Engineers and teamwork - MHP - the Method Holistic Participation towards sustainable technology

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Engineers and Teamwork
- MHP - the Method Holistic Participation
towards Sustainable Technology

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The MHP - Method Holistic Participation will be introduced in this paper. It is a teamwork method, based on the fact that different people (engineers and partners) always will have different opinions. In spite of this the method can be helpful to coordinate, integrate and synthesize even the most oppositional points of view by a kind of rotation game. The one of the team has - at least for a time - to play the role of the other. With some exercise and routine it is possible to reach common results even in a harmonious way.

In the face of the world wide ecological disasters, the engineer has a main task to help to solve these problems. The method (firstly introduced by K.Wachsmann and W. Gropius in the fourthies in the U.S.A., but also known as a principle in some pre-industrial cultures) is useful to be applied in the search to find new solutions for an environmental conscious and healthy artificial world or with other worlds a sustainable technology supported by many experiences in workshops. The paper will be illustrated with examples.

Introduction

All human working processes and all results within our culture are more or less based on cooperation. Even the existence of a hermit depends on the fact, that other individuals in society work together. It may be, that cooperation and consensus sometimes or often even automatically and instinctively takes place like in the case of simple activities and within so-called primitive cultures. In our time and in our industrialized world with a high complexity and many complicated circumstances, nothing is less natural, than automatic cooperation and consensus including design, planning and building activities. Therefore it is of great importance to educate engineers for cooperation and collaboration.

In his videopresentation “The Global Brain” Peter Russel shows the necessity of working together on various levels, if we want to survive. Therefore in the context of engineering, certainly as a mean for society, it is an actual question to apply efficient methods and techniques to reach the aims of a harmonious working process and integrated results. In this brief contribution to the method holistic participation - MHP we will define the terms we are discussing. In addition to the starting points we have to clarify the aims. At the base of the roots of cooperation, possibilities and needs, it is essential to pay attention to the method. Examples of actual workshops give an illustration of the method and the aims. Future applications are of interest for everybody who is participating in the one or other cooperative process. A summarizing conclusion will underline the opportunities we find in the discussed method holistic participation, along with many benefits.

Definitions

Holism is a theory of wholeness, Gansheid, totality, originating in Greece. Holistic can be called a balanced integrated complexity.
Participating from latin ‘pars’, a part, means to be and to act as a part of a larger order or higher totality or wholeness.
In the context of the method holistic participation we find some more terms important to handle the very subject:
<table>
<thead>
<tr>
<th>Cooperation</th>
<th>working together generally</th>
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<tbody>
<tr>
<td>Teamwork</td>
<td>special structured cooperation</td>
</tr>
<tr>
<td>Coordination</td>
<td>multidisciplinary, interdisciplinary organization (Synthesise)</td>
</tr>
<tr>
<td>Integration</td>
<td>composition, gestaltung or coordination</td>
</tr>
<tr>
<td>Consensus</td>
<td>common (parallel) sense and complementary addition to each other</td>
</tr>
<tr>
<td>Method</td>
<td>clear, systematic and efficient way for problemsolving</td>
</tr>
<tr>
<td>Process</td>
<td>the path, the way (including causes and conditions and effects)</td>
</tr>
<tr>
<td>Result</td>
<td>the goal or aim, the final effect of all participating influences</td>
</tr>
</tbody>
</table>

**Aims**

According to Zen and even some other philosophies dealing with selfrealization “The Path and the Goal is One”. Hence it is useful for all participants of a team or a working group to first try and cooperate in a convenient way, to be able to handle conflicts, to work together, stimulating, enjoyable and efficient, ..... and second to try and reach satisfying solutions, which fit the tasks, problems or questions as well as the needs and intentions of the participants and/or clients. The general starting point for holistic participation is the fact that in order to survive, there are innumerable tasks we have to fulfil in our social life together in large and small groups or teams. Design and engineering of all technical disciplines in the framework of shaping our built environment belongs or leads to the conditions responsible for our more or less common existence. So the aims of the holistic participation method are:

To include at least in principle and/or in a representative way all participants.

The basic qualities of human and ecological conditions or in other words an integral bio-logical approach carried by the main characteristics of “bios” and “logos” belongs also to a holistic participation.

**Background**

Konrad Wachsmann and Walter Gropius introduced a certain teamwork method for the development of complex building concepts already in the fourties. They indeed never mentioned the source(s) of this system. The author who continued and developed this method in tens of cases, actually found the probably base of the essence of the method in at least the old red-indian and indonesian way as well, to solve problems in a ‘democratic’ and harmonious way within their tribes. While the current environmentally (ecological disaster) and health problems (Sick Building Syndrome - SBS) get more and more attention, this becomes a hot item in our whole society.

Integral, holistic functioning is a natural thing in the process of the nature and in the nature as a wholeness. Balance or a dynamic balance can be a result of a holistic or again and again an integration focussed process. From the medevials we know about the mystic seven synchronities (“Die sieben Gleichzeitigkeiten”). It was said, that a human being is able - at least in top condition - to see or remember seven items at the same time in order to combine them creatively to a new thing, like an artistic or scientific product, a technical-technological, or an architectural and building design. So, an individual person alone even can exercise this synchronizing method or technique systematically to reach balanced results. Today everyone is dependent on a lot of influences and factors. Due to the rise of many specialities in our divided working processes with so many participants even in case of the design processes (formerly very individual and personal) and engineering development. Even everyone is dependent in a way from everyone. In building techniques - and sciences - for the first time - a horizontal (democratic) structure of the various components, responsible for the final built results, was introduced and this introduction can be seen as a turning point like the title of Wachsmann book form 1958, first edited in Germany “Wendepunkt im Bauen”. Actually in the fifties there was hardly any consciousness on the ecological aspects, the specific human factors and environmental problems in the world of civilization. Therefore we had to add all these new factors for a Sustainable Development, into this first total view of building components, which was brought by Konrad Wachsmann and supported by Walter Gropius. Finally these additions led to the holistic metamodel of an integral bio-logical architecture.
The Method

The principle of the holistic participation method works as follows:
1. The (main) task or problem which in case of designs always is a complex one, has to be divided into the various partial problems or aspects - according to the ideas of the participants.
2. The whole team has to be divided similarly into small working groups and it is ideal to have three members in such a small(er) group.
3. After these dividing processes, discussed with the whole team, each small working group goes on to investigate one of the partial problems separately.
4. After this investigation period all the team members come together again to inform each other by chosen speakers, who afterwards will change with others to give to everybody the opportunity to speak in a representative way.
5. After this information, discussion and consultation period all working groups change the subject and continue to investigate.
6. This play or game will continue as long as necessary to give everyone the chance to investigate each of the partial problems. At that point the cycle is finished.
7. Conflict Free Conflict Resolution can be applied. There is always a possibility to structure the participants, the partial problems and the time in such a way, that the just explained integration process can be organized and managed.
8. This “rotating” or “weaving” process can be continued even for a second part of a period of making a design ready for realization and even realization itself can be handled in a similar way.
9. Consultants (from outside the team) can at least participate during the discussions as early as possible. Of course it is advisable to use audiovisual methods, models and clear text, sketches, drawings etcetera etcetera for deeper research as well as better information and presentation.
10. In ideal circumstances and with a well trained team the teamwork process, the method holistic participation is extremely enjoyable and the result in a way will come without effort. Everybody can also get his’ or her’s identification of the continuous participation. Side by side with the “serious” applications of the method it might be good to apply some socio-psychological and creativity games.

Actual Work

As already amongst others in the International Design Participation Conference (IDPC) at the Eindhoven University of Technology in April 1985 at the Experience Exchange on Technology Education of the WOCATE, World Council of Associations for Technology Education in Eindhoven in April 1994 and in the International Design Decision Support Systems (DDSS) in Vaals in August 1994 presented, the - nowadays MHP - Method Holistic Participation called - way to collaborate, is more and more in use. The Method Holistic Participation is within the Faculty of Architecture and Building Sciences, especially in the (Sub)Department of Building Construction and Realisation used as well as in many workshops in several countries (sometimes in the northern countries the “Peter Schmid - Method” called) for students and practitioners. Moreover the method was also applied in other fields, like education, physics and even politics.

I had my own training with Konrad Wachsmann in the framework of the International Academic Summer Course in Salzburg in the years 1956, 1957, 1958, 1959 and 1960. After this development we applied the teamwork method many, many times with various subjects and groups of different capability and size and in several countries. In the education programmes of the Eindhoven University of Technology I have used the method many times for “teamwork and integration” exercises, also for groups of students from abroad or the European Delft Workshops “The Architecture of an Uncertain Future” in 1982 and for people, who want to live
together an environment like an old village but as a new community. People who look for an ecological and healthy surroundings, for a biological architecture the application of clean and soft technologies, for a really human home or shelter or for a more self supporting life, building and living environment know to find my help for a preparation in order to participate and design. Even politicians - confronted with the actual ecological problems such as environmental pollution recently were guided in a workshop on base of the described method. So we see a growing number of interested participants, who like to participate methodically. Most recently one of the sub-departments of our faculty decided to introduce the students to the various sub-disciplines, complex technological tasks mainly in an economical or commercial context of this department in a first project which is runned on base of the MHP. More and more the method is also applied in practical fields mainly of research and design and engineering as well.

Future

The MHP can get a place and meaning in the fields of the most urgent problems and within the discussions concerning Sick Building Syndrome and ecological disaster (as significantly pointed out in already so many scientific reports and conferences). Collaboration and cooperation is needed more than ever before - although we can find examples and models already long ago. Two main problems can be answered by using the method - as already proofed in several cases: the facing of the environmental demands for building activities and engineering, because of the ecological crisis - worldwide often combined with the SBS and the necessity for the different (power) groups to come together in order to reach some consensus for our common survival.

(The paper presentation will be enriched by many illustrations.)

After looking far back to the medieval simultaneity of a creative process, the experience of the Wachsmann-Seminars and the facts of the very recent participation workshops we also may look forward to the future of design participation generally and engineering particularly. It is a matter of fact that finally only a conscious and harmonious participation leads to a good cooperation and only “a good cooperation” makes us survive. A lot of learning processes bring us to a higher level and quality of existence and make us more conscious about our basic needs and aims. One of the main conditions to reach these mentioned qualities probably will be methodic cooperation. In fact the method could be applied to every thinkable task in the field of building design and engineering as well as in all other disciplines. I could imagine, that like in an orchestra various teams on various subjects working together will design and build an harmonious environments with proper artifacts which fit in a democratic way the needs of all participants and people.

Concluding Summary

The starting point for a holistic design participation process in architecture is based on a methodically, enjoyable and stimulating cooperation in order to finally reach efficient results. The necessary consensus of the participants may be fed by the creativity of conflict, but all important aspects components, factors and participants as well have to get the chance to influence as relevant causes the effects. During all times mankind had to handle a lot of - sometimes complicated - ingredients to shape a complex totality in various levels. Synchronity, simultaneity, balance, equilibrium was always an aim in the design processes and in what led to "engineering of today". First Wachsmann introduced a teamwork which fits these demands (Forderungen), by means of a rhythmic working - and discussing process, all research and information can be done and given systematically. A lot of trainings of this kind have been done and developed in many countries. Hence there is already enough experience from the past and very recent past for further applications in the future. The method can even be expanded to several other fields. Hopefully this MHP can be a practical contribution for our built environment and all the technical artifacts with a higher responsibility in relation to the human beings and the environment and generally for a more harmonious cooperation.
Examples of Workshops furnished in order to support study, discussion and creative cooperation.

The logo of the rotating and weaving structure of the MHP-Method Holistic Participation.

A possible division of aspects concerning building technology towards a balanced concept.
References

Pull participation of the author in the teams of the workshops "Bauen in unserer Zeit" ("Building in Our Time") under the guidance of Konrad Wachsmann in the framework of the International Centre of the Salzburg Summer Academy, Austria.

- Commissioned for a Concert Hall in Wood Structure with 15 participants, (1956).
- Flexible Cultural Centre in Aluminium Structure with 21 participants, (1957).
- Flexible Cultural Centre in Wood Structure with 24 participants, (1958).
All published, amongst other prints, in Wendepunkt im Bauen by Konrad Wachsmann, Otto Krusiusk - Verlag, Wiesbaden, 1959.

Parttime participation of the author within the same framework (Salzburg Summer Academy).


Het deelnemerteam van de workshop (± 20 deelnemers) Zelfoorzien een Buitenuiskrif, Stichting Stentoste, Annoh, Hengelo, NL, 1983.


Schmid, P., Leitung der de workshop (± 60 deelnemers), Bouwen en Wonen, International University of Legos, Driebergen, NL, 1984.


Schmid, P., Architektur Workshop Wien (mit ± 10 Teilnehmer), Global.
Schmid, P. in collaboration with different assistant/professors of various subdepartments

MHP-projects in the frame of the Differentiaalcollege (Afvuwbouw/Methodologische integratie, lectures, exercises, seminar) at the Eindhoven University of Technology

- Ontwikkeling van een bouwwijze voor het Huis van een andere toekomst, I, 2, (10), 1989
- Milieu Educatief Centrum, Delftse Hout, (15), 1990
- Klinderboerderij Delft, (15), 1991
- Milieuprande bouwkundige maatregelen voor de TUE in 2015, (24), 1992

- Een gezond, milieubewust en volledig recyclebaar Ecodrome, Floriadepaviljoen, Zoetermeer, (24), 1992
- Voorstel voor een nieuw ontvanger gebouw, TU entré, (24), 1993
- Milieuprande gebouw voor de faculteit Schikunde, (24), 1993
- Vredespaviljoen en -park voor Eindhoven, Mondial Netwerk van Vredesvinden voor een Diverse Ontwikkeling, (2 x 24), 1994

Schmid, P., Human(e) Eco-logical Architecture & Building Technology in the first, second, third and fourth world - a path - from the past - towards a whole - about research, education and practice from lifestyle to Gaia Building Systems MHP - BMD - JBA - GBS Lecture with stories and slides, Human Ecology Department, Free University Brussels, Belgium, Feb. 24th, 1994


Biography

Peter Schmid (1935) was born in Rome/Italy but became an Austrian and had most of his education in Vienna (Prof. Clemens Holzmeister) and Salzburg (Prof. Konrad Wachsmann), later also in Germany and India.

He received a professional degree as a building engineer in 1954 from the "Höhere Technische Bundeslehr- und Versuchsanstalt" and a Master of Architecture degree from the "Akademie der bildenden Künste" both in Vienna/Austria. Beside this he was the disciple of an extraordinary Yogi at the same time the author of many books the late Paramhansa Yogeshwarananda Saraswati (former Vyasa Dev). Later in 1989 he received a honorary doctor's degree in Yoga from the Unnayan Samsad in India.

Prof. Schmid's professional career as an architect was in Switzerland, Germany as well as in Austria from 1957-1972. He realized many buildings also in other European countries as well as overseas.

Overlapping he taught as a professor at the Höhere Technische Bundeslehranstalt in Krems/Danube in Austria.

Since 1972 he is an appointed professor at the Eindhoven University of Technology in the Netherlands, where his specialization is architecture with the focus on the detail on the one hand and on Health and the Natural Environment including Building for and on Peace on the other hand.

In 1965 he started with IBA (Integrale Bio-logische Architektur) activities in Vienna. In the early seventies he was the chairman of the first Belgian Association/Genootschap Gezond Bouwen en Wonen and in 1975 he founded the VIBA (Vereniging Integrale Bio-Logische Architectuur), which is until now a very active association in the Netherlands.

Schmid wrote many publications and several books on this subject amongst which are: Bio-logische Architektur and Bio-logische Baukonstruktion, (R. Müller Verlag, Köln) and Bio-logisch Bouwen en Wonen, gezond voor mens en milieu, together with Michiel Haas (Ankh Hermes Deventer 1990) Gaia-Architecture, a Healthy Building Design Guide together with Howard Liddell is in preparation.

He also contributed to Die Chance Holz, der andere Weg, L&L Verlag Graz and to many conference proceedings in national and international conferences all over the world.

He is the main editor of the magazines "Gezond Bouwen & Wonen" (bimonthly) and "Nieuwsbrief Vredescentrum TUE" (fourmonthly).

Currently Peter Schmid is amongst other positions in Peace Movements, the chairman of the Executive Committee Peace Center of his university, the Association of Integral Bio-logical Architecture, and a founding member of the Association of Environmental Awareness and a member of the Spiritual World Peace Congress. He gives many lectures and workshops about "Healthy Building", "Environmental-sound Building" and "Building on Peace" as well as the "Method Holistic Participation" all over the world, mostly in combination with many research journeys through many parts of the World.

Peter Schmid is the dean of the Dutch Institute of Maharishi Sthapatya Ved and patron of the Global Co-operation for a Better World-action in Austria and Germany.

He received a gold medal of the World Biennale of Architecture Interarch, Sofia in 1987 for the Living Labyrinth, a case study of a Timber Production Forest at the same time a model of a Peace Park on the area of the Eindhoven University of Technology.

On June 16th, 1992, Peter Schmid received the Austrian "Ehrenkreuz für Wissenschaft und Kunst, 1. Klasse" because of his efforts for Healthy and Ecological Building.

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