

# GEOMETRIC MODELING VIRTUAL: TRAPICHE AND MULTIMEDIA BUILDING A HISTORICAL NARRATIVE (SERGIPE, BRAZIL)

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## A B S T R A C T

The computational tools are evolving rapidly and continuously challenging the professionals involved in these technologies, which brings one to gain unmatched productivity and response, capable of reaching all strata of society. Today the challenge is to incorporate the human factor in this technological environment to achieve the results and low cost of deployment quickly. This work presents an ongoing study on the potential of these technologies to integrate the systems of documentation of historical and traditional build, with low implementation cost, a system for dissemination and preservation of the historical town of Laranjeiras (Sergipe – Brazil), forming specialized staff using the digital technologies applicable to the historical documentation. In this dynamic medium of exchange of information it is specifically proposed to evaluate the infrastructure involved and all the participants in the process. For this purpose a representative set of architectural history of the Laranjeiras city (Sergipe – Brazil), called the Trapiche's Quadroon, was selected and which was set up as a case study from which it has been intended to formulate guidelines to systematize information concerning the heritage of the city.

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## KEY WORDS

MULTIMEDIA  
INFORMATION  
TECHNOLOGY  
HISTORICAL CITY

## INTRODUCTION

Contemporary culture steeped in digital technology allowing us to call it cyberspace was experiencing an acceleration in the production and dissemination of information, causing a radical change in the nature of man's relationships with technology and each other.

Traditionally, the notion of heritage is guided by the logic of keeping a set of tangible and intangible cultural assets, but with the technological advances of contemporary culture, not only the concern for conservation forwards to spread knowledge of this heritage, but in the process of your scan, they are electronic documents transmitted via web and their accessibility ensures that the transmission of information is maintained.

Thus the larger the number of accesses to these virtual information and the greater the number of links associated with them, more consolidated and democratized information will remain unlike piles of documents in physical files in the public institutions whose access to documents is restricted for reasons of protection of these documents, in view of their durability.

The introduction of digital technologies for the conservation of heritage impacted the very notion of heritage preservation and dissemination.

This paper presents partial results of a survey of methodological procedures applicable to the cultural heritage of the Laranjeiras city (Sergipe, Brazil) to the documentation system adding new technology and traditional which forms part of a study that is underway at the Department of Architecture and Urbanism, Federal University of Sergipe - Brazil, in which as a case study the Trapiche's Quadroon, an architectural ensemble of the first half of the sixteenth century the town of Laranjeiras in Sergipe - Brazil, was used, where the Laranjeiras *Campus* of the Federal University of Sergipe is located.

## THE HISTORICAL CONTEXT OF TRAPICHE IN HYPERMEDIA

The Trapiche Quadroons (an old quarter of the piers) consists of a set of port warehouses, built along the river Cotinguiba, in the historical town of Laranjeiras, the territory of Great Aracaju, the holder of an architectural heritage of inestimable historical value.

The Laranjeiras city started its process of structuring in the eighteenth century, having emerged on the Contiguiba river bank where there was an orange tree, under which travelers rested protecting themselves from the sun and singing romantic songs until it was time to start on the road again. Guarding the poetic versions and the certainty that the place became a major commercial city of Sergipe Del Rey, as the of the production of sugarcane as their main source of income.

This fact led to its promotion to the status of town in 1832, even though in 1824 the area was already the holder of over sixty sugar mills, cigars and brandy factories and the houses of European representatives<sup>1</sup>. According to Dantas<sup>2</sup>, with the installation of Sergipe's Customs location and demographics have become an important commercial emporium whose fair 'competing trains of almost all parts of the province' communicating directly with the capital of Bahia (Salvador), Rio de Janeiro (Rio de Janeiro) and Pernambuco (Recife). On May 4, 1848 it became a city, and today has a strong presence of its baroque architecture as the heritage of its rich past.

In the twentieth century, in 1940, at Laranjeiras city conservation actions were performed by the federal government which comprised the Chapel of sugar mill Jose Maria Jesus, the house of the sugar mill Retiro, the Church of Comandaroba and the Great Church of the Coração de Jesus, as parts of an architectural style characterized by the Jesuit presence in the colonial period<sup>3</sup>.

In 1976 the Cultural Meeting of Laranjeiras (SE) was established with the objective of studying, researching and disseminating folklore and various demonstrations. The first meeting occurred in May, the following ones being always held in January, during the festivities of Santos Reis, fulfilling its role and the study and dissemination of cultural traditions of the Laranjeirense people<sup>4</sup>.

Thus the historical narrative to be implemented in walkthroughs, image resources, video and sound leads the visitor by the historicity of a playful versus those present in crystallizations boring textbooks or encyclopedias.

Thus, the use of technological resources allows giving voice to forgotten silence, remembering past experiences in virtual as in the present form of hypermedia learning and meaningful to those who need to recover their roots in the construction of their identities.

## TECHNOLOGY RESOURCES

Computer technology resources were used to virtually rebuild Trapiche's Quadroon linking it to this reconstruction, digital multimedia material to compile a digital database of the cultural heritage of the Laranjeiras city, with a view of integrating traditional systems of historical documentation of the heritage existing city (Fig. 1).

The reconstruction of the history of the Trapiche's Quadroon, synthesized in three-dimensional modeling (Fig. 2) of the building walkthroughs (Fig. 3) and their environments associated with imaging capabilities, video and sound ones, will be available on DVD and the Internet, allowing access to the knowledge of the heritage cultural Laranjeiras city in a clear and accessible way to both professionals and the layman public, especially to the community of the Laranjeiras city.

Through the use of web tools , it has been intended to create an environment free with features and extremely flexible, allowing the establishment of a collaborative activity to systematize data, putting the academic skills articulated in different areas of knowledge - Architecture and Urban Design, Computer, History, Archaeology and Museology, at the service of community (Fig. 4).

From this project, it has been intended to set up a systematic methodological procedures that use information and communication technology that is applicable to all in the historical town of Laranjeiras city.

It is extremely relevant to the collections available to rescue the history of the Laranjeiras city, and systematize information about itsr cultural heritage with low cost of deployment by the specific needs of dissemination and preservation of heritage and the need to promote the training of specialized personnel in the use of digital technologies applied to asset documentation.

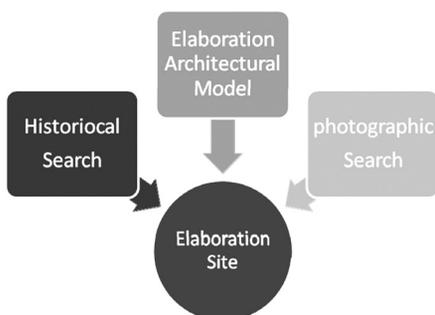


Figure 1.



Figure 2. Model Electronic

This project contributes to the production of digital data while assessing the applicability of the methodological procedures adopted throughout the cultural heritage of the Laranjeiras city aggregating the traditional system of documentation for the possibility of virtual reconstruction.

## METHODOLOGY

In this project a practice made of sustainable resources in the Laranjeiras city, holds a priceless cultural heritage of historical value and so a methodology was designed that considered an activity for the preservation and dissemination of knowledge of that heritage.

It was decided to use information and communication technology to build a digital database of the architectural case study known as the Trapiche's Quadron, impressive building of historical interest of the Laranjeiras city, with a view of integrating the systems of traditional heritage documentation of the existing historical city, offering this material on the Internet in order to ensure the access to the knowledge about it in plain language geared not only to the specialized audience, but also for the layman public, especially to the community of Laranjeiras city.

In search of articulated historical building activities interdisciplinary teaching and research graduate in Architecture and Urban Design, Computing, History, Archaeology and Museology at face activities and distance.

The Trapiche's Quadron, representative of the architectural history of the Laranjeiras city, will be focused as a case study in order to create guidelines to systematize information concerning the heritage of the city with low cost of implementation with a view of disseminating and safeguarding heritage and the training of specialized personnel in the use of digital technologies applied to asset documentation.

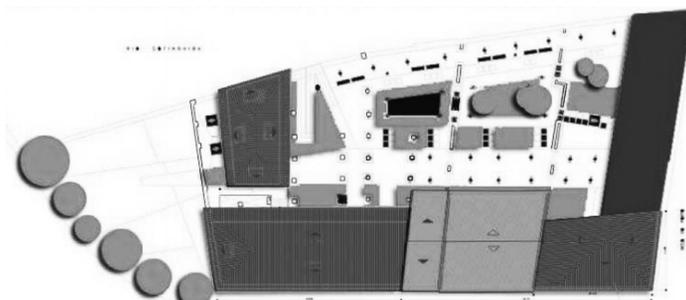


Figure 3. Layout drawing Trapiche's Quadron

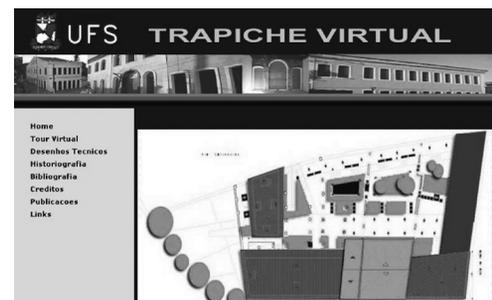


Figure 4. Site Trapiche's Quadron

Thus, the project envisages the following steps:

1. Historiographical search of the whole architectural Trapiche's Quadron.
2. Photographic search
3. Architectural Drafting Model: Based on technical drawings and photographs to produce the Trapiche's Quadron model and then after the definition of travel itineraries the walkthroughs will be drawn up. For modeling and rendering of the model and image processing the following programs are used: 3D Studio, Adobe Premiere, After Effects and Photoshop (Fig. 5; Fig. 6).
4. Preparation of a site (home page) where the material produced will be available resources associated with image, video and sound. In this section the Flash program is used and sound editing program Sound Forge will be used.

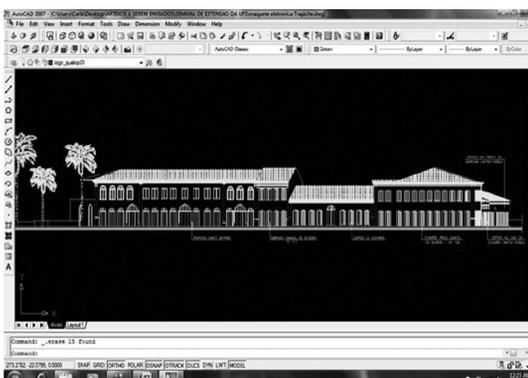
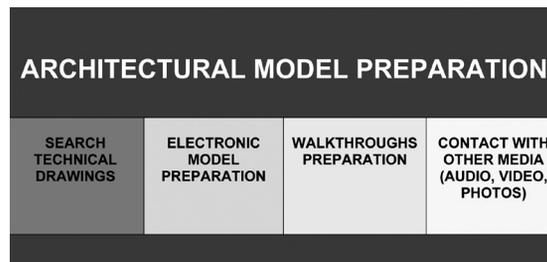


Figure 5.

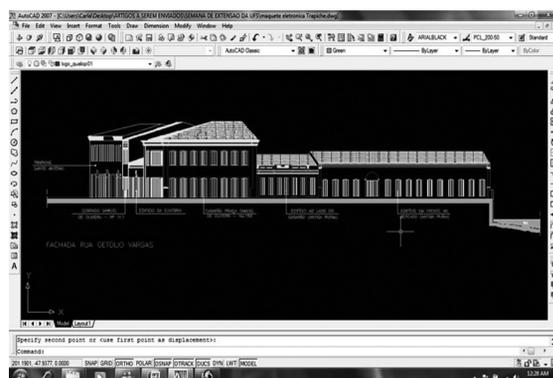


Figure 6.

## CONCLUSION

Until the time that the methodology presented in this project to systematize the process of digital record of the cultural heritage of the Laranjeiras city could be verified, it demonstrates the importance of human factors to achieve the proposed objectives with critical consciousness in the process of building knowledge, fostering awareness of cultural values that are his own.

Undeniable is the productivity gain that the technology allows the conformation of the digital data and induces a growing trend of interactivity and connectivity that can be observed over the years, but the implications of the use of Information and Communication Technology (ICTs) within the educational processes represent a challenge in the task to motivate and diversify human relationships, enabling interactivity.

You can check that the extension of the virtual space helps stimulate critical analysis in the preservation of historical contexts and intervention architectural and urban planning, fundamental processes of decision making.

The social impacts of this project implemented in the distant learning type education allows for the students to gain the knowledge and ownership of cultural property at the Laranjeira's city, assisting in the process of preserving their heritage and their identity.

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## NOTES

- 1 Eder Silva and Adriana Nogueira, "Glancing about the architectural heritage of Laranjeiras," in *The awakening of knowledge in the blue hill*, eds. Maria Veronica Nunes and Adriana Nogueira. (São Cristóvão: EDUFS. The Federal University of Sergipe in Laranjeiras. (issue no.1), 2009), 40.
- 2 Beatriz Gois Dantas, *The Taieira Sergipe. A folk dance* (Petrópolis: Vozes. Iphan, 1972), 17.
- 3 Iphan, "Goods and Equipment," in *Institute Of National Heritage And Artistic. Conservation books of the Institute of National Historical and Artistic Heritage* (Rio de Janeiro: IPHAN, 1994), 194-195.
- 4 Wellington de Jesus Bomfim, "Notes on the Cultural Meeting of Laranjeiras," in *The awakening of knowledge in the blue hill*, eds. Eder Silva and Adriana Nogueira (São Cristóvão: The Federal University of Sergipe in Laranjeiras. EDUFS, 2009), 113-130.

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## GEOMETRIJSKO VIRTUELNO MODELIRANJE: TRAPICHE I MULTIMEDIJA. GRAĐENJE ISTORIJSKOG NARATIVA (SERGIPE, BRAZIL)

**Carla Maria Furuno Rimkus, Janaina Cardoso de Mello**

Računarske alatke se brzo razvijaju i neprekidno predstavljaju izazov profesionalcima koji se bave ovim tehnologijama, što dovodi do toga da se postigne nenadmašna produktivnost i odgovor, koji mogu da dosegnu do svih slojeva društva. Danas je taj izazov integrisanje ljudskog faktora u to tehnološko okruženje kako bi se brzo dobili rezultati pri niskim troškovima primene.

Ovaj rad predstavlja jednu studiju u toku o potencijalima ovih tehnologija da integrišu sisteme dokumentacije istorijske i tradionalne građe, uz niske troškove sprovođenja, koja se odnosi na sistem za širenje i očuvanje istorijskog grada Laranjeiras (Sergipe-Brazil), formiranjem specijalizovanog osoblja koje je obučeno da koristi digitalne tehnologije primenjive na istorijsku dokumentaciju. U ovom dinamičnom medijumu za razmenu informacija specifično se predlaže da se proceni uključena infrastruktura, kao i svi učesnici u tom procesu. Za ovu svrhu je odabran reprezentativni set arhitektonske istorije Laranjeiras grada (Sergipe, Brazil), nazvan Trapiche's Quadroon (Trapiche Kvaratron), koji je uspostavljen kao studija slučaja iz koje je namera da se formulišu smernice za sistematizaciju informacija koje se odnose na nasleđe tog grada.

KLJUČNE REČI: MULTIMEDIJA, INFORMACIJA, TEHNOLOGIJA, ISTORIJSKI GRAD

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## U SUSRET NOVIM PRILAZIMA PRETVARANJA PRINCIPA VERNAKULARNE ARHITEKTURE U ENERGETSKI EFIKASNE ZGRADE U TOPLIM I SUVIM KLIMAMA

**Yahya Lavafpour**

Zgrade mogu biti projektovane tako da zahevaju daleko manje energije nego što je današnji prosek. Smanjenje potrošnje energije zgrada u toplo-suvim klimama korišćenjem prirodnih izvora energije da bi se obezbedila prijatna mikroklima predstavlja glavni problem kojim se bavi ova studija. U ovom radu se razmatraju strategije projektovanja u smislu iskoristljivosti energije koja se zasniva na pravilnom obliku zgrade, odabiru materijala i orijentacije i korišćenja prednosti strategija pasivnog hlađenja i ventilacije. Studija ima za cilj da pokaže da ideja o korišćenju prirodnih energetskih izvora i strategija pasivnog hlađenja potiče od vernakularnih principa (običajnih).

KLJUČNE REČI: ENERGETSKA EFIKASNOST, PRIRODNA ENERGIJA, VERNAKULARNI PRINCIPI,  
STRATEGIJA ARHITEKTONSKOG PROJEKTOVANJA