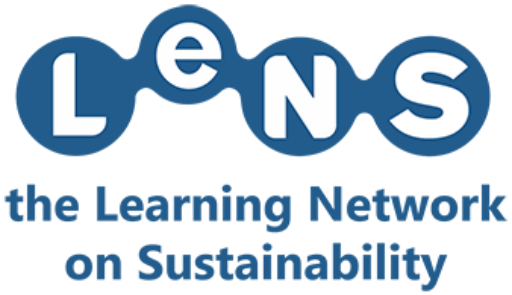

TRANSITION DESIGN – PRESENTATION AND EDUCATIONAL APPROACH

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ABSTRACT

In the wake of Richard Heinberg and Rob Hopkins's theories, the concept of Transition Design has found its place at the EESAB-Brest. It has been put in place to offer a curriculum to future designers with the aim of responding with a personal and creative approach to social and environmental issues related to the energy transition induced by the depletion of fossil fuels. This paper presents our approach, based on developing and transmitting resources on eco-friendly materials, multidisciplinary cooperation, local actions, the recovery of traditional know-how, methodologies for analysing and exploiting features of a specific territory, thinking about the adaptation of local knowledges to other territories, respect for others, moral and intellectual integrity of project partners and respectful and empathic communication. We conclude by presenting student projects to give concrete examples of our educational actions.

Key Words: Design, Transition, EESAB, Curriculum.

TRANSITION DESIGN – PRESENTATION AND EDUCATIONAL APPROACH

RESEARCH GOALS

This paper presents an educational programme in sustainable design and a research platform based on the Transition principle, both developed in our art school (EESAB-Brest (École Européenne Supérieure d'Art de Bretagne - European Academy of Art in Brittany), France) and named Design de la Transition (Transition Design).

The goal of our research at the EESAB is to elaborate a teaching programme to train designers to address societal and ecological challenges related to transitioning from fossil fuels to more sustainable energies and even to prepare them to become agents of this transition. Our approach is forward looking and we are trying to build on past experiences while also proposing innovative solutions.

The ambition of this communication is to share our experience and to create a dialogue on issues of energy transition and sustainability, both ecological and societal, in order to consider ways to rethink education.

At a time when scientific publishing has become a commercial enterprise, where international access to public research results is becoming increasingly complex, and where the value of a career is being played out over the number of so-called official publications, we are delighted to join our voice to yours by publishing through Creative Commons.

We hope to get in touch with new partners and to work for the development and consolidation of sustainable thinking for the human being and the environment.

THEORETICAL BACKGROUNDS

This project is based on Rob Hopkins and Richard Heinberg's theories about the necessity to start a voluntary transition toward a fossil-fuel-free society.

Thanks to works such as *The Party's Over* and *The End of Growth* (Heinberg, 2003 and 2011) Richard Heinberg severely challenges the relationship of Western and even global cultures to fossil fuels and the economic principle of growth. Heinberg outlines the limitations of current energy exploitation models and predicts their impending end due to depletion, resulting in the emergence of a crisis for all related activities, that is, virtually everything that is part of our western ways of life (object production, transportation, means of communication, agriculture, health).

In response to this problem and to the inaction of a majority of governments and industrialists, several citizen initiatives have emerged, such as Rob Hopkins's famous "Transition Towns," initiated in the city of Totnes in England. The idea is to rethink the modes of interaction between individuals and their environment in order to anticipate the end of the use of fossil fuels and the abandonment of the economic principle of growth and therefore of overconsumption (of energy, of objects, of humans). A growing number of publications and documentaries on the subject have emerged, resulting in the diffusion of the Transition principle developed in books such as *The Transition Handbook: From Oil Dependency to Local Resilience* (Hopkins, 2008).

As the movement grows, some professors of the EESAB-Brest design option have wished to take on the social and environmental issues of our century and to join the Transition movement.

PRÉSENTATION OF THE SCHOOL

The École Européenne Supérieure d'Art de Bretagne (EESAB) is a public institution of higher education training students in various practices of creation. It is governed by the national Ministry of Culture and it prepares for two degrees: the Bachelor's degree Diplôme National d'Art (DNA) and the Master's degree Diplôme National Supérieur d'Expression Plastique (DNSEP). The school offers three distinct options for each diploma: Art, Communication and Design.

The EESAB is spread over four sites throughout Brittany (27,000km²): Brest, Lorient, Rennes and Quimper. It is thus the largest art school in France in terms of numbers. Each site offers a curriculum that is specific to the research interests of its professors and its socio-cultural and geographical environment.

The team in charge of the Design option of the Brest site has decided to orient its pedagogical path to best meet the social and environmental issues related to Transition, and to make the designer, as a thinker of space and objects, a major player of this transition.

THE DESIGNER AND HIS/HER SOCIAL RESPONSIBILITY AS A CREATOR

The issues of sustainability and transition have to be addressed in art schools and even more so in a design option. In the past decades, art schools have abandoned their traditional approach based on the model of the artistic academy and have become experimental sites where artistic practices and societal models can be called into question and transformed. Art schools are often pictured as engaged, experimental, and posing a challenge to the institutions in place. These principles are obviously not systematic, far from it, but they can find in these establishments an appropriate conceptual and human breeding ground.

The context of Brest is also conducive to the development of the idea of Transition. Far from major French urban and cultural centres, such as Paris or, on a smaller scale, Nantes and Rennes, its position allows artistic questioning based on a local socio-cultural context and close to its territory. Thus, the reflection on art by local creators can go further than a search for recognition by legitimating authorities. To put it another way, the remoteness from cultural centres forces a more direct and concrete dialogue with a wider and more mixed socio-cultural diversity than that of the artistic microcosm.

As far as the designer is concerned, his/her role is too often reduced to that of a thinker of forms and colours valorizing and demarcating a product or a space by adding a symbolic and aesthetic value, for the benefit of an industrial structure within a competitive consumer economy. This is one of the many possible roles for the designer, who can accomplish more than what is pictured in this simplistic vision. Indeed, the Arts and Craft and Bauhaus - post biological turn (Michaud, 2003, p. 53) - present the designer as one who can intervene on reality through space and objects. That is to say, the designer would have the capacity to modify human beings and their behaviours in a global societal, even political, perspective. At the time of the development of theories such as those of peak oil, degrowth, Transition and the questioning of overconsumption and therefore of the production of objects, it is obvious that designers can again reinvest the social and societal principles that are the pillars of the great conceptual and historical movements of design.

To put it another way, the role of the designer is not to give shape *to* objects or places, but to give shape to a life in common *through* objects and places. In this sense, it seems clear that the designer can become a major player in the transition and that it becomes relevant to better equip future designers to move in that direction.

TRANSITION IN DESIGN

So, at a time when environmental issues are at the centre of our concerns, and when production issues can no longer be considered without also looking at the required resources and the resulting waste, the Transition Design concept seeks to rethink design practices to incorporate these concerns, with particular emphasis on local and regional dynamics.

The educational project within the Design option at the EESAB in Brest places the priority on context and emphasises the need for design to draw on local research.

The geographic location of the city makes Brest a peninsular territory rich in social and environmental biodiversity, but also one with a certain fragility, where the human impact is measured on a short time scale. It is against this backdrop that the program Transition Design has been established in order to understand this territory through the kaleidoscope of transition and to lay the groundwork for discussion on the implementation of resilient design.

The region's geographic location on the coast combines a social biodiversity with a rich and fertile natural environment. The region is based on a balance of different environments - urban, rural and maritime -, the outlying location of which requires a certain amount of consideration in terms of self-sufficiency and adaptability.

In addition to the region's various preservation efforts, including the Armorique Regional Natural Park, which spans 44 towns, and the Iroise Marine Park, which spans over 3,500km of coastline, there is also a large community network that is working to achieve greater adaptability and self-sufficiency, lots of third places that promote multidisciplinary and collaborative projects and centres of excellence in maritime and coastal scientific research.

Supported by a regional network of design schools, design practices have been redefined at regional level through a localised approach that highlights the importance of taking the designer's location into account.

In a transitional context, the designer will then seek to adopt an approach that takes both global issues and contextual factors into account as part of a dynamic working process. These global issues might, for example, take the form of politically identified indicators for initiatives designed to promote sustainable development

The global vision therefore outlines the perfect direction to take and a series of initial evaluative components, but it is out of touch with the complex and unique reality of real-life contexts. Projects implemented in real-life contexts generate the most concrete data but mostly at a later date. A real-time feedback relationship between the global and local components is therefore vital.

Projects developed using a Transition Design approach are developed using different resources and to different ends. Some adopt a sustainable development approach, whereas others adopt a retro-innovation or even circular economy approach. Depending on the context, these frameworks of action can be implemented simultaneously and do use certain methodologies.

HOW TO TEACH TRANSITION

How do we teach this emerging approach to design? When Rob Hopkins underlines the forward-looking nature of the transition approach by indicating that "[p]eople who are engaged in Transition Initiatives [...] are part of one of the world's largest research projects" (Hopkins , 2010, p.186; our translation), he induces that no outcome is predictable and that everything is an act of creation of new models. How, then, can we put in place an effective and coherent pedagogy?

This is exactly the kind of questions we are currently trying to answer at EESAB-Brest. And our strategy is to apply the methods of creation in art: the dialogue with matter and reality to bring out the unexpected. Thus, experimentation and analysis with feedback on experience are at the basis of our work and teaching dynamics. We place the student at the

center and apply principles of respect (of the other, of the environment), of openness and of collaborative work.

In this way, transition is not an exclusively "technical" response to resource-related issues, but also a human-centred approach based on moral values and principles.

Our educational program and our research platform - through a multidisciplinary, collaborative, inductive, iterative and socially inclusive approach - aim to make our school an involved actor of the Transition principle on its territory.

Technically, this will be enacted by developing or by transmitting resources on eco-friendly materials; multidisciplinary cooperation; local actions; recovery of traditional know-how; methodologies for analysing and exploiting features of a specific territory; and reflection about the adaptation of local knowledges to other territories.

Morally, the approach wishes to encourage behaviors of inclusion, respect for others, moral and intellectual integrity of project partners, respectful and empathic communication in order to think community and relationships. This seems obvious and should be the case in any context. However, it is clear that sometimes competition, differentiation and the ego of the creative artist are sadly at the core of art education.

Yet, in what regards the educational structure, art schools are fortunate in comparison with French universities. Indeed, the pedagogy, as well as the administrative and technical structures of the school are traditionally turned towards the development of each student's personal project. The teaching staff is therefore accustomed to adapting its pedagogy to the concerns of each student.

The real change happens in the networking between our students and professors and local partners who can work on a unique and specific project, as well as in the development a territory and its specificities in the global and local dynamics presented previously. Such projects require cooperation between players and a certain transdisciplinarity and are, for example, developed with the Fablab at the University of Brest's Faculty of Science and Brest-based schools of engineering, which are working with us to set up this educational program. From design, biology and sociology to electronics and IT, the accumulation and hybridization of skills and expertise are vital to the emergence of these new design practices.

We also use biomimicry as both a language, allowing us to communicate with other disciplines, and of course as a research process to draw inspiration from the living world when it comes to designing and innovating. Our biomimetics training module is certified by the Senlis European Centre of Excellence in Biomimetics. These are a few examples of projects we have worked on in the Finistère region.

Just like in an interindividual relationship, with the triptych student, professor and external partner, the result does not pre-exist the interaction and is partly unpredictable. It is the interaction between the different actors of the project that will allow the emergence of a specific pedagogy and its evolution. With this approach, the professor is no longer the holder of a vertical knowledge to transmit; he co-creates knowledge with the student and the partner, in a research-creation dynamic. The legitimacy of the professor is then much more closer to what Rancière addresses in the Maître ignorant (Rancière, 1987). This obviously has the effect of creating atypical and extremely different profiles after graduation.

We even have the ambition to consider our teaching as conducive to exceeding the degree and tending to induce the student to a process of perpetual learning.

In conclusion, our approach consists of a teaching curriculum and a special working environment designed to promote the development of transitional projects across the Finistère region. Its aim is to help students adopt an active learning methodology and multidisciplinary project management skills and to introduce them to the scientific fields relating to the issues they are dealing with alongside their artistic training.

To facilitate an easier and more professional dialogue with the environment and partners outside the school, we have developed an action research laboratory, the Designlab, to support students and young graduates in local professional integration through work in real conditions, by assisting with research contracts in real-world situations, with an incubation program to support business start-ups and by heralding a support channel for the production and circulation of student projects.

STUDENTS' PROJECTS

In order to make our approach to teaching and our actions more legible and concrete, this part is dedicated to the presentation of projects developed within the framework of the Design option of the EESAB-Brest site.

Corentin Vitre dealt with waste from the fishing, auction and canning industries, which discard large quantities of fish skin. Working alongside Sophie Menguy, a student biologist at the University of Western Brittany, they developed a plant-based tanning technique and succeeded in obtaining a technical and aesthetically-pleasing material that required no chemical treatment, resulting in the production of a leather referred to in tanning terms as 'exotic'.

[Figure 1] Fish leather developed for the Krak'en project © Corentin Vitre [Figure 2] Elec Green City © Alizée Gerard

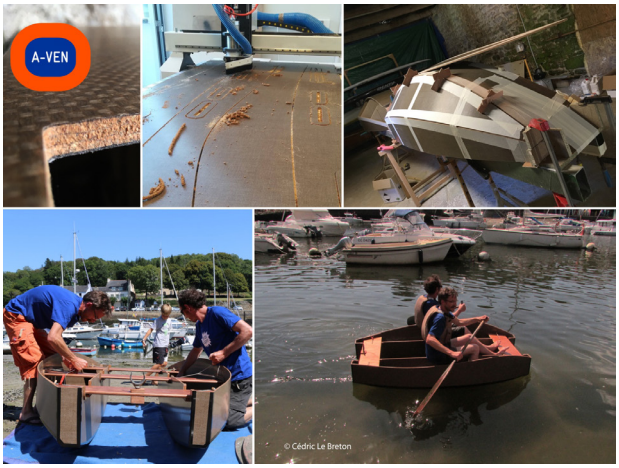
This project won the support of the Armorique Regional Natural Park, which works to promote circular economic flows, with a local auction house providing the raw material. The university's Fablab helped with adapting traditional tanning techniques, whilst local dressmakers expressed an interest in this sort of fish leather.

The Elec Green City project was the brainchild of Alizée Gérard, who describes herself as a bio-inspired designer. She took on the challenge of a city at the end of the network, namely Brest, which is not very resilient in energy terms, the idea being to create living walls on the facades of social buildings using a modular system and using the bacteria from the plant substrate to create a current to harness and amplify.

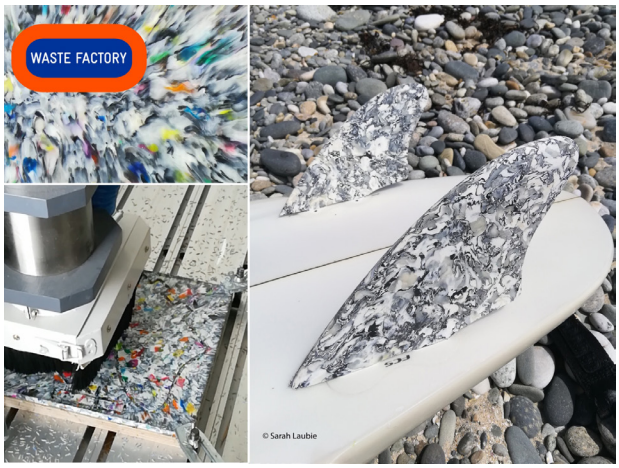
Current amplification is a technical innovation developed jointly by 2 electronic engineers from the university's Fablab, Christophe Bars and Julien Raoul. The electricity generated is proportionate to the planted surface and could locally and renewably power special temporary urban lighting that is better distributed than it currently is. This research is awaiting funding for a prototype.

A-Ven is a collaborative project run by Cédric Le Breton and involving research into efficient usage in micro-contexts and a more resilient approach to coastal sailing. The mini-catamaran is lightweight, easy to dismantle and transport and designed for sailing in estuaries and rias. Plans are under shareable Creative Commons license and the vessel is made of bio-sourced composite sheets.

This is a primarily a sustainable innovation project. The material used is a cork, flax fibre and PLA composite and the catamaran is 95% biodegradable by industrial composting. The plans are designed for easy digital cutting at



[Figure 3] Dismantlable catamaran A-ven © Atelier Z



[Figure 4] Recycled Surf fins developed in the Waste Factory project © Sarah Laubie

the Fablab, for example, and assembly involves a so-called conventional 'stitch & glue' technique.

This final project, run by Sarah Laubie, is called Waste Factory. On the one hand, it involves using low-tech tools to categorise, grind and recycle used plastics recovered from the sea, and on the other hand, a designer who comes up with relevant uses and designs for the material produced. Waste Factory has produced this collection of bio-inspired surf fins.

Waste Factory has been supported by and granted access to equipment at various academic research centres to develop the project. Sarah can gather her raw materials locally and has also identified a regional target for the goods she produces. She is now seeking to complete her own production facilities to ensure the project is based on a circular and sustainable economic model.

CONCLUSION

The practice of design, both for the theoretical principles developed by the historical figures of the discipline and the concrete fields of action today, is an ideal space for the concrete beginning of a response to the Energy Transition and for the anticipation of new social and environmental issues that will develop in the 21st century. The idea of transition also made it possible to consider new teaching approaches within the EESAB thanks to a teaching structure conducive to its development in art school. As you will have seen, a prospective approach based on a specific territory and involving transdisciplinary partnerships in good intelligence allows the emergence of innovative projects.

Our main question is now how to consolidate and develop this dynamic and evolving pedagogical model to make it both perceptible, reproducible and sustainable. There is also the question of the economic and legal model of such approaches, because of their collaborative dimension with partners with multiple statuses.

All these questions are currently being addressed within the school and we will be happy to discuss them with

anyone interested in sharing knowledge and sharing ideas.

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