



Ground-related requirements for new housing

Workshops to examine the issues faced by the industry

NHBC Foundation

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Constructive Research for Building Businesses

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Contents

Executive Summary	5
1. Introduction	7
1.1 Objectives	7
1.2 Approach	7
1.3 Profiles of the speakers	8
2. Summary	9
2.1 General background	9
2.2 Sewers	9
2.3 SuDS and contaminated land	10
2.4 Highways	10
2.5 Water and electricity	11
2.6 Issues to be addressed	11
3. The attendees and their issues	13
3.1 Profile of the attendees	13
3.2 Concerns about ground-related issues	14
4. Sewers	15
4.1 E-survey results – sewers	15
4.2 Facilitated discussion – sewers	22
5. SuDS and contaminated land	24
5.1 E-survey results – SuDS and contaminated land	24
5.2 Facilitated discussion – SuDS and contaminated land	30
6. Highways	32
6.1 E-survey results – highways	32
6.2 Facilitated discussion – highways	37
7. Water and electricity	39
7.1 E-survey results – water and electricity	39
7.2 Facilitated discussion – water and electricity	46
8. Discussion: issues to be addressed	47
Appendix 1: Companies agreeing to attend	49
Appendix 2: Abbreviations	50

ABOUT THE NHBC FOUNDATION

The NHBC Foundation was established in 2006 by the NHBC in partnership with the BRE Trust. Its purpose is to deliver high-quality research and practical guidance to help the industry meet its considerable challenges.

Since its inception, the NHBC Foundation's work has focused primarily on the sustainability agenda and the challenges of the government's 2016 zero carbon homes target. Research has included a review of microgeneration and renewable energy techniques and the groundbreaking research on zero carbon and what it means to homeowners and house builders.

The NHBC Foundation is also involved in a programme of positive engagement with government, development agencies, academics and other key stakeholders, focusing on current and pressing issues relevant to the industry.

Further details on the latest output from the NHBC Foundation can be found at www.nhbcfoundation.org.

NHBC Foundation Advisory Board

The work of the NHBC Foundation is guided by the NHBC Foundation Advisory Board, which comprises:

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Geoff Pearce, Group Director of Development and Asset Management, East Thames Group

David Pretty CBE, Former Chief Executive of Barratt Developments PLC

Professor Steve Wilcox, Centre for Housing Policy, University of York

Executive Summary

On all new sites developers are required to comply with requirements from a number of different organisations, which sometimes have competing priorities, before the superstructure is even considered. These requirements, relating primarily to the ground, cover sewers, surface water, contaminated land, highways and the various utilities. There is anecdotal evidence that the smooth flow of development has been affected by what appear to be conflicting requirements, and, although there has been little solid work undertaken in this area, there is a widening view that a rationalisation of many ground-related issues would benefit the industry.

To identify the main areas of concern and gather evidence about the smooth running of this stage of a development can be adversely affected, a fact-finding exercise was undertaken. Two workshop events were held, one each in London and Manchester in November 2010, to identify the scale and nature of issues relating to below-ground engineering on new housing sites. The workshops were attended by 63 senior technical and engineering professionals representing the 10 top housebuilders, plus 11 other leading housebuilders and their consultants and contractors.

After presentations from specialist speakers, attendees gave feedback via an e-survey on their general experience of issues relating to below-ground engineering and specifically those issues related to sewers, SuDS and contaminated land, highways, water and electricity.

General issues: SuDS and utilities are raising the most concerns, followed by contaminated land and highways. Attendees have not encountered a joined-up, developer-friendly approach from regulatory and approval bodies. Water and Sewerage Companies (WaSCs), contaminated land and highways bodies fare better than Sustainable Drainage Systems (SuDS) and utilities in terms of performance. 80% of attendees want to see binding service level agreements offered by these organisations.

Sewers: 70% are aware of the forthcoming legislative changes, but almost all believe these have not been effectively communicated and there is a lack of confidence about implementing them in their businesses. With existing Section 104 approvals taking 3–6 months, there are concerns about lengthening approval times under both Section 104 and 106. 90% would prefer one body to be responsible for drainage infrastructure, performing to guaranteed standards and timescales. Over half believe that costs for works under Section 104 Agreements are around 50% more expensive than the equivalent from their own contractors. Widespread concern was expressed around the individual interpretation of standards with the transition from 10 to 342 SuDS Approval Bodies (SABs). The impact on site layouts, highways and future maintenance is expected to be significant.

SuDS and contaminated land: Over 90% did not believe that skills and experience for taking responsibility for this exists in local authorities (LAs) and SABs; most expect it to be outsourced. 80% believe WaSCs should remain responsible. Over 70% expect spoil disposal to increase with new SuDS design standards. Over 70% believe that more than a third of their sites will fall to orphaned surface sewers, with concerns about their future maintenance. SABs are not thought to have capacity and skills for SuDS maintenance. Delays and abortive costs are expected with the need for simultaneous planning and SuDS applications. The possible withdrawal of underground storage in SuDS is a significant concern, with Manchester delegates suggesting that 70% of sites rely on this (not asked in London). The call for further guidance across all issues was unanimous.

Highways: Few have encountered planners and highways working effectively together, and many have experienced inconsistent interpretation and application of different design guidance (Manual for Streets and Design Bulletin 32). Standardised highway design guidance would be welcomed, potentially a re-written Manual for Streets. Authorities are not proactive in progressing safety audit and technical approvals, Section 38 Agreements, maintenance and adoption. Over half of attendees have seen increases in the number requiring commuted sums and have not encountered the CSS guidance. Publication of the levels of adoptions by authority would be helpful and support the localism agenda. Delays in satisfying conditions and increased periods at risk will affect land supply, prices and, potentially, housing delivery.



Water and electricity: Water and electricity service providers are poorly rated. Progress on improvements through competition has been disappointing, but better for electricity than water. Few attendees feel they get sufficient cost breakdowns or value for money and want to see greater competition in the water sector. For electricity, few were aware of the Ofgem-guaranteed standards, nor had noticed changes since their introduction. Recent experiences suggest providers are rescinding quotations, seeking re-pricing and passing on charges for network upgrades.

Issues to be addressed: In open discussion after the presentation, the key issues raised were:

- Different requirements for sewage and surface infrastructure and inconsistent interpretation of different standards. Similar concerns relate to contaminated land.
- The impact of SuDS design standards on smaller sites and the possible withdrawal of underground storage. Brownfield and non-porous sites may become undevelopable.
- The complexity of the proposed changes and interaction with the numbers of WaSCs, Highway Authorities and SABs. Significant delays are anticipated, resulting from approvals and agreements necessary before commencement of works, impacting on funding and viability.
- Future maintenance of SuDS and issues affecting shared drainage may prove problematic with responsibilities expected to remain with developers. Open drainage design approaches will result in health and safety liabilities for developers.
- Highways experience suggests that SABs are likely to adopt rigorous inspection procedures to identify issues and will not be proactive in pursuing adoptions, or will seek commuted sums.
- The scale and complexity of current changes are daunting and have not been effectively communicated.

1 Introduction

1.1 Objectives

The NHBC Foundation has become aware of concerns about requirements from different organisations relating to groundworks⁽¹⁾ on new housing sites. Anecdotal evidence suggests that developers are being required to comply with inconsistent interpretations of different standards resulting in conflicting priorities which are hampering the smooth flow of development. New legislation has also been introduced in the form of the Flood and Water Management Act 2010 which has potential impacts upon development design and implementation.

The NHBC Foundation undertook this project to identify the scale and nature of issues already being encountered, to test and understand the levels of awareness of legislative changes and to test reaction to a number of proposals for mandatory build standards for adoptable sewers, currently under consideration and/or consultation by Defra. The outcomes are intended to provide evidence to help develop a more streamlined and efficient process for dealing with ground-related construction requirements and to support the consultation processes.

1.2 Approach

The research involved two four-hour workshops, held on the mornings of 23 and 25 November 2010. The first was held in Central London, the second on the outskirts of Manchester.

The companies represented included 21 large and medium-sized housebuilders (including delegates from the 10 top UK housebuilders) and their consultants. All attendees had responsibility for involvement at a senior level with technical matters on behalf of their organisation. They received a personal invitation from Lychgate, on behalf of NHBC Foundation. No charge was made for attending. Over 40 guests accepted invitations at each venue; a list of those agreeing to attend is given in the Appendix.

As typically happens, there were a number who did not show on the day. However, attendance was high at each event:

Location	Number
London	33
Manchester	30
Total	63

Typical job titles of those attending each group included:

- Managing Director/other Director
- Technical Director
- Contracts/Technical Manager
- Senior/Design Engineer
- Civil Engineer
- Consultant

There were two main speakers at each event. Their profiles are given in the next section.

- Ted Chandler gave an introduction on behalf of NHBC and led interactive research sessions after each presentation, using an e-survey system.
- Peter Coleman facilitated a discussion on each topic and a general discussion at the end of each morning session.
- The e-survey results and the graphics produced by the survey software for each event are reproduced in this report. All discussions were recorded and a summary of the main points raised are included for each topic.

(1) For the purpose of this initial work, 'groundworks' were defined as the remediation of contaminated land, road and sewer construction, provision of SuDS and of utility service infrastructure



1.3 Profiles of the speakers

- **Steve Wielebski, Development Director, Miller Homes Ltd:** Steve is a Civil Engineer, Chartered Environmentalist and Fellow of the Royal Society of Arts, Manufactures and Commerce and the Association of Building Engineers. He is an ambassador for the Chartered Institute of Building and Chairman of their Chartered Environmentalist Panel. He has authored several papers covering a range of technical and sustainability issues relating to contaminated land, geotechnics, highways, sewerage infrastructure design/construction. He has been a member of the Cabinet Office Remediation Licensing Task Force (RLTF), is involved with the Environment Agency and other government departments and is a member of BRAC (Building Regulations Advisory Committee).
- **Ray Farrow, Group Director, TDS Group:** Ray has worked in the construction industry for over 35 years mainly in the areas of engineering and infrastructure. He was Building Director and Technical Director at Westbury Homes and is now a director of six businesses providing services to the construction industry. He is a consultant to the Home Builders Federation (HBF) on highways, sewers and utility issues and is involved with Government and their respective departments, industry regulators and associated trade federations. He also acts as an advisor on utility issues to the UK Contractors Group (UKCG).
- **Ted Chandler, Consultant, NHBC Foundation:** Ted is a Chartered Builder with nearly 40 years of experience in construction, the house building industry and the new home warranty business. He was General Manager for NHBC's Inspection and Building Control Services. He is now a consultant and is Project Champion for a number of NHBC Foundation research projects. He also works with the Zero Carbon Hub on consultation events to progress the Government's zero carbon agenda.
- **Peter Coleman, Consultant with Lychgate:** Peter has had a long career in the construction industry, is a qualified architect and chairman of an Affordable Housing Provider. He is an experienced chairman and discussion facilitator.

2 Summary

2.1 General background

- The two events were attended by 63 housing sector professionals who have responsibility for, or involvement with, ground-related technical matters at a senior level. 60% were housebuilders, around one quarter were consultants, the remainder being predominantly contractors.
- Foremost concerns relating to current developments were around SuDS and utilities, with contaminated land and highways issues also proving significant. Over half in London and three-quarters in Manchester believed that the current high degree of regulation is a benefit.
- Only one-third felt that the people they deal with on ground-related matters are developer-friendly and they have found little evidence of a joined up approach being pursued. Existing performance by SuDS and utilities organisations was rated lowest, but water and sewerage companies (WaSCs), contaminated land and highways bodies all fared little better.
- There was a balance in both sessions between those wanting less regulation on below-ground issues, and those who felt it was about right. However, about 80% would like to see mutually agreed, binding service levels from all the organisations responsible for ground-related matters.

2.2 Sewers

- Around 70% were aware of the forthcoming changes in legislation, but almost all believe these have not been communicated effectively. 90% are not confident that they have had the guidance necessary to be able to implement the changes and therefore inform their respective businesses.
- The highest levels of existing concern related to challenges in securing Section 104 technical approvals and the inconsistent application of Sewers for Adoption 6th Edition, particularly in relation to storage/attenuation requirements. Inconsistencies with Section 106 rights to connect, supervision fees and inspection regimes have also been encountered.
- Over 90% of attendees are currently encountering timescales of 3–6 months for obtaining Section 104 technical approvals.
- Few could identify WaSCs whose procedures could be commended; getting technical approvals and adoptions agreed are the biggest issues.
- Going forward, over 90% would prefer to have one body responsible for the drainage infrastructure. Also a significant number of delegates reported timescales in excess of 6 months to complete Section 104 Agreements after technical approval.
- Around 90% feel it would be advantageous to have statutorily agreed timescales in place with guaranteed standards linked to penalties for failure. However, many have encountered delaying tactics from existing bodies governed by performance standards.
- In London, almost half believed that the costs of works under Section 104 Agreements were currently over 50% more than those charged by their own contractors. In Manchester, two-thirds felt that charges were between one-quarter and one half more expensive (potentially resulting in increases in bonding provision and inflated WaSC supervision fees).
- In discussion, concerns were raised about the proposed new design approaches and the impact on site layouts and highways. Many could foresee opportunities for authorities to charge significant commuted sums for future maintenance of highway drainage.
- There were general concerns about the separation of responsibility for sewers and SuDS, particularly the change from 10 WaSCs to around 342 SABs with the expectation that many will have individual interpretations of standards.
- There has been a lack of briefings and information generally on the changes from the WaSCs and the LAs preparing to take over SuDS responsibilities.



2.3 SuDS and contaminated land

- Over half in London and one-third in Manchester were not aware of the SuDS train management process and the future restrictions. All of those who were aware said they had not had enough information about the implementation.
- In relation to SuDS, planning and layout implications and future adoption are the main concerns and over 90% believe that the relevant skills and experience do not exist in LA/SABs to effectively take responsibility. There is an expectation that much of this responsibility will be outsourced by many authorities. There was recognition that the necessary skills and experience are also lacking within developers' own organisations. Around 80% believe that sewerage authorities should remain responsible for surface water infrastructure.
- In relation to contaminated land, it was considered that site conditions should define which issue(s) take priority, e.g. for a badly contaminated site, cost-effective, sustainable remediation should take precedence over surface water management. Around 70% in London and almost all in Manchester believed that provision of SuDS will increase the disposal of spoil to licensed landfill. (Increased disposal to licensed landfill is contrary to existing government policy.)
- In London, 80% of attendees believed that upwards of one-third or more of their sites would fall to orphaned surface water sewers. In Manchester over 70% believed this would be the case. There are concerns about the future responsibility and maintenance of these.
- In terms of SuDS, there was an almost unanimous call for further guidance to assist with the implementation of the changes from April 2012.
- There are concerns that the need to seek SuDS approvals at the same time as planning applications will lead to delays with additional up-front and abortive costs. Inconsistencies in interpretation of standards are already a problem and further guidance would be welcomed; the Environment Agency and/or DEFRA are the most appropriate bodies to publish this. Issues are expected to arise when interpreting the new standards in relation to the Code for Sustainable Homes.
- Questions were raised about the resources available for SABs to maintain SuDS infrastructure in the future. The expectation is that a way will be found to pass costs back to the developer.
- The potential withdrawal of underground surface water storage as an acceptable solution in SuDS caused considerable concern. The impact on land-take and difficulties with clay and non-porous sub-soils will be significant. In Manchester estimates suggest 70% of sites are relying on underground storage.

2.4 Highways

- The majority at both locations find planning and highway departments are not working effectively together; few had encountered the development team approach being taken.
- Almost all believe there should be a model highway design guide, but only a third have encountered Highway Authorities adopting the new design criteria contained in the Manual for Streets instead of Design Bulletin 32. Approaching half in London, and a third in Manchester want to see Manual for Streets become statutory guidance.
- Over two-thirds believe that highways authorities are not proactive in progressing adoptions and have issues with obtaining technical approvals, completing Section 38 agreements and moving sites into maintenance. They believe that a model Section 38 would be advantageous. Over half have seen an increase in the number of highways authorities requiring commuted sums in the last three years, but have not had the CSS guidance quoted at them as an agreed document.
- It was suggested that LAs should publish levels of adoptions on an annual basis. This would fit well with the big society and localism agendas and identify under-performance.
- In the discussion, the main issue raised was around different interpretations and approaches to highways design being taken by planners and highways officers. This could result in difficult negotiations with approvals and adoptions being delayed or refused. Safety audit approvals is an area where significant delays are being encountered.
- Inconsistent interpretations of the Manual for Streets by different local authorities and different officers within individual authorities are a problem. Standardising visibility and turning requirements

and making them statutory would help. If the Manual for Streets is to be made statutory, then it may need to be re-written.

- Developers are encountering lengthy periods of site works at risk because of delays in satisfying conditions attached to planning, highways and drainage consents. These delays and associated costs are not being reflected in land prices, which may impact on the overall land supply and housing delivery.

2.5 Water and electricity

- Water and electricity companies and the service they provide are poorly rated, with improvements required in performance, service levels and communications in the main. The progress of measures to improve competition in both sectors is poor, but electricity suppliers are proving more progressive than the water sector. All believe that, if guaranteed standards, similar to those issued by Ofgem, were applied to the water sector, it would be beneficial.
- Around three-quarters do not feel they get value for money around water main requisitioning and most want a breakdown of these costs. Almost all want to see greater competition in the sector.
- Around three-quarters are not aware of the Ofgem-guaranteed standards and almost two-thirds have not seen any change in dealings with Distribution Network Operators (DNOs) since October 2010 when they were introduced. Improvements are most wanted in the time taken for underground diversions and disconnections on development sites and costs associated with them.
- Around two-thirds of delegates have not had dealings with Ofgem or Ofwat in the past five years and of those that did, there are poor levels of satisfaction from dealings with both industry regulators.
- The discussion probed and confirmed low levels of awareness of the guaranteed standards. None could identify changes attributed to the introduction of the standards, but this is probably due to the standards only coming into effect in October 2010.
- Several spoke of recent experiences where electricity providers had defined sites as mothballed and had rescinded former quotations and sought re-pricing. There were also concerns that providers were passing on charges for network upgrades not necessarily directly attributable to developments.

2.6 Issues to be addressed

In open discussion at the end of the workshops, the key issues raised were as follows:

- Challenges meeting the differing requirements for sewerage and drainage infrastructure provision arising from changes in legislation, Part H of the Building Regulations and the Code for Sustainable Homes. Consistency in design standards and interpretation is required.
- The land take for SuDS on smaller sites is expected to impact on viability. If underground surface water storage is not permitted, some locations and existing sites will be undevelopable. Brownfield sites, in particular, were thought likely to become more difficult to develop economically. Senior executives within developers are not aware of or prepared for this potential impact and cost.
- A lack of consistent guidance issued by bodies such as Defra, the Environment Agency and Local Authorities on contaminated land issues is a problem. Agreed standardised guidance would be welcomed.
- Significant concern surrounds the lack of ability to start on site ahead of obtaining Section 104 agreements. This is expected to impact on up-front development costs and site viability. The uncertain timescales may also cause difficulties in relation to HCA-funded affordable housing projects.
- Having three agreements with three bodies, Highway Authorities, WaSC and SAB, is considered complex and likely to be restrictive as well as increasing costs. The late consultation/introduction of Mandatory Build Standards is likely to compound difficulties in obtaining and implementing agreements.
- The future maintenance of SuDS and issues relating to shared drainage systems are expected to become significant issues. The multiple bodies involved and the potential lack of skills and



resources within them are expected to result in a lack of performance. Responsibilities and costs are expected to be returned to, or remain with developers.

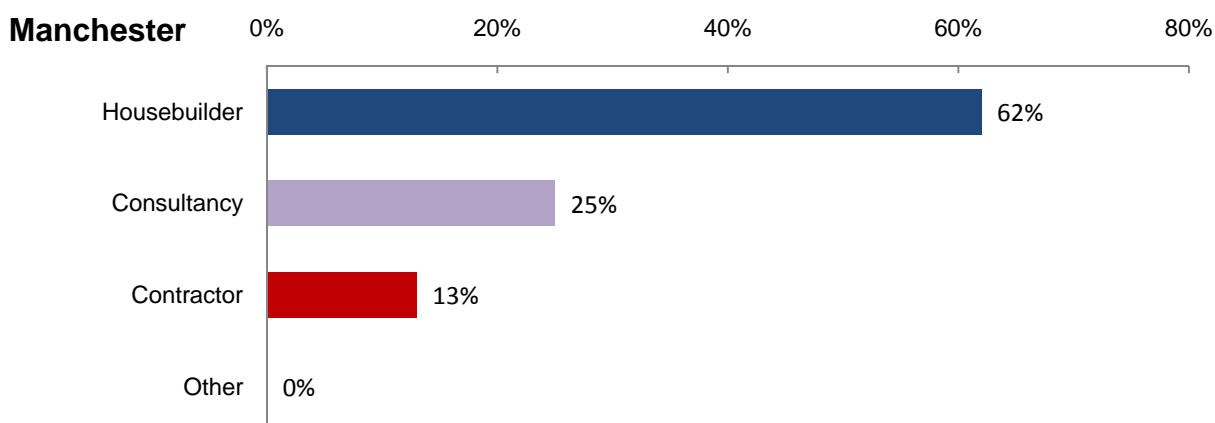
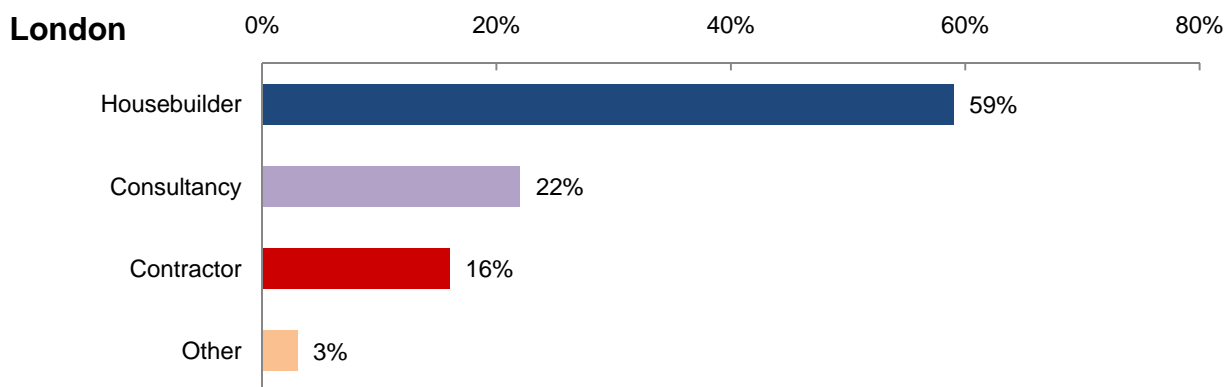
- There are concerns that the proposed open drainage approaches in SuDS will result in additional health and safety liabilities for developers.
- There is a widespread expectation that SABs will adopt rigorous inspection regimes and that any variations will become barriers to adoption. Experience with highways adoption suggests that local authorities will be reluctant to proactively pursue SuDS adoptions, or will seek significant commuted sums for doing so.
- While these technical representatives recognise they work in a changing environment, the scale and complexity of the current changes is daunting.
- The availability of adequate levels of bonding for all aspects of drainage infrastructure was a key concern raised in discussion.

3 The attendees and their issues

3.1 Profile of the attendees

After an introduction to the e-Survey system in use at each event, attendees were asked to indicate the type of organisation they represented:

What most closely describes what your organisation does?



A full list of companies agreeing to attend the events is included in the Appendix.

All graphics reproduced in the report are derived from those generated by the e-survey software and were shown to attendees instantly, after each question.

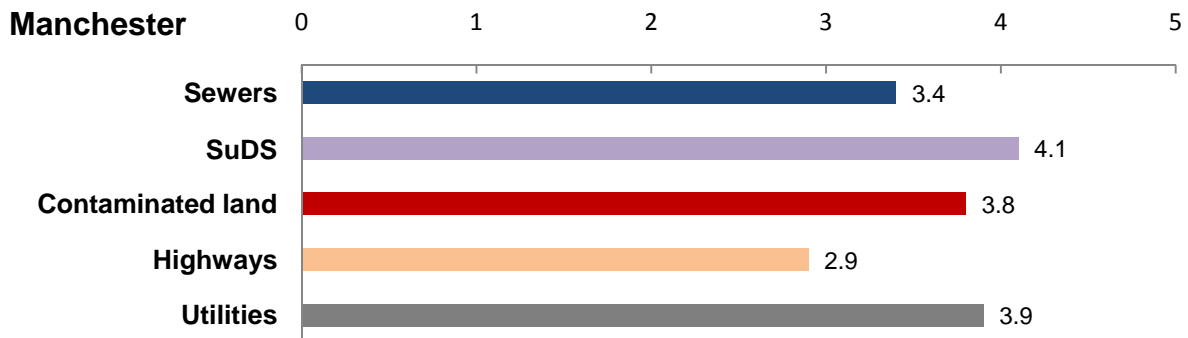
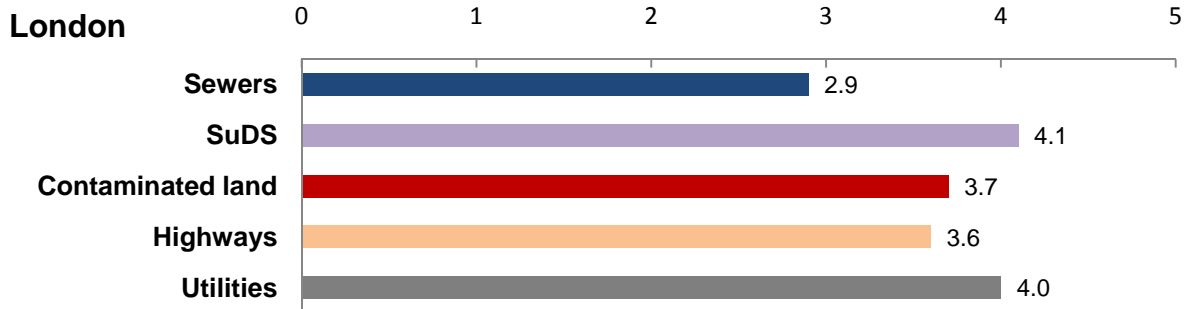


3.2 Concerns about ground-related issues

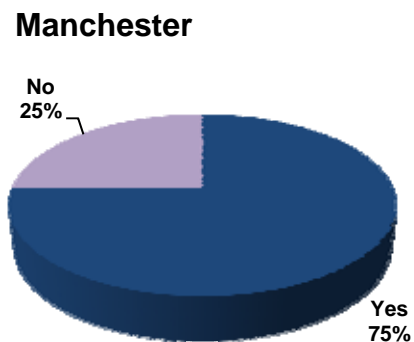
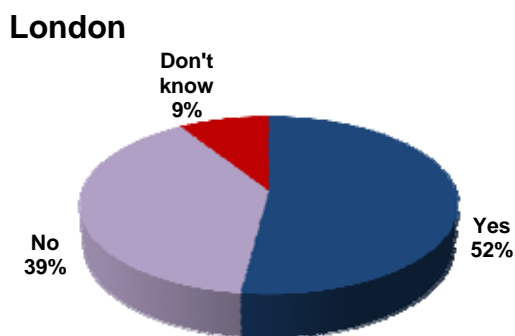
They were then asked a number of questions relating to their experience of encountering ground-related issues. The following graphs give the answers for both locations.

In relation to issues that have to be addressed when developing a site, please rate the following on the degree of complexity involved.

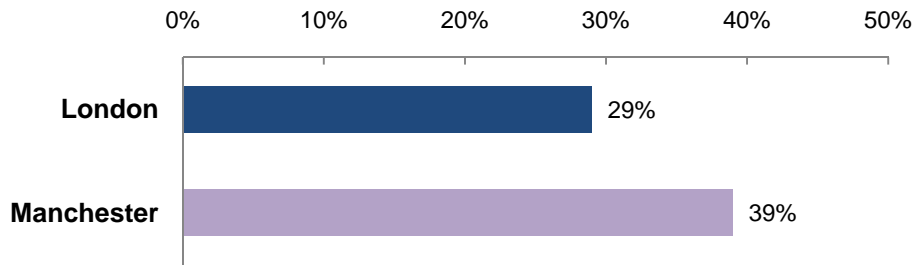
(0 = No problems to 5 = Serious issues)



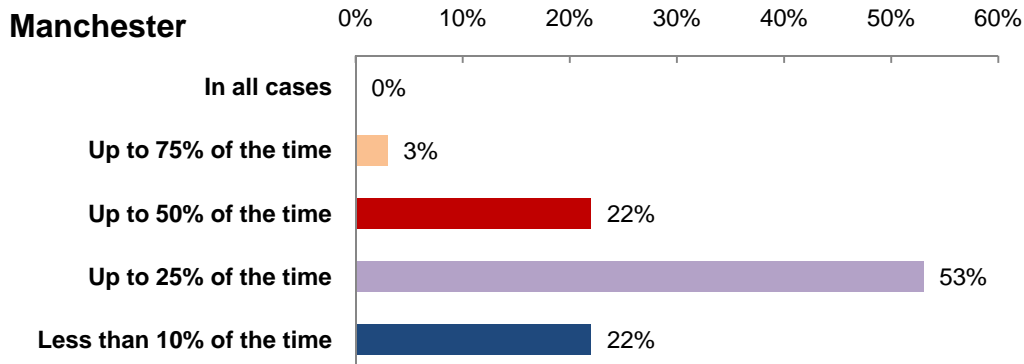
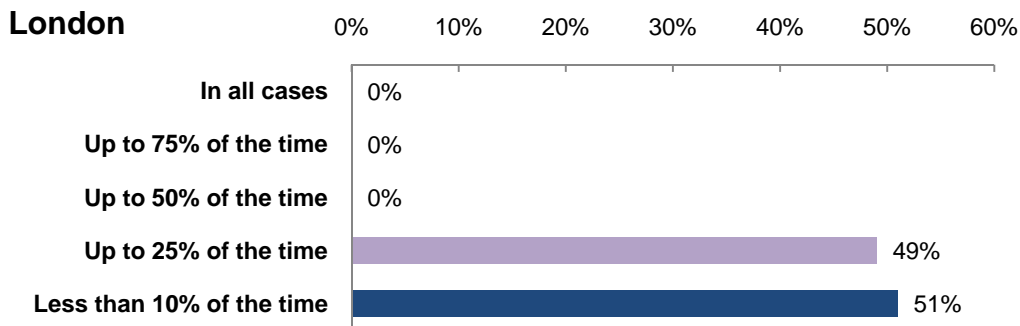
Most below-ground issues are subject to a high degree of regulation. Do you think this is a benefit?



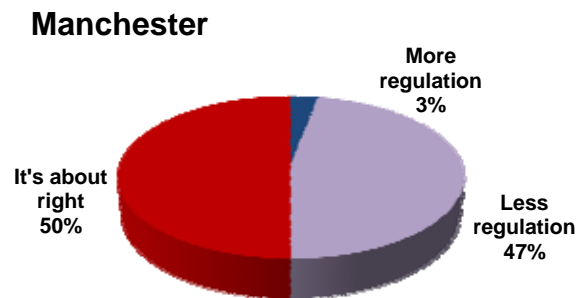
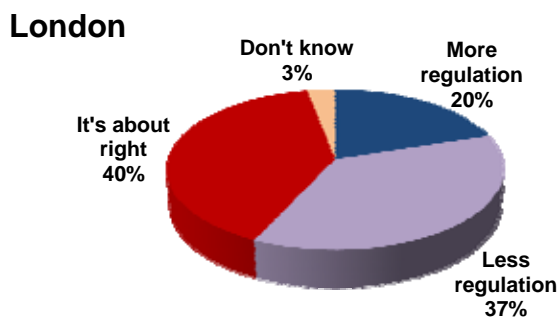
What percentage of people you deal with in these area are what you would term “development friendly” and understand the process?



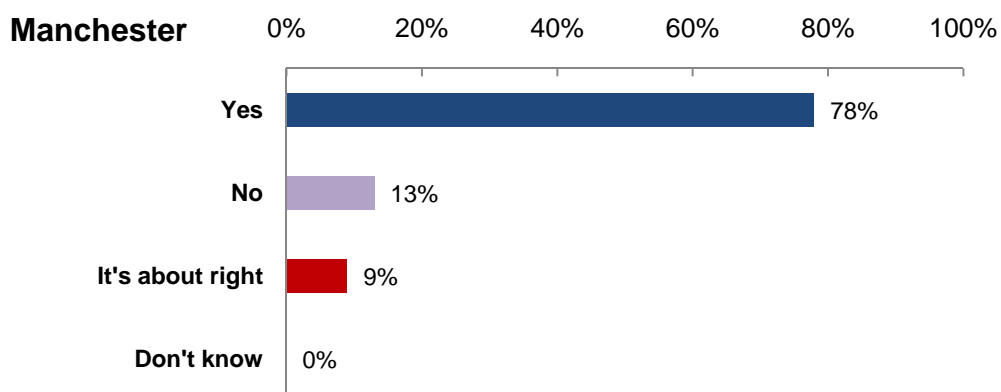
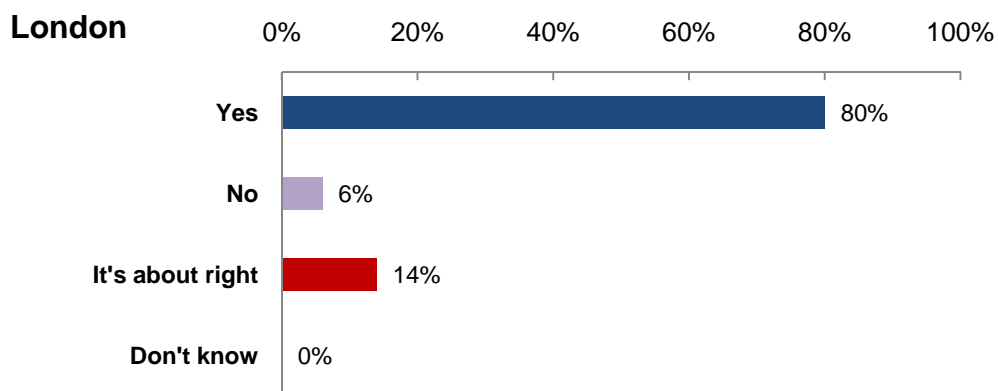
How evident is a “joined up” approach in the implementation of the requirements for the different areas with an understanding of each others’ issues?



If you had the choice, would you prefer more or less regulation with regard to below-ground issues?



Would you like more binding and mutually agreed service levels with the organisations involved in below-ground issues?



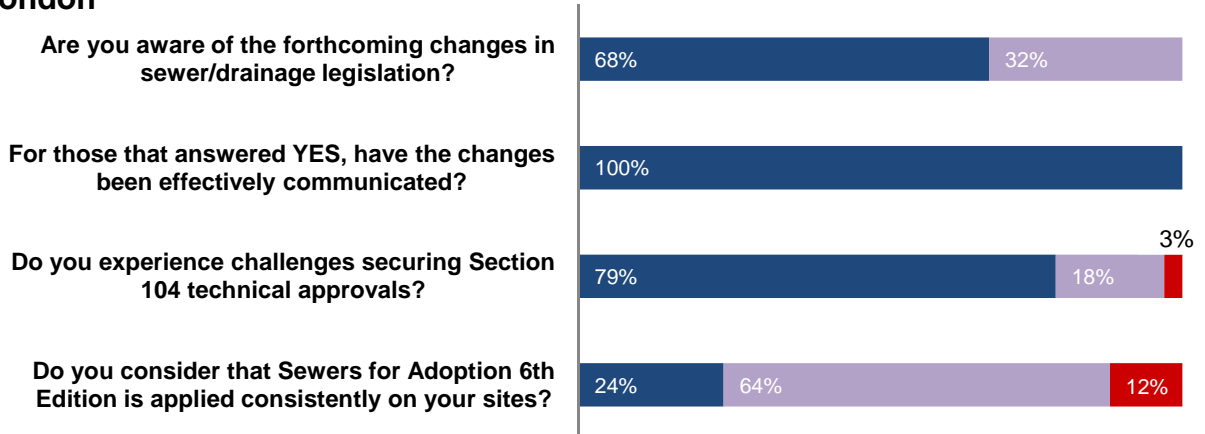
4 Sewers

A presentation was given by Steve Wielebski. On completion, attendees were asked to respond to a number of related questions, using the e-survey system. Peter Coleman, event chairman, then facilitated a discussion.

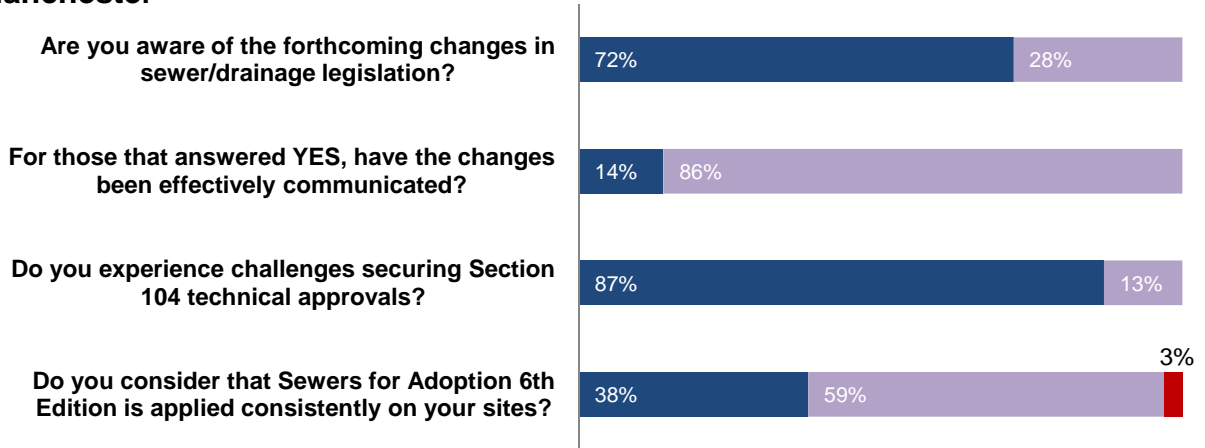
4.1 E-survey results – Sewers

Please answer the following questions relating to sewers and their inclusion on site:

London



Manchester

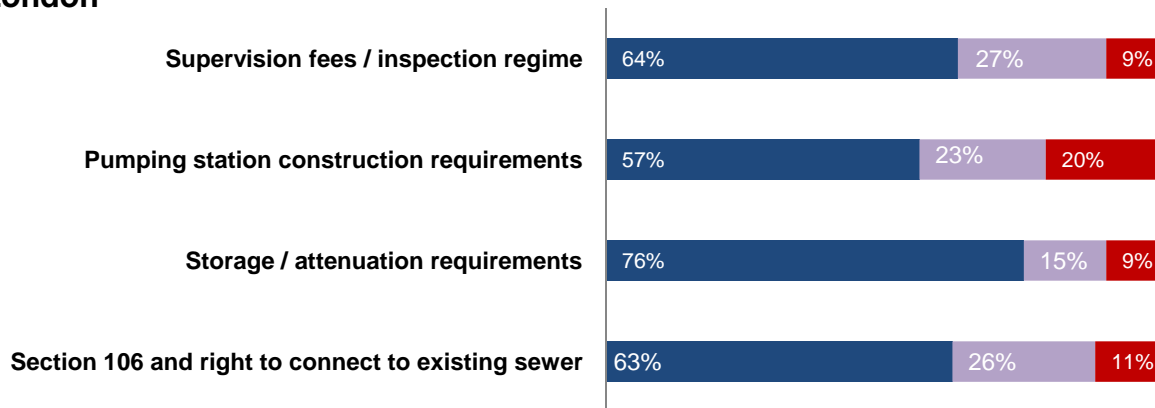


■ Yes ■ No ■ Don't know

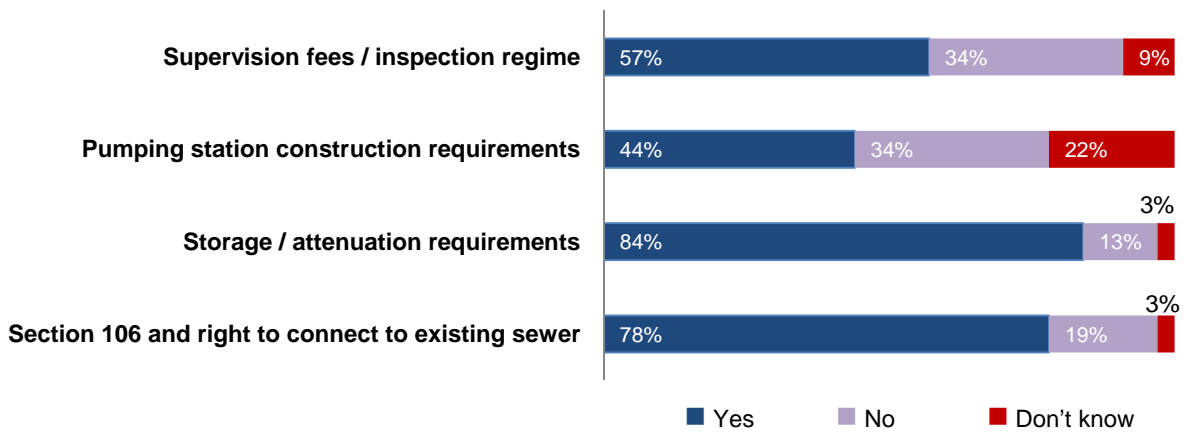


If you encountered inconsistencies, in which areas did they occur?

London

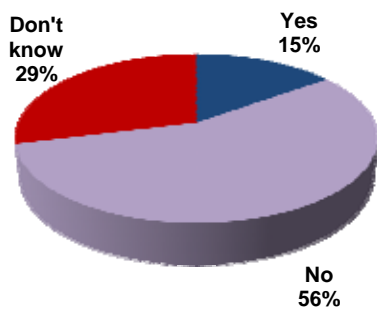


Manchester

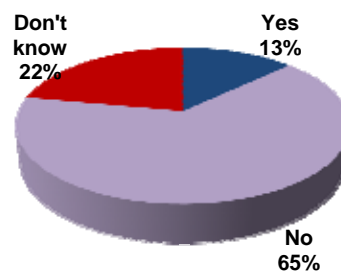


There are 10 WASCs in England and Wales. Would you be able to recommend at least one whose procedures could be used as an exemplar?

London

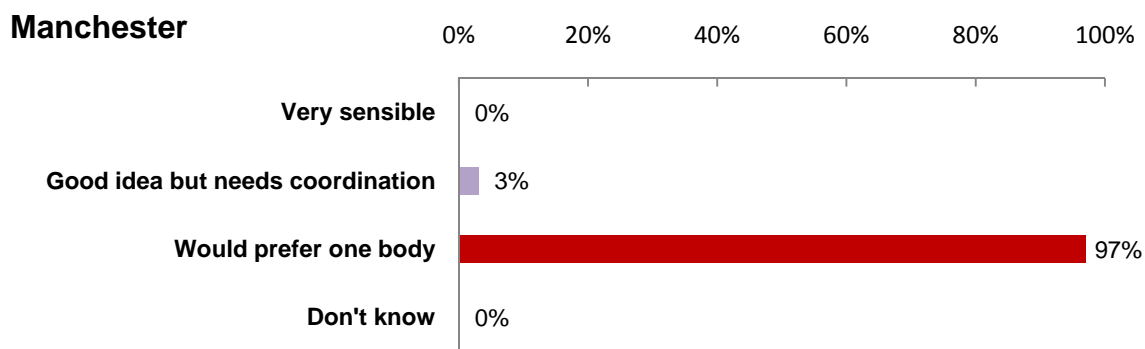
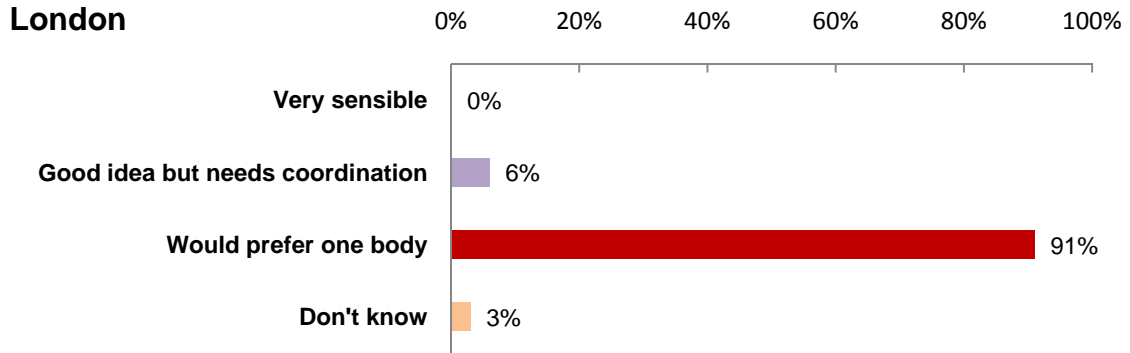


Manchester

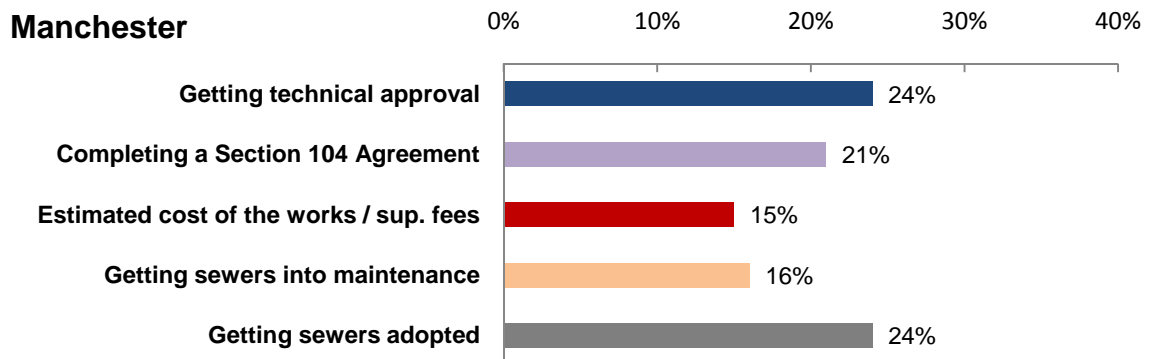
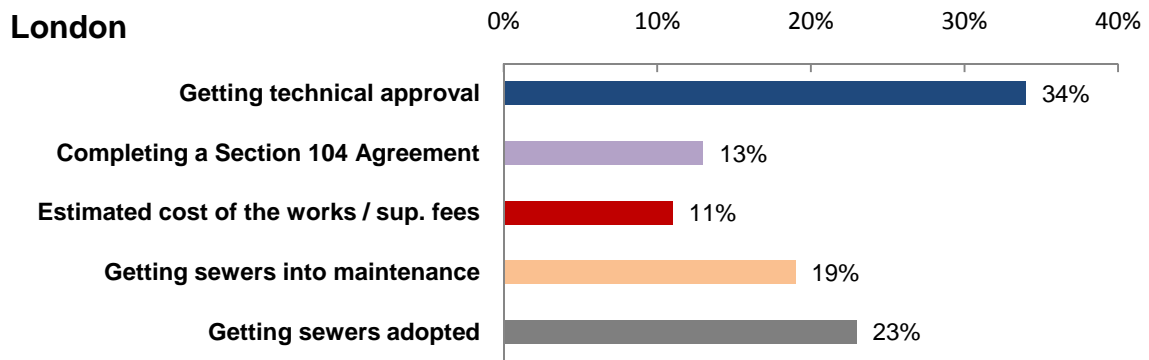


Going forward, how sensible / practical do you consider it is to have three different bodies involved in the design of drainage infrastructure?

WASC for foul water; SAB for surface water; Highway Authority for highway drainage.

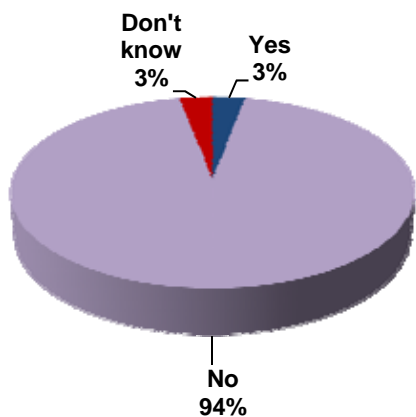


What are the key issues that involve you the most when dealing with Sewerage Authorities?

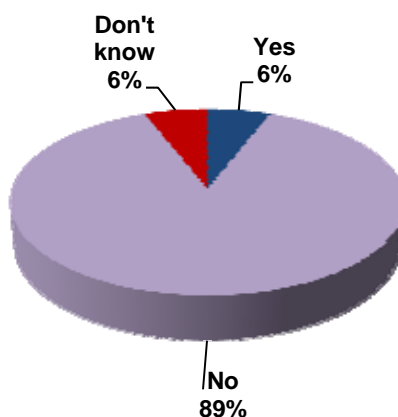


With the prospect of significant changes in drainage / sewerage infrastructure from April 2011, do you feel confident with the guidance available to you to implement the changes into your business?

London

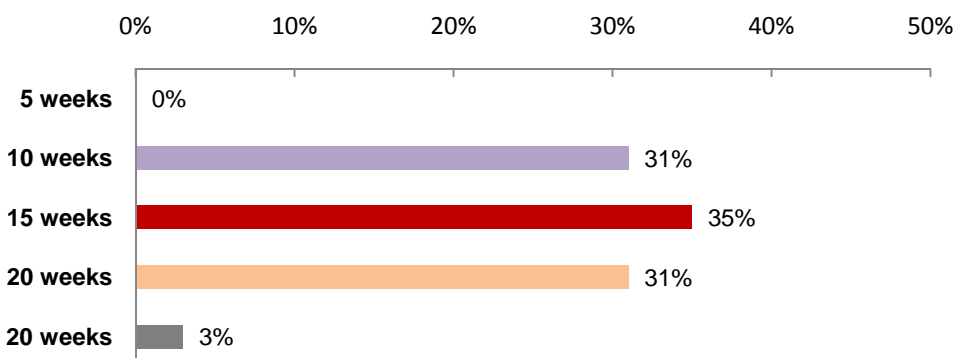


Manchester

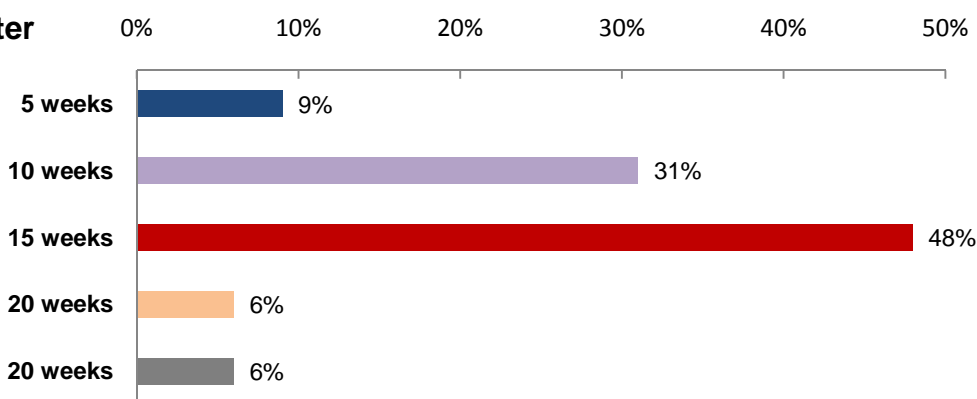


For Section 104 Agreements how long on average would you say it takes to get technical approval after making an application to the WASC?

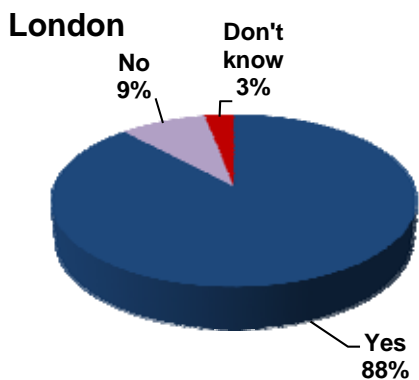
London



Manchester



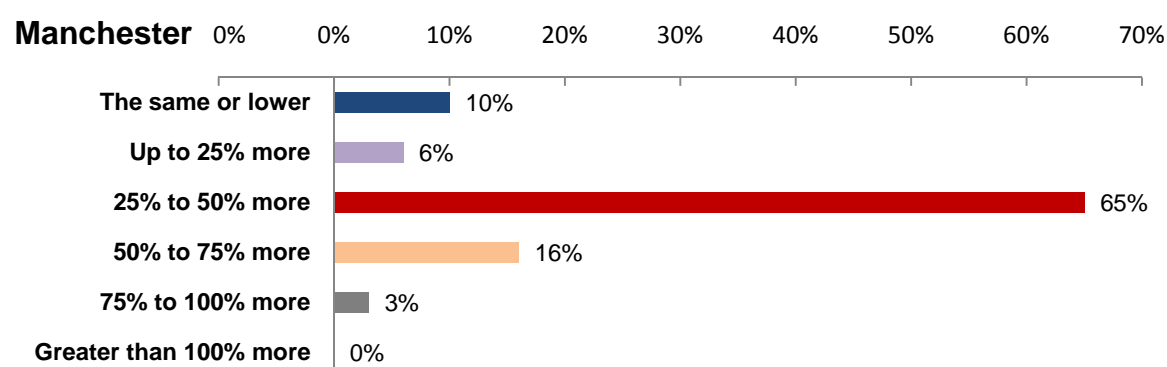
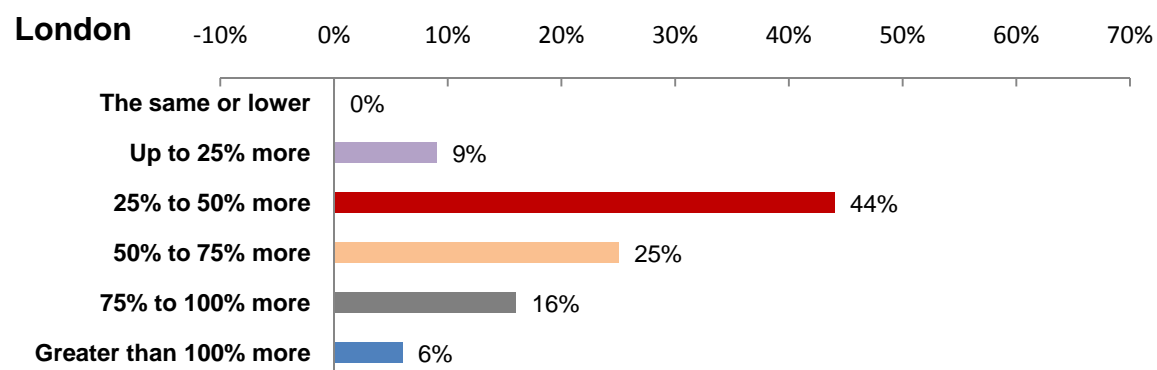
Is there a major advantage in getting statutory agreed time scales for the key stages of getting a Section 104 Agreement in place?



Do you see the need for Guaranteed Standards for the above where penalties are paid to Developers by WASCs if they fail to meet a level of service?



In relation to the cost of the works under a Section 104 Agreement how do they compare with the prices you are charged by your Contractor?



4.2 Facilitated discussion – Sewers

London

- Concerns were expressed about the amount of below-ground drainage infrastructure that would need to be accommodated to the front of a dwelling, accompanied by the necessity for an increase in under-slab drainage. In addition, conflict accompanied by extra cost when having to deal with home zones was a particular area of concern. Further, sites are rarely flat and in some instances will require pumping installations. The locations for these are a concern, and so are the adoption arrangements under the new regime. Limiting drainage systems to accessible areas only was thought to be unrealistic.
- Interpretation of the proposed standards relating to blocks of flats was identified as a potential problem which several questioned. The challenges of defining curtilage were explained but concerns remained.
- The potential for highways authorities to charge developers significant commuted sums for the future maintenance of storm drainage systems, incorporating infiltration drainage, was identified as a concern.
- One person questioned the possibility of having defined performance standards for approving bodies. His experience suggested however, that, where such bodies have to meet agreed performance levels, they have devices for deferring decision-making or avoiding breaching published terms. Measures such as requiring additional information at the last minute are regarded as deliberate delaying tactics. Others in the workshop confirmed experience of such practices.
- During the e-survey, a small number indicated that they were able to identify examples of good procedures adopted by some of the 10 WaSCs. Those identified were Wessex Water, Severn Trent, Anglian, Southern and Thames Water. Thames was described as being particularly consistent.

Several suggested that the service levels encountered were often related to having an established relationship with a particular member of staff. Three people strongly disagreed with the positive experience of service from Southern Water.

- One person suggested there might be a need for a hierarchy of the various systems to be established. For example, surface water drainage might take precedence over the others because foul water can be dealt with in many more differing ways.
- The question of existing combined sewers was raised. Using these as a last resort was explained and a number expressed concerns about the potential restrictions this would impose.

Manchester

- The first question sought confirmation that the separation of surface water management and foul sewage responsibilities will definitely happen. When assured that this was intended to be the case, there was concern, particularly related to the ability to meet the proposed SuDS provisions on smaller sites, in particular those with non-porous ground conditions.
- *“The problem as I see it is that authorities, particularly the smaller authorities, aren’t manned up to deal with it. They don’t have the skill base there. You struggle, to be honest with you, through the planning process. It seems strange that you’ve got water authorities, with teams built to deal with a larger area, with the skill base to deal with that. That’s effectively going to get fragmented and I don’t understand how that skill base is going to get spread throughout all the authorities.”*
- The proposition that SuDS approval will move from 10 WASCs across the country to 342 SABs, possibly with individual standards, was outlined again in response to a question. This prompted concerns, particularly around reaching agreements with all these parties. The prospect of three agreements, two Section 104s for foul and surface water and a Section 38 for highways was generally considered daunting.
- A show of hands suggested that only one respondent was aware of a local authority which was preparing resources in anticipation of accepting responsibility as an SAB.
- Questions were asked about the role of Ofwat and any proposed changes to their mandate. There were concerns that Ofwat may not have a role in monitoring performance around the approval and delivery of services affecting SuDS.
- The definition of curtilage in relation to the proposed changes was discussed. Attendees could foresee difficulties particularly in relation to developments of flats.
- Another scenario causing concern surrounded the prospect of negotiations, already underway with WASCs by March 2011, being continued by SABs from April 2011, assuming these are in place and their willingness to continue existing discussions, honour agreed principles and move to complete Section 104 agreements during the transition period.
- Of the three or four attendees who suggested they could identify examples of good service provision from existing providers, the main organisation identified was Yorkshire Water, who were considered to be developer-friendly. Others suggested they had encountered the opposite service from Yorkshire Water. It was generally agreed that the ability to have good working relationships and accessibility to individual staff was a key to obtaining good service. Another identified Welsh Water, but a significant number had less positive experiences with this organisation.
- Severn Trent was identified as a poor service provider by a number in the room.
- Attendees were probed about the perceived lack of communications around the provisions of the Flood and Water Management Act 2010. They expected utility companies to have been providing briefings and information on the likely impact. None had seen any information emanating from local authorities or WaSCs around these new measures.



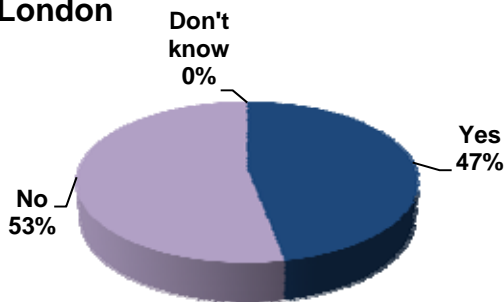
5 SuDS and contaminated land

A presentation was given by Steve Wielebski. On completion, attendees were asked to respond to a number of related questions, using the e-survey system followed by a facilitated a discussion

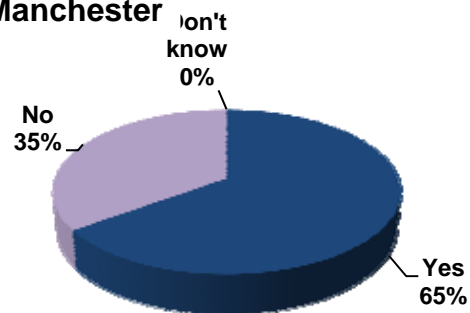
5.1 E-survey results – SuDS and contaminated land

Are you aware of the SuDS Train Management process and future restrictions on SW disposal to public sewers?

London

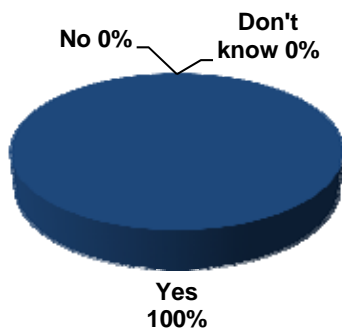


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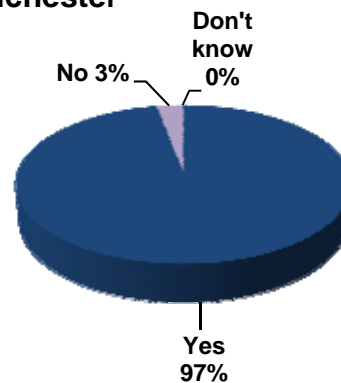


If you answered 'YES', do you feel that you have received sufficient information about implementation of these changes?

London



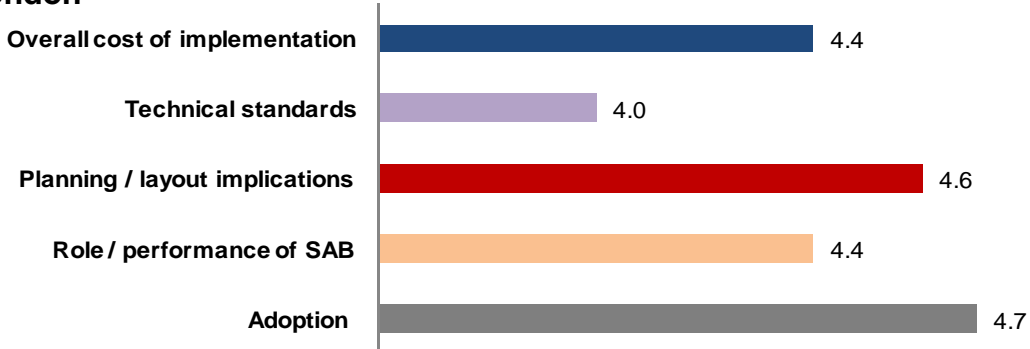
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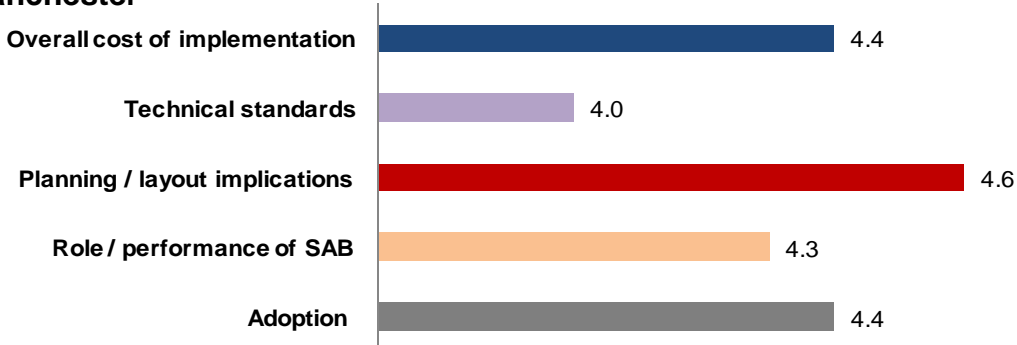
Please rank these issues as to their importance to you when implementing SuDS.

(1 = Low importance to 5 = Very important)

London

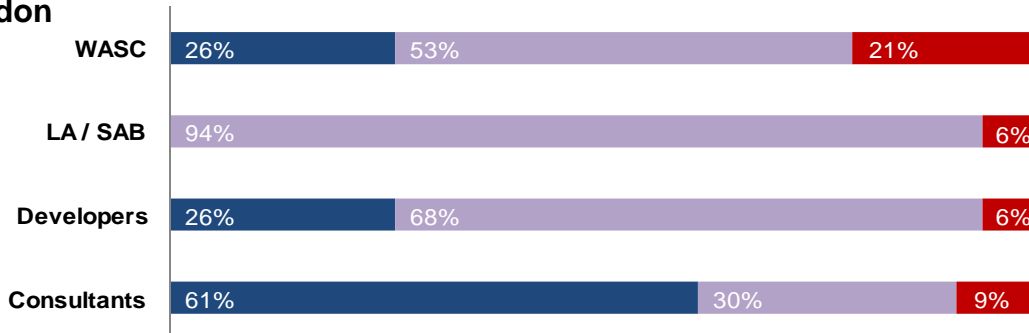


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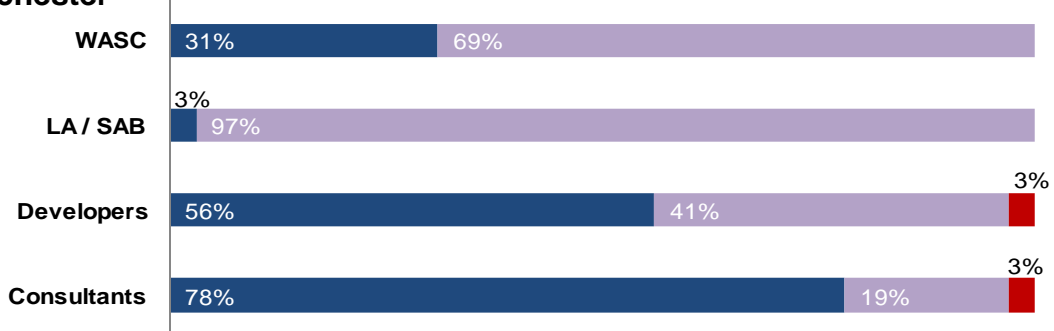


Effective delivery of SuDS is assisted with a good understanding of hydrology, hydraulics, geotechnics, geochemistry, environmental and civil law. Do you believe that they exist at present in the following bodies?

London



Manchester

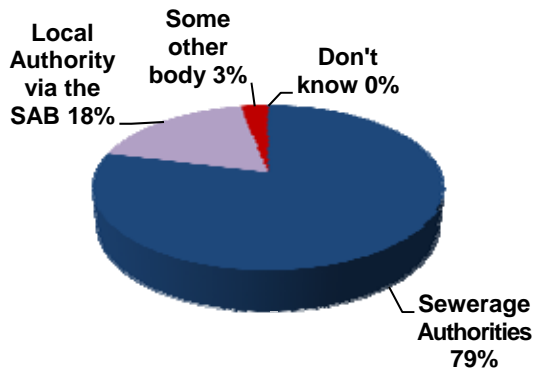


■ Yes ■ No ■ Don't know

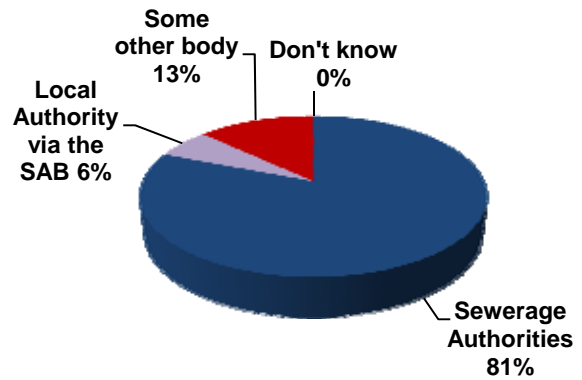


Who would like to see responsible for adoptable surface water infrastructure?

London

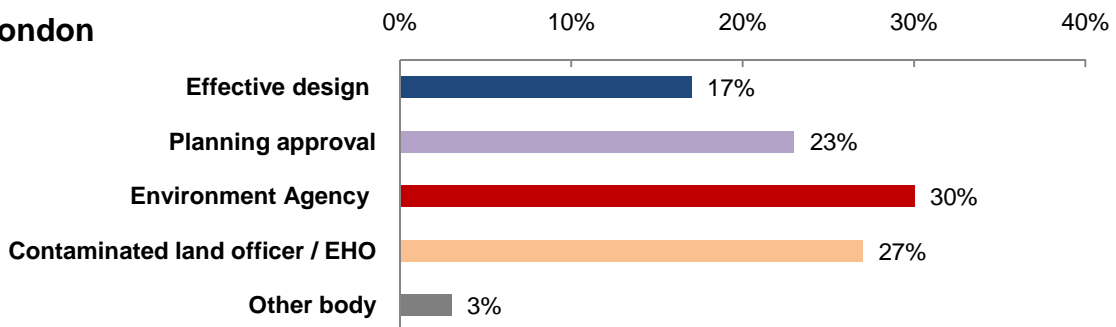


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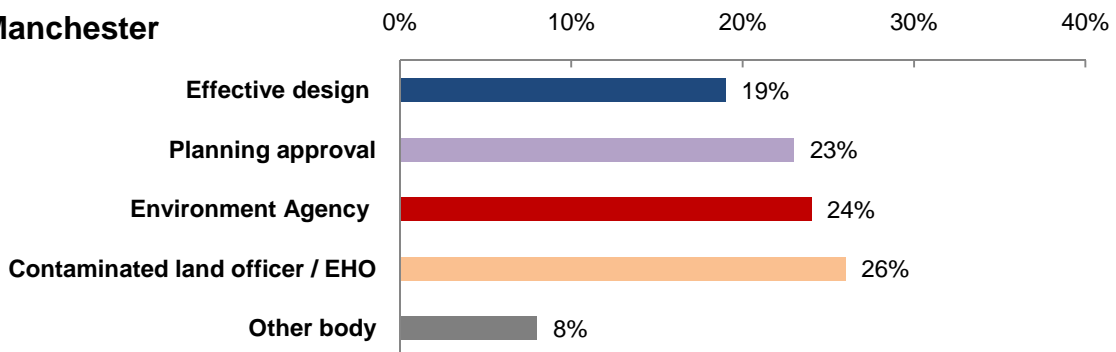


What are the main areas of concern that you have when progressing towards approval for a remediation strategy?

London

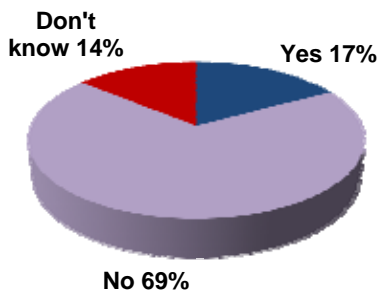


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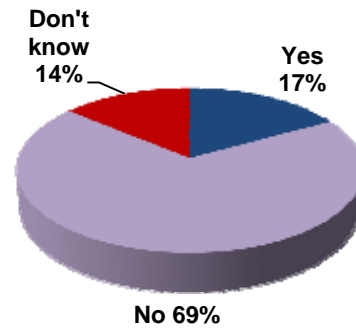


We are looking for exemplars of the process for dealing with contaminated land. Do you have any examples where the design, approval and verification processes would qualify?

London

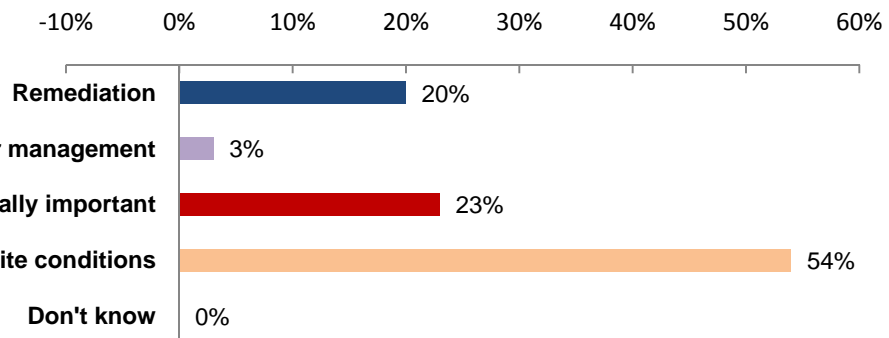


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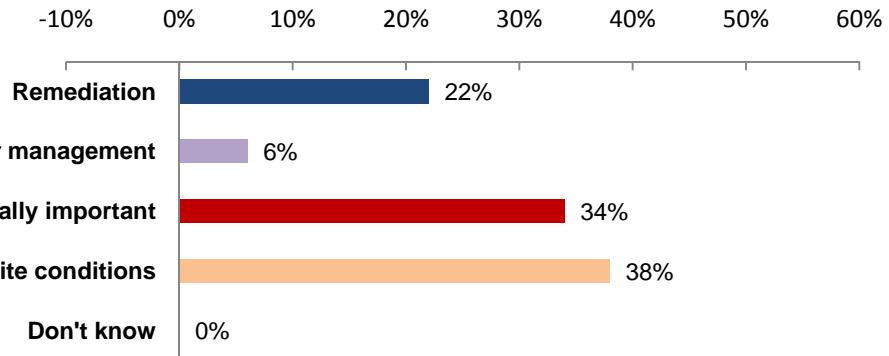


When dealing with contaminated land issues, what do you consider should take priority?

London

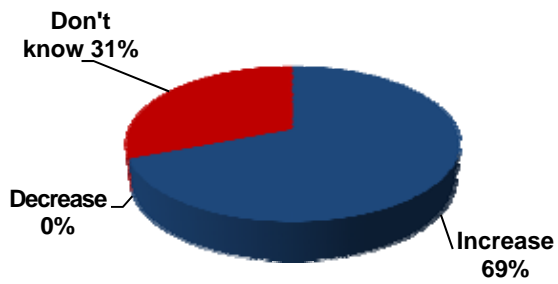


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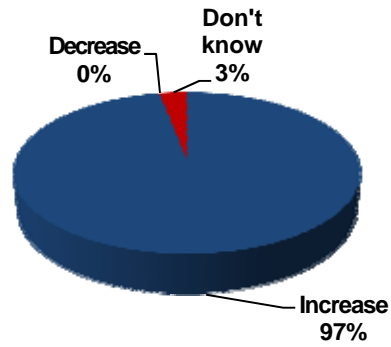


Do you think that the provision of SuDS will result in an increase or decrease in your dependency on spoil disposal to licensed landfill?

London

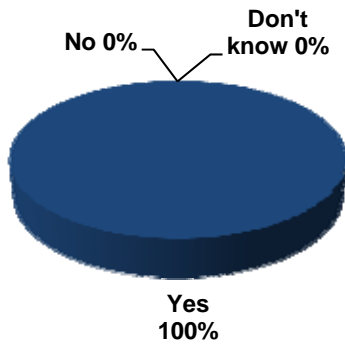


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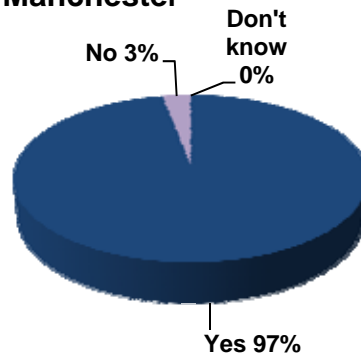


Would you like more guidance to assist you with the implementation of the changes in design and construction of surface water drainage, from April 2012?

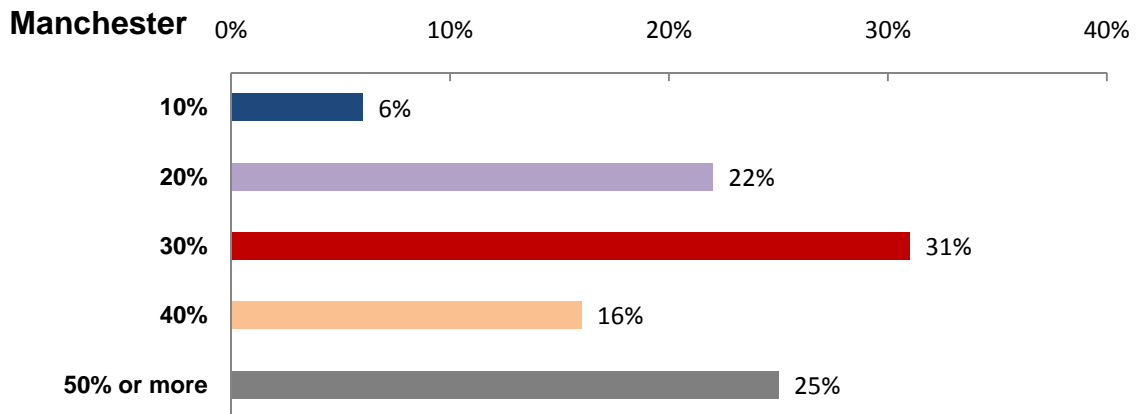
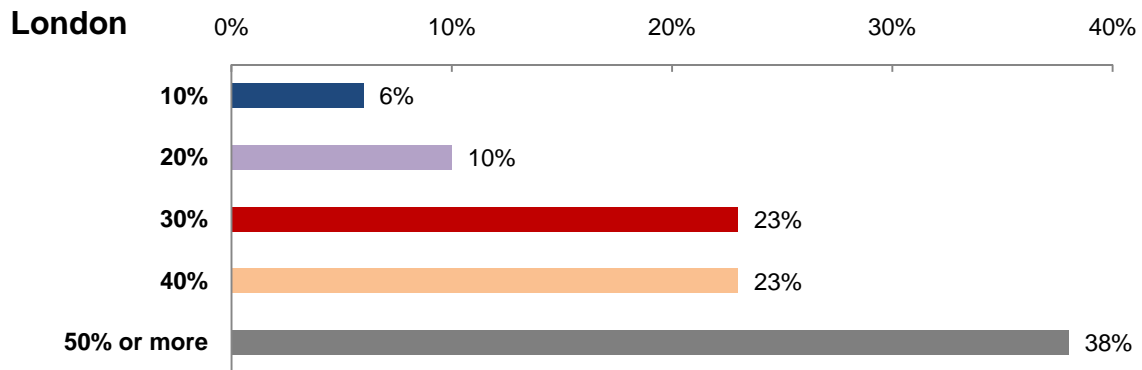
London



Manchester

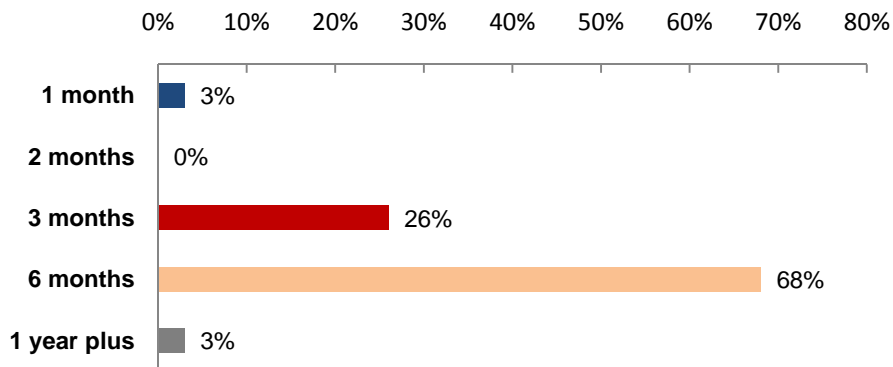


What percentage of your sites may fall to orphaned surface water sewers?



What is the time taken from Technical Approval under Section 104 to completing an agreement?

Question only asked in Manchester



5.2 Facilitated discussion – SuDS and contaminated land

London

- There was a degree of awareness that SuDS applications and approvals will need to be made at the same time as making a planning application. When informed that this will require a detailed SuDS design submission, several immediately recognised that this may lead to significant additional costs in the preparation of submissions, with potential abortive costs in the event that permissions were not forthcoming.
- The main types of guidance being sought in relation to the design of SuDS is around the interpretation of standards and regulations. Maintenance is also a significant concern.
- There are also concerns about the consistency of interpretation by different authorities around the country. While this can already be challenging with the WaSCs, it is anticipated to become even more of a difficulty with the SABs. Guidance would be welcomed and it was suggested that the Environment Agency was the body most appropriate to issue this.
- *“That’s one of the biggest problems with this idea of separating the provision of drainage into three different issues. Each form of drainage has its own challenges and its own guidance but when you then separate that into three different bodies interpreting that guidance and you get asked by the sewage undertakers to move the foul sewer, and suddenly that’s now clashing with the storm sewer. You go back to the advisory body that’s taken on the storm side of it, and they won’t move it. You will at some point end up caught between a rock and a hard place.” “That’s going to be your major problem, people looking at it independently, at things that are all directly impacting on each other.”*
- The responsibility for sewers which discharge to an existing water course was discussed. There were concerns about the future responsibility and maintenance for these orphaned sewers.
- Concerns were expressed about ensuring that the interpretations of the new standards was captured and correctly interpreted within the Code for Sustainable Homes.
- Another question was raised around the capability of the new SABs having sufficient powers, resources and funding to adopt existing systems. Having been assured that these resources would be available and SABs would not be able to avoid adoption, the concerns shifted to the fees that might become chargeable to developers to recover costs.
- *“These are not like a pipe in the ground [SuDS] they are a living asset, and they are part of public open space. Is the SuDS adopting body going to come in and cut the reeds, remove the invasive species, dredge them and remove the leaf litter? If that isn’t done, these things won’t operate or they certainly won’t function properly. Who’s going to fund all of that?”* Comments suggested that they anticipate a way will be found to recover costs for this maintenance, from the developer.
- Some in the workshop recognised the potential for issues arising when needing to get access to, or pass increased volumes of water across, third party land. Unless the appropriate powers are included within the act, this will prove a significant issue.
- Discussion turned to the removal of material from sites resulting from the construction of SuDS features. Several confirmed their expectation that there will be an increase in the volumes of material removed from sites. This would be a significant issue, with considerable associated costs, especially when the land was contaminated.
- One person shared recent experience suggesting that the Environment Agency are now taking an increasing back seat in relation to the treatment of contaminated land, where there is no direct impact on a watercourse.
- A further question related to plans being put in place by county councils, unitary authorities etc to resource the SABs in preparation for the new arrangements. Concerns were expressed that authorities might choose outsourcing as a solution to this new responsibility. Existing skills in Building Regulations and highways departments were not thought to be appropriate, nor adaptable to those required for the SABs.
- When asked what other bodies were raising issues related to development on contaminated land, one suggested he had experienced difficulties with funders in this area.

- One suggested there was a clear need for a regulator for the performance of SABs and questioned who that should be.
- As occurred when discussing sewers, a number of participants raised the issue of performance of SABs during the approvals process, particularly in terms of meeting defined timescales. There were several further illustrations of the devices used currently to pass responsibility for delays back to the applicant, and several expected that this new process was likely to experience similar activities.

Manchester

- The immediate questioning at the start of this session related to the potential removal of underground storage as an acceptable surface water solution. The impact on land-take resulting from all SuDS infrastructure being above ground was immediately identified as an issue.
- *"In our region, 70% of our sites have underground storage. Of that 70% you may be able to get it down to 40% that have to be, because of the site constraints. For example, we've got soil protection zone 1, no infiltration, it's a flat site, so by the time you get to the front you are 8 m deep. What solutions are we expected to consider? It doesn't work as an all-embracing principle. It's basically going to take out a chunk of sites that we aren't going to be able to take forward for development."*
- A discussion amongst several attendees concerned the skills base that had been built up within the existing providers and the likelihood of this being transferred or re-established within the new SABs. There were doubts about how quickly and effectively this would be achieved and the potential impact on service provision and the ability to obtain agreements and adoptions in the meantime.
- Those who suggested they had experienced good service relating to the issue of contaminated land identified Leeds City Council, Liverpool City Council, Manchester City and Cheshire East as examples. As with the WASCs, experience of good service was generally attributed to individual working relationships.
- Bury MBC were known to have employed a chemist within their contaminated land team. This was credited with having a positive impact on the service provision; *"When you come up with an LA that doesn't have technical knowledge, doesn't know how to interpret guidance, and they make a complete hash of it, you can spend months going round and round. Somebody who knows what they are talking about can make very quick decisions."*
- Attendees were asked what further guidance they were seeking in relation to the changes and from which bodies they expected to receive this. There were concerns that if bodies such as Defra issue guidance and LAs subsequently adopt individual interpretations of the provisions and standards this could result in widespread confusion. Consistency was the main request in terms of the information released.
- On a show of hands, almost all the attendees indicated that they expect information on these changes to be issued by Defra.

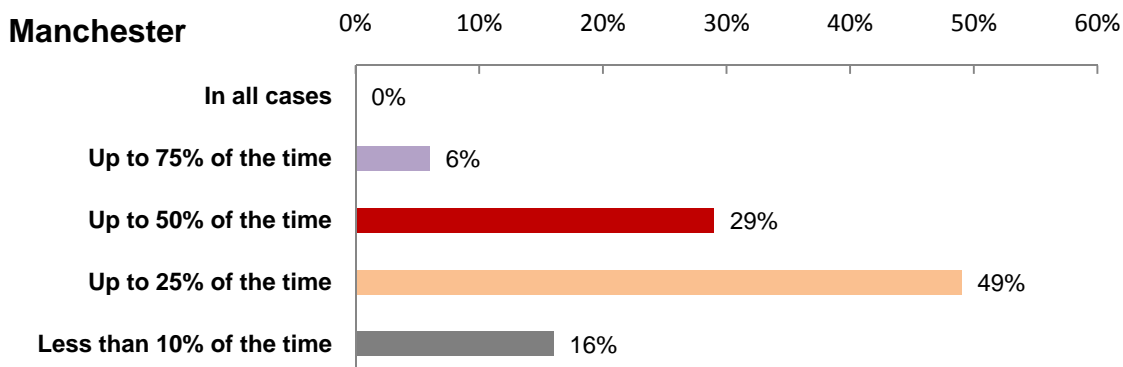
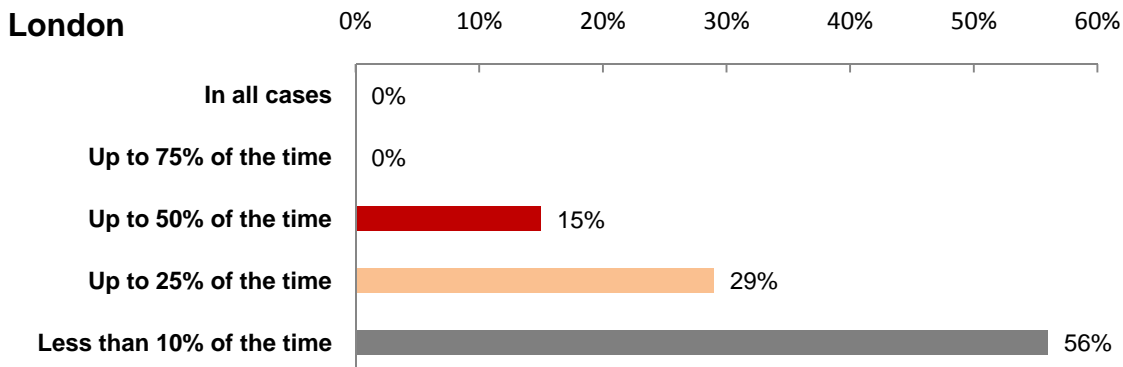


6 Highways

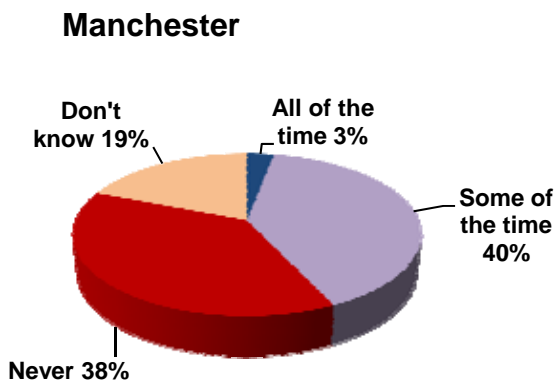
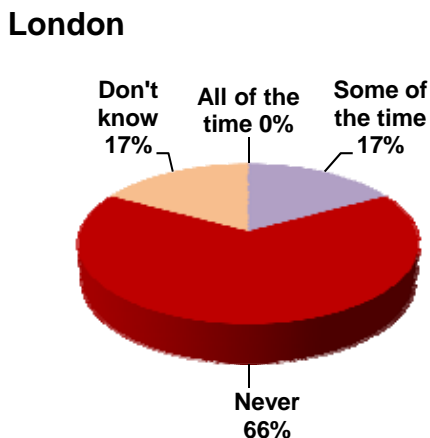
A presentation was given by Ray Farrow. On completion, attendees were asked to respond to a number of related questions, using the e-survey system. A facilitated discussion followed.

6.1 E-survey results – Highways

How often do you see Planners and Highway Engineers working together to resolve issues relating to highways?

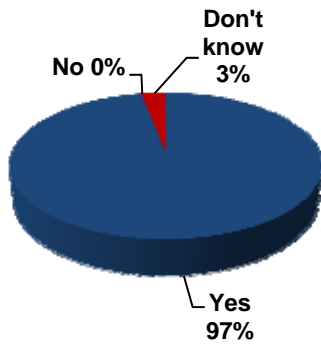


How often do you see LAs applying the concept of development teams as recommended in the Manual for Streets, to take issues forward?

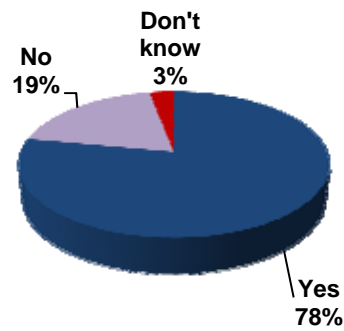


In England and Wales, most Highway Authorities have their own Highway Design Guides. Do you think it is important to have a Model Highway Design Code?

London

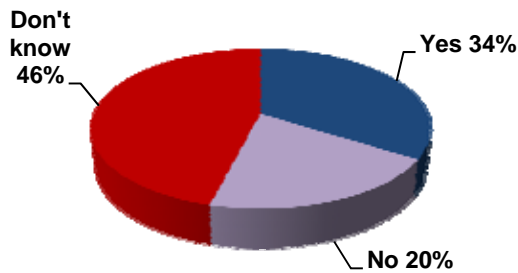


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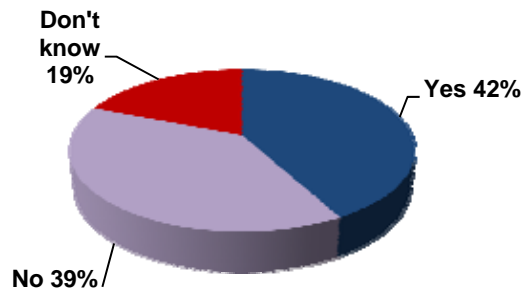


In your experience, have Highway Authorities adopted the design criteria of sight distances and visibility requirements of Design Bulletin 32?

London



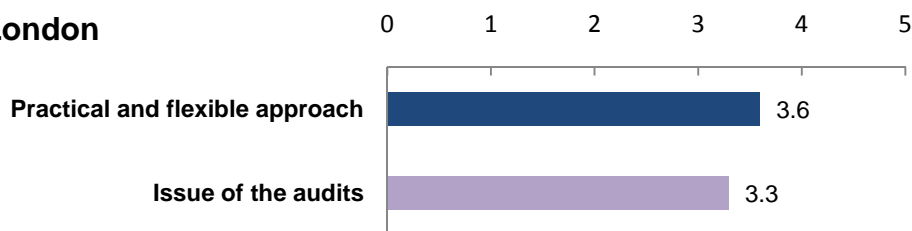
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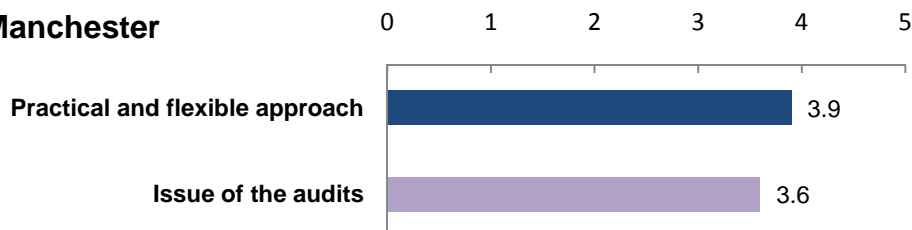
Please rate the following with regard to Road Safety Audits

(0 = No problems to 5 = Serious issues)

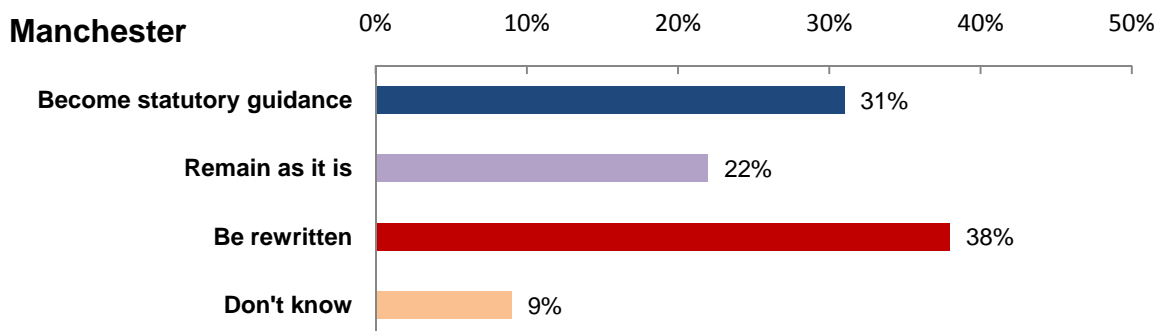
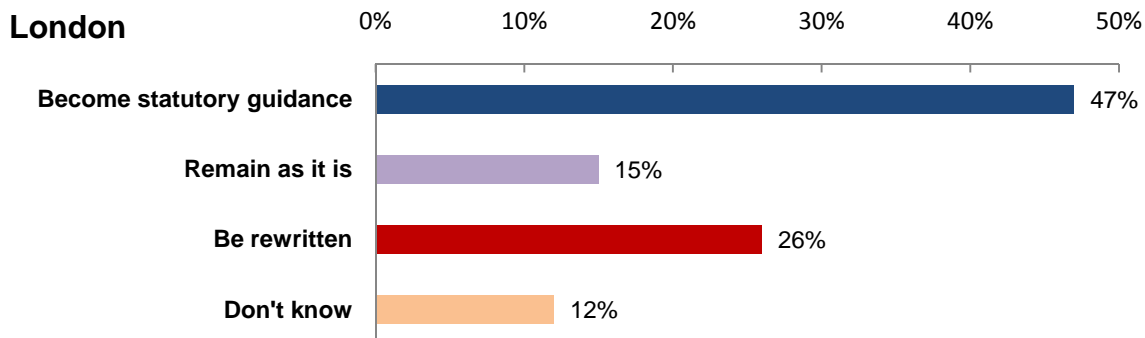
London



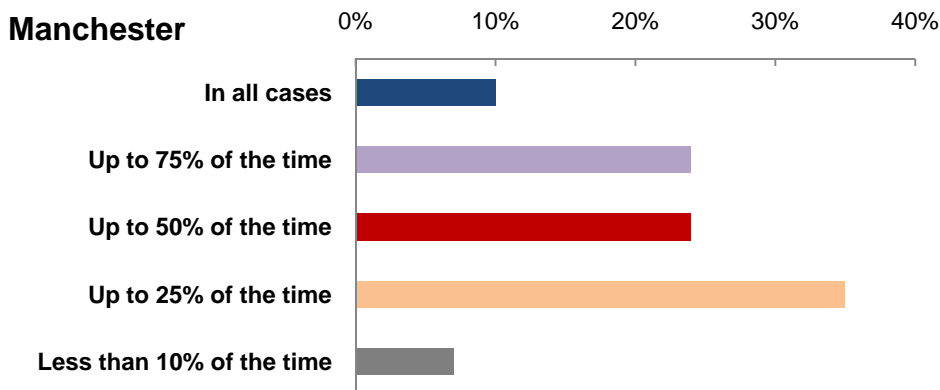
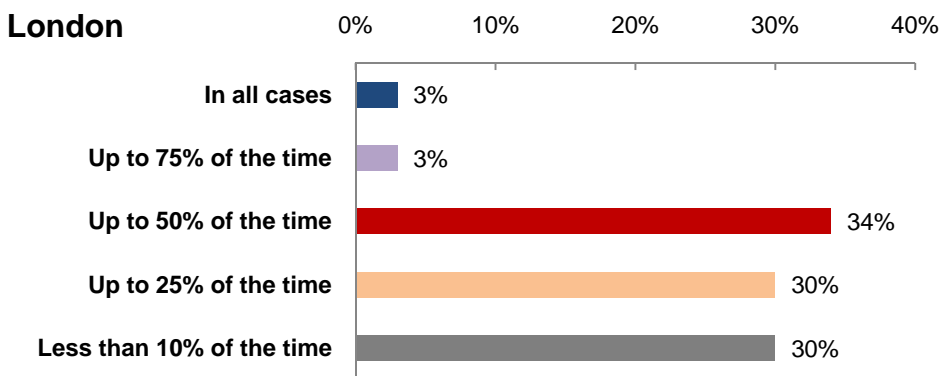
Manchester



The Manual for Streets was expected to be guidance which would change the way highways are designed so people would take precedence over vehicles. So do you want it to:

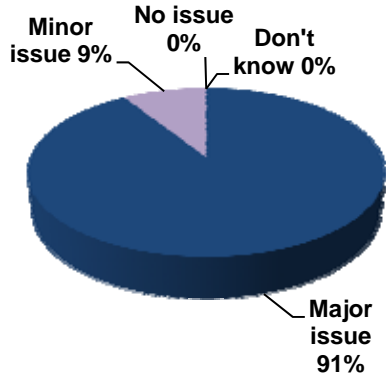


How often do you find that Highway Authorities adhere to the requirements of the Advance Payment Code ((S219/S220)?

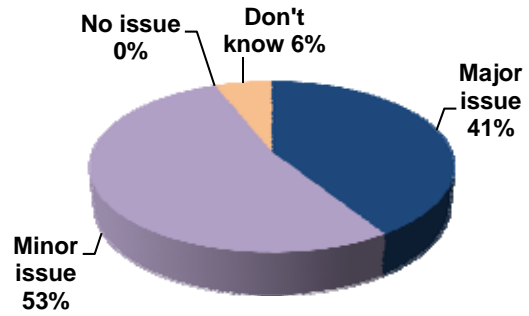


How much of an issue is the amount of car parking on a development, be it allocated or unallocated?

London

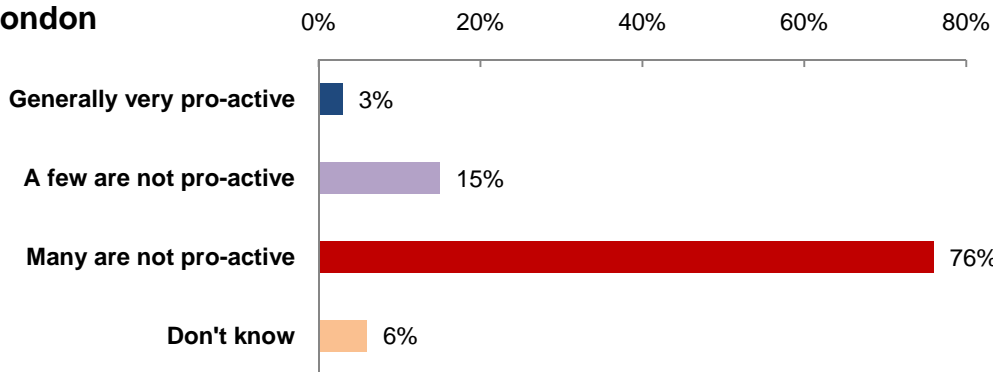


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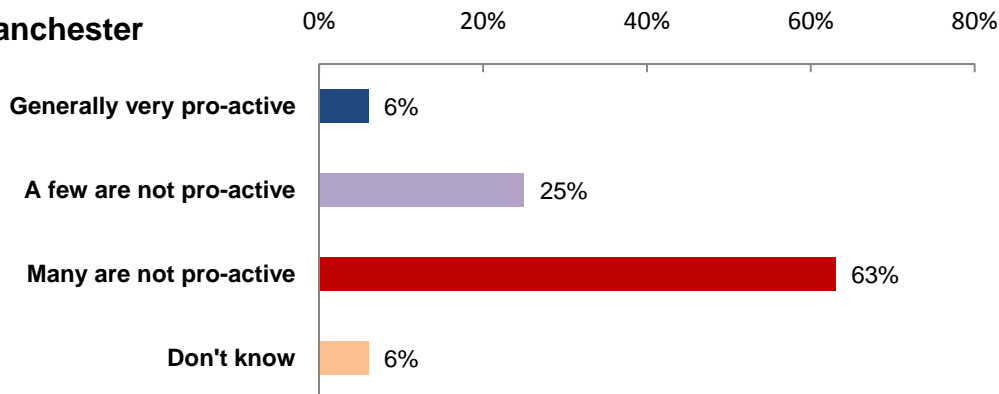


How pro-active do you find Highway Authorities are in progressing highway adoptions?

London

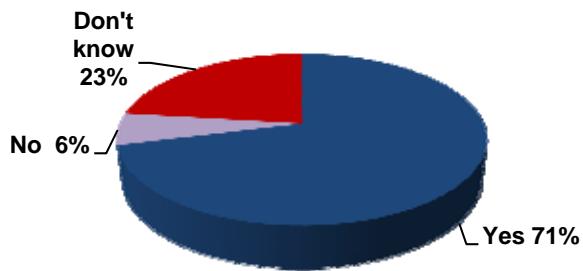


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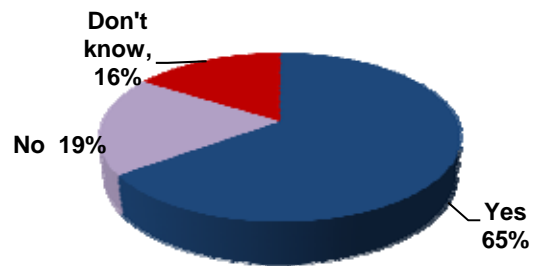


Do you think an updated Model Section 38 Agreement would be advantageous in the current environment?

London



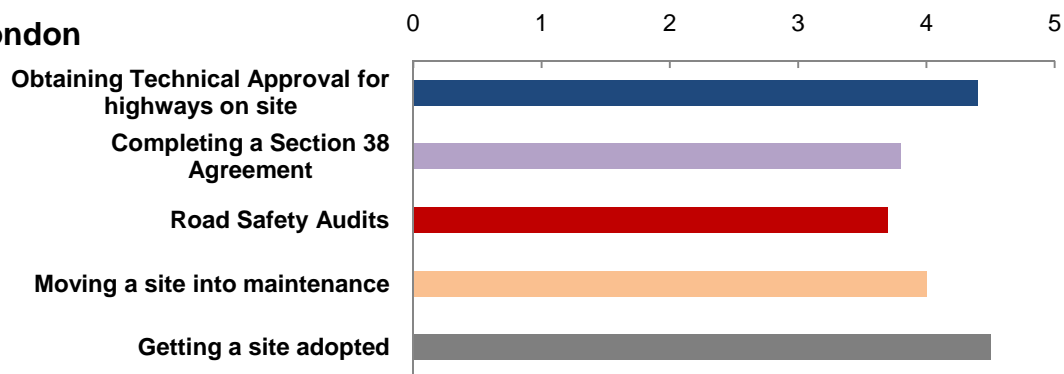
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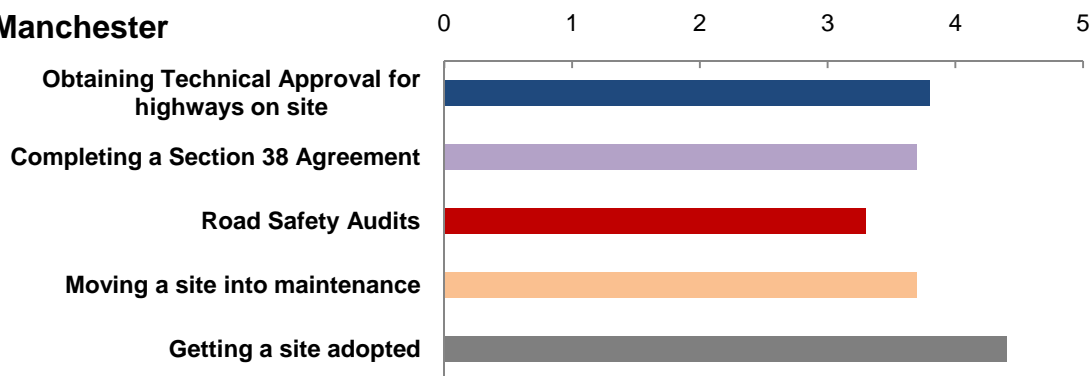
Please rate the following areas in terms of the issues they give you when dealing with Highway Authorities

(1 = Low to 5 = High)

London

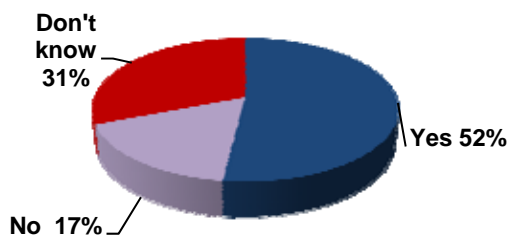


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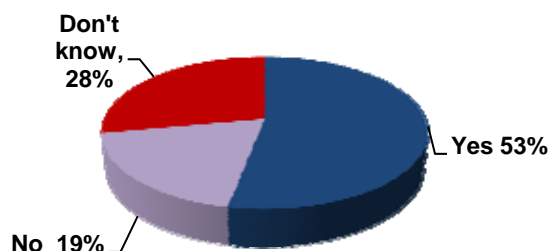


Over the last three years has there been an increase in the number of Highway Authorities that require commuted sums?

London

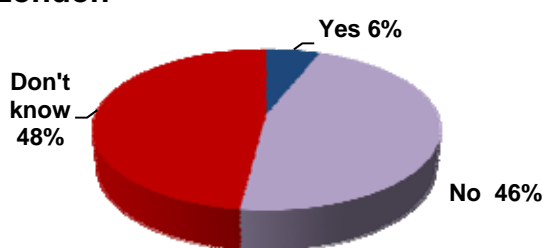


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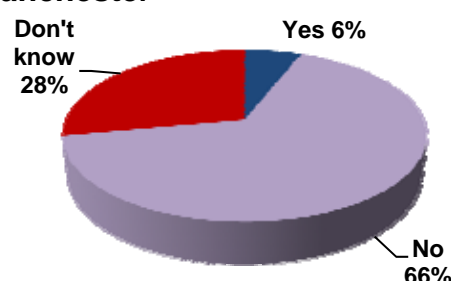


Has the CSS Guidance on commuted sums been quoted to you as an agreed document for requiring commuted sums?

London



Manchester



6.2 Facilitated discussion – Highways

London

- While planning legislation has not changed, several delegates told of their experiences of planners taking different approaches to the interpretation of the act in terms of parking standards. This has increased the land take and impacted on development viability.
- One had encountered a planning authority who proposed that garages would not count as parking spaces within the scheme design. This was an authority in Kent.
- Several others told of experiences where planners had sought to reduce the impact of cars in developments by applying low parking allocations per dwelling. In one case this had resulted in a one space per dwelling allocation, being applied equally to a one-bedroom flat and a five-bedroom house. This caused particular difficulties during the sales process.
- Others told of experiencing difficulties when seeking to get roads adopted. This could be a particular issue where highways authorities had been a consultee during the planning process, but the parking and highways standards defined by planners in the approval differed from the authorities' adopted standards. This had left the developer in a difficult situation with little room for negotiation between the two parties.
- Many of the difficulties described by attendees related to differing interpretations of the Manual for Streets, both by highway authorities, planning officers and by different local authorities. A consistent approach would be welcomed. Several later illustrations returned to experiences of these types of conflict.
- Adopting the Manual for Streets as a statutory instrument would be helpful. However, some of the sections of the document should be re-written to address the change in function between guidance and statutory document.



- One suggested that there was still a need for local interpretation within the document. However, matters such as visibility and turning requirements should be standardised and made statutory.
- There is an increasing risk of conflict at the planning stage, with resistance by planners to accept engineering constraints which impact on layout and site design. Several attendees told of experiences where design elements, which had been specifically included to reflect anticipated engineering requirements, were challenged or identified for removal before planning consent could be achieved.
- These technical representatives suggested they were increasingly concerned about their ability to comply with conditions attached to planning, highways and sewers consents etc. They suggested that this resulted in extended periods when their organisations were developing at risk, without certainty that conditions could be satisfied and agreements/consents would be forthcoming. The need to proceed at risk was largely financially- and market-driven.
- There were further concerns that land owners were not aware of the increasing impact of legislation and design guidance on developability/viability, and that expectations of value were not reflecting the increased costs of bringing sites into occupation.
- One person suggested that local authorities should publish information on the annual levels of adoptions completed. This was thought to fit well with the big society, localism and accountability agendas being promoted by the government. This would help to identify authorities who were underperforming. An illustration was given where a company has over 100 un-adopted sites, a situation that has remained for well over a year with little prospect of agreement in some instances.
- Concerns were also raised about the difficulties encountered with 278 works [off-site works on existing roads]. These were thought to be a particular difficulty in the existing arrangements. Most in the workshop confirmed that they had experienced difficulties in this area.
- Several spoke of their organisations having sites which, through failure to get technical approvals signed off by the different parties involved, were never adopted and remained the responsibility of the developer. Again, this experience appeared to be widespread although several described ways in which they had overcome such situations.

Manchester

- One person shared experiences of getting approvals and adoptions for highways and suggested that, where a successful working relationship could be established at a local level, the service delivery was often satisfactory. Criticism of the service levels should be shared by those in developers' organisations who did not invest in establishing these relationships. Several in the room supported this view.
- There was little experience of LA highways departments taking a proactive approach to adoption at the end of maintenance periods. Many in the room suggested that this was down to developers alone and there was a common experience of LAs not actively seeking to accept adoption responsibilities. *"There's no incentive with Highways to take it on. Leave it with the developer as long as possible then they don't have the responsibility."*
- *"The only time that highway authorities take a lead is when they get pressure from residents living on the development. Other than that, they just sit back and wait."*
- The attendees debated the need for a model set of standards that would deliver a consistent approach to highway design nationwide. Some felt this was unnecessary, undesirable even, and were happy to work to local interpretations and standards. However, variation(s) in interpretation at the local level, mainly between planning and highway officers, was a source of considerable difficulty, and measures to reduce the incidence of this would be welcomed.
- Several told of difficulties encountered when planning permissions had been granted for designs based on the Manual for Streets, but then subsequently assessed for adoption by highways officers seeking to apply the principles of Design Bulletin 32. Experience suggested that this was often the source of conflicts that delayed or prevented adoption.
- Just over one-third in the workshop had suggested that the Manual for Streets should be re-written. When asked why, and which sections, the principal issues identified were parking, shared surface criteria and the need to make provisions for service margins.

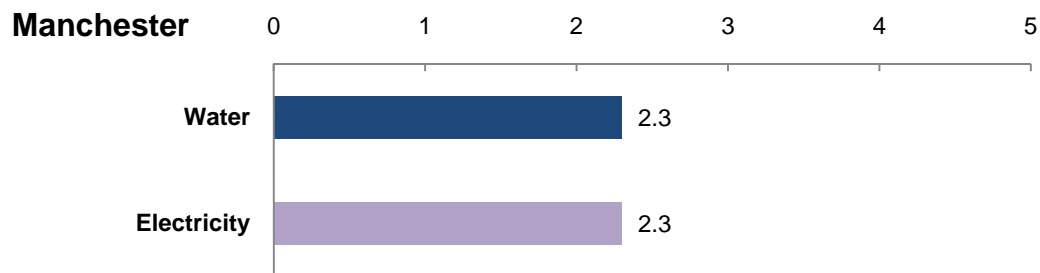
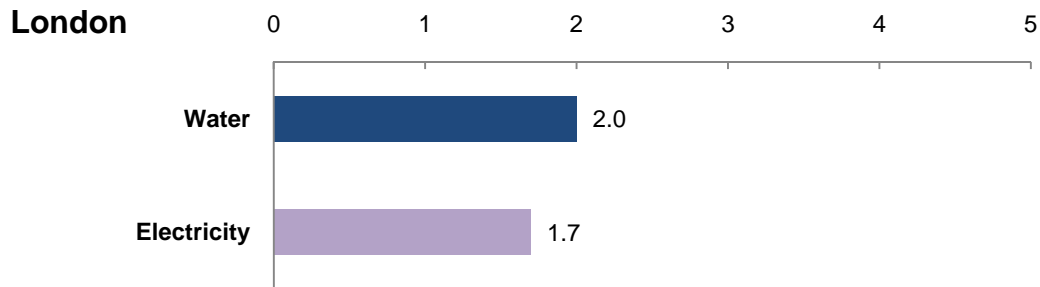
7 Water and electricity

A presentation was given by Ray Farrow. On completion, attendees were asked to respond to a number of related questions, using the e-survey system followed by a facilitated a discussion

7.1 E-survey results – Water and electricity

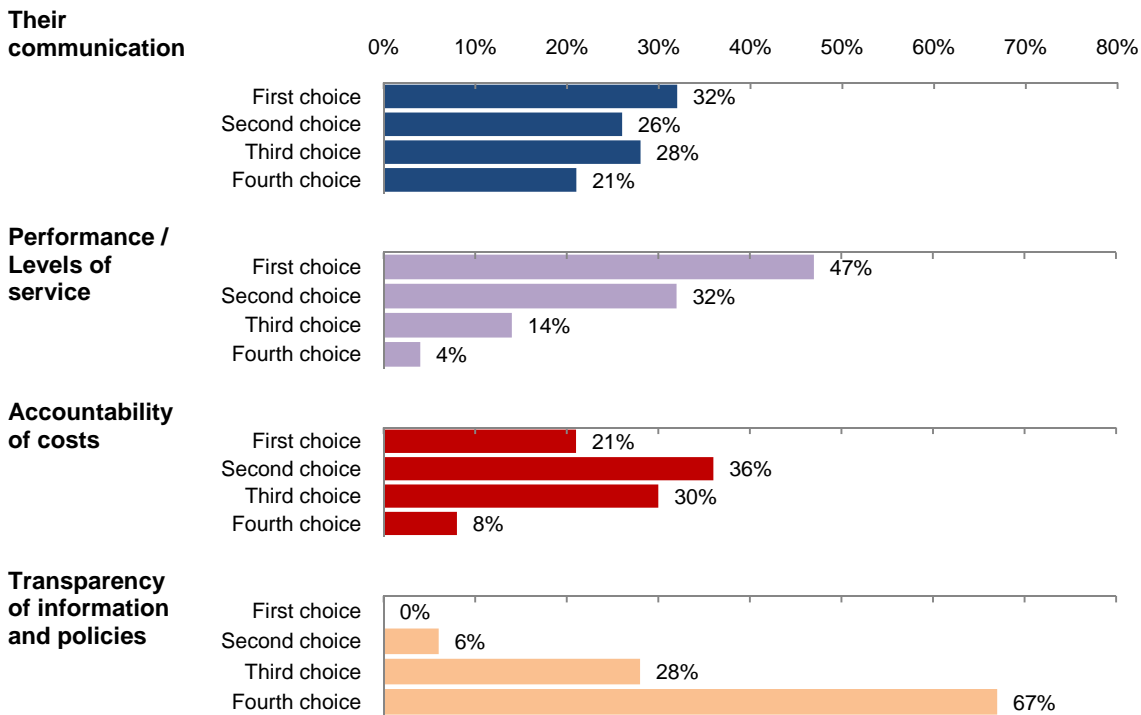
In an overall view of Water and Electricity Companies, please rate each Sector on how good they are to deal with.

(1 = Poor to 5 = Excellent)

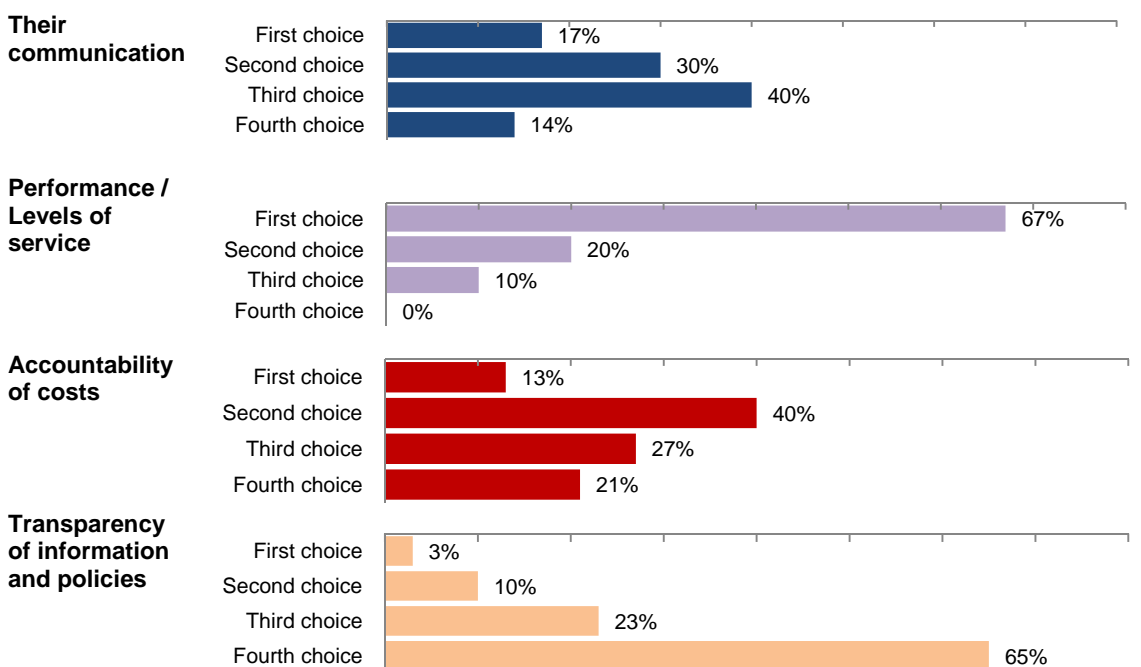


With regard to the Water and Electricity Sectors, which aspects of them would you most like to see an improvement in? (Start with the most important.)

London

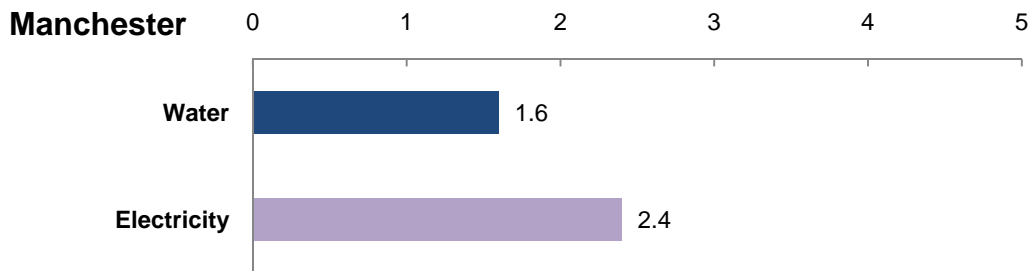
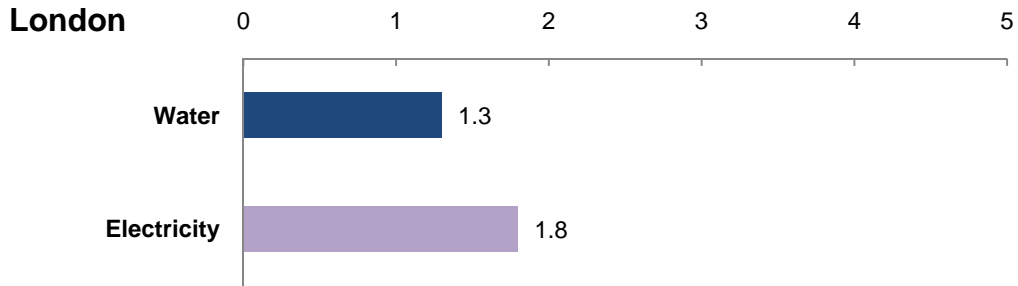


Manchester

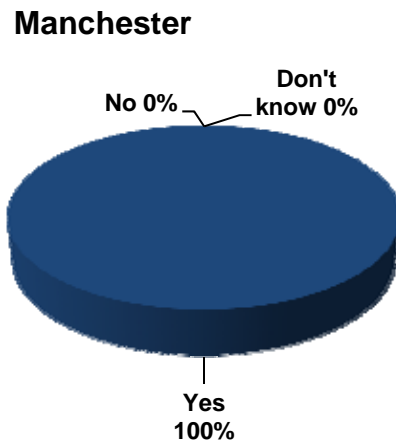
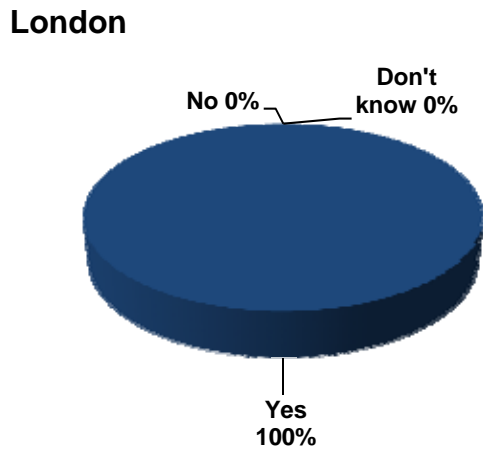


The Industry Regulators in both of these Sectors want competition. From your experience, to date, please rate the progress of competition.

(1 = Poor to 5 = Excellent)



In October 2010 Ofgem issued a number of performance criteria call Guaranteed Standards where, if a DNO failed to meet a Standard they would pay a penalty fine to the develop. Would such an arrangement be beneficial for the Water Sector?



Please answer the following questions relating to Water Companies:

London

With regard to the costs associated with water main requisitioning, do you feel that you get value for money?



Would you think it would be beneficial to have a breakdown of costs with each water main requisition?

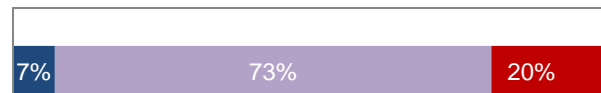


Do you think it would be an advantage to house builders to have true competition in the Water Sector?



Manchester

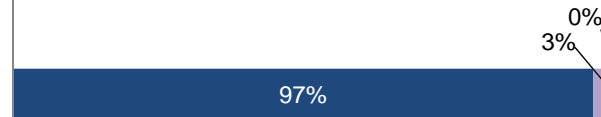
With regard to the costs associated with water main requisitioning, do you feel that you get value for money?



Would you think it would be beneficial to have a breakdown of costs with each water main requisition?



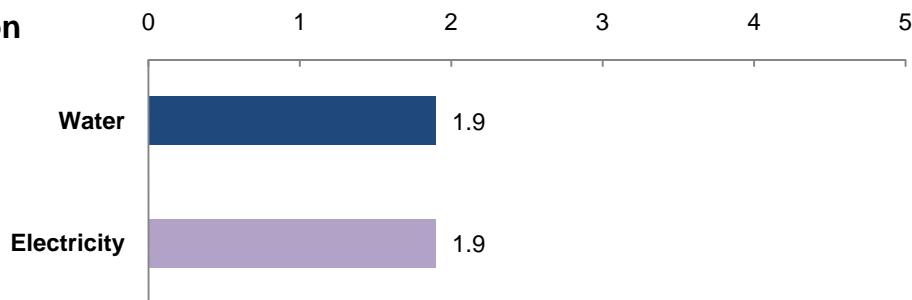
Do you think it would be an advantage to house builders to have true competition in the Water Sector?



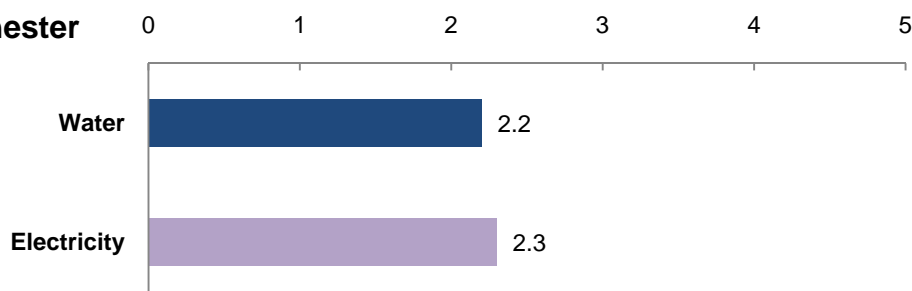
■ Yes ■ No ■ Don't know

Please rate the level of service provided from requisitioning to getting a property connected. (1 = Poor to 5 = Excellent)

London

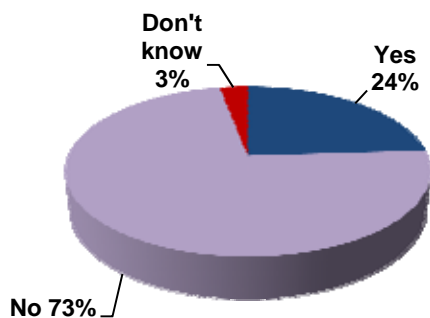


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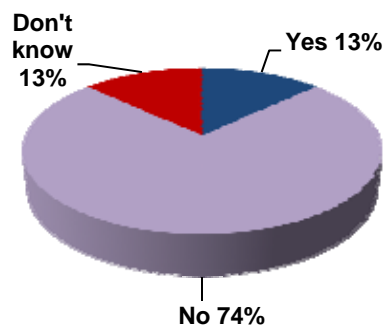


Are you aware of the Ofgem Guaranteed Standards for DNOs published on 1 October 2010?

London

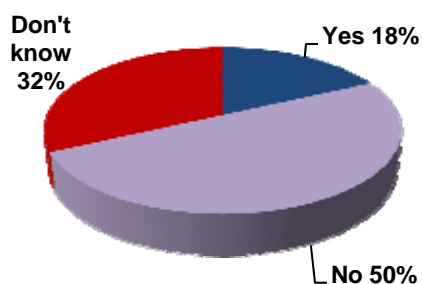


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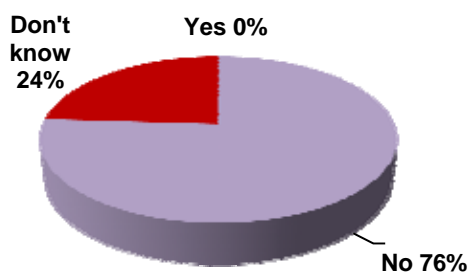


Have you noticed any change in the way that DNOs are dealing with house builders since their introduction?

London



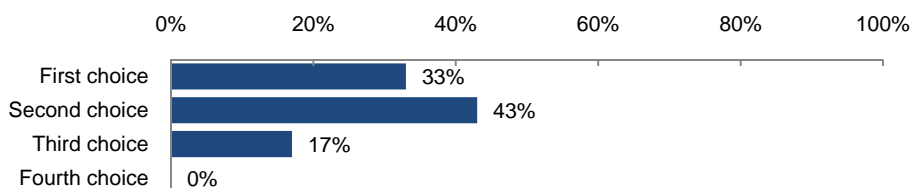
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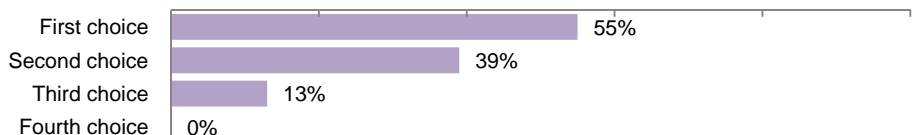
In taking issues forward, which of the following would you like to see improved in the Electricity Sector? (Start with the most important.)

London

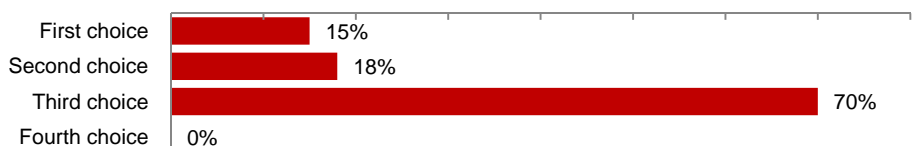
Process of getting disconnections on redeveloped sites



Shorter time for diversion of underground electricity cables



More concerted approach in achieving competition with ICPs and IDNOs

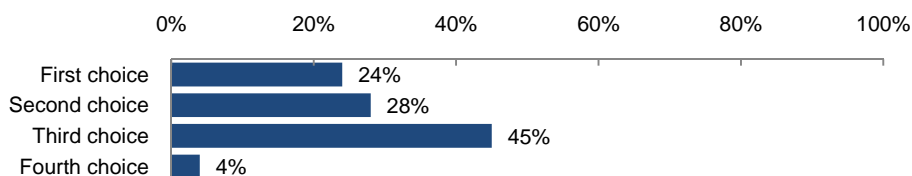


Other areas

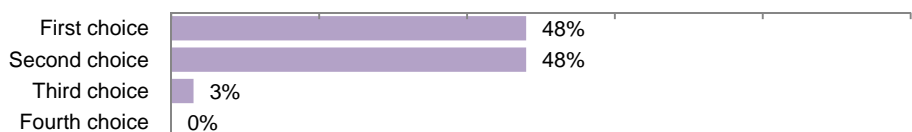


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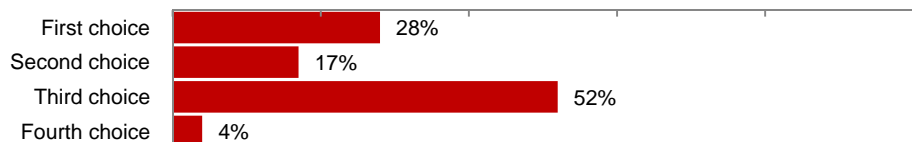
Process of getting disconnections on redeveloped sites



Shorter time for diversion of underground electricity cables



More concerted approach in achieving competition with ICPs and IDNOs

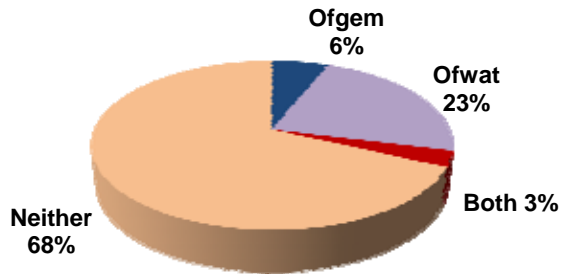


Other areas

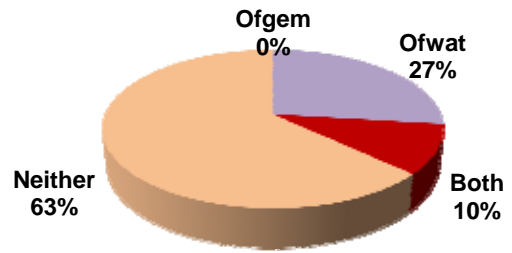


In the past five years, have you had dealings with Ofwat or Ofgem?

London



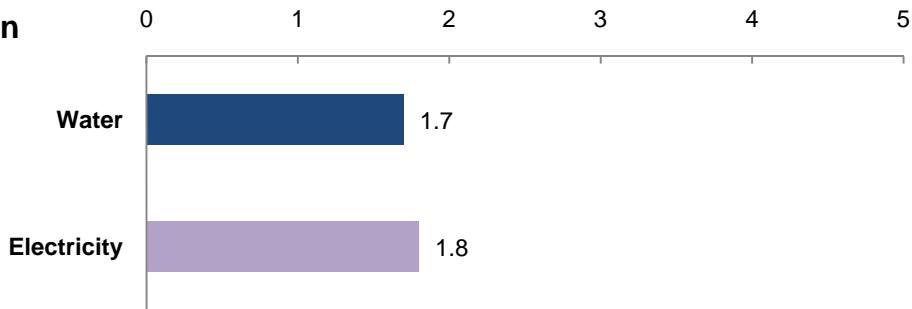
Manchester



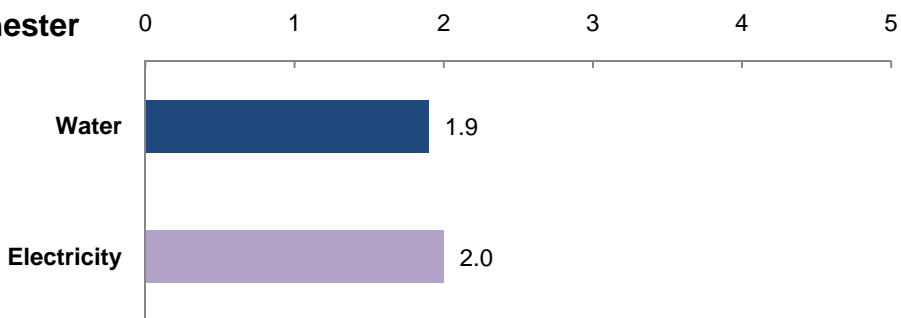
In your overall experience of dealing with Industry Regulators, please rate your level of satisfaction.

(1 = Poor to 5 = Excellent)

London



Manchester



7.2 Facilitated discussion – Water and electricity

London

- The first issue raised related to the difficulties encountered with newly acquired sites where these are found to have existing water or electricity services passing through them. Experiences recounted suggest that timescales for responses are overly long and costs for diversion or removal are judged to be excessive. Controls and performance standards would be welcomed.
- There was little awareness of the guaranteed standards relating to the performance of electricity suppliers in providing new connections. None had seen any change in performance in the period since the introduction of these standards.
- Two attendees told of situations where electricity providers had defined sites as mothballed and had returned payments under former agreements and were insisting on a new contract and re-pricing. The grounds given by the provider for this approach was the delay in progressing the site by the developer.
- Several also shared experiences of high levels of costs relating to off-site upgrades, which were perceived to be charges for network enhancements not directly related to the requirements of the site in question. One told of challenging such a charge through Ofgem which had resulted in £0.5 million of savings. However, the process had taken over six months to complete.

Manchester

- The first question related to uncertainties about the application of the Ofgem-guaranteed standards to Distribution Network Operators (DNOs). Clarification was sought and given and further promotion of this by Ofgem would be welcomed.
- Several spoke of surprise that the scores given across this workshop for the performance of statutory providers was as high as it was. Concerns were expressed that performance limits defined under the standards had become due delivery dates rather than end-stop dates.
- This group also confirmed experience of delaying practices employed to avoid failing to meet defined standards. Last minute requests for additional information are commonplace.
- Costs, particularly in relation to electricity supply works, were also identified as an issue. When probed, this related to changes in costs in the period from quotation to implementation and the lack of ability to challenge this. Several told of having sites and quotations being categorised as lapsed and re-quoted at substantially higher rates.
- This group also confirmed the perception that electricity providers sought to pass on charges for upgrading their networks and off-site infrastructure to developers. Where this is being encountered, several told of calling upon independent expertise to challenge designs and costs.
- The issue of the outsourcing of legal services relating to diversions was raised. Experiences suggest that this approach is on the increase among electricity providers.

8 Discussion: issues to be addressed

In this session, attendees at the workshops were encouraged to raise any issues or experiences which had not been covered in the presentations and subject debates. They were also invited to return to the four previous topics with further questions and discussion.

London

- One asked for views on the likelihood of regulation being introduced to cover rainwater harvesting measures. While there were few issues when rainwater harvesting systems were installed with individual houses, problems of ownership and maintenance could occur with flatted development.
- Several gave examples of encountering difficulties when seeking to satisfy the requirements of the Code for Sustainable Homes, against the conflicting requirements of drainage authorities. Greater clarity of standards and consistency of interpretation, particularly by Code assessors would be welcomed.
- Concerns were expressed about the application of the drainage design standards for containing the 100 year event and the consequential land-take on smaller sites.
- There are thought to be significant emerging issues relating to water conservation efficiency measures to meet the requirements of the Code for Sustainable Homes.
- Attendees questioned whether the Building Regulations Part H would be changed to align with the new requirements and standards for SuDS.
- One attendee outlined recent experience of different guidance and advice having been given by Defra, the local authority and the Environment Agency relating to risks from asbestos fibres in an existing site. This created both confusion and inconsistency in approach when considering remediation options. Further clear and consistent guidance would be welcome.
- One question was raised relating to the ability to start on site before the Section 104 agreement was signed. When confirmation was given that the intention was that all works could not start until this agreement was in place, there was widespread concern. None felt their senior executives were currently aware of the potential delays in site commencement that might occur.
- Another suggested that there could be difficulties with affordable housing developments relating to the funding deadlines imposed by the HCA. The potential for funding to be withdrawn because of failures to meet deadlines was a significant concern.
- The need to have three separate agreements signed before commencement of works was discussed. Having a Section 38 agreement for highways, section 104 for foul sewerage infrastructure and a separate section 104 agreement signed by the SAB was considered complex, restrictive and unnecessarily costly.
- The late introduction of the Mandatory Build Standards was a further issue which attendees felt would compound difficulties in implementing the new requirements.
- The issue of shared drainage, where a number of properties are connected to a communal soakaway, was raised. This was thought to be a source for potential difficulties in defining responsibility for maintenance. On any site there might be up to five bodies involved in taking responsibility for drainage infrastructure, i.e. the homeowner, possibly a management company, the SAB, the sewage undertaker and the highway authority.
- There was considerable level of concern that the measures presented during the workshop, and the issues discussed by attendees, could result in a significant impact on the ability of developers to gain approvals for new developments and achieve timely starts on site. The potential impact on densities, the additional costs of obtaining permissions and the signing of agreements, coupled with the extended timescales before starts on site, were anticipated to significantly affect the volumes of development capable of being delivered.

Manchester

- Several suggested that neither the managing director nor finance director in their organisation was believed to be aware of these emerging issues and there would be high degree of surprise at the implications. It was thought likely that existing sites in ownership or being considered for development would be reviewed and potentially dropped in some cases. *“It will certainly make them look twice at sites and the size of them. I think it will prompt us to go for smaller sites.”*
- *“We are not going to be buying sites. You’ve got to factor a percentage of net loss of area for your SuDS, so your bids are going to go down and vendors will probably take the land off the market till things improve.”*
- Some felt they already had sites in their landbanks which would now be difficult to develop economically. With a show of hands, every attendee indicated that their organisation already had sites within landbanks or development programmes that would not work without the ability to harness underground storage.
- Several questioned the timing and volume of changes affecting below-ground issues on new sites. While the participants recognised that they work in a professional environment which is subject to frequent change, the scale and impact of these multiple amendments were clearly causing significant concern.
- In the area in which many of these representatives’ organisations operate, clay subsoils are commonplace. The ability to design SuDS without access to underground storage in the solution for such sites would be difficult and could result in some no longer being viable. There were several calls for requests to be made to government for a review and reconsideration of the withdrawal of use of underground surface water storage.
- *“We deal with brownfield sites and there just isn’t the space. With the footprint of the building, you’ve just got to go underground.”* Others supported this view and felt that the measures could persuade developers to move away from brownfield development.
- The issue of the impact of the changes under the Flood and Water Management Act 2010 and the impact on the Code for Sustainable Homes was raised again. Several believed that there would be emerging difficulties through differing interpretations of SuDS design standards between SABs and Code Assessors. This could impact on funding.
- One questioned possible increased health and safety risks resulting from a move to open drainage and storage features within SuDS designs. This was a further possible area for risk and liability for the developer.
- The impact of extended timescales before start on site upon HCA funding commitments to Affordable Housing Developers was discussed again. This was identified as a potential area for emerging difficulties, particularly within the increasingly limited funding environment.
- The need for thorough inspection of drainage works to ensure installation exactly complies with the design will become increasingly important. Any variations were thought to be a potential block to subsequent adoption and the source of delays.

Appendix 1: Companies agreeing to attend

London

Banners Gate
 Barratt (Northampton)
 Barratt (Southern Counties)
 Barratt (West London)
 Bellway Homes (Essex)
 Bellway Homes (Essex)
 Bellway Homes (North London)
 Bellway Homes (South East)
 Bellwinch Homes Ltd
 Berkeley Homes (Central London) Ltd
 Cala Homes (South) Ltd
 Countryside Maritime Ltd
 Crest Nicholson (Eastern) Ltd
 Crossfield Consulting
 Croudace Homes Ltd
 Denne Construction Ltd
 Fairview New Homes Ltd
 Gemma Building Design Service
 Higgins Construction Plc
 Hill Partnerships Limited
 Infrastructure Design
 Knight Group
 Laing Ltd
 Lovell Partnerships (London/East)
 NHBC
 Persimmon Homes (South East) Ltd
 RCP Consultants
 Redrow Homes (Eastern) Ltd
 RLT Ltd
 St James Group Ltd (Leatherhead)
 St James Group Ltd (Thames Valley Region)
 St James Group Ltd (Urban Living)
 Structa
 SUDstainability
 Taylor Wimpey (East London)
 Taylor Wimpey (Midlands)
 Taylor Wimpey (East London)
 Taylor Wimpey (North Thames)
 Tweedie Evans

Manchester

Alan Wood & Partners
 Barratt (Manchester)
 Barratt (Manchester)
 Bellway Homes
 Betts Associates
 Bovis Homes (Central)
 Bovis Homes (Central)
 Bovis Homes (Central)
 Bramall Construction Ltd (Rotherham)
 Bramall Construction Ltd (Rotherham)
 Charles Church (South Midlands)
 Connell Consulting
 Eastwood and Partners
 Frank Haslam Milan (West Midlands)
 G & J Seddon Ltd
 J S Bloor (Wilmslow) Ltd
 Lees Roxburgh Ltd
 Lovell Partnerships (Eastern)
 McCarthy & Stone Retirement Lifestyles Midlands
 Meldeb Ltd
 Miller Homes (Derby)
 Miller Homes (Derby)
 Miller Homes (North West)
 Miller Homes (Solihull)
 Persimmon Homes (Lancashire) Ltd
 Persimmon Homes (North West) Ltd
 Persimmon Homes (North West) Ltd
 Redrow Homes (Yorkshire) Ltd
 Seddon Group Ltd
 Sirius
 Southdale Homes Ltd
 SWR Consultants
 Taylor Wimpey (Manchester)
 Taylor Wimpey (North Midlands)
 Taylor Wimpey (North Midlands)
 Taylor Wimpey (North West)
 TTL Structures
 Wainhomes (North West) Ltd
 Wright Mottershaw Lydon



Appendix 2: Abbreviations

DNOs	Distribution Network Operators
EHO	Environmental Health Officer
HA	Highways Authority
HCA	Homes and Community Agency
ICP	Independent Connections Provider
IDNO	Independent Distribution Network Operator
LA	Local Authority
Ofgem	The Office of the Gas and Electricity Markets.
Ofwat	The Water Services Regulation Authority
SABs	SuDS Approval Bodies
SuDS	Sustainable Drainage Systems
WaSCs	Water and Sewerage Companies

NHBC Foundation publications

Energy efficient appliances and controls NF31 June 2011
Low or zero carbon cooking appliances NF30 June 2011
Water consumption in sustainable new homes NF29 March 2011
Part L 2010 – where to start: An introduction for house builders and designers NF28 March 2011
Milton Keynes' prospectus NF27 February 2011
Home sale and handover NF26 January 2011
Management of post-completion repairs NF25 January 2011
Ageing and airtightness NF24 January 2011
Introduction to Feed in Tariffs NF23 January 2011
A simple guide to Sustainable Drainage Systems for Housing NF22 July 2010
Efficient design of piled foundations for lowrise housing NF21 February 2010
Water efficiency in new homes NF20 October 2009
Open plan flat layouts – assessing life safety in the event of fire NF19 August 2009
Indoor air quality in highly energy efficient homes – a review NF18 July 2009
Zero carbon compendium – who's doing what in housing worldwide NF17 July 2009
A practical guide to building airtight dwellings NF16 July 2009
The Code for Sustainable Homes simply explained NF15 June 2009
Zero carbon homes – an introductory guide for housebuilders NF14 February 2009
Community heating and combined heat and power NF13 February 2009
The use of lime-based mortars in new build NF12 December 2008
The Merton Rule NF11 January 2009
Learning the lessons from systemic building failures NF10 August 2008
Zero carbon: what does it mean to homeowners and housebuilders? NF9 April 2008
Site waste management NF8 July 2008
A review of microgeneration and renewable energy technologies NF7 January 2008
Modern housing NF6 November 2007
Ground source heat pump systems NF5 October 2007
Risks in domestic basement construction NF4 October 2007
Climate change and innovation in house building NF3 August 2007
Conserving energy and water, and minimising waste NF2 March 2007
A guide to modern methods of construction NF1 December 2006

NHBC Foundation publications can be downloaded from www.nhbcfoundation.org



Ground-related requirements for new housing – Workshops to examine the issues faced by the industry

On all new sites developers have to comply with requirements from several organisations relating to the ground – sewers, surface water, contaminated land, highways and the various utilities. There is a widening view that a rationalisation of many ground-related issues would benefit the industry.

To identify the main areas of concern, a fact-finding exercise was undertaken by NHBC Foundation. Two workshops were held in London and Manchester. After presentations from specialist speakers, attendees gave feedback via an e-survey on their experience of issues relating to below-ground engineering and specifically those issues related to sewers, SuDS and contaminated land, highways, water and electricity on housing sites.

This publication reports the responses to the survey and draws together the common themes arising from the discussion at the seminars in order to highlight the key issues and concerns.



The NHBC Foundation has been established by NHBC in partnership with the BRE Trust. It facilitates research and development, technology and knowledge sharing, and the capture of industry best practice. The NHBC Foundation promotes best practice to help builders, developers and the industry as it responds to the country's wider housing needs. The NHBC Foundation carries out practical, high quality research where it is needed most, particularly in areas such as building standards and processes. It also supports house builders in developing strong relationships with their customers.

