
THE NEW “CIDADE NOVA”: assessing effects of urban configuration and land use change in architectural transformation

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Abstract

Studies of the effects of global changes in urban configuration over local land use patterns in Brazilian towns (Trigueiro, Medeiros, 2003; Trigueiro, Teixeira et al., 2005) have shown that streets that first become part of the global integration core tend to attract the construction of public buildings and upper class housing and, later, that of commercial buildings. As the core grows in size and density, houses are converted or demolished to give way to apartment blocks and service/retail units. In Natal, the neighbourhood of “Cidade Nova” – planned in the early 20th century – sited most of the residential architecture produced from the 1940s to the 1960s. The urban expansion has engulfed this neighbourhood in the city’s integration core and former residential streets are becoming part of an upper market commercial sub-centre. Consequently, the best ensemble of pre-modernist and modernist architecture produced in the state is disappearing. This paper focuses on the transformation of Afonso Pena Avenue, an exemplary (if lamentable) case within that scenario as part of a set of recording and analytical procedures for building up a morphological database. The study aims to raise understanding about the nature and consequences of such processes and promote alertness concerning its drawbacks.

Petropolis as a perennial “Cidade Nova”

Studies of the effects that change in spatial integration exert over land use patterns and architectural heritage conservation in Brazilian towns (Trigueiro, Medeiros, 2003; Trigueiro, Teixeira et al., 2005) have shown a recurrent tendency for streets that first become part of the global integration core to attract the construction of institutional edifices and upper class residences and, in the second stage as the core grows in size and density, that of commercial and retail buildings of varying scales and importance. As a consequence, fine residential buildings are torn down into shops or demolished to give way to tall-rise apartment blocks and shopping malls.

In Natal, capital city of the state of Rio Grande do Norte, Brazil, most of the best residential architecture produced from the 1940s through to the 1960s was located in Petropolis and Tirol, present day “bairros”

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that originated from then called "Cidade Nova", a residential neighbourhood planned and demarcated in the early days of the 20th century (1901-1904). Sited in an area of around 165 ha, subdivided in 60 blocks (Miranda, 1981:115), Cidade Nova took the shape of a regular orthogonal grid over an elevated sandy terrain. For many years the occupation proceeded at a very low rate with a few buildings scattered amongst granges and small holdings where fruit trees were cultivated. Some of the oldest buildings in the area were constructed or converted to accommodate health care facilities, which benefited from the fairly high altitude. This position is thought to have inspired the toponym Petropolis, a reference to the town of Petropolis in the state of Rio de Janeiro: a mountainous site that became popular in the 19th century as destiny for convalescence and repose, where the Brazilian imperial family had a holiday palace. It is believed that the town was named in honour of Pedro II, second and last emperor of Brazil.

The present case study concentrates on the neighborhood of Petropolis, which comprises most of the area formerly covered by Cidade Nova and is now –more than the adjacent neighborhood of Tirol– subject to a profound process of transformation (Figure 1). It reports results from a pilot study that aims to monitor processes of townscape formation and transformation in Natal by using a Geographic Information System¹ to articulate data concerning urban space configuration and physical attributes of buildings at successive time stages.

Axial maps of the area at subsequent stages of development and within diverse embedment levels in the city's street grid are exported to the database alongside other relevant information about the building: such as its stylistic affiliation, period of construction, preservation of original formal attributes, material conservation, number of storeys, use and opening hours (as the case may be) of ground floor, first floor and the average use of the storeys above first floor, the existence or not of institutional protection, and whatever complementary information (plans, narratives, media reports etc) is available and considered relevant.

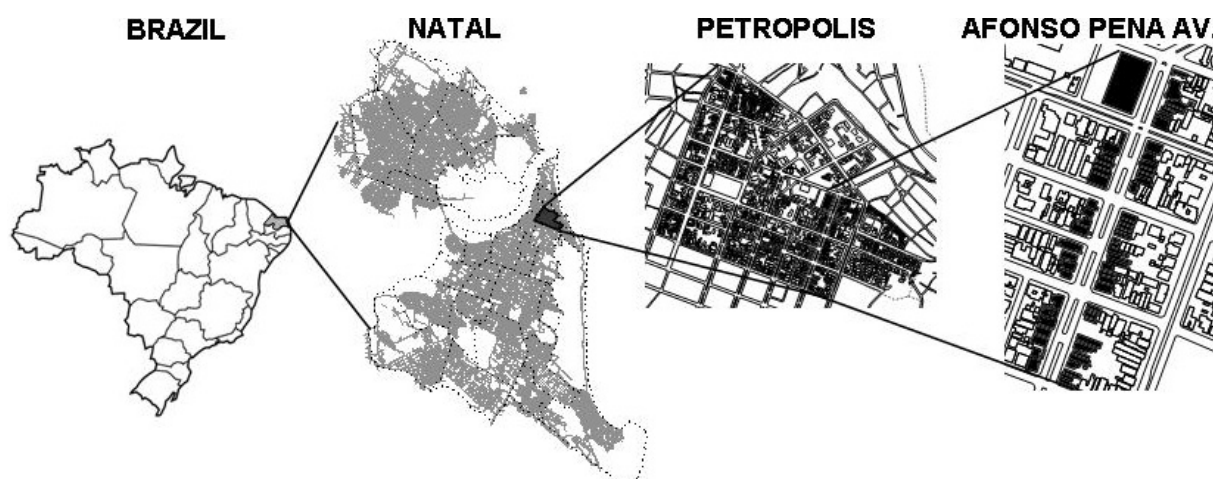
Architectural students are systematically encouraged to develop field work through which the built stock and public spaces are recorded and analyzed at regular intervals so that changes can be assessed. The data collected is used to fundamentally as coursework and research, by being made available to the academic community. Areas, at first, are usually selected according to urban processes taking place there at the time of the course. In the later stages of the architectural courses, students are encouraged to choose their object of research and develop their own projects, which may later be used as part of a monograph or architectural/urbanism plans that are required to be developed for graduation. Radical transformation phenomena have been privileged as a coursework theme and students allowed choosing a research target. In this case study, the way in which the building stock located on the northern end of Afonso Pena Avenue changed from 2000 to 2006 is chosen. The reason for this selection is that the succession of occurrences affecting its built environment, although concentrated in a very small area, exemplifies every aspect of the transformation process suffered by the neighborhood of Petropolis.

In 1929 the limits of Cidade Nova were expanded, following the guidelines of the first "Master Plan" –Plano Palumbo– whose general appearance was vaguely inspired in Garden City principles especially in terms of what was then aspired as a model of modernity and urban beauty (Ferreira & Dantas, 1999) with houses surrounded by gardens.

This scheme was favored to the continuous rows of terraced buildings opening directly over the pavement of the older neighborhoods, with facilities such as public lighting, piped water, sewage and drainage systems, and wide paved thoroughfares with central gardens separating one-way lanes. Despite this expansion, the occupation grew at a slow pace until the 1940s when a new development wave partly boosted by the movement of American and Brazilian troops during wartime contributed to increase density in the area. Urban growth carried on steadily in the 1950s and 1960s underwent another boom –this time of unprecedented intensity– in the 1970s, which turned the country from a predominantly rural to a predominantly urban nation.

Figure 1:

Natal (capital of the state of Rio Grande do Norte), the neighbourhood of Petropolis and Afonso Pena Avenue



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During these four decades, the sections of Petropolis and Tirol that corresponded to the area of Cidade Nova was the privileged ground for new middle and upper class residences so that most of what was architecturally innovative in this part of the world was built there. It remained as a site populated by an expressive collection of each stylistic tendency that succeeded one another until the mid 1970s, when a number of factors combined to radically transform the area from a leafy low-rise residential neighbourhood into a concrete jungle of residential tower blocks, scattered amongst posh service and retail facilities, commercial buildings and private hospitals and clinics.

Urban Expansion versus Architectural Heritage Conservation

It is here argued that global configurational changes, which followed the urban expansion after the war and especially in the 1970s, have acted as a powerful independent variable in this transformation process.

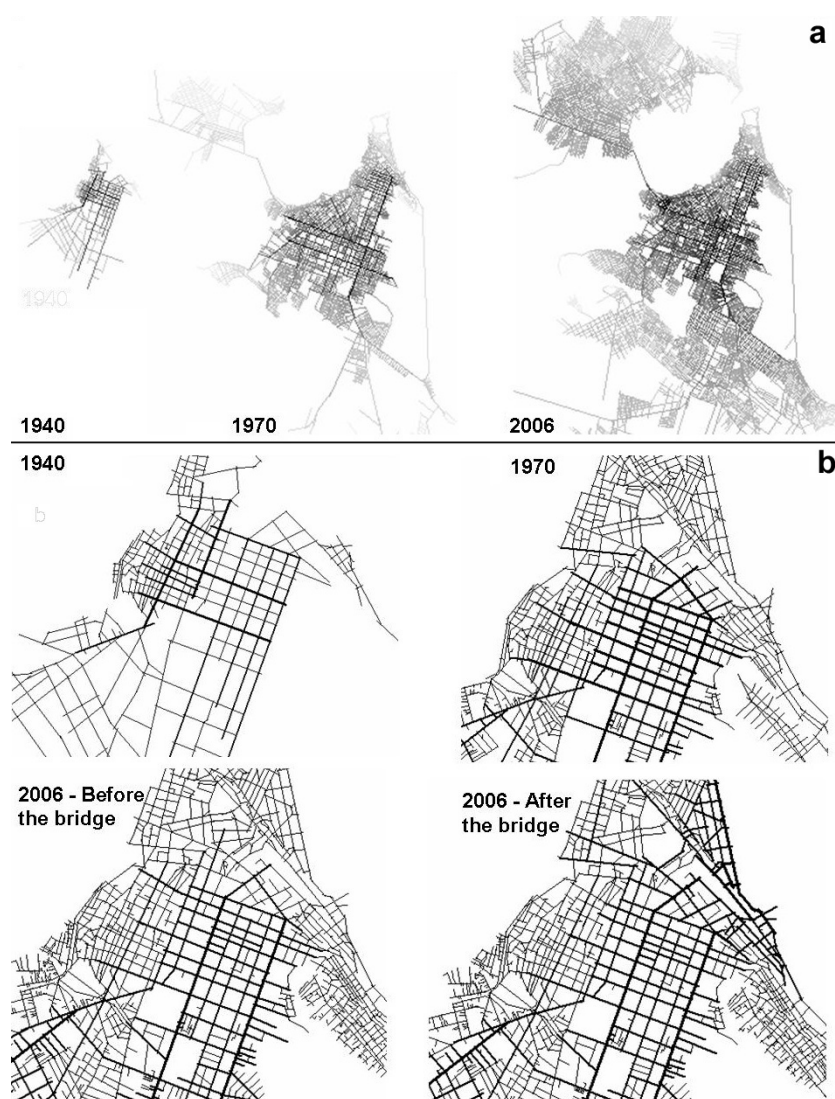
By comparing the successive axial representations of Natal in (circa) 1940 to that of the 1970s (figure 2a), it can be seen that the urban expansion suffered by the city at that time has caused the integration core to shift from the old town center (Cidade Alta and Ribeira) towards the regular grid of Cidade Nova and from there towards southwest defining a large central dark patch crisscrossed by more or less extensive orthogonal and diagonal axes. At its border, running from northeast to southwest, a powerful integration line represents Hermes da Fonseca Avenue, the first major urban extender axis built in the 1940s to connect Natal's harbour to the American air force base in the adjoining town of Parnamirim. This road, which contributed to redirect the urban occupation towards southwest, still functions as one of the three most important arteries in the metropolitan area. It also links the loosely triangular patch that forms the centre of the main

integration core to the squarish grid of darker lines that cover the area of Petropolis. The definition of such configuration coincides with the first wave of reconstruction, when former residences were converted into retail and service facilities.

Figure 2b shows that at present this integration core has remained in a stable position but expanded in all directions causing the network of highly integrated streets in Petropolis to densify. Now, the larger triangular part of the integration core is linked to the orthogonal grid of Petropolis by the two most highly integrated axes in the whole urban complex – the already mentioned Hermes da Fonseca avenue and Prudente de Moraes avenue, the longest thoroughfare in Natal, which was opened up to connect new developments during the building boom of the 1970s. The regularity of Petropolis's grid and its subdivision into fairly small blocks has contributed to spread accessibility over the street network so that a compact appendage to the main integration core was formed. The entire extension of this appendage is rapidly turning into a busy sub-centre of upper class service and retail facilities.

Figure 2:

a: axial representations (Rn) of the street grid of Natal at successive stages of urban development; b: axial representations of the street grid of Petropolis (Rn, embedded in a ratio of around 4 km) as it is now (left), and to include the impact of a new bridge (right), currently at the final stages of construction



Afonso Pena: An Exemplary (Yet Deplorable) Case Study

Afonso Pena avenue runs in-between and parallel to Hermes da Fonseca and Prudente de Moraes Avenues, but is a fairly short road in the urban context. It traverses, beside the width of Petropolis, a few more blocks within the adjacent neighbourhood of Tirol, where it is

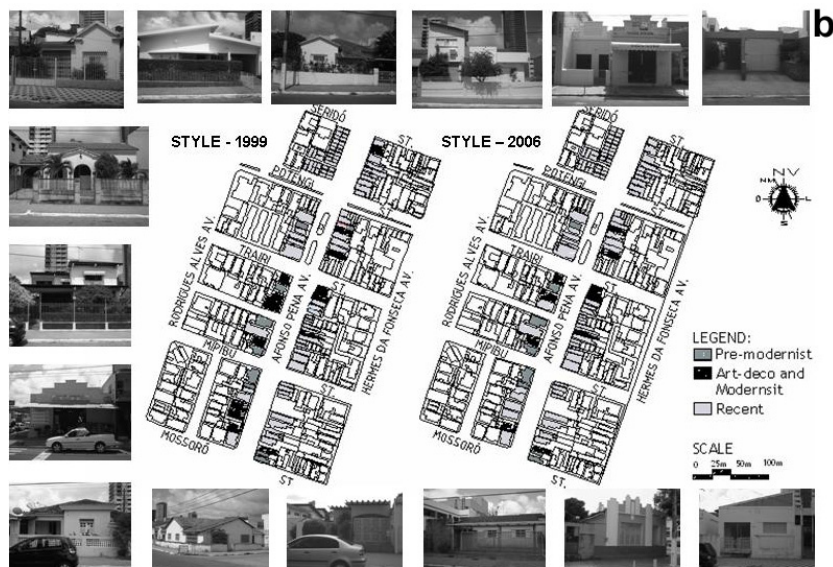
interrupted. This topologic aspect – a mildly integrated street running parallel to a very integrated one – has certainly, at first, contributed to encourage residential use, which predominated from its origin in the early 20th century to the 1990s, although some service facilities (i.e. sport clubs, hospitals) were established between the 1940s and the 1960s. This period coincides with that of the construction of some high quality modernist residences and a couple of low rise apartment blocks, some of the very first of its kind in the town. The residential predominance began to be overturned in the 1970s when a considerable number of service-related units (mostly health care facilities, catering and boutiques) began to substitute one-family dwelling houses.



Figure 3:

a: fragment from a Geographic Information System database showing land use and architectural appearance of buildings in 2000 and 2006; b: same section displaying stylistic affiliations of the building ensemble in 1999 and 2006

Source for 3a – Land use data: Costa (2000); Carvalho and Souza (2006)
 Photo: Ramos (1999); Carvalho and Souza (2006)
 Source for 3b – Style data: Ramos (1999); Carvalho and Souza (2006)
 Photos: Carvalho and Souza (2006)



Nowadays, Afonso Pena is one of the most costly commercial addresses in town. In the section of the street focused in this study only 15 of the existing 74 buildings retain their original formal attributes (figure 3a). It is interesting to note that in the west side of the street, plots are larger and therefore fewer –only 28– than in the east side, where they sum up to 46 cases. This can probably be attributed to early occupation of the east side blocks by a few terraced rows of low income dwellings –two inner block housing enclaves still

exists in quite precarious conditions. These row houses are represented in the plan of Natal in 1924 (Miranda, 1981:123), when most of blocks in the Cidade Nova development were still unbuilt. The comparative observation of these blocks, surveyed within an interval of six-year by Costa, (2000) and Carvalho (2006), shows that the rate of increase (60.6%) in commercial use corresponds directly to that of decrease (36,1%) in residential use.

A positive correlation between use and preservation of original architectural features was also found (figure 3b). In the east side of the streets where commercial use now predominates, only 15.2% of buildings retain original features, whereas that proportion totals 39.3% on the west side where the number of residences is higher. As has been demonstrated in previous studies focused on the old town centre of Natal (Trigueiro & Medeiros, 2003), the change in use has been damaging to architectural integrity and therefore of heritage conservation in a city that is strongly relying on its ability to attract visitors interested in cultural tourism as opposed to the base sea-sun-sand-sex appeal. In the specific case of Petropolis, this loss seems all the more dramatic because it is taking place at the expense of the best ensemble of pre-modernist and modernist residential architecture produced in the state.

Petropolis remains to this day as a privileged residential address and one of the most expensive square meters of ground space in town. But, habitation is gradually retreating into apartment blocks protected by tall walls, watchtowers and electronic devices. Despite the concentration of tertiary activity, pedestrian movement is practically non-existent after dark and at weekends, except to and from catering facilities and parking spaces, thus depriving the streets of the animation that is expected to be a factor of touristic attraction, and reducing the natural surveillance which had always been a key ingredient in the high quality of life enjoyed by residents and visitors alike. By keeping a close account of the transformation processes affecting some of the most privileged urban environments of Natal, we hope to contribute to alert community and urban planners, especially the next generation, about some of its most dramatic consequences.

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