

## Well-being in hospitals

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# Well-being in Hospitals

## Design aids for Functionally Environmentally sound Therapeutic Buildings

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### Abstract

Complaints of patients, staff and experts reveal that hospital condition and design are at a critical stage. A series of misfits are registered in relation to Environment, Configuration and Function of hospitals. These three domains of design need to be improved in order to be adequate to the new life-style and to create 'better' conditions in hospitals. This study is aimed at identifying appropriate components improving the quality of hospital design, concerning these domains, to be integrated in a new hospital model which is called the Hospital supporting Health and Well Being. This hospital is also supposed to take into consideration the present background of hospital design and function (Policy of Prevention in Health Care and Sustainability in Building). To fulfil this aim, the nature of the misfits above is closely investigated, in hospitals and in the literature. This is done in relation to past, present and future of Hospital Design and Health Care. At the end a number of components are found which improve the quality of design in relation to the three domains. They are integrated in Hospital supporting Health and Well Being.

### Statement

Aim of hospital design is to support the Health and Well Being

### Key-words

Sustainability in Building, Environment, Architecture, Function, Design Methodology, Health Care, Disease Prevention

### Current Conditions of Hospital

Physical discomfort and general complaints are lamented by hospital patients and medical staff. A series of components dealing with the Building and Environment are basically pointed out as contributing to produce a 'sick' environment and the 'Sick Hospital Syndrome' in analogy to the 'Sick Building Syndrome'. A large number of situations at risk result to be strictly connected to hospital environment and function (e.g.: poor maintenance, design misfits, inappropriate performance of activity, etc.). Complaints also relate to the configuration of hospitals (e.g.: lack of way-finding, obsolete content, unattractive aspect, inadequacy of space and technological systems, etc.). Here emergent needs create the frequent necessity of structural and functional changes. But designers and technicians assert that, owing to structural limits, the renewal of old hospitals is sometimes impossible. A series of misfits affect three domains of design: Environment, Configuration and Function.

### Aim of this Study

This study is ended at improving the quality of Hospital Design by means of appropriate components which compensate the misfits registered in hospitals regarding Environment,

Configuration and Function. It is based on the background of the policy of the W.H.O. at present influencing Health Care and Building Design. The components individuated are integrated into a new model of Hospital supporting Health and Well Being.

## **Health Care and Hospitals**

Day-hospital care and quick surgery are in expansion as well as new diagnostic methods and therapeutic treatments. During a round table-conference it is stated that hospitals are actually *"dedicated to 60 percent outpatient care instead of 10 percent"* (Hagland, 1996). The population is growing in quality and quantity. The typology of patients is changing due to an increased awareness in matter of disease. Patients are currently dismissed immediately after treatments and considered as *'taking responsibility'* (Appleby, 1995) for their health condition. The use of advanced technologies and computerisation is occurring everywhere. Appropriate functional spaces are needed to integrate increased activities and equipment. Difficulties of growth or change in structure/technological systems, obsolete configuration, lack of way-finding, increased risks in relation to health and design, etc. testify that hospitals are inadequate to answer to the new reality. On the contrary, new living standards are already corresponded in other categories of public buildings.

Experts and people are inclined to renovate the application of homeopathic cures and natural means of therapy. Natural products are more often assumed as opposed to sophistication also in other life activities. The use of chemicals is generally reduced. There is an emergent interest in the use of natural products and ingredients also in private clinics and hospitals. Some newly built American clinics for example specialise in natural cures and include physical activity, relaxation systems and natural ingredients. Alternative new typologies of hospitals are sporadically built, which tend to consider the patient as a 'client' of the facility. Some newly built hospitals perform the two functions of prevention and cure. These changes in hospitals receive the consent of staff, patients, doctors, researchers and local administrations.

## **Well Being and Building Design**

New issues are dictated by the W.H.O. aimed at promoting energy saving and the use of renewable products against the depletion of resources. Industrial pollution and polluting material are reduced in order to re-establish healthier environmental conditions. The policy of the W.H.O. supports disease prevention in health care and the production of Sustainable Buildings promoting the Health and Well Being of their users. This policy already influences the design of public buildings (e.g.: healthy universities, offices, etc.). Special components are introduced in design to create pleasant environments (e.g.: furniture, decoration, colour etc.) and activities supporting the well being of the users.

## **The Need of the Hospital supporting Health and Well being**

Historically, designers have always responded to the issues dictated by the social, scientific and technological context which have always influenced the development of hospitals. At present, plural misfits reveal the inadequacy of hospitals to respond to new needs emerging from the recent quick social development. These misfits depend on design failings about Configuration, Environment and Function.

Health Care and Building Design are more generally influenced by the policy of the W.H.O., supporting Health and Well Being. The quality of Building Design is improved by the policy of Sustainability. Specific design components are introduced in other categories of public buildings, which respond to new living standards and needs. The Hospital supporting Health and Well being fills the failings produced by the quick social development and answers the needs registered in hospitals on the background of the policy promoted by the W.H.O.

## The Model of this Hospital

The framework of design for the new Hospital is given in the form of a conceptual model which offers criteria for a methodical approach to design. This model works as a guide for the realisation and function of hospitals. The quality of 'Hospital Design' is increased by the assumption of components which answer specific needs found in hospitals in relation to Configuration, Environment and Function. To this end, four categories of components are introduced at the end in the model of the Hospital supporting Health and Well being: *Architecture, Environment, Function and Methodology*. They are illustrated in a final prospect, working as 'design-aids' for designers and builders. An example of a 'Hospital supporting Health and Well Being' is also given in order to represent the feasibility of the model and to illustrate the way of using these components.

For the prevention of a series of risks dealing with the **Environment**, the contact with natural ingredients is promoted: a *natural resort* and natural renewable building *materials* and products having specific requisites are integrated in design and furniture. The quality of the environment is improved by the use of natural *energies*, the energy recover and bio-compatible building technologies.

To improve the quality of **Architecture**, suitable criteria for the refurbishment of hospitals are identified in a flexible building *typology* and modularity of spaces, which support structural and technological changes. The building configuration is mostly developed on one level in order to facilitate the movement of persons and means according to a specific circulation from place to place. Clear mapping and the application of a way-finding system answer the needs of various categories of people and increased number of out-patients. Quick means for communication and transportation are integrated in design. Finishing details and furnishing play a part in the building design, supplying colour and decoration. The building *configuration* assumes its own identity as opposed to its conventional 'anonymity', making hospitals like other public structures.

The hospital Function is improved by implementing the assistance and supporting the well being of the patients, by responding new needs due to *institutional changes* (integral solutions support flexibility of space and function). The individual well being is promoted by means of *functional changes* through the introduction of specific activities. Comfortable living spaces, common areas for socialisation and activities, increased privacy in the patient's room, home-like environments support the comfort and assistance of patients. Green areas are integral functional spaces and green frame for the building.

The **Methodology** of design supports the fulfilment of positive results. A *methodical approach* to design and function has the goal of maintaining the conditions of design that will remain also in the future. This is done by improving the quality of the design itself, the performance of the activity, the *building technology* and the *maintenance* of the building. The responsibility of the project not only depends directly on designers and builders, but also on the wider collaboration of different categories of people. Design procedure is a product of the co-operation of all parties involved in its plan and function. Designers, builders, patients, doctors and nurses participate in the hospital production and function.. Not only the project, but also function, maintenance and management of the building are integral part of the design proceed. The continuous 'revisiting of issues' and the consequent up-grading of design consent these buildings to avoid unwanted misfits and to answer the new design issues.

## Method and means of research

The current condition of hospitals reveals that hospital function, built and physical environment of hospitals are affected by specific failings. Three aspects of design need to be improved: *Environment, Configuration and Function*. They became object of study. Health care and hospital history, present and future perspectives of hospitals are analysed in relation to Environment, Configuration and Function.

The *research made in the past* highlights that Scientific, Technological and Social Progress have always conditioned hospital development and design. As a consequence, hospital building is subject to continuous change and is therefore considered 'dynamic' structure. However a number of components result to have always been valid for patients and designers. These components are considered indispensable to improving the quality of Environment, Configuration and Function in hospitals.

The *present of hospital design is analysed* in detail regarding Environment, Configuration and Function of design. Analogous risks influence the quality of the building environment and the physical well-being of the people, in hospitals and buildings. The policy of the W.H.O. is aimed at improving more generally the condition of design by promoting a policy of sustainability in building and prevention in health care. Analogous measures, which are taken generally in building design, are considered suitable also in hospital design to overcoming analogous risks. According to the policy of the W.H.O. specific criteria are introduced in design for the production of 'Sustainable Buildings'.

In the study of the *future perspectives* of hospital design, new trends are identified which consider hospitals as 'Residential buildings' or 'Mall models' or 'Hospitality models'. These receive the consent of the patients and doctors. These hospitals are analysed in relation to Environment, Configuration and Function. It is noted the correlation of specific components to the components of other categories of public buildings. Physical and psychological aspects of well-being, are promoted in the design of other modern public buildings.

The newly built hospitals realised all over the world have similar aims as well and various initiatives are taken by people and doctors in order to improve the quality of hospital environment and function. From many points of view, higher living standards are outlined not only in design but mostly in life. Researchers and designers, staff and patients of hospitals all express very similar needs and attitude. The analogous components found in the design of other recent public buildings and in some very recently built hospitals are susceptible to ameliorate the quality of Environment, Configuration and Function of hospitals. They also result to be suitable to overcoming specific misfits at present registered in hospitals and to promoting patient's well being and better respond to the new attitude of patients and the new function of hospitals. Validation of these data is finally performed through investigations carried out in hospitals focused to know the opinion of patients and staff.

From the *global study of past, present and future perspective of hospital design*, specific components results at the end suitable to improve the quality of hospital design concerning Environment, Configuration and Function. They are introduced in the model of the Hospital supporting Health and Well Being and belong to specific categories, which are: Environment, Architecture and Function.

But, the research carried out in hospitals revealed also specific misfits, attributed to poor maintenance and to wrong considerations made in planning. Hospital buildings are besides subjects to specific risks, due to the peculiarity of their activities and the use of chemicals and radioactive products, the presence of sophisticated technological systems and installations. Finally, hospitals are 'dynamic' buildings in function and structure and the problem is evident to keep the results of design over time 'fresh'. For this reason, another category of components, that is Methodology, is introduced in the model of Hospital supporting Health and Well Being. This promotes a methodical approach to the design and maintenance of hospitals, considered necessary to improve the quality of hospital design and function.

## Conclusion

This study fulfils the goal of improving 'globally' the quality of hospital design on the basis of a series of misfits registered in hospitals and on the background of the policy at present influencing the building design. However, the result of this study represents only the first stage and the 'indispensable basis' -made of the total indispensable criteria- on which it is possible 'to start to build' a Sustainable Hospital supporting 'Health and Well Being'. In practice, the product of this study may be compared to the starting brief and the general lay-out of a project. As well as only the 'concept' of the Hospital is contained in its model, only the indispensable

basic information are contained in the starting brief of a project. On this basis however, it is possible to formulate closer definitions and details for the production of the Hospital, as well as the executive drawings, calculation and details of a project are deduced from this brief and the general lay-out of a building.

Two relevant aspects are highlighted in the model as an innovative approach to hospital design. First, design is intended as a global proceed addressed to grant the production and function of hospitals. Drawings and calculation, realisation of the building, function, maintenance and management represents in fact different phases of the same procedure.

In order to improve the quality of this product, all target' groups take part in the formulation of the project. This consents to improve in quality by receiving different contributions which 'validate' the product of design *before* its realisation. But the better quality is also given by the increased co-ordination of various activities and components, the contemporary confrontation and co-ordination of different aspects, the consideration of advantages/disadvantages given by specific choices, the achieved collaboration of various categories of 'experts' having different competences.

The second innovative aspect is the relevance given to the maintenance and management of the building, which have in fact relevant tasks. They 'experiment' the project in the reality and 'use' the final product of design. For this reason they are also the ones who find out positive aspects and faults of design. It is besides their task to keep the outcome of design valid *after* the building realisation.

These relevant activities improving the quality of hospital design are promoted in the management and maintenance of the Hospital model which is object of this study.

This is done by means of: the punctual and regular performance of various activities; the continuous 'revisiting' of the issues of design (which consents to keep the product 'fresh'); the continuous up-grading of design (which consents to answer new issues and needs deriving from the social development).

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