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OPEN BUILDING IN BRAZIL: IS IT POSSIBLE?

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Abstract

The provision of social housing in Brazil has been in progress since 2009 carried out by the Program Minha Casa, Minha Vida. The program, sponsored by the Federal Government, has seen little progress in relation to prior housing policies, also in regard to the quality of the dwelling spaces. Its production is quite opposed to the conceptual principles of Open Building, not addressing features such as flexibility, connectivity and efficiency, and offering ready-built, finished, standardised, non-adaptable, obsolete and under-utilised spaces.

The context of such formal housing mass production, based on productive capitalist principles, involves [1] agents and institutions of the private and public sectors, their properties and relationships, [2] the condition and the conduct of architects within the scope of their education and cultural heritage [3] and current Brazilian society considering the social, economic and political transformations of recent decades.

The logic of practice in this field, as carried out by the private market and legitimised by the State, hinders the participation of dwellers in the decision-making process related to the space where they will live. This contrasts with the prevailing practice of self-construction, and addresses the question, not as an architectural or technological issue, but mainly, as a political, economic and social issue.

In other words, the circumstances involve the market, the government, the professional, academia and the population, a context where capital prevails, ruled by consumerism, which in principle or historically, is not interested in developing evolutive spaces that are unlikely to be demolished for the construction of newer dwellings.

The text ultimately proposes to challenge and investigate to what extent it would be possible to apply the Open Building methodology to the Brazilian housing production initiatives, in view of the flaws indicated in the logic of this practice, and the effective association of the movement’s principles to contemporary Brazilian housing policy. The present paper is part of a larger Ph.D. study that is in progress, which further investigates this theme.

Keywords: Open Building, social housing, public policies, autonomy.

INTRODUCTION: THE HOUSING DEFICIT IN BRAZIL

The Program Minha Casa, Minha Vida (MCMV), introduced by a 2009 Federal Act, is the current public instrument for the production and acquisition of new dwelling units. By the end of 2010, the program had built approximately 1 million dwelling units. During its second phase (2011–2014), it undertook the construction of over 2 million units. On 9th December, 2013, in the radio program “Café com a Presidenta” (breakfast with the president), President Dilma Rousseff disclosed a figure of 3.75 million units planned, exceeding the goal promised for the two first phases. In addition, she announced the third phase of the program, which is an attempt to eradicate the quantitative housing deficit, which is the main purpose of the MCMV.

The concept and the methodology used to appraise and calculate the quantitative housing deficit, adopted by the Ministry of the Cities (MC) in Brazil and by the Instituto de Pesquisa Econômica Aplicada – IPEA (Applied Economy Research Institute) of the Federal Government, was developed by the state research institute, the João Pinheiro Foundation – FJP. It comprises four components: [1] precarious dwelling; [2] family-shared dwelling; [3] excessive lease burden and [4] excessive dwelling density in leased properties. The total deficit is the sum of the quantitative and qualitative deficits (existing inadequate dwellings). The MCMV does not address the qualitative deficit.

In urban areas, the program is divided into three family income brackets for assistance purposes: up to BRL 1,600.00 (Range 1) – approximately USD 718.00
up to BRL 3,100,00 (Range 2) – approximately USD 1,392,00
up to BRL 5,000,00 (Range 3) – approximately USD 2,246,00

The registration, selection and recommendation, by means of drawing, of families that apply to participate in the program, and whose income lies within one of these brackets and matches both federal and municipal criteria, are carried out free of charge by the city halls, supported by a financial institution (CAIXA) which executes the process.

According to FJP (2011, 2012, 2013), the total Brazilian housing deficit (urban and rural) totalled 5.546,310 domiciles in 2008, 5.998,909 in 2009, and 6.940,691 in 2010. The same study (FJP 2013, pp. 39-41) suggests that in 2010, the largest deficit indicators in Brazil were mainly concentrated in the lower income class, with 62.7% in Range 1, added to 3.9% in the ‘no-income’ bracket, however ranging from 60% to almost 90% depending on the region of Brazil. IPEA (2013, p. 5) also shows that “the largest portion of the deficit still remains on the domiciles that belong to the lower income bracket”. Nevertheless, the MCMV has not been effective in addressing the deficit it was designed to deal with, mainly regarding the lower class, which has an income of up to BRL 1,600,00, approximately 0 to 3 minimum wages in force in Brazil. In addition, the program does not cover two important aspects: [1] a significant part of the qualitative deficit, considering that the solution could also involve the adequacy of existing dwellings, i.e., the program simply regards the solution as a number to be surpassed with the production of new houses; [2] parallel research on property vacancy in the country, showing the number of vacant properties that could potentially be mobilised to resolve the quantitative social housing deficit. The FJP (2013, p. 73) published the number of vacant properties in Brazil in 2010: 6,052,161 units, taking into consideration those properties which were vacant and closed, as well as those used sporadically.

Relative increases were observed when assessing the deficit per component, among them, the increase in the surplus lease burden from 1.75 million homes to 2.293 million in 2013, an approximate increase of 30% in five years stands out (IPEA 2013, p. 12). This is precisely the component responsible for the highest deficit percentage. This means that families covered by the MCMV leave leased properties behind (which also occurs with properties that fit into the deficit category due to other factors), and these properties are occupied by new homeless families, causing an endless renewal process, and suggesting the existence of invisible costs of social nature that are not being considered in the program. Ribeiro, Boulos and Szemeta (2014) also suggest that the housing deficit has grown due to a large increase in lease prices, including areas in urban outskirts. That component of the surplus burden is accounted for in the deficit of families whose monthly income is compromised by dwelling lease expenses by 30% or more.

In addition to the above-mentioned sources, part of the data analysed here is from ongoing research (2013-2014) of the PRAXIS group of the School of Architecture of the Universidade Federal de Minas Gerais (UFMG), involving the characterisation and assessment of the MCMV in the metropolitan area of Belo Horizonte (BHMA), which is part of national network research carried out jointly with other Brazilian universities. This research includes more localised data, reflecting the Brazilian scenario, as the program is carried out all over the country. The study has been investigating 11 occupied areas, in six municipalities of the BHMA, by means of field visits, photographic surveys, interviews with local dwellers, building managers, construction companies and companies that evaluate post-dwelling aspects, including document and report analysis.

Due to the flaws in the MCMV, abandonment or unlawful sale of program-sponsored properties is already taking place (reselling or transferring such properties is forbidden during the first 10 years of use) (PRAXIS-UFMG 2013-2014). This occurs either due to payment default or dissatisfaction with the house. In some cases, the beneficiaries return to their former homes.

Housing deficit, the primary purpose of the program, has not met all housing needs of the families. On the contrary, it has created new problems and also a growth in the housing deficit. This results in an imbalance, within a social inequality feedback process, which contrasts with the official discourse (in ‘breakfast with the President’ program on 9th December, 2013) of achieving goals and political gains, of generating new jobs, ultimately for boosting the economy and increasing the GNP (gross national product), favouring economic growth and development. By the end of 2014, the government will have invested approximately BRL 234 billion (USD 99.91 billion) in the productive chain of this industry (IPEA, 2013).
Maricato (2013, pp. 38-39) asserts that the MCMV was “[...] designed by developers and real estate entrepreneurs in partnership with the Federal Government. The real estate boom thus began, with a huge impact on big cities. While in 2009, the Brazilian GNP and the civil construction showed negative balances, as opposed to the earlier trend, in 2010 the GNP grew by 7.5% and civil construction grew by 11.6%. “Ribeiro, Boulos and Szemeta (2014) concludes that the program “was developed on-demand to save the real estate industry during the 2008 crisis, and its rules are therefore focused on private interests”.

In other words, the housing issue in Brazil is complex and would require studies in several areas. The present article focuses on the issue of architectural typology adopted without being restricted to architectural design, yet considering production as a priority, with all of its economic, political, legal, professional and social influences and implications. In order to achieve this, the concept of field, in Bourdieu (2004), helps to highlight the obstacles that impair other practices, which are co-related here, so that, in the end, considerations that raise more questions than solutions may be proposed.

FIELD: AGENTS AND INSTITUTIONS INVOLVED IN HOUSING PRODUCTION

The universe of house building in Brazil comprises agents and institutions that produce, reproduce and reveal the program, by means of instruments (laws, directives, manuals) and mechanisms of its own (capitalist production), with a high degree of autonomy, which Bourdieu (2004) calls field. Therefore, the MCMV is a program developed by the Federal Government (MC), executed by private enterprises (construction companies), in partnership with state or municipal governments and/or other entities, and operated by a bank, Caixa Econômica Federal (CAIXA), a financial institution that functions as a public company of the Federal Government, with its own equity and administrative autonomy.

Construction companies of the state of Minas Gerais engaged with the MCMV, income Range 1, declared that they have outsourced their architectural designs (PRAXIS-UFMG 2014). The design guidelines assigned to the architects always include the same, unique standard typology, both in terms of dwelling units and of building layouts (buildings of up to 5 floors). In this process, the architect is only responsible for developing several building sites, calculating the number of units, suggesting a façade pattern, and taking care of bureaucratic approval proceedings for the projects before the competent authorities. Bernis (2008) conducted a study regarding the role assigned to the architect, as developer, façade designer and forwarding agent. This type of practice consolidates a professional pseudo-autonomy at the expense of the heteronomy of the dweller, who will occupy a predefined, standardised space, treated as merchandising. A field (economic and political) of forces and struggles for positions between the dominant (government and market institutions) and the dominated (agents, namely architects, other professionals and particularly the population) is established.

Profiting from the boom of the real estate market, with the potential of the MCMV, large Brazilian construction companies went public, offering their shares in the stock market.

Since this process is the result of an alliance between the government, the market and the financial institution, which excludes society, leaving it in the passive condition of mere consumer, a structure of relationships is established: [1] the market is the institution that dominates the housing production; [2] the legitimacy of that production granted by the State; [3] the subordination of the architect to both; and [4] the consumption, subordination and misinformation however, with a potential of change by the society (dwellers).

A few questions can be raised regarding these relations. The first refers to the role of the State as an intervening authority in favour of the society. Maricato (2013) states that Brazil has “laws, plans, technical knowledge, experience, tried and tested proposals in the areas of transportation, sanitation, drainage, solid residue, housing”, sufficient to change the current practice. Further on, however, “the first required action regarding the current urban policy is a political reform, especially in relation to political campaign funding.” In Brazil, political campaign funding is regulated by law and the use of both public and private resources are allowed, the latter characterised as private donations. Although there are drafts of laws that would define an exclusive public fund for political campaigns, donations made by lucrative companies still prevail. The political campaigns are still funded by large construction companies, among other companies of the private sector, rendering the introduction of an effective regulating policy a difficult task (Rabat 2011).
The second question brings about the possibility of equating the production of social housing to the actual benefit to the population and not the construction companies. Currently, the construction companies comply with the minimum parameters required by the program, such as the size of the units, technical specifications, etc., when allocation prices are fixed. Even if the construction company offers a larger apartment, with different and better features, the allocation price is still unchanged reducing, therefore, its profits. This means the legislation in effect stimulates low-quality popular housing, as it favours productivity (Ribeiro, Boulos & Szemeta 2014). This suggests a degree of partnership between State and Capital that ought to be questioned.

The third question proposes that architects redefine their own profession and field (Stevens 2003), undertaking the role of collaborators in the process. For Stevens (2003), architects in general are not concerned with social aspects. They design for other architects, considering the user practically as an obstacle to the designing process.

The final, and perhaps most important question, considers the fact that Brazilian society nowadays, as it directly suffers the consequences of the program, holds such mobilisation power that it could occupy a different position in this field, in this global social space, which Bourdieu (2009) calls *habitus*.

**REGARDING THE ARCHITECTURAL TYPOLOGY ISSUE**

Many issues related to the MCMV have been highlighted. Rolnik and Nakano (2009, p. 4) asserted that there is a conflict regarding what a “housing policy with a job creation policy in the construction industry” really is. Arantes and Fix (2009) warn that “the housing package and its huge marketing operation reclaim the “homeowner ideology”, which was strategically promoted in Brazil during the military regime [...]“ Maricato (2010) states that the MCMV does not refer to “the urban question, and is not satisfactory in terms of social housing issues (if we consider all advancements conceptually achieved on the theme in Brazil).” Such issues and their serious social implications are incorporated in the specific theme of that study: the issue involving an adopted and widely reproduced architectural typology.

Production in MCMV has been the same all over the country. The properties are either apartments organised in H-shaped buildings on plateaus, with up to 5 floors each (Figure 1), or houses (detached, two-story or semi-detached) (Figure 2). Both types are submitted to the same rigid and standardised architectural design, comprising the minimum (required) features, which become the maximum (accomplished) features. The organisation of space within the dwelling unit only changes as the positions of the rooms change; other than that, all properties comprise a combined living and dining room, a kitchen, a micro laundry usually adjacent to the kitchen, two bedrooms and one bathroom, and all these contained within an area of 39 to 44 m², at most. In other words, there is a starting point of a pre-determined design that merely complies with the functions of a “modern design” with spaces for living, eating, sleeping, washing and cooking, as if no demands could be adapted to different layouts, even by the dwellers themselves.
The program’s directives are also legitimised by municipal building codes that determine the same rules regarding types, number and dimensions of the premises, as well as the respective furniture.

*Figure 1* - housing schemes - Alterosa and Palmeiras II (Betim and Ribeirão das Neves, in BHMA)

*Source: PRAXIS-UFMG, 2013-2014*
The premises cannot be modified, as the walls are self-supporting. The elements are repetitive and standardised, with the purpose of achieving a ‘constructive rationalization’ (industrialised components are employed in a manufactured production). Due to their low income, dwellers are not able to do costly refurbishing work in a recently built and finished space, given the pre-conceived inadaptability of the design. This brings about a hidden crisis, as the dweller cannot adapt the house to meet the immediate family need. With time, the dweller will suffer directly with a problem whose origins they hardly understand, that is, the individual being excluded from a social control process.

In addition to the MCMV directives’ predefined criteria, the government, jointly with CAIXA, launched a complementary program ‘Minha Casa Melhor’ for the program’s beneficiaries to improve their homes. It consists of a credit facility of up to BRL 5.000,00 (USD 2.246,00) to purchase furniture and household appliances, restricted to a list that, once again, contributes to a standardised type of occupation, in addition to subjecting the dwellers to a kind of assisted indebtedness. The list of items was certainly based on minimal dimensions as well as on the predetermined layout of a standard typology adopted and illustrated in a previous blueprint. This is evidence of the generalised concept of dwelling needs defined in the program. In a country with continental dimensions and large social and cultural differences, family demands are not identical within the same income bracket or within the same region.

In Brazil, architects do not design the vast majority of the buildings, neither are they regulated by the competent authorities, as they are usually built by the dwellers themselves. According to the MC (Brazil 2009), about 70% of households are self-productions. On that issue, Morado Nascimento and Tostes (2011) remind us that “all it takes is to think about spaces that are not planned by architects, where the existing space layouts are commonly more complex, without similar space-activity, and above all activity-industry correspondence, in layouts that are more adequate to the daily practices of the dwellers: the kitchen is, many time, a socialising space, and not only a “service” area for domestic workers, such as the medium-class kitchens. Furthermore, people commonly sleep in spaces that are not specifically bedrooms, since the intended use of each space is not always the reality.” Even in the standardised configuration of the MCMV projects, it is possible to observe appropriations of the spaces different from those defined in the projects (Figure 3).

In other words, the legislation does more than simply stimulate and induce: it forces a concept of space grounded in the modernistic ideals of minimum partition of the social-service-private areas of the house. It includes single-purpose spaces based on a single family structure for a couple with children, which is quite diversified, as if all people lived under identical standards. The minimum requirement that becomes the maximum accomplishment in these social-interest dwellings is stricter than the design solutions for higher-income classes. This typology does not vary in size or number of bedrooms, resulting in an almost automatic modus operandi in Brazil, involving the replication of the projects. “The dwelling process, which should assume choices, participation in the decision-making process in several levels and timeframes, is impoverished and reduced to a mere shopping list like any other, emptying and deteriorating its political dimension” (Morado Nascimento & Tostes 2011).

The space appropriation and subversion, both in the dwelling units and in the common use areas, in projects visited in the BHMA, provide clues for assessment, clearly showing: [1] lack of space for certain tasks such as drying clothes in the apartments, forcing the dwellers to simply invent different solutions (Figure 4); [2] overlapping function of spaces originally intended for single functions (sleeping in the living room, working in the bedroom or living room), and sometimes conflicting functions (drying clothes in the kitchen).
(Figure 3); [3] mixed uses of spaces originally only planned for dwelling (Figure 5); [4] lack of flexibility of the premises and in the opening or closing of spaces, leading to even more improvisation (Figure 6). In addition, the rapid deterioration or depredation of construction elements, lack of safety, the use and traffic of drugs, etc. increase social conflicts.

The absolute majority of the dwellers originally lived in houses, even if leased or in precarious conditions, and not in apartments. Therefore, they wish to have privacy and individual space, the possibility of expanding their houses, or external private areas, in order to live as they used to in their former homes. The typology adopted by the MCMV does not offer such options to the dwellers. This assessment could be extended to the common use areas, which present similar issues (Figure 7).

Figure 3: appropriations in MCMV’s housing schemes
Source: PRAXIS-UFMG, 2013-2014
Figure 4: appropriations in MCMV’s housing schemes (varied solutions to the clothesline)
Source: PRAXIS-UFMG, 2013-2014
Figure 5: Appropriations in MCMV’s housing schemes (mixed-use)
Source: PRAXIS-UFG, 2013-2014
Figure 6: Appropriations in MCMV’s housing schemes (saving resources and lack of flexibility)
Source: PRAXIS-UFMG, 2013-2014

Figure 7: Appropriations in MCMV’s housing schemes
Source: PRAXIS-UFMG, 2013-2014
OTHER EXPERIENCES, OTHER SCENARIOS

While this conventional design method, thoroughly mastered by capitalism, consolidated itself by practice and learning in the architectural field, other experiences have emerged since the beginning of the twentieth century.

Some of the experiences derive from the Dutch tradition, from Rietveld, late Hertzberger, Habraken, Koolhaas, Nox, among others, leading to more contemporary experiences, such as the Open Building movement. Other initiatives, from other contexts, include the proposals of Lucien Kroll, Ralph Erskine, Christopher Alexander, Giancarlo di Carlo, Yona Friedman, Cedric Price, John Turner, Walter Segal, members of the Archigram, Jeremy Till, Manuel Gausa, Elemental, etc. Such proposals involve flexible, hybrid, connectable, expandable, easily modifiable or adaptable spaces, which are more efficient and offer the greater possibility of complying with more satisfactory and multiple demands, and generate more autonomy and emancipation for the users.

A preliminary comparative analysis between space appropriations and subversions carried out by dwellers of the MCMV projects and their experiences may provide evidence to suggest a new design trend. First, even if the space has been designed and produced without considering certain attributes, the appropriations reveal adaptability, mixed use and individualisation features, among others. That is, even if space usage is difficult, people make arrangements to adapt to their dwelling culture. Second, other characteristics intrinsic to these experiences, such as varying dwelling units and the possibility of definitely expanding premises, are not a reality in the spaces built by the MCMV, but ought to be considered. In other words, the need for dwelling density does not justify the solutions offered by apartments, since it is possible to meet the needs of a dense occupation with different space solutions, other than the plain stacking and repetition of units and typical stories (Morado Nascimento & Tostes 2011).

J. N. Habraken’s Supports’ Theory, as well as the principles of Open Building (OB) derived from there are worth highlighting in this study as a possible, but at the same time questionable, alternative to apply to the Brazilian context.

Habraken’s theory is essentially based on re-introducing the dweller into the decision-making, professional and political processes related to the design, construction and use of dwelling space. There are two moments in that decision-making process: the collective, equivalent to the support, with collective decisions and, in a certain way, fixed and general; and the individual, which corresponds to infill, the house itself, a decision of each dweller. The theory may apply to several levels of intervention, from furniture and objects to city structuring and planning, including dwelling units, buildings, neighbourhoods, and other uses as well. Furthermore, the theory defends the interface between technical systems allowing for the replacement of one system with another having the same function, with the least disturbance. It also defends that the constructed environment is in constant transformation and the need for change should be acknowledged and studied. Examples may be found in the publications of J. N. Habraken, Stephen Kendall and Jonathan Teicher, as well as on the movement’s website.

It is important to highlight that the [re]inclusion of the user into the decision-making process raises the issue of a divorce between common culture and scientific knowledge (Bourdieu 2010). In the past, job site knowledge was replaced by architectural knowledge, commodified knowledge in the form of coded drawings, which placed the architect as a controller of the process, causing symbolic violence. Habraken wishes to rescue the understanding between the specialist and the layman.

Such ‘other experiences’ in ‘other scenarios’ could be challenged by both the State and private enterprises in Brazil, for reasons related to costs, which would demand a detailed verification survey. Even if the argument is true, it should be challenged as to the priority of social interests to the detriment of more profits to the private market, as well as against the social issues arising from the standard typology adopted. The conflicts in neighbourhoods are also a consequence of: [1] private demarcations in common-use areas, as the projects do not provide for individualization and privacy; [2] public demarcations in private areas, for example, the implementation of mixed use in an area intended to be exclusively residential; [3] the poor acoustic insulation between the apartments; [4] unlawful abandon or sale of units by those who could not adapt to the typology; among other reasons.
The difficulty of our profession, as stated by Habraken (2012) is that we never consider these constraints and relations as part of the design work. We hold onto the ideals of unrestricted freedom in design-related decisions, an ideology that makes us believe that freedom is a primary condition for good architecture, whereas, of course, challenging restrictions drives actual creativity. The author affirms that it is not a technical or architectural issue, but of changing the control among the actors that participate in the process and are aware of the local context. The architect is not supposed to be a genius and an author, nor a forwarding agent. Furthermore, it is not the dwellers participation, in the sense of a referendum, yet in the sense of agreement, consensus, negotiation, autonomy, understanding and sharing involving several actors and agents, as opposed to control, dominance or dependence.

It is worth mentioning examples, due to their political-economic nature rather than the architectural issues, such as an Open Building (OB) action in Japan: the Long Life Quality Housing Act. This is an Act approved by the Japanese parliament in 2009, which rewards open architecture designs that emphasise durability and adaptability. The law offers financial and tax incentives, aiming at a high percentage of dwelling stock produced during the past decades with low durability, short useful life, low resistance to earthquakes and low energy efficiency (35% after 1981). These incentives may be a direct subsidy such as income tax rebates, lower individual property taxes or lower real estate market taxes, or favourable conditions for loans used in the purchase of properties with better quality and emphasis in environmental sustainability. This act ensures incentive to properties that present nine features: [1] durable (100 years or more), [2] structurally safety, [3] large enough, [4] adaptable, [5] barrier-free, [6] energy efficient, [7] connection to its surroundings, [8] easy to maintain and [9] regularly maintained (Tomohiro 2012). The government expects 20% of the new properties in 2020 to obtain the Long-lasting housing Certificate. In 2011, more than 235,000 properties were certified. The program is valid for the construction of new properties as well as for retrofits. That is an experience inspired in the prevailing records of open and flexible urban buildings and structures, built in Japan during the past decades (OB). Habraken (2012) admits that he had never thought of the idea of such a law, and that whilst the durability requirement is the mandate of the law, it inevitably allows the personalization of properties to the user’s preferences.

The MCMV is producing a significant stock of low-durability and low energy-efficiency dwelling units, a forecast of even worse problems in the near future.

OPEN BUILDING IN BRAZIL: IS IT POSSIBLE?

The main purpose of this article is to discuss the current scenario of social housing in Brazil, to highlight issues and to consider new possibilities. While other countries progress in the exchange among research, theory and practice, involving processes that share information to develop architectural, political, economic and marketing solutions, Brazil still considers housing merely as merchandise. What are then the actual possibilities for the Brazilian problem to be transformed with regards to this scenario? How could the architects contribute to this, as they are part of the field? Would a solution by means of legislation be more suitable for the Brazilian context? Or would the best solution be via Brazilian society, with its mobilisation and transformation power, its social and economic organisation, creating new (re) production alternatives, as opposed to the prevailing capitalistic methods? How could the traditional knowledge regarding people’s dwelling culture be articulated with the design and production of new houses?

We have indeed progressed in terms of urban legislation with the Federal Constitution of 1986, the Statute of the City in 2001, as well as with all the instruments derived therefrom. Regarding construction, there were two recent accomplishments that converge with the topic discussed here: the Brazilian Modular Coordination Standard for Buildings (NBR 15783:2010), one of the hallmarks to actually industrialize construction, bearing in mind that modular coordination is a repetition of measures and not elements; and the Brazilian Building Performance Standard (NBR 15575:2013). Public policies, legal instruments and their effective application must be further advanced.

Would a deeper study, considering the OB concepts on the one hand, and the appropriations and subversions of both MCMV projects and self-built spaces and irregular occupations on the other, be a guideline for the provision of housing in Brazil?
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