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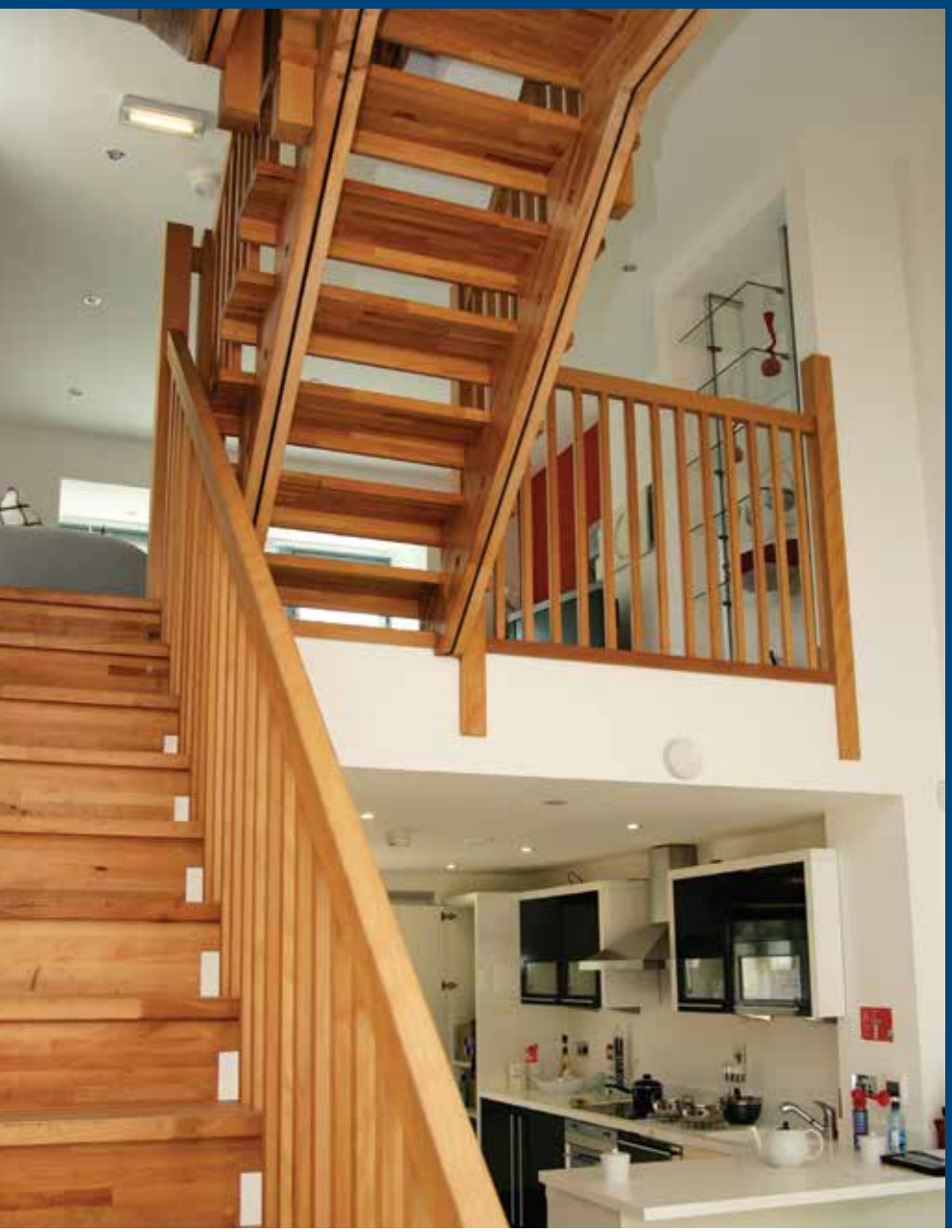
REFURBISHING STAIRS IN DWELLINGS TO REDUCE THE RISK OF FALLS AND INJURIES

Mike Roys



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FOREWORD

Our perception of risk is often distorted. So, while we may consider some situations threatening, we don't worry about others that really are a danger. Stairs are one of the latter. Perhaps it is because we become so used to them, using them many times every day without thinking, and so forget or just disregard the fact that they are dangerous.

Although we all take stairs for granted, they are complex constructions, the dimension of each part being important and affecting the ease and safety of use. Prepared by Mike Roys, and building on more than 10 years of research and study into stair design and use, this publication is comprehensive. It explains the technical characteristics of safe stair design clearly and understandably. It then describes why it is that some stairs can be more hazardous than others.

This publication focuses on stairs in existing dwellings, rather than new (yet to be built) dwellings. This is important, as over 50% of the current English housing stock was built over 50 years ago to standards required at that time, and we have learned a lot since then. Also, over 90% of the existing stock will have to last for another 25–30 years, and who knows what we will have learned by then? This means that the majority of stairs in dwellings may incorporate one or more features that can increase the likelihood of a mis-step and of a fall resulting in an injury. Being practical, as well as detailing what can make stairs more dangerous, it also discusses how they can be made safer, mitigating the risk of falls and consequential injuries.

This is an important publication, providing practitioners with vital information on assessing stairs, and on how, simply, to minimise the risk of injuries. It also reviews the cost-benefits of refurbishing to make stairs safer. It brings together evidence, data and interventions, informing policy makers and practitioners on practical approaches to what is too often an understated but important public health issue.

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EXECUTIVE SUMMARY

Are stairs dangerous? Statistical injury records indicate that every year more than 350,000 injuries and 550 deaths occur on stairs in dwellings in the UK. This is equal to a serious fall on dwelling stairs every 90 seconds, and 10 stair-related deaths every week. Most people will recall at least one fall on a stair, often minor, and will blame themselves for the event. However, research over the last 10–15 years at BRE has highlighted that there are more than just personal factors to blame; indeed there are many environmental factors relating to the design and maintenance of stairs that increase the risk of injury for all users. Fortunately, reducing the risk associated with stair faults is relatively inexpensive and, when compared with the expected cost to the health services, such repairs would have an average payback period of about six years.

This report considers the aspects of stair design that can be repaired or replaced in order to mitigate most of this risk. These include: the design of useable handrails; adequate artificial and natural lighting; guarding to prevent falls over the side edge of steps; suitable step covering; appropriate space for access to stairs and landings; recommended step dimensions; the removal of step inconsistencies and hazards associated with non-straight stairs.

A stair assessment checklist is provided, which details a simple process for assessing domestic stairs. It includes some practical advice on making measurements on stairs and what to look for when assessing risk. The report also includes three case studies that illustrate some very poor stairs, and the short payback periods associated with their repair or replacement.

In many dwellings where the risk of harm from falling on stairs is high, the increased risk is mainly due to small step dimensions (going size), dimensional variability, a lack of useable handrails, poor visibility or some combination of these factors. Simple measures can reduce this risk to a level that is comparable to the average for stairs within properties of a similar age. These include adding handrails, adding guarding, improving lighting and undertaking major repairs or maintenance.

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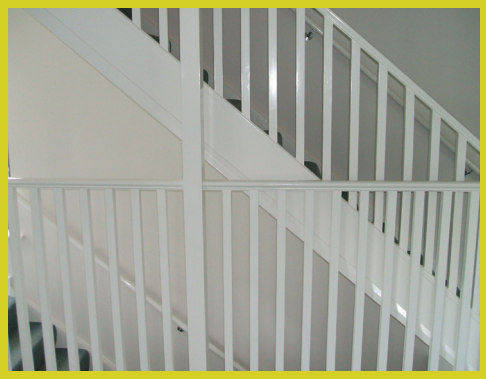

More than 350,000 injuries and 550 deaths in the UK every year are caused by falls on domestic stairs and steps. Reducing the risks associated with the most hazardous stairs is relatively inexpensive, with a typical payback period of six years (based on savings for the health services).

This report considers the aspects of poor stair design that can be repaired or replaced in order to mitigate most of this risk. These include: handrail design, lighting, guarding, step covering, access and landings, step dimensions, step inconsistencies and non-straight stairs. A stair assessment checklist provides a simple process for assessing domestic stairs, and includes some practical advice on such measures as installing handrails and making repairs. Three case studies illustrate some very poor stairs, and the short payback periods associated with their repair.

In some dwellings, the risk of harm from falling on the stairs is high, mainly due to small going size, dimensional variability, a lack of useable handrails and poor visibility. Simple measures can reduce this risk to a level that is comparable to the average for stairs expected within properties of a similar age. These include adding handrails, adding guarding, improving lighting and undertaking major repairs or maintenance.

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