Government of JERSEY

Code of Practice

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RENTED DWELLINGS LICENSING SCHEME

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Code of Practice Preface

1. Introduction and background

1.1 The purpose of this code of practice is to outline hazards, their causes and preventative measures associated with rented dwellings. These hazards are risk assessed using the Housing Health and Safety Rating System (HHSRS), which has been used in Jersey since the implementation of the Public Health and Safety (Rented Dwellings) (Jersey) Law 2018. HHSRS, whilst not itself a standard, provides a risk-based system of measurement to assess potential hazards, and mitigate hazards as required, with the ultimate aim of ensuring the safety of rented dwellings.

1.2 This code of practice is designed to consolidate the potential hazard categories ("Profiles") and align the content with other areas of Jersey based legislation. The core principles of HHSRS however still apply. More detail of the statistics, calculations and formulas, can be found on the UK government website via the following links:

1.3 Housing Health and Safety Rating System (HHSRS) operating guidance: Housing inspections and assessment of hazards

1.4 Housing Health and Safety Rating System (HHSRS) enforcement guidance: Housing conditions

1.5 The HHSRS system is founded on the principle of a logical evaluation of the likelihood of the occurrence of harm and the probable severity of the harm the hazard has the potential to cause to a member of the relevant vulnerable age group. The assessment is based on statistical evidence from the UK and informed professional judgements of likelihood and severity outcomes to calculate a hazard rating.

1.6 Outcomes from a HHSRS assessment may be used for enforcement purposes under the Public Health and Safety (Rented Dwellings) (Jersey) Law 2018. However, enforcement is only ever used as a last resort, with competent officers opting for engagement, explanation and encouragement to achieve compliance in all but the most severe cases where there is imminent risk to health or life.

1.7 The HHSRS is supported by extensive reviews of the literature and by detailed analyses of statistical data on the impact of housing conditions on health. This evidence is summarised in the Hazard Profiles section of this guidance, and these are intended to inform professional judgement.

1.8 The assessment using the HHSRS is made based on the condition of the whole dwelling. This means that, before such an assessment can be made, a thorough inspection of the dwelling must be carried out to collect evidence of the condition. The inspection requires

an understanding and appreciation of the potential effects that could result from the condition and deficiencies which may be identified during the inspection.

1.9 The HHSRS concentrates on threats to health and safety. It is generally not concerned with matters of quality, comfort and convenience. However, in some cases, such matters could also have an impact on a person's physical or mental health or safety and so can also be considered. Also, the form of construction and the type and age of the dwelling do not directly affect an assessment. However, these matters will be relevant to determining the cause of any problem and so indicate the nature of any remedial action that is required.

2. The core principles of the Code of Practice and HHSRS

2.1 The underlying principle of this Code of Practice and HHSRS is that any residential premises should provide a safe and healthy environment for any potential occupants and visitors.

2.2 To satisfy this principle, a dwelling should be designed, constructed and maintained with non-hazardous materials and should be free from both unnecessary and avoidable hazards.

2.3 Some hazards, however, are necessary or unavoidable, and others are considered desirable or expected because the perceived benefits outweigh the risks. For example, electricity is hazardous but considered necessary; stairs (however well designed) are hazardous but necessary in any multi-storey dwelling. For such hazards, the design, construction and maintenance should be such as to reduce to a minimum the probability of an occurrence which could result in harm and of the potential harm that could result.

2.4 It is a general principle that any dwelling should provide adequate protection from all potential hazards occurring in the local external environment. This includes the normal local weather conditions, ground conditions and pollution (including noise, air and radiation).

2.5 This approach acknowledges that all dwellings will contain some hazards, and that the degree to which the underlying principle can be satisfied in existing dwellings will vary. The Code of Practice and HHSRS provides a means of assessing dwellings which reflects the risk from any hazard and allow a judgment to be made as to whether that risk, in the

particular circumstances, is acceptable or not.

2.6 The assessment of the severity of a hazard is solely about the risks to health and safety. The feasibility, cost or extent of any remedial action is irrelevant to the assessment. Some deficiencies, such as a broken stair tread or a leaking pipe, may be quickly, easily and cheaply remedied, but while such deficiencies are present, the threat to health or safety can be considerable.

Note – While the Code of Practice and HHSRS focus on the existing potential effect of any deficiencies on health and safety, any inspection should not overlook any other deficiencies which do not currently contribute to hazards. Such deficiencies may have other implications, such as interference with the aesthetic or general quality, the convenience, the comfort of occupants and visitors, or, if left to deteriorate, could contribute to hazards in the future. Other powers or actions can often be used to deal with such deficiencies.

3. Responsibility for deficiencies and hazards

3.1 Hazards in dwellings can result from:

a) Deficiencies solely attributable to the design, construction and/or maintenance of the dwelling;
b) Deficiencies solely attributable to the behaviour of the occupants or neighbours; and
c) Deficiencies which are attributable to both the dwelling and the occupants or neighbours.

3.2 The Code of Practice and HHSRS provide a means of assessing the dwelling. They are, therefore, concerned only with those deficiencies that can be attributable solely or partly to the design, construction and/or maintenance of the dwelling (i.e. those falling within (a) or (c) above). This assessment is of the dwelling disregarding the current occupiers (if any) and based on the potential effect of any hazards on a member of the relevant vulnerable age group. This is important to note as it means that the assessment will not be affected by a change of occupier, and that an unoccupied dwelling can still be consistently assessed.

3.3 For example, Hazard 01: Damp and Mould has a vulnerable group of children aged under 14. This is the standard which will be inspected to irrespective of whether there is an occupant within the vulnerable group residing within the property.

Landlord responsibilities

3.4 Dwellings, as well as providing protection from the environment, should be capable of being occupied safely and healthily by a range of households with a spectrum of lifestyles. In addition, dwellings should meet the needs of a wide range of households whose members may include the elderly or the very young. In some cases, occupiers, through their activities and the furniture, furnishings, fixtures and fittings that they may introduce, can increase or reduce the likelihood of a hazardous occurrence and increase or reduce the severity of harm from any such occurrence. It is not always possible to apportion the contribution a deficiency makes to the likelihood of an occurrence and the contribution made by the behaviour of the occupants.

3.5 The Code of Practice and HHSRS are primarily concerned with those matters which can properly be considered the responsibility of the owner (or landlord) even where the dwelling is occupied by the owner. This means that it is necessary to distinguish between those elements of a dwelling for which responsibility lies with the dwelling owner (or landlord) and those for which responsibility lies with the user (the occupier).

3.6 The issue of the division of responsibility between landlord and occupier in unfurnished residential lettings has been subject to considerable parliamentary and judicial scrutiny in the UK for well over a century. As such, the balance between landlord responsibility and tenant behaviour is considered on case-by-case basis and a professional judgment shall be made.

3.7 Generally, the landlord is responsible for the provision, state and proper working order of;

a) The exterior and structural elements of the dwelling; and
b) The installations within and associated with the dwelling for:
c) The supply of water, gas, electricity, and oil;
d) The provision of facilities for personal hygiene, sanitation, and drainage;
e) The provision of facilities for the preparation and safe storage of food;
f) Ventilation; and
g) Space and water heating.

3.8 The landlord (or owner), however, is not responsible for the state of any fixtures or fittings provided by the occupier unless they have been adopted by the landlord (or owner) and are not removable. Adoption by the landlord (or owner) can occur on the change of tenancy where fixtures or fittings provided by the previous occupier remain at the commencement of the new tenancy.

3.9 A landlord's responsibilities may be summarised as – To ensure the rented dwelling allows an occupier and visitors of the dwelling to be safe and healthy by the removal of hazards

or reducing the hazards to an acceptable and practicable level.

4. The assessment of conditions using the HHSRS

4.1 Once the inspection has been completed, the authorised officer will make an assessment on the condition of the dwelling. This involves:

a) Determining whether there are any deficiencies present by assessing whether each dwelling element and the dwelling as a whole meets the relevant ideal.
b) Determine whether any deficiencies contribute to one or more hazards, and if so, which hazards; and
c) For each hazard which is obviously worse than average for that type and age of the property, the authorised officers will assess:

- The likelihood of a hazardous occurrence over the next 12 months (based on UK national statistics); and
- The probable spread of harms which could result from such an occurrence.

5. The inspection procedure

5.1 An inspection is a means by which to gather information on which authorised officers shall base decisions. Given those decisions may result in enforcement actions, the inspection should be thorough and comprehensive. The observations and findings from the inspection should be accurately recorded and stored for future reference, particularly as they may be needed to substantiate judgments and justify decisions which may affect someone's home and someone's property.

5.2 For the purposes of assessment using the Code of Practice and HHSRS, the inspection should be detailed enough to gather all the necessary information on the state and condition of a dwelling, and particularly on any deficiencies. As with all inspections, a simple logical approach should be adopted to ensure all internal and external parts of the dwelling are inspected. Such inspections generally will be restricted to visual and surface inspection, without any destructive investigations and limited by furniture and furnishings. However, it is important to note that authorised officers may require more invasive investigations to be conducted to establish the causes for deficiencies or hazards.

5.3 Authorised officers will contact the owner (or landlord) to arrange a time to inspect a unit of accommodation. The authorised officers will do their best to select a time which is mutually

convenient for the landlord and occupier. It is a requirement to advise tenants of intended entry in advance of an inspection in accordance with legislative requirements. Following the inspection, the authorised officer will complete a report of their visit and provide hazard awareness advice, detailing the deficiencies and hazards identified. The authorised officer will request a timeframe for remedial works to be completed. In all but the most serious of cases, authorised officers will endeavour to work collaboratively with landlords to meet the requirements of the law. Enforcement action in the form of the serving of an improvement or prohibition notice is reserved as a last resort.

6. Identifying hazards

6.1 Identifying and assessing hazards involves an understanding of the basic physiological and psychological requirements for human life, and of the functions of a dwelling as a whole and of each individual dwelling element.

6.2 As a minimum, a dwelling should be capable of satisfying the basic and fundamental needs for the everyday life of a household. It should provide shelter, space and facilities for the occupants. It should be suitable for the spectrum of households and individuals who could normally be expected to occupy a dwelling of that size and type.

6.3 The dwelling should not contain any deficiencies and consequential hazards which interfere with the household establishing a home, or which might endanger the occupants, potential occupiers or visitors.

6.4 Determining whether a deficiency contributes to one or more hazards also requires an understanding on the part of the authorised officer of the function(s) of each element / facility and a competence in assessing how the deficiency interferes with a function, giving rise to a hazard.

7. Assessing hazards

7.1 Using details of the deficiencies identified which contribute to hazards, the authorised officer should score each hazard which is obviously worse than the average for that age and type of dwelling.

7.2 To fully assess some hazards, destructive investigations may be necessary, but the authorised officer may not be in a position to carry these out during the inspection. In other cases, such as for excess cold, noise, and radiation, further investigations and measurements may be needed to verify the existence and seriousness of the hazard. For these, a preliminary assessment should be made, with the proviso that verification by measurement or further investigation will be necessary.

7.3 Firstly, after reviewing the deficiencies identified during the inspection which contribute to a hazard, the authorised officer will assess the likelihood of a member of the vulnerable age group suffering a potentially harmful occurrence in the next twelve months. Secondly, the authorised officer should judge the possible harm outcomes that could result from such an occurrence.

7.4 The hazard scoring is calculated as an addition of the likelihoods x potential harm outcome classes. There are 4 classes of harm (harm outcome classes I, II, III, IV). To contextualise the classes of harm, they can loosely be equated to the following:

a) Class I – Extreme (e.g. Death, paralysis, severe pneumonia, lung cancer)
b) Class II – Severe (Cardio-respiratory disease, asthma, severe burns, loss of limb, serious fractures)
c) Class III – Serious (Fractures, concussion, chronic severe stress, gastroenteritis)
d) Class IV – Moderate (Mild pneumonia, bruising, severe discomfort, regular coughs and colds)

8. Remedial work considerations – Planning

8.1 In the event a hazard is identified within a dwelling, remedial actions to remove or reduce the hazard may be required. In cases where there is a requirement for significant repair, replacement or alteration of structures, owners should be mindful of the legal requirements of the Planning and Building Standards teams. For more information or advice, please contact the Development and Land team on 01534 445508 or email planning@gov.je

9. Summary

9.1 To summarise, the purpose of this document and its contents is to provide guidance for owners (or landlords) to understand the requirements of the Public Health and Safety (Rented Dwellings) (Jersey) Law 2018 and all subordinate legislation.

9.2 Enforcement action is only ever used as a last resort or in severe cases where there is imminent risk to health or life. Authorised officers will opt for engagement with landlords and actively encourage communication between authorised officers, tenants, and landlords to achieve the best outcomes for all parties and improve the quality of housing within Jersey.

9.3 For more information regarding the detail behind the Housing Health and Safety Rating System including the calculations, statistics and hazard profiles, please see the Operating Guidance - Housing Health and Safety Rating System (HHSRS) operating guidance: housing inspections and assessment of hazards

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Contents: Hazard profiles

1. Damp and mould growth

Description of the hazard

1.1 This category covers threats to health associated with increased occurrence of house dust mites and mould or fungal growths resulting from dampness and/or high humidities. It includes threats to mental health and social well-being which may be caused by living with the presence of damp, damp staining and/or mould growth.

Potential for harm

Most vulnerable age group and statistical averages

1.2 The most vulnerable age group is all persons aged 14 years or under.

Physiological health effects

1.3 Both the detritus from house dust mites and mould spores are potent airborne allergens. Exposure to high concentrations of these allergens over a prolonged period will cause sensitisation of individuals with a predetermined genetic tendency to sensitisation and may sensitise other individuals. Once a person is sensitised, relatively low concentrations of the airborne allergen can trigger allergic symptoms such as rhinitis, conjunctivitis, eczema, cough, and wheeze. For a sensitised person, repeated exposure can lead to asthma, and it appears that the severity of the asthma intensifies with increasing humidity, house dust mite and mould levels.

Dust mites

1.4 Allergens associated with house dust mites (found in the mite faecal pellets) are the most common triggers of asthma, and are also implicated as a causal agent of the illness. Around 80% of genetically pre-disposed children who suffer from asthma are sensitised to house dust mites, and about a third of all children, whether asthmatic or not, display some evidence of allergy to them.

Mould growth

1.5 Although less significant statistically in health terms, spores of many moulds and fungi (including timber attacking fungi) can be allergenic. The spores can also be carcinogenic, toxic and cause infections; the potential health effect varying with species. Fungal infection, whilst not common, is usually associated with those vulnerable to infection (such as those on immuno-suppressant drugs). Some fungi, particularly when present in very high concentrations, can also colonise the airways of susceptible individuals, particularly asthmatics. Toxins from some moulds (mycotoxins) can cause nausea and

diarrhoea, can suppress the immune system, and have been implicated in cancers. Although uncommon, these are serious if they occur.

Social and mental health effects

1.6 The mental and social health effects of dampness and mould should not be under-estimated. Damage to decoration from mould or damp staining and the smells associated with damp and mould can cause depression and anxiety. Feelings of shame and embarrassment can lead to social isolation.

Causes

1.7 The indications are that house dust mite populations and indoor mould growth have increased over the last century. This is probably because of reduced ventilation levels, increased humidities, and warmer indoor temperatures in winter months caused by changes in dwelling design and adaptations introduced when houses are renovated.

1.8 Both house dust mites and moulds flourish in damp or humid conditions, and their growth is also influenced by temperature. Where relative humidities are within the optimum range, increasing temperatures results in a reduction in dust mite populations. However, where there are high humidities, outside the optimum range, increasing temperatures can result in increased mite populations and mould growth. Moulds can grow when the indoor relative humidity persistently exceeds 70%.

1.9 Moisture production is influenced by the design, construction and repair of the dwelling, and on occupant density and activity. Moisture is produced by occupants through their normal biological and domestic activities. Relatively low levels of moisture are generated through breathing and are spread out over the twenty-four hours. However, there are higher levels produced in peaks from cooking, clothes drying and bathing (or showering). Vapour pressure will equalize humidities throughout a dwelling, so that damp in one part will have an impact on relative humidities in other parts. Our everyday activities add extra moisture to the air inside our homes. Two people at home can introduce three pints of water into the air form breathing alone.

1.10 There should be continuous low-level of background ventilation. Small reductions in the ventilation rate below 0.5 air changes per hour can greatly increase the mite population. Increasing the rate to above 0.7 air changes per hour can also lead to an increase in the mite population in a dwelling which is not adequately heated. Use of mechanical heat recovery ventilation (MHRV) systems can allow an increased air change rate (around 0.9 per hour) without the same heat loss. Dwellings which can be expected to have high occupant density and small room sizes may require increased ventilation and

heating/insulation to prevent problems.

1.11 Hygrothermal conditions (the movement of heat and moisture through buildings) are considered the most important limiting factor in house dust mite population growth. However, furnishings, especially the age and type of mattresses, and mode of housekeeping, can also have some influence.

1.12 Air always contains some water vapour, warm air can hold more moisture than cold air. The amount of water that can be present in air is related to the air temperature. When the upper limit of water vapour is reached, the air is saturated, if air becomes saturated, condensation can occur. If the relative humidity of the air is 100% then it is fully saturated.

Preventive measures and the ideal

1.13 Dwellings should be warm, dry and well-ventilated. Indoor relative humidity should be between 40% and 70% for human comfort, except for short periods of fluctuation. This range is the optimum to limit the growth of house dust mite populations and mould growth. It is also the recognised comfort zone.

1.14 The structure and finishes of a dwelling should be maintained free from rising, penetrating and traumatic dampness, or persistent condensation.

1.15 Rising and penetrating dampness should be prevented by proper and adequate damp-proofing. This includes damp proof courses and membranes around door and window openings. The external fabric should be kept in repair to prevent rain penetration. Preventative measures including frost protection, will help avoid traumatic problems such as burst pipes and tanks.

1.16 All facilities which involve the use of water (for example, baths, wash hand basins, sinks, showers, and WC basins) should be properly installed to prevent or at least minimise the risk of dampness from splashing during normal use. Such facilities should be properly connected to a waste pipe capable of safely carrying wastewater to a drainage inlet outside the dwelling.

1.17 There should be properly installed rainwater goods, including eaves gutters and rainwater fall pipes, capable of safely collecting rainwater discharged from the roof and carrying it safely away from the dwelling either into a drainage inlet or other proper means of disposal.

1.18 Roof and underfloor spaces should be properly ventilated to ensure timber remains air-dry to minimize the chance of fungal infection.

1.19 The dwelling should be able to cope with normal occupant moisture producing activities without persistently high relative humidities. There should be provision for the safe removal of moisture-laden air during peak production. This should include extraction during cooking or bathing, either by mechanical means, or passive stack ventilation and direct venting of clothes drying facilities (whether tumble driers or drying cabinets) to the exterior.

1.20 There should be sufficient and appropriate means of ventilation to deal with moisture generated by normal domestic activities without the need to open windows. Opening windows can result in heat loss, noise, and may be a security risk. There may be no need for additional background ventilation where windows are ill-fitting, no draught-stripping, and/or where there are open chimney flues. Where there is draught-stripping, or tight-fitting windows, provision for background ventilation may be necessary via trickle vents in replacement windows, insertion of high-level airbricks, or by a passive stack or a MHRV system.

1.21 If moisture levels are controlled, through adequate ventilation, dust mite populations can be significantly reduced by raising indoor temperatures. To achieve this, there should be adequate structural thermal insulation, and appropriate means of space heating.

1.22 For more information on ways of controlling condensation and mould, visit: Controlling Condensation and Mould: Essential Information for landlords, agents, tenants and home owners

Relevant matters affecting likelihood and harm outcome

1.23 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Energy efficiency – inadequate heating and insulation of the dwelling.
b) Background ventilation – lack of controllable background ventilation.
c) Extract ventilation – lack of safe and accessible means for the extraction of moisture laden air during cooking, bathing or showering.
d) Clothes drying facilities – lack of facilities ventilated to the external air.
e) Damp proofing – in disrepair or otherwise inadequate, resulting in rising or penetrating dampness.
f) Disrepair – floors, walls or roofs allowing water penetration.
g) Exposed water tanks and pipework – inadequate frost protection.
h) Water using appliances – inadequately installed and sealed facilities, such as baths, showers, wash hand basins and WC basins which may permit splashing.

i) Plumbing and waste pipes – inadequately installed, or disrepair to, waste pipes or plumbing serving water using appliances (such as baths, showers, wash hand basins, bidets and sinks).
j) Rainwater goods – inadequate or defective.
k) Roof and sub-floor spaces – inadequate ventilation.
l) Small rooms sizes – may result in high occupant density.

Hazard assessment

1.24 The many variables mean that, perhaps more so than for other hazards, the assessment is one of professional judgement rather than measurement. Consideration should be given to the design, condition, and state of repair of the dwelling. The location, extent and duration of any dampness identified are important determinants of the effect it may have on dust mite populations and mould growth, and the consequent potential for harm.

1.25 The immediate local climate and exposure should also be taken into account. Areas of high rainfall will influence penetrating dampness. Altitude and wind exposure will affect the thermal efficiency and associated condensation/high relative humidities. The climate in Jersey is oceanic, cool and humid throughout the year and this should be taken into account when measuring the relative humidity levels.

1.26 Prevailing weather conditions should be taken into account. While a temporary spell of good weather may result in dry conditions when an inspection is undertaken, the assessment is for a 12-month period. Penetrating and rising dampness may be less prevalent during dry weather. Condensation is less likely outside cold and winter months. Damage to decoration, mould growth, and/or structural deficiencies are indicative of potential problems.

1.27 Dwelling size is a relevant factor, a small dwelling can cope with less moisture than a larger dwelling. The location of the damp and/or mould is also relevant, the threat to health being influenced by the number and intended use of the affected room(s). Damp affected bedrooms are probably more important since mattresses tend to support larger dust mite populations than other furniture and furnishings. Also, the most vulnerable age group normally spend a large proportion of the day in their bedrooms, both because that group typically require 9 to 14 hours sleep per day and because bedrooms are often also used for homework.

1.28 The cause of the dampness is also relevant to the assessment. Condensation is a symptom of high humidities, while other types of dampness are potential causes of high humidities, rather than being a symptom.

1.29 Measurement of background ventilation rates and of thermal efficiency may be appropriate in some circumstances.

1.30 For dwellings where rooms are occupied for both living and sleeping, such as bedsits and small flats in multi-occupied buildings, then the presence of dampness may be more significant as occupants can be expected to spend a greater proportion of time exposed. This can be compounded if the room is also used for cooking.

2. Excess cold

Description of the hazard

2.1 This category covers the threat to health due to low indoor temperatures in a dwelling.

Potential for harm

2.2 The most vulnerable group is all persons 65 years or over. It is noted that excess cold can cause harm to any person.

Health effects

2.3 A healthy indoor temperature is around 21°C, although cold is not generally perceived until the temperature drops below 18°C. A small risk of adverse health effects begins once the temperature falls below 19°C. Serious health risks occur below 16°C with a substantially increased risk of respiratory and cardiovascular conditions. Below 10°C the risk of hypothermia becomes significant, especially for the elderly.

2.4 In the UK there are approximately 30,000 more deaths between December and March than expected from the death rates in other months of the year. This seasonal fluctuation, Excess Winter Deaths, is greater in Britain than in most other countries of continental Europe and Scandinavia. In Jersey, the average is 40 Excess Winter Deaths per year.

2.5 Cold indoor temperatures cause an increase in deaths from cardiovascular conditions (e.g. stroke and heart attack) and respiratory diseases (e.g. bronchitis, influenza and pneumonia). They also will potentially exacerbate the symptoms of pre-existing conditions like asthma, Chronic Obstructive Pulmonary Disease (COPD), arthritis and angina, and can slow wound healing.

2.6 Cold temperatures can potentially lead to a lowering of the immune system, meaning that people living in cold properties are more vulnerable to infections.

2.7 Cold drafts may affect the respiratory tract and can slow the heart temporarily, increasing cardiovascular strain. When the whole body is cooled, blood pressure increases. The effect of cold air on the bronchial lining and immune system can reduce resistance to infection. Thus, sleeping in cold bedrooms has been shown to substantially increase the health risk.

Causes

2.8 The percentage rise in deaths in winter is greater in dwellings with low energy efficiency ratings. There is a gradient of risk with age of the property, the risk being greatest in dwellings built before 1850, and lowest in the more energy efficient dwellings built after 1980. Absence of central heating and dissatisfaction with the heating system also show some association with increased risk of Excess Winter Death.

2.9 Cold related illness is in part determined by the characteristics of the dwelling and in part by occupation factors. For example, under-occupation can mean either excessive heating costs or low indoor temperatures.

2.10 The energy efficiency of a dwelling depends on the thermal insulation of the structure, on the fuel type, and the size and design of the means of heating and ventilation. Any disrepair or dampness to the dwelling and any disrepair to the heating system may affect their efficiency. The exposure and orientation of the dwelling are also relevant.

2.11 Some forms of insulating material, such as glass fibre, will settle over a period and become less effective as a result. As water readily conducts heat, excess moisture content (dampness) of the structure will reduce the thermal insulation provided. The effectiveness of some forms of insulating material can become compromised by moisture. Dampness will also affect the thermal insulation of bedding, increasing the risk.

2.12 Excess ventilation wastes heat and reduces air temperatures. It also causes draughts and discomfort. Excess ventilation may be caused by too large or inappropriately sited permanent openings, or large openable windows. Draughts can also be caused by ill-fitting butt-jointed floor boarding, or ill-fitting doors or windows.

Preventative measures and the ideal insulation

2.13 An insulated property will minimise heat loss. The level of insulation required is dependent upon a number of factors, including the position of the property in relation to other dwellings, the geographical location and exposure.

Heating

2.14 Heating systems should be safely installed and maintained. The heating system should be installed having regard to the design, layout and construction of the dwelling to ensure the system will be efficient and adequate. The occupants should be able to control the heating system. In multi-occupied buildings, the heating may be controlled centrally. Such systems should be operated such that occupants are not exposed to low indoor

temperatures. The occupants should have controls so that they can regulate temperature within their dwelling. It is important that occupants understand how to operate the heating system in the dwelling, landlords should ensure manuals or instructions for use are available.

Ventilation

2.15 The property should have adequate low level background ventilation, which is properly installed, maintained and appropriate to that part of the dwelling. The ventilation should be controllable and there should be means for rapid ventilation in areas where there can be high moisture production.

Damp

2.16 The dwelling should be in good condition and free from damp caused by structural defects. Damp within walls can cause a reduction in thermal properties. For more details on combatting damp, refer to Section 1 of Hazard profiles: Damp and mould growth.

2.17 Professionals in Jersey can undertake Home Energy Audits and may issue Energy Performance Certificates as part of the audit process. During the audit you should be given information about how to improve energy efficiency.

Relevant matters affecting likelihood and harm outcome

2.18 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Thermal insulation – inadequate insulation of the external envelope of the dwelling, including the presence of cold bridges.
b) Dampness – in such a position, and sufficiently extensive and persistent as to reduce the effectiveness of the thermal insulating material and/or the structure.
c) Settling of insulation – compression of the thermal insulating material reducing its effectiveness.
d) Type of heating provision – inappropriate or inefficient systems and appliances.
e) Size of heating system – systems and appliances inadequate for the size of dwelling.
f) Installation and maintenance of heating system – inadequately installed or maintained systems.
g) Controls to heating system – inadequate or inappropriate controls to the system or appliance.
h) Amount of ventilation – inadequate, excessive, or inappropriate provision for thorough ventilation.
i) Ventilation controls – inadequate means of controlling the ventilation.

j) Disrepair to ventilation – to the system or controls.
k) Draughts – uncontrollable draughts and those situated to cause discomfort.

Hazard assessment

2.19 Consideration should be given to the design, condition, and state of repair of the dwelling. The location, extent and duration of any faults identified are important factors of the effect this may have on heat loss from the property.

2.20 The type of heating provision, the locations of heaters, the type of fuel and ability to heat the property to an appropriate temperature will be considered during an assessment.

2.21 The assessment will also look at the adequacy of the ventilation and insulation in the property.

2.22 Measurement of thermal efficiency may be appropriate in some circumstances.

3. Excess heat

Description of the hazard

3.1 This category covers the threats to health from excessively high indoor air temperatures.

Potential for harm

Most vulnerable age group and statistical averages

3.2 The most vulnerable age group is all persons aged 65 years or over.

Health effects

3.3 As temperatures rise, thermal stress increases, initially triggering the body's defence mechanisms such as sweating. High temperatures can increase cardiovascular strain and trauma, and where temperatures exceed 25°C, mortality increases and there is an increase in strokes. Health effects can include the following:

3.4 Dehydration - The human body tends to lose excess heat through sweating. The hotter a person gets, the more they sweat, and unless they rehydrate adequately, they will begin to become dehydrated. Dehydration is linked to many other health conditions and can itself be very dangerous in older people and young children. In some cases, severe dehydration can lead to kidney failure, coma or death. People with hypertension (high blood pressure) are particularly at risk.

3.5 Cardiovascular Issues - The other method the human body has for dispelling heat is to increase the flow of blood to the proximities of the body (feet, hands) as it is easier to radiate heat from these part of the body, which helps to regulate core temperature. Excessive heat can therefore put strain on the cardiovascular (blood) system, leading to an increased risk of heart-related problems. It can cause an increase in heart rate and blood pressure, potentially triggering heart attacks, strokes or other cardiovascular events, especially in individuals with pre-existing heart conditions.

3.6 Heat Exhaustion - This is caused by a person exerting themselves in hot temperatures (typically over 32°C). Heat exhaustion is not thought to link to any long-term effects, but short-term effects include dizziness, cramps and vomiting. If left untreated, heat exhaustion can develop fairly rapidly into heatstroke.

3.7 Heatstroke - Far more serious than heat exhaustion, heatstroke is potentially fatal. Effects

include the swelling of organs (including the brain), coma, delirium, and seizures. Even when not fatal, heatstroke can cause permanent disability.

3.8 Respiratory Problems - Hot and humid conditions can exacerbate respiratory conditions like asthma, and Chronic Obstructive Pulmonary Disorder (COPD). High temperatures can lead to airway inflammation and increased breathing difficulties for individuals with respiratory issues. These effects can be increasingly felt at night.

3.9 The elderly, especially those with pre-existing cardiovascular disease, and the very young (infants) are more vulnerable than other groups.

Causes

3.10 While in the UK it has been unusual for risks from over-heating of a dwelling, heat waves are forecast to become more common. It is possible, therefore, that there will be an increase in mortality and morbidity rates from excess heat associated with the inability to maintain a healthy temperature within dwellings.

3.11 The major dwelling factors are solar heat gain, ventilation rates, and thermal capacity and insulation of the structure. Smaller, more compact dwellings, and particularly attic flats, are more prone to overheating than are large dwellings.

3.12 Solar heat gain is influenced by the area and orientation of glazing, the amount of external shading, and the thermal capacity and insulation of the structure. Ventilation and/or the provision of air-conditioning influence the ability to control the indoor air temperature.

3.13 Of particular importance to the risk to health of occupants is the ability to dissipate heat at night. This is influenced by the thermal mass of the structure, the position of insulation in the structure (i.e. whether the insulation is external, in the cavity, or internal) and the night-time ventilation rate.

3.14 Defects to a heating system, or the inability to control the dwelling's heating system, can also be a cause of excessive heat in dwellings.

3.15 Dwellings in multi-occupied buildings are more likely to be affected by excessively high indoor temperatures. Particularly those located immediately beneath an uninsulated roof, those with only a south facing elevation, and those with district heating systems not controllable by the occupier.

Preventive measures and the ideal

3.16 The structure of the dwelling should provide or incorporate sufficient thermal insulation, having regard to its construction, its geographical location, its position in relation to other dwellings and buildings and its orientation.

3.17 Where there are large expanses of south facing glazing there should be appropriate shuttering or blinds to control solar heat gain in summer months.

3.18 There should be means for cooling during hot summer weather, either by natural ventilation or by air conditioning. The means should be controllable, properly installed and maintained, and appropriate, having regard to the particular part of the dwelling. While openable windows can provide ventilation, occupiers may be reluctant to use them for security reasons, or because of external noise levels, especially at night.

3.19 There should be adequate controls to the heating system within the dwelling, particularly for district heating systems, enabling the occupier to control temperature.

Relevant matters affecting likelihood and harm outcome

3.20 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Thermal insulation – inadequate provision for thermal insulation particularly in attic flats.
b) Orientation of glazing – large areas of south facing glazing in inappropriately designed dwellings.
c) Heating controls – faulty, inappropriately designed, or inadequate controls to the heating system.
d) Ventilation provision – inadequate or inappropriate provision for ventilation.
e) Ventilation control – inadequate means of controlling the ventilation.
f) Disrepair to ventilation – to the system or devices.

Hazard assessment

3.21 The assessment should take account of the provision for ventilation, particularly night-time ventilation, and the provision and condition of any mechanical ventilation or air conditioning system. Also relevant will be the thermal capacity of the structure and the amount and position of thermal insulation, the extent and orientation of glazing, and the condition of and controls for the heating system.

4. Asbestos (and MMF)

Description of the hazard

4.1 This category covers the threats to health from the presence of, and exposure to, asbestos fibres and manufactured mineral fibres (MMF) within dwellings.

Potential for harm

Most vulnerable age group and statistical averages

4.2 There is no specific age group more vulnerable than others.

Health effects

Asbestos

4.3 Asbestos is a natural mineral fibre, which is a particularly effective fire resistant, insulation material. There are three main types of asbestos, chrysotile (white asbestos), and the amphibole forms crocidolite (blue asbestos) and amosite (brown asbestos).

4.4 The health risks from asbestos exposure are associated with inhalation. Risks from ingestion and skin contact are minimal.

4.5 The inhalation of asbestos fibres can cause pleural disease (pleural plaques and fibrosis), lung cancer and mesothelioma (cancer of the pleura, the lining around the lung, or, less frequently, cancer of the peritoneum). Each of these conditions typically occurs decades after first exposure to asbestos. Pleural plaques may occur 10 years after asbestos exposure, although they are likely to go unidentified. Lung cancer and mesothelioma typically occur 20 to 50 years after exposure. (Asbestosis requires very high levels of exposure to asbestos not found in the domestic situation, and is therefore not considered here.) Lung cancer has very poor survival rates, and there is no known cure for mesothelioma. While pleural plaques are not in themselves harmful, if discovered, they may cause significant anxiety about the risk of more serious asbestos-related conditions.

4.6 The risk to health from inhalation of asbestos fibres depends on the number of fibres per unit volume of air, the potency of the fibres (dependent on fibre dimension and bio-persistence or bio-solubility), and the duration of exposure. Chrysotile is more bio-soluble than amphibole asbestos, and so tends not to persist in the lung as long. For this reason, amphibole asbestos is considered the most hazardous form, especially with regard to mesothelioma. It appears that mesothelioma may occur following relatively low levels of

exposure to amphibole asbestos.

4.7 In the UK, it is estimated that lung cancer or mesothelioma victims where dwelling exposure is the cause are at worst in double figures, and at best less than one per year. Those at greatest risk include children and adults with long-term exposure. Smokers are at increased risk as the combined effect of smoking and exposure to asbestos is more than additive in the risk of lung cancer.

MMF

4.8 MMF include rockwool and glass fibre blanket, which provide thermal and acoustic insulation. MMF are skin, eye and respiratory irritants, and there have been isolated reports of respiratory problems and dermatitis associated with exposure to MMF in the home.

4.9 There is conflicting data on risks of lung cancer from inhaled MMF, and the risks have been largely assessed on the basis of occupational exposure. In the domestic situation, the balance of evidence suggests that there is only a small clinical risk of Class I to IV harms following domestic exposure.

Causes

4.10 Asbestos has been incorporated in a wide range of building products. In most traditionally built houses and flats some products and materials containing asbestos (mostly chrysotile) may be present. Airborne fibre levels in these buildings are unlikely to exceed ambient background levels. As well as not having been extensively used, the asbestos is not usually in locations that are likely to be disturbed.

4.11 The indoor air concentrations of asbestos in most dwellings, including those where asbestos is present but in good condition, present minimal risk to health. Where asbestos materials are damaged and clearly releasing fibres, airborne asbestos fibre levels are normally higher. One week of exposure to damaged asbestos in a non-traditionally built flat can equate to 14 years of normal exposure at ambient levels.

4.12 Activities such as plumbing and rewiring which involve disturbance of asbestos materials can generate much elevated airborne fibre levels. So far as occupants are concerned, exposure from such activities is likely to be episodic, infrequent and short; such that the risk is likely to equate to less than the equivalent of two years of exposure at ambient levels. However, in the case of amphibole asbestos there is some uncertainty over the associated risk of mesothelioma following low levels of exposure.

4.13 Loft and cavity wall insulation are the most common uses of MMF in dwellings. Most MMF products do not readily release airborne fibres, and few if any fibres which are

released reach the deep lung, and those that do are not bio-persistent. The risk in most dwellings is therefore minimal.

Preventive measures and the ideal

4.14 Asbestos should not be present in dwellings. However, where it is, as removal is likely to result in an increase in airborne fibre levels, existing asbestos should be managed in situ if it is in good condition, not likely to be damaged and/or not likely to be worked on or disturbed.

4.15 Management of asbestos materials involves identifying the location and condition of asbestos, ensuring it is effectively sealed, making inaccessible to prevent occupiers damaging the sealing surface, labelling the asbestos and keeping a record of the location of asbestos in the building.

4.16 Where existing asbestos is damaged or is likely to be damaged or disturbed, an assessment needs to be made and action taken to repair, seal, enclose or remove it.

4.17 To avoid the possibility of adverse health effects, high peak exposures to asbestos fibres should always be avoided. Most work on asbestos insulation, asbestos insulating board and lagging, including sealing and removal, should be completed by a professional contractor licensed by the Health and Safety Inspectorate.

4.18 The Asbestos Reception and Disposal Facility at La Collette accepts all asbestos waste. This is the only location in Jersey that can accept asbestos waste.

4.19 Where MMF-based materials are present, the material should be in good condition, sealed, inaccessible, labelled and the location recorded. Unnecessary exposure to any fibre should be avoided and exposure likely to result from maintenance, installation or removal of MMFs should be avoided or minimised.

Relevant matters affecting likelihood and harm outcome

4.20 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Date of construction – housing, particularly flats, built between 1920 and 1979.
b) Presence of asbestos – particularly in accessible positions.
c) Unsealed asbestos – unsealed asbestos-based materials.

d) Unlabelled asbestos – unlabelled asbestos-based materials.
e) Disrepair – damage or disrepair to asbestos-based material.
f) Presence of MMF – in accessible positions.

Hazard assessment

4.21 Assessment should include identifying any asbestos, its vulnerability to damage, and the extent of any current damage and possible fibre release. If present, the type of asbestos should also be identified. Sampling may be necessary to confirm the presence of asbestos and the type.

4.22 Assessment for MMF should involve visual examination for disturbance of material.

5. Biocides

Description of the hazard

5.1 This category covers the threats to health from chemicals that are used to treat timber and mould growth in dwellings.

5.2 While biocides include insecticides and rodenticides to control pest infestations (e.g. cockroaches or rats and mice), these are not considered for the purposes of the Code of Practice.

Potential for harm

Most vulnerable age group and statistical averages

5.3 There is no specific age group more vulnerable than others.

Health effects

5.4 Biocides are intended to prevent growth or development of insects, fungi, moulds and bacteria, or kill those already present. The potential for harm to human health varies depending on the particular biocide.

5.5 The main health risk is from inhalation, although skin contact and ingestion may also be an issue, particularly for small children.

Causes

5.6 Problems only arise where biocides are used incorrectly, or where the dwelling is occupied before the fumes have been allowed to disperse adequately.

Preventive measures and the ideal

5.7 Where possible, the use of biocides should be avoided. Often, treatment of the underlying and main cause of the problem, remedying dampness and renewal of affected timber, will make the use of biocides unnecessary.

5.8 Biocides must be used in accordance with the instructions, and provided proper precautions are observed during use and afterwards to allow for fume dispersal, risks will be minimised. Use of biocides for treating mould growth and timber should also be in accordance with the various

statutory controls. Wood preservatives (fungicides and insecticides) and surface biocides (mould growth treatments) are subject to approval under both UK and EC regulations and directives.

Relevant matters affecting likelihood and harm outcome

5.9 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Use of biocides – use particularly in living areas.
b) Misuse – failure to follow the instructions for use and other proper precautions.

Hazard assessment

5.10 In order to properly assess the hazard, it will be necessary to identify the biocide(s) used, and determine whether the precautionary procedures and recommendations for use of the product have been followed.

6. Carbon Monoxide & Fuel Combustion Products

Description of the hazard

6.1 This category covers the threats to health due to hazards resulting from the presence of excess levels in the atmosphere within the dwelling of:

a) Carbon monoxide.
b) Nitrogen dioxide.
c) Sulphur dioxide and smoke.

6.2 Carbon monoxide, oxides of nitrogen, sulphur dioxide and smoke, are products associated with the combustion, or incomplete combustion, of gas, oil, and solid fuels for heating and cooking. The health effects of carbon monoxide, oxides of nitrogen, and sulphur dioxide and smoke vary. However, the causes, preventive measures and dwelling characteristics affecting likelihood and harm outcome overlap, therefore these are discussed together.

Carbon monoxide - Potential for harm

Most vulnerable age group and statistical averages

6.3 The most vulnerable age group is all persons aged 65 years or over.

Health effects

6.4 Carbon monoxide is a colourless, odourless and extremely toxic gas. Blood haemoglobin has a greater affinity for carbon monoxide than it does for oxygen, which means that inhalation of this gas will reduce the ability of the blood to take up oxygen.

6.5 At high concentrations, carbon monoxide can cause unconsciousness and death. At lower concentrations, it causes a range of symptoms from headaches, dizziness, weakness, nausea, confusion, and disorientation to fatigue. These symptoms are sometimes confused with influenza or depression. In people with ischaemic heart disease, it can result in episodes of increased chest pain. Carbon monoxide may also impair foetal development.

6.6 The half-time for elimination of carbon monoxide from blood is between 2 and 8 hours. Thus, diagnosis of carbon monoxide poisoning can be difficult unless a blood test is taken within hours of exposure. Because of the possibility of misdiagnosis of non-fatal cases, the total burden of carbon monoxide poisoning is uncertain. It is likely that carbon monoxide contributes to a small number of unattributed deaths and acute episodes of cardiovascular disease. However, the UK

reported figures show around 60 carbon monoxide related deaths occur per year, and about 300 acute non-fatal cases.

6.7 It is unclear what effects occur from long-term exposure to much lower, but above normal, concentrations of carbon monoxide. Many of the reported symptoms, including impairment of attention span and short-term memory loss, appear to be related to, and be symptoms of, damage to the central nervous system. It is estimated that over 100,000 people a year suffer low level carbon monoxide poisoning in the UK.

6.8 Those most vulnerable to carbon monoxide exposure include unborn children, infants, the elderly and people with anaemia or heart or lung disease. The highest rate of deaths from carbon monoxide poisoning occurs in older age-groups, especially in people aged 75+ years. This may be for several reasons, including the increasing prevalence of cardio-vascular illness and neurological decline at older ages, and the fact that the elderly tend to spend a high proportion of their time at home indoors.

Nitrogen dioxide - Potential for harm

Most vulnerable age group and statistical averages

6.9 There is no specific age group more vulnerable than others.

Health effects

6.10 Nitrogen dioxide affects the respiratory system, damaging the lining of the airways. At low levels it may cause narrowing of the airways in asthmatics and may exacerbate reactions to allergens such as house dust mites. Asthmatics are therefore more vulnerable than others, particularly if also exposed to other airborne allergens.

6.11 Exposure to high levels of nitrogen dioxide may also increase susceptibility to bacterial and viral infection of the lungs.

Sulphur dioxide and smoke - Potential for harm

Most vulnerable age group and statistical averages

6.12 There is no specific age group more vulnerable than others.

Health effects

6.13 Sulphur dioxide from open fires is implicated in respiratory conditions, particularly bronchitis and breathlessness. People with asthma are the most vulnerable.

Carbon monoxide, oxides of nitrogen, and sulphur dioxide

6.14 The causes, preventive measures and the ideal, along with features relevant to hazard assessment, for each of these indoor air pollutants overlap, and are therefore discussed together.

Causes

6.15 The main source of carbon monoxide within dwellings is the incomplete combustion of all fuels containing carbon, including gas, oil, and solid fuels. Gas and oil burning appliances are the main sources of nitrogen dioxide. Sulphur dioxide, which has a noticeable smell, is produced by oil and solid fuel.

6.16 Open flued appliances can discharge combustion gases back into rooms where there is a negative pressure, for example, caused by extract fans that are too powerful.

6.17 A possible source of carbon monoxide is from vehicle exhausts, particularly where there is an integral garage to the dwelling.

6.18 Gas cookers discharge combustion gases into the dwelling and, without appropriately sited extract ventilation, safe levels are likely to be exceeded. Flueless gas or oil heaters also discharge the combustion gases into the dwelling. Even in well-ventilated rooms, these are likely to produce carbon monoxide and nitrogen dioxide levels above safe levels while the appliances are in use.

Preventive measures and the ideal

6.19 Gas, oil and solid fuel burning appliances must be correctly installed and maintained. All such appliances should be provided with an adequate air supply for combustion, be appropriately sited, and be connected to adequately sized flues to safely take away combustion gases. Rooms with gas, oil or solid fuel burning appliances should be provided with adequate and appropriate ventilation.

6.20 All flues should be regularly checked and kept clean. Flues should not be sited close to an openable window or other ventilators, otherwise flue gases may enter the dwelling. Balanced flues, which take in air for combustion from outside and discharge combustion gases outside, avoid the likelihood of combustion gases spilling back in.

6.21 There should be a ventilated lobby between an integral garage and living accommodation.

6.22 Properly sited and maintained carbon monoxide detectors of a suitable type will warn occupants of danger, enabling them to take action to prevent further build-up of the gas or escape from the dwelling.

6.23 Recommended maximum exposure levels are given by the World Health Organisation. Gas, oil and solid fuel burning appliances and associated flues should be properly installed and maintained by

a competent person. For gas appliances, installation should be by a person on the United Kingdom Gas Safe Register.

Relevant matters affecting likelihood and harm outcome

6.24 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Flueless appliances – gas or oil burning appliances, including cookers.
b) Disrepair to appliance – to gas, oil or solid fuel burning appliances resulting in incomplete combustion.
c) Inadequate ventilation – particularly of rooms with gas, oil or solid fuel burning appliances.
d) Disrepair to ventilation – disrepair to the means of ventilation.
e) State of flues – lack of proper and regular cleaning of flues serving gas, oil or solid fuel burning appliances.
f) Disrepair to flues – serving gas, oil or solid fuel burning appliances.
g) Flue outlet siting – sited adjacent to openable window.
h) Extractor fans – in rooms with open flued appliances.
i) Ventilation lobby – no lobby between a garage and living accommodation.
j) Carbon monoxide detectors – lack of, or defects to, detectors.

Hazard assessment

6.25 There should be visual inspection of the gas, oil and solid fuel appliances, their flues, and the ventilation arrangements at the dwelling. Where there are indications that there may be an above average risk, further investigation and a safety report from an appropriate engineer may be necessary.

6.26 If you think you may have a gas leak you should:

a) Call (01534) 755555 immediately (this is a 24-hour Jersey Gas Emergency Line)
b) Turn off all appliances that use fuel other than electricity.
c) Open the windows.
d) Leave the room.
e) See a doctor at once.
f) Call a suitably qualified engineer to check all your appliances.
g) Your landlord should be able to assist in resolving the matter.

7. Lead

Description of the hazard

7.1 This category covers the threats to health from the ingestion of lead in rented dwellings.

Potential for harm

7.2 The most vulnerable age group is all persons aged under 3 years.

Health effects

7.3 There are two main sources of lead within dwellings – paint and water pipes. Other sources of lead include soil, particularly around older buildings contaminated by flaking external paintwork, and adjacent to industrial premises using (or previously having used) lead. In addition, there may be residual lead in soil close to busy roads from the exhaust fumes from leaded petrol.

7.4 Lead is a heavy metal which, when ingested, accumulates in the body and has toxic effects on the nervous system, cognitive development and blood production. Continual exposure at low levels has been shown to cause mental and behavioural conditions in children.

7.5 Lead is readily absorbed from the intestinal tract, especially in children, and its absorption is enhanced by a dietary deficiency of iron and calcium.

7.6 However, the most prevalent risk is Intelligence Quotient (IQ) deficiency in children, rather than acute poisoning. Even with relatively low levels of lead in blood, there are indications that it affects the IQ of children.

7.7 The highest risk group is young children aged 0-3 years because of lead's potential effect on neurological development, and because physiologically they take up lead more readily. Children may also ingest lead from paint (pica) or dust. Pregnant women and foetuses have also been identified as a risk group, mainly in relation to levels of lead in water. The elderly are more susceptible to health effects than younger adults, because as part of the aging process lead may be released from bone changes, and toxic effects may be observed from relatively low lead exposures.

Causes

7.8 The main exposure to lead is through the removal of lead-based paint on redecoration or through exposure in the water supply to the property.

7.9 Lead was widely used in domestic paint up until the 1960s in the EU, and since then restrictions on the use of lead in paint mean that there is likely to be little risk in post-1970 properties.

7.10 For the purposes of this Code of Practice, lead contamination of water is limited to that which may occur after water has been delivered to the premises where it becomes the responsibility of the owner. Lead does not normally occur in natural water supplies but is the result of the use of lead pipework or lead-based solder (in copper or lead pipework) in the water distribution systems and domestic pipework. Where the water has high plumbosolvency capabilities, lead will be dissolved.

Preventive measures and the ideal

7.11 If paintwork is completely sound, then overcoating old lead paint is often a safer option than removal. However, if the paintwork has deteriorated, removal will be necessary. Proper precautions should be observed during paint removal to prevent ingestion of airborne lead particles, and to prevent the deposition of lead particles in the building or on surrounding land.

7.12 Even in areas where water is of low plumbosolvency, lead pipework should not be present in dwellings.

7.13 When properties are built, lead pipes are no longer installed. Leaded paints are no longer generally available as there are tight restrictions on the manufacture and purchasing of these within the UK and EU.

7.14 There are controls limiting the levels of lead in drinking water and guidelines for lead levels in soil. The Water (Jersey) Law 1972 states the maximum level of lead in water is 10 µg/l.

7.15 There is no guideline level for lead in house dust.

Relevant matters affecting likelihood and harm outcome

7.16 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Date of construction – the newer the construction date of the building, the smaller the chance of lead being present as lead piping or lead paintwork.

b) Old paintwork – the presence of old paint likely to contain lead.
c) Disrepair to old paint – damage and/or flaking of old paintwork likely to contain lead.
d) Previous lead paintwork – where allowed to flake or inappropriately removed resulting in accessible lead in dust or garden soil.
e) Lead pipework – the presence of such pipework for domestic water.
f) Plumbosolvent water – water of high acidity likely to dissolve lead in pipes.

Hazard assessment

Lead in paint, dust, and soil around the house

7.17 There should be a visual examination of the condition of paintwork. Where old flaking paint is found in pre-1970 dwellings, sampling and analysis may be necessary to confirm the presence or otherwise of lead.

7.18 If lead in garden soil is suspected, a sample can be taken for analysis by a competent person and analysed by a qualified company.

Lead in water

7.19 Visual inspection should identify any lead pipework. However, to determine the lead content in water, sampling and analysis will be necessary.

8. Radiation

Description of the hazard

8.1 This category covers threats to health from radiation.

8.2 In rented dwellings in Jersey, the principal threat to health from radiation, is from radon gas. This is primarily airborne but can also be due to radon dissolved in water. Landlords must take reasonable action to prevent hazardous levels of radon gas in their property.

8.3 Electromagnetic fields ("EMFs") are a form of non-ionising radiation that do not damage DNA. EMFs are produced when electric currents flow and may be found in the vicinity of electricity substations and electrical appliances. High frequency fields are produced by mobile phones, their masts, TV and radio transmitters, microwave ovens and radar. There is no significant evidence of a risk to health from exposure to these EMFs. EMF generating equipment is regulated by ICNIRP (International Commission for Non-Ionising Radiation) and is generally not considered an issue in the domestic environment.

8.4 Leakage of significant radiation from microwave ovens is extremely rare.

Potential for harm

Most vulnerable age group and statistical averages

8.5 The most vulnerable age group is all persons aged between 60 and 64 years who have had lifetime exposure to radon.

8.6 If a person has had a lifetime of exposure to radon gas, that person would be susceptible to lung cancer.

Health effects

8.7 Radiation is an energy emission as waves or particles. Ionising radiation, including alpha particles (resulting from decay of radon) can pass through bodily tissues. It has sufficient energy to damage DNA and potentially cause genetic mutation. Non-ionising radiation such as UV radiation, microwave radiation and radio frequency radiation, does not have sufficient energy to directly damage DNA.

8.8 Radon gas is the second largest cause of lung cancer after smoking. Radon decays rapidly and the decay products can quickly attach themselves to particles in the air. On inhalation, they can be deposited in the lungs, where the radioactive decaying process continues. Particles emitted can cause the cell lining in the lungs to become genetically mutated, this can initiate lung cancer. The

risk related to radon increases with dose and duration of exposure. Health outcomes assume that there is only a 10 percent survival rate for lung cancer, and for survivors the degree of harm is also severe. For groups older than 64 years old, the hazard scores would increase. This is due to increased risk of lung cancer with age and with duration of exposure.

8.9 When radon is soluble in water, it can be ingested resulting in the organs of the gastrointestinal tract receiving the largest dose.

8.10 Malignancies can result from exposures of ingestion and skin contact; they may include leukaemia and skin cancer.

8.11 The levels of non-ionising radiation, or EMFs, usually found within dwellings are insufficient to cause significant harm to health.

Causes

8.12 Natural radon is a natural radioactive gas, which has no taste, smell, or colour. It is produced by the radioactive decay of uranium, which is present in all soils and rocks in small quantities.

8.13 The porosity and the uranium series radionuclide content of the rocks are both major factors in the potential for radon indoors.

8.14 In some areas where granite is found, such as Jersey and parts of the south-west of England, higher levels are recorded, especially around the edges of granite intrusions. Jersey was defined as an area with higher radon potential (Radon Affected Area) in the late 1980s.

8.15 The granites in Jersey are extensively fractured which gives rise to pathways for release of the gas to the surface which could give higher radon concentrations in buildings.

8.16 In the open-air, radon is diluted to very low concentrations, but in confined spaces, such as within a building, it can accumulate and reach concentrations hazardous to health. Indoor levels depend on the concentration of radon in the ground, the design and state of repair of the house, and the way the house is heated and ventilated.

8.17 The likelihood of a building having a higher level of radon can be predicted using mapping techniques (Miles 1994, 1998, Miles & Appleton 2005), however the radon level for an individual building can only be assessed by testing.

8.18 Problems with radon gas typically affect houses and dwellings in the lower storeys of a building.

8.19 Environmental and Consumer Protection tested a number of properties for radon across the Island previously. The results suggest at least 12% of Island homes may contain radon at a level that requires action.

8.20 The gentle suction created by the normally lower atmospheric pressure within buildings draws radon gas in through holes, cracks, and gaps in the floor. This will occur most readily with suspended timber floor, but any breaches of solid floors or damp-proof membranes will allow the gas to penetrate the dwelling.

8.21 Private water supplies may have elevated levels of radon, particularly in areas where there are elevated levels of uranium and radon in the underlying rock and soil. However, less is known about the risks from radon in drinking water compared to levels in air.

Preventive measures and the ideal

8.22 All buildings in Jersey are sited on potentially radon emitting geology, so occupiers of accommodation are recommended to test for radon if the property has an occupied ground floor room or basement.

8.23 The Building Bye-Laws (Jersey) 2007 give information on the requirements for new buildings in Jersey. Radon is covered in Technical Guidance Document Part 4 'Site Preparation and Resistance to Contaminants and Moisture' (2019 Edition). Section 2 deals with 'Contaminants' and the associated radon guidance gives information about radon risks and states: To reduce this risk all new buildings, extensions and conversions, whether residential or non-domestic, need to incorporate precautions against radon. Guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects) can be found in BRE Report: BR 211 Radon (2023 edition).

8.24 A low-cost radon measurement pack can be ordered on the UKradon website or by phoning 01235 822622.

8.25 Where the result is at or above the UK Action Level of 200 Bq m-3, landlords must reduce the level of radon below actionable limits. The UKradon's website has advice on ways of reducing radon. Sometimes a free re-measurement is available from UKradon to check the remedial work. The Government of Jersey's Natural Environment team can help interpret the results.

8.26 In the UK, Public Health England (PHE) also recommends radon reduction should be seriously considered if members of the household are in a higher risk group (current or past smokers) and the annual average radon level exceeds the Target Level of 100 Bq m-3.

8.27 All new dwellings should be constructed to achieve radon gas levels as low as is practicable. For existing dwellings in Jersey and affected areas, remedial measures should be adopted.

8.28 If your home has a private drinking water supply that is fed from a groundwater source, you should follow the simple steps set out on UK radon's dedicated radon in water webpage.

Relevant matters affecting likelihood and harm outcome

8.29 The following matters may increase the likelihood of an occurrence:

a) Timber ground floor – ground floor of suspended timber construction particularly if without adequate sub-floor ventilation.
b) Disrepair to solid floor – holed, cracked or other disrepair to a solid ground floor.
c) Lack of DPM – lack of or defective damp proof membrane to solid floor.
d) Sealing around services – inadequate sealing around service entry points, and similar disrepair.
e) Ventilation rates – high upper-level ventilation rates.
f) Open fires – use of open fires and solid-fuel-effect open fires, without additional through the wall ventilation.
g) Remedial measures – disrepair to any remedial measures, such as a radon sump or associated fan.
h) Extractor fans – continuous use of extractor fans in kitchens, bathrooms or toilets.
i) Private water supply – particularly if from a borehole or well.

Hazard assessment

Radon in the air

8.30 In Jersey, the construction and condition of the ground floor and the presence of open chimney flues and the means of ventilation should be assessed.

8.31 If present, the state of any remediation measures should be checked. However, the condition of these will only indicate that there could be a problem.

8.32 As radon levels can vary widely between apparently identical dwellings, the only way to determine whether there is a threat to health is by measurement.

Radon in the water supply

8.33 The only way to determine whether there is a high level in a particular water supply is by measurement.

9. Uncombusted Fuel Gas

Description of the hazard

9.1 This category covers the threat to health of asphyxiation resulting from the escape of fuel gas into the atmosphere within a dwelling.

9.2 Poisonings associated with incomplete combustion of gas and the spilling back of combustion products into a dwelling are covered by Carbon Monoxide (6), and explosions from gas leakages are covered by Explosions (27).

Potential for harm

9.3 There is no specific age group more vulnerable than others.

Health effects

9.4 Fuel gases can cause asphyxiation. This occurs when the fuel gas builds up within the dwelling, displacing the air to such an extent that the occupants are unable to obtain sufficient oxygen to breathe. The critical oxygen level resulting in asphyxiation is 14% (normal levels being around 21%).

9.5 The health effects of inhaling fuel gas in smaller doses can cause nausea, vomiting, headache, dizziness, light-headedness and unconsciousness.

Causes

9.6 Fuel gas may be connected to a property in Jersey either as mains gas, or as pressurised gas (commonly LPG gas) in a metal container.

9.7 Fuel gas is naturally occurring, colourless, tasteless and odourless gas to which the harmless additive is added to give the gas its distinctive smell.

9.8 Uncombusted fuel gas enters properties as a result of leaking gas appliances (e.g. ovens or boilers) or from leaking pipes connected to such appliances.

Preventative measures and the ideal

9.9 Section 6 of the Public Health and Safety (Rented Dwellings – Minimum Standards and Prescribed Hazards) (Jersey) Order 2018 sets legal minimum standards for gas safety. The requirements are summarised below:

a) Where there is a gas supply to a rented dwelling, whether or not any appliances are connected to that supply and whether or not the supply is in actual use, an annual gas safety inspection of the dwelling must be carried out by a person registered on the United Kingdom Gas Safe Register.
b) A gas safety inspection must include any installed pipework for the supply of gas, any gas appliances provided in the dwelling provided by the landlord, and any alarms for detection of gas.
c) A copy of the record of the gas safety inspection needs to be provided to the occupier of a rented dwelling.
d) The landlord, or person in control of a rented dwelling must keep a copy of any gas safety inspection for a period of two years or until two further gas safety inspections have been carried out, whichever is soonest.

9.10 Gas should be supplied by an authorised supplier and be of standard composition and at a standard pressure.

9.11 There should be appropriate properly designed and installed pressure regulators, meters and pipework. The installation should be regularly tested to ensure there are no leaks or other defects, and in particular where there have been any alterations to the dwelling or to the gas installations. Appliances should be properly designed and installed. The appliances should be regularly serviced and maintained by a competent person.

9.12 Where gas installations are no longer required in a dwelling the installations and pipework should be decommissioned by a competent person. Where the supply still exists to the dwelling, even when decommissioned you may still be required to have an annual gas safety inspection.

9.13 For LPG, which is heavier than air, there should be adequate low-level ventilation or means of ensuring any gas escaping can drain safely away. This is particularly important where the floor level is below the adjacent ground level.

9.14 Gas detectors are available which should provide warning to occupants if fuel gas is building up within the dwelling, enabling them to take action and/or to escape. The appropriate siting of such detectors will depend on which gas is being supplied.

9.15 For further information see – Building Bye-Laws (Jersey) 2007 Technical Guidance Document: Part 3 Combustion Appliances and Fuel Storage Systems, and BS 5258 Safety of domestic gas appliances Part I Specification for central heating boilers and circulators and BS 5482 Domestic butane- and propane-gas-burning installations – Part 1: Specification for installations at permanent dwellings.

Relevant matters affecting harm and likelihood

9.16 Matters relevant to the likelihood of an occurrence and to the severity of the outcomes include:

a) Gas supply – the supply of gas from a non-authorised supplier.
b) Gas installations – defects to the installation, including pressure regulators, meters and pipework.
c) Gas appliances – defects to boilers, fires etc.
d) Maintenance defects – lack of evidence of regular testing and servicing of the gas installation and/or appliances.
e) Siting of appliances – locations adjacent to windows or doors where there is a risk of flames blowing out.
f) Gas detector provision – the lack of correctly sited detectors.
g) Defects to detectors – lack of warning.

Hazard assessment

9.17 After both a visual inspection and checking for the smell of the relevant gas, if there are indications that there may be a leak the gas should be turned off at the supply valve, and the gas leak reported as an emergency. If there are indications that there may be an above average risk from this hazard, even if no gas is detected (or smelt), further investigation and a safety report from an appropriate engineer may be necessary.

9.18 If you think you may have a gas leak you should:

a) Call (01534) 755555 immediately (this is a 24-hour Jersey Gas Emergency Line)
b) Turn off all appliances that use fuel other than electricity.
c) Open the windows.
d) Leave the room.
e) See a doctor at once.
f) Call a suitably qualified engineer to check all your appliances.
g) Your landlord should be able to assist in resolving the matter.

10. Volatile Organic Compounds

Description of the hazard

10.1 This category covers threats to health from Volatile organic compounds (VOCs).

Most vulnerable age group

10.2 There is no specific age group more vulnerable than others.

Health effects

10.3 VOCs are a diverse group of organic chemicals which includes formaldehyde. They are gaseous at room temperature and are found in a wide variety of materials in the home. The majority of individual VOCs that may be found in dwellings have no reported health effects. However, some may cause short term irritation and allergic reactions to the eyes, nose, skin and respiratory tract. Higher concentrations can result in headaches, nausea dizziness and drowsiness. Formaldehyde can be a particular problem, although sensitivity varies.

10.4 Allergy sufferers, such as asthmatics, are most vulnerable, and may react to VOC exposure at levels below those that would affect others.

Causes

10.5 VOCs, including formaldehyde, produce vapours at room temperatures. Sources typically within the control of building owners include Urea formaldehyde foam insulation (UFFI), particle board, chipboard, plywood, paints, glues, solvents and the combustion of fuel.

10.6 There are many other (non-building) sources of VOCs, such as cleaning products, tobacco smoke, furnishings and wall and floor coverings.

10.7 Typical levels of VOCs found in homes do not present a risk to health. However, exposure to higher levels may be found, for example, during painting for extended periods of time.

10.8 Emission rates are affected by temperature, relative humidity, ventilation rates and occupant activity. Emission from building materials and treatments normally falls over the first year, although it will be affected by ventilation rates. Furnishings such as carpets and other fabrics will absorb VOCs (or may have been pre-treated) and will release them later.

Preventive measures and the ideal

10.9 Emissions of VOCs from building materials and treatments and from furnishings should be minimised. Low emission materials and products should be used where possible. Dwellings should also be provided with means of ensuring adequate and appropriate ventilation.

10.10 For further information see in particular – The Building Bye-Law (Jersey) 2007 Technical Guidance Document, Part 5: Means of Ventilation, Condensation in Roofs, and BS 5618 on urea-formaldehyde foam insulation (UFFI).

Relevant matters affecting likelihood and harm outcome

10.11 Matters relevant to the likelihood of an occurrence and to the severity of the outcomes include:

a) VOC emitting materials – the use of materials during construction, alteration or maintenance which emit high levels of volatile organic compounds.
b) VOC emitting treatments – the use of treatments during construction, alteration or maintenance which emit high levels of volatile organic compounds.
c) Inadequate ventilation – inadequate or inappropriate provision for ventilation.
d) Disrepair – to the ventilation system.

Hazard assessment

10.12 Care should be taken not to confuse the source of the odour with other problems, such as faulty gas appliances, and to eliminate sources which may have been introduced by the occupier.

11. Crowding and space

Description of the hazard

11.1 This category covers the threats to physical and mental health from hazards associated with lack of space within the dwelling for living, sleeping and normal family/household life.

Potential for harm

Most vulnerable age group and statistical averages

11.2 There is no specific age group more vulnerable than others.

Health effects

11.3 Lack of space and overcrowded conditions have been linked to a number of health outcomes, including psychological distress and mental disorders, especially those associated with a lack of privacy and childhood development. Crowding can result in an increase in heart rate, increased perspiration, reduction of tolerance, and a reduction of the ability to concentrate. Crowded conditions are also linked with increased hygiene risks, an increased risk of accidents, and spread of contagious disease.

11.4 There should be sufficient space to provide for social interaction between members of the household, while allowing for private time away from other household members.

11.5 Personal space and privacy needs are important for the individual members of the same household as well as for individuals or households sharing rooms and/or facilities. These needs vary reflecting both individual and cultural perceptions. Adolescents may need more space than the elderly. Small children need at least as much space as an adult. The need for privacy begins to develop from the age of eight and will be fully formed during puberty. While there is no specific age group more vulnerable than others, the greatest impact will be to those who spend the most time at home such as the elderly, the very young and their carers.

Causes

11.6 Deficiencies with space and crowding can increase the risks associated with several other hazards. The risk of domestic accidents is greater where there is insufficient space for the occupants. Small kitchens also increase the risk of accidents. Where people, their belongings and furniture are crowded together, it may not be possible to keep circulation space or functional space around appliances clear.

11.7 Space and crowding deficiencies can result in beds being placed too close to fixed heating appliances. Crowded conditions can result in a moisture burden above that which the dwelling is designed to safely deal with, and this can be a cause of condensation and high humidities, giving rise to associated health risks.

11.8 In multi-occupied accommodation, most of these issues may be compounded by sharing of some spaces. In terms of privacy, a higher standard may be expected where facilities are shared with other households.

Preventive measures and the ideal

11.9 Within a dwelling there should be sufficient space for the separation of different household activities, either by physical separation or by a clearly defined space within a larger space. The degree of separation is partly dependent on the number of people who can be expected to share the space, and whether they are expected to be part of the same household.

11.10 Open-plan arrangements may be acceptable for dwellings for a single person or for a couple, but not for dwellings intended for larger households.

11.11 For larger households, physical separation of living, cooking, dining and even sleeping areas is more necessary. For such households, bedrooms should lead off a circulation space, and should be large enough to be useable for sleeping and for study or relaxing away from the other members of the household.

11.12 There should be sufficient provision for sleeping, having regard to the numbers likely to be accommodated in the dwelling. As a guide and depending on the sex of household members, their relationship, size of rooms, a dwelling containing one bedroom is suitable for up to two persons, irrespective of age. A dwelling containing two bedrooms is suitable for up to four persons. One containing three bedrooms is suitable for up to six persons, and one containing four bedrooms is suitable for up to seven persons.

11.13 As well as sufficient sleeping space, there should be a living area of sufficient size for the household.

11.14 To provide for adequate privacy for the user, each bath or shower should be sited in a bathroom and each sanitary closet should be sited in a bathroom or separate compartment provided with a lockable door.

Guidance

11.15 The below outlines the measurements considered when assessing sufficient space in a dwelling.

Room floor space in sqm	Room floor space in sq ft	Maximum number of people
4.6 -6.4	50-69	0.5
6.5-8.3	70-89	1
8.4- 10.1	90-109	1.5
10.2+	110+	2

11.16 For clarity for the purpose of this assessment, anyone over 10 years of age is one person. Anyone under the age of 10 but above 1 is considered to be 0.5 a person. Children under the age of 1 do not count.

Relevant matters affecting likelihood and harm outcome

11.17 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Living area – lack of living area of an adequate size for the household or potential household.
b) Kitchen area – lack of a separate kitchen area of adequate size.
c) Personal washing area – lack of a separate, or an appropriately sited, or sized personal washing area.
d) Washing area door – no door to the personal washing area or lock on door or glazed door.
e) Sanitary accommodation – lack of separate, or an appropriately sited or sized, sanitary accommodation compartment.
f) Sanitary accommodation door – no door to the sanitary accommodation compartment.
g) Number of bedrooms – inadequate number of bedrooms for the household or potential household.
h) Bedroom size – inadequate size of bedrooms.
i) Bedroom location – inappropriately sited bedrooms.
j) Recreational space – lack of safely fenced or guarded recreational space, readily visible from within the dwelling.

Hazard assessment

11.18 As with all hazards, the initial assessment should be of the dwelling disregarding the current occupants. This should consider the size and layout of rooms based on the occupancy level that typically might be expected to use the dwelling.

11.19 Unlike other hazards, a second stage is involved for crowding. This involves determining whether the dwelling is over-occupied by the current household, taking account of their ages and relationships. For example, whereas a two bedroomed house with one living room may be suitable for occupation by up to four people (irrespective of their ages), if it is occupied by a couple with their teenage son and daughter, it would be over-occupied, as the son and daughter require separate bedrooms.

12. Entry by intruders

Description of the hazard

12.1 This category covers the threats to mental and physical health associated with the possibility or actuality of an entry by an intruder.

Most vulnerable age group and statistical averages

There is no specific age group more vulnerable than others.

Health effects

12.2 Jersey's crime rate is among the lowest in the British Isles. However, as in any country, break-ins and other illegal entries are a possibility. The States of Jersey Police Annual Report 2021 states that 127 'burglaries' were recorded for the year 2021. In Jersey, 'burglaries' are charged as Break and Entry or Illegal Entry, with larceny if something is taken.

12.3 Potential psychological effects are the fear of a possible burglary occurrence or recurrence and the stress and anguish caused by a burglary.

12.4 There may also be injuries caused to occupants by an intruder (assault during the burglary).

12.5 Each year in the UK around 2% of households experience burglary with entry, and 1.5% of households experience attempted burglary. Offenders use violence in about 9% of burglaries, although in many incidents involving violence the offender has some prior relationship with the victim.

12.6 The most common harm suffered because of burglary, or fear of burglary, is emotional stress, with 28% of victims being affected "very much", 31% "quite a lot", and 24% "just a little". The emotional impact is greater for burglaries where there is successful entry to the dwelling.

Causes

12.7 Socio-economic circumstances are related to the risk of burglary and fear of burglary. Fear of burglary is brought about by knowing someone who has been burgled and from publicity about crimes. Whilst elderly people may be more fearful of walking on the streets after dark, they are less anxious about burglary than other age groups.

12.8 Generally, economically disadvantaged households are at a higher risk of burglary. Also at high risk are flats and terraced properties. However, the risks are associated more with socio-economic factors, than with physical attributes, such as estate design and home security.

12.9 Tenure is important, with occupiers of rented dwellings (private or social) being nearly twice as likely to be victims of burglary or attempted burglary than owner occupiers.

12.10 In the majority of successful burglaries, some force is used to effect entry. The risk of entry increases with declining levels of security.

Preventive measures and the ideal

12.11 The dwelling itself should be capable of being secured against unauthorised entry, which will both delay and deter intruders and will make the occupants feel safer. The design of the building and its curtilage should include clearly defensible space.

12.12 The use of window locks or deadlocks, burglar alarms, security lights and window grilles reduce risk of an occurrence considerably. Spy holes and chains on entrance doors can help. Fencing can hinder burglars. It can also help them if it is easy to climb, or they can hide behind it.

12.13 However, creating fortress-like dwellings may have a negative effect on the health of occupiers. In addition, there is a balance to be made between security features and any associated increased risks from other hazards. For example, security measures can hamper or obstruct means of escape in case of fire and may result in windows not being readily openable interfering with ventilation.

12.14 In multi-occupied buildings there have been reductions in crime and fear of crime where concierge systems or entry-phone controls have been introduced.

Relevant matters affecting likelihood and harm outcome

12.15 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Defensible space – both public and private around the dwelling.
b) Lighting – pedestrian routes to an estate or immediate neighbourhood, entry points to dwelling, including any security lighting.
c) Pedestrian routes – definition of routes to an estate or immediate neighbourhood.
d) Housing layout – no natural unobtrusive view of neighbouring dwellings.
e) Doors and windows – insubstantial construction, disrepair or inadequate locks.
f) Door viewers – lack of viewers to external doors.
g) Door chains – lack of or broken chains to external doors.
h) Burglar alarms – lack of or defective alarm system.

Hazard assessment

12.16 The level of physical security features at a dwelling should reflect the overall crime rate in the neighbourhood, and the assessment should take both into account. Both fear of crime as well as the risk of any actual burglary (whether aggravated or not) should be considered.

12.17 There appears to be elevated risks of burglary associated with multi-occupied buildings. Not only is security of the building important (i.e. restricting unauthorised entry into the building), but security within the building is also an issue, both in terms of entry by intruders, and security of individual householders' belongings from other residents of the same building.

13. Lighting

Description of the hazard

13.1 This category covers the threats to physical and mental health associated with inadequate natural and/or artificial light. It includes the psychological effect associated with the view from the dwelling through glazing.

Potential for harm

Most vulnerable age group and statistical averages

13.2 There is no specific age group more vulnerable than others.

Health effects

13.3 The potential health conditions which can be caused by inadequate light include depression and psychological effects caused by a lack of natural light or the lack of a window with a view.

13.4 A person may suffer disturbance by intrusive artificial external lighting at night or eye strain from glare and a lack of adequate light (natural or artificial). Flicker from certain types of artificial light can cause discomfort and may cause photo convulsive reaction to those susceptible.

13.5 The elderly and those with impaired vision are more likely to be unable to detect potential hazards where there is inadequate or excessive light. In addition, the vision of the elderly is slow to adjust to changes in light levels.

Causes

13.6 The shape, position and size of windows and the layout of rooms all affect the amount of daylight in a dwelling. Windows which should be adequate in themselves, can be obstructed externally by other buildings or by trees.

13.7 The worst problems with lighting are often found where dwellings are located wholly at basement level. On occasions there are also problems where dwellings are entirely at attic level and are fitted solely with Velux type windows or skylights, affording no other view than the sky. This can lead to feelings of isolation.

13.8 The siting of external lighting (street lights and security lighting) can be annoying and cause sleep disturbance to adjacent occupiers. This can potentially be considered and assessed under Statutory Nuisances (Jersey) Law 1999.

13.9 Inappropriately positioned artificial lighting within the dwelling can cause glare and shadows which interfere with occupiers identifying other hazards.

Preventive measures and the ideal

13.10 The layout of the dwelling, particularly living rooms, kitchens, and recreation space should allow access for sunlight. There should be sufficient natural light during daylight hours to enable normal domestic tasks to be carried out without eyestrain. Windows should be of adequate size, and of appropriate shape and position to allow for reasonable daylight penetration into rooms. Basement and sub-ground level rooms can pose particular problems, and there should be sufficient adequate open space outside the window to allow for adequate light penetration.

13.11 Artificial lighting should be positioned to provide sufficient light to enable domestic and recreational activities to be carried out without eyestrain and without creating glare or shadows. Artificial light is particularly important where domestic tasks require adequate light, for example in the kitchen over worktops, sinks and cookers.

13.12 Windows should be wide enough to provide for a reasonable view of the immediate surroundings. Sills in living areas should be low enough to allow a seated person a reasonable view, however, they must meet the requirements to prevent falls between levels. Ideally, the views through windows of all rooms other than those where privacy is required, such as bathrooms and toilet compartments, should be of open space. The view should also provide for supervision of outside recreation spaces and, for security purposes, of the means of access to the dwelling.

Relevant matters affecting likelihood and harm outcome

13.13 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Obstruction – of windows by buildings or other features (e.g trees).
b) Size, shape and position – inadequate size, inappropriate shape and/or position of windows preventing reasonable penetration of daylight into room.
c) Position of artificial lighting – inadequate and/or inappropriate siting of artificial lighting.
d) Control of artificial lighting – lack of sufficient, accessible switches to control artificial lighting.
e) Glare etc – artificial lighting causing glare, shadows and/or obvious flicker.

f) Window view – inappropriate shape and/or size of window preventing view of outside.
g) Outlook – lack of reasonable view through living room windows.

Hazard assessment

13.14 The assessment should include the views from windows and the adequacy of both artificial and natural lighting for the dwelling as a whole.

14. Noise

Description of the hazard

14.1 This category covers threats to physical and mental health resulting from exposure to noise inside the dwelling or within its curtilage.

Potential for harm

14.2 There is no specific age group more vulnerable than others.

Health effects

14.3 Between 7.5 and 18% of households (that is 1.2-2.9 million) in the UK are dissatisfied because of noise from neighbours; 5.5% because of road traffic noise; and 4% because of people outside.

14.4 The best understood effects of noise are psychological disturbances and physiological changes resulting from annoyance and sleep disturbance. Typical health effects are stress responses, sleep disorders and lack of concentration. Headaches, anxiety and irritability are also associated with noise induced stress, and the effects of sleep disturbance may affect mood the following day. Extreme psychological outcomes include suicide, and assault due to aggravation over noise. Hearing loss and impairment caused by noise in dwellings is unlikely.

14.5 There is less certainty about the physiological effects resulting from exposure to noise, other than those linked with annoyance and stress. However, there is increasing evidence that noise causes problems without consciously awakening the individual from sleep. This noise induced arousal causes secretion of cortisol, especially in the first half of the night, and can lead to increased risk of cardiovascular disease. There is some evidence of correlation between noise and stress induced raised blood pressure and altered blood constituents.

14.6 Children under combined exposure to traffic related noise and air pollution have been found to have relative risks of chronic bronchitis, asthma and skin allergies, which cannot be explained by air pollution alone.

14.7 Those most vulnerable are those who are likely to spend more time at home, including the elderly, the very young and their carers. Noise causing sleep disruption will affect all groups, but particularly the elderly.

14.8 Men tend to respond to noise with outwardly directed aggression, describing their feelings as annoyance, aggravation, bitterness and anger. Women tended to suppress their reactions to noise and direct them inwards, saying that they are tense, fraught or anxious.

Causes

14.9 People vary greatly in their sensitivity and tolerance to noise. Tolerance may be determined by age, sex, working status, lifestyle and personality. People differ as to what they find offensive. Loud and continuous noises which seem to go on indefinitely, or unnecessary or inconsiderate may be less tolerated.

14.10 Occupiers should be expected to put up with certain noise, such as some traffic and neighbour noises, no matter how annoying they might find it. However, dwellings should be designed and maintained so that dwellers are not exposed to unreasonable levels of noise from ordinary activities outside of the dwelling, bearing in mind the character of the surrounding environment.

14.11 Poor construction or conversion, particularly to partition and party walls, can reduce sound attenuation properties of a structure.

14.12 Poorly insulated or glazed properties make it more likely that dwellers will be aware of external noise, or readily hear each other through shared walls or areas.

14.13 In general, a laminate or wooden floor may lead to the transmission of excessive noise. Soft surfaces like carpets will reduce noise better than hard floors.

Preventive measures and the ideal

14.14 To prevent problems from traffic and other outside noise, the level of insulation should be appropriate to the ambient noise levels. Where noise levels are high, double or secondary glazing and lobbies to external doors may be necessary. Triple glazing may be necessary close to airports or other sources of very high noise levels. Insulation of the upper floor ceiling and roof space will be important where aircraft noise is likely. However, where double or triple glazing is provided to protect occupiers from noise there must be adequate alternative provision for ventilation.

14.15 Noise from plumbing, including from water closets and cisterns, can be reduced by siting them away from a separating wall. Bathrooms and WC compartments in flats should not be sited above living rooms or bedrooms. Separating walls and floors, particularly in flats and maisonettes, should be properly constructed to reduce impact and airborne sound transmission.

14.16 Minimum requirements for new dwellings can be found in the Technical Guidance Document 9: transmission of sound.

14.17 However, in some circumstance, the minimum may not be adequate to prevent indoor noise pollution. Other sources of information include the World Health Organisation.

Relevant matters affecting likelihood and harm outcome

14.18 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Site of dwelling – whether a property is in a built-up, semi-rural or rural location.
b) Internal insulation – inadequate construction and/or insulation of floor/ceiling structure within the dwelling or between the dwelling and other premises. The use of carpets or rugs on hard floors can minimise sound transference between dwellings.
c) External insulation – inadequate levels of sound insulation to external structure.
d) Disrepair – disrepair of windows and/or external or internal doors allowing increased noise penetration.
e) Siting of plumbing – inappropriate siting of plumbing fittings and/or facilities.
f) Equipment – noisy equipment or facilities.
g) Door closers – overly powerful mechanisms resulting in banging.

Hazard assessment

14.19 The assessment should concentrate on the ability of the dwelling to protect the occupants from noise penetrating from outside the dwelling. The design and construction of the dwelling should protect the occupants from ordinary domestic noise from one dwelling entering another, and from traffic or other ambient external noise. There is an expectation that there will be some external noise is all dwelling types.

14.20 It is more appropriate to assess the noise levels within the dwelling than to measure the performance of the building as this will take into account the noise conditions of the immediate environment. (In some situations, the minimum required by the Building Regulations will be insufficient.) Measurement of noise levels using properly calibrated noise meters can be helpful to confirm the subjective assessment.

14.21 Noise from the unreasonable behaviour of neighbours (whether domestic or commercial) should not be included in the assessment, although this could be the subject of other action.

14.22 There are a number of ways in which a noise issue can be raised with a tenant beyond resorting to provisions of any letting arrangement. This can include a direct approach to a tenant who has become subject of a complaint to discuss the issue. In some instances, mediation of a formal or informal nature may be available to broker a solution to the noise issue between the landlord and tenant (See, for example, https://citizensadvice.je/community-mediation-440/).

14.23 Environmental and Consumer Protection and the Housing and Nuisance team can exercise various powers where a statutory noise nuisance arises. A statutory nuisance can include noise emitted from premises, so as to be prejudicial to health or a nuisance. Where the Environmental and Consumer Protection team considers this test is met, it can serve a written warning and/or an Abatement Notice. Please contact the Housing and Nuisance team by phone (01534 445808) or email (environmentalhealth@gov.je) for further information.

15. Domestic hygiene, pests and refuse

Description of the hazard

15.1 This category covers threats to physical and mental health associated with lower levels of hygiene and cleanliness, insufficient and unhygienic disposal and storage of household waste and the harbourage of pests in a dwelling.

15.2 Note that hazards associated with sanitation and drainage, domestic water, personal washing facilities and food safety are each dealt with as separate hazards.

Potential for harm

Most vulnerable age group and statistical averages

15.3 There is no specific age group more vulnerable than others.

Health effects

15.4 The potential health outcomes are gastro-intestinal disease (from spread of infection), and asthma and allergic rhinitis (from allergens).

15.5 Household waste may, in addition, present a physical hazard in terms of cuts, particularly to young children.

15.6 Apart from the potential health risk, pests can cause damage to property, furnishings, surfaces, clothes, and can invade bedding.

15.7 Emotional distress is also commonly associated with pest infestations, and accumulations of refuse. Premises which are difficult to keep clean may be a cause of depression and anxiety.

15.8 People may experience an allergic reaction to pests, most likely when bitten or stung by a pest. They can also irritate symptoms of a pre-existing health condition. The effect of the shedding of skin and droppings, which break down in airborne particles can cause or exacerbate breathing conditions such as asthma.

15.9 While many pests can be responsible, rodents are particularly notorious for contaminating areas where food is either stored or prepared, making the potential for ingesting harmful substances greater. Mice, for example, almost constantly dribble urine, meaning that traces of this will be deposited wherever they travel. More generally, rodents are believed to spread as many as 35

different diseases, including Salmonella, Meningitis, Hantavirus, Weil's disease (Leptospirosis), and Lyme disease, all of which can be fatal.

15.10 Rats and mice are also known to be infected with pathogenic organisms such as Listeria and Cryptosporidium etc.

15.11 Birds such as pigeons can carry diseases such as Salmonella and they can harbour biting insects such as the Martin bug.

15.12 Insects are responsible for food spoilage. Insect pests are mechanical vectors of diseases, picking up disease causing organisms on their bodies from one source and transferring it to another place. They can travel from rotting garbage and animal faeces that are infected, to food intended for human consumption therefore transmitting disease.

Causes

15.13 Entry of pests can be enabled by structural defects (for example broken vents to suspended timber floors). There have been instances where rats gnaw through plastic covers to wall ventilators. Rat infestations show an association with poor environments and areas of poor quality or multi-occupied housing.

15.14 Rodents inhabit sewers, and they can readily access drains. Unless something is done to prevent it, they will travel from drains into dwellings. In dwellings they will then spoil food by gnawing and/or by fouling.

15.15 Damaged or ill-fitting doors and windows can provide means of access for rats and mice.

15.16 If food waste is not stored correctly, it will attract pests including flies, cockroaches, ants, wasps, mice, rats, birds, squirrels, cats, and dogs.

15.17 Some insects may use food waste to lay their eggs and let their larvae develop. All insects and larvae can be vectors for pathogenic organisms (bacteria, virus, or parasites), which can then breed in the food waste.

15.18 Pests may come into contact with food before it is prepared or eaten, transferring pathogenic organisms, or may come into contact directly with persons living in the dwelling.

15.19 The dangers of household waste will increase as pathogenic organisms multiply. Waste will also start to smell bad.

15.20 If multi occupied buildings have common service ducts, particularly those with district heating systems and therefore year-round warm conditions, it can present ideal conditions for infestation of pests such as cockroaches or ants.

Preventive measures and the ideal

15.21 The design, construction and subsequent maintenance of a dwelling should enable it to be kept clean, preventing the build-up of dirt and dust which may enable organisms to multiply.

15.22 Areas of the dwelling intended for personal washing, sanitation or for food storage, preparation and cooking should be capable of being maintained in a hygienic condition.

15.23 Walls and ceilings should be smooth and even to enable them to be easily cleaned. Walls and ceilings should be free from cracks which could provide harbourage for insect pests. Floors should be smooth and even so that they can be easily kept clean.

15.24 All internal surfaces should be smooth, even, and free from cracks and crevices which may allow entry by, or give harbourage to, pests. Joints between walls and floors and between walls and doors and windows should be effectively sealed. Wherever possible materials should be resistant to attack by pests.

15.25 The exterior of the dwelling should be free of cracks and unprotected holes. Where breaches of the walls or roof are necessary, grilles or other methods should be used to protect these.

15.26 Spaces in the dwelling such as service ducting, roof spaces and under floor spaces should be capable of being effectively sealed off from the living area. There should be means of access to these spaces for treatment in case of any infestation. Dwellings should be designed and constructed to reduce, so far as is possible, gaps or voids that may be inaccessible to the dwelling occupants, and which may provide harbourage for pests.

15.27 The design and construction should reduce, so far as is possible, any means of access by pests from the outside into the dwelling. All openings into drains should be sealed with an effective water seal.

15.28 To prevent mice entering there should be no holes or gaps in excess of 6.25mm. Service entry points should be effectively sealed as should any points in walls penetrated by waste, drain or other pipes or cables.

15.29 There should not be any holes through roof coverings, eaves and verges which might allow access into the roof space to rats, mice, squirrels, or birds. Any necessary holes for ventilation should be covered with grilles.

15.30 There should be suitable and sufficient provision for the storage of refuse awaiting collection or disposal outside the dwelling. There should also be suitable and sufficient provision for the storage of household refuse within the dwelling. The storage provisions should be readily accessible to the occupants but sited so as not to create a danger to children. The refuse facilities should not cause problems of hygiene, nor attract and allow access to pests or seagulls.

15.31 In multi storey dwellings, any bin stores should be designed, constructed, and maintained to reduce, so far as is possible, invasion by pests. It should also be sited, designed, constructed, and maintained so as not to allow air from the store to enter any living space.

15.32 Environmental and Consumer Protection does not offer a pest control service. Landlords should contact a pest controller to deal with a problem in a rented dwelling. Pest controllers contact details can be found on the online telephone directory.

Relevant matters affecting likelihood and harm outcome

15.33 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Internal walls and ceilings – uneven and/or cracked internal walls and/or ceilings.
b) External walls & roof – missing or damaged brickwork, including airbricks, to external walls and other disrepair to external walls and roof.
c) Ventilation – other unprotected ventilation on walls and/or roofs.
d) Solid floors – uneven and/or cracked solid floors.
e) Suspended floors – uneven and/or open-jointed boarding to suspended timber floors.
f) Under floor space – ill-fitting covers or lack of means of access to under floor spaces to facilitate treatment.
g) Roof space – ill-fitting covers or lack of means of access to roof spaces to facilitate treatment.
h) Skirting and architraves – loose and/or ill-fitting skirting boarding or architrave.
i) Windows and doors – ill-fitting doors and/or windows.
j) Windows and door frames – open joints between window and/or door frames and adjacent walls.
k) Ducts and pipework – open joints to service ducting and/or pipework.
l) Access to ducts – lack of means of access into service ducting to facilitate treatment.
m) Service entry points – open joints to service entry points.
n) Water seals – defective water seals to wc basins and/or drainage inlets.
o) Disrepair to drains – including sewers and/or inspection chambers.
p) Open vent pipes – missing guards to drainage vent pipes.
q) Design deficiencies – harbourage points created through poor design and/or construction.

r) Internal refuse areas – the lack of, or defects to, any internal refuse storage space.
s) External refuse areas – the lack of, or defects, to any clearly defined area for refuse containers.
t) Refuse chutes etc – the lack of or defects to means of disposal of refuse to each floor of multi-occupied buildings.

Hazard assessment

15.34 The overall risk at the dwelling from potential infestations and any problems associated with refuse disposal and domestic hygiene generally will be assessed.

16. Food safety

Description of the hazard

16.1 This category deals with the threats to health due to the risk of infection from inadequacies in provision and facilities for storage, preparation, and/or cooking of food.

Potential for harm

16.2 There is no specific age group more vulnerable than others.

Health effects

16.3 There are approximately 120 confirmed cases of food borne illness in Jersey every year. The exact sources for these cases often remain unclear. However, UK evidence suggests that at least 50% of food poisoning arises in the home.

16.4 Foods (and liquids such as milk) can become a source of food poisoning through contamination, the multiplication of micro-organisms through poor or inappropriate storage, or through inadequate cooking. Illnesses resulting from food poisoning ranging from mild stomach upset to death from infectious gastro-intestinal disease, or hospital admission because of severe diarrhoea, vomiting and dehydration. However, the majority of mild gastro-intestinal infections which result from food poisoning go unreported.

16.5 Young people, elderly people, or pregnant women are more likely to suffer severe outcomes.

Causes

16.6 Any chips, cracks or other damage to the internal surface of sinks or worktops may prevent effective cleansing and lead to the accumulation of pathogenic and food-spoiling organisms. These organisms may then contaminate food or equipment or utensils that are used to prepare or cook food.

Preventative measures and the ideal

16.7 Kitchen facilities should be in a properly designed room or area, laid out to make safe and hygienic preparation and cooking of food easy, so reducing the risk of food poisoning and promoting safe practice.

16.8 Damp affected surfaces may degrade and become friable, and may also support growth of micro-organisms, presenting a risk of contamination of food. Humid conditions can cause food to decay more quickly. The surface of the floor to the kitchen area should be reasonably smooth and impervious and capable of being readily cleansed and maintained in a hygienic condition. Corners and junctions should be sealed and covered to avoid uncleanable junctions. Wall surfaces should be smooth and capable of being readily cleansed. Surfaces immediately adjacent to cookers, sinks, drainers, and worktops should be of an impervious finish and the joint between any sink, drainer or worktop and the adjacent wall should be sealed and watertight.

16.9 The layout and relationship of facilities should ease the stages of preparation, cooking and serving. There should be adequate and appropriate lighting to the kitchen area and particularly over the facilities, and there should be appropriate means of ventilation of the whole of the kitchen area and in particular the cooking area.

16.10 The food storage facilities should allow cooked and uncooked food to be kept separate to prevent cross contamination. These facilities should be of adequate size for the size of dwelling and should be finished internally and externally with smooth impervious surfaces capable of being readily cleansed and maintained in a hygienic condition.

16.11 The sink should be of an adequate size, and have a drainer which drains into the sink, or, as an alternative, a dual sink. It should be strong enough to safely take the weight of the water and equipment and utensils. The surface of the drainer and the internal surface of the sink should be smooth, impervious, and capable of being readily cleansed and maintained in a hygienic condition.

16.12 A supply of cold water is necessary for food washing and preparation. For washing-up of equipment and utensils, and for cleaning worktops and cookers, there should be a supply of hot water. The sink should be properly connected to pipes which safely carry away wastewater to discharge it into a drainage system.

16.13 Worktops should be of adequate size for all the reasonable equipment and other food preparation activities and securely fixed. The surface of a worktop should be smooth, impervious, and capable of being readily cleansed and maintained in a hygienic condition. There should be sufficient appropriate power sockets associated with the worktop(s) (as well as those provided for equipment such as refrigerators and washing machines). It is noted that some tenants may have numerous pieces of electrical equipment, e.g. blenders, coffee makers, air fryers, slow cookers. It is not expected that there will be sufficient space and sockets for all equipment to be used simultaneously.

16.14 There should be space for the installation of cooking facilities sufficient to take facilities of adequate size for the household, with appropriate connections for fuel.

16.15 In multi-occupied premises where facilities are shared, a degree of lack of communication between individuals from different households is likely. This can lead to conditions where there is an increased risk of food poisoning, particularly where there is confusion over responsibility for cleaning. Separate food storage, preparation, and cooking facilities for different households can help reduce the risk of food poisoning and also reduce stress and anxiety associated with shared use.

Relevant matters affecting likelihood and harm outcome.

16.16 Factors relevant to the likelihood of harm and its potential severity include:

Storage

a) Food storage facilities - not suitably designed, inadequate size for the household, damaged surfaces, damp or humid.
b) Refrigerator and freezer – inadequate or in disrepair, not in a suitable location.
c) Power sockets – inadequate provision.

Preparation

a) Sink - inadequate provision, damaged surface, unable to take a suitable weight of water, no hot and cold water.
b) Kitchen worktops – inadequate size, not securely fixed, damage to surface.

Cooking

a) Cooking facilities – lack of an oven or hob, or the lack of space for the installation of cooking facilities, inadequate size for the household, inappropriate connection to fuel, defects or disrepair.

Design, layout, and state of repair

a) Kitchen floor – uneven, porous, damp or defective surface.
b) Walls or ceiling surfaces – defective, damp or uneven.
c) Areas adjacent to a cooker, sink, drainer, or a worktop – not impervious.
d) Between a sink, a drainer or a worktop and the bordering wall surface – defective or absent seals.
e) Kitchen lighting - inadequate or inappropriate.
f) Ventilation - inadequate for the kitchen area.

Hazard assessment

16.17 The hazard assessment should focus on the available facilities, their ratio to (potential) occupants, and the ease with which the occupants can maintain safe food practices.

16.18 With multi-occupied dwellings, the assessment should consider the degree of sharing of facilities by households/individuals and its potential impact on food safety.

17. Personal hygiene, sanitation and drainage

Description of the hazard

17.1 This category covers threats of infection and threats to mental health associated with personal hygiene, including personal washing and clothes washing facilities, sanitation and drainage. It does not include problems with pests associated with defective drainage facilities.

Potential for harm

Most vulnerable age group and statistical averages

17.2 The most vulnerable age group is all persons under 5 years of age.

Health effects

17.3 The health outcomes from both poor personal hygiene and poor sanitation include gastro-intestinal illness, and, more rarely, skin infections. Illnesses resulting from gastro-intestinal infection can range from mild stomach upsets through to death from diarrhoeal and gastro-intestinal disease, and severe dysentery, and gastro-enteritis.

17.4 Dysentery (Shigella sonnei) and rotavirus infections are frequent causes of diarrhoea carried by the faecal-oral route. Even if the illness is contracted elsewhere up to 50% of family members may become infected if the hygiene levels are poor.

17.5 Although not a direct cause of physical illness, odours associated with poor hygiene, the visual appearance of facilities which are difficult to clean or have stained surfaces, damaged decoration and furnishings resulting from splashing or leaking appliances or drainage, can be a cause of stress and depression. This is particularly the case where the occupant has little control over the situation, typically in rented accommodation, and where facilities are shared. As well as causing anxiety and depression, it can also cause tension between people sharing facilities.

17.6 The highest risk groups are the very young (0-4), the elderly and the immuno-compromised. Those in houses in multiple occupation with shared personal hygiene and sanitary facilities are at increased risk, as are low socio-economic groups.

Causes

17.7 The greatest risks appear to arise from the sharing of facilities and personal hygiene behaviour, rather than from the design and condition of facilities provided. However, where there are deficiencies with the facilities themselves, this clearly can increase the risk from this hazard.

17.8 The most widespread type of toilet is the modern water closet connected directly to the sealed drains or through a macerator and small bore high pressure pipe discharging into the public sewerage system or into private storage or treatment tanks. A water closet includes the basin, a flushing mechanism and a connection to the drainage system. Other means include composting closets and chemical closets.

17.9 There is no evidence linking modern conventional water closets, the wash-down and the siphonic, with increased risk of spread of disease. Obsolete water closets (such as the long and short hoppers, the wash-out) are considered insanitary.

17.10 It seems that the major risk of spread via the faecal-oral route is transfer by hands through contact with the seat or the basin. The flushing action may spread some airborne organisms, but, providing wall surfaces are dry, this is not considered a main route of infection.

17.11 An insufficient number of sanitary closets for the number of occupants will increase the risk of spread of pathogens, particularly if the closets are shared by two or more dwellings when responsibility for cleaning may be confused.

17.12 Discharge of untreated foul waste onto paths or gardens will introduce faecal contamination, with associated micro-organisms, create offensive odours, and may attract pests. If there are any air leaks to drains these will be offensive.

17.13 Waste water discharged onto paths or gardens, if allowed to accumulate and stagnate, will be a source of offensive smells, and may attract pests.

Preventive measures and the ideal

17.14 Water closet basins should have a smooth and impervious surface (such as vitreous china) and be self-cleansing. They should be connected to a proper working flushing cistern provided with a supply of water, and also properly connected to a drain capable of safely carrying waste out of the dwelling and into the drainage system. The design of the basin should ensure there is a water seal of adequate depth to prevent foul air escaping from the system. It should be securely fixed and capable of carrying the weight of users. It should be fitted with a hinged seat and hinged lid of impervious material. The operating lever to the flushing cistern should be of impervious and

readily cleansable material to limit the possibility of the spread of pathogens from one user to the next (the cistern usually being used before hands are washed).

17.15 Where a macerator is installed, the safe operation of the water closet relies on a supply of electricity as well as water for flushing.

17.16 There should be a sufficient number of sanitary closets for the occupants. The number of sanitary closets should be related to the number of levels in the dwelling and to the number of persons (irrespective of age).

17.17 The sanitary accommodation should be located in a separate compartment or a bathroom which should be of a hygienic design and construction. The compartment or bathroom should be adequately ventilated. There should be a door to the compartment or bathroom capable of being locked from the inside (although, in an emergency, openable from the outside).

17.18 A composting closet when useable from inside the dwelling should have a water tight container that can only be emptied from outside. There should be a hygienic and effective means of ensuring deodorising material is discharged into the container.

17.19 There are several types of chemical closets. There are small free-standing units with an integral holding tank. Others are water closets, which usually operate with only a small amount of flush water, and which are connected to a separate holding tank. These are located away from the dwelling or, if inside, capable of being emptied from outside the dwelling.

17.20 There should be a sufficient number of baths or showers for the occupants or potential occupants. Each bath or shower should be stable and properly and securely fitted. They should be strong enough to safely take the weight of the user and the water. They should be connected to a supply of water at a controlled temperature (not exceeding 48 degrees Celsius) or to supplies of hot and of cold water. They should also be properly connected to pipes which safely carry away the waste water to discharge it into the drainage system.

17.21 To encourage and facilitate use, each bath or shower should be sited in a properly designed bathroom which is properly heated, lighted and ventilated. The bathroom should be provided with a door which is capable of giving privacy.

17.22 There should also be a sufficient number of wash hand basins for the occupants or potential occupants, with separate supplies of cold water and hot water over each basin. Each wash hand basin should be sited so as to encourage and facilitate use.

17.23 To encourage hand washing after using sanitary accommodation, a wash hand basin should be provided either in the same compartment or immediately adjacent. However, it is preferable for an

additional wash hand basin to be within the room containing the WC, even when it is next to a bathroom. A wash hand basin should also be provided in every bath or shower room.

17.24 Sinks will be used for hand washing of clothes as well as for food preparation and for washing up kitchen and eating equipment. The internal surfaces of the sink should be smooth, impervious, and capable of being readily cleansed and maintained in a hygienic condition. Cracks, chips or other damage to the internal surface may prevent thorough cleansing.

17.25 There should be separate supplies of cold water and hot water over each sink. Each sink should also be properly connected to pipes which safely carry away the waste water to discharge it into the drainage system.

17.26 There should be space for a washing machine with an appropriate power socket adjacent. There should also be clothes drying facilities, preferably both outside and internally. Internal provision can consist of a cabinet with a means of heating at low level. Alternatively, there should be space for the installation of a clothes drier with a connection for the vent outlet and an appropriate power socket adjacent.

17.27 Foul waste, once outside the dwelling, must be safely removed for disposal. No air should be released at low level or close to windows or vents.

17.28 All sinks, wash hand basins, baths, showers, bidets and other water using facilities must be properly connected to adequately sized waste pipes capable of safely carrying the waste water out of the dwelling and discharging it into a drainage inlet or directly in vertical drains connected to the main sewerage system. Each waste pipe should incorporate a trap to provide a water seal of adequate depth to prevent draughts and foul air entering the dwelling. Where a single waste pipe serves more than one appliance or facility, it should be properly designed or provided with ventilation to prevent siphonage.

17.29 Where waste water from a bathroom (greywater) is to be recycled, it should be stored in a container outside the dwelling. Any overflow from the greywater storage container should be safely connected to the main drainage system or a soakaway. Where there is a private treatment or storage system for foul sewage, waste water should be delivered safely to a properly located, designed and constructed soakaway.

17.30 All connections between sanitary closets and the drain and between drain pipes, must be air-tight to avoid leakage of the foul sewage or smells. The system should be adequately ventilated to prevent pressure causing siphonage of traps and facilities connected to the drain or sewer. The system should be designed and constructed to ensure that the pipes do not block in normal use.

17.31 In multi-occupied premises where facilities are shared, a degree of lack of communication between individuals from different households is likely. This can lead to conditions where there is an

increased risk of infection, particularly when one household has an infectious illness of which other households are unaware. There may also be confusion over responsibility for cleaning, or poor management of cleaning, which can lead to a poor standard of hygiene.

17.32 For further information see: Technical Guidance Document 6: Drainage, Sanitation, Hot Water Safety and Water Efficiency and British Standards BS 6465 Sanitary installations Parts I and II, and BS 8000 Part 13: Workmanship on building sites. Code of practice for above ground drainage and sanitary appliances.

Relevant matters affecting likelihood and harm outcome

17.33 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

Personal hygiene

a) Bath or showers – lack of sufficient and/or appropriately sited baths or showers for the number of occupants or potential occupants.
b) Wash-hand basins – lack of sufficient and/or appropriately sited wash hand basins for the number of occupants or potential occupants.
c) Hot and cold water supply – inadequate supplies of hot and cold water (or water at a controlled temperature) to each bath, shower and wash hand basin.
d) Kitchen sink – the lack of a sink for each household with separate supplies of cold and hot water.
e) Clothes drying facilities – the lack of sufficient and/or appropriately sited facilities in the dwelling or building.
f) Disrepair to facilities – disrepair or defects to, or associated with, a bath, shower, wash hand basin, hot or cold water supply, sink or clothes drying facility.
g) Inadequate lighting – to the room containing the personal washing facilities.
h) Shared facilities – personal hygiene facilities shared by more than one household.

Sanitation facilities

a) Sewage system – none or an obsolete means for the sanitary collection and removal of human excreta from the dwelling.
b) Sanitary provision – insufficient numbers of sanitary closets (whether water, composting or chemical) for the numbers in occupation.
c) Sanitary closet siting – inappropriate or inconvenient location of a sanitary closet.
d) Disrepair of sanitary closet – cracked or otherwise non-impervious bowl to a water closet or other sanitary appliance.
e) Water to wc – inadequate supply of water to the flushing cistern serving a water closet.
f) Effective flush – defective mechanism to a flushing cistern serving a water closet.
g) Macerator defects – defective mechanism to a water closet.

h) Earth closet defects – ineffective means of supplying deodorising earth or similar material to an earth closet.
i) Seat/lid to sanitary closet – missing or non-impervious seat and/or lid to a sanitary closet basin.
j) Ventilation to compartment – inadequate ventilation to the compartment or room housing a sanitary closet.
k) Unhygienic compartment – defective design, construction and/or maintenance of the surfaces to the walls and floor of the compartment resulting in them not being capable of being kept clean and hygienic.
l) Inadequate lighting – to the compartment or room containing a sanitary closet.
m) Door to compartment – missing or defective door to the compartment.
n) Adjacent wash hand basin – lack of a wash hand basin in the room, compartment, or immediately adjacent room.

Drainage

a) Soil and waste pipe provision – the lack of an adequately sized soil or waste pipe connected to a water-using facility able to carry foul or waste water safely to the drainage system.
b) Pipe defects – defects to a soil or waste pipe serving a water using facility.
c) Traps and water seals – the lack or disrepair of a trap and water seal.
d) Ventilation of pipes – inadequate ventilation to a soil or waste pipe.
e) Disrepair to system – defects to the foul or waste water drainage systems.
f) Private sewage system – missing or defective private foul sewage treatment system or private foul sewage storage cistern.
g) Soakaway – missing, defective or badly located soakaway for surface water.
h) Surface water drainage – inadequate or defective drainage.
i) Recycling system – defects to greywater or rainwater recycling system.

Hazard assessment

17.34 It is the overall threat to health at the dwelling from provision and state of the facilities for personal hygiene, sanitation, and drainage, which is to be assessed.

17.35 It should be noted that the statistical averages for likelihood reflect the generally good level of provision for drainage, sanitary and personal hygiene facilities in UK homes. This means that, where there are problems, the risks will be elevated well above the average.

17.36 The assessment of a dwelling in a multi-occupied building should reflect the increased risk having regard to the number of individuals and households that might be expected to share facilities.

18. Water supply

Description of the hazard

18.1 This category covers the quality and adequacy of the supply of water within the dwelling for drinking and for domestic purposes such as cooking, washing, cleaning and sanitation. As well as the adequacy, it includes threats to health from contamination by bacteria, protozoa, parasites, viruses, and chemical pollutants. Contamination by radon (8) and lead (7) are dealt with separately.

18.2 The quality of water supplied from public mains is outside the assessment and is subject to separate controls. The water supply must be considered "wholesome" which can be defined as: "Water fit to use for drinking, cooking, food preparation or washing without any potential danger to human health." Water intended for purposes such as watering the garden are not required to meet the same wholesome standards however should be free from risk to health for the intended purpose.

Potential for harm

Most vulnerable group and statistical averages used for rating

18.3 There is no specific age group more vulnerable than others.

Health effects

18.4 Water is essential to sustain life. At normal temperature, with little or no exercise, an adult needs to consume around 2.5 litres of fluid each day, but in hot conditions and with heavy exercise the output rises substantially. Mild dehydration is associated with fatigue, headaches, dry skin, constipation, bladder infections, and poor concentration.

18.5 In the UK, the main threats to health from water result from contamination. Microbiological pathogens which affect drinking water typically cause gastro-intestinal illness. Campylobacter and Cryptosporidium are the most common causes of gastro-intestinal illness associated with drinking water. Legionella, which typically causes respiratory infection, also presents an infection risk from domestic water systems.

18.6 Young children and the immuno-compromised are most at risk from ingested pathogens, and the elderly and immuno-compromised are most at risk from Legionella.

18.7 Private water supplies may be untreated and can become contaminated more readily, although there is a lower rate of reported illness. While this may be due to the occupiers developing some acquired immunity, visitors may be at risk.

18.8 In 2000 there were 173 reported cases of Legionnaires' disease in the UK, of which 76 (44%) were community acquired. It is estimated that 1 in 6 community acquired cases is due to domestic water systems. Most infections with Legionella's are respiratory infections, acute pneumonia – Legionnaires disease – of which 10 to 15% of cases are fatal. Legionella can also cause wound infections from contact with contaminated water.

18.9 Nitrate and Nitrite are common water pollutants and one of the most widely documented. Nitrates form naturally as part of what is known as the nitrogen cycle. However, given their function within plant growth, they are used within fertilizers and are widely utilized in agriculture. As nitrate and nitrite have the potential to enter water courses, untreated water supplies are at risk of contamination. The European Union safe limits for nitrate in drinking water is 50 micrograms per litre. Untreated supplies in Jersey regularly exceed this limit and require treatment. The only confirmed health complication from excessive nitrate and nitrite in water is methemoglobinemia, colloquially known as 'blue baby syndrome'. This can be fatal in newborns. There are also studies which may indicate increased levels on nitrate may be attributed to some forms of cancer however this evidence is inconclusive.

18.10 Per and polyfluoroalkyl Substances known as PFAS are a group of man-made chemicals which have been widely utilized for various purposes. There is evidence to suggest is PFAS are now ubiquitous in low levels from rainwater and as a result are often detected in water supplies. There are known areas where levels are increased, such as to the west of Jersey Airport due to the use of PFAS in firefighting foam. The World Health Organisation classes PFAS as carcinogenic as such the monitoring of levels within private water supplies is recommended.

18.11 Mains water in Jersey meets standards on PFAS limits set by the EU Drinking Water Directive. Private water supplies in Jersey likely contain PFAS due to its presence in rainwater. Jersey water offers a chargeable service for those who want such private supplies to be tested for PFAS.

Causes

18.12 The vast majority of dwellings in Jersey are served by public mains water, with around 3,000 properties served by private water supplies. Private supplies may become contaminated more readily because water is usually pumped into a storage tank within the dwelling.

18.13 Legionella can be dispersed into the air during use of showers, and this, although rare, is the most likely route for transmission of Legionnaires' disease in homes. Legionella thrives between 20ºC and 45ºC.

18.14 There is potential for pathogens to proliferate in filters attached to taps, or in a plumbed in filter.

18.15 Water for drinking, cooking, washing and laundry, needs to be of high quality. However, water for flushing toilets and irrigating gardens, can be of lower quality, and it is possible to use reclaimed rainwater or greywater (bathroom wastewater).

Preventive measures and the ideal

18.16 Drinking water should be wholesome, and the supply to and within the dwelling should not be interrupted, except in emergencies.

18.17 The entire installation (taps, pipes, any storage tanks) should not adversely affect the quality of the water by:

a. By allowing ingress of contamination (e.g. tanks should be covered to prevent access to mice, birds, and insects)

b. By stagnation, particularly at high temperatures (e.g. there should not be any dead-ends in pipework, particularly for the supply of hot water)

c. By materials in contact with the water being unsuitable for the purpose (e.g. tar linked tanks are not allowed)

d. As a result of backflow of water from water fittings, or water using appliances, into pipework connected to mains or to other fittings and appliances and/or:

e. By cross-connection between pipes conveying water supplied for drinking water with pipes conveying water from some other source.

18.18 All dwellings should have at least one tap for drawing drinking water, and there should be adequate arrangements for connection to a wholesome supply of drinking water. Drinking water taps can be supplied direct from the supply pipe, from a pump delivery pipe drawing water from a supply pipe, or from a distributing pipe drawing water exclusively from a storage cistern supplying wholesome water. There should be regular sampling and analysis of drinking water (at a minimum annually) stored and supplied from a tank (such as from a private supply). Testing can be arranged by the Official Analyst – Private water supplies: pollution and testing (gov.je).

18.19 There should be a suitable water treatment system capable of removing all relevant contaminants.

18.20 The water should be supplied at a pressure adequate for appliances at a dwelling, if necessary, with the use of a booster pump.

18.21 To prevent Legionella growth, hot water needs to be maintained above 55ºC. To achieve this hot water tanks should be set to store hot water at above 60ºC. (However, the benefit from maintaining hot water at this temperature may be offset by the risk of scalding, unless there are thermostatic mixer valves at taps, particularly bath taps.) It should also be noted, that if hot water is used regularly and not stored for long periods, this reduces the risk of an infective dose of Legionella.

18.22 Other risk factors for the domestic acquisition of Legionnaires disease include low chlorine levels, most commonly found with a private water supply, and cold water stored, or held in pipework, at above 20ºC. Cold water, therefore, should be stored and held in pipework at a temperature as low as possible, and at least below 20ºC.

18.23 Typically, water softeners introduce sodium into the water, which should not be used for infants in the preparation of powdered milk for feeds, or for those on a low-sodium diet. There is a link between cardiovascular disease and consumption of naturally soft water. No link is proven with artificially softened water. However, as a precaution it is usually recommended that softened water is not used for drinking. Where a water softening treatment system is installed, there should be a tap providing unsoftened water for drinking and cooking.

18.24 Untreated water supplies should not be used for newborns due to the potential risk of nitrate contamination. It is generally recommended to use bottled water to prepare baby formula opposed to using a private water supply.

18.25 Any filters attached to taps, or plumbed in, should be fitted properly and the filter cartridge changed regularly according to the manufacturer's instructions.

18.26 If rainwater or grey water replaces mains water for toilet flushing, then it should be treated by filtration and disinfection. Maintenance is required to ensure that treatment remains effective.

18.27 In multi-occupied buildings, where there is inadequate pressure from mains water to supply all dwellings, water is stored in tanks. In older blocks, water may be stored in a header tank at the top of the block. However, it is now more common to find storage tanks at lower level with booster pumps to supply water to flats. Legionella are more likely to be found in the water systems of multi-occupied buildings than in other domestic accommodation. Drinking water to such buildings should be sampled and analysed regularly, particularly for new installations, and where extensive repairs or alterations have been carried.

Relevant matters affecting likelihood and harm outcome

18.28 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Water supply tap – lack of a tap for drawing wholesome water for drinking within the dwelling.
b) Intermittent supply – regular or prolonged interruption of supply.
c) Water pressure – water delivered to taps at inappropriate pressure.
d) Water temperature – water stored at an inappropriate temperature.
e) Defective pipework etc – inappropriate materials used for pipework, storage tanks, or fittings.
f) Contamination of tanks – inadequate protection against contamination of water storage tanks.
g) Water filter defects – poor maintenance of water filters.
h) Water softening system – poor maintenance of water softening system.

Hazard assessment

18.29 A visual examination of the installations and fittings within the dwelling for supply of water should be followed by checking the water visually and for odours. Where there is justification for further investigation, sampling and analysis of water will be necessary.

18.30 In multi-occupied buildings, where there are greater risks from Legionella, it may be considered appropriate to check the temperature of water in pipes, cold water cisterns, hot water storage vessels, and the discharge from taps. Water sampling and analysis may also be considered necessary.

19. Falls associated with baths etc.

Description of the hazard

19.1 This category includes any fall associated with a bath, shower or similar facility.

Potential for harm

Most vulnerable age group and statistical averages

19.2 The most vulnerable age group is all persons 60 or more years of age.

Health effects

19.3 The most common injuries that result from falls associated with a bath, shower or similar facility are cuts or lacerations (27%), swelling or bruising (26%), or fractures (11%). Because of the many hard projections and surfaces found in bathrooms, and that the user may be unprotected by clothing, outcomes from a fall are likely to be more severe than in other areas.

19.4 Although typically the harm suffered from a fall is a physical impact type of injury, the health of an elderly person can deteriorate generally following a fall, and the cause of death of an elderly person within weeks or months of the initial fall injury can be cardio-respiratory illness, including heart attack and pneumonia.

19.5 Children younger than 5 years are most likely to fall in the bath or shower. However, the elderly are most at risk because of the more severe health outcomes.

Causes

19.6 The main cause of falls in bathrooms is slipping when getting into or out of the bath. Thus, the slip resistance of the internal surfaces of baths and showers when wet will affect the likelihood of an incidence occurring.

19.7 The position of taps, waste controls and other bathroom controls can also affect both the likelihood of an occurrence and the severity of the outcome. Inappropriate siting may mean a user has to reach awkwardly, increasing the risk of a fall. The position and direction of opening of the door may also affect the likelihood of a fall.

19.8 Inadequate functional space (the space necessary for using the facility) immediately adjacent to the appliance may make it more difficult to use, increasing the likelihood of a fall. Inadequate

lighting or glare can also increase the likelihood of a fall, as can a light switch remote from the doorway.

19.9 Cold impairs movement and sensation, and a lowered body temperature affects mental functioning such that falls are more likely in the cold. A fall may therefore be more likely in a bathroom which cannot be adequately heated, and the consequent harm suffered because of a fall may be more severe.

Preventive measures and the ideal

19.10 Baths and showers should be stable and securely fitted, provide for slip resistance and incorporate safety features such as handles or grab rails and side positioning of taps and waste controls. The layout of a bathroom and of the appliances should allow for ease of use of each appliance, including sufficient functional space to enable users (including an adult assisting a child) to be able to undress, dry themselves and dress without increasing the likelihood of a fall.

Relevant matters affecting likelihood and harm outcome

19.11 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Poor friction – of the internal surface of a bath or shower.
b) Siting of taps, wastes, light switches and other controls– inappropriate sittings increasing the risk of falls.
c) Handles and grab rails – lack of, or insecurely fitted.
d) Unstable appliance – unstable fitting of bath, shower, wc basin, or wash hand basin.
e) Inadequate space – for the functional area immediately adjacent to the appliance.
f) Inadequate lighting – lack of adequate natural or artificial lighting.
g) Glare – from natural or artificial lighting.
h) Space heating – inadequate means of heating the bathroom.
i) Projections – the presence of sharp edges, heating installations, or glass.
j) Inadequate space – functional space and space between appliances.
k) Space heating – inadequate means of heating the bathroom.

Hazard assessment

19.12 As well as the condition of the facilities and appliances, the layout and functional space is important. The space should be sufficient for more than one person, to allow for a parent to help a child, or a carer to help an elderly person. The more individuals or households using a bathroom, the greater the wear and tear which may lead to appliances and handles becoming loose and unstable.

20. Falling on level surfaces etc

Description of the hazard

20.1 This category covers falling on any level surface such as floors, yards, and paths. It also includes falls associated with trip steps, thresholds, or ramps, where the change in level is less than 300mm.

Potential for harm

Most vulnerable age group and statistical averages

20.2 The most vulnerable age group is all persons aged 60 years or over.

Health effects

20.3 Falls can result in physical injury, such as bruising, fractures, head, brain and spinal injuries. The nature of injury is in part dependent on the distance of a fall, and in part dependent on the nature of the surface onto which the victim falls. While falls on the level tend to result in relatively minor injuries than other falls, they occur more frequently.

20.4 Following a fall, the health of an elderly person can deteriorate generally, and the cause of death following an initial fall injury can be cardio-respiratory. This may include heart attack and pneumonia and may not necessarily result directly from the impact injury sustained at the time of the fall.

Causes

20.5 The construction, evenness, inherent slip resistance, drainage (for outdoor path surfaces), and maintenance of the floor or path surface, all affect the likelihood of an occurrence and the severity of the outcome. Other factors such as lighting, temperature and distracting noise also have an affect.

20.6 The likelihood of a slip or trip occurring is affected by how level is the floor, path or yard, its evenness and the state of maintenance. Surface variations of 5mm to floors and of 20mm to paths increase the likelihood of a trip, an even surface will help prevent falls.

20.7 The possibility of a slip occurring is affected both by the slip resistance of the floor surface and by the characteristics of any footwear. The type of floor covering will determine the final slip resistance. Slip resistance is worsened when a surface is damp

or wet, which may be the result of a building deficiency, or be expected given the use of the area in question.

20.8 A lack of sufficient space to carry out tasks or manoeuvres may also increase the likelihood of an occurrence and the severity of the outcome.

20.9 The nature of the surface will influence the outcome. Hard surfaces such as uncovered stone, concrete, or ceramic tiled floors being more unforgiving than carpeted floors.

20.10 Cold impairs movement and sensation, and a lowered body temperature affects mental functioning, such that falls are more likely in the cold. The thermal efficiency of the dwelling is therefore relevant to fall hazards as well as the Excess Cold hazard category. It may also therefore be more hazardous using external paths in cold weather, irrespective of whether they are wet or icy.

Preventive measures and the ideal

20.11 Effective drainage of surface water is important for outdoor paths and yards to reduce the chances of occurrences because of ponding of water, and in adverse weather, patches of ice.

20.12 Each room and part of a dwelling should have sufficient space and be laid out to allow for the carrying out of appropriate tasks and manoeuvres without increasing the chances of a slip.

20.13 Adequate lighting will enable users to identify any obstructions and any trip steps or projecting thresholds. Artificial lights and windows should be sited to avoid shadows and dark corners where users cannot clearly see where they are going. Switches or controls for artificial lighting should be sited for ease of use. Glare from windows should be avoided.

20.14 In common parts in multi-occupied buildings, the owner or manager is responsible for floor coverings as well as the other factors discussed.

20.15 For further information see: British Standards BS 5385 and 6431.

Relevant matters affecting likelihood and harm outcome

20.16 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Lack of floor surface – no properly constructed floor, path, or yard where needed.

b) Excessive slope – to the floor, path or yard.
c) Uneven surface – to the floor, path, or yard.
d) Trip steps/threshold – the presence of such steps or projecting thresholds.
e) Disrepair – to the structure and surface of the floor, path or yard.
f) Poor slip resistance – to the surface of the floor, path or yard.
g) Inadequate drainage – of surface water from the path or yard.
h) Inadequate space – for the carrying out of appropriate tasks and manoeuvres.
i) Poor lighting or glare – both artificial and natural.
j) Thermal efficiency – inadequate heating and insulation at the dwelling.
k) Hard surfaces – unforgiving or abrasive surface to the floor, path or yard.
l) Projections etc – the presence of sharp edges, heat producing appliances, or glass, in the area where a fall might occur.
m) Nature of area – and of the activities which will be undertaken in the area where a fall might occur.
n) Thermal efficiency – inadequate heating and insulation at for the dwelling.

Hazard assessment

20.17 Account should be taken of the floors to all rooms, passages and areas within the dwelling and all paths and yards giving access to and associated with the dwelling and the hazard assessed for the dwelling as a whole.

20.18 As well as uneven boarding or loose paving, the friction quality can be affected by moisture, or, in the case of paths and yards, ice or leaves. The expected frequency of use should also be considered.

20.19 The expected activity in the area can contribute to both the likelihood and severity of outcome. For example, in a kitchen people can be expected to be carrying hot liquids, knives, etc, and this increases both the likelihood of a fall, because they may concentrate less on where they are putting their feet, and it also affects the severity of the outcome resulting from a fall.

21. Falling on stairs etc

Description of the hazard

21.1 This category covers any fall associated with stairs, steps and ramps where the change in level is greater than 300mm. It includes falls associated with internal stairs or ramps within a dwelling, external steps or ramps within the curtilage of a dwelling, internal common stairs or ramps within a building containing a dwelling and giving access to the dwelling, and those to shared facilities or means of escape in case of fire associated with the dwelling and external steps or ramps within the curtilage of a building containing a dwelling and giving access to the dwelling, and those to shared facilities or means of escape in case of fire associated with the dwelling.

21.2 It includes falls over guarding (balustrading) associated with the stairs, steps or ramps. However, it does not include falls over guarding to balconies or landings, nor does it include falls associated with trip steps, thresholds or ramps where the change in level is less than 300mm.

Potential for harm

Most vulnerable age group and statistical averages

21.3 The most vulnerable age group is all persons aged 60 years or over.

Health effects

21.4 Falls on stairs account for around 25% of all home falls (fatal and non-fatal) in the UK. Although fewer falls occur on stairs than on the level, stair falls are much more likely to lead to a more serious outcome.

21.5 After the age of 40 men are much more likely to die of a fall on stairs or steps in the home than women. In the age bands 40 to 64, and 75+, a man is almost twice as likely to die from a fall on stairs/steps at home than a woman in the same age band (when the rate per million population of each sex is considered). In the age bands 65 to 74, a man is more likely to die from a fall than a woman, although the difference between the sexes is less marked.

21.6 Any fall can result in physical injury, such as bruising, fractures, head, brain and spinal injuries and may even be fatal. The nature of injury is dependent on the distance of a fall, and nature of the surface(s) collided with, as well as on the age and fragility of the

person.

21.7 While numerically more accidents involve younger people, proportionally the elderly are most at risk as they usually suffer worse injuries from which they take longer to recover. Although typically the harm suffered from a fall is a physical impact type of injury, the health of an elderly person can deteriorate generally following a fall. Their cause of death within weeks or months of the initial fall injury can be cardio-respiratory illness, including heart attack, stroke and pneumonia.

Causes

21.8 Variations in dimensions of rise and going within a flight are likely to increase the possibility of missteps. However, where the variation is linked with an obvious change in direction of a stair, for example with the use of winders, this may mean that the user takes greater care and increases concentration, reducing the likelihood of an occurrence.

21.9 Accidents are nearly twice as likely on stairs consisting of straight steps with no winders or intermediate landings. The length of flight of stairs or of slopes may increase the seriousness of the outcome by increasing the possible distance of a fall.

21.10 On small spiral stairs, the likelihood of a fall may be increased where there is no inner handrail and where the width is less than 800mm. Alternating tread stairs may also be hazardous, particularly in emergencies.

21.11 Accidents are more likely where the pitch of stairs is more than 42º, and a steeper pitch can be expected to result in a worse outcome. For ramps, the steepness of the slope is relevant to the potential for accidents.

21.12 The shape and dimension of nosings affect the likelihood of an occurrence. In particular, nosings that project more than 18mm may increase missteps. Poor frictional quality of the surface of stair treads and particularly of nosings can increase slips and missteps. The treads should overlap by at least 16mm if flight of stairs has open risers.

21.13 An accident is three times more likely to occur on stairs without carpet covering, including those stairs intended to be left uncovered. Uncovered external steps which may become icy or wet, or are uneven and badly maintained, will increase the likelihood of a fall and the severity of the outcome.

21.14 The likelihood of a fall is doubled if there is no wall or guarding to one side of the stair. Similarly, the lack of any handrail doubles the likelihood of a fall, even if there is a wall to both sides of the stairs.

Preventive measures and the ideal

21.15 The likelihood of missteps is reduced where tread and rise dimensions are 280-360mm and 100-180mm respectively. It is estimated that the risk of an accident is decreased by 10% for every 10mm increase in going between 180mm and 280mm.

21.16 Carpets generally reduce the severity of injury should a fall occur, both on stairs and at the foot of stairs.

21.17 To prevent small children falling (or becoming trapped), there should not be any openings on stairs, either to the stairs themselves or to the guarding, which allow a 100mm diameter sphere to pass through.

21.18 Narrow stairs may cause problems in emergencies. Ideally, stair width should be a minimum of 900mm clear width to allow the stairs to be negotiated by a child and adult side-by-side.

21.19 Handrails provide assistance in ascent and descent and offer a hand-hold if there is a misstep, and so can help prevent a fall. Handrails to both sides of the stairs provide the safest arrangement. Handrails should be sited between 900mm and 1,000mm measured from the top of the handrail to the pitch line or floor. They should be shaped so that they are easy to grasp and extend the full length of the flight.

21.20 Where the is no wall to one or both sides of the stairs, guarding (e.g. balustrade) should be provided to prevent falls off the sides of stairs and/or platforms. It should be designed and constructed so as to discourage children climbing. The top of this guarding must be 1100mm measured from the top of the guarding to the pitch line or floor.

21.21 The headroom to stairs themselves should be a minimum of 2,000mm. In some situations, such as loft conversions, where this is not possible the headroom should be 1,900mm at the centre reducing to a minimum of 1,800mm at the side.

21.22 Good lighting at the top and bottom of stairs will enable users to identify the first step and the dimensions of the stairs, reducing the possibility of a misstep or slip. Artificial lights and windows should be sited to avoid shadows and dark corners where users cannot clearly see where they are going. There should be switches or controls for artificial lighting at both the top and foot of stairs. Glare from windows should be avoided.

21.23 There should be reasonable space at the top and bottom of any stairs to enable users to appraise the start and dimensions of the steps and stairs. Architectural features (e.g.

doors) which create an obstruction on stairs or at the head of stairs can increase the likelihood of a fall. Projections and sharp edges on stairs and glass or radiators at the foot of stairs will increase the seriousness of the health outcome of a fall.

21.24 Cold impairs movement and sensation, and a lowered body temperature affects mental functioning, such that falls are more likely in the cold. The thermal efficiency of the dwelling is therefore relevant. It may also be more hazardous using external steps in cold weather, irrespective of whether they are wet or icy.

21.25 In multi-occupied buildings, the owner or manager is also responsible for the stair covering (e.g. carpet) and for ensuring that stairs are kept free from obstructions.

21.26 For further information see: The Building Bye-Laws (Jersey) 1997 Code of Practice and British Standard BS 5395. Technical Guidance Document 2007 Part 7 Stairs, Ramps and Protective Barriers.

Relevant matters affecting likelihood and harm outcome

21.27 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Tread lengths – of less than 280mm or greater than 360mm.
b) Riser heights – of less than 100mm or greater than 180mm.
c) Variation in tread or riser – dimensional variation producing an uneven pitch.
d) Nosing length – projecting more than 18mm beyond any riser. If open riser noising overlaps, length should be at least 16mm.
e) Poor friction quality – of treads and nosings.
f) Openings – in stairs or guarding through which a 100mm diameter sphere can pass.
g) Alternating treads – stairs so constructed, particularly those not conforming to current regulations.
h) Lack of handrails – the absence to both sides of the staircase.
i) Height of handrails – set below 900mm or above 1,000mm.
j) Lack of guarding – the absence where there is no wall to both sides of the staircase.
k) Height of guarding – not extending to at least 900mm above the treads.
l) Easily climbed guarding – constructed so as to facilitate climbing.
m) Stair width – less than 1,000mm.
n) Length of flight – long flights may increase the likelihood of a fall.
o) Inadequate lighting – natural and/or artificial, particularly to the top and foot of a flight.
p) Lighting controls – inadequate or inconvenient means of controlling the artificial lighting.

q) Glare from lighting – whether natural or artificial.
r) Door(s) onto stairs – doors opening directly onto the stairs.
s) Inadequate landing – inadequate floor space leading to the stairs.
t) Construction/disrepair – inadequate construction or disrepair to any element of the stairs.
u) Thermal efficiency – inadequate heating and insulation of the dwelling.
v) Length of flight – long flights increase the severity of the outcome.
w) Pitch of stairs – stairs which are of above average steepness or shallowness.
x) Projections etc. – the presence of sharp edges, heating installations, or glass, to the stairs or at the foot of the flight.
y) Hard surfaces – unforgiving surfaces at the foot of the flight.
z) Construction/disrepair – inadequate construction of, or disrepair to, any element of the stairs.
aa) Thermal efficiency –inadequate heating and insulation of the dwelling

Hazard assessment

21.28 All stairs, steps, and ramps associated with the dwelling should be taken into account. This includes the internal stairs, stairs for exclusive use of the dwelling occupants, common stairs, external steps, fire escape stairs, and any ramps. It is the overall likelihood of a fall that is to assessed. This should take account of the frequency with which each might be expected to be used.

22. Falling between levels

Description of the hazard

22.1 This category covers threats of falls between levels inside or outside a dwelling, where the difference in levels is more than 300mm. It includes, for example, falls out of windows, falls from balconies or landings, falls from accessible roofs, into basement wells, and over garden retaining walls.

22.2 It does not include falls associated with stairs, steps or ramps. Nor does it include falls from furniture or from ladders.

Potential for harm

22.3 The most vulnerable age group is all persons under 5 years of age.

Health effects

22.4 Falls result in physical injury, including bruising, puncture injuries, fractures and head, brain and spinal injuries. The nature of injury is in part dependent on the distance of a fall, and in part dependent on the nature of the surface collided with.

22.5 Children under the age of five are most likely to fall between levels, and boys are more likely to fall than girls. Falls from windows, landings and balconies is one of the more common causes of death for children (and, for that matter, young adults).

22.6 Within the adult age group of 16 to 59 years, young adults between 20 and 29 years old are the most likely to fall between levels. Adults 60+ years old are the least likely to fall between levels but suffer much more severe health outcomes when they do.

22.7 There are around 50 fatal falls from windows in domestic buildings each year in the UK, and around 2,300 non-fatal cases treated in hospitals. There are around 8 fatal domestic balcony falls each year in the UK.

Causes

22.8 The ease of opening windows, the distance they can be opened, the height of the sill and the design of the opening light will all have a bearing on the possibility of an occurrence. For windows above ground floor level, the ease of cleaning from inside will affect the

likelihood of an occurrence.

22.9 Windows which are easy to open, may increase the likelihood of an occurrence for a child, whereas difficulty in opening a window requiring extra strength may increase the likelihood of an occurrence for an adult. Difficult to reach catches can increase the likelihood of a fall (although this may be more properly assessed in relation to ergonomics).

22.10 The distance of a window opening or balcony above the adjacent ground will affect the severity of the health outcome of a fall, as will the nature of the ground. The greater the distance and the less forgiving the ground finish, the more severe the health outcome is likely to be. Similarly, any other features beneath the window will affect the severity of outcome. For example, railings and fences tend to increase the harm, whereas shrubs and flower beds tend to break the fall and reduce the severity of harm. Of the fatal falls from windows in the UK, 50% are from bedrooms, and 50% are from first floor windows (clearly there is a large overlap between these falls).

Preventive measures and the ideal

22.11 Safety catches will reduce the likelihood of children being able to open a window unsupervised. Catches which restrict the distance a window can be opened to 100mm should be fitted to windows above ground floor level to reduce the possibility of an accident involving a child. Any opening limiter should be easy to over-ride by an adult in the event of emergency and to aid ventilation. While, ideally, there should be a catch to at least one window in a room accessible to wheelchair users, such a window should still be fitted with a restrictor.

22.12 Falls are least likely when internal sills are at least 1,100mm from the finished floor level.

22.13 To allow views from a seated position (see Lighting) the height of glazing above floor level should not be more than 800mm. Where there is any glazing extending to within 800mm of the floor level, it should break safely and be safety glass i.e. toughened or laminated. If the difference in level outside the building is greater than 600mm, the glass must also act as containment or be guarded.

22.14 In multi-storey buildings there is a need for increased safety precautions to upper storey windows, because of the increased risk posed by the more severe harms resulting from distance of fall.

22.15 The design of the windows should facilitate safe cleaning of the outer surface. It should be such that there is no reason to climb on a chair or stepladder to clean it. Where there

is a high-level opening light above the main opening light, the high-level light should be easily cleanable on both sides without opening the main light.

22.16 Guarding (e.g., balustrade) should be provided to balconies and landings to prevent falls. It should be at least 1,100mm high and designed and constructed to discourage children climbing and strong enough to support the weight of people leaning against it. There should be no openings to the guarding which would allow a 100mm sphere to pass through.

Relevant matters affecting likelihood and harm outcome

22.17 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

Windows

a) Ease of window operation – degree of difficulty to use window catches and opening lights.
b) Safety catches – lack of such catches or features to catches.
c) Opening limiters – no restriction preventing windows being opened more than 100mm.
d) Sill heights – less than 1,100mm above floor level and/or lack of safety glass or guarding.
e) Disrepair of window – to frame, catches, hinges, sashes, safety devices and opening lights.
f) Ease of cleaning – outer surfaces that are difficult to clean.
g) Balconies, landings, roof parapets, basement wells
h) Height of guarding – extending less than 1,100mm above the balcony, roof surface or floor.
i) Easily climbed guarding – constructed so as to facilitate climbing by young children.
j) Openings in guarding –openings greater than 100mm.
k) Construction/repair of guarding – insufficient strength and fixing.
l) Height above ground – the distance of a fall to the ground or next level.
m) Nature of ground – the nature of the surface and any features which may be collided with.
n) Non-safety glass – the lack of safety glass where appropriate in the window or guarding.

Hazard assessment

22.18 All deficiencies which may contribute to the hazard, including those associated with

windows, balconies, landings, basement wells, etc., both internally and externally, should be considered in the assessment. Where a roof is part of the recreational or amenity space associated with the dwelling, the risk of falls from that roof should be considered.

23. Electrical hazards

Description of the hazard

23.1 This category covers hazards from shocks and burns resulting from exposure to electricity, including from lightning strikes. (It does not include risks associated with fire caused by deficiencies to the electrical installations, such as ignition of material by a short-circuit.)

Potential for harm

Most vulnerable age group and statistical averages

23.2 The most vulnerable age group is all persons under 5 years of age.

Health effects

23.3 When electricity passes through the human body, it causes shock to the nervous system. The shock effect ranges from mild tingling sensations to disruption of the normal regular contractions of the heart or respiratory muscles, causing death.

23.4 As human tissue acts as a resistance to electricity, heat is generated which may result in burns. Such burns usually occur at the point of contact with the source of electricity. Injuries are primarily burns (53%) to the finger or thumb (58%). The mouth is the second most frequent injury site. About half of electrical accidents in the home result in burns as well as shock.

23.5 The majority of injuries are not severe. Of those attending hospital accident and emergency, 38% of victims are sent home, and 47% are referred to out-patients or a GP. Of those admitted to hospital, 71% stayed for less than 3 days.

23.6 Those under 40 have 80% of all accidents, and males have 59% of accidents. The most vulnerable group are young children, who are less likely to be aware of the risks posed by electricity. Boys between 5 and 14 are three times more likely to have accidents than girls of the same age.

Causes

23.7 By touching metal or other conducting material which is 'live' a person may receive an electric shock. The risk is dependent on a number of factors, the main one being the

voltage across the body. An electric shock is experienced when current passes through the body to earth.

23.8 The majority of the electric current fatalities result from deficiencies in plugs, leads, and appliances. Less than 10% of fatalities result from a deficiency in the electrical wiring and other installations. Of the fatal accidents not associated with plugs, leads and appliances, 50% involve mains wire or cables, 24% sockets, 13% light fittings and 10% a fuse or fuse board.

23.9 Where a location is known (62% of cases) most accidents occur in the living or dining room (27%), kitchen (23%), or bedroom (18%). For adults the location is most likely to be the kitchen or the living/dining room, for children the living/dining room or bedroom.

Preventive measures and the ideal

23.10 The potential danger of electrocution requires that there are adequate safety precautions and, reflecting the high standard of electrical safety found in most UK homes, the incidence of electric shock in dwellings is relatively rare.

23.11 Protection from electric shock is provided by isolation and/or insulation. Live parts must be covered with non-conducting material to reduce the risk of electric shock. All exposed metal parts of the installation must be earthed so that in the event of a deficiency any current will flow immediately to earth rendering the system safe from electric shock. Other exposed metalwork such as gas and water pipes should also be connected to the main earth terminal.

23.12 If equipment operating at 230 volts or higher is used, a Residual Current Device (RCD) can provide additional safety. These can be incorporated in the consumer unit. An RCD is a device which detects some, but not all, deficiencies in the electrical system and rapidly switches off the supply. The terms RCD covers a number of devices including Residual Current Circuit Breaker (RCCB), Residual Current Breaker with Overcurrent protection (RCBO), Socket-outlets with Combined RCD (SRCD), and Portable RCD (PRCD). It is not recommended to use RCD protection in circuits supplying security and emergency systems e.g. burglar alarms, fire alarms, security lighting.

23.13 As water is highly conductive, it increases the dangers from electricity. This means that additional precautions are necessary in bathrooms, kitchens and other areas where individuals could be in contact with both water and a source of electricity (e.g. electric showers). There should be no socket outlets in bathrooms other than 12 volt AC (e.g., shaver sockets).

23.14 A Lightning Protection System (LPS) may need to be present where there is an unacceptable risk of a lightning strike. This is particularly relevant to tall and isolated buildings and is, in part, dependent on geographical location.

23.15 For further information see – British Standard BS7671 Requirements for electrical installations, and BS6651 on a procedure for calculating the overall lightning strike risk factor for a building.

Relevant matters affecting likelihood and harm outcome

23.16 Matters relevant to the likelihood of an occurrence and severity of the outcome include:

a) Electrical installation out-of-date – non-compliance with current requirements.
b) Number and siting of outlets – inadequate number of, and/or badly sited electrical socket outlets.
c) Fuses and meters – inappropriately sited fuses and meters.
d) Earthing – lack of or inadequately earthed electrical system.
e) Disrepair of installation – including to supply, meters, fuses, wiring, sockets, light fittings or switches.
f) Presence of water – electrical installations in close proximity to water, including areas of damp.
g) Lightning protection system – lack of, or defective system to buildings at significant risk of lightning.

Hazard assessment

23.17 A visual inspection of the electrical installation and fixed appliances to the whole dwelling may identify obvious deficiencies which contribute to the hazard. Where there is an indication that there may be an above average risk, then a full inspection and test report by a qualified electrician or electrical engineer should be commissioned.

23.18 In multi-occupied properties, the owner or manager may provide non-fixed appliances. These should also be taken into account.

23.19 An Electrical Installation Condition Report (EICR) (by a competent engineer as defined in Article 7.8 under the Public Health and Safety (Rented Dwellings – Minimum Standards and Prescribed Hazards) (Jersey) Order 2018 who must have a certificate of competence from NAPIT, NICEIC or BRE) is required prior to the tenant taking occupation for any new tenancies or renewals from 1st January 2019. In the case of long-term periodic tenants where there is no renewal this was required to be completed by no later than 31st

December 2023. These inspections are valid for 5 years. Once a landlord is in possession of an EICR upon any renewal or change of tenancy a Landlords Interim Checklist should be completed and a template is available from Environmental and Consumer Protection (01534 445808 or environmentalhealth@gov.je)

24. Fire

Description of the hazard

24.1 This category covers threats from exposure to uncontrolled fire and associated smoke at a dwelling. It includes injuries from clothing catching alight on exposure to an uncontrolled fire, which appears to be common when people attempt to extinguish such a fire.

24.2 It does not include injuries caused by clothing catching alight from a controlled fire or flame, which may be caused by reaching across a gas flame or an open fire used for space heating.

Potential for harm

Most vulnerable age group and statistical averages

24.3 The most vulnerable age group is all persons aged 60 years or over.

Health effects

24.4 There are around 70,000 dwelling fires reported to Fire Brigades in the UK each year, of which the majority (around four fifths – 56,000) are accidental. As only one fifth of fires are reported to Fire Brigades, this represents an under-estimation of the total number of uncontrolled fires, which occur at approximately 3% of dwellings each year. It is estimated that nearly 90% of domestic fires do not result in any injury.

24.5 The most common cause of death from a fire (around 38%) is being overcome by gas or smoke. Around 26% of deaths are attributed jointly to both burns and being overcome by gas or smoke, and 25% of deaths are the result of burns alone. (The remaining 11% of deaths are either unspecified or from other causes.)

24.6 The elderly and the very young (aged four and under) are most at risk. Impairment of mobility will increase vulnerability as it affects the ability to, and speed of, escape. More children die from carbon monoxide poisoning (mainly as a result of fires) than from any other poisoning. A household with children is twice as likely to experience a fire as one without children. This increased likelihood is likely because adults are distracted by children whilst cooking.

24.7 Although children are more likely to be exposed to fire, the elderly are more than three

times as likely to die from a fire, and therefore are more at risk. People over 80 years of age have the highest rate of deaths per million population, and 36% of fire deaths are to people over 65 years of age.

Causes

24.8 Occupier behaviour is a major factor in relation to fires starting. Over 80% of accidental fires in dwellings result from occupier carelessness or misuse of equipment or appliances, etc. Fires started by smokers' materials and matches account for about 40% of accidental deaths from dwelling fires, with a death rate of over 30 per 1,000 reported fires, the highest death rate resulting from any cause of fire ignition. The Jersey Fire and Rescue Service publishes statistics on its operations in relation to accidental dwelling fires, revealing that the fire service responded 59 accidental dwelling fires in 2023.

24.9 As well as being responsible for some fires starting, occupiers' reactions on discovering fire influence escape and prevention of fire spread.

24.10 The main sources of ignition attributable to the dwelling, rather than occupiers, are cooking appliances, space heaters, and electrical distribution equipment.

24.11 Around half of dwelling fires are related to cooking appliances, with over 30,000 reported fires in the UK each year. However, these fires have a relatively low injury rate, and result in 2 deaths per 1,000 reported fires associated with electric cookers, and 4 deaths per 1,000 reported fires associated with gas cookers, and around 200 non-fatal casualties per 1,000 fires for both gas and electric cookers. The majority of these fires are attributable to misuse or carelessness by the occupier, and include chip pan fires. The most common cause of fire is cooking left unattended. However, a small minority of cooking appliance fires, less than 10%, may be the result of equipment deficiencies or the siting of the cooker (e.g. close to flammable materials).

24.12 Space heating appliances, including portable appliances and central heating systems, account for 12% of fatalities from dwelling fires, with around 25 deaths per 1,000 reported fires. There are around 240 non-fatal casualties per 1,000 fires caused by electric space heaters, and 315 non-fatal casualties per 1,000 fires caused by gas space heaters. Carelessness and placing articles too close to the heater are the cause of over 60% of the heating related fires. The use of solid fuel as the main fuel leads to a higher likelihood of a fire. However, there is a lower rate of fatal and non-fatal casualties from solid fuel fires than from those caused by gas or electric space heaters, around 20 deaths per 1,000 fires, and around 200 non-fatal casualties per 1,000 fires.

24.13 There are around 2,000 fires associated with electrical distribution (wiring and cabling)

per annum, separate from those fires associated with appliances and leads to the appliances. These fires have a rate of 3 fatalities per 1,000 fires, and non-fatal casualties of 86 per 1,000 fires (2001 figures).

24.14 Of the 70,000 dwelling fires per year, around 90% are confined to the room where the fire originated, and a further 8% are confined to the building. Less than 0.5% of dwelling fires spread beyond the building where the fire started.

24.15 Over 65% of fires start in the kitchen, around 10% of fires start in bedrooms and bedsitting rooms, and 10% start in living and dining rooms. Only around 2% of fires start in each of bathroom/WCs, circulation spaces, and store-rooms, and airing cupboards.

24.16 Over half of all fatalities occur in the room where the fire started. However, while 65% of fatalities in fires starting in the bedroom or bedsitting room occurred in the room of origin, only 32% of deaths in fires starting in the kitchen occurred in the room of origin.

24.17 There is a death rate of 23 per 1,000 fires starting in bedrooms or bedsitting rooms. Fires starting in the living room account for 40% of the accidental dwelling fire fatalities and equate to a 32 deaths per 1,000 fires. The death rate from fires starting in the kitchen is 3 deaths per 1,000 fires.

24.18 The level of harm suffered is influenced by the presence or absence of a fire detection and alarm system. The proportion of households with smoke alarms had risen to around 80% in 2001, yet an alarm was absent in 59% of reported fires in dwellings. In 12% of reported fires the alarm had failed, most commonly as a result of a missing or flat battery. Dwelling fires in which smoke alarms raise the alarm tend to shorten the discovery time of the fire, are associated with lower fatal casualty rates, and cause less property damage. Death rates from dwelling fires in which smoke alarms raise the alarm are 3-4 per 1,000 fires, compared to 7-9 per 1,000 for fires where there is no working smoke alarm. The failure rate for smoke alarms generally is around 28%. However, there is a wide difference in performance between battery-operated and mains-powered alarms. The battery-operated alarms have a 45% failure rate, yet the mains-powered alarms have a failure rate of 13%.

24.19 There is a greater risk of a fire occurring in flats than houses. Flats in buildings constructed before 1920 have the greatest likelihood of causing death and injury from fire, having an average HHSRS score well over four times greater than that for post 1979/80 houses, the latter having the lowest average score. The increased risk is related to the number of storeys, such that the risks for flat and bedsit occupiers escalate when they live in accommodation of over two storeys in height. An adult living in either a self-contained flat or bedsit accommodation in a building of three storeys or more is roughly

10 times more likely to die in a fire than an adult living in a two-storey house.

Preventive measures and the ideal

Consideration should be given to the following:

Design

24.20 The dwelling design, construction and condition should limit the chances of carelessness causing a fire, limit the spread of a fire, howsoever caused, and provide safe and ready means of escape. The layout of the unit should ensure that the means of escape from occupied areas does not require travelling through an area of fire risk (e.g. escaping from the bedroom via the living room or kitchen), unless there is an alternative means of escape.

Construction

24.21 The dwelling should be constructed of fire and smoke-permeable resistant materials. The design of the dwelling should incorporate fire stops to cavities including ventilation and heating systems. The design and construction should help contain and limit the spread of fire. Internal doors (including entrance doors to flats) should be made of appropriate materials which are properly fitted and, where appropriate, fitted with self-closers.

24.22 The construction material of the walls and floors/ceilings enclosing the rented unit should provide a minimum of 30 minutes fire resistance. At a minimum the front door to the unit in question should also provide a minimum of 30 minutes fire resistance, be fitted with intumescent strips and cold smoke seals (FD30s) and fitted with an overhead self-closing device conforming to BS EN 1154. The installation of any walls, ceilings/floors, and doors should be done by a competent contractor.

24.23 Part 2 of the Building Bye-laws (Jersey) 2007 set standards for fire safety in new and altered buildings. Technical Guidance Document 2 provides design guidance on meeting those standards.

Appliances

24.24 All fitted appliances and equipment which present a possible source of ignition should be correctly and safely installed and maintained. The space for siting cookers should be safe, with no flammable materials immediately adjacent, or close to windows where curtains may be hung. All fixed heating appliances and systems, whether central heating or not, should be properly designed, installed and regularly serviced and maintained. The adequate means for space heating of the whole of the dwelling will discourage the need for and use of supplementary portable heaters. Facilities for drying clothes indoors

during inclement weather will discourage placing clothing near to or on heaters.

24.25 For electrical appliances, you should never get them wet, this includes plugs and sockets. Do not leave them on at night, unless they are designed to be left on, like fridges and freezers. Do not put anything in the microwave that is made of metal or has a metallic finish or parts. Do not place appliances that could be considered a fire risk along the means of escape from any areas, or if that placement is unavoidable enclose them in fire resistant materials.

24.26 Electrical appliances, especially ones that run at high speeds and contain motors, like washing machines, should be serviced once a year by a qualified electrician.

Electrical Sockets

24.27 The provision of sufficient and appropriately sited electric socket outlets will help reduce the need for extension leads and overloaded sockets. The electrical installation (distribution board, wiring etc.) should meet the current requirements, and should be properly installed, maintained, and regularly checked and tested. There should be no defects to socket outlets or switches.

24.28 For plugs and sockets, keep an eye out for the following: hot plugs or sockets, scorch marks, fuses that often blow, or flickering lights (they are all signs of loose wiring or other electrical problems), badly wired plugs and overloaded sockets (plugging too many electrical appliances into one socket can lead to overheating).

24.29 Ensure the outer covering of all power leads are in good condition and replace if necessary. Cables should not be positioned anywhere that they could be tripped over, or near water, cookers or other sources of heat. Do not run cables under rugs or carpets where they can wear through without anyone noticing.

24.30 Ensure there are not any coloured wires between a plug and the power lead and make sure that wires are held firmly in place inside the plug. Only use one adaptor per socket and don’t plug one adaptor into another. A bar adaptor is safer than a block adaptor.

24.31 Avoid trunking cables at ceiling level without the use of fire-resistant cable trunks to reduce the risk of hanging cables in the event of a fire.

Fuses

24.32 When fitting or replacing a fuse, it's important to use the right fuse for the appliance to make sure the fuse doesn’t overheat. Check the manual or look for a sticker on the appliance to find out its wattage and then use the correct fuse:

a) for appliances up to 700 watts, use a 3 amp fuse.

b) for appliances between 700 and 1,000 watts, use a 5 amp fuse.
c) for appliances more than 1,000 watts, use a 13 amp fuse.

24.33 Extension leads and adaptors have a limit on how many amps they can take, so be careful not to overload them to reduce the risk of a fire.

RCDs

24.34 Residual Current Devices (RCDs) help prevent fires associated with electrical deficiencies where surface tracking across insulation is a cause of fire ignition.

Alarms

24.35 Properly working alarms, connected to smoke or heat detectors do more to save lives in the event of a fire than any other preventative measure as they provide early warning, allowing occupants to escape. There should be sufficient properly designed and appropriately sited smoke and/or heat detectors with alarms in every dwelling. These should be properly maintained and regularly tested. Where appropriate, alarms are available for those with hearing impairment.

Minimum Standards

24.36 Section 6 of the Public Health and Safety (Rented Dwellings – Minimum Standards and Prescribed Hazards) (Jersey) Order 2018 sets legal minimum standards for detection of smoke. The requirements are summarised as follows: A smoke alarm to the standard EN 14604 must be installed on each storey of a rented dwelling. CA carbon monoxide alarm to the standard EN 50291 must be installed in each habitable room or rented dwelling where oil, gas, wood, coal or similar will be burnt. Both types of alarms must be kept in fully working order and be operational at the start of each rental period. The legislation can be viewed on www.jerseylaw.je

24.37 The above is the minimum requirement. The alarm system should ideally have a coverage category of at least LD2 in accordance with BS 5839-6:2019. This would consist of the following:

a) Smoke alarms in all bedrooms

b) Smoke alarm in any living areas

c) Heat alarm in the kitchen

d) Smoke alarm in the internal corridors of the accommodation units

e) All the alarms must be of either Grade D1 (mains powered) or F1 (battery) and must be interlinked so that if one were to actuate the rest would also raise the

alarm.

Citing of alarms

24.38 The British Standard BS 5839-6:2019 recommends that smoke and heat alarms be installed:

a) On the ceiling, as central as possible in the room.
b) Sited 300mm from walls and light fittings – this ensures the alarm is out of any 'dead air' spaces where the airflow may be blocked.
c) Placed within 3m of every escape door and bedroom door to ensure audibility.
d) Positioned between high-risk rooms and bedrooms.
e) For peaked and sloped ceilings – make sure there is a maximum of 600mm vertically down from the apex for smoke alarms, and 150mm vertically down for heat alarms.

24.39 The British Standard EN 50292 standard recommends that a CO alarm should be installed:

a) Between 1 metre to 3 metres of all potential sources of carbon monoxide (fuel burning appliances).
b) Sited 300mm from walls and light fittings – this is to ensure that they are outside of any 'dead air' spaces that occur in corners and spaces where the airflow may be blocked.
c) If the fuel burning appliance is in a confined space (e.g. a boiler room) then the alarm should be sited on the ceiling just outside the room.
d) If there is no fuel-burning appliance, then place the alarm at breathing height e.g. bed's head height in a bedroom.

Checking alarms

24.40 Alarms should be regularly checked and should be replaced 10 years from the date of manufacture.

24.41 There should be adequate, appropriate, and safe means of escape in case of fire from all parts of the dwelling. There should be primary means of fighting fire, such as fire blanket and extinguishers.

24.42 For any form of multi-occupied buildings, there should be adequate fire protection to the means of escape and between each unit of accommodation, appropriate fire detection and alarm system(s), and, as appropriate, emergency lighting, sprinkler systems or other firefighting equipment.

Emergency lighting

24.43 Emergency lighting systems should conform to British Standard BS5266-1:2016

24.44 Because of the possibility of a failure of the normal lighting supply occurring shortly after a period of testing, all tests should wherever possible be undertaken at times of least risk.

Sprinklers

24.45 Sprinklers provide a high level of protection against the risk of dying in a fire. They are particularly suitable for older people and those who have an impairment, injury or difficulty moving around.

24.46 It is important to have a smoke alarm as well as a sprinkler system. A smoke alarm will alert the occupant to slow-burning, smoke-generating fires which may not produce enough heat to trigger a sprinkler.

24.47 The main benefit of sprinklers is that they are individually heat-activated, so they do not all go off at once. They need high temperatures to activate, so they do not trigger accidentally. They operate automatically, whether someone is at home or not, and they sound an alarm to alert occupants, as well as tackling the fire.

24.48 The sprinkler system must be designed and installed in accordance with BS 9251: 2021

Fire certificates for buildings

24.49 If more than one household occupies the premises, and the use of your building for rental purposes falls under the following categories, it will be considered a designated premises:

a) House in Multiple Occupation: A property that consists of self-contained units.

b) Lodging House: A property used for the business of providing lodging with or without board, for reward, whether or not those premises are tourist accommodation.

c) Hostel: A property that provides sleeping accommodation and either board or facilities for the preparation of food adequate to their needs.

d) Residential School: A school that provides both education and board.

24.50 The definition of a single household is where all occupants are part of the same family or have a specific role that defines them as part of the household. To be a part of a family occupants must be any of the following:

a) Married to each other or live together in such a way as though they are married

(e.g. long-term relationship).

b) Relatives (parents, child, grandchild, brother, sister, uncle, aunt, nephew, niece, or cousin) including persons who become part of the family through legal or marital means (e.g. stepchildren, fostering, or adoption).

24.51 Persons who occupy a house, in addition to occupants described above, can also be considered as part of the household if they:

a) Perform a role that is exclusively domestic in nature for the household.

b) The accommodation within the premises is provided to this person for the sole purpose of performing this role.

c) The person does not pay any rent or other considerations for living within the premises.

24.52 The following are roles that may be performed and considered as part of a household:

a) Au pair
b) Nanny
c) Nurse
d) Carer
e) Governess
f) Servant (including maid, butler, cook, or cleaner).
g) Chauffer
h) Gardener
i) Secretary
j) Personal Assistant

24.53 The family of an occupant like this is also considered part of the household. If the overall occupancy is considered to be more than one of household, and if the use of the premises is best described as one of the above options, then the premises will require a fire certificate if one of the following conditions is met:

a) If there is sleeping above the first floor, or below the ground floor, the capacity to sleep is greater than 5 persons.
b) If there is no sleeping above the first floor, or below the ground floor, the capacity to sleep is more than 40 persons.

24.54 The 'capacity to sleep' does not mean that having one bedroom provides sleeping to only

one person. If the room fits a double bed, then the capacity to sleep in that bedroom is two persons. The use of the premises will also define capacity (e.g. hostels and residential schools raise the probability of the use of bunkbeds).

24.55 If the premises is being used as a House in Multiple Occupancy, the property can be exempt from requiring a fire certificate if:

a) A minimum of two-thirds of the total number of accommodation units are occupied by the owner.

b) The premises has been purpose-built to be use for this manner and has never been converted.

c) The premises was converted from another use (e.g. private dwelling) in its entirety in accordance with Building Bye-Laws (Jersey) 2007.

24.56 To prove exemption from requiring a certificate, evidence must be provided to the Fire Safety department of Jersey Fire and Rescue Service for review.

Relevant matters affecting likelihood and harm outcome

24.57 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Heater/cooker position – inappropriate siting and/or close proximity of flammable materials.
b) Space heating – inadequate for the whole of the dwelling encouraging use of supplemental heaters.
c) Defects to heating – defects or disrepair to appliances or system.
d) Clothes drying facilities – lack of indoor facilities.
e) Number/siting of sockets – insufficient and/or inappropriately sited electric socket outlets.
f) Electrical installation – defects to the supply, meters, fuses, wiring, sockets, or switches.
g) Non-fire resistant fabric – allowing fire to spread.
h) Smoke permeable fabric – allowing smoke to spread.
i) Fire stops to cavities – lack of, allowing fire to spread.
j) Disrepair to fabric – walls, ceilings and/or floors may allow smoke, fumes and/or fire to spread.
k) Internal doors – insufficient doors or doors of inappropriate materials or ill-fitting doors.
l) Fire doors – Lacking a fire door at the entrance to the rented accommodation, or the door is present but not of sound design, condition, or installation.
m) Self-closers – lack of effective self-closers where appropriate.

n) Smoke/heat detectors – lack of, or defective, smoke and/or heat detectors with alarms or of detection and alarm system.
o) Firefighting equipment – lack of adequate and appropriate means of primary firefighting.
p) Lightning protection system – lack of a system where appropriate.
q) Means of escape – inadequate safe means of escape in case of fire. This includes keeping the means of escape clear of any items that could cause risk from fire (fire sterile). Special consideration should be given to items that contain lithium-ion batteries (e.g. electric bikes).
r) Combustible furnishings – including furniture and furnishings.
s) Balconies – Storage of flammable materials on balconies could lead to fire spread that the building was not designed for. This should be kept to a minimum.

Hazard assessment

24.58 The assessment should include both the likelihood of a fire starting, and once a fire has started - how likely it is the fire will go undetected and spread.

24.59 The severity of harm suffered will depend on how quickly a fire can spread, and how soon it is detected, and occupiers made aware of it. If a fire goes undetected, and spreads quickly, then the severity of harm will be worse. The majority of fires are detected and extinguished without injury being incurred.

24.60 The means of escape from fire is particularly relevant to the spread of harm. If the means of escape allows quick and easy exit from the accommodation, then there will probably be less severe harm, than if the escape from fire is more difficult. Travel distance from the accommodation to the final exit is relevant, as is the compartmentalisation of the means of escape to prevent ingress of smoke and flame. Emergency lighting will increase the speed of exit, whereas a steep and awkward staircase will impede it.

24.61 For dwellings in multi-occupied buildings, the assessment is made for each individual dwelling (including the associated shared rooms and areas, if any). This means that different hazard ratings can be expected for dwellings within the same building depending on the location of the dwelling unit within the building, and any deficiencies to the individual dwelling. For example, a bedsit on the ground floor close to the final exit from the building would not be assessed the same as a bedsit on the third floor, where the means of escape is the internal staircase, and both bedsitting rooms are identical except for location – the spread of harms would be more severe for a victim in the third storey bedsit because there will be a greater distance of travel to safety than from the ground floor bedsit. Similarly, differences may be because 90% of fires do not spread

beyond the room in which they start.

24.62 Assessment of each individual dwelling within a multi-occupied building should include consideration of the common parts.

25. Flames, hot surfaces etc

Description of the hazard

25.1 This category covers threats of burns (injuries caused by contact with a hot flame or fire, and contact with hot objects or hot non-water based liquids) and scalds (injuries caused by contact with hot liquids and vapours). It includes burns caused by clothing catching alight from a controlled fire or flame, for example, when reaching across a gas flame or open fire used for heating.

25.2 It does not include burns resulting from an uncontrolled fire at a dwelling.

Potential for harm

Most vulnerable age group and statistical averages

25.3 The most vulnerable age group is all persons under 5 years of age.

Health effects

25.4 Around 175,000 people in the UK visit hospital accident and emergency units each year suffering from burns or scalds incurred in the home or from leisure activities.

25.5 Burns or scalds in this hazard category account for the great majority of non-fatal burn accidents (burns caused by uncontrolled dwelling fires result in the most deaths).

25.6 The severity of the burn or scald is dependent on its depth and the area covered. The depth of the burn is dependent on: the temperature of the hot object or liquid, the length of time of exposure, the time taken before corrective action is taken, and the length of time that cold water is applied. How long a hot material can be touched without damage to human tissue also depends on the material, as well as the temperature.

25.7 Where the burn or scald is severe, it can result in permanent scarring. Apart from the obvious physical pain, many victims, and parents of children that are burnt or scalded, suffer acute psychological distress for many years.

25.8 In the UK around half the injuries are to children under 5 years of age. Their risk level is six to seven times greater than the average level for the population as a whole, with boys at slightly higher risk than girls.

25.9 The relatively small body area (especially when hot liquids are involved), the higher

sensitivity of young children's skin, and their low position in relation to hot objects, means that young children are particularly at risk of suffering severe injuries. Many of these victims suffer extensive full thickness burns and require plastic surgery, often for many years following the accident.

25.10 The incidence of burns and scalds is greater for those over 65 years of age than for other adults, but less than for children. The health outcome for the elderly is usually more serious than for all other age groups.

Causes

25.11 Around 50% of severe burn and scald injuries to young children happen in the kitchen. The most common items involved in these accidents are cups and mugs of hot drinks, kettles, teapots, coffee pots, saucepans, cookers, chip pans and deep fat fryers.

25.12 The most common cause of injury is a spilt mug of tea or coffee, which accounts for over a third of the severe burn and scald injuries, and most of these accidents involve a child reaching up and pulling over a mug of hot drink.

25.13 While human behaviour is a factor, the design and layout of the dwelling can also contribute to these accidents. In particular, the design and layout of kitchens, the relationship between the kitchen and living/dining areas, the cooker location, the design or adjustment of fixed heating appliances, and the means of heating water.

25.14 Fires and heaters cause the most deaths from burns in the UK at around 30 per year, across all age groups (but predominantly the elderly). Burns from fires and heaters involve 10% of the severe injuries to small children and about two deaths a year. Children under 5 years old tend to fall onto or touch a fire. Many adults and older children suffer burns when their clothes catch alight.

25.15 The elderly appear to be involved frequently with burns involving unfixed heating appliances, cookers and flammable liquids.

25.16 A sixth of the accidental burn and scald severe injuries (430 per year in the UK) and half of the deaths (over two per year in the UK) to children under 5 years old result from scalding in hot baths. Most of these accidents involve the child being left unsupervised, and they fall or climb into a bath of very hot water. Many children under 3 years old suffer 20-50% body burns, as they submerge in hot water.

25.17 Water temperatures above 45ºC present a risk of scalding, especially to young children. However, there is a balance to be struck between risks of scalding from hot water, and

risks of Legionella from low storage temperatures of hot water.

25.18 Cookers are involved in about 290 severe injuries a year in the UK, requiring admission as hospital in-patients, and 13 deaths a year (most involve the elderly). Annually, around 110 severe injuries involve children under 5 years old – usually a child touches a hot plate/ring or cooker grill. Adult injuries mostly involve items of clothing igniting when leaning over the cooker. Dwelling design and layout can contribute to these injuries when a cooker is sited adjacent or close to a doorway, or there are other deficiencies in the space or layout of the kitchen.

25.19 There can be increased risks of burns and scalds in multi-occupied buildings. For instance, where the kitchen is in shared use and there is potential for several people to be cooking and moving about in the kitchen at the same time, the risk of a burn or scald is increased.

25.20 Where cooking is carried out within a bedroom or living room, there can be an increased likelihood of an accident if the kitchen area is inadequately separated from the living or sleeping area. If there are insufficient numbers of electric socket outlets provided in the kitchen area, it can result in kettles, or other kitchen appliances, being used in non-kitchen areas, which may result in increased risk of scalds.

25.21 Where a kitchen is remote from the unit of accommodation, then there may be significantly increased risk of burns and scalds associated with carrying hot drinks and food from the kitchen to the accommodation.

Preventive measures and the ideal

25.22 There should be adequate guarding of any open flame on space and water heating appliances. The temperature of exposed surfaces of radiators, pipework between radiators and that serving hot water tanks and taps, storage heaters, boilers and tanks should be limited to a maximum of 43ºC, or appropriately guarded, where a person (usually a child or elderly person) could become trapped against the hot surface. This is appropriate in rooms with limited space for furniture, or where there are long pipes running at low level, where a typical accident involves a person falling and becoming trapped between furniture and the hot surface.

25.23 The best way to address both risks from scalding and Legionella is to store hot water at 60ºC or more, and then to limit the temperature delivered at taps, most importantly, bath taps. Thermostatic mixer valves can be fitted, when it advised that water should be delivered to baths at between 44ºC and 46ºC, taking into consideration that the water will cool as it fills the bath. There are few scalding accidents from wash basins, and although a hot tap delivery temperature of 41ºC is preferred, it is not as important in

terms of health and safety risks to limit basins temperatures as it is to baths. Higher temperatures are more appropriate for kitchens because a hot water temperature is necessary for washing up greasy cooking pans, etc. However, it is recommended that kitchen sink tap temperatures are limited to 60ºC.

25.24 Kitchens should be of adequate size and of such a layout that ensures cookers and worktops are safely sited away from doors, thoroughfares and other potentially hazardous areas.

25.25 Where a cooker is provided, it should be in good working order, stable and securely placed. Ideally, where there is more than one household sharing a kitchen, there should be separate worktop space and separate cooking facilities provided for each household.

25.26 In high-risk premises such as hostels and sheltered housing for the elderly, those with mental health problems or who are neurodiverse, the surface temperature of accessible heating appliances and associated pipework should be a maximum of 43ºC, or appropriately guarded.

Related matters affecting likelihood and harm outcome.

25.27 Matters relevant to the likelihood of an occurrence and the severity of the outcomes include:

a) Unprotected hot surfaces – exposed surfaces to fixed appliances or pipework with surface temperatures of 43ºC or more.
b) Unguarded open flames – to space or water heating appliances.
c) Hot water to bath – water from bath and basin taps supplied above 46ºC.
d) Hot water to sink – water from kitchen sink taps supplied above 60ºC.
e) Surface/liquid temperature – the temperature of the hot liquid or surface.
f) Exposure – the length of time exposure is expected.

Hazard assessment

25.28 The assessment should include the provision for space and water heating, the temperature of water at taps, and the design and layout of the dwelling as a whole.

25.29 For dwellings in multi-occupied buildings, whether bathrooms and/or kitchens are shared and, if so the number of people sharing, will be relevant. Where people from different households share facilities, there may not be good communication or co-operation between them, and risks can increase.

26. Collision and entrapment

Description of the hazard

26.1 This category deals with risks of physical injury from trapping body parts in architectural features such as doors and windows or collisions with features such as glazing, doors, low ceilings and walls.

Potential for harm

26.2 The most vulnerable age group for trapping and collision is all persons under 5 years of age.

26.3 The most vulnerable age group for collision due to low headroom is all persons under aged 16 or over.

Health effects

26.4 The majority of injuries caused by collision and entrapment are from windows. Injuries sustained from windows tend to be worse, particularly when it involves cutting or piercing from glass.

26.5 The most common type of door accident involves a door shutting on, or trapping, part of a body. Collisions with doors is the next most common. Most door accidents, particularly a door shutting on part of the body, involve children aged 9 years and under. Accidents involving door glazing are most likely to occur to young adults (15 to 24 years old).

26.6 Children and elderly people who are frail are the most vulnerable to accidents involving lifts.

Causes

26.7 There will always be a degree of risk of entrapment or collision in relation to doors and windows. However, certain matters can change the degree of risk. The risk increases where doors and/or windows are difficult to close, where a door-closer is overpowerful and a dweller such as a child cannot resist the force used, where doors and windows pivot rather than being hinged, and where sash cords are weak or broken.

26.8 Inappropriate siting of doors and windows and their direction of opening can affect the

risk. Doors opening onto small passages or onto stairs can be a collision hazard; the same applies to windows and doors opening across passages. Doors to wall-mounted kitchen cupboards can also be a collision hazard.

26.9 Small children may become trapped in gaps, particularly in guarding to balconies, landings, and stairs.

26.10 Areas of low head room, such as in door openings, can lead to collisions.

Preventive measures and the ideal

26.11 The way a window opens should not project into pathways to obstruct the safe passage through a pathway.

26.12 Doors and windows should be maintained correctly, with particular attention given to items such as sash cords, to avoid increasing the risk of an occurrence. Self-closers on doors should be adjusted so as not to cause over-vigorous closing.

26.13 Safety glazing should be provided in doors and windows in vulnerable locations.

Relevant matters affecting likelihood and harm outcome

26.14 Matters relevant to the likelihood of an occurrence and to the severity of the outcome include:

a) Door design defects – difficult operation of doors and door catches.
b) Disrepair to doors – disrepair of door and/or door furniture.
c) Door closer defects – overly powerful mechanisms.
d) Door location – doors opening out into small circulation areas, corridors, landings, or staircases.
e) Window design defects – difficult operation of opening lights and window catches.
f) Disrepair to windows – disrepair of windows, frames and/or window furniture.
g) Windows location – windows opening across pathways.
h) Non-safety glass – in a door, low window or other vulnerable location.
i) Unprotected gaps – gaps of over 100 mm in banisters in which young children could get trapped.
j) Low headroom to doors – well under 1.9 metres.
k) Low beams and ceilings – well under 1.9 metres.

Hazard assessment

26.15 All potential entrapment and collision features, deficiencies and problems identified at the dwelling should be taken into account in the overall assessment.

27. Explosions

Description of the hazard

27.1 This category covers the threat from the blast of an explosion, from debris generated by the blast, and from the partial or total collapse of a building as the result of an explosion.

Potential for harm

Most vulnerable age group and statistical averages

27.2 There is no specific age group more vulnerable than others.

Health effects

27.3 While the average likelihood of an explosion is very small, explosions can result in extreme harm such as deaths and victims struck by debris.

27.4 Typical injuries include crushing, bruising, puncture injuries, fractures, and head, brain or spinal injuries. If the explosion involves a hot water appliance, there may also be scalding.

Causes

27.5 The most likely causes are defective installation or design, and defects from inadequate maintenance.

Preventive measures and the ideal

27.6 Gas supplied to dwellings should satisfy the requirements of the current quality regulations and should be supplied by an authorised supplier at a standard pressure and of a standard composition.

27.7 There should be appropriate properly designed and installed gas pressure regulators, meters and pipework. It should be properly installed by a competent person (i.e. registered on the United Kingdom Gas Safe Register and in accordance with the current safety regulations. The installation should be tested annually by a Gas Safety registered engineer to ensure there are no leaks or other defects, and in particular where there have been any alterations to the dwelling or to the installations.

27.8 Gas appliances should be properly designed, installed, removed, and should satisfy the

relevant safety regulations. The appliances and associated flue should be regularly serviced and maintained by a competent person.

27.9 Liquid Petroleum Gas (LPG) is heavier than air, while natural gas is lighter. Where LPG is used, there should be adequate low level ventilation or means of ensuring any gas escaping can drain safely away. This is particularly important where the floor level is below the adjacent ground level. Liquid Petroleum Gas (LPG) containers and storage tanks should be secure and sited well away from possible sources of ignition.

27.10 Hot water systems should be correctly installed to meet the requirements of safety regulations. No hot water storage tank of more than three-gallon (15 litre) capacity should be connected directly to the mains water supply. For ventilated hot water systems, there should be an adequately sized vent pipe sufficient to allow steam to escape in case of thermostat failure. Unvented systems should be provided with both a non self-resetting thermal cut-out and one or more temperature relief valves. These safety devices should be regularly tested.

27.11 For further information see: Building Bye-Laws (Jersey) 2007: Technical Guidance Document 6 and British Standards BS 5258, BS6700 and BS 5482 – Part 1.

Relevant matters affecting likelihood and harm outcome

27.12 Matters relevant to the likelihood of an occurrence and to the severity of the outcome include:

a) Unauthorised gas supply – the supply of gas from a non-authorised supplier.
b) Siting of gas tanks – inappropriate siting of LPG containers or tanks.
c) Gas installations – defects to the gas installation (pressure regulators, meters and pipework).
d) Gas appliances – defects to the gas appliances.
e) Maintenance defects – lack of evidence of regular testing and servicing of the gas installation and/or appliances.
f) Ventilation – lack of appropriate means of ventilation, taking account of the type of gas used.
g) Gas storage – inadequate or defective storage equipment for other than mains gas.
h) Hot water storage tank – tank of greater than 3 gallons (15 litres) connected directly to the mains water supply.
i) Vented hot water system – inadequately sized and/or blocked vent to system.
j) Unvented hot water system – lack of or defective non self-resetting thermal cut-out and/or temperature relief valve to unvented system.

Hazard assessment

27.13 It is not just the possibility of an explosion which is relevant, but also the consequences if one occurs. If there is any indication that there may be an above average risk, further investigation and a safety report from an appropriate engineer should be considered to fully assess the hazard.

27.14 If you think you may have a gas leak you should:

a) Call (01534) 755555 immediately (this is a 24-hour Jersey Gas Emergency Line).
b) Turn off all appliances that use fuel other than electricity.
c) Open the windows.
d) Leave the room.
e) See a doctor at once.
f) Call a suitably qualified engineer to check all your appliances.
g) Your landlord should be able to assist in resolving the matter.

28. Position and operability of amenities

Description of the hazard

28.1 This category covers threats of physical strain associated with functional space and other features at dwellings.

Potential for harm

Most vulnerable age group and statistical averages

28.2 There is no specific age group more vulnerable than others.

Health effects

28.3 Strain and sprain injuries are the obvious injuries resulting from poor ergonomics. However, this hazard can lead to other injuries where a person is forced to stretch or lean awkwardly to reach a handle, catch or switch. This may include fall injuries.

Causes

28.4 The positioning and location of amenities, fittings and equipment and the design and layout of dwellings has an effect on convenience of use. Inappropriate positioning of amenities and equipment may cause physical strain. For example, strain can result from awkward positioning of windows, difficult to operate window catches, inadequate functional space such as low headroom, inadequate space around bathroom or kitchen facilities, or inappropriate siting of facilities.

28.5 It is important to remember that all areas of a building and its grounds that a tenant has access to, must be considered in this guidance. Access and egress to the residential property is also covered by this guidance.

Preventive measures and the ideal

28.6 The layout of the dwelling and in particular the kitchen and bathroom should be such as to make use easy, convenient, safe, and should also facilitate cleaning.

28.7 Wash hand basins, sinks, worktops, sanitary basins, baths and showers should be located at an appropriate height, and with sufficient free user space to facilitate use without strain. Light switches should be sited convenient to door openings and at each end of

staircases and corridors and at a reasonable height. Socket outlets should be conveniently sited. Door handles should be at a reasonable height and window catches should be readily accessible without strain. Cupboards and shelves should be sited where they can be easily reached, but without posing collision hazards.

28.8 For further information see: *Building Bye-Laws (Jersey) 2007:* Technical Guidance Document Part 8: Access to and use of buildings.

Matters affecting likelihood and harm outcome

28.9 Matters relevant to the likelihood of an occurrence and to the severity of the outcome include:

a) Position of amenity – inappropriate positioning of a wash hand basin, bath, shower, bidet and/or sanitary basin.
b) Space for amenity – inadequate functional space for the use of a wash hand basin, bath, shower, bidet and/or sanitary basin.
c) Kitchen worktops – inappropriate positioning of a worktop and/or sink.
d) Kitchen space – inadequate functional space for the use of cooking facilities, worktops and/or sinks.
e) High level storage – inappropriate siting of a shelf or wall cupboard.
f) Window controls – inappropriate positioning of window controls.
g) Electric switch/sockets – inappropriate siting of electric switch and/or socket outlet.
h) Operation of windows etc – stiff or otherwise difficult operation of window, door, or tap handles and catches.

Hazard assessment

28.10 All potential ergonomic problems throughout the dwelling should be taken into account to give an overall assessment.

28.11 Where an ergonomic hazard is the result of trying to avoid or negotiate another hazard such as a collision or fall hazard, the assessment should be of both hazards. However, account should be taken of whether removing (or minimising) one hazard will also deal with the ergonomic hazard.

29. Structural collapse and falling elements

Description of the hazard

29.1 This category deals with the threat of the whole dwelling collapsing, or of an element of the fabric falling or being displaced, because of inadequate fixing, disrepair, or adverse weather conditions. The fabric of the dwelling includes fixtures and fittings, such as showers and kitchen wall cupboards. Structural failure may occur internally or externally within the curtilage threatening occupants, or externally outside the curtilage putting at risk members of the public.

Potential for harm

29.2 There is no specific age group that is more vulnerable than others.

Health effects

29.3 It is extremely rare for the fabric of a building to fall and cause an injury. However, this hazard can cause anything from a minor injury to death.

Causes

29.4 There may be defects in the design, construction, and maintenance of the building. The floor and roof may be inadequately designed, constructed, or maintained; they need to be able to support not only their own weight, but also the loads placed upon them. External cladding or rendering, roof slates and eaves may not be inadequately fixed and/or maintained. Injuries in this category commonly occur when a fixture, such as a light fitting, falls due to combination of vibration and inadequate fixing. Falling ceiling plaster is a common cause of injury.

29.5 All elements of the structure of dwellings should be properly maintained to ensure they remain safe and stable.

Preventive measures and the ideal

29.6 The foundations and load bearing external walls should be designed, constructed and maintained to be of sufficient strength to support the weight of the building, fittings, furnishings and its users. Any disrepair should not interfere with structural integrity. Any

external cladding, rendering or similar finishing, and any coping should be securely fixed and in repair.

29.7 All openings to external walls should be properly constructed and maintained to provide for proper distribution of the load above. Lintels should be of sufficient strength and be maintained in repair. Frames to openings and doors and windows should be securely fixed and maintained in repair.

29.8 All external balconies and walkways should be designed, constructed and maintained so as to be capable of supporting their own weight and the imposed loads (such as plant pots) and persons.

29.9 The roof structure should be designed, constructed and maintained so as to be strong enough to support the weight of the covering, be securely fixed and to cope with wind and weather-imposed loads. Roof coverings should be securely fixed and maintained in repair. Chimney stacks should be properly constructed and maintained and pots securely fixed.

29.10 All external pipework and eaves gutters should be securely fixed and properly maintained. Eaves gutters should be capable of coping with the weight imposed by typical snowfalls.

29.11 Floors should be designed, constructed and maintained to be of sufficient strength to support their own weight and that of imposed loads including furniture, fixtures, fittings (including facilities such as baths and wc basins) and occupants. Staircases should be designed, constructed and maintained to be of sufficient strength to support their own weight and that of imposed loads, including occupants and furniture, likely to be carried up and down.

29.12 Ceilings should be designed, constructed, fixed and maintained to be strong enough to remain intact.

29.13 Internal walls should be designed, constructed and maintained to be strong enough to support their own weight and any loads reasonably expected. Such loads could include upper floors and ceilings, shelves, pictures, light fittings, equipment, facilities and fixtures. Door frames and openings should be capable of supporting the doors, and properly fixed and maintained.

29.14 Fittings and fixtures (such as electric lights, kitchen wall-cupboards and showers) should be properly and securely fixed.

29.15 For further information see: Building Regulations Part A and Approved Documents A and

F2L.

Matters affecting likelihood and harm outcome

29.16 Matters relevant to the likelihood of an occurrence and to the severity of the outcome include:

a) Structural movement - Settlement and sway.
b) Structural - cracks and bulging external walls, excess load, open joints in brick, stone or block work, loose coping to external walls or to chimney stacks.
c) Cladding – defective, loose.
d) Guarding to balconies, roof terraces, staircases and landings – insecure, defective.
e) Balconies, window boxes, etc. – damage, disrepair.
f) Windowsills/lintels – damage, disrepair.
g) Window or door frames or hinges – insecure, disrepair.
h) Roof - distorted structure, sagging or spreading.
i) Roof coverings - inadequately secured.
j) Chimney pots - loose.
k) Rainwater systems - inadequately secured.
l) Staircases - tilting to one side, rotting.
m) Ceilings - defective, cracked, damp, sagging, bulging.
n) Internal walls – defective, cracks, bulging.
o) Fittings or fixtures - loose, defective.
p) The height of the building or the height the relevant element above the ground or floor.
q) The size, weight and nature of the object or element that is likely to fall.

Hazard assessment

29.17 The entire dwelling should be visually inspected for signs of structural defects and deficiencies. Where there are indications of potential danger, further investigation should be undertaken to establish the degree of any structural problems. This investigation process may itself be destructive: for example, involve dismantling parts of the building to reach the problem area. It may sometimes be necessary to seek professional advice from a suitably qualified and experienced structural engineer or building surveyor.