

# Marketing of sustainable products by free time experiences in holiday houses

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## Abstract

There is almost no demand for sustainable housing and building products by consumers in the Netherlands. However, evaluations of sustainable built houses have shown that people living in sustainable houses do appreciate a lot of these products. The lack of interest can be explained by the lack of knowledge and experience. People don't ask for what's unknown. This fact leads to the idea of using holiday houses to inform people about the attractiveness of sustainable products. A Dutch research focussed on the most effective way to attract people who are not extremely interested in the environment but not disinterested either, the so called cultural creatives. This research resulted in a design of holiday houses on a former military airbase as an example of effective marketing of sustainable housing innovations.

*Keywords: sustainable products, holiday houses, marketing, architecture.*

## 1 Research into the appreciation of sustainable housing and building products

There is almost no demand for sustainable housing and building products by consumers in the Netherlands. However, evaluations of sustainable built houses have shown that people living in sustainable houses do appreciate a lot of these products. The lack of interest can be explained by the lack of knowledge and experience. People don't ask for what's unknown. A Dutch research (van Ettekoven [2]) focussed on the most effective way to attract people who are not extremely interested in the environment but not disinterested either, the so called cultural creatives.



## 1.1 Objective and research questions

The objective of the Dutch research is to find out if certain qualities of sustainable built houses can increase the appreciation of consumers for sustainable housing and building products. This objective results in the main question of the research:

*In what way can certain qualities of sustainable built houses increase the appreciation of consumers for sustainable housing and building products?*

Related questions are:

Which qualities of sustainable built houses do consumers appreciate especially?

How do consumers choose sustainable housing and building products?

## 1.2 Definitions

### 1.2.1 Sustainable housing and building products

The definition of the word sustainable is based on the three pillars of sustainable development: People, Planet and Profit (or Prosperity). Basis of this so called 'triple P' is the Triple Bottom Line (TBL) (Elkington [1]).

In this specific case sustainable products are products that do not harm the environment to the extent of their alternatives. A product can be a house, a housing element, an installation or a part of it, or a detail such as a material.

### 1.2.2 Qualities

A literature study of three sources (van Hal [4], SEV [8], van Hal [5]) resulted in eight qualities of sustainable built houses: functionality, comfort/luxury/user-friendliness, aesthetics, indoor-quality, positive impact on the environment, money-saving, uniqueness/status and safety.

*Functionality* is very important for consumers. For example; environmental friendly paint that can only be used on unpainted wood and not on old paint isn't functional. Solidity is an element of this quality too.

*Comfort/luxury/user-friendliness* Sustainable housing and building projects should help people to feel physically relaxed and content in their homes. Luxury and user-friendliness are elements of comfort.

*Aesthetics* A very personal quality but nevertheless very important. People prefer 'beautiful' buildings. Sustainable architecture struggles with a bad aesthetic image. The public opinion often relates sustainability with old-fashioned or bad architecture as a result of projects in the past. However, recent projects show that aesthetics can be combined with sustainable architecture in many different ways.

*Indoor-quality* Due to governmental campaigns and reports in newspapers and on television an increasing number of people are interested in a healthy indoor climate.

*Positive impact on the environment* Only for a small group of people (2%, Hoytink [6]) environmental quality is leading in decision-making. For many people a positive impact on the environment is considered to be positive but it is never a primary condition of sale. Therefore this aspect has not been considered further in this research.



*Money-saving* Money-saving is the most important quality of sustainable housing. Money-saving can be related with energy and water saving. However, in the public opinion sustainable housing is more expensive than traditional housing.

*Uniqueness/status* Uniqueness can be related to location, design, the way of using a house etcetera. Some people prefer sustainable products because of their uniqueness. Status is not only related with possession but also with quality of life in general.

*Safety* Safety is a very important topic for most consumers. It is currently debated if safety is an environmental topic or not.

### **1.3 Sub question 1: Which qualities of sustainable built houses do consumers appreciate especially?**

This part of the research exists out of a literature study focussed on consumer experiences and an analysis of three sustainable built houses. Testing, evaluating and monitoring projects containing new sustainable housing and building products is not a standard practice in the Netherlands. However, the experiences with some demonstration projects and some specific products are evaluated. The literature study is based on three evaluation reports (Silvester and de Vries [9], [10], [11]). The analysed sustainable built houses were De Heuve in Beuningen, villa Deys in Rhenen and a holiday house in holiday-park Herperduin in Herpen (see figures 1–3).



Figure 1: De Heuve in Beuningen (credits: Joost Brouwers).



Figure 2: Villa Deys in Rhenen, architect Paul de Ruiter (credits: Anke van Hal).



Figure 3: A holiday house in a holiday-park Herperduin in Herpen, architect: Archiservice (credits: Joost Ettekoven).

The result of this sub research shows that especially in the first period people often struggle with sustainable innovations due to lack of experience of the architect, the builder or the installation specialist. However, when the innovations are working well most inhabitants appreciate these new elements. Functionality is not a point of interest when everything is working well. Remarks are only made about a lack of functionality.

The appreciation is mostly related to comfort and money-saving. All cost efficient products are popular. Energy-efficiency is one of the few conditions of sale related to sustainability.

*Indoor quality* is appreciated as a positive element too. Based on these few reports it is not possible to give priority to qualities other than comfort and money-saving. Elderly people do especially appreciate comfort, user-friendliness and safety. But a few people especially appreciate the positive impact on the environment. Some products have several qualities. For example: A heat pump in combination with a low temperature heating system is energy efficient but also offers extra living space (because of the lack of radiators), comfortable heating and the possibility of a cheap cooling facility. This combination makes this product very attractive.

The main conclusion based on analysis of the houses: High sustainable quality of houses is not related to the architectural manifestation. All architectural styles are possible. To get the best results an integrated approach is necessary. Most sustainable built houses are more expensive to build than regular houses but some of the extra costs can be recovered soon. Recommendations related to the qualities described in 2.2.2.

*Functionality* Functionality is a main condition for a product. Non-functioning products were not rare in sustainable built houses because of the experimental stage of these products. This damaged the image of sustainable building. Functionality has to be proven before products are implemented in houses. Experiments are only acceptable on a very small scale.

*Comfort/luxury/user-friendliness* Consumers seem to highly appreciate heat pump systems combined with low temperature heating because of benefits described above. Disadvantages are the slowness of the system and the complexity of attaching anything on the wall (because of the heating pipes in the wall). Often the inhabitants were quite ignorant about the system. Information is

very important. Big windows on sunny sides are very much appreciated because of the amount of daylight. In some cases this resulted in an overheated indoor climate in summertime. There are simple technical solutions to avoid this problem.

Mechanical ventilation systems combined with heat-reuse are unpopular because of the noise and the lack of windows that may be opened. Most people are unclear on by the relation of this system with energy efficiency because of the energy use of the 24h/day working system. People also complain about a lack of a (good) manual.

*Aesthetics* The researches show that people prefer solar systems in their neighbourhood because of their functionality. At the other hand, most people don't like the aesthetics of these systems. Many persons like the view of green roofs but some don't. Visibility is an important aspect of sustainability. It's an ongoing discussion if sustainable products should be visible or not. The researches lead to the hypothesis that the overall architectural quality is the most important aspect. For most people visibility of sustainable products is not a point of discussion. They just want a beautiful house in an architectural style they like.

*Indoor-quality* is appreciated as a positive element. There is a possible negative influence by behaviour. If people, for example, do smoke in a healthy designed house the positive health effects of the house are negatively compensated. Information about health improving elements of the house are very important.

*Money-saving* People are interested in money-saving products but only if the costs can be recovered soon. Extra insulation and solar collectors are appreciated for this reason.

*Uniqueness/status and safety* Based on these reports it appears that uniqueness or status and safety are qualities that are important for a certain group of people (such as safety for elderly people).

*Other* Some products are never noticed by the consumers. This is only a problem when these products need some action of the inhabitants to function properly.

#### **1.4 Sub question 2: How do consumers choose sustainable housing and building products?**

Based on a literature study several answers to this question were found. The most important ones:

Consumers have to be seduced by personal advantages of the product. "What's in it for me?", is the main question. (Hoytink [6]).

Opinion leaders are very effective in seducing consumers (opinion leaders are individuals who are able to exercise influence on others, famous people for example) (van Hal [3]).

Consumers don't have to be convinced by environmental reasons to choose for sustainable products ("It doesn't matter why they do it, only if they do it") (van Hal [4]).



As a result of bad experiences in the past, sustainable products are not associated with quality. For the diffusion of sustainable products proof of quality is necessary. ("Don't advertise a bad product.") (WFA et al. [12])

Rogers characteristics of innovations be applied to sustainable innovations too (Rogers [7]):

- relative advantage; the degree of relative advantage may be measured in economic terms, but social prestige, convenience and satisfaction are also important factors
- compatibility; the degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters
- complexity; more complicated innovations will be adopted more slowly
- trialability, the degree to which an innovation may be experienced with. Innovations that can be tried will generally be adopted more quickly
- observability; the easier it is for individuals to see the results of an innovation the more likely they adopt it.

### **1.5 Main question: In what way can certain qualities of sustainable built houses increase the appreciation of consumers for sustainable housing and building products?**

The results of the sub researches lead to the answer of the main question:

*Qualities of sustainable built houses can increase the appreciation of consumers for sustainable housing and building products but these products have to be implemented in the correct way and the communication has to be organized effectively too.*

About quality: Sustainable housing and building products need to have proven quality and be integrated in a house with overall quality. Relative advantage is very important. The degree of relative advantage may be measured in economic terms, but social prestige, convenience and satisfaction are also important factors. The more relative advantages a product has, the more it will be appreciated. A positive influence on the environment is seldom supposed to be a relative advantage. On the other hand, functionality, comfort and money-saving are important relative advantages. Functionality is nothing people ask for but something they complain about when products are not working well. So, functionality of sustainable products has to be proven before the products are implemented in houses. Experiments are only acceptable on a very small scale.

Climate comfort or comfort by daylight are examples of comfort related to sustainable products. Compatibility, the degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters, is related with comfort. More complicated innovations will be adopted more slowly so user-friendliness is important too. Luxury is also an element of comfort.

All cost efficient products are popular. People are interested in money-saving products but only if the costs can be recovered soon.

Visibility is an important aspect of sustainability. It's an ongoing discussion if sustainable products should be visible or not. For most people visibility of



sustainable products is not a point of discussion. They just want a beautiful house in an architectural style they like. Some products have never been noticed by the consumers. This is only a problem if these products need some action by the inhabitants to function properly. The easier it is for individuals to see the results of a product the more likely they will adopt it.

The only thing that can be concluded about uniqueness or status and safety is that these qualities are important for a certain group of people (like safety for elderly people).

About communication: Consumers don't have to be convinced by environmental reasons to choose for sustainable products. They have to be seduced by personal advantages of the product. "What's in it for me?", is the main question they ask themselves. Opinion leaders are very effective in seducing consumers.

Trialability is an effective form of communication. This is the degree to which an innovation may be experienced with. Innovations that can be tried first will generally be adopted more quickly.

Inhabitants should have knowledge about sustainable products if they have to operate them. For that reason, manuals are important. Information about health improving elements of the house is very important to prevent behaviour with a negative influence.

## **2 Design of holiday houses on a former military base**

The results of the research inspired the idea of holiday houses as an instrument to seduce people into choosing sustainable housing and building products. After all, holiday houses form one of the few possibilities to let people experience these kinds of products. Besides, during a holiday most people are open to new adventurous experiences. They don't care about changing their lifestyle for a short period of time. To avoid a focus on people who are already very interested in the environment a location was chosen that generally does not attract this kind of people; the former military airbase Soesterberg in the centre of the Netherlands. A famous Dutchman should be used as opinion leader for the advertisement of the holiday houses.

### **2.1 Program of demand**

The research results lead to the following program of demand:

- the holiday house should have an overall quality (a beautiful house in an attractive architectural style)
- the chosen sustainable building products should have more relative advantages than environmental friendliness alone. They also have to be, for example, functional, comfortable and money-saving
- only sustainable housing and building products with proven functionality should be implemented
- all chosen products should contribute to the comfort of the guests (luxury and user-friendliness are elements of comfort. Compatibility, the degree to which an innovation is perceived as being consistent with the existing



- values, past experiences and needs of potential adopters, is an element of comfort too but less important in a holiday house than in a regular house)
- involvement of money saving products with noticeable cost-recovering (easy to see the results of a product)
- if products need some action by the inhabitants to function properly they have to be visible
- an effective and seductive information exchange

## 2.2 Design description

The holiday houses are built on the existing, heavy concrete shelters in a car free resort. The environmental advantage of using the existing shelters is avoiding extra damage to the surrounding natural environment. The shelters function as the foundation for the dwellings. The reuse of the existing buildings also prevents energy use for demolition and loss of material.

But there are more relative advantages. Aesthetic quality for example; the way the guests experience the surrounding is totally different from the top of the shelter than from the ground level. This results in an intense experience of the nature around. The shelters also create variety in a flat and forested neighbourhood. The way the shelters are spread through the terrain also offers an opportunity to realize small groups of dwellings. As a result the resort won't be characterised by a very high-density but by a vast area with little compounds spread within a green area. The shelters refer to the military history of the location. The new way of using them will give them a new significance.

The use of the shelters also offers functional quality: the unused inner space of the shelters can easily be used for facilities of the resort like a sauna, swimming pool, tennis courts, restaurant, disco, storage etc.

The use of cars will be discouraged by the design of a car free neighbourhood and the absence of parking facilities next to the dwelling. The advantages for the guests are a quiet and safe neighbourhood. Instead of cars bicycles and electronic cars can be used.

There will be different types of dwellings: 0-energy house, 0-allergy house and 0-waterhouses. The last one is designed in detail. The house is dependent on rainwater, so there will only be a regular water supply in cases of emergency.

The way the water house interacts with the shelter refers to lithophytes (plants that don't need a fertile ground to be fed, but grow on a stony underground). There will be a symbiosis between the dwellings and the shelter, because the dwelling uses the rainwater that is collected by the shelter. The water will be stored in tanks and when there is a demand from the dwelling it will be purified and used. After using the water it will be purified again and infiltrated in the environment, so sewerage will be needless. The dwellings can be reached by a wooden deck that also offers collective space to relax and to meet other visitors. A watchtower contains playing facilities for children, collective roofed space and a viewing point in the top. These elements contribute to the overall architectural quality. The project shows that sustainable architecture does not have to be dull or dusty. It is possible to integrate contemporary design with a sustainable method of building.





A crucial element of the holiday houses is the core of the house. This core is used for purifying, preheating, regaining heat and the distribution of water and heat. Another function of the core is to communicate by lighting up red, when there is enough warmth gained from the sun by a collector to have a free shower, and blue when there is not.

Another way to relate sustainable products with noticeable costs recovering is a game. Guests can build up credits by using the dwelling in a more efficient way. The more efficiently they use energy and water, the more credits (points) they will get. They can exchange these points in the restaurant of the resort for costs reduction on (organic) food.

The communication in the dwelling about the water and energy saving possibilities are realized by integrating a so called 'board computer'. This multimedia device supplies the different media, like park information, TV, film, music, radio but also the points of the user. By adding some tips and tricks in the information the user will be able to improve his results. Children will be informed by educative computer games, from which they learn how, for example, the water system in the dwelling functions or in what way they can use water efficiently.

'Freedom of choice for the user' and 'stimulating by rewarding' were important principles in the process of designing these holiday houses. The visitor is free to neglect the stimulating measures. Aspiration, not obligation, is the slogan.

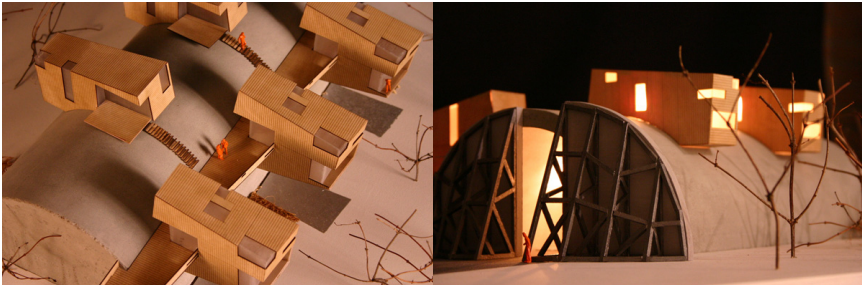


Figure 4: Scale model of the shelter (credits: Joost van Ettehoven).

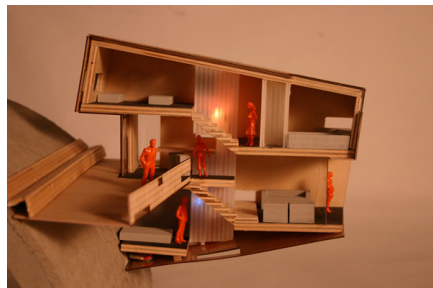


Figure 5: Cross section of the scale model of the holiday house (credits: Joost van Ettehoven).

### 3 Notes

Cultural Creatives is a term coined by sociologist Paul H. Ray and psychologist Sherry Ruth Anderson to describe a large segment in Western society that has recently developed beyond the standard paradigm of Modernists versus Traditionalists or Conservatists. The concept was presented in 2000 in their book *The Cultural Creatives. How 50 Million People Are Changing the World* (Harmony Books, NY), where they claim to have found that 50 million adult Americans (slightly over one quarter of the adult population) can now be identified as belonging to this group which has not yet found its identity but is disenchanted with materialism and hedonism (retrieved from: [http://en.wikipedia.org/wiki/Cultural\\_Creatives](http://en.wikipedia.org/wiki/Cultural_Creatives)).

### References

- [1] Elkington, J., *Cannibals with Forks: The Tripple Bottom Line of 21st Century Business*, New Society Publishers, 1998
- [2] Ettehoven, J. van, (H)eerlijk ontspannen, de marketing van duurzaam bouwen d.m.v. een positieve duurzaamheidsbeleving in vrijetijdswoningen, TUDelft/Explorelab, 2006
- [3] Hal, A. van, *Beyond the demonstration project, the diffusion of environmental innovations in housing*, Aeneas, 2000
- [4] Hal, A. van, *Amerikaanse toestanden, Commerciële kansen voor duurzame woningbouw*, Aeneas, 2002
- [5] Hal, A. van, *Duurzaam bouwen vermarkten*, SEV, 2005
- [6] Hoytink, J., *Van Geitenwollen sokken naar design jeans*, Kluwer, 2005
- [7] Rogers, M.E., *Diffusion of innovations*, fourth edition, The Free Press, 1995
- [8] SEV, *Weldadige woningen, veertig ontwerpprincipes voor Gezond Bouwen*, SEV, 2004
- [9] Silvester, S. en G. de Vries, *Woonsatisfactie, bewonersgedrag en bewonerswensen bij Voorbeeldprojecten duurzaam bouwen*, TUDelft, DfS-program/V&L-consultants, Delft/Rotterdam, 1999,
- [10] Silvester, S. en G. de Vries, *Bewonerservaringen met houtskeletbouw*, TUDelft, DfS-program/V&L-consultants, Delft/Rotterdam, 2000
- [11] Silvester, S. en G. de Vries, *Bewonerservaringen lage temperatuursystemen*, TUDelft, DfS-program/V&L-consultants, Delft/Rotterdam, 2001
- [12] World Federation of Advertisers (WFA), et al., report for the World Summit for Sustainable Development, Johannesburg, 2002, Retrieved from [http://www.unep.org/outreach/wssd/contributions/sector\\_reports/sectors/advertising/advertising.htm](http://www.unep.org/outreach/wssd/contributions/sector_reports/sectors/advertising/advertising.htm)

