natureplus e.V.

Award Guideline GL0000

BASIC CRITERIA

Issued: May 2011

For the awardance of the Eco-Label
Introduction

The International Association for Sustainable Building and Living – natureplus e.V. – has set itself the goal, through the awardance of a quality label (eco-label), of promoting the use of those construction products which are especially suited to achieving the goal of economic sustainability. The three classic pillars of sustainability (the environment, social aspects and the economy) are reflected in natureplus’s the three fundamental requirements: the environment, health and functional quality.

Every construction activity encroaches upon the natural environment and is connected with the consumption of limited resources. Our responsibility towards future generations requires us to undertake every effort to reduce these encroachments to the lowest level possible and to limit our use of resources to a necessary minimum. In view of the foreseeable exhaustion of the reserves of fossil fuels, for example, and the dangers to the earth’s climate, such an approach is the only possible means to ensure sustainable and socially equitable development. For the building sector this means promoting the use and application of construction products which help to minimize the consumption of fossil fuels and limited resources. It is natureplus’s intention to help promote the commercial success of those products which fulfil these demands.

Energy-saving building methods and the avoidance of uncontrolled ventilation facilitates the accumulation of volatile chemical compounds in the interior air that are emitted by building products and the inventory contained within the building. This presents a(n) (avoidable) danger to the health of the occupants. Also, the accretion of chemical contaminants (especially phthalates/plasticisers) from building products on house dust, the increasing use of biocides in everyday products and the dangers posed by mould growth due to negative product characteristics give rise for concern. An increasing proportion of the population are exhibiting reactions, such as allergies, to the negative health-related effects of these construction products. natureplus therefore evaluates the compatibility of construction products, especially in the usage phase, according to strict standards in order to actively promote those materials which pose no risk to health and are, in addition, conducive to a healthy room climate.

The natureplus®-Eco-label is an award for construction products which meet the highest standards of sustainability by exhibiting the best possible performance in terms of the environment, health and functionality. Scope of the assessment is the building material as raw material and as component. Only the best products in a particular product group are eligible for certification in order to act as an orientation for all building professionals and consumers towards the promotion of a culture of sustainable building. The natureplus®-Eco-label has anticipated the requirements of construction products of the European Construction Products
Award Guideline GL0000

BASIC CRITERIA

Date: May 2011

Directive EU CPR 305/2011: In the future this regulation requires a declaration of performance with evidence of the sustainable use of natural resources and of compliance with requirements in terms of low impact, over their entire life cycle, on the environmental quality or on the climate, energy-efficiency and the hygiene, health and safety of people. The natureplus®-Eco-label already provides these proofs of performance in relation to the essential characteristics of construction products. This is gauged by natureplus according to criteria and requirements which, as a rule, far exceed the legal requirements and as a minimum comply in each case with the strictest recognised standards applicable.

The natureplus-award guidelines are hierarchically organised. The requirements of the Basic Criteria are applicable to all products certified with the natureplus®-Eco-label. The Eco-label can not however be awarded solely on the basis of compliance with the Basic Criteria. Every product that is tested must also comply with the requirements of the applicable product guideline as well as those of the applicable product group guideline. In order to avoid double entries, the Basic Criteria requirements are not, as a rule, included in the product guidelines a second time.

1 Application Areas

The natureplus®-Eco-label is classified as a Type 1 environmental label as per ISO 14024, taking into consideration the EU Ecolabel Regulation and the EMAS regulation on environmental auditing, and is valid across the whole of Europe according to uniform criteria. The pre-requirements for a construction product to be certified with the natureplus®-Eco-label are its especially high performance characteristics in terms of the environment, health and sustainability. The main focuses are on the protection of limited resources by the minimisation of the use of petrochemical substances, sustainable raw material extraction/harvesting, resource-efficient production methods and the longevity of the products. Therefore, building products made from renewable raw materials, raw materials which are unlimited in their availability or from secondary raw materials will be favoured for certification.

Suppliers of certified products must also comply with all the relevant legal requirements applicable in the relevant country with regard to manufacture, sale and actual use.

©natureplus e.V.


2 Award Criteria

2.1 Suitability of Application

The products must have a valid technical approval, if required by law or by the building inspectorate:

- Alternative 1: European technical approval
- Alternative 2: Statement of compliance as per EN or national standard
- Alternative 3: Technical approval in a country within the European Economic Area
- Alternative 4: Building Inspectorate approval in a region within the European Economic Area (e.g. a German Federal State (Bundesland))

Each product must comply with the minimum standards as laid down in either the relevant European Standard or in the equivalent standard(s) specific to the country in which the product is to be sold and used. If no such minimum standards have been specified, the product’s functional suitability must be proven.

Product quality must be guaranteed by means of a quality assurance system. The product must exhibit a reasonable and appropriate expected technical useful life and the amount of work and cost involved in its routine and preventive maintenance/upkeep must be optimised in terms of the sustainability aspects. More detailed information is contained within the award guidelines which must be complied with.

2.2 Composition, Forbidden Substances, Substance Restrictions

The manufacturer must make an exact declaration to natureplus of all input substances. This includes the submission of the current safety data sheets as per the REACH-Regulations\(^4\), Article 31 and Annex II. If intermediate/preliminary products or formulations are used as input substances, then all the substances used within these must also be declared if the proportion present in the final product is >0.1 M-%.

The manufacturer must provide a proof of origin for all input materials. The sustainable use of natural resources must also be proven. Input materials must be selected so as to take due account of their impact on the functional suitability, environmental compatibility and health risks posed by the end-product in accordance with ecological best practises and current technical developments (state-of-the-art technologies).

The proportion of renewable and/or environmentally-friendly resourced mineral raw materials (including water) in the products should be maximised. The use of petrochemical input substances should be kept to the minimum level that is technically possible. As a rule, the proportion of renewable and mineral raw materials should not be less than 85 Mass% of the product. Exceptions must be justified in terms of sustainability aspects. Products whose function is based upon petrochemical substances are not eligible for certification. Raw materials which are limited in their availability or which are very difficult or cost-intensive to harvest/extract should be replaced by environmentally-friendly, secondary raw materials whenever possible. In general, substances should be excluded when a more ecological, economically viable alternative exists. The use of all additives must be technically justified and specific details are contained within the award guidelines.

The natureplus®-Eco-label should serve a special role in protecting the environment and the health of users and consumers. Therefore products certified with the natureplus®-Eco-label should offer an above average level of safety performance in respect to the dangers posed to the environment and health by chemicals. To this end, two exclusion lists have been compiled which stipulate substances which may not be used in certified products. In these lists of prohibited substances, the substances are named or reference is made to other lists in which they are specified. The references to lists of national or international regulations or scientific committees, enables the automatic adjustment of the natureplus prohibited substance lists to legal classifications and scientific findings. In each case the highest national classifications are generally binding.

In so far as exceptions to the prohibited substances lists are permissible, these are only justified for reasons of sustainability and may only be approved subject to the constraints of the strictest national legal requirements applicable. An ecological benefit justifying the approval of the exception must be specified. Any exceptions granted are only applicable to particular product types and are explicitly listed in the corresponding award guidelines. Exceptions are not possible if the prohibited substance can be emitted by the product. The exceptions are issued in individual cases by the natureplus criteria commission.

The **general list of prohibited substances** covers substances which, according to CLP-Regulations, as per Directive 67/548/EEC or national law, are prohibited or classified by the named institutions as carcinogenic, causing mutations or toxic to reproduction. Furthermore, additional individual substances may be specified by natureplus as non-desirable due to their environmental and health dangers and which one would not expect to find in a certified product.

---


©natureplus e.V.
Any exceptions to the exclusion of substances contained within the general list of prohibited substances are only possible on the basis of a comprehensive scientific justification which must be presented in a scientific evaluation report which has been commissioned by natureplus. The general list of prohibited substances covers all the substances specified in the following lists:

- Prohibited substances as per CLP-Regulations, DSD 67/548/EEC or national law (e.g. GefStoffV, TRGS 905 (German standards))
- CLP-Regulations: Carcinogenic Cat. 1A and 1B. Mutagenic Cat. 1A and 1B, Toxic to reproduction Cat. 1A and 1B
- Substances as per DSD 67/548/EEC C1 and C2, M1 and M2, R1 and R2 and as per national law (e.g. TRGS 905)
- Substances as per MAK-lists III1 and III2 (German occupational exposure limits)
- Substances in IARC groups 1 and 2a (International Agency for Research on Cancer)
- Substances requiring official approval as per Appendix XIV of the REACH regulations

In addition, the general list of prohibited substances includes the following named substances and compounds, as long as they have not already been included in the aforementioned lists:

- Persistent Organic Pollutants: Aldrin, Dieldrin, DDT, Endrin, Heptachlor, Chlorodan, HCB, Mirex, Toxaphen, PCB, Dioxine und Furane
  - Arsenic and arsenic compounds
  - Lead and lead compounds
  - Cadmium and cadmium compounds
  - Organotin compounds
  - Antimony trioxide
  - Hydro-fluorocarbons (HFC)
  - Organic halogen phosphates

The special list of prohibited substances includes substances, according to CLP-Regulations, as per Directive 67/548/EEC, national law or classified by the named institutions as suspected of being carcinogenic, causing mutations or toxic to reproduction, toxic or sensitizing or classified as harmful to the environment. Furthermore, additional individual substances may be specified by natureplus as non-desirable due to their environmental and health dangers and which one would not expect to find in a certified product.

The exclusion of the substances specified in the special list of prohibited substances goes beyond those of legal requirements and is thereby a special justification for the award of a quality label. Furthermore, there is a requirement that the use of substances with hazardous characteristics should be kept to an absolute minimum. The possible availability of alternative replacement substances must always be checked before any exceptions to the exclusion of
substances contained within the special list of prohibited substances can be considered. If an alternative is not possible, then appropriate measures must be taken to ensure both occupational health and safety during production and that of the consumer/user.

The special list of prohibited substances includes all input substances which must be labelled with the H-statements contained within the following table. This also applies to substances in intermediate/preliminary products or formulations which are present in the end product at a proportion of >0.1 M-%.

<table>
<thead>
<tr>
<th>Classification</th>
<th>H-Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>H300, H310, H330</td>
</tr>
<tr>
<td>Specific target organ toxicity</td>
<td>H370, H304, H372, H373</td>
</tr>
<tr>
<td>Toxic</td>
<td>H301, H311, H331</td>
</tr>
<tr>
<td>Sensitization of the skin and respiratory tract</td>
<td>H334, H317</td>
</tr>
<tr>
<td>Carcinogenic Cat. 2</td>
<td>H351</td>
</tr>
<tr>
<td>Germ cell mutagenicity Cat. 2</td>
<td>H341</td>
</tr>
<tr>
<td>Toxic for Reproduction Cat. 2</td>
<td>H361, H362</td>
</tr>
<tr>
<td>Reproductive toxicity on or via lactation</td>
<td></td>
</tr>
<tr>
<td>Hazardous to the aquatic environment – Acute Hazard</td>
<td>H400</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment – Chronic Hazard</td>
<td>H410, H411</td>
</tr>
<tr>
<td>Hazardous</td>
<td>EU H059</td>
</tr>
</tbody>
</table>
Furthermore, the special list of prohibited substances includes all the substances contained in the following lists:

- Substances as per DSD 67/548/EEC C3 M3, R3 and as per national law (e.g. TRGS 905 K3)
- Substances listed in Candidate list (SVHC) – ECHA
- Substances as per MAK-lists III3 (German occupational exposure limits)
- Sensitizing substances as per MAK IV, BgVV-List Cat. A, TRGS 907 or the applicable national law (BgVV = German Federal Office for Consumer Health Protection)

In addition, the special list of prohibited substances includes the following named substances and compounds, as long as they have not already been included in the aforementioned lists or the general list of prohibited substances:

- Organic halogen compounds
- Pyrethroids
  - Phthalic acid ester (except polyethylene terephthalate (PET))
  - Substances classified as Water Hazard Class 3 (German standard)

Synthetic nano-materials with a size range of 1 – 100 nm, as based upon the preliminary definition in DIN-CEN-ISO TS 27687, may, as a precautionary measure, only be employed when the following conditions have been satisfied:

- An evaluation of the advantages: The increased benefits and/or the reduction in the environmental impact by the addition of nano-materials must be proven.
- Risk evaluation: Based upon the available data and literature references, the safe use of the product, by humans and in terms of the environment, over the whole product life-cycle must be demonstrated.
- Transparency: All nano-materials contained within the product must be declared on the product packaging with the substance designation (nano) - analogue to the EU-Cosmetic Regulations.

The threshold limits for harmful substances and emissions into the indoor air, as specified

---

7. Definition of synthetically manufactured nano-materials based upon the Working-Definition of the OECD and DIN-CEN-ISO TS 27687: The nanoscale is a size range from approximately 1 nm to 100 nm. (Properties that are not extrapolations from a larger size will typically, but not exclusively, be exhibited in this size range. For such properties the size limits are considered approximate.) Nano materials are divided into nano-objects and nano-structured materials. Nano-objects are confined in one (nano-plates), two (nano-tubes and nano-fibres) or three dimensions (nano-particles) at the nanoscale. Nano-structured materials contain components which have one or more dimensions within the nanoscale. These also include agglomerates and aggregates of nano-objects.

©natureplus e.V.
within the product award guidelines, must be complied with.

2.3 Declaration

The product packaging should display a full declaration of the input materials listed, analogue to the EU-Cosmetic Regulations, according to the declining mass percentage and stating the place and country where the product was manufactured. If it is not possible to display this information directly on the product packing, it should be provided with the product in a technical datasheet or sales leaflet (in English or in the national language).

- up to 1 mass % - designation of the substance in question
- less than 1 mass % - at least a functional designation (e.g. “moth proofing agent”)

Furthermore, compliance with the individual regulations for the labelling and designation of the products must be observed. Qualified product information must be available in a suitable form to the user and consumer (on the product, in the internet etc) covering:

- Areas of application
- Advice on handling/installation, maintenance and care
- Information on associated hazards and any necessary protective measures
- Disposal instructions

If sensitizing input materials as per MAK IV C / TRGS 907 / BgVV-list Cat. A and B are used, there must be a note on the packaging indicating where more detailed information can be obtained (e.g. in the product information / technical data sheet).

2.4 Raw Material Sourcing, Production of Preliminary Products, Production

An above average ecological performance, in the areas of the conservation of natural resources and energy efficiency in both the harvesting/extraction of resources and the production process, is the fundamental principle governing the award of the natureplus®-Eco-label. A product eligible for certification must exhibit a distinct, above-average performance in at least one of these areas and must not fall below the level of accepted comparative standards in the other areas. The manufacturer must provide suitable proof of compliance with these criteria. For products which are not normally sold in markets beyond national borders, the comparative standards shall be deemed to be the normal industry standards of the domestic country; otherwise the standards of the target country shall apply.

First and foremost, the sustainable use of natural resources must be proven through the environmentally-friendly and sustainable harvesting/extraction of raw materials and/or the use of ecologically-compatible secondary raw materials. The annual consumption rates of

---

the renewable raw materials employed must not significantly exceed the annual net production level (difference between the level of consumption and regrowth per year). If non-renewable resources are used, then the stocks of resources – whose difficulty of extraction is possible within justifiable economic limits – that are available in the known warehouses must be able to cover the 100-fold annual resource demand.

In general, the following apply to the sourcing of raw materials

- Consideration of the need to protect the natural environment and biodiversity
- Compliance with the Washington Wildlife Protection Agreement
- Re-cultivation or renaturation of extraction sites: Proof of precautionary measures for the protection of the surface and the future use of the surface at the end of the extraction process, according to the EU guideline “Natura 2000”.

The sustainable harvesting of renewable raw materials means

- the greatest possible avoidance of the use of pesticides, chemicals and chemical fertilizers
- the avoidance of raw materials from non-sustainably managed plantations
- that no raw materials will be used from sources which employ methods of exhaustive cultivation, over-felling or other forms of destructive exploitation (e.g. non-certified tropical timber).
- The widest possible reference to, and employment of, recognized quality systems of organic agriculture and sustainable forestry management.

In the raw material sourcing and production processes, the level of energy efficiency and environmental compatibility must be proven in terms of the ecological effectiveness indicators. More detailed information is contained within the award guidelines which must be complied with.

The production and assembly of the preliminary/intermediate products should be socially compatible. Compliance with the minimum standards of the International Labour Organisation (ILO) may be taken as an indication of the social compatibility of the production process. In eight conventions of the ILO (ILO 29, 87, 98, 100, 105, 111, 138 and 182) fundamental principles and labour rights were defined. Compliance with these points must be guaranteed: the freedom of association and the right to organise; the recognition of collective bargaining; the prohibition of any form of forced or compulsory labour; the effective abolition of child labour and the elimination of discrimination in terms of employment and occupation.

Companies manufacturing certified products must provide concrete proof that

- the manufacturer recognises and will adhere to the aforementioned ILO principles.
- the right to organise and the right to collective bargaining are guaranteed. In particular that employment contracts do not contain any respective exclusion clauses; that employees have free access to their representatives and that clear rules are defined concerning dismissals, redundancies and negotiations with the representatives of leg-
ally recognised employee representation organisations, in so far as these are legally binding or permissible.
- the use and practise of forced or compulsory labour within the company is forbidden.
- an employee minimum age rule is in force.
- the company complies with employee health and safety regulations.

2.5 Product Packaging

The product packaging should have the lowest possible impact upon the environment. This starts with the availability of consumption-oriented package sizes. Reusable packaging should be employed where possible. Packaging plastics must be halogen-free and must not contain plasticisers (softening agents/diluents). Paper and cardboard packaging should be made predominantly from recycled paper or paper from certified plantations (FSC / PEFC). The latter also applies to wood packaging. Plastic packaging must preferably be comprised from polyolefin or in exceptional cases, polyethylene terephthalate (PET), polystyrene or polycarbonates. Packaging should not contain biocides. If this is unavoidable, then these protective additives must be declared and the declaration clearly visible on the packaging.

The requirements of both the EU-Packaging Regulations 2004/12/EG and the relevant national packaging regulations must be complied with.

2.6 Processing / Installation

In the processing/installation of the certified product, compliance with the fundamentals of health and safety, in accordance with the EU-Health and Safety Directive 89/391/EEC and national health and safety regulations must be ensured. The manufacturer supports this aim by providing qualified product information:

- Usage areas
- Processing-, maintenance- and care instructions (aids, accessories, treatment/processing)
- Information on associated hazards and any necessary protective measures
- Disposal instructions
- Warnings about any risks of allergic reactions

The processing of the certified products should, in the main, pose no health risks. As a rule, the product should pose such a low hazard level that processing/installation should be possible without the need for personal protective equipment. Any other special information or precautionary measures are covered in the award guidelines.

2.7 Usage

A minimum requirement for the award of the natureplus®-Eco-label is compliance with the
requirements of the EU Construction Products Regulations EU CPR 305/2011 with respect to hygiene, health and environmental protection. In order that the products fulfil the much more stringent natureplus requirements, the emission levels of

- Volatile Organic Compounds (VOC, SVOC and formaldehyde)
- Odours
- Radioactivity
- Dust particles and fibres

into the indoor air during the usage phase must be extremely low. This stipulation serves to reduce accommodation/building-related health risks. Where possible, and when structurally expedient, the certified products should contribute to an improvement in the interior air climate e.g. through a reversible, capillary moisture absorption capacity. More detailed information is contained within the award guidelines and the specified threshold limits therein must be complied with.

In the interests of preventive environmental protection, the emissions of organic and inorganic substances into water, soil and the atmosphere must be strictly limited. More detailed information is contained within the award guidelines and the specified threshold limits therein must be complied with.

2.8 Recycling/Disposal

The basic rules of a recycling-compatible, material design in the manufacture of certified products should be adhered to.

- The number of input substances should be minimised
- The building materials should be suitable for processing into recycled products of a comparable value
- The constituents must be known and documented and/or procedures for their rapid recognition should be available
- Material composites should be avoided where possible
- Those substances used in composite materials which may be problematic during product recycling should be labelled and removable.
- Substance combinations with common processing characteristics should, when possible, be used in composite materials
- If a large bonding surface between various building materials is necessary, then the bonding should be accomplished using mineral-based adhesives/mortars
- The life-span of a building should be maximised by means of a durable, basic construction and flexible fixtures
- A possible removal/disassembly of the building materials and components employed must be related to their predicted life-span.

A manufacturer will be able to distinguish themselves for the award of the natureplus®-Eco-label by the submission of a concept which covers re-naturalisation, the acceptance/return of
goods and recycling for the product to be certified as well as details of the degree to which the concept has been implemented.

A minimum requirement for the award of the natureplus®-Eco-label is that the end-product is not classified as hazardous waste and must be either suitable for safe disposal at a waste disposal site or for incineration for energy production.
3 Required Assessments and Analyses

The details provided by the manufacturer in the product declaration data capture form, serve as the basis for the assessment procedure for the award of the natureplus®- Eco-label. The data capture form records and documents the product composition, the product input components, additives and auxiliary constituents, the manufacturing process and the use of resources, the resulting waste, waste water etc. It also documents the applicable use of the product and finally concepts for the re-use, recycling and/or risk-free disposal of the product submitted for certification over its whole life-cycle.

The requirements of the natureplus® Eco-label (certification guidelines) were set by an independent scientific body, set up by natureplus (criteria commission). The decision to award the natureplus® Eco-label is made by an independent body set up by natureplus (awardance commission). This decision is based upon the assessment reports and analyses as specified in the certification guidelines. Only independent, natureplus-accredited testing/auditing institutes, of which one will take the leading role, are contracted to perform these assessments and prepare reports. By means of this independent, scientific and replicable testing and verification of the requirements as well as the public transparency of the certification guidelines, natureplus fulfils the corporate compliance requirements of ISO 14024 and the ISO 65 (EN 45011) norm for certification bodies.

Within the framework of a pre-testing procedure, the contracted testing/auditing institute checks the conformity of the details provided by the manufacturer against the requirements contained within the certification guidelines (Basic Criteria, Product Group Guidelines and Product Guidelines) for the award of the natureplus® Eco-label. If the requirements have been met, the main testing procedure will follow. This is in three parts: an on-site visit and sample taking (OSV), the life-cycle analysis (LCA) including the calculation of the ecological indicator values and finally the laboratory tests. These tests are performed in accordance with the applicable testing procedures and regulations. The results of the test procedure are recorded and documented in a test report. This report forms the basis for the decision of the also independent certification body.

Definition of Terms:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>The product is the end result of the production process - packaged and ready-to-deliver (i.e. the end product).</td>
</tr>
<tr>
<td>Production</td>
<td>Production is the process producing the product - but excluding fabricated input materials.</td>
</tr>
</tbody>
</table>
### Construction product
Any product or kit which is produced and placed on the market for incorporation in a permanent manner in construction works or parts thereof and the performance of which has an effect on the performance of the construction works with respect to the basic requirements for construction works.

### Raw materials
Raw materials are the initial input materials entering the prefabricated, intermediate, and/or end products.

### Renewable resources
Renewable resources are biotic raw materials which regenerate in short reproduction cycles (up to 200 years) or which can be obtained from such materials.

### Mineral raw materials
Mineral raw materials are all inorganic raw materials which comprise naturally occurring rock or minerals or which can be derived from such materials; (coal and metals, in this context, are not counted as mineral raw materials).

### Secondary raw materials
Secondary raw materials are materials recycled from other goods, production waste, or by-products from other processes, all of which have been suitably collected and prepared.

### Prefabricated materials
Prefabricated materials are input materials which, before entering the production process, have already been manufactured in one or more production processes upstream.

### Intermediate/preliminary products
Intermediate or preliminary products are products involved in the production process as preliminary or intermediate forms of the end product.

### Input materials
Input materials are all raw materials, secondary raw materials, and prefabricated materials used by the product manufacturer for the specific purpose of obtaining the desired product characteristics and remaining as part of the product.

### Preparation
A preparation is not, in itself, classified as an input material. However, any of the preparation’s constituent substances remaining in the product for the purposes of providing specific product characteristics are counted as input materials.

### Main constituents
A main constituent is any input material in the product representing more than 5 mass %.

### Additives
An additive is any input material in the product representing up to 5 mass %.

### Auxiliary constituents
An auxiliary constituent is any substance or material used in production but not remaining as part of the product.

### Impurities / residues
An impurity / residue is any undesired constituent which remains in the product but which serves no functional purpose.

### Sustainability
This is a method of economic activity which provides coming generations with the same development opportunities. Sustainability encompasses the ecological, economic and social dimensions of this task. Applied directly to building products, sustainability is the achievement of the best possible levels of quality in terms of the environment, health and functionality.