adroit economics ltd

December 22

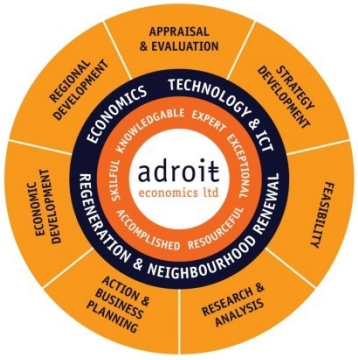
Part R: Wales - Proposals for gigabit-capable connections for new homes - IA

Prepared by Adroit Economics

For and on behalf of

Welsh Government

Contents



Registered Office:

Adroit House, 31 Finchley Road, Hale, Altrincham, Cheshire, WA15 9RE

Company registered in England No: 05567197

www.adroit-economics.co.uk

1. Introduction

1.1 This document sets out the results of assessing the costs and benefits of the proposed new requirements within Part R of Schedule 1 to the Building Regulations 2010, ensuring new build homes have gigabit-capable connections.

2. Summary

Policy Options considered

2.1 The policy proposals being assessed are the new requirements within Part R of Schedule 1 to the Building Regulations 2010 (summary in Figure 2.1 below), ensuring new build homes have gigabit-capable connections through the installation of:

- Gigabit-ready physical infrastructure necessary for gigabit-capable connections (consisting of infrastructure including ducts, chambers and termination points) up to an off-site network distribution point where reasonably practicable; and
- Subject to a £2,000 cost cap per dwelling, a gigabit-capable connection (composed of equipment such as an optical fibre cable or other technological means of facilitating such a connection).
- The cost cap was arrived at after industry consultations by Department for Culture Media and Sport (DCMS) and is set at that level as it enables 99% of UK properties to be gigabit connected within the cap[1]. A number of other options and cost caps were considered by DCMS - a long list of options considered in the England Impact Assessment was published by the DCMS in October 2018.[2]

Figure 2.1: Summary of current requirements under Building regulations Part R, the proposed changes and the Impacts

- Current Part R requirements –
  - High speed electronic communication network (i.e speeds of at least 30 Mbps – over copper for example)
  - Developers required to put in in-building infrastructure only
- Proposed Part R requirements –
  - Gigabit capable connection (e.g. fibre to the premises)
  - Developers required to put in onsite gigabit ready infrastructure (ducting and termination space) plus the gigabit capable connection if it costs less than £2,000 (where the cost is over £2,000, developers need to put in what they can to a minimum of 10Mbps (i.e a phone line)
  - To ensure this happens, there will now be a need for a Connectivity Plan signed off by the Building Control Body.
- Impacts -
  - Under current Part R requirements, it's possible some dwellings wouldn't/didn't get a 30 Mbps broadband connection and ended with a lower speed
  - Proposed Part R requirements, all sites will get connected and the vast majority will get gigabit.

[1] A very good summary of the issues is here: "Gigabit-broadband in the UK: Government targets and policy" https://researchbriefings.files.parliament.uk/documents/CBP-8392/CBP-8392.pdf (see section 5.2).

[2] See pp 75 *et seq* in: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752146/New_Build_Developments_Impact_Assessment_FINAL.pdf

2.2 The policy proposals require that a 'connectivity plan' is prepared for each new site and agreed with a supplier. This is the element of providing gigabit-capable infrastructure and connections that falls within scope of the Building Regulations.

Costs

2.3 The costs of compliance with the policy are the time costs of preparing/agreeing/checking a 'connectivity plan':

- The time costs fall on the developer, supplier and regulator (including familiarisation costs);
- Time is required for the developer to discuss/negotiate a connectivity plan with a supplier;
- Time is required for the developer to submit the connectivity plan;
- Time is then required for the regulator to check/sign off the plan.

2.4 To calculate the time costs, the analysis uses a 10-year appraisal period from 2023 to 2032:

- Number of sites in scope - it is estimated that there are 330 new build residential sites per year in Wales, rising to 393 by 2032, totalling 3,467 sites over the 10-year period[3];
- Counterfactual - of these sites, it is assumed that gigabit-ready physical infrastructure necessary for gigabit-capable connections, is already being provided on 85% of sites by the developer and/or broadband supplier (for example, Openreach has committed to connect all sites over 20 premises at no cost[4]), and that this includes preparation of a 'connectivity plan'. The only additional thing the developer needs to do to comply with the proposed policy therefore is to complete a short 'connectivity plan' which details the contract is in place and confirms the date on which gigabit broadband will be installed, which then needs to be checked by the regulator;
- On the remaining 15% of sites, additional time costs are incurred by the developer/supplier. The amount will vary depending on the £2,000 price cap:
  - = For those sites where a supplier agrees with the developer that the developer's contribution is less than £2,000 per dwelling to provide gigabit-capable connections, this involves negotiating with the supplier, preparing

[3] The data were calculated based on housing starts from Welsh Government estimates (available at https://statsWelsh.gov.Welsh/Catalogue/Housing/New-House-Building) with site sizes estimated from the DCMS Impact Assessment (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752146/New_Build_Developments_Impact_Assessment_FINAL.pdf) based on data from the Ofcom Connected Nations Data Analysis Report 2017. These data were adjusted to reflect smaller average site sizes for Wales.

[4] https://www.openreach.com/building-developers-and-projects/fibre-for-developers

and submitting the connectivity plan. This is assumed to apply to 14% of sites;

= For the remaining 1% of site, where the developer's contribution would be over £2,000, the developer needs to get an additional quote from a supplier to confirm this is the case.

Results - Costs

2.5 Table 2.1 sets out the estimated 10yr Present Value Costs of the policy proposals; Table 2,.2 shows the equivalent annual costs and table 2.3 shows the estimated person time required (full time equivalent):

- Annual mid-scenario costs are £22,000 over 10 years;
- The majority of the costs are for building control to check the connectivity plans for each site;
- For most developers, there will be limited additional costs to demonstrate that they can achieve gigabit broadband connectivity.

Table 2.1: 10yr Present Value Costs	10yr PV Costs		
	Low	Mid	High
Developer Costs	£26,080	£44,846	£76,680
Operator Costs	£466	£1,058	£1,801
Regulator Costs	£87,028	£149,549	£254,492
Total policy costs	£113,575	£195,453	£332,972

Table 2.2: Annual costs	EANC		
	Low	Mid	High
Developer Costs	£3,030	£5,210	£8,908
Operator Costs	£54	£123	£209
Regulator Costs	£10,110	£17,374	£29,566
Total EANC	£13,195	£22,707	£38,683

Table 2.3: FTE required	Average FTE over 10 years		
	Low	Mid	High
Developer FTE	0.10	0.16	0.27
Operator FTE	0.00	0.00	0.00
Regulator FTE	0.19	0.32	0.53
Total FTE	0.28	0.48	0.80

Benefits

2.6 The principal benefit of the policy will be to reduce the number of retrofit connectivity installations on new residential sites. Retrofits will cost the supplier (and potentially the developer) more than installation at the time of build. Retrofits will also cause disruption for residents.

2.7 These benefits have not been costed but are anticipated to involve avoided costs many fold more than the cost of the policy.

2.8 There may be a small number of cases where schemes do not install the infrastructure or electronics under the counterfactual. In these cases, the policy will contribute towards ensuring installation. The benefit of this to the occupiers will be availability of gigabit connectivity, the benefits of which are now widely documented. In particular, we note that 'conventional' broadband has already delivered benefits in terms of access to services and remote working and education. The implementation of this policy will ensure that broadband infrastructure is 'future proof' as demands for bandwidth continue to increase and new services emerge.

3. Policy Proposals

Policy proposals

3.1 The policy proposals being assessed are the new requirements within Part R of Schedule 1 to the Building Regulations 2010, ensuring new build homes have gigabit-capable connections through the installation of:

- gigabit-ready physical infrastructure necessary for gigabit-capable connections (consisting of infrastructure including ducts, chambers and termination points) up to an off-site network distribution point where reasonably practicable; and
- subject to a £2,000 cost cap per dwelling, a gigabit-capable connection (composed of equipment such as an optical fibre cable or other technological means of facilitating such a connection).

Cost cap

3.2 The value of the cost cap is set at a cost of £2,000 to the developer, after any financial contribution from the network operator has been deducted in respect of each new dwelling created.

3.3 The following costs are to be included in the cost cap:

- a. value added tax;
- b. the cost to provide connection to a gigabit-capable public electronic communications network from the point of connection at the network distribution point to the network termination point at each new dwelling on a development;
  - Note: labour and material costs may include direct costs to the developer and the costs to the developer of sub-contracting to network operators or a mixture of both.

3.4 The following costs are excluded from the cost cap:

- a. the cost of providing gigabit-ready physical infrastructure (i.e. ducting, poles, access point etc.) in relation to each individual dwelling including in-building infrastructure in common building areas in a multi-dwelling building;
- b. administrative cost incurred by the developer including costs associated with submission of the particulars of any public electronic communications network to which a connection is provided ('connectivity plan') and building control fees;
- c. the cost to an end-user (as defined by section 151(1) of the Communications Act 2003) of the ongoing provision of a public electronic communications service.

Submission of a Connectivity Plan

3.5 The person carrying out the building work is required to submit particulars of any public electronic communications network in relation to which a connection is to be provided ('connectivity plan') with each full plans application, building notice, initial

notice or amendment notice provided to a local authority (either directly or through an Approved Inspector) prior to commencement of the building work. The assessment assumes a policy start date in 2023 and a transitional provision period of 12 months for Building regulation applications submitted prior to the publication of the changes to the Building Regulations.

Scope of the 'connectivity plan'

3.6 Where the particulars of the public electronic communications network state that connection to a gigabit-capable public electronic communications network is being provided, Part A of the 'connectivity plan' should be completed and should include the following information:

- a. Building Control Application Number;
- b. Development/Address/Plot Number;
- c. Developer (name of developer, point of contact);
- d. Network Operator (name of provider, contract reference, point of contact);
- e. Confirmation that gigabit-ready physical infrastructure will be installed from the network distribution point to the network termination point at each new dwelling on the development; or that gigabit-ready physical infrastructure will be installed to a point as close as is reasonably practicable to a network distribution point to the network termination point at each dwelling; or that each dwelling on the development will be provided with gigabit-ready physical infrastructure from an access point or common access point to a corresponding network termination point at each dwelling;
- f. Confirmation that a connection will be installed from the network distribution point to the network termination point at each new dwelling on the development
- g. Evidence to support this (for example, written confirmation that a suitable provider of public electronic communications networks has been contracted to provide each dwelling on the development with connection to a gigabit-capable public electronic communications network).

3.7 Where the 'connectivity plan' confirms that connection to a gigabit-capable public electronic communications network is not being provided, Part B of the 'connectivity plan' should additionally be completed to provide the following information:

- a. Evidence in the form of at least two formal quotations from suitable providers of public electronic communications networks to demonstrate that the cost of providing at least one connection to a gigabit-capable public electronic communications network exceeds the cost cap; or evidence from at least two suitable providers of public electronic communications networks confirming that they have refused to provide a gigabit-capable connection and stating the reason why;

- b. Where connection to a gigabit-capable public electronic communications network is not being provided, Part B of the 'connectivity plan' should additionally confirm the next fastest broadband connection that falls within the cost cap that is being installed instead and attach the relevant technical information;
- c. Where no connection to any public electronic communications network is being provided, Part B of the 'connectivity plan' should include evidence in the form of two formal quotations from at least two suitable providers of public electronic communications networks confirming that they have refused to provide any connection to a public electronic communications network and stating the reason why;
- d. Confirmation that even where a slower speed connection or no connection is being installed, gigabit-ready physical infrastructure will still be installed from each new dwelling on the development to the following points, listed in order of priority:
  - = distribution point on the network operator's gigabit-capable public electronic communications network (which could be off-site), or where the person carrying out the building work has no right to install the infrastructure in land in which it would need to be installed in order to reach the network distribution point, a point as close as is reasonably practicable to a network distribution point which the owner of the building is entitled to install gigabit-ready infrastructure, or where this is not reasonably practicable because the developer has no right to install such infrastructure in land beyond the building, a network termination point's corresponding access point or common access point.

Exemptions

3.8 Requirement RA1 does not apply to the following types of building or building work:

- a. buildings and work described in Schedule 2 (exempt buildings and work) to the Building Regulations 2010 which includes buildings included in the schedule of monuments maintained under section 1 of the Ancient Monuments and Archaeological Areas Act 1979. - other examples include sheds, domestic greenhouses, garages, conservatories and other small detached buildings with no sleeping accommodation;
- b. buildings for which compliance with Requirement RA1 would unacceptably alter their character or appearance and that are listed in accordance with section 1 of the Planning (Listed Buildings and Conservation Areas) Act 1990;
- c. buildings occupied by the Ministry of Defence or the armed forces of the Crown, or otherwise occupied for purposes connected to national security;
- d. buildings in isolated areas where a connection to a high-speed public electronic communication network and a connection to an electronic communications network capable of delivering a broadband connection

download speed, as defined in the Broadband Universal Service Obligation 2018 would exceed the cost cap, and the prospect of a connection to any public electronic communications network is considered too remote to justify equipping the building with gigabit-ready physical infrastructure or an access point.

4. Cost Assessment Methodology

Sequence of calculations undertaken to estimate the cost of the proposed policy

4.1 The following sequence of calculations were undertaken:

- Estimate the total number of new build sites per annum in Wales over the 10-year appraisal period;
- Estimate the proportion under the counterfactual – those that will be already implementing the requirements of the policy proposals;
- Of the remainder, estimate the proportion likely to be able to comply with the policy proposals, within the price cap;
- Estimate the activities, time and cost involved in complying.

The appraisal period

4.2 A 10-year appraisal period is used for this assessment which is regarded as 'standard' by the UK Treasury's Green Book. In this case, we consider that this 10-year appraisal period is appropriate for Wales' Gigabit Broadband policy for new build.

4.3 A 10-year policy period means that this appraisal assumes that policy is implemented over a 10-year period. It may in practice be implemented for longer but for appraisal purposes, a-10-year period is used. The costs of implementation are assessed for this period.

4.4 The benefits have not been monetised in this appraisal (for the reasons noted earlier) but if they were, the benefits' appraisal period would reflect the effective life of the benefit. In this case, the benefit of the policy is to reduce the number of expensive retrofits. These are one-off benefits that occur at the time of construction. The appropriate benefits appraisal period would therefore also be 10 years as this particular benefit is not ongoing.

New build estimates

4.5 Table 4.1 shows the number of new build sites each year in Wales by size of development and type of buildings. These figures are based on:

- To derive the estimate of the number of new dwellings per annum, the assessment takes a 5 year average of dwelling completions split between houses and flats then uses three growth rates to give a low/mid/high range - mid of 3% growth, high of 5%, low of 1%;
- This gives a mid-estimate of new dwellings per annum averaged over the 10 year policy period of 6,900 (low: 6,055 high: 7,867);
- The number of sites is estimated by assuming 70% of dwellings are delivered on large sites (with an average of 100 dwellings per site); 15% of dwellings are

delivered on medium sites (with an average of 20 dwellings per site) and 15% of dwellings are delivered on small sites (with an average of 4 dwellings per site)[5].

Table 4.1: Number of new build sites each year in Wales by size of development and type of buildings					
	2023	2024	……	2031	2032
	yr1	yr2		yr9	yr10
Small developments					
Number of sites with houses	178	183		225	231
Number of sites with flats	42	43		53	54
Medium Developments					
Number of sites with houses	36	37		45	46
Number of sites with flats	11	12		14	15
Large developments					
Number of sites with houses	33	34		42	43
Number of sites with flats	3	3		4	4
Total number of sites	**303**	**312**		**383**	**393**

The counterfactual

4.6 It is assumed that 85% of new build sites conform to the counterfactual. The assumption is based on assumptions provided by DCMS in August 2020 for England and supported by PRP's experience[6] of working on schemes across England and Wales.

Table 4.2: The Counterfactual		
Process followed for - 85% of all sites	85% of all sites conform to the Counterfactual except that the Developer needs to provide evidence of Connectivity to BC	The developer completes a short 'connectivity plan' which details this contract is in place and confirms the date on which gigabit broadband will be installed.

Sites in scope

4.7 Of the 15% of sites in scope, it is assumed, based on DCMS assumptions and PRP's experience, that:

- 14% of sites can comply at a cost less than the £2,000 price cap;
- And that the remaining 1% cannot.

[5] These percentages are based on Ofcom data for the UK which is used in the DCMS IA. This analysis assumes a slightly higher proportion of small sites for Wales than the UK average.

[6] PRP is a member of the Adroit Consortium and a leading architectural firm with a track record of advising the UK and Welsh Governments.. Adroit is responsible for the economic aspects of the appraisal and PRP for all technical aspects such as specifications, costings, current practice etc

4.8 Table 4.3 shows the Number of new sites per year which can comply within the price cap.

Table 4.3: Number of new sites per year which can comply within the price cap					
	2023	2024	……	2031	2032
	yr1	yr2		yr9	yr10
14% of all sites - can be installed at a cost of less than £2,000	*42*	*44*		*54*	*55*
1% of all sites cannot be installed for less than £2,000	0	0		1	1
Limited negotiations on a small proportion of 14% of all sites - number of sites	1	1		2	2
If the first quote indicates that gigabit broadband cannot be installed at a cost of less than £2000 to the developer, a second quote for gigabit broadband must be sought from a different network operator - number of sites	0	0		1	1
Number of sites where Documents need to be re-submitted for errors etc	6	6		8	8

Process followed by 14% of sites

4.9 Table 2.2 sets out the process followed by 14% of all sites and the calculations and assumptions used to estimate the costs of compliance with the policy proposals

Table 4.4: Process followed by 14% of sites, calculations and assumptions					
	Sequence	Assumptions	Time needed		
			L	M	H
Process followed for 14% of all sites	14% of all sites - can be installed at a cost of less than £2,000; in almost all cases these are boilerplate and very limited negotiations over commercial terms takes place	Proportion of sites to be costed	14%	14%	14%

		Assume very limited commercial negotiations in a small percentage of cases.	1%	3%	5%
Developer costs		Developer negotiation time costs	0.5	1	1.5
Operator costs		Operator negotiation costs	0.5	1	1.5
Developer costs	The developer completes a short 'connectivity plan' which details this contract is in place and confirms the date on which gigabit broadband will be installed.	To be costed – admin time for developer	0.33	0.5	0.75
Regulator checking costs	Logging receipt	Building Control Administrator time and day rate	0.33	0.5	0.75
	Checking content	Building Control Officer	0.33	0.5	0.75
	assume a % involve resubmission and rechecking		1.5%	2%	3%
		Developer time	0.33	0.5	0.75
		Building Control Administrator time	0.33	0.5	0.75

Process followed by the remaining 1% of sites

4.10 For the 1% of sites that cannot demonstrate that they can install broadband for less than £2000, the table below shows the estimated costs involved.

Table 4.5: Process followed by 1% of sites, calculations and assumptions					
	Sequence	Assumptions	Time needed		
			L	M	H
Process followed for 1% of all sites	If the first quote indicates that gigabit broadband cannot be installed at a cost of less than £2000 to the developer, a second quote for gigabit	Proportion of sites to be costed	1%	1%	1%

	broadband must be sought from a different network operator.				
		Time for Developer	0.33	0.5	1
		Time for 2nd Operator	0.5	1	1.5
	If the second quote also indicates that gigabit broadband costs more than £2000, then an exemption applies and the next fastest broadband available within the cost cap must be installed. Usually, where network operators cannot install gigabit broadband they will automatically offer a superfast connection instead. Therefore, in practice, developers will revert to one of the two quotes they have received and request a superfast connection.	Time for Developer in deciding which of the 2 quotes to adopt. No additional costs for Operators.	0.33	0.5	1
	The developer completes a 'connectivity plan' which details: a. Why gigabit broadband is not being installed b. Provides evidence that the cost cap is exceeded (likely to be the quote from the operator) c. Which broadband connection is being installed and provides evidence of this (likely the contract with the operator) d. The date of installation of the broadband	Costs for Developer	0.5	1	1.5
Regulator checking costs	Logging receipt	Building Control Administrator time and day rate	0.33	0.5	0.75
	Checking content	Building Control Officer	0.33	0.5	0.75
	assume a % involve	Building Control Officer	0.33	0.5	0.75

	resubmission and rechecking	time			

4.11 Table 4.6 shows the number of sites per year, of those that are likely to be able to comply within the price cap, that are subject to limited negotiations and only require one quote with a supply and those that need to get a second quote.

Table 4.6: Number of new sites per year which can comply within the price cap					
	2023	2024	……	2031	2032
	yr1	yr2		yr9	yr10
14% of all sites - can be installed at a cost of less than £2,000	*42*	*44*		*54*	*55*
1% of all sites cannot be installed for less than £2,000	0	0		1	1
Limited negotiations on a small proportion of 14% of all sites - number of sites	1	1		2	2
If the first quote indicates that gigabit broadband cannot be installed at a cost of less than £2000 to the developer, a second quote for gigabit broadband must be sought from a different network operator - number of sites	0	0		1	1
Number of sites where Documents need to be re-submitted for errors etc	6	6		8	8

Estimated time cost of compliance

4.12 Table 4.7: Shows how compliance time requirements – for the developer, operator and regulator, were calculated.

Table 4.7: Mid scenario compliance time requirement calculations – for the developer, operator and regulator							
			2023	2024	…..	2031	2032
	Time		yr1	yr2		yr9	yr10
Limited negotiations on a small proportion of 14% of all sites - Developer time	0.50	per site	1	1		1	1

The developer completes a short 'connectivity plan' which details this contract is in place and confirms the date on which gigabit broadband will be installed.	0.50	per site	151	156		191	197
The developer needs to resubmit documents that fail BC checks	0.50	per rejection	3	3		4	4
Time spent by developer getting second quote	0.50	per site	0	0		0	0
Time for Developer in deciding which of the 2 quotes to adopt.	0.50	per site	0	0		0	0
The developer completes a 'connectivity plan' which details: a. Why gigabit broadband is not being installed b. Provides evidence that the cost cap is exceeded (likely to be the quote from the operator) c. Which broadband connection is being installed and provides evidence of this (likely the contract with the operator) d. The date of installation of the broadband	1.00	per site	0	0		1	1
Total Developer time (hrs)			156	161		197	202
Limited negotiations on a small proportion of 14% of all sites - Operator time	1.00	per neg	1	1		2	2
Second quote for gigabit broadband must be sought from a different network operator.	1.00	per site	0	0		1	1
Total Operator time (hrs)			2	2		2	2
Regulator logging receipt	0.50	per site	151	156		191	197
Building Control Officer checking	0.50	per site	151	156		191	197
Building Control rechecks and approves resubmitted documents	0.50	per app rejected	3	3		4	4
Regulator logging receipt	0.50	per site	0	0		0	0
Building Control Officer checking	0.50	per site	0	0		0	0
Building Control rechecks and approves resubmitted documents	0.50	per rejection	0.0	0.0		0.0	0.0
Total Regulator time (hrs)			306	315		386	397

4.13 Table 4.8 shows how, for the mid scenario, compliance time costs – for the developer, operator and regulator, were calculated.

Table 4.8 mid scenario compliance time cost calculations – for the developer[7], operator and regulator[8]							
			2023	2024	….	2031	2032
			yr1	yr2	yr3	yr9	yr10
Limited negotiations on a small proportion of 14% of all sites - Developer time	75.40	per hr	48	49		61	62
The developer completes a short 'connectivity plan' which details this contract is in place and confirms the date on which gigabit broadband will be installed.	29.11	per hr	4,406	4,538		5,568	5,721
The developer needs to resubmit documents that fail BC checks	29.11	per hr	88	91		111	114
Time spent by developer getting second quote	75.40	per hr	16	16		20	21
Time for Developer in deciding which of the 2 quotes to adopt.	75.40	per hr	16	16		20	21
The developer completes a 'connectivity plan' which details: a. Why gigabit broadband is not being installed b. Provides evidence that the cost cap is exceeded (likely to be the quote from the operator) c. Which broadband connection is being installed and provides evidence of this (likely the contract with the operator) d. The date of installation of the broadband	29.11	per hr	12	13		16	16
Total Developer cost(£)			4,587	4,724		5,796	5,955
Limited negotiations on a small proportion of 14% of all sites - Operator time	75.40		96	99		121	124
Second quote for gigabit broadband must be sought from a	29.11		12	13		16	16

[7] Developer and Operator rates have been calculated by the Adroit Consortium and are based on salary data – Annual Survey of Hours and Earnings (ASHE) plus 30% (to account for on-costs). The rates used are 'blended' assuming that 50% of the work is done 'in house' and 50% subcontracted. Charge out rates are based on data collected by PRP and Charge out rates – data collected by PRP and RLF (a specialist cost consultancy).

[8] Regulator costs are based on ASHE salary data for Building Control Officers and Administrators plus 30% (to account for on costs).

different network operator.							
Total Operator cost (£)			108	111		137	140
Regulator logging receipt (Admin)	29.11	per hr	4,406	4,538		5,568	5,721
Building Control Officer checking	70.39	per hr	10,655	10,974		13,463	13,834
Building Control rechecks and approves resubmitted documents	70.39	per hr	213	219		269	277
Regulator logging receipt (Admin)	29.11	per hr	6	6		8	8
Building Control Officer checking	70.39	per hr	15	15		19	19
Building Control rechecks and approves resubmitted documents	29.11	per hr	0	0		0	0
Total Regulator cost (FTE)			15,295	15,754		19,327	19,859
Total policy cost			19,990	20,590		25,260	25,955

5. Conclusions

Costs

5.1 Table 5.1 sets out the estimated 10yr Present Value Costs of the policy proposals; Table 5.2 shows the equivalent annual costs and table 5.3 shows the estimated person time required (full time equivalent):

- Annual mid-scenario costs are £22,000 over 10 years;
- The majority of the costs are for building control to check the connectivity plans for each site;
- For most developers, there will be limited additional costs to demonstrate that they can achieve gigabit broadband connectivity.

Table 5.1: 10yr Present Value Costs	10yr PV Costs		
	Low	Mid	High
Developer Costs	£26,080	£44,846	£76,680
Operator Costs	£466	£1,058	£1,801
Regulator Costs	£87,028	£149,549	£254,492
Total policy costs	£113,575	£195,453	£332,972

Table 5.2: Annual costs	EANC		
	Low	Mid	High
Developer Costs	£3,030	£5,210	£8,908
Operator Costs	£54	£123	£209
Regulator Costs	£10,110	£17,374	£29,566
Total EANC	£13,195	£22,707	£38,683

Table 5.3: FTE required	Average FTE over 10 years		
	Low	Mid	High
Developer FTE	0.10	0.16	0.27
Operator FTE	0.00	0.00	0.00
Regulator FTE	0.19	0.32	0.53
Total FTE	0.28	0.48	0.80

Benefits

5.2 The principal benefit of the policy will be to reduce the number of retrofit connectivity installations on new residential sites. Retrofits will cost the supplier (and potentially the developer) more than installation at the time of build. Retrofits will also cause disruption for residents.

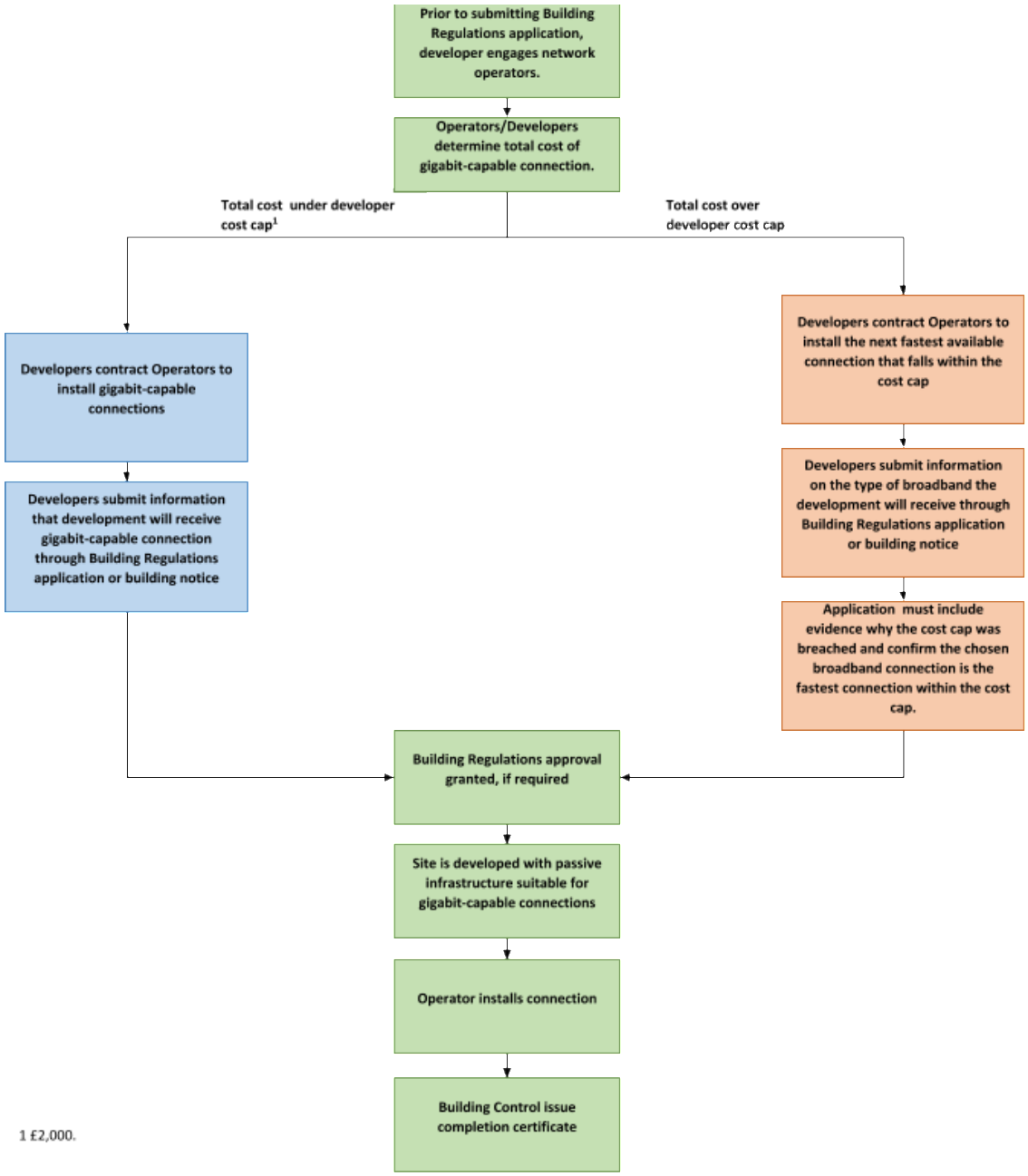
5.3 These benefits have not been costed but are anticipated to involve avoided costs many fold more than the cost of the policy.

5.4 There may be a small number of cases where schemes will not do not install the infrastructure or electronics under the counterfactual. In these cases, the policy will contribute towards ensuring installation. The benefit of this to the occupiers will be availability of gigabit connectivity, the benefits of which are now widely document. In particular, we note that 'conventional' broadband has already delivered benefits in terms of access to services and remote working and education. The implementation of this policy will ensure that broadband infrastructure is 'future proof' as demands for bandwidth continue to increase and new services emerge.

6. Appendix A: Sequence of steps required to comply with policy

6.1 Figure 6.1 shows the sequence of steps involved.

Flowchart: The finalised process for delivering gigabit-capable connections to new build developments



1 £2,000.

6.2 Table 6.1 provides further detail on the sequence of steps .

Table 6.1 Sequence of steps – further deta.

Sequence of steps required to comply	Adroit comment
<u>Current process followed by the 85% of developers who install gigabit broadband:</u> 1. Prior to site build beginning, the developer seeks a quote from a single network operator for the installation of gigabit broadband (note: this will automatically include the passive infrastructure required in all cases). 2. **In 85% of cases** the developer chooses to install gigabit broadband (note: in almost all cases these are boilerplate and very limited negotiations over commercial terms takes place). 3. The developer submits a full plans application or initial notice to either Local Authority Building Control or Approved Inspectors. This includes proof of compliance with the current requirements of Part R. 4. Building Control Bodies check full plans/initial notice against current requirements. 5. Building Regulations approval is granted, if required 6. Site is built with gigabit broadband and infrastructure 7. Building Control Bodies conduct inspections (note: the current requirement that Building Control Bodies must inspect is that there is the in-building passive infrastructure to support a high-speed broadband connection.) 8. Building Control Bodies issue completion certificate	We use this to define the counterfactual. However, while digital infrastructure site plans and installation certificates are produced for construction/ completion of the site they are not currently submitted to Building Control for approval. This will be an additional cost per site to be added in for all sites.
<u>We will amend the Building Regulations 2010 to introduce the following process to install gigabit</u>	This applies to 14% of sites

broadband:	
1. Prior to submitting a Building Regulations application, the developer seeks a quote from a single network operator for the installation of gigabit broadband (note: this will automatically include the passive infrastructure required in all cases).	This is the same as the Counterfactual – no additional costs
2. If the quote indicates that gigabit broadband can be installed at a cost of less than £2000 to the developer, the developer agrees a contract with the network operator (note: in almost all cases these are boilerplate and very limited negotiations over commercial terms takes place).	Assume very limited commercial negotiations in a small percentage of cases.
3. The developer completes a short 'connectivity plan' which details this contract is in place and confirms the date on which gigabit broadband will be installed.	To be costed – admin time for developer
4. The developer will be required to submit the 'connectivity plan' alongside the full plans application or initial notice they make to either Local Authority Building Control or Approved Inspectors.	No additional costs above step 3) above – they just add the plan into the documents they submit
5. Building Control Bodies check and confirm a contract is in place.	To be Costed – Regulator costs
6. Building Regulations approval is granted, if required	This is the same as the Counterfactual – no additional costs
7. Building Control Bodies conduct inspections.	This is the same as the Counterfactual – no additional costs
8. Building Control Bodies issue completion certificate	This is the same as the Counterfactual – no additional costs
Where the cost cap is exceeded, the following process will be introduced in the Building Regulations. **Our analysis indicates that this process will only be followed 1% of the time as**	

the cost of the installation of gigabit broadband in 99% of all new homes will fall within the cost cap:	
1. Prior to submitting a Building Regulations application, the developer seeks a quote from a single network operator for the installation of gigabit broadband (note: this will automatically include the passive infrastructure required in all cases).	This is the same as the Counterfactual – no additional costs
2. If the quote indicates that gigabit broadband cannot be installed at a cost of less than £2000 to the developer, a second quote for gigabit broadband must be sought from a different network operator.	Costs for Developer and 2nd Operator
3. If this quote also indicates that gigabit broadband costs more than £2000, then an exemption applies and the next fastest broadband available within the cost cap must be installed. 4. Usually, where network operators cannot install gigabit broadband they will automatically offer a superfast connection instead. Therefore, in practice, developers will revert to one of the two quotes they have received and request a superfast connection.	Costs for Developer in deciding which of the 2 quotes to adopt. No additional costs for Operators.
5. The developer agrees a contract with the network operator (note: in almost all cases these are boilerplate and very limited negotiations over commercial terms takes place).	This is the same as the Counterfactual – no additional costs
6. The developer completes a 'connectivity plan' which details: a. Why gigabit broadband is not being installed b. Provides evidence that the cost cap is exceeded (likely to be the quote from the operator) c. Which broadband connection is being installed and provides	Costs for Developer

evidence of this (likely the contract with the operator) d. The date of installation of the broadband	
7. The developer will be required to submit the 'connectivity plan' alongside the full plans application or initial notice they make to either Local Authority Building Control or Approved Inspectors.	No additional costs above step 6) above – they just add the plan into the documents they submit
8. Building Control Bodies check and confirm a contract is in place.	To be costed – Regulator costs
9. Building Regulations approval is granted, if required	This is the same as the Counterfactual – no additional costs
10. Site is built with gigabit broadband and infrastructure	This is the same as the Counterfactual – no additional costs
11. Building Control Bodies conduct inspections	This is the same as the Counterfactual – no additional costs
12. Building Control Bodies issue completion certificate	This is the same as the Counterfactual – no additional costs

7. Appendix B: Method for costing time

Calculating how much time is required

7.1 Table 7.1 shows how developer, supplier and regulator time was converted to full time equivalent (FTE) persons.

Table 7.1 Converting time (hours) into Full Time Equivalent persons (FTE)	
working hours per day	7.5hrs a day
Working Days per annum	220 days a year
utilisation Rates	utilisation of 65%
working days per year (including utilisation)	productive hours of 1073 per FTE

Hourly Rates

7.2 Table 7.2 shows the hourly rates used to cost time in the analysis

Table 7.2: Hourly rates used in the time cost calculations					
		Salary	hourly rate (assuming 100 utilisation	hourly rate including utilisation	hourly rate including utilisation and overheads
HSE RR Rates	SCS	128,641	77.96	119.94	218.9
HSE RR Rates	Band 1	96,727	58.62	90.19	164.59
HSE RR Rates	Band 2	80,311	48.67	74.88	136.66
HSE RR Rates	Band 3	63,398	38.42	59.11	107.88
HSE RR Rates	Band 4	45,322	27.47	42.26	77.12
HSE RR Rates	Band 5	38,351	23.24	35.76	65.26
HSE RR Rates	Band 6	29,141	17.66	27.17	49.59
salary = ASHE + 30%	BCB Building Control Officer	57,100	34.61	53.24	97.16
salary = ASHE + 30%	BCB Administrator	26,200	15.88	24.43	44.58
FRS FTE Costs	FRS Watch Manager	54,613	33.1	50.92	92.93
FRS FTE	FRS Station	75,025	45.47	69.95	127.66

Costs	Manager				
salary = ASHE + 30%	FRS Administrator	29,141	17.66	27.17	49.59
salary = ASHE + 30%	LPA Planning Officer	43,500	26.36	40.56	74.02
salary = ASHE + 30%	LA Environmental Health Inspector	43,500	26.36	40.56	74.02
consultant estimate	BSM	60,000	36.36	55.94	55.94
consultant estimate	BSM (low)	50,000	30.3	46.62	46.62
consultant estimate	BSM (high)	75,000	45.45	69.93	69.93