

# Overview of the Healthy Home Rating System (HHRS)

## What is the Healthy Home Rating System (HHRS)?

The HHRS is based upon the successful Home Health and Safety Rating System (HHSRS) developed by the United Kingdom (UK) for use in evaluating risks posed to residents from conditions found in the home.

The HHRS follows the same qualitative approach to identifying health and safety hazards in the home. HHRS uses a risk-assessment methodology and is a system (not a standard) developed to enable risks from hazards to health and safety in dwellings to be removed or minimized.

## About the HHRS

The HHRS addresses all the key issues that affect health and safety. The HHRS provides an analysis of just how hazardous a dwelling is and provides evidence and statistical information to assist assessors in making their judgments.

Each year, housing conditions in the US are implicated in thousands of deaths and hundreds of thousands of illnesses and injuries requiring medical attention. The HHRS provides a method of grading the severity of threats to health and safety in any dwelling. A dwelling can include a:

- house
- self-contained flat/apartment
- non self-contained flat/apartment
- a room rented within a dwelling or house
- a room in a university hall or similar residential building
- includes the means of access and shared or common rooms and facilities.

The key principle of the system is that a dwelling, including the structure and associated outbuildings and garden, yard and/or other amenity space, and means of access, should provide a safe and healthy environment for the occupants and, by implication, for any visitors.

The inspection process is a risk-based assessment and considers the effect on occupant health of any hazards in the property. Hazards are rated according to how serious they are and the effect they are having, or could have, on the occupants, that is, “the effect of the defect”. The basic principle is that the property should be safe and healthy for occupation.

The HHRS system also provides a means of comparing the risks associated with different types of hazard. Some are slow and insidious in their effect, like dampness and cold, while others are quick, such as falls. Some hazards are more likely to result in death (such as carbon monoxide or electrocution); others are very unlikely to cause death e.g. noise or poor layout of amenities.

It should be kept in mind that all properties contain hazards, for example stairs, electrical outlets etc. and it is not possible (or desirable) to remove all hazards. The emphasis should be to minimize the risk to health and safety as far as possible either by removing the hazard altogether or minimizing the effect, as appropriate. All references in this Overview to removing hazards should be read with this in mind.

The numbers (scores) that are a feature of the system are used to reflect assessors' judgments; they also allow comparison of widely differing hazards and take account of the potential frequency of occurrence and severity of outcome. This allows several things to occur:

1. Local housing and health departments know which hazards are most serious to the occupants and can prioritize funding to address these; and,
2. Local policy makers can identify which areas of the community (because most homes were built in blocks) are in greatest need of attention and what health impacts those communities are facing

**What are the hazards?**

The HHRS is categorized in accordance with the American Academy of Public Health’s 1938 publication entitled, “Healthful Principles of a Home.” The HHRS examines 29 hazards, or categories of hazards: summarized as follows:

<b>Physiological</b>	<b>Psychological</b>	<b>Infection</b>	<b>Safety</b>
<ul style="list-style-type: none"> <li>• Dampness &amp; Mold Growth</li> <li>• Excess Cold</li> <li>• Excess Heat</li> <li>• Asbestos and man-made fibers</li> <li>• Biocides</li> <li>• Carbon Monoxide</li> <li>• Lead-based paint</li> <li>• Radiation</li> <li>• Uncombusted fuel</li> <li>• Volatile organic compounds</li> </ul>	<ul style="list-style-type: none"> <li>• Crowding and Space</li> <li>• Entry by Intruders</li> <li>• Lighting</li> <li>• Noise</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic Hygiene etc.</li> <li>• Food Safety</li> <li>• Personal Hygiene</li> <li>• Water Supply</li> </ul>	<ul style="list-style-type: none"> <li>• Falls in baths etc.</li> <li>• Falls on the level</li> <li>• Falls on stairs etc.</li> <li>• Falls from windows etc.</li> <li>• Electrical hazards</li> <li>• Fire hazards</li> <li>• Hot surfaces etc.</li> <li>• Collision/Entrapment</li> <li>• Ergonomics</li> <li>• Explosions</li> <li>• Structural collapse</li> </ul>

Each of the 29 hazards are assessed separately and weighted according to likelihood of occurrence and the possible outcomes should the hazard result in harm.

**How are inspections carried out?**

Inspections are essentially carried out in the traditional fashion, i.e. a physical assessment of the whole property during which deficiencies (faults) are noted and recorded.

Once the inspection has been completed, the assessor judges:

- a) whether there are any hazards,
- b) the likelihood of an occurrence, and
- c) the range of possible outcomes for those hazards

**How are assessments made?**

The assessment process is not just a question of spotting defects, but is all about risk assessment, outcomes and effects.

When an assessor finds a hazard, two key tests are applied - what is the likelihood of a dangerous occurrence as a result of this hazard and if there is such an occurrence, what would be the likely outcome?

For example a staircase that had a broken stair would represent a serious hazard in that an occupant could trip or fall down the stairs. However a broken stair at the top of the staircase would obviously be more dangerous than one at the bottom. If, for example, a glass door was situated near the bottom of the staircase, that would increase the potential severity of the outcome even more.

Dwellings are assessed against the average for the type and age of building for the region or area in which the dwelling is located. The assessor also judges whether the condition increases or lowers the likelihood of an occurrence. The system provides information about the characteristics of average dwellings, as a basis for assessors' own assessments of the conditions they find. Assessors will normally concentrate on hazards that are likely to be worse than the average, but they will be able to assess any of the 29 hazards on the basis of their observations or their knowledge of hazards that are specific to particular areas, such as radon gas.

Where a hazard is designated as particularly relevant to people in a vulnerable group, hazards are assessed according to their likely impact on that group. "Vulnerable" here usually means children and the elderly. For example, widely spaced balusters (spindles) on a staircase could be a hazard for a child who could squeeze through and fall down the stairs. Similarly a winding staircase with no handrail could be a hazard for an elderly person. The action that needs to be taken to deal with a hazard will be influenced by who is occupying it. Once a property has been made safe for the most vulnerable, it should be safe for all.

### **How is the score calculated?**

Each assessment of a hazard carried out using the HHRS results in a score. The score is a numerical representation of the degree of risk represented by a hazard. Although the calculation can be carried out on paper or using a handheld computer, most assessors will use a computer software program operated on a handheld computer or desktop pc back in the office to calculate the scores. All hazards are rated and scored individually. A formula is used which takes into account the nature of the hazard, the likelihood of an occurrence and the seriousness of the outcome (known as the spread of possible harms). At its simplest, the formula is: *Risk (likelihood) x Outcome = Numerical Score*

The calculation includes a 'weighting' to reflect more serious outcomes, such as death (see examples below). The assessor or surveyor simply enters the information into a handheld and the software takes care of the calculations.

In simple terms, the greater the risk (likelihood), or more serious the outcome, the higher the overall score. An example of a high score would be a gas water heater leaking carbon monoxide - the risk is high and the outcome could be death.

Training on the use of the HHRS will be provided to successful applicants.