 09:50
A2.2.1 Yes	7	8	06/05/2020 09:50
A2.2.2 No	23	121	06/05/2020 09:50
A2.3 Are the mass concrete strips rails the foundation	0	0	04/05/2020 15:51
A2.3.1 Yes	7	11	04/05/2020 15:53
A2.3.2 No	22	106	04/05/2020 15:53
A2.4 Do you accept Redler's analysis of a Basement	0	0	02/05/2020 12:15
A2.4.1 Yes	7	15	06/05/2020 09:47
A2.4.2 No	20	93	06/05/2020 09:47

Figure No 23 QSA2 External opinions of the Chaturachinda judgment

Therefore, as evidenced above, there is a broad spread of opposition within the wider party wall community that goes beyond the researcher's position that the Chaturachinda case is flawed.

7.2.2 Analysing the obstacles created by the Chaturachinda case

The single obstacle raised by the judge held that mass concrete rails positioned below the reinforced box satisfied the Act's definition of a foundation, thus, removing the building owner's obligation to obtain written consent under section 7(4). To validate or to challenge this decision, it is necessary to begin with an understanding of the individual and multifunctional qualities of the reinforced concrete box and its various design elements and to identify which, if any, satisfy the Act's definitions.

The first design (see Diagram No 38) adopted a reinforced concrete basement box without mass concrete rails below the perimeter of the basement. It was not until the adjoining owner's surveyor claimed this was a special foundation, that mass concrete rails (see Diagram No 39) were introduced and claimed to be the foundation that it was clear that the intention of the second design was to remove the adjoining owner's statutory rights under section 7(4) and not to create an alternative foundation.

Contrary to the third surveyor's approach, on the literal reading of the Act's definition, there is no distinction between either the primary or secondary functions. The inclusion of "any load" creates a broad recognition that if the walls distribute any load, this would satisfy the Act's definition of a "foundation" irrespective of whether there is a mass concrete rail beneath the basement box.

Therefore, what is the function of mass concrete rails, if they do not distribute any load, plainly they do not satisfy the Act's definition of a foundation. On that basis alone, it is difficult to understand how in Chaturachinda it was held that the rails were providing "any" function as a foundation. Clearly the accepted construction (see Section 2.2.5) design supports that contention. If the rails are not distributing "any load" they must by definition be otiose and therefore cannot be the foundation or any part of a foundation.

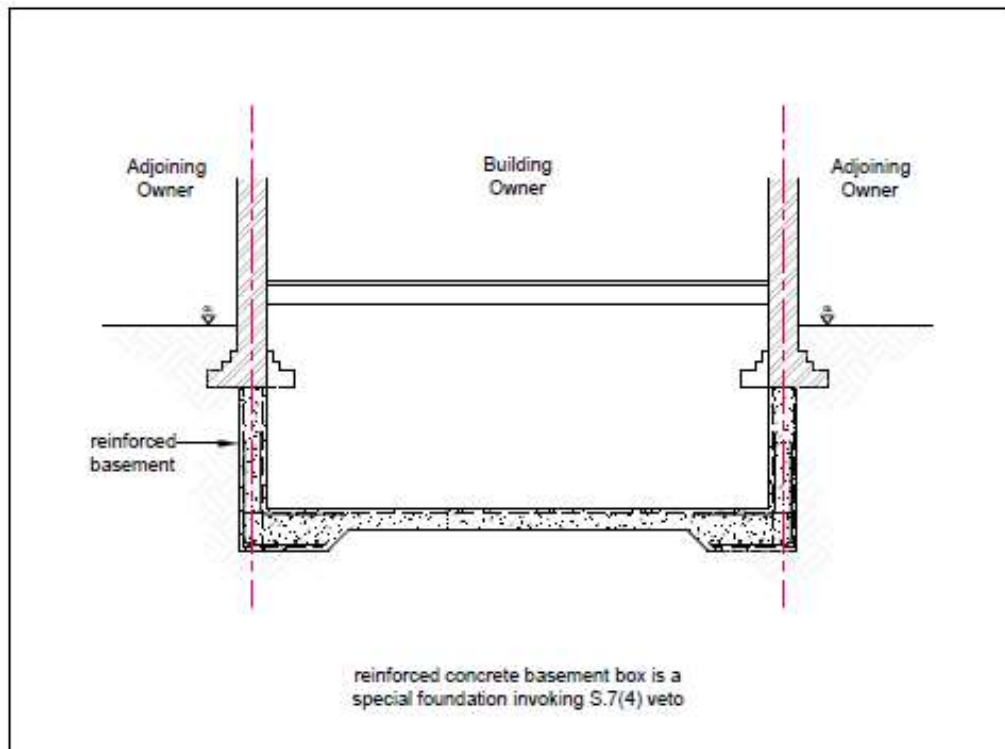


Diagram No 38 Section through the first Chaturachinda basement box design

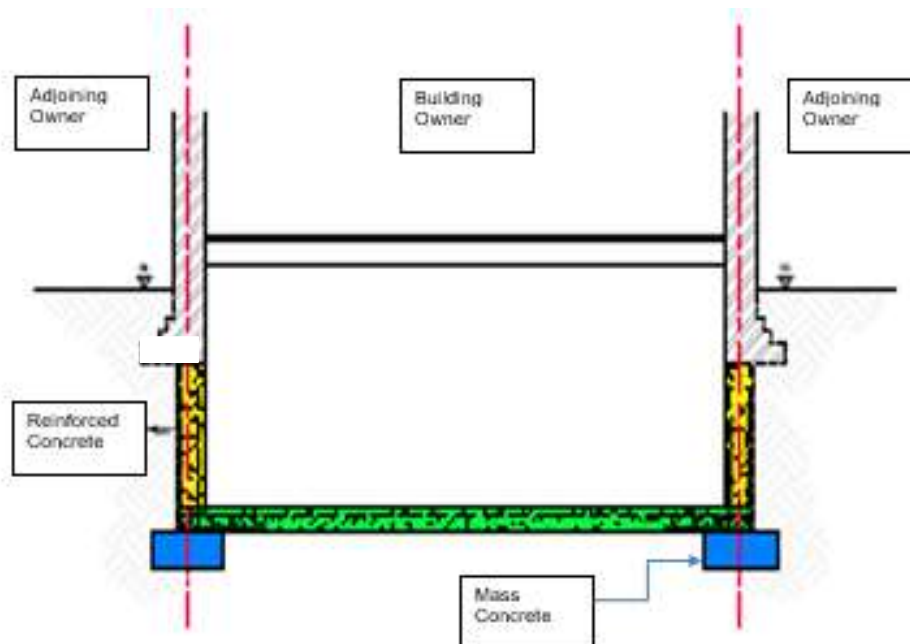


Diagram No 39 section through the Chaturachinda basement box with concrete rails beneath the perimeter wall

7.2.3 What is the function of a three-dimensional basement box?

Concrete comprises a mixture of fine and coarse aggregates which when mixed with a binding agent (cement and water) creates limited structural strengths. These strengths are determined by mass and its ability to withstand compressive loads. When hardened, it has limited tensile strength. The introduction of reinforcement increases the tensile capabilities of concrete which allows it to be used for a wide range of structures as illustrated, when used above or used below ground.

Concrete has been used as a construction material since Roman times, the use of reinforcement, in the form of iron was only introduced circa 1850 by French industrialist François Coignet. It was not until circa 1880 that a German civil engineer Wayss, discovered that placing steel bars and plates inside the concrete increased its ability to sustain heavier loads with the added benefit of increasing its tensile strength. It is a strong, versatile, and durable building material that can be formed into many shapes and sizes ranging from a simple rectangular column to a slender curved dome or shell. This makes it a material of choice for building with low maintenance and construction costs. Its versatility is achieved by combining the best features of concrete and steel. (Mosley and Bungey, 1987, p.1–14). The introduction of reinforcement has an important function in overall design considerations, when constructing for example (see Figure No 24) a concrete bridge. Understanding this principle is fundamental to recognising why the use of a concrete reinforced box is so attractive to basement designers as opposed to a mass concrete structure.

Reinforcement will:

1. Increase the tensile stresses developed through loading, as concrete is not good in tension with minimal tensile strength (flexural stress);
2. Introduce ductility into the structure;
3. Prevent the catastrophic failure of the structure, provided the reinforcement is not less than nominal requirement of the structure to be designed;
4. Overall gives the stability to the structure without which the structure would not have served the purpose for which it would be designed.

These four points raise an academic question that the research investigates, what is the reinforcement's function when used within a basement box if the elements are regarded as individual?



Figure No 24 Reinforced concrete bridge (Bangor Precast Concrete Products 2017)

The performance of a reinforced concrete basement box is dependent upon the linking reinforcement, remove it and the box will eventually fail. Further, when positioned beneath the existing structure, the basement box supplants the original foundations because they are no longer in contact with the ground. The construction of the box is executed in stages (i-v) (see 6.5) with each element performing a specific function that, when combined as a three-dimensional box, constitutes the artificially formed support that is: “in contact with the ground upon which the wall rests” and as such would satisfy the Act’s definition of a “special foundation”.

Whilst the box comprises individual vertical and horizontal elements, the wall terminates at the interface with the basement ‘green’ slab (see Diagram No 40) and therefore, the wall is resting upon the slab and not resting upon the rails which is an explicit qualification within the foundation definition. The concrete rails do not satisfy this criterion of the Act’s definition. If the rails are relocated (see Diagram No 17) so that they do not project across the line of junction the wall will not be sitting upon the rails and therefore cannot, by

definition, be a foundation so irrespective of the location of the rails they do not create a foundation.

The imposed loads from the wall above and the retained soil are transferred through the individual vertical elements of the box and ultimately through the 'green' slab, which is dependent on the reinforcement, which if removed, would fail as a structure. If the reinforcement has no function in the 'distribution of any loads' through the three-dimensional box, then why is there a need to link the slab and walls. It is this link that creates a three-dimensional structural box that facilitates the distribution of both lateral and vertical loads through the slab and onto the ground.

Accordingly, based on the analysis so far, the three-dimensional box:

- (i) Does perform a load-bearing function as a three-dimensional structure;
- (ii) The function of the wall is to distribute "any loads" to the slab;
- (iii) The loads transmitted from the structure from above and laterally are directed through the basement slab; and
- (iv) The vertical and horizontal elements of the box is in contact with the ground.

On this analysis, a three-dimensional reinforced concrete basement box satisfies all the explicit qualifications and criteria set out within the Act's definition of both a "foundation" and a special foundation.

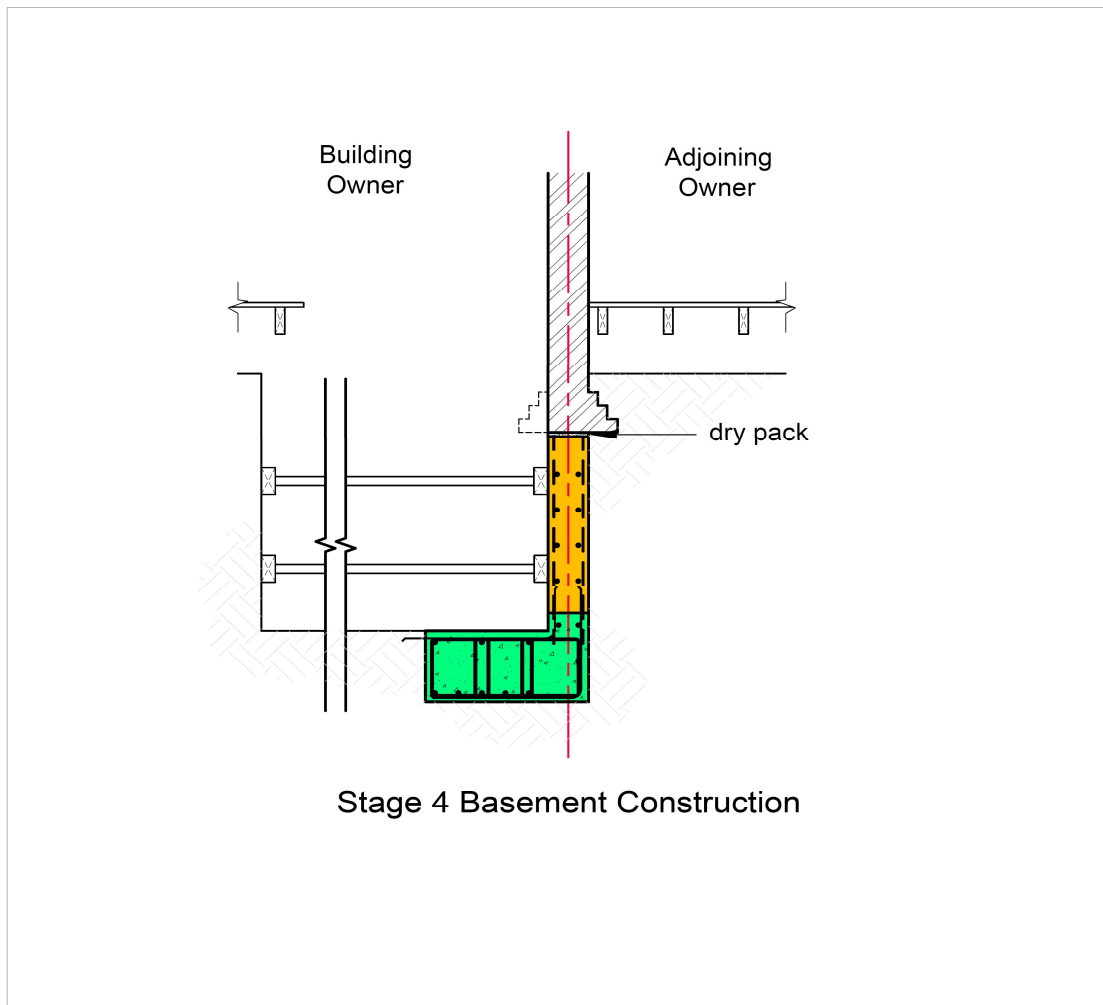


Diagram No 40 reinforced concrete walls resting upon perimeter beam

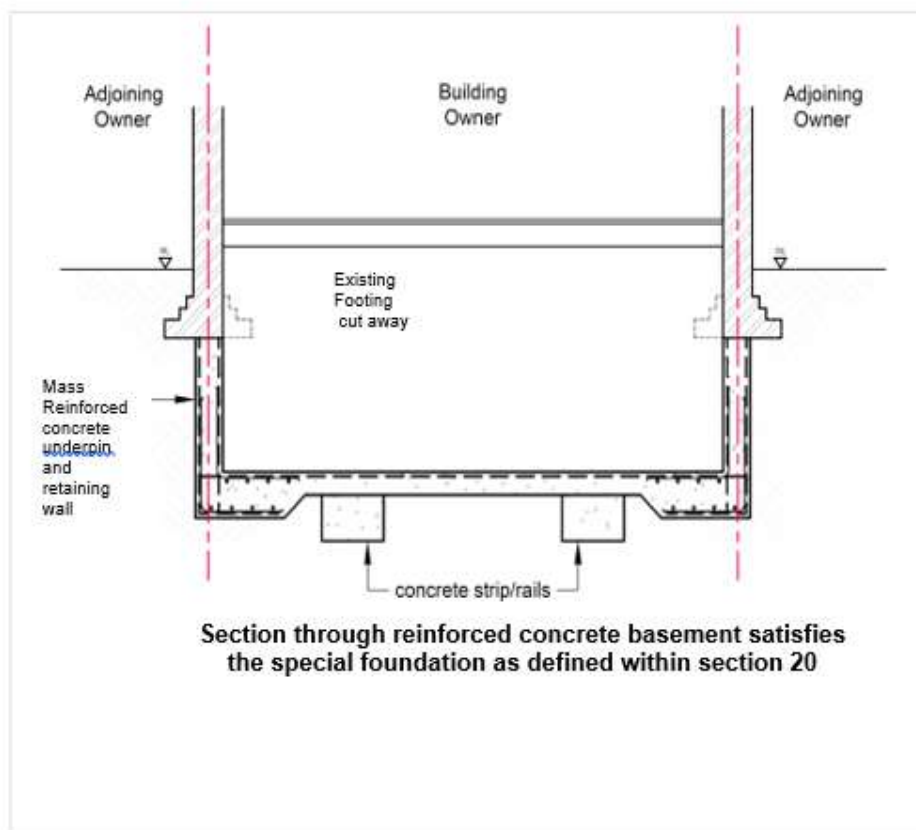


Diagram No 41 mass concrete foundation beneath a reinforced concrete box slab

7.2.4 Mass concrete foundation wholly within the building owner's land

Diagram No 42 demonstrates the direction of the surcharge loads applied to the basement wall, which are directed downwards onto the basement slab and partially through the rails on to the soil beneath. Thus, the wall and slab both satisfy the Act's definition of special foundation. Diagram No 41 is an example of another design which it might be suggested also avoids the special foundations criteria. However, this can only succeed if the vertical and horizontal elements of the basement box are not transferring loads and therefore, due to the reinforcement, are clearly performing the function of a special foundation .

Diagram No 41 is the basement design in the Ferguson case. In this instance the introduction of rails shows that these are clearly now below any part of the box walls and are being used to manipulate/ or avoid the special foundation veto being invoked. The rails are not a foundation for the following reasons:

- (a) The mass concrete rails are not beneath the wall and therefore the wall cannot be resting upon the rails;
- (b) The slab is supporting the full width of the basement wall and must be the foundation for the wall;
- (c) The slab incorporates reinforcement and is therefore by definition a special foundation ;
- (d) The rails are not (necessary) and do not transfer “any loads”; and
- (e) The wall’s function as a retaining wall is, by definition, to act as a foundation.

Accordingly, irrespective of the positioning of the mass concrete rails this does not remove the section 7(4) veto.

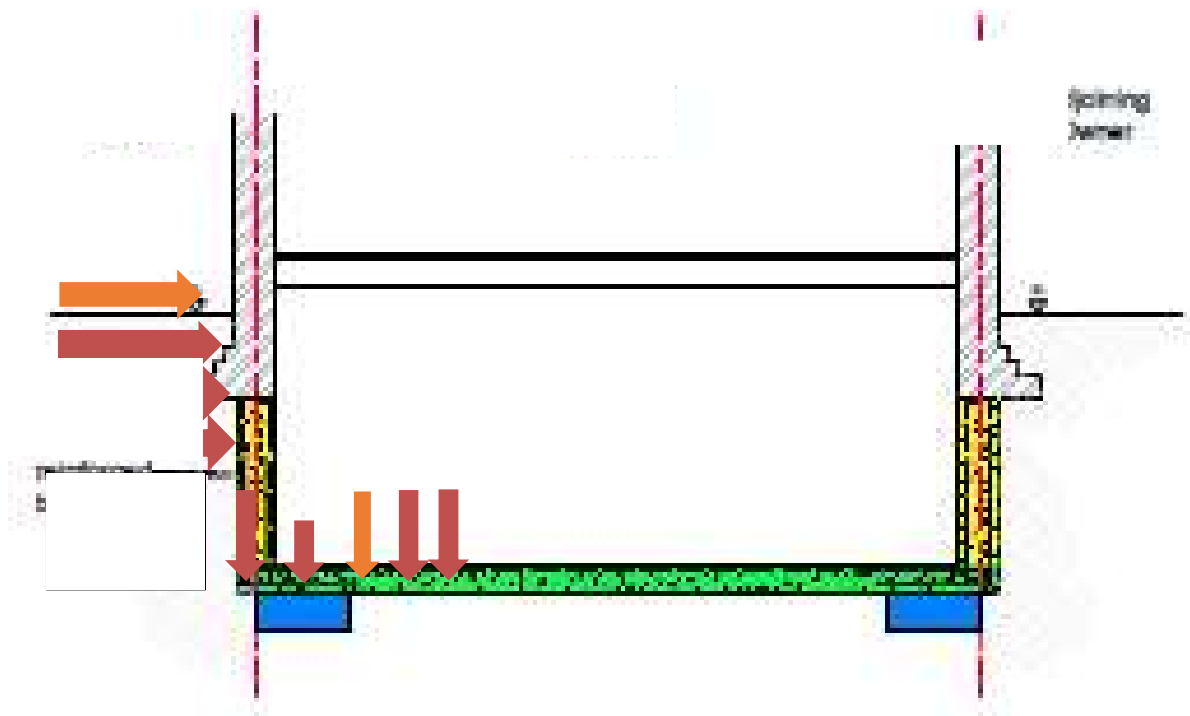


Diagram No 42 section 1(6) compliant reinforced concrete box beneath a reinforced concrete box

7.2.5 Is a basement wall only ever a wall?

A significant part of the third surveyor's assessment in Chaturachinda was a finding that "a wall is only ever a wall". This section considers whether, the use of brickwork to form a basement wall prevents it from having an alternative function, or means it is only a wall. Not unsurprisingly, historic basement construction practices incorporated brickwork spreader foundations by increasing the surface area of the brickwork where it is in touch with the ground to spread the load over a greater area of soil (see Figure No 25).

Brickwork is a highly flexible material with multifunctional abilities, well established in construction. When used to create an arch, the function of brickwork is clearly load-bearing in distributing the load to the supporting piers. When used in basement construction, the brickwork becomes both the foundation for the structure above, and the walls for the basement. The wall retains the adjacent soil by distributing the loads through the walls, if that was not the case the wall would deflect. This demonstrates that irrespective of the material's function when distributing "any loads" this will satisfy the Act's definition of a "foundation", when the artificially-formed support is in touch with the ground (see Figure No 42).

Further evidence of the ability of brickwork to act as load-bearing in its function becomes apparent when it is used to form a freestanding brick pier. Clearly a pier is not a wall, its structural function is as an artificially-formed support, in touch with the ground., This support safely distributes loads from the structure resting upon the pier to the ground which in turn also satisfies the Act's definition of a "foundation".

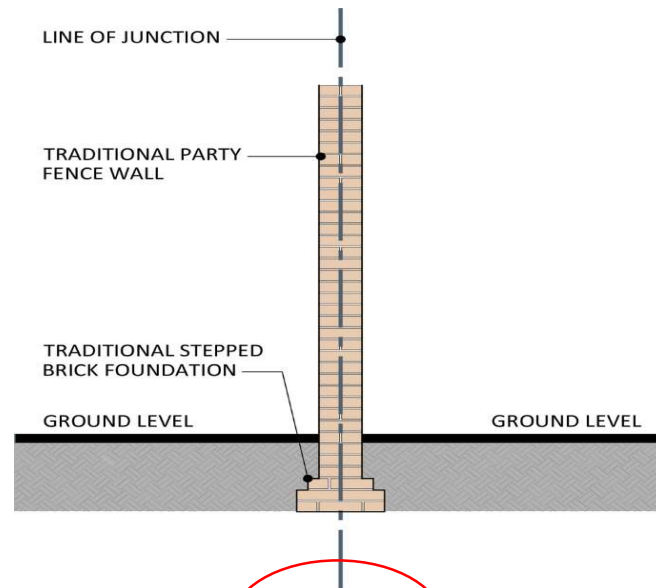


Figure No 25 Sketch detail of traditional brickwork spreader foundation (Shutterstock, 2017)



Figure No 26 Stepped brick spreader and pier foundation forming basement wall

7.2.6 What is a retaining wall's function when used in a basement

It has been established within the literature review that the construction industry recognises that a retaining wall is a foundation, irrespective of the material used for its construction. Structural stability is achieved because the wall asserts a force equal to that created by the adjacent soil and thus resists the lateral force. If the wall did not have a structural function, the wall would collapse. However, the structural function of the wall extends further because it is primarily intended to form a space that can be occupied and used as an addition to the existing structure. In such cases, the walls must be structurally stable.

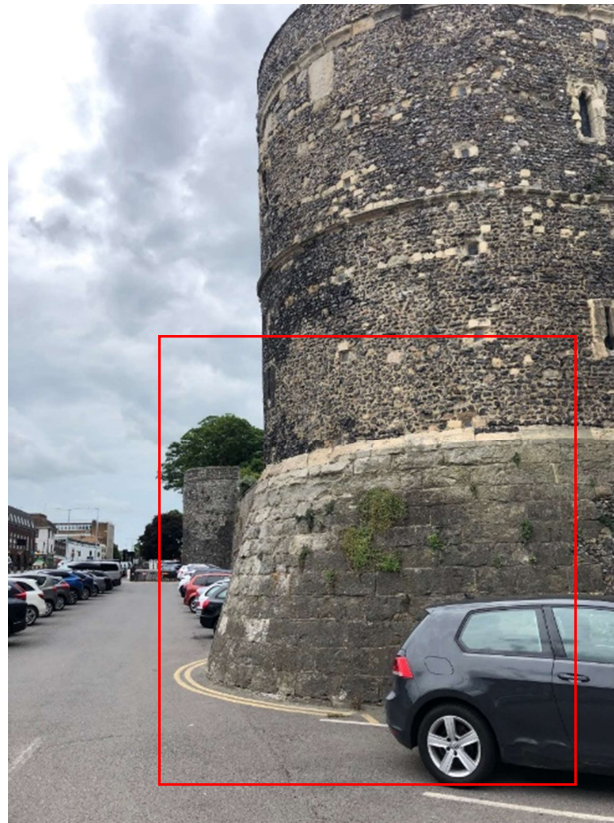


Figure No 27 Stone acting as a retaining wall and foundation

Figure Nos 26–28 further demonstrate the versatility of brickwork and stone and how various materials and elements of a structure can perform in a multifunctional way. The lower section of stone (within the red square) is built leaning inwards and acts as a

retaining buttress wall for the raised ground level on the opposite side of the stone wall, whilst simultaneously acting as a foundation to the wall above. This is no different to the function of a modern retaining wall or basement box.

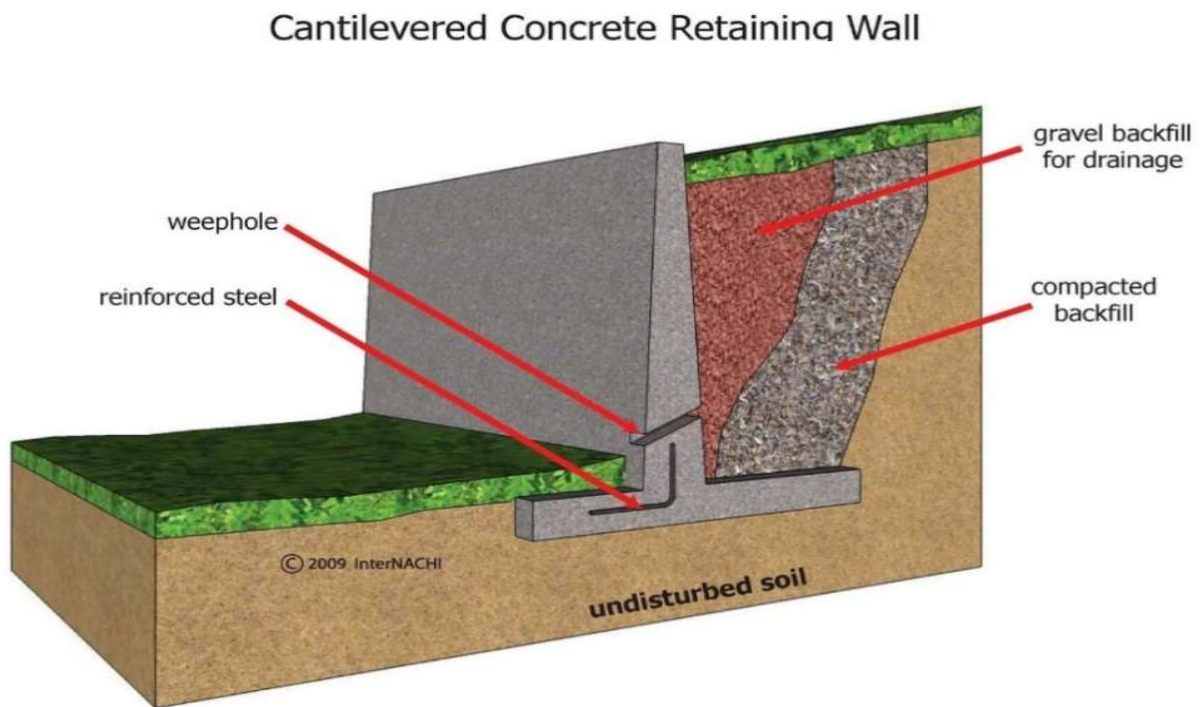


Figure No 28 Cantilevered concrete retaining wall

The above analysis supports the contention that a basement wall, irrespective of its material content, has multiple functions. Therefore, the natural conclusion from the analysis is that a reinforced concrete wall is contrary to the Chaturachinda judgment and more than just a wall.

7.2.7 Clarity will establish the function of an element

Achieving clarity in respect of a material or structural function is an important part of the process in understanding and resolving the conflict. The silence in Chaturachinda on the function of reinforcement is notable. No consideration is given to its contribution or to its structural integrity. If the link is removed, the structural dynamics are changed, the function is compromised irrespective of whether mass concrete rails are present.

The structural integrity of the basement is derived from the three-dimensional structure created using reinforced concrete.

The Chaturachindas' engineer (Pole) succeeded in demonstrating that: *“there are forces at work, with resultant downward loads, other than the (main) downward force consequent on the weight of the building.”*

The third surveyor had not considered the direction of the lateral and downward forces that pass through the basement box, and directly down onto the concrete slab which projects onto the adjoining owner's land.

Whether the concrete rails remain or are removed, there is no difference to the box's ability to distribute loads. If the rails have no function, they are not required, and they cannot possibly be distributing “any loads” which is an explicit criterion within the Act's definition of a “foundation”.

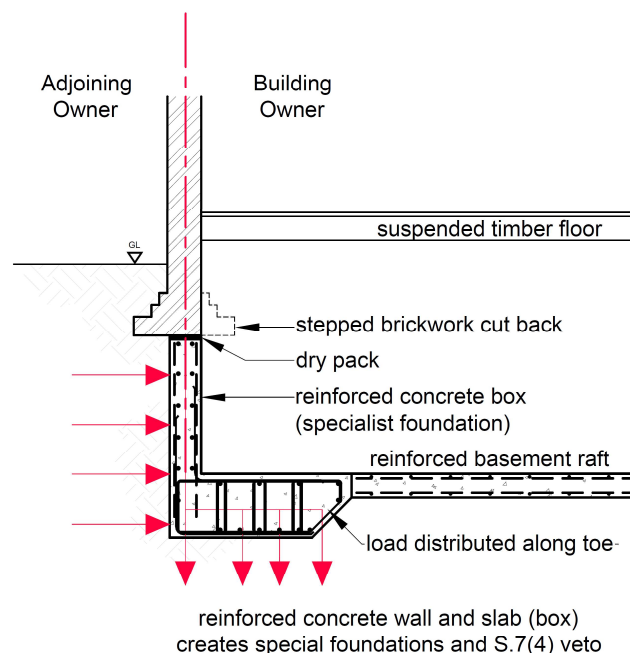


Diagram No 43 Direction of Loads and distribution through a reinforced concrete box wholly on the building owner's land

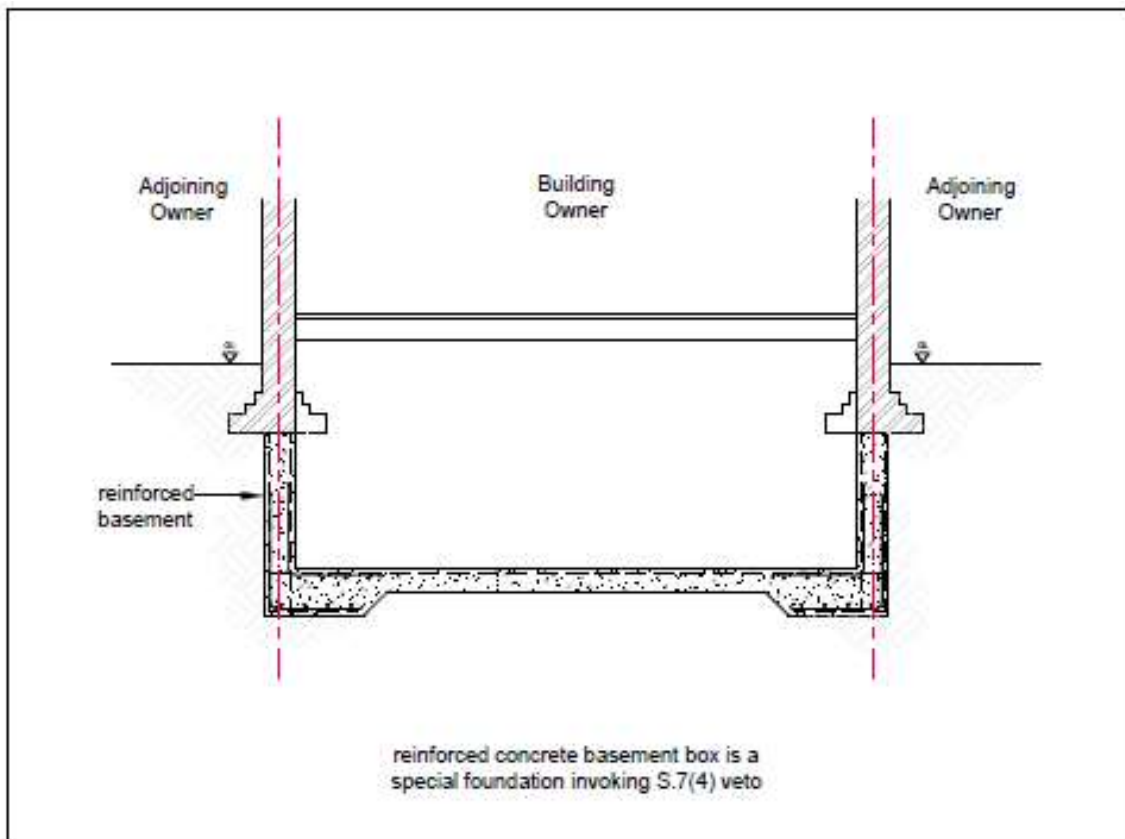


Diagram No 44 Reinforced concrete box with thickened perimeter beam

7.2.8 Is the absence of an engineering perspective raised by Bailey HHJ flawed

In Chaturachinda, the judge formed the opinion that the Act's definition of special foundation did not incorporate an engineering perspective. Based on the literal reading of the definition, and the inclusion of the words 'for the purpose of distributing any load' that opinion with respect to the judgment must be wrong.

Furthermore, the inclusion of beams or rods within concrete requires the input of a structural engineer to justify the design, with structural calculations, to specify the extent of the rods and their configuration. All of this would also be subject to independent checking by a local authority building control engineer before the structure could be approved and deemed satisfactory in distributing the loads. Accordingly, there are engineering perspectives and it is submitted that the failure to recognise this is a flaw in the judge's determination when seeking to establish what the function of a special foundation is.

7.2.8.1 section 7 nuisance and inconvenience

The right to project special foundations onto another property would be considered a nuisance. In which case given that fact, certain aspects of section 7 are intended to avoid any unnecessary thus influence the basement design:

Section 7(1): “A *building owner shall **not exercise any right conferred on him by this act in such a manner or at such time as to cause **unnecessary inconvenience** to any adjoining owner or to any adjoining occupier***” (emphasis added).

The excavation and construction and the resultant distribution of loads on the adjoining owner’s ground, exposes the adjoining owner’s property to movement. This would, by definition, create an unnecessary inconvenience.

7.2.8.2 What is a special foundation?

At the heart of the research and the focus surrounding the Chaturachinda case turns on whether there is a consistent, logical and accepted interpretation of the Act’s definition of what qualifies as a special foundation, and this is a fundamental contribution to knowledge. Breaking the Act’s definition down into its component parts; firstly, the foundation must include “an assemblage of beams or rods” for the purpose (function) of “distributing any load”. The Act’s definition does not specify a minimum amount of reinforcement to satisfy this definition and therefore the use of a reinforcing mesh (see Diagram No 45) which increases the structural integrity and distributes loads, would qualify as a special foundation. The P&T hold an opposing view, suggesting that the use of a mesh does not create a special foundation, but plainly a mesh is “...*an assemblage of beams or rods....*” and would on its literal reading satisfy the special foundation definition. However, the P&T also introduce two qualifications to their position, firstly, if the mesh can be readily cut without affecting the structure’s integrity it is not a special foundation. The mesh is buried in the concrete, so cutting into the concrete to access the mesh would affect the foundation’s integrity. This is supported by the P&T who accept that the inclusion of any amount of reinforcement will create a special foundation making the whole of the foundation a special foundation.

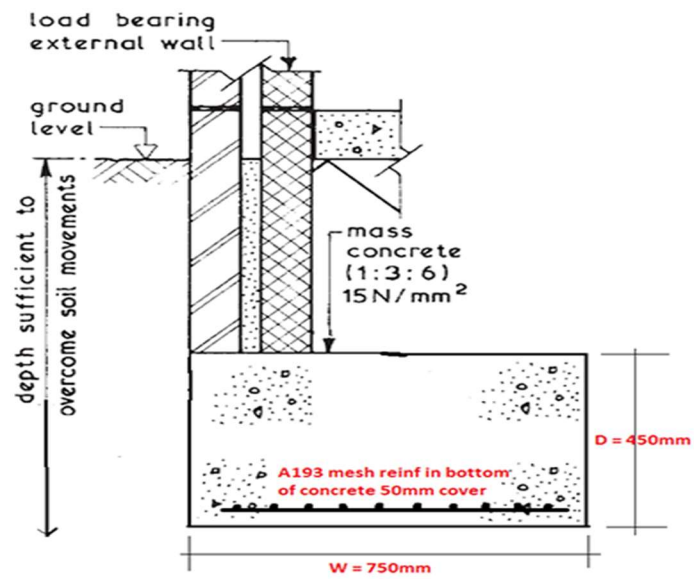


Diagram No 45 offset mass concrete special foundation with A193 reinforcing mesh (<http://www.mypropertyguide.co.uk>)

Chapter 8

8.0 Contribution to Knowledge

8.1 The Research Aims and Objectives

The Stage I enquiries obtained a substantial volume of data that supported the researcher's professional concerns and observations that conflict within the party wall community was growing. In addition, having identified potentially 20 areas of conflict the data also enabled a single common area of conflict to be identified relating to building below ground level. The conflict arose out of various surveyor approaches and interpretations of the Act's special foundation and section 7(4) veto. This conflict was adopted as the research focus and used to develop the research questions (see Section 1.3.3) and thereafter the researcher aims and objectives (see Section 1.3.1 and 1.3.2).

8.1.1 To critically review basement designs (Objective 1)

Because the contribution to knowledge is related to building below ground level, establishing whether there were accepted basement designs became an integral and important element of understanding why the conflict was arising if there were designs were accepted (see Section 2.2.5). These designs were relevant to understanding how surveyors reached their interpretations and therefore they were incorporated into the Stage II and III data enquiries. The primary issue was to establish which part of the basement is considered a foundation, by demonstrating how the function of each individual element contributed to developing the research questions. Surveyors were referred to the designs when asked to provide their interpretation of the Act's two definitions of "foundations" and the section 7(4) veto.

8.1.2 To understand the dynamics that influenced the origins and passage of the legislation (Objective 2)

The need for legislation is created by the complex legal rights that flow from elements of a structure that are in joint ownership. Establishing a procedural framework that manages maintenance, repair, alterations, and adaptations of walls in joint ownership is essential. However, if the legislation creates more issues than it resolves, a thorough understanding

of its evolution and origins is required. Understanding why the legislation is required is dependent on its relevance to past, current and future administration.

Of notable value to the issue of conflict was identifying the concerns AC raised in 1939 regarding the use of grillages, now referred to as special foundations. Despite the issue having been raised by the AC 58 years before the current Act, understanding why no coherent strategy or clarification was incorporated into the Act other than the two broad definitions and the limitations created by the section 7(4) veto, was a necessary objective. As Chynoweth (2003) recognises, ambiguities within the Act make the statute notoriously difficult to interpret.

The current Act is derived from Part VI of the LBA which is a more complex legislation that deals with a broad area of property issues within the built environment. Understanding what created the desire for owners of different properties to share the use of a wall as tenants in common and how the special foundation definition evolved within the built environment, clearly requires an understanding of the origins and passage of the Act and earlier legislation.

8.1.3 To understand the Act's structure and rules of interpretation (Objective 3)

The Act introduced statutory procedures and a framework to manage the resolution of a dispute between property owners while facilitating certain building works that underpin common law principles. If the Act's procedures are not applied correctly then the works are unlawful. However, when correctly applied surveyors can for example authorise access to an adjoining owner's property without creating a trespass. Understanding the mechanism that allows surveyors to interpret and apply the Act without a dispute arising, is dependent on understanding why conflict is growing year on year, as indicated by the research data. As demonstrated in the *Farrs Lane Developments Ltd v Bristol Magistrates* 2016 Judicial Review, Mr. Justice Holdgate observed that section 10(12)(c): *"is apt to include matters going beyond the ambit of the dispute between the parties."*

Understanding these procedures together with the unique language introduced by the Act is relevant to understanding the contribution to knowledge.

8.1.4 To identify the single common area of conflict (Objective 4)

The APA data analysis identified various areas of conflict. To remove any perceived bias the Stage I (ii) enquiries were initiated to identify any correlation with the APA data. Thus, it was decided when developing the scoping study that stakeholders would be invited to provide a list of their five most common areas of conflict. The largest volume of data was attributed to the conflicting interpretation of special foundations and the section 7(4) veto. This link between two independent sets of data (see Table No 3) was adopted as the focus of the research. More importantly it placed the research within a manageable framework that could be achieved within the limitations of a PhD thesis.

8.1.5 Review of alternative dispute resolution procedures (Objective 5)

Historically, the construction industry has a notorious reputation for generating costly disputes. In response the industry has seen the emergence of ADR procedures designed to reduce the time and cost associated with resolving disputes by avoiding the courts. The Act is clearly a dispute resolution procedure but is not traditionally recognised or incorporated within the ADR (see Section 2.6 above). Whether that is because the Act arises under statutory rather than contractual legislation, there are nonetheless, some similarities.

Understanding where, (if at all) the Act fits within ADR and whether ADR procedures could be adopted to assist with the resolution of conflict brought about by the Act, was a legitimate exercise. The Act's intent is to facilitate certain building works, any conflict restricts, limits, or excludes the execution of those works and is counter intuitive to the Act's intent, thus failing the property owners that it was indeed intended to serve. Correlations between ADR and the Act were therefore considered relevant in the overall context of identifying potentially new knowledge and interpretation to resolve conflicts.

8.1.6 Contribution to knowledge that eliminates the conflict surrounding special foundations definition (Objective 6)

The contribution to knowledge encapsulates several topics all of which are inter-related and form part of a thorough understanding of the issues that contribute to conflict arising out of the interpretation of the section 7(4) veto. This contributed knowledge will influence the way in which the surveyors address, and formulate their interpretation of special

foundations and subsequently whether the section 7(4) veto can be applied when a reinforced concrete basement box is proposed.

8.1.7 Ambiguity within the Act

Chynoweth's flow diagram (see Figure No 29) demonstrates the extent of surveyors' statutory powers (jurisdiction) which inter alia, authorises them to determine the extent of the works, how and when they are to be executed and importantly to deal with any matter arising out of or incidental to the works. This creates a broad ambit that takes a surveyor's jurisdiction beyond disputes between the owners. As the research data has demonstrated, the Act is considered ambiguous and, by definition, encourages interpretation to reify the abstract concept created by the two conflicting definitions of foundations and the section 7(4) veto. Achieving clarity and consistency to eliminate the conflict through this research has required an analytical and inquisitorial approach which commenced with the deconstruction of the Act's definitions, the design and construction of the basement box, its function, and the Chaturachinda judgment. The research proposes a three-stage protocol for surveyors to apply when considering a proposed basement design to determine whether it satisfies the special foundations definition and so triggers the section 7(4) veto. The intent is to encourage surveyors to focus on the function of structural elements and to better understand how they operate within the Act's definition.

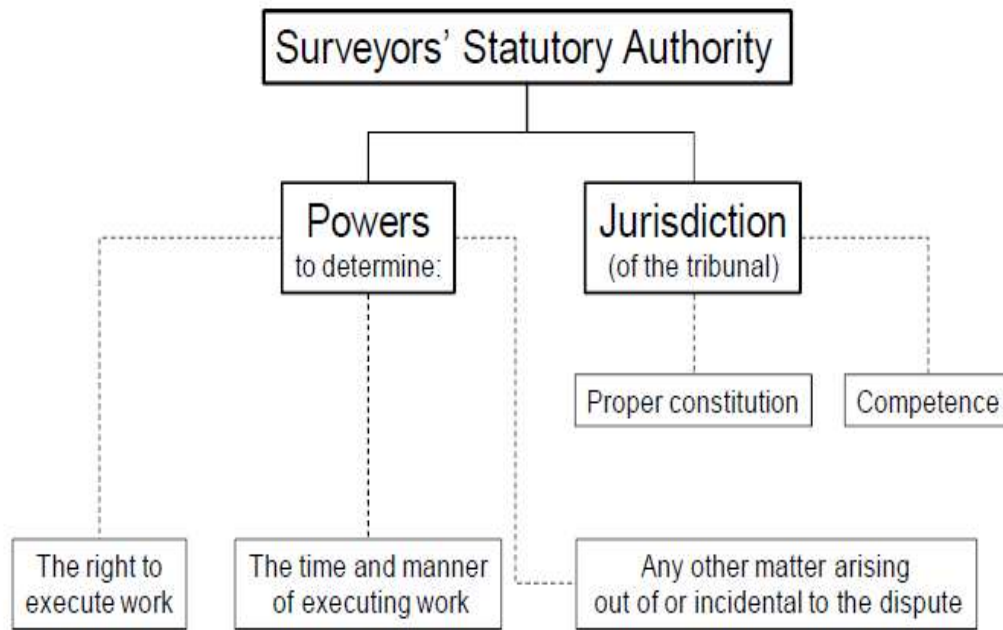


Figure No 29 Surveyors statutory authority (Chynoweth, 2011, p.59)

8.2 Contribution to Knowledge

The research has made a significant contribution to the existing knowledge surrounding the Act specifically regarding the difficulties in interpreting the Act when building below ground. This contribution has been achieved through both internal and external qualitative and quantitative data analysis. A by-product of the research and a further contribution to knowledge is the identification of an additional 20 areas of conflict, which potentially creates a springboard for further research in this highly unique and contentious topic.

8.2.1 Research data

8.2.1.1 APA internal data contribution

The contribution provided by the APA rich data cannot be underestimated in terms of its early demonstration that conflict exists, and that further contribution is made in terms of both the quantity and quality of the data, which Yin (2009) recognises is not generally available either before or indeed throughout the research journey. The EDA of the APA

data spanning two decades demonstrates the historic growth in disputes (see Table No 1), which validates the initial concerns surrounding conflict. This created a solid foundation to springboard the research and to address the concerns that the researcher had observed during the administration of the legislation. A further detailed analysis of the APA data yielded significant results that identified the five most common areas of conflict experienced within the last two decades (see Table No 2). This substantially narrowed down the broader areas of conflict, whilst creating an opportunity to establish the research focus achievable within the limitations of a PhD thesis.

8.2.2.2 Wider party wall community external data contribution

The researcher was aware that reliance upon one source of data within any research would raise concerns that there may be perceived bias, or that the data would appear flawed, and this created legitimate challenges. To overcome this difficulty, a second line of enquiry was adopted through a scoping study which involved the wider party wall community, (not involved in the original 1469 APA cases). This secondary stream of data identified 17 individual areas of conflict, some of which coincided with the APA findings (see Table No 3). On further analysis, it was possible to identify one single common area of conflict, which uniquely coincided with the APA results which had initially established the difficulty in interpreting special foundations and the section 7(4) veto. This link reinforced the value of the research and indeed validated the hypothesis that conflict was growing in the industry.

8.2.2 Research focus and structure

The conflict arising out of the interpretation of the Act's definition of special foundation and the section 7(4) veto was adopted as the research focus. Given the unprecedented explosion in recent years of property owners' desire to build below ground level, it was abundantly clear that unless consistency and a general understanding within the wider party community was reached in the interpretation of these two explicit elements of the Act, conflict would continue to grow exponentially.

In order to understand why the topic creates conflict, the research began with the origins and passage of party wall legislation which established that the AC had first raised the difficulties of steel being used in foundations, specifically when projecting onto an adjoining owner's land. This identified the term 'special' being introduced in the context of foundations and party wall legislation, for the first time.

Two sets of data were used to develop the research questions, aims, objectives and research methodology framework as mapped below: -

8.2.2.1 Research aims

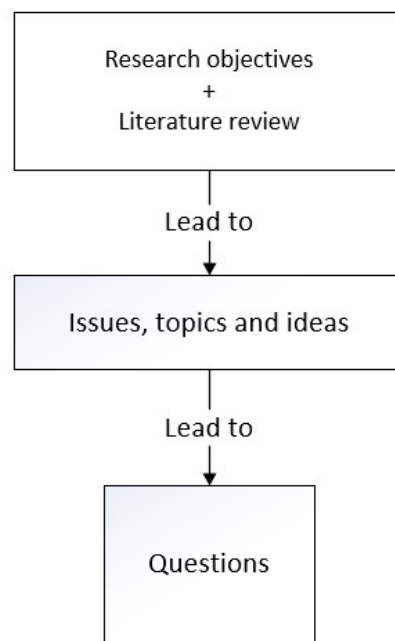
- A1) To analyse internal APA data to establish the extent of conflict;
- A2) To analyse the external data to establish conflict within the party wall community;
- A3) To investigate the influencing factors that contribute to conflict;
- A4) To identify any common links between the internal and external data; and
- A5) To generate new knowledge that would contribute to eliminating conflict within the research focus.

8.2.2.2 Research objectives

- O1) To critically review basement designs;
- O2) To understand the dynamics that influenced the origins and passage of the legislation;
- O3) To understand the Act's structure and rules of interpretation;
- O4) To identify the single common areas of conflict;
- O5) To review alternative dispute resolution procedures; and
- O6) To generate new knowledge that eliminates conflict surrounding the "special foundations" definition within section 7(4).

8.2.2.3 Research questions

- 1) What are the implications of the Act when building below ground?
- 2) What are the difficulties created by the Act's terminology when applied to basement construction?
- 3) How does the party wall community interpret the special foundation and section 7(4) veto when applying the Act?
- 4) To what extent does case law clarify or influence the interpretation of the Act when building below ground?



**Figure No 30 Demonstrating how objectives are translated into questions
(Naoum, 2013, p.62)**

It was recognised that additional lines of enquiry should be established (see Stages II and III) to obtain specific data relevant to the research focus. The ongoing aim and objective were to obtain an in-depth assessment of both the interpretation and approach to the research focus and to develop a strategic road map thereby ensuring the research was both focused and trackable (see Figure No 31). The proposed structure of the research was achieved through the data gathered during the early Stage I (i) and (ii) live enquiries.

8.2.3 Special foundations and the section 7(4) veto

The Act is silent with regards to explaining why it is considered necessary or indeed reasonable to incorporate two distinct definitions for “foundation” or why it appears reasonable to project foundations (adopting Section 1.6 of the Act) but not special foundations onto an adjoining owner’s property. Indeed, the section 7(4) veto was also

introduced without any justification as to why the latter is an issue, and the former is not. Therefore, the analysis began with the deconstruction of the specific wording:

“‘foundation’, in relation to a wall, means the solid ground or artificially-formed support resting on solid ground on which the wall rests”.

and

“‘special foundation’ means foundation in which an assemblage of beams or rods is employed for the purpose of distributing any load.”

The two definitions clearly recognise and emphasise the importance of “function” which is not dependent upon the material content. This leaves the designer with a broad scope to design the foundation to perform its function which is to support the structure above, by transferring the imposed loads safely to the ground. This approach to “function” is evident within the Act’s two definitions, and other elements. Therefore, it naturally follows that the only reasonable conclusion that can be reached is that the “function of the materials” when used either independently or conjoined with other materials, determines which definition applies.

Upon further analysis the only difference between the Act’s two definitions is the inclusion of an assemblage of beams or rods. However, by deconstructing the various definitions, the following five design functions identified from the research, establish the Act’s prerequisite in determining which definition applies to the proposed foundation design (see Table No 16). When answered in either a positive or a negative context, these functions assist the surveyor with identifying whether there is a special foundation.

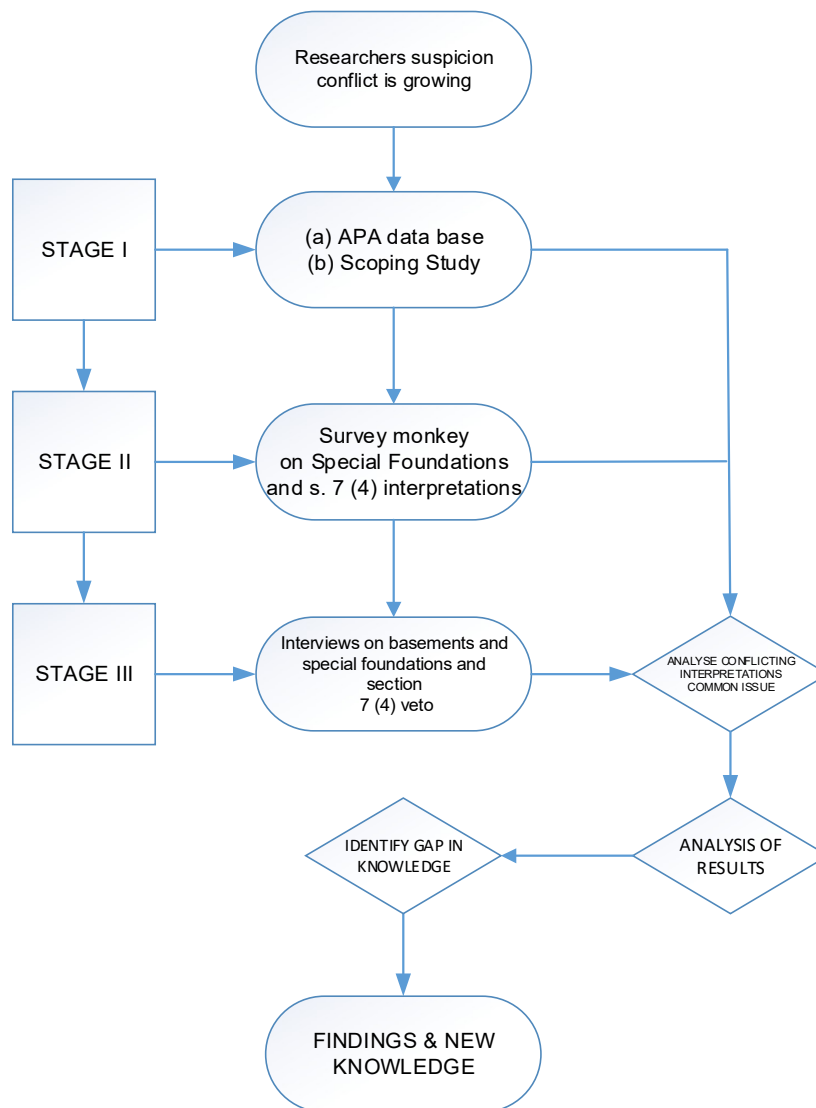


Figure No 31 Research structure

Table No 16 The design functions that determine the presence of foundation or special foundation

		YES	NO
(i)	Is the artificially-formed support resting on the ground?		
(ii)	Is the proposed wall resting upon the artificially-formed support?		
(iii)	Is the artificially-formed support transferring any load to the ground upon which it rests?		
(iv)	Does the artificially-formed support contain an assemblage of beams and/or rods for the distribution of any load?		
(v)	Is the artificially-formed support projecting onto the adjoining owner's land?		

If the answer to any of the first three questions (i)–(iii)s “No” then it is not a foundation; if the answer is “Yes” it is a foundation.

Conversely, if the answer to the first four questions (i)–(iv) is “Yes”, then it is a special foundation.

If the answer to (i)–(v) is “Yes” then as a special foundation section 7(4) veto does apply. The researcher developed this table as a tool for surveyors to undertake a desk top study in the first instance and to reach a decision, that may avoid conflict.

8.2.4 The influence of case law

The administration of the party wall Act is a quasi-judicial process where surveyors make determinations (awards) that impose legal implications on property owners. It is therefore not unsurprising that the law, and any subsequent judgments will have a specific importance and influence on surveyors’ various interpretations and approaches of the Act. It therefore naturally follows that the literature review should include a substantive analysis of any case law and judgments that specifically address the research focus. The identification and analysis of the case law is a further contribution to knowledge, specifically where it examines the various submissions and analyses that have persuaded judges to reach a decision either way.

The identification of only one explicit case arising out of the research focus was a further contribution to knowledge.

In essence, the Chaturachinda judgment removed the adjoining owner's rights to veto special foundations projecting onto their land when it incorporates rails beneath a reinforced concrete box, and thus the judgment has clearly paved the way for basement building to continue. The research demonstrated that when a judgment is handed down, it is done so with the intention of resolving conflict, and ultimately assisting those within that specific environment to move forward without any further issues arising.

However, following the results from the Stage II & III interviews it is abundantly clear that whilst the wider party wall community rejects the judgment, they reluctantly follow the principle because the interviewees were unwilling to contravene the judgment (see Table Nos 11 & 13). This emphasises the influence that judgments may have on moulding future issues. Indeed, there is one case (see Section 2.7.2.6) which, had it progressed to the courts, intended to challenge the earlier Chaturachinda judgment. Upon receipt of the Fergusons' grounds of appeal, the building owner's (Lloyd-Baker) legal team advised him not to defend the challenges, which suggests that Lloyd-Baker's legal advisers were not sufficiently confident that the Chaturachinda case would not stand rigorous investigation and analysis. Had the case gone to court then, it would have provided a further significant contribution to the research and generation of new knowledge, although it is argued that its very existence does contribute to the knowledge.

For ethical reasons, the researcher cannot identify the stakeholders that participated in Stage II and III of the study, therefore the researcher's only option was to undertake an analysis based on the very detailed narrative set out within the Chaturachinda judgment, for which Bailey HHJ is renowned. Irrespective of whether his decision is accepted or not, the judge always went the extra mile to make sure that the parties understood what had influenced his decision. One significant outcome from the analysis and a significant contribution towards the research focus, is third surveyor acceptance that the rails did not provide any structural function, but then counterintuitively, they reached the decision that they were the foundation, when in fact they are not mutually exclusive elements and/or functions.

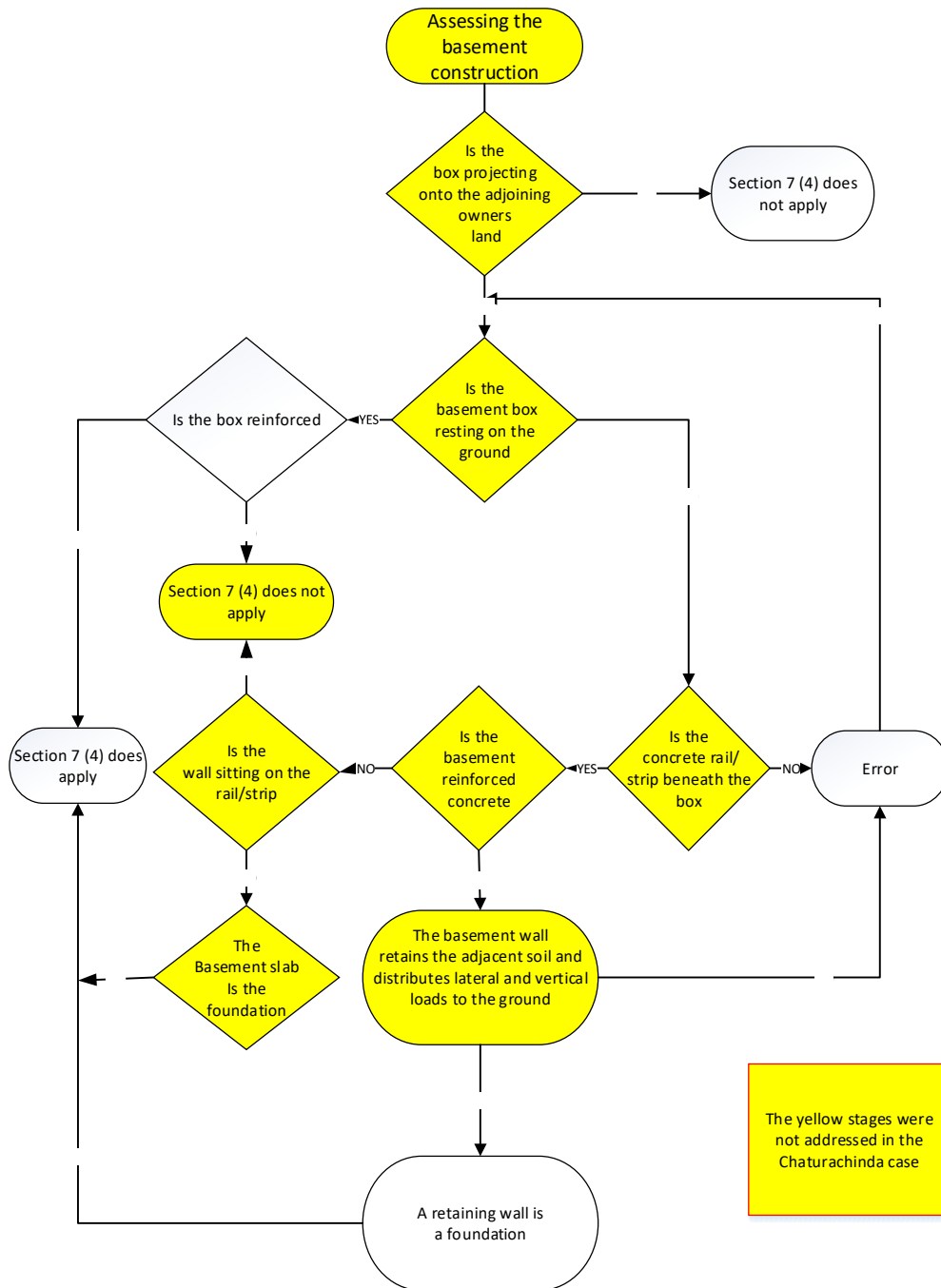


Figure No 32 Flaws within the Chaturachinda judgment

This is fundamentally important and identified throughout the literature review and raises one very important question. If, under the Act, the function of a foundation is to distribute loads onto the ground upon which it rests, how can that be achieved if the element does not have a structural function? The Judge accepted the third surveyors finding that the rails performed the function of a foundation. It is evident that if these rails are the foundation then the loads that they are supporting must be carried to them via the basement walls and basement slab. The basement walls and basement slab are

reinforced concrete and therefore are an assemblage of beams and/or rods as referred to in the Act. In section 2.8.5 it was established that a reinforced concrete basement box is a foundation and we see the importance of that in this case, irrespective of whether the concrete rails are introduced or not.

8.2.5 Analysis of the third surveyor's assessment process

An analysis of the third surveyor's explanations (as set out by the judge in Chaturachinda) was fundamental to the research focus. This analysis successfully identified various factors that had influenced the third surveyor's decision and enabled the development of a decision tree incorporating the criteria that had been relied upon (see Figure No 33). In addition, there were a number of statements made by the third surveyor that attempted to challenge established construction principles or practices by redefining them:

A wall is only ever a wall: the research has investigated this proposition and has successfully demonstrated that this statement is fundamentally flawed. The research demonstrated that the construction industry recognises that the function of a retaining wall is to support the soil and transfer the imposed loads safely onto the ground in exactly the same manner and function as a foundation. This substantive evidence directly rejects the third surveyor's proposition and therefore the statement that a wall is only ever a wall is simply incorrect.

The basement wall is an extension of the existing party wall: the research has investigated, addressed and demonstrated that the individual elements that make a reinforced box have little or no structural function unless joined through the reinforcement. Thus, creating multiple functions, which is the opposite position adopted by the third surveyor who only viewed the various elements as having only one function.

The research further contributes to knowledge in that the function of a basement wall simultaneously performs the following functions:

- a) As an extension of the existing party wall downwards;
- b) As an underpin foundation to the original foundations;
- c) As a wall that creates a space;
- d) As a retaining wall; and

- e) As a three-dimensional structure that is dependent on the linking of the reinforcement that supports the whole of the structure above and that acts as a foundation.

These multi-functioned capabilities only exist when the horizontal and vertical elements of the box structure are conjoined through the reinforcement. Each element is undeniably and inextricably dependent upon the reinforcement, which if interfered with, would substantially reduce the structural integrity of the reinforced basement box and prevent it from properly absorbing the imposed loads and distributing them safely to the ground, which the research has demonstrated is the function of any foundation.

Applying this approach, to the concept that the introduction of rails does not provide any structural function, it is extremely difficult to understand how the judge or indeed the third surveyor could reasonably have reached the decision. Quite ironically, the timing of this research cannot go without comment, given the substantial impact and the significant implications when basement structures go wrong (see Appendix VII).

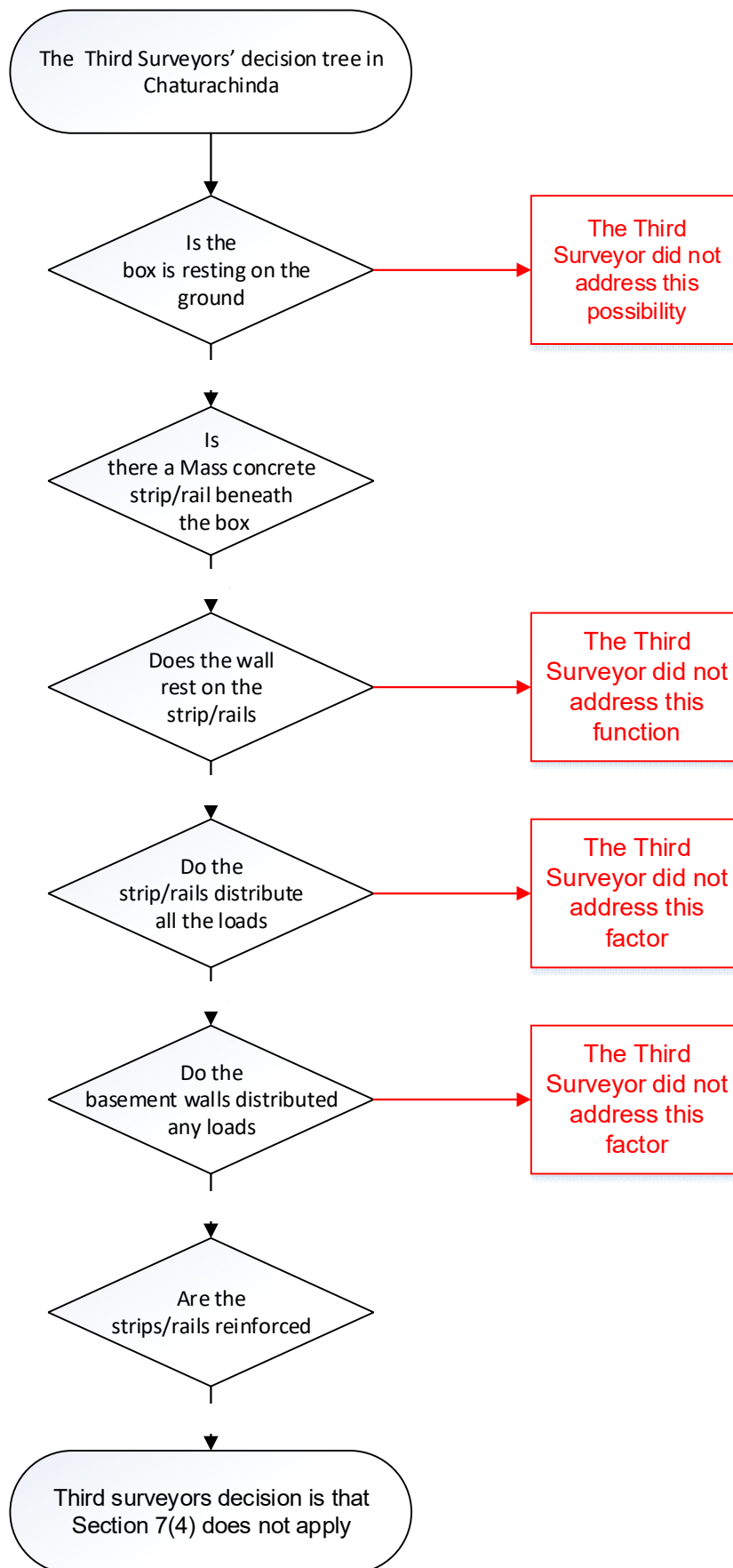


Figure No 33 Third surveyor's decision tree

8.2.6 The research assessment process

A significant contribution to knowledge is the development of a four-stage assessment process that surveyors and designers can implement to establish whether or not a proposed design triggers the special foundations definition, thereby invoking the section 7(4) veto.

8.2.6.1 Stage 1

With the research having identified eight individual basement designs that are accepted construction techniques when building below ground (see Section 2.2.5), the first stage of the assessment process considers the designs with the proposed classifications set out in Table No 17 below. This is intended to provide a reference platform to either bring about an agreement or to springboard the assessment process to the next stage.

Table No 17 Summary of accepted basement designs and foundation classification

Diagram No	Foundation	Special Foundation	Section 7(4)
10	✓	X	X
11	✓	X	X
12	X	✓	✓
13	✓	X	X
14	X	✓	✓
15	X	✓	✓
16	X	✓	✓
17	X	✓	✓

8.2.6.2 Stage 2

The second stage requests stakeholders to make a comparative analysis of the proposed design by considering the five functions that were identified within the Act's two definitions of foundation and special foundation by adopting the questions in Table No 18. If there remains any doubt in a party's mind, before progressing to the third stage, the party should set out their specific grounds regarding each independent element of the reinforced

concrete box. This will enable surveyors to identify which points are in agreement, and which remain in conflict. Having clarified the design, a decision can then be reached.

Table No 18 The design functions that determine the presence of foundation or special foundation

		YES	NO
(i)	Is the artificially-formed support resting on the ground?	✓	
(ii)	Is the proposed wall resting upon the artificially-formed support? State-run	✓	
(iii)	Is the artificially-formed support transferring any load to the ground upon which it rests?	✓	
(iv)	Does the artificially-formed support contain an assemblage of beams and/or rods for the distribution of any load? and	✓	
(v)	Is the artificially-formed support projecting onto the adjoining owner's land?	✓	

8.2.6.3 Stage 3

The third stage expands in Table No 19, by introducing an additional eight questions addressing various aspects of the proposed design. These questions focus on the function of both the individual and conjoined elements, and the contribution that the function of the reinforcement makes or any function that attributable to rails.

Table No 19 Checklist for assessing function of the basement construction

	FUNCTION	YES	NO
1	Is the mass concrete basement box resting upon the ground?	✓	
2	Does the basement box include an assemblage of beams or rods?	✓	
3	Are the vertical and horizontal elements linked through the reinforcement?	✓	
4	Do the walls when linked to the slab retain soil?	✓	
5	Does the basement slab include a steel mesh?	✓	
6	Is the wall sitting on the reinforced slab?	✓	
7	Would removing the link between the wall and slab render the box incapable of safely transferring lateral loads?	✓	
8	Are there mass concrete rails beneath the basement box?	✓	
9	Are the mass concrete foundation rails necessary?		✓
10	Is the wall sitting on the mass concrete rails?		✓
11	Does the mass concrete rails provide any structural function to the basement box walls?		✓
12	Does the structural integrity/function of the basement box wall require a mass concrete rail?		✓
13	Does any part of the basement box project across the line of junction?	✓	

8.2.6.4 Stage 4

As referred to in Section 2.5.7 there are eight individual designs for basements that demonstrate accepted construction techniques suitable for building below ground (see Section 2.2.5). The research proposes that these can be separated into two sub-categories, (non-integral and integral). The former would include diagrams 10, 11 and 13, the latter, diagrams 12, 14, 15, 16 and 17. The research undertook a forensic investigation, commencing with the deconstruction of the building process (see Diagram Nos 35–39), and then pictorially set out the basement construction process and developed two roadmaps (see Figure Nos 34 and 35) to further assist surveyors in determining whether the proposed design falls within either a non-integral or an integral construction process. Subsequently, the roadmaps can be used to determine if the special foundations definition applies and subsequently invokes the adjoining owner's right to veto such works.

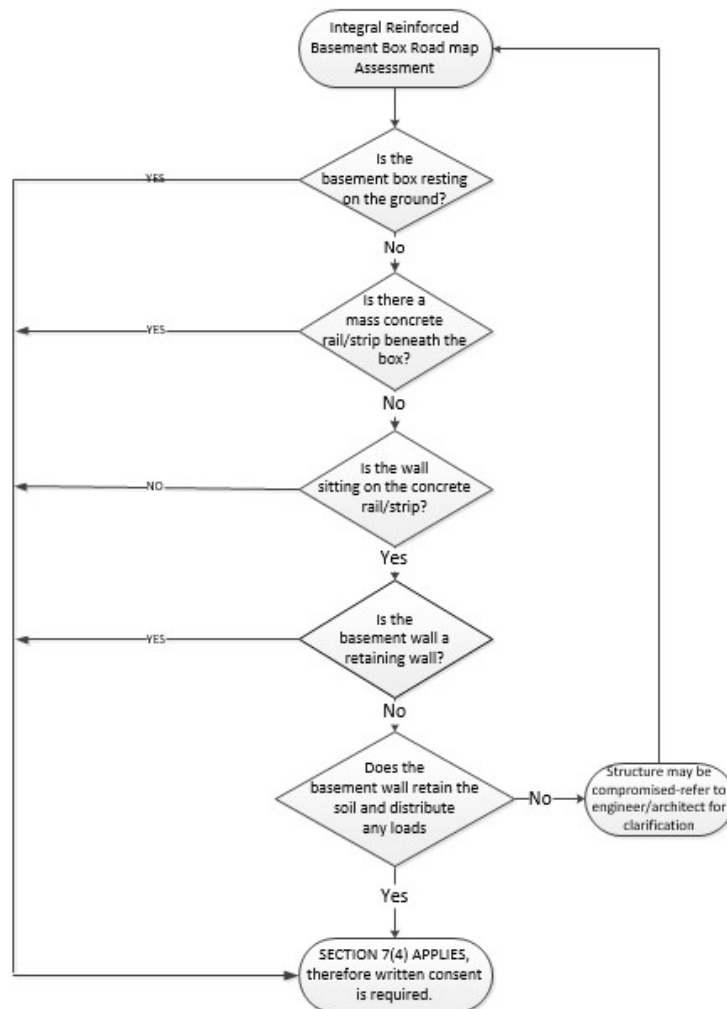


Figure No 34 Integral basement box decision tree

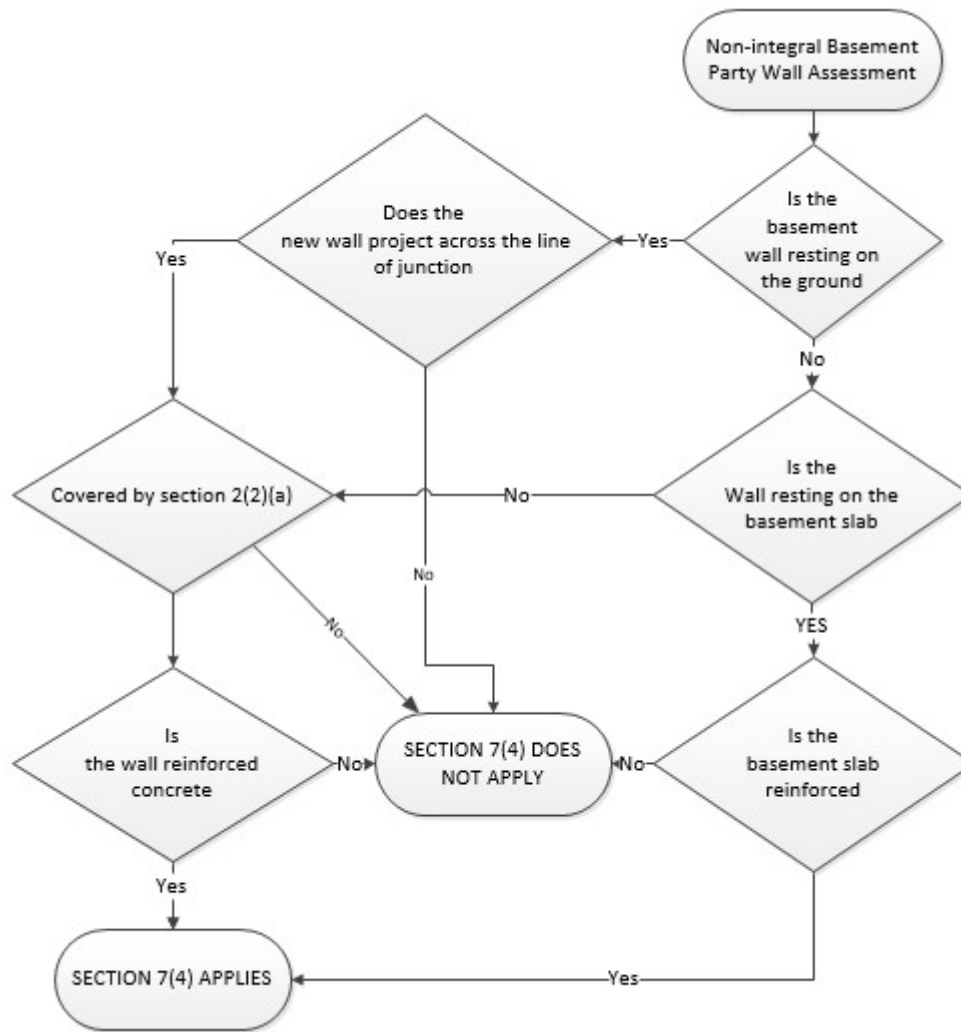


Figure No 35 Non-integral basement box decision tree

8.2.7 Conclusion and recommendations

The contribution this research makes to knowledge can be summarised in the following ways:

- 1) The Act is ambiguous;
- 2) There is wide conflict surrounding the interpretation of numerous sections of the Act;
- 3) Identified the single-most common area of conflict;
- 4) Identified eight accepted designs for basement construction;
- 5) Established that a basement wall is not just a wall but is a foundation;
- 6) Reinforcement is an assemblage of beams and or rods;
- 7) The Chaturachinda case is flawed;

- 8) Demonstrated that an element of the building can have multiple functions;
- 9) Demonstrated that the rails make no contribution to the structural function of the reinforced concrete box;
- 10) The reinforcement is integral to the box's function/ability to distribute loads;
- 11) A reinforced concrete box is a special foundation;
- 12) A reinforced concrete box will trigger the adjoining owner's right to apply the section 7(4) veto;
- 13) Chi-squared independent test supports the research conclusions that a basement box is a special foundation;
- 14) Contributes to further doctoral research.

8.2.8 Further doctoral research

In 2019 the Act celebrated its 23rd birthday and yet as demonstrated in this thesis there remains substantive evidence of conflicting interpretations and ambiguity in the legislation. The scoping study results in Table No 3 record the 17 areas of conflict experienced by stakeholders, which support the researcher's initial hypothesis. As such, the research focus has contributed to existing knowledge relating to the definition of special foundations when building below ground. However, clearly there remains a substantial gap in knowledge generally surrounding the interpretation of the Act.

It is anticipated with this thesis, that having identified the specific issues surrounding special foundations and the basement box, the main areas of conflict currently identified as section 10(8), section 10(17), and section 12(1) are the most common areas. Therefore, based on any independent and impartial observation and assessment of the Act, and on proper consideration of the construction of the Act, it is reasonable to conclude that the Act is not achieving its objective. In its current form it will continue to create conflict rather than removing barriers to facilitate the reasonable execution of certain construction works without adversely affecting the adjoining owner's property, and further research is recommended on this topic.

8.2.8.1 The British Standards Institute

In tandem to this research, the researcher has been exploring opportunities to work with the UK's National Standards Organisation and the UK representative in the European Committee for Standardization ("CEN") and the International Organization for Standardization ("ISO") and International Electrotechnical Commission ("IEC"), the British

Standards Institution (“BS”). Their objective as the world’s largest independent certification body is to independently pioneer the development and distribution of standards for the correct management of systems.

The researcher has made good progress with the BSI who have expressed a clear desire to developing a British Standard for the administration and interpretation of party wall legislation with the researcher being the appointed author. The path to achieving a “British Standard”, commences with publishing a Publicly Available Specification (‘PAS’) which takes approximately 12 months. The process is overseen by the BSI who select an independent panel of 15 industry professionals and academics to meet with the author to critique the proposed structure and content of the PAS. This process is repeated until there is a consensus within the panel. The process is monitored, managed, and reviewed by the BSI. Once approved the PAS is published and promoted through the BSI network of professional bodies, industries, and government departments.

The PAS creates the steppingstone to developing a full British Standard, which takes a further 9–12 months and follows a similar process. The BSI have also indicated an interest to develop an ISO Standard. The independent assessment and ratification of the issues currently identified within the research (see Table No 3), and those that have not yet been identified, would be fully explored and resolved through the PAS and subsequent BSI.

This is an exciting opportunity because the PAS and BSI would be recognised as an authority guidance for the party wall community and potentially serve as a springboard for the drafting of new legislation. The downside is that the cost of achieving a PAS is circa £60,000 and subsequently to achieve a BSI would be circa an additional £40–50,000. These costs pay for the administration services provided by BSI, the independent assessment panels, administration, advertising campaigns, and seminars to promote the PAS or BSI. Because the BSI is a non-profit organisation the funding must be secured through industry or through an academic institution such as universities, which presents a unique opportunity for a proactive university to be seen as a lead researcher in this field.

8.2.8.2 The Party Wall etc. Act 1996

The position concluded from this research is that the Party Wall etc. Act 1966 in its current format is not achieving its objective which is to facilitate certain works without creating conflict. There is sufficient evidence to support a possible amendment to the Act. However, that process would involve Parliament repealing the current legislation, and

unfortunately, the wheels of Parliament turn slowly so even if the findings of this research recommending an amendment to the Act are adopted, a conservative estimate for achieving Royal Assent would be 2–3 years from the beginning of the process.

8.2.8.3 Future research papers and publications

This research has focused on a unique element of the Act and has contributed to the interpretation of building below ground level. However, there remains conflict identified through this research that has not yet been fully explored through academic research (see Table No 3). Further research into these remaining areas of conflict is desirable and necessary for the correct interpretation of the Act. The researcher intends to write further academic papers to promote the findings of this research with a view to assisting with the successful reversal of the judgment in the Chaturachinda case.

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Appendix I Stage I (ii) Scoping study questions

	Scoping study questionnaire			
1	Were you involved in party wall matters under the earlier London Building Amendment Act 1939?	Y	N	DK
2	Is your experience of party wall matters limited to the Party Wall etc. Act 1996?	Y	N	DK
3	Did you receive any formal training on party wall matters prior to accepting appointments?	Y	N	DK
4	Are you a member of a professional body such as CABE, RICS, RIBA, CIOB?	Y	N	DK
5	Do you belong to any non-professional organisations that focus on Party wall matters	Y	N	DK
6	Can one Building Owner step into the shoes of another Building Owner and speak as one voice	Y	N	DK
7	Should all owners be included on all notices and appointments	Y	N	DK
8	Should a party wall surveyor have a letter of appointment before serving notice	Y	N	DK
9	Should a party wall surveyor have a letter of appointment before continuing with party wall matters after notice has been served	Y	N	DK
10	If consent to a notice is given, do the owners have the right, at a later date, to appoint surveyors to resolve a dispute under section 10	Y	N	DK
11	Can a surveyor's appointment be replaced	Y	N	DK
12	Can a surveyor be conditionally appointed	Y	N	DK
13	Can the appointed surveyors proceed without selecting a Third Surveyor	Y	N	DK
14	Do you inform the Third Surveyor of his selection at the time of the selection	Y	N	DK
15	Do you inform your appointing owners of the Third Surveyors identity	Y	N	DK
	(a) upon agreement with the opposite surveyor	Y	N	DK
	(b) when the Award is served	Y	N	DK
16	Do you set your fees before accepting an appointment	Y	N	DK
17	Can you lawfully authorise forced entry when access is refused by your appointing owner	Y	N	DK
18	Do you advise your appointing owners of the provisions of section 12(1) security of expenses?	Y	N	DK
19	Is the security under section 12(1) subject to exclusions or limitations	Y	N	DK
20	Do you inform your appointing owners of the Third Surveyors identity prior to an Award	Y	N	DK
	(a) Do you advise your appointing owners of their section 10(11) rights	Y	N	DK
21	Is a boundary location a matter of legal title	Y	N	DK
22	Do the appointed surveyors have jurisdiction to determine the position of the boundary (line of junction)	Y	N	DK

23	For the purpose of applying section 1(5), do you consider the inclusion of the word "on" is ambiguous	Y	N	DK
24	Do you consider for the purpose of section 1(5) that "in the vicinity of" is the same as "on"?	Y	N	DK
25	Does an Adjoining Owner have the right to raise a type (b) party wall either vertically or laterally?	Y	N	DK
26	Does the right of access under section 8(1) have limitations or exclusions	Y	N	DK
27	Can a Building Owner have access to an adjoining owner's land to execute works that are not notifiable notice but can be carried out simultaneously with works that do require notice	Y	N	DK
28	Do you consider section 7(1) compensation when considering rights of access under section 8(1)	Y	N	DK
29	Do you consider the Act's definition of foundations and special foundations is ambiguous in relation to basements	Y	N	DK
30	Do you advise the adjoining owner of their rights under section 7(4) to veto special foundations	Y	N	DK
31	Can the Act be applied retrospectively without the owner's agreement	Y	N	DK
	Can the Act be applied retrospectively with the owner's agreement	Y	N	DK
32	Can the surveyor decide a point of law	Y	N	DK
33	In your opinion is the Act ambiguous	Y	N	DK
34	Does the Act require clarification	Y	N	DK
<p>Please list what you consider are the five common areas of dispute (please list in order of greatest significance at position No. 1)</p> <p>For example</p> <p>1 Section 6(2)</p> <p>2 section10(5)</p> <p>3 section1(5) etc.</p>				
1			1	
2			2	
3			3	
4			4	
5			5	

Appendix II Stage II Survey monkey results

Question 1 enquired about the professional status of the stakeholder, 72% were RICS, 28.57 were CABE; 21% CIOB; 14% FPWS; 29% P & T; 29% IPWS; 7% were not members of any professional organisation. From the cumulative total percentages, it is apparent that stakeholders were multi-disciplined and this is consistent with the analysis of the APA data (see Figure No 1).

Question 2 enquired into the stakeholder's main professional activity, 57% were Chartered Surveyors; 14% were Chartered Engineers; 7% were RIBA architects; 50% were party wall surveyors and 21% were Chartered Building Engineers. These results somewhat conflicted with the percentages recorded in Question 1.

Question 3 enquired into the stakeholder's experience under the earlier legislation, 57% had worked under the earlier legislation, with 43% only having experience under the current legislation.

Question 4 presented the Diagrams of accepted established basement construction, techniques (see Section 2.2).

Question 5 asked for their views generally on the Act's definition of "special foundations". 14% believed that the definition was ambiguous, 64% believed it required greater clarification, compared with only 21% who considered the definition was perfectly clear.

In Question 6, 64% confirmed that they were familiar with the current case law, with 36% having no knowledge of the case.

Question 7 investigated the section 7(4) veto with 85% confirming an understanding, whilst 7.7% did not have an understanding and 8% gave no explanation.

In Question 8 only 73% agreed the function of the basement "box" was: (i) to act as a foundation; (ii) to create a subterranean envelope; and (iii) to form a habitable environment. Of the rest, 18% did not agree, and 9% did not express an opinion.

Question 9 sought to clarify if it was accepted that the Chaturachinda decision that a "basement wall is only ever a wall" and not part of the foundation, 59% agreed and 42%

believed that basement “box” walls act as both a wall and a foundation thereby challenging the decision.

Question 10 indicated a notable change in opinions with 77% of the stakeholders now considering that the basement wall and floors created a multifunctional box, being both a foundation and a wall. The other 23% did not agree, which was a significant swing from the previous question.

Question 11 asked the stakeholders to express their views as to whether or not the basement “box” wall constructed from reinforced concrete was a wall and not a special foundation. 36% accepted that it was a special foundation, only 21% said that it was not, and interestingly, although not unsurprisingly, 36% considered the wall was multifunctional, whilst 7% could not decide.

Question 12 asked whether respondents considered underpinning dowels created a special foundation. The participants were almost split, with 57% accepting that they were and the remaining 43% disagreeing.

Question 13 asked whether removing the reinforcement link between the walls and floor would remove the issue of special foundations. Of the respondents, 50% agreed with the Chaturachinda decision that “a wall is only a wall”, 43% did not agree and the remainder did not express a view.

Question 14 was similar to question 10, resulting in a positive change in views, with a significant swing over to the positive side, 86% now accepting that a basement box was multifunctional, while 7% disputed and 7% were unclear.

Question 15 sought the stakeholder’s understanding of whether a basement wall was also a retaining wall. 36% agreed, whilst 55% did not recognise that the function of the basement wall was to retain the adjacent soil and 9% did not know.

Question 16, 45% believed the concrete strips beneath a basement box (see Figure 2.2.4) were the foundation and therefore the issue of special foundations and the section 7(4) veto no longer applied, 36% disagreed and 18% were unsure.

Question 17 was designed to refer to the Chaturachinda decision i.e., whether an adjoining owner could exercise their section 7(4) rights and withhold written consent when

a reinforced concrete basement box is constructed. 79% believed now that they could do so, whilst only 7% challenged that right. A small number, 14% gave limited explanations. This represented a significant change in stakeholders' responses to Question 11, where only 36% considered that a basement box was a special foundation. This was a significant swing to the positive where they now considered a basement box as a special foundation.

Question 18 when asked whether stakeholders would advise an owner that a basement box was a special foundation, only 36% confirmed they would. 29% said that they did not consider it to be a special foundation and 36% confirmed that they would explain the section 7(4) veto. When compared with the responses to Question 11, this was an increase on the 21% that considered the basement slab was not a special foundation, to 29% now suggesting that the basement box was not a special foundation.

Question 19 asked stakeholders if their approach and interpretation of the Act was dependent on the party appointing them. 7% said they would change their approach and interpretation when appointed by the building owner. Interestingly 7% would change their approach if appointed by the adjoining owner, 65% gave an explanation and 22% did not know.

Question 20 was at the heart of the research and supports the data recorded in Stage I (i) and (ii) i.e., that there is conflict surrounding the interpretation and approach to basement boxes and the use of special foundations, two thirds (64%) had experienced conflict in these areas, whilst only 36% had not.

Question 21 asked surveyors to consider whether the function of a retaining wall is to act as a foundation to support the surcharges created by the retained soil. The stakeholders were evenly split, with 50% believing the function of the retaining wall was to act as a foundation and 50% believing that it was not. This was a substantive change in opinion from the answers received in Question 10, where 77% believed that a basement box was multifunctional. This recorded a 27% drop with an increase from 36% to 50% believing that basement walls are not retaining walls and therefore do not act as a foundation.

Question 22 asked stakeholders which of the options listed below they would adopt to resolve a dispute when the issue of special foundations arose. Only 7% advised that they would refer the matter to a third surveyor; 14% would refuse to serve an Award when the section 7(4) veto had been exercised; 43% would not adopt either of the above options and the remaining 36% gave various alternatives.

Q.22	How have you managed to resolve the differences in special foundations?
i	Refer to a Third Surveyor
ii	Awarded special foundations and left it to the owners to appeal the award
iii	Refused to sign award where the section 7(4) veto has been exercised
iv	None of the above
v	Please explain
vi	Building in Norfolk is extensive rather than intensive therefore, few developments if any for basement construction in existing building
vii	By negotiation with another surveyor
viii	I only act these days as a structural engineer advise out to party wall surveyors and follow the guidance issued by IStructE and ICE and specifically the paper on special foundations published in the IStructE by S M Pole
ix	Never had an owner refused to give consent for special foundations. A mass concrete one takes up more room and the CF case can always be used

Question 23 asked whether stakeholders considered the function of a retaining wall was to act as a foundation; 82% agreed; 18% did not agree, and there were no abstentions.

Question 24 was included within the survey to ascertain greater understanding of the various interpretations, concerns and observations of stakeholders by inviting them to give their views.

Q.24	Do you have any other comments, questions or observations?
i	I feel that the C-V-F will be or should be overturned on appeal
ii	The Act's definition inclusion of special foundations requires clarification to remove the confusion
iii	The Act needs a radical rethink with an Amendment Act
iv	I am content that the wall is a wall but, in my view, the bottom slab below the wall must be a foundation
v	No
vi	I query whether the definition of special foundation was intended to include modern reinforcement concrete. In any case, the definition is obsolete, and in every case, I have seen (a substantial number) there has been no actual detriment to the adjoining owner from the foundation being reinforced concrete

vii	The definition of (SF) is outmoded as it originally applied to rafts and large grillage steels which acted in concert. Modern RC does not give any issues and allows the wall to be of minimum thickness
viii	Figures not accessible
ix	No Diagrams

Question 25 invited the stakeholders to provide a definition of a foundation.

Q.25	Please write in less than 35 words what your definition of a foundation is
i	A sturdy and level base underneath a structure which prevents weakening of the structure from potential ground movement
ii	The base support of any structure that can safely transmit the imposing and then loads to suitable load-bearing strata
iii	It is a part of the building that is designed to transfer loads safely to ground and can be both vertical and horizontal. Generally, but not always it is part of the structure that is in contact with soil
iv	A foundation transmits the load of the building vertically to the ground
v	The part in touch with the earth
vi	A subterranean formation to support a wall or structure above and transpose load from a building to the ground
vii	An element of the building transferring loads that are applied on to it safely to the ground
viii	The ground or artificially-formed support on which the wall rests, it is the structure transmitting load to the ground at the base being below the ground level does not automatically make a structure a foundation
ix	A ground bearing support for a wall or structure
x	The element of construction transferring loads directly to the ground and in contact with the ground
xi	Probably yes
xii	Modern reinforced concrete does not give any issues and allows the wall to be of minimum thickness
xiii	The Act's inclusion of special foundations requires clarification to remove the confusion
xiv	Referring back to the diagrams is frustrating and time consuming
xv	I cannot open the diagrams

xvi	The Act's inclusion of special foundations requires clarification to remove the confusion
xvii	In Q.23 above I am content that the wall is a wall but, in my view, the bottom slab below the wall must be a foundation
xviii	The Act needs a radical rethink with an amendment to the Act

Appendix III Stage III Analysis of interviews Nos 1–18

Question 1 invited stakeholders to consider whether the Act's two definitions were ambiguous, 67% agreed, 33% did not.

Question 2 referred to the Building Regulations definition of foundation was dependent upon one function, 76% agreed and 6% did not, 18% did not know.

Question 3 invited stakeholders to consider if the Building Regulations definition was determined by the material or design criteria to satisfy the definition of a foundation, 22% agreed and 66% did not, 12% did not know.

Question 4 asked stakeholders if they agreed that the horizontal element of the structure was not a wall, 82% agreed and 12% disagreed, 6% could not answer the question.

Question 5 asked if they agreed that the Act's two definitions did not define a foundation by its material composition, 62% agreed and 32% disputed, 6% did not know.

Question 6 asked if they agreed that (Diagram No 1) satisfied the Act's definition of foundation and special foundation, 89% agreed and 6% disagreed, 6% could not answer the question.

Question 7 asked stakeholders if they agreed that a wall must rest upon a foundation to prevent partial or complete collapse, 73% agreed and 21% disagreed, 6% could not answer the question.

Question 8 asked stakeholders if (Diagram No 1) satisfied the building regulations definition of a "foundation", 88% agreed and 12% could not answer the question.

Question 9 asked if they agreed that when an owner intended to reduce the ground level (Diagram No 2) that the owner had an implied or explicit obligation to maintain the adjoining owner's natural right of support, 88% agreed and 12% could not answer the question.

Question 10 asked (see Diagram Nos 3 & 4) if they agreed whether the function of a retaining wall was to maintain the adjoining owner's natural right of support, 100% agreed.

Question 11 asked if they agreed that the Diagrams (see Diagram Nos 3 & 4) were an accurate representation of a retaining wall, 100% agreed.

Question 12 asked if they agreed that linking the vertical reinforced concrete wall with the horizontal concrete floor (see Diagram Nos 3 & 4) created a single structural element tied by the reinforcement, 82% agreed and 18% disagreed.

Question 13 asked if, having agreed with Question 12 above, they also agreed that the function of the reinforcement was to link the two structural elements “full” and “toe”, 76% agreed and 18% disagreed, 6% could not answer the question.

Question 14 asked if they agreed that the wall must be resting upon the horizontal “toe” (see Diagram Nos 3 & 4), 94% agreed and 6% disagreed.

Question 15 asked if they agreed that the function of a retaining wall also satisfied the building regulations definition of foundation (see Diagram Nos 3 & 4), 94% agreed, there were no disputes, and only 6% could not answer the question.

Question 16 asked if they agreed that these Diagrams also satisfied the Act’s “special foundations” definition (see Diagram No 3 & 4), 94% agreed, there were no disputes, and only 6% could not answer the question.

Question 17 asked whether a retaining wall required written consent under section 7(4) (see Diagram No 4), 94% agreed and 6% did not agree.

Question 18 asked if they agreed that the linking of the horizontal and vertical elements of the basement box, whilst creating a single structure, also maintained the adjoining owner’s soil by safely transferring the imposed “lateral loads” of the retained soil through the basement structure to the ground, 94% agreed, there were no disputes, and only 6% could not answer the question.

Question 19 asked with reference to Question 18 above, whether they agreed that the removal of the link between the vertical and horizontal elements would reduce the ability to withstand “lateral forces” 100% agreed.

Question 20 asked if they agreed that the horizontal “toe” was a function/structural element of a retaining wall’s ability to resist rotation created by “lateral loads close” (see Diagram Nos 3 & 4), 94% agreed and 6% disagreed.

Question 21 asked would they have agreed that without the “toe” it was reasonably foreseeable that the vertical element would fail (see Diagram No 10), 74% agreed and 26% disagreed.

Question 22 asked, as a general rule, whether they agreed that the elements of the structure can be multifunctional, 88% agreed and 12% could not answer the question.

Question 23 asked if they agreed that the function of the reinforced concrete box (see Diagram Nos 5 & 7), was the same as that of a retaining wall with reference to (see Diagram Nos 4 & 5), i.e., to safely transmit the lateral and imposed loads to the ground, 94% agreed and 6% disagreed.

Question 24 asked if they agreed that when positioning the vertical elements of the reinforced box directly below the party wall (see Diagram Nos 6, 8, 11, & 15), there was no change in the function of the vertical elements which is to safely transfer and distribute the imposed “lateral loads” to the horizontal sections and to the ground, 76% agreed and 12% disagreed 12% could not answer the question.

Question 25 asked whether they agreed that the introduction of the concrete “rails” (see Diagram No 8), beneath the slab (see Diagram Nos 6, 10, 11), adopted the function of a foundation, 44% agreed and 50% disagreed, 6% could not answer the question.

Question 26 was related to Question 25 above and asked whether they agreed that the horizontal element on which the wall now rested became a wall, 22% agreed and 72% disagreed, 6% could not answer the question.

Question 27 also related to Question 25 above, asked if they agreed that the horizontal sections of the basement box were the foundation of the wall, 56% agreed and 45% disagreed.

Question 28 asked whether breaking the link between the “wall and toe” removed the structural function of the retaining wall (see Diagram No 11), 72% agreed and 28% disagreed.

Question 29 asked if, having agreed to the previous five questions, whether they further agreed that the introduction of concrete rails removed the issue of special foundation and the section 7(4) veto, 28% agreed and 72% disagreed.

Question 30 asked whether the increased thickness of the concrete directly below the vertical “wall” was to ensure the safe distribution of the imposed loads by acting as a foundation on which the wall was resting (see Diagram Nos 6, 8, & 16), 94% agreed and 6% disagreed.

Question 31 asked generally whether they agreed that the wall could be both a foundation and wall, 78% agreed and 22% disagreed.

Question 32 asked if they agreed that these designs fell within the special foundation definitions (see Diagram Nos 4, 6, 8, & 11), 78% agreed and 22% disagreed.

Question 33 sought to identify if a wall was only vertical and not horizontal, 94% agreed, 6% disagreed.

Question 34 asked, if having agreed with question 32 above, would (Diagram Nos 4, 6, 8, & 11) trigger the section 7(4) veto, 78% agreed and 22% disagreed.

Question 35 asked if they agreed that the right to raise a party wall upwards (see Diagram No 10), under section 2(2)(a) of the Act, applied equally to raising the wall downwards, 78% agreed and 22% disagreed.

Question 36 asked if having agreed with Question 35 above, did they agree that the downward raising of a wall terminates where it meets, and therefore, rests on the concrete tongue, 78% agreed and 11% disagreed, 11% could not answer the question.

Question 37 asked whether they agreed that basement box (see Diagram No 8) was multifunctional and is:

- (i) an extension of the wall; 88% agreed and 12% disagreed;
- (ii) a retaining wall; 100% agreed; and
- (iii) a foundation to the wall, 88% agreed and 12% disagreed.

Question 38 invited stakeholders to consider the construction sequence (see Diagram Nos 12–16) of a basement, and the function of each element.

Question 39 asked if they agreed that the stages of construction were a correct reflection of the construction process, 94% agreed and 6% disagreed.

Question 40 asked with reference to Question 36, if they agreed that before the party wall can be raised downwards, that a base (foundation) for the proposed extended wall must be formed in the first instance, 94% agreed 6% disagreed.

Question 41 asked if having agreed with Question 40 above, did stakeholders agree that if the “green” concrete was not reinforced (see Diagram No 14), that it falls within the section 20 definition of “foundation”, 94% agreed and 6% disagreed.

Question 42 asked with reference to Question 41, if would they agree that if the “green” concrete contained reinforcement, it would satisfy the section 20 definition of the special foundation (see Diagram No 14), 94% agreed and 6% disagreed.

Question 43 asked, if having agreed with Question 42 above, stakeholders accepted irrespective of the materials used for the construction of the wall, that the adjoining owner could therefore invoke the section 7(4) veto on the basis that the “green” reinforced concrete was a special foundation, 78% agreed and 22% disagreed.

Question 44 asked stakeholders to reflect on their earlier decision and invited them to reconsider the structural function of the retaining wall, and whether they now agreed that a basement box design was multifunctional, acting as a retaining wall, a foundation, a perimeter wall, a party wall, and a floor, while systematically falling within the Act’s definition of a special foundation, 76% agreed and 24% disagreed.

Question 45 asked if having been in agreement with question 44, on reflection stakeholders now agreed that the basement box construction triggered the section 7(4) veto, 76% agreed and 24% disagreed.

Question 46 invited stakeholders to suggest whether any of the following points would assist in clarifying the special foundations debate:

- a) This removes the definition altogether; 44% agreed, 44% disagreed and 12% abstained;
- b) Replace the word 'special' with an alternative word; 50% agreed and 50% disagreed;
- c) Replace the whole definition of "special foundations"; 60% agreed and 34% disagreed; and
- d) Remove the section 7(4) veto; 44% agreed, 44% disagreed and 12% could not answer the question.

Appendix IV Analysis of additional interviews Nos 15–23

Question 1 invited stakeholders to consider whether the Act's two definitions were ambiguous, 100% agreed.

Question 2 asked whether the building regulations definition of "foundation" was dependent upon one function, 100% agreed.

Question 3 invited stakeholders to consider if the building regulations definition was determined by the material or design criteria to satisfy the definition of a "foundation", 100% agreed.

Question 4 asked stakeholders if they agreed that the horizontal element of the structure was not a wall, 100% agreed.

Question 5 asked if they agreed that the Act's two definitions did not define a "foundation" by its material composition, 100% agreed.

Question 6 asked if they agreed that (Diagram No 1) satisfied the Act's definition of foundation and special foundation, 100% agreed.

Question 7 asked stakeholders if they agreed that a wall must rest upon a foundation to prevent partial or complete collapse, 100% agreed.

Question 8 asked stakeholders if (Diagram No 1) satisfied the building regulations definition of a foundation, 100% agreed.

Question 9 asked if they agreed that (Diagram No 2) when an owner intended to reduce the ground level, that the owner had an implied or explicit obligation to maintain the adjoining owner's natural right of support, 100% agreed.

Question 10 asked if they agreed (Diagram Nos 3 & 4) whether the function of a retaining wall was to maintain the adjoining owner's natural right of support, 100% agreed.

Question 11 asked if they agreed that (Diagram Nos 3 & 4) were an accurate representation of a retaining wall, 100% agreed.

Question 12 asked if they agreed that linking the vertical reinforced concrete wall with the horizontal concrete floor (Diagram Nos 3 & 4), created a single structural element tied by the reinforcement, 100% agreed.

Question 13 asked if having agreed with Question 12 above, they also agree that the function of the reinforcement was to link the two structural elements “full” and “toe”, 100% agreed.

Question 14 asked if they agreed that the wall (Diagram Nos 3 & 4) must be resting upon the horizontal “toe”, 100% agreed.

Question 15 asked if they agreed that the function of a retaining wall (see Diagram Nos 3 & 4), also satisfied the building regulations definition of “foundation”, 100% agreed.

Question 16 asked if they agreed that (Diagram Nos 3 & 4) also satisfied the Act’s “special foundations” definition, 100% agreed.

Question 17 asked whether a retaining wall (Diagram No 4) required written consent under section 7(4), 100% agreed.

Question 18 asked if they agreed that the linking of the horizontal and vertical elements of the basement box whilst creating a single structure also maintained the adjoining owner’s soil by safely transferring the imposed “lateral loads” by the retained soil through the basement structure to the ground, 100% agreed.

Question 19 asked with reference to Question 18 above, whether they agreed that the removal of the link between the vertical and horizontal elements would reduce the ability to withstand “lateral forces” 100% agreed.

Question 20 asked if they agreed that the horizontal “toe” (Diagram Nos 3 & 4) was a function/structural element of a retaining wall’s ability to resist rotation created by “lateral loads close”, 100% agreed.

Question 21 asked if they agreed that without the “toe” (Diagram No 10), it was reasonably foreseeable that the vertical element would fail, 100% agreed.

Question 22 asked if, as a general rule they would agree that the elements of the structure could be multifunctional, 100% agreed.

Question 23 asked if they agreed that the reinforced concrete box function (Diagram Nos 5 & 7), was the same as a retaining wall with reference to (Diagram Nos 4 & 5), that can safely transmit the lateral and imposed loads safely to the ground, 100% agreed.

Question 24 asked if they agreed that when positioning the vertical elements of the reinforced box directly below the party wall (Diagram Nos 6, 8, 11, & 15), there was no change in the function of the vertical elements, which is to safely transfer and distribute the imposed "lateral loads" to the horizontal sections to the ground, 100% agreed.

Question 25 asked whether they agreed (Diagram No 8), that the introduction of the concrete "rails" beneath the slab, (Diagram No 6,10,11), adopted the function of a foundation, 20% agreed and 60% disagreed, 20% could not answer the question.

Question 26 was related to Question 25 above and asked whether they agreed that the horizontal element on which the wall now rested became a wall, 40% agreed and 60% disagreed.

Question 27 also related to Question 25 above and asked if they agreed that the horizontal sections of the basement box were the foundation of the wall, 60% agreed and 20% disagreed, 20% did not know.

Question 28 asked whether breaking the link between the "wall and toe" (Diagram No 11), removed the structural function of the retaining wall, 60% agreed and 40% disagreed.

Question 29 asked if having agreed to the previous five questions, whether they further agreed that the introduction of concrete rails remove the issue of special foundation and the section 7(4) veto, 20% agreed and 80% disagreed.

Question 30 asked whether the increased thickness of the concrete directly below the vertical "wall" (Diagram No 6, 8, & 16) was to ensure safe distribution of the imposed loads by acting as a foundation upon which the wall rested, 100% agreed.

Question 31 asked generally whether they agreed that the wall could be both a foundation and wall, 80% agreed and 20% disagreed.

Question 32 asked if they agreed that (Diagram Nos 4, 6, 8, & 11) fell within the special foundation definitions, 100% agreed.

Question 33 sought to identify if a wall was only vertical and not horizontal, 100% agreed.

Question 34 asked, if having agreed with Question 32 above, would (Diagram Nos 4, 6, 8, & 11) trigger the section 7(4) veto, 60% agreed and 20% disagreed, 20% did not know.

Question 35 asked if they agreed that the right to raise a party wall upwards (Diagram No 10), under section 2(2)(a), applied equally to raising the wall downwards, 100% agreed.

Question 36 asked if having agreed with Question 35 above, they agreed that the downward raising of a wall terminates where it meets and therefore rests on the concrete tongue, 80% agreed and 20% disagreed.

Question 37 asked whether they agreed that a basement box was multifunctional (see Diagram No 8) and is:

- (iv) an extension of the wall; 00% agreed;
- (v) a retaining wall; 100% agreed; and
- (vi) a foundation to the wall; 100% agreed.

Question 38 invited stakeholders to consider the construction sequence of a basement (see Diagram Nos 12–16), and the function of each element, 100% agreed.

Question 39 asked if they agreed that the stages of construction were an accurate reflection of the construction process, 100% agreed.

Question 40 asked with reference to Question 36, if they agreed that before the party wall could be raised downwards that a base (foundation) for the proposed extended wall must be formed in the first instance, 100% agreed.

Question 41 asked if having agreed with Question 40 above, stakeholders agreed that if the “green” concrete was not reinforced (Diagram No 14) it would fall within the section 20 definition of “foundation”, 80% agreed and 20% disagreed.

Question 42 asked with reference to Question 41, if they agreed that if the “green” concrete contained reinforcement (Diagram No 14) it would satisfy the section 20 definition of the special foundation 100% agreed.

Question 43 asked if having agreed with Question 42 above, stakeholders accepted irrespective of the materials used for the construction of the wall, that the adjoining owner could therefore invoke the section 7(4) veto on the basis that the “green” reinforced concrete was a special foundation, 100% agreed.

Question 44 invited stakeholders to reflect on their earlier decision and invited them to reconsider the structural function of the retaining wall, and whether they now agreed that a basement box design was multifunctional, acting as a retaining wall, a foundation, a perimeter wall, a party wall, and a floor, while systematically falling within the Act’s definition of a special foundation, 80% agreed and 20% disagreed.

Question 45 asked if having agreed with question 44, did stakeholders on reflection now agree that the basement box construction triggered the section 7(4) veto, 60% agreed and 20% disagreed, 20% did not know.

Question 46 invited stakeholders to suggest whether any of the following points would assist in clarifying the special foundations debate:

- a) This removes the definition altogether; 20% agreed and 80% disagreed;
- b) Replace the word “special” with an alternative word; 60% agreed and 40% disagreed;
- c) Replace the whole definition of “special foundations”; 20% agreed and 80% disagreed; and
- d) Remove the section 7(4) veto; 20% agreed and 60% disagreed, 20% could not answer the question.

Appendix V NVivo® coding nodes

[-] A1 Function		0	0	0
[-] A1.2 A floor is only a floor		0	0	0
A1.2.1 Yes		13	17	0
A1.2.2 No		0	0	0
[-] A1.3 A wall is only ever a wall		0	0	0
A1.3.2 No		16	27	0
A1.3.1 Yes		7	9	0
[-] A1.4 Can a wall be horizontal		1	1	0
A1.4.1 Yes		5	5	0
A1.4.2 No		16	26	0
[-] A1.1 Can a wall be a floor		0	0	0
A1.1.1 Yes		9	10	0
A1.1.2 No		21	39	0
[-] A1.5 Is the function of a foundation to distribute loads safely		0	0	0
A1.5.1 Yes		21	40	0
A1.5.2 No		3	3	0
[-] A1.6 Can elements of a structure be multi-functional		0	0	0
A1.6.1 Yes		23	66	0
A1.6.2 No		3	4	0

[-] A2 Chaturachinda		0	0	0
[-] A2.1 Do you Accept Chaturachinda		0	0	0
A2.1.1 Yes		9	15	0
A2.1.2 No		22	93	0
[-] A2.3 Are the strips rails the foundation		0	0	0
A2.3.1 Yes		7	11	0
A2.3.2 No		22	106	0
[-] A2.4 Do you accept Redler's analysis of a Basement		0	0	0
A2.4.1 Yes		7	15	0
A2.4.2 No		20	93	0
[-] A2.2 Do you consider it is appropriate to challenge Chaturachinda		0	0	0
A2.2.2 No		23	121	0
A2.2.1 Yes		7	8	0

<input type="checkbox"/> A3	Mass concrete strips rails			0	0	04
<input type="checkbox"/> A3.1	What is their function			1	1	04
<input type="checkbox"/> A3.1.1	None			18	40	04
<input type="checkbox"/> A3.1.2	same as A2.3.1			3	4	04
<input type="checkbox"/> A3.2	Do you dispute strips rails are the foundation			0	0	04
<input type="checkbox"/> A3.2.1	Yes			17	31	04
<input type="checkbox"/> A3.2.2	No			4	5	04
<input type="checkbox"/> A3.3	If the strips are removed will the basement box structurally fail			0	0	04
<input type="checkbox"/> A3.3.1	Yes			1	1	04
<input type="checkbox"/> A3.3.2	No			14	26	04
<input type="checkbox"/> A4	What is the purpose of underpinning			0	0	06/05
<input type="checkbox"/> A4.1	Is Underpinning a foundation			0	0	06/05
<input type="checkbox"/> A4.1.1	Yes			6	7	04/05
<input type="checkbox"/> A4.1.2	No			0	0	04/05
<input type="checkbox"/> A4.2	Can Underpinning be built from brickwork			0	0	06/05
<input type="checkbox"/> A4.2.1	Yes			6	6	06/05
<input type="checkbox"/> A4.2.2	No			0	0	06/05
<input type="checkbox"/> A4.3	Does the basement box underpin the structure			0	0	06/05
<input type="checkbox"/> A4.3.2	No			1	1	06/05
<input type="checkbox"/> A4.3.1	Yes			19	25	06/05
<input type="checkbox"/> A5	What is the function of a reinforced concrete Basement Box BB			0	0	
<input type="checkbox"/> A5.1	Is the Basement Box dependent on the reinforcing			0	0	
<input type="checkbox"/> A5.1.1	Yes			22	27	
<input type="checkbox"/> A5.1.2	No			2	2	
<input type="checkbox"/> A5.2	Can an extended walls function be the same as a foundation			0	0	
<input type="checkbox"/> A5.2.1	Yes			22	23	
<input type="checkbox"/> A5.2.2	No			2	2	
<input type="checkbox"/> A5.3	Is the basement vertical (wall) element multi-functional			0	0	
<input type="checkbox"/> A5.3.1	Yes			21	22	
<input type="checkbox"/> A5.3.2	No			2	2	
<input type="checkbox"/> A5.4	Is the Basement Box a special foundation (SF)			0	0	
<input type="checkbox"/> A5.4.1	Yes			23	61	
<input type="checkbox"/> A5.4.2	No			3	4	
<input type="checkbox"/> A5.5	Is the basement wall sitting on the floor slab			0	0	
<input type="checkbox"/> A5.5.1	Yes			23	131	
<input type="checkbox"/> A5.5.2	No			8	10	
<input type="checkbox"/> A5.6	If Yes to A5.5.1 then is the slab a foundation agree in diagram 14			0	0	
<input type="checkbox"/> A5.6.1	Yes			23	63	
<input type="checkbox"/> A5.6.2	No			6	6	

<input type="checkbox"/>	<input type="radio"/>	A5.7 Is the basement box function dependent upon the strip rails		0	0	0
	<input type="radio"/>	A5.7.1 Yes		4	6	0
	<input type="radio"/>	A5.7.2 No		18	32	0
<input type="checkbox"/>	<input type="radio"/>	A5.8 Do the mass concrete strips rails replace the Basement Box function		0	0	0
	<input type="radio"/>	A5.8.1 Yes		4	4	0
	<input type="radio"/>	A5.8.2 No		19	26	0
<input type="checkbox"/>	<input type="radio"/>	A5.9 Do diagrams 12-16 accurately represent the construction process of a basement box.		0	0	0
	<input type="radio"/>	A5.9.2 No		0	0	0
	<input type="radio"/>	A5.9.1 Yes		23	30	0
<input type="checkbox"/>	<input type="radio"/>	A5.10. Is a basement box multi-functional		0	0	0
	<input type="radio"/>	A5.10.1 Yes		23	136	0
	<input type="radio"/>	A5.10.2 No		6	9	0
<input type="checkbox"/>	<input type="radio"/>	A6 Reinforced concrete (RC) Retaining walls		0	0	0
	<input type="checkbox"/>	A6.1 Is a retaining wall a foundation		0	0	0
	<input type="radio"/>	A6.1.2 No		3	3	0
	<input type="radio"/>	A6.1.1 Yes		23	57	0
<input type="checkbox"/>	<input type="radio"/>	A6.2 Does a retaining wall require a toe		0	0	0
	<input type="radio"/>	A6.2.1 Yes		21	28	0
	<input type="radio"/>	A6.2.2 No		2	2	0
<input type="checkbox"/>	<input type="radio"/>	A6.3 Is a retaining wall a Special foundation		0	0	0
	<input type="radio"/>	A6.3.2 No		1	1	0
	<input type="radio"/>	A6.3.1 Yes		21	32	0
<input type="checkbox"/>	<input type="radio"/>	A6.4 Does a retaining wall require reinforcement diagram No 3 and 4		0	0	0
	<input type="radio"/>	A6.4.1 Yes		23	121	0
	<input type="radio"/>	A6.4.2 No		4	5	0
<input type="checkbox"/>	<input type="radio"/>	A6.5 Will removing the reinforcing link affect the retaining walls structural function		0	0	0
	<input type="radio"/>	A6.5.1 Yes		23	107	0
	<input type="radio"/>	A6.5.2 No		5	8	0
<input type="checkbox"/>	<input type="radio"/>	A6.6 Is the toe a foundation to the vertical retaining wall		0	0	0
	<input type="radio"/>	A6.6.1 Yes		23	92	0
	<input type="radio"/>	A6.6.2 No		7	12	0
<input type="checkbox"/>	<input type="radio"/>	A6.7 Is a retaining walls function to resist lateral loads		1	1	0
	<input type="radio"/>	A6.7.1 Yes		23	111	0
	<input type="radio"/>	A6.7.2 No		4	4	0

<input checked="" type="checkbox"/>	A7 The Party Wall etc Act 1996		0	0	02
<input checked="" type="checkbox"/>	A7.1 Does diagram 1 represent the two foundation definitions		0	0	0
<input checked="" type="checkbox"/>	A7.1.1 Yes		22	32	0
<input checked="" type="checkbox"/>	A7.1.2 No		2	2	0
<input checked="" type="checkbox"/>	A7.2 Is the Act ambiguous		1	1	0
<input checked="" type="checkbox"/>	A7.2.1 Yes		21	25	0
<input checked="" type="checkbox"/>	A7.2.2 No		3	3	0
<input checked="" type="checkbox"/>	A7.3 Section 7 (4) veto and Special Foundations (SF)		0	0	0
<input checked="" type="checkbox"/>	A7.3.4 Retain section 7 (4) veto YES		14	16	0
<input checked="" type="checkbox"/>	A7.3.3 Replace the whole definiton of SF YES		11	12	0
<input checked="" type="checkbox"/>	A7.3.2 Replace the SF definition altogether YES		10	12	0
<input checked="" type="checkbox"/>	A7.3.1 Remove section 7 (4) veto YES		11	11	0
<input checked="" type="checkbox"/>	A7.3.5 I dont know		2	3	0
<input checked="" type="checkbox"/>	A7.4 Does the Act specify foundations by material content		0	0	0
<input checked="" type="checkbox"/>	A7.4.1 Yes		22	26	0
<input checked="" type="checkbox"/>	A7.4.2 No		3	3	0
<input checked="" type="checkbox"/>	A7.5 Is a Basement Box a Special foundation SF		0	0	0
<input checked="" type="checkbox"/>	A7.5.1 Yes		23	103	0
<input checked="" type="checkbox"/>	A7.5.2 No		7	7	0
<input checked="" type="checkbox"/>	A7.6 Does a Basement Box trigger the Section 7 (4) veto		0	0	0
<input checked="" type="checkbox"/>	A7.6.1 Yes		23	100	0
<input checked="" type="checkbox"/>	A7.6.2 No		8	10	0
<input checked="" type="checkbox"/>	A7.7 Can a wall be rasied downwards		0	0	0
<input checked="" type="checkbox"/>	A7.7.1 Yes		23	71	0
<input checked="" type="checkbox"/>	A7.7.2 No		5	6	0

<input checked="" type="checkbox"/>	A8 The Building Regulations (BR)		0	0	11
<input checked="" type="checkbox"/>	A8.1 do the BR define a foundation by function		0	0	11/
<input checked="" type="checkbox"/>	A8.1.1 Yes		19	21	11/
<input checked="" type="checkbox"/>	A8.1.2 No		3	3	11/
<input checked="" type="checkbox"/>	A8.3 Do the BR preclude materials in the function		0	0	11/
<input checked="" type="checkbox"/>	A8.3.1 Yes		21	24	11/
<input checked="" type="checkbox"/>	A8.3.2 No		2	2	11/
<input checked="" type="checkbox"/>	A8.2 Does diagram 1 satisfy the BR		0	0	11/
<input checked="" type="checkbox"/>	A8.2.1 Yes		20	31	11/
<input checked="" type="checkbox"/>	A8.2.2 No		2	2	11/

Appendix VI Ethics approval



Date 8th August 2017

Dear Philip

Principal Investigator: Philip Antino

Project Title: Professional Surveyors and the Party Wall etc. Act 1996

I am pleased to inform you that your ethics application has been approved by the Departmental Research Ethics Panel (DREP) under the terms of Anglia Ruskin University's Research Ethics Policy (Dated 8 September 2016, Version 1.7). Approval by DREP is subject to ratification by the FREP.

Ethical approval is given for a period of 3 years for research students, from 4th August 2017. If your research will extend beyond this period, it is your responsibility to apply for an extension before your approval expires.

It is your responsibility to ensure that you comply with Anglia Ruskin University's Research Ethics Policy and the Code of Practice for Applying for Ethical Approval at Anglia Ruskin University available at www.anglia.ac.uk/researchethics including the following.

- The procedure for submitting substantial amendments to the committee, should there be any changes to your research. You cannot implement these amendments until you have received approval from DREP for them.
- The procedure for reporting accidents, adverse events and incidents.
- The Data Protection Act (1998) and any other legislation relevant to your research. You must also ensure that you are aware of any emerging legislation relating to your research and make any changes to your study (which you will need to obtain ethical approval for) to comply with this.
- Obtaining any further ethical approval required from the organisation or country (if not carrying out research in the UK) where you will be carrying the research out. This includes other Higher Education Institutions if you intend to carry out any research involving their students, staff or premises. Please ensure that you send the DREP copies of this documentation if required, prior to starting your research.
- Any laws of the country where you are carrying the research and obtaining any other approvals or permissions that are required.
- Any professional codes of conduct relating to research or requirements from your funding body (please note that for externally funded research, where the funding has been obtained via Anglia Ruskin University, a Project Risk Assessment must have been carried out prior to starting the research).
- Completing a Risk Assessment (Health and Safety) if required and updating this annually or if any aspects of your study change which affect this.
- Notifying the DREP Secretary when your study has ended.

Please also note that your research may be subject to monitoring.

Should you have any queries, please do not hesitate to contact me. May I wish you the best of luck with your research.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Laurie Gill".

Laurie Gill
Departmental Administrator
Email: laurie.gill@anglia.ac.uk

Appendix VII The Chelsea property collapse

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Thursday, Nov 19th 2020 3PM 8°C  6PM 5°C  5-Day Forecast

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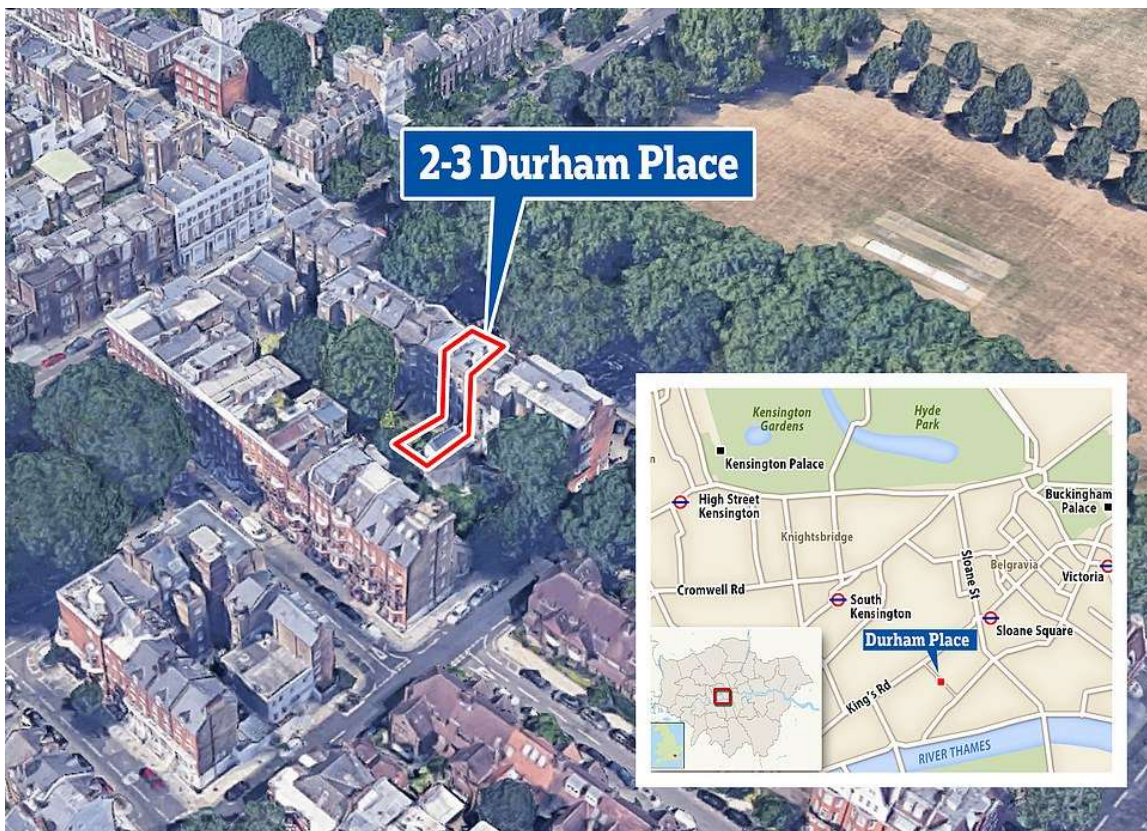
By your side



LLOYDS BANK

Revealed: Plans for mega-basement extension being built beneath £8.5million Chelsea mansion before it suddenly **COLLAPSED** 'in thunderous crash'

- Neighbours reported hearing 'huge thud' in the early hours of the morning by what they thought was thunder
- Dozens of people have been evacuated from the surrounding properties while crews make the site secure
- Pictures from scene show two mid-terraced town houses have been completely destroyed during collapse





Appendix VIII Distribution of χ^2

Table B Distribution of χ^2

df	Probability					
	0.5	0.1	0.05	0.02	0.01	0.001
1	0.455	2.706	3.841	5.412	6.635	10.827
2	1.386	4.605	5.991	7.824	9.210	13.815
3	2.366	6.251	7.815	9.837	11.345	16.268
4	3.357	7.779	9.488	11.668	13.277	18.465
5	4.351	9.236	11.070	13.388	15.086	20.517
6	5.348	10.645	12.592	15.033	16.812	22.457
7	6.346	12.017	14.067	16.622	18.475	24.322
8	7.344	13.362	15.507	18.168	20.090	26.125
9	8.343	14.684	16.919	19.679	21.666	28.877
10	9.342	15.987	18.307	21.161	23.209	29.588
11	10.341	17.275	19.675	22.618	24.725	31.264
12	11.340	18.549	21.026	24.054	26.217	32.909
13	12.340	19.812	22.362	25.472	27.688	34.528
14	13.339	21.064	23.685	26.873	29.141	36.123
15	14.339	22.307	24.996	28.259	30.578	37.697
16	15.338	23.542	26.296	29.633	32.000	39.252
17	16.338	24.769	27.587	30.995	33.409	40.790
18	17.338	25.989	28.869	32.346	34.805	42.321
19	18.338	27.204	30.144	33.867	36.191	43.820
20	19.337	28.412	31.410	35.020	37.566	45.315
21	20.337	29.615	32.671	36.343	38.932	46.797
22	21.337	30.813	33.924	37.659	40.289	48.268
23	22.337	32.007	35.172	38.968	41.638	49.728
24	23.337	33.196	36.415	40.270	42.980	51.179
25	24.337	34.382	37.652	41.566	44.314	52.620
26	25.336	35.563	38.885	42.856	45.642	54.052
27	26.336	36.741	40.113	44.140	46.963	55.476
28	27.336	37.916	41.337	45.419	48.278	56.893
29	28.336	39.087	42.557	46.693	49.588	58.302
30	29.336	40.256	43.773	47.962	50.892	59.703

Table B taken from Dr S.G. Naoum Appendix 3, Page 200