For a construction that is also Agroecological

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The spectre of agroecology that looms over us must be realised in its entirety. There is no point in fighting agribusiness by producing agroecological food that is ‘free’ from the exploitation of human beings and nature by the capitalists! And it would be even better if we rounded off our struggles with a direct confrontation with the so-called "construbusiness", which erects the spaces of the world, both urban and rural, to exploit human beings and nature.

This ‘construction business’ appears before our eyes when we look carefully at the spaces we use to live, produce, study, trade, etc. We only have to look at how and with what means houses, schools, churches, shops, agro-industries, and production equipment such as silos, sheds, and greenhouses are built in the rural world. At a glance, it seems that these constructions do not present any problems if they are ‘well made’, just like the clothes we wear! Being ‘well dressed’ is what matters. This is because the hegemonic condition of

capitalism leaves us blind, and everything we see and know seems great and there seems to be no alternative to these constructions.

Just like agribusiness, which produces commodities (corn, wheat, rice, beans, etc.), 'construction-business' also produces its commodities: iron, aluminum, PVC, copper, on a global scale and a regional scale, cement, lime, sand, gravel, eucalyptus, pine, glass, synthetic paints, among others. The building sector is responsible for 21% of global greenhouse gas emissions, making it one of the human activities with the greatest impact on the environment, along with the energy, industrial, and transport sectors. Of this figure, 18% represents CO2 emissions from the production of cement and steel used to construct or renovate buildings. In 10 years (1999-2019) the demand for energy in buildings has increased by 161%. [1]

Limestone mining site in northern Brazil. Photo: Reinhard Jahn.

Commodities are generic goods that can be traded on stock exchanges worldwide, generating a lot of surplus value, concentrated in the beaks of the vultures of financial capital. The financialisation of housing has transformed housing into a commodity and financial asset, through a corporate sector that

speculates especially in central urban areas and promotes the digitalisation of renting, in which the management of this service becomes the new business. If housing has become a commodity, cities have become an investment, where investors speculate on areas and buildings according to the existing infrastructure and local potential (such as the presence of green areas, urban zoning, and accessibility, among others). [2]

The construction business operates on built matter all over the planet. We are sheltered from the sun, rain, and bad weather by it, in the constructions it makes, so we live in it. And even though we spend 90% of our time inside built environments, where air pollution can be as high or higher than outdoors [3], we can not succumb to it and its mode of production! We must fight for agroecological production and oppose the means of production of the capitalist multinationals in urban and rural construction.

Materials such as iron, cement, aluminum, glass, copper, PVC, and synthetic paints require a lot of investment to produce. These are long and expensive production chains. These intensively and centrally produced materials destroy the environment:

- To make cement, entire mountains are destroyed to extract the necessary minerals and a lot of energy is used to heat the blast furnaces;
- Planted woods such as pine and eucalyptus form kilometres and square kilometres of green desert, and the strongest and most resistant woods, used for roofing, for example, destroy native forests;
- Iron, steel and aluminium are like cement, giant deposits are exploited, robbing us of mountains, valleys and forests to generate coal and heat furnaces, as well as intervening in rivers for hydroelectric power;
- To produce bricks, more coal or gas, heating up the planet more by releasing CO2 into the atmosphere;
- To extract sand, riverbanks are destroyed;
- Gravel is pure dynamited stone;
- Chemicals for paints are also produced by destructive processes;
- PVC (polyvinyl chloride) comes from the oil chain;

We should therefore try to replace them with other materials, with those that we can produce, with quality and affordability, and use them only when strictly necessary. Spaces that use ecological techniques prioritise the use of local and/or easily accessible materials, reducing the damage caused throughout the

chain of production of these materials, whether through extraction, transport, or industrialisation. It also fosters the local economy and promotes social autonomy through local labour (which can be self-organised) and the management of natural resources and waste [4].

Earth construction processes. Photo: MST-SP and FAUUSP archives.

Those who run the construction industry are capitalist contractors, large, medium, or small. For the materials to reach these construction sites, a lot of diesel oil is burned and enormous distances are travelled, bringing many lorries loaded with heavy materials from the most distant points.

The ideological action of marketing on capital's building materials is astonishing. Take the long-running criminal campaign against wattle and daub houses, so common in rural areas of the Global South that they are avoided under the pretext of being a shelter for venomous animals when these can also lodge in holes in concrete houses. In addition, there is the stigma created by the elites and reproduced by many, that these materials are for the shelter of less valuable people, of the always unqualified working class, which instigates and reinforces prejudice. This alienation of information hides the benefits of building in consideration of the biome in which it is located: agroecological buildings can reduce energy consumption and atmospheric emissions, manage resources correctly, promote more comfortable

environments, and achieve material savings 3 to 4 times greater than modern buildings [4].

The way modern-conventional buildings are erected, there is a demand for technicians created by capital, such as engineers and architects, who are alienated from the world of work and dialogue with workers, producing projects far removed from the hands of the builders. In other words, there is no real ownership of the work on their part, as they are forced to follow the dictates of the drawings and carry out work that is also alienated. This is exacerbated by the fact that the calculation of a reinforced concrete beam or column is so complex that someone without a regulatory council would not dare to do it. In this way, everything that builders traditionally know about construction loses value, and they are deprived of knowledge.[1]

In another way, popular, class-based, in solidarity, integrated with nature and even more 'beautiful', construction in the countryside can, and should, be agroecological. The work can be carried out by the peasants themselves, in a system of self-management, mutirão, and co-operation, as is already the popular experience in various parts of the Global South, There is no need for a contractor. Producer cooperatives can, for example, take part in tenders and should contribute to the organisation of builders. In this way, no surplus value is generated if the builders' salaries are fair and democratically decided.

The environment does not suffer if the materials are extracted for their own consumption, on a small scale, with pulverised extraction spread across the territory. For example, if adobe bricks are used, the earth and plant fibres are taken from the vicinity of the building site, in small quantities, and because they are raw, there is no need to burn coal or firewood, very common in the manufacture of ceramic bricks, which require a high temperature for the rapid drying process in the kilns of the potteries. If they choose to use wood or bamboo, it can be planted in great variety on the sites themselves, because if forest management is carried out, with native species in Agroforestry Systems, there will be wood and bamboo for life. Paints can be pigmented with local soil, sometimes in a wide range of colours. There is also the possibility of covering the spaces with plant fibres, which last less but give excellent thermal and aesthetic results. Constant refurbishment is neither more expensive nor more

[1] Lobotomizados, ou com a parte frontal do cérebro extraída, como nos sugere Sérgio Ferro, 2006.

labour-intensive than installing roof tiles, and they are extremely light, saving on timber.

Construction of a bamboo and straw roof. Photo: MST-SP and FAUUSP archives.

The idea that these building materials have little durability is not true and reinforces the enormous prejudice surrounding products that do not come from the conventional construction industry. Treatment and preservation techniques have already been researched, allowing for a long lifespan, provided they are used correctly. For example, adobe bricks can be reinforced with recycled mortar, natural fibres, or lime, and can dry under cover for between 7 and 14 days, depending on the weather conditions. Bamboo, on the other hand, can be reinforced with other materials to increase its performance and resistance to pests, such as glass fibre and additives based on copper, chrome, and boron. [5,6]

After their life cycle, agroecological buildings can be reinserted into the environment without leaving a trace, as they are biodegradable and there are no ruins or rubble. At the same time, repairs, renovations, extensions, and replacement of parts are easy to carry out because the materials are local and

can be extracted from the environment, produced, and reproduced. Even if some non-natural components are added to improve the material's performance, it does not prevent its residue from being incorporated back into nature or recycled, because the amount used is very small compared to the amount of raw material.

The use of these alternative construction techniques is in keeping with the ancient building culture of our ancestors, adapted and technologically developed for each ecosystem. An in-depth technical analysis of a Xavante home, for example, beats the rates for healthiness, natural lighting, ventilation, water tightness, energy efficiency, and environmental integration more than any house built by a white coloniser using imported European techniques. It is therefore up to architects and engineers to come down from their pedestal offices and learn from the peasant and original people, and build with them, side by side, in fraternal and comradely dialogue.

The capitalist social division of labour is not a divine law, nor is alienated labour separated into designer thinkers and robot builders. It is a political decision. Once this is understood, the work is done through creative labour or free labour, and perhaps even artistic labour! Examples of constructions along these lines are all over the world, in spaces built by struggling builders who have realised the need to free capital in its construction business form. They are working in agrarian reform settlements, spaces for training cadres and popular education, quilombos, rural communities, riverside communities, or in the forests, carried out by popular movements, trade unions, or autonomous groups, sometimes accompanied by technicians who have broken with their elitist training. They are certainly beautiful works because they were made without exploitation and with joy. As they are new, they are part of collective processes of learning and exchange. In this way, they are experiments that seek, with each success or error, to adjust and correct our popular technological and cultural reality in a new human way of inhabiting the territory.

As it is a learning process that brings together theory and practice, through praxis, the desire and demand that formal education spaces in schools, technical courses, and universities should also follow this path, including experiences of agroecological construction in their curricula, contributing in some way to the ongoing process of social transformation. We can even move

the conversation on and correct what was said at the beginning, that capital attacks human beings and nature. But according to agroecological logic, we human beings are all part of nature. We are not separate from it, we are in it, we are it, in other words, our action on the world is different from that of capital. It's a total action! That's why food production and the buildings that house us are also agroecological!

Agroecological construction for everyone!

References

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