

22 January 2016

Trust in water

Dispute referred under section 42 and 30A of the Water Industry Act 1991

Provision of water infrastructure to five development sites in the Anglian region

Barratt Homes vs. Anglian Water Services Ltd

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1. Introduction

A. The complaint

- 1.1 This final determination concerns a dispute referred to the Water Services Regulation Authority (“**Ofwat**”) by Barratt Homes (“**Barratt Homes**”) under section 42(6) and section 30A of the Water Industry Act 1991 (“**the Act**”).
- 1.2 The dispute is between Barratt Homes and Anglian Water Services Limited (“**Anglian Water**”) and concerns the reasonableness of the charge Anglian Water has sought to recover from Barratt Homes in respect of providing water mains at five development sites (“**the Sites**”):
- Hundred Acre Way, Red Lodge, Suffolk (“**Red Lodge**”)
 - Ringland Park, Costessey, Norwich (“**Ringland Park**”)
 - Bedford Street, Ipswich (“**Bedford Street**”)
 - Bovingdon Road, Bocking (“**Bovingdon Road**”), and
 - Rifle Hill, Braintree (“**Rifle Hill**”).
- 1.3 For each of the Sites, Barratt Homes chose to pay the requisition charge for the new mains by means of the Discounted Aggregate Deficit (DAD) option set out at section 43A of the Act¹. When referring the dispute to Ofwat, Barratt Homes disputed three specific issues that affect the calculation of the DAD:
- i) whether (for the Bedford Street, Bovingdon Road and Rifle Hill sites) contributions towards “strategic schemes” can be included as part of the costs reasonably incurred in providing the mains;
 - ii) the method of estimating the amount of charges expected to be payable to Anglian Water from the premises served by the requisitioned mains; and
 - iii) the value of the average charge expected to be payable per premises that was used to establish the estimate of the charges payable to Anglian Water from the premises on the Ringland Park site.
- 1.4 We are satisfied that the Parties are in dispute and that we have jurisdiction to make a determination under sections 42(6) and 30A of the Act.

¹ As described in paragraph 3.7 below.

B. Purpose of this document

- 1.5 This is our final determination for this dispute and it shall be binding and enforceable in accordance with the provisions of section 30A of the Act.
- 1.6 Before making this final determination we issued a request for information on 23 May 2014 to gather information necessary for making this determination. As part of its response to this request, Anglian Water provided us with an updated DAD calculation which sets out the final actual costs where they were available. We also issued a draft determination to the parties to the dispute on 22 June 2015 and invited them to make representations to us on the determination we were minded to make. Barratt Homes submitted representations to us on 22 July 2015. Anglian Water submitted representations on 24 July 2015. Details of the parties' representations on our draft determination and, where necessary, our response to these are set out in chapter 4 below.

C. Overview of our determination

- 1.7 Our determination and our reasoning for it are set out in full in chapter 4 of this document, but an overview of our determination is set out below. In light of the legal framework of the Act and the evidence we have gathered from the parties to the dispute, we have determined the following:
- The actual costs reasonably incurred in providing the mains at the Red Lodge site should include a contribution of £18,576 towards the Red Lodge Growth strategic scheme;
 - The actual costs reasonably incurred in providing the mains for the Bedford Street site should include a contribution towards the offsite works as these were necessary in consequence of providing the new main requisitioned for this site;
 - The estimate of the costs reasonably incurred in providing the mains at the Bovingdon Road site should include a contribution of £74,159 towards the Braintree Ring Main strategic scheme but should not include a contribution towards the Alton to Great Horkeley strategic scheme on the basis that Anglian Water no longer believes this work to have been necessary in consequence of the requisitioned main;

- The estimate of the costs reasonably incurred in providing the mains at the Rifle Hill site should include a contribution of £36,001 towards the Braintree Ring Main strategic scheme;
- The charges expected to be payable to Anglian Water from the premises served by the relevant requisitioned mains (used as the estimated revenue for the purposes of calculating the DAD) should include the charges expected to be payable during the first year following the provision of the new main (i.e. Year 1 of the DAD calculation);
- For the purposes of establishing the charges expected to be payable it is not reasonable to only include charges for those premises that were connected at the beginning of each DAD year (and hence for the full year). Rather, to establish the estimated revenue from a Site, we consider it reasonable to calculate the charges expected to be payable from the first full month after the date on which the premises were or are sold (as a proxy for their occupation date); and
- When estimating the charges expected to be payable from the Ringland Park site, it is reasonable to use the figure of £121.43 as the average charge expected to be payable per premises on the site in 2006-07.

- 1.8 Having determined each of these issues, we have recalculated the DAD for each of the Sites in accordance with Section 43A of the Act. Where there has not been a specific challenge to the approach or the values used in Anglian Water's calculation of the DAD, we have used the values set out in Anglian Water's calculation.
- 1.9 For those Sites for which all final actual costs are now available (Red Lodge, Ringland Park and Bedford Street), we have recalculated the DAD to determine the final requisition charges Anglian Water can recover from Barratt Homes.
- 1.10 For those Sites where all of the final costs are not yet available (Bovingdon Road and Rifle Hill) we have determined the level of security Anglian Water can reasonably require on the basis of the fullest cost information currently available. We would expect the approach set out in this determination to be used if the parties concluded that they want to calculate the final requisition charge when all final actual costs are available.

- 1.11 We determine that Anglian Water should refund Barratt Homes a total of **£56,907.62**. The individual site breakdown of this figure is provided in Chapter 0 at Table 2.
- 1.12 In accordance with section 42(4) of the Act, interest is payable on the amounts held by Anglian Water as security between the dates when each of these amounts was paid to Anglian Water until the relevant new main was provided (and hence the requisition charge became payable). Interest is also payable on any outstanding security beyond the final requisition charge that must be refunded, from the date the relevant new main was provided until the date the refund is paid.
- 1.13 Anglian Water should pay the refunds and interest payments due to Barratt Homes within 20 working days of the date of this final determination. Anglian Water should apply interest rate(s) in accordance with [Ofwat's Information Notice on interest rates](#). The amount of any interest payable is for the Courts to determine, if Anglian Water and Barratt Homes are unable to agree this amount.

2. Factual background

A. The Parties

(i) Anglian Water

2.1 Anglian Water is appointed under the Act to provide water and sewerage services to customers in the east of England, including those customers within the Hartlepool area. The Sites are within Anglian Water's area of appointment.

(ii) Barratt Homes

2.2 Barratt Homes is a trading name of BWD Trading Limited, a large developer who specialises in constructing residential premises. BWD Trading Limited operates across much of the UK.

B. Other organisations

(iii) David Wilson Homes

2.3 David Wilson Homes ("**David Wilson Homes**") is another trading name of BWD Trading Limited. Barratt Homes bought David Wilson Homes in 2007 and are acting on its behalf with respect to this dispute.

(iv) Bellway

2.4 Bellway PLC ("**Bellway**") is a residential property developer that operates across the UK. Bellway is not part of BWD Trading Limited.

C. The Sites and the mains requisitions

i) Red Lodge

2.5 The Red Lodge development is located at Area 4B, Hundred Acre Way, Red Lodge, Suffolk. The site consists of 77 new premises developed by David Wilson Homes.

2.6 David Wilson Homes and Anglian Water reached an agreement on a water main requisition to serve the site in May 2008. The onsite works consisted of providing 292 metres of 125mm HPPE pipe and 67 metres of 90mm HPPE pipe.

- 2.7 Anglian Water has informed us that in calculating its estimated requisition charge for the site, it included a strategic scheme contribution of £18,601 towards the Red Lodge Growth Scheme. This strategic scheme consisted of increasing the capacity of supply from Kentford to the Red Lodge area in three phases. The first two phases of the Red Lodge Growth Scheme involve main-laying from Kentford. This provides 31.8l/s of capacity and each phase was triggered once 50 and then 300 properties had been built in the Red Lodge area respectively, this is specifically to supply new developments in the Red Lodge area, including Barratt Homes' Red Lodge site. A contribution to this strategic scheme was therefore included in the estimate of the costs that would be reasonably incurred in providing the main requisition for the Red Lodge site.
- 2.8 This work has now been completed. Anglian Water has confirmed the actual costs incurred by it for the Red Lodge Growth Scheme were £720,000². A third phase of the Red Lodge Growth Scheme will involve laying a main from Chippenham. This phase has not yet been provided and will only be triggered once 500 properties have been built in the Red Lodge area.
- 2.9 Anglian Water estimated that it would cost £33,771 (including the £18,601 strategic scheme contribution towards the Red Lodge Growth Scheme) to provide the requisitioned main for the Red Lodge site (see section 4.30 for more details). To calculate the charges expected to be payable from the premises served by the requisitioned main, Anglian Water used an average bill per premises value of £148. For each site, the value of average bill per premises comes from Anglian Water's estimate of the future average bill per premises which was provided to Ofwat as part of an annual submission on charges. The reason this value varies between some of the sites is that it is an annual submission therefore depends on the year in which the requisition was made. As a result, Anglian Water estimated the requisition charge for the Red Lodge site to be £4,172.40 and David Wilson Homes paid a security payment for this figure on 15 May 2008.
- 2.10 The requisitioned main was completed on 3 November 2008. Anglian Water confirmed that the actual cost of the works was £30,353 (including the £18,601 strategic scheme contribution towards the Red Lodge Growth Scheme). In a letter to Barratt Homes dated 7 February 2012 Anglian Water confirmed that it had recalculated the requisition charge using the actual cost of providing the requisitioned main, which resulted in a requisition charge of

² Anglian Water has confirmed that the scheme was provided for them by a third party self-lay organisation.

£3,772.71. Anglian Water has not yet paid any refund to Barratt Homes for the Red Lodge site.

ii) Ringland Park

- 2.11 The Ringland Park development is located at Area BH3, Ringland Park, Costessey, Norfolk. The site consists of 167 new premises developed by Barratt Homes.
- 2.12 Barratt Homes and Anglian Water reached an agreement on a water main requisition to serve the Ringland Park site in July 2006. The works provided comprised of onsite works only and consisted of 622 metres of 180mm HPPE pipe; 218 metres of 125mm HPPE pipe; and 339 metres of 90mm HPPE pipe.
- 2.13 Anglian Water estimated that it would cost £60,650 to provide the requisitioned main for the site. To calculate the charges expected to be payable from the premises served by the requisitioned main, Anglian Water used an average bill per premises value of £121. As a result Anglian Water estimated the requisition charge for the site to be £7,381 and Barratt Homes paid a security payment for this figure on 20 July 2006.
- 2.14 The requisitioned main was completed on 12 December 2006. In a letter to Barratt Homes dated 15 February 2012, Anglian Water confirmed that the actual cost of providing the requisitioned main was £49,354.90. Anglian Water recalculated the requisition charge using the actual cost of providing the requisitioned main, resulting in a requisition charge of £5,490. Anglian Water has not yet paid any refund to Barratt Homes for the Ringland Park site. However on 25 August 2015, Anglian Water reviewed their actual costs and confirmed to us that the final actual cost of providing this main was £38,704.

iii) Bedford Street

- 2.15 The Bedford Street development is located at Bedford Street in Ipswich. The site consists of 32 new premises developed by David Wilson Homes.
- 2.16 David Wilson Homes and Anglian Water reached an agreement on a water main requisition to serve the Bedford Street site in May 2010. The onsite works consisted of providing 42 metres of 180mm pipe.
- 2.17 Anglian Water has informed us that the calculation of its estimated requisition charge included a £5,000 contribution towards offsite works to reinforce the outlet main from the Park Road Reservoir with a 355 mm HPPE main.

- 2.18 Anglian Water estimated that it would cost £13,036.30 (including the £5,000 for offsite works) to provide the requisitioned mains for the site. Anglian Water estimated the requisition charge for the site to be £1,646.18 and David Wilson Homes paid a security payment of £1,646.18 on 25 May 2010.
- 2.19 To calculate the charges expected to be payable from the premises served by the requisitioned main, Anglian Water used an average bill per premises value of £154.
- 2.20 The requisitioned main was completed on 15 April 2011. In a letter to David Wilson Homes dated 15 February 2012, Anglian Water confirmed that the actual cost of providing the requisitioned main was £12,610.82 (including the £5,000 contribution to the completed offsite works). Anglian Water recalculated the requisition charge using the actual cost of providing the requisitioned main, which resulted in a requisition charge of £1,355.07. Anglian Water has not yet paid any refund to David Wilson Homes for the Bedford Street site. However, on 25 August 2015, Anglian Water reviewed their actual costs and confirmed to us that the final actual cost of providing this main was £10,741, including the £5,000 contribution to the offsite works.

iv) Bovingdon Road

- 2.21 The Bovingdon Road development is located at Bocking Mill, Bovingdon Road, Braintree. The site was originally planned to consist of 152 new premises. Barratt Homes developed 108 of these and sold part of the site to Bellway who developed the remaining 44 premises. However, of the 44 premises developed by Bellway that were originally planned to be connected to the requisitioned main, 15 of them were not ultimately connected to it. Instead they were connected to an existing main in Bovingdon Road. In addition to the 152 planned premises, Barratt Homes developed an additional 24 premises which were connected to the requisitioned main. Overall, 161 premises were actually connected to the requisitioned main.
- 2.22 We note that even though Barratt Homes sold part of the development to Bellway Homes, the agreement for the main requisition was between Barratt Homes and Anglian Water. Therefore the DAD calculation should reflect all of the costs reasonably incurred in providing the requisitioned main, and all of the estimated revenue from premises served by the requisitioned main, including charges payable from premises developed by Bellway.
- 2.23 Barratt Homes reached an agreement with Anglian Water on a water main requisition to serve the site in March 2007. The onsite works consisted of

providing 309 metres of 180mm ALPE pipe, and 430 metres of 90mm ALPE pipe.

- 2.24 Anglian Water has informed us that in its initial calculation of its estimated requisition charge, it included strategic scheme contributions of £74,159 to the Braintree Ring Main strategic scheme and £78,300 to the Alton to Great Horkesley Transfer Main strategic scheme³. However, it subsequently removed the amount of £78,300 for the reasons set out in paragraph 2.26 below.
- 2.25 The Braintree Ring Main strategic scheme is part of the Braintree Planning Zone scheme and consists of a new ring main around Braintree that is expected to provide an additional capacity of 85l/s to supply both new developments and growth for existing customers in the area. The requirement for the extension of the Braintree Ring Main was first identified in Anglian Water's 2003 supply-demand modelling. The Braintree Ring Main strategic scheme was set out in Anglian Water's Business Plan for the 2009 price review, which is part funded through customer bills and part funded through contributions from developers. It is an extension of the existing Braintree ring main. The scheme is designed to provide extra capacity for growth in the Braintree Planning Zone and address a future forecasted supply-demand deficit driven by new growth in the Braintree Planning Zone. The scheme was expected to be completed in March 2015, however parts of the scheme have been postponed due to lower than expected growth in the area. Despite the scheme not having been completed, it is already capable of providing supplies to the Braintree area. Final costs for the scheme are not yet available; it is however estimated by Anglian Water that the scheme will cost £1.53m.
- 2.26 The Alton to Great Horkesley Transfer Main strategic scheme was planned to transfer capacity from the Alton Treatment works to the Great Horkesley Water Reservoir near Colchester to cope with predicted growth in the Colchester and Braintree areas which would impact on existing headroom of the existing network. The scheme was a proposed transfer of an additional 81l/s from Alton to Colchester, specifically to the reservoirs at Great Horkesley, making extra capacity available to the Braintree system. Anglian Water anticipated that the Alton to Great Horkesley transfer scheme would need to be delivered when it was asked to provide a main requisition for the Bovingdon Road site. Contributions to this strategic scheme were therefore included in Anglian Water's original DAD calculation for the Bovingdon Road main requisition. However this scheme has now been delayed until at least

³ These values have been rounded to three significant figures by Anglian Water

2019 and Anglian Water consequently removed the £78,300 contribution to this scheme from its charge estimate for Bovingdon Road

- 2.27 Anglian Water initially estimated that it would cost £238,600 (including the £74,159 contribution to the Braintree Ring Main strategic scheme and the £78,300 contribution to the Alton to Great Horkeley Transfer Main strategic scheme) to provide the new mains (see section 4.30 for more details). To calculate the charges expected to be payable from the premises served by the requisitioned main, Anglian Water used an average bill per premises value of £121. As a result Anglian Water initially estimated the requisition charge for the Bovingdon Road site to be £86,532.50 and Barratt Homes paid a security payment for this figure on 9 March 2007.
- 2.28 However the original main requisition was subsequently altered on two occasions at the request of Barratt Homes to add additional premises which would be served by the requisitioned main. This resulted in changes to the estimated requisition charge. Anglian Water therefore requested additional security payments of £656 (paid on 12 October 2009) and £565 (paid on 2 November 2009). The total security payment for the requisition was therefore £87,753.50.
- 2.29 The requisitioned main was completed on 21 January 2008. In a letter to Barratt Homes dated 15 February 2012, Anglian Water confirmed that the final actual cost of the onsite works was £80,057.04. The Braintree Ring Main strategic scheme has not been fully completed. Anglian Water has recalculated the estimated requisition charge using the available actual costs from the onsite works, which has resulted in a revised requisition charge estimate of £79,813.07. On 25 August 2015, Anglian Water reviewed their actual costs (where incurred) and confirmed to us that their latest estimate of the cost of providing this main was £140,903, including the £74,159 estimated contribution to the Braintree ring main strategic scheme but excluding £78,300 for the Alton to Great Horkeley Transfer Main strategic scheme. No further payments or refunds have been made in relation to the Bovingdon Road site.

v) Rifle Hill

- 2.30 The Rifle Hill development is located at Rifle Hill Works, Rifle Hill, Braintree. The site consists of 66 new premises developed by Barratt Homes.
- 2.31 Barratt Homes and Anglian Water reached an agreement on a water main requisition to serve the Rifle Hill site in September 2009. The onsite main consists of 128 metres of 125mm ALPE pipe, and 79 metres of 90mm ALPE

pipe. In addition, a new offsite connection main was provided because the existing 6" water main in Notley Road was already at capacity. Barratt Homes have told us that it agrees that this work was necessary in consequence of the requisitioned main for the Rifle Hill site and have not disputed the costs of these offsite works.

- 2.32 Anglian Water has informed us that its calculation of the estimated requisition charge included a strategic scheme contribution of £36,002⁴ towards the Braintree Ring Main strategic scheme (as described in paragraph 2.25).
- 2.33 Anglian Water estimated that it would cost £86,235 (including offsite connection works and the £36,002 strategic scheme contribution) to provide the new mains for the site. To calculate the charges expected to be payable from the premises served by the requisitioned main, Anglian Water used an average bill per premises value of £154. As a result Anglian Water estimated the requisition charge for the Rifle Hill site to be £11,427 and Barratt Homes paid a security payment of this figure on 21 September 2009.
- 2.34 The requisitioned water main was completed on 15 April 2010. Anglian Water confirmed that the final actual costs of these works were £118,405.72 (including the offsite connection works and the £36,002 strategic scheme contribution). The Braintree Ring Main strategic scheme however is not fully completed at the time of this determination. Anglian Water has however recalculated the estimated requisition charge using the available actual costs from the onsite and offsite works, which has resulted in a revised requisition charge estimate of £28,789. No further payments or refunds have been made in relation to the Rifle Hill site.

D. The request for a determination

- 2.35 On 7 December 2012, Barratt Homes requested a determination from Ofwat under section 42(6) of the Act. In particular Barratt Homes disputed:
- i) whether (for the Bedford Street, Bovingdon Road and Rifle Hill sites) contributions towards "strategic schemes" can be included as part of the costs reasonably incurred in providing the mains;

⁴ For details on how this cost was determined, see section 4.30

- ii) the method of estimating the amount of charges expected to be payable to Anglian Water from the premises served by the requisitioned mains; and
- iii) the value of the average charge expected to be payable per premises that was used to establish the estimate of the charges payable to Anglian Water from the premises on the Ringland Park site.

2.36 Barratt Homes is not disputing the reasonableness of the costs of the onsite or offsite works (beyond the strategic schemes) at any of the Sites. It is disputing the inclusion of contributions to strategic schemes in the costs reasonably incurred as a result of the main requisition.

2.37 Under section 42(6)(b) of the Act we can determine a final requisition charge based on actual costs. Where actual costs are not available we can determine, under section 42(6)(a) of the Act, the level of security it is reasonable for Anglian Water to require in light of the latest available costs information. Where we have determined the security level for a site, we would expect the approach set out in this determination to be used to establish the final requisition charge for the site when all final actual costs are available.

3. The legal framework

This section outlines the key legislative provisions relevant to this case.

A. Definition of a water main

3.1 Section 219 of the Act defines a water main as:

“any pipe not for the time being vested in a person other than the undertaker which is used or to be used by a water undertaker...for the purposes of making a general supply of water available to customers or potential customers of the undertaker..., as distinct from for the purpose of providing a supply to particular customers”.

3.2 This definition includes tunnels or conduits which serve or are to serve as a pipe and to any accessories for the pipe.

B. Water mains requisitions

3.3 Under section 41(2) of the Act, an owner or occupier of premises may require a water undertaker to provide a water main to provide a supply of water to the premises for domestic purposes (a **“requisition”**). Subject to the conditions set out in section 41(1) of the Act being fulfilled, the water undertaker is under a duty to provide the water main.

3.4 Under section 41(1)(c) and section 42(1) of the Act, as part of the duty to comply with a water main requisition, a water undertaker can recover a charge from the owner or occupier of the premises towards the costs of providing the water main (the **“requisition charge”**).

C. Requisition charge

3.5 Sections 42 – 43A of the Act set out the financial conditions for complying with a water main requisition. The requisition charge a water undertaker is allowed to recover is calculated by reference to:

- i) the annual borrowing costs of a loan of an amount that would be required to cover the costs reasonably incurred in providing the main; and
- ii) the estimated revenue that will be recovered by the water undertaker by means of the new main (i.e. the charges expected to be payable by premises connected to that main, which is in turn derived from the

occupancy rates of the premises connecting) over each of the 12 years following the provision of the water main.

- 3.6 Where, in any of those 12 years, the revenue exceeds the borrowing costs, the owner or occupier of the premises will not be required to make any payment. Where the borrowing costs exceed the revenue, the water undertaker is entitled to require the owner or occupier of the premises to pay the difference to the water undertaker.
- 3.7 Section 42(2)(a) provides for the owner or occupier of the premises to pay the water undertaker the requisition charge either by way of an annual amount over each of the 12 years following provision of the water main (the “**relevant deficit**”), or a single lump sum payment made following provision of the water main, which is referred to as the discounted aggregate deficit (the ‘**DAD**’) and is commonly called the “**statutory commuted sum**”. The relevant deficit is calculated in accordance with section 43 of the Act and the DAD is calculated in accordance with section 43A of the Act.
- 3.8 The final requisition charge is only payable once the water main has been provided, but security can be requested in advance by the water undertaker by virtue of section 42(1)(b) of the Act. Section 42(4) provides for interest to be paid on any sums deposited with a water undertaker as security for the provision of a water main. Interest is payable on every sum of 50p deposited for every three months during which it remains in the hands of the water undertaker.

D. Costs that may be included in calculating the requisition charge

- 3.9 The calculation of the requisition charge relies on establishing the costs reasonably incurred in providing a new water main. Section 43(4) of the Act states that the costs reasonably incurred in providing a water main shall include:
- (a) “the costs reasonably incurred in providing such other water mains and such tanks, service reservoirs and pumping stations as it is necessary to provide in consequence of the provision of the new main”; and
 - (b) “such proportion (if any) as is reasonable of the costs reasonably incurred in providing or procuring the provision of any such additional capacity in an earlier main as falls to be used in consequence of the provision of the new main”.

- 3.10 In setting out how the requisition charge should be calculated, as well as stating which wider costs can be considered to be reasonably incurred, section 43(2) of the Act specifically provides that costs incurred in the provision of additional capacity beyond that required by the person requisitioning the main cannot to be considered “costs reasonably incurred” when calculating the requisition charge:

“The annual borrowing costs of a loan of the amount required for the provision of a water main is the aggregate amount which would fall to be paid in any year by way of payments of interest and repayments of capital if an amount equal to so much of the costs reasonably incurred in providing that main as were not incurred in the provision of additional capacity had been borrowed...”

- 3.11 This is expanded on by section 43(6) of the Act, which states:

“Any reference in this section to the provision of additional capacity in a water main provided in pursuance of a requirement under any enactment is a reference to such works carried out or other things done in connection with the provision of that main as are carried out or done for the purpose of enabling that main to be used for the purpose in addition to those for which it is necessary to provide the main in order to comply with the requirement”.

- 3.12 There are no specific provisions in section 43 of the Act setting out how costs should be apportioned when additional capacity is provided by the water undertaker.

E. Estimated revenue that is included in calculating the DAD

- 3.13 Sections 43A(4) and 43A(5) of the Act details the estimated revenue that should be considered when calculating the DAD. Section 43A(4) of the Act states:

“Any reference in this section to the estimated revenue in respect of a water main for any year-

- (a) in relation to premises expected to be connected with the main and supplied with water by a water undertaker, is a reference to so much of the aggregate of any charges expected to be payable to the undertaker for the provision of services in the course of that year as would represent charges-

- (i) imposed by the undertaker in relation to those premises, and
- (ii) reasonably attributable to the provision of a supply of water (whether or not for domestic purposes) to those premises by means of that main...

3.14 Section 43A(5) states that:

“For the purpose of calculating estimated revenue under subsection (4) above, a thing is expected to be the case if, at the time the calculation is made, it is reasonably likely to occur.”

F. Infrastructure charges

3.15 Infrastructure charges are charges that a water or sewerage undertaker is entitled to raise pursuant to a charges scheme and sections 142 and 146 of the Act. They are payable when connecting premises to a public water supply or public sewer for the first time for domestic purposes. They are charged separately for water and sewerage services.

3.16 The Act’s provision for raising an infrastructure charge is separate and independent of the provisions related to the providing and charging for a mains requisition under section 41-43A of the Act. Legally there is no interaction between these sections and section 146 of the Act.

3.17 The methods for calculating the amount of infrastructure charges an undertaker can recover are set out in Condition C of its instrument of appointment (i.e. its licence). Depending on the type of premises being connected, charges are applied on the basis of either the standard infrastructure charge method (where a standard rate is applied per premises) or the relevant multiplier method (where the standard rate is adjusted for certain premises types to reflect the number and type of water fittings used in the premises, e.g. premises subject to a common billing agreement).

G. Disputes

3.18 Section 42(6) of the Act provides that any dispute between a water undertaker and any other person regarding any undertakings or security required for the purposes of section 42 of the Act or the relevant amount required to be paid can be referred by either party to Ofwat for determination under section 30A of the Act.

4. Ofwat's determination

4.1 This chapter sets out our final determination on the disputed issues referred to us by Barratt Homes. The determination is split into three sections:

Section A Considers whether contributions towards strategic schemes can be included in the costs reasonably incurred in providing the mains used to calculate the DAD.

Section B Considers the method of estimating the charges payable to Anglian Water from the premises served by the requisitioned mains, used as the estimated revenue in calculating the DAD.

Section C Considers the value of the average charge per premises expected to be payable, used to establish the estimated revenue in calculating the DAD for the Ringland Park site.

4.2 Having determined each of the issues above, we have recalculated the DAD to determine the final requisition charges (for those sites for which all final actual costs are available), or the revised requisition charge estimate for the purposes of the security required by Anglian Water (for those sites for which all final costs are not yet available). These are set out in chapter 5, which also includes details of the resulting refunds and interest payments due to Barratt Homes.

4.3 In each section of this determination we start by setting out the views of each of the parties to the dispute. As noted above, the parties provided representations on our draft determination for this case. These are captured within the parties' views in the relevant section below.

4.4 In summary Barratt Homes accepted our draft determination's conclusions, although it did highlight some factual errors that were present in the draft determination. This took the form of a mistake in the calculation of the final requisition charge (or security for sites where the final costs are not known). In the draft determination we had calculated the refund that was due by subtracting Anglian Water's re-calculation of the DAD from our calculation of the DAD. However this should have been calculated by subtracting the security that was paid by Barratt Homes from our calculation of the DAD. This

has resulted in the refund due changing from £56,925.48 in the draft determination to £56,907.62 in the final determination.

- 4.5 Anglian Water agreed with our draft determination's conclusions regarding infrastructure charges and contributions to strategic schemes, but challenged our conclusion that the strategic scheme contributions should be updated to reflect the scheme's actual costs when calculating the final requisition charge. Anglian Water challenged our use of premises completion dates for the purposes of establishing the charges expected to be payable from the Sites, proposing instead to use premises occupation dates. Anglian Water also disagreed with our conclusion regarding the average bill level to be used to establish the charges payable from the Ringland Park site.

A. Contributions to Strategic Schemes

- 4.6 When referring the dispute to us, Barratt Homes told us that Anglian Water had included contributions to strategic schemes in the calculation of the estimated requisition charge for three of the five sites:
- Bedford Street,
 - Bovingdon Road, and
 - Rifle Hill.
- 4.7 During our investigation Anglian Water told us that there was also a contribution to a strategic scheme in the calculation of the estimated requisition charge for the Red Lodge site. We have therefore also considered this as part of our determination as Barratt Homes framed its complaint as a general concern about whether strategic schemes should be included in requisition charge calculations.
- 4.8 Having reviewed the costs breakdown information provided to Barratt Homes by Anglian Water it also became clear that the inclusion of a £5,000 contribution in the calculation of the requisition charge for the Bedford Street site was not described as a "strategic scheme contribution". It was instead presented as the costs for reinforcement of the 355mm outlet main from the Park Road Reservoir which was considered necessary as a result of the new development. Since it was a disputed cost originally referred to us by Barratt Homes we have continued to consider this contribution to be within the scope of our determination, regardless of what the contribution was termed by Anglian Water.

Barratt Homes' view

- 4.9 In its initial submission dated 7 September 2012, Barratt Homes stated that it does not accept that any strategic scheme contributions should be included in the calculation of the requisition charge for the relevant sites. It believes that the infrastructure charges raised for each site should cover the costs of any additional capacity required within Anglian Water's local network, and that the costs of increasing capacity in more remote parts of the network should be funded through customer bills.
- 4.10 Barratt Homes specifically point to a letter that was sent by the Department of the Environment to the Managing Directors of each of the statutory water companies on 7th July 1989 setting out the basis for capping the level of infrastructure charges in licence condition C of companies' instrument of appointment. This letter states that:
- “Requisitioning enables developers to have water mains laid to connect their development to the undertaker's infrastructure. The infrastructure charge contributes towards the costs which have been, or will be, incurred in providing the necessary capacity in the undertaker's infrastructure.”
- 4.11 Barratt Homes also highlight two reports by the Monopolies and Mergers Commission from 1995:
- “A report on the determination of adjustment factors and infrastructure charges for South West Water Services Ltd”; and
 - “A report on the determination of adjustment factors and infrastructure charges for Portsmouth Water plc”.
- 4.12 Barratt Homes contend that these reports conclude that the costs of local infrastructure development are covered by infrastructure charges, while costs associated with remote infrastructure, resources and treatment are funded through price limits.
- 4.13 In our draft determination we concluded that the Act allowed Anglian Water to raise infrastructure charges for the new premises connected to the public water and sewer networks. In its response to our draft determination, dated 22 July 2015, Barratt Homes did not challenge our conclusions regarding the strategic scheme contributions.

Anglian Water's view

- 4.14 In its representation on the draft determination dated 24 July 2015 Anglian Water sets out that it believes that it is correct to include contributions to strategic schemes in the calculation of the relevant sites' requisition charges as they are works provided in consequence of developments in the area.
- 4.15 Anglian Water also agreed with our conclusions regarding infrastructure charges.
- 4.16 However, Anglian Water's representations challenged our draft determination's conclusion that the DAD calculations for the Bovingdon Road and Rifle Hill sites will need to be recalculated once the Braintree Ring Main is completed and its final costs are known. Anglian Water states that its approach is to apply the estimated contribution to strategic schemes in the final calculation of the requisition charge and to not update this value with the actual costs when they are known. Anglian Water states that it fixes the contributions in this way to ensure that for each development from which it seeks a contribution, the value it attributes for each litre per second remains the same. Anglian Water highlighted that this is the approach that was taken in a recent final determination by Ofwat⁵.
- 4.17 Anglian Water's additional views as to why it considers the relevant strategic schemes to be necessary in consequence of the relevant requisitions, are set out below.

Red Lodge

- 4.18 Anglian Water states that the Red Lodge Growth Scheme was required because, whilst its modelling indicated that there were sufficient water resources available to supply new developments in the area, the existing infrastructure in the area did not have the capacity to provide the additional demand driven by the expected developments in the Red Lodge area.
- 4.19 Phases 1 and 2 of the Red Lodge Growth Scheme provide 31.8l/s. The Red Lodge main requisition added 77 new premises to the area which required a supply from this scheme. Anglian Water's methodology for calculating the volume consumed by the Red Lodge site uses a standard value for the water consumption per premises of 0.01067l/s. Using this value, Anglian Water calculated that the Red Lodge site would require capacity of 0.82l/s⁶. Anglian

⁵ Anglian Water v Utility Law Solutions:
http://www.ofwat.gov.uk/mediacentre/ibulletins/prs_ib1615wing

⁶ Figure to five decimal places is 0.82159l/s

Water used these figures to calculate the proportion of the estimated costs of the scheme (£720,000) attributable to the Red Lodge site (£18,601).

Bedford Street

- 4.20 Anglian Water disputes Barratt Homes' assertion that the Bedford Street estimated requisition charge included a contribution to a strategic scheme. It states that these costs instead related to a required offsite upgrade to an outlet main which were required as a result of the development of the site.

Bovingdon Road and Rifle Hill

- 4.21 Anglian Water states that the Braintree Ring Main scheme is designed to supply 85l/s to new developments in the Braintree area, and that both the Bovingdon Road and Rifle Hill sites use capacity that is provided by this strategic scheme. The Bovingdon Road site has a peak flow demand of 4.12l/s, whilst the Rifle Hill site has a peak flow demand of 2l/s. For both sites, when estimating the requisition charge, Anglian Water attributed a proportion of the estimated costs reasonably incurred in providing the Braintree Ring Main scheme by dividing the total estimated cost of the strategic scheme (£1.53m), by the proportion of the capacity provided by the scheme that will be used by each site. This resulted in a contribution of £74,200 for the Bovingdon Road site and £36,002 for the Rifle Hill site.
- 4.22 In its response to our request for information dated 23 July 2014, Anglian Water confirmed that a contribution towards the Alton to Great Horksey strategic scheme should not be included in the costs reasonably incurred by the Bovingdon Road main requisition. Anglian Water stated that when it had received the application for the requisition in December 2006 it anticipated it would be delivering the Alton to Great Horkesley Scheme within the same price control period and that the Bovingdon Road site would benefit from it and should contribute to the scheme's costs. Anglian Water states that delivery of the Alton to Great Horkesley scheme has now been delayed and is unlikely to be delivered any sooner than the price review period commencing in 2020/21 or 2024/25. It has therefore removed the contribution to this scheme from its calculation of the revised requisition charge estimate for Bovingdon Road.
- 4.23 The requisition application for the Rifle Hill site was received later than that for the Bovingdon Road site, at which point Anglian Water was aware that the Alton to Great Horksey scheme would not be required to serve the site.

Anglian Water therefore did not include a contribution to this strategic scheme in the estimated requisition charge for the Rifle Hill site.

Our determination

- 4.24 As explained in paragraphs 3.15 to 3.17 above, infrastructure charges are raised by virtue of sections 142 and 146 of the Act (Connection charges etc. and charges for highway drainage). Section 146 was originally enacted as section 79(2) of the Water Act 1989 and entitles a water company to recover a charge for the connection of a premises for domestic purposes that have never at any previous time been connected to the network. The intention of section 146 was to allow for charging by companies to contribute to the investment costs it incurs in providing additional capacity in its network because of general increases in demand from new connections.
- 4.25 As noted by the Hansard debate which led to the introduction of section 79 in the Water Act 1989, and the letter sent to companies by the Department of the Environment in 1989 referred to by Barratt Homes, the entitlement to raise an infrastructure charge is separate from and does not affect the Act's provisions for the requisitioning of a water main or sewer and certain other associated infrastructure. There is nothing in the Act that specifies that network enhancements can only be financed through infrastructure charges. Both the Hansard debate, referred to above, and subsequent guidance from Ofwat has noted that requisition charging and standard water and sewerage charges (raised through general customer's bills) can also contribute to providing and renewing infrastructure to meet increasing demand from new or existing customers.⁷
- 4.26 When infrastructure charges were introduced, Condition C of each water companies' instrument of appointment set out the maximum amount that could be charged for each newly connected premises. This figure was derived as an average of the "costs associated with works to remote infrastructure (treatment works, resources, trunk mains and the like) necessary to cater for new connections"⁸. This figure was established separately for each company based on the investment and connections it would incur over a 10-year period.
- 4.27 These figures were revisited at the 1994 price review. At that time, Ofwat's Director General concluded that infrastructure charges should be used to "finance the costs of local system enhancement (i.e. the distribution system)

⁷ <http://www.ofwat.gov.uk/regulated-companies/company-obligations/ofwat-regulating-the-industry-compliance-requirements-charging/>

⁸ Explanation provided in "Paying for Water", Ofwat 1991 guidance document

only, and should not therefore be financing the costs of water treatment or water resources”⁹. The level of infrastructure charges was also standardised across companies and limited to £200 for each service from 1995-96 (rising annually in line with inflation)¹⁰. Therefore this change made the distinction between the distribution network (which was termed local enhancements) and treatment and resource works (which were termed remote works). The 1995 Monopolies and Mergers Commission reports referred to by Barratt Homes likewise concluded that infrastructure charges should not contribute towards “remote” works such as reservoirs or major treatment works, and that these should be financed through standard general customer charges.

- 4.28 As set out in paragraphs 3.15 to 3.17 above, water and sewerage companies are entitled to raise infrastructure charges for premises being connected to the network for the first time. Separately, sections 42-43A of the Act enable charging for a mains requisition. As explained in paragraphs 3.9 to 3.12 section 43(4) allows the costs reasonably incurred in providing the requisitioned main to include certain wider works where these are necessary in consequence of providing the new main.
- 4.29 Water and sewerage companies are entitled to raise charges under both sets of provisions where premises are being connected for domestic purposes to the network for the first time. The works these charges cover should however be distinct:
- Requisition charges should be used to recover the costs reasonably incurred in providing the requisitioned main, which would include works that are considered necessary to provide in consequence of a requisitioned main, i.e. they cover works that are directly attributable to the development site they are being raised against.
 - Infrastructure charges may be used for other network reinforcement works within the company’s area of appointment as and when they arise as a result of general increases in demand.
- 4.30 As such, the fact that Anglian Water has raised infrastructure charges for each of the Sites does not prevent them from including the costs reasonably incurred in providing network reinforcement in the calculation of a requisition charge, where the works are necessary in consequence of the requisitioned main.

⁹ Ofwat letter to Regulatory Directors – RD 2/95 9 January 1995

¹⁰ https://www.ofwat.gov.uk/pricereview/det_pr_fd94.pdf

4.31 Anglian Water has provided an explanation of the nature and costs of each of the strategic schemes that relate to the Sites as set out in section 2C and in paragraphs 4.18 to 4.22 above. In light of this evidence, the information provided by Anglian Water on these strategic schemes during the 2004 price review process and our previous assessment of this information as part of the 2004 price review, we are satisfied that the following contributions can be included in the costs reasonably incurred in providing the requisitioned mains in accordance with section 43(2) of the Act, for the purposes of establishing the Site's requisition charges. This is because we are satisfied these works were necessary in consequence of the provision of the relevant requisitioned mains:

- the strategic scheme contribution to the Red Lodge Growth Scheme for the **Red Lodge** site. On the basis that the site uses 0.82159l/s of the 31.8l/s provided by the scheme (2.58%), and the final actual costs incurred by Anglian Water for the scheme were £720,000, we determine this contribution should be £18,576, which is 2.58% of the final actual costs. This figure reflects the proportion of provided capacity used by the site, rather than the rounded figures used in Anglian Water's original calculation;
- the £5,000 contribution to offsite works for the **Bedford Street** site;
- the strategic scheme contribution to the Braintree Ring Main for the **Bovingdon Road** site. Whilst not yet fully completed, this scheme is already capable of providing supplies to the Braintree area and therefore will provide capacity needed by the Bovingdon Road site. On the basis that the site will use 4.12l/s of the 85l/s provided by the scheme (4.847%), and the estimated costs of the scheme are £1.53 million, we determine this contribution should be £74,159 for the purpose of calculating the requisite security; and
- the strategic scheme contribution to the Braintree Ring Main for the **Rifle Hill** site. Whilst not yet completed, this scheme is capable of providing supplies to the Braintree area and therefore will provide capacity needed by the Rifle Hill site. On the basis that the site will use 2l/s of the 85l/s provided by the scheme (2.353%), and the estimated costs of the scheme are £1.53 million, we determine this contribution should be £36,001.

4.32 Anglian Water confirmed in 23 July 2014 that a contribution of £78,300 to the Alton to Great Horkesley strategic scheme for the Bovingdon Road site was no longer required due to the change in the timing of its potential delivery. We

are satisfied with the removal of this required contribution from the estimated requisition charge of the Bovingdon Road site and therefore we are no longer required to determine this element of the estimated security required for this site.

- 4.33 Section 43(4) of the Act states that the DAD calculation should use the costs reasonably “incurred” (rather than “to be incurred”) in providing the new main. Therefore the calculation of the final requisition charge should reflect the final costs actually incurred in providing that main, including the costs reasonably incurred in providing other mains that are necessary to provide in consequence of the requisitioned main. This ensures that the developer and water company share the appropriate balance of risk and reward should the final actual costs differ from the estimated costs. Updating for final costs does not affect the apportionment of costs between customers.
- 4.34 At the time of this determination the final costs incurred in providing the Braintree Ring Main are not yet available. We are therefore only currently able to determine the level of security we consider it reasonable for Anglian Water to require from Barratt Homes for the Bovingdon Road and Rifle Hill sites. This is based on an estimate of the requisition charge using the fullest cost information available. At Barratt Homes’ request, Anglian Water will need to recalculate the final requisition charge for these sites when the final actual costs of the Braintree Ring Main strategic scheme are available. We expect the approach in this determination to be used to establish the final requisition charge when all final actual costs are available for these two sites.
- 4.35 We note Anglian Water’s comment that the determination of a dispute between Anglian Water and Utility Law Solutions (‘Wing’) by Ofwat used estimated costs for the contributions to a strategic scheme when calculating final requisition charges. As detailed in the Wing final determination,¹¹ the facts of that case provided circumstances which are unlikely to apply in other cases and our conclusions were based on the particular facts of that dispute. Importantly, in this case, in contrast to Wing, not all the strategic works have been completed in relation to all of the sites. For those sites where these works have not been completed it is therefore appropriate for us to determine the security owed by Barratt Homes, rather than the final requisition charge. However, depending on the relevant final actual costs, any differences

¹¹ Final determination of a dispute between Anglian Water and Utility Law Solutions under sections 30A, 42(6) and 51C(11) of the Water Industry Act 1991.
<http://www.ofwat.gov.uk/ib-1615-ofwat-publishes-water-requisition-final-determination-2/>

between the security payment and the final requisition charge might be minimal.

B. The Premises Completion Profile

4.36 In order to calculate the DAD in accordance with section 43A(2) of the Act, it is necessary to know both the costs reasonably incurred in providing the main¹² and the estimated revenue in respect of the requisitioned water main. The estimated revenue is established on the basis of the charges expected to be payable to the water undertaker for the provision of a water supply to the premises expected to be connected with the requisitioned main. In order to establish this estimated revenue, it is necessary to know the date on which charges for each premises became payable following the provision of the main.

Barratt Homes' view

4.37 Barratt Homes has disputed Anglian Water's approach to profiling the estimated revenue within the DAD calculation. It believes that Anglian Water is required to include revenue from premises that are completed and connected to the main during the first year of the DAD calculation, including those premises connected as soon as the main is provided. Anglian Water should also include revenue from those premises constructed during the course of a year in that year of the DAD calculation. Barratt Homes have provided the dates that each of the premises on the Sites were sold, which it believes is a close approximation of their connection date.

Anglian Water's view

4.38 For each of the Sites, Anglian Water followed the same methodology for determining the estimated revenue that would be generated as a result of the relevant requisitioned main. For each year of the DAD calculation, Anglian Water only included revenue from premises that were to be connected and served by the main at the start of the relevant year, i.e. providing a full year's revenue. It did not include any revenue from premises that were due to be connected during the year. In addition, Anglian Water did not include any revenue for the first year of the DAD calculation, regardless of whether any premises were to be connected to the requisitioned main at, or before, the time that the main had been completed and was able to provide a water

¹² To establish the annual borrowing costs of a loan for this amount

supply. Anglian Water states that this is its policy for DAD calculations for main requisitions.

- 4.39 To calculate the estimated revenue for each of the Sites, Anglian Water used estimates of the rate at which the premises served by the requisitioned mains would be completed. These estimates were provided to Anglian Water by Barratt Homes as part of the initial main requisition requests. Anglian Water state that in its recalculations of the final requisition charge (where final actual costs are now available), it has not updated its estimated revenue to reflect the actual completion dates for the premises, instead continuing to use the original estimates.
- 4.40 In our draft determination, we concluded that Anglian Water should include revenue from premises built before or during the first year after the requisitioned main is completed, and each year of the DAD calculation should take account of premises completed part-way through the year. In its representations on our draft determination, Anglian Water does not challenge our conclusion that it must include revenue from premises connected in the first year in the DAD calculation. However, it does challenge the use of completion dates for determining revenues as the basis for calculating the charges expected to be payable as a result of the requisitioned main. Anglian Water considers that a more accurate measure of the revenue associated with each premises is the date the premises is occupied (and hence in receipt of a service) rather than the date the premises is completed.
- 4.41 Anglian Water also asked for clarification on whether the calculation of the final requisition charge provides another opportunity to the developer to provide an updated estimate of the future build rates of any premises that are planned to be served by the requisitioned main that are yet to be completed. Anglian Water agreed that whilst, where possible and readily available, best information and actual data should be used, this should be weighed against the costs of obtaining this information and the incentives of the respective parties to provide this.

Our determination

- 4.42 Section 43A(4) of the Act states that the estimated revenue for any year, used for calculating the DAD, should be the aggregate of any charges expected to be payable in the course of that year in relation to the premises expected to be connected to and served by the requisitioned main. Section 43A(5) states that “For the purpose of calculating estimate revenue under subsection (4) above, a thing is expected to be the case if, at the time the calculation is

made, it is reasonably likely to occur". We therefore expect water undertakers to establish the best estimate of the charges that are payable as a result of the requisitioned main.

- 4.43 At the time of calculating a final requisition charge, we consider that it is reasonable for water undertakers to use both the final costs incurred in providing the main and the best information it reasonably has available to establish the site's estimated revenue. This allows the estimates used in the original quotations and resulting security requirements to be updated, as necessary, on the basis of more accurate information.
- 4.44 In accordance with the Act, we see no basis for Anglian Water not to include in its estimated revenue calculation the revenue from premises that were connected and served by the requisitioned main at the start of, or during, the first year of the DAD calculation. Charges would be expected to be payable during this period for these premises and therefore should be included in the estimated revenue calculation. This same principle applies to premises that become connected and served during subsequent years of the DAD calculation. In this case we consider that it is reasonable to calculate the estimated revenue for the DAD on the basis of the number of whole months for which charges were payable at each premises.
- 4.45 Barratt Homes have provided us with the dates on which the sale of each of the Site's premises was completed (i.e. the premises was sold to its new owner / occupier). We consider it reasonable to use these dates to estimate the dates from which charges were expected to be payable. We have used these dates to establish the Sites' estimated revenue. For some premises, Barratt Homes have only been able to provide the month in which the premises were sold, rather than a specific date. For these premises we have assumed that it was sold at the end of that month, such that the following month is the first for which charges were payable for the whole month.
- 4.46 On the basis of these dates, Annex 1 provides details of the number of premises for which we determine charges would be expected to be payable for each of the 12 years of the DAD calculation. This demonstrates, for example, where charges are payable for six months of a year, the revenue for 0.5 premises is included in the estimated revenue for that year. Table 3 in Annex 1 also provides a comparison with the occupancy profile Anglian Water had used for establishing the estimated revenue.
- 4.47 In general, this has the impact of increasing the estimated revenue for each of the Sites in each year of its DAD calculation, when compared with Anglian

Water's original DAD calculations. This typically has the most significant impact in the first year of the DAD calculation as Anglian Water had not previously included the revenue from premises served by the requisitioned main in that year.

C. The average charge expected to be payable per premises

Barratt Homes' view

- 4.48 Barratt Homes raised concerns about the value of the average charge per premises used by Anglian Water to establish the estimated revenue used in the DAD calculation for the Ringland Park site, which was £121 per premises.
- 4.49 Barratt Homes believes that the income figure is unrepresentative of the average charge per premises within the area. Barratt Homes considers that £135 better represents the average income per premises from water bills in the area. It did not specify the reason for this belief.

Anglian Water's view

- 4.50 Anglian Water used an average charge per premises of £121 to establish its estimated revenue for the Ringland Park site. This was based on the forecast of the average measured household water bill for all Anglian Water customers in the year in which the main was provided. In its representations on the draft determination, Anglian Water challenged our proposed use of the average measured household water bill per premises taken from Anglian Water's 2006-07 approved charges scheme, which was £121.43. Anglian Water states that our approach to estimating the average revenue per premises lacks sufficient evidence to justify amending the estimated value of £121 that was used in Anglian Water's initial calculation of the DAD.

Our Determination

- 4.51 Section 43A of the Act states that the estimate of the revenue should represent charges that are reasonably attributable to the provision of a water supply to premises connected with the main. We consider Anglian Water's approach of using the average charge per premises, as taken from its approved charges scheme, is reasonable.
- 4.52 In the case of the Ringland Park DAD, the main was provided on 12 December 2006 and each house has a metered water supply. We therefore consider it reasonable to use average metered household bill as set out in

Anglian Water's 2006-07 approved charges scheme (£121.43) as the average charge expected to be payable for a premises. We note that this is only slightly different from the value of £121 that was used by Anglian Water, having been rounded to the nearest pound. Whilst we understand that this is an estimated value, section 43A(5) states that for the purpose of calculating estimated revenue a thing is expected to be the case if, at the time the calculation is made, it is reasonably likely to occur.

- 4.53 We determine that, when establishing the estimated revenue for the Ringland Park site, it is reasonable to use the figure of £121.43 as the average charge expected to be payable per premises on the site in 2006-07.
- 4.54 The Act provides that the estimated relevant deficit for a year shall be discounted in order to determine its net present value¹³. In this case we propose doing this by taking into account the impact of inflation and any expected changes to the average charge per premises due to Ofwat's price limits determinations. In Anglian Water's calculation of the DAD, the RPI value for the end of the 2005-06 financial year was used: 2.4%. The value of the average charge per premises was then increased by this value for each year other than the first year of the DAD. We consider this to be a reasonable approach for taking account of the future impacts of RPI on the estimated revenue from the site, as it is based on recent actual RPI data.
- 4.55 The average charge expected to be payable per premises in each year of the DAD calculation should also take into account any expected changes due to the price limits that Ofwat sets.
- 4.56 Using the values for RPI, K and the average charge expected to be payable per premises for 2006-07 as set out above, we have determined the average charge expected to be payable per premises which should be used in the DAD calculation for Ringland Park. These values are given in Table 1 below:

Table 1: Annual average charge expected to be payable per premises

Year	Average charge per premises
	£
2006/07	121.43
2007/08	128.96
2008/09	135.28
2009/10	142.18
2010/11	145.59

¹³ Section 43A(6) of the Act

Year	Average charge per premises
	£
2011/12	149.08
2012/13	152.66
2013/14	156.33
2014/15	160.08
2015/16	163.92
2016/17	167.85
2017/18	171.88
2018/19	176.01

5. Conclusion

5.1 In light of the legal framework of the Act and the evidence we have gathered from the parties to the dispute, we have determined the following:

- The actual costs reasonably incurred in providing the mains at the Red Lodge site should include a contribution of £18,576 towards the Red Lodge Growth strategic scheme;
- The actual costs reasonably incurred in providing the mains for the Bedford Street site should include a contribution towards the offsite works as these were necessary in consequence of providing the new main requisitioned for this site;
- The estimate of the costs reasonably incurred in providing the mains at the Bovingdon Road site should include a contribution of £74,159 towards the Braintree Ring Main strategic scheme but should not include a contribution towards the Alton to Great Horkeley strategic scheme on the basis that Anglian Water no longer believe this work to have been necessary in consequence of the requisitioned main;
- The estimate of the costs reasonably incurred in providing the mains at the Rifle Hill site should include a contribution of £36,001 towards the Braintree Ring Main strategic scheme;
- The charges expected to be payable to Anglian Water from the premises served by the relevant requisitioned mains (used as the estimated revenue for the purposes of calculating the DAD) should include the charges expected to be payable during the first year following the provision of the new main (i.e. Year 1 of the DAD calculation);

- For the purposes of establishing the charges expected to be payable it is not reasonable to only include charges for those premises that were connected at the beginning of each DAD year (and hence for the full year). In this case, to establish the estimated revenue from a Site, we consider it reasonable to calculate the charges expected to be payable from the first full month after the date on which the premises were sold (as a proxy for their occupation date); and
 - When estimating the charges expected to be payable from the Ringland Park site, it is reasonable to use the figure of £121.43 as the average charge expected to be payable per premises on the site in 2006-07.
- 5.2 Having determined each of these issues, we have recalculated the DAD for each of the Sites in accordance with Section 43A of the Act. Where there has not been a specific challenge to the approach or the values used in Anglian Water's calculation of the DAD, we have used the values set out in Anglian Water's calculation.
- 5.3 For those Sites for which all final actual costs are now available (Red Lodge, Ringland Park and Bedford Street), we have recalculated the DAD to determine the final requisition charges Anglian Water can recover from Barratt Homes. The calculations for each of the Sites are provided in Annex 2.
- 5.4 For those Sites for which all final costs are not yet available (Bovingdon Road and Rifle Hill) we have determined the level of security Anglian Water can reasonably require on the basis of the fullest cost information currently available. We expect the approach set out in this determination to be used if the parties concluded that they wanted to calculate the final requisition charge when all final actual costs are available. However, the parties may agree to treat the determined level of security as a final payment. We have set out our calculations in more detail in Annex 2.
- 5.5 We determine that Anglian Water should refund Barratt Homes a total of **£56,907.62**. This reflects that, whilst refunds are due on four of the five sites, we consider it would be reasonable for the security payment for the Rifle Hill site to be £9,198.80 higher than that originally requested due to the actual onsite costs being significantly higher than the estimate of costs. The individual site breakdown of this figure is provided in Table 2 below, which for each of the Sites details:
- the costs reasonably incurred that we have used in our calculation;

- the level of security required by Anglian Water and paid to date by Barratt Homes;
- the date(s) the security payments were made;
- the date the requisitioned main was provided;
- Anglian Water's recalculation of the requisition charge or security provided during our investigation (on the basis of which no refunds have been made); and
- the refunds we have determined to be due.

5.6 In accordance with section 42(4) of the Act, interest is payable on the amounts held by Anglian Water as security between the dates when each of these amounts were paid to Anglian Water until the relevant new main was provided (and hence the requisition charge became payable). Interest is also payable on any outstanding security beyond the final requisition charge that must be refunded, from the date the relevant new main was provided until the date the refund is paid.

5.7 Anglian Water should pay the refunds and interest payments due to Barratt Homes within 20 working days of the date of this final determination. Anglian Water should apply interest rate(s) in accordance with [Ofwat's Information Notice on interest rates](#). The amount of any interest payable is for the Courts to determine, if Anglian Water and Barratt Homes are unable to agree this amount.

Table 2: Recalculation of the DADs

Site	Costs reasonably incurred	Security paid by Barratt Homes	Date paid	Date main provided	Anglian Water's recalculation	Our determination	Refund due
Final requisition charge							
Red Lodge	£30,354	£4,172	15 May 2008	3 Nov 2008	£3,772.71	£1,844.84	£2,327.16
Ringland Park	£38,704	£7,381	20 July 2006	12 Dec 2006	£4,306	£2,255.81	£5,125.19
Bedford Street	£10,741	£1,646.18	25 May 2010	15 April 2011	£1,355.07	£0	£1,646.18
Revised security amount							
Bovingdon Road	£140,903	£86,532.50 £656 £585	9 March 2007 12 Oct 2009 2 Nov 2009	21 Jan 2008	£79,813.07	£30,765.61	£57,007.89
Rifle Hill	£118,406	£11,427	21 Sept 2009	15 April 2010	£28,789	£20,625.80	£-9,198.80
TOTAL		£112,399.68				£55,492.06	£56,907.62

Annex 1 – Premises Occupation profile

This annex sets out the premises occupation profiles that have been used to establish the estimated revenue from each of the Sites, for the purposes of the DAD calculation. The profile has been estimated using the number of full months for which charges can be expected to be payable for each of the premises. As set out in section 4B, to calculate the estimated revenue that would be generated by premises connected to and served by the requisitioned main in each year of the DAD calculation, we first established the number of full months for which charges would be payable in that particular year of the DAD calculation. For example, for premises for which charges became payable during the 7th month of a DAD year, the charges payable for the final five full months of that year would be included in the estimated revenue for that year of the DAD calculation.

We then multiplied the number of whole months for which charges were expected to be payable, by the average monthly household bill to calculate the estimated revenue from the Site. We also took into account the fact that a single year in a DAD calculation typically covers two charging years; therefore the average household bill will not be the same for each month within a single year of the DAD calculation. To address this, for each whole month that a premises was billable, we multiplied it by the average monthly household bill that was in place on the first day of that month.

In Table 3 below we set out the profile of premises occupations we have determined for each of the Sites, and details of the original profile used by Anglian Water.

Table 3: Profile of premises occupations

Our determination

Year	Red Lodge	Ringland Park	Bedford Street	Bovingdon Road	Rifle Hill
Year 1	11.25	17.92	18.00	6.08	34.50
Year 2	39.92	60.25	30.83	36.00	58.25
Year 3	67.25	93.42	32.00	82.58	66.00
Year 4	74.83	129.83	32.00	161.00	66.00
Year 5	77.00	158.50	32.00	161.00	66.00
Year 6	77.00	165.92	32.00	161.00	66.00
Year 7	77.00	166.00	32.00	161.00	66.00
Year 8	77.00	166.00	32.00	161.00	66.00
Year 9	77.00	166.00	32.00	161.00	66.00
Year 10	77.00	166.00	32.00	161.00	66.00
Year 11	77.00	166.00	32.00	161.00	66.00
Year 12	77.00	166.00	32.00	161.00	66.00

Anglian Water's DAD calculation

Year	Red Lodge	Ringland Park	Bedford Street	Bovingdon Road	Rifle Hill
Year 1	0	0	0	0	0
Year 2	77	50	32	80	45
Year 3	77	110	32	81	65
Year 4	77	167	32	152	65
Year 5	77	167	32	152	65
Year 6	77	167	32	152	65
Year 7	77	167	32	152	65
Year 8	77	167	32	152	65
Year 9	77	167	32	152	65
Year 10	77	167	32	152	65
Year 11	77	167	32	152	65
Year 12	77	167	32	152	65

Annex 2 - DAD calculations

Red Lodge

Total scheme cost (£)	£30,354.00
Basic average income per property (£)	£148.00
Borrowing interest rate (%)	6.00%
Long term annual inflation (%)	4.00%

Year	Cumulative occupancy	Company K factor (%)
Year 1	11.25	0.00%
Year 2	39.52	2.70%
Year 3	67.25	0.00%
Year 4	74.83	0.00%
Year 5	76.00	0.00%
Year 6	76.00	0.00%
Year 7	76.00	0.00%
Year 8	76.00	0.00%
Year 9	76.00	0.00%
Year 10	76.00	0.00%
Year 11	76.00	0.00%
Year 12	76.00	0.00%

Intermediate calculations

Annuity factor	0.38
Annual repayment (£)	£3,620.53
Discount rate (%)	6.00%

Year	K factor plus long term inflation (%)	Annuity factor calculation	Annual discount factor
Year 1	0.00%	0.94	0.94
Year 2	6.70%	0.89	0.89
Year 3	4.00%	0.84	0.84
Year 4	4.00%	0.79	0.79
Year 5	4.00%	0.75	0.75
Year 6	4.00%	0.70	0.70
Year 7	4.00%	0.67	0.67
Year 8	4.00%	0.63	0.63
Year 9	4.00%	0.59	0.59
Year 10	4.00%	0.56	0.56
Year 11	4.00%	0.53	0.53
Year 12	4.00%	0.50	0.50

Main calculations

Year	Cumulative occupancy	Basic revenue (£)	K factor plus long term inflation index (%)	Reckonable revenue (£)	Discount factor	Discounted value of reckonable revenue (£)	Annual repayments of the loan (£)	Capital payable per year (£)	Interest on the loan payable per year (£)	Year end principal outstanding (£)	Projected relevant deficit (£)	Statutory Commuted sum (£)	Income allowance (£)	Asset payment (£)
Year 1	11	£1,685.00	100.00%	£1,685.00	0.94	£1,570.75	£3,620.53	£1,799.29	£1,821.24	£28,554.71	£1,955.53	£1,844.84	£1,685.00	£1,570.75
Year 2	40	£5,907.67	106.70%	£6,303.48	0.89	£5,610.08	£3,620.53	£1,907.25	£1,713.28	£26,647.45	-	-	£5,620.53	£3,222.26
Year 3	67	£9,953.00	110.97%	£11,044.65	0.84	£9,273.30	£3,620.53	£2,021.69	£1,598.85	£24,626.76	-	-	£3,620.53	£3,029.87
Year 4	75	£11,075.33	115.41%	£12,781.68	0.79	£10,124.29	£3,620.53	£2,142.99	£1,477.55	£22,482.78	-	-	£3,620.53	£2,967.80
Year 5	76	£11,248.00	120.02%	£13,500.19	0.75	£10,088.12	£3,620.53	£2,271.57	£1,348.97	£20,211.21	-	-	£3,620.53	£2,705.47
Year 6	76	£11,248.00	124.82%	£14,040.19	0.70	£9,897.78	£3,620.53	£2,407.86	£1,212.67	£17,903.34	-	-	£3,620.53	£2,552.33
Year 7	76	£11,248.00	129.82%	£14,601.80	0.67	£9,711.03	£3,620.53	£2,552.33	£1,068.20	£15,251.01	-	-	£3,620.53	£2,407.86
Year 8	76	£11,248.00	135.01%	£15,185.87	0.63	£9,527.80	£3,620.53	£2,705.47	£915.06	£12,545.54	-	-	£3,620.53	£2,271.57
Year 9	76	£11,248.00	140.41%	£15,793.31	0.59	£9,348.03	£3,620.53	£2,867.80	£762.73	£9,677.73	-	-	£3,620.53	£2,142.99
Year 10	76	£11,248.00	146.03%	£16,425.04	0.56	£9,171.66	£3,620.53	£3,039.87	£580.66	£6,637.86	-	-	£3,620.53	£2,021.69
Year 11	76	£11,248.00	151.87%	£17,082.04	0.53	£8,998.61	£3,620.53	£3,222.26	£398.27	£3,415.60	-	-	£3,620.53	£1,907.25
Year 12	76	£11,248.00	157.94%	£17,765.32	0.50	£8,828.82	£3,620.53	£3,415.60	£204.94	£1,000.00	-	-	£3,620.53	£1,799.29
Total		£118,565.00		£156,188.57		£102,150.28	£43,446.42	£30,354.00	£13,092.42	£187,852.99	£1,955.53	£1,844.84	£41,490.88	£28,509.16

Ringland Park

Total scheme cost (£)	£38,704.00
Basic average income per property (£)	£121.00
Borrowing interest rate (%)	5.75%
Long term annual inflation (%)	2.40%

Year	Cumulative occupancy	Company K factor (%)
Year 1	17.32	0.00%
Year 2	60.25	0.00%
Year 3	93.42	0.00%
Year 4	129.83	0.00%
Year 5	168.50	0.00%
Year 6	165.32	0.00%
Year 7	166.00	0.00%
Year 8	166.00	0.00%
Year 9	166.00	0.00%
Year 10	166.00	0.00%
Year 11	166.00	0.00%
Year 12	166.00	0.00%

Intermediate calculations

Annuity factor	8.50
Annual repayment (£)	£4,553.44
Discount rate (%)	5.75%

Year	K factor plus long term inflation (%)	Annuity factor calculation	Annual discount factor
Year 1	0.00%	0.95	0.95
Year 2	2.40%	0.89	0.89
Year 3	2.40%	0.85	0.85
Year 4	2.40%	0.80	0.80
Year 5	2.40%	0.76	0.76
Year 6	2.40%	0.72	0.72
Year 7	2.40%	0.68	0.68
Year 8	2.40%	0.64	0.64
Year 9	2.40%	0.60	0.60
Year 10	2.40%	0.57	0.57
Year 11	2.40%	0.54	0.54
Year 12	2.40%	0.51	0.51

Main calculations

Year	Cumulative occupancy	Basic revenue (£)	K factor plus long term inflation index (%)	Reckonable revenue (£)	Discount factor	Discounted value of reckonable revenue (£)	Annual repayments of the loan (£)	Capital payable per year (£)	Interest on the loan payable per year (£)	Year end principal outstanding (£)	Projected relevant deficit (£)	Statutory Commuted sum (£)	Income allowance (£)	Asset payment (£)
Year 1	18	£2,167.92	100.00%	£2,167.92	0.95	£2,050.04	£4,553.44	£2,327.96	£2,225.48	£36,376.04	£2,385.52	£2,255.81	£2,167.92	£2,050.04
Year 2	60	£7,290.25	102.40%	£7,465.22	0.89	£6,675.47	£4,553.44	£2,461.81	£2,091.62	£33,914.23	-	-	£4,553.44	£4,071.73
Year 3	93	£11,303.42	104.86%	£11,852.49	0.85	£10,022.33	£4,553.44	£2,603.37	£1,950.07	£31,310.86	-	-	£4,553.44	£3,850.33
Year 4	130	£15,709.83	107.37%	£16,868.31	0.80	£13,488.07	£4,553.44	£2,753.06	£1,800.37	£28,557.80	-	-	£4,553.44	£3,640.87
Year 5	159	£19,178.50	109.95%	£21,086.38	0.76	£15,944.56	£4,553.44	£2,911.36	£1,642.07	£25,646.44	-	-	£4,553.44	£3,443.00
Year 6	166	£20,075.92	112.59%	£22,603.47	0.72	£16,161.92	£4,553.44	£3,078.77	£1,474.67	£22,567.68	-	-	£4,553.44	£3,255.79
Year 7	166	£20,086.00	115.29%	£23,157.58	0.68	£15,657.79	£4,553.44	£3,255.79	£1,297.64	£19,311.88	-	-	£4,553.44	£3,078.77
Year 8	166	£20,086.00	118.06%	£23,713.36	0.64	£15,161.78	£4,553.44	£3,443.00	£1,110.43	£15,868.88	-	-	£4,553.44	£2,911.36
Year 9	166	£20,086.00	120.89%	£24,282.48	0.60	£14,681.48	£4,553.44	£3,640.97	£912.46	£12,227.91	-	-	£4,553.44	£2,753.06
Year 10	166	£20,086.00	123.79%	£24,865.26	0.57	£14,216.39	£4,553.44	£3,850.33	£703.10	£8,377.57	-	-	£4,553.44	£2,603.37
Year 11	166	£20,086.00	126.77%	£25,462.03	0.54	£13,766.04	£4,553.44	£4,071.73	£491.71	£4,305.85	-	-	£4,553.44	£2,461.81
Year 12	166	£20,086.00	129.81%	£26,073.12	0.51	£13,329.95	£4,553.44	£4,305.85	£247.59	£-0.00	-	-	£4,553.44	£2,327.96
Total		£196,241.83		£229,598.23		£151,155.81	£54,641.23	£38,704.00	£15,937.23	£238,465.15	£2,385.52	£2,255.81	£52,255.71	£36,448.19

Bedford Street

Total scheme cost (£)	£10,741.00
Basic average income per property (£)	£154.00
Borrowing interest rate (%)	5.00%
Long term annual inflation (%)	2.75%

Year	Cumulative occupancy	Company K factor (%)
Year 1	18.00%	0.00%
Year 2	30.83	1.40%
Year 3	32.00	1.10%
Year 4	32.00	0.90%
Year 5	32.00	0.00%
Year 6	32.00	0.00%
Year 7	32.00	0.00%
Year 8	32.00	0.00%
Year 9	32.00	0.00%
Year 10	32.00	0.00%
Year 11	32.00	0.00%
Year 12	32.00	0.00%

Intermediate calculations

Annuity factor	8.86
Annual repayment (£)	£1,211.86
Discount rate (%)	5.00%

Year	K factor plus long term inflation (%)	Annuity factor calculation	Annual discount factor
Year 1	0.00%	0.95	0.95
Year 2	4.15%	0.91	0.91
Year 3	3.85%	0.86	0.86
Year 4	3.65%	0.82	0.82
Year 5	2.75%	0.78	0.78
Year 6	2.75%	0.75	0.75
Year 7	2.75%	0.71	0.71
Year 8	2.75%	0.68	0.68
Year 9	2.75%	0.64	0.64
Year 10	2.75%	0.61	0.61
Year 11	2.75%	0.58	0.58
Year 12	2.75%	0.56	0.56

Main calculations

Year	Cumulative occupancy	Basic revenue (£)	K factor plus long term inflation index (%)	Reckonable revenue (£)	Discount factor	Discounted value of reckonable revenue (£)	Annual repayments of the loan (£)	Capital payable per year (£)	Interest on the loan payable per year (£)	Year end principal outstanding (£)	Projected relevant deficit (£)	Statutory Commuted sum (£)	Income allowance (£)	Asset payment (£)
Year 1	18	£2,772.00	100.00%	£2,772.00	0.95	£2,640.00	£1,211.86	£674.81	£537.05	£10,066.19	-	-	£1,211.86	£1,154.15
Year 2	31	£4,748.33	104.15%	£4,945.39	0.91	£4,485.61	£1,211.86	£708.55	£503.31	£9,357.64	-	-	£1,211.86	£1,039.19
Year 3	32	£4,928.00	108.16%	£5,330.11	0.86	£4,604.35	£1,211.86	£743.98	£467.88	£8,613.67	-	-	£1,211.86	£1,046.85
Year 4	32	£4,928.00	112.11%	£5,524.66	0.82	£4,545.15	£1,211.86	£781.17	£430.68	£7,832.49	-	-	£1,211.86	£937.00
Year 5	32	£4,928.00	115.19%	£5,676.59	0.78	£4,447.76	£1,211.86	£820.23	£391.62	£7,012.26	-	-	£1,211.86	£949.52
Year 6	32	£4,928.00	118.36%	£5,832.70	0.75	£4,352.45	£1,211.86	£861.24	£350.61	£6,151.02	-	-	£1,211.86	£904.31
Year 7	32	£4,928.00	121.61%	£5,993.10	0.71	£4,259.18	£1,211.86	£904.31	£307.55	£5,246.71	-	-	£1,211.86	£861.24
Year 8	32	£4,928.00	124.96%	£6,157.91	0.68	£4,167.91	£1,211.86	£949.52	£262.34	£4,297.19	-	-	£1,211.86	£820.23
Year 9	32	£4,928.00	128.39%	£6,327.25	0.64	£4,078.60	£1,211.86	£997.00	£214.86	£3,300.19	-	-	£1,211.86	£781.17
Year 10	32	£4,928.00	131.92%	£6,501.25	0.61	£3,991.20	£1,211.86	£1,046.89	£165.01	£2,253.34	-	-	£1,211.86	£743.98
Year 11	32	£4,928.00	135.55%	£6,680.03	0.58	£3,905.68	£1,211.86	£1,099.19	£112.67	£1,154.15	-	-	£1,211.86	£708.55
Year 12	32	£4,928.00	139.28%	£6,863.73	0.56	£3,821.98	£1,211.86	£1,154.15	£57.71	£0.00	-	-	£1,211.86	£674.81
Total		£56,800.33		£68,604.72		£49,299.89	£14,542.29	£10,741.00	£3,801.29	£65,284.85	-	-	£14,542.29	£10,741.00

Bovingdon Road

Total scheme cost (£)	£140,903.00
Basic average income per property (£)	£121.00
Borrowing interest rate (%)	6.00%
Long term annual inflation (%)	2.40%

Year	Cumulative occupancy	Compang K factor (%)
Year 1	6.08	0.00%
Year 2	36.00	3.80%
Year 3	82.58	2.50%
Year 4	161.00	2.70%
Year 5	161.00	0.00%
Year 6	161.00	0.00%
Year 7	161.00	0.00%
Year 8	161.00	0.00%
Year 9	161.00	0.00%
Year 10	161.00	0.00%
Year 11	161.00	0.00%
Year 12	161.00	0.00%

Intermediate calculations

Annuity factor	8.38
Annual repayment (£)	£16,806.49
Discount rate (%)	6.00%

Year	K factor plus long term inflation (%)	Annuity factor calculation	Annual discount factor
Year 1	0.00%	0.94	0.94
Year 2	6.20%	0.89	0.89
Year 3	4.90%	0.84	0.84
Year 4	5.10%	0.79	0.79
Year 5	2.40%	0.75	0.75
Year 6	2.40%	0.70	0.70
Year 7	2.40%	0.67	0.67
Year 8	2.40%	0.63	0.63
Year 9	2.40%	0.59	0.59
Year 10	2.40%	0.56	0.56
Year 11	2.40%	0.53	0.53
Year 12	2.40%	0.50	0.50

Main calculations

Year	Cumulative occupancy	Basic revenue (£)	K factor plus long term inflation index (%)	Reckonable revenue (£)	Discount factor	Discounted value of reckonable revenue (£)	Annual repayments of the loan (£)	Capital payable per year (£)	Interest on the loan payable per year (£)	Year end principal outstanding (£)	Projected relevant deficit (£)	Statutory Commuted sum (£)	Income allowance (£)	Asset payment (£)
Year 1	6	£736.08	100.00%	£736.08	0.94	£694.42	£16,806.49	£8,352.31	£8,454.18	£132,550.69	£16,070.41	£15,160.76	£736.08	£694.42
Year 2	36	£4,356.00	106.20%	£4,626.07	0.89	£4,117.19	£16,806.49	£8,853.45	£7,953.04	£123,697.24	£12,180.42	£10,840.53	£4,626.07	£4,117.19
Year 3	83	£9,992.58	111.40%	£11,132.12	0.84	£9,346.74	£16,806.49	£9,384.66	£7,421.83	£114,312.58	£5,674.37	£4,764.31	£11,132.12	£9,346.74
Year 4	161	£19,481.00	117.09%	£22,809.41	0.79	£18,067.19	£16,806.49	£9,947.74	£6,858.75	£104,364.85	-	-	£16,806.49	£13,312.32
Year 5	161	£19,481.00	119.90%	£23,356.83	0.75	£17,453.58	£16,806.49	£10,544.60	£6,261.89	£93,820.24	-	-	£16,806.49	£12,558.79
Year 6	161	£19,481.00	122.77%	£23,917.40	0.70	£16,860.82	£16,806.49	£11,177.28	£5,629.21	£82,642.97	-	-	£16,806.49	£11,847.91
Year 7	161	£19,481.00	125.72%	£24,491.41	0.67	£16,288.19	£16,806.49	£11,847.91	£4,958.58	£70,795.06	-	-	£16,806.49	£11,177.28
Year 8	161	£19,481.00	128.74%	£25,079.21	0.63	£15,735.00	£16,806.49	£12,558.79	£4,247.70	£58,236.27	-	-	£16,806.49	£10,544.60
Year 9	161	£19,481.00	131.83%	£25,681.11	0.59	£15,200.61	£16,806.49	£13,312.32	£3,494.18	£44,923.95	-	-	£16,806.49	£9,947.74
Year 10	161	£19,481.00	134.99%	£26,297.45	0.56	£14,684.36	£16,806.49	£14,110.05	£2,695.44	£30,812.90	-	-	£16,806.49	£9,384.66
Year 11	161	£19,481.00	138.23%	£26,928.59	0.53	£14,185.65	£16,806.49	£14,957.72	£1,848.77	£15,855.18	-	-	£16,806.49	£8,853.45
Year 12	161	£19,481.00	141.55%	£27,574.88	0.50	£13,703.87	£16,806.49	£15,855.18	£951.31	£10,903.87	£10,903.87	-	£16,806.49	£8,352.31
Total		£190,413.67		£242,630.56		£156,337.61	£201,677.90	£140,903.00	£60,774.90	£872,011.92	£33,925.20	£30,765.61	£167,752.69	£110,137.39

Rifle Hill

Total scheme cost (£)	£118,406.00
Basic average income per property (£)	£154.00
Borrowing interest rate (%)	4.75%
Long term annual inflation (%)	2.50%

Year	Cumulative occupancy	Compang K factor (%)
Year 1	34.50	0.00%
Year 2	58.25	0.00%
Year 3	66.00	0.00%
Year 4	66.00	0.00%
Year 5	66.00	0.00%
Year 6	66.00	0.00%
Year 7	66.00	0.00%
Year 8	66.00	0.00%
Year 9	66.00	0.00%
Year 10	66.00	0.00%
Year 11	66.00	0.00%
Year 12	66.00	0.00%

Intermediate calculations

Annuity factor	8.99
Annual repayment (£)	£13,171.51
Discount rate (%)	4.75%

Year	K factor plus long term inflation (%)	Annuity factor calculation	Annual discount factor
Year 1	0.00%	0.95	0.95
Year 2	2.50%	0.91	0.91
Year 3	2.50%	0.87	0.87
Year 4	2.50%	0.83	0.83
Year 5	2.50%	0.79	0.79
Year 6	2.50%	0.76	0.76
Year 7	2.50%	0.72	0.72
Year 8	2.50%	0.69	0.69
Year 9	2.50%	0.66	0.66
Year 10	2.50%	0.63	0.63
Year 11	2.50%	0.60	0.60
Year 12	2.50%	0.57	0.57

Main calculations

Year	Cumulative occupancy	Basic revenue (£)	K factor plus long term inflation index (%)	Reckonable revenue (£)	Discount factor	Discounted value of reckonable revenue (£)	Annual repayments of the loan (£)	Capital payable per year (£)	Interest on the loan payable per year (£)	Year end principal outstanding (£)	Projected relevant deficit (£)	Statutory Commuted sum (£)	Income allowance (£)	Asset payment (£)
Year 1	35	£5,313.00	100.00%	£5,313.00	0.95	£5,072.08	£13,171.51	£7,547.22	£5,624.29	£110,858.78	£7,858.51	£7,502.15	£5,313.00	£5,072.08
Year 2	58	£8,970.50	102.50%	£9,194.76	0.91	£8,379.78	£13,171.51	£7,905.71	£5,265.79	£102,953.07	£3,976.74	£3,624.26	£9,194.76	£8,379.78
Year 3	66	£10,164.00	105.06%	£10,678.55	0.87	£9,290.74	£13,171.51	£8,281.23	£4,890.27	£94,671.83	£2,492.95	£2,168.96	£10,678.55	£9,290.74
Year 4	66	£10,164.00	107.63%	£10,945.52	0.83	£9,091.18	£13,171.51	£8,674.59	£4,496.91	£85,997.24	£2,225.99	£1,948.87	£10,945.52	£9,091.18
Year 5	66	£10,164.00	110.38%	£11,219.15	0.79	£8,895.90	£13,171.51	£9,086.64	£4,084.87	£76,910.60	£1,952.35	£1,548.06	£11,219.15	£8,895.90
Year 6	66	£10,164.00	113.14%	£11,493.63	0.76	£8,704.82	£13,171.51	£9,518.25	£3,653.25	£67,392.95	£1,671.87	£1,265.55	£11,493.63	£8,704.82
Year 7	66	£10,164.00	115.97%	£11,767.12	0.72	£8,517.94	£13,171.51	£9,970.37	£3,201.14	£57,421.98	£1,384.38	£1,000.41	£11,767.12	£8,517.94
Year 8	66	£10,164.00	118.87%	£12,081.80	0.69	£8,334.88	£13,171.51	£10,443.96	£2,727.54	£46,978.02	£1,089.70	£751.75	£12,081.80	£8,334.88
Year 9	66	£10,164.00	121.84%	£12,383.85	0.66	£8,155.85	£13,171.51	£10,940.05	£2,231.46	£36,037.97	£787.66	£518.74	£12,383.85	£8,155.85
Year 10	66	£10,164.00	124.89%	£12,693.44	0.63	£7,980.67	£13,171.51	£11,459.70	£1,711.80	£24,578.27	£478.06	£300.57	£12,693.44	£7,980.67
Year 11	66	£10,164.00	128.01%	£13,010.78	0.60	£7,809.24	£13,171.51	£12,004.04	£1,167.47	£12,574.23	£160.73	£96.47	£13,010.78	£7,809.24
Year 12	66	£10,164.00	131.21%	£13,336.05	0.57	£7,641.50	£13,171.51	£12,574.23	£597.28	£9,976.95	£-10.00	£-	£13,336.05	£7,641.50
Total		£115,923.50		£134,143.66		£97,874.48	£158,058.07	£118,406.00	£39,652.07	£716,374.33	£24,078.95	£20,625.80	£133,979.12	£97,780.20