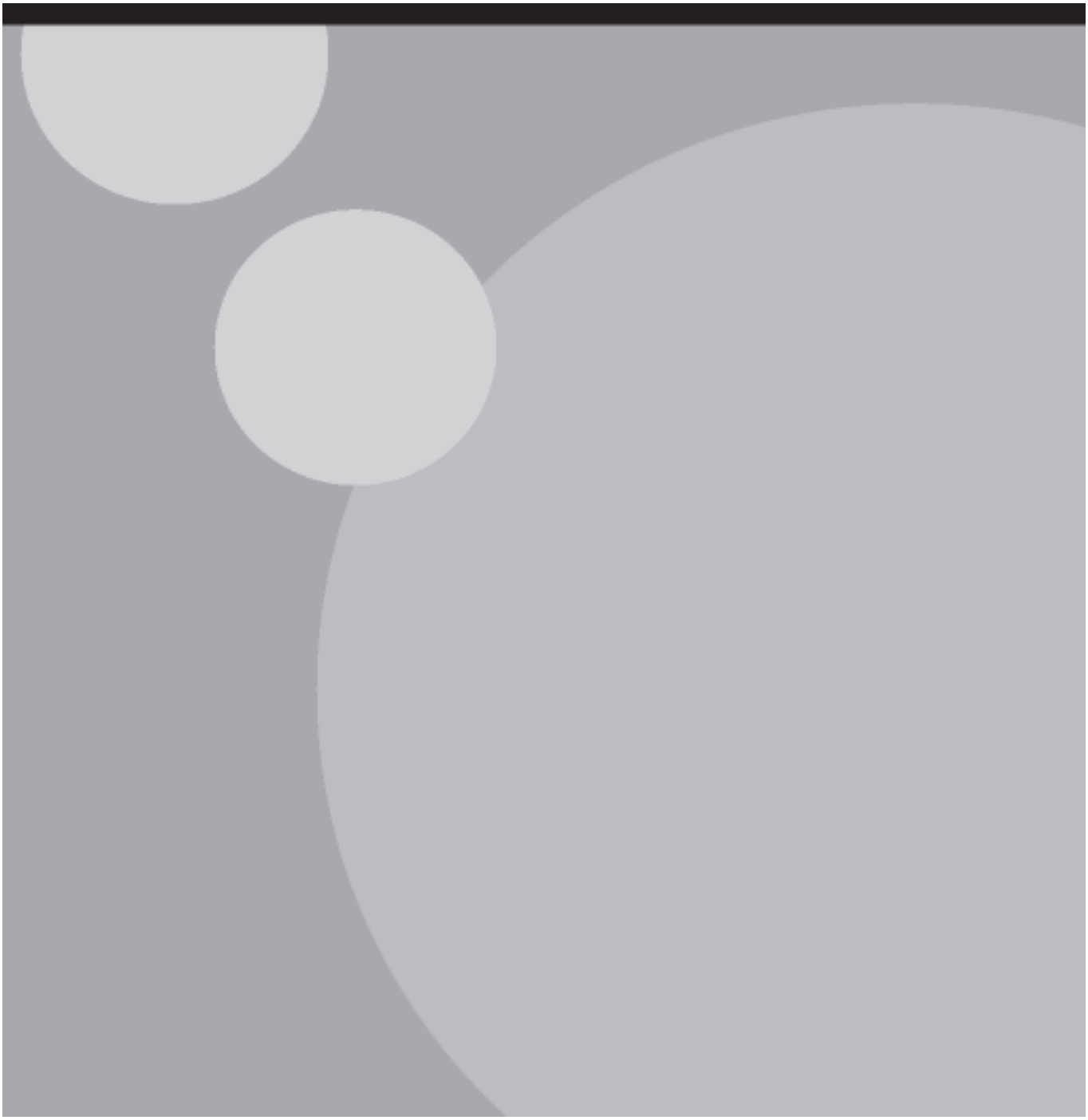
Communities and Local Government

Economic and analytical support for impact assessment of proposals to amend the Building Regulations in 2013



Economic and analytical support for impact assessment of proposals to amend the Building Regulations in 2013

EC Harris

January 2012
Department for Communities and Local Government

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Any enquiries regarding this document/publication should be sent to us at:

Department for Communities and Local Government
Eland House
Bressenden Place
London
SW1E 5DU
Telephone: 030 3444 0000

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Building regulations review

1. The brief

1.1 EC Harris was appointed by the Department for Communities and Local Government (DCLG) to provide support in relation to proposals to amend the Building Regulations in 2013. The appointment was made under the Homes & Communities Agency Multidisciplinary Panel and as such provided for appropriate specialist input from EC Harris' partners, PRP Architects, Hyder Consulting and CBRE.

1.2 The key requirement of the appointment was to provide specialist analytical input to support evaluation work being carried out by DCLG to identify possible changes to the Building Regulations that could come into force in 2013. DCLG's review sought to:

- Look for deregulation and streamlining opportunities and other essential changes.
- Collect /identify suggestions for change from key external partners, including other government departments and the public.
- Assess opportunities for change.
- Inform a ministerial statement on further work to introduce changes in 2013.

1.3 EC Harris' work was required to support the above review by:

- Assessing and quantifying the impact of suggested changes using evidence submitted by others or from existing sources.
- Identify requirements for additional evidence/data needed to carry out more detailed assessment.
- Carrying out economic analysis of the costs and benefits of suggested changes, in the form of identifying winners and losers, including equality issues, and generating broad ranges of values sufficient to inform further development of options.
- Preparing draft and final reports summarising the above.

1.4 It is important to note that the work represents an initial review to inform development of options and the need for further work. The analysis and investigation undertaken is proportional to this requirement and does not seek to arrive at conclusions as to which changes should be made.

2. Issues investigated

2.1 DCLG identified a number of areas of the Building Regulations and other regulations with potential opportunities for change.

2.2 The appendices to this document include the final outputs in relation to each opportunity reviewed as follows:

Appendix 1	**Part P** – The costs and benefits of the relatively recently introduced Part P of the Building Regulations relating to electrical installations in dwellings.
Appendix 2	**Access statements** – Potential overlap between access statements required under the planning and building regulations processes.
Appendix 3	**Changing Places** – The likely impacts of a new requirement to include Changing Places facilities in public buildings.
Appendix 4	**Part D** – The potential removal of regulation in relation to a little used insulation type.
Appendix 5	**Part A, 2E4 –** The potential removal of redundant regulation in relation to foundations in shrinkable clays.
Appendix 6	**Part H6** – Regulation in relation to solid waste which overlaps / conflicts with local standards.
Appendix 7	**BS5395-1:2010** – Comparison of standards and costs for stairs under two areas of regulation.
Appendix 8	**Part N** – Duplication of glazing safety standards between Parts N, M and K of the Building Regulations.
Appendix 9	**Parts K, M and N** – Conflict of glazing standards between Parts N, M and K of the Building Regulations and options to address this.
Appendix 10	**Eurocodes** – The impacts of changes to the Building Regulations to include reference to Eurocodes in lieu of British Standards.
Appendix 11	**Part E4** – The potential removal of guidance on acoustic standards for schools which is generally superseded by the requirements of the Department for Education.
Appendix 12	**Part L** – Options to change the requirements for consequential improvement works when extending existing buildings.
Appendix 13	**Radon protection** – Costs of radon protection works which will apply to greater numbers of buildings due to updated radon maps.
Appendix 14	**Security standards** – Costs of alternative security standards and combinations of standards.

3. Notes

3.1 As stated under section 1 the reports appended to this document have been prepared to inform initial thinking in relation to options for change. Further work culminating in full impact assessments will be required before any decisions are made.

3.2 The study is provided for use by the Department for Communities and Local Government. No third party shall have the right to rely on the report and EC Harris LLP accept no liability to any third party.

Appendix 1 – Part P

1. Executive summary

1.1 Respondents to the recent Building Regulations consultation exercise indicated a desire for change to Part P. Given this feedback an initial review of the costs and benefits of the regulations and options for change has been commissioned.

1.2 Options for change have been identified ranging from removal of the regulations entirely to a number of intermediate changes to retention of Part P in its current form (i.e. no change).

1.3 The approach to this initial review has been to revisit the Impact Assessment carried out prior to the introduction of Part P. Each forecast cost and benefit has then been considered and a potential update produced.

1.4 The key findings of the review are:

- Building control costs appear to have been substantially underestimated. This is due to the complexity of electrical testing and the fact that many building control departments have sub-contracted this work to specialists.
- The number of installations subject to review by building control (i.e. those not carried out by installers within a competent persons scheme) appears to have been substantially over-estimated. The over-estimate on quantities off-sets the under-estimate on costs described above.
- The cost to contractors of participation in a competent persons scheme appears to have been overestimated. This seems to be due to competition between the various schemes (NICEIC, NAPIT etc).
- There is no firm data on realisation of benefits (i.e. reduced property damage and injuries as a result of Part P). However, there is an overwhelming view that standards of electrical installations have improved.

1.5 A review of the cost / benefit position of Part P has been undertaken incorporating the above findings. The review found that:

- Retention of Part P is likely to indicate a positive NPV (i.e. benefits exceed costs). This remains the case under a number of scenarios of reduced benefit / increased cost. Of the two extreme positions, retention of Part P is therefore favoured over removal; and
- Though the NPV is positive there remains a substantial cost associated with Part P. It appears that several of the intermediate options have the potential to retain much or all of the benefits but reduce costs.

1.6 It is noted that a more detailed review, including a full impact assessment, will need to be carried out to confirm the findings and to identify the optimum intermediate option (e.g. reduced scope, simplified inspection and testing regime etc).

2. The issue

2.1 Recent consultation on the Building Regulations indicated a strong theme amongst respondents in relation to the need to make changes to Part P. After initial consideration the following broad options for change have been identified:

- Do nothing;
- Remove Part P completely;
- Reduce the scope of application (for example amend the definition of "notifiable" works so that some jobs that are considered to have less risk associated with them no longer fall under this category);
- Use BS 7671 and its authors BSI & IET differently (for example make compliance with the inspection and testing procedures within BS7671 an accepted way of showing compliance with Part P);
- Simplify the inspection / testing regime for installations outside of competent persons schemes, for example:
  - Require DIY installers to obtain a Periodic Inspection Report and submit this to building control who would then merely undertake a visual inspection of the works
  - Require professional but unregistered installers to prepare an Electrical Installation Certificate which again would be accompanied by a visual inspection by building control;
- Allow trade body self-regulation (similar to the situation that existed prior to the introduction of Part P); and
- Make the trade a regulated one (in a similar way to the Gas Safe Register all notifiable works could only be carried out by registered electrical installers)

2.2 We were asked to provide the following:

- An update of the previous allowance for saving in reduced damage by fires / reduced fire call-outs (adjustment for inflation only);
- Check actual current costs of training / registration / annual memberships / certificates etc for electricians;
- Check the actual number of inspections that have been required by building control and provide an update of the cost per inspection;

- Consult Building Control bodies on actual additional staff time etc and update quantities and costs;
- Approach key consultees to discuss views on Part P, in particular any rationale / evidence base for calls for changes to Part P; and
- Identify the changes to the current impact assessment (the extremes of no Part P or the current Part P) that would occur if any intermediate options were adopted.

2.3 A full update of the previous Impact Assessment (prepared in relation to the original introduction of Part P) was not part of this study. Having reviewed the individual items listed above we have, however, sought to make a reasonable assessment as to what conclusions an updated IA would arrive at.

3. Our response

Costs from the original impact assessment

3.1 Part P was introduced relatively recently. The impact assessment signed on the 13th July 2004 should therefore form a useful basis for assessment of the options to retain Part P in its current form or remove it entirely.

3.2 We have sought to update certain assumptions within the original impact assessment (for example, where cost estimations were made but actual data is now available) and consult relevant bodies for views where data is not available.

3.3 We have not sought to review the methodology of the original assessment or its fitness for purpose, given any changes to the impact assessment regime. We understand DCLG will review these points. Similarly, we do not have access to the original cost / benefit cashflows so, whilst we have commented on rates (e.g. actual cost of certification vs forecast), we are not able to create an accurate new NPV position.

3.4 The original impact assessment identified the following key costs associated with introduction of Part P:

- Costs to the electrical contracting industry:
  - Annual certification
  - Certificates / information for householders and building control
  - Building control fees
- Costs to building control bodies
  - Receiving and archiving certificates etc

- **Training and recruitment

- Costs to government

  - **Promotion of proposed changes

3.5 Items marked ** above relate to initial implementation only. These costs have presumably been incurred and would not be reversed if Part P were removed. No further review of these costs has therefore been undertaken, though we would note that some separate ongoing training costs have been identified. The remainder of the items are commented on as below:

Costs to the electrical contracting industry - annual certification

3.6 The original impact assessment indicated a cost of £500-1,000 per firm to become a member of a scheme to enable certification of their work (e.g. ECA or NICEIC). This was based on a time allowance ranging from 0.5 to 2 days. We would estimate a current hourly rate for an electrician of £21/hr, which would equate to lost revenue of £84-336 per firm.

3.7 We have consulted the certification bodies listed below to understand the actual cost of registration / annual memberships and the like for electricians:

- The National Association of Professional Inspectors and Testers (NAPIT)
- Electrical Contractors' Association (ECA)
- National Inspection Council for Electrical Installation Contracting (NICEIC, now also known as Ascertiva group)

Feedback is summarised in the following table1 below.

Table 1 – Competent Persons Schemes

Question	NICEIC	ECA	NAPIT
Number of members (total)	25,000+	3,000+	6,900+
Number of members registering since the introduction of Part P	16,317	Not available	Circa 6,500
Initial cost of application / membership***	£0	£0*	£216**
Annual cost of membership****	£370	£410	£408

*ECA make a charge of £530 for initial assessment, however this is refunded to the applicant on joining

**The cost of initial assessment is £216, a first year membership fee of £360 is then payable

***Most organisations also charge a nominal sum for provision of the individual electrician's assessment certificate, this amounts to only a few pounds and is a one-off cost so has been considered to be immaterial

****Increased charges apply for larger firms, however most firms fall within the smaller band.

3.8 The listed bodies do not provide prescriptive guidance as to the amount of training / professional development that must be undertaken. However, various courses are offered, particularly when regulations change. There is also a requirement for continued competence levels and for assessment of new operatives joining the firm.

3.9 It appears that a typical 1 day courses costs around £175 and 1 may be undertaken per year. However, the majority of this training is likely to be related to general skills development and updates to BS7671, rather than being directly required by Part P. Given these points, this cost has not been included in the total updated costs to industry.

3.10 The two key certification costs to electricians as follows:

- Cost of lost time and therefore revenue to initially become certified £84-336 (lost time only, as 2 out of 3 schemes do not make a charge for initial assessment); and
- Annual cost of membership £381 weighted average.

Costs to the electrical contracting industry - certificates / information for householders and building control

3.11 The original impact assessment identified a cost of £1.50 for self-certifying firms to produce a completion certificate and pass this on to householders / building control. We have not consulted any electrical contractors directly. We have informally consulted NICEIC who felt that the time involved is minimal, it therefore appears that the original forecast is not unreasonable.

Costs to the electrical contracting industry - building control fees

3.12 Those projects that are carried out by the DIY sector or contractors not able to self certify will incur a building control fee. The original impact assessment estimated this fee at £50-100 per installation.

3.13 We have discussed the current allowance for the above fee with Local Authority Building Control (LABC) who consulted their members. Appendix 4 contains a summary of the 47 responses received by LABC, key themes are:

- Building control fees for DIY installers or contractors outside of the competent persons schemes are significantly greater than forecast within the original impact assessment. The average of those responding to the survey was £231 for 2009/10 compared to the forecast within the original IA of £50-100;
- The average of £231 for the most recent year represents an increase on previous years. This appears to be a result of the recent changes that allow building control bodies to recover actual costs;
- A small proportion of authorities offer a discounted fee structure for electrical contractors who are felt to be competent (but not part of a competent persons scheme) and therefore require less input than DIY installers; and
- Not all building control bodies have readily available information on notifiable works categorised by work type. Electrical works are also sometimes carried out in conjunction with other works. It is therefore difficult to establish precise quantities of notifiable works and the proportion of these that are carried out under competent persons schemes.

  Notwithstanding the above, some local authorities have been able to provide us with data and from this information it appears that works falling outside of competent persons schemes and being notified to building control bodies are relatively rare. Larger authorities dealing with 10,000+ building control applications per year are likely to see less than 100 relating to electrical works being undertaken outside of a competent persons scheme. Smaller authorities will see less than 10 per year.
- The data supports anecdotal information from building control teams suggesting that the number of installations carried out by DIY installers or contractors outside of competent persons schemes is decreasing. It appears that an increase in the number of registered contractors is contributing to this fact. However, it is unclear how many installers are being put off by rising building control fees and therefore deciding to carry out works without notification.

3.14 The general message appears to be that building control fees for Part P work are significantly greater than the original forecasts. In some cases, due to the previous fixed fee regime, the costs to local authorities were greater than those they recovered from installers. The reason for the higher than forecast fees appears to be that authorities are often not capable of inspecting work themselves and therefore need to employ qualified specialists to do this.

Costs to building control bodies – receiving and archiving certificates etc

3.15 Aside from training and recruitment costs (assessed as implementation items) the key cost from the original impact assessment was for receiving and filing self certification documents. This cost was assessed at £1.50 per installation and, as for the cost to electrical contractors, the industry consensus seems to be that this is a minimal cost item.

3.16 We are unclear as to whether the original impact assessment assumed an ongoing yearly training cost related to Part P. From our consultation 13 of 47 building control bodies undertook training in the last year relating specifically to Part P. The average cost to the authority was £680.

Benefits from the original impact assessment

3.17 The original impact assessment identified key benefits associated with introduction of Part P as follows.

- Reduced fatal and non-fatal injuries from electrical shock / fire;
- Saving in costs of fire damage to properties; and
- Saving in costs of fire brigade attendance;

3.18 We understand that DCLG is reviewing updates to the value associated with reduced fatal / non-fatal injuries. We have commented on the other items below.

Reduced costs of fire damage to properties / fire brigade attendance

3.19 We have adjusted the average saving resulting from reduced damage by fires and fire call-outs for inflation, the updated figures are shown in table 2.

Table 2 – Index adjustments to fire savings

Impact Assessment	Saving Allowance		Index Adjustment
	3Q07	4Q10	
Average saving in reduced damage by fire	£5,300	£4,923	BCIS All-in TPI
Average saving in reduced fire call-outs	£3,400	£4,110	RPI

3.20 We have assumed that the retail price index is the appropriate measure to apply to the cost of fire brigade call-outs. We have not investigated actual costs, which may reveal a different figure. We would note that the saving in fire damage indicates a fall in costs, which is in line with general falls in the construction market due to current workload.

Quantities

3.21 We were not asked to review data on actual reductions in fires / injuries etc since the introduction of Part P. We understand that DCLG will review this topic but data is thought to be very limited. When consulting the Electrical Safety Council some data (prepared 2007, partially updated 2010) was offered and we have attached this for reference at Appendix 5.

3.22 We consulted LABC in relation to the quantities of inspections made / self-certification information received. Unfortunately, as stated under 3.13 above, it is difficult to obtain information specific to Part P. However, what is clear is the vast majority of notifiable works are carried out by those within a competent persons scheme rather than DIY installers or other contractors. It is not known how many jobs are carried out totally outside of the building control system.

General consultation in relation to rationale / data supporting views

3.23 A schedule of the organisations we were asked to consult and confirmation as to whether a response was received is included in appendix 1. Organisations that did not have the opportunity to respond could be approached again as part of further work.

3.24 The following paragraphs provide a summary of the consultation responses. Full details of which are included at appendix 2. Though views and anecdotal evidence were prevalent a common theme is that, given the relatively recent introduction of Part P, firm data on costs and benefits is very limited.

Consultation response summary

3.25 It is widely believed that Part P has had a positive impact on the quality of work being completed. Although actual evidence relating to the safety improvements is difficult to quantify, the respondents felt that through the regulations there had been a greater safety standard achieved. In particular the membership bodies noted:

- The introduction of Part P has increased the level of compliance with BS 7671. Compliance with Part P has improved as more electricians have registered with scheme. Almost all of the electrical installations carried out by members of the schemes are safe; and

- The schemes have made a significant contribution towards improving the level of competence of those undertaking electrical installation works in dwellings.

3.26 Some of the figures quoted in relation to the benefits of Part P in improving standards are:

- NICEIC now has 23,000 members, 75 employees testing members work and have completed 4 million checks and 3 million warranties
- NAPIT now govern 7,000 contractors and receive circa 180 complaints per year on 15,000 projects (just over 1%)

3.27 We contacted a range of industry personnel to gauge reaction to the introduction of Part P. From our discussions with the industry we would summarise the response:

- Building Control was not equipped to deal with electrical installations when Part P was introduced;
- Publicity has been limited and public awareness is felt to be low;
- Policing is inconsistent and this is discouraging installers from registering;
- Part P guidance is confusing and could be simplified; and
- The skills base has improved amongst registered tradesmen.

3.28 The Building Control (BC) departments we spoke to identified that cost had been incurred as a result of the regulations. This related to staff training / time producing new procedures and promotion to local tradesmen and the public.

3.29 Cost has also been incurred where BC departments had to contract external agents to undertake certification on their behalf as they do not have the skills necessary in house.

3.30 Until October 2010 building control could not charge an additional fee for contracting an external agent. Some BC departments reported paying more for the external agent than the building control fee they charged.

3.31 Annual training is undertaken to ensure BC staffs' knowledge is up to date. The cost for a specific Part P course is in the region of £600 - £700.

3.32 Within the market it is difficult to police Part P. Whilst safety is a consideration, the public do try to undertake electrical work themselves. When approached by potential "DIY'ers" most BC departments spend considerable time explaining the complexity and safety issues associated with the DIY approach. Following this discussion most people decide to employ a competent person to complete the works.

3.33 Some BC departments have established a process whereby DIY workers seeking to notify BC of their intention to undertake work themselves are contacted directly and advised of the Part P requirements and the cost associated with BC. It is following these discussions that BC departments report most DIY workers decide to appoint a competent tradesman. BC do report that approximately 10% of DIY workers do continue to undertake work following these discussions.

3.34 Overall consumers are keen to pay a low price and this is often the highest priority. Those tradesmen being part of a competent persons scheme often compete with tradesmen outside of any scheme. Tradesmen believe that they are being undercut by competitors who are failing to register their work with building control.

3.35 Membership bodies report the above as being one of the major challenges facing their members. The majority of bodies contacted suggested that membership be made mandatory, like the gas industry, to ensure that only certified competent tradesmen are able to undertake electrical work.

3.36 Membership bodies also reported inconsistency in the requirement of UKAS Accreditation. Those bodies contacted suggested that, to help ensure a level playing field, all bodies should be required to obtain UKAS accreditation. In particular, it would reduce the need for government regulatory performance audits, and ease those that remain necessary. It would leave the industry room to regulate itself.

4. Options Assessment

4.1 The options identified for change to Part P are:

- Do nothing;
- Remove Part P completely;
- Reduce the scope of application (for example amend the definition of “notifiable” works so that some jobs that are considered to have less risk associated with them no longer fall under this category);
- Use BS 7671 and its authors BSI & IET differently (for example make compliance with the inspection and testing procedures within BS7671 an accepted way of showing compliance with Part P);
- Simplify the inspection / testing regime for installations outside of competent persons schemes, for example:
    - Require DIY installers to obtain a Periodic Inspection Report and submit this to building control who would then merely undertake a visual inspection of the works.

- Require professional but unregistered installers to prepare an Electrical Installation Certificate which again would be accompanied by a visual inspection by building control;

- Allow trade body self-regulation (similar to the situation which existed prior to the introduction of Part P); and

- Make the trade a regulated one (in a similar way to the Gas Safe Register all notifiable works could only be carried out by registered electrical installers).

4.2 The work carried out under section 3 of this report should allow a reasonable update to the original impact assessment by DCLG. This will inform the “Do nothing” and “Remove Part P completely” options. We do not have access to the original IA cashflows but have given a broad comparison of the original assumptions and our current findings.

Table 3 – Original impact assessment costs and benefits

Benefits (As original IA)

	Fatalities		Non-fatal injuries		Fire damaged properties	Fire attendance	Total
	Shock	Fire	Shock	Fire			
Fixed wiring	5.0	3.3	55.9	12.2	19.4	12.5	**108.3**
Fixed appliance	9.3	15.5	31.7	15.4	27.5	17.7	**117.1**
Non-portable	6.4	0.4	31.3	9.0	12.2	7.8	**67.1**
Portable	16.4	29.5	100.9	21.8	8.5	5.5	**182.6**
Total	**37.1**	**48.7**	**219.8**	**58.4**	**67.6**	**43.5**	**475.1**

Costs (As original IA)

	Item	Total
Electrical contracting industry	Costs of annual certification (compliance)	155.0
	Pass on certificates to householders / information to BC bodies	12.0
	Building control fees	202.0
Building control bodies	Receive and archive certificates	12.0
	Training and recruitment	1.5
Government	Promotion of proposed changes	0.1
		382.6

Cost-benefit (As original IA)

	Total
Benefit	475.1
Cost	382.6
Net benefit	**92.5**

Table 4 – Commentary on updated costs compared to the original IA

	Item		
		Original IA assumption	**New figures**
Electrical contracting industry	Costs of annual certification	Annual cost of £500-1,000 for certification and annual enrolment for firms using self certification route (estimated 75% of all jobs within 5yrs)	Initial cost to become certified of £84-336. Ongoing annual cost of £381. Currently 35,000 registered firms compared to 13,000 prior to Part P (57% of the estimated 61,000 firms in the original IA)
	Pass on certificates to householders / information to BC bodies	£1.50 per self-certificate produced to pass onto the householder	No change
	Building control fees	£50-100 per installation for the 25% of jobs not self-certified	£231 per installation. Minimal jobs not falling under a self-certification scheme (<5%)
Building control bodies	Receive and archive certificates	£1.50 per installation	No change
	Training and recruitment	£2,000-3,000 per inspector to recruit 1-2 new officers per BCB	N/A (recruitment has now occurred). However noted that annual training costs are £600-700
Government	Promotion of proposed changes	£100,000 to publish leaflets etc	N/A (publicity has now occurred)

Table 5 – Hypothetical "likely direction of travel" IA update

Benefits (As original IA)

	Fatalities		Non-fatal injuries		Fire damaged properties	Fire attendance	Total
	Shock	Fire	Shock	Fire			
Fixed wiring	5.0	3.3	55.9	12.2	19.4	12.5	**108.3**
Fixed appliance	9.3	15.5	31.7	15.4	27.5	17.7	**117.1**
Non-portable	6.4	0.4	31.3	9.0	12.2	7.8	**67.1**
Portable	16.4	29.5	100.9	21.8	8.5	5.5	**182.6**
Total	**37.1**	**48.7**	**219.8**	**58.4**	**67.6**	**43.5**	**475.1**

Costs

	Item	Total
Electrical contracting industry	Costs of annual certification (compliance)	115.0
	Pass on certificates to householders / information to BC bodies	12.0
	Building control fees	225.0
Building control bodies	Receive and archive certificates	12.0
	Training and recruitment	0.0
Government	Promotion of proposed changes	0.0
		364.0

Cost-benefit

	Total
Benefit	475.1
Cost	364.0
Net benefit	**111.1**

4.3 Table 5 indicates a hypothetical update to the previous impact assessment and includes the following.

- No change to benefit. The general consensus appears to be that these have occurred and, whilst it may take some time, standards would eventually fall back if Part P were withdrawn;
- Costs of annual certification to electrical contractors reduced by around a quarter. This is to reflect the fact that actual costs of registrations / memberships have been less than forecast.
- Costs of building control fees increased by around ten percent. This is to reflect the fact that fees have been approximately double those forecast but the number of works falling outside of competent persons schemes has been much lower than forecast.
- Training, and recruitment and promotion costs removed as these were implementation costs

4.4 As can be seen the changes result in cost / benefit relationship that is slightly more positive than the original impact assessment. A full update of the original impact assessment could be carried out as a further activity and could verify this point. In the interim Table 6 indicates whether a positive NPV is likely to occur in a range of scenarios:

Table 6 – Potential updates to cost / benefit NPV

Scenario	Benefits (£m)	Costs (£m)	NPV (£m)
Baseline IA	475.1	382.6	**+92.5**
Hypothetical update as above	475.1	364.0	**+111.1**
Original benefits and updated costs but assume costs of annual certification 10% greater than forecast	475.1	375.5	**+99.6**
Original benefits and updated costs but assume quantity of building control inspections was above that estimated from survey of LABC	475.1	387.0	**+88.1**
Updated costs but assume original IA over-stated benefits by 20%	380.1	364.0	**+16.1**

Assume original benefits over-stated by 10%, annual costs 10% greater than forecast and quantity of inspections twice that from LABC survey	427.6	398.5	**+29.1**

4.5 We were not asked to examine the costs and benefits of the intermediate options in detail. However we were asked to comment briefly as to how the costs / benefits for these options may compare to those of the two extremes ("Do nothing" and "Remove Part P completely"). The paragraphs below comment on this issue, grouping similar options.

***Note** – All of the following comments can be updated when the original impact assessment is updated*

Reduce scope / simplify the inspection and testing regime for installations outside of competent persons schemes

4.6 Both of these options would intend to maintain the key benefits of Part P by continuing to regulate those issues / elements of the electrical installation with the greatest potential to cause fire / injury / death. However they would attempt to reduce some of the cost burden by reducing the extent of testing / inspection.

4.7 Reviewing the original impact assessment circa 53% (£202m) of the total cost related to building control fees for inspection of non-self certified work. A further 6% (£24m) related to certification (50% preparing the certificates, 50% receiving them) and 41% (£155m) to annual membership / training for self certification. Finally, less than 1% related to initial implementation costs.

4.8 It can been seen that the costs associated with certification / inspection are over half of the total costs. A reduction in the quantity or rate would, therefore, have a material impact on the overall cost position. The lost benefits through reduced inspections (e.g. less fires avoided) are unclear but the developed option would need to balance cost and benefit changes.

4.9 The position of the "Reduce scope / simplify the inspection and testing regime" option is therefore likely to be somewhere between "remove Part P completely" and "do nothing" but would be closer to "do nothing".

Allow trade body self-regulation

4.10 This option would look to revert to a similar position to that existing prior to Part P – a system of self-regulation by industry. The change could however build upon the current situation (a far greater number of firms registered with a trade body than prior to Part P) to attempt to maintain much more coverage of the industry. Public information as to the benefits of competent installers could supplement this approach.

4.11 Whilst no investigation of "self regulation" options has been undertaken it is likely that benefits will be somewhat less than the current situation (a proportion of industry would presumably not take part) and that costs would be reduced.

Use BS7671 differently

4.12 As with the option to simplify testing this would seek to put the onus on the installer to undertake the required testing. Building control could then move to a role of checking compliance (that the testing has been undertaken) rather than commissioning the tests directly.

4.13 This option would appear to have the potential to achieve most or all of the benefits with a reduced cost of building control charges.

Make the trade a regulated one

4.14 This option would appear to be very likely to achieve at least the same benefits as the current Part P. However, unlike the two previous options, it is quite possible that the costs side of the equation would represent an increase on the current position. It is therefore possible that the cost / benefit position would be less preferable than the current position (however this is not certain and cost effective industry regulation may be possible).

5. Future Works

5.1 The assessment undertaken within this report is at a very early stage, it would therefore be of benefit to undertake further work, in order to:

- Gain agreement on the options to be considered in more detail (appears likely that “retain Part P” would be the base case with 2-3 of the intermediate proposals being the option for change);
- Create cashflows of costs and benefits from first principles, therefore allowing an accurate NPV position to be ascertained for each of the above options; and
- Further develop the consultation by contacting those organisations which have not yet responded and meeting a greater number of industry firms.

6. Summary comment on options for change

6.1 The previous impact assessment supported the introduction of Part P. Having reviewed this document some 6 years after signing the findings are as follows.

- There is general consensus that benefits have occurred. However due to the relatively short timescale and range of other factors (for example greater prevalence of electrical appliances) hard data is very limited;
- Building control costs appear to have been substantially underestimated, this is due to the complexity of electrical testing and the fact that many building control departments have sub-contracted this work;

- The number of installations subject to review by building control (i.e. those not carried out by installers within a competent persons scheme) appears to have been substantially over-estimated. This off-sets the underestimation above;
- The cost to contractors of participation in a competent persons scheme appears to have been overestimated. This seems to be due to competition between the various schemes (NICEIC, NAPIT etc);
- Having experienced a period of practical application there are a range of views as to which parts of the regulations work well and where they could be improved; and
- Even with incorporation of the changes it is likely that retention of Part P would show a more positive NPV than removal. This fact remains under a range of cost / benefit scenarios.

6.2 Given the findings it appears that the option to remove Part P entirely (return to the previous situation) would cause a loss of benefits of a significant scale. However, the cost side of the equation does appear to have opportunities for reduction. It therefore appears that change (most likely to an intermediate option) could bring about an improved balance of cost / benefit.

7. Key notes and assumptions

7.1 All costs at UK mean base location, 4th Quarter 2010.

8. References

8.1 References to the previous impact assessment refer to the Regulatory Impact Assessment: Signed 13 July 2004

8.2 Hourly rates for electrician from EC Harris rates database

9. Attachments

- Appendix 1 - Schedule of consultation undertaken
- Appendix 2 - Summary of telephone interviews
- Appendix 3 - Update of Previous IA (reduced fire damage / call outs)
- Appendix 4 – Summary tables from LABC members consultation
- Appendix 5 - Electrical Safety Council core data set

Building Regulations Review

Part P

Part P Consultation Contacts:

Name	Organisation	Consultation Area	Response Received
Geoff Cronshaw	Institution of Engineering & Technology	Views on Part P	×
Ian Drunmmond	DCLG	Views on Part P	×
Alan Wells	NICEIC	Cost of training/membership, etc	✓
Emma McCarthy	NICEIC	Views on Part P	✓
		Cost of training/membership, etc	✓
David Cowburn	NAPIT	Views on Part P	✓
		Cost of training/membership, etc	×
John Andrews	NAPIT	Views on Part P	×
Chris Beedel	ECA	Cost of training/membership, etc	×
David Thomas	ECA	Views on Part P	×
Giuliano Digilio	ECA	Views on Part P	×
Mike Clark	Electrical Safety Council	Views on Part P	✓
Paul Everall	LABC	Views on Part P	×
Barry Turner	LABC	Views on Part P	×
		Staff time/cost	×
Anna Thompson	LABC	Staff time/cost	✓
Steve Blackmore	Swansea Council	Views on Part P	✓
Trevor Jacklin	Cornwall Council	Views on Part P	✓
John Neal	Rushcliffe Council	Views on Part P	✓
		Staff time/cost	×
Kevin Blunden	Association of Building Engineers	Views on Part P	×

Building Regulations Review

Part P (consultation records)

Part P Telephone Consultation

Consultee: Steve Blackmore
Organisation: Swansea Council
Date of Consultation: 22/11/2010

Consultation Area	Response
Views on Part P	Has made small improvement to the consumer but is open to different interpretations between installers and BC or competent person for example. Some people are certifying work without being registered and others are not notifying certifiable work even though they are registered.
Evidence/Qualification Base in relation to costs/benefits	Cost of review DIY £334 / Qualified person £145. Because Council was not qualified to certify work they employed firms (consultants) to do this but were being charged more by the consultants than the Building Control pricing would allow. Where BC was involved it was costly and often in cases where a dispute was evident it took significant time to build a case for non compliance. It is also difficult to prove the severity of the wrong; therefore it often resulted in a warning. Not evident that self-certification improves the quality of the work being completed.
What do you think are the benefits of Part P?	It has made people more aware. People take it seriously when they are looking to have work done and they actively seek certified firms. It also allows people to be called back if work is wrong. Making homes safer and work can be retrospectively certified which means improvements are made at the time.

What do you think is wrong about Part P/ what could be changed?	Open to interpretation. People take advantage of RCD's to offset safety elsewhere / cut corners or to comply with the minimum standard. It is difficult to police and enforcement is costly The code spans too many documents / areas making it difficult to find consensus. EU law adds a further layer of confusion.
Other suggestions	Important to maintain Part P as PV and solar area becoming more common. Many with electric pumps / structural works required as part of installation process which should have relevant Building Regulation certification.

Building Regulations Review

Part P (consultation records)

Part P Telephone Consultation

Consultee: Trevor Jacklin
Organisation: Cornwall Council
Date of Consultation: 22/11/2010

Consultation Area	Response
Views on Part P	It has added significant confusion and the public / contractors don't appreciate what it is trying to achieve. You have a situation where DIY is still being done with no notification yet electricians can't work on their own properties without notifying of work. Limited evidence / ability to police.
Evidence/Qualification Base in relation to costs/benefits	Impact on cost where there is conflict. It is difficult to improve because people notify the BC and they have to approve work which is not the intention. It was intended to improve the quality of work in the first instance, not for BC to check and find fault compared against Part P requirements.
What do you think are the benefits of Part P?	Don't think it is the impact intended. It has raised the question of who is doing the work which is positive and has steered people away from doing work themselves.
What do you think is wrong about Part P/ what could be changed?	Not enforced as well as it could be. If work is said to be not finished nothing can be moved forward. The certification itself is confusing and people are trying to use loop holes.
Other suggestions	Be clear about the certification in the appendix document. Provide examples of the document to be issued. Move towards the gas regulations where it is mandatory to be registered.

Building Regulations Review

Part P (consultation records)

Part P Telephone Consultation

Consultee: Emma McCarthy
Organisation: NECIC
Date of Consultation: 22/11/2010

Consultation Area	Response
Views on Part P	Has brought improvements to the standard of work being completed which is good.
Evidence/Qualification Base in relation to costs/benefits	Previously providing a voluntary accreditation scheme. Now have 23,000 members and employ 75 people to test the work of those members. Also provide training courses. Believe there has been improvement in skill set as a result. Initial cost of setting up but running is self-sufficient. UKAS membership is expensive and whilst is a requirement of Part P not all registered bodies have it.
What do you think are the benefits of Part P?	The benefit is that 4m checks and 3m back warranties have been completed. Whilst no quantified evidence, logically the testing and certification must be driving standard of work improvements and benefits for the consumer.
What do you think is wrong about Part P/ what could be changed?	It is a good principle but very limited policing and promotion. Part P is not being promoted as much as possible and there are still people who are not registered still operating which undermines the principle and confidence of installers signed up.
Other suggestions	Make Part P mandatory. This would ensure people have to be accredited and subject to checks on a regular basis. You could also reward good performance by allowing greater time between inspections. Simplification of documents. Currently there are x14 documents which could be incorporated to one point of reference. Joined up thinking – there are numerous bodies regulating across government e.g.BIZ and DCLG. Combining into a common body that operates across

	all trades for tradesmen. One centralised source of information – make it easy for consumers to find the information they require not as is currently, where different bodies and departments provide different information on the own specific topics. Risk based assessment. Annual inspection for those performing well. This would require consistency but would ensure that the focus is on driving up standards of those deemed underperforming.

Part P Telephone Consultation

Consultee: John Neal
Organisation: Rushcliffe Borough Council
Date of Consultation: 23/11/2010

Consultation Area	Response
Views on Part P	BC did not have competence to deal with electrical installations when Part P was introduced. The competent persons approach caused problems as BC did not have the skills set which mean they had to engage external agents to certify work.
Evidence/Qualification Base in relation to costs/benefits	Training and the use of external agents has had a cost impact.
What do you think are the benefits of Part P?	Been established for a number of years. Difficult to quantify benefit although it is tangible. Part P has had positive impact overall and would be disaster to take it out now.
What do you think is wrong about Part P/ what could be changed?	Most electrical organisations don't wish to subscribe to 3rd party certification. Most firms self certify and are not keen to assist BC. If Part P is overlooked, BC is contacted to issue a completion certificate. Non-competent electrician can not call upon competent electrician to certify work. BC not competent so appoint agent to do work. Before October 2010 BC could not recover all cost. This meant customer had to pay for building control and third party certification. Loop holes – Periodic inspection certificate being used to check new installations and this certificate was then being used to sign off build reg approval.
Other suggestions	Make Part P mandatory the same as gas industry. All competent persons to be able to provide insurance to cover the work. The client automatically is covered

	providing reassurance and ability to call back if work is wrong. Make sure electricians join the scheme. It provides the primary choice and supports within industry. Give assistance to help non competent people become competent / get their work certified.

Part P Telephone Consultation

Consultee: David Cowburn
Organisation: NAPAIT
Date of Consultation: 23/11/2010

Consultation Area	Response
Views on Part P	Part P has had a positive impact since its introduction but there is still scope to improve its operational efficiency.
Evidence/Qualification Base in relation to costs/benefits	Impact on cost where there is conflict. It is difficult to improve because people notify the BC and they have to approve work which is not the intention. It was intended to improve the quality of work in the first instance, not for BC to check and find fault compared against Part P requirements.
What do you think are the benefits of Part P?	Part P has achieved a lot over the last 5 years and there has been significant progress in the standard of work within the industry. To remove it would create a vacuum which could result in the progress being undone. Previously voluntary organisation is now governing 7,000 new contractors. Providing training / free seminars to BC officers. This had led to up skilling and the number of complaints have been reduced. 10/20 complaints a month on 15,000 jobs per year. Those with complaints are focus of assessment, good performance extends inspection period. Because it is a standard it is possible to increase and improve the minimum required, thus continually increasing standards.
What do you think is wrong about Part P/ what could be changed?	BC not seen to enforce electrical standards where non compliant work is undertaken. BC can now charge their own rate. Previously cost of Part P on a scheme was being passed to consumer in addition to BC fee.

	Some contractors don't understand the remit of Part P and the complexity of what is notifiable. A defined scope simplify installation work gets greater take up because its currently woolly. There are some loop holes and confusion on what a local authority can and cannot accept / what should be notifiable would help. Possible to use 'administrative offences' allowing standard fine for standard offences operated by LA who could retain the money.
Other suggestions	Welcomes Part P to become mandatory same as gas. Would encourage publicity to promote the benefit to the consumer. Mandatory insurance carried by competent persons would remove inconsistency across industry. Move to a risk based assessment – identify organisations that need to be assessed based on performance. Consistency of scheme. Should support accreditation. UCAS ensures control and consistency in service delivery. Drive a single brand. Currently a number of organisations which cause confusion. Dual logo's do not help. Possible move towards micro generation model where they have a common logo.

Part P Telephone Consultation

Consultee: Mike Clark
Organisation: Electric Safety Council
Date of Consultation: 24/11/2010

Consultation Area	Response
Views on Part P	Lack of awareness of Part P Lack of enforcement – Part P is an additional burden on BC. Approach is people notify in advance and then have to certify by appointing agent. Sprit is good
Evidence/Qualification Base in relation to costs/benefits	Safety has improved but measures are not robust.
What do you think are the benefits of Part P?	It has made people more aware. People take it seriously when they are looking to have work done and they actively seek certified firms. It also allows people to be called back if work is wrong. Making homes safer and work can be retrospectively certified which means improvements are made at the time.
What do you think is wrong about Part P/ what could be changed?	Many ways round the rules. Make it mandatory to ensure everyone is obliged to sign up.
Other suggestions	Promote to the public. The obligations could improve which drives continuous improvement. Ensure message that cheap doesn't mean safe Make Part P mandatory

Building Regulations Review - Part P

Update Previous IA in Reduced Damage by Fires / Reduced Fire Call-outs

16th November 2010

Source: Regulatory Impact Assessment: Signed 13. July 2004

Fire damage due to electrical fires (updated for build cost inflation)

Base allowance as July 2004		£5,300
BCIS All-in TPI Q3 04	225	
BCIS All-in TPI Q4 10	209	
	92.89%	
Revised allowance		£4,923

Cost of fire attendance

Base allowance as July 2004		£3,400
RPI Q3 04	186.8	
RPI Q4 10	225.8	
	120.88%	
Revised allowance		£4,110

LABC	What is the charge for BC certification for Part P works?	
	Average since the Introduction of Part P	2009/2010
Havant	n/a	£271
Bromley	£180	£195
Bath	£100	£330
Birmingham	n/a	£250
ST Edmundsbury	£100	£150
Corby	£0	£0
East Cambs	£65	£190
South Ox	n/a	n/a
Wyre BC	n/a	£175
Swansea	£334	£284
Stevenage	n/a	£288
Calderdale	£194	£240
Lincs	£500	£500
Stock on Trent	n/a	£529
Forest of Dean	n/a	£100
New Forest	n/a	£220
Woking	n/a	£260
Peterborough	n/a	£200
Pennine Lancashire	£110	£110
Liverpool	n/a	£280
Leeds	£90	£235
Purberck	n/a	£85
Sevenoaks	£118	£220
Suffolk Costal	£150	£195
Cheltenham	n/a	£174
Rushmoor	n/a	£300
Telford	n/a	£300
Mid Suffolk	n/a	£200
Tonbridge and Malling	£103	£140
Brighton and Hove	n/a	£238
Cornwall	n/a	£150
Kirklees	300	£400
Richmond	n/a	£206
Windsor and Maidenhead	£89	£109
Rochdale	n/a	£298
Amber Valley	£120	£180
South Gloucestershire	n/a	£342
Trafford	£135	£186
Great Yarmouth	£167	£205
Teignbridge	£60	£120
Doncaster	n/a	£400
High Pick	£100	£350
Sandwell	£145	£163
Breckland	n/a	£100
Pool	n/a	£136
Ashford	n/a	£150
North Yorkshire BCP	£230	£251
Average Costs	**£161**	**£231**

Revised: 19 August 2010
Due for Revision by: 19 August 2011
Year of mortality and fire statistics: 2007

Electrical Safety Council Core Data Set

Note: this is a working document and subject to review. When more up to date information becomes available, this data set will be updated to reflect this.

1. Low voltage electrocutions and fatal electrical burns in the UK in 2007 from low voltage electricity supplies[i]:
   - Total: 28
   - Work related electrocutions: nine
   - Home or leisure electrocutions: 19

2. Number of fires of electrical origin in the UK in 2007[ii]:

	All accidental domestic fires	Accidental domestic fires of electrical origin			
		Faults	Misuse	Articles too close to heat	Total
Deaths	267	23	12	14	**49**
Injuries	9,066	1,143	1,831	503	**3,477**
Fires	43,351	7,986	10,960	2,478	**21,424**

A DTI report from 1997 estimated that 20% of electrical fires would be prevented by an RCD.

3. Number of homes in UK **without** adequate RCD protection at the consumer unit[iii] by number and percentage of houses.
   - **All types of housing tenure: 12.9 million (49%)**
   - Owner occupied: 9.7 million (52%)
   - Private rented: 1.65 million (52%)
   - Local Authority: 890,000 (38%)
   - Registered social landlord: 660,000 (30%)

4. Number of homes **without** adequate RCD protection at the consumer unit by region[iv]:
   - North East: 550,167 – 48.1%
   - Yorkshire and The Humber: 1,203,835 – 53.8%
   - North West: 1,643,418 – 53.9%
   - East Midlands: 847,549 – 44.6%
   - West Midlands: 980,358 – 42.5%
   - South West: 1,064,733 – 46.1%
   - East of England: 1,105,284 – 45.3%
   - South East: 1,731,569 – 48.6%
   - London: 1,778,609 – 55.3%

5. Number of owner occupied homes **without** adequate RCD protection in the consumer unit by region[v]:
   - North East: 410,952 – 54.36%
   - Yorkshire and The Humber: 877,971 – 56.06%
   - North West: 1,289,277 – 58.52%
   - East Midlands: 687,956 – 48.90%
   - West Midlands: 744,254 – 45.33%
   - South West: 850,835 – 50.08%
   - East of England: 876,265 – 49.09%
   - South East: 1,370,299 – 51.66%
   - London; 1,052,726 – 57.38%

6. Households moving per year by tenure 2007-8[vi]:
   - All tenures: 2.4 million
   - Private renters: 1 million
   - Owner-occupiers: 985,000
   - Social renters: 374,000

7. Housing stock increase, England, 2007-08, Net additions 207,400[vii]
   - New build: 200,300
   - Change of use: 17,600
   - Additional dwellings from conversions: 9,000
   - Demolitions: 20,500

   Note: New builds from private investment totalled 144,740[viii]

8. House sales, England and Wales, 2006-07: 1,807,860[ix]

9. Average length of tenure[x] mean (median) 2007-8:
   - Owner occupiers: 16 years (11.9)
   - Private renters: 4.5 years (1.5)
   - Social renters: 12 years (7.8)

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[i] Number of deaths recorded under W86 and W87 categories as reported to the World Health Organisation, minus those from HSE data, given in confidence, for the year 2007. Note: This excludes deaths from contact with High Voltage electrical currents, as recorded under W85, and therefore excludes some fatalities recorded by the Health and Safety Executive.

[ii] Data supplied by the Department of Communities and Local Government, 11/02/10. On the advice of the Product Safety Division of the ESC, data quoted includes fires from electrical products, but does not include Chip/fat pan fires Playing with fire, Careless handling of fire or other hot substance, Person too close/fell on fire, Other accidental, and Unspecified categories, and are quoted for a single year, rather than multiyear average.

[iii] 'Adequate' refers to 30mA RCD protection to circuits within the consumer unit, excluding protection alongside such as may be found where a TT system is used and fitted with a 100mA RCD to reduce the risk of fire. Taken from BRE data with a 95% confidence, adding together no RCDs, Separate RCDs and Unknown data for England, scaling up by the ratio of number of houses in England (22m) to number in the UK (26m)

[iv] From BRE data using the same methodology as in endnote iii

[v] From BRE data using the same methodology as in endnote iii

[vi] http://www.communities.gov.uk/documents/statistics/pdf/1346249.pdf, pp57, table 2.1 (England data)

[vii] Housing and Planning Key Facts, Page 1, http://www.communities.gov.uk/publications/corporate/statistics/keyfactsmay2010?view=Standard

[viii] Housing and Planning Key Facts, Page 2 http://www.communities.gov.uk/publications/corporate/statistics/keyfactsmay2010?view=Standard

[ix] Communities and Local Government Housing Market Data, table 533, http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/housingmarket/livetables/

[x] http://www.communities.gov.uk/documents/statistics/pdf/1346249.pdf, pp60, table 2.3 (England data)

Appendix 2 – Access Statements

Building Regulations Review

Part M: Access Statements

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1. The issue

1.1 Two current concerns:

- Access statements are often used to justify non-compliant designs and therefore trigger a 10 year exemption.
- Access statements submitted under the building regulations overlap with design and access statements submitted within the planning process

1.2 Given the above an option exists to remove the requirement for access statements from the Building Regulations

1.3 We were asked to prepare the following:

- A reasonable grouping of the 300,000 full plans applications by project size band.
- An estimated cost to prepare an access statement (being clear that this is the additional cost to prepare the statement for the Building Regulations, not the cost of design work or the statement for planning application).
- An estimate of time input to prepare an access statement.

2. Our Response

Project Size Band

2.1 Based on the new construction order data published by Office for National Statistics in 2008, the following project size banding has been developed:

Project Size Band	Residential	Mixed Use	Total
Less than £25,000	201,018	50,255	251,273
£25,000 - £500,000	5,834	32,929	38,763
£500,000 - £2,000,000	3,332	4,125	7,457
£2,000,000 - £10,000,000	452	1,594	2,046
£10,000,000 - £20,000,000	45	215	260
£20,000,000 and over	20	181	201
Total	**210,701**	**89,299**	**300,000**

2.2 Residential projects are separated from mixed use projects as the time taken for access statements differs between these project types. Similarly the complexity of an access statement generally increases with project size (though there will of course be some complex small projects and simple large projects).

Time Input Assessment

2.3 An assessment of the time input required in creating Access Statements for different types and sizes of projects has been prepared by PRP:

Project Size Band	Time Input (Days)	
	Residential	Mixed Use
Less than £25,000	0	0.15
£25,000 - £500,000	0.5	1.5
£500,000 - £2,000,000	2	3
£2,000,000 - £10,000,000	3	4
£10,000,000 - £20,000,000	4	6
£20,000,000 and over	4	6

2.4 It is noted that the time taken to complete an access statement also depends on the number of different types of buildings or dwellings within an application, or the complexity of the project. The above figures for time input are therefore a best estimate only.

2.5 No time is allowed to prepare an access statement for very small residential projects, this is due to the fact that the requirements would generally be dealt with via a simple note on a drawing which does not have a material time impact.

Cost Assessment for Preparation of Access Statements

2.6 Some smaller and more straightforward projects may not require any material time to prepare an access statement. An estimate has been prepared of the proportion of projects in each size band to which a material time would apply:

Project Size Band	% of Projects Applicable	
	Residential	Mixed Use
Less than £25,000	0%	25%
£25,000 - £500,000	50%	50%
£500,000 - £2,000,000	100%	100%
£2,000,000 - £10,000,000	100%	100%
£10,000,000 - £20,000,000	100%	100%
£20,000,000 and over	100%	100%

2.7 An average charge-out day rate of Architect is **£584** based on EC Harris' fees database.

2.8 Based on the above daily rates, applicability assessment and time input the estimated cost for preparation of access statements is £6,000,000 for residential projects and £28,000,000 for mixed use projects, totalling **£34,000,000** / yr (refer to attached tables for calculation details).

3. Sensitivity Test

3.1 It is considered that the time taken to prepare an access statement and the daily cost of architect's time are relatively robust assessments. The percentage of smaller projects for which a material amount of time is spent on access statements has been assessed based on experience from various professionals, it is therefore felt to be worth undertaking a sensitivity assessment on this variable:

Project Size Band	% of Projects Applicable (reduced / base / increased)	
	Residential	Mixed Use
Less than £25,000	0% / 0% / 0%	5% / 25% / 75%
£25,000 - £500,000	30% / 50% / 75%	30% / 50% / 75%
£500,000 - £2,000,000	100%	100%
£2,000,000 - £10,000,000	100%	100%
£10,000,000 - £20,000,000	100%	100%
£20,000,000 and over	100%	100%

Projects with access statement time required	Residential	Mixed Use	Total
Reduced % projects applicable	£4,000,000	£19,000,000	£23,000,000
Increased % projects applicable	£6,000,000	£37,000,000	£43,000,000

4. Notes and Key Assumptions

4.1 All costs are at UK mean base location, 4Q10

4.2 The total number of buildings of value band "Less than £25,000" is not split between building typologies by National Statistics. It has been estimated that 80% of these buildings are residential and 20% mixed use.

5. References

5.1 National statistics, New Orders in the construction Industry – Additional Annual Tables: Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008)

5.2 2013 Review economic analysis and framework contract work packages

6. Attachments

6.1 Estimate of Cost to Prepare an Access Statement for Each Project Size Band

6.2 PRP Part M statement

Building Regulations Review - Access Statement

Estimate of Cost to Prepare an Access Statement for Each Project Size Band

Project Size Band	No. of Building	Time Input per building	% Applicable	Architect Charge Out Rate	Total Cost
Less than £25,000	201,018	0.00	0%	£584	£0
£25,000 - £500,000	5,834	0.50	50%	£584	£851,764
£500,000 - £2,000,000	3,332	2.00	100%	£584	£3,891,776
£2,000,000 - £10,000,000	452	3.00	100%	£584	£791,904
£10,000,000 - £20,000,000	45	4.00	100%	£584	£105,120
£20,000,000 and over	20	4.00	100%	£584	£46,720
Total	**210,701**				**£5,687,284**
				Say	**£6,000,000**

Mixed Use

Project Size Band	No. of Building	Time Input per building	% Applicable	Architect Charge Out Rate	Total Cost
Less than £25,000	50,255	0.15	25%	£584	£1,100,585
£25,000 - £500,000	32,929	1.50	50%	£584	£14,422,902
£500,000 - £2,000,000	4,125	3.00	100%	£584	£7,227,000
£2,000,000 - £10,000,000	1,594	4.00	100%	£584	£3,723,584
£10,000,000 - £20,000,000	215	6.00	100%	£584	£753,360
£20,000,000 and over	181	6.00	100%	£584	£634,224
Total	**89,299**				**£27,861,655**
				Say	**£28,000,000**
Grand Total Cost					**£33,548,939**
				Say	**£34,000,000**

Source of Information

Building Numbers:
National statistics, New Orders in the construction Industry – Additional Annual Tables
Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008).

Time Input:
PRP Part M Statement Dated on 11th November 2010.

Architect Charge Out Rate:
EC Harris Rate Database

DCLG Building Regulations Review

Part M Access statements

An assessment of the time input required in creating Access Statements for different types and sizes of projects.

		Time input (days)	
Value Band	**No of building projects**	**Residential**	**Mixed use**
Less than £25,000	251,273	0	0.15
£25,000 - £500,000	38,764	0.5	1.5
£500,000 - £2,000,000	7,457	2	3
£2,000,000 - £10,000,000	2,046	3	4
£10,000,000 - £20,000,000	260	4	6
£20,000,000 and over	201	4	6
Total	**300,000**		

Notes:

- The Dwellings section (Sections 6-10) of Part M comprises 8 pages; whereas the Buildings Other than Dwellings sections (Sections 1 - 5) comprise 45 pages.

- Completion of documentation describing the compliance with Part M in a Building Regulations full application for a residential development therefore requires less time than a non-residential development.

- Care Homes are an anomaly as far as Part M is concerned; as the residential part (usually on the upper floors) is covered by the "Dwellings" section, while the communal areas (which may be open to the public to some extent) fall under the "Buildings other than Dwellings" sections. We have therefore included the time input for these types of buildings under the Mixed Use category.

- Small residential developments costing less than £25,000 may be simply an extension to an existing dwelling, or a new entrance and canopy or fitting a wheelchair-accessible WC or a ramp to a public building. In these cases, the time input for a Part M Access statement would be very small.

- If a residential scheme is designed to Lifetime Homes Standard, the Part M compliance is exceeded, and the access statement is therefore simpler.

- The time taken to complete an access statement also depends on the number of different types of buildings or dwellings within an application, or the complexity of the project.

- Figures for the time input identified above are therefore a best estimate based on our experience.

Appendix 3 – Changing Places

Building Regulations Review

Changing Places

1. The issue

1.1 It has been suggested that there is significant benefit from the inclusion of Changing Places facilities in public buildings (e.g. shopping centres, leisure centres etc).

1.2 We were asked to provide the following:

- A design for a generic Changing Places facility from which the capital (build) costs for this facility, any revenue loss and any increased operational cost could be calculated
- An estimate of the likely number of new buildings each year to which the above estimates could be applied

1.3 We were not asked to review the benefits of Changing Places facilities; we understand this has been extensively researched by others.

2. Our response

Design

2.1 A generic design for the Changing Places facility is attached along with comparative designs for a standard toilet facility compliant with the Building Regulations.

Quantity of buildings

2.2 Building types which may require a Changing Places facility have been grouped into a number of categories as follows:

- Motorway services
- Sport and leisure facilities
- Cultural centres
- Stadia and large auditoria
- Shopping centres
- Key buildings in town centres
- Educational establishments
- Health facilities
- Hotels

2.3 We have been unable to obtain conclusive data on the number of buildings constructed each year under each of the above categories. However, Office for National Statistics do publish statistics on new construction orders under various headings. Our baseline approach has firstly been to remove the impact of low value contracts (below £0.5m) on the basis that these are unlikely to represent new buildings (or major refurbishment) of any significant size. Of the remaining

buildings we have excluded those falling into the residential and industrial categories, this results in our final assumed quantity of 5,600 new buildings per year. We have assumed that only one facility will be required in each building.

Capital cost

2.4 We have initially assumed that the Changing Places facility can also accommodate a standard toilet which would be required in the building in any case. The facility therefore represents an extra over cost to the base allowance for the standard toilet. Within this assumption we have examined two scenarios:

- **Scenario 1** – A scenario where the building size is fixed and as such any area lost to the Changing Places facility will cause a reduction in the usable / saleable area of the building. Build costs are lower in this scenario (there is no cost to increase the building size) however a loss of revenue exists.
- **Scenario 2** – A scenario where the building size can be increased to accommodate the larger facility. Build costs are greater in this scenario (the building is enlarged) however there is no lost revenue.

2.5 We have reviewed the change in facilities from a non-assisted WC and compared that to the enhanced facilities a Changing Place would offer. We assess that each Changing Place would attract a cost increase of approximately £18,300 based on scenario 1 and £24,700 based on scenario 2.

2.6 Applying the above sums to the quantity of 5,600 projects every year equates to a capital cost of **£102,000,000** under scenario 1 and **£138,000,000** under scenario 2

Reduced revenue / asset value

2.7 As stated above scenario 1 leads to a reduction in usable area of the building. For commercial buildings this will result in lost income and consequently a reduced value of the asset. The area lost is the difference between a standard toilet (4m2) and a Changing Places facility (12m2) which amounts to 8m2.

2.8 We have assumed that cultural buildings, civic buildings in town centres, educational establishments and health facilities will not incur a revenue loss and will still be able to deliver their services within the slightly reduced space available. There is clearly a potential impact here (monetary or otherwise) and we would suggest that this is followed up as part of the more detailed review.

2.9 For the remaining commercial buildings CBRE have estimated typical rental values and an appropriate yield to convert these to capital values. It is noted that variance in rental values is significant and much greater than that of build costs. Whilst the stated values are therefore felt to be appropriate averages they may be significantly different for particular buildings (for example shopping centre values could easily vary by a factor of 10).

2.10 The average reduction in capital value under scenario 1 amounts to £10,500 which equates to a total of **£59,000,000**

Operational considerations

2.11 The costs stated above relate to the development phase of the building; however there are also long term operational impacts which need to be taken into consideration, for example:

- Increased hot water storage may be required to cope with increase of demand
- Costs associated with the enlarged hot water storage system
- Shower head disinfecting needs to be carried out on a monthly basis
- Increase in the cost of shower curtain replacement every 2 months
- Annual deep clean of the tiles and grouting
- Increase in the cost of water to site
- Increase of the cost to the electricity and / or gas
- The H&S checks will increase in comparison for annual inspections
- Possible re-training costs for cleaners
- Additional time for cleaning
- The costs of admin to update the onsite paperwork, H&S RAMS, method statements, COSHH data and the review of these docs

2.12 Many of these issues will be dependent on the buildings' overall servicing strategy and the additional demand that the Changing Place may add. We have not attempted to review operational costs in detail but, on the basis of the above items, would estimate an order of cost of £1,000 per facility per year.

Benefits

2.13 We have not reviewed the benefits of a Changing Places facility. We would however note that quality of toilet facilities is an important factor in many building types (particularly shopping centres), an improved facility may therefore drive some additional trade and revenue.

3. Overall assessment

3.1 The following summarises the likely overall impact of the incorporation of a Changing Places facility under both scenarios 1 and 2:

	Scenario 1	**Scenario 2**
Capital Cost	£102,000,000	£138,000,000
Asset Value Reduction	£59,000,000	£0
Total	**£161,000,000**	**£138,000,000**

4. Key notes and assumptions

4.1 It is assumed that the requirement applies only to new buildings / major refurbishment, no consideration has been given to retrospective application to existing buildings.

4.2 Layouts suggest that a Changing Place WC is circa 8m2 larger in size compared with baseline non-assisted WC, this is however a generic design and will vary by building.

4.3 As data on the number of buildings under each category is not available an assumption has been made on the proportion of buildings under each type, this issue is further commented on under the sensitivities below.

4.4 All costs are at UK mean base location, 4th Quarter 2010.

4.5 It is assumed that there is only a single changing place per building.

4.6 Capital values are gross and exclude deductions for purchasers' costs, tax and the like.

4.7 A range of lower, medium and upper rent values per ft2 have been considered for asset value reduction. However, the higher value scale is considered relatively rare and the low range values represent the most common practice. The low value is therefore used for the above value reduction assessment, this issue is further commented on in the sensitivities below.

5. Sensitivities

Assumption that the facility replaces another toilet

5.1 As stated under 2.4 the base assumption is that the Changing Places facility supersedes the need for a toilet which would have been built in any case, the build cost is therefore an extra over the original build cost. If a Changing Places facility were required in addition to a standard toilet the table under 3.1 would be amended as follows (due to the increase in build costs and loss of usable space):

	Scenario 1	**Scenario 2**
Capital Cost	£138,000,000	£192,000,000
Asset Value Reduction	£88,000,000	£0
Total	**£226,000,000**	**£192,000,000**

Proportion of building types

5.2 As stated under 2.3 full data on the number of buildings falling into each typology is not available. Our baseline assumptions of the proportion of each building type are scheduled within the attached document. There are two potential inaccuracies:

- The proportion allocated to each use within the overall group of commercial uses is incorrect (for example hotels vs shopping centres)

- The proportion allocated to commercial uses (hotel, shopping centres etc) vs that allocated to non-commercial uses (educational facilities, health facilities etc) is incorrect

5.3 It is clear that the second item above will have the greater impact (the comparison is a use type with zero income associated vs one with an income), whilst the first item is much less significant (the variance in value levels within the commercial uses is not great).

5.4 Given the above point the baseline mix of commercial uses (60% of the total) has been tested at a low estimate (45%) and high estimate (75%), the resultant impacts are as follows:

Low estimate:

	Scenario 1	**Scenario 2**
Capital Cost	£102,000,000	£138,000,000
Asset Value Reduction	£14,000,000	£0
Total	**£116,000,000**	**£138,000,000**

High estimate:

	Scenario 1	**Scenario 2**
Capital Cost	£102,000,000	£138,000,000
Asset Value Reduction	£73,000,000	£0
Total	**£175,000,000**	**£138,000,000**

Rental values

5.5 As stated under 4.7 the base assumption is that rental levels are at the lower end of the range, this being the most commonly encountered. In the event that values are at the medium value the result would be as indicated in the table below. Values at the high end of the range have not been tested as these would represent premium / landmark developments which are relatively uncommon:

	Scenario 1	**Scenario 2**
Capital Cost	£102,000,000	£138,000,000
Asset Value Reduction	£93,000,000	£0
Total	**£195,000,000**	**£138,000,000**

6. Attachments

- Summary impact for scenario 1 and 2
- Layout for changing places WC
- Typical layouts for baseline (non-changing places) WC
- Breakdown for income impact
- Cost estimate of changing places
- Rent and yield assessment of each building type in the range of lower, medium and higher

7. References

- National statistics, New Orders in the construction Industry – Additional Annual Tables: Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008).

Building Regulations Review - Changing Places

Summary

25th November 2010

Scenario 1 - Building size remains constant; no additional build area; reduction in net lettable area		
	Changing places as a replacement for a toilet	Changing places in addition to required toilets
Quantity of Projects (Nr)	5,600	5,600
Cost / Changing Place	£ 18,266	£ 24,703
Sub-total	**£ 102,289,600**	**£ 138,336,800**
Reduction in value	£ 59,000,000	£ 88,000,000
Total	**£ 161,289,600**	**£ 226,336,800**
Rounded	£ 161,000,000	£ 226,000,000

Scenario 2 - Building size increases for the additional area; no reduction in net lettable area		
	Changing places as a replacement for a toilet	Changing places in addition to required toilets
Quantity of Projects (Nr)	5,600	5,600
Cost / Changing Place	£ 24,674	£ 34,363
Sub-total	**£ 138,174,400**	**£ 192,432,800**
Reduction in value	N / A	N / A
Total	**£ 138,174,400**	**£ 192,432,800**
Rounded	£ 138,000,000	£ 192,000,000

Assumption:

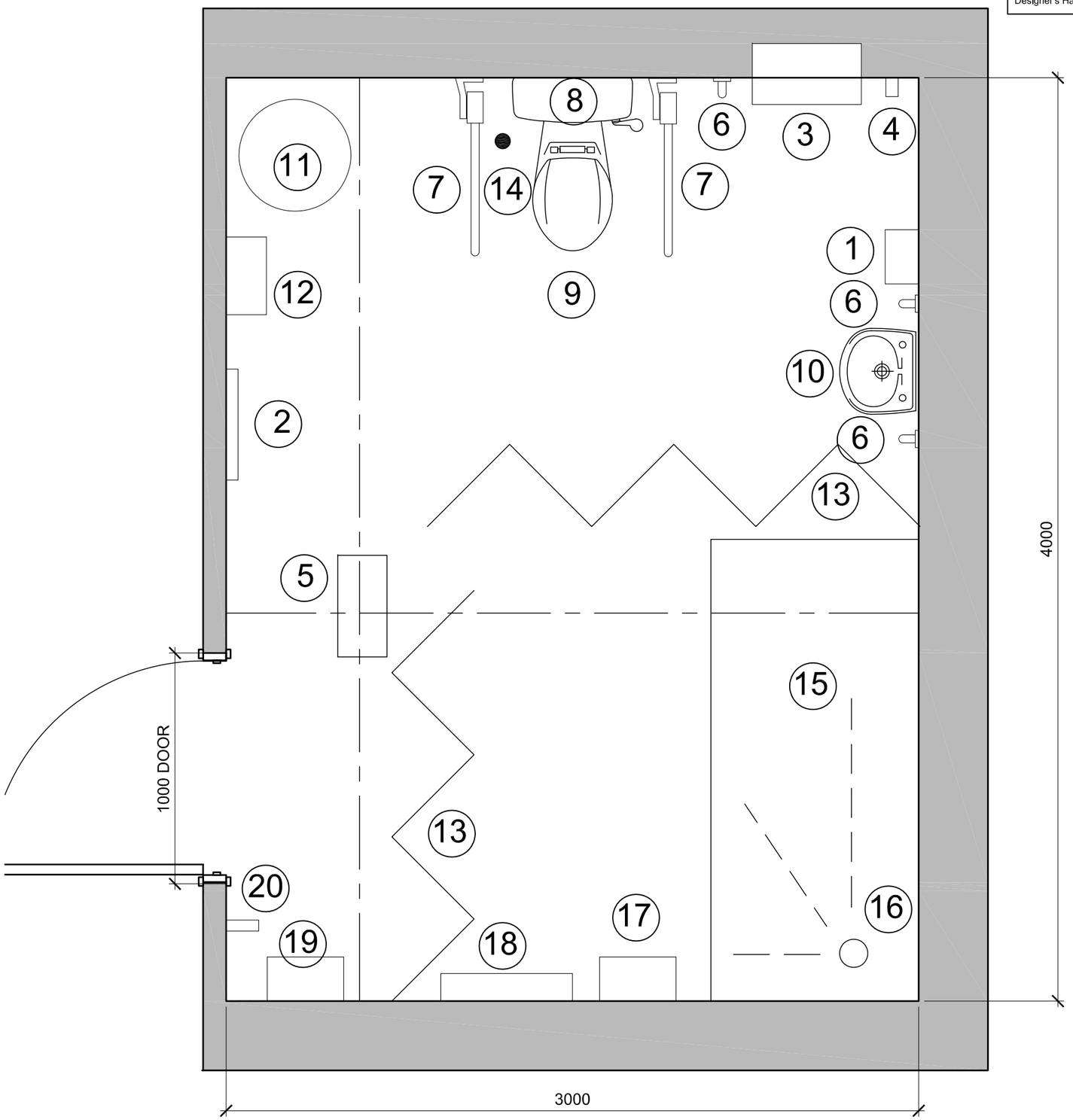
Allow one number changing place per building.

CDM Regulations 2007

ALL current drawings and specifications for the project must be read in conjunction with the Designer's Hazard and Environmental Assessment Record.

notes

- The contractor is responsible for checking dimensions, tolerances and references. Any discrepancy to be verified with the Architect before proceeding with the works.
- Where an item is covered by drawings to different scales the larger scale drawing is to be worked to.
- Do not scale drawing. Figured dimensions to be worked to in all cases.



KEY

1 Paper towel dispenser
2 Full length mirror
3 Large sanitary disposal bin, if possible recessed into the wall
4 Alarm reset button
5 Full room cover tracked hoist system
6 Vertical grab rail
7 Drop-down support rails, one with a toilet roll holder
8 Flat-topped close-coupled cistern providing a back rest and a colostomy changing surface for standing users (where high or low level cisterns are used, a rail with a padded back rest and a eparate colostomy changing shelf 125 mm to 150 mm deep and preferably 400 mm wide, withits surface 950 mm above floor level, should be provided)
9 Peninsular WC
10 Large power-assisted height-adjustable washbasin
11 Waste disposal bin
12 Manually-operated hand dryer
13 Retractable privacy curtain/screen
14 Alarm pull cord
15 Height-adjustable showering/changing bench, min. 1 800 mm long
16 Floor drain
17 Shower unit
18 Wide paper roll dispenser for use on the changing bench
19 Sanitary towel dispenser
20 Two clothes hooks, one at 1 050 mm and the other at 1 400 mm above the floor

date	rev	revision/author/checker

drawn LG
checked RB
scale @ A3 1:20
date 05.11.10

project CLG REVIEW
drawing CHANGING PLACES WC

purpose of issue DRAFT FOR COMMENT
drawing no AA2211 / 2.3 / 001
rev

PRP Architects © 10 Lindsey Street London EC1A 9HP T +44 (0)20 7653 1200 F +44 (0)20 7653 1201 lon.prp@prparchitects.co.uk

notes

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CDM Regulations 2007

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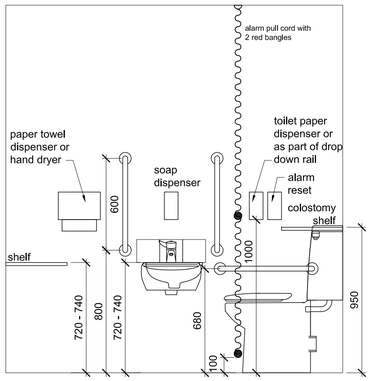
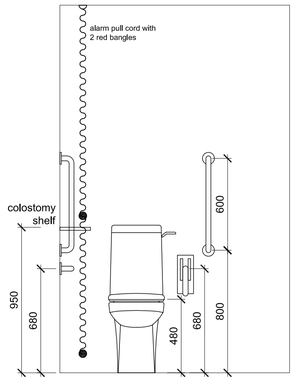


ELEVATION A



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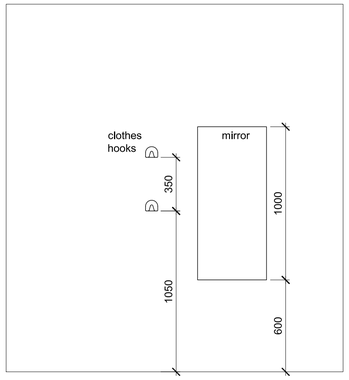
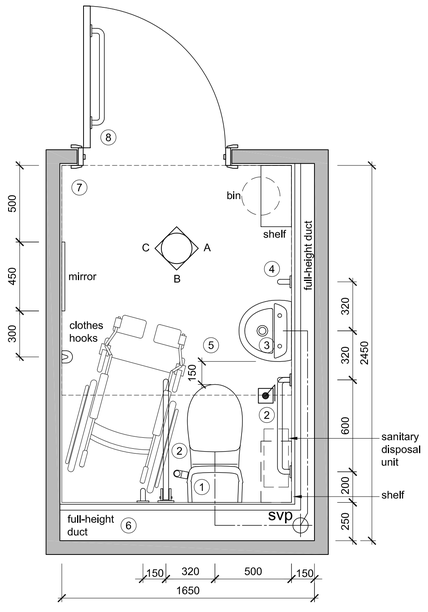


ELEVATION C



TYPE WC 01 - NON-ASSISTED WC

WC with full height ductwork

WC:
1. Twyford 'Avalon' rimless close coupled wc
2. 1 no. 600mm fixed grab rail and 1 no. drop down grab rail to sides of wc

WHB:
3. Twyford 'Sola' whb
4. 2 no. vertical grab rails to sides of whb
5. 140mm - 160mm from wc

Ducts:
6. full height for svp + other services

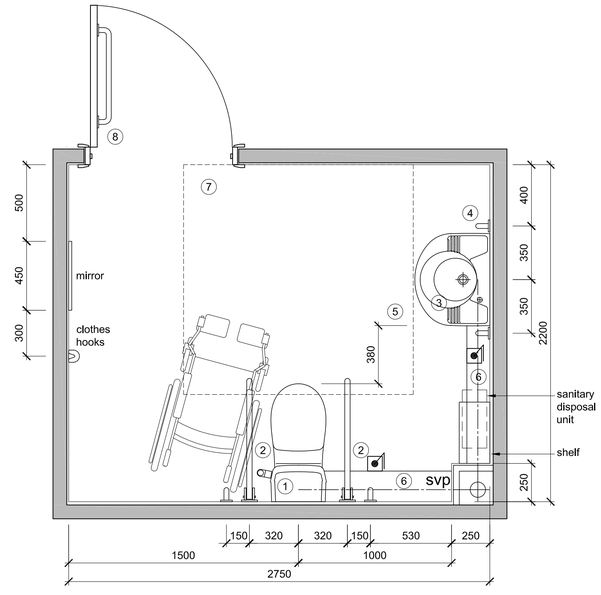
Turning space:
7. 1500mm x 1500mm for wheelchairs

General notes:

8. 926mm door
9. Slip resistant flooring with coved skirting + capping to wall tiles

TYPE: WC 01 - Non-assisted layout (Twyford)
Standard washroom
with full height ducts behind wc and whb to conceal pipework

Part M compliant



TYPE WC 02 - ASSISTED WC

Peninsular WC layout with larger whb

WC:
1. Twyford 'Avalon' rimless close coupled wc
2. 2 no. drop down grab rail to sides of wc

WHB:
3. Twyford 'Avalon' whb
4. 2 no. vertical grab rails to sides of whb
5. 380mm from wc

Ducts:
6. low level ducts for pipework

Turning space:
7. 1500mm x 1500mm for wheelchairs

General notes:

8. 926mm door
9. Slip resistant flooring with coved skirting + capping to wall tiles

TYPE: WC 02 - Assisted layout (Twyford)
Width of room increased
peninsular layout with larger whb

date	rev	revision/author/checker

purpose of issue
FOR INFORMATION

project
BATHROOMS AND WCS

drawing
DISABLED WC LAYOUTS
Twyford Sanitaryware

drawing no	rev
PRP/LIB/SH/402	

drawn	KW	checked	
scale @ A1	1:20	date	SEPT '10

PRP Architects ©
Ferry Works
Summer Road
Thames Ditton
Surrey KT7 0QJ
T +44 (0)20 8339 3600
F +44 (0)20 8339 3636
prp@prparchitects.co.uk

Building Regulations Review - Changing Places

Value by Use

25th November 2010

	Rent (£/ft2)	Yield	Gross Capital Value (£/ft2)	Gross Capital Value (£/m2)	Proportion	Project Nr	8m2 Lost to Larger Changing Place	12m2 Lost to Larger Changing Place
· Motorway services	£22.00	7.50%	£293	£3,157	5%	280	£7,072,666	£10,608,998
· Sport and leisure	£8.00	7.50%	£107	£1,148	12%	672	£6,172,508	£9,258,762
· Cultural centres (such as museums, concert halls, and art galleries)	£0.00	0.00%	£0	£0	5%	280	£0	£0
· Stadia and large auditoria	£15.00	7.50%	£200	£2,153	5%	280	£4,822,272	£7,233,408
· Shopping centres and shopmobility centres	£20.00	7.50%	£267	£2,870	25%	1400	£32,148,480	£48,222,720
· Key buildings within town centres (e.g. town halls, civic centres, main public libraries)	£0.00	0.00%	£0	£0	5%	280	£0	£0
· Educational establishments	£0.00	0.00%	£0	£0	15%	840	£0	£0
· Health facilities (such as hospitals, health centres, and community practices)	£0.00	0.00%	£0	£0	15%	840	£0	£0
· Hotel	£10.00	7.50%	£133	£1,435	13%	728	£8,358,605	£12,537,907
							£0	£0
					100.0%			
					Total lost of revenue		**£58,574,531**	**£87,861,796**
					Round		**£59,000,000**	**£88,000,000**

Building Regulations Review

Cost Estimate of Generic Changing Place Layout

Latest Design vs Conventional Design

INCLUDING BASE BUILD COSTS

						Changing Places WC 05.11.10		**WC 01 - Non Assisted WC**			
						GIFA	**12m2**	**GIFA**	**4.04m2**		
Ref	**Description**	**Supply Rate**	**Installation**	**Total Rate**	**Unit**	**Quantity**	**Total**	**Quantity**	**Total**	**Variance**	**Notes**
	Structures										
1	Base building (Shell & Core)	£700	incl.	£700	m2	12.00	£8,400	4.04	£2,828	£5,572	Average rate for shell & core construction
	Subtotal						**£8,400**		**£2,828**	**£5,572**	
	Sanitary Fittings										
1	Paper towel dispenser	£40	£12	£52	nr	1	£52	0	£0	£52	Rate from: www.hygienesuppliesdirect.com
2	Full length mirror	£150	£15	£165	nr	1	£165	1	£165	£0	plug in rate
3	Large sanitary disposal bin (if possible recessed into the wall)	£30	£9	£39	nr	1	£39	0	£0	£39	plug in rate
4	Alarm reset button	£20	£6	£26	nr	1	£26	0	£0	£26	plug in rate
5	Full room cover tracked hoist system	£250	incl.	£250	m2	12	£3,000	0	£0	£3,000	Quotation from Domestic Lift
6	Vertical grab rail	£42	£13	£55	nr	3	£164	3	£164	£0	Rate from: www. Disabled-toilets-uk.co.uk
7	Drop-down support rails, one with a toilet roll holder	£190	£57	£247	nr	1	£247	1	£247	£0	Rate from: www. Disabled-toilets-uk.co.uk
8	Flat-topped close-coupled cistern			incl. in Peninsular WC	nr	1	incl. in Peninsular WC	0	incl. in Peninsular WC		incl. in WC cost
9	Peninsular WC	£300	£90	£390	nr	1	£390	1	£390	£0	Rate from: www.boundarybathrooms.co.uk
10	Large power-assisted height-adjustable washbasin	£2,200	£660	£2,860	nr	1	£2,860	0	£0	£2,860	Rate from: www.livingmadeeasy.org.uk
11	Twyford Sola WHB	£250	£75	£325	nr	0	£0	1	£325	-£325	Rate from: www.boundarybathrooms.co.uk
12	Waste disposal bin	£80	£0	£80	nr	1	£80	1	£80	£0	plug in rate
13	Manually-operated hand dryer	£690	£207	£897	nr	1	£897	0	£0	£897	Rate from: www.e-tradecounter.co.uk
14	Retractable privacy curtain/screen	£70	£21	£91	nr	2	£182	0	£0	£182	plug in rate
15	Alarm pull cord	£20	£6	£26	nr	1	£26	0	£0	£26	Rate from: www.labelsourceonline.co.uk
16	Height-adjustable showering/changing bench, min. 1800m long	£2,500	£750	£3,250	nr	1	£3,250	0	£0	£3,250	Rate from: www.changing-places.org
17	Floor drain	£150	incl.	£150	item	1	£150	0	£0	£150	
18	Shower unit	£1,100	£330	£1,430	nr	1	£1,430	0	£0	£1,430	Rate from: www.disabled-toilets-uk.co.uk
19	Wide paper roll dispenser for use on the changing bench	£40	£12	£52	nr	1	£52	0	£0	£52	Rate from: www.hygienesuppliesdirect.com
20	Sanitary towel dispenser	£120	£36	£156	nr	1	£156	0	£0	£156	Rate from: www.personal-products.co.uk
21	Clothes hooks	£10	£3	£13	nr	2	£26	1	£13	£13	plug in rate
22	Full height duct for svp + other services	£80	£24	£104	item	0	£0	1	£104	-£104	plug in rate
23	Shelf	£20	£6	£26	nr	0	£0	1	£26	-£26	Rate from: www.bathroom2u.com
	Subtotal						**£13,192**		**£1,514**	**£11,678**	
	Internal Finishes										
	Floor finishes										
1	Screed cement	£30	incl.	£30	m2	12.00	£360	4.04	£121	£239	
2	Safety vinyl including skirtings	£50	incl.	£50	m2	12.00	£600	4.04	£202	£398	
	Ceiling finishes										
1	Moisture resistant plasterboard ceiling, plaster skim and emulsion paint finish	£45	incl.	£45	m2	12.00	£540	4.04	£182	£358	
	Internal wall finishes										
1	Plaster with emulsion paint finish	£8	incl.	£8	m2	89.81	£718	52.80	£422	£296	
2	Ceramic wall tiles (internal wall only), full height	£50	incl.	£50	m2	44.90	£2,245	26.40	£1,320	£925	
	Subtotal						**£4,464**		**£2,248**	**£2,216**	
	Internal Doors										
1	Timber door, stainless steel ironmongery	£750	£75	£825	nr	1	£825	1	£825	£0	
	Subtotal						**£825**		**£825**	**£0**	
	M&E										
1	Additional space heating, electricity, water installation, lighting & ventilation.	£250	incl.	£250	m2	12	£3,000	4.04	£1,011	£1,989	
	Subtotal						**£3,000**		**£1,011**	**£1,989**	
	Prelim										
1	Preliminary & OHP	15%			sum	£29,880	£4,482	£8,425	£1,264	£3,218	
	Subtotal						**£4,482**		**£1,264**	**£3,218**	
	Grand Total						**£34,363**		**£9,689**	**£24,674**	

Building Regulations Review - Changing Places
Value by Use
25th November 2010

					Total Nr. Of project	5600		
Commercial Buildings - 45%								
	Rent (£/ft2)	Yield	Gross Capital Value (£/ft2)	Gross Capital Value (£/m2)	Proportion	Project Nr.	8m2 Lost to Larger Changing Place	12m2 Lost to Larger Changing Place
· Motorway services	£22.00	7.5%	£293	£3,157	1.25%	70	£1,768,166	£2,652,250
· Sport and leisure	£8.00	7.5%	£107	£1,148	3.00%	168	£1,543,127	£2,314,691
· Cultural centres (such as museums, concert halls, and art galleries)	£0.00	0.0%	£0	£0	10.00%	560	£0	£0
· Stadia and large auditoria	£15.00	7.5%	£200	£2,153	1.25%	70	£1,205,568	£1,808,352
· Shopping centres and shopmobility centres	£20.00	7.5%	£267	£2,870	5.63%	315.28	£7,239,838	£10,859,757
· Key buildings within town centres (e.g. town halls, civic centres, main public libraries)	£0.00	0.0%	£0	£0	10.00%	560	£0	£0
· Educational establishments	£0.00	0.0%	£0	£0	32.30%	1808.8	£0	£0
· Health facilities (such as hospitals, health centres, and community practices)	£0.00	0.0%	£0	£0	33.30%	1864.8	£0	£0
· Hotel	£10.00	7.5%	£133	£1,435	3.25%	182	£2,089,651	£3,134,477
							£0	£0
					100.0%			
					Total lost of revenue		**£13,846,350**	**£20,769,526**
					Round		**£14,000,000**	**£21,000,000**

Building Regulations Review - Changing Places
Value by Use
25th November 2010

Total Nr. Of project	5600

Commercial Buildings - 75%

	Rent (£/ft2)	Yield	Gross Capital Value (£/ft2)	Gross Capital Value (£/m2)	Proportion	Project Nr.	8m2 Lost to Larger Changing Place	12m2 Lost to Larger Changing Place
· Motorway services	£22.00	7.5%	£293	£3,157	6.25%	350	£8,840,832	£13,261,248
· Sport and leisure	£8.00	7.5%	£107	£1,148	15.00%	840	£7,715,635	£11,573,453
· Cultural centres (such as museums, concert halls, and art galleries)	£0.00	0.0%	£0	£0	2.50%	140	£0	£0
· Stadia and large auditoria	£15.00	7.5%	£200	£2,153	6.25%	350	£6,027,840	£9,041,760
· Shopping centres and shopmobility centres	£20.00	7.5%	£267	£2,870	31.25%	1750	£40,185,600	£60,278,400
· Key buildings within town centres (e.g. town halls, civic centres, main public libraries)	£0.00	0.0%	£0	£0	2.50%	140	£0	£0
· Educational establishments	£0.00	0.0%	£0	£0	10.00%	560	£0	£0
· Health facilities (such as hospitals, health centres, and community practices)	£0.00	0.0%	£0	£0	10.00%	560	£0	£0
· Hotel	£10.00	7.5%	£133	£1,435	16.25%	910	£10,448,256	£15,672,384
							£0	£0
					100.0%			
					Total lost of revenue		**£73,218,163**	**£109,827,245**
					Round		**£73,000,000**	**£110,000,000**

Building Regulations Review - Changing Places

Value by Use

11th November 2010

Total Nr. Of project 5600

Commercial Buildings - 45%

	Rent (£/ft2)	Yield	Gross Capital Value (£/ft2)	Gross Capital Value (£/m2)	Proportion	Project Nr.	8m2 Lost to Larger Changing Place	12m2 Lost to Larger Changing Place
· Motorway services	£28.00	6.25%	£448	£4,822	5%	280	£10,801,889	£16,202,834
· Sport and leisure	£10.00	7.00%	£143	£1,538	12%	672	£8,266,752	£12,400,128
· Cultural centres (such as museums, concert halls, and art galleries)	£0.00	0.00%	£0	£0	5%	280	£0	£0
· Stadia and large auditoria	£18.00	6.50%	£277	£2,981	5%	280	£6,676,992	£10,015,488
· Shopping centres and shopmobility centres	£30.00	6.50%	£462	£4,968	25%	1400	£55,641,600	£83,462,400
· Key buildings within town centres (e.g. town halls, civic centres, main public libraries)	£0.00	0.00%	£0	£0	5%	280	£0	£0
· Educational establishments	£0.00	0.00%	£0	£0	15%	840	£0	£0
· Health facilities (such as hospitals, health centres, and community practices)	£0.00	0.00%	£0	£0	15%	840	£0	£0
· Hotel	£11.50	6.25%	£184	£1,981	13%	728	£11,534,875	£17,302,312
							£0	£0
					100.0%			
					Total lost of revenue		**£92,922,108**	**£139,383,162**
					Round		**£93,000,000**	**£139,000,000**

Building Regulations Review - Changing Places

Assessment of the number of new non-residential buildings

25th November 2010

Source: National statistics, New Orders in the construction Industry – Additional Annual Tables
Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008).

GREAT BRITAIN (excl. Scotland)	Infrastructure	Other New Work excl. Infrastructure		
RANGE OF CONTRACTS		Public	Private Commercial	Total
£500,000 - £750,000	282	523	808	1,613
£750,000 - £1,000,000	137	272	398	807
£1,000,000 - £2,000,000	251	456	699	1,406
£2,000,000 - £5,000,000	150	335	542	1,027
£5,000,000 - £10,000,000	57	143	206	406
£10,000,000 - £20,000,000	24	83	93	200
£20,000,000 and over	29	71	75	175
Number of Jobs	**930**	**1,883**	**2,821**	**5,634**
			Rounded	**5,600**

Please note, this schedule excludes the following:
- All residential & private industrial projects
- Projects under £500,000
- All projects located in Scotland

Appendix 4 – Part D

Building Regulations Review

Part D

1. The issue

1.1 It is understood that urea formaldehyde cavity wall insulation is very rarely used due to the presence of better materials, the opportunity therefore exists to remove regulation relating to this type of insulation.

1.2 We were asked to comment on the potential issues surrounding the above option and potential cost savings.

2. Our response

2.1 PRP architects have prepared a commentary in relation to urea formaldehyde cavity wall insulation which is attached. The commentary is summarised as follows:

- Urea formaldehyde insulation does increase the exposure of occupiers to formaldehyde
- Formaldehyde is hazardous to health
- The current and forthcoming focus on sustainability retrofit is likely tol drive a significant number of cavity wall insulation installations
- Given the above facts it is considered that removal of regulation relating to urea formaldehyde insulation could have negative health consequences for a significant number of households

DCLG Building Regulations Review

Part D, Urea Formaldehyde Cavity Fill

Issue under review:

It is understood that urea formaldehyde cavity wall insulation is very rarely used due to the presence of better materials. The opportunity therefore exists to remove regulation relating to this type of insulation.

Background:

Urea formaldehyde foam insulation (UFFI) is a cellular matrix of urea-formaldehyde resin used to insulate cavity walls of existing buildings. There were approximately 2 million buildings treated with UFFI in the UK as of 2000[1]. UFFI insulation has been banned in most US states and in Canada since the early 1980s due to fears of exposure to formaldehyde.

Research by BRE showed that the mean formaldehyde concentrations in homes insulated with UFFI was 114 $\mu g/m^3$ (0.086 ppm) compared with 57 $\mu g/m^3$ (0.043 ppm) in homes not insulated using this product. UFFI is usually mixed on site with an excess of formaldehyde to ensure complete curing of the resin. Emissions are at their greatest immediately after the product is installed. Formaldehyde release thereafter decreases depending on the quantity of free volatisable unreacted formaldehyde trapped in the resin and on the hydrolytic decomposition or ageing of the resin itself. High temperatures and humid conditions cause the most rapid ageing.

UFFI dust is another source of formaldehyde. As UFFI ages it may become brittle and decomposes, thus releasing dust through cracks and other gaps in the inner leaf of the external wall, into the living quarters of the building.

Formaldehyde is a common chemical also used in other construction products (e.g. compressed timber products) or household items (furniture, textiles). Since UFFI breaks down at high temperatures, significant formaldehyde exposure can occur during a fire.

Health hazards of formaldehyde:

Even very short term exposure to formaldehyde irritates the eyes causing pain, redness, blurred vision and severe eye watering. It can irritate the nose and throat causing sneezing, soreness, coughing, shortness of breath, headaches and nausea. In severe cases of exposure to elevated levels it can lead to accumulation of fluid in the lung (pulmonary oedema). Long term exposure causes chronically impaired lung function, skin hardening, swelling and flaking, dermatitis, allergic eczema, and cancer.

Formaldehyde is a skin and respiratory sensitiser. It is a sensitising agent which can stimulate the body's immune response so that a subsequent exposure to even a very small amount is likely to trigger an allergic response.

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[1] Institute for Environment and Health, *Volatile Organic Compounds, Including Formaldehyde, in the Home* http://www.cranfield.ac.uk/health/researchareas/environmenthealth/ieh/ieh%20publications/vocslflt.pdf last accessed 9/11/10

Formaldehyde has also been shown to cause sleep disturbance, impaired memory, reduced concentration, nausea and menstrual irregularity.

The International Agency for Research on Cancer, (IARC) which is part of the World Health Organisation, has designated formaldehyde as a known cause of several types of throat and nasal cancer[2].

Exposure levels:

In the UK formaldehyde has been assigned a Maximum Exposure Limit (MEL) of 2 parts per million (ppm), although the Health and Safety Executive acknowledges that eye irritation can be caused by exposure to levels as low as 0.01 ppm, 200 times less than the MEL[3]. Other countries have set MELs between 0.75 ppm (USA) and 0.1 ppm (Sweden, Germany, Canada).

The average formaldehyde concentration in UFFI insulated dwellings was found to be 0.086 ppm, far below the MEL[4], however very close to the regulated concentration in other countries, and above the concentration that has been shown to cause eye irritation.

"According to the Department of Health Committee on the Medical Effects of Air Pollutants, there is no evidence to suggest that current UK domestic exposures to VOCs, either as individual chemicals or as a total, pose a risk to health. The contribution of VOCs towards carcinogenic, mutagenic and neurotoxic effects in the UK population is considered negligible.

The odours associated with VOCs may nevertheless be unpleasant and the sources of those VOCs should therefore be identified and, where possible, removed."[5]

Conclusion:

Due to the regulation, urea formaldehyde foam is currently used in fewer than 1% of cavity wall insulation works[6], however it is still available to consumers. For example, Haringey Council still lists UF as one of the most common cavity wall insulation materials[7].

[2,3] London Hazards Centre http://www.lhc.org.uk/members/pubs/factsht/82fact.htm last accessed 9/11/10

[4,5] Institute for Environment and Health, *Volatile Organic Compounds, Including Formaldehyde, in the Home* http://www.cranfield.ac.uk/health/researchareas/environmenthealth/ieh/ieh%20publications/vocslflt.pdf last accessed 9/11/10

[6] Energy Savings Trust http://www.haringey.gov.uk/cavity_wall_insulation.pdf, last accessed 9/11/10

[7] Cavity Wall Insulation - Haringey Council http://www.haringey.gov.uk/index/housing_and_planning/housing/housingadvice/homeheatloss/home_insulation/cavity_wall_insulation.htm last accessed 9/11/10

The number of cavity wall refurbishments is set to soar as a result of large scale energy efficiency schemes such as the Green Deal, which targets 14 million households in the UK[8]. Based on the English House Condition Survey 2007, it is estimated that 8.3 million dwellings in the UK have unfilled cavity walls and would be eligible to have this work funded under the Green Deal. Assuming all participate, as is the aim, with UFFI used in 1% of eligible dwellings, this would result in an estimated 82,500 new installations or approximately 4% increase on the total.

UFFI is a low cost material and lifting regulation could be interpreted as a sign that it is considered safe, causing a return to mainstream use. The impact of deregulation on the uptake of UFFI is difficult to predict, though even a small impact can greatly affect UFFI installation rates. Delivery of the Green Deal will be lead by major high street retailers, however, in a competitive market, smaller installers who are not subject to certification or approval processes will feel pressure to cut costs and may not adequately consider the health impact.

The rate of demolition/decommissioning of UFFI-treated properties is likely to be lower than the expected rate of new installations. Therefore the overall number of properties insulated with UFFI is likely to rise from the 2 million reported figure, which would put a significant number of people at risk of deleterious health effects due to increased levels of formaldehyde.

Some incentive is required to limit the use of UFFI to cases where it is not likely to pose a hazard. At the moment Part D accomplishes this, and protects occupiers from incorrect or inappropriate installations. As an alternative to Part D, similar guidelines could be introduced as qualifying conditions for participation in energy efficiency schemes. However, this is likely to entail a similar administrative cost and does not protect occupiers in cases of voluntary cavity insulation works, or those conducted by non-accredited installers.

It should also be noted that it is only the Approved Document guidance that is specific to UFFI, but that the Regulation itself covers ANY toxic material.

Given the above points it is considered that removal of regulation relating to UFFI would have the potential of causing negative health impacts to a significant number of households.

[8] The Evening Standard *Chris Huhne: 14 Million homes could benefit from Green Deal* http://www.thisislondon.co.uk/standard/politics/article-23848593-chris-huhne-14-million-homes-could-benefit-from-green-deal.do last accessed 10/11/10

Appendix 5 – Part A 2E4

Building Regulations Review

Part A, 2E4

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1. The issue

1.1 Guidance currently states a depth for strip foundations of minimum 750mm in shrinkable clays; it is however felt extremely rare that foundations this shallow occur. The opportunity may therefore exist to remove section 2E4.

1.2 We were asked to provide the following:

- A qualitative comment on the typical depths of foundation which are practically required in clay and the minimum depths experienced
- An analysis of the increase in cost if the current recommendation of 750mm depth in clays were to be increased to 1000mm

2. Our Response

Practically experienced foundation depths

2.1 PRP Architects have reviewed their experience across a large number of projects at a range of locations. The key points are summarised as follows:

- Foundation depths in shrinkable clay are always considerably more than 750mm. A depth of 750mm only happens in an idealised ‘open’ test environment.
- 1000mm to 1200mm depth is needed in the best of circumstances even at this depth simple garden planting and trees can have negative impacts.
- Authoritative guidance is published by NHBC and utilised where trees or shrubs are present, this generally dictates greater depths or alternatives such as piling.
- Over a long period of time many areas have required a minimum depth of 1200mm in 'open' non vegetative effected locations.
- It is also noted that part 2E4 gives guidance on minimum foundation depths in any soils (450mm), however the same points above apply; foundations at this depth are not practically experienced.
- Given the above points it is reasonable to state that part 2E4 has little practical impact at present and could be considered for removal.
- In the event that removal were to occur the wider requirements of Part A would ensure review of the structural adequacy of the foundations in any case.
- It is noted that subsidence in clay soils does still occur occasionally, however this is due to defective construction or failure to fully understand the design requirements for the ground conditions. It is not minimum foundation depths which will prevent these occurrences but better understanding of the subject area through work by bodies such as the BRE and NHBC.

- It could be considered that part 2E4 should be expanded to deal with clay conditions in much more detail. However in practical terms the educational role of industry bodies on design and construction practice will be much more important and industry best practice is likely to continue to develop and supersede regulation as the adopted solution.

Cost Assessment of Foundation Depth Increase from 750mm to 1000mm

2.2 As noted above it is likely that, in practical terms, the quantity of buildings impacted by a move from 750mm to 1000mm would be close to zero. However for information purposes we have undertaken an assessment of the cost of this change for a series of typical dwelling typologies.

2.3 Foundation quantities have been taken off from a typical three-story two-bedroom house. The cost impact was assessed in three scenarios: detached house, semi-detached house and terrace house, in order to include the impact from party wall. The following average costs were obtained:

House Type	Extra over cost
Detached House	£840
Semi – Detached House	£650
Terrace House	£580

3. Notes and Key Assumptions

3.1 All costs are at UK mean base location, date 4Q10

3.2 No allowance for working in contaminated soil

3.3 No allowance for atypical working conditions

3.4 Foundation type considered is strip foundations

4. Attachments

- Cost Assessment of Foundation Depth Increase from 750mm to 1000mm

Building Regulations Review - Part A, 2E4

Cost Estimate of Increasing Founation Depth from 750mm to 1000mm

25th November 2010

Senario 1: Detached House

Elements	Qty	Rate	Unit	Total
Excavation & Disposal	3.05	45	m3	£137.03
Formwork	10.15	30	m2	£304.50
Concrete	3.05	130	m3	£395.85
Total				£837.38
		Say		**£840.00**
Cost per m				£41.25

Senario 2: Semi-Detached House (incl half of the party wall)

Elements	Qty	Rate	Unit	Total
Excavation & Disposal	2.96	45	m3	£133.40
Formwork	4.54	30	m2	£136.13
Concrete	2.96	130	m3	£385.37
Total				£654.89
		Say		**£650.00**
Cost per m				£36.08

Senario 3: Terraced House (incl one of the party walls)

Elements	Qty	Rate	Unit	Total
Excavation & Disposal	2.56	45	m3	£115.26
Formwork	8.00	30	m2	£240.00
Concrete	1.76	130	m3	£228.15
Total				£583.41
		Say		**£580.00**
Cost per m				£36.46

Appendix 6 – Part H6

Building Regulations Review

Part H6: Solid Waste

1. The issue

1.1 Part H6 relates to solid waste however it does not set national standards as this is done at local level. The opportunity therefore exists to withdraw Part H6, leaving this issue fully in the control of local authorities.

1.2 We were asked to prepare the following:

- Commentary on the regulatory framework relating to solid waste and in particular whether existing guidance (for example at local authority level) is robust enough to deal with the issue in the absence of Part H6
- An estimate of the costs of architects' / project teams' time associated with dealing with Part H6

2. Our Response

Project size band

2.1 Based on the new construction order data published by Office for National Statistics in 2008, the following project size banding has been developed:

Project Size Band	Residential	Mixed Use	Total
Less than £25,000	201,018	50,255	251,273
£25,000 - £500,000	5,834	32,929	38,763
£500,000 - £2,000,000	3,332	4,125	7,457
£2,000,000 - £10,000,000	452	1,594	2,046
£10,000,000 - £20,000,000	45	215	260
£20,000,000 and over	20	181	201
Total	**210,701**	**89,299**	**300,000**

2.2 Residential projects are separated from mixed use projects as mixed use projects generally include their own specific waste management arrangements.

Time input assessment

2.3 An assessment of the time input required in dealing with Part H6 for different types and sizes of projects has been prepared by PRP:

Project Size Band	Time Input (Days)	
	Residential	Mixed Use
Less than £25,000	0.00	0
£25,000 - £500,000	0.25	0
£500,000 - £2,000,000	0.25	0
£2,000,000 - £10,000,000	0.25	0
£10,000,000 - £20,000,000	0.50	0
£20,000,000 and over	0.50	0

2.4 It is noted that the time above is only that spent in dealing with Part H6 in addition to the normal planning and design of waste systems. As much of the regulation relating to waste is outside of Part H6 the time above is very limited.

2.5 Mixed use projects include a zero allowance for time, this is because local requirements and occupier specifications outside of Part H6 are generally the determining factor.

Cost assessment

2.6 Some smaller and more straightforward projects may not require any material time to deal with Part H6 – the work may involve only a paragraph of text. An estimate has been prepared of the proportion of projects in each size band to which a material time would apply:

Project Size Band	% of Projects Applicable	
	Residential	Mixed Use
Less than £25,000	0%	N/A
£25,000 - £500,000	25%	N/A
£500,000 - £2,000,000	50%	N/A
£2,000,000 - £10,000,000	100%	N/A
£10,000,000 - £20,000,000	100%	N/A
£20,000,000 and over	100%	N/A

2.7 An average charge-out day rate of an Architect is **£584** based on EC Harris' fees database.

2.8 Based on the above daily rates, applicability assessment and time input the estimated cost for dealing with Part H6 is £500,000 for residential projects and £0 for mixed use projects, totalling **£500,000** / yr (refer to attached tables for calculation details).

Further notes

2.9 As noted within PRP's detailed statement most aspects of solid waste management are dealt with outside of Part H6, it therefore appears that the option to withdraw this document is realistic.

2.10 The key issues which would appear to be dealt with clearly in Part H6 but not elsewhere are:

- Travel distances for disposing of waste
- Travel distances for collection of waste

2.11 PRP therefore note that, in the event Part H6 were removed, it may be useful for DCLG to help local authorities / relevant bodies / industry groups to work to ensure that the above gaps are filled.

3. Sensitivity Test

3.1 It is considered that the time taken dealing with Part H6 and the daily cost of architect's time are relatively robust assessments. The percentage of smaller projects for which a material amount of time is spent on Part H6 is therefore the key sensitivity. However, even where all project size bands are set to 100% applicability the figure of £500,000 above only changes to **£1,400,000**

4. Notes and Key Assumptions

4.1 All costs are at UK mean base location, 4Q10

4.2 The total number of buildings of value band "Less than £25,000" is not split between building typologies by National Statistics. It has been estimated that 80% of these buildings are residential and 20% mixed use.

5. References

5.1 National statistics, New Orders in the construction Industry – Additional Annual Tables: Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008)

5.2 2013 Review economic analysis and framework contract work packages

6. Attachments

6.1 Estimate of costs of dealing with Part H6 (baseline)

6.2 Estimate of costs of dealing with Part H6 (sensitivity)

6.3 PRP statement on Part H6 (and attachments)

Building Regulations Review - Part H6

Estimate of Costs of Time Associated with Part H6 - Baseline

25th November 2010

Residential

Project Size Band	No. of Building	Time Input per building	% Applicable	Architect Charge Out Rate	Total Cost
Less than £25,000	201,018	0.00	0%	£584	£0
£25,000 - £500,000	5,834	0.25	25%	£584	£212,941
£500,000 - £2,000,000	3,332	0.25	50%	£584	£243,236
£2,000,000 - £10,000,000	452	0.25	100%	£584	£65,992
£10,000,000 - £20,000,000	45	0.50	100%	£584	£13,140
£20,000,000 and over	20	0.50	100%	£584	£5,840
Total	**210,701**				**£541,149**
				Say	**£500,000**

Mixed Use

Project Size Band	No. of Building	Time Input per building	% Applicable	Architect Charge Out Rate	Total Cost
Less than £25,000	50,255	0.00	0%	£584	£0
£25,000 - £500,000	32,929	0.00	25%	£584	£0
£500,000 - £2,000,000	4,125	0.00	50%	£584	£0
£2,000,000 - £10,000,000	1,594	0.00	100%	£584	£0
£10,000,000 - £20,000,000	215	0.00	100%	£584	£0
£20,000,000 and over	181	0.00	100%	£584	£0
Total	**89,299**				**£0**
				Say	**£0**

Grand Total Cost	**£541,149**
Say	**£500,000**

Source of Information

Building Numbers:
National statistics, New Orders in the construction Industry – Additional Annual Tables

Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008).

Time Input:
PRP Part H6 Statement
Architect Charge Out Rate:
EC Harris Rate Database

DCLG Building Regulations Review

Part H6

1.0 APPROVED DOCUMENT H6

Part 6 relates to solid waste storage.

1.1 **Summary**

It includes

- Provision of storage for solid waste
- Adequate means of access to the place of storage for people depositing waste, or collecting it.

The performance guidance requires:

- Design and siting to not be prejudicial to health
- Area sufficient for Waste Collection Authority (WCA) requirements
- Timing of collections and distance travelled (to WCA requirements)
- Accessibility for deposit and collection

Not included (requiring reference to WCA):

- Recycling of household or other waste
- Size of communal storage areas

Guidance, rather than regulation on:

- Separate storage of all waste, whether for recycling or not, supporting national initiatives on recycling and waste reduction.
- Capacity for communal waste storage (but requires reference to WCA for their agreement)

1.2 **Domestic developments**

- Capacity - 0.25m3 per household, or as WCA requirements
- **Low-rise domestic developments up to 4 storeys**
  - 2 movable individual or communal waste containers, to WCA requirements
  - Separate storage areas of 1.2m x 1.2m plus space for access
  - Communal storage areas to WCA requirements
- **High-rise domestic developments**
  - Up to 4 storeys each home may have its own waste container or share one.
  - Homes above 4 storeys may share a single container for non-recyclable a fed by a chute and a separate shared container for recyclable waste.
  - Or storage compounds may be provided (with management arrangement)
- **Siting**
  - Householders to travel max distance of 30m to containers
  - Containers within 25m of the agreed collection point , to WCA requirements

- Containers can be taken to collection point without going through a building
- Avoid steps between container and collection point, maximum of 3 allowed, slopes not exceed 1:12
- Collection point reasonable accessible to the size of WCA vehicles
- External storage to be away from windows and ventilators, preferably under shade or shelter.

- **Design**
  - Room required for filling and emptying containers + 150mm between them.
  - Enclosures min 2m high, high enough to allow opening lid
  - Permanent ventilation at top and bottom
  - Paved impervious floor
  - Washing down and floor drain provision suitable for polluted effluent
  - Gullies to maintain seal at all times
  - A room for open storage is to be secure to prevent vermin
  - If rooms provide, separate rooms required for recycling and non-recyclable waste
  - In a publicly-accessible area, and enclosure or shelter to be considered
  - Chutes in high-rise developments to be at least 450mm dia, with smooth non-absorbent surface, close fitting access doors, ventilated at top and bottom.

1.3 **Non-domestic developments**

- Consult with WCA on the following:
  - Volume and nature of waste
  - Segregation of waste
  - Method of storage
  - Location of storage
  - Hygiene arrangements
  - Fire hazards and protection
- Impervious floor, wash-down and drainage
- Gullies to maintain seal at all times
- Storage room secure from vermin
- Marking and signage for waste storage areas

- **Alternative approach**
  - BS 5906: 1980 Clauses 3-10, 12 - 15 and Appendix A

2.0 RELEVANT LEGISLATION AND GUIDANCE

2.1 **UK regulatory bodies are:**

- Defra
- Environment Agency

2.2 **UK waste legislation**

- Animal By-Products Regulations (ABPR)
- Best practicable environmental option (BPEO)
- Certificate of Technical Competence (COTC)
- Control of Pollution Act
- Environment Act 1995
- Environmental Impact Assessment
- Environmental Protection Act
- Landfill Allowance Trading Scheme (LATS)
- Landfill in the UK
- Landfill tax
- Landfill Tax Regulations
- Waste Management Licensing Regulations
- Statutory recycling targets

2.3 **Environment Protection Act 1990 - *Legislation***

- Section 45 - Collection of controlled waste
  - General duty of LAs to collect waste in their area without charge
  - Duty to collect commercial waste where requested
  - They may collect industrial waste, but may also levy a charge for this

- Section 46 - Receptacles for household waste required by the LA -
  - Separate storage for recyclable waste
  - Type of containers for storage of waste
  - Additional containers for separate storage of recyclable waste
  - Locations where containers are to be placed for emptying

- Section 47 - Receptacles for commercial or industrial waste
  - LA may still require the same considerations as 46 above.

Each local authority can make its own decisions as to the method and timing of waste collection, and does this through the waste collection authority in their area.

2.4 **Building Acts1984 - *Legislation***

Section 23 (provision of facilities for refuse) Subsection 3 - access for removal of waste is to be maintained.

This legislation lays responsibility on the local authority for ensuring access to waste storage is maintained at all times, with sanctions to be applied for failure to comply.

2.5 **BS 5906: 1980 - *Guidance***

This is the Code of Practice for the storage and on-site treatment of solid waste from buildings, including hospitals, commercial and residential buildings.

The 1980 version is no longer current, but is cited in the Building Regulations. It is superseded by BS 5906: 2005.

2.6 **BS 5906:2005 - *Guidance***

Code of practice for waste management in buildings, superseding BS 5906:1980.

It covers methods of storage, collection, segregation for recycling and recovery, and on-site treatment of waste from residential and non-residential buildings and healthcare establishments. It is applicable to new buildings, refurbishments and conversions of residential and non-residential buildings, including but not limited to retail and offices.

This document covers the following:

- Definitions
- General principles of the design of facilities
- Older persons and people with disabilities (referring to BS 8300)
- Systems of waste storage, handling, on-site treatment and collection
- Choice of method of storage and collection of waste in various types of building
- Waste storage chambers
- Storage for bulky items
- Roads and approaches to buildings
- Collections of containers
- Hygiene

It includes recycling provision, composting, compacting, etc, but not healthcare waste from hospitals or waste oil.

It encourages liaison between the LA planning authority and architects, as well as collection authorities. In the list of consultees, Building Control is mentioned as only one of seven, though this is not an exhaustive list.

Anthropometrics are provided, identifying the weights that men and women can lift and lower to different heights.

A table is provided of the storage requirements for different sizes of homes, frequency of collections, etc, from different types of buildings.

There is no requirement for minimum travel distances for people depositing waste, though there is a maximum travel distance recommended for collection, of 15m for 2-wheeled containers and 10m for 4-wheeled containers.

2.7 EU Waste Legislation

Directive 2006 / 12 / EC on waste
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006L0012:EN:NOT

These are very generalised requirements for consideration in waste handling and disposal, up to interpretation by Member States, with a requirement for waste management plans.

2.8 European Federation of Waste Management and Environmental Services

FEAD is the European Federation representing the European waste management industry. FEAD's members are national waste management associations covering 20 Member States. They have an approximate 60% share in the household waste market and handle more than 75% of industrial and commercial waste in Europe. They play an important role in the determination of the best environmental option for waste management problems.

The provide an overview of the legislative framework regulating the European Waste Management Industry

- Waste Framework Directive
- Waste Shipment Regulation
- Waste stream related recycling Directives
- Incineration Directive
- Integrated Pollution Prevention & Control Directive
- Landfill Directive

3.0 WASTE COLLECTION AUTHORITY

We have projects across the country where it can be noted that LAs vary in their requirements for waste storage, often dependent on the vehicles available.

The attached document, Waste and Recycling Storage and Collection Requirements from Lambeth, is likely to be typical.

It covers the following in great detail:

- Introduction
- Submitting planning applications
- Calculation of storage capacity required (for a range of types of buildings)
- Storage systems and requirements
- Developments where a Compactor is recommended
- Recycling
- Provisions of the Environmental Protection Act
- Appendices

This document is extremely clear, thorough and broad ranging. However, it does not cover the regulation of distance of travel for people carrying waste material to a storage area. Its focus is on the storage and collection, rather than the safe transfer of waste from its origin to a point of collection.

4.0 PLANNING REQUIREMENTS

4.1 Validation checklist

- There is a National standard checklist of the items needed for any planning submission, and it includes the requirement for a refuse strategy or site waste management plan (see attached - P14)
- This is encouraged by the Department for Business Enterprise and Regulatory Reform in their document: **Site Waste Management Plans: Guidance for construction contractors and clients.** This does not require formal approval by planning authorities, but is intended to:
    - encourage the identification of the type and volume of material to be demolished and/or excavated,
    - opportunities for the reuse and recovery of materials
    - demonstrate how off-site disposal of waste will be minimised and managed.
- Most local authorities require this information, though it may vary in the extent of information needed, in relation to the nature and size of the submission.

4.2 Design and Access statements

- The D&A statement accompanying a planning submission, usually incorporates a waste management statement, providing the "tick" for the validating officer on receipt of the application.

5.0 PROJECT FLOW

- RIBA Stages B-D
    - Consultation with LA waste collection authority
    - Agreement on strategy for waste for entire scheme
    - Consultation with LA transportation department regarding road design criteria for collection vehicles, etc.
    - Refuse strategy devised which forms part of the planning submission
    - In determining a planning submission, the planning department will take into account the views of the Street Care (or other similar department).
    - Usually, Planning requires submission of details about storage of waste and recyclable material. However, they might also allow reserved matters in the planning consent.

- Planning conditions, including any reserved matters, will be applied which require resolution or implementation of proposals to meet the requirements of the WCA prior to site commencement.

- RIBA Stages E - H
  - Compliance with the refuse strategy in the D&A statement, through discharge of planning conditions.
  - Compliance with transportation requirements through discharge of planning conditions.
  - Building Control input mainly on travel distances and access to waste storage (turning circles for vehicles, etc)
  - Planners will require a statement, copy of minutes of meetings, letter of confirmation from the WCA to support the discharge of conditions.

6.0 IMPACT OF REMOVAL OF AD H6

As can be seen from the above, Building Control plays a small part in the considerations for design and layout of waste storage and collection, since the major part of decision-making on design is with the Waste Collection Authority and the Local Authority's Roads and Transportation department.

However, most of the other documentation is not enshrined in legislation; merely it is provided as guidance in the form of British Standards or the requirements of the different local authorities' waste collection organisation.

There is therefore scope for aligning waste storage and collection requirements across the country holistically, to embrace accessibility of waste storage. This is important because recycling is vital for a sustainable and environmentally responsible waste management system.

The only items covered by the Approved Document, but which are not covered elsewhere relate to travel distances.

The key concerns are, therefore:

- Travel distances to the collection point for the person depositing waste - 30m maximum.
- Travel distances for the collection of waste - 25m maximum from designated collection point, which is in excess of the maximum travel distance for different types of containers stated in BS 5906:2005.

The rest of the text is duplicated elsewhere, or qualified by the relevant Waste Collection Authority, and is not obligatory.

7.0 COST IMPACT OF REMOVAL OF AD H6

Time saving is minimal, as it only requires a statement about internal travel distances for people depositing waste; everything else is covered by the WCA requirements. Domestic waste is the typology that is relevant, and flat blocks the most complex. Mixed use buildings will have their own waste management systems, probably using agents/cleaners to collect waste and deposit it at the collection points agreed with the WCA.

So, quantifying the saving would be as follows:

	Time input (days)		
Value Band	**Residential**	**Mixed use**	**% Applicable**
Less than £25,000	0	0	0
£25,000 - £500,000	0.25	0	25
£500,000 - £2,000,000	0.25	0	50
£2,000,000 - £10,000,000	0.25	0	100
£10,000,000 - £20,000,000	0.5	0	100
£20,000,000 and over	0.5	0	100

8.0. ACTIONS FOR DCLG

DCLG could either:

- keep the regulations,
- abbreviate them
- or remove them and look at helping local authorities / industry bodies to ensure that they fill in the gaps

Appendix 1

National Statutory Requirements – Validation Checklist

Applications for full planning permission are required to be accompanied by the following:

The standard application form
From 1 April 2008, all planning applications will need to be presented on a standard application form, which will be available electronically. The Government wishes to encourage applicants to submit applications electronically wherever possible, as this provides opportunities for streamlining procedures and thereby reducing costs. However applicants will retain the option of submitting paper versions of the form. In that event, the GDPO 1995 requires three additional copies of the completed standard application form to be submitted.
An applicant may be requested by the local planning authority to submit more than three copies, but three copies is the statutory requirement for a valid application.

The location plan
All applications must include copies of a location plan based on an up-to-date map. This should be at a scale of 1:1250 or 1:2500. The GDPO 1995 requires three copies (unless submitted electronically). In exceptional circumstances plans of other scales may also be required. Plans should wherever possible show at least two named roads and surrounding buildings. The properties shown should be numbered or named to ensure that the exact location of the application site is clear.
The application site should be edged clearly with a red line. It should include all land necessary to carry out the proposed development – for example, land required for access to the site from a public highway, visibility splays, landscaping, car parking and open areas around buildings. A blue line should be drawn around any other land owned by the applicant, close to or adjoining the application site.

Site and Other Plans
Copies of the site plan should be submitted. The legislation requires three copies (unless submitted electronically). The site plan should be drawn at a scale of 1:500 or 1:200 and should accurately show:
a) The direction of North.
b) The proposed development in relation to the site boundaries and other existing buildings on the site, with written dimensions including those to the boundaries.
c) All the buildings, roads and footpaths on land adjoining the site including access arrangements.

d) The position of all trees on the site, and those on adjacent land that could influence or be affected by the development.
e) The extent and type of any hard surfacing.
f) Boundary treatment including walls or fencing where this is proposed.
In addition other plans should be submitted dependent on the type of Application. These may include:

Block plan of the site (e.g. at a scale of 1:100 or 1:200) showing any site boundaries
Copies of plans should show: any site boundaries; the type and height of boundary treatment (e.g. walls, fences etc); the position of any building or structure on the other side of such boundaries

Existing and proposed elevations (e.g. at a scale of 1:50 or 1:100)
These should be drawn to a scale of 1:50 or 1:100 and show clearly the proposed works in relation to what is already there. All sides of the proposal must be shown and these should indicate, where possible, the proposed building materials and the style, materials and finish of windows and doors. Blank elevations must also be included; if only to show that this is in fact the case. Where a proposed elevation adjoins another building or is in close proximity, the drawings should clearly show the relationship between the buildings, and detail the positions of the openings on each property.

Existing and proposed floor plans (e.g. at a scale of 1:50 or 1:100)
These should be drawn to a scale of 1:50 or 1:100 and should explain the proposal in detail. Where existing buildings or walls are to be demolished these should be clearly shown. The drawings submitted should show details of the existing building(s) as well as those for the proposed development. New buildings should also be shown in context with adjacent buildings (including property numbers where applicable).

Existing and proposed site sections and finished floor and site levels (e.g. at a scale of 1:50 or 1:100)
Such plans drawn at a scale of 1:50 or 1:100 should show a cross section(s) through the proposed building(s). In all cases where a proposal involves a change in ground levels, illustrative drawings should be submitted to show both existing and finished levels to include details of foundations and eaves and how encroachment onto adjoining land is to be avoided.
Full information should also be submitted to demonstrate how proposed buildings relate to existing site levels and neighbouring development. Such plans should show existing site levels and finished floor levels (with levels related to a fixed datum point off site) and also show the proposals in relation to adjoining buildings. This will be required for all applications involving new buildings. In the case of householder development, the levels may be evident from floor plans and elevations, but particularly in the case of sloping sites it will be necessary to show how proposals relate to existing ground levels or where

ground levels outside the extension would be modified. Levels should also be taken into account in the formulation of design and access statements.

Roof plans (e.g. at a scale of 1:50 or 1:100)
A roof plan is used to show the shape of the roof and is typically drawn at a scale smaller than the scale used for the floor plans. Details such as the roofing material, vents and their location are typically specified on the roof plan.

Ownership Certificates
Under section 65(5) of the Town and Country Planning Act 1990, read in conjunction with Article 7 of the GDPO, the local planning authority must not entertain an application for planning permission unless the relevant certificates concerning the ownership of the application site have been completed. All applications for planning permission except for approval of reserved matters must include the appropriate certificate of ownership. An ownership certificate A, B, C or D must be completed stating the ownership of the property.
For this purpose an 'owner' is anyone with a freehold interest, or leasehold interest the unexpired term of which is not less than 7 years.

Notice(s)
A notice to owners of the application site must be completed and served in accordance with Article 6 of the GDPO.

Agricultural Holdings Certificate
This certificate is required whether or not the site includes an agricultural holding. All agricultural tenants must be notified prior to the submission of the application. This Certificate is not required if the applicant is making an application for reserved matters, renewal of temporary planning permission, discharge or variation of conditions, tree preservation orders, or express consent to display an advertisement.

The correct fee (where one is necessary)

Scale of Fees for Planning

Design and Access Statements
A Design and Access Statement must accompany applications for both outline and full planning permission unless they relate to one of the following:

- A material change of use of land and buildings, (unless it also involves operational development);
- Engineering or mining operations;
- Householder developments. However, statements are required for applications where any part of a dwelling house or its curtilage fall within one of the following designated areas:
  National Park
  Site of special scientific interest

Conservation area
Area of outstanding natural beauty
World Heritage Site
The Broads

A design and access statement is a short report accompanying and supporting a planning application that should seek to explain and justify the proposal in a structured way. The level of detail required in a design and access statement will depend on the scale and complexity of the application, and the length of the statement will vary accordingly. The design and access statement should cover both the design principles and concepts that have been applied to the proposed development and how issues relating to access to the development have been dealt with. A design and access statement should be proportionate to the complexity of the application, but need not be long. What is required in a design and access statement is set out in article 4C of the GDPO and Department for Communities and Local Government Circular 01/06 – G*uidance on Changes to the Development Control System*.

Applications for listed building consent will also be required to be accompanied by a design and access statement. In particular, such a statement should address:

(i) the special architectural or historic interest of the building;
(ii) the particular physical features of the building that justify its designation as a listed building; and
(iii) the building's setting.

The legislative requirements are set out in regulation 3A of the Planning (Listed Buildings and Conservation Areas) Regulations 1990.

Appendix 2

Local requirements – Liverpool's Validation Checklist

New Housing- Housing Market Renewal Initiative

Housing Development SPD (adopted by Liverpool City Council in July 2005) is part of the statutory development plan. The SPD and the Unitary Development Plan will be used for making decisions on planning applications for new dwellings including conversions.In this regard it will be necessary for all these residential applications to be accompanied by a Housing Assessment.

Within the HMRI area, proposals for residential development will be considered acceptable in principle, subject to the applicant demonstrating a number of points as set out in relevant policy documents (particularly the UDP and the Council's urban design Guide). Proposals should have sufficient information to meet sustainability provisions and quality design aims set out in PPS1.

Proposals for residential development outside the HMRI area and strategic sites will only be permitted where there is a demonstrable regeneration benefit and where it would not undermine the HMRI Zones of opportunity and the HMRI area as a whole. Information required to demonstrate would include :- the number of residential units, the mix of units with numbers of habitable rooms and/or bedrooms, or the floor space of habitable areas of residential units, and should comply with the relevant UDP policies including Policy H6.

Air Quality Assessment

Where the development is proposed inside, or adjacent to an air quality management area (AQMA), or where the development could in itself result in the designation of an AQMA or where the grant of planning permission would conflict with, or render unworkable, elements of a local authority's air quality action plan, applications should be supported by such information as is necessary to allow a full consideration of the impact of the proposal on the air quality of the area. Where AQMAs cover regeneration areas, developers should provide an air quality assessment as part of their planning application. Further advice is available in *Planning Policy Statement 23: Planning and Pollution. UDP Policy EP 11.*

Biodiversity Survey and Report

Where a proposed development may have possible impacts on wildlife and biodiversity, information should be provided on existing biodiversity interests and possible impacts on them to allow full consideration of those impacts. Where proposals are being made for mitigation and/or compensation measures

information to support those proposals will be needed. Where appropriate accompanying plans should indicate any significant wildlife habitats or features and the location of habitats of any species protected under the Wildlife and Countryside Act 1981, the Conservation (Natural Habitats etc) Regulations 1994 or the Protection of Badgers Act 1992. Applications for development in the countryside that will affect areas designated for their biodiversity interests are likely to need to include assessments of impacts and proposals for long term maintenance and management. This information might form part of an Environmental Statement, where one is necessary. Certain proposals which include work such as the demolition of older buildings or roof spaces, removal of trees, scrub, hedgerows or alterations to water courses may affect protected species and will need to provide information on them, any potential impacts for them and any mitigation proposals for such impacts. Government planning policies for biodiversity are set out in *Planning Policy Statement 9: UDP Policy OE5, OE6,OE7.*

Daylight/Sunlight assessment

In circumstances where there is a potential adverse impact upon the current levels of sunlight/daylight enjoyed by adjoining properties or building(s), including associated gardens or amenity space then applications may also need to be accompanied by a daylight/sunlight assessment. Further guidance is provided in, for example, BRE guidelines on daylight assessments.
Further Guidance is contained in the Council's Supplementary Planning Document on Residential Development UDP Policy HD 18.

Environmental Impact Statement

The Town and Country Planning (Environmental Impact Assessment) Regulations (1999) set out the circumstances in which an Environmental Impact Assessment (EIA) is required.
Where EIA is required, an Environmental Statement in the form set out in Schedule 4 to the regulations must be provided. Where EIA is not required, the local planning authority may still require environmental information to be provided. An applicant may request a 'screening opinion' (i.e. to determine whether EIA is required) from the planning authority before submitting the application.

Out of Centre Uses (Impact Assessments)

Impact assessments are required for all retail and leisure developments over 2,500 square metres gross floorspace, and may be required for smaller developments such as those likely to have a significant impact on smaller centres. Impact assessments should also be provided for applications for other

district centre uses when they are in an edge of centre or out of centre location and not in accordance with a development plan. Policy advice can be found in **Planning Policy Statement 6: Planning for town Centres (March 2005)** Evidence should be provided to show that there are no sequentially preferable sites. Policy advice on the policy tests for town centre uses is provided in *Planning Policy Statement 6: Planning UDP S12,S13.*

Design and Access Statement

The Liverpool Unitary Development Plan – Policy HD19 *Access for All* sets out policy and Supplementary Guidance Note *Access for All* provides information and advice to developers on the standards that the City Council would like to see in development schemes. This policy and guidance is available on There is also a Merseyside wide *Code of Practice on Access and Mobility* which is an advisory document reflecting best practice and current statutory requirements for the design of buildings, structures, highways and transportation www.accesscode.info.

National Planning Policy Statement 1 makes clear that inclusive access is a material planning consideration and that the majority of planning applications should be accompanied by an access statement.

In respect of all applications (outline and full planning applications) the City Council would require an Access Statement to cover the following parts.

The access component of a statement would cover the following points:

a) the policy or approach adopted to access, and how policies relating to access in relevant local development documents have been taken into account;

b) what, if any, consultation has been undertaken as to the access and what account has been taken of the outcome of any such consultation;

c) how any specific issues which might affect access to the development have been addressed;

d) how prospective users will be able to access the development from the existing transport network and why the main points of access to the site and the layout of access routes within the site have been chosen;

e) how features which ensure access to the development will be maintained.

The Access Statement should be an integral part of a Design Statement.

Depending on the nature of the application and the works involved exceptions to this may be made with the applications for:-

- A material change of use of land and buildings, (unless it also involves (operational development);
- engineering or mining applications;
- development of an existing single dwelling-house, where no part of the dwelling-house or its curtilage is within a designated area, e.g a conservation area.

However Liverpool City Council would expect ALL changes of use to uses which provide services to the public to be accompanied by an Access Statement

The Access Statement should illustrate what has been done from the start to ensure buildings, services and facilities are accessible to all. The statements are central to the planning application process and designers, developers and clients should explain how the needs of disabled people and everyone else are incorporated into the design of a scheme, and should be accompanied by plans showing circulation routes, facilities, dimensions etc.

The nature of Design and Access Statement may vary depending on the size, complexity and nature of the scheme. The access statement should clearly identify :-

- The philosophy and approach to an inclusive design
- The key issues of the particular scheme
- The source of advice and guidance used
- How the principles of an inclusive design have been implemented into the scheme.
- How inclusion will be maintained and managed.

If a major development is proposed a comprehensive two dimensional visualization of the proposal in the context of it's surroundings, or a three dimensional model should be submitted.

Crime Prevention

Secured by design is the UK Police flagship initiative supporting the principles of “designing out crime” by use of effective crime prevention and security standards for a range of applications.

Secured by Design (SBD) is a minimum standard for safety and security. Additional or alternative measures may be required due to local conditions, as advised by the local police Architectural Liaison Officer (ALO)

The principles of designing out crime must be incorporated (see the *Secured by Design* Principles document at www.securedbydesign.com) in the design and Access Statement. *Safer Places The Planning System and Crime Prevention,* a planning guidance document issued by the Home Office and the ODPM (now the DCLG) sets out (2.3 to 2.6 inclusive) Developers must demonstrate that the all of the attributes have been considered and applied within the design of the development.

- Access and movement
- Structure
- Surveillance
- Ownership
- Physical protection
- Activity
- Management and maintenance

Flood Risk Assessment

At the planning application stage, where necessary, an appropriate Flood Risk Assessment (FRA) will be required to demonstrate how flood risk from all sources of flooding to the development itself and flood risk to others will be managed now and taking climate change into account. Planning applications for development proposals of 1 hectare or greater in Flood Zone 1 and all proposals for new development located in Flood Zones 2 and 3 should be accompanied by a Flood Risk Assessment (FRA). This should identify and assess the risks of all forms of flooding to and from the development and demonstrate how these flood risks will be managed, taking climate change into account. For major developments in Flood Zone 1, the FRA should identify opportunities to reduce the probability and consequences of flooding.

The FRA should be prepared by a developer in consultation with the local planning authority. The FRA should form part of an Environmental Statement when one is required by the **Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 as amended**. Planning Policy Statement 25: 'Development and Flood Risk (December 2006) provides comprehensive guidance for both local planning authorities and applicants in relation to the undertaking of flood risk assessments and the responsibilities for controlling development where it may be directly affected by flooding or affect flooding elsewhere.
UDP policy EP 13 Flood Prevention.

Heritage Statement (including Historical, archaeological features and Scheduled Ancient Monuments)

Conservation Statement

(Including listed buildings, buildings within conservation areas and the Liverpool World Heritage Site, locally listed buildings, development affecting registered historic parks, scheduled ancient monuments, archaeological remains and the setting of any of the above)

The Council deals with both planning applications affecting the historic environment (based on a number of heritage designations) and applications under separate but related legislation for listed building consent. Requirements for supporting information vary with the type of application, the complexity of the proposals and the nature of their impact.

Government advice as to the supporting information required when proposals affect the historic environment is given in Annex B (paragraph B.3) of **Planning Policy Guidance 15: Planning and the Historic Environment** (DETR / DCMS, September 1994). This includes, location plan to identify the building in context, plans and drawings to identify the work – in all but the simplest work this means measured drawings of floor plans and external (and internal as necessary) elevations. Submissions should include both survey (before) drawings and proposal (after) drawings. Photographs can be particularly helpful. Applications for listed building consent can require submission of additional technical specification for proposed works, detail of structural works and a full schedule of works. In most cases where significant development is proposed, contextual drawings showing street scenes and important views may be required.

There are also two special cases where the supporting information is required to exceed that normally required:-

(1) Listed Building Consent / Conservation Area Consent for demolition – criteria is set out in paragraphs 3.16 to 3.19 of PPG15. This includes conditions survey, structural survey, sales and marketing information, options feasibility study, financial information of costs and possible end values (development appraisal).

(2) Enabling development - by definition this is development that is harmful but is considered necessary as the least harmful solution to preserve a historic building. Advice as to the required information is set out in **Enabling Development and the Conservation of Heritage Assets** (English Heritage, June 2001) at section 2. It will include similar information to the above where demolition is proposed, some information about the feasibility of options, and financial / development appraisal.

Informed Conservation (English Heritage, 2001) is the good practice guide to PPG15 and provides further advice about the form and detail of submissions that can be used to accompany applications including, a 'heritage impact assessment' and 'conservation statement', as well as the more complex 'conservation management plan' which is only likely to be required for large and complex applications.

Where development may affect archaeological remains, guidance about the supporting information for an application is set out in **Planning Policy Guidance 16: Archaeology and Planning** (DoE, November 1990). Where there are known archaeological remains a desk-based assessment of the likely archaeological interest will be needed. For more complex applications, especially major development or infrastructure works, where archaeological remains may survive (as may be agreed in pre-application discussions) an applicant may need to commission a field-based assessment and submit the information as part of application.

Applications for scheduled ancient monument consent are currently submitted directly to the Department for Culture Media and Sport.

Land Contamination assessment

Applications may also need to be accompanied by a land contamination assessment which should include an extended assessment of contamination in line with **Planning Policy Statement 23 'Planning and Pollution Control' (November 2004***)*. Where contamination is known or suspected or the proposed use would be particularly vulnerable, the applicant should provide such information with the application as is necessary to determine whether the proposed development can proceed. **UDP** Chapter 13,policy EP2 which requires details of a site survey identifying the type, degree and extent of any contamination, a requirement for remedial measures to deal with any hazard, together with the proposed timescale for the implementation of the measures.

Landfill applications

Applicants should provide sufficient information to enable the waste planning authority to fulfil its requirements under **The Landfill (England and Wales) Regulations 2002.** This information may be provided as part of the Environmental Impact Assessment.

Lighting assessment

Proposals *involving* the provision of publicly accessible developments, in the vicinity of residential property, a Listed Building or a Conservation Area, or open countryside, where external lighting would be provided or made necessary by the development, should be required to be accompanied by details of external lighting and the proposed hours when the lighting would be switched on. These details shall include a layout plan with beam orientation and a schedule of the equipment in the design. **UDP policy HD28** Light Spillage.

Noise impact assessment

Application proposals that raise issues of disturbance or are considered to be a noise sensitive development in what are considered noise sensitive areas should be supported by a noise impact assessment prepared by a suitably qualified acoustician. Further guidance is provided ***in*** **Planning Policy Guidance note 24: Planning and Noise (September 1994).** UDP Policy Pollution EP11.

Open Space assessment

Planning consent is not normally given for development of existing open spaces which local communities need. For development within open spaces, application proposals should be accompanied by plans showing any areas of existing or proposed open space within or adjoining the application site. An applicant seeking planning permission may seek to demonstrate through an independent assessment that the land or buildings are surplus to local requirements and any such evidence should accompanying the planning application. Government planning policy is set out in **Planning Policy Guidance note 17: Planning for open space, sport and recreation (July 2002).**

UDP Policy OE 11, OE12, OE13 and OE14.

Planning obligations - Draft Head(s) of Terms

Planning obligations (or "section 106 agreements"[4]) are private agreements negotiated between local planning authorities and persons with an interest in a piece of land (or "developers"), and are intended to make acceptable development which would otherwise be unacceptable in planning terms. Where Local Development Framework policies give details of likely section 106 requirements, a statement of the proposed Heads of Terms may be submitted with the application where it is known a 106 agreement is likely to be required. Further advice is available in ODPM **Circular 05/2005, Planning Obligations** and the model section 106 agreement, both of which are available on the Communities and Local Government

UDP Policy OE14

Parking provision

All non-householder applications will be required to provide details of existing and proposed parking provision, including cycle parking, and to justify the level of provision.

Applicants will be required to justify proposals which exceed the Council's maximum parking standards. Existing and proposed parking details may be required for proposals where existing parking will be lost.

Planning Statement

A planning statement identifies the context and need for a proposed development and includes an assessment of how the proposed development accords with relevant national, regional and local planning policies. It may also include details of consultations with the local planning authority and wider community/statutory consultees undertaken prior to submission. However, a separate statement on community involvement may also be appropriate.

Regeneration Statement

Applications may also need to be accompanied by a supporting statement of any regeneration benefits from the proposed development, including: details of any new jobs that might be created or supported; the relative floorspace totals for each proposed use (where known); any community benefits; and reference to any regeneration strategies that might lie behind or be supported by the proposal.

Site Waste Management Plan

Proposed new development should be supported by a Site Waste Management Plan of the type encouraged by the code of practice published in 2004 by the Department of Trade and Industry, now the Department for Business Enterprise and Regulatory Reform **Site Waste Management Plans: Guidance for construction contractors and clients.** These do not require formal approval by planning authorities, but are intended to encourage the identification of the type and volume of material to be demolished and/or excavated, opportunities for the reuse and recovery of materials and to demonstrate how off-site disposal of waste will be minimised and managed.

Statement of Community Involvement

Applications may need to be supported by a statement setting out how the applicant has complied with the requirements for pre-application consultation set out in the local planning authority's adopted statement of community involvement and demonstrating that the views of the local community have been sought and taken into account in the formulation of development proposals. Further guidance on Statements of Community Involvement is available in Chapter 7 of Creating Local Development Frameworks: A Companion Guide to PPS12 (*November* 2004).
UDP Policy C8 sec 12.76

Planning Policy Guidance 13 'Transport' (March 2001) advises that a Transport Assessment (TA) should be submitted as part of any planning application where the proposed development has significant transport implications. The coverage and detail of the TA should reflect the scale of the development and the extent of the transport implications of the proposal. For smaller schemes the TA should simply outline the transport aspects of the application, while for major proposals, the TA should illustrate accessibility to the site by all modes of transport, and the likely modal split of journeys to and from the site. It should also give details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal, and to mitigate transport impacts. Further guidance will be found in Guidance on Transport Assessment, published by the Department for Transport (March 2007).
(Draft) Travel Plan
A (draft) travel plan should be submitted alongside planning applications which are likely to have significant transport implications. A (draft) travel plan should outline the way in which the transport implications of the development are going to be managed in order to ensure the minimum environmental, social and economic impacts. The (draft) travel plan should have a strategy for its implementation that is appropriate for the development proposal under consideration. It should identify the travel plan coordinator, the management arrangements for the plan – e.g. a steering group and the development timetable. The strategy should also include activities for marketing and promoting the plan to occupiers, users, visitors and residents of the site. Further advice is available in **Using the planning process to secure travel plans: best practice guidance for local authorities, developers and occupiers [ODPM and DfT, 2002] and Making residential travel plans work** [DfT, 2007].
On the issue of transport the following UDP policies are relevant :-
T6 : cycling, T7 walking and pedestrians, T9 road safety, T12 major road corridors.
Combined these policies focus the need for sustainable transport whilst acknowledging the car as a main source of travel. The result is a balance

between vehicular and non-vehicular means, which promotes pedestrian and vehicular safety.

Telecommunications Development

Planning applications for mast and antenna development by mobile phone network operators in England should be accompanied by a range of supplementary information including the area of search, details of any consultation undertaken , details of the proposed structure, and technical justification and information about the proposed development.

Planning applications should also be accompanied by a signed declaration that the equipment and installation has been designed to be in full compliance with the requirements of the radio frequency (RF) public exposure guidance of the International Commission on Non-Ionizing Radiation Protection (ICNIRP). Further guidance on the information that may be required is set out in **Code of Practice on Mobile Network Development (2002)**

Tree survey/Arboricultural implications
Where there are trees within the application site, or on land adjacent to it that could influence or be affected by the development (including street trees), information will be required on which trees are to be retained and on the means of protecting these trees during construction works. This information should be prepared by a suitably qualified and experienced arboriculturist. Full guidance on the survey information, protection plan and method statement that should be provided with an application is set out in the current **BS5837 'Trees in relation to construction – Recommendations'.** Using the methodology set out in the BS should help to ensure that development is suitably integrated with trees and that potential conflicts are avoided.
UDP policies HD22, HD23.

Utilities Statement

A utilities statement should include how an application connects to existing utility infrastructure systems. Most new development requires connection to existing utility services, including electricity and gas supplies, telecommunications and water supply, and also needs connection to foul and surface water drainage and disposal.

Refuse Disposal Details

All proposals involving the creation of new dwellings or new retail, business, industrial or leisure or other similar developments will be required to be

accompanied by details of proposed facilities for the storage and collection of refuse, including access for refuse collection vehicles.

Large scale developments may result in requirements for recycling facilities.

Sustainability

Sustainability Statements will be required for all major planning applications which demonstrate the sustainability principles of the proposed development, including the positive environmental, social and economic considerations.

Lambeth

WASTE & RECYCLING

STORAGE AND COLLECTION REQUIREMENTS

Guidance for Architects & Developers

For consultation and advice on any scheme, please contact:

Streetcare
Environment & Culture Department
1st Floor, Service Team House
185-205 Shakespeare Road
London
SE24 0PZ

Tel: 020 7926 9000
Fax: 020 7926 0530

E-mail: StreetCareCallCentre@lambeth.gov.uk

Updated May 2006

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Appendices

1. Introduction

1.1
Lambeth Council is constantly trying to improve the quality of life for residents, workers and visitors to the borough and is actively pursuing measures to minimise the volume of waste placed on pavements for collection. There needs to be an opportunity for consultation on the design of any new development with regard to waste and recycling facilities. Through consultation, it can be ensured that any introduced facilities are compatible with the collection systems operated by the Council and its contractors. To achieve this objective, all premises must have adequate storage space to contain waste, including separate storage for dry recyclable material.

1.2
Planning conditions or obligations are an important means of securing suitable provisions for both refuse and recycling storage and servicing. They can also assist wider objectives of reaching new recycling targets by facilitating recycling. When a new development, extension or change of use is submitted for approval the scheme will be assessed to ensure that adequate storage facilities are provided for waste and dry recyclable material. This requirement should therefore be considered at the earliest stages of the design process and details included on drawings submitted to the Council when applying for planning permission.

1.3
Storage space and waste management facilities within commercial and residential developments are determined by the frequency of the Council's waste collection service. This provision must also take into account occasional and seasonal peaks in waste output. The use of a waste compactor and/or a cardboard baler may be required in certain types of development.

1.4
These notes, which apply only to the London Borough of Lambeth, are intended as a guide for architects when planning any new development, modernisation or change of use. They indicate methods of waste storage and the criteria by which the Street Care service estimates waste production and they should not be considered an alternative to consultation. Discussion with a representative of the Street Care service is essential.

1.5
Further documents for reference and some useful web addresses are given in Appendices IV and V but please always bear in mind the following:

- Waste is unwanted or discarded materials. Categories include Municipal, Controlled, Household, Commercial, Industrial, Hazardous and Clinical waste.
- A Waste Collection Authority (WCA) collects municipal waste, which includes household waste and recycling, street sweepings, litter, fly-tipped materials, commercial waste, industrial waste and municipal parks & gardens waste.
- Household waste continues to grow by approx. 3% per year.
- Most of the waste produced in the UK is currently sent to landfill.
- Landfilling is unsustainable and is being increasingly restricted by EU Directives.
- Much waste has a hidden value and can be re-used, composted or recycled. This, following the reduction of waste produced, constitutes the 'waste hierarchy' in terms of acceptable sustainable waste management.

2. Submitting Planning Applications

2.1
It is essential to discuss waste and recycling issues at an early stage to ensure that proposed systems are compatible with the requirements of the Council and/or its contractors, the location and size of the refuse/recycling area, types of containers and anticipated servicing requirements. Facilities must be provided within all new developments for storage of refuse. This includes conversions of single dwellings into two or more units and change of use.

2.2
Waste increasingly needs to be considered in terms of its separate components. There is a need to ensure that sufficient space is afforded in all new developments, re-developments and conversions to enable segregated storage of waste. When a planning application is submitted, the Council will expect details of the proposed storage accommodation for waste and recyclable material to be specified and agreed. The Planning service consults Street Care on the following types of application:

- New developments
- Residential conversions
- Major extensions to existing buildings
- Re-developments
- Most changes of use, especially those providing hospitality services

2.3
In determining planning applications, such as those listed above, Planning will take into account the views of Street Care. Permission will not normally be granted in advance of submission of details indicating satisfactory storage arrangements for waste and recyclable material. However, in exceptional circumstances it may be considered appropriate to reserve details of the waste storage accommodation for approval prior to commencement of construction work.

2.4
Planning applications should clearly identify the proposed refuse and recycling storage points and the access routes for collection vehicles. Particular care needs to be taken when designing the access to bin storage arrangements above ground floor level, which have to be accessed by the collection vehicles using a ramp. Any access ramps need to be capable of supporting vehicles having a gross weight (i.e. vehicle plus load) of 26 tonnes and minimum single axle loading of 11 tonnes.

2.5
Street Care requires the provision of sufficient storage space for waste and recyclable material for two days, four days or seven days output, depending on the frequency of collection. This provision must be clearly marked on the relevant plans submitted with the planning application.
Where large amounts of waste are likely to be generated, the installation of a waste compactor and cardboard baler is recommended. However, as Lambeth Council does not provide skip and bale collections, the developer would need to arrange a contract with a private licensed waste collector. Wash down and drainage facilities are also desirable in order to facilitate required hygiene standards.

2.6
In order to further reduce the environmental impact of waste being placed on the pavement for collection, buildings will be expected to have an off-street collection area at ground floor level. In most cases waste should be contained in an enclosed store.

2.7
For commercial developments in areas where the Council's collection service is:

- Daily: provision must be made for at least two days output of waste.
- Three times a week, or less: provision must be made for at least four days output of waste.
- Once a week: provision must be made for at least seven days output of waste

In areas where there are mixed residential and commercial units, residential dwellings will be required to have four days storage, irrespective of the frequency of collection. Additional space is required for the storage of recyclable material, as the collection frequency is normally less than that given for general waste.

2.8
In all applications where clinical waste is likely to be generated (medical, dental and veterinary establishments, etc), separate storage and collection arrangements are required for clinical and non-clinical waste.

2.9
In major residential or commercial developments the Council may require a waste management plan to be submitted. This should indicate:

- Estimated volumes and types of waste produced by the development
- The size and location of waste and recycling stores
- How recyclable material and other waste is delivered to these stores
- The equipment specified for compacting and/or containing the waste
- The proposed collection point and the method for transferring waste to this location.

2.10
Discussions concerning the provision of waste storage accommodation should take place directly with Street Care. These guidance notes seek only to provide some basic advice on the storage and collection requirements for waste and recyclable material.

3. Calculation of Storage Capacity Required

3.1 General Requirements

When considering the amount of storage space needed for any particular development the following requirements will help to calculate the volume of waste generated. They should be taken as a guideline only, since individual developments may need specific storage requirements.

3.2 Residential

For developments of up to 10 households:

- 80 litres storage capacity per bedroom
- The Council provides sacks and/or a green box for dry recyclable material.

This requirement relates and refers to storage of waste provided by wheeled containers with a capacity of 360 litres or below.

For developments of more than 10 households, using communal bulk waste containers:

- 60 litres storage capacity per bedroom
- An additional 50% storage capacity for dry recyclable material (1280 litre recycling bins). In developments where 660 litre wheeled containers are used, the council might consider providing sacks and/or green boxes for dry recyclable material.

This requirement relates and refers to storage of waste provided by wheeled containers with a capacity of 660 litres or above.

Note: For large residential developments additional storage space is required for redundant bulky household goods, such as furniture, cookers, beds, etc.

3.3 Offices

- 2,600 litres waste storage for every 1,000 m^2 gross floor space.

One third of the waste storage capacity should be retained for the storage of separated waste for recycling. The Council doesn't currently offer recyclable material collections to commercial developments. However, information about private recyclable material licensed collectors can be obtained from the Council.

3.4 Retail

- 5,000 litres waste storage for every 1,000 m^2 gross floor space.

This is not a generally applicable minimum requirement. Certain food outlets, especially those of the fast food type, would generate substantially greater amounts of waste. Streetcare will assess each proposal individually.

One third of the waste storage capacity should be retained for the storage of separated waste for recycling. The Council doesn't currently offer recyclable material collections to commercial developments. However, information about private recyclable material licensed collectors can be obtained from the Council.

3.5 Restaurants & Fast Food Outlets

- 10,000 litres waste storage for every 1,000 m^2 gross floor space.

This is not a generally applicable minimum requirement. Certain food outlets, especially those of the fast food type, would generate substantially greater amounts of waste. Streetcare will assess each proposal individually.

One third of the waste storage capacity should be retained for the storage of separated waste for recycling. The Council doesn't currently offer recyclable material collections to commercial developments.

However, information about private recyclable material licensed collectors can be obtained from the Council.

3.6 Hotels

- 7,500 litres waste storage for every 1,000 m^2 gross floor space.

This is not a generally applicable minimum requirement. The volume of waste produced depends to a large extent on the type of hotel, since these range from short stay bed and breakfast to luxury banqueting facilities. Streetcare should be contacted at an early stage in the design process to advise on storage space and equipment requirements.

One third of the waste storage capacity should be retained for the storage of separated waste for recycling. The Council doesn't currently offer recyclable material collections to commercial developments. However, information about private licensed recyclable material contractors can be obtained from the Council.

3.7 Schools

- 1,500 litres waste storage for every 100 pupils.
- 1,000 litres recycling storage for every 100 pupils.

Note: Streetcare should be contacted at an early stage in the design process to advise on storage space and equipment requirements.

4. Storage Systems & Requirements

4.1 General Requirements

4.1.1
Where multi-storey residential developments are proposed, the developer must provide a purpose built area for the storage of chamberlain bins or wheeled Eurobins (generally 660 litre or 1100 litre for refuse and 1280 litre for recycling). Alternatively, the developer might consider installing underground containers for waste and dry recyclable material. The bin store must be capable of housing the maximum number of containers required, based on an assessment of projected arisings.

4.1.2
Wherever possible, refuse containers should be located within an enclosure to prevent nuisance from the spread of rubbish, odour and noise, especially in the case of multi-storey developments. The enclosure should be constructed of material in keeping with the surroundings and screened as much as possible, using boundary walls, fencing or planting. Doors/gates to any such enclosure are not permitted to open out over the public highway.

4.1.3
Any enclosure, compound or storage area should allow room for filling and emptying and provide a clear space of 150mm between and around containers and be a minimum of 2m high. Communal storage areas should have an impervious floor and permit washing down and draining into the floor via a system for receiving polluted runoff. Unless the waste is to be stored in secure containers with close fitting lids, the compound should be secure to inhibit entry of vermin.

4.1.4
A rubber buffer should be affixed to the surrounding wall and placed at an appropriate height to prevent damage to the storage area walls and unnecessary noise. Doors to the storage area should also be fitted with a hook back facility to prevent damage from bins colliding into doors upon entry or exit.

4.1.5
Adequate lighting that is easily maintained is required within in any enclosed storage area

4.1.6
Consideration should be given to providing separate rooms for the storage of waste and recyclables within any storage area. If separate storage areas are to be provided for each dwelling, an area of 1.2m^2 is recommended for storage of waste.

4.1.7
Residents or, in some cases, caretakers, are responsible for moving their bins/bags to the collection point on the collection day. Access for collection of refuse and recycling must be provided between 6am - 9pm and any provision of refuse/recycling storage should not result in the placement of containers on the public highway at any time or interfere with pedestrian or vehicle access to buildings.

4.1.8
For commercial waste, careful consideration needs to be given to the likely composition and quantities of waste expected to arise and whether the type of handling system proposed is compatible with that being operated by contractors, in case the tenant opts to use the Council as the waste carrier. Sufficient space should be designed to accommodate the appropriate number of bins, both refuse and recycling, to meet the needs of the user.

4.1.9
As a general rule, every development should be provided with the minimum number of separate containers in which to store waste and recyclable material. The provision of a compactor, and cardboard baler if necessary, should be considered in order to reduce the volume of waste to be stored and collected. However, when a compactor or baler are considered, a private collection contract will need to be arranged, as Lambeth Council does not offer a compacted and/or baled waste collection service.

4.1.10
In most planning applications space should be allocated for the storage of dry recyclable material. This not only encourages recycling, but can also significantly reduce overall collection charges for commercial tenants.
In residential developments space provision for recyclable material must be around 50% of the estimated total volume of waste output.

4.1.11
Some of the larger waste storage systems (such as skips and skip compactors) require access for heavy vehicles, which may not always be acceptable in environmentally sensitive locations such as Conservation Areas or in the vicinity of listed buildings. Design constraints mean that provision of access and accommodation for such vehicles is only likely to be possible in new, purpose-built developments, which could be designed to accommodate off-street servicing. In all instances consideration must be given to the sensitivity of location, the requirements for a vehicular crossover and the likely constraints of headroom and turning space. Please note that Lambeth Council does not offer a skip collection service.

4.1.12
Any locks to storage areas must be have a standard 'Fire Brigade' 1, 2 or 4 pattern. Where there are electronic gates and/or barriers controlling access to such areas, codes should be provided to the Council. The door must not open over a public footway or road.

4.1.13
In new buildings, the siting of storage containers should, wherever possible, allow movement of containers to the nominated collection point without being taken through a building, unless it is a porch, garage or carport or other open covered space. Waste storage areas must be large enough to allow access to all containers.

4.1.14
If it is proposed to locate bulk waste storage containers, such as Eurobins, in a basement area inaccessible to a standard waste collection vehicle, a suitable ground floor collection area must be indicated on drawings submitted for approval. In addition, a written statement must be attached describing the proposed method for transporting the containers to ground level, including parking arrangements for a tractor unit and trailer, if these are required.

4.1.15
If the waste containers are to be transported to ground level by a goods lift, it must be large enough to accommodate the waste container as well as the porter. In large schemes more than one waste container will need to be accommodated. The lift doors must be sized to allow free access for the waste containers. In addition, a written statement must be attached describing the proposed method for transporting the containers to ground level, including parking arrangements for a tractor unit and trailer, if these are required.

4.1.16
Large residential developments must be provided with space for redundant bulky household goods, such as furniture, cookers and refrigerators.

4.1.17
Storage areas for waste and recyclable material should be clearly designated for this use only, by a suitable door or wall sign and, where appropriate, with floor markings.

4.1.18
Medium to large restaurants and hotels must include suitable separate storage provision for waste cooking oil.

4.1.19
The floor and walls of waste stores must be constructed and finished in materials that are impervious and easily kept clean. Where appropriate, a trapped gully and water supply should be provided.

4.1.20
In residential dwellings, adequate separate provision must be made for disabled persons, where appropriate.

4.1.21 Above Ground Containers

- A dropped kerb should be sited within 10m of the facilities and the pulling area should be free from obstructions and have a sound surface
- The developer must ensure that they do not obstruct sight lines for pedestrians, drivers and cyclists
- The facility should not obstruct any utility service points
- Receptacles should be sited away from windows and ventilators to minimise odour and noise nuisance, and away from perimeter walls to deter illegal access from being gained
- It should be observed and advertised where possible that the hours of deposit/emptying are 6am-9pm
- Consideration should be given to installation of wheel locks or another suitable type of locking device to secure bins
- Where any communal facilities are proposed for direct use by residents, designs of the facility should be forwarded to the Crime Prevention Design officers at the Metropolitan Police for comment. The positioning of facilities should permit safe use and ensure there is no potential to encourage crime

4.1.22 Underground Containers
For underground facilities, the void space required would have to be completely clear of services and cables to a depth of 3 metres and have a minimum clearance space overhead of approximately 8.8-9.8m, free from overhanging obstructions, to permit the lifting and emptying of containers. The formula for calculating this minimum clearance space is set out below. When considering site locations the installation must also not be within 5m of any overhead power-line.

MINIMUM CLEARANCE SPACE =	height of vehicle	+ size of container	+ height of attachment	+ height of crane
	3.8m	$3m^3$: 3m $4m^3$: 3.5m $5m^3$: 4m	1.5m	0.5m

In addition, the distance between the centre line of the bin installation (or the container lifting hooks, whichever is the furthest) and the roadside should not exceed 2.5m to facilitate the lifting & emptying operation.

4.2 Limitations and Requirements
The following limitations and requirements should be noted in relation to the storage and collection of waste and recyclable material.

4.2.1
The recommended maximum storage provision for waste and recyclable material is 8 Eurobins or wheeled bins of any type.

4.2.2
Waste collection operatives should not be required to:

- Carry waste sacks or move wheeled bins (up to 360 litres) more than 25m in total
- Transport a Eurobin, or similar wheeled waste container, more than 10m in total
- Transport sacks or bins from basements or above ground floor level

4.2.3
The path between the container housing or chamber and the nearest vehicular access should:

- Be free of steps or kerbs (a dropped kerb may be required)
- Have a solid foundation
- Be rendered with a smooth continuous finish (a cobbled surface is unsuitable for any type of wheeled container)
- Be level, unless the gradient falls away from the housing or chamber, in which case it should not exceed 1:12
- Have a minimum width of 2 metres

4.2.4
In residential developments where a chute system is proposed, in the case of multi-storey buildings they should be a minimum of 45cm in diameter, have a smooth non-absorbent surface, close fitting access doors and be ventilated at the top and bottom. Each floor must be provided with additional space for at least two containers to store separated dry recyclable material.

4.2.5
In large residential developments where it is proposed not to use chutes, but for the management to provide an internal waste collection service for residents, a waste storage area is required on each floor. In addition to a suitable waste container, this store should have sufficient space to accommodate at least two containers for the storage of separated dry recyclable material.

4.3 Additional Considerations for Mixed Use Developments

4.3.1
Each separate user should have its own independent store for waste and recyclable material. Waste storage may be combined when 1100 litre wheeled containers, skips or skip compactors are used, providing a private contract is arranged by the managing agent.
In any case, business owners are under legal obligation to comply with the Duty of Care.

4.3.2
The siting of storage areas for waste containers and chutes should not cause householders to carry refuse further than 25m (excluding vertical distance).

4.3.3
Residential units will normally be expected to have independent storage (unless full porterage is provided) but the developer must give consideration to the provision of communal recycling facilities, using either conventional above ground banks or underground containers.

4.3.4
Smaller sack compactors are not suitable for mixed developments.

4.4 Commercial Usage

4.4.1
If the Council is to be the intended waste carrier, each business needs to take out a waste and/or recycling agreement with the Council in advance of supply of bins. Fees apply on the basis of bin rental charges plus a collection charge according to the number and frequency of collections. Developers should consult the appropriate officer.

4.4.2
If the developer is considering engaging a private licensed waste contractor to handle waste arising from commercial premises, they should consult potential waste contractors on the design of purpose-built facilities at an early stage, copying their proposals to the Council. The specification details of the kinds of containers that are commonly used by the Council and the private sector are very similar.

4.4.3
Each application will be assessed to ensure that the number of bins provided will meet the need of the business. Normally, this would be on the basis of a weekly collection, except in the case of food premises. However, where this frequency is not sufficient, consideration will be given to more frequent collections where more space cannot be afforded for storage.

4.4.4
Owing to the nature of the waste, food premises should have adequate space to store waste in one or more wheeled bins or Eurobins of a suitable size. It is recommended that in order to avoid to potential odours, a minimum of two collections per week should be allowed for.

4.4.5
It is recommended that contractors do not empty bins outside of the hours 6am – 9pm to minimise disturbance to residents. Storage areas for waste & recycling should be clearly defined and a sign erected indicating each area to identify the zone in the event of change in ownership or letting.

4.5 Containers & Maintenance

4.5.1
Eurobins and Chamberlains are acceptable for the storage of refuse. Developers should check the dimensions to ensure that adequate space between bins is provided when siting a number of units together, allowing for their manoeuvre; for example, in and out of enclosures and where necessary through doorways and gates for collections. Also, if the applicant intends to install wheel locks to secure the bins, allowance needs to be made for the width of the lock as well as room for manoeuvre.

4.5.2
The Council does **not** provide bins or bags free of charge for commercial users.

4.5.3
Suitable containers may be hired from the Council to businesses or multi-storey residential blocks where a waste or recycling agreement is taken out. The maintenance, repair and replacement of containers are included within the terms of the hire agreement, except where damage is caused through vandalism or the negligence of the leasee.

4.5.4
Where they intend to use the Council as a waste carrier, it is recommended that developers do not supply their own bins, as the management company would then be responsible for all repairs and replacement bins. However, should they opt to supply their own bins, these must be compatible with Council vehicles and lifting equipment.

4.5.5
Suitable arrangements must be made for the management and maintenance of any refuse/recycling areas, including cleansing of the site and upkeep of any soft landscaping.

4.6 Refuse Collection Vehicles

4.6.1
Roads providing access to the building should have foundations and a hard-wearing surface capable of withstanding a fully laden refuse vehicle of 26 tonnes gross vehicle weight (GVW), with a maximum axle weight of 11 tonnes.

4.6.2
Roads should have a minimum width of 5m and arranged so that the collection vehicle can continue mainly in a forward direction.

4.6.3
If turning space is necessary, the road layout should permit a turning circle of 18.5m, kerb to kerb or 21.1m wall to wall.

4.6.4
Any gates or arches on the vehicle route to the refuse/recycling storage area should give a minimum clearance of 3.72m width and 4.3m height.

5. Developments Where a Compactor is Recommended

5.1
Compactors are recommended for the following types of development.
Please note that Lambeth Council does not offer a compacted waste collection service.
Where compactors are provided, separate provision must also be made for the storage and collection of dry recyclable material.

5.2 Residential
Compactors for residential developments only tend to be effective if the development has a managed waste system with porterage.

5.3 Offices
Compactors are recommended for all office developments larger than 2,500m^2. For offices over 10,000m^2 in size, a rotary compactor is recommended and for those in excess of 15,000m^2 a portable skip compactor is recommended.

5.4 Light Industrial
For units of 1,500m^2 or more or for small units where the gross combined floor space exceeds 1,500m^2 a small sack compactor is recommended.

5.5 Retail
The most appropriate type of compactor for units of 1,500m^2 or more is the small sack compactor. This type of compactor may also be used for small units where the gross combined floor space exceeds 1,500m^2. For major retail developments of over 5,000m^2 a rotary compactor is recommended, and for those over 10,000m^2 a portable skip compactor or a larger static compactor are recommended.

5.6 Restaurants/Fast Food Outlets
Compactors are recommended for fast food outlets with an eat-in facility and for other restaurants. A small sack compactor, or the type using wheeled containers, is suitable for most applications, although the rotary compactor is preferable for restaurants with potentially high output.

5.7 Hotels
For hotels of up to 250 bedrooms the most appropriate type of compactor is the small bag compactor, or the type that compacts waste into wheeled containers. For larger hotels a rotary compactor, portable skip compactor or a static compactor is recommended, particularly for those with banqueting facilities.

6. Recycling

6.1
The Council has been set the challenge by Government of recycling one-third of all household waste produced in Lambeth by 2015 ('Waste Strategy 2000'). All planning applications for residential properties will be required to take account of this recycling target and incorporate additional space for the storage of waste for recycling. The Government is by other means promoting recycling from businesses and account will be taken of these objectives when determining planning applications.
Lambeth Council does not offer recyclable material collections for businesses, but it can provide information on private licensed companies offering this service.

6.2
The provision of space for recyclable material in commercial developments is likely to result in lower commercial waste collection charges, as well as providing a practical demonstration of the occupant's concern for environmental issues.

6.3
The Council endorses the objectives of BREEAM (Building Research Establishment Environmental Assessment Method) and in particular its aim to persuade developers, property owners and architects to provide separate storage facilities for recyclable material.

6.4
There is a weekly doorstep collection from most **low-rise households** of recyclable materials placed within Council orange sacks or green boxes. Items that can currently be collected for reprocessing are:

- All paper and card/cardboard
- All glass bottles and jars
- All drinks cans, food tins and aerosols
- Plastic bottles only

The sacks or boxes are to be placed at the inside edge of the property for collection by 6.30 am on the collection day. If there is no frontage to the property then they can be left on the pavement no earlier than 6 pm on the day before collection.

6.5
For premises that may generate a significant quantity of cardboard, e.g. large office buildings, retail units, hotels or restaurants, a baler is recommended. Balers enable cardboard to be stored in an efficient and safe manner and will encourage staff to withdraw cardboard from the general waste stream.

6.6
The Council can also provide the details of private collection contractors for other recyclable material and difficult wastes (e.g. cooking oil and fluorescent tubes). For information on this or any other aspect of recycling please contact us on 020 7926 9000 or email recycling@lambeth.gov.uk

6.7
There are two types of basic recycling installations:

Conventional above ground sites will normally use 1280 litre wheeled steel Eurobin containers that can be emptied using bin lifting equipment like that found on refuse vehicles. In particular locations (e.g. supermarkets, hostels, etc.), an alternative model of conventional recycling bank is the "bell" type container, which is static and needs to be lifted and emptied using a lorry mounted crane.

Underground systems are less common and only very few of them have so far been installed in the borough, although there are a number of manufacturers currently producing these systems. The Council would obviously wish to standardise on one type of underground collection system throughout the borough. Of the options currently available, the "Egbert H. Taylor" model appears to offer maximum flexibility and the best range of options.

If developers are made aware of the issues at an early stage, mitigation measures can be incorporated into the design of new developments with minimal additional expenditure. Purpose built features will have the advantage of providing sufficient room both to permit recycling and to blend in with the development.

Underground containers have a much larger capacity than the conventional Eurobins normally used in above ground installations. Containers are available in three main sizes: 3, 4 & 5m³. They have a number of advantages:

- Optimisation of space above ground
- Small discrete reception units, a bit larger than a litter bin, that can be customised to blend in with surrounding environment
- Noise and odours normally associated with above ground recycling sites are minimised
- Minimal street furniture reduces the often associated problems of flytipping and flyposting around recycling sites
- Less traffic and therefore less air and noise pollution from vehicles servicing the site, due to the reduced frequency of collections necessary
- User friendly
- Reduced collection costs

The containers and reception units can be split and customised to meet specific requirements, e.g. to handle more than one material. They are lifted out of the ground by lorry-mounted crane and a safety platform rises automatically to cover the hole during the emptying operation.

6.8
In most cases, in new developments such as block of flats/estates, the Council will require the provision of a communal recycling site/s, to provide recycling facilities for the residents. This will need to have storage space for one or more co-mingled 1280 litre Eurobins to provide one or more small multi-material recycling collection points. Alternatively, an underground storage system can be proposed. Materials collected are the same as described at paragraph 6.4.

6.8.1
The location of communal recycling sites should be easily accessible for both users and collection teams. In terms of users, entrance/exit points to housing, particularly high-density housing. In terms of collections, please refer to points above.

7. Provisions of the Environmental Protection Act 1990

7.1
The provisions of the Environmental Protection Act have conferred powers on the Council as a "Principal Litter Authority" to serve notices on the occupiers of the following types of premises:

(a) Premises used wholly or partly for the sale of food or drink for consumption off the premises,
(b) Premises used wholly or partly for the sale of food or drink for consumption on a part of the premises forming open land adjacent to the street,
(c) Service stations and other premises, on which fuel for motor vehicles is sold to the public,
(d) Premises used wholly or partly as a cinema, theatre, concert hall, bingo hall, casino, dance hall, swimming baths, skating rink, gymnasium or area for other indoor or outdoor sports or recreations, or as an amusement arcade or centre, or
(e) Banks, building society offices or other premises with automated teller machines located on an outside wall of the premises.

7.2
The Council must first be satisfied that the premises have a frontage on a street. It must then be satisfied that:

- There is recurrent defacement by litter or waste of any land, being part of the street or open land adjacent to the street, which is in the vicinity of the premises, or
- The condition of any part of the premises which is open land in the vicinity of the frontage is, and if no notice is served is likely to continue to be, detrimental to the amenities of the locality by reason of the presence of litter or waste, or
- There is produced, as a result of the activities carried out on the premises, quantities of litter or waste of such nature and in such amounts as are likely to cause the defacement of any part of the street, or of open land adjacent to the street, which is in the vicinity of the premises.

7.3
The notice will detail the Council's requirements with respect to the provision of litterbins and sweeping. In respect of those listed in (e), it concerns land within 10 metres and for the remainder it is up to 100 metres. The requirements will relate to the clearing of litter or waste from a specified area and, in relation to so much of the specified area as is not part of the premises, the Council will take account, in determining what requirements to impose, their own duties and of any similar duties of any other local authority in relation to the land.

7.4
The Council would therefore recommend the provision of both on and off street litter bins in respect of developments involving any of the above.

7.5
Details covering the provision and type of litter bins, together with any additional cleansing requirements, should be discussed with the Streetcare (020 7926 9000).

7.6
Each collection authority is required, under part II of EPA 1990, to collect household waste from all residential properties in the borough and, if requested, make provisions for the collection of commercial waste. Each collection authority may also, under section 46 of the Act, specify the type and number of receptacles to be used and where they should be placed in order to ensure compatibility with council collection methods and to facilitate collections.

7.7

The Act imposes a 'Duty of Care' on persons concerned with controlled waste. The duty applies to any person who produces, imports, carries, keeps, treats or disposes of controlled waste. Breach of the Duty of Care is an offence, with a penalty of an unlimited fine if convicted on indictment. The purpose of this code is to set out practical guidance for waste holders subject to the Duty of Care. It recommends a series of steps that would normally be enough to meet the duty. The code cannot cover every contingency; the legal obligation is to comply with the Duty of Care itself rather than with the code. Anyone subject to the Duty of Care who has some "controlled waste" should establish what the waste is. Waste left for collection outside premises, whether on the public highway or private land, should be in containers that are strong and secure enough to resist not only wind and rain but also animal disturbance, especially food waste. All containers left outside for collection will therefore need to be secured or sealed (for example drums with lids, bags tied up, skips covered). To minimise the risks, waste should not be left outside for collection longer than necessary. Anyone subject to the Duty of Care must ensure that, if waste is transferred, it is transferred only to a registered waste carrier. Further information regarding the Duty of Care can be obtained from the HMSO, quoting ISBN 0-11-752557-X.

Appendix I – Storage Equipment for Waste & Recyclable Material

RECYCLING

a) Low Rise Properties
The Council supplies orange sacks and/or green plastic boxes suitable to store recyclable material.

Space required for green box recycling container.

Width	390
Length	530
Height	280

b) Block of Flats/Estates

Co-Mingled Eurobins
These are co-mingled wheeled bins with four wheels, which conform to British Standard BS EN 840: 1997. They have a fixed lid supplied with a lock, and a smaller flap for insertion of the recyclable materials by residents. These containers are custom designed for Lambeth Council and are provided by Lambeth Streetcare (tel. 0207 926 9000). The standard size is 1280 litre.

CAPACITY (litres)	1280
DIMENSIONS (mm)	
Width (lid open)	990
Length	1260
Height	1470

Co-Mingled Underground Containers
Co-Mingled Underground containers are available in three sizes. The units are emptied with standard lifting equipment.

CAPACITY (litres)	$5m^3$	$4m^3$	$3m^3$
DIMENSIONS (mm)			
Width (container -underground)	1430	1430	1430
Width (receptacle –above ground)	620	620	620
Length (container -underground)	1430	1430	1430
Length (receptacle –above ground)	909	909	909
Height (container -underground)	2674	2139	1604
Height (receptacle –above ground)	890	890	890

c) Other developments (e.g. supermarkets)

'Bell' type

These are free standing flame retardant moulded plastic suitable for the collection of glass, drink/food cans, plastic bottles, paper and cardboard with apertures on either side for the deposit of items. There is a galvanized steel 2-hook lifting mechanism on the top to raise the unit over a collection vehicle; the 'trap door' mechanism underneath the unit is released to allow the material to be transferred

CAPACITY (litres)	2500
DIMENSIONS (mm)	
Width	1200
Length	1400
Height	1750 (1950 including lifting hook)

REFUSE

d) Plastic Sacks

These should conform to British Standard BS 6642: 1985. All plastic sacks used for waste storage should be of maximum dimensions 860mm long by 750 mm overall width (gussets extended).

e) Wheeled Bins

These are plastic wheeled bins with two wheels and should conform to British Standard BS EN 840: 1997. These waste containers are easy to transport and may be used as an alternative to sacks.

CAPACITY (litres)	240	360
DIMENSIONS (mm)		
Width	580	665
Length	740	880
Height	1100	1100

f) Eurobins

These are wheeled bins with four wheels and should conform to British Standard BS EN 840: 1997. They have a fixed lid, which can be supplied with a lock if required, and are suitable for residential and mixed developments and also offices of up to 2,500m^2 in size. These containers are not suitable for developments utilising a chute fed waste storage system. Several manufacturers supply Eurobins, some of which may be incompatible with the Council's waste collection vehicles. Streetcare can advise which type of Eurobin would be acceptable.

CAPACITY (litres)	660	1100
DIMENSIONS (mm)		
Width (lid open)	730	990
Length	1260	1260
Height	1310	1370

g) Underground Containers

Underground containers are available in three sizes. The units are emptied with standard lifting equipment.

CAPACITY (litres)	5m^3	4m^3	3m^3
DIMENSIONS (mm)			
Width (container -underground)	1430	1430	1430
Width (receptacle –above ground)	620	620	620
Length (container -underground)	1430	1430	1430
Length (receptacle –above ground)	909	909	909
Height (container -underground)	2674	2139	1604
Height (receptacle –above ground)	890	890	890

h) Chamberlains
These waste storage containers should conform to British Standard BS EN 840: 1997, and are available with nominal capacities of 720 litre (replacing Paladin Round 850 litre) and 940 litre (replacing Paladin Elliptical 830 litre). They are ideal for residential developments as they can be utilised for chutes and should be located in a suitably designed chamber with the following features:

a) A suitable cover or roof
b) At least one external wall. The walls to be constructed of impervious material
c) A double door of minimum width 1.6m
d) A water supply and a trapped gully to allow for regular cleansing
e) Adequate lighting
f) Means of natural ventilation (air bricks or louvers)
g) A minimum headroom of 2.2 m
h) Sufficient space to allow access to all containers
i) The floor surface should incorporate an integral coving to facilitate cleaning
j) A rubbing strip should be attached to the wall surfaces and doors to prevent scuffing
k) The floor must be level with the adjacent path or highway

CAPACITY (litres)	720	940
DIMENSIONS (mm) – including handles		
Width	780	975
Length	1020	1020
Height	1410	1500

i) Skips
These bulk storage containers may be used with or without a compactor and are available in two sizes:

Skip Container
10.5m^3

Rolonof Skip Container
27m^3. Only used where waste output is considerable, e.g. a major shopping complex. Normally combined with a static compactor.

DIMENSIONS (m)	10.5m^3 skip		27m^3 skip	
	CONTAINER	SERVICE BAY	CONTAINER	SERVICE BAY
Width	1.80	4.5	2.5	5.0
Length	3.70	5.8	6.2	8.2
Height	2.34	4.8	2.8	6.0

In developments where the service bay opens directly on to the street, the distance from the entrance to the rear of the service bay should be a minimum of:

- 12.0 m for a 10.5m^3 skip
- 18.5 m for a 27m^3 skip

This is to prevent the vehicle encroaching on to the footway when loading or unloading the skip.

j) Compactors
These utilise accommodation provided for waste storage to its best advantage by minimising the space required. The five main types of compactor are:

Small Bag Compactors
These are small compactors using plastic waste sacks of 300 gauges. Such compactors are either of a cylindrical or cabinet type occupying a floor area of 1 square metre and require minimum headroom of 2.5 metres. They significantly reduce the volume of waste and can achieve a compaction ratio of up to 4:1. A bag of compacted waste may weigh up to 30kg and it is therefore advisable to site the compactor at ground floor level near a street access. Collection of compacted waste in sacks is made only at street level. Small compactors are not suitable for mixed developments.

DIMENSIONS (m)
Width 0.78
Length 0.98
Raised Height (Standard Model) 2.68
Raised Height (Short Model) 2.38
Power Supply 240 volts, 15 amp earthed socket

Wheeled Bin Compactors
These compactors are of two main types; a small compactor using 360 litre wheeled bins and a larger compactor using 660 or 1100 litre bins. Adequate floor space is required (given in the table below) to allow for working space for the container. These compactors can achieve volume reductions of around 3:1 (a higher compaction ratio would result in damage to the 360 litre plastic bin, and caster damage to the 660 & 1100 litre bin). It is advisable to site the compactor at ground floor level near a street access as collection of wheeled bins containing compacted waste is only made at street level. These compactors are not suitable for mixed developments unless fully managed. Note: a 660 litre Eurobin containing compacted waste may weigh up to 280 kg and an 1100 litre Eurobin may weigh in excess of 400 kg.

BIN CAPACITY (litres)	360	660 & 1100
DIMENSIONS (m)		
Width	0.90	1.8
Length	1.60	2.7
Working length	2.90	4.0
Height	2.00	2.5
Floor area required (m^2)	2.60	7.2

Power Supply 240 volts, 15 amp earthed socket

Note: for the Eurobin compactor (660 & 1100 litres) a minimum space of 1m is required at one side of the compactor for servicing requirements and a nominal 150 mm clearance is required at the other side. The Council does not supply 360 litre bins for use with waste compaction equipment.

Rotary Compactors
This compactor utilises a heavy duty spiked rotating head, which tears and compacts waste placed in the machine and can achieve high compaction ratios. One compactor of this type compacts waste into a very large bag supported on a wooden pallet. A full bag has a diameter of around 1.5 m and may weigh up to 600kg. Rotary compactors are suitable for use in hotels, offices, retail units and supermarkets, but are not recommended for mixed developments unless fully managed.

DIMENSIONS (m)	
Width	1.35
Working length	2.37
Raised Height	2.90

Power Supply 415 volts, 32 amps. Three phase neutral and earth.

Note: a minimum space of 600 mm is required at each side of the compactor for servicing requirements.

Portable Skip Compactor
These have a capacity of 9.5m^3 and can achieve volume reductions of up to 4:1. They require direct access by a skip vehicle. Additional length is required to that given below for the service bay to accommodate the collection vehicle. These compactors are suitable for use in premises where a significant volume of waste is likely to be produced, such as large offices, retail units and hotels as well as mixed developments.

DIMENSIONS (m)	9.5m^3 skip compactor	
	COMPACTOR	SERVICE BAY
Width	1.75	4.5
Length	4.28	5.8
Height	2.34	4.8

Minimum width of entrance to service bay: 4.0 metres.

Power Supply 415 volts, 32-45 amps (depending on model) three-phase neutral & earth. The power supply should terminate with an RCD box located within two metres of the compactor.

Note: In developments where the service bay opens directly on to the street, the distance from the entrance to the rear of the service bay should be a minimum of 12m.
This is to prevent the vehicle encroaching on to the footway when loading or unloading the skip.

Static Compactor
These units are fixed and used in conjunction with a removable fully enclosed skip. They can achieve volume reductions of up to 5:1. Skips are available in a range of sizes from 10.5 to 27m^3.
Static compactors are ideal for developments where a considerable volume of waste is likely to be produced, including large retail, hotel and commercial developments. Static compactors may be used in conjunction with Eurobin wheeled containers.

Appendix II – Cardboard Balers

The use of a baler enables cardboard to be stored in an efficient and safe manner. Four types of baler, recommended for use in the borough, are outlined below. Please note that Lambeth Council does not offer a baled waste collection service.

Top Loading Mini Baler
These are small top loading balers, which would be used where space is limited and cardboard output is not likely to be excessive. They require a floor area of 1 m^2 and minimum headroom of 2.2 metres.

Top Loading Baler
These are versatile top loading balers, which are suitable for use in most restaurants and retail units. They require headroom of 2.7 metres.

Top Loading Twin Chamber Baling Press
These are efficient top loading balers, which are ideal for use where a reasonable output of cardboard is possible, e.g. hotels, mixed retail developments and large restaurants. One advantage of this unit is that the second chamber can be loaded while the first is in operation. They require minimum headroom of 2.2 metres.

Front Loading Baling Press
These are efficient front loading balers, which are ideal for use where a reasonable output of cardboard is possible, e.g. hotels and mixed retail developments. They require minimum headroom of 2.2 metres.

It is advisable to site the baler at ground floor level near a street access, as collection of baled cardboard is only made at street level. Adequate space must be provided to allow for servicing the baler. Balers are not suitable for mixed developments unless fully managed.

DIMENSIONS (m)	(a)	(b)	(c)	(d)
Width	0.71	0.78	1.74	1.00
Length	1.10	1.20	0.88	0.83
Working length	1.60	1.70	1.80	1.80
Height	2.20	2.70	2.20	2.20
SIZE OF BALE (mm)	700 x 500	700 x 700	700 x 700	800 x 700
$WEIGHT_{MIN}$ OF BALE (kg)	20	30	40	60
$WEIGHT_{MAX}$ OF BALE (kg)	40	60	60	80

Power Supply a) to c) 240 volts, 15 amp earthed socket d) 415 volts, 20 amp. Three phase neutral & earth.

Appendix III – Vehicle Dimensions

Waste Collection Vehicle
(Three Axle 21.2-26.00 tonnes)

DIMENSIONS (m)		
Width		2.5
Overall length		8
Height		3.8
KERB TURNING CIRCLE (m)		19.6 Ø
SWEPT CIRCLE (m)		21.1 Ø
WALL TO WALL TURNING CIRCLE		21.28
AXLE WEIGHTS	– 1st & 2nd	8000 kg
	– 3rd	10500 kg

Note: any part of a building through which a waste collection vehicle passes must have a minimum clear height of 4.5m, to allow for overhead fixtures and fittings.

Underground Storage & Mixed Material Recycle Bank Collection Vehicle
(26 tonne DAF 6x4 75 Series)

DIMENSIONS (m)	
Width	2.5
Overall length	5.3
Working height	5.8
KERB TURNING CIRCLE (m)	17.7 Ø
SWEPT CIRCLE (m)	18.8 Ø

Appendix IV – Reference Documents

London County Council (General Powers) Act 1959

Building Regulations 2000, requirement H4, Solid waste storage.

Building Regulations 2000, requirement K1, Stairs, ladders and ramps.

Environmental Protection Act 1990

British Standards Institution Codes and Standards

- BS 1703: 1977 Specification for Refuse Chutes and Hoppers
- BS 5906: 1980 Code of Practice for Storage and On-site Treatment of Solid Waste from Buildings
- BS 6642: 1985 Disposable Plastic Refuse Sacks Made From Polyethylene
- BS EN 840: 1997 Mobile waste containers

Chartered Institution of Waste Management. Publication No.3 Advice on Storage and On-Site Treatment of Household, Commercial and Industrial Wastes

BREEAM (Building Research Establishment Environmental Assessment Method)

a) An Environmental Assessment For New Offices
b) An Environmental Assessment For New Homes
c) Household waste: storage provision and recycling

Designing for Deliveries, Freight Transport Association

Department of Transport Design Bulletin 32, Residential Roads and Footpaths

Disability Discrimination Act 1995

Household Waste Recycling Act 2003

Waste Strategy 2000

EU Landfill Directive (Council Directive 1999/31/EC)

LB Lambeth Unitary Development Plan

WRWA Constituent Council Planning Guidance – Land use Planning for waste & recycling

Appendix V – Web Addresses

www.bre.co.uk (Building Research Establishment)

www.bsi-global.com (British Standards Institution)

www.ciwm.co.uk (Chartered Institution of Wastes Management)

www.defra.gov.uk/environment (Dept. for Environment, Food & Rural Affairs)

www.environment-agency.gov.uk (Environment Agency)

www.lambeth.gov.uk (London Borough of Lambeth)

www.londonremade.com (London Remade – changing the way London manages its waste)

www.recycle.mcmail.com (the 'Wastebook' – a compendium of information sources relating to the sustainable management of waste)

www.wastewatch.org.uk (Waste Watch – general guidance on waste and recycling)

Appendix 7 – BS5395-1:2010

Building Regulations Review

BS 5395-1:1977 and BS 5395-1:2010

1. The issue

1.1 BS 5395-1:1977 is referred to within Approved Document K. More recently BS 5395-1:2010 has been published. We were asked to compare the two standards in relation to cost impacts and any lost lettable floor area.

2. Our Response

2.1 PRP architects are of the view that the current Part M of the Building Regulations is more onerous than BS 5395-1:1977. As such Part M is the current minimum standard for practical purposes.

2.2 Given the point above PRP architects undertook a comparison between a typical stair designed to Part M and one to BS 5395-1:2010. The attached drawing AA2211/4.3/001 summarises this comparison.

2.3 EC Harris estimated the costs for the two stair scenarios based on a single concrete stair over 3 floors. The attached estimate demonstrates an extra over cost of circa £6,000 in this scenario (or £2,000 per floor level).

2.4 As with the previous work in relation to Changing Places it is also likely that income will be lost as a result of an enlarged stair (it is assumed that total gross internal area will often be fixed and as a result any increase in circulation areas will result in a loss of lettable / saleable area).

The impact of the lost space on capital values will clearly vary significantly by building type and at this stage an analysis by typology has not been undertaken. However, an indicative calculation has been undertaken on the basis of a typical capital value of £225/ft2. This calculation results in a lost value of £30,000 (or £10,000 per floor level).

3. Potential Next Steps

3.1 As for the Changing Places review an analysis of quantities of relevant building types could be undertaken along with average capital values for each type, this would inform a weighted average lost value. Again similarly to the Changing Places review there may be small impacts in operational costs (e.g. maintenance / cleaning).

4. Attachments

4.1 PRP architects drawing AA2211/4.3/001 – Part M / BS 5395-1:2010

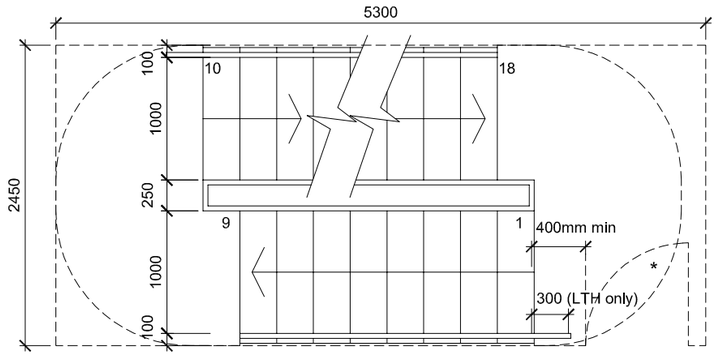
4.2 Cost comparison summary

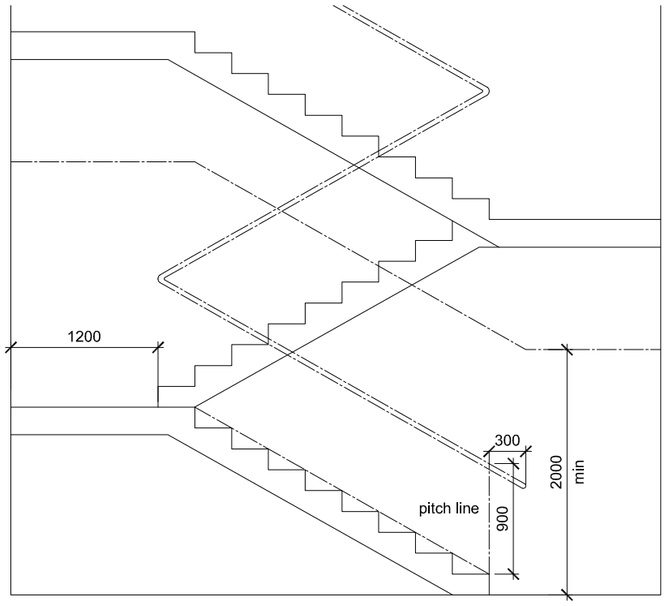
4.3 Lost value calculation

BS5395-1:2010 compliant stair

TYPICAL UPPER FLOOR
based on FFL to FFL max 3060mm

tread = 300mm min
rise = 170mm max
stair width = 1100mm between wall and balustrade,
1000mm clear between handrails

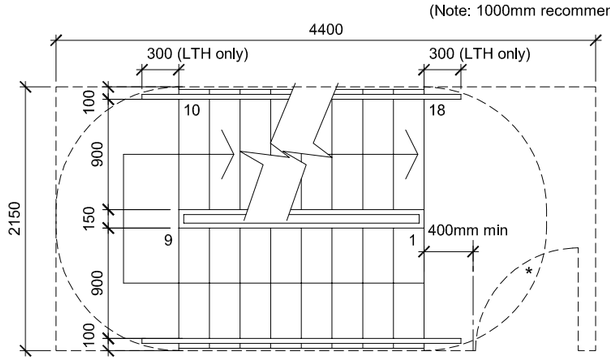


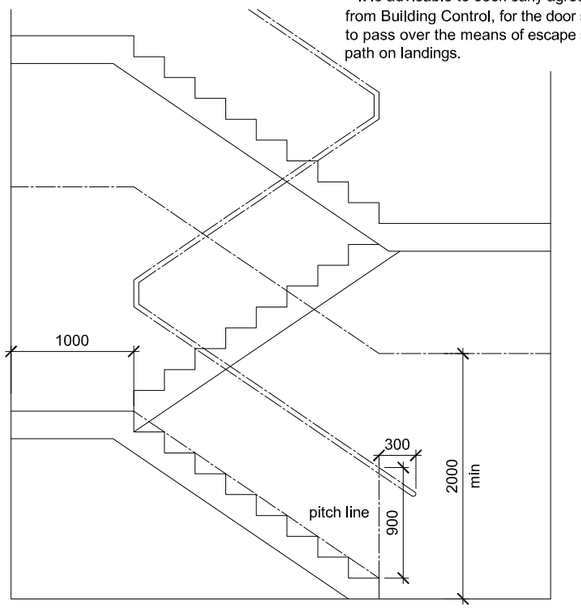


Part M compliant stair

TYPICAL UPPER FLOOR
based on FFL to FFL max 3060mm

tread = 250mm min
rise = 170mm max
stair width = 1000mm between wall and balustrade
(Note: 1200mm recommended by BS 8300:2009)
900mm clear between handrails
(Note: 1000mm recommended by BS8300:2009)





* It is advisable to seek early agreement from Building Control, for the door swing to pass over the means of escape swept path on landings.

REFERENCES:

Legislative:
AD Part M, M1 Section 9
AD Part B2, B5 Appendix C
AD Part K, Section 1

Guidance:
BS 5395-1:2010 "Stairs - Part 1: Code of practice for the design of stairs with straight flights and winders"

BS 8300:2009 "Design of buildings and their approaches to meet the needs of disabled people – Code of practice"

BS 9999:2008 "Code of practice for fire safety in the design, management and use of buildings"

BS 5588-1:1990 "Fire precautions in the design, construction and use of buildings. Code of practice for residential buildings"

Definition of clear width:

BS5395-1:2010:
The clear stair width is measured between handrails

AD Part B2, Appendix C - 4c:
The clear width is measured between walls and balustrading but allows a handrail incursion not exceeding 100mm

notes

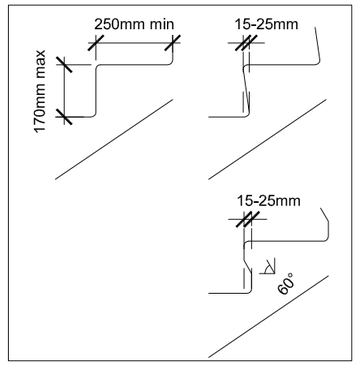
- The contractor is responsible for checking dimensions, tolerances and references. Verify any discrepancies with the Architect before proceeding with the works.
- Where an item is covered by drawings to different scales the larger scale drawing is to be worked to.
- Do not scale drawing. Figured dimensions to be worked to in all cases.

Other considerations:

AD Part M1 requires, if there is no passenger lift, a suitable stair which has:

a) all step nosings distinguishable through contrasting brightness;
b) top and bottom landings whose lengths are in accordance with Part K1;
c) steps with suitable tread nosing profiles (see diagram) and uniform rise of each step, which is not more than 170mm;
d) uniform going of each step, which is not less than 250mm, which for tapered treads should be measured at a point 270mm from the inside of the tread;
e) risers which are not open; and
f) a suitable continuous handrail on each side of flights and landings if the rise of the stair comprises two or more rises.

Source: AD Part M Section 9.5



Suitable stair profiles (scale 1:20)
Source: AD Part M Section 9.5

If the Lifetime Homes Standard applies, then the stair must meet the following requirements, regardless of whether or not a lift is provided:

a) uniform rise not exceeding 170mm (as Part M);
b) uniform going not less than 250mm (as Part M);
c) handrails that extend 300mm beyond the top and bottom;
d) handrails height 900mm from each nosing;
e) step nosings distinguishable through contrasting brightness (as Part M);
f) risers which are not open (as Part M).

Source: LTH 2010 Criterion 5a

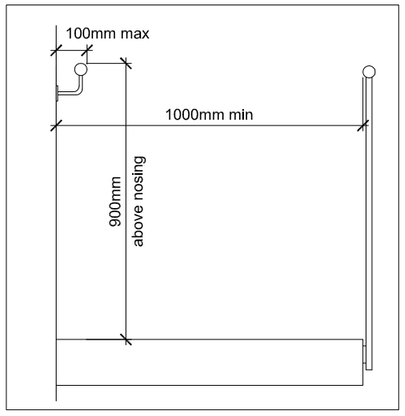
Landings:
a) clear landings must be provided at the top and bottom of every flight;
b) dimensionally these should be of the same width as the stair flight and of a length not less than the width of the flight;
c) doors are not permitted to swing into this landing space at the top of any flight, although service riser and other cupboard doors are allowed;
d) at the foot of flights some door swing incursion is allowed as long as a 400mm clear space is maintained from the bottom riser.

Source: AD Part K, Section 1.5 - 1.7

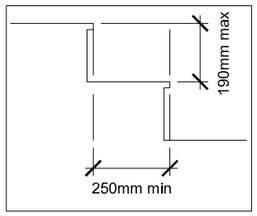
Fire Fighting Shafts:
Fire Fighting Shafts are required if the building has a floor level over 18m above ground, in which case a minimum width of 1100mm is required. Dry risers may also be required.

Timber stairs may not be used for basement flights and can only be used in single stair buildings only up to 3 storeys.

Source: AD Part B5, Section 17



Cross section (scale 1:20)



AD Part K
Rise and going (scale 1:20)
Source: AD Part K , Section 1.3

date	rev	revision/author/checker

drawn	KW	project	DCLG BUILDING REGS REVIEW
checked	RB		
scale	1:50	drawing	Part M / BS 5395-1:2010 Comparison Review of common stairs in residential buildings
date	MAR '11		

purpose of issue: FOR INFORMATION
drawing no: AA2211/4.3/001
rev:

PRP Architects © Ferry Works Summer Road Thames Ditton Surrey KT7 0QJ T 020 8339 3600 F 020 8339 3636 prp@prparchitects.co.uk

Stair comparison (build costs)

(ref. PRP drawing AA2211/4.3/001)

	BS5395-1:2010 Compliant				Part M Compliant				Difference
Element	**Qty**	**Unit**	**Rate**	**Amount**	**Qty**	**Unit**	**Rate**	**Amount**	
Staircase									
Concrete									
Stair flight	4.24	m3	£130	£551	3.74	m3	£130	£486	£65
Landing	5.89	m3	£130	£765	3.87	m3	£130	£503	£262
Formwork									
Stair flight	42.56	m2	£50	£2,128	35.23	m2	£50	£1,762	£366
Landing	23.58	m2	£50	£1,179	16.50	m2	£50	£825	£354
Reinforcement									
Stair flight	0.64	ton	£1,150	£732	0.56	ton	£1,150	£645	£86
Landing	0.88	ton	£1,150	£1,015	0.58	ton	£1,150	£668	£348
Balustrade / handrail	1.00	Item	£6,025	£6,025	1.00	Item	£4,500	£4,500	£1,525
Finishes									
Staircase (carpet)	22.56	m2	£50	£1,128	18.14	m2	£50	£907	£221
Landing (carpet)	21.86	m2	£50	£1,093	14.74	m2	£50	£737	£356
Metal nosing	52.80	m	£110	£5,808	43.20	m	£110	£4,752	£1,056
Subtotal				**£20,425**				**£15,785**	**£4,640**
Stairwell Wall									
Concrete	13.23	m3	£130	£1,720	11.07	m3	£130	£1,439	£281
Reinforment	1.98	ton	£1,150	£2,282	1.66	ton	£1,150	£1,910	£373
Formwork	132.30	m2	£40	£5,292	110.70	m2	£40	£4,428	£864
Plaster	125.10	m2	£6	£751	103.50	m2	£6	£621	£130
Decorations	168.65	m2	£6	£1,012	135.16	m2	£6	£811	£201
Subtotal				**£11,057**				**£9,209**	**£1,848**
Total				**£31,000**				**£25,000**	**£6,000**

Assumptions

1 3-storey building
2 150kg reinforcement per 1m3 concrete
3 Wall thickness 200mm
4 All costs at UK average prices, quarter 1 2011

Stair comparison (lost revenue)

(ref. PRP drawing AA2211/4.3/001)

BS5395-1:2010 Compliant area (3 floors)	39	m2
Part M Compliant area (3 floors)	28	m2
Difference	11	m2
Capital value	£250	/ft2
Capital value	£2,691	/m2
Potential lost value	£30,000	

Appendix 8 – Part N

Building Regulations Review

Part N: Glazing Safety

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1. The issue

- There is currently duplication between Parts N, M and K. The proposal is therefore to repeal Part N, moving its relevant elements to Part M & K.

1.1 We were asked to prepare the following:

- A reasonable grouping of the 300,000 full plans applications by project size band
- An estimate of time arising from duplication / conflict between standards
- An estimate of cost arising from duplication / conflict between standards

2. Our Response

Project Size Band

2.1 Based on the new construction orders data published by the Office for National Statistics in 2008, the following project size band has been developed:

Project Size Band	**Quantity of Building**
Less than £25,000	251,273
£25,000 - £500,000	38,763
£500,000 - £2,000,000	7,457
£2,000,000 - £10,000,000	2,046
£10,000,000 - £20,000,000	260
£20,000,000 and over	201
Total	**300,000**

Time Input Assessment

2.2 PRP Architects estimated that every project probably suffers from 3 hours of wasted time unravelling what is the appropriate standard. The time allowance is reduced to 1 hour on projects in which costs are below £25,000, due to the relatively small scope of works.

Estimate of Cost Arising from Duplication/Conflict between Standards

2.3 The following table defines an assessment of the percentage of projects where potential conflicts exist:

Project Size Band	% of Applicable Projects
Less than £25,000	20%
£25,000 - £500,000	50%
£500,000 - £2,000,000	50%
£2,000,000 - £10,000,000	100%
£10,000,000 - £20,000,000	100%
£20,000,000 and over	100%

2.4 An average hourly charge-out rate for an Architect is £73 / hour. Based on the above applicability assessment, the estimate cost arising from duplication / conflict between standards is **£9,000,000.**

Further Comments

2.5 PRP note that the issue reviewed is not merely duplication between Parts N, M and K but also conflict between the standards and standards which in some places are outdated. Achievement of the above mentioned savings would therefore require not only merger of Part N into M/K but a full review of the relocated sections.

3. Sensitivity Test

3.1 It is considered that the time arising from duplication / conflict between standards and the hourly cost of architect's time are relatively robust assessments. The percentage of smaller projects for which the numbers of projects that require Part N compliance have been assessed based on experience from various professionals; it is therefore felt to be worth undertaking a sensitivity assessment on this variable:

Project Size Band	% of Projects Applicable (reduced / base / increased)
Less than £25,000	5% / 20% / 50%
£25,000 - £500,000	25% / 50% / 75%
£500,000 - £2,000,000	25% / 50% / 75%
£2,000,000 - £10,000,000	100%
£10,000,000 - £20,000,000	100%
£20,000,000 and over	100%

Projects with access statement time required	Total
Reduced % projects applicable	£4,000,000
Increased % projects applicable	£17,000,000

4. Notes and Key Assumptions

4.1 All costs are at UK mean base location, 4th Quarter 2010.

5. Reference

5.1 National statistics, New Orders in the construction Industry – Additional Annual Tables: Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008)

6. Attachment

6.1 Estimate of Cost Arising from Duplication / Conflict between Standards (base, reduced & increased variants)

6.2 PRP Part N statement

Building Regulations Review - Part N

Estimate of Cost Arising from Duplication/Conflict Between Standards

12th November 2010

Project Value Band	Number of Building	% of Projects with Potential Conflicts	Time Input (Hr)	Architect Charge - out Rate per Hr	Total Cost
Less than £25,000	251,273	20%	1	£73	£3,686,951
£25,000 - £500,000	38,764	50%	3	£73	£4,265,911
£500,000 - £2,000,000	7,457	50%	3	£73	£820,626
£2,000,000 - £10,000,000	2,046	100%	3	£73	£450,237
£10,000,000 - £20,000,000	260	100%	3	£73	£57,194
£20,000,000 and over	201	100%	3	£73	£44,183
Total	**300,000**				**£9,325,103**
				Say	**£9,000,000**

Please note, this schedule excludes the following:

- All projects located in Scotland

Source of Information

Building Numbers:

National statistics, New Orders in the construction Industry – Additional Annual Tables

Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008).

Time Input:

PRP Part N Statement Dated on 11th November 2010.

Architect Charge Out Rate:

EC Harris Rate Database

Building Regulations Review - Part N

Estimate of Cost Arising from Duplication/Conflict Between Standards

12th November 2010

Test Scenario: Reduced % projects applicable

Project Value Band	Number of Building	% of Projects with Potential Conflicts	Time Input (Hr)	Architect Charge - out Rate per Hr	Total Cost
Less than £25,000	251,273	5%	1	£73	£921,738
£25,000 - £500,000	38,764	25%	3	£73	£2,132,956
£500,000 - £2,000,000	7,457	25%	3	£73	£410,313
£2,000,000 - £10,000,000	2,046	100%	3	£73	£450,237
£10,000,000 - £20,000,000	260	100%	3	£73	£57,194
£20,000,000 and over	201	100%	3	£73	£44,183
Total	**300,000**	**10**			**£4,016,620**
				Say	**£4,000,000**

Please note, this schedule excludes the following:

- All projects located in Scotland

Source of Information

Building Numbers:

National statistics, New Orders in the construction Industry – Additional Annual Tables

Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008).

Time Input:

PRP Part N Statement Dated on 11th November 2010.

Architect Charge Out Rate:

EC Harris Rate Database

Building Regulations Review - Part N

Estimate of Cost Arising from Duplication/Conflict Between Standards

12th November 2010

Test Scenario: Increased % projects applicable

Project Value Band	Number of Building	% of Projects with Potential Conflicts	Time Input (Hr)	Architect Charge - out Rate per Hr	Total Cost
Less than £25,000	251,273	50%	1	£73	£9,217,379
£25,000 - £500,000	38,764	75%	3	£73	£6,398,867
£500,000 - £2,000,000	7,457	75%	3	£73	£1,230,939
£2,000,000 - £10,000,000	2,046	100%	3	£73	£450,237
£10,000,000 - £20,000,000	260	100%	3	£73	£57,194
£20,000,000 and over	201	100%	3	£73	£44,183
Total	**300,000**				**£17,398,798**
				Say	**£17,000,000**

Please note, this schedule excludes the following:

- All projects located in Scotland

Source of Information

Building Numbers:

National statistics, New Orders in the construction Industry – Additional Annual Tables

Value of New orders Obtained by Contractors: Analysis by Range of Contract (Annual Figures Jan – Dec 2008).

Time Input:

PRP Part N Statement Dated on 11th November 2010.

Architect Charge Out Rate:

EC Harris Rate Database

DCLG Building Regulations Review

Part N

Issue under review:

There is currently duplication between Parts N, M and K. The proposal is therefore to repeal Part N, moving its elements to Part M and K.

Background:

This area is a mass of conflicting (and absent) standards. We would estimate that every project probably suffers from 3 hours wasted time unravelling what is the appropriate standard that will be acceptable for both the client and the approving authorities.

However this is wasted time and confusion brought about by conflicting or non existent guidance. If the review does not intend to review and consolidate technical standards but purely merge Approved Documents K and N then any benefit will be minimal and will relate only to some back office administrative matters. The latter would seemingly only be that there would be one less Approved Document to purchase as part of our library portfolio (e.g. Saving for PRP - say 14no. new buy copies @ say £15.00 once every say 10 years = £21.00 pa)

Commentary:

It would be very meaningful to merge Approved Documents N and K and also to ensure correlation with Approved Document M and other Parts of the Building Regulations as long as the technical content is fully reviewed, including updating and supplementation.

Approved Document K is out of date and includes definitions and dimensional requirements for staircases that are not synchronised with Part M, the development of Lifetime Home standards and BS 5395. It also needs reviewing in the face of recent trends in respect of the form of windows and window openings and the prevention of falling. Merge part K with part N would be good in this regard as a consolidated set of guidelines could be stated in respect of means of cleaning domestic windows which are inexplicably not covered by present Part N but which is a subject that demands a lot of care and attention at the design stage. Whilst the NHBC and PRP have produced their own internal guidelines there is a need for any common risks to be identified, researched and according national guidance agreed. It is interesting to note that Scottish Technical Handbooks cover such needs.

PRP do produce window use and cleaning strategies for each project but it is an area that causes much confusion with designers and enforcers alike due to uncertain standards. Good and consistent end results can easily suffer due to the ambiguities that riddle these parts of the Approved Documents.

Conclusion:

Repeal Part N, and merge its elements into Part M and K, (but with a recommendation to review and consolidate technical standards, in line with parallel documents).

Appendix 9 – Part K,M and N

Building Regulations Review

Parts K, M and N

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1. The issue

1.1 It has been identified that duplication exists between parts N, M and K of the Building Regulations. A previous study by EC Harris and PRP Architects examined the potential savings through removal of Part N and incorporation of its requirements within Parts M and K.

1.2 As part of the above study it was noted that, though removal of duplication would be beneficial, a more significant issue is conflict between Parts N, M and K. Given this point a further review was commissioned to examine the extent of these conflicts.

2. Our Response

2.1 PRP architects undertook an internal review involving a workshop exercise, bringing together architects with extensive experience and expertise in various building types. The result of this exercise is the attached review, the key conclusions of which are:

- There are significant conflicts between Parts N, M and K and removal of these would be beneficial.
- The optimum solution would be a merger of Parts N, M and K along with updating of the content. As an initial step merger of Parts K and N would also be beneficial, again also updating the content.
- There are also a number of other very commonly adopted standards which build on, support or conflict with Parts N, M and K. These should be considered at the same time if an update to remove conflicts is to be undertaken.
- In a number of areas Parts N, M and K are less comprehensive for residential buildings than for other building types. The increasing complexity of residential buildings, particularly larger apartment blocks, means that a more uniform application of standards may be beneficial.

3. Potential Next Steps

3.1 The attached review focuses on the technical aspects of the regulations and options to remove conflicts / duplication. Provided there is agreement as to the technical points raised a review of the potential cost / benefit position could be undertaken.

4. Attachments

4.1 PRP report on Part K, N and M

DCLG Building Regulations Review

CONSIDERATION OF PARTS K, M and N

Part K (Protection from falling, collision and impact)

Part M (Access to and use of buildings)

Part N (Glazing - safety in relation to impact, opening and cleaning)

1.0 BACKGROUND TO THE REVIEW

1.1 In the summer of 2010 the Government instigated an exercise to investigate ways of improving the Building Regulations. Ideas and comments were invited and submitted by interested parties and these various responses have been distilled into a more formal review process set out in the CLG document 'Future changes to the Building Regulations - next steps', dated December 2010.

1.2 EC Harris and PRP have been appointed to aid the investigation and review process further. Specifically, PRP has been requested to develop a more detailed analysis of ways in which the current objectives and content of Parts K, M and N of the Building Regulations could be improved, individually and collectively.

2.0 INTRODUCTION

2.1 The context of this review is that 'improvement' means to cut red tape and undue regulatory burden in order to achieve the best balance of building and design process cost efficiency whilst ensuring a correct and necessary level of public and consumer safeguard in the built environment.

2.2 Building design and techniques together with societal needs do not stand still and it is necessary to review the regulatory position periodically. It is timely that this review can give focus to Parts K, M and N as the regulatory and guidance content of these parts has changed little over the past decade whilst other linked requirements and standards have advanced. Society's needs and expectations have also risen across this period, much of which is patchily reflected in other non Building Regulation, but parallel, systems that impose related standards.

2.3 In addition, the conflicts that exist between various guidance sources cause considerable confusion and wasted effort within the design and construction process. Confusion can be exacerbated further, as it is not

uncommon for different standards to be applied to different parts of the same development due to funding or tenure differences or similar reasons.

2.4 Consolidation is needed urgently. It has been noted in previous sections that there are many controlled topics that are duplicated across Parts K. M and N and that some conflicts exist. In this paper it is illustrated that a plethora of other control regimes (legislative and otherwise) also impose technical standards within the same subject range as Parts K. M and N. Consolidation of all necessary standards into a combined and updated Approved Document would be of immense help to designers and constructors in that it would provide a clear single guidance which could be relied upon, thereby avoiding wasteful time (due to lack of clarity across the guidance) and misplaced design and specification.

3.0 OBJECTIVES OF THIS PAPER

3.1 An often duplicative and conflicting patchwork of 'standards' has developed within the realm of Parts K, M and N and it is recognised that there is scope for streamlining within the total matrix. To seek improvement the content of these Parts will be analysed and tested against the following four principles:

- Rationalisation - check that the purpose of any regulation is still needed, that its delivered value is justified and to look for ways to simplify requirements and attendant processes.
- Update - ensure that regulations and guidance actually meet present day risks and needs and that there is suitable correlation of Approved Document guidance with other current standards.
- Consolidation - remove duplication and conflicts and merge requirements into logical building features/design topic groupings.
- Efficiency of use - consider how the regulatory knowledge base and guidance is best formatted and presented to give good awareness and easy and efficient use throughout the design, construction and control processes.

3.2 The scope of this review follows parameters outlined in Appendix A and which have been previously agreed with CLG.

4.0 PART N

4.1 BUILDING REGULATION N1 (PROTECTION AGAINST IMPACT WITH GLAZING)

It is considered that the legal scope of this Regulation is satisfactory as is.

4.1.1 APPROVED DOCUMENT GUIDANCE FOR N1: Commentary

This guidance is considered satisfactory and we have not experienced many problems regarding its content. It is however suggested that the following aspects could benefit from a more detailed review:

- Check with the glazing industry as to correct currency of references and practice;

- There have been some issues regarding the marking and identification of glazing installations to give ready verification that they are fit for purpose. A specific building regulatory requirement to mark glazing might be useful.

- There is also a very frequent linkage with Regulation K2 in that much guarding consists of glazed features, such as screens and balcony balustrades (see comments in 5.2.1 below)

4.2 BUILDING REGULATION N2 (MANIFESTATION OF GLAZING)

This Regulation is considered satisfactory in its present wording.

4.2.1 APPROVED DOCUMENT GUIDANCE FOR N2: Commentary

In itself the technical guidance is sound enough but there is considerable overlap with some similar provisions in Part M. However there is no undue conflict between the respective guidance, or with that contained in BS8300, but the presence of several reference points does cause confusion. Two small differences do however occur:

- Part M contains slightly fuller guidance (for instance on leading edges, reflectivity, etc.);

- Part N is wider in its total applicability across the building whilst Part M relates to specific locations.

- Under Parts M and N requirements for manifestation of glazing do not apply to dwellings. However the scope of BS 8300 (which also covers this subject area) applies to common areas of residential buildings. It is presumed that it was initially felt that the regulatory scope of applicability is sufficient and that such safeguards are not necessary in common areas of dwellings, although further research might be justified on this aspect as it is possible that similar risks pertain to such common areas. It is also noted that Scottish Technical Standards do include dwellings for this purpose. For the avoidance of confusion this should be made clear. (Also see wider comment below on similar distinctions made between dwellings and non dwellings)

There is some opportunity to consolidate the guidance; this could be in one of the following formats:

- Simply ensure complete correlation between requirements contained in Part M and a merged Part K/N; or

- Put all glazing manifestation and awareness guidance into merged Part K/N with just cross reference within Part M; or

- Preferably merge Parts M, K and N into one composite 'Access and Safety in Use' Approved Document (see further comment below).

4.3 BUILDING REGULATION N3 (SAFE OPENING AND CLOSING OF WINDOWS, ETC.)

It is unfortunate that N3 and N4 do not apply to dwellings, as it is within residential buildings that the highest risk and need occurs. Apart from safety, the mode of use of windows and ventilation installations also need to embrace the concepts Lifetime Homes requirements together with good ventilation management. In reality, the requirements of N3 are often applied to dwellings on residential projects by building control officers. Therefore it is suggested that the 'Limits of Application' be removed.

4.3.1 APPROVED DOCUMENT GUIDANCE FOR N3: Commentary

The current guidance in ADN is very limited in its usefulness and conflicts with the dimensional limits called for in Part M for bedrooms in hotels and 'other residential' buildings (800mm to 1m above FL). There is no statement of maximum distance to the 'reachable' controls, which makes defining compliance difficult. There is also no relationship with the recommendations contained in BS8300 or any mention of remote or automatic controls.

If N3 were made to apply to dwellings then the requirements of Lifetime Homes could be integrated, i.e. 750mm wide approach clear zone in front of the window and window handles/controls between 450mm and 1.2m above FL.

It is also noted that ADF expects N3 to be applied to dwellings in order to give adequate control of ventilation features.

4.4 BUILDING REGULATION N4 (SAFE ACCESS FOR CLEANING WINDOWS, ETC.)

As with N3 this Regulation should apply to dwellings, as some very real safety and amenity issues are incurred with windows within residential buildings, particularly those above two storeys. Therefore it is suggested that 'Limits of Application' (a) be removed.

4.4.1 APPROVED DOCUMENT GUIDANCE FOR N4: Commentary

This guidance is useful and it is considered that it is equally applicable to cleaning strategies for residential buildings, which have become increasingly complex and safety sensitive.

It could be beneficially expanded to include some reference to modern cleaning methods, such as water-fed poles, and to have a strong inclusion, or reference towards, applying the assessment processes and recommendations of BS 8213-1:2004 for cleaning from the inside as well as including reference to external and building-mounted window access systems.

5.0 PART K

5.1 BUILDING REGULATION K1 (STAIRS, LADDERS AND RAMPS)

The wording of the main part of the Regulation is satisfactory but the limit of applicability (only applies to said structures forming part of the building) does not fit with Part M which patently covers external stairs, ramps, etc.

5.1.1 APPROVED DOCUMENT GUIDANCE FOR K1: Commentary

K1 guidance is out of date and has been overtaken by a raft of other standards including other Building Regulations as well as other Standards. It is probable that the only instance in which a Part K stairs would now comply in its own right is within a private house built for sale (i.e. a house not subject to LTH or HCA's Housing Design Standards). As an example the matrix of standards that apply to staircases is illustrated in the following Table - dimensional requirements for common stairs in blocks of flats.

COMMON STAIRS TO FLATS - VARIOUS DIMENSIONAL REQUIREMENTS

Source	Rise		Going		G+2R		Pitch	Width (between handrails)		Handrail Height		Run Past	Landing Length
	min	max	min	max	min	max	max	min	reduced	min	max	min	min
AD K	150	190	250	320	550	700	-	-	-	900	1000	-	= actual width
AD M*	-	170	250	-	-	-	-	-	-	900	1000	300	= actual width
AD M**	150	170	250	-	-	-	-	1200 †	-	900	1000	300	1200
BS53951 1977	100	190	250	350	550	700	38º	1000	800	-	-	-	1000
BS53951 2000	100	190	250	350	550	700	38º	1000	800	900	1000		1000
BS53951 2010	150	180	300	450	-	-	-	1000	-	900	1000	Cont.	1000
LTH	-	170	250	-	-	-	-	-	-	900	-	300	-
BS 8300***	150	180	300	450	-	-	-	1200 †		900	1000	300	1200

* Dwellings section
** other than dwellings
*** see Scope
† measured at tread surface, 1000mm allowed between handrails

This Table illustrates the extent of different standards that might be held to apply to such common stairs in blocks of flats due to the following reasons:

- Part K - all stairs must satisfy these requirements
- AD M (dwellings) - these override AD K and must be followed unless a lift is installed
- AD M (other buildings) - might be argued as applying to common and non-dwelling parts
- BS 5395-1:1977 - obsolete but still cited in ADK as an alternative approach
- BS 5395-1:2000 - now withdrawn but still some lingering currency
- BS 5395-1:2010 - current standard, recommendation status only but often called up by Employers Requirements, industry specification or general best practice
- Lifetime Homes - commonly demanded as part of Planning Consent, Housing Standards or clients requirements, they apply whether there is a lift or not
- BS8300 – Scope says it is intended to apply to common parts of residential buildings

Furthermore and to add to the confusion, there are three different conflicting rules of measuring the width, i.e. between handrails; at the tread surface; and between the balustrade and wall but allowing a 100mm handrail incursion. LTH requires the measurement to be carried out from wall to wall at a height 450mm above the pitch height to confirm the clear width (which presumably means that the handrail is not taken into consideration).

The above illustrates how ADK neither synchronises with ADM, nor other common requirements and current standards. This is a problem as other standards are increasingly being applied under different legislative regimes.

The accompanying PRP drawing demonstrates the considerable space and cost impact that an increase in a requirement or recommendation can make, for instance increasing the minimum going from 250mm to 300mm (a massive step change!).

The remainder of ADK Section 1 guidance is satisfactory in intent but needs the following attention:

- complete updating and correlation with current standards, categorisation of staircase types, rules of measurement, etc.

- amalgamation of requirements for width of flights that fit with all normal accessible requirements and with cross reference to Part B width assessments

- gathering together of the allowances and limitations of doors encroaching on landings in respect of all needs, e.g. safety, means of escape routes, awareness of approach, etc. (It may be found that the existing allowances should only be suitable for private stairs within dwellings or limited to other small buildings, for example)

- complete re-evaluation of guidance on alternative tread stairs and fixed ladders to loft conversions given the conflicts that occur with other AD B guidance and past determinations

- consideration of further guidance on the guarding of stair and landing edges to stop foot traps or objects falling under guarding

Section 2 guidance (Ramps) is minimalist in its content and usefulness and should be merged with Part M guidance, which states that Part M takes precedence in any conflict between AD K and AD M. Lifetime Home guidance on ramps is more detailed (Criterion 3), and applies the requirements of AD M 1/M2 to dwellings.

5.2 BUILDING REGULATION K2 (PREVENTION OF FALLING)

The requirements stated in K2 (a) and (b) are considered satisfactory. The limit of applicability of K2 (a) only to stairs and ramps forming part of the building is too limiting as there are many instances where external disconnected but vital pedestrian route ways are equally needed to be safe; for example approaches to buildings, in courtyards, playgrounds, etc.

5.2.1 APPROVED DOCUMENT GUIDANCE FOR K2: Commentary

Generally the guidance is considered adequate with the following exceptions:

- updating to Eurocode references needed

- more detailed guidance relating to protection from falling at window openings would be advisable (perhaps in tandem with BS 8213-1:2004 guidance) given modern trends for deeper openings and other design features that present new/enhanced risk potential, for instance steps formed by window boards
  NB: strong linkage or merger with N4 guidance is needed

- enhanced guidance regarding parapets and other edge guarding that might carry some climbable feature would be welcome

- guidance on protection for maintenance purposes, at least for some standard situations, as buildings are increasingly including built-in maintenance features (this could also embrace K1 requirements)

It is considered that the internal NHBC guidance note (see Appendix B) is a good example of clear guidance that helps to eliminate risk in this context

5.3 BUILDING REGULATION K3 (VEHICLE BARRIERS AND LOADING BAYS)

This Regulation does not seem in need of any change.

5.3.1 APPROVED DOCUMENT GUIDANCE FOR K3: Commentary

Apart from a need to update to Eurocode design references this guidance seems adequate.

5.4 BUILDING REGULATION K4 (PROTECTION FROM COLLISION WITH OPEN WINDOWS, ETC.)

This Regulation is limited as it does not refer to possible hazards such as doors, protruding structure, underside of stairs etc. It is suggested that it be widened in its scope, particularly in view of the fact that Part M covers other obstructions.

The limits of applicability exclude dwellings but it is suggested that the approach to common areas around dwellings should be included as they present an equal risk.

5.4.1 APPROVED DOCUMENT GUIDANCE FOR K4: Commentary

From 5.4 above it will be seen that there is uneven coverage between Parts K and M. It is suggested that all requirements should be merged into a composite K and M Approved Document with the scope of applicability also including the common approaches and surroundings of dwellings.

5.5 BUILDING REGULATION K5 (PROTECTION AGAINST IMPACT AND TRAPPING BY DOORS)

The main part of the regulatory requirement seems sound. However the limit on application is lacking by excluding dwellings and lifts.

There is probably more risk presented by doors and gates to dwellings than other buildings and some recent tragic cases would seem to prove this. It is considered that research should be conducted with a view to extending coverage to residential circumstances if found valid.

Industrial type lifts might warrant exclusion from coverage but there is no reason why passenger lifts should be exempt.

5.5.1 APPROVED DOCUMENT GUIDANCE FOR K5: Commentary

The guidance is somewhat simplistic and contains conflicts with Part M.

With Part M taking precedence it would seem that there is no further need for the guidance on vision panels in doors. However clarity of the extent of applicability needs to be established in respect of common areas to dwellings.

The requirement for any powered door or gate to fail safe to open (or manually openable) upon power failure also needs to be cross referenced to fire safety and disabled requirements.

Further guidance should be included in response to some recent safety shortfalls involving automatic gates.

References to current British Standards covering the relevant topics should be included.

6.0 PART M

NB - because of the extent of Part M this review considers relevant topics in a more collective way at this stage

6.1 BUILDING REGULATIONS M1, M2, M3 AND M4

The regulatory content is considered broadly satisfactory and we do not know of any problems in this regard. The following two points may benefit from being addressed:

- The wording of the regulation and style it is set out in the Approved Document could be more crisply presented to ease reading and understanding.

- Regulation M4 (2) might need revisiting depending upon any guidance adjustment that might move technical standards in line with Lifetime Homes (LTH) criteria.

6.1.1 APPROVED DOCUMENT GUIDANCE FOR PART M: Commentary

General:

- ADM has been the vanguard tool for integrating inclusive access within the built environment and has overwhelmingly proved its worth.
- It does, however, deal with a subject that is accompanied by a constantly advancing social need and demand together with attendant growth of supporting policies and technical guidance. This causes some tensions in respect of funders and regulators deciding what the proper current standard is, or should be, or what control regime is to be used for implementing standards
- Serious disconnection has occurred between different standards.
- ADM's content is quite dense and complex in detail.
- There are instances where vital guidance is scattered throughout the document, e.g. internal stairways have design provisions guidance stated in different parts of the document and cross referenced to provisions for external steps.
- Rules of measurement get confounded and changed by other documents, e.g. the introduction in BS 8300 of the 'gently sloping' category

Updating:

- Whilst ADM is periodically reviewed it is the case that it is often being outstripped by the production of new and amended parallel guidance , e.g. BS 8300, pending BS 9266 and BS for wheelchair housing, LTH, etc.
- In practice other standards therefore often have to be woven in above and around ADM which is a source of confusion.

Dwellings distinction:

- It is entirely logical that ADM is split into separate guidance sections dealing with 'dwellings' and 'buildings other than dwellings'
- However a very wide gulf has emerged between the relative policy approach to the two sets of building use, i.e. dwellings being minimal and other buildings being very full. Also the lines of demarcation between the different standards applying to common spaces in and around residential buildings are blurred and uncertain.
- A separate section below looks at Part M and dwellings in more detail.

Consolidation:

- It has been noted in previous sections that there are many controlled topics that are duplicated across Parts K. M and N and that some conflicts exist.
- Elsewhere in this paper it is illustrated that a plethora of other control regimes (legislative and otherwise) also impose technical standards within the same subject range as Parts K. M and N, the cumulative effect of which is to make the process over complex and costly.
- Consolidation of all necessary standards into a combined and updated Approved Document would be of immense help to designers and constructors in that it would provide a clear single guidance set that reliance could be placed upon thus avoiding wasteful time (due to lack of clarity across the guidance) and misplaced design and specification(see separate section below)

6.1.2 DWELLINGS AND PART M

The Building Regulation standard for dwellings provides a very low level of requirement when viewed against other current standards and policies relating to the access to, ease of use and adaptability of dwellings.

ADM guidance for dwellings was set some decades ago as a first legislative step and was formatted upon a limited notion of 'visitability' and a deference to house builder concerns of cost and land space take up at that time.

Part M guidance for dwellings has now become very isolated, out of date, and in need of review. It is of diminished value as it has been overtaken by the following:

- Widespread Planning policies that call for LTH standards to all housing

- Increasingly 10% wheelchair housing provision being required under Planning policies
- Housing Standards that require LTH
- Funding mechanisms that require LTH
- Code for Sustainable Homes scoring that encourages the application of LTH standard, which is mandatory at higher levels
- British Standards that recommend accessible and adaptable general housing
- BS 8300 widening its scope to cover common areas of dwellings
- Increasing general awareness of the nation's need to accommodate an ageing population within a more adaptable and flexible form of dwelling
- Growing need to integrate lifts and other forms of vertical transportation in residential buildings

Review processes should clearly define what standards are deemed applicable as a national norm in the following situations:
(i) within individual dwellings;
(ii) within common areas of dwellings; and
(iii) to the approaches and other common external areas

Standards should balance need, safety, sustainability and sensible amenity of use without imposing a distorted and unwarranted increase in cost and space demand. Neither should they include requirements for adaptability measures that are of limited demand, such as the provision of a through-floor lift space in concrete frame buildings.

They should also be practicable and allow for some reasonable graduation of approach where such features as steep and tight sites impose constraints.

6.1.3 ACCESS STATEMENTS

An objective of the review is to assess the role and worth of the Access Statement process and attendant guidance currently set out in ADM. Previously to this end we have identified typical current time and cost impacts associated with the preparation of Access Statements.

Ways of showing clarity of purpose and compliance of accessibility measures remain as an important mechanism for both the Planning and Part M processes. Whilst this should not be eroded in any way it is considered that there is scope to reshape the guidance so that the content and mode of use of Access Statements is more graduated to the needs of any project. Additional, and clearly understood, linkage with the Design and Access Statements process as required by Planning would help to streamline the process.

This could be achieved by:

- amplifying the guidance on dealing with the detailed justification stage of Part M (which normally tends to be far more precise and far reaching in detail and is normally designed in detail post Planning)

within CABE's 'Design and Access Statements' document that supports the Planning process

- simplifying the guidance contained in Sections 0.20 to 0.28 of ADM

- including revisions that give guidance allowing for the graduation of Access Statements according to the complexity and needs of any one project

In respect of the third bullet point there is, for instance, a large difference in need between say a simple low rise housing development, where compliance with Part M is usually self evident by inspection of the plans, and a complex development where the access strategy needs explanation and understanding by all involved parties. In the latter case the phased evolution of a detailed access statement can be an important vehicle for the achievement and awareness of both the principles and details and act as a high value design aid/check list.

7.0 OTHER LINKED ISSUES

7.1 ACCESS FOR MAINTENANCE

CDM requires designs to integrate safe and suitable strategies for ongoing maintenance. Often these take the form of inbuilt building features and installations. Currently ADK and N acknowledge that features that follow Building Regulation guidance will be considered suitable under Health and Safety at Work legislation. It is believed that certain recurring access features, including some that may deviate from standard AD guidance but still be fit for purpose, could beneficially be included in the Approved Document(s) in order to standardise approaches and give confidence .

7.2 SECURITY

The possible inclusion of security measures in the Building Regulations has been a long-standing consideration and it is being reviewed elsewhere as part of the total review process.

In the meantime quasi voluntary measures have increasingly imposed themselves via the Secured by Design initiative.

Once again this is an instance wherein the growth of a separate control regime has created its own world of unilateral standards, which have implications for costs and conflicts with various parts of the Building Regulations. There is much to be said for consolidation into the Building Regulations.

If this were to happen then the natural home would be within the Parts K, M and N portfolio.

8.0 POTENTIAL MERGE OF PARTS K, M and N

The review has already identified that there is a case to rationalise and consolidate across Parts K, M and N with a particular highlighting of the potentiality of grouping K and N together.

A wider view is that maximum benefit would be gained by a total merger of Parts K, M and N. Given that there are many strands of duplication and conflict existing between the three Parts, it is therefore recommended that a single merged Approved Document be created, which embraces some of the additional more advanced considerations on the topics, as highlighted in the previous text. The new document could be called:

'Access and Safety in Use'

Benefits that would be achieved are:

- a concise single reference point
- composite streamlined guidance would aid the design process
- comprehensive guidance relating to individual building features would aid the specifying process
- would create a more obvious focal knowledge point for the construction world
- gaps in awareness and confusion between requirements would be overcome
- the consolidation process would eliminate conflicts between requirements
- would become a more obvious home for the important subject of inclusive usability and lifetime living
- inclusive and safe use concepts would become more generally integrated in construction processes
- help to meet the general objective of reducing the number of Approved Documents
- could be split into dwelling and non dwelling parts (as has been successful in Parts B and L)
- content could be formatted to follow a logical building sequence and design route map

9.0 SUMMARY

1 Significant benefit could be gained by updating and amending the content of Approved Documents K and N as well as merging them, however this should also deal with any mismatches with Part M.

2 Very real benefit can be delivered by updating and correlating the content of Approved Documents K.M and N into a composite merged Approved Document thus simplifying the compliance process and hence cutting down on costly confusions and waste.

3 As part of the review process suggested under item 2 it is considered that particular attention should be given to setting and drawing together a centralised set of standards covering accessibility and lifetime living for dwellings and multi dwelling buildings (incorporating those aspects of current guidance which is relevant, useful and practical).

4 The formation of a composite merged Approved Document would become an important platform, and component, for the wider harmonisation of all standards across the construction and housing process.

Topic	Deregulate	Duplicat'n	Conflict	Linkage	Out of date	Amend	Merge	Comment
N1	NO	NO	NO	K2	check		YES	
N2	NO	YES	YES	M	NO		YES	Clarify applicability
N3	NO	NO	YES	ADF, LTH	YES	YES	YES	
N4	NO	NO	NO	N3, N1	YES	YES	YES	Widen to cover dwellings, update
K1	NO	ADM, LTH	YES	ADM, LTH	YES	YES	YES	Complete update needed
K2	NO	NO	NO	N1	YES	YES	YES	
K3	NO	NO	NO		check		YES	
K4	NO	ADM	YES	ADM	NO	YES	YES	

Topic	Deregulate	Duplicat'n	Conflict	Linkage	Out of date	Amend	Merge	Comment
K5	NO	ADM	YES	ADM	YES	YES	YES	Widen to cover dwellings, update
M1- 4	NO	YES	YES	K1,2,3 ,4 N1,2,3 LTH	in part	YES	YES	
LTH	ABSORB	YES	YES	ADM, K1			YES	Review and integrate into ADM
BS			YES	ADK, M,N				Correlate relevant standards with review process

APPENDIX A

Management of the review process has previously agreed to a PRP investigation based on, and around, the following Key Action Points:

- Review legal scope of Building Regulations in Parts K and N and in particular their relationship to present day needs for residential buildings where there are some exclusions from applicability at present.

- Check that safety glazing guidance is sufficient and relates to current practice.

- Consider the current duplication of guidance on manifestation of glazing between Parts N and M and look towards consolidation.

- Evaluate the need for the consistent and best spread of guidance on the safe and easy operation of windows in the face of advancing needs for life time living.

- Review modern window cleaning techniques and the need for safe window cleaning facilities across all building uses.

- Analyse and list all the varying arrangement and dimensional requirements relating to stairways across all Building Regulations together with other technical and housing standards.

- Make suggestions for a consolidated, and simpler, set of staircase guidance standards.

- Study all present guidance sources on access routes (i.e. flat, gently sloping, ramped and stepped) and suggest some consistent and consolidated guidance.

- Review protection from falling risks and guidance in the light of modern building design features.

- Consider means of consolidating all necessary safeguards relating to risk of impact, trapping, etc relating to doors and windows into a composite and fully targeted guidance set.

- Take a look at other, currently extraneous, safety in use features that might benefit from having Building Regulation coverage/guidance.

- Look at benefits/impacts of merged Parts K/N and also discuss the potentiality of merging Parts K, M and N into one consolidated 'Access and Safety in Use' Approved Document.

APPENDIX B

TO: All Surveyors FROM: Neil Cooper

Technical Policy Item 11.24

DATE:28th July 2003 REF: GMJ/8568

SUBJECT: Guarding to French windows and window openings in external walls with low cill heights

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This guidance is intended to provide a common approach when assessing guarding provided to French windows and window openings in external walls with low cill heights.

French Windows

When considering guarding to French windows a minimum guard height of 1100mm measured from ffl is required to ensure adequate safety from falling. This figure is almost consistent with the guidance given in BS 8213: Part1 1991, which recommends 1.12m high guarding for French windows above ground floor level.

Where an upstand is formed (up to 300mm high) to the base of the opening then an 800mm guard height should be maintained above this level.

See diagram1

Window openings in external walls with cill heights between 300mm and 800mm above finished floor level.

According to *Childdata* 50% of 4 year olds can step up 410mm, and 3% can step up 550mm. Any cill height lower than 600mm may therefore be considered climbable by children.

According to Childdata, only 5% of 4 year olds are taller than 1200mm so most would be fairly stable standing on an upstand if a minimum guard height of 700mm were to be maintained.

Diagram 2 indicates acceptable guard arrangements where cill heights are between 300mm and 600mm above ffl.

Diagram 3 indicates acceptable guard arrangements where cill heights are between 600mm and 800mm above ffl.

When considering finished floor level account need not be taken of fixed

furniture such as window seats.

Window Restrictors

Window restrictors are not considered to be an alternative to a permanent guard illustrated in diagrams 1 -3.

The reasons are:

a) Window restrictors can be disabled to allow for window cleaning or increased ventilation and hence cannot be considered to be a permanent guard.

b) The glazing would need to be designed to provide containment by resisting the horizontal loads prescribed by BS 6399, however, window restrictors are unlikely to be capable of resisting these loads.

Diagram 1 – Guarding to French windows

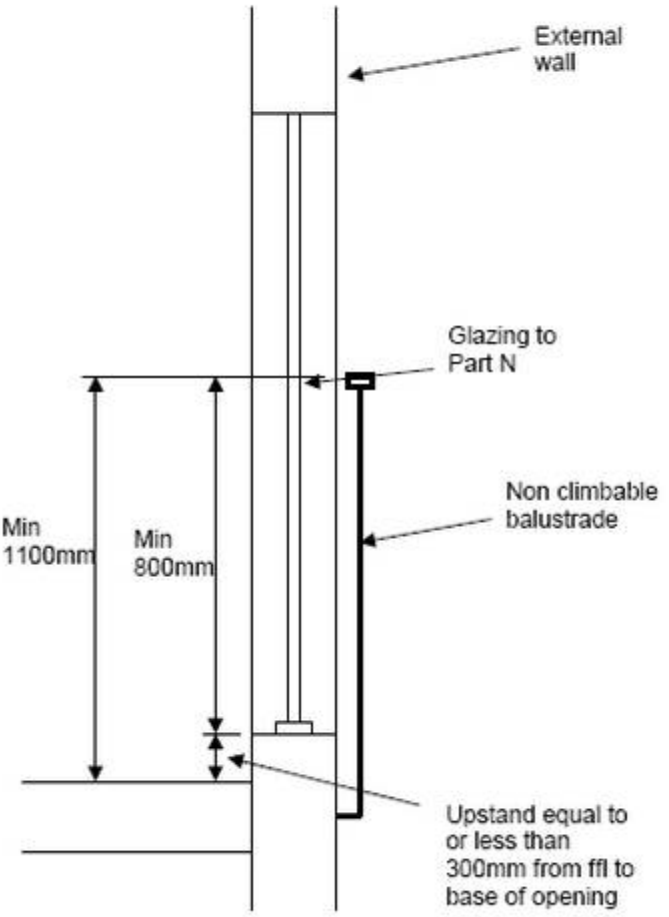


Diagram 2 – Guarding to windows with a cill height between 300mm and 600mm above ffl

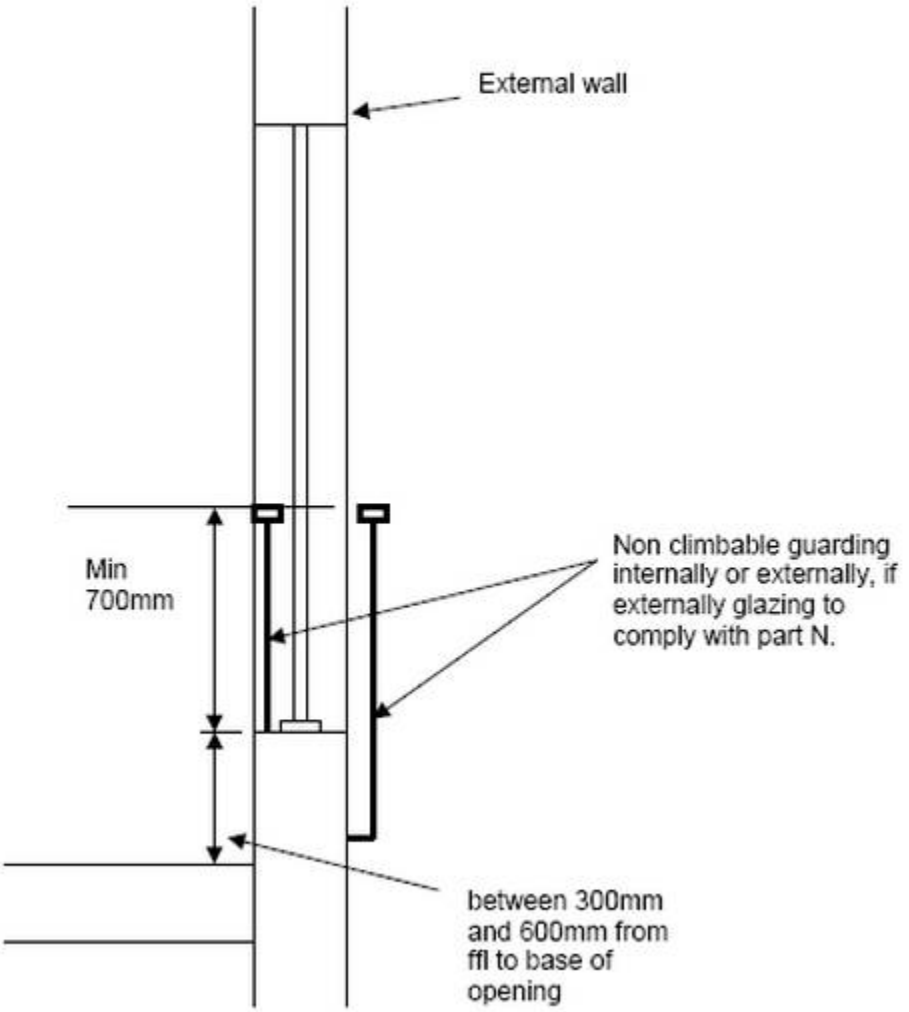
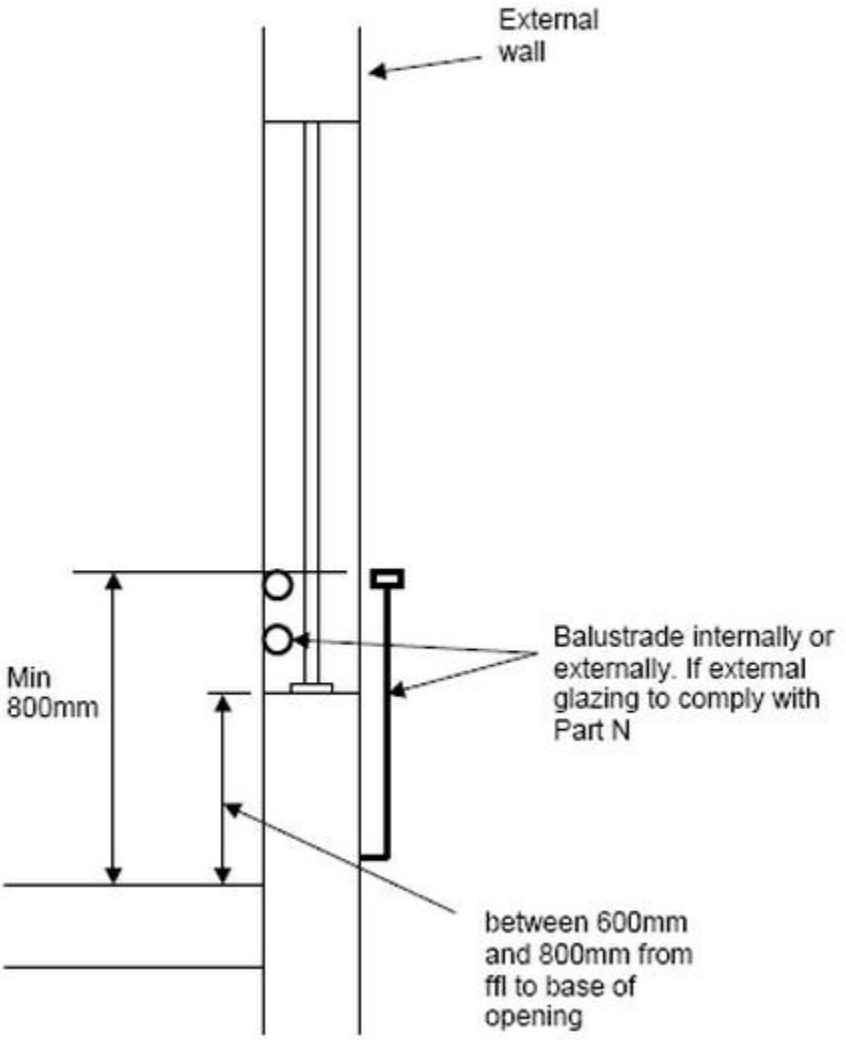


Diagram 3 – Windows with a cill height between 600mm and 800mm above ffl



Technical Policy 11.19a

Title	Guarding to Balconies		
Reference	K2		
Date	18/05/2009	Status	Current

References	Approved Document K 1998 edition – Protection from falling, collision and impact.

This guidance is intended to provide a common approach when assessing guarding provided to balconies where there is a section of parapet below the handrail.

When considering guarding to balconies a minimum guard height of 1100mm measured from balcony floor level is required to ensure adequate safety from falling in accordance with the guidance in Approved Document to Part K.

Balconies with parapet heights up to 300mm above balcony floor level.

Where an upstand is formed (up to 300mm high) to the base of the opening then an 800mm guard height should be maintained above this level. Where children have access to that balcony, the guarding must be designed such that cannot easily be climbed.

See Diagram1

Balconies with parapet heights between 300mm and 1100mm above balcony floor level.

According to *Childdata* 50% of 4 year olds can step up 410mm, and 3% can step up 550mm. Any cill height lower than 600mm may therefore be considered climbable by children.

According to Childdata, only 5% of 4 year olds are taller than 1200mm so most would be fairly stable standing on an upstand if a minimum guard height of 700mm were to be maintained.

Diagram 2 indicates acceptable guarding arrangements where parapet heights are between 300mm and 600mm above balcony floor level.

Diagram 3 indicates acceptable guarding arrangements where parapet heights are greater than 600mm above balcony floor level.

When considering balcony floor level account need not be taken of fixed furniture such as permanent seating.

Diagram 1 – Guarding to Balconies

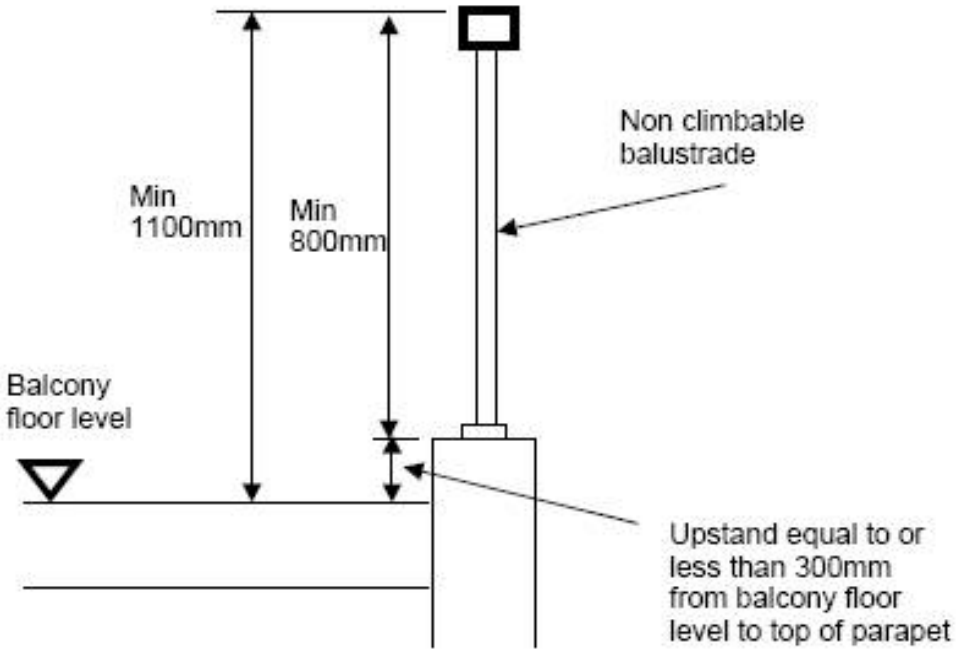


Diagram 2 – Guarding to balconies with a parapet height between 300mm and 600mm above balcony floor level

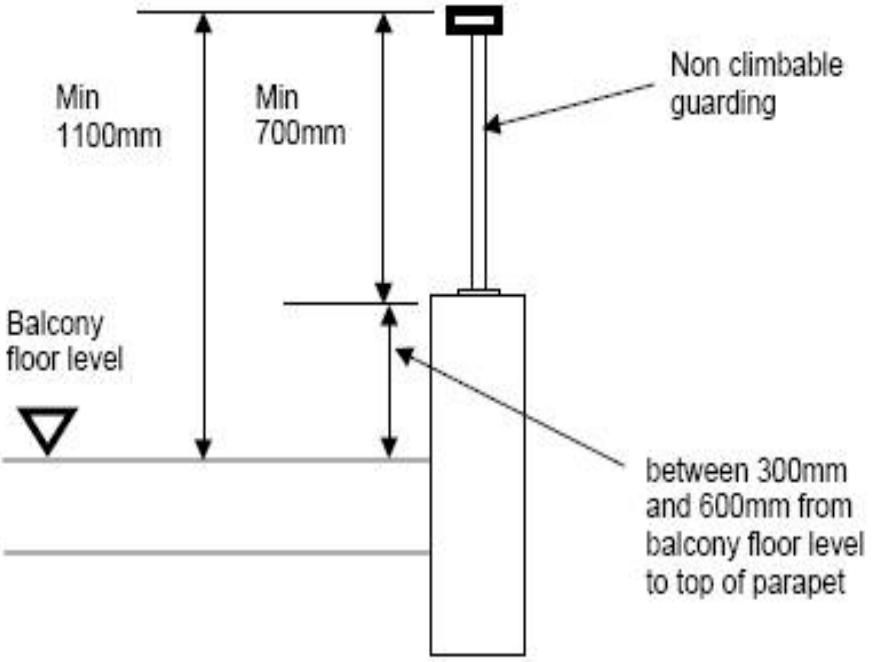
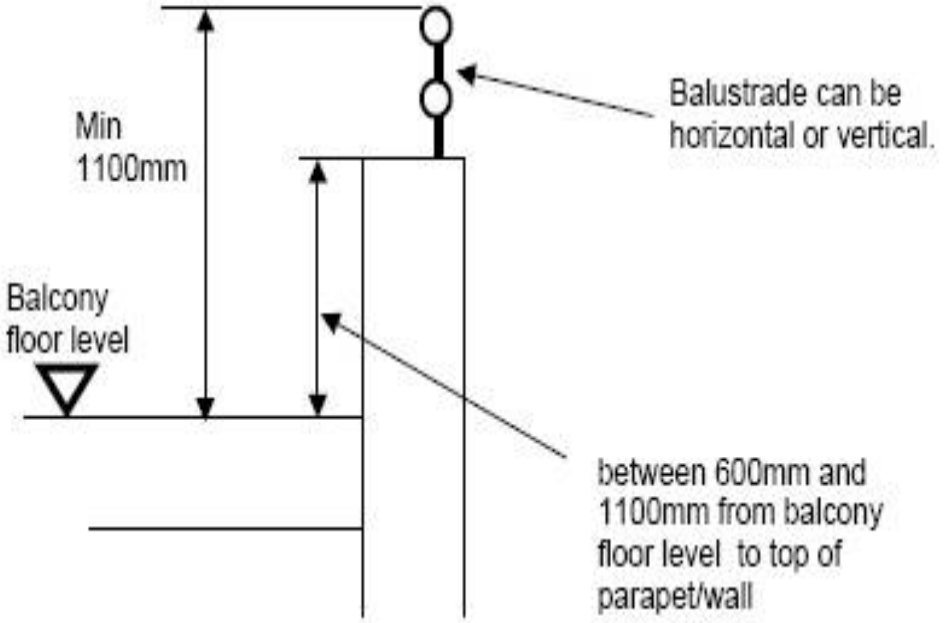


Diagram 3 – Balconies with a parapet height between 600mm and 1100mm above balcony floor level



Appendix 10 – Part A, Eurocodes

Building Regulations Review

Eurocodes

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1. The issue

1.1 Eurocodes have now superseded the previous British Standards as the key point of reference for the design of construction works. However, much of the industry has not yet adopted Eurocodes and they are not referenced in Part A of the Building Regulations.

1.2 Europe Economics have previously undertaken an Impact Assessment on the adoption of Eurocodes.

1.3 The option exists to update Part A of the Building Regulations to make reference to Eurocodes.

1.4 We were asked to prepare the following:

- Commentary on the likely impact on uptake of Eurocodes across the industry if they were referenced within Part A
- Comments on the previously assessed cost to industry of moving to Eurocodes

1.5 We were not asked to consider any technical change to buildings arising from Eurocodes, we understand there is consensus that the cost impacts of any changes are broadly zero.

2. Our Response

Industry progress to date in moving to Eurocodes

2.1 Based on our experience progress on Eurocodes uptake has been relatively slow amongst smaller firms but is prevalent amongst the larger multi-disciplinary consultants (where take up is close to 100%). This we believe is due to several factors:

- Ongoing recessionary market conditions are driving consultancies to reduce overheads in an increasingly competitive market. Training is often a relatively easy overhead to reduce.
- There is currently little insistence from clients and approving authorities for the use of Eurocode based design. Some large public sector clients such as Crossrail and Network Rail are insisting on the use of Eurocode based design. Typically these major infrastructure projects are undertaken by large multi-disciplinary consultants, and therefore there is less demand on smaller consultants to adopt Eurocode based design.

2.2 We do also note that, even for larger firms who are able to utilise Eurocodes, they are not currently adopted for every scheme. This issue is driven by client demand from major purchasers, for example within the same practice a large team dedicated to Highways Authority work currently uses British Standards whereas one for Network Rail uses Eurocodes.

How will an update to Building Regulations change uptake by industry?

2.3 Undoubtedly this measure would rapidly accelerate industry take up, as there would be no real alternative to obtaining Building Control approval. Designs and calculations would need to be prepared in accordance with Eurocode requirements and, where a firm attempted not to do this, it is possible that Building Control could reject the submission (Building Control's checking would be aligned to Eurocodes).

2.4 We would note some concern as to whether Local Authority approving engineers are actually geared up to deal with Eurocode submissions, in our experience this is often not the case. It is feasible that Local Authorities would sub-consult checking work temporarily or permanently where the ability to work to Eurocodes does not exist.

2.5 Client awareness of and demand for Eurocodes varies. Private sector demand is relatively limited, public sector demand is greater but still not comprehensive. It is likely that incorporation into the Building Regulations would also enhance client awareness.

Our view on the cost to firms as previously assessed by Europe Economics

2.6 Our assessment of the original Implementation Costs identified in the 'National Strategy for Implementation of the Structural Eurocodes: Design Guidance – April 2004' by the Institution of Structural Engineers is that these were overly pessimistic. The example cost for a practice of 16 staff is replicated below:

Item	Cost (£)
Cost of purchasing 1 set of structural Eurocodes including National Annexes	2,750
Cost of buying guidance documents	1,000
Cost of updating software	20,000
Attendance at technical seminars (assume 3 days per person) Cost of seminars (assume £150 net each seminar) = 13x3x£150 Cost of attendance = 16x3x7.5x£50	 7,200 18,000
Familiarisation with codes in the office (assume 12 man days for each person) = 16x12x7.5x£50	72,500
Alterations to standard 'in house' specification documents (allow 14 documents at average of 1 man –day each) = 14x7.5x£50	5,250
Loss of productivity during the first year of change(assume an average annual billing (productive time) = 1600 hours and 10 per cent loss of productivity) = 1600x16x0.1x£50	128,000
TOTAL	**254,700**

Source: Institute of Structural Engineers (2004)

2.7 European Economics reviewed the above costs, in some circumstances amended figures and also analysed variants. A revised "worst case" of £164,868 rather than £254,700 was arrived at. We would agree with this figure and the reasoning behind it. As European Economics note the figures are "work in progress" and some data is not yet available.

<u>The benefits to firms from moving to Eurocodes</u>

2.8 We believe that the key benefits will be as follows:

- Common set of technical rules and guidelines across Europe. This is of real benefit to practices that work across Europe, and would tend to be of more benefit to larger consultancies who are more likely than smaller consultancies to be engaged in this work sector.
- Improved market positioning for consultancies who wish to demonstrate a leading edge approach to design.
- The opportunity to bid for and secure projects across a broader geographical area.
- Improved staff morale – psychological aspect of working for a practice that is prepared to invest in relevant training.

Appendix 11 – Part E4

Building Regulations Review

Part E4: Acoustics in Schools

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1. The issue

1.1 Part E4 relates to acoustic requirements for schools. DfE are closely involved in this issue via their Building Bulletin 93 and specific requirements for individual school projects. The option therefore exists to remove Part E4 and leave this issue fully in the control of DfE.

1.2 We were asked to prepare the following:

- Commentary on typical issues arising on school projects with respect to Part E4 and other relevant guidance on acoustic issues.
- An estimate of the costs of architects' / project teams' time associated with dealing with Part E4.
- An estimate of the cost saving potential for the above time in the event that Part E4 were removed.

2. Our Response

Commentary on Part E4 issues

2.1 PRP architects have prepared the attached document summarising views on Part E4, the key points are:

- Building Bulletin 93 is the key document referred to within Part E4 of the Building Regulations, the only other documents referred to are the relevant British Standards for measuring noise levels.
- Acoustic performance is a key issue for schools and can materially impact on the quality of teaching achievable, this is particularly so for Special Education Needs pupils and BB93 gives guidance in this respect.
- Teaching environments are changing and there is a need for guidance to keep developing to align to new classroom styles.
- Approved document E4 is a very short document, referring directly to BB93. It is expected that, in the absence of E4, designers would continue to refer to BB93. For this reason the removal of E4 is forecast to create very limited time savings.
- Though the above is technically the case there is some concern that practically standards may drop, this is due to the robustness of Building Control vs that of client's / contractor's monitoring.

2.2 EC Harris' education team was also consulted on this issue and provided the following feedback from a project / cost management viewpoint:

- Acoustic issues are generally a significant area of cost for schools. The main problem is the conflict between the need to enclose acoustically and the need to ventilate. It is often the case that somewhat inflexible acoustic requirements drive an expensive mechanical ventilation system.
- The Building Regulations and BB93 are felt to be overly proscriptive. There is an opportunity that removal of E4 could give freedom for some flexibility and more cost effective solutions, however DfE would

clearly need to take the initiative and develop their thinking rather than continue to apply BB93 as it stands.

- If Part E4 were removed it is anticipated that all public sector schools would continue to comply with BB93, hence ensuring that no fall in standards would occur. There is a possibility that private sector schools would select their own standard which could be reduced.
- Given the complexity of acoustic issues and the relation to other areas of school design it is felt that DfE rather than Building Control are best placed to deal with them.

2.3 Additionally a leading architect specialising in education buildings was informally consulted and responded as follows:

- Typical school designs that we work on generally include modern teaching spaces which cannot comply with Part E4, however it is not usually a problem to agree a dispensation with the local Building Control / client teams.

Impact of removal of Part E4

2.4 In summary we have assessed the potential impacts of removal of Part E4 as follows:

- **Technical / quality impact** – It generally appears that there would not be a reduction in standards in the absence of Part E4; DFE would continue to utilise BB93. There is a slight concern regarding private sector schools, however most clients are probably “educated” and would be aware of BB93 as a point of reference.
- **Practical impact** – There is some concern that on-site monitoring may be less robust in the absence of Part E4, however this is not considered relevant to this study and may be an issue for general education as to how to test / monitor acoustic performance.
- **Cost savings** – There would be little cost saving for general projects as Part E4 has minimal reference time with design teams moving directly to BB93 (which they would continue to do). There may be a saving on more modern school types where flexibility on the acoustic approach is required, however it appears that Building Control / design teams “on the ground” are already dealing with these issues and are not causing unnecessary delay.
- **Other potential benefits** – There may be some additional benefit of increased flexibility for school projects if Part E4 were removed. Where issues such as sustainability, ventilation, fire enclosure etc currently conflict with Part E4 (particularly for modern building types), greater flexibility may allow more economic design solutions.

Time / cost assessment

2.5 Given the points made above we have not attempted to make an assessment of time / cost savings. It appears that these would be limited, albeit there may be an increase in the future as changing school typologies and wider requirements mean that acoustic issues are more complex.

3. Attachments

3.1 PRP statement on Part E4

DCLG Building Regulations Review

Part E4

Issue under Review

Part E4 relates to acoustic requirements for schools, this issue is also dealt with within DfE's own guidance. The potential therefore exists to remove Part E4 and allow DfE to deal with the issue.

Approved Document E

E4 simply requires that all spaces in schools should be designed for sound in respect to their intended use, and refers to the Education Act 1996[4] for definition of 'school'.

Section 8 : Acoustic Conditions in Schools - refers to Building Bulletin 93 for values for sound insulation, reverberation time and internal ambient noise to be met to satisfy requirement E4.

Apart from BB93, Annex D only refers to various British Standards regarding methods for measuring sound.

Background:

Building Bulletin 93 is mandatory and to quote the document:

- provides a regulatory framework for the acoustic design of schools in support of the Building Regulations
- gives supporting advice and recommendations for planning and design of schools
- provides a comprehensive guide for architects, acousticians, building control officers, building services engineers, clients, and others involved in the design of new school buildings.

The aim of Building Bulletin 93 is to provide a simple but comprehensive guide for architects, building control officers, building services engineers, clients, and others involved in the design of new school buildings. Section 1 of Building Bulletin 93 describes the 'Specification of acoustic performance'. This section gives the performance targets for compliance with the Requirement from Part E of the Building Regulations.

Impact of removal of AD E4

Research has shown that acoustic conditions within schools can have a profound impact on pupil's learning and staff performance. Whilst BB87 now provides guidance on environmental control, BB93 is a good document and particularly ensures the Integration of those pupils with Special Educational Needs into mainstream schools, and to generally improve standards.

Part E of the Building Regulations currently refer to BB93 for all guidance on meeting the acoustic requirements in schools.

If Part E4 is removed the actual standards applied would be unchanged. There is some concern that compliance levels may vary (the onus would be on client's representatives which would not necessarily be as strong as Building Control), however we understand that this is not an issue for this study.

As a wider issue school building design is going through significant change and transformation. There is an essential need to meet the greater challenge of creating flexible and adaptable spaces, thus the demand on the building to be a more 'agile' to continue to respond to the changing need for different teaching permutations and offer teachers and learners greater opportunities. Other areas of school design (e.g. means of escape and fire, natural light and ventilation) are also covered by DfE Building Bulletins and may have the opportunity for reform similar to that considered for E4. A wider review of the various standards may give greater opportunity for efficiency.

Cost impact of removal of AD E4

Time saving is negligible (zero), as the wording of AD E4 is short and simple, referring directly to BB93.

Appendix 12 – Part L

EXTENSION COSTS

	Area (m2)	£/m2	Total
Commercial Offices (excl fit out)	158	£1,203	£190,126
Communications & Transport	193	£1,300	£250,900
Education	371	£1,407	£521,834
Local Government	489	£1,683	£823,163
Hospital	479	£1,797	£860,715
Health Centre & Surgery	141	£1,556	£219,455
Hotels	167	£1,703	£284,358
Other	207	£1,300	£269,100
Retail	167	£1,226	£204,675
Other Sport & Entertainment	167	£1,615	£269,638
LA Sports Centre (closest similar categories used)	549	£1,388	£761,979
Warehouse	240	£852	£204,516
Government Estate	446	£1,250	£557,500

EXTENSION COSTS

Commercial Offices (excl fit out)

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

	£/m2
Commercial Offices Generally Horizontal	£1,101
Commercial Offices Air Conditioned Horizontal	£1,196
Commercial Offices Non Air Conditioned Horizontal	£1,009
Commercial Offices Generally Vertical	£1,015
Commercial Offices Non Air Conditioned Vertical	£1,051
Simple average	£1,074

Suggested allowance			£1,074
Allowance for external works and fees excluded by BCIS		12%	£129
Proposed allowance /m2			**£1,203**
Extension cost	158 m2	£1,203	£190,126

Communications & Transport

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

Limited data and uncertainty as to what type of works fall under this category - suggest notional £1,300/m2 allowance at present and revist at a later date

Extension cost	193 m2	£1,300	£250,900

Education

Central (City Centre)

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

	£/m2
Horizontal extensions Primary School	£1,290
Horizontal extensions to Secondary School	£1,094
Vertical extensions to Primary Schools (Mean)	£778
Vertical extensions to Secondary Schools (Mean)	£929
Simple average	£1,054

Suggested allowance given that horizontal extensions to Schools are likely to be most common			£1,192
Allowance for external works and fees excluded by BCIS		18%	£215
Proposed allowance /m2			**£1,407**
Extension cost	371 m2	£1,407	£521,834

Local Government

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

	£/m2
Horizontal extensions to Local Admin Building	£1,503
Simple average	£1,503

Suggested allowance			£1,503
Allowance for external works and fees excluded by BCIS		12%	£180
Proposed allowance /m2			**£1,683**
Extension cost	489 m2	£1,683	£823,163

Hospital

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

			£/m2
Horizontal extensions to General Hospitals			£1,627
Vertical extensions General Hospitals			£1,902
Horizontal extensions to Outpatients / Casualty			£1,418
Horizontal Extensions to Intensive Care wards			£1,718
Vertical extensions to Outpatients / Casualty Mean			£1,107
Vertical extensions to Intensive Care wards Mean			£1,461
Horizontal extension to mixed specialist facilities			£1,337
Simple average			£1,510
Suggested allowance			£1,510
Allowance for external works and fees excluded by BCIS		19%	£287
Proposed allowance /m2			**£1,797**
Extension cost	479 m2	£1,797	£860,715

Health Centre & Surgery

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

			£/m2
Horizontal extensions to Health Centre / Surgery			£1,211
Horizontal extensions to Day Centres			£1,427
Simple average			£1,319
Suggested allowance			£1,319
Allowance for external works and fees excluded by BCIS		18%	£237
Proposed allowance /m2			**£1,556**
Extension cost	141 m2	£1,556	£219,455

Hotels

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

			£/m2
Horizontal extensions to Hotels			£1,171
Vertical extensions to Hotels (Mean)			£1,715
Simple average			£1,443
Suggested allowance			£1,443
Allowance for external works and fees excluded by BCIS		18%	£260
Proposed allowance /m2			**£1,703**
Extension cost	167 m2	£1,703	£284,358

Other

Unclear what types of building this would represent - suggest allowance of a notional £1,300/m2

Extension cost	207 m2	£1,300	£269,100

Retail

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

			£/m2
Horizontal extensions to supermarkets			£1,088
Horizontal extensions to shops			£827
Simple average			£958
Suggested allowance			£958
Allowance for external works and fees excluded by BCIS		28%	£268
Proposed allowance /m2			**£1,226**
Extension cost	167 m2	£1,226	£204,675

Other Sport & Entertainment

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

			£/m2
Horizontal extensions to public houses			£1,350
Horizontal extensions to sports pavilions etc			£1,341
Simple average			£1,346
Suggested allowance			£1,346
Allowance for external works and fees excluded by BCIS		20%	£269
Proposed allowance /m2			**£1,615**
Extension cost	167 m2	£1,615	£269,638

LA Sports Centre (closest similar categories used)

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

			£/m2
Horizontal extensions to Gym / Sports Halls			£1,180
Horizontal extensions to Gym / Fitness centres			£1,213
Simple average			£1,197
Suggested allowance			£1,197
Allowance for external works and fees excluded by BCIS		16%	£191
Proposed allowance /m2			**£1,388**
Extension cost	549 m2	£1,388	£761,979

Warehouse

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

			£/m2
Horizontal extensions to Retail Warehouses			£560
Horizontal extensions to warehouses / stores			£686
Horiztonal extensions to purpose built warehouses			£664
Horizontal extensions to cold stores			£1,054
Simple average			£741
Suggested allowance			£741
Allowance for external works and fees excluded by BCIS		15%	£111
Proposed allowance /m2			**£852**
Extension cost	240 m2	£852	£204,516

Government Estate

Likely to cover a variety of building types, suggest allowance of £1,250/m2 on the basis that most are office type uses

Extension cost	446 m2	£1,250	£557,500

Extension cost

Extension size 20 m2

Build cost data (BCIS, Q1 2011, UK Mean location, Median figures):

	£/m2
Horizontal extensions to detached houses (3 or less)	£1,439
Horizontal extensions to semi-detached houses (3 or less)	£1,255
Vertical extensions to houses (3 or less)	£1,443
Simple average	£1,379

Suggested allowance given that horizontal extensions to semi-detatched are likely to be most common £1,315

Allowance for external works and fees excluded by BCIS 10% £132

Proposed allowance /m2 **£1,447**

Extension cost	20 m2	£1,447	£28,930

Appendix 13 – Radon Protection

Building Regulations Review

Radon Protection

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1. The Issue

1.1 Revised Radon maps mean that additional homes are likely to require either basic or full radon protection.

1.2 We were asked to provide the following:

- A design of appropriate radon protection measures for each typology
- An estimated cost for each typology for radon protection
- Consult with the Home Builders' Federation (HBF) in respect of our cost assessment in comparison with their own views on cost.

1.3 We were not asked to review the numbers of dwellings impacted on by the above costs – this work has already been completed by others.

2. Our Response

Radon Protection Measures

2.1 Both PRP Architects and Hyder Consulting Engineers have reviewed the protection required under the "basic" and "full" categories, this differs dependent on the ground floor construction type:

Ground bearing slab:

- **Basic protection:** A radon membrane with sealed joints is laid under the slab and linked with the DPC.
- **Full protection:** As basic protection plus sumps with vent pipes. Fans may be required should there be unacceptably high radon readings within the finished building.

Suspended floor:

- **Basic protection:** A radon membrane with sealed joints is laid between the floor and the finishes and linked with DPC.
- **Full protection:** As basic protection, the floor void is already ventilated to remove moisture and this is deemed adequate to remove the radon.

2.2 Where no specific radon protection measures are adopted, conventional building practice is for a 1200 gauge polythene Damp Proof Membrane (DPM) to be laid under the ground floor slab. The walls have a Damp Proof Course (DPC) though each skin which is overlapped with the DPM.

Building Regulations Review

Radon Protection

Estimated cost for each typology for radon protection

2.3 The following table summarises the minimum number of additional new homes requiring radon protection under BR211:

Number of homes in areas requiring:	House	Flat	Total
Basic Protection	5,478	2,578	8,056
Full Protection	1,568	738	2,306
Total Homes	**7,046**	**3,316**	**10,362**

2.4 We have been provided with information which suggests the costs are as follows:

Existing Cost Information	House	Flat
Basic Protection	£250.00	£87.50
Full Protection	£335.00	£117.50
Full Protection inc. fan	-	-

2.5 This assessment assumes that each flat has a ground floor area of 35% of a typical house. We have arrived at a figure of 47% and this forms the basis of our assessments below.

2.6 In our estimations (details attached), we assess the costs as follows:

Revised Cost Assessment	House	Flat
Basic Protection	£170.00	£80.00
Full Protection	£670.00	£200.00
Full Protection inc. fan	£1,020.00	£290.00

2.7 It is noted that in houses / flats which are severely affected by radon, it may be necessary to raise the height of the building in order to create a ventilated void. It is considered in such cases, there will be no changes to the basic protection measures, or the house building construction generally. However, in order to create this void an increase in height of up to 500mm would need to be added to the external walls. This would translate as a premium in addition to the above figures of:

- £1,000 / House
- £200 / Flat

Consult with the HBF

2.8 To date we have been unable to obtain any real cost information from the HBF for comparison purposes. We will continue to follow this issue up with HBF and issue an addendum to this document in due course.

Sensitivity

As noted under 2.6 we arrived at a differing average ground floor flat area when compared to the previous work. In the event that the 35% figure were applied to our rates the table would be amended as follows:

Revised Cost Assessment	House	Flat
Basic Protection	£170.00	£60.00
Full Protection	£670.00	£180.00
Full Protection inc. fan	£1,020.00	£270.00

3. Notes and Key Assumptions

3.1 All costs are at UK mean base location, 4th Quarter 2010.

3.2 The average ground floor area of a house being 42.8m^2

3.3 The average gross internal area of a flat being 80m^2. On the basis of a 4 storey block with 4 flats per floor (16 total) this translates to 20m^2 notional ground floor area per flat. The number of flats per floor is of little importance here – the result will be unchanged for most reasonable typologies. However the assumption that the average block height is 4 storeys is important.

3.4 Allow one number sump and fan per house, four per block of flats.

3.5 Vent pipes to be above eaves level

4. Reference

- Consultation stage impact assessment for amendments to Building Regulation Part C – Evidence Base
- Radon guidance on protective measures for new buildings 2007 edition
- Irish Agrément Board building product certificate No. 04/0075

5. Attachments

- Cost assessment of radon protection measures – basic and full protection
- Hyder Radon protection review report
- PRP typical radon gas membrane details

House Size

House Gross Floor Area	42.8

			House		
Description	**Rate**	**Unit**	**Area**	**Total**	**Notes**
BASIC PROTECTION					
Cost to install DPM	£1.00	m2	42.8	£42.80	
Costs to install Radon membrane	£5.00	m2	42.8	£214.00	Based on £3.00/m2 for membrane and £2.00 E/O for welded joints / detailing
(extra over cost to install Radon membrane)	*£4.00*	*m2*	*42.8*	*£171.20*	*The costs assessed are extra over of non-radon protection measures*
				SAY £170.00	
FULL PROTECTION (incl. sumps/vent pipes/top hat)					
Sump, vent pipe & top hat	£500.00	Item		£500.00	New works that must include additional access equipment to install the vent to eaves level
				£671.20	
				SAY £670.00	
TOTAL COST OF FULL PROTECTION					
Fan installed for full protection	£350.00	Item		£350.00	Allow additional £350/fan for fan to move excess quantities of radon
				£1,021.20	
				SAY £1,020.00	

Flat

GFA Per flat	80	m2
No. of flats on Ground floor	4	nr
No. storeys	4	nr
Total No. Flats	16	nr
GFA	1280	m2
Ground Floor Area	320	
Ground Floor Area / Flat	20	
Proportion of House GFA	4%	

			Flat		
Description	**Rate**	**Unit**	**Area**	**Total**	**Notes**
BASIC PROTECTION					
Cost to install DPM	£1.00	m2	320	£320.00	
Costs to install Radon membrane	£5.00	m2	320	£1,600.00	Based on £3.00/m2 for membrane and £2.00 E/O for welded joints
(extra over cost to install Radon membrane)	*£4.00*	*m2*	*320*	*£1,280.00*	*The costs assessed are extra over of non-radon protection measures*
				£80.00	PER FLAT (divided by 16nr flats)
				SAY £80.00	
FULL PROTECTION (incl. sumps/vent pipes/top hat)					
Basic Protection as above				£1,280.00	
Sump, vent pipe & top hat	£500.00	Item	4	£2,000.00	Allow 4 sumps per block (Based on £500/sump and vent plus additional length of pipe for higher rise to eaves
				£3,280.00	
				£205.00	PER FLAT (divided by 16nr flats)
				SAY £200.00	
TOTAL COST OF FULL PROTECTION					
Full protection as above				£3,280.00	
Fan installed for full protection	£350.00	Item	4	£1,400.00	Allow additional £350/fan for fan to move excess quantities of radon, say 4nr per block
				£4,680.00	
				£292.50	PER FLAT (divided by 16nr flats)
				SAY £290.00	

Extra Over for increasing building height

Houses							
	Length (m)	Height (m)	Area (m2)	Rate for build (£/m2)	Total	Rate / House	Say
Raise Wall 500mm	27	0.5	13.5	£105	£1,418	£1,418	**£1,000**

Flats							
16	Length (m)	Height (m)	Area (m2)	Rate for build (£/m2)	Total	Rate / Flat	Say
Raise Wall 500mm	62	0.5	31	£105	£3,255	£203	**£200**

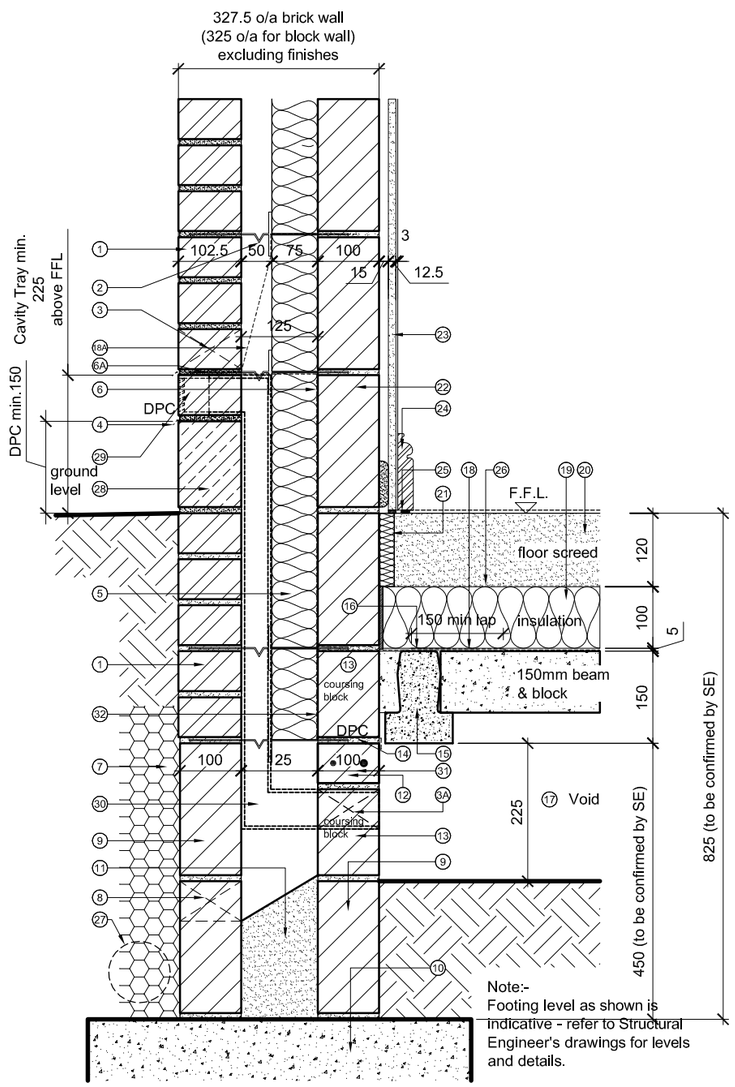
1. ALL DPM'S, DPC'S, VAPOUR BARRIERS ETC. TO BE LAPPED AND/OR SEALED TO MANUFACTURERS DETAILS AND RECOMMENDATIONS /REQUIREMENTS INCLUDING LAPPING TAPES, DOUBLE SIDED JOINTING TAPES AND THE LIKE.

CDM Regulations 2007

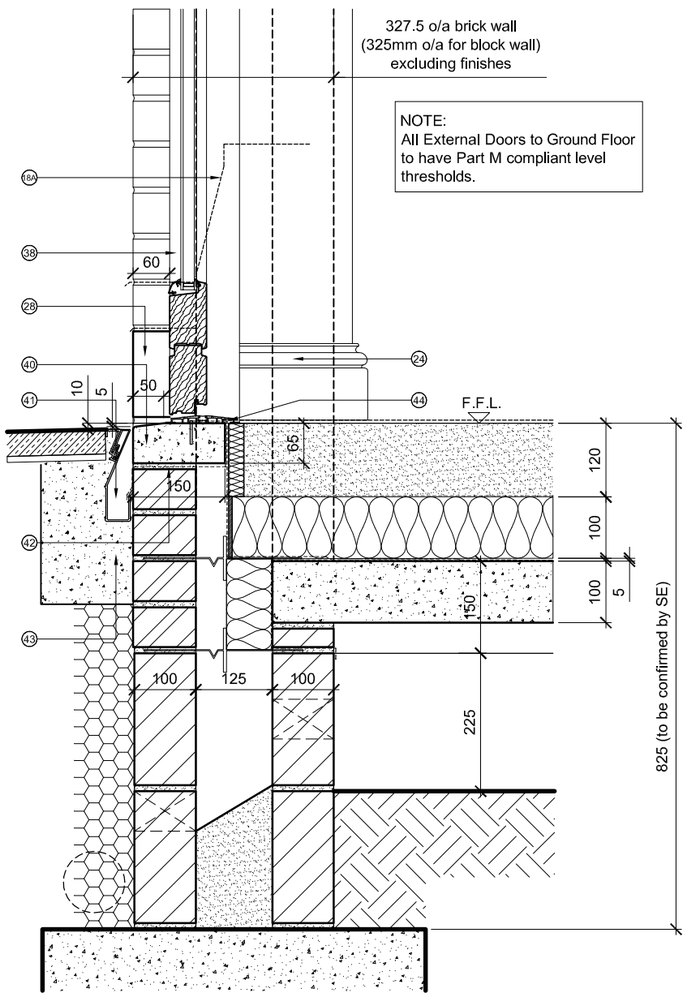
ALL current drawings and specifications for the project must be read in conjunction with the Designer's Hazard and Environmental Assessment Record.

notes

- The contractor is responsible for checking dimensions, tolerances and references. Verify any discrepancies with the Architect before proceeding with the works.
- Where an item is covered by drawings to different scales the larger scale drawing is to be worked to.
- Do not scale drawing. Figured dimensions to be worked to in all cases.



DETAIL 1
External Wall / Ground Floor Junction
Beam against wall - Scale 1:10



DETAIL 2
Door Threshold/Cill and Channel Drain
(Door opening out) - Scale 1:10

Sub-Structure External Wall and Slab Perimeter Edge Details.

1. External skin to be:
103mm facing brickwork to FL quality laid in Stretcher Bond in 1:1:6 cement:lime:sand mortar with bucket handle joints above ground, and FL quality with flush joints laid English Bond in 1:0,25:3 cement:lime:sand mortar below ground. SE to advise on required crushing strength of all masonry units and the need for sulphate resisting cement in mortar mix. (Engineering Brickwork Class B below DPC level)

2. Stainless steel wall ties, embedded min. 63mm into external wall leaf and 50mm into inner wall leaf, with retaining rings for partial fill cavity insulation. Type to have been assessed in accordance with NHBC technical requirements R3 and clause 2.18 to 2.24 of approved document part E. Spacing of ties to be 750mm max. centres horizontally and 450mm max. centres vertically (staggered) and at each block course (min. 300mm in height) and within 150mm of movement / control joints and window / door jambs or openings.

3. Proprietory weepholes at max. 1000mm centres, to drain cavity.

3a. Open perpends to Inner leaf at min. 900mm centres, to allow void below slab to drain across cavity.

4. DPC to BS 743 or BBA approval, min. 150mm above external ground level, to project 5mm beyond face of masonry.

5. 75mm Kingspan Kooltherm K8 partial fill cavity Insulation to achieve overall U-value of 0.20 W/m²K, positioned against inner skin to manufacturers instructions by suitable retaining rings on wall ties.
Nominal cavity width = 125mm. (maintaining a 50mm minimum clear cavity).

6. Visqueen Zedex CPT DPC lapped under Visqueen Zedex CPT DPC cavity tray and carried out 5mm beyond facing brick outer leaf; Visqueen Zedex CPT DPC carried down to slab level and lapped 150mm below Visqueen Radon membrane and sealed to manufacturers details.

6a. Visqueen 50mm wide jointing tape between Visqueen Zedex CPT DPC and cavity tray.

7. Granular backfill (Terram or similar) to avoid blocking weepholes with soil fines.

8. Weepholes at max. 900mm centres.

9. Structural blockwork with flush joints (Block strength and density to be advised by structural engineer).

10. Foundations shown as indicative. See Structural Engineer's details for type, width, levels etc.

11. Cavity fill : lean mix concrete, splayed towards outer leaf, min. 225mm beneath u/s of slab, below lowest dpc.

12. Concrete coursing blocks supplied by structural floor manufacturer.

13. Concrete coursing / cut blockwork with flush joints.

14. Visqueen Zedex CPT DPC at beam / floor bearing course laid dry at u/s beam and to project 25mm down face of internal leaf.

14a. Where floor build up includes RWP or SVP adjacent to wall - DPC to extend min. 75mm below level of formwork/infill concrete to slab.

15. 150mm deep structural zone for precast concrete beam and block floor system (15mm max camber, not included, shown dotted on detail, and absorbed into screed depth - see note about screed).
Top surface of beam and block to be made smooth ready for DPM by laying a cement:sand slurry to grout minor voids & irregularities. All voids around incoming services and pipes to be filled with concrete.

16. Visqueen Zedex CPT DPC to Inner leaf, to be lapped min. 150mm & sealed to Visqueen Radon membrane DPM to manufacturers details and recommendations and to provide continuous protection.

17. Minimum 150mm deep ventilated void, treated with herbicide approved on current list of Agricultural Chemicals Approved Scheme and recommended for use in amenity area. Engineer to confirm additional depth requirement for ground heave based on NHBC requirements.

18. Visqueen Radon membrane fully bedded DPM with all joints lapped and sealed - to be lapped and sealed with all adjacent wall DPCs and installed to manufacturers details.

18a. Continuous Zedex CPT DPC cavity tray: Visqueen Zedex CTP DPC lapped 150mm over Visqueen Radon membrane - DPC carried up external face of blockwork and carried out to below Visqueen and sealed: proprietory weepholes above cavity tray; cavity tray at opening reveal beyond indicated in broken line.

18b. Visqueen Radon membrane cut to allow pipe penetration - prefabricated Visqueen top-hat collar, bonded to pipe to finished floor level and over Visqueen Radon membrane with Visqueen jointing tape and sealed with Visqueen GR lap tape - all to manufacturers details and recommendations.

19. 100mm Kingspan Kooltherm K3 to give 0.13 W/m²K U-value, laid according to manufacturer's specifications, closely butted and staggered joints, with all joints taped.

20. SCREED SPECIFICATION TO BE CONFIRMED.
120mm reinforced sand:cement screed (specification to suppliers recommendations) laid with top surface true, level and reinforced with steel fabric mesh Ref.D49 in accordance with BS4483. Screed thickness to reduce to min. 60mm due to max. 15mm camber at centre span of structural floor units (camber to be confirmed by floor manufacturer). Wire netting to be laid prior to laying screed, to protect Insulation & separating layer which is to be turned up at perimeter as required by NHBC.

21. 25mm edge Insulation strip laid at vertical abutments, with separating layer turned up at perimeter.

22. Blockwork Inner leaf, as dimensioned (1400kg/m³ density) laid in 1:1:6 cement:lime:sand mortar with flush joints. SE to advise on required crushing strength of blockwork.

23. 12.5mm plasterboard (10kg/m² min. density) with 3mm skim coat finish, on 15mm dabs, with continuous ribbon of adhesive around all openings, along top and bottom of the wall and at all internal and external corners - apply 5mm Intumescent paste or similar fire stop/sealant to bottom of plasterboard.

24. Skirting as indicated on finishes/joinery schedule, plugged & screwed to walls with 5mm gap above screed, scribed to top of screed as required by NHBC, and suitably sealed to ensure no impact sound transference from floor into wall via finishes.

25. Flexible silicone sealant below skirting to improve air tightness and reduce airborne sound transmission; 5mm Intumescent sealant below plasterboard

26. 500 gauge visqueen vapour barrier separating layer between insulation and screed - to be turned up at face of perimeter Insulation strip.

26a. Visqueen 500 gauge vapour barrier separating layer turned up face of prefabricated Visqueen top-hat collar.

27. Land drain required only if high water table exists, or site has poor draining characteristics.

28. 140x100mm Reconstructed Stone Plinth

28a. 140x100mm Reconstructed Stone Plinth profiled as shown to form cill below window frame/cill - cill/plinth below windows to have 100mm wide stooled ends to allow for min.100mm jamb brickwork bearing.

29. Clay air brick. Size = 215 x 65mm. Colour to match adjacent facing brickwork. Free area and spacing of airbricks to achieve not less than 1500mm² ventilation per 1metre run of external wall or 500mm² per m² of floor area - whichever gives the greater opening area. Ventilation openings should be provided on at least two opposite sides of building. Airbricks to be evenly spaced to ensure all areas of void beneath floor are fully ventilated and to be cased through cavities with cavity liners. See Substructure GA plans for positions.

30. Proprietary telescopic void ventilators built in as work proceeds, attached to every airbrick as described above. Perpends to be staggered and masonry units to be cut neat and square.

31. When floor beams bear onto inner leaf within horizontal zone of periscope vent, then use a 65 high x 100 x 665mm long reinforced concrete lintol, to ensure loads are spread to masonry on each side of vent.
Similarly, where vents are double banked or are positioned close together, then use a suitably sized lintol to provide min. 150mm bearing to divert loads away from plastic vents.

32. DPC to BS 743 or BBA approval, lapped under Visqueen Radon membrane min.75mm, carried down over ends of slab and lapped over Visqueen CTP DPC below slab level.

33. Void (250 x 250mm gap) around drain pipe and outlet to be filled with small aggregate concrete laid onto temporary formwork.

34. Formwork for concrete infill - to be composed of durable, non-rotting board and wired in position.

35. Where SVP or similar prevents beam being positioned against masonry wall then infill floor block units must span from nearest beam into masonry wall (beyond).

36. All internal RWP's, SVP's & branches to be enclosed in min.25mm unfaced mineral wool to NHBC recommendations.

37. 2 No.layers 12.5mm plasterboard (15kg/m² min. density) with staggered joints, on 38x38mm sw framing - 38x38mm sw noggins at max.600mm vertical c/c; 5mm Intumescent sealant to bottom of plasterboard; bottom frame of 75x38mm sw to allow for fixing of skirting where indicated on joinery/finishes schedule; 3mm skim coat plaster finish where indicated on finishes schedule.

38. Proprietory Double Glazed Timber door frame with aluminium or similar threshold plate (supplied by door/window manufacturer) bedded on concrete threshold cill - DPC's to be lapped below threshold plate min. 100mm.; All windows to achieve max.U-Value of 1.4 w/m² K

39. Proprietory Double Glazed Timber window frame; All windows to achieve max.U-Value of 1.4 w/m² K

39a. Proprietory Double Glazed Timber window frame cill bedded on insulating filler on DPC and to be mastic or similar pointed to perimeter of frame.

40. Precast Concrete cill fully bedded; DPC (refer to 42.) below cill carried up at rear and over top to inside window cill bedding - mastic pointing applied to exposed end; DPC carried up sides of cill and lapped min.100mm with vertical DPC to window/door jamb opening.

41. Hepworth Threshold Drain installed flush to threshold. Adjacent paving to have a 1:80 max fall away from entrance threshold. Channel to be drained to adjacent ground, or into main drainage system if site and ground conditions dictate.

41a. Hepworth Threshold Drain to run below window frame width for full length of combined door/window frame opening, where door and window form a single opening - for location of full length drain refer to External Works G.A.Plans and to M&E Engrs. drawings.

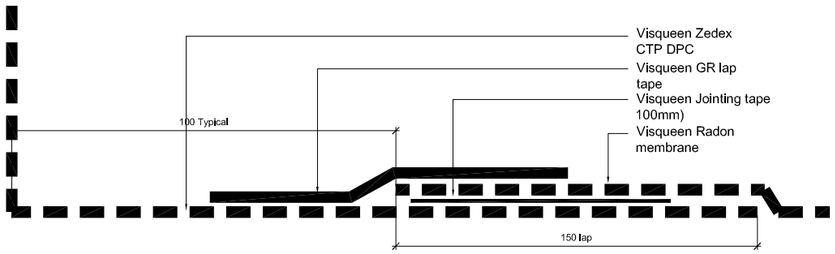
42. DPC to BS 743 or BBA approval, carried into Hepworth Threshold Drain and sealed with mastic or similar waterproof jointing compound - to be carried around precast concrete cill as noted at 40 above.

43. Insitu concrete foundation/infill to support drain - refer to manufacturers details and specifications.

44. Visqueen Radon membrane (as noted at 6 and 16 above) lapped min.100mm over DPC (as noted at 42 above)/over precast concrete cill.

45. Thermabate or equal approved Insulated cavity closer to window cill.

46. Visqueen Zedex CTP DPC carried over cavity closer/below window cill and mastic pointing applied to exposed end/ joint below cill.



DETAIL at Typical DPC/Membrane Lap
(refer to manufacturers recommendations/instructions) N.T.S.

date	rev	revision/author/checker

drawn	MIS	project	purpose of issue
checked	RME		
scale @ A3	1:10	drawing TYPICAL SUBSTRUCTURE DETAILS RADON GAS MEMBRANE DETAILS	drawing no. / rev.
date	NOV.2010		

PRP Architects © John Ormond House 899 Silbury Boulevard Central Milton Keynes MK9 3XL T +44 (0)1908 393929 F +44 (0)1908 393844 mk.prp@prparchitects.co.uk

Hyder Radon Comments

Ground bearing slab.

Non-radon;

Under slab you have a 1200 gauge polythene DPM laid on sand blinded hardcore.
The walls have a damp proof course through each skin.

Basic protection;

Under slab you need a radon membrane such as Monarflex RMB 400 with sealed joints and laid on a sand blinding. See attached data sheet etc.
The damproof course needs to be radon resistant and to seal the cavity in any cavity walls.
The membrane and damproof courses need to be linked.
Service entries need sealing, see Monorflex detail figure 4.

Full protection;

As basic protection plus sumps with vent pipes, fans may be required should there be unacceptably high radon readings within the finished building. For sump details refer to BR211 page 18 etc.

Suspended beam and block floor.

Non-radon;

Between the floor and the finishes you have a 1200 gauge polythene DPM laid.
The walls have a damp proof course through each skin.

Basic protection;

Between the floor and the finishes you need a radon membrane such as Monarflex RMB 400 with sealed joints. See attached data sheet etc.
The damproof course needs to be radon resistant and to seal the cavity in any cavity walls.
The membrane and damproof courses need to be linked.
Service entries need sealing, see Monorflex detail figure 4.

Full protection;

As basic protection, the floor void is already ventilated to remove moisture and this is deemed adequate to remove the radon.

Suspended timber floor.

Non-radon;

Below the timber floor either 100mm oversite concrete should be cast on the ground or a 1200 guage DPM laid on sand blinding with 50mm oversite concrete cast on top.
The walls have a damp proof course through each skin.

Basic protection;

The polythene DPM included above is replaced with a radon membrane such as Monarflex RMB 400 with sealed joints. See attached data sheet etc.
The damproof course needs to be radon resistant and to seal the cavity in any cavity walls, they also need to link to the radon barrier.
Service entries need sealing, see Monorflex detail figure 4.

Full protection;

As basic protection, the floor void is already ventilated to remove moisture and this is deemed adequate to remove the radon.

Appendix 14 – Security Standards

Building Regulations Review - Domestic Security

SBD, Houses

	Baseline					Compliant					
Standard	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Extra Over**
Doors											
PAS 24:2007 and PAS 23:1999 to all external access	Hardwood door and frame, front entrance door and rear entrance door	1	Item	£1,080.00	£1,080.00	PAS 23/24 Door Set Front and Rear	1	Item	£1,350.00	£1,350.00	£270.00
Door Viewer	None	0	Nr	£0.00	£0.00	Wide angle door viewer to front entrance door	1	Nr	£15.00	£15.00	£15.00
Mail Delivery											
Internal letter plate deflector (House)	None	0	Nr	£0.00	£0.00	Internal letter plate deflector (House)	1	Nr	£18.00	£18.00	£18.00
Windows											
Groundfloor and easily accessible windows: BS 7950:1997 and laminated glass to outer pane	9nr PVCU windows (circa 1000x1600, 1000x1800, 800x1200-5nr, 1250x650)	1	Item	£2,100.00	£2,100.00	9nr PVCU windows, laminated glass to 4nr (circa 1000x1600, 1000x1800, 800x1200-5nr, 1250x650)	1	Item	£2,435.00	£2,435.00	£335.00
Other PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	£0.00
Lighting											
PIR light to each external door	PIR light to front entrance door only	1	Nr	£85.00	£85.00	PIR light to front entrance and rear entrance	2	Nr	£85.00	£170.00	£85.00
Alarms											
13 amp non switched fused spur to take intruder alarm	None	0	Nr	£0.00	£0.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£80.00	£80.00	£80.00
Bicycle Parking External											
Timber shed secured to concrete base	Timber shed on concrete base	1	Item	£290.00	£290.00	Timber shed secured to concrete base	1	Nr	£310.00	£310.00	£20.00
Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	None				£0.00	Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	1	Nr	£40.00	£40.00	£40.00
Ground Anchor - 'Sold Secure' Silver Standard	None				£0.00	Ground Anchor - 'Sold Secure' Silver Standard	1	Nr	£20.00	£20.00	£20.00
Home Office											
Internal entrance door of robust construction	Hollow core flush door	1	Nr	£78.00	£78.00	Fire resistant robust door FD30	1	Nr	£109.00	£109.00	£31.00
BS 3621 lock	Latch only (incl)					BS Mortice Deadlock	1	Nr	£25.00	£25.00	£25.00
Party Wall, Sound Insulation and Communal Lofts											
Party walls of robust construction	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00
Hatch locks to 'Sold Secure' Silver	None	0	Nr	£0.00	£0.00	Sold Secure Lock	1	nr	£30.00	£30.00	£30.00
				Total	**£3,633.00**				**Total**	**£4,602.00**	**£969.00**

Building Regulations Review - Domestic Security

SBD, Flats (12 apartment block, 4 flats per floor)

	Baseline					Compliant					
Standard	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Extra Over**
Doors											
Communal entrance door to PAS 24 or LPS1175 and PAS 23, automatic deadlocking lock, cylinder to BS EN 1303, Lock to BS 8621	Hardwood door and frame to communal door, automatic lock	1	Item	£940.00	£940.00	PAS 23/24 Door Set, multi-point locking etc	1	Item	£1,200.00	£1,200.00	£260.00
PAS 24:2007 and PAS 23:1999 to all access	Hardwood door and frame, front entrance door	12	Item	£590.00	£7,080.00	PAS 23/24 Door Set Front	12	Item	£790.00	£9,480.00	£2,400.00
Door Viewer	N/A	0	Nr	£0.00	£0.00	Door Viewer	12	Nr	£15.00	£180.00	£180.00
Access Control / Mail Delivery											
Robust external letter box with fire retardation and anti-fishing attributes (Flats)	Standard letter box bank	12	Nr	£35.00	£420.00	Security letter box bank	12	Nr	£70.00	£840.00	£420.00
Audio visual access control system (Flats)	Audio door entry system	1	Item	£4,000.00	£4,000.00	Video door entry system	1	Item	£6,000.00	£6,000.00	£2,000.00
Windows											
Groundfloor and easily accessible windows: BS 7950:1997 and laminated glass to outer pane	5nr PVCU windows / apartment, 4nr Ground floor apartments	1	Item	£12,000.00	£12,000.00	5nr PVCU windows / apartment, 4nr Ground floor apartments with laminated glass	1	Item	£13,300.00	£13,300.00	£1,300.00
Other PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	£0.00
Lighting											
PIR light to each external door	PIR light to front entrance door only	1	Nr	£85.00	£85.00	PIR light to front entrance and rear entrance	2	Nr	£85.00	£170.00	£85.00
Alarms											
13 amp non switched fused spur to take intruder alarm	None	0	Nr	£0.00	£0.00	13 amp non switched fused spur to take intruder alarm	12	Nr	£80.00	£960.00	£960.00
Bicycle Parking Internal											
Secure doorset	Hardwood door and frame	1	Nr	£425.00	£425.00	Secure doorset PAS 23/24	1	Nr	£650.00	£650.00	£225.00
Ground Anchor - 'Sold Secure' Silver Standard	None				£0.00	Ground Anchor - 'Sold Secure' Silver Standard	16	Nr	£20.00	£320.00	£320.00
Home Office											
Internal entrance door of robust construction	Hollow core flush door	12	Nr	£78.00	£936.00	Fire resistant robust door FD30	12	Nr	£109.00	£1,308.00	£372.00
BS 3621 lock	Latch only (incl)					BS Mortice Deadlock	12	Nr	£25.00	£300.00	£300.00
Party Wall, Sound Insulation and Communal Lofts											
Party walls of robust construction	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00
Hatch locks to 'Sold Secure' Silver	None	0	Nr	£0.00	£0.00	Sold Secure Lock	12	nr	£30.00	£360.00	£360.00
				Total	**£25,886.00**				**Total**	**£35,068.00**	**£9,182.00**
				Total / flat	**£2,160.00**				**Total / flat**	**£2,920.00**	**£770.00**

Building Regulations Review - Domestic Security

Master Lock Smith's Association, Houses

	Baseline					Compliant					
Standard	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Extra Over**
Locks											
External doors	Hardwood door and frame, front entrance door and rear entrance door	1	Item	£1,080.00	£1,080.00	PAS 23/24 Door Set Front and Rear	1	Item	£1,350.00	£1,350.00	£270.00
Locks to PVCU and composite doors (when multi point) should meet PAS 3621, PAS 8621 and PAS 10621. PAS 24 doors are acceptable.	None				£0.00	Included					£0.00
Lock furniture - BS EN 1906 Grade 1 (unless PAS 24 door)	None				£0.00	Included					£0.00
Doors											
All doors - Hinge bolts or security hinges with protection from hinge pin removal on all outward opening doors	None				£0.00	Included					£0.00
A lock certified to BS 3621, BS 8621 and BS 10621 together with striking or box plate and accessories	None				£0.00	Included					£0.00
Windows											
A window lock with removable key	9nr PVCU windows (1000x1600, 1000x1800, 800x1200-5nr, 1250x650)	1	Item	£2,100.00	£2,100.00	9nr PVCU windows BS 7950 (1000x1600, 1000x1800, 800x1200-5nr, 1250x650)	1	Item	£2,325.00	£2,325.00	£225.00
A substanital locking handle with removable key	Included				£0.00	Included					£0.00
A multi-point locking system with removable key	Included				£0.00	Included					£0.00
Where casement window opening exceeds 600mm two locks required	None				£0.00	Included					£0.00
Windows certified to BS 7950	None				£0.00	Included					£0.00
Door and Window Frame fixing											
Additional fixing between 150mm and 250mm vertically and horizontally from internal corners	Fixings at standard corners - included in window and door cost				£0.00	Included					£0.00
Additional fixings at approximately 600mm centres between corner fixings of the frame	Fixings at standard centres - included in window and door cost				£0.00	Additional fixings at approximately 600mm centres between corner fixings of the frame	1	Item	£60.00	£60.00	£60.00
Mail Delivery											
Letter plate BS EN 13724 Type 4 size 2-230 - 280mm wide x 30-40mm high	Standard letter plate	1	Nr	£30.00	£30.00	Letter plate BS EN 13724 Type 4 size 2-230 - 280mm wide x 30-40mm high	1	Nr	£48.00	£48.00	£18.00
				Total	**£3,210.00**				**Total**	**£3,783.00**	**£573.00**

Standard	
Lock to main entrance door	Assumed the vast majority of items achieved by "baseline" typical dwelling, therefore no extra over costs
Lock - at least 1000 differs, a fixing which if burst open would not pull out without breaking the door or its frame. Should permit emergency egress without use of key when building is occupied.	
A hardened steel bolt	
Latch operable with a key externally and handle/thumb turn release internally	
Deadlock should be operable with a key externally and a handle/thumb release internally BS 8621	
Door opening limitation device to main door	
Door Viewer	
Lock to alternative excape door	
Latch operable with a key externally and handle/thumb turn release internally	
Deadlock should be operable with a key externally and a handle/thumb release internally BS 8621	
Lock to secondary external doors	
Latch	
Door handle (required internal and external)	
Deadlock should be operable with a key internally and externally	
Door bolt fixed to top and bottom of secondary external door on internal opening edge	
Windows	
Fittings	
Hinges and fastenings of opening lights of windows should be of a type which prevents them from being opened from the outside when in the closed position	
Opening lights on all ground floor windows and others which are readily accessible from the outside may be fitted with lockable devices which cannot be released without a key	
Ventilation	
Where windows are required by building regs to have background ventilation they may be fitted with trickle ventilators or some other means of providing ventilation which is conrollable and located to avoid undue drafts. Windows with night vent positions are not acceptable.	

Building Regulations Review - Domestic Security

BS 8220-1:2000 Guide for security of buildings against crime - Part 1 Dwellings - Houses

	Baseline					Compliant					
Standard	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Extra Over**
Doors											
PAS 24:2007 and PAS 23:1999 to external access	Hardwood door and frame, front entrance door and rear entrance door	1	Item	£1,080.00	£1,080.00	PAS 23/24 Door Set Front and Rear	1	Item	£1,350.00	£1,350.00	£270.00
Door Viewer	None	0	Nr	£0.00	£0.00	Wide angle door viewer to front entrance door	1	Nr	£15.00	£15.00	£15.00
Mail Delivery											
Internal letter plate deflector BS 2911 (House)	None	0	Nr	£0.00	£0.00	Internal letter plate deflector BS 2911 (House)	1	Nr	£18.00	£18.00	£18.00
Windows											
Groundfloor and easily accessible windows: BS 7950:1997 and laminated glass to outer pane	9nr PVCU windows (circa 1000x1600, 1000x1800, 800x1200-5nr, 1250x650)	1	Item	£2,100.00	£2,100.00	9nr PVCU windows, laminated glass to 4nr (circa 1000x1600, 1000x1800, 800x1200-5nr, 1250x650)	1	Item	£2,435.00	£2,435.00	£335.00
Other PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	£0.00
Lighting											
Light to front entrance door BS 4533-102.1, fitted with screwed cover	PIR light to front entrance door only	1	Nr	£85.00	£85.00	PIR light to front entrance door only	1	Nr	£85.00	£85.00	£0.00
Alarms											
BS 6799 Class VI Wireless Alarm Systems	None (not typically provided)	0	Nr	£0.00	£0.00	BS 6799 Class VI Wireless Alarm System	1	Nr	£380.00	£380.00	£380.00
Service Meters											
Location of gas and electricity meter installed exterior of dwelling	Location of electricity meter inside the dwelling (gas / water external)	0	Item	£0.00	£0.00	Location of gas, water and electricity meter exterior to the dwelling	1	Item	£120.00	£120.00	£120.00
				Total	**£3,265.00**				**Total**	**£4,403.00**	**£1,138.00**

Building Regulations Review - Domestic Security

BS 8220-1:2000 Guide for security of buildings against crime - Part 1 Dwellings - Flats (12 apartment block, 4 flats per floor)

	Baseline					Compliant					
Standard	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Item Description**	**Quant**	**Unit**	**Rate**	**Total**	**Extra Over**
Doors											
Communal entrance door to PAS 24 or LPS1175 and PAS 23, automatic deadlocking lock, cylinder to BS EN 1303, Lock to BS 8621	Hardwood door and frame to communal door, automatic lock	1	Item	£940.00	£940.00	PAS 23/24 Door Set, multi-point locking etc	1	Item	£1,200.00	£1,200.00	£260.00
PAS 24:2007 and PAS 23:1999 to all access	Hardwood door and frame, front entrance door	12	Item	£590.00	£7,080.00	PAS 23/24 Door Set Front	12	Item	£790.00	£9,480.00	£2,400.00
Door Viewer	N/A	0	Nr	£0.00	£0.00	Door Viewer	12	Nr	£15.00	£180.00	£180.00
Access Control / Mail Delivery											
External metal letter box with lockable access door and aperture to BS 2911	Standard letter box bank	12	Nr	£35.00	£420.00	External metal letter box with lockable access door and aperture to BS 2911	12	Nr	£70.00	£840.00	£420.00
Windows											
Groundfloor and easily accessible windows: BS 7950:1997 and laminated glass to outer pane	5nr PVCU windows / apartment, 4nr Ground floor apartments	1	Item	£12,000.00	£12,000.00	5nr PVCU windows / apartment, 4nr Ground floor apartments with laminated glass	1	Item	£13,300.00	£13,300.00	£1,300.00
Other PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	£0.00
Alarms											
BS 6799 Class VI Wireless Alarm Systems	None (not typically provided)	0	Nr	£0.00	£0.00	BS 6799 Class VI Wireless Alarm System	12	Nr	£380.00	£4,560.00	£4,560.00
Service Meters											
Location of gas and electricity meter installed exterior of dwelling	Location of electricity meter inside the dwelling (gas / water external)	0	Item	£0.00	£0.00	Location of gas, water and electricity meter exterior to the dwelling	1	Item	£2,000.00	£2,000.00	£2,000.00
				Total	**£20,440.00**				**Total**	**£31,560.00**	**£11,120.00**
				Total / flat	**£1,700.00**				**Total / flat**	**£2,630.00**	**£930.00**

General Standards

	Baseline			Compliant			
Standard	**Item Description**	**Unit**	**Rate**	**Item Description**	**Unit**	**Rate**	**Extra over**
Locks							
BS 3621 Thief resistant lock assemblies – Key egress.	5-Lever Mortice Deadlock	Nr	£27.00	5-Lever BS 3621 Mortice Deadlock	Nr	£36.00	£9.00
BS 3621 Thief resistant lock assemblies – Key egress.	5 Lever Sashlock	Nr	£32.00	5 Lever BS Sashlock	Nr	£40.00	£8.00
PAS 3621 Thief resistant lock assemblies – Key egress.	Refer to PAS 24 Door elsewhere						
BS 8621 Thief resistant lock assemblies – Keyless egress	5-Lever Mortice Deadlock	Nr	£29.00	BS 8621 Deadlock with thumbturn	Nr	£56.00	£27.00
PAS 8621 Thief resistant lock assemblies – Keyless egress	Refer to PAS 24 Door elsewhere						
BS 10621 Thief resistant lock assemblies – Dual Mode	Night Latch	Nr	£31.00	Night Latch BS 10621	Nr	£73.00	£42.00
PAS 10621 Thief resistant lock assemblies – Dual Mode	Refer to PAS 24 Door elsewhere						
BS EN 12320. Building hardware – Padlocks and padlock fittings	Security Padlock	Nr	£20.00	BS En 12320 Padlock	Nr	£55.00	£35.00
BS EN 12209. Building hardware – Locks and latches	5-Lever Mortice Deadlock	Nr	£27.00	5-Lever BS EN 12209 Mortice Deadlock	Nr	£36.00	£9.00
BS EN 1303. Building hardware – Cylinders for locks	Included						
LPS 1242:Issue 2 Requirements and testing procedures for the LPCB approval and listing of cylinders for locks.	Loss Prevention Standard describing requirements and test methods for classifying lock cylinders. Relates to requirements of BS EN 1303. Included.						
Doors							
PAS 24. Enhanced security performance requirements for door assemblies – Part 1. Single leaf, external door assemblies to dwellings.	Hardwood door and frame, front entrance door	Nr	£590.00	PAS 23/24 Door Set Front	Nr	£790.00	£200.00
BS EN 1906. Building hardware – Lever handles and knob furniture	Aesthetic considerations are a more significant factor						
BS EN 1935. Building hardware – Single axis hinges	Stainless Steel ballbearing hinge (3nr)	Item	£13.50	BS EN 1935 Stainless Steel Ballbearing Hinge (3nr)	Item	£17.50	£4.00
SS 306. Sold Secure Specification for Mechanical, Domestic Door Security Systems	Unable to locate full specification						
Mail Delivery							
BS EN 13724. Postal services – Apertures of private letter plates	Standard letter plate	Nr	£16.00	BS EN 13724 Letter plate	Nr	£40.00	£24.00
Windows							
BS 5357 Code of practice for installation of security glazing	Applicable to areas at high risk of ballistic attack or explosions. States frames and fixings should be robust enough to withstand expected manual attack. For domestic security BS 7950 windows should be used, therefore presumed not applicable.						
BS 5544. Specification for anti-bandit glazing (glazing resistant to manual attack) - Superceded by BS EN 356	Glazing that has undergone drop test and axe test. Classified into 8 categories. Not encountered for general dwellings.						
BS 6206. Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings	Standard appears to glazing safety rather than security, therefore presumed not the building regulations is the key factor.						
BS 6262. Part 4 Glazing in buildings – Safety related to human impact	Standard appears to glazing safety rather than security, therefore presumed not the building regulations is the key factor.						
BS 7950. Specification for enhanced security performance of casement and tilt/turn windows for domestic applications	Refer to extra over window costs elsewhere.						
Alarms							
BS EN 50131. Intruder alarm systems	Significant variance in uncertified systems, very low cost items available.			BS EN 50131 Intruder Alarm	Nr	£650.00	£650.00
BS 4737 Intruder Alarm System	Significant variance in uncertified systems, very low cost items available.			BS 4737 Intruder Alarm System	Nr	£650.00	£650.00
BS 6799 Class VI Wireless Alarm Systems	Significant variance in uncertified systems, very low cost items available.			BS 6799 Class VI Wireless Alarm System	Nr	£380.00	£380.00
BS 8213-4. Windows, doors and roof lights Part 4. Code of practice for the installation of replacement windows and doorsets in dwellings	Unable to locate standard (current?)						
BS 8220-1. Guide for security of buildings against crime – Part 1. Dwellings	See covering email note						
LPS 1175 (127 Draft) Security Rating (SR) 6,5,4,3,2 & 1.	Levels 3-6 not generally applicable to domestic dwellings. Level 2 appears equivalent to PAS 24 door as costed elsewhere. Level 1 appears equivalent to hardwood door and BS locks as costed elsewhere.						

Department for Communities and Local Government

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