



PRODIGIOUS WISDOM AND APPROPRIATE TECHNOLOGY FOR THE ERA OF TRANSITION

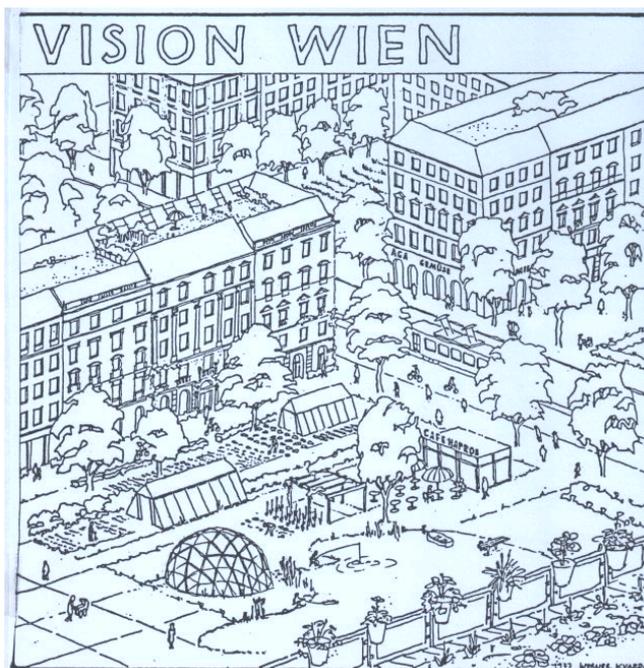


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Thus science is much closer to myth than a scientific philosophy is prepared to admit. It is one of the many forms of thought that have been developed by man, and not necessarily the best. It is conspicuous, noisy, and impudent, but it is inherently superior only for those who have already decided in favour of a certain ideology, or who have accepted it without having ever examined its advantages and its limits.

<http://www.marxists.org/reference/subject/philosophy/works/ge/feyerabe.htm>

Paul Feyerabend - Against method. „Wider den Methodenzwang“²



PREFACE

It is argued that the current social, political and economic crisis is caused by the current economic philosophy which advocates primacy of capital and extreme individualism. Like a Tsunami a radical repudiation of the global financial markets were overtaking real economy just recently and millions of people are plunging into poverty. Now that climate change is increasing our global temperature and human beings are therefore to some extent guilty. The adherents of the hypotheses succeeded worldwide. Protests against prevailing climate policy are not disproved but getting rather defamed.

But today's financial crisis is not really a purely "financial" crisis. It is much more than that. It is the crisis of confidence in the old system. It is the crisis of confidence in the political system. It is the crisis of individual and group identity. It is the crises that always come with the age of transition when the old beliefs, assumptions and systems are shown to be inadequate. We are currently at the birth of the technological revolution in the **transitional period** between the Service Era and the Information Era. What is needed is a brand new political-economic philosophy - ontology of being; one, that not only addresses the requirement of the new globalized market, but also and most vitally, the ethical requirements.³ As an architect I can say, the environmental crisis in urban and rural areas is a design crisis. Dumb design is wasteful of energy and resources. It is polluting, extravagant and profoundly dangerous.

¹ I am deeply grateful to Günther Pfaffenwimmer who gave the impetus writing this article, José Manuel Henriques being an extraordinary mentor and Borislav Stojkov collaborating with me through several years. I'd like to thank Ladislav Kubo for his support from the STU in Bratislava for revising the draft version of the text and many thanks to Boris Mihatsch and Luis Ramirez-Camargo who have provided nourishing support to the project.

² FEYERABEND, Paul (1983): Wider den Methodenzwang. Fft.a.Main, Suhrkamp. FEYERABEND: Against method

³ WEISH, Peter: Umweltethik. http://homepage.univie.ac.at/peter.weish/umweltethik/Umweltethik_folien06.pdf

Very recently in 2005 **Jared M. Diamond** was writing a book called “*Collapse: How Societies Choose to Fail or Succeed*”, intending for his readers, that its readers should learn from history. This book employs the comparative method to understand societal collapses to which environmental problems contribute. Diamond lists eight factors which have historically contributed to the collapse of past societies: Deforestation and habitat destruction, Soil problems (erosion, salinization, and soil fertility losses), Water management problems, Overhunting, Overfishing, Effects of introduced species on native species, Human population growth, increased per-capita impact of people.⁴

Many countries now pursue active policies to help their cities, regions, towns and neighbourhoods become ‘more attractive’. But most countries find that this also requires new skills, **new ways of thinking** and new ways of working. The skills of place-making are not often taught in schools or universities, and there are few professional or academic qualifications that address them explicitly. Jose Manuel Henriques from University of Lisboa – Political Economy was mentioning at the “European skills for sustainable communities symposium” in the Town Hall of Leeds the Lisbon strategy for Europe and he was emphasizing the inscrutable role of the university.⁵ Across **Europe**, and the whole rest of the world, we can observe the a renewed emphasis on making places where people want to live, where companies want to invest, and where citizens can find real opportunities and good services. Successful place-making requires an extensive basis of skills and knowledge. It means **generic skills** - such as leadership, community engagement, project management, partnership working and effective communication - that underpin the technical and various specialist’s, helping people to overcome obstacles and leading to a greater understanding of how to make places truly sustainable.

INTRODUCTION

One day in the morning some years ago, I was switching on the radio and was listening to Prof. Winfried Blum, a respectable scientist who had been on broadcast described serious threats to soil and land, because degradation processes are getting worse. This is specifically true for sealing of soils through urban and industrial development. Two hours later I was calling and asking him, if he would like to join a project within Sokrates Erasmus **Intensive programs**, to make students and stakeholders in the region aware about these problems. This was the start-up of a five years preliminary work for our project “Responsible use of Soil, water and land and spatial development”.⁶ The subsequently outcoming Intensive Programme (IP) represents a short programme of study which brings together students and teaching staff from higher education institutions to encourage efficient and multinational teaching of specialist topics which might otherwise not be taught at all.⁷

When we were preparing this new kind of learning within the Intensive program IPSOIL, Rosa Strasser had been responsible for the social field of the project, generating social capital from learning by experience through a special learning culture. “It was quite clear from the beginning, that for most of the participants the kind of transnational and transdisciplinary cooperation in this project would be new territory.

Especially the cultural, communication and social challenges of such an endeavour are not the usually preferred topics of reflection among scientists. Yet to deal successfully with them would be crucial for the effectiveness of the programme. Most helpful is to create together the context for the learning endeavour in a conscious way and to agree on carefully designed procedures of action and reflection giving enough safety to permit the next steps into unknown spaces. Having experienced this form of learning together fosters relationships and generates a unique kind of social capital that cannot be created in another way.”⁸

⁴ DIAMOND M. Jared (2005): *Collapse, How societies Choose to Fail or Succeed*. N.Y.: Viking Books

⁵ “Skills for the future - Making better places in Europe”: The European skills for sustainable communities symposium. Town Hall, Leeds, UK. Thursday 9 & Friday 10 November 2006

⁶ BLUM, Winfried E.H. / KVARDA. Werner (2007): Challenges for Soil Science in View of the European Thematic Strategy for Soil Protection. In *Academia Danubiana*. 4/2007. ISSN 1817 – 3349 http://www.academia-danubiana.net/projects/IPSOIL/IPSOIL%20III/IP_SOIL_III.pdf S. 10- 13

⁷ http://ec.europa.eu/education/lp/doc/call12/fiches_en.pdf

⁸ STRASSER, Rosa (2005): The social Culture of the Intensive Program IP.Soil. in: *IP-SOIL Responsible Use of Soil and Regional Development*. Wien: BOKU; Academia Danubiana, issue 1/2005 p7-8 <http://www.academia-danubiana.net/projects/IPSOIL/IPSOIL%20I/IP1.pdf>

One of the real success stories of the European Union are Europe wide **educational programmes**. Europe has become many chances within its´ Higher Educational programmes for obtaining a peaceful and democratic development process inspired by these values and also by Environmental Education principles.⁹ Additionally the UN proclaims with the Decade for Education for Sustainable Development from 2005 to 2014 that education will help to develop widespread understanding of the interdependence and fragility of planetary life support systems.

Europeans are in the midst of a profound debate about our vision of the future. Romano Prodi, former President of the European Commission was commenting Jeremy Rifkins´ book [10], when he said: “**The European Dream**” mirrors the European soul, providing us with a clear reflection of who we are and what we stand for and aspire in the new Europe.”

The European Dream emphasizes community relationships over individual autonomy, cultural diversity over assimilation, quality of life over the accumulation of wealth, sustainable development over unlimited material growth, deep play over unrelenting toil, universal human rights and the rights of nature over poverty rights, and global cooperation over the unilateral exercise of power.

1.. THE PERMACULTURE DESIGN COURSE

Permaculture is a combination of two words: ‘Permanent agriculture’.¹⁰ Mollison says that culture without sustainable agriculture and ethics of the soil cannot survive.¹¹ For disseminating the idea he was initiating **educational projects** with a very broad spectrum. *‘Permaculture is a design system but the engineering principles followed are those of life, for creating sustainable human environments’*. Permaculture has been coined by Bill Mollison and David Holmgren¹² in the mid-1970s to describe consciously designed landscapes which mimics the patterns and relationships found in nature. Mollison has been awarded with the alternative Nobel-award in 1981. He believes that everybody can learn from nature for developing a liveable future. Permaculture is above all a design system which can be used to establish and improve all our efforts towards a sustainable future. The global economy and its intrusive economic thinking and aggressive advertising, is performing an important function in providing consumers for buying more and more. Breaking these barriers is a big challenge for permaculture. In 1995 Bill Mollison was visiting Vienna. I was inviting Bill to introduce his experiences to our students in landscape planning at the University of Natural Resources and Life Sciences. For three days he was staying in my home and we discussed tonight future perspectives of cooperation. As a result of these ideas we established in Austria with a group of ecologists permaculture as an association.¹³

The *Permaculture Design Course* can be considered as a model which requires substantial innovation in technologies, products and services, to satisfy the needs for the poor while being financially sustainable. In permaculture design courses, students learn to work within a wider community through practical design projects, and acquire basic ecological literacy through lectures, thereby gaining the valuable habit of responding effectively to complex, interdisciplinary problems in their own field. These students could mobilize other actors in the future in their urban neighbourhood or village. The result is the harmonious integration of the people and their considerate utilisation of land providing their food, shelter, appropriate energy technologies, intelligent transport needs and socio-economic needs in a sustainable way.¹⁴

There are four pillar policies of ecological, economic, technical and social issues, which designate the main **basic principles** of permaculture.

⁹ PFAFFENWIMMER, Günther was managing the Austrian OECD/ENSI team fostering on ecological awareness raising, dynamic qualities based on project teaching. ENSI-AUSTRIA publications http://ensi.bmukk.gv.at/english/pub_studies.htm

¹⁰ MOLLISON. Bill (1991): Introduction to Permaculture. Tyalgum: Tagari Publications. ISBN 0 908228 05 8

¹¹ PRUS, Tomaz: http://academia-danubiana.net/projects/IPSOIL/IPSOIL%20III/lectures/8.PRUS_Land_Use_Ethics.pdf

¹² HOLMGREN, David (2002): Permaculture Principles. Principles & Pathways beyond Sustainability. Hepburn, Victoria, AU. Holmgren Design Services

¹³ PERMAKULTUR AUSTRIA – „Association promoting a new culture for the soil and land-use and human activities according to sustainability and natural values”. <http://permakultur.net/>

¹⁴ HOLZNER, Wolfgang / KVARDA, Werner (2004): Integrated Land Utilization Nature Conservation and ? / or ? Regional Development. Symposium on Agriculture and Forestry in the Balkan Countries, December 2004, Wien: BOKU . <http://www.mpc1.at/download/Kvarda.pdf>

- **Ecological:** The utmost goal of permaculture design means the **diversity** of systems cultivated with a high variety of functional relationships and mutual interactions between various elements. Use and value renewable resources and services, use edges and value the marginal. For instance an ecotone is an edge between two bioregions, creating greater biodiversity. **JuJutsu in ecology** means, adjusting to the natural elements of wind, sun and water etc. of the place by using its potential. Instead of opposing or clashing opponent strength, rather we harmonize with it, using minimal strength by redirecting, deflecting and blending forces. In a solar house we use and value renewable resources like sun rays for warming and natural air condition for cooling.
- **Economical:** Each element in a system performs multiple functions. Every function is placed in relationship to other elements. For instance water supply is done by collecting groundwater and also water from the roof put into a cistern. In nature **multi-functionality** is the norm. The trunk and branches of a tree hold up the leaves for efficient collection of solar energy, and the sapwood conveys water and nutrients to the canopy, and carbohydrates to the roots. We are designing from patterns to details (zoning, housing, etc.) small scale **intensive systems** and **solidarity economy** with links to nature, social innovation and entrepreneurship.
- **Technical aspect:** Catch and store energy, produce no waste (refuse, reduce, reuse, repair, recycle) In a house with a circular **metabolism** every output can be used as an input into the system. Household natural waste disposal is regarded as an asset for recycling it in the compost heap.
- **Social aspect:** Care for the earth, care for the people, set limits to consumption and reproduction, and redistribute surplus. Life on earth is a **self-organizing system** in which the internal organization increases in complexity.¹⁵ Human mankind was developing by an arrangement of cooperation and co-evolution.

LEARNING ABOUT TRANSDISCIPLINARITY

The traditional university with a positivistic approach is prepared for creating scientific knowledge. But real world problems often cut across existing disciplines. Therefore transdisciplinarity offers the prospect of generating the relevant knowledge which implies cooperative research driven by social needs and through mutual learning. By **transdisciplinarity** we mean a new form of learning and problem solving, involving cooperation among different parts of society and academia in order to meet complex challenges of society.

Transdisciplinarity requires methods that allow integration of knowledge with respect to four dimensions.¹⁶

- The first dimension involves structure and procedures for systematic linking of knowledge from **different sciences** to establish an interdisciplinary approach.
- The second dimension entails subdivision into different systems and compartments to allow an encompassing, **holistic consideration** (such as water, air, soil, fruits, animals).
- The third dimension is integrating different qualities of thought indicated by the right and the left brain hemisphere, distinguishes the **complementarity** between intuitive and analytic modes. For mutual interchange between theory and practice, intuition and analysis is considered as a complementary approach.
- The last case of knowledge integration shifts from methods or methodology to **epistemology**. The different interests of the participants and stakeholders of the course will be discussed in a critical dialogue. It is an evolutionary process to integrate new ideas and concepts into the planning process.

Philosophers call a filter that determines what counts as knowledge an **epistemology**.¹⁷ Our prevailing industrial culture, which is currently reaching a global climax is corresponding with our present forms

¹⁵ JANTSCH, Erich (1982): Die Selbstorganisation des Universums. Vom Urknall zum menschlichen Geist. München. Dtv

¹⁶ KLEIN, J T / GROSSENBACHER / MANSUY / HÄBERLI / BILL / SCHOLZ / WELTI (2002): Transdisciplinarity, Joint Problem solving among Science, Technology and society. An effective Way for Managing Complexity. Basel-Boston+Berlin: Birkhäuser et al., p. 242

of cultural landscapes, industrial agriculture, fossil architecture and townscapes, engineering and industry, derived from the design epistemologies incompatible with nature's one. If human mankind do not succeed in counteracting and reversing negative tendencies within a reasonable time, many of them will become irreversible. Therefore we have to consider large-scale perspectives that provides a culture with a high value system, which reflects long-range ecological realities.

Our current science production and administrative system is based on discipline-based department structures and therefore very insufficient. "Society has problems, whereas universities have departments."¹⁸ This aphorism illuminates some of the current problems in knowledge production. Most major contemporary problems do not call for a fancy scientific solution, requiring additional research. They call for responsible and rational behaviour among an educated population. Therefore transmission of existing knowledge creation is necessary.¹⁹ In this context the epistemic basis of the knowledge at work must be understood. The concept of an architecture of knowledge is helpful for ordering different types of arguments and reasoning inherent in transdisciplinary processes.²⁰

ARCHITECTURE OF KNOWLEDGE INTEGRATION

There are many discussions going on describing the approach to nature, should it be more human oriented or nature oriented. Tomaz Prus covers this issue at an IPSOIL meeting, "the anthropocentric (utilitarian, shallow even technocratic) approach is cost-benefit oriented accounting natural resources. This biocentric approach is based on supposition that each part of the nature and the nature as a whole have an intrinsic value, a value by itself, which is independent from actual or potential human benefits."

An analysis of the rapid change of landscape inventory requires ordering the different types of arguments and reasoning inherent in **transdisciplinary processes and knowledge integration**. The respective architecture thus distinguishes between **understanding** (*verstehen*), **conceptualizing** (*begreifen*), and **causal explaining** (*erklären*).

- For **understanding** any case of a real-world problem within its history, constraints, dynamics, the empathy accompanied by implicating epistemology of feeling, pictorial representation in memory and intuitive comprehension. For identifying the problem, goals objectives and aims have to be defined.
- At the second level is the **conceptual** model of the real world, being able to predict the results of actions taken in the problem solution. The key for successful work at this stage is synthesis and integration, organized by methods of knowledge integration (Life Cycle Assessment, Future Search workshops etc.)
- The third level is the application of a model by the causal **explanation** of the real world based on arguments arranged by propositional logic. Methods of the Territorial spatial planning as a 'empowering dialogue' should than harmonize the complexity of alternatives, that arises from the interaction among different agents at different territorial levels and recognizes the 'interests', 'reasons' and 'motives' underlying their 'rationalities' and strategic conduct.

2.. PERMACULTURE METHODS

Permaculture deserves a high profile because its design approach is fundamental in any problem solving situation. Andrew Goldring is describing in "Permaculture Teacher's Guide" the methods for permaculture design courses. The practical skills, such as gardening, forestry, landscape design and so on, can be the ones which people already have. In the respective case of the community workshop in Aspern Seestadt we will integrate the public in community design issues and enhance their understanding of new strategies.²¹ The course proceeding will consist of a mixture of methods which are suited to different learning styles: verbal, discussions, seeing examples, practically by doing it.²²

¹⁷ VAN DER RYN, Sim / COWAN, Stuart (1996): Ecological design. Washington D.C. * Covelo, Cal.: Island press, p.8

¹⁸ I.c.: KLEIN et al. (1996). p.150

¹⁹ SCHARMER, Claus, Otto (1996): Reflexive Modernisierung des Kapitalismus als Revolution von Innen. Stuttgart: M&P. Verlag für Wissenschaft und Forschung <http://ottoscharmer.com/>

²⁰ I.c.: KLEIN et al. (2002). p.243

²¹ I.c.: VAN DER RYN (1996). p.150

²² GOLDRING, Andrew (2000): Permaculture TEACHERS' GUIDE. Permaculture Association Britain. P.22-28

There are five main themes to the course with the paradigm of systems analysis²³ problem solving:

- + **Understanding** the case – Problem identification: writing case studies and papers, excursion
- + **Conceptualizing** through synthesis by methods of knowledge integration: lectures, Future Search conference,
- + **Causal explaining** based on arguments – generation of alternatives: community design workshop
- + **Evaluation** of different alternatives and choosing a solution
- + **Implementation: Dissemination and exploitation** – strategies for the city of the future

2.1.. UNDERSTANDING THE CASE

The deep meaning of permaculture is not a pure scientific discipline; it is the epistemic basis of combining prodigious wisdom of the past with appropriate knowledge of present social, ecological, technical and economic issues. We should reconsider the potential of vernacular architecture and urban design of the past, often embodied with an intimate knowledge of the locality, climatically and cultural, optimising the local environment, through the manipulation of the site, the forms of the building and organisation of external space. Participants of Permaculture Design courses strive to learn for maximising resources, producing or saving energy, eliminating waste by reconnecting unused products back into the system through the accent of careful planning. Finally we can say it is a patterned approach and ethical method for designing systems to meet human needs which are accessible to all.²⁴

At the beginning we have to **identify the problems**. This means formulating the goals, objectives and aims of the project. We also have to consider constraints, measures of effectiveness and identification of stakeholders.²⁵ “The key epistemology of cognition on this level are: synergy of understanding and empathy, feeling, pictorial representation in memory and intuitive comprehension.”²⁶ If we are sensitive to the nuances of the place, we can inhabit without destroying.²⁷ **Observation** is the fundamental skill required to permaculture. During our courses we were experiencing a high variety of different know how and practical experience from the participants in relation to visual perception. We can assume that people with diverging education have a different approach within their own personalised ‘paradigmatic field’. This needs a heterogeneous and critical approach during the design process.

Ecological design begins with the intimate knowledge of a particular place.²⁸ At the beginning we have to analyse the locality, the identity of the place - ‘**genius loci**’ - , the local specific characteristics - radiesthetical lines - and in particular we have to dispute about local knowledge and oral history with the local people. The collective memory of people who live in the neighbourhood provide experience of soil, vegetation, crops, and weather which is necessary for the design process.

Wang Shu has been decorated with the Pritzker architecture award this year, he lamented about the rapid development of Chinese cities and the break-down of traditional building structures as tools of profitmaking. Instead of this he appreciates the local culture and the small sized local handicraft vernacular values. Villages, he says are conserving much better the essential values than mega cities.²⁹

The Austrian architect Bernard Rudofsky the author of ‘**architecture without architects**’ manifests in his book here his genius for seeing and explaining the meaning of vernacular architecture. Prodigious built up structures of former times, like vernacular architecture “goes to the roots of human experience and is thus of more than technical and aesthetic interest. Moreover, it is architecture without a dogma”, states Rudofsky.³⁰ Vernacular architecture is a category of architecture based on localized needs and construction materials, and reflecting local traditions. The vernacular is much more than a style; it is a code of good manners that has no parallel in the modern urban world.

²³ I.c.: KLEIN et al. (2002). p.246

²⁴ ENGELHART, Reinhard (2011): Requirements to a sustainable agriculture. http://www.umweltbildung-noe.at/upload/files/FOCUS/Engelhart_nachhaltige%20Landwirtschaft.pdf

²⁵ I.c.: KLEIN et al. (2002). p.246

²⁶ I.c.: KLEIN et al. (2002). p.243

²⁷ I.c.: VAN DER RYN (1996). p.57

²⁸ TREBERSPURG, Martin (1994): Neues Bauen mit der Sonne. Wien, New York: Springer

²⁹ In: Der Standard vom 26.Mai 2012. WANG SHU „Der Entdecker der Langsamkeit“

³⁰ RUDOFSKY, Bernard (1977): The Prodigious Builders. London: Secker&Warburg.

The elements of graphic design in **vernacular architecture** and open spaces are suitable in a timeless way for any design-repertoire. “The future of vernacular architecture looks none too bright; it is caused by concern with the rapid loss of those traditions that for ages had imprinted an unmistakable identity on the land and its people.”³¹ Vernacular architecture is a category of architecture based on localized needs and construction materials, and reflecting local traditions. Vernacular architecture of torrid zones were rich in ingenious cooling devices, windscopes were cooling the breeze in the street, vertical green architecture, unfurling sun sails in the atrium, and finally the pergola with an awning is a three dimensional pavilion without walls and ceiling.

Let us compare the characteristics of **conventional and ecological design** that illustrates the necessity of knowledge integration. Conventional design relies on fossil fuels or nuclear power, it consumes natural capital and standard templates are replicated all over the planet with little regard to culture or place. On the other hand ecological design lives of ‘solar income’, responds to the bioregion and solutions grow from place.³² Until recent times the prevailing architectural design and spatial planning epistemology considered built up and geographical areas as technical, social and economic entities for classifying, profitable use and exploiting. “For our purposes, let us define design as the intentional shaping of matter, energy, and process to meet a perceived need or desire. Design is a hinge that inevitable connects culture and nature through exchanges of materials, flows of energy, and choices of land use.”³³

Since the 60s and 70s of the last century people became aware of fossil and nuclear disadvantages.³⁴ Especially in the U.S. and U.K. outstanding personalities were starting to disseminate new ideas of a solar culture. Peter Harper and Godfrey Boyle were influencing the discussion in Austria with their publication ‘Radical Technology’³⁵ and most of all with an impressive exhibition in the Centre of Alternative Technology (www.cat.org) Machynlleth, Wales.

Peter Harper has been writing and teaching about sustainability for many years. In his view the principal aim of permaculture is to help humanity through the 21st century by **developing models of efficient, materially lean but culturally rich modern living**. A great part of this will come about by training a proportion of the people in the richer parts of the world to reduce their ecological footprint down to 20%, perhaps less, of the prevailing levels, not just by technology but by much deeper and subtler changes in culture, lifestyle, tastes and organisation.

Example: Having showers instead of baths could save 15% of your water. If you have a car you will never get to 20%. Assuming you get 90% of your food from elsewhere, diet and purchasing policy will have a far greater effect on your footprint, and the take-up of new dietary and food choice ideas is likely to be far, far higher than growing more of your own. Basically you eat less meat, less processed stuff, eat organic wherever possible and support local growers. Generally speaking, in any one area of sustainability – energy, water, waste, transport etc. – you can reduce your ecological footprint by 10 or 20% with very little effort or cost.³⁶

A Technological revolution does not result generated by new techniques, but much more through human beings who take the occasion. This is how any technological, social, economic change happened.³⁷ Of course, first they ignore you, then they laugh at you, then they fight you, then you win (Mahatma Ghandi). Hermann Scheer is describing advantages of a new solar world economy which relies on renewable energies. He compares the exaggerated different flows of energies between fossil/nuclear and renewable energies, so that a disposition of different links for solar resource values get

³¹ I.c.: RUDOFISKY (1977): p. 276

³² I.c.: VAN DER RYN (1996) p.26

³³ I.c.: VAN DER RYN (1996) p.8

³⁴ WEISH.P / GRUBER E.(1975): Radioaktivität und Umwelt. Stgt. Fischer Verlag

<http://homepage.univie.ac.at/peter.weish/schriften/Radioaktivit%20E4t&Umwelt%201975%20Kopie.pdf>

³⁵ BOYLE, Godfrey / HARPER, Peter (1976): Radical technology. London: by Undercurrents Limited.

³⁶ HARPER, Peter (2000): What? Car Maintenance in a Design Course! In: I. c. GOLDRING (2000) S.36-42

³⁷ SCHEER, Hermann (1999): Solare Weltwirtschaft. Strategie für die Ökologische Moderne. München: Antje Kunstmann

visible.³⁸ But most of all we have to think about a deep change of our lifestyle with a high sense of responsibility for achieving the priorities of a 1,5 Kilowatt society.³⁹

Considering our design course with students from ten different countries in Aspern Seestadt, we need **awareness raising** for explaining a new lifestyle. Boris Mihatsch a psychologist was asking the question at our PDC-AS Kick off meeting in July 2012: How is it possible to raise awareness of people so that they start trying to minimize their ecological footprint? He was describing the situation:

- Many people know that there needs to be done something but don't do it
- Some people even want to do but don't have the tools to do it or don't know how.
- Many people are lazy: It is much easier to go to the supermarket nearby than to do something

So attitude formation of people can be changed through learning processes. As an example he was explaining an interesting attempt from a fusion music festival with hundreds of people: "Gratification for collecting garbage in combination with information" (e.g. "Please collect bottles separately from the rest of the garbage.") People were surprised: Why gratification? Because for many people there needs to be an impulse (like a critical mass) to act contrary to those actions they learned all their life.

2.2.. CONCEPTUALIZING METHODS OF KNOWLEDGE INTEGRATION

At the second level a shift occurs from a holistic real-world perspective, at the first level, to a system model level. In the middle level, synthesis is an important step for establishing methods of knowledge integration. But for sustainable development the need is more for appropriate philosophy than the appropriate technology.⁴⁰ Therefore we need a new paradigm in planning and design. Weisbord for example, describes a kind of idealistic planning and interactive processes of learning, empowering, democratizing and partnering. Within the functioning of **future search conferences** he shows how to increase everybody's power at all levels, sharing information and fostering learning processes. The creation of renewable energy policy in a bottom up process needs a balanced horizontal flow of power, which is based on three horizontal power processes: learning, dialogue and action, states Weisbord.⁴¹

- First **learning** means understanding the realities and the possibilities, for creating basic goals for the period of ten years and beyond for the long term vision.
- Second within a **dialogue** selecting and debating priorities for examining the present realities and possibilities by organizing all stakeholders in the planning process. We have chosen the methodology of a search conference to explain the nature of the conference as a new planning process, and we will bring people together with diverse interests to create shared vision, innovation and collaborative action and do joint planning. For developing common ground with the participants we will introduce mind-mapping as a strategy for learning and note taking.⁴²
- Third making choices within active participation for **action** and a search for options to move toward a solution, from everybody (municipalities, civil sector, etc.) accepted.

The design of a search conference provides a way to enable all the participants to develop a picture of the whole situation that affects their purposes. Prof. Borislav Stojkov was initiating at the IPSOIL Kick-off meeting in Neusiedl am See in 2007, the concept of a "**Soil use pentagon**". He is explaining "Planning and land administration are the result of rational societal behaving, spurring the **pentagon** (people, economy, property rights, governance, soil) as the complex and dynamic system by their actions, with all positive and negative feed-back loops between key factors, and its' meaning for the future of transitional societies. As a result all other factors will change their position and meaning in the system. „If the soil will be the victim, the ultimate victim will be the people.“

³⁸ SCHEER, Hermann (2010): Der EnergETHISCHE IMPERATIV. 100% jetzt: Wie der vollständige Wechsel zu erneuerbaren Energien zu realisieren ist. München: Antje Kunstmann. P.85

³⁹ DÜRR, Hans-Peter (2003): Die 1,5 Kilowatt- Gesellschaft. Intelligente Energienutzung als Schlüssel zu einer ökologisch nachhaltigen Wirtschaftsweise. Global Challenges Network (vgl. die 2000w-Gesellschaft, <http://de.wikipedia.org/wiki/2000-Watt-Gesellschaft> Stadt Zürich!)

⁴⁰ REES, William E. (1998): Understanding Sustainable Development. In: HAMM, Bernd / MUTTAGE, Pandurang K. (1998): Sustainable Development and the Future of Cities. London, Centre for European Studies. P.39

⁴¹ WEISBORD, Marvin R. (1992): Discovering Common Ground. San Franzisko, Berrett-Koehler Publ. p.177

⁴² How to make a mind map http://www.youtube.com/watch?v=v8_H42Z9wxA

2.3..EXPLAINING PATTERNS FOR THE CITY OF THE FUTURE

Finally on the third level it is the **epistemic** of causal explanation based on arguments. The knowledge of an appropriate response to climate and vernacular architecture was fundamental to the planning of many traditional settlements and urban design often embodied an empathic knowledge of the locality

For centuries from ancient times up to modern times of Europe the discipline of **painting** was prestigious as a cumulative discipline.⁴³ Especially during the Renaissance there was no schism or separation of the natural sciences and fine arts. In the wake of enlightenment the fine arts are in opposition towards nature. For distinguishing the fine arts and science, Goethe said, science is rationality and the fine arts its mechanism. Having said this, any visual-descriptive picture is an important information carrier.

Christopher Alexander⁴⁴ laid the foundation with the **‘pattern language’**, for a new theory of architecture, building and planning. All design and construction can be guided by a collection of communally adopted planning principles called patterns. Pattern language is an explicit set of instructions for designing and building, which defines patterns at every scale, from the structure of the region, the open spaces, to the trellis in the gardens. It is an archetypal language which enables any lay person or group of persons to design any part of the environment for themselves.

In the past all design and construction had been guided by a collection of communally adopted planning principles called here **patterns**. “The pattern language represents a system which allows its users to create an infinite variety of these three dimensional pattern combinations, which we call buildings, open spaces and cultural landscapes. The essential feature which every pattern has is that it forms the basis for the shared agreement in a community.”⁴⁵ The pattern language indicates a network, spread always from the larger patterns (e.g. region) to the smaller ones, always from the ones which creates structures, to the ones which embellish then those structures. The sequence of patterns represents both a summary of the language, and at the same time, an index to the patterns. Finally this sequence of patterns is also the **‘base map’** from which you can make a language for your own project.

Let us now take the Aspern-Seestadt townscape, as an example for a city of the future.⁴⁶ When you look through the **‘Pattern Language’**, you will find many patterns relevant to identifiable neighbourhood, accessible green-edible landscape⁴⁷ and edible towns⁴⁸, bike paths, positive outdoor space etc. Let us begin by asking how we can build a pattern language for open spaces. A typical pattern might be the **‘positive outdoor space’**. Outdoor spaces which are merely **‘leftover’** between buildings will, in general, not be used.

Therefore: Always place buildings, arcades, trellised walks, so that the outdoor spaces they form are convex in plan.⁴⁹ The practical procedure which you can use to promote the use of patterns will be guided by a collection of communally adopted planning principles. The collection of formally adopted patterns should be reviewed on the basis of explicitly stated observations and discussions with experts.

2.4. EVALUATION of PROJECTS FOR A LOW CARBON SOCIETY

With systems analysis problem solving, evaluation has a highly significant value in spatial planning. Evaluation procedures have to consider the impact of different alternatives on system goals and stakeholders and this way also finally influence the final solutions’ choice. When using the careful ecological accounting in the permaculture it provides an accurate determination of the environmental impacts of design, allowing these impacts to inform the design process.⁵⁰ **Ecological accounting** begins with a careful choice of interpretation. Typical accounts like indicators cover the type and quantity of ener-

⁴³ KUHN, Thomas S.(1967): Die Struktur der wissenschaftlichen Revolutionen. Fft. Am Main, Suhrkamp. p.172

⁴⁴ ALEXANDER, Christopher et al.(1977): A pattern Language. N.Y. Oxford University Press.

⁴⁵ ALEXANDER, Christopher (1975): The Oregon Experiment. New York, Oxford University Press

⁴⁶ SCHEUVENS, Rudolf et al. (2011): Vision und Wirklichkeit. „Die Instrumente des Städtebaus“. Wien: MA18

⁴⁷ TATSCHL, Siegfried (2009): Essbare Landschaft – Stadt. In: PERMAKULTUR ZERTIFIKATSKURS.

http://www.academia-danubiana.net/documents/2010j_A.D.6-2010_Permakultur_Gruenner_10.02.01.pdf S.51-59

⁴⁸ Andernach Gärten: „Pflücken erlaubt“. <http://www.3sat.de/mediathek/?display=1&mode=play&obj=31393>

⁴⁹ I.c.: ALEXANDER, et al. (1975): p.123

⁵⁰ I.c.: VAN DER RYN (1996) p.82-85

gies (e.g. sun, wind, etc.), water quality, materials/material wastes and land used within a design. If we trace all of the design impacts over its complete history, we are performing life-cycle thinking in its spatial planning context - Ecological design demands that we inquire after everything we use:

- what was sacrificed to create it?
- what harm to people, animals, and nature was caused by its creation?
- can the material be recycled or reused at the end of its useful life in a structure?
- how much energy is used in transporting agricultural products to consumers?
- how much energy is required to manufacture the material and related products?

The very idea of this permaculture design course is to ask the question: What we learn on a regional, municipal and local level about the prodigious wisdom in permaculture. Mollison believes that everybody can learn from nature (and become a designer) for developing a worth living future. The global economy and its entirely pro-growth oriented economic thinking and aggressive 'advertising' performs an important function in conditioning consumers to become themselves proliferative of this kind of cultural behaviour. Breaking these barriers is a big challenge for permaculture. Wang Shu, the above mentioned Chinese Pritzker prize winner is warning about the endangerment of the building boom. Large lump development is based on the idea of replacement. Piecemeal growth is based on the idea of 'repair'. This should be the basic and essential argument for the students, getting informed about visions for the future of the city.

The students in the Permaculture Design Course will have all opportunities for elaborating design concepts without any constraint or political exertion of influence. For setting up the ideal of a free society as "a society in which the realm of good traditions have equal rights and equal access to the centres of power" Paul Feyerabend already quoted at the beginning of this text was demanding 'the separation of science and state', in order for us to achieve the humanity we are capable of.⁵¹ This were sensitive issues at the Architectural symposium "anders als geWohnt" June 3rd 2012. Prof. Rudolf Scheuven the president of the Aspern advisory board had there demanded: "We have to understand Aspern as a laboratory. Its' an area of an experiment to put regulations into questions". Dietmar Steiner, the director from Architekturzentrum has complemented: "Bureaucracy is not adaptive. There are contradictory regulations. We have to make demands on anarchic and lawless building activities".

If we take the **masterplan** which specifies the future growth of the new city, it prescribes the land uses, functions, heights and other parameters. It creates totalitarian order, but mostly not organic order.⁵² Christopher Alexander is describing the idea of organic order: "Everyone is aware that most of the built environment today lacks a natural order, an order which presents itself very strongly in places that were built centuries ago. This natural order emerges when there is perfect balance between the needs of the individual parts of the environment, and the needs of the whole. In an organic environment, every place is unique, and the different places also cooperate, with no parts left over, to create a global whole – a whole which can be identified by everyone who is part of it."⁵³

By **piecemeal growth** we mean growth that goes forward in small steps,⁵⁴ where each projects spreads out and adapt itself to the site and attuned to the nature of the terrain, the trees, the greens and the character of the buildings. Piecemeal growth works to create organic order. Its' an arcaded path added to connect two buildings, its community gardens⁵⁵ instead of lawns, an outdoor room covered by trellis, a café in a sunny corner, canvas roofs which are in harmony with wind and light and sun. Finally if we compare the same budget, we will have a great number of smaller projects with the piecemeal scheme creating organic order versus large lump development with a few large projects.

Once a set of patterns has been adopted by the planning realm for the new city, we may sketch the diagnosis for each pattern in the form of a map.⁵⁶ The **principle of diagnosis** explains, in detail, which spaces are alive and which ones are dead. The map has four colours. Let put them in:

⁵¹ <http://plato.stanford.edu/entries/feverabend/>

⁵² Compare the MASTERPLAN Aspern Seestaadt - <http://www.aspern-seestaadt.at/en/workstyle-lifestyle/master-plan/>

⁵³ I.c.: ALEXANDER, et al. (1975): p.10

⁵⁴ I.c.: ALEXANDER, et al. (1975): p.67-100

⁵⁵ Contact: Permakultur Austria (<http://permakultur.net>), Sepp Holzer <http://www.youtube.com/watch?v=Bw7mQZHfFVE> Krameterhof http://www.youtube.com/watch?v=P3y_MfZFrGM&feature=related Gartenpolylog (www.gartenpolylog.org),

⁵⁶ ALEXANDER – Das Oregon Experiment, <http://byrd.de/index.php?id=703>

- **yellow** indicates places where the pattern exists
- **orange** indicates places where the pattern very nearly exists
- **Red** refers to those areas which are virtually unusable
- and finally **violet** (or red hatching) refers to those areas where the pattern does not exist at all

As an example of the diagnostic map we take ‘**outdoor space, positively designed**’. The areas marked yellow represent outdoor spaces that are good positive zones. The orange areas represent outdoor spaces that require some modification, and the red areas need more substantial repair.

Besides the analysis of the design concept and diagnosis of important patterns, the main focus of the evaluation procedure is represented by: concrete principles, the definition of a transparent implementation process and a manageable number of clearly defined **indicators for measuring progress**:

- How to estimate the demand of energy for residential areas (KWh/person(day) ⁵⁷?
- How to increase resource efficiency and promote renewable energy in spatial planning ⁵⁸?
- Evaluation of the share of sealed surface
- How to develop new markets for agricultural regional products ⁵⁹
- How to estimate the ecological footprint of future residents in the new town and region?
- How to make a diagnosis of important patterns?

Nowadays 80% of the European population of the former 15 EU states live in metropolitan regions and their suburban surroundings. Everybody needs some help to orientate himself. Therefore two conceptions became accidentally more important. First of all the meaning of **identity**, which produces the impression that human beings, political and social institutions are asking, what about the essence of our existence and the question about identity. Our second notion is about the **region**. The dominance of globalisation conveys us much more for another understanding of local and regional issues.⁶⁰ For perceiving an interchange of ideas in relation to identity, an empirical study⁶¹ was carried out about future visions of the Rheintal in Vorarlberg. Statements of the inquiry in relation to **identity**:

- Local identity is a powerful matter for the region and it needs new rituals
- Identification of the space will happen only in cooperation with the community
- we have to induce the region into men’s brains (Schindegger)

Christopher Alexander is describing the **metropolitan region** as a pattern, which will not come to balance until each one is small, fractal-like and autonomous enough to be an independent sphere of culture. With regard to the regional metabolism and multifunctional land-use we have to proof the flows of resources, energy and waste, to the scale of the region – akin to the living metabolism on living organisms – which are the fundamental resources that sustain economic life. Multifunctional land use means to substitute the zoning principle of the rudimentary physical separation of urban and rural activities with a mix of patterns, which functions in order to benefit life in all its forms. This model of the new metropolitan ‘Donaustadt-Marchfeld’ region will create integrated patchworks of residential areas, proximity for all human activities connected with greenways, agriculture, and forestry related to wilderness.⁶²

2.5. STRATEGIES AND IMPLEMENTATION

With the fossil crisis the whole world is situated somewhere in a borderline situation. Neither political or economic decision makers have shown, that they are able to overcome these difficulties.⁶³ Hermann Scheer is describing in detail in his book ‘Solare Weltwirtschaft’ - strategies for a modern solar age and he is also forming a hypothesis in his second book “Der energetische Imperativ” – 100% renew-

⁵⁷ EFES – Energieeffiziente Entwicklung von Siedlungen <http://www.energieeffizientesiedlung.at/>

⁵⁸ SCHREMMER, Christof (2011): Sustainable Urban Metabolism for Europe. <http://www.sume.at/>

⁵⁹ ELER - Förderung der Entwicklung des Ländlichen Raums durch den Europäischen Landwirtschaftsfonds für die Entwicklung des ländlichen Raums http://europa.eu/legislation_summaries/agriculture/general_framework/160032_de.htm

⁶⁰ DORNHEIM, Andreas / GREIFFENHAGEN, Sylvia (2003): Identität und politische Kultur. Stuttgart, Kohlhammer. p.15

⁶¹ BERCHTOLD, Markus / SCHINDEGGER Friedrich (2003): Entwicklungsprozess Vision Rheintal. Befragung 2003.

Dornbirn, Vorarlberger Landesregierung – Raumplanung, p.4

⁶² I.c.: HOLZNER / KVARDA (2004): <http://www.mpc1.at/download/Kvarda.pdf>

⁶³ SCHEER Hermann (2002): “Solare Weltwirtschaft-Strategie für die ökologische Moderne”. München: Kunstmann. p.316

ables NOW! – a concept for a political economy of the solar age.⁶⁴ Scheer is announcing and making a declaration that agriculture and forestry will not be any more an economic residual, but much more a long lasting institution collectively for national economy.⁶⁵

A solar **employment-society** has to be seen from a different angle in connection with energy and resource structures says Jeremy Rifkin about the proceeding process of automation and elimination of working places.⁶⁶ Simultaneously a question of substance will become very important, how we will manage the time beyond our gainful employment. Mathias Greffrath is talking about a three-types-of-terms society (Dreizeit-Gesellschaft) where the people are pursuing one third of the time for gainful employment, one third for voluntary jobs, and finally the allowance of personal needs.⁶⁷

2.5.1.. Strategy for preserving & conserving our existing Living Environment

Conservation slows the rate at which things are getting worse by allowing scarce resources to be stretched further. Unfortunately, conservation implicitly assumes that damage must be done and that the only resource is to somehow minimize this damage. This philosophy was influencing in Austria many village renewal projects in the 70's and 80's, when housing insulation projects and decoration of facades and the preservation of natural resources was the primary goal.

Most of the landscapes with high biodiversity" are rural or cultural landscapes. They have been shaped by human activities particularly in agriculture, which was the main factor for the development of the high biodiversity and its maintenance today, to develop sustainable models of **integrated land utilisation**. It is the harmonious integration of landscape and people providing their food, shelter, appropriate energy technologies, intelligent transport needs and their socio-economic needs in a sustainable way.⁶⁸

The objectives of an **ecoregion** of the future will be, elaborating integrated land utilization by developing models, which reduce their impact on the environment and respect natural areas (ecotones - 'crossover of plants', and bio-corridors). There will be also no contradiction generating economic activities by facilitating environmental technologies and sustainable regional development through job creation. This should be the goal for regional development issues in the Aspern Seestadt in relation to the bioregion Marchfeld. In Aspern Seestadt we will also work on an open space concept with urban farming⁶⁹ and considering green corridors between the bioregion Marchfeld and Donaustadt. A crossed finger system can demonstrate the regional pattern for the city development plan.

2.5.2.. Strategy for regeneration and repairing

Regeneration is the repair and renewal of the living tissue. This may involve re-creating habitats or implementing renewable energies. It is a form of healing and renewal that embodies the richest possibilities of culture that actively regenerate human and ecosystem health. In Austria the model of an **integrated rural development** program has been applied in many regions and it supports rural infrastructure and village renewal projects. The SUME project "Sustainable Urban Metabolism for Europe" gives a lot of remarkable ideas and thoughts about resource efficient urban planning and design, based on the **urban metabolism** approach, the flows of resources, energy and waste, maintaining the urban system.⁷⁰ (c)

The key objective of the Austrian **Sustainability strategy** is to achieve a continuous increase in the market share of products and services with less resource and energy consumption. Particularly in the field of housing the demand for resources and energy in the construction should be reduced and covered increasingly by renewable sources or with increased use of recycled building materials.⁷¹ Ecological accounting includes the loss of abused land, kilowatt-hours of energy, gallons of water, pounds of

⁶⁴ I.c.: SCHEER (2010): Der energetische Imperativ.

⁶⁵ I.c. - loco citato: SCHEER (2002). p.320

⁶⁶ RIFKIN, Jeremy (1997): "Das Ende der Arbeit und ihre Zukunft." Fft.a.M. Fischer. Original publication: RIFKIN, Jeremy (1995) „The end of work“. N.Y.: Putnam

⁶⁷ I.c.: SCHEER (2002). p.325

⁶⁸ I.c.: HOLZNER / KVARDA, (2002)

⁶⁹ DIE ZEIT Nr.43, 20. Okt. 2011. In the midst of the city vegetable gardens are growing. www.urbanfarming.org p.31

⁷⁰ Sustainable Urban Metabolism for Europe www.sume.at

⁷¹ LEBENS MINISTERIUM, Federal Ministry of Agriculture, Forestry, Environment and Water Management (2002): The Austrian Strategy for Sustainable Development. Wien: www.lebensministerium.at p.59

eroded soil, and other environmental impacts of a specific design.⁷² If we trace all the impacts of a design over its complete history, we are performing a **life-cycle analysis**. For our case Aspern Seestadt it is a tool for making ecologically sound choices. “It reveals the relative impacts of the various stages of economic activity, from resource extraction through manufacturing, distributing, consuming and discarding.”⁷³

2.5.3.. Strategy for sophisticated stewardship

To manage our continually changing activities in land use planning, new ‘polycentric governing styles’ may support the dialogue between all the stakeholders, in an on-going process to create effective governance toward a ‘learning region’ co-affected democratically by everyone.

Stewardship maintains natural capital to the systems that ultimately sustain us. Therefore we will stimulate the mutual learning process for sustainable land use, fostering landscape identity and promoting a constructive encounter between persons with contrasting interests. This planning paradigm will take place at the future search conference with the collaboration of the local population, politicians, stakeholders of the region, students and teaching staff. Within this paradigm of planning all kinds of empowering, democratizing and partnering will support our investigations. It requires the careful maintenance and continual reinvestment that a good gardener might practice through weeding, watering, enriching the soil with compost, or adding new varieties.

This option of future has already begun in the transition town of Totnes, U.K. with an active population⁷⁴. The municipality of Vienna has a big chance, is finding itself, at the starting moment of creating the city of the future through the participatory process just in Aspern.⁷⁵

2.5.4.. Dissemination

Due to continuing the idea of the project we want to disseminate the results of the intensive program to empower a dialogue on a local and regional basis. The learning outcome will be a **comprehensive paper** carried out by each group. Finally the project will end up presenting the best practices of the Permaculture Design Course to the public. In order to do so we aim to address and mobilize as diverse and balanced groups of learners as possible (with respect to age, gender, education, occupation, and income situation etc.), if possible in cooperation with organisations experienced in lifelong learning and the empowerment of stakeholders.

The Web-learning environment will be used for dissemination of the material, group discussions, feedback for teachers as well as portfolio evaluation for students. The study material produced during the IP will be used later in all participating organisations.

2.5.5.. Exploitation

Exploitation consists of ‘mainstreaming’ and ‘multiplication’.

Mainstreaming is the planned process of transferring the successful results of the programmes and initiatives to appropriate decision-makers and medias in regulated local, regional, national and European systems. The results of the design course will be summed up and made available for long term target groups (inhabitants of the Seestadt, representatives of the municipality of Vienna, and also municipalities and NGOs’ and universities within the Danube region).

Multiplication is the planned process of convincing individual end-users to adopt and/or apply the results of programmes and initiatives. Main target group of the project and its outcomes consists of students (undergraduate and postgraduates) in relevant disciplines. The **decisive intention** is to help the public and multi-stakeholder groups of different professions (students, pedagogues, scientists, politicians, farmers, land owners, learners in adult education and others), who are directly or indirectly involved.

The **participants** of the “Permaculture Design Course” will come mainly from regions of the **Danube** catchment areas. They will transfer the permaculture knowledge and demonstrate good land-use prac-

⁷² I.c.: VAN DER RYN (1996). p.82

⁷³ I.c.: VAN DER RYN (1996). p.93

⁷⁴ TRANSITION TOWN TOTNES – eine Zukunft mit weniger Öl – Video <http://www.transitiontowntotnes.org/>

⁷⁵ ASPERN Seestadt: <http://www.aspern-seestadt.at/die-vision/> <http://www.aspern-seestadt.at/publik/>

tices for the city of the future in the region they come from. The expected outcome and project results will be summarized in a compressed version for a **publication** “Permaculture Design Course- Aspern Seestadt”., also published in the **media**. It will be a summary of the Intensive Program and proposals for permaculture garden and open space design in the Aspern Seestadt. We will translate from the source language English into other languages - Slovak, Slovenian, Croatian, Hungarian, Serbian and also Portuguese. The information transfer will raise awareness for permaculture design and planning.

This project is based also on the Danube Strategy. The **EU Strategy for the Danube Region** is describing in the document ‘action plan’ concrete priorities for the macro-region. The Academia Danubiana a network of excellence is mentioned in the Danube strategy as an example of a project. **“To implement the strategy for soil protection - Responsible, multifunctional use of land and soil and linking connections to the regional development, as well as the appropriate governance tools and the “learning region concept” would be developed. The project should link to the work already undertaken within the Academia Danubiana in this field”.**⁷⁶

The **action plan** “Protecting the Environment in the Danube Region and especially focusing on preserving biodiversity, landscapes and the quality of air and soils.”⁷⁷ The action - “To raise awareness about soil protection” could be achieved in cooperation with the European Land and Soil Alliance (ELSA), including more than one hundred members from seven Member States (UK, NL, DE, CH, IT, AT, SK, some municipalities of the CZ). Further partnerships in the Danube Region should be initiated on communal level and in the educational domains.⁷⁸

CONCLUSION

Prodigious wisdom and appropriate technology means, that in an era of transition we have to formulate the principles and methods within new ways of knowledge integration. Within that frame of mind and intention, we do believe to make people feel for new ways of thinking and working. Kromp-Kolb from the ‘Centre for Global Change and Sustainability’ in Vienna argues about climate policy: “If we want to reduce temperature and CO2 concentration globally, we have to achieve permissible emissions up to 2050 to less than 3,0 tons of CO2 per person and year.” This means we have to cut emissions by changing our lifestyle by reducing our demands on consuming, increasing efficiency, using renewable energies, protecting our soils and developing generic skills of place making.

We can start where we are. If we want to succeed we will emphasize to show opportunity changing our life style and leading people to understand appropriate technologies in relation to prodigious wisdom. We are now in the midst of an era of transition. Jean Gebser outlined for each new development in the collective consciousness of a culture an unfolding of deeper and wider perception and value.⁷⁹

For our project “**Permaculture Design Course**”, we will take the **art** as a metaphor and as a cumulative and integral discipline, for working on common ground with different subjects, describing elemental parts of life. For integrating and visualizing multifunctional regions and different land-use systems within an aquarelle⁸⁰, we can emphasize a visionary picture: “*Like patches of watercolours on wet paper, different regions soft overlapping will intermingle in an ecotone, to create, like a new spectrum of colours, the landscape of the future.*”

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⁷⁶ European Union Strategy for the Danube Region. {COM(2010) 715 final}
http://www.oerok.gv.at/fileadmin/Bilder/2.Reiter-Raum_u_Region/4.Europ-Raumentwicklung/Makroregionen/EUSDR/Docs/2010-12_EUSDR_ActionPlan_EN.pdf p.52

⁷⁷ European Union Strategy for the Danube Region, p.47

⁷⁸ The cooperation could be enhanced via the already existing working group “Ecology with a focus on soil protection” operating within the ARGE Donauländer.

⁷⁹ van der Ryn: The Concerns and questions of ecological design. <http://www.vanderryn.com/Docs/IntegralSustainableDesign.pdf> p.51

⁸⁰ I.c.: HOLZNER/KVARDA (2004)