evolve

evaluation of older people's living environments

for vision

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EVOLVE for vision is a tool for evaluating the design of housing for older people with sight loss. It is a specialist version of the *EVOLVE* evaluation tool, which can be used to make a more detailed assessment of a living unit to take account of requirements of people with sight loss.

The tool was developed and refined in a research programme funded by The Thomas Pocklington Trust.

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Housing and support for people with sight loss

Housing LIN

Implementation by parallel

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Introduction

EVOLVE for vision is designed to evaluate the suitability of an individual living unit for an older person with sight loss. It is a specialised version of the *EVOLVE* evaluation tool. It can be used on its own to check an individual living unit or in conjunction with *EVOLVE* for a comprehensive evaluation of a housing development. The full *EVOLVE* tool is available to download at http://www.housinglin.org.uk/Topics/browse/Design/DesignGuides/?parent=6594&child=7997 .

The tool can be used to assess a building in use, as a briefing and design guide or to evaluate design proposals.

EVOLVE for vision has a similar structure to *EVOLVE*. It consists of a set of checklists ordered in the sequence of the rooms or spaces encountered in a walk through a dwelling. The checklists relate to user requirements in key areas, or domains. The domains are:

General lighting (gen)

Task lighting (task)

Daylight (day)

Sunlight (sun)

Aspect (asp)

Glare (gla)

Control (con)

Colour (col)

Tactile (tac)

Safety (saf)

Layout (lay)

Wayfinding (way)

Each checklist statement can be answered: 'yes', 'no', 'not in use' (for items that are present in the building but not actually available for use) or 'not applicable'. In an 'ideal' building the answer to each statement would be 'yes'. Buildings are evaluated by adding up the domain scores, and the results are presented in a histogram with scores in the different categories shown against a theoretical maximum score that would be attained if all the answers were 'yes'. The scoring has a uniform weighting of 1.

Using the *EVOLVE for vision* tool

How to assess a building

Obtain floor plans if possible. Plans are not essential but it is helpful to have them to identify rooms and spaces, and to work out compass directions that windows face

Permissions

If you are not the owner or manager of a scheme or building it is essential to get permission to do a survey, and to obtain the formal consent of anyone whose living space you propose to evaluate. If the survey is part of a research project you will need to obtain formal approval from the appropriate Research Ethics Committee.

Equipment needed

To do a full assessment you will need:
Measuring tape
Magnetic compass
Illuminance meter
Colour temperature meter (if available)

Downloading the tool

Open the zip file and copy the *EVOLVE for vision* toolkit folder onto the hard drive of your computer. You will need to do this for each assessment. The folder contains this overview and a set of the checklists. The checklists can be filled in electronically using a laptop in a walk through the building

Using a paper version of the tool

The checklists are available as PDF files for printing if you prefer to complete a paper survey. The scores can be transferred to a computer to obtain the building scores.

Completing the checklists

Record the project details on the title page. The next worksheet is a checklist of generic items. These are items that are identical throughout, such as door ironmongery. Items selected on the generic worksheet will automatically fill across the ensuing checklists. If there is variation in these items the generic worksheet should not be used.

The next worksheet records illuminance levels in the living unit. Readings of the illuminance levels in lux should be taken using an illuminance meter placed facing upwards at floor level in the centre of each room (unless otherwise specified) with the electric lights switched first on and then off. Type the values into the worksheet. The data will automatically transfer to the ensuing worksheets. Those with technical expertise can also use this worksheet to record the correlated colour temperature of the lighting measured with a colour temperature meter.

The following worksheets are arranged room by room in approximately the order that they will be found in a walk through the building. Items shown in grey font are dependent on the preceding item. For example the statement 'the kitchen receives sunlight in the morning or the afternoon' is dependent on 'the kitchen has natural light'. When the 'yes' button is selected on the controlling item the dependent items become live and the text will go black.

Technical terms have been avoided as far as possible. A glossary giving further explanations of some of the items in the tool is provided at the end of this document.

Scoring

In scoring each item in the *EVOLVE for vision* tool, there are four options:

yes - the statement is true

e.g. the item 'The lounge has natural light' would be scored as 'yes' if the lounge has a window

no - the statement is not true

e.g. the item 'The lounge lighting can be dimmed' would be scored as 'no' if there was no dimmer switch for the room's fixed ceiling lights

not in use - a particular building feature is present, but it is not available for use

e.g. the item 'The kitchen has an oven' would be scored as 'not in use' if the current user never used the oven

n/a - the statement is not applicable

e.g. the item 'There are shading devices for S, E, W facing windows' would be scored 'n/a' if there were no windows in the room being evaluated.

Order in which items are listed

Layout/space planning
Building elements, including:
- Doors

Fittings, including:
- Sinks
- Hobs/Ovens/Cookers
- Kitchen Units
- Basins
- W.C.s
- Showers
- Baths

Environmental design, including:
- Natural Lighting
- Artificial Lighting
- Heating

Services and systems, including:
- Television sockets
- Telephone sockets
- Electrical sockets
- Light switches

Finishes (carpets, wall finishes, etc.)

The data set and total worksheets fill automatically as the checklists are

completed. These worksheets cannot be modified. The data set worksheet can be used to visually check that all the items in the checklists have been checked. It also records the illuminance levels and the electric light correlated colour temperature in the rooms.

Results

When the checklists are filled in the overall scores in each domain are displayed on the results worksheet. Scores are given numerically and shown as a histogram, with the length of the bar representing the highest possible score attainable in that domain.

Glossary

These are notes to clarify the meaning of the checklist items. Glossary items are numbered in the checklists

	Layout
1.01	*The living unit entrance is in a recognisable position* The living unit entrance is in a distinctive position, so that it is easy to tell it apart it from other doors in the scheme
1.02	*The living unit is double aspect* i.e. there are windows facing in different directions, rather than the windows facing in one direction only
	Building Elements
2.01	*The colour of the lounge door contrasts with the colour of the surrounding walls* The door's surface should contrast tonally with the surrounding walls such that one appears significantly darker than the other
2.02	*The colour of the lounge door handle contrasts with the colour of the lounge door* The door's surface should contrast tonally with the handle such that one appears significantly darker than the other
	Fittings
3.01	*The hob sockets are more than 50mm to the side of the hob* The term 'hob socket' is used to denote the electrical mains switch for the hob
3.02	*The cooker sockets are more than 50mm to the side of the cooker* The term 'cooker socket' is used to denote the electrical mains switch for the oven
	Environmental Design
4.01	*The lounge receives sunlight in the morning or in the afternoon* For this to be true, the window must not be facing north. Taking a compass bearing, does the window face between 45 degrees and 315 degrees, and have no physical obstructions to direct sunlight?
4.02	*The lounge receives sunlight in the morning and afternoon* For this to be true, the window must be facing south. Taking a compass bearing, does the window face between 135 degrees and 225 degrees, and have no physical obstructions to direct sunlight?
4.03	*S, E, W facing windows receive direct sunlight* Physical obstructions to direct sunlight might include buildings or trees, but internal shading devices such as adjustable blinds do not count
4.04	*The lounge window(s) has a view of the open sky* Is it possible to see the sky unobstructed by objects such as trees?
4.05	*The lounge window(s) overlooks outdoor spaces where there is human activity* For example, in an urban setting human activity might include the movement of people on footpaths
4.06	*The view from the lounge window consists of near and distant features of interest* This item is about the depth of the view, not whether the view is interesting - is it possible to see distant features as well as near features?
4.07	*The view from the lounge window consists of natural features* Is the view predominantly of natural features, such as trees and shrubs, rather than of the built environment?
4.08	*The view from the lounge window is free from obstructions, e.g. a blank wall* Is the field of vision significantly reduced by buildings in close proximity to the window?

4.09	*There are shading devices for S, E, W facing windows* Shading devices include Venetian and vertical blinds, but do not include curtains or net curtains
4.10	*The lounge light fittings conceal the light source from view* Ceiling-mounted lamps should be shaded from the side and from below, or should be fully diffused, i.e. the lamp should be covered by a translucent layer that scatters the light
4.11	*There is a working light over the table or worktop where food preparation occurs* This is not the same as the main fitted ceiling light, but is a light fitted directly over the working surface, usually under wall-mounted units/cupboards/shelving
4.12	*The cooker's extractor hood has an integrated (white) light with good colour rendering* Objects illuminated by the electric light appear the same colour as if illuminated by natural light
4.13	*When a person is standing at the sink, the sink area has an illuminance of more than 200 lux with daylight only* The illuminance measured in lux with electric lighting turned off
4.14	*The bedroom is dark at night* i.e. is the bedroom unaffected by lighting such as intrusive internal lighting or street lights at night?
4.15	*There is task lighting over the shower/bath* i.e. is there a fitted ceiling light directly over the shower?
	Finishes
6.01	*The bathroom walls are non-reflective* The wall finishes should not be shiny

References

Barker, Peter, Jon Barrick, and Rod Wilson. 2000. *Building Sight - A Handbook of Building and Interior Design Solutions to Include the Needs of Visually Impaired People*. London: RNIB.

BSI. 2008. *Lighting for buildings- part 2: Code of practice for daylighting*. 2nd ed. London: BSI.

CIBSE. 1999. *SLL Lighting guide 10: Daylighting and window design*. London: Chartered Institution of Building Services Engineers.

CIBSE. 2009. SLL Code for lighting. Chartered Institute of Building Services Engineers

CIBSE 2009. *The SLL lighting handbook*. London: Chartered Institution of Building Services Engineers.

Figueiro, M. G., Aarp Andrus Foundation, and Rensselaer Polytechnic Institute Lighting Research Center. 2002. *Lighting the way: A key to independence*: AARP Andrus Foundation.

Goodman, Chris. 2008. *Housing for people with sight loss: A Thomas Pocklington Trust design guide*. Bracknell: Thomas Pocklington Trust / IHS BRE Press.

Rees, Linda, and Caroline Lewis. 2003. *Housing sight: a guide to building accessible homes for people with sight problems*: RNIB.