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On the ground... and into the air

Research & Development for an eco-friendly habitat on rural Commune named Ambert

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Researcher at CRESSON, architectural and Urban Research Laboratory UMR CNRS 1563 (Architecture, Ambiance, Urbanity) since 1983, doctor in urban planning and development, (1992, Qualified Research Director (2002).

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ABSTRACT: To suggest some answers to questions about the future of the living environment of human settlements in rural areas, this article will discuss intensification assumptions adapted to new or rehabilitated housing projects in the rural commune of *Ambert*, administered by the department of Puy-de-Dôme, France. These assumptions are derived from shared education between the two Higher National schools of Architecture in Lyon (an area of study called master AA & CC “Architecture, Ambiances and Constructive Cultures”) and Grenoble (an area of study called master A & CC “Architecture and Constructive Cultures”). They are based on the research and partnership of two laboratories of the Grenoble architectural school, the research unit AE & CC (Architecture, Environment and Constructive Cultures, Labex MCC) and the research unit CRESSON (Centre for Research on the SOUND SPACE and the urban environment, UMR CNRS 1563 *Architecture, Ambiance and Urbanity*) . This collaboration foreshadows the construction of a solar powered habitat in *Ambert*, showing an approach centered on pleasant surroundings and local building habits.

Keywords: Habitat, Ambiances, Constructive Cultures, sustainability, energy and rural environment.

THE HABITAT OF THE FUTURE, CAN IT REMAIN LOW-RISE?

Our world is changing radically. The effective spatial awareness of sustainable development issues due to recent crises (social, environmental, financial and energy) leads to other approaches to habitat, land, social mix and tools to be used within the framework to be built. First of all, in rural areas, this finding prompts the building of an ecological, responsible and economical habitat, attractive for newcomers, reflecting new surroundings in rural conditions, integrating energy issues and ecological thinking, as well as on the level of materials employed and the production line of the components used.

Secondly, and in response to the request of some rural municipalities, the need for density, to avoid urban sprawl, invites us to restore value to all open spaces, on the ground and into the air. The designer is then asked to imagine buildings and environments that combine infrastructure, landscape, architecture, events, society, customs, cultures, energy and local resources. Thirdly, reflection across the territory implies rethinking the inhabitants' logistics mode. We must rethink both the modes of management of

natural resources essential for life (such as water), and agricultural space management methods, transport methods between food production areas and consumption areas, and modes of travel between different living areas. A new symbiosis must emerge between agriculture, mechanics and architecture by combining, in a more organic way, available and vacant lands, vehicles, housing and the working place.

Overall, this awareness challenges us about our lifestyles (increase or decrease?) and our major societal choices (centralized or decentralized?). At the political level and at the individual level, however, it is extremely difficult to make these choices without concrete indications of the opportunities available to us. These decisions can obviously not be taken solely on the basis of theoretical reasoning. Therefore, to gain the support of the majority and become effective, and more efficient, these choices should be informed by research and experiments carried out together on the constructive aspects and living ambiances of tomorrow's society, which bring quantified and tangible evidence of the feasibility or consistency of the proposals.

Hence the following proposals that attempt to connect, around the issue of habitat, in the small rural town of *Ambert*: sensitive approaches and technical education, landscape and individual living spaces, perceptions and measurements, sustainable approaches to the territory and expectations of ambiance, all these actions to address the transformation of multiple *Ambert* sites. At the heart of our concerns, the renewal of the rural habitat questions the alternative to the private home and considers density compatible with proximity, multiplicity of services, a gradual decrease in the use of the car, effective pooling of resources, rationalization of transport investment, and a guarantee of quality of life in shared spaces and a relationship with nature.

DEMOGRAPHIC CHALLENGES IN THE AREA OF AMBERT

Faced with population decline, the town of *Ambert* (6600 inhabitants) wishes to retain young people and welcome new populations. Many SMEs in the valley have developed in the areas of weaving, the wood industry and chemicals (*Sanofi*). If they have today 2500 industrial jobs, however, they have some difficulties in recruiting or keeping their employees. The obstacles come from the image of a town far away from active centres where a spouse has trouble finding a job and, specifically, a town without good housing: it appears unsuited to the needs of a population willing to settle there, who seek comfort, air, sun, nature-friendly buildings, and a feeling for the environment.

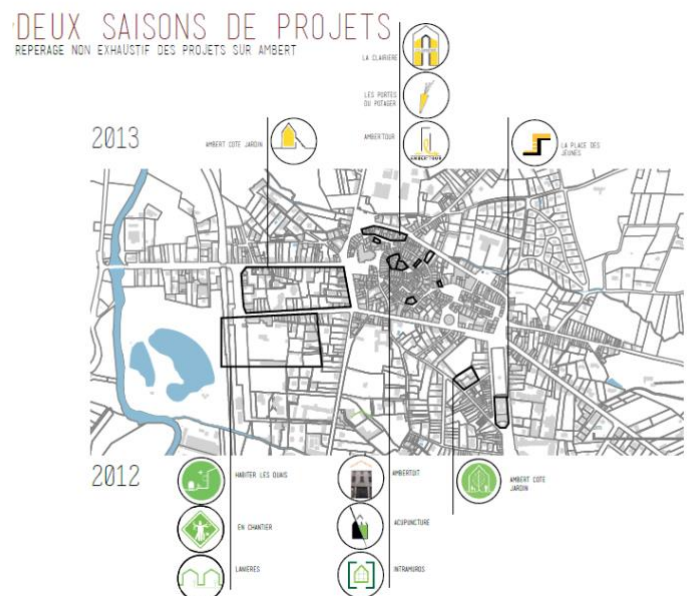


What is this new population? It is primarily well-paid executives. They come first for a year keeping their original housing, or they prefer to rent on site to reduce transport time. They seek a modern lifestyle with outside spaces, light and sunshine: a furnished or unfurnished rental. After the first completed year they move to *Ambert*, enjoying the quality of life, no longer having to make car journeys. They hope to buy a home in an existing or a new building. Of course they can settle in the

countryside, but they often need spacious accommodation close to the services offered by the town (leisure, culture and community activities are very lively in *Ambert*). The desire of the municipality is to encourage architecture students to imagine homes that attract: comfortable and contemporary interior architecture opening on to the outside, (not necessarily a private garden) but an exterior accessible according to the season; housing in the city centre, bright, spacious, plush, with a history, that is close to services, giving a sense of comfort, particularly in winter.

Secondly there are salaried workers who are hopefully recruited locally. Coming from rural areas they prefer the new or old houses on the outskirts of the town, with a garden (depending on their budget). They live while slowly modernizing their house bought for between 100,000 and 150,000 Euros. The most urban among them accept the shared garden.

Thirdly there are foremen, apprentices and medical aides who come to train for a few months. Numbering two hundred, they generate every year a high turnover of people. These employees' supervisors look for small or shared apartments, comfortable, with terraces and no gardens. The company *Sanofi*, owner of many homes for the reception of workers, converted them into temporary foster homes for foremen. But the houses are lacking and not really suited to employees who want to get away from the workplace and get nearer to the "town". A similar desire exists among the "many care assistants" who have little income and who accept small furnished, shared apartments near the hospital, rehabilitated homes in the town centre. As for apprentices, they would rather find shelter in hostels for young workers that do not exist locally. Some are housed in the local boarding school.



Drawing showing location of students' proposals between 2011 and 2013. *Floriane and Emilie Delesglise Etori, DEM master AA&CC Promotion 2013.*

The city council finally states that there is a demand for seasonal housing designed for pensioners living in villages or hamlets, and coming downtown in winter “because it is cold and there is nothing to do up there” on the one hand and on the other, for seasonal workers on construction sites and public works.

In conclusion the demands of the new townspeople are numerous and varied. The town centre should suit students, health workers, as well as those who love opulent homes. Today it attracts a few lonely people with small budgets. To reverse this tendency, the architecture students of Lyon and Grenoble were encouraged to offer new comfortable and attractive homes. Around the *Chabrier* garden (see map for location) a new rather up-market development is planned but the municipality wants a social mix. This leads the students to consider a spatial distribution of new inhabitants described above. On the land called “Prairie” in *Ambert*, near the station, would be built, for newcomers, new housing, some furnished rental, as well as seasonal homes. On the island development called “Island Foch”, a field on the western edge of the town centre, students propose an alternative to the house in the country by redeveloping an outdoor space, shared by the inhabitants, which would provide social and age diversity, suited to higher density.

PROPOSALS FOR THE HABITAT

But when we proposed this, many other issues were raised. What density is really tolerable? Which urban forms are adapted to this density? What former architectural styles allow integration into the existing ecosystem so as to maximize energy performance while preserving social diversity, equal access to services and the privacy of individuals, while addressing responses to fuel poverty? What substances or materials should be used to achieve economical levels while participating in the creation of an environment appropriate to habits and neighborhoods? What symbolic presence and what climatic role can plants have in this built-up environment? Which building systems and construction organizations are best suited to perform these complex assemblies while remaining compatible with the financial means of the majority? Which helpful devices can be envisaged to allow the poor to access housing, to meet the basic right of a roof over one’s head?

To submit an early answer to these questions that examine the future of the living environment of human settlement, here are some ideas shared between the national schools of architecture of Lyon and Grenoble.

1 / The habitat model which is preferred by 86% of French people, the detached house, is no longer compatible with life in *Ambert* because of transport costs between the home and the “town centre”, and between the home and the workplace. A new development located in the quarter called “Foch”, just on the edge of the ancient medieval fabric of the sub-prefecture, becomes possible if a large number of spatial sensations of a detached house (360 degree circular vision, neighborhoods a little way off, activities outside extensions, an accessible common garden, the existence of outbuildings...) can be preserved, improved and integrated into the local architecture of the *Foch island* near central town. The “rules” regarding the assumption of vertical densification have to be written so as to remain on a human scale. It is not a model that can be applied systematically, but one that can be adapted as for the *Foch island* built in the nineteenth century, an island with a large interior “garden” belonging to and appreciated by its residents, as the proposal below shows.





Rovy Pessoa Ferreira, Nicolas Schaad, Nicolas Wertheimer, DEM master AA&CC promotion 2014

2 / In *Ambert*, houses in the medieval town are narrow and have two or three floors. In a new configuration of apartments designed for wealthier people, leading to social diversity, the top floors can be converted into further elevation, to accommodate a laundry, a "sunbathing spot", a summer kitchen, a barbecue, a greenhouse, which would provide an additional common sheltered space for young children to play, get-togethers between tenants on public holidays, that would contribute to the development of the spirit of the spirit of neighbourliness and solidarity.



Rovy Pessoa Ferreira, Nicolas Schaad, Nicolas Wertheimer, DEM master AA&CC promotion 2014

3 / Ground floors of the town houses can easily include small industries or shops, as the sale of fabrics is very much alive in *Ambert*. Hence the idea for offices or business premises comprising a productive diverse urban mix, reducing travel stress for some people, ensuring also the exchange, or



sharing of single person transport such as bicycles or electric vehicles.

Anne-Claire Bouvier, Alexandre Chavanne, Aurélie Rodrogez-Fallard, Maud Royer, DEM master AA&CC promotion 2013

4 / The rehabilitation of the town centre can be achieved through a construction system based on a prefabrication of small elements which can easily enter through doors and windows, thus reducing installation costs, increasing the quality control of the construction, both these aspects constituting a critical given for the construction of buildings to "high" energy performance in the current French professional context.

Florent Faye, Adrien Gaillard, Noémie Paperin, Nicolas Vernet, DEM master A&CC promotion 2012

5 / Other innovative hypotheses? The idea of a



large training workshop shared with a craft

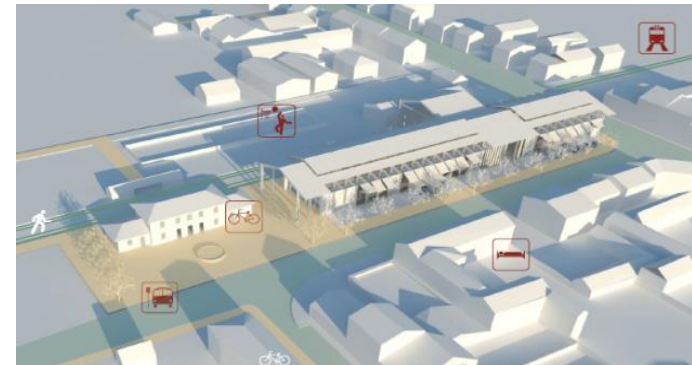
cooperative received the Award for Young Architects given by the city of Lyon. This project would help revive local construction procedures, wooden and earth pathways, by involving them in a youth training project.

Margot Clerc et Flora Picchinenna, DEM master AA&CC promotion 2013

TO CONCLUDE

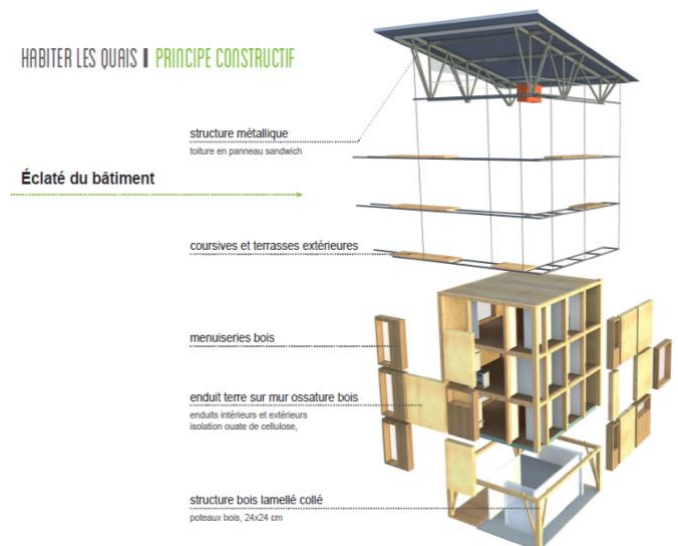
The teaching staff proposed the construction of a solar habitat prototype for *Ambert* in 2015/2017. The municipality has agreed to underwrite the architectural renewal of *Ambert* with renewable energies. It would be designed by a group of students and produced by local entrepreneurs sharing the project. An architect has offered to submit the building permit and supervise the students so that the project can be managed in their own name.

The prototype will have to demonstrate the ability of *Ambert* to survive the energy challenges of tomorrow. It will also demonstrate, once built and tested in situ by locals, the ability to meet local multiple perceptions and significations for number of people. All spatial planning, even the poorest, can be the bearer of meaning; and any construction, even the most complex, can be carried out mechanically. Project management on site might propose a profitable strategy to deliver energy and build a dwelling, but this strategy may be insignificant for people of that area. The meaning is personal and it also focuses on spatial and practical signs recognized by all. How then can we advance in energy saving by ignoring this phenomenon? What meaningful support can this ecological movement bring to *Ambert*, today? Can it be shared between architecture students and residents of rural areas?



Floriane Delesglise et Emilie Etori, DEM master AA&CC promotion 2013

The erection of buildings for food production has never been part of architectural and landscape proposals in *Ambert*, as it has traditionally been a “service” town. However, a change is taking place for at least two reasons: firstly, because food might give work to one half of a young couple who arrive without jobs. The second reason concerns pensioners and people in isolated hamlets, who “come down” to *Ambert* and are used to a vegetable garden. They could teach gardening to the new young couples. For example, on the outskirts of the town, this meeting between the two generations could totally renew the landscape.



Delphine Bugaud et Alice Gras, DEM master A&CC promotion 2012

The reader can see that new issues appear and because they deserve answers, the teaching staff has committed itself to research, funded by the French Office of Architectural and Landscape Research of the Ministry of Culture and Communication.

