Department for
Communities and
Local Government

Usability Research

Approved Document B: Fire safety

Approved Document M: Access to and use of buildings

A report for the Department of Communities and Local Government

Contents

Executive Summary

This is a summary report of a study into the usability of Building Regulations Approved Documents B (Fire safety) and M (Access to and use of buildings). The research was made up of:

- a desk-based review;
- depth interviews ; and
- an online survey.

The research showed that the Approved Documents (ADs), including AD B and M, are essential in making sure people comply with the Building Regulations. Users value them.

However, the ADs should be clearer and easier to use. They are broadly fit for purpose now, but they will need to change as the construction industry becomes digital.

The research uncovered three user groups. They have different needs. It is not easy for one set of guidance to meet these different needs.

We make six recommendations that, if acted on, will make the ADs easier to use and better able to effect compliance now and in the future.

Introduction

The Department for Communities and Local Government (DCLG) is planning to update AD B (Fire safety), and M (Access to and use of buildings). The DCLG needed research with actual and potential users of ADs B and M to make sure that the new ADs meet their needs. It commissioned NBS Research to carry out this study.

The study was about the usability of ADs B and M; not about their technical content nor the underlying policy decisions which determine the guidance given. The research objectives were to:

- Identify the users of ADs B and M;

- Describe their usability needs and requirements;

- Identify how these needs can best be met within the practical and legal confines of the ADs.

NBS Research carried out the study. There were three-stages.

- A desk-based review of existing data, research and reports about ADs B and M.

- Qualitative telephone interviews with 37 actual and potential users of ADs B and M.

- A quantitative online survey with 316 actual and potential users of ADs B and M.

AD M (Access to and use of buildings), Volume 1 (Dwellings), was updated in October 2015. It adopted the new AD style. Participants in the study provided their views of the new style compared with the style used in AD B and AD M Volume 2.

Three types of AD user; each with different needs

Many types of organisations and individuals use guidance to help them comply with the Building Regulations. None of these *has* to use the ADs, but nearly all do. Ninety-nine percent of respondents to the survey said they were 'likely' to turn to the ADs to ensure compliance with the building regulations. For many, it was the first place to look.

> *"[Part B] my first port of call; I use the law as a benchmark."* Fire safety consultant

AD B is the most used AD. There was a combined 269,543 downloads for the two volumes in the year to March 2015. AD M is the third most used of the ADs (189,659 downloads).

PDF is by far the most popular format for using ADs B and M, with 83% doing so. Most respondents want to continue to access the ADs as PDFs. There is interest in other media; 41% would like to access using tablets or smartphones.

Paper copies are still highly valued. Almost half want their own hardcopy; building control, approved inspectors and specialist consultants are particularly keen to have these. Some building control officers annotate their own personal, printed copies, and take them to meetings, for example.

Three types of user groups emerged from the study; we summarise them below. These groups are not always exclusive as they depend on the type of work being done, however, they do provide a useful picture of the needs of users, and their typical types of work.

Professionals involved with 'standard' buildings

This is the largest group of AD users.

They are designing or advising on the construction of common building types, such as residential schemes, retail units, industrial units, and offices. The group includes: architects, building surveyors, engineers, and fire safety/access consultants, for example. Some contractors, too, fall into this group.

Building control officers and approved inspectors are responsible for enforcing Building Regulations compliance on these types of building, so they too belong here.

Among this group are heavy users of the ADs, many of whom are confident in using them. They rely on the ADs to tell them what to do to comply, and help others comply, with the Regulations. Therefore, they want clear, prescriptive guidance. Many building control officers, would like the ADs to be highly prescriptive.

> *"Many designers and builders do not understand the Regulations and look to BCO's/AI's to tell them what to do to comply. If we can show them the AD and say, 'do that,' then they will be happy."* Building control officer

Some of this group are ready to embrace digitally interactive formats of the ADs.

Some, particularly, small companies, cannot always access referenced documents.

Professionals involved with 'non-standard' buildings

This group is made up of people who are involved with 'non-standard' complex buildings, such as high-rise commercial buildings, or unique public buildings. They are confident in their knowledge of the Regulations. They want guidance to be flexible, to give them freedom to find the best design solution. They also need technical detail for complex situations and typically turn to other sources for this, such BS 9999.

They are architects, engineers, fire safety and access consultants, and contractors – often from large firms. Building control officers and approved inspectors belong in this group too.

They often turn to non-AD guidance first, such as British Standards. Those involved with particular sectors, such as education and health, may also be included in this group. They tend to refer to sector-specific guidance, like NHS Technical Memorandums and Education Building Bulletins.

Small professionals and 'Do-It-Yourself-ers' (DIY-ers)

Small builders and subcontractors working on projects like individual houses, shop fit-outs and extensions make up this group. It also includes self-builders and serious DIY homeowners. They are not confident in their knowledge of the Regulations or the ADs, and they want to be told exactly what to do to comply. They often rely on building control officers and designers to do this – they may not consult the ADs themselves.

> *"It's a very complicated subject."* Self-build expert

The ADs are essential

The ADs (including B and M) are an *essential* resource, relied upon by those who: enforce the Regulations, advise on compliance, or need to comply.

Most users understand, in theory, that the ADs are just one way of ensuring compliance with the Regulations. However, nearly half of survey respondents think they *must* adhere to the ADs. Eighty-six percent agreed that the ADs are the most important tool for ensuring compliance with the Building Regulations.

ADs B and M are valued but can be improved

The ADs are valued and well used. They are useful, accurate and comprehensive – especially AD B.

Experienced users are comfortable using them and many can find the information they need quickly – as they know where to look. However, not everyone finds it easy to use the ADs. Even those who are familiar with them would like to see improvements. People think they are complex and could be clearer.

> *"…we are familiar with the AD's and refer to them all the time; I don't think they are as clear as they could be and I find them cluttered as documents, I must confess."* Architect

We summarise opinions of the ADs under the following themes.

Users want clearer diagrams and pictures, and simpler language

Even heavy users think the ADs are complex, especially AD B; this may reflect the subject. But users would find the ADs easier to understand if they:
- used plain English;
- presented diagrams more clearly; and
- were less cluttered with more white space.

The new style AD M Volume 1 (as well as some other ADs) uses plain English, a single column layout, and more white space on the page. The majority of users favoured this style (62% of those who had used the new style agreed they would like to see all ADs adopting it). They found the new style easier to use, saying that diagrams were clearer, the layout and quality of writing better.

Generally, users like diagrams and some also requested pictures or photographs to show examples of good or bad practice. Users feel that diagrams in ADs B and M were not always clear.

Some are unsure of the two-volume split

At first, users seemed comfortable with the two-volume split of AD B and M – and most are. However, there was a sense that some people assumed that Volume 1 (Dwellings/Dwellinghouses) covered only domestic work, and Volume 2 (Buildings other than dwellings/dwellinghouses) covered only non-domestic.

A minority would prefer the ADs to revert to one volume, or to have a domestic volume that includes houses and flats and another for 'everything else.' The desk research highlighted that some experts have called for a domestic, non-domestic split, as adopted in Scotland.

More users want prescriptive guidance

Overall, users favour prescriptive rather than non-prescriptive guidance. Those in favour of prescriptive guidance believe it will increase certainty about compliance. It will make the criteria for the decisions of building control officers and approved inspectors transparent. It should mean fewer disagreements between Building Control and those seeking to comply.

Some people, including building control officers, describe a 'minimum requirement' for 'standard' or common situations. Indeed, 62% of building control officers/approved inspectors strongly agree that the ADs set out the minimum standards. Many users would like the ADs to set out, more clearly, what these minimum standards are. Some voiced concerns that without a clearly defined minimum standard, some people's interpretation of guidance leads to lower quality buildings.

> *"Most of my work is best suited to prescriptive solutions, if I needed to do something different I would go to BS 8300. The AD should concentrate on the mass of relatively simple projects."* Building Surveyor

Some users would also value an explanation of *why* something will enable compliance, and some asked for examples.

Those working on less common, often large, complex projects, are less keen on prescriptive guidance. These users often look to British Standards. Some believe that prescriptive guidance can hinder good design.

While just over half of AD B users think the purpose groups in the document are reflective of buildings in England, more agreed than not that AD B should adopt a similar approach to that used in BS 9999.

Users want improved navigation and functionality

Users do not rate the ease of navigation of ADs B and M highly. The issues were the need to flick back and forth through the printed documents and the lack of hyperlinks from the contents pages in the PDFs.

> *"I can't understand in this day and age that it's so far behind the times."* Fire safety consultant (re. lack of hyperlinks in PDFs)

People described a lack of logical flow, inconsistency of definitions, and difficulty finding headings – especially given the complexity of AD B in particular. In the PDF, people want a more visible search facility that provides contextual results, with some looking to search for guidance on one building element, such as stairs, across all ADs. They also want to be able to 'cut and paste.'

Referenced documents

The majority of building control officers, approved inspectors, specialists and designers use the references to British Standards and Eurocodes. They also use references to other ADs. Many follow references to other publications. However, some organisations, especially smaller ones and building contractors cannot afford the cost of accessing British Standards.

> *"[Re: British Standards] Not that often… they are so expensive to buy and complicated to follow."* Small/medium contractor

Users find the referenced documents useful but some were frustrated that when they change, the references in the ADs become out of date.

Suitable for the present but not for a digital future

Just over two thirds of the users we consulted are satisfied with ADs B and M. Most believe they are suitable for current working practices.

They are comfortable using PDFs and like being able to print sections or to have a downloaded document to limit mobile data usage.

They would value some improvements to the PDF; over 90% would find it useful to:

- follow hyperlinks to other parts the ADs, such as from the contents pages;
- return search results with additional contextual information;
- search for information across all of the ADs; and to
- easily copy and paste extracts from the ADs.

Some do express interest in more dynamic formats, such as those optimised for mobile devices, like apps or more visual interfaces, like those used on the Planning Portal.

Looking ahead, only 49% believe the ADs are suitable for the future and almost two-thirds think that AD guidance will need to link to Building Information Models (BIM). Half think they will need to automatically check compliance of a BIM with the Building Regulations.

> *"A website that exclusively deals with them [the ADs], interactive for clients and simple to search as one whole document for professionals - i.e. if we're looking at stairs in Part K then the relevant sections of Part M should automatically be pulled up so we can make a call on which regulation to follow."* Architect

Conclusions

The ADs are highly valued but need to change

People rely on the ADs, including ADs B and M. They are an essential and valued resource. However, they serve some users better than they serve others. They will not be fit for purpose in a digital construction industry, in their current format.

The ADs deal with complex information and do not present it in a way that is clear to all. Users prefer the new style applied to some ADs including AD M Volume 1. The DCLG will republish the remaining ADs in this style. This research confirms that this is the right approach.

Echoing past research, this study shows that there are different user groups with different needs. We define three main groups. It is difficult to see how the ADs, in their current form, can satisfy all of these different needs. Producing different versions of the ADs is likely to cause confusion; instead we recommend making it as easy as possible for users to navigate a single set of ADs to find the information they need.

There is a debate about prescriptive and non-prescriptive guidance. One argument against prescriptive guidance is that it inhibits good design. The purpose of the ADs is to provide guidance for compliance with the Building Regulations, so that buildings are safe, sustainable and accessible. This is not incompatible with good design, and allows for compliant design outside the ADs.

A dynamic, digital format can serve the needs of different users

People involved in construction are increasingly accepting (and some embracing) digital ways of working. While many like printed copies of ADs, more prefer PDFs. Including hyperlinks for better navigation, improving search, and allowing cut and paste would improve the PDFs.

Looking further ahead, people expect formats that are more dynamic. Some anticipate integration with Building Information Modelling (BIM). A dynamic format could enable users to search across all ADs. It could make it easier for people to find the information they need for their project – without having to decide which volume is applicable to them. And it could reduce the need for flicking backwards and forwards through static documents.

More prescriptive guidance would provide certainty for users that need it, and would pave the way for compliance checking of a BIM. However, links could also be included to further, less prescriptive guidance, explanations of why people should take certain measures, and examples with pictures. This could be done without having to create longer, static documents. In short, a dynamic digital format has the potential to cater better for different users' needs.

Digital content outside of a static PDF would also enable the updating of referenced documents to ensure they are always citing the latest standards. More users want to access the ADs on mobile devices – there is likely to be interest in an app.

Recommendations

In light of the conclusions, we make the following recommendations.

1. Continue to apply the 'new style' to the remaining ADs, and consider introducing larger diagrams, pictures and different colours.

2. Provide more prescriptive guidance making it clear what will comply, including:
    a. clear prescriptive guidance for common situations that minimises the need for interpretation
    b. making the distinction between prescriptive and non-prescriptive guidance;
    c. provide reference to other approaches, such as British Standards; and
    d. within the ADs, explain more about how things comply, giving examples.

3. Enhance the PDFs of the ADs to include:
    a. hyperlinks from contents and index pages;
    b. easier searching;
    c. cut and paste; and
    d. update links to referenced documents as they change or add notes to web pages about these changes.

4. Develop digital versions of the ADs, such as HTML, that enables:
    a. tailoring of guidance so users can find:
        i. domestic vs. non-domestic;
        ii. 'standard' vs. 'non-standard';
        iii. prescriptive vs. non-prescriptive;
    b. updating of links to referenced documents as they change;
    c. printing of sections and viewing in PDF format; and
    d. search across all ADs with contextual results; for example, all information relating to stairs.

5. Explore ways of automating compliance checking and linking to BIMs.

6. Review the purpose groups in AD B.

We recommend that DCLG explains the reasons for any changes to users and tests these changes, to make sure they do benefit them.

"The building regulations are becoming far too complex and scientific. They should be straight to the point so that everyone from the designer to the builder and the end user can understand them and implement them. There is no point in having a group of academics and scientists write the documents when nobody else understands them or have five different interpretations of what they actually mean and then expect somebody to build it on site. Go back to basics, minimum requirements with clear text and diagrams. There is an industry out there trying to untangle what the documents mean and what they should be complying with." Building Control Officer