

User Information in the housing market

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Abstract

In some countries Design Quality Assessment has been applied to housing building projects, often providing a basis for financing decisions. Nevertheless, the usefulness of these methodologies for the improvement of user information has been limited as the outputs are usually rather technologically-oriented, therefore difficult to understand by the common dweller.

This prevents the development of what is often referred as *Client Education*. It is observed that the more efficient and competitive industries are the ones driven by consumer requirements; to obtain this client knowledge in the construction industry, and in particular in housing, procedures that are able to translate the technical topics relevant to dwelling efficiency into easier and more commonplace issues, must be used.

In this paper we will present some Assessment methods and a proposal of user-oriented output that can be of help in buying or renting decisions.

1 Introduction

Design Quality Assessment Methods were created to eliminate the gap caused by the lack of information in housing acquisition. However, these methods are only useful if the common dweller can read and interpret their outputs. An assessment method can analyze many aspects, but if it doesn't transmit the information in a proper and effective way, it ceases to be relevant to the consumer's decision. In other more competitive industries, where the investment has a lower impact on a family's or individual life, for example the automotive industry, the customers' requirements in what concerns technical information is an aspect properly addressed by producers. When customers purchases a vehicle, usually they are better informed than when they buy a dwelling, although, in the first case the investment is much smaller and intended for a more limited time-frame.

On the other hand, the languages of technicians and consumers should, in some aspects, be similar; otherwise it can cause communication errors and, consequently, lead to incorrect decisions by the user. Solutions like the use of a final value or a sample profile to describe the dwellings' quality can be a correct form to inform the consumer about the technical characteristics of the houses. However, these

solutions have some drawbacks. The use of a single value to characterize the dwelling limits the buyer in the comparison of the characteristics of available supply. Also, too much information can lead to confusion in the interpretation by the final customer, whom usually has no technical background. In Chapter 2, we will present some of the more the most recognized assessment methods and how they present the information to the consumer.

2 Design Quality Assessment Methods

2.1 Qualitel - France

The Qualitel method was developed in France in 1974 by the Qualitel Association. This method seeks to establish an information system on the dwelling's constructive qualities and was intended to perform a triple role: as an information to the consumer, allowing a more objective and conscious choice between the offers of the market; as a prior review, in the design stage, enabling the designers to assess the implications of each alternative solution; and as a trade marketing element for the promoters that wished to use this system (a voluntary one) [1].

The Qualitel Association defined a set of seven items to be evaluated on a 1-5 scale, where 1 corresponds to the sole fulfillment of code or standard requirements and 5 to a comprehensive design solution. In the present version of the method, two of these items are related to acoustic comfort - internal acoustics and external acoustics -two with thermal comfort - in winter and in summer - two related to maintenance costs - the envelope durability and a cost-conscious conception - and one with equipment performance - water and drainage facilities [2]. There is also an optional item related to the accessibility and livability.

Fig. 1 shows an example of the Qualitel Profile in use until 1988 [3]. This profile is a very simple and straightforward way to represent the results obtained in the dwelling analysis in a form easily understandable by non-technicians. Unfortunately, this approach has been discarded in the more recent versions of this method.

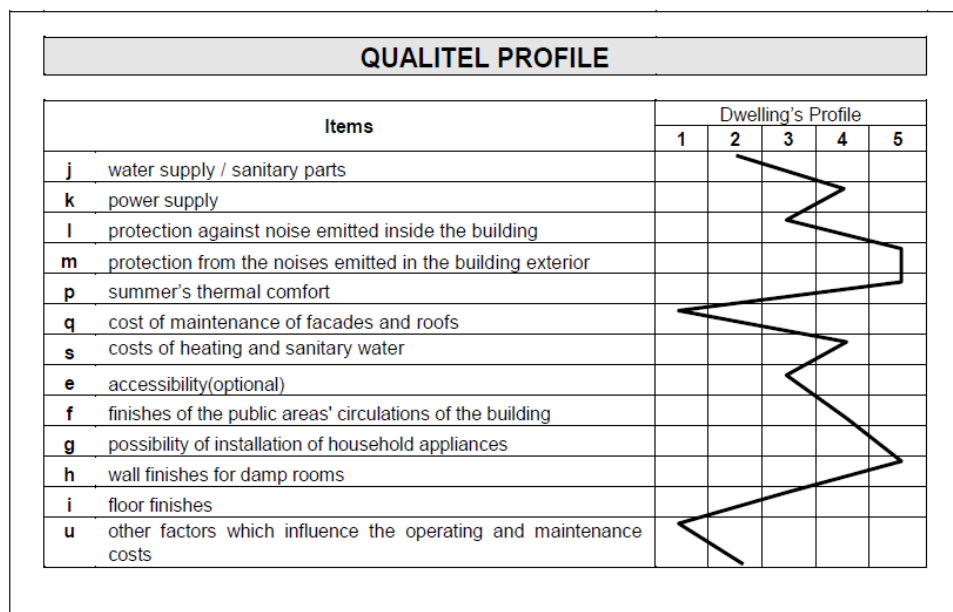


Figure 1: Example of Qualitel Profile – 1988 version [3].

2.2 SEL - Switzerland

The SEL method - *Système d'Évaluation of Logements*, ie, Dwelling Assessment System, was developed in Switzerland, based on a federal law instituted in 1974. This law has required the existence of a careful analysis on social, technical and urban issues prior to the grant of state funding for the development of new housing. Based on the good results obtained, the SEL methodology saw its use expanded as a quality control tool in private architectural design [3] [4].

The analyzed components are, entirely, in the architecture's domain, such as the modeling and organization of private and common spaces of the building and the urban integration.

The evaluation procedure according to this approach passes through the submission and subsequent approval of a design to a set of five requirements which correspond to a minimum of quality thresholds. These requirements are (i) the net area, the housing gross floor area and program spaces provided, (ii) the kitchen equipment and sanitary facilities, (iii) the thermal and (iv) acoustic standard requirements and (v) the dwelling's specifications for the elderly and disabled [5]. Only after this first checking the house or apartment is evaluated according to thirty-nine criteria presented in the version made in 2000 (down from 69 in the first versions). The rating scale of the SEL method, as the Qualitel method, has five levels of evaluation but, in this case, ranging from 0-4. To each criterion is given a weighting value, permitting the calculation of a final grade, VU, as the result of the sum of each mark in each criterion, n , by the corresponding weighting, P , presented in equation (1). The weighting factors were established by a seven people team, deeply knowledgeable about the housing needs of the population of different social strata, economic and age, and are periodically reviewed.

$$VU = \sum_{i=1}^{39} n_i \times P_i \quad (1)$$

2.3 HQI – United Kingdom

Since 1996, the Housing Corporation, in collaboration with the Office of the Deputy Prime Minister (ODPM), has been pursuing the development of Housing Quality Indicators (HQI) [6]. The HQI system is a measurement and assessment tool designed to allow potential or existing housing schemes to be evaluated on the basis of quality rather than simply of cost. This method allows a review of quality in three main categories: location, design and performance. The HQI system consists of two parts: the HQI Form and a Scoring Spreadsheet. The HQI form is a paper booklet containing information on the project and the ten indicators:

- Location;
- Site – visual impact, layout and landscaping;
- Site – open space;
- Site – routes and movement;
- Unit – size;
- Unit – layout;
- Unit – noise, light and services;
- Unit – accessibility;
- Unit – energy, green and sustainability issues;
- Performance in use.

It is important to relate dwelling design to the way in which people wish to live and the context in which their home is placed. For this reason, the house quality indicators look not only at the unit and its design in detail, but also the context and surroundings, and aspects of performance in use.

Each indicator contains a series of questions that are completed by the developer or client. The information from the HQI form is transferred to a spreadsheet. The spreadsheet used to calculate the score based on responses turns the HQI form into a standardized score, expressed as a series of results showing how well the scheme performed on each indicator and as an aggregate result. It is the profile of the ten different indicators (Fig. 2) that gives the most useful information about the strengths and weaknesses of a housing scheme [8][9].

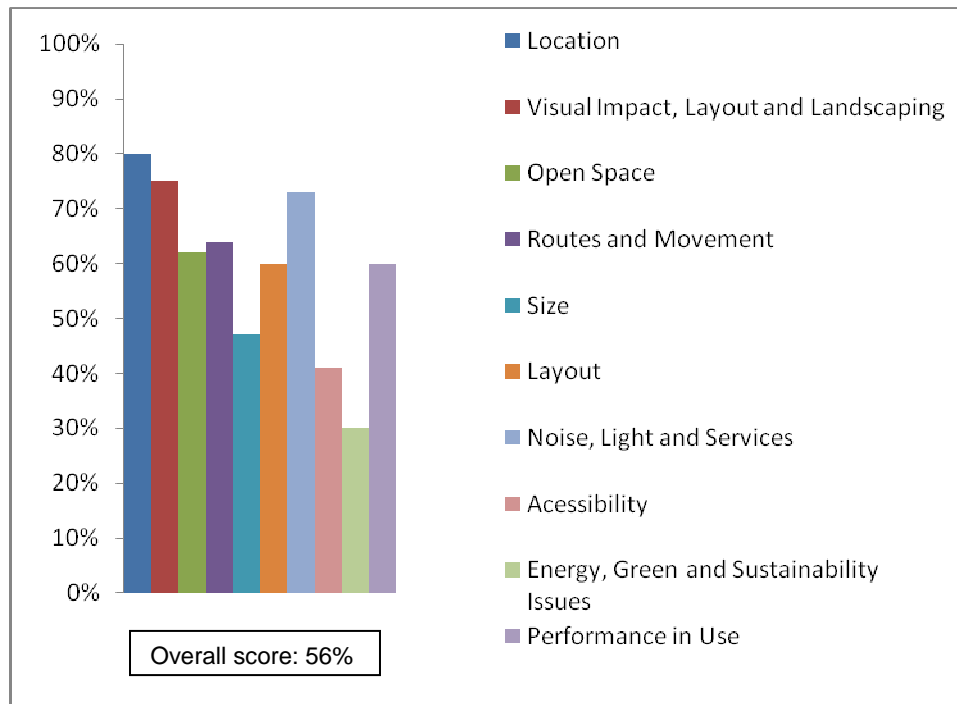


Figure 2: Example of HQI Profile (based on [8]).

2.4 MC.FEUP - Portugal

This method, developed by J. M. Costa, in 1995 in the scope of a PhD thesis, aims to cover those aspects, in short and long term, that most affect the daily life of users and the global building efficiency [9]. Just as the SEL method, MC.FEUP provides an objective hierarchy whose main purpose is, obviously, the dwelling's quality. The second level includes two Complex Objectives: the Efficiency of Constructive Aspects and the Efficiency of Spatial Use, which are divided into Superior Objectives (Fig. 3). In the description of each Superior Objective is associated the applicable codes, the definition of Partial-Criteria and the corresponding Objectives-Criteria, the Evaluation Criteria, as well as the Evaluation Criteria sheets. The latter are related to each criterion and they include three parts: a general description of the objective, a proposed evaluation procedure and directives on how to apply, as well as comments on the reasons for the choice of Criterion.

In this method, the satisfaction level in the various evaluation criteria is measured on a scale of 0-4. The end result of the method is presented in the form of a final classification which is the result of the sum of the partial of each Criterion, multiplied by a weighting factor, in the same way as SEL. This weighting was obtained by consulting a set of experts, architects and engineers from different expertises, similar to the one that was implemented by the Swiss Federal Office of Housing [3].

Main Objective	Complex Objectives	Superior Objectives
DWELLING QUALITY	Efficiency of Constructive Aspects	Structural Safety
		Fire Safety
		Environmental Confort
		Durability of Non-Structural Materials
		Facilities' Efficiency and Maintenance
	Efficiency of Spatial Use	Spatial Design of Private Areas
		Use of Common Areas in the Building

Figure 3: Hierarchy of Objectives of the MC.FEUP assessment method [3].

3 A Proposal of a User-Oriented Output

As we know, the dwelling's purchase is probably the greatest investment that most families face during their entire life and influences their financial situation for many years. Thus, the choice of housing is a step of remarkable importance for which the ordinary citizen is unprepared for the various issues that must be properly weighed, some of them difficult to assess in a single visit or involving technical expertise. The methods which were presented in Chapter 2, although often announcing the intent of being a final user information tool, have kept a highly technical profile and have yet to achieve a recognition outside the design/expert area. This can be proved by the situation in France, where Qualitel has been in use for more than 30 years, where we find in housing developers' web site references of the award of a Qualitel Label but no detailed information of the specific levels the project has attained in each of the assessed criteria.

Therefore, we believe that an effort should be done in the field of information translation permitting that the technical results of the application of these methods more relevant for a satisfactory use of housing might be presented under a user-oriented output. In an ongoing research project at FEUP (Engineering Faculty – University of Porto), a proposal for this type of output has been devised. This proposal focus on the issues identified as more pertinent to the average resident: architectural design (areas, dimensions, windows), building location (transport, schools, commerce), thermal and acoustic comfort and durability of materials.

The classification of each item is presented on a scale of 0-4 points, with an easy to understand explanation about the issues which are considered critical to its analysis and which lead to the obtained score. In the end, these results are summarized in a profile (Fig. 4) so that each potential user values each item according to his/her preferences, allowing the choice of housing that best approximates the cost/quality ratio which, for him/her, is more suitable.

A1. AREAS

A1.1. BEDROOMS

The bedrooms areas should allow different furniture's arrangements so that they could permit a diversified way for be used, tailored to the occupants preferences and ages.

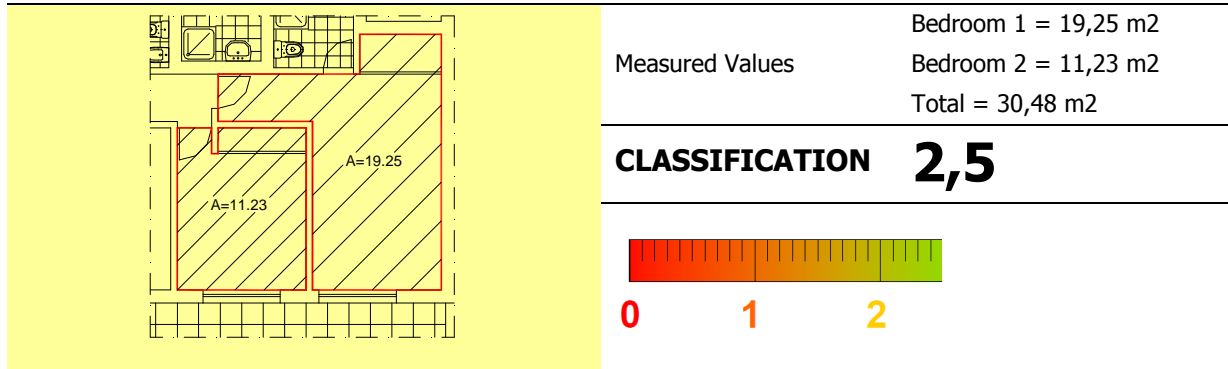
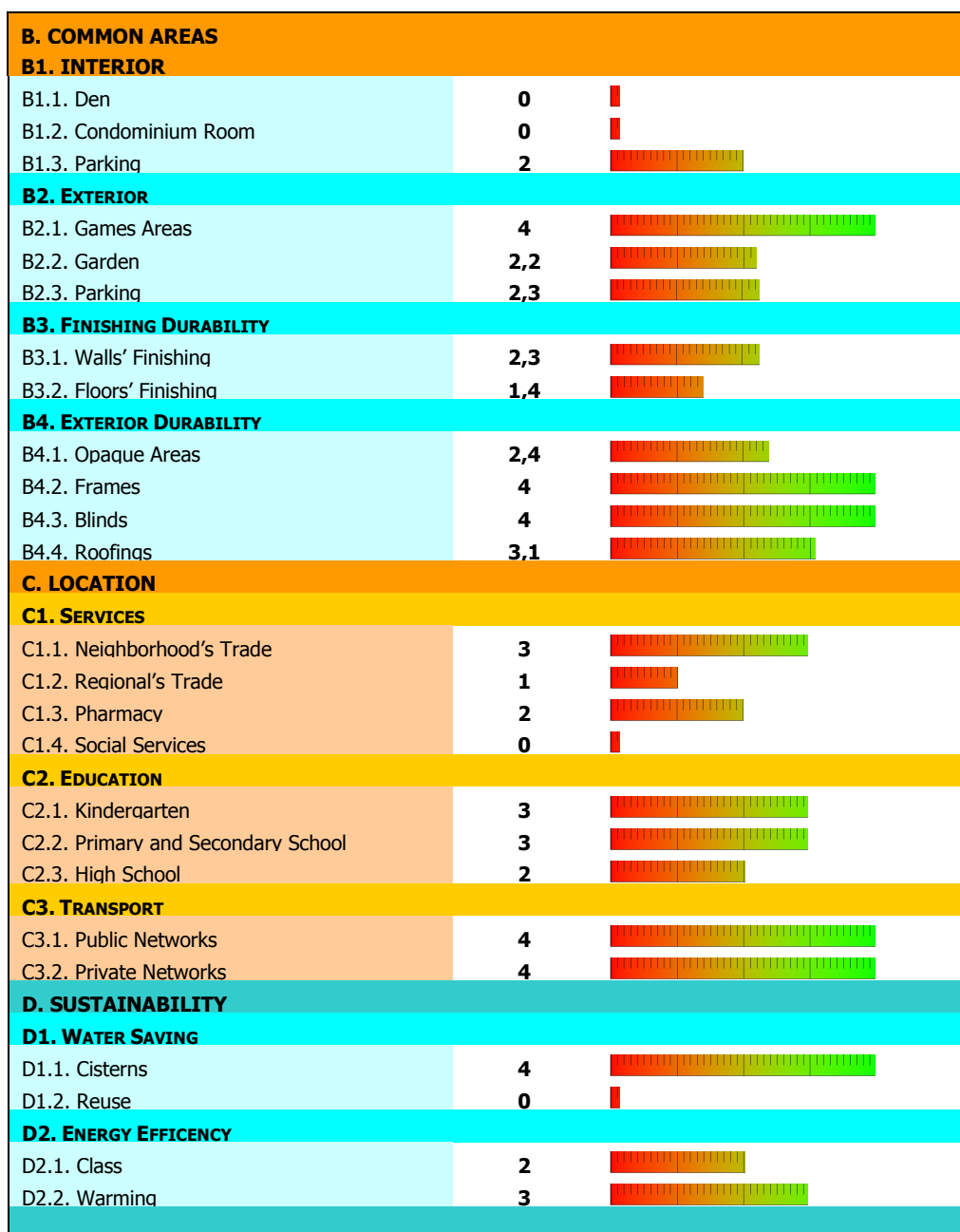


Figure 4: Example of the classification of a criterion

QUALIFICATION SUMMARY		
A. DWELLING		
A1. AREAS		
A1.1. Bedrooms	2,5	
A1.2. Living Rooms	1,8	
A1.3. Kitchen	0	
A1.4. Bathrooms	4	
A1.5. Den	0	
A1.6. Halls and Corridors	3,2	
A1.7. Laundry	4	
A2. DIMENSIONS		
A2.1. Bedrooms' walls	4	
A2.2. Living Rooms' walls	4	
A2.3. Corridors'width	1,3	
A2.4. Balconies and Terraces	4	
A3. COMFORT		
A3.1. Winter's Thermal Comfort	2,5	
A3.2. Summer's Thermal Comfort	4	
A3.3. Solar Gains	0,8	
A3.4. Interior Acoustic	2	
A3.4. External Acoustic	2,3	
A4. LIGHTENING AND NATURAL VENTILATION		
A4.1. Living Areas	0	
A4.2. Kitchen	2	
A4.3. Bathrooms	0	
A5. FINISHING DURABILITY		
A5.1. Walls in Current Areas	3	
A5.2. Walls in Humid Areas	4	
A5.3. Floors	4	

Figure 5a: Example of a summarized profile (extract)

Figure 5b: Example of a summarized profile (extracts) – *contd.*

4 Conclusions

Assessments procedures directed to the housing market have been used in Europe for several decades. Developed under specific purposes, ranging from a support tool for financing decisions (SEL) to the establishment of a trustworthy quality mark (Qualitel), the fact is that its recognition by the end users, although frequently expressed in their aims, has fallen short. Even in France, probably the country with longer and larger application scope of these methods, its use as a marketing tool has yet to be achieved.

We believe that the common citizen searching for a dwelling among all the options market has to offer is totally capable of making a sound and conscientious decision as long as the data relevant for this objective is given in an adequate and clear way. Most – if not all – of the known assessment methods provide highly technical output, extremely important for design decisions and understandable by the professional expertises, but completely opaque for the typical dweller.

In this paper we presented an abridgement of the assessment criteria analyzed in the more well-known European methods and proposed an output format focused on user information. For this, we tried to blend some level of technical information – but expressed in a soft taxonomy so that an average user can understand its purpose and weight its relevance in his/hers own view – with a grading system that emulates, in some way, the one used for energy efficiency, a scheme the society has learned to identify and value.

References

- [1] Trehin, C., *Qualitel Method and Label*. Communication to the European Symposium on Management, Quality and Economics in Housing. Quality and Economics in Housing, 11/10/1991, London, 914-919, A. Bezelga e P. Brandon E&FN Spo, London.
- [2] www.cerqual.fr Accessed in 11/11/2009.
- [3] Costa, J. M. *Métodos de Avaliação da Qualidade de Projectos de Edifícios de Habitação*. PhD Thesis, Faculdade de Engenharia da Universidade do Porto, 1995
- [4] Sousa, M. J. *Aplicação do Método SEL a Projectos de Edifícios de Habitação Elaborados em Portugal*. Master Thesis, Faculdade de Engenharia da Universidade do Porto, 1994
- [5] Wiegand, J., Aellen, K., Keller, T. *Evaluation de logements – Système d'évaluation de logements (SEL) – Edition 2000*. Bulletin du logement, Volume 35. Office Fédéral du Logement, Berna, 2000
- [6] Housing Corporation. *Scheme Development Standards*, Fifth Edition, Housing Corporation, London, 2003.
- [7] Harrison, A. *Housing Quality Indicators*. DEGW plc, London, 1999.
- [8] www.homesandcommunities.co.uk Accessed in 2/04/2010.
- [9] Sampaio, M. F. *A Evolução de Indicadores de Desempenho em Construção Habitacional – Aplicação a um Parque na Zona do Porto*. Thesis submitted to the partial satisfaction of the requirements of the master's degree in Civil Engineering, Faculdade de Engenharia da Universidade do Porto, 2010.