

## ADAPTIVE ARCHITECTURE IN EXTREME ENVIRONMENTS: VERNACULAR TECHNIQUES AND SUSTAINABILITY IN AMAZONIAN RIVERSIDE COMMUNITIES

### ARQUITETURA ADAPTATIVA EM AMBIENTES EXTREMOS: TÉCNICAS VERNACULARES E SUSTENTABILIDADE NAS COMUNIDADES RIBEIRINHAS AMAZÔNICAS

### ARQUITECTURA ADAPTATIVA EN AMBIENTES EXTREMOS: TÉCNICAS VERNÁCULAS Y SOSTENIBILIDAD EN LAS COMUNIDADES RIBEREÑAS AMAZÓNICAS



<https://doi.org/10.56238/sevened2026.019-036>

**Jair Antonio de Oliveira Junior<sup>1</sup>, Célia Regina Moretti Meirelles<sup>2</sup>, Silvio Stefanini Sant'Anna<sup>3</sup>, Rodrigo Carbajal-Ballell<sup>4</sup>, Silvana Rodrigues de Oliveira<sup>5</sup>, João Paulo Assis Gobo<sup>6</sup>, Maria Cristina Celuppi<sup>7</sup>, Ana Gabriela Godinho Lima<sup>8</sup>, Lucas Fehr<sup>9</sup>, Flávio Marcondes<sup>10</sup>, Fabio Raia<sup>11</sup>, Helena Dias de Oliveira Camargo<sup>12</sup>**

#### ABSTRACT

This article discusses the construction system of communities in floodplain regions and over water, analyzing vernacular architecture, the form of houses, their structure, enclosures, and the cultural relationship embedded in this process, especially in the Brazilian Amazon, while drawing parallels with international works. It introduces the historical issues of dwelling on and within floodplains. Therefore, it examines the relationship between riverside populations, housing, and the environment. The methods are based on a literature review and field study

<sup>1</sup> Dr. Universidade Presbiteriana Mackenzie. E-mail: [jair.oliveira@mackenzie.br](mailto:jair.oliveira@mackenzie.br)

Orcid: <https://orcid.org/0000-0002-7424-1419> Lattes: <http://lattes.cnpq.br/2432920357857944>

<sup>2</sup> Dr. Universidade Presbiteriana Mackenzie. E-mail: [celiaregina.meirelles@mackenzie.br](mailto:celiaregina.meirelles@mackenzie.br)

Orcid: <https://orcid.org/0000-0002-4477-3895> Lattes: <http://lattes.cnpq.br/3880984768964028>

<sup>3</sup> Dr. Universidade Presbiteriana Mackenzie. E-mail: [silvio.anna@mackenzie.br](mailto:silvio.anna@mackenzie.br)

Lattes: <http://lattes.cnpq.br/4898178546150321>

<sup>4</sup> Dr. Universidad de Sevilla. E-mail: [rcarbajal@us.es](mailto:rcarbajal@us.es) Orcid: <https://orcid.org/0000-0002-0506-2150>

<sup>5</sup> Dr. Universidad de Sevilla. E-mail: [srodrigues@us.es](mailto:srodrigues@us.es) Orcid: <https://orcid.org/0000-0001-7621-9234>

<sup>6</sup> Postdoctoral researcher. Universidade UNIR. E-mail: [joao.gobo@unir.br](mailto:joao.gobo@unir.br)

Orcid: <https://orcid.org/0000-0003-4461-2570> Lattes: <http://lattes.cnpq.br/6216803824187190>

<sup>7</sup> Postdoctoral researcher. UNIR, Universidade de São Paulo (USP). E-mail: [mariaceluppi@hotmail.com](mailto:mariaceluppi@hotmail.com)

Orcid: <https://orcid.org/0000-0003-4588-233> Lattes: <http://lattes.cnpq.br/9806332874122434>

<sup>8</sup> Dr. Universidade Presbiteriana Mackenzie. E-mail: [anagabriela.lima@mackenzie.br](mailto:anagabriela.lima@mackenzie.br)

Orcid: <https://orcid.org/0000-0003-2529-0596> Lattes: <http://lattes.cnpq.br/2010070403291740>

<sup>9</sup> Dr. Universidade Presbiteriana Mackenzie. E-mail: [lucas.fehr@mackenzie.br](mailto:lucas.fehr@mackenzie.br)

Orcid: <https://orcid.org/0000-0002-6326-4033> Lattes: <http://lattes.cnpq.br/4861188678505858>

<sup>10</sup> Dr. Universidade Presbiteriana Mackenzie. E-mail: [flavio.marcondes@mackenzie.br](mailto:flavio.marcondes@mackenzie.br)

Lattes: <http://lattes.cnpq.br/6513294756299035>

<sup>11</sup> Dr. Universidade Presbiteriana Mackenzie. E-mail: [raiaorama@gmail.com](mailto:raiaorama@gmail.com)

Lattes: <http://lattes.cnpq.br/2808112201398430>

<sup>12</sup> Master's degree. Universidade Presbiteriana Mackenzie. E-mail: [helenadocamargo@gmail.com](mailto:helenadocamargo@gmail.com)

Lattes: <http://lattes.cnpq.br/9261935639992933>

with site visits. The study identifies traditional stilt houses alongside floating constructions. Another relevant aspect in the Brazilian Amazon is that houses over the river accommodate not only domestic space, but also productive activities, commerce, transportation, and social practices. It is observed that riverside communities employ local materials, reuse components, and promote ecological integration, making these constructions practical examples of empirical sustainability.

**Keywords:** Riverside House. Stilt Houses. Floating Structures. Sustainability.

## RESUMO

Este artigo discute o sistema construtivo das comunidades em regiões das várzeas e sobre as águas, analisando a arquitetura vernacular, a forma das casas, a sua estrutura, vedações e a relação cultural deste processo, em especial da Amazônia brasileira, e faz paralelos a obras internacionais. Introduce as questões históricas do habitar sobre e as suas várzeas. Portanto, discute a relação entre os ribeirinhos, a moradia e o meio ambiente. Os métodos partem da revisão da literatura e estudo de campo com visitas. O estudo identifica as moradias palafíticas tradicionais às construções flutuantes. Outro aspecto relevante na Amazônia Brasileira é que as casas sobre o rio abrigam não apenas o espaço doméstico, mas também as atividades produtivas, o comércio, o transporte e as práticas de sociabilidade. Observa-se que as comunidades ribeirinhas aplicam materiais locais, a reutilização de componentes e a integração ecológica fazem dessas construções exemplos práticos de sustentabilidade empírica.

**Palavras-chave:** Casa Ribeirinha. Palafitas. Flutuante. Sustentabilidade.

## RESUMEN

Este artículo discute el sistema constructivo de las comunidades en regiones de várzeas y sobre el agua, analizando la arquitectura vernácula, la forma de las viviendas, su estructura, cerramientos y la relación cultural de este proceso, especialmente en la Amazonía brasileña, y establece paralelos con obras internacionales. Introduce las cuestiones históricas del habitar sobre y en las llanuras de inundación. Por lo tanto, analiza la relación entre las comunidades ribereñas, la vivienda y el medio ambiente. Los métodos se basan en la revisión de la literatura y en el estudio de campo con visitas. El estudio identifica las viviendas palafíticas tradicionales junto con las construcciones flotantes. Otro aspecto relevante en la Amazonía brasileña es que las casas sobre el río albergan no solo el espacio doméstico, sino también actividades productivas, comercio, transporte y prácticas de sociabilidad. Se observa que las comunidades ribereñas emplean materiales locales, la reutilización de componentes y la integración ecológica, lo que convierte a estas construcciones en ejemplos prácticos de sostenibilidad empírica.

**Palabras clave:** Vivienda Ribereña. Palafitos. Flotante. Sostenibilidad.

## 1 INTRODUCTION

The history of dwelling on water is, above all, the history of the human capacity for adaptation. Since ancient times, communities around the world have developed ways of living in aquatic or seasonally floodable environments, responding with ingenuity to the conditions imposed by the natural environment. In each geographical context, water presents itself not only as a physical obstacle, but also as a symbolic, cultural, and spiritual element — an essential component of the relationship between society and territory.

The first records of constructions on water date back to the Neolithic period. Archaeological excavations in Alpine regions of Europe — especially in Switzerland and Italy — have revealed the presence of lake villages erected on wooden stilts, dating to around 5,000 B.C. These dwellings, known as *pile dwellings* or stilts, consist of platforms suspended above the surface of lakes, accessed by walkways and protected from flooding and animals (Anderson, 2014).

Similarly, Southeast Asian civilizations, such as those of Indonesia, Thailand, and the Philippines, developed stilt buildings on the banks of rivers and deltas, using bamboo, teak, and other light woods. In these contexts, the technique was not only a response to humidity or floods, but also a way of occupying mobile territories, where the boundary between land and water is constantly transformed.

On the American continent, palatines appear in different cultural expressions. In South America, the most notable example is that of the Amazonian communities, which for centuries have used wood as a structural basis for elevated or floating houses, adapted to variations in river levels. In Chile, the *stilt houses* of Chiloé have become architectural icons, combining traditional construction knowledge with a unique aesthetic (Oliveira Junior, 2009; Anderson, 2014). These diverse experiences — European, Asian or South American — converge in the use of wood as a mediator between the natural environment and the inhabited space. Its lightness and versatility make it possible to face water cycles without disrupting the ecological balance, giving rise to a constructive tradition that, in many places, remains alive today.

The relationship between human beings and water transcends the functional aspect. In many cultures, water is perceived as the origin of life, a source of purification, and a symbol of transformation. This imaginary permeates the way of building and living with her. In the Amazon, for example, the river is not only a natural resource or transport route, but an extension of the domestic space itself. As Oliveira Junior (2022, p. 37) observes, "the house is a continuation of the canoe, and the river is the street of everyday life". This conception transforms the riparian habitat into a form of existence deeply integrated into the aquatic environment.

**Figure 1***Canoe house*

Source: Diego Peres, Arthur Castro: Secom

The symbology of water is also manifested in other traditions. In Southeast Asian communities, proximity to rivers is associated with spiritual values, while in European coastal cities dominance over the sea has historically been linked to prosperity and territorial expansion. In all of these cases, the act of building on or next to water reflects a balance between reverence and pragmatism—between the need for protection and the recognition of water as a constitutive part of the territory.

This symbolic dimension explains, in part, the persistence of aquatic dwellings even in the face of urban modernization. Living on water carries a logic that is not limited to functionality: it expresses a philosophy of coexistence with the environment, in which architecture is an extension of the natural cycle and not its negation.

## **2 OBJECTIVE**

The objective of this article is to study the vernacular construction techniques in the Amazon and to make parallels with international works.

## **3 METHODOLOGY**

This article is based on a literature review and field study carried out in riverside communities of the Solimões River floodplains, particularly in Manacapuru (Amazonas).

The literature review covered academic publications on construction techniques on water in the world, with an emphasis on experiences in the Netherlands, Canada, and Southeast Asia, as well as literature on Amazonian vernacular architecture, often already developed by the

author himself in his master's dissertation (OLIVEIRA JUNIOR, 2009) and doctoral thesis (OLIVEIRA JUNIOR, 2022).

The field study consisted of visits, direct observation and photographic documentation of the dwellings, emphasizing: constructive typologies (stilt houses, floating houses, stevedoring houses), materials used (native wood species), traditional construction processes, and the relationship between spatial organization and ways of life. Semi-structured interviews with residents and local builders allowed us to understand the transmission of knowledge and cultural practices associated with the constructions.

The comparative analysis established parallels between Amazonian technical solutions and international experiences, highlighting patterns of environmental adaptation and sustainability. This study also benefited from the author's previous research presented to the International Seminar on Research in Urbanism — SIIU (OLIVEIRA; MEIRELLES; FEHR, 2020).

## **4 LITERATURE REVIEW**

### **4.1 CONSTRUCTION TECHNIQUES ON THE WORLD'S WATERS**

The relationship between architecture and the aquatic environment is not exclusive to the Amazon. In various parts of the world, communities and professionals have developed wooden construction solutions for housing in areas subject to floods, tides and extreme climatic variations. These experiences, although diverse in scale and technology, share the same principle: the adaptation of the built space to the water cycle.

International studies allow us to identify a conceptual evolution that goes from traditional stilt houses to floating constructions and, more recently, to amphibious housing, which combines conventional foundation techniques with controlled flotation systems.

According to Anderson (2014), it is possible to classify constructions on water into four major categories, according to the degree of interaction with the liquid medium:

1. Terps (raised embankments) – dwellings erected on earthen platforms or artificial embankments, common in coastal regions of the Netherlands and northern Europe;
2. Houses on stilts (stilts)–supported by foundations driven into the submerged soil, typical of wetlands and river deltas;
3. Houseboats – buildings that rest entirely on flotation systems, usually composed of rafts, concrete coffins or metal drums;
4. Amphibious houses – which remain supported on fixed foundations, but are able to rise and return to the original level according to the variation of the water level.

This typology allows us to understand the diversity of strategies adopted around the world, despite all of them present in the Amazonian regions surveyed. Each model expresses a specific response to environmental, cultural and technological conditions, but they all share the same search: to ensure safe and continuous habitability in environments subject to water instability.

#### 4.2 NOTABLE EXPERIENCES ON THE INTERNATIONAL SCENE

Several countries have stood out in the development of projects aimed at housing on water. Just to name a few examples, the Netherlands, Canada and Southeast Asia present representative approaches, which combine tradition, innovation and sustainability.

- **Netherlands: amphibious architecture and aquatic urbanism**

The Netherlands is a world reference in amphibious architecture and resilient urbanism. Due to its flat topography and the constant threat of flooding, the country has historically developed advanced water control techniques and adapted housing. The **Maasbommel project**, designed by Dura Vermeer in partnership with **Factor Architecten**, is considered the world's first amphibious housing development. Completed in 2005, the development consists of 46 homes built in laminated timber, set on floating foundations of lightweight concrete. In periods of flooding, the houses rise gently, guided by metal pillars, returning to their original position when the water level drops (Anderson, 2014).

#### Figure 2

*Amphibious houses – Maasbommel – Netherlands*



Source: Dura Vermeer, 2006.

Another notable example is the **IJburg district** in Amsterdam, planned as an urban sprawl on the IJmeer lake. The project combines flotation techniques with principles of sustainable urbanism, employing engineered timber and flexible anchoring systems. According

to Anderson (2014), these experiences demonstrate the feasibility of large-scale amphibious urbanism, in which water is no longer seen as a threat and is integrated into the public space.

- **North America: Amphibious Resilience and Retrofit**

In North America, the highlight is the **Buoyant Foundation Project (BFP)**, developed by researcher **Elizabeth English** at the University of Waterloo, Canada. The project came about in response to Hurricane Katrina, which devastated New Orleans in 2005, destroying thousands of wooden homes. English (2009) proposed an amphibious retrofit system that allows the conversion of existing residences into floating buildings. The solution is based on a set of polyethylene floats installed under the foundation, coupled to a system of vertical guides. During a flood, the house rises gently and returns to the ground without sustaining structural damage.

Lac's house was renovated and floated during the 2018 seasonal flood – Vietnam – Mekong River Delta

**Figure 3**



Source: <https://www.buoyantfoundation.org/vietnam-amphibiation-in-the-mekong-river-delta>

- **Southeast Asia: Continuity of the Stilt Tradition**

Southeast Asia represents perhaps the most continuous and widespread form of dwelling on water. Countries such as Vietnam, Cambodia and Indonesia maintain extensive stilt houses built entirely of wood and bamboo. In these regions, the technique is not limited to housing: schools, temples, markets and even entire cities — such as **Kampong Ayer**, in Brunei — are built on stilts. The construction system is simple and efficient: hardwood piles driven into the floodable soil support light platforms on which bamboo walls and straw or wooden roofs are erected.

**Figure 4**

*Kampong Ayer, Brunei, known as the Venice of the East*



Source: Taz Zaidi.

According to Anderson (2014), the durability of these structures depends on constant maintenance and periodic replacement of parts in contact with water. Although rudimentary, these buildings have sophisticated constructive logic: flexibility, natural ventilation and total integration into the ecosystem. Such principles have even inspired contemporary sustainable architecture projects in the region, such as those of **Vo Trong Nghia Architects** in Vietnam, which reinterpret the stilt tradition with modern techniques of laminated wood and treated bamboo.

#### 4.3 THE FORMATION OF RIVERINE COMMUNITIES IN THE AMAZON

In the Amazonian context, water habitation is a direct result of the ecological and economic relationship between man and the river. In the case of the populations living on the banks of the Solimões, Negro and Amazonas, they have developed forms of settlement that seek to keep up with the annual floods and ebbs, adjusting their way of life to the rhythm of the waters. Wood, abundant and diversified, has become the main construction material, giving rise to typologies that vary according to the degree of flooding and the type of soil. As Oliveira Junior (2009) points out, the stilt, floating and stevedoring houses form an adaptive system that reflects both the material culture and the environmental intelligence of the riverside dwellers. These constructions are erected collectively, in joint efforts that reinforce community bonds and the exchange of knowledge.

Meirelles *et al.* (2018) point out that, in contemporary riverside cities, such as Manacapuru and Coari, traditional typologies still persist, even with the introduction of industrialized materials, as these meet the conditions of the terrain and the variations in river levels.

In addition to responding to environmental demands, riverside architecture reveals a specific social structure. The houses on the river shelter not only the domestic space, but also productive activities, commerce, transportation and sociability practices. The built environment extends into the liquid space, forming what Oliveira Junior (2022) describes as a "living landscape", where inhabiting and nature coexist in an organic way.

#### 4.4 THE ROLE OF WOOD IN WATER CROP

The recurring presence of wood in aquatic constructions throughout history is no coincidence. It is a material that brings together unique characteristics for this type of environment: **availability**, lightness, flexibility, tensile strength and a good relationship between weight and load capacity. In addition, wood offers ease of repair and replacement — an essential aspect in contexts where the wear and tear caused by humidity and aquatic organisms is constant.

In the Amazon, the species traditionally used — such as itaúba, angelim, acacu and maçaranduba — are chosen for their natural durability and local availability (Hermes, 2014). Over time, wood consolidates itself as a symbolic mediator between man and water: it is the element that allows us to be on the river without moving away from it, to float without breaking the bond with the land. Even in the most technological experiences — such as contemporary amphibious houses — the choice of wood carries this ancestral heritage, associating lightness and resistance, nature and culture.

The historical study of living on water, therefore, shows a remarkable constancy: regardless of the time or the continent, wood remains the material that translates the human search for balance with the liquid environment. This permanence attests not only to the technical effectiveness of this resource, but also to its role as a cultural language, capable of uniting tradition and innovation around the same principle: living with water, not against it.

#### 4.5 RIVERINE VERNACULAR ARCHITECTURE IN THE AMAZON

The vernacular architecture of the Amazon represents one of the richest expressions of the interaction between culture and nature. It is an architectural production that does not impose

itself on the environment, but develops from it, responding to variations in the water regime, the availability of materials and the social organization of communities.

On the banks of the great Amazonian rivers, wood constitutes the physical and symbolic foundation of this relationship, acting as a mediator between man and the aquatic environment. Each dwelling is, at the same time, shelter, workshop, viewpoint and extension of the landscape.

The shape of the riverside dwellings is a direct result of environmental conditions and the accumulated experience of local populations. According to Oliveira Junior (2009), these constructions translate an "empirical ecological knowledge", transmitted orally and improved for generations, which guides decisions about the place of implantation, the type of foundation and the structural proportions. In general, the riverside house is light, demountable and adaptable to floods — qualities that guarantee both the survival and cultural permanence of the communities.

The most widespread typology is the **stilt house**, supported by wooden stakes driven into the floodable soil. The raised floor allows the house to remain above the water level during the flood period. Its structure, composed of spikes, beams and boards, is simple, modular and built with hand tools, favoring maintenance and reconstruction when necessary.

### Figure 5

*Stilt house - Manacapuru – AM*



Source: Jair Oliveira.

Other variations include **houseboats**, erected on rafts or hollow wooden logs, and **stevedoring houses**, common in lowland areas, partially supported and partially suspended. They all share the same logic: to follow the water cycle without resisting it (Meirelles *et al.*, 2018).

**Figure 6***Floating house – Fishing lake – Manacapuru – AM*

Source: Jair Oliveira.

#### 4.6 MATERIALS AND CONSTRUCTION SYSTEMS IN WOOD FROM THE AMAZON

The predominant material is still native woods, used in all parts of the building: foundation, structure, fence and roof. The species used vary according to the region and local availability. Among the most common, the "itaúba (*Mezilaurus itauba*), the red angelim (*Dinizia excelsa*), the acapu (*Vouacapoua americana*), the andiroba (*Carapa guianensis*) and the maçaranduba (*Manilkara huberi*) stand out, recognized for their durability and natural resistance to humidity" (Hermes, 2014).

The construction follows a predominantly artisanal process, carried out in a community collective effort. This practice reinforces social ties and keeps the transmission of technical knowledge alive. Hermes (2014) observes that the construction method is rational and efficient: "houses can be disassembled, transported and assembled with the same set of materials", which ensures mobility in the face of floods.

From a structural point of view, the traditional Amazonian stilt house is based on pillars driven directly into the clay soil, on which the sleepers and the plank floor rest. The walls can be made of wood or woven straw, and the roof, with gables, is traditionally covered with buriti and babassu straw – they are replaced by metal tiles and are now more common. This technical simplicity, far from representing precariousness, translates a refined constructive logic, adjusted to the environment and the economy of available means.

#### 4.7 ENVIRONMENTAL LOGIC AND THE WATER CYCLE

Living on the banks of the Amazon rivers means accepting the alternation between periods of flood and ebb as part of daily life. This constant oscillation requires constructive

solutions that do not oppose nature, but that accompany it. Meirelles et al. (2018) point out that riverside populations living at lower levels face months of isolation during floods, when access is only by canoe. The house, therefore, needs to assume multiple functions — housing, work shelter, warehouse, and even dock.

### Figure 7

*Two-story floating house and maromba (deposit in periods of drought and stable in periods of flood) Manacapuru – AM*



Source: Jair Oliveira.

The observation of Oliveira, Meirelles and Fehr (2020), in a study presented to the International Seminar on Research in Urbanism (SIU), is instructive: "the floating houses of the Solimões River floodplain configure adaptive architectures in constant negotiation with the water landscape". The water level determines the type of foundation, the access system and even the internal organization of the spaces. This dynamic character makes riverside architecture an example of resilient design, in which construction is an extension of the ecosystem.

The notion of the "water cycle" structures not only the physical space, but also the way of life of the communities. The time to build, fish, plant or move depends on the tides and the regimes of the rivers. Architecture, therefore, is not static: it is a temporal and cyclical expression of the relationship between man and the environment. For the riverside dweller, the house is not only a physical shelter: it is also a space for sociability, work and culture, as Fraxe (2000) argues. The construction involves the community in collective efforts, where knowledge is shared and solidarity reinforces the collective bond. This social dimension gives architecture a participatory and pedagogical character. According to Oliveira Junior (2009), "the house is the

center of the social landscape and the river, the public space par excellence". Everyday life unfolds between land and water, and the act of building is also the act of belonging.

Wood, in this context, assumes a symbolic role. It carries the memory of the forest and the ancestral knowledge of the management of available resources. Its texture, smell and sound are part of the sensory experience of living, giving identity and cultural continuity to riverside communities. Amazonian architecture, therefore, goes beyond the technical domain: it is a language that translates a way of existing in harmony with the liquid territory. As Oliveira Junior (2022) observes, understanding this architecture means understanding an ethics of coexistence with the environment — a wisdom that manifests itself not only in technique, but in the very way of living.

Hermes (2014) reinforces that riverside dwellings anticipate central principles of modern sustainable architecture: the efficient use of resources, community self-construction, structural reversibility, and climate adaptability. Recent academic and institutional projects, inspired by these models, have been proposing prefabricated modular systems in engineered wood for regions of difficult access, combining local tradition with new construction technologies (Hermes, 2014; Oliveira Júnior, 2009, 2022).

## 5 FINAL CONSIDERATIONS

This set of practices, materials, and values makes riverside vernacular architecture an example of how tradition can offer concrete answers to contemporary challenges. Far from representing an obsolete model, it inspires new design possibilities, capable of articulating technology, culture and sustainability.

Sustainability, often treated as a contemporary concept, is already inscribed in the logic of Amazonian vernacular architecture. The use of local materials, minimal waste generation, reuse of components and ecological integration make these constructions practical examples of empirical sustainability. Thus, Amazonian vernacular architecture reveals itself not as a vestige of an artisanal past, but serves as a support and concrete reference for the development of sustainable contemporary solutions. However, it is important to note that, in this context, the term *sustainability* is closer to the notion of survival capacity than to the concept widely disseminated by the so-called *green marketing*, often associated with merely promotional strategies.

## REFERENCES

- Anderson, H. (2014). *Amphibious architecture: Living with a rising bay*. San Luis Obispo: California Polytechnic State University.
- English, E. (2009). *Amphibious foundations and the buoyant foundation project: Innovative strategies for flood-resilient housing*. Paris: UNESCO.
- Hermes, F. (2014). *Elaboração de um projeto padrão de escola para as regiões ribeirinhas do estado do Pará (Dissertação de mestrado em Arquitetura e Urbanismo)*. Universidade Federal do Pará, Belém.
- Fraxe, T. J. P. (2000). *Homens anfíbios: Etnografia de um campesinato das águas*. São Paulo: Annablume Editora.
- Meirelles, C. R. M., et al. (2018). *A problemática da urbanização na região amazônica: Bairro da Correnteza em Manacapuru*. In *Congresso de Desenho Urbano*. São Paulo.
- Oliveira Junior, J. A. (2009). *Arquitetura ribeirinha sobre as águas da Amazônia: O habitat em ambientes complexos (Dissertação de mestrado em Arquitetura e Urbanismo)*. Faculdade de Arquitetura e Urbanismo, Universidade de São Paulo.
- Oliveira Junior, J. A. (2022). *Regionalismo paramétrico no Baixo Solimões – Amazônia (Tese de doutorado em Arquitetura e Urbanismo)*. Faculdade de Arquitetura e Urbanismo, Universidade de São Paulo.
- SIU. (2020). *Habitação em ambientes extremos: Áreas de várzea do Rio Solimões*. In J. A. Oliveira, C. R. M. Meirelles, & L. Fehr (Orgs.), *Seminário Internacional de Investigação em Urbanismo*. São Paulo.