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Reconceptualising nomadic architecture: from the body to the space creation

Rudy Trisno^{*} , Denny Husin and Fermanto Lianto

Abstract

Nomadic architecture from the past until now has been adapted to the spirit of the age. The research aims to search the nomadic lifestyle that has become a phenomenon of local and global movements worldwide. This paper investigates the meaning of nomadic architecture using historical and bibliographical methods. Our exploration provides a better understanding of nomadic architecture and reconceptualises the idea of future nomadic architecture with the attention of history period; (1) Hunter-gatherer; (2) Nomadic Pastoralism; (3) Dom; (4) Neo-Nomadic Society; (5) Contemporary Nomad. In conclusion, this approach reflects a strong connection between the human body, activity, and nomadic architecture creation. The research findings are a transformation of space in nomadism that implies the hybridisation of technology and new materials towards integration with future city development.

Keywords Architecture, Body, Creation, Nomadic, Space

Introduction

The traditional nomadic lifestyle was once popular until the fourteenth century before it gained popularity in the early millennium as an alternative way of living. The word nomad was formerly used to emphasise the idea of mobile movements (Cowan 2002); however, in this twenty-first century, the idea of a nomad has been extended to describe a particular futuristic lifestyle of Millennials, especially in experiencing the world. This younger generation reinvents the idea of nomadism as inspiration for provoking the new concept of freedom (Czarniawska 2014), and the new paradigm of nomadism should be presumably pass-downed and continued by the next generation (Diaz 2017). If nomad as a jargon was once academically utilised as a specific association of certain mobile tribes, groups, or people. In that case, it is becoming more popular as an urban term to convey travel and entertainment concepts.

In the current situation, nomad as a word has been popularised in various shows, introduced by global nomads, perpetual travellers, the nomadic project, third culture kid, digital nomad, and neo-nomadism (Stickel 2020). It became well-established after social media stimulated promotion and publicity about the Millennial lifestyle. As a term, nomadism represents a creative lifestyle facilitated by support from various brands' labels, titles, and campaigns. Commercialisation has been associated with several Millennialomadic projects and entrepreneurship (Bartosik-Purgat 2018). Although for some, the nomad as word may still refer to the primordial concept of living and related to traditional living, such as; hunter-gatherers, pastoral, and tinker nomads that still exist in both developing and maybe fewer in developed countries (Rudofsky 1964).

According to most research, modernism is still believed to be one of the fundamental aspects that respond to the decreasing number of nomadic pastoral tribes in the late twentieth century (Annamoradnejad and Lotfi 2010). Although the degradation of traditional nomadic society happened unavoidably, it has inspired a new nomadic community (Czarniawska 2014). This contemporary nomadic lifestyle celebrates living mobile and

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international lifestyles (Hoare 2014), focusing on experiencing fast movement (Stickel 2020) and different aspects of one's life in particular locations. This way of living avoids spending too much time in a specific geographical location or staying for a more extended period, anticipated by planning travelling activities in different programs within a tight agenda (Cowan 2002). This new nomad prefers to find a significant part of their child's development, fulfilling their dream to travel worldwide, seeing the sites as homes (Hoare 2014). These fellow travellers are aimed to experience different environments and foreign cultural settings (Czarniawska 2014). They favour living in a different location (Stickel 2020) and looking for detachment from a specific location while sharing and extending territorial networks around the globe using digital technology as the main instrument (Diaz 2017).

With this new phenomenon, some researchers believe that the nomad's idea emphasises the importance of technology and the dependency on an internet connection. Others may see the openness of the global network as the most crucial aspect of this contemporary lifestyle (Diaz 2017). Despite the sophistication and advancement of various technologies facilitated by open infrastructure, it has contributed to travel ease (Stickel 2020). The idea of a nomad has always been related yet essentially connected to the human body because humans have always been attracted to experience the unique environment and desire to explore new things subjectively alien from one daily life as a perceiver (Hoare 2014). The eagerness of one body may not always be related to the requirement for searching for particular experiences or resources, but always be tempted to engage in self-exploration and self-discovery that can be effectively stimulated by experiencing a particular place or a new resource.

This research aims to explore the nomadic lifestyle that has become a phenomenon of local and global movements worldwide. It achieves the objectives, and this research uses historical and bibliographic methods. This research reflects not only the strong relationship between the human body, its activities, and the creations of nomadic architecture but also the transformation and hybridisation of new technologies and materials in tent architecture to integrate with future city development.

Theoretical approach

Etymological and historical investigation

Nomad

The word nomad is derived from a Greek word: *νομάς*. The Greek words *nomas*, *nomados*, or nomads emphasise the meaning of wandering from one place to another places, roaming, and roving to seek pasture for herds and flocks. In fact, in ancient times, nomads had one primary purpose of finding natural resources, mainly related to

food. Latin used similar words *nomas* or *nomadis*, referring to a group of wanderers, especially in Arabia. They travel in a group rather than solo. Later, the French elaborated on the nomad word, as the word *nomade* was believed to promote the utilisation of the English phrase nomadic architecture. However, the English word nomad was initially more associated with people who live nomadically rather than emphasising it as a way of living. The word became common and gained popularity in the 1550s when referring to a wanderer or presenting a tribe with no fixed abode throughout the world. Around the millennium, the word nomad as a jargon regained its new meaning as a new lifestyle. From solo to a group, the word of a nomad has presented a more significant number of people while building a more globally connected community (Naz 2017). However, a contemporary nomad definition may still paradoxically provoke different meanings towards representing an individual or isolated activity (Czarniawska 2014).

Since then, the word nomad has been broadly used to refer to various ideas: a member of society with no fixed home, a class who herds animals or travels from pasture to pasture, a visitor, a foreign kid, or even a travelling term. Moreover, it broadened to a wanderer, homeless, or itinerant people (Hoare 2014), whether in the city or rural areas. That is why in the current situation, the word nomad has become commonly utilised as an urban jargon or slang (Bartosik-Purgat 2018) to suggest 'a citizen of the world' or a person who is changing residence frequently and may also refer to a player or member who changes teams frequently, especially in sport (Diaz 2017). Despite its varied, its definition generally emphasises dual understanding both literally and metaphorically (Mok 2010); firstly, as a generic term to label a wanderer or a group of a specific tribe who has less attachment to a place; secondly, to refer to a perpetual traveller or a specific community who continuously engage in travelling around the world as a job (Naz 2017), as it is shown by Table 1.

Nomadic architecture

Although it is difficult to detect the existence of a nomadic community from our surrounding environment, in the twentieth century, its population reached around 30–40 million around the world (Annamoradnejad and Lotfi 2010). The census gathered around 1990 only suggests the group comprises merely hunter-gatherers, pastoral, tinkers, and trader nomads and has not included a contemporary nomad whose members are dominated by the Millennials (Hoare 2014). The reason was that nomadism as a scientific term only categorised cultural lifestyle that considers the exploitation of scarce natural resources as the most efficient life strategy, encouraged by natural living adaptation in infertile

Table 1 Linguistic transformation of the word ‘Nomad’

Origin	Time	Word	Meaning
Greek	Ancient 1550 BC to 330 BC	νομάς <i>Nomas, nomados</i> or nomads	Wandering Roaming Roving
Latin/Arab	6 th to ninth century	<i>Nomas</i> or <i>nomadis</i>	Wanderers A group of wanderers
Middle French	14 th to sixteenth century	<i>Nomade</i>	Wanderers Nomadic tribe
English	The 1550 s	<i>Nomades</i> or nomad	A wanderer A member of a nomadic group Nomadic tribes
The U.S.A	The 1950s	Third culture kid's	Bicultural individuals
	The 1990s	perpetual traveller	Permanent tourist
	1997	Digital nomad	Digital movement
	The 2000s 2005	Global nomad The nomadic project	Global traveller Travel as a project

Source: Elaborated (Hoare 2014; Bartosik-Purgat 2018; Diaz 2017; Mok 2010; Naz 2017)

regions like steppe, tundra, ice, and sand by reindeer herders and other itinerant populations. Unfortunately, it did not yet include travelling for mere entertainment (Bartosik-Purgat 2018).

The nomadic activity was believed to happen as a natural urge because the available resource in a specific location was limited; a person or a tribe moved from place to place to obtain food, pasture for livestock, or make a living. That is why most nomad groups follow a fixed annual or seasonal movement pattern as an agenda for travelling, as climate offers particular conditions and resources. To obtain natural resources and pasture flocks, a tribe traditionally travels by animal, canoe, boat, or foot (Cowan 2002). They live in homeless shelters, carts, or modified vehicles on a temporary or itinerant basis (Nichols 2004). A house of wanderers means a flexible structure and an easy-to-modify vehicle, whether for resting, staying, gathering even raising livestock (Naz 2017). Nomadic space is usually made from natural material available on-site or found and adjusted when travelling (Hoare 2014).

Although migration happens seasonally, most traditional nomads seldom move far and travel within a region. The movement forms a shape of a circle, built as a mental map around a large region. The journey takes an itinerary of familiar places, whether situated around the mountain, valley, river, or lake, an open area to avoid raids or enemies (Diaz 2017). Migration refers to a geographical closeness of families as mutual closeness, a loosely bounded population. Although nomad societies are separated into groups, they have a relatively large population consisting of loosely organised tribes (Hoare 2014). The nomadic way of life demonstrates a network of combinations between formal and

informal societal organisations that lie according to order within a natural landscape (Rudofsky 1964).

Historically and geographically, ancient nomads are categorised into three phasing evolution. First is the hunter-gatherer, a group whose movement generally depends on foot. It is the oldest form of nomads, was humanity's first and most successful adaptation, and probably began in the Lower Paleolithic (Lee and Daly 1999). Space in this phase is generally categorised as a cave, trees, natural hut, or early primitive tent (Rudofsky 1964). The second phase is pastoralism which evolved as a result of the growing nomad population. Its growth influences the increasing complexity of a social organisation, stimulating the development of *Oikos*, an embryo of private enterprises that encourages the economy (Annamoradnejad and Lotfi 2010; Bartosik-Purgat 2018). Variations may happen in this phase, such as pastoral farming and agropastoralism. The symbiosis variation comes from ethnic groups, a condition of a tribe, and a situation natural landscape. Later comes true nomadism, an embryonic network at the regional level generally for barter and distribution. Cart, barge, tent, yurt, and early stage of the caravan have emerged, representing the advancement of transportability in mobility systems (Schoof and Luick 2018).

The latest phase is known as a network of nomadic societies and is well-known for its migration throughout continents. The Dom, Domi, or Dom culture is famous for its ancient migration. Its heyday began around the sixth century, its migrations scattered across Western Asia, North Africa, Caucasus, Central Asia, and Indian Subcontinents (Kenrick 2012). They prospered for advanced culture and history through music, poetry, and dance, including the Indo-Aryan language. This nomadic

society is called Rom, Roma, Romani, Dom, or Lom, depending on the region and having a wide demographic. Its nomadic architecture shows semi-permanent and informal settlements (Hoare 2014) with grandeur and elaborated temporary spaces, whether a compilation of grand tents, mobile caravans, or a combination of various temporary and flexible structures (Rudofsky 1964).

The last ancient nomadic culture evolution suggests the existence of different types of settlements. It demonstrates the early development of the informal or organic city with grouping and asymmetrical fabrics. Its society is a nomadic empire, a non-sedentary polity; and a political entity formed by a collective identity (Hoare 2014). Commercial, entertainment, social and cultural divisions are developed following various forms represented by the function, engaging a combination of architectural types. It is organised by institutionalised social relationships and can mobilise resources (Nichols 2004). Some activities are gathered and classified according to professional works or productions, whether as musicians, dancers, dealing horses, harvesting, fortune-telling, bloodletting, smith, tinker, animal handlers, and others within an area. This last development has been modernised by neo-nomad society, especially Romani, by utilising industrial vehicles and permanent yet semi-permanent settlements while later sharing tremendous influences in the contemporary nomadic community, as shown in Table 2.

While the traditional nomads depend on the available resources in a natural landscape for constructing their nomadic architecture, the modern forms of nomadic people are well-known as gipsies, rootless cosmopolitan, shiftless, refugees, street people, homeless, and even a citizen of the world, depends more on the infrastructure, both as a space for living and the network of their

communities (Hoare 2014). Architecture for the neo-nomad can be replaced and modified using different personal spaces or mobile architecture, whether bubble, cart, caravan, tent, or even resort. Although the general purposes of this more modern nomad's society remain almost the same: finding alternative resources and a place (Stickel 2020), the aim of living may have changed (Bartosik-Purgat 2018). The latest ancestors are specifically claimed to emerge sometime between the sixth and thirteenth centuries; its community remains in some countries (Annamoradnejad and Lotfi 2010). Society form and nomadic networks are believed to have become an inspiration for the emergence of a contemporary nomad's community, which was started in the early millennium (Hoare 2014). By understanding nomadism as a way of living, nomadic space must be developed based on the importance of nomadic activity and network, rather than a superficial representation of physical space. Notwithstanding, the evolution of nomadic culture indeed suggests a variety of options: from simple to complex structure, from personal to semi-public space, and from temporary to semi-permanent settlement that requires consideration when developing the future of nomadic architecture.

Recontextualising the body

The body movement generally shapes nomadic culture, whether carried by humans or animals, as mobility is obtained due to the body apparatus, especially the feet (Nichols 2004). The most ancient form of moving in nomadism means walking. Moving in ancient times meant allowing people or flocks to collect natural resources and live in the forest, woodlands, trees, or caves as natural shelters. The natural shelter is believed

Table 2 Nomadic culture evolution

Type	Era	Periods	Pioneer	Characteristics
Hunter-gatherer (Groen-eveld 2016)	1.8 million to 70,000 years ago	Lower to Upper Paleolithic	Homo Erectus	Nomadic or semi-nomadic, temporary settlements, mobile communities, egalitarian, settled hunter-gatherers
Nomadic pastoralism (Schoof and Luick 2018)	During the end of the hunting-gatherer period around (12,000–10,000 years ago)	The end of the Mesolithic to Neolithic Revolution	Neo hunter-gatherers and Early farming society	Mobility, livestock, trading, early processing and management, mental map
Dom (Garipzanov 2018)	3 rd —ninth century	Late antiquity to Early Middle Ages	The Domba, Indian Sub-continent (from Western Asia, North Africa, Caucasus, Central Asia, Eastern Anatolia Region)	Oral tradition, Rich in culture and history like: music, Poetry, Dance, and Complex architectural types
Neo Nomadic Society (Mundy 1973)	10 th —thirteenth century	Middle Ages	Romani/ Gypsies	Endonym, diaspora, contemporary culture
Contemporary Nomad (Hoare 2014; Nichols 2004)	The 1950s to 1990s	Around Millennium	Third culture kids and millennials	Multi-culture, intellectual, international, global, digital, entrepreneurship

to be an inspiration for a man-made hut; the embryo of architecture, while in nomadic culture, the idea is explicitly inspired by a form of mobile architecture developed into a temporary shelter, a transportable house, or a flexible structure (Allen 2005). Understanding the nomads' body means comprehending the adaptation to the actual context of different tribes or a group of nomads (Rossitto 2009). Most archaeologists believe in using tools as evidence of their nomadic activities, while some researchers believe the answers lay in their living environment as the artefact.

The earliest nomad is an ancient society whose food is obtained by foraging. They are called hunters and gatherers in contrast to those who rely mainly on domesticated cattle or agricultural activities. Most hunter-gatherers depend on foot and the human body with fewer utensils for working and living (Lee and Daly 1999). They have almost no protection for the body, typically only a piece of leather or leaves to cover vital organs. They are categorised as nomadic or semi-nomadic societies and live in temporary settlements. Their daily activities are sheltered by an existing cave, trees, or shelters made of stone, rocks, and branches. They are known as mobile communities; space is defined by a surface or a simple structure as a distinct boundary in contrast to surrounding natural environments. Some place is temporarily bordered by rock, dried plant, leather, and other barriers, whether functioned as a protection, a possession, or simply a composition of sign to represent the power of the universe. Some hunter-gatherer culture forms sedimentary or sedentary living when living in particularly rich environments. Others stay in the same place all year; some initiates farming or show early stages of agricultural society (Schoof and Luick 2018).

The advanced development of hunter-gatherers is called early pastoralism. The pastoral body suggests a different development phase, as nomadic pastoralism has developed a secondary product revolution. This form of nomadism utilised animals as the primary energy source, whether as food or power yet vehicles (Schoof and Luick 2018), to assist the development of irrigation systems, agro-management, and cycle processes. Pastoralism developed the idea of a cart as a vehicle and the early development of mobile space. Consequently, additional space was planned according to human ergonomics, animal bodies and the early stage of aerodynamics. Space has been shaped following the capability of an animal to mobilise humans and good distribution. Materials have been tested and modified to give easiness and comfort to the users. As similarly implemented for clothing, popular materials like wool and leather have been adapted to climate and landscape (Rudofsky 1964). By developing materials and joints, craftsmanship has been advanced

to create a better fit between animals, the human body, space, and the surrounding environment (Schoof and Luick 2018).

The Dom exhibits the most complex ancient nomadic culture. The Dom culture represents the heyday of nomadism in ancient times. Space creation is celebrated and worshipped by the proliferation, combination, and elaboration of different types of previous nomad living (Kenrick 2012). Activities are categorised, forming a collective organisation and informal group of various professions (Rudofsky 1964). While a form of space represents activities, the human body is generally granted to move and travel between groups. Barter and exchange happened for goods, information, and service within and between tribes. Animal, tool, and space are not only used as an instrument of production or vehicles, but it also represents stratum, a level, or a class, whether to indicate social status, education, or income within and between the societies (Kenrick 2012). Body movement and gesture are expressed through dance, music, and poetry, usually by taking inspiration from the landscape. Clothing and space are correlated according to the procession and social class. A dress code has dictated the usage of costumes, jewellery, furniture, and decoration. Maximum utilisation of clothing and space has been managed from time and from one place to another as spaces have been organised according to events, seasons, and the hierarchy in a particular society (Mok 2010).

The utilisation of telecommunication technologies inspires the digital nomad to conduct the life of recent nomadic communities (Bartosik-Purgat 2018). It mainly focuses on using digital devices with wireless internet capabilities (Thompson 2018), like; smartphones, computers, and mobile hotspots. These devices are utilised to set the financial and independent entrepreneurship of remote workers (Diaz 2017). The phrase digital nomads was coined firstly by Tsugio Makimoto and David Manners in 1997 as a prediction of the millennium era that would be stimulated by the internet explosion (Haking 2017). Currently, most digital nomads are developed by Millennials who prefer a new way of living, like switching jobs, multi-tasking ability, work-travel (Rossitto 2009), and are more interested in working independently. Millennials prefer working-holiday to balance personal and professional life (Stickel 2020) than the previous generation, who are more interested in working in a traditional office (Naz 2017).

As the world is connected digitally and infrastructure becomes integrated (Thompson 2018), living mobile in an international style is possible (Bartosik-Purgat 2018). Most researchers believe that global nomads are inspired by pastoral nomads, adapting their travelling season for economic and cultural purposes (Annamoradnejad and

Lotfi 2010). They prefer to live like a backpacker, luxury travellers, expatriate children, mobile youth, lifestyle migrants, or third culture kids to experience the world (Rossitto 2009). As information and communication, including opportunities and offers, can be obtained more efficiently using technologies (Haking 2017), this community depends on the internet connection for daily activities. Whether as a person, group, or community, they encourage sharing and trading resources online while building their enterprises.

With more possibility to travel intensely and rapidly, a global nomad is characterised by high global mobility. While digital nomads emphasise the ownership of digital entrepreneurship and virtual spaces, global nomads highlight international travelling as the main selling point (Bartosik-Purgat 2018). This contemporary nomad may live freely with no permanent home or job, whether in the hotel, hostel, tent, caravan, R.V., or even on the street and the landscape under the open sky (Thompson 2018). Most activities of global nomads are related to international travelling, unique lifestyle, foreign exploration, and personal life passion as they concentrate on obtaining experiences, happiness, self-discovery, and well-being. They also focus on managing funds for moving from place to place rather than merely working to save money or possessions (Haking 2017). Activities and programs of the contemporary nomads have been combined with the city's festivals and cultural events as a form of attraction and edutainment, which become a reason for the invitation, participation, and celebration (Diaz 2017).

Most digital and global nomads are perpetual travellers; they actively engage in social media, digital platforms, or e-commerce (Thompson 2018) and depend on followers and subscribers despite receiving endorsements and advertisements from sponsors, grants, and donors (Naz 2017). As believed formerly inspired by the nomadic project exhibited in 2007, some of the most successful nomadic entrepreneurs are youngsters. They are generally talented with advanced graphic design, conceptual

arts, and business-management skills, with a specific passion for promoting a narrative project that is frequently updated online (Diaz 2017). Their networks are usually maintained and tested digitally before encountering real-life relationships (Rossitto 2009). Digital correspondence is maintained consistently within the community or collaborations, including fans, friends, and family (Cowan 2002). The relationship between people and their surrounding environment depends on how infrastructure advancement facilitates travellers to connect digitally and globally. It corresponds to their activities which are generally facilitated and guided by specific applications and social media (Stickel 2020) (Table 3).

Reconceptualizing space creation

Generally, our generation has been dominated by industrial products and dictated by modern perspectives (Rudofsky 1964); space that has been produced from one producer to another seems to share a substantial similarity. Likewise, nomadism's contemporary creation of spaces has often been interpreted to mimic nomadic culture (Naz 2017). For instance, tents, caravans, and carts are often utilised as a generic representation of the nowadays nomad. They seem to link to the idea of past nomad living. Although for the current situation, this type of space may be often more fitted for sport or adventure, like hiking, trekking, and camping; and may not always be associated with nomad living. Nomadism emphasises a way of living or a lifestyle rather than temporary resting or a holiday, although it may consist of the idea of the two (Haking 2017). Thus reconceptualising space for nomadism is essential to facilitate this growing community in a more precise and profound way, even if it may not always be represented by nomadic proto-space as the symbolic representation (Toft and Rönn 2017).

Following nomadic space as a temporary architecture, recent trend development in space and spatial configuration demonstrates a tendency to more balance variation between formal and informal organisation (Mok 2010),

Table 3 Nomadic spatial transformation

Type	Mobility	Body	Spatial transformation
Hunter-gatherer	Body apparatus	Depending on foot	The natural environment as a living environment
Nomadic Pastoralism	Animal as vehicle, nomadic and semi-nomadic living	Ergonomic and spatial comfort development, especially in vehicle	Landscape as a living environment
Dom	Semi-nomadic living, an informal settlement	The collective organisation, informal group, strata, complex culture	Diaspora
Neo-Nomadic Society	Caravan, recreational vehicle (R.V.), modern vehicle, motorhome, campervans	Individual or collective towards the development of post-civil society	Modern vehicle as a home
Contemporary Nomad	Infrastructure (digital and conventional infrastructure)	Synchronisation of digital and virtual space	International living and virtual space

resulting in the rebirth of mobile, ephemeral and perpetual space in static and generic urban and rural configuration. Primordial, traditional, vernacular-related concepts are often revisited to offer futuristic inspirations (Allen 2005) that are often associated with the emergence of post-civil society (Cowan 2002). Instead of presenting alienated concepts, future temporal spaces are predicted to present more familiar, casual, every day and intimate spaces that are also beneficial for stimulating more participation (Haking 2017). Space is imagined to be filled with more variation, changes, and transformation rather than sterile and monotonous (Toft and Rönn 2017). A great combination of formal and informal architecture is expected to build a symbiosis between the two as more architects and planners realise the interdependency (Mok 2010).

As a representation of informal architecture, the temporality and mobility of nomadic architecture demonstrate the unique strength that focuses on humanity, culture, collectivity, and evanescent (Mok 2010). It is generally easy to transport, build, user-friendly and affordable. However, it requires control and a greater scale to be presented to a bigger audience (Toft and Rönn 2017). The re-creation of nomadic architecture must be planned beyond specific tradition if willing to accept the universal design, paradoxically ought to maintain its distinctive feature to present its uniqueness (Allen 2005). Thus, a dilemma is emerging: how to develop a nomadic type, scale up the idea of nomadic space and offer a greater nomadic architecture strategy (Toft and Rönn 2017).

Materials and methods

This paper explores a research gap for reconceptualising the idea of nomadic architecture based on etymology and historical investigation. The research highlights the importance of the relationship between the human body and the landscape in creating nomadic architecture (Hoare 2014). By questioning the recent phenomena of digital and global nomads, the research offers an alternative perspective for understanding nomadic architecture as a spatial concept. Rather than adopting or borrowing from the concept of an industrial camp or modern tent (Diaz 2017), this paper seeks a philosophical understanding of nomadic architecture based on its root for building a better future space (Diaz 2017). A qualitative description is utilised for demonstrating the design transformation and strategy; the theoretical steps are planned as follows: (1) Etymological and historical investigation, (2) Recontextualising the body, (3) Reconceptualising space creation. Therefore, this research method in analysing the transformation of the nomadic architecture concept is based on the spatial transformation of (1)

Hunter-gatherer; (2) Nomadic Pastoralism; (3) Dom; (4) Neo-Nomadic Society; (5) Contemporary Nomad.

Result and discussion

According to the etymological investigation, nomadic architecture is distinct from other types of informal architecture because it concentrates fundamentally on its mobility and transportability. The capability of nomadic architecture to accommodate the travelling requirement stimulates the development of simpler architectural construction, lighter structure, flexible joints, and easy carry product. Its mobility contributes to temporality in terms of location, while transportability requires portability even though the representation of its actual space can be generally similar to other types of informal space. Its mobility system respects humans and animals' capability to carry and adapt to their surrounding environment. This limits the volume and weight of space, while alternatives in material, shape, and form are generally varied. Transformation occurs because of the climate, the field, and the availability of resources that require improvisation, elaboration, and compromise when travelling; thus, transformable and adjustable space shall be required to facilitate a fast-changing nomadism lifestyle.

Although various meanings can be found and developed, nomad stands constructively to present the capability of a person, a group, a community, or even a society to travel for an extended period regardless of the profession. This meaning may conversely question a static, conventional and unchanged position, notwithstanding a formal space's stable, steady, and consistent quality. As understood, travelling means changing places and representing a network of solo yet a group of people; thus, nomadic architecture does not only represent a point on a geographical map. It reflects a compilation of connected points and lines, an architecture represented by a nexus or a web rather than limited by a parcel of land. Hence, despite its temporality, its architecture may constantly create a continuous loop or consistently extend a space's boundary organically. It can be taken as an architectural capability of nomadic architecture to extend a territory of society in contrast to conventional architecture limited by a fixed delineation.

Through historical investigation, nomadic architecture suggests a living transformation, stimulated by environmental adaptation, while improvisation happened because of limitations. A nomadic architecture challenges space limits, including its surrounding environment; a nomadic space must be versatile and convertible. That is why alteration and modification are unavoidable before contributing to a relatively stable or steady type. Stock, storage, and material collection are a form of consciousness and unconsciousness activities in nomadism that

reflect the relationship between humans, animals, nature, and its surrounding environment. An interdependency is complexly shown in conserving, preserving, maintaining, controlling, and producing its resources while empowering what is available from the surrounding environment. Nomadism, in this sense, is not always dependent on a new field but presumably moving to explore and exploit what is abundant.

Migration reflects a planned or conveyed itinerary according to a particular schedule, whether a season, a climate, a political or an economic change. It does not happen randomly or without a plan. However, improvisation may be decided to compromise with a situation or a circumstance. As inspired by the natural environment and time conditions, nomadic architecture is bonded by a particular activity, program, and event throughout the year. Nomadic architecture is controlled, organised, and managed according to a social function. In contrast, its architecture is more contributed as a temporary arena. Its fluidity reflects more openness, less division, and blurring of boundaries between people and organisation; collaboration and negotiation between spaces happen casually and informally with less administration and bureaucratic procedure.

Phasing in nomadic architecture evolution demonstrates a specific gradation in the development and advancement of its space. Nomadic architecture presents a greater space and elaborated details than its proto architecture from individual to collective space. From natural cave to an empire, from a private space to create a social space inviting to the public; nomadic architecture has transformed tents into the cart, domestic space to eventual spaces like a circus, zoos, markets, and other cultural spaces, as shown by Table 4. Phasing creates variation, combination even permutation of a program based on human activity, especially related to the fluidity of the movement. Activity, program, and event are indeed inspired by the relationship between humans and the environment, although hybridisation occurs naturally. Furthermore, nomadism is undeniably connected to the universe as processions, rituals, and *genius loci* depend on its temporality, reflected in its seasonal itinerary.


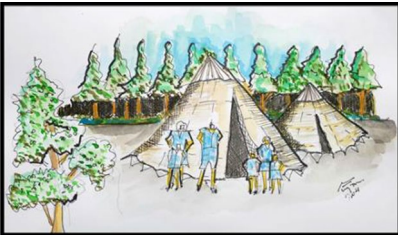



Understanding nowadays the domination of commercial culture and modern procedure in space production, nomadic architecture is often superficially created based on replication and modification, despite successfully offering a higher economic income. A profound understanding is required to redefine the idea of nomadism and its architecture according to the setting while providing an alternative solution for different possible scenarios. The setting must include potentially redefined spaces to fulfil the nomadic lifestyle, considering a combination of formal and informal architecture.

Unlike general static architecture, the mobility of nomadic architecture can create a direct relationship within and between urban and rural environments, offering a greater distribution and movement while promoting formal and informal networks. With the help of advancements in technology, the transformation of nomadic architecture has stimulated a new recreation of pods, capsule, blob, and other mobile spaces, including a vehicle for promoting and stimulating different interpretations of organicism as part of nomadic development. Not only proliferation, combination, and modification are expected to develop the future of nomadic architecture, but mutation, permutation, and hybridisation shall be considered for presenting the future of nomadic space as a new architectural entity.

By revisiting the etymological and historical investigation of nomadic architecture design, a formula can be highlighted to emphasise the fundamental principle of nomadism. Although today's transformation suggests a lighter structure, lower price, and easy to use, the tendency is to become digitalised and globalised products. From a critical point of view, nomadic architecture always contributes to mobility, transportability, flexibility, and ephemerality in most environments. Notwithstanding the advancement of global futuristic architecture is trending toward kinetic, cybernetic, and robotic architecture, nomadic architecture suggests a basic formula in its distinctive development: (1) body movement, for example, the mobility system, transportability, portability, and kinetic, including detail, joints and ergonomic; (2) dialectic between interior and exterior, such as; connectivity, openness, transparency; (3) materiality and craftsmanship, such as natural resources, culture, and intellectuality; (4) fluidity and organicity, samples are: transformability, flexibility, and impermanency; (5) networks like collectivity, informality, and reciprocity. Hence, although various transformations can be implemented in many ways, the nomadic architecture principle can be conserved, preserved, and maintained to emphasise its uniqueness.

Some architectural genres were potentially redefined and redesigned to facilitate a nomadic lifestyle. Understanding nomadic architecture's main activity and program are dominated by temporary accommodation and inter-connectivity. Some genres are potentially recreated or advanced as the future nomadic architecture, especially for today's architecture: (1) hotel, (2) resort, (3) hostel, (4) housing, (5) airport, (6) terminal, and (7) urban hub. These architectural genres have served various types of accommodation, transportation, and hospitality since birth. In the current situation, more advanced systems and management have been successfully tested via Booking.com, Airbnb, Couch-Surfing,

Table 4 Nomadic conceptual transformation

Type	Illustration	Conceptual transformation
Hunter-gatherer		Trees/cave/natural shelter for accommodation
Nomadic Pastoralism		Mobile space, cart, ergonomic, material, joint, complex craftsmanship
Dom		Proliferation, combination, and elaboration of different types of nomadic architecture
Neo-Nomadic Society		Nomadic empire, a combination of formal-informal, temporary, and semi-permanent settlement
Contemporary Nomad		Various architectural genres and types, a combination of formal and informal from intimate to social space, from personal space to public, from casual to luxury

Source: Authors

and other commercialised community-based applications creating e-commerce, networking, bartering, and even shopping and trading in the nomadic online community. Though the development of type for these genres remains the same, waiting for exploration and

experimentation. Hence, the idea of temporality is not always translated as a transportable space, but possibly by redefining formal architecture yet reinventing informal architecture (Fig. 1).

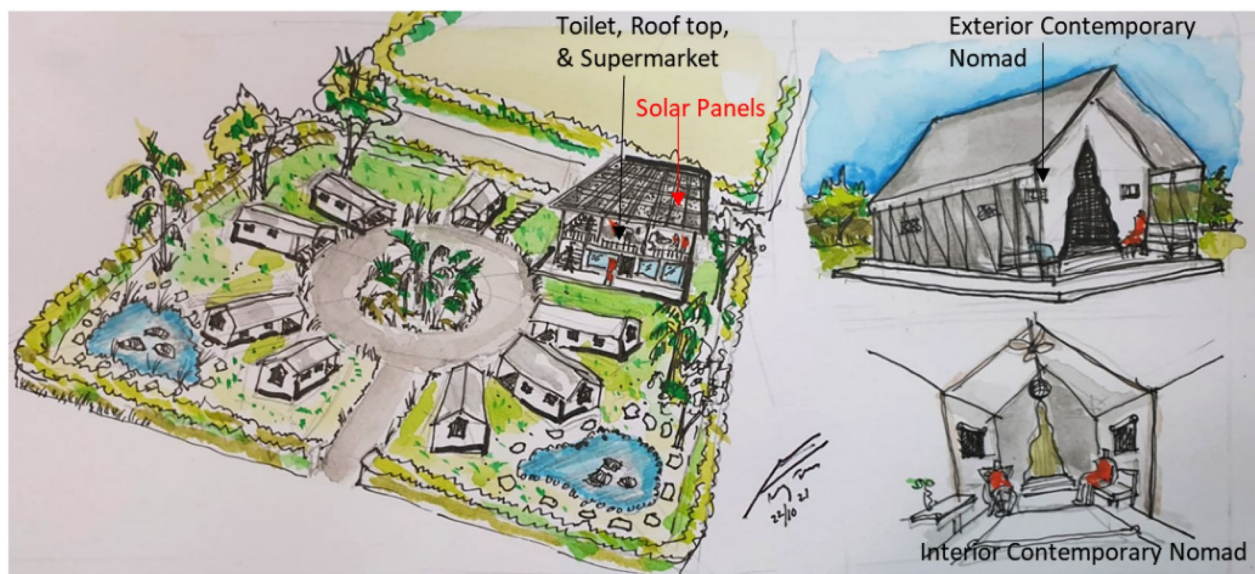


Fig. 1 Hotel with a system of Contemporary Nomad. Source: Authors

Although various interpretations can be made, more open-minded perspectives are required to reconceptualise nomadic architecture. The representation of nomadic architecture shall not be the same as it is. It must present dynamic and perpetually changing architecture, notwithstanding the fundamental idea of nomadism remains almost the same. In Fig. 2, the representation of nomadic architecture is created to present a completely different media and may present an idea of multi-function products a transformable tent: from a bag and clothing to a tent. The idea has been tested a few times in collaboration with product designers, fashion designers, and architects.

This small and practical tent packaging can be packed in a backpack. This backpack can be transformed into a unisex jacket and interior accessories (Fig. 3).

Nomadism shall present free-spirited life and more freedom to the community while giving more to society. It shall open up a greater possibility for discovery and exploration rather than superficially interpreted as exploitation. Sharing knowledge, experience, and skill is as important as networking and diving into foreign environments. As created based on human activity, nomadic architecture may only serve as temporary accommodation. However, knowing that nomadism puts humans at



Fig. 2 Transformation of a tent into a parachute jacket packaged in a small and practical form. Source: Authors. **A** The parachute tent can be folded as small as possible and adjusted to the space requirements for one person. **B** The tent without a steel structure can be transformed into a parachute jacket. **C** Unisex parachute jacket is to deal with the rain



Fig. 3 The tent is in a Travel bag that transforms into a Jacket and interior accessories. Source: authors and (Lianto et al. 2021). **A** Small and practical tents can be put into the Travel bag. **B** Travel bag can be a Backpack and can be transformed into a unisex jacket. **C** This jacket is adapted to the needs of space for one person and interior accessories

the centre of this informal architecture, the new creation of space may create a distinctive identity. A better network and greater relationships may be constructed globally, reflected on a virtual mental map, as connectivity and integration should be implemented digitally and globally.

Conclusion

Nomadic architecture, like other representations of informal architecture, is a human-based accommodation, respecting humanism as the main ideology of its design. Nomadism demonstrates a variation; from simple life to complex cultures, from acting solo to subgroups, and from a temporary settlement to a diaspora. It suggests a stronger tendency that space creation developed based on the fluidity of human movement and reflects a vital relationship between body and environment, either individuals or groups. Mobility and transportability are essential aspects of nomadic architecture, as much as the bigger system of nomadic architecture, which is often forgotten: the nomadic networks. The wide networks of relationships in nomadism have contributed to the hybridisation of technology and new materials that have become one of the most fundamental finding aspects that highly influence the transformative concept of nomadic architecture: fluidity, elasticity, and plasticity.

The nomadic networks must be taken as part of its architectural strategy, the latent potential of nomadism. Scaling up the strategy for nomadic architecture may

become the most significant challenge to bringing up the nomadic lifestyle in the bigger picture. That is why to present a greater scale of nomadic architecture profoundly, the network must not only present human relationships but especially unify the links between humans and their environment, including the universe. By understanding the deeper meaning of nomadism, nomadic architecture does not only present a physical representation of a building envelope or a shelter as merely temporary accommodation but also consists of a chain of all nomadic activities. That is why activity, program, event, and season must be included in its architectural agenda as a system, itinerary, and schedule, including integrating its informal architecture into the environment. By doing so, the nomadic architecture for the near future potentially offers a different kind of architecture that facilitates a style of nomadic human life rather than a superficial, temporary lifestyle, demonstrating more hybridisation and integration while building a new identity for its society.

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