

Re-tracing urban landscape lines

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Abstract

As designers, we should question ourselves on how we relate to the ground. In this article, we would re-trace urban landscape lines of the Qhapaq Ñan, the Inca Andean Road system in Peru, to reveal the primeval pattern that a city extends; we shall explore it through a series of conceptual layers. We inhabit a territory that is facing big changes, and this is taking us towards the dispel of ecological and archaeological vestiges which are information layers that can lead us to explore the territory. We seek to re-trace a multidimensional system of lines and points, adopting an exploratory and descriptive approach that responses to different strata that allow us to become aware of the landscape. Within observing the systems revealed, we can understand and appreciate the natural and urban landscapes intertwined in a city morphology to operate upon it, for us to propose new alternatives to integrate our heritage to the existent urban landscape.

Keywords

Territory, Landscape, Urbanism, Qhapaq Ñan, Peru

Qhapaq Ñan¹

Qhapaq Ñan is the name by which the Inca Andean Road system in Peru was identified during the Inca Empire. Ñan means road, Qhapaq means main lord. It was a multidimensional road network, non-linear system, emplaced over a large territory, a pathway that unified the ground point by point, line by line. It had a transversal relationship with the different land altitudes. An articulation of axes covering about 40,000 kilometers in six Andean countries, with no doubt the largest monument known in America. Its first traces belonged to pre-Inca cultures as Chimú, Warí and Mochica. In the first instance, they functioned as communication and political pathways, providing economic and administrative services, but beyond its pragmatic aspect, the Qhapaq Ñan has much more meanings than the aforementioned purposes. It is, indeed a more complex system also guided by natural landscapes and Incan deities. (Fig. 1 and Fig. 2)

Over the lines of the Qhapaq Ñan, apart from the main centers, there was a system of places of Incan structures called the *tambos*, which means temporary accommodation. Archaeologists and researchers estimate that 2,000 or more *tambos* are placed next to important roads, used by itinerant individuals as shelters and storage centers for administrative and military purposes.

These served as enclosures allowing people to rest overnight and continue their journey towards another *tambo* or other main centre. The *tambos* were placed throughout the Peruvian territory, and as the aforementioned road system, they were not only strategically distanced by a 1-day walk, but also usually located in places where they would provide a special connection between earth and heaven.

This research article seeks to explain how the Qhapaq Ñan and the *tambos*, as systems for ground travel, still play an important role over the natural and the urban landscape in the context of modern Peru, particularly in its capital Lima. We will explore the idea of walking and staying through the strata exposed in the Landscape Chart of the Americas to become aware of it. Walking and staying will be also investigate as a personal and social concept, and the Qhapaq Ñan system will be considered as the physical and divine motives of routes and stations, and through these, observe and understand the relation of the overall system with the landscape. We will also argue the forms and directions that landscape design can determine on how to operate the ground and relate to it to become aware of its value within the field of culture, "believing that the landscape is a key element of individual and social well-being and that its protection, management and planning entail rights and responsibilities for

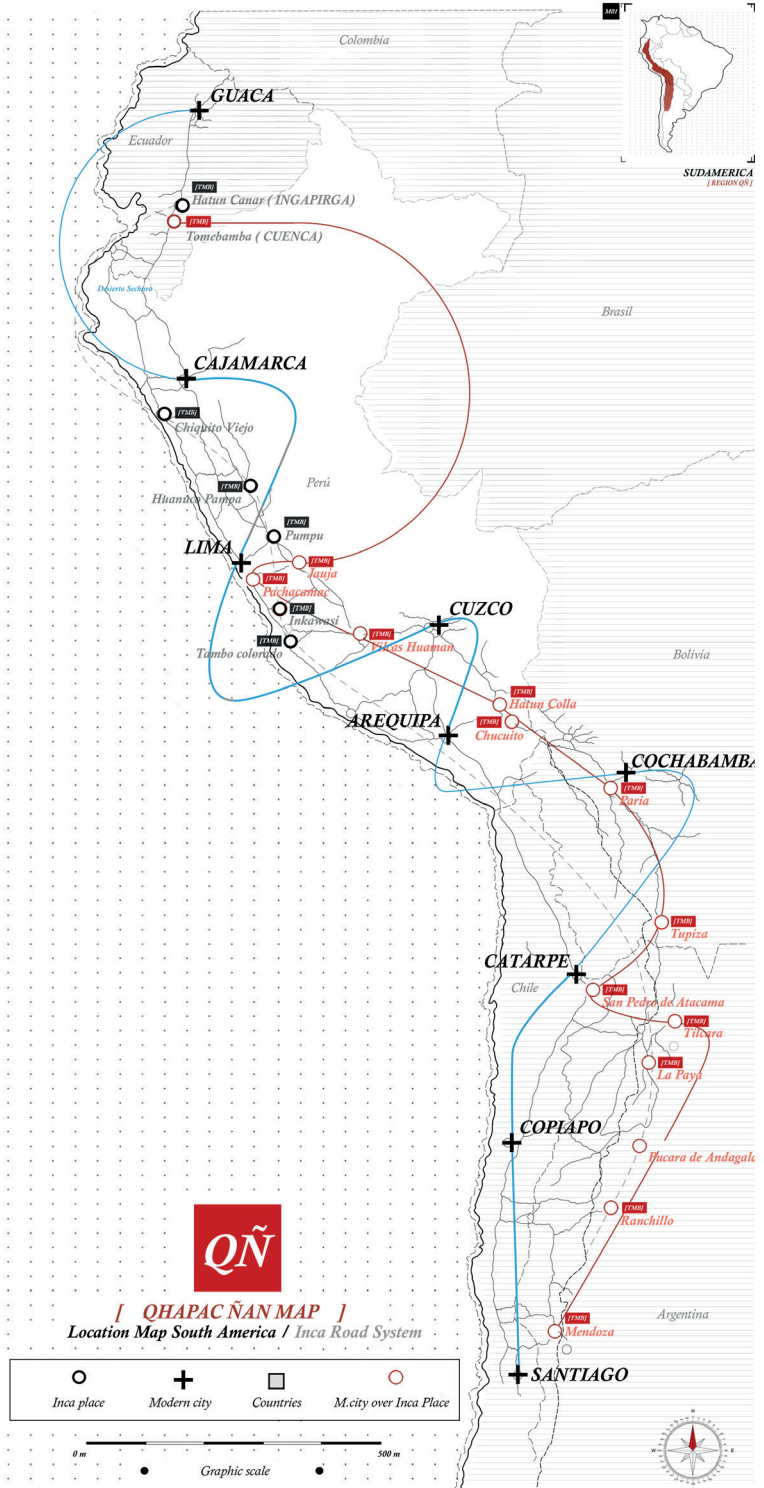


fig.1 - Qhapaq Ñan Map. Location Map South America. (Redrawn from Canziani, 2012)

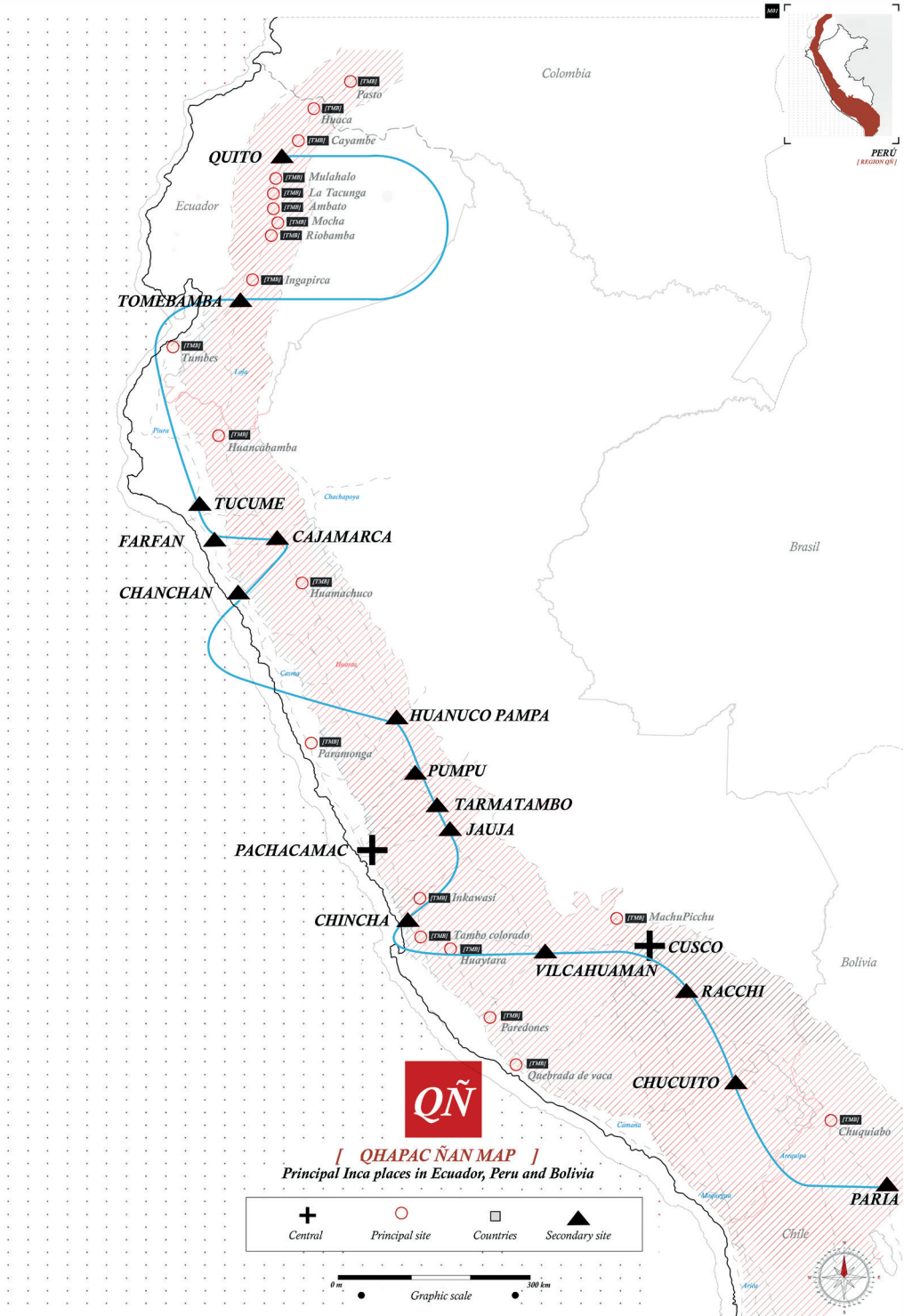


fig.2 – Qhapaq Ñan Map. Principal Inca places in Ecuador, Peru and Bolivia. (Redrawn from Canziani, 2012)

everyone” (European Landscape Convention, 2000, pg. 1). Our main objective is to re-trace these historical urban landscape lines, and to reveal and study, the primeval pattern that a city extends, with the purpose of structuring a new urban experience.

Of subject and object, and of personal and social

Why have we allowed our heritage to fade from the ground, putting at risk the historical value that it carries, instead of collecting its wisdom to reinvent the landscape as culture? Valuing cultural landscapes is a complex and extensive process that requires an interdisciplinary and participatory approach which has clearly been poorly managed in America. Population will be able to cooperate for its protection, management, and planning, if we recognize it as an important element of life quality of the entire population. Studying the landscape through diverse layers allows us to become aware of its value. (Paisajes Culturales: Comprensión, Protección y Gestión, 2010, pg. 160)

The idea of walking through or staying someplace, referring to the act of moving along a surface or remaining in it, incorporates, mostly inadvertently, far more than the merely functional activity of moving or not moving. It is when we incorporate the idea of landscape to these actions that we start acknowledging its multiple layers of meaning. Additionally, we can notice that there are personal and social connotations that influence the way each person experiences the world. Initially, as people move or remain still on any landscape, the real world starts to be mediated through the subjective human experience in a very personal way. “Landscape is not merely the world we see, it is a construction, a composition of that world. Landscape is a way of seeing the world.” (Cosgrove, 1984, p. 13) Consequently, we must remind ourselves that landscape is a social product, an impression of human labor operated on the ground. The transformation of the Earth’s geography is a collective human activity, yet the way we experience that world is a completely personal perception; thus, this

ambiguity is the primary reason that opens a space to examine all the layers contained. (Cosgrove, 1984, p. 14)

Qhapaq Ñan and the tambos form a unique cultural heritage, which to date—despite its state—still represent a part of the Peruvian landscape. Given that the whole system was distributed throughout a larger area of the South American territory, it had the capacity of connecting faraway places and people. The road system and the Incan structures, as landscape elements, can also be seen as a human expression that integrated social, political, religious, and economic aspects at the time, and reinforced the local and regional identity. This social component was not only expressed through the physical path that was being travelled, but also in the act of walking per se. The analysis regarding the way of navigating the Qhapaq Ñan, walking through its lines or staying at certain points amplifies when we start exploring it as subject and object.

In one hand, objective implications bring us to observe pragmatic aspects as the users’ action of moving or stopping over the network. For instance, a chaski was a runner who carried messages and objects throughout the Incan reign. They were the ‘postal system’ during the Inca empire, traveling through the Qhapaq Ñan from tambo to tambo. They carried the quipus, an instrument that stored information used by the Andean civilizations, consisting of wool or cotton ropes provided with knots. Although it is known that it was used as an accounting and storage system, researchers as William Burns Glynn have suggested that it could have also been used as a graphic writing system. (Torres, 2004, pp. 229-232) Moreover, the road system was also used by military troops, for keeping the political and military administration of the valleys under control and to transport tributes to political centers. Though these were the main groups of people that moved through the Qhapaq Ñan system, the Incas and the rest of the population used it as travel roads too.

On the other hand, subjective connotations make us rethink the subject of human agency and the diverse ways of experiencing the world through the landscape. As the experiences were individualistic, and therefore they can only remain in one or another kind of human expression, the geographical space becomes a canvas where the cultural dimension materializes. These imprints in the Qhapaq Ñan landscape carry a deep knowledge of geographical and social interaction with the environment. Thousands of anonymous people, from prehistoric times, have carved the territory through an unlimited number of conscious and unconscious actions that have endowed each place with a determined and unique character. The expression of that character is what we call landscape. (Maderuelo, 2020, p. 50)

“Landscape, I shall argue, is an ideological concept. It represents a way in which certain classes of people have signified themselves and their world through their imagined relationship with nature, and through which they have underlined and communicated their own social role and that of others with respect to external nature.” (Cosgrove, 1984, p. 15)

Thus, this dual ambiguity of subject and object lets us understand how human beings experienced the Qhapaq Ñan and the tambos in their travels. Still, there are several interpretations over this historic territory, and this adds complexity to the matter and gives us an array of perspectives to reach a more global meaning of the concept of landscape. However, why do we find ourselves disconnected from our landscape if we—individually and as a community—have a personal and social relationship with our surrounding nature and have had subjective and objective experiences with our landscape? The discussion will continue exploring the nature and how this concept has changed through time, since nowadays nature is combined with the anthropic, and this variation influences the human originality in making and experiencing the landscape.

The natural world

The primeval nature is the stratum understood as biological heritage on which the American Continent was erected. The routes of the Qhapaq Ñan and the locations of the tambos are in fact related to this physical terrain. Understanding the relationship of these systems with the nature of the landscape through time will allow us to comprehend the territory during Inca times and to date. To deepen our analysis, we will narrow our focus to the coastal territory of Lima. (Carta del Paisaje de las Américas, 2018, pg. 4) (Fig. 3)

Mostly, the main coastal road runs close and parallel to the ocean, covering the deserts and valleys of this region. It should be noted that the roads were not only a result of the natural travel paths of goods and people, but the result of the political will and decisions of the time. We can notice that the coastal path, parallel to the Andes path, was a well-served route, but with a series of limitations; it was difficult and dry, with very little access to water. The coastal road was also supported by the marine transport that was an advanced conveyance, capable of transporting people, merchandise, and llamas. “Kosok’s observations show that the diversity of coastal roads is an important trait” (Lumbreras, Tarragó and Castro, 2020, p. 133) He acknowledged that the roads did not have a similar structure and discovered five different categories of formal roads. Some of the characteristics seem to be associated with eventual flooding caused by overflow of water from the river or by the phenomenon El Niño. The coastal towns prioritized their north-south connections with neighboring valleys and complemented them with routes directed to Andean towns (Lumbreras, Tarragó and Castro, 2020, pp. 129-137). In the valleys of Lima, urban development was significant, and it is here that the temple of Pachacamac became a point of reference for the entire Peruvian territory. Today Pachacamac should be considered as a sanctuary and pilgrimage site because

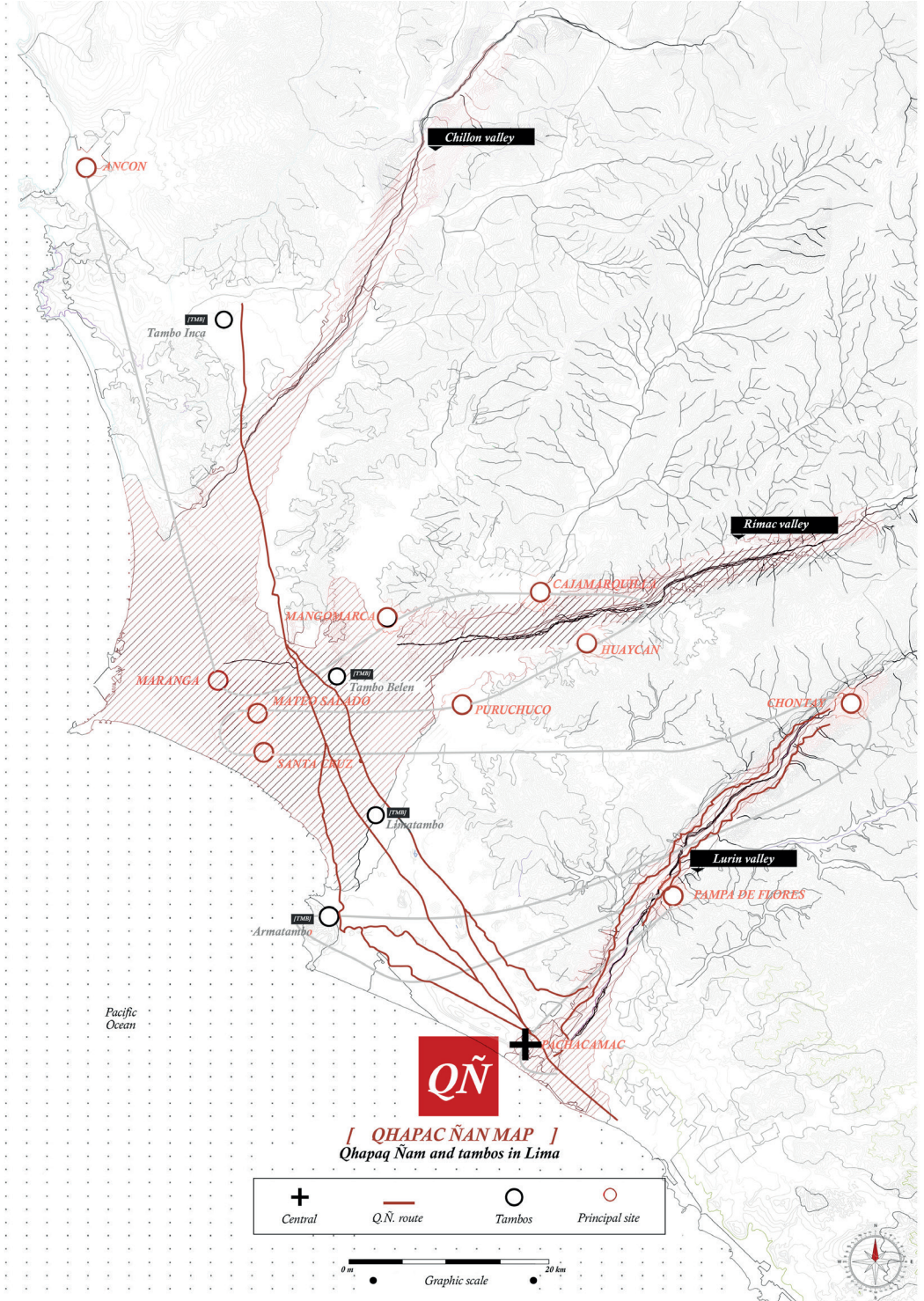


fig.3 - Qhapaq Ñan and tambos in Lima.

it is where its oracles, the main reason for the provision of the roads that lead there, where located. From there one can travel towards the mountains, in direction to Jauja and of course Qhapaq Ñan. As the saying goes: all roads lead to Pachacamac.

The relationship of the Qhapaq Ñan route and the tambos location in Lima, specifically within the valleys of Chillón, Rimac, and Lurín, was especially based on the geomorphology to guide the traces of the line and point system. Mostly on the coast, the structures accommodate to the valleys; as one can notice, tambos were usually located on the entry or exit of the valleys. Also, regarding the routes in coastal areas, these were always seeking proximity to agricultural resources to create new production centers and promote the development of low-productivity areas. Such as in Rimac valley, the location of the sites would show that in addition to a notable agricultural extension in the lower valley, a good part of the lower-middle valley was also occupied and taken advantage of during those periods of time. Locations were also associated to water channels for the distribution and management of the corresponding irrigation zones. (Canziani, 2012, p. 280)

It is also worth mentioning that the Incas looked for exchange between the different ecological floors. In a schematic cross section of the northern, central, and southern regions of Peru, we can see the differences in meters above sea level, going from sea level to 6000 m.a.s.l., which allows us to appreciate the diversity of the Peruvian territory and understand the variety of social formations that took place in the different regions. These exchanges allowed a wide domestication of plants and animals and a level of domestication of the territory as a mean of production. Both the extraordinary geographical and climatic conditions of the environment and ecosystems that characterize the territory of Peru and the need to adapt these areas to the demands of various types of production resulted in

the deployment of an exceptional and varied cultural landscape (Canziani, 2012, p. 36) (Fig. 4).

Tracing the lines and points through the natural world reveals the relationship of the mentioned Inca structures and the current infrastructure, with nature today being evidently different. Back then the link between human-built infrastructure and nature was extremely intertwined. Today, although the concept of nature itself has changed, the present and most modern infrastructures are completely disconnected from the landscape, and archaeological remains have been set aside as burdens in the city's space. "These heritage places have become meaningless voids, transformed into 'urban black holes' that irresistibly attract formal and informal urbanization due to land scarcity and society's indifference." (Crousse, 2017, p. 26) As happens in Lima, the ecological field is permanently threatened by urban growth, where the city has reached natural limits such as the Pacific Ocean and the Andes. As long a demand is high, formal, and informal land developers are always searching for empty spaces to continue to expand the city, taking advantage of the weakness and disinterest of the public sphere and the zero to non-political efforts to regulate them.

Deities

The relationship between the anthropical and ecological factors has changed over time. It is important to recognize the link between the material and immaterial dimension to fully understand the cosmos, the metaphysical aspect of the landscape, of the worldview domain. Historically, as human beings we have been connected to nature and spirituality. However, today our activities and way of living usually neglects them. The Incas related their infrastructures to divine motives. The tambos or main temples, which were physically located on strategic heights because of security and agricultural purposes, provided a special connection between the land and its deities and the roads, which were tai-

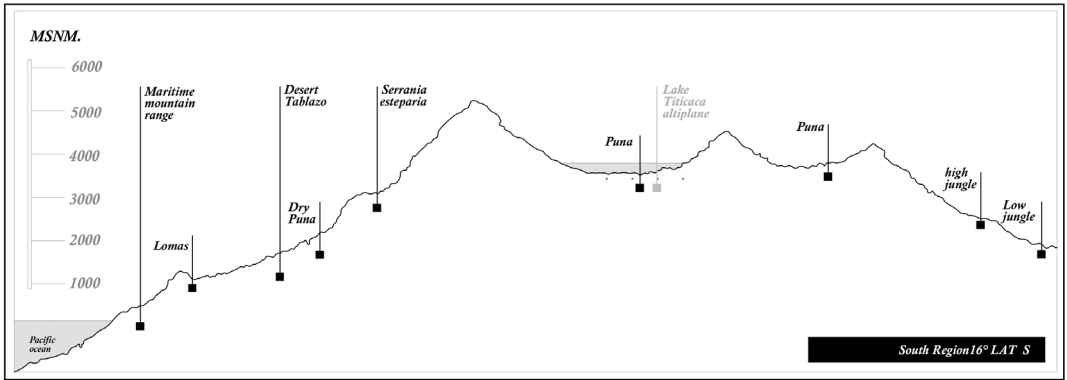
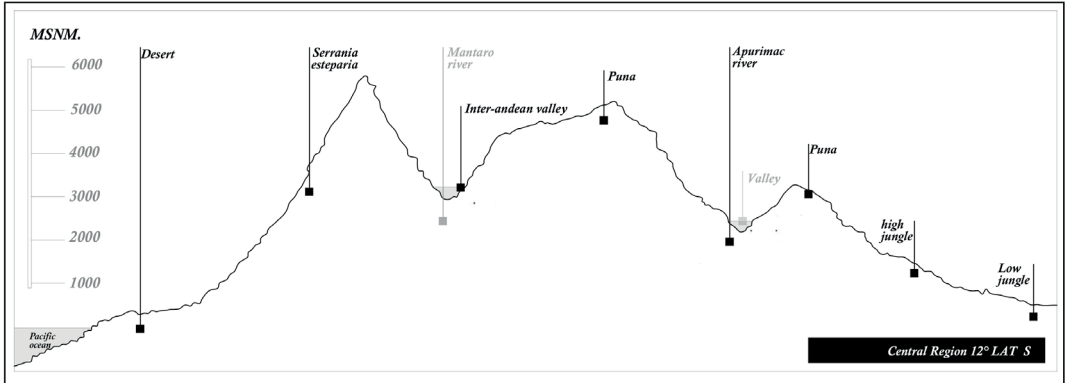
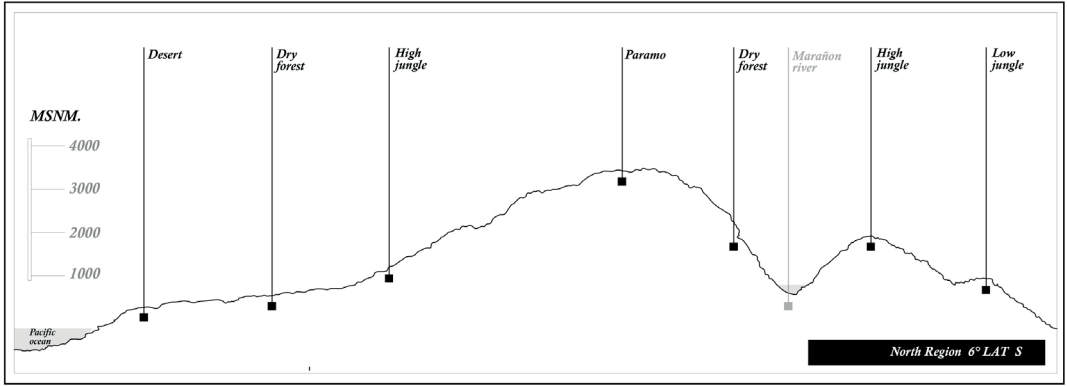


fig.4 - Schematic transversal sections by the north, central and south regions in Peru. (Redrawn from Canziani, 2012)

lor-made to each geography in order to make the journey easier and to connect geographical points representing their different gods. For instance, in the road from Pachacamac to Jauja in Lurin valley one can notice a clear geographical connection between the Pacific Ocean and Mount Pariacaca and, in context of deities, between Mama Cocha, the goddess of the sea, and Pariacaca, the god of water and rainstorms. (Carta del Paisaje de las Américas, 2018, pg. 4) (Fig. 5)

The Incas developed an understanding of the world according to which the elements of nature, human beings, and deities were considered living, complementary, and incomplete organisms. All these entities were interrelated from one another and transform the territory in an equivalent way, forming a community based on complementarity and reciprocity. Human settlements and roads, and their connection to deities, were not conceived as interventions 'outside of nature' but as part of it. It is when Europeans reach America with the new Renaissance values that determine the future of Western paradigm: the separation between human beings and nature, a new understanding of the world that was superimposed over the Inca territory which explains the beginning of our disconnection to nature. In either case, through human beings or divinities, the exercise of going back to the past to gather wisdom on how to interact with ecosystems shows us that we must 'return to the landscape' to reconnect with the natural surroundings. (Crousse, 2017, p. 30)

All the way from the lines and points system of the Qhapaq Ñan and tambos to conceptually walking and staying in these landscapes, we can confirm that the natural landscape, understood as an integrated concept between the human beings, deities, and nature itself, guided their traces and locations. Why have we not become aware of the value that landscape has within the field of culture? This is currently a relevant discussion on the polit-

ical canvas because there should be actions to regulate our approach to the landscape around us, yet entities are unaware of how to regulate and plan actions related to the ecological floor.

Landscape design

The entire Rimac valley and a large part of the Chillon valley have been completely taken over, or rather poorly occupied, by the population, and this menacing expansion is spreading to the Lurin valley. This is enough evidence to question the direction, of the occupation plan of the Peruvian territory. Project plans do not measure nor consider the possible impacts on the natural and urban environment, as has happened in the Lurin Valley or in Pachacamac Sanctuary. Population, professionals and national entities should recognize the value of the system in study for new developments.

From this position, it is worth framing a series of themes that open uncountable interesting questions. Re-tracing and re-discovering the roots of 'Americanity' as a condition for the future is the paramount principle in considering the roots that provide our foundations as owners of our land and which allows us to continue projecting the future of the landscape to consolidate our identity. Specific measures must be taken that commit to increased awareness of the society, private organizations, and public authorities regarding the value of landscapes, considering all its strata. (Carta del Paisaje de las Américas, 2018, pg. 8) (European Landscape Convention, 2000, pg. 3)

The lack of identity of the society, as is happening in Peru, leads to the disintegration of natural bodies and archaeological monuments of its cultural landscape, whereby the people that inhabit its immediate or non-immediate surrounding do not protect them and therefore become vulnerable to the accelerated growth of urban areas. It is important to take this factor into account when proposing solutions in the field of landscape design and urban planning.

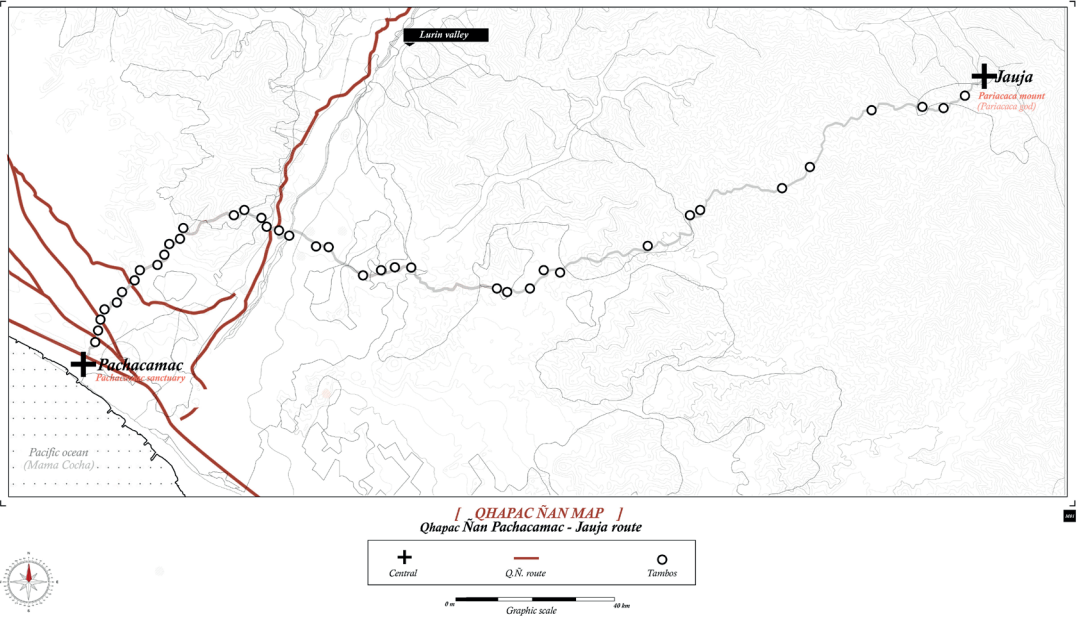


fig.5 - Qhapaq Ñan. Pachacamac to Jauja route.

Despite being degraded in Lima, the Qhapaq Ñan is still evident and alive in the capital, running approximately 63 kilometers from Ancon to Pachacamac. In fact, the main Express way and the route of the electric train follow the original tracks of the Inca Andean Road, a reality that many Lima residents ignore. These routes have much to recognize to the Incas. For example, the Express way has 66 blocks connecting Lima Centre to Barranco district and since 2010 the Metropolitano, a rapid transit bus system, operates inside said avenue. Moreover, the electric train route that runs through Aviacion Avenue, which was inaugurated in 2011 with 35 kilometers, follows the buried trail of the Qhapaq Ñan.

“Urban black holes represent a huge reserve of urban space. In a city like Lima, with very little public infrastructure and a considerable deficit of green spaces, these segregated areas are huge opportunities for the city’s transformation. According to the city Park Services (SERPAR), Lima has 2940 hectares of green spaces, and needs some 5200 more in order to meet the international standards. If urban black holes were to be integrated in the city as urban spaces, they would contribute almost 18000 hectares of green spaces to Lima. Archaeological sites themselves represent 4865 hectares, nearly the entire deficit surface of green spaces.” (Crousse, 2017, p. 36)

As Charles Waldheim’s landscape urbanism theory sustains, the city should be built on interconnected and ecologically rich horizontal field conditions. (Waldheim, 2016, p. 13) We must incorporate the management of territorial landscapes into the city’s plans recognizing the values of its special cultural identity as well as the essential role they play in environmental aspects and social recreation.

Conclusion: ‘Return to the landscape’

Walking and enjoying landscapes is not a fluid exercise when the landscape is not in the minds of the inhabitants. Firstly, we should start to discuss more about the landscape to understand its own

idea of the local, the artificial and the concept of identity. In Lima’s case it is clear how a territorial system already culturally transformed to be habitable and productive has been destroyed. From the ideological point of view, just as the authorship of the transformation of the landscape corresponds to the community as a collective, any intervention in the urban space, which leads to the modification of the territory, must be understood in a collective and integral manner.

Secondly, the Qhapaq Ñan routes and the tambos, which today are voids conceptually unavailable, must be seen as the great opportunity to intervene and find balance between heritage and the city. It is worth emphasizing that intervening does not necessarily mean to build but to occupy and transform into true public spaces. The way we operate the ground should incorporate the management of territorial landscapes, recognizing their special values to cultural identity, as well as the role they play in environmental and social recreation aspects.

Thirdly, big changes and accelerated growth has led us to the disappearance of ecological and archaeological vestiges. We have isolated the monuments with respect to their territorial and landscape contexts as well as from new infrastructure. Only in Lima, a wide variety of ecosystems such as wetlands, coastal hills, sea, and rivers coexist. To recover the lost landscape, we must design models of a sustainable city which integrates all the ecosystems, opting for connectivity between them and gradually and progressively integrating them into the urban environment.

Thus, learning about landscape design from our predecessors, the Incas, leads us to comprehend, protect and manage the relationship of the natural and anthropic layers that interact on our territory without leaving behind the immaterial dimension, or even just a hidden dimension of footprints to which walking and staying in the landscape introduces us.

The act of walking and taking in our surrounding not only allows us to enjoy the space, but also to collect information through navigation. Interpreting the landscape through these actions and through lines and points system, does not pretend to give definitive answers to cities. Rather the purpose is to open the discussion about the need to change our way of seeing the territory. We must become aware of the value of the landscape and as architects and urbanists propose design projects that integrate our heritage to the city, making them flexible to potential changes in functionality when integrating new socio-economic products with our landscape-use intentions.

Note

¹The images included in the article have been done with the help of Brayan Luis Antonio Arapa, architecture student from Universidad Peruana de Ciencias Aplicadas.

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