

Fictional vernacular architecture as a worldbuilding element: Structure samples from the World of Warcraft video game

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Abstract

This study aims to evaluate the structures of Azeroth, the fictional built world of the World of Warcraft video game, as samples of vernacular architecture. Therefore, the scope of the study contains video game architecture, vernacular architecture, and structure samples from the mentioned video game. For the methods of the study, first, the storytelling and worldbuilding concepts are investigated. Then, the use of architecture in video games is analyzed in the light of pioneer academic studies. Moreover, the term vernacular architecture is introduced to name the structure of World of Warcraft as samples of it. The elements affecting the design of vernacular architecture samples are mentioned. Finally, in the case study, the settlements and the structures of the fictional races with distinct cultures, from the mentioned video game, are studied in detail. And in result, some unique determinations of mentioned game's use of architecture, in both video game architecture and fictional vernacular architecture terms, are proposed.

Keywords: Video Game Architecture, Storytelling, Worldbuilding, Vernacular Architecture, World of Warcraft.

INTRODUCTION

Current era is the golden age of video gaming. And there is a growing interest in studying on academic grounds. Studies like “Allegories of space: The question of spatiality in computer games” (Aarseth, 2001), “The Role of architecture in video games” (Adams, 2002), “The importance of architecture in video games” (Brouchoud, 2013), and “Building imaginary worlds: The theory and history of Subcreation” (Wolf, 2012) can be considered as pioneers. Therefore, the use of architecture in video games is a popular subject. Many studies focus on a single video game title and directly begin writing its architecture. However, to understand the use of structures in any single videogame, first, the background of the field should be studied. As the main contribution of this study to the literature, the fields of storytelling and worldbuilding which were somehow absent in the previous works, and the overall relationship between the architecture and video games, should both be figured out as laying a foundation for studying the architecture of a single game.

The study should scale up from the structure base to the environment base. Many current video games introduce a brand new three-dimensional world to tell us its story within. And for the current level of technology, it is quite easy to build up a new world. However, is modeling a new settlement in a larger context enough for naming it a world? There are some base points in worldbuilding, and a newly generated one should meet these essential criteria to be considered as a world.

METHOD

The study used the literature review method for the first three findings sections, storytelling and worldbuilding, video game architecture, and vernacular architecture. And for the fourth finding section evaluating the structure samples from the mentioned video game, a case analysis method is followed. Selected in-game screenshots

(those created by the author on 13.4.22 from PTR version 9.2.5.43057) were evaluated over the concepts figured out in the previous finding sections. And in the result, general determinations have been made regarding the architectural use of the game in question in terms of video game architecture and vernacular architecture.

FINDINGS

As mentioned, this study groups its findings into four sections. These sections were ordered in a conscious order, to build up the knowledge stock on top of each other. The conclusion section, on the other hand, constructs a different concept. It covers an evaluation of the case study, over the knowledge collected in the previous three sections.

Storytelling and Worldbuilding

There is a growing interest in the storytelling phenomenon in either professional or academic fields, recently. The term “storytelling” is the cultural and social activity of sharing stories. Each culture has stories or narratives told as means of education, entertainment, or development of moral values. Storytelling is as old as mankind since the human brain has cognitive capacity. Oral traditions of storytelling (mythology, epic heroic legends, fairytales, fables, etc.) are found even in the earliest civilized stages. Visual media, on the other hand, can be considered equally aged. Later with the advent of writing, the stories were recorded as scripts and reached wider audiences. Modern storytelling has broader meanings. New forms of media create new ways for people to record and tell stories. In this age of communication, also image-makers create stories for brands, either a pop-music icon, a hamburger restaurant, or even a political leader. Now there are different modes of storytelling, varying from digital interactive narratives to tabletop role-playing games.

Storytelling has also been an object of academic scientific research under the name “narratology”. Scientists investigate the forms and methods of storytelling and discovered some common issues. The most famous of them, popularized by Joseph Campbell in *The Hero with a Thousand Faces* (Campbell, 1949: 30), is known as the “hero’s journey” or “monomyth” which is a common template for most stories, consisting of three main parts. On first, the departure, a hero goes on an adventure, on second, the initiation, the hero becomes victorious in a decisive crisis, and on the third, the return, the hero comes home changed or transformed (Singh, 2021: 184).

Another common characteristic of stories, also known as the “five elements of fiction”, is the existence of plot, characters, theme, narrative perspective, and setting. The plot is the sequence of events and their relationship in a story, characters are the people and/or other beings in the work, the theme is the main idea or the message the story conveys, narrative perspective is the relationship of the narrator to the story, and the setting is the time and place in which the events occur. Each element can and should be studied in detail. However, here the one on the target is the place. Not all stories happen on the planet Earth or somewhere on its surface. Some stories, because of their features, need a special setting that does not physically exist. In such cases, worldbuilding plays a crucial role in storytelling.

Although somehow introduced as early as in the Homeric myths, before the twentieth century most worldbuilding can be accepted as existing only in novels leaving the imagination part to the reader. The later visual media had different aspects of storytelling, appealing to different senses. Now there are comics, films, and video games that tell us stories. To name a few, *Star Wars* and *Middle Earth* are examples of current-era stories with superior qualities and are often considered worldbuilding epics. The next set of media, the so-called *Metaverses*, claim to appeal to even different senses to tell us even different stories.

Worldbuilding, as a sub-branch of storytelling, is the process of creating imaginary worlds for telling stories. The term may express different scales and realities, from an ordinary but non-existent village to an inhabited planet and even to a complex system of galaxies. However, worldbuilding often involves the construction of fantastic environments. Therefore, the creators often put forward a new set of geography (continents, oceans, and climate), ecology (flora and fauna), and civilized inhabitants (humans or new races with technology, history, and the most important culture).

The worldbuilding process often begins with the construction of a fictional map. A concise map displaying the geographical features of the terrain and the exact place of the settlements can be helpful for both designers and the audience, in terms of storytelling. The existence of different biomes of plains, mountains, seas, deserts, wetlands, and forests as well as the towns, capitals, and roads would also define the destinies of the local inhabitants. The cartography of these built worlds is sometimes called “geofiction” (Erle et al., 2005: 508).

In these fictional worlds, of course, there also should be biological beings scattered around. Lifeforms like shiny magical trees, cryptozoological animals and monsters, and even hybrids of these two are common. Apart from the flora and fauna, there are also some intelligent civilized races, either humans or other anthropomorphic creatures, interacting with the defined terrain, flora, and fauna. In the real world, the distinctive feature of the only civilized biological species is being gifted with the ability of abstract thinking. And this amazing skill led people to create various cultures. Culture is defined as the totality of values, activities, and products. Cultural products of mankind are generally divided into two, intangible culture on one hand, and tangible or material culture on the other (Karacali, 2020a: 27). The features like the rituals, norms, music, religion, customs, skills, mythology, and language fall into intangible culture whereas the ones with a physical appearance are considered tangible culture. In other words, the belongings of humankind like the tools, clothes, and architecture construct the material culture.

The creation of constructed cultures (also called “concultures”) is the key element of worldbuilding since civilized races can only be distinguished via their existence. Cultures play a decisive role in which the built world reflects and represents stories that are relevant in the real world. More, they discuss how the built world is made to feel realistic. Wolf thinks an invented culture can be tailored in detail according to the story’s needs and does not come with the baggage of an existing culture (Wolf, 2012: 179). However, making up an alien culture should exactly be challenging. Therefore, the designers somehow investigate existing human cultures for inspiration. Usual methods are hypothetically using an existent culture out of its context and creating different combinations of the various features of distinct real-world cultures. The twentieth-century developments like the growth of archaeology and anthropology, the spread of mass media, the emergence of new tourism opportunities, and the waves of immigrants arriving in the Western world all helped people to encounter firsthand cross-cultural experiences. And more complicated fictional cultures began to appear as the audiences became increasingly sophisticated in expectation of their existence. Configuration of a detailed fictional culture, for the sake of storytelling and worldbuilding, needs to determine both intangible and tangible features of the civilized inhabitants in question. There are a lot of things to ask first about the intangible ones. What are the values in this world? What do its inhabitant believe in? What do they celebrate? How do they communicate? Are there new languages? What are the economic, financial, and political systems? Are there battles? What about history?

Material culture, on the other hand, needs further explanation especially in constructed worlds for visual media since they are the concrete features of the culture. Another set of questions should be inquired. What do inhabitants of this world wear? Does the clothing represent social status? What kind of tools do they use? What is the technological level? Are there vehicles they drive? And especially what do they build? How was their architecture formed? And what does all this material culture do with the main story?

It is always argued that architecture works as an important storytelling element. Building Imaginary Worlds accepts it as one of the many facets of culture, along with the other infrastructure features which had to be considered concretely as an integrated whole (Wolf, 2012: 182). The architecture alone can transfer a bunch of messages in a built world, as well as it does in the real world. By just observing the structures, the economic cycle, technological grade, and social organization of a society can all be understood. In terms of visual worldbuilding, architecture also helps deepen the spatial experience. Architecture can be mentioned as a very important sub-element of worldbuilding, and essentially the storytelling on a larger scale, since the physical space does much of the work of conveying the story that the designers are trying to tell (Carson, 2000: 3).

All the criteria mentioned here are somehow carefully crafted in worldbuilding attempts. They all serve in the facilitation of the genuine realness of the fictional environment. They utilize the background richness and verisimilitude of the story. Some of the features may be explained in detail, some others may be mentioned superficially, or some may be left (consciously or not) to the imagination of the audience. The features are

perceived through the real-world experiences since the designers make decisions based on their real relationships in the physical world. Simon Provencher states the “Golden Rule” of worldbuilding as “unless specified otherwise, everything inside your world is assumed to behave exactly as it would in the real world”. (Provencher, 2012: 1).

Video Game Architecture as Narrative Surrounding

Architecture, or space, is used for narrative purposes since ancient theaters, in terms of volume and scenery. In the last two and a half centuries, the film and television industry also heavily employed the architectural concept for storytelling purposes. And in the last sixty years, video games are introduced as a brand-new visual media. Architecture is also directly utilized in video games, such as the other similar media, however with a significant difference. The distinctive nature of the built worlds in video games as spatial environments is their availability to be interacted with and navigated, much like the real world. The audience, gamers in this case, are in full control of the environmental experience, against the other visual media evaluating them as passive spectators perceiving the space via the fixed perspectives. More, in linear storytelling of the previous media the story is straightforward and the ending is the same for everyone, whereas in the video games both the direction of the story and the destiny of its ending are personal since both are controlled by the players (Hryb, 2015: 18) with the aid of architecture.

Now it is the golden age of video game storytelling, and the designers of these games are treated like celebrities at the game conferences worldwide. Character design they put forward eases the storytelling by defining characters, where the world and structures they build do the same by describing the setting (Adams, 2002: 7). These built worlds are no doubt three-dimensional narrative spaces with obvious architectonic concepts offering new possibilities for interaction. And environmental storytelling is accepted as a key element in the success of a video game (Jason, 2022: 1). Many of these video games draw spatial inspiration from physical architecture (von Borries et al., 2007: 12) to create more accurate imaginary worlds.

The use of architecture in video games, obviously differs from any other visual media, especially in those three-dimensional open-world video games. However, comparing their worldbuilding with the real architecture, they somehow mimic or considered in a close relationship. Numerous similarities and plenty of differences as well, can both be figured out. Both the architects and game designers use the spaces and structures for the same purpose. Most of the time, real-world architecture acts as a reflection of the culture and history of the society while the same is true within the game worlds. When worldbuilding is successful, game architecture would be an embodiment of the morals and values of the fictional people who inhabit it (Zonaga and Carter, 2020: 81). And the architecture here helps players understand the built world as a storytelling element. The need of gamers to perceive architecture in video games comes from its real-world function (Çatak, 2003: 39) which the audience is already familiar with. In successful cases, the architecture makes the players believe as if they are in a real-world, rather than a fictional one. More, both the game designers and architects use similar working methods in their planning and development phases. They mainly work with the three-dimensional computer-generated models which is the fundamental interface between the two disciplines allowing the mutual exchange (Götz, 2007: 134).

The similarity between these two architectures is even converted to unity recently. Relatively new input devices like motion detectors and gesture recognizers hybridize virtual and real worlds (like Nintendo Wii and similar consoles). Away from this, video games migrated outdoors and integrated physical environment and game space via augmented reality (AR) solutions (like Pokémon Go). And it is now the threshold of a newer movement introducing three-dimensional virtual worlds focused on the social connection (metaverse as a buzzword) experienced via AR and VR (virtual reality) wearable technology controller inputs.

According to Ernest Adams, the rationale for architecture, in reality, is different from the reasons why architecture is produced in video games (Adams, 2002: 1). The main difference between virtual worlds and physical places is that the former is not real. They are maintained entirely by computers and exist only in the imagination (Bartle, 2007: 158). In the real world, the place is a natural consequence of space, whereas in the virtual worlds the space should be represented. To date, there have been three main representation formats: nodes for textual worlds, grids for isometrical worlds, and polygons for three-dimensional worlds. Polygons represent surfaces and the space becomes the apparent volume in between them (Bartle, 2007: 161). Therefore,

in video game environments, both structures and landscapes are abstractions of reality (Adams, 2002: 1). Since the entire world is in a computer-generated identity, even the rural and unsettled areas become artificial. Here, the wilderness is also a built environment or architecture made up of polygons.

Besides, neither gravity nor climate is the default in the virtual worlds (Lootsma, 2007: 404), unless defined. Therefore, the architectural concepts of load-and-support, climate responsive design, sustainability, and budget do not remain on the agenda of structure design. This reality no doubt unchains the limits of architecture, unlike the physical conditions. Architectural materials do not behave as in the physical world, since they are just bitmaps attached to the polygon surfaces. Jon Brouchoud (2013: 1) states “500 years from now, there is a good chance you will still be able to play an old copy of Skyrim, but what will be left of the physical city artifact that exists today? They will be ruins at best”. The cosmetic identity of the materials in video game worlds only works in terms of meanings linked to them from real-life experiences. In architecture, materials have languages and architects use them as a design and evaluation mechanism (Karacalı and Urfaloğlu, 2019: 67).

Another main difference between video game worlds is their quantity. Like a three-dimensional chatroom, they connect people from geographically disparate locations all over the world in real-time (Brouchoud, 2013: 1). However, they act more like a stage than a chatroom in that the actions of millions of other players are witnessed (Schmidt, 2007: 148). What happens when this population exceeds the carrying capacity of the virtual ecosystem? This world is cloned. In the physical environment, there is only one planet for people. However, exact copies of the entire game world can be easily created for offering overflow somewhere to go. Some games even connect these parallel worlds to separate servers of difficulty levels, player density, or any other game mechanic. Therefore, when game spaces are already a parallel world simulation for the physical environment (a fantastic escape from everyday life), it also has exact parallels either.

Video game architecture is heavily studied in the academic field, recently. To name a few, Espen Aarseth (2001: 154) claims that “the defining element in video games is spatiality”. Wolf thinks that “the architecture is utilized in video games mainly in informing the players about the imaginary world of the game and therefore shaping their gaming experience” (Wolf, 2012: 180). Michael Nitsche (2008: 160) puts forward that “architecture can help describe how a game world can gain significance and a quality or place”. Friedrich von Borries et al. (2007: 13) argue that “interdisciplinary exchange between architecture and game design is mutually beneficial” and suggest that “this would lead to a new form of interactive space”. And Mark Bonner (2014: 4), in his studies, provides a foundation of an academic synthesis of architectural thought with game studies and discusses theories from architecture that describe and help us understand how architecture in games, like real architecture, uses styles and forms to refer their material entity to actual functions and internal contents.

Another study, Ernest Adam’s (2002: 3), *The Role of Architecture in Video Games* sorts the primary and secondary functions of architecture in video games. The primary functions are listed as, “supporting gameplay”, “establishing boundaries that limit the freedom of movement”, “hiding valuable or dangerous objects from players and players from each other”, “encouraging to jump across, climb, and avoid”, “stimulating the exploration feeling” where the secondary ones were “giving clues through familiar spaces”, “taking advantage of the ideas via referring real buildings”, “creating a sense of unfamiliarity (as well, if needed)”, “generating a sense of mystery”, “fabricating a sense of danger”, “designing a lighthearted and funny environment (if the game is not supposed to be wild)”, “relying on clichés and stereotypes to set a scene and establish player expectations quickly”.

Yet another study, *Narrative Spaces* by Henry Jenkins mentions the narrative side of the game architecture. According to him, environmental storytelling creates the preconditions for an immersive narrative experience in up to four different ways: “Evocative Spaces”, when the game takes part within a larger narrative system of books, films, comics, and other media. Games here have an important role in their ability to give concrete shapes to their memories in which can be wandered and interacted. “Enacting Stories”, when the spatial stories are brought together by defined goals and driven by the player’s movement across the map. Here, the principles of environmental storytelling are utilized once more since the organization of the plot becomes a matter of designing the geography. “Embedded Narratives”, when the game designers develop two kinds of narratives:

one is unstructured and controlled by the players as they explore the space, and the other is prestructured but embedded within the mise-én-scene awaiting discovery. And “Emergent Narratives”, when the game is not of merely preprogrammed stories. So-called “sandbox” or “dollhouse” genres are examples of decent quality since the players define their own goals and write their own stories. Jenkins also summarizes these four ways as follows: In the case of evoked narratives, the spatial design either enhances the sense of immersion with a familiar world or communicates a new perspective on a known story through alternative details. In the case of enacted narratives, the story may be structured around the character’s movement through space. In the case of embedded narratives, the game space becomes a memory that please user deciphers. And in the case of emergent narratives, game spaces should be designed to be rich in narratives for enabling the story construction activity of the players (Jenkins, 2003: 118).

In the study Viva Piñata, Tor Lindstrand puts forward that;

Working with architecture in virtual worlds means that the specific properties of those worlds should be researched, how they are constructed, how their site and subjects are conceptualized, and so on. (...) Whether like it or not, virtual architecture exists in this world, with or without the help of architects. (2007: 356).

In recent years, the trend of game studios hiring formally trained architects is obvious. This helps in creating more authentic three-dimensional environments than those previously created by the level designers or art directors (Zonaga and Carter, 2020: 72). In an interview with ArchDaily, when the question “How does a degree in architecture contribute to a career like yours?” asked, Philip Klevestav, principal artist at Blizzard Entertainment answers;

As someone without an architectural degree myself, unfortunately, I think it can be very valuable to have architects on the team who knows the proper terminology. (...) I would say especially having worked closely with one person who held a degree in architecture, I learned a lot of things over the years and it also helped me gain a lot more interest in architecture in general. (Stouhi, 2020: 1)

In another conversation with Space Time Play editors, architect Olivier Azémar, level designer at Ubisoft stresses that;

As an architect, I have to bring my spatial and design expertise to the production team while building maps and levels, just like the spatial distribution in a building, horizontal and vertical circulations, scale and dimension. (...) Architectural expertise has strongly influenced and will continue to influence the creation of the spatial experience, not only in the field of realistic representation but, above all, in the reinvention of video game spatial qualities and codes. (von Borries et al., 2007: 133)

In yet another study, Jon Brouchod thinks that;

You may have the most impressive and carefully created castles in a medieval game or maybe a killer space station in a futuristic sci-fi game. You may have even thought about architecture and worked very hard to create realistic buildings. But that does not necessarily mean you have created architecture. Buildings are not always architecture. (...) Architecture can tell a story, evoke emotion and shape player experience more effectively than any other aspect of the game. You can have the best characters, storyline, and graphics, but without an equally considerate approach to architecture, your player experience will always fall short of its fullest potential. (2013: 1)

And in the interview mentioned above, Philip Klevestav, principal artist at Blizzard Entertainment also puts forward;

As for the world of video games, it is not just about the quality of the graphics, but rather the immersive experience of visual designs and how the players are communicating with the virtually-built environment. (...) Before beginning to work on any map a lot of references are gathered and dominant and recognizable architecture for the area is tried to be found out. Cultural reference is also very important: what kind of food is popular here? What modes of transportation stand out? Are there any specific celebrations or festivals that are very local to this area? (Stouhi, 2020: 1)

In another study, Manuel Saga thinks;

The building design should suit the style of the game. In Starcraft, for example, the Terrans are humans of the future with super-tech buildings that can fly. Meanwhile, the Zergs are an alien race based on organic matter,

including, an infrastructure of living buildings. In both cases, the construction of both races should be easily recognizable by the players. (2016: 1)

The architecture here finally breaks free from the bonds of physical and budgetary limitations of the real world and becomes wholly narrative. Especially for the game worlds of the fantastic genre, it is obvious that architecture has a leading role in identification. Since there is a high probability of the existence of non-human intelligent civilized races with distinct cultures, the architecture with no doubt has to serve in terms of its storytelling skills. The fictional identities of these constructed indigenous cultures cannot be told without the design of perfectly matched vernacular architecture.

Fictional Vernacular Architecture

Since the structures of the constructed cultures in video games are called vernacular architecture, first, this term should be defined in detail. Not all structures on the planet were designed by architects or specialized craftsmen. On the contrary, the percentage of the buildings created by these people is quite a few. According to numerous studies, 90 to 98 percent of the total building stock of the globe has a vernacular identity (Oliver, 2003: 15). However, this huge building collection was considered too low-level to evaluate by architectural history for a long time since they were not palaces or temples. The little reference of vernacular architecture to mainstream architectural styles or theories is another reason for this disregard. However, in the last 40 years, there is a growing academic interest in the study of the field, satisfyingly.

Definition of the term is still a little challenging and the Vernacular Architecture Forum (VAF) acknowledges that there have been and continue to be debates on defining vernacular architecture. The shortest (and the strictest) explanation is 'architecture without the architects'. When the time comes for an expanded definition, exploration of the characteristic parts of the academic studies mentioned above can be useful. In Encyclopedia of the Vernacular Architecture of the World, Paul Oliver (1998: 111) puts forward "related to their environmental contexts and available resources, they are community built structures, utilizing traditional technologies" and "it includes the collective wisdom and experience of a society and the norms that have become accepted by the group as being appropriate to its built environment". Oliver (2003: 15) also thinks, in *Dwelling: The Vernacular House Worldwide*, "it is the architecture of the people, by the people, but not for the people" since it is for themselves, and in *Built to Meet Needs*, "all types of buildings made by people in the tribal, folk, peasant and popular societies whereas an architect, or special designer is not employed" (Oliver, 2006: 4). According to Nezar Alsayyad (2006: 17), "they were produced without the need for imported components and processes built by the individuals who occupy it". And for Marcel Vellinga (2006: 115), the field is a "more dynamic approach that explicitly focuses on building traditions rather than buildings". Yet another definition, explained by Dell Upton (1983: 262), mentions "my preference is to define vernacular architecture not as a category into which some buildings may be fit and others not, but as an approach to architectural studies that complements more traditional architectural historical inquiries".

Despite all these detailed definitions, there still are common misconceptions about vernacular architecture. First, the term is misunderstood as if it mentions primitive structures. However, they almost outperform modern structures even in the severest conditions. More, vernacular architecture is thought to be ancient. Though the building technique is traditional, the structures are still built and used at present. A third misconception scopes the idea that vernacular architecture belongs to the rural world. Despite being found in lesser quantities, they also exist in urban areas, especially in suburban immigrant settlements. The last wrong perception accepts all vernacular buildings as residences. However, vernacular architecture is not confined to just dwellings. There are many farm structures, shrines, shops, schools, and many other buildings with several functions fitting the definition of the term.

A definitive study, *A Detailed New Method for Vernacular Architecture Research*, investigating both the definitions and the misconceptions, focuses on the following synthesis: "Vernacular architecture is the architectural activity presented in a geography, over locally available materials and experienced technique, collaborating with local climate and running the cultural values, however without the employment of a professional designer". The same study also structures abstract inputs and concrete outputs of vernacular architecture: climate, economy, and culture are the successive inputs whereas material, technique, and form are the outputs in order (Karacali, 2020a: 16).

Climate is the genesis term in vernacular architecture design since the very first function of architecture is providing a shelter adapted to the climatic factors. According to the Köppen Climate Classification System, there are five main types of climate: Arid (hot-arid), Tropical (hot-humid), Temperate (warm-arid), Continental (warm-humid), and Polar (cold). Despite meager resources, vernacular structures successfully meet all the climatic conditions of these types (Fitch and Branch, 1960: 1) and the most enlightening solutions are found in those areas where the climate is the severest (Rapoport, 1991: 85).

In cold climates, structures become either smaller or in a compact identity to decrease the surface area so as not to lose heat. The well-known “igloo” can be a good example of this type. In desert climates, on the other hand, structures once again become smaller but this time not to gain heat. Cooling solutions as wind catcher chimneys and enclosed pooled courtyards were introduced. The “Bedouin tents” from the Sahara Desert and the “Harran houses” from Turkey are good examples. The other hard climate, but not extreme as the mentioned ones, is tropical. This time, the façades of the structures become permeable, or the structure overall is raised on piles, both to welcome wind to reduce moisture. Since also the sunlight is another major problem, here thick roofs with large eaves are observable. Scientists studying vernacular architecture name these structures “huge umbrellas”. The “rumah adat” from Indonesia and the “ifugao” from the Philippines can be examples. In the last climates, the warm-arid and warm-humid, the climate is not a major problem, and builders can focus on the other inputs.

Certain climates create the distinct biomes of the planet. And these biomes facilitate habitats for certain endemic animals, plants, and fungi. Human, on the other hand, is the only creature that spread all these biomes. The amazing ability to manipulate all these organic entities and the inorganic material around them helped humans in creating economies. However, the “geographical determinism” denouncing human creativity and accepting mankind as passive robots helplessly programmed by climate, fauna, and flora is a misconception (Diamond, 2017: 14). Certain economies support limited populations and certain forms of social organizations emerge and social groups survive by their organization of labor and goods. These economy types can be listed as subsistence, nomadism, agriculture, and industry. The vernacular architecture can be observed in all these organizations.

In the subsistence economy, the “hunter-gatherers”, are the people who do not produce food. They keep migrating to the next zone of resources when one gets empty, and they leave back the structures they built. The “Bambuti pygmy hut” from Congo and the “gunyah” from Aboriginal Australia can be good examples. The second economy is the nomadic one. Here, people follow specific routes together with their herds. And this time, the architecture adapts to the migration and becomes demountable and portable. The well-known “yurt” tent from Central Asia and the “black tent” from Tibetan China can be listed as examples. The third type of economy is agriculture. This time, people are settled farmers. They produce food both via horticulture (gardening) and husbandry. Approximately one-quarter of the world population, roughly two billion people are farmers, and their residences and outbuildings (farming structures) are the greatest part of the vernacular architecture stock. The last form of economy is the industry. Though many of the buildings in urban cities are designed by architects, vernacular architecture samples are observable mainly in the suburbs. Famous slums like the “favela” from Brazil and the “barriada” from Peru are perfect examples of this category.

While speechless creatures adapt distinct biomes via biological adaptation, humans, the only creature is known to be gifted with abstract thinking ability, can create cultures. Culture is the last input of vernacular architecture studies. Since certain economies can support certain populations, the social organizations mentioned above emerged. Erman Service (1962: 111) listed these sociopolitical typologies as bands, tribes, chiefdoms, and states. However, it is obvious that cultural zones are neither defined by nations, nor by the political borders. Cultural products of mankind are divided into two, intangible and tangible. When the intangible part covers the rituals, religion, music, mythology, language, and other similar entities, the tangible culture is of concrete things like tools, clothes, and architecture. Therefore, the tangible culture is also called “material culture”. Since the distinct cultures have very different norms of cooking, dining, worshipping, working, gathering, and any other daily activity, the architectural needs, even for the same function, can be changeable in uncountable numerous ways. This alone can explain why there are countless distinct samples of vernacular architecture all over the world.

As mentioned before, the elements of material, technique, and form are the concrete outputs of vernacular architecture. The first one, material means the physical resource of construction, or in other words, what the structure is mainly made of. Most of the time, the vernacular builders face a challenging range of material choices, compared with the formal architects. Therefore, they tend to use the available material around them. They also push the limits of their structural features and achieve the most inspiring solutions. And their performances are also admirable in terms of sustainability as well. Vernacular architecture is built either from the ground or with the resources that grow. That means the vernacular building materials fall into two main groups: inorganic or earthen materials that include mainly the earth itself (mud, turf, soil, sand), and stone, metal (very few, since being an industrial product), and even snow, and the organic group consisting of mainly the plants (logs, branches, reeds, bamboos, grasses, fibers, leaves), and animal products in very few quantities (bones, hair, hide, horns, seashell, and even dung).

Earth is the widest used construction material in the world, in numerous sophisticated techniques. Earth is a compression material and can bear a considerable amount of vertical load. More, it has a very high thermal capacity. Unfortunately, the earth is non-renewable but reusable. “Taos Pueblo” from the United States can be a superior example of earthen vernacular architecture. Plants are the second most widely used building materials all over the world. Since there are plenty of plant species, techniques and forms are also numerous. The “mudhif” from Iraqi marshes and the “log cabin” from Northern European forests can be distinct examples. Needless to say, there are some mixed techniques of using both earth and plants together. Materials have meanings in architecture, this phenomenon is facilitated in terms of evaluation.

Building materials and construction techniques can be mentioned as inseparable. Certain materials allow certain forms of techniques. Earth is not available to stretch whereas piling up the hides also becomes useless in terms of architecture. Some materials, on the other hand, are available for different techniques and result in remarkably diverse solutions. Architecture mainly relies on the one simple relationship between the load and the carrier. All building elements have a weight affected by gravity. The design of the interaction between the load and the load-bearing element creates the rules known as the building technique. Vernacular building techniques are almost traditional. Each of them is a result of a very long time of trials and errors. This indigenous wisdom can also be called the “know-how” of what to do with the material around.

Earth material can be used in quite various techniques such as carving (as horizontal caves and vertical pits), building with wet mud (known as “cob” in English), cutting bricks out of turf, ramming earth (in a mold built beforehand), plastering (on a branch weaving, known as “wattle-and-daub” in English and “Baghdadi” in the Middle East), creating “superadobe” (filling bags with earth or sand, an unusual technique pushed by architect Nader Khalili), and prefabricating adobe. Adobe is considered the most sophisticated building method of earth and is of creating earth bricks in wooden molds, sundried or fired. Another inorganic material, the stone is available only in the piling up technique, either dry or wet with mortar. Plants, on the other hand, also display a great variety of building techniques. When ready in logs, they can either be piled up or used in a frame structure with local variations. Branches can be weaved as a basket and plastered with mud. Bamboos are again used in creating frames. Grasses and leaves are used as façade finishes or roof coverings (called “thatch”).

The final output is the form. In architecture, the term form refers to the physical plastic entity of the structure, or in other words, the geometrical reference of the building. Vernacular structures are rarely identical to one another, and they can also be categorized via their abstraction to basic geometric three-dimensional forms, such as cones, domes, cylinders, and cubes. The cone is one of the widest used forms in vernacular architecture. It is found either as the roof shape or as the structure itself (called “rooftecture” in architecture when there is no visual difference between the walls and the roof). The American “teepee” and the Siberian “chum” are conic vernacular structures. Dome, on the other hand, is the perfect geometry in terms of covering the maximum volume with minimum surface area. Therefore, it is used in climates with the minimum heat transfer desired, either inwards or outwards. The polar “igloo” and the Cameroonian “musgum” (actually a parabolic dome) are examples of decent quality. The cylinder, generally combined with a conic roof, is another vernacular form. It is a less popular option and various African “rondavels” can be exemplified. And the cube, as the final vernacular form, is used rarely. Corners, in terms of load distribution, can be considered as the reason for this disregard. The “taos pueblo” can be an excellent example of this infrequent vernacular form.

Mentioned definitive study, *A Detailed New Method for Vernacular Architecture Research*, also covers the “other vernaculars” (Karacalı, 2020b: 57). The study lists the other vernacular as follows: the urban vernacular, the new vernacular, the museum vernacular, the kitsch vernacular, and the fictional vernacular. The urban vernacular term includes the suburban vernacular structures mentioned in the industrial economy. The new vernacular term covers the studies of formal architects that draw inspiration from vernacular architecture. Here, the works of Hassan Fathy, Geoffrey Bawa, and Charles Correa can be considered the pioneers. Museum vernacular is the concept of open-air museums for the sake of the romantic tourist appeal. However, examples are full of misconceptions like unrelated reconstructions and misleading images. Kitsch vernacular is a similar attitude with awful hotel concepts of mimicking the vernacular architecture. They are unfortunately nothing but cosmetic and exaggerated copies of vernacular architecture, built in formal methods.

The final and the most interesting “other vernacular” is the fictional ones. The term fictional here covers the unreal structures of novels, movies, and video games, especially the ones of the fantasy genre. Here, mostly nonexistent cultures of humans or other civilized races are shaped. And among other material culture entities, architecture has a leading role in terms of storytelling. Buildings of distinct universes (or built worlds) of *Lords of the Rings*, *Star Wars*, *Avatar: The Last Airbender*, and *World of Warcraft* franchises can be considered examples of superior quality. Whoever designs their structures, level designers, art directors, or formally educated architects, these people have a deep insight into vernacular architecture.

Structures from the World of Warcraft

World of Warcraft, as one of the mentioned titles considered worldbuilding epics, deserves to be studied in detail, especially in terms of the setting and the architecture. *Warcraft* is a franchise created by Blizzard Entertainment and consists of video games, novels, films, and other media. The first three installments were real-time strategy (RTS) games titled *Warcraft: Orcs & Humans* (1994), *Warcraft II: Tides of Darkness* (1995), and *Warcraft III: Reign of Chaos* (2002). The first two were two-and-a-half dimensional games on a grid map and the third was fully isometric. The fourth and best-selling title, on the other hand, is a fully three-dimensional (third-person view) massively multiplayer online role-playing game (MMORPG) called *World of Warcraft* (2004). Contrary to previous RTS games in which the players build structures and control armies, here the players create a single avatar and develop it (by levelling it up). Another installment, the *Hearthstone*, an online digital collectible card game, was released in 2014. And a currently a new mobile game, titled “*Warcraft: Arclight Rumble*” announced in May 2022, to be released. Also, one movie titled “*Warcraft*” (2016) and numerous novels were produced in the franchise.

World of Warcraft had been a major commercial success upon its original release in 2004 and rapidly became the most popular MMORPG of all time. The game had one hundred million player accounts (inactive ones included) in 2014 and the game had made over nine billion dollars in revenue (sold twenty-three million copies), making it one of the highest-grossing video games of all time. And at its peak in 2017, there were forty-six million active subscribed players. Since its launch, *World of Warcraft* had nine major expansion packs: *The Burning Crusade* (2007), *Wrath of the Lich King* (2008), *Cataclysm* (2010), *Mists of Pandaria* (2012), *Warlords of Draenor* (2014), *Legion* (2014), *Battle for Azeroth* (2018), *Shadowlands* (2020), and the latest announced the *Dragonflight* to be released. Each expansion enlarged the game universe by adding new playable races and new settings to be explored.

The game is set in the high-fantasy world called Azeroth (The term “high-fantasy” stands for epic settings, characters, and plot whereas the “low-fantasy” is used for the ordinary worlds that magical events intrude on). Blizzard Entertainment focuses on the narrative of Azeroth together with polished gameplay. This is accepted as the main reason for its worldwide success. Creators spend a vast amount of time crafting the setting. Because they know that the players will develop a deep emotional connection to a game world that will keep them coming back again and again.

In the original release (called “vanilla” in the gaming terminology, which means the core game in its original release, without any expansion packs yet), the Azeroth was divided into two main continents: the Kalimdor in the west (mainly controlled by the Horde, one of the two factions of fictional races) and the Eastern Kingdoms (mainly controlled by the Alliance, the other faction). Later expansions enlarged the game map by introducing new continents, new planets, and alternative time travels. Azeroth is actually not a big planet, compared to the

Earth. A study calculated the distance between the north and south tip of the Eastern Kingdoms continent as thirteen kilometers (Aarseth, 2008: 116). However, all the civilizations, creatures, and lots of magic can fit into this relatively small built world.



Figure 1. Current map of Azeroth

The continents of Azeroth are divided into zones. Each zone has a uniquely rich variety of climate, flora, and fauna (and even a unique in-game soundtrack, as well) such as the marshes, wetlands, jungles, and highlands known in the real world. However, the climate is not accurate since icy zones can be found around the equator and the deserts can occupy the adjacent zone or the northern or southernmost territories. And there are urban spots in these zones occupied by the fictional races, as well as the mentioned rural settings. There are smaller villages and towns, and also the greater capitals of each race. The key design principle behind Azeroth is enjoyment, not geographic or material realism. The overall setting was designed and optimized for gameplay, and their real-world resemblance is a secondary feature.

World of Warcraft is a game in which all players try to develop their character (or avatar) via completing quests, fighting with monsters (and each other as well), exploring the Azeroth (navigating between zones by walking or on land or flying mounts), and unlocking new skills, weapons, and armors. At the very beginning of the game, the player creates an avatar by choosing a race and a class. In the World of Warcraft, the fictional races are divided into two enemy factions, the Horde and the Alliance. Races in the vanilla were the Orc, the Undead, the Tauren, the Troll for the Horde and the Human, the Dwarf, the Night Elf, the Gnome for the Alliance. Expansion packs introduced the new races of the Blood Elf and the Goblin for the Horde and the Draenei and the Worgen for the Alliance, and the Pandaren which can choose one of both factions later in the game. And the classes of the game are the Druid, the Hunter, the Mage, the Paladin, the Priest, the Rogue, the Shaman, the Warlock, the Warrior, the Monk, the Death Knight, and the Demon Hunter. Race means general looking of the avatar whereas class is for somehow the profession (for example, gaming mechanisms such as battling with magic or swords and wearing cloth or mail armor are shaped via these choices). The avatar has benefits both from its race and class. Not all races can choose all classes, and this dual choice shape the gaming experience.



Figure 2. Races of World of Warcraft

All races are common in their anthropomorphically bipedal design. In other words, they are all humanoids. However, as well as their physical experience, they display a vast variety of their unique cultures, each designed in detail. Some of them come forward with the design of their distinct material culture.

For example, the Orcs, also known from the Tolkien lore, are a muscular race with greenish skin and sharp teeth. It is known that their design has obvious Central Asian (Turkic and Mongolic) influence. Even the word “Horde” (the faction Orcs lead) is from the Turkic term “orda (or ordu)”, meaning “camp”, “headquarters”, “army” and “tribe”. They are displayed as somehow savage bloodthirsty warriors. Shamanism is a widespread life practice for them. Therefore, their material culture identifies these uncivilized features. The Taurens, on the other hand, are bovine ungulate humanoids with huge horns. They look like the monster Minotaur from Greek mythology. However, their culture has references from the Northern American Natives. They are organized in chiefdoms, dwell in teepees and there are lots of totem poles around their settings. They also wear war bonnets, headgear decorated with feathers, and play drums. Another race, the Trolls, who are also known from the European folklore, are differentiated by their huge fierce tusks and blueish skin tone. Organized in tribes, the troll culture has Aztec, Maya, and Inca references. They also practice voodoo worship, known to the African people. Their settings are full of masks, similar to the African and Polynesian cultures. Their overall tribal culture can be considered the Caribbean. Their architecture also shares features with the tropical real-world cultures.

The Humans of Warcraft can appear in any real-world skin tone. They wear clothes and armor and live in structures, both similar to the real world medieval culture. The Human settlements are generally in geometrical plan and of stone architecture. Fortresses, castles, and walls are common in their environments. The Dwarfs, on the other hand, are short and stubborn natives of Azeroth, with males having huge beards. They are somehow based upon Tolkien dwarf culture. Their physical appearance and in-game mythology can be considered Norse-based. However, they are also familiar with the cultural features known from the Irish and Scottish. Beer has a unique importance in their culture. Their economy is heavily based on mining and blacksmithing. They have a huge forge, carved in the mountains. The Night Elves are another ancient race with mystical features. They have very long and pointy ears and shiny eyes. They have a deep connection with nature and are very familiar with the magic. The Lunar Festival, based on the Chinese New Year is a very important celebration for them. Chris Metzen, the former Senior Vice President of Story & Franchise at Blizzard Entertainment, once told that the elven architecture draws influences from both Nordic and Japanese styles. Pagodas and torii gates around their settings are obvious evidences. They also built large domes, known from the Byzantine architecture. They also have many sacred trees and beautifully decorated pools.

Pandaren (humanoid pandas) are another ancient race of Azeroth with a deep history, love for nature, and again strong ale. Here, they present the East Asian cultures. They are monks skilled in the Martial Arts. They also have a vast collection of cuisine based on Asian cultures. And they herd dragons. And for architecture, the monasteries and palaces with hip-and-gable roofs and rich ornaments are common in their settings. They have huge walls mimicking The Great Wall of China and Zen gardens. Gongs, bells, and incenses around their shrines once again prove the Asian influence.

Many scientific studies focused on the fictional culture creation in the World of Warcraft. Some of them praise the attitude of Blizzard Entertainment, an American company in borrowing foreign cultural concepts from all over the world and melting them in a pot. According to these studies, features like Nordic gods, Chinese cuisine, and Egyptian architecture are blended into the lore (or story) of the game successfully. And those cultural elements encourage players in adapting to the game and becoming deeply attracted to it (Wu, 2020: 520). However, another set of studies does not hesitate in criticizing the storytelling of the game in terms of creating cultures. Many of them blame Blizzard Entertainment for whitewashing, in terms of ethnocultural racial stereotyping. According to them, the company has a Western perspective attitude in creating the races of the Horde and the Alliance factions. They put forward the detail of displaying the Alliance cultures as “WEIRD (western, educated, industrialized, rich, and democratic)”, civilized and good, whereas the Horde cultures as savage, cruel, colonized, barbarous, dirty, disorganized, primitive (Langer, 2008: 91), and evil.

Another group of studies focuses deeply on the architecture of the Azeroth. First of all, the common perception offers that the stunning diversity of buildings of Azeroth secures it the top spot (Patel, 2009: 1), and making

World of Warcraft a worldbuilding epic. Intentional or not, many architectural solutions in the game work similarly to the real world (Ljungström, 2005: 1). More, the World of Warcraft privileges architecture as a spatial experience, in terms of moving, wayfinding, and the joy of exploring. Eskelinen (2004: 1) thinks that spatiality is an important factor in video games and that very fact makes architecture far more important to game scholars and designers. However, games utilize architecture and landscape for sake of the gameplay. The buildings and the rural settings are mainly used to provide attractive settings, what gamers call “eye candy”. And World of Warcraft proves this phenomenon in terms of its rich colorful surroundings. Many scholars agree that the Azeroth has nonrealistic but unique cartoonish graphics. More, the World of Warcraft simulates building materials in terms of their appearance. The wood or the stone do not actually behave like their actual properties in the real world (McGregor, 2006: 1). They exist just with their meanings. All these attitudes struct the architectural narrative. World of Warcraft, therefore becomes a visual storybook.

Another task of architecture in Azeroth is to differentiate between the opposing factions, according to their cultures mentioned above. The Alliance races tend to build in stone in strict geometrical plans with varying degrees of integration into the landscape whereas the Horde races prefer cloth and wood materials in looser organic plantype (McGregor, 2006: 1). Even for the urban design, the Alliance capitals of Stormwind (the Humans) and Ironforge (the Dwarfs) are in geometrical plantype whereas the Horde capitals of Orgrimmar (the Orcs) and Thunder Bluff (the Taurens) are organic.

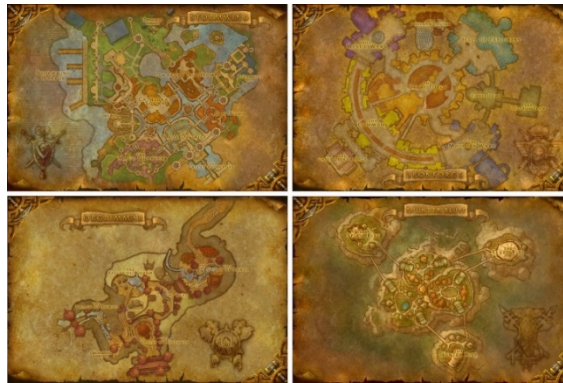


Figure 3. Maps of several capital cities (geometric plantypes above and organic ones below)

Below, there are in-game screenshots of different settings chosen from the mentioned distinct cultures of the races, those will help in understanding the role of the architecture of World of Warcraft, in terms of storytelling and worldbuilding. Since the Orcish culture was designed savage and bloodthirsty, the form and the material of their structures are quite offensive. Many of these organic buildings have long spikes, chains, and untidy war banners. For a realistic counterpart, they somehow remind the Turkish and Mongolic yurts in form resemblance, as expected.



Figure 4. Aerial view of the Orcish capital Orgrimmar (a), a close-up view of an Orcish structure (b), gates of the Orgrimmar (c)

The Tauren culture has many obvious Northern American Natives influences, as mentioned above. They prefer to live in structures with the organic formed fabric tents and teepees of these real-world native cultures. And many totemic poles, as mentioned before, are visible around their settlements.

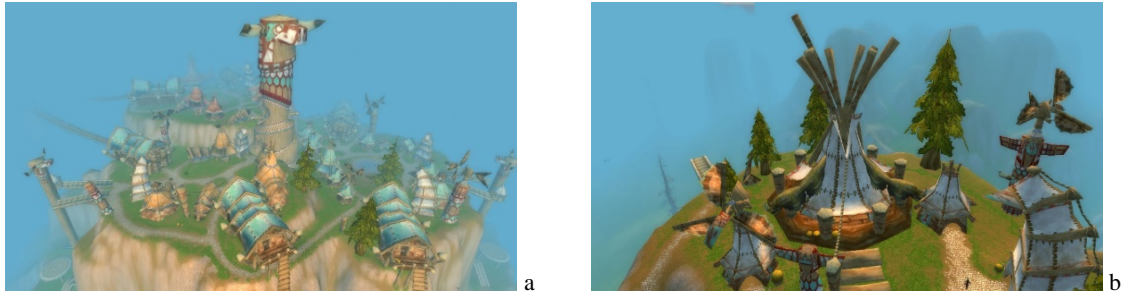


Figure 5. Aerial view of the Tauren capital Thunder Bluff (a), a close-up view of a Tauren structure (b)

The Troll settings, on the other hand, directly remind us of the tropical real-world architecture risen on stilts, for maximum cooling. The materials such as structural tusks, stretched fabric, and thatched roofs also support this similarity.



Figure 6. Aerial view of the Troll settlement Sen'jin Village (a), a close-up view of a Troll structure (b)

The Stormwind, the Human capital of Azeroth, has many stone walls, castles, towers, and a central cathedral. It is obvious that the city was designed with medieval architecture in mind. The geometrical organization known from the urban plan is also followed for the building design.



Figure 7. Aerial view of the Human capital Stormwind (a), a close-up view of a Human structure (b)

The Ironforge, the Dwarven capital of the game, is a great forge carved in the mountains. Irish and Scottish influence is visible through the structures inside this cave. As an Alliance race, the strict geometry of both urban design and structure design is also applied here.



Figure 8. Interior view of the Dwarf capital Ironforge (a), a close-up view of a Dwarven structure (b), Gates of the Ironforge (c)

The main city of the Night Elf culture is Darnassus. This and any other Night Elf setting are full of shiny magical trees since the Night Elven culture is linked with nature. As mentioned above by one of the game designers, the influences of both Japanese and Byzantine architecture are clear. The Night Elves have either pagodas and torii gates or larger ornamented domes in their settings.



Figure 9. Aerial view of the Night Elven capital Darnassus (a), a close-up view of a Night Elven structure (b), Gates from a Night Elven setting (c)

Introduced in one of the later expansion packs, the Pandaren are another unique culture designed in detail. The Asian architecture was followed in the settlements of Pandaria, the main Pandaren continent in Azeroth. Almost every structure has a hip-and-gable roof, the main Asian architectural characteristic. More, there are huge temples, monasteries, and various pagodas with courtyards for meditation purposes. Almost everywhere in Pandaria is decorated with bells, gongs, and kites. There also is a great wall in between the Pandaria zones obviously mimicking The Great Wall of China.

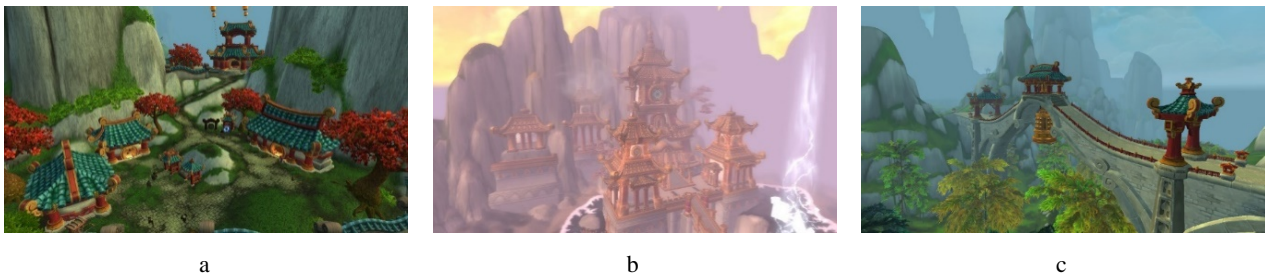


Figure 10. A Pandaria settlement (a), a monastery structure from Pandaria (b), a bridge structure from Pandaria (c)

For an overall evaluation of World of Warcraft architecture, several determinations can be put forward. However, before they are introduced, the overall analyses of storytelling and worldbuilding of World of Warcraft should be put forward.

CONCLUSION

Blizzard Entertainment created deep lore and a wonderfully detailed constructed world for the Warcraft franchise. And they keep telling us stories within these lore and setting, in each new installment they publish in this franchise. For worldbuilding purposes, there is a unique map covering the continents, oceans, and climate. Each zone has a different set of flora, fauna, and civilized inhabitants. And for civilized inhabitants, the designers created equally detailed races with unique material cultures. They all have clothes, tools, and architecture in a variety of distinct appearances. Since architecture is the key element in material culture with its storytelling skills, the creation of structures for each distinct culture obviously was studied in detail.

For the video gaming architecture, in the narrative experience scale of evocative / enacting / embedded / emergent spaces, the World of Warcraft displays an umbrella stance, rather than sampling one of them. The design of Azeroth is evocative, in terms of being a part of a greater ecosystem of several books, games, and other media, known as the Warcraft franchise. It is also enacting, in terms of gathering people together for similar purposes. For embedded spaces, the game presents a prestructured mise-én-scène for players to explore. And for emergent spaces, the game gives freedom to its players to define their own goals and write their own stories.

Finally, the structural creation in World of Warcraft can be considered successful for a bunch of reasons. First, since the Azeroth is a three-dimensional built world, the structures stand with their spatial identity both indoors and outdoors. Some games, on the other hand, evaluate the structures with their abstract meanings (as an example, in Age of Empires, an isometric real-time strategy franchise, when lumberjack villagers drop off the wood to a storehouse structure, the resource becomes invulnerable, since it is not an actual architectural storage). However, the World of Warcraft utilizes the architecture for similar purposes to the real world. Second, in terms of the vernacular architecture, the game becomes an excellent example of the structural identity of fictional cultures. In terms of the identification of distinct cultures and the differentiation of their appearance, architecture here plays a critical role. The structures of Alliance races look similar to the real world formal architecture whereas in the design of Horde races' buildings, a more vernacular identity is preferred. This alone proves the critics of the Western attitude. The Alliance races were designed with industrialized cultures in mind, whereas the Horde races look similar to the alien cultures of somehow third-world countries. Third, as well as the building forms, also the building materials work for storytelling. Neither stone, nor wood, nor spikes is actual materials. However, they ease the perception of the fictional cultures, either savage or industrialized. Fourth, the cartoonish atmosphere preferred while building the Azeroth indicates that the setting was optimized for the gameplay. Structures and cities in World of Warcraft prefer a unique appearance, and this is not a realistic one. Therefore, the storytelling function of the architecture here is the main goal of worldbuilding. Azeroth is a fantasy world, and this dissimilarity seems working successfully.

After an overall evaluation of the architecture of the Azeroth, it can be confidently stressed that, for the features of being not a photorealistic environment but narrative, and pushing the limits of storytelling of architecture, the World of Warcraft should be accepted as another worldbuilding epic. And the use of vernacular architecture here singlehandedly takes control of much of the storytelling function of the game world. Since the number of this much detailed game worlds with this much cultural variety is limited, the evaluation of storytelling features of architecture in World of Warcraft can be considered somehow unique and the leading example. And therefore, the Azeroth can be named a very successful fictional world which has been built from scratch.

Authors' Contributions

The author contributed to the study 100%.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

Ethics committee declaration was not required for the study.

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Figure References

Figure 1: Wowpedia. (n.d.). Current map of Azeroth. <https://wowpedia.fandom.com/wiki/Azeroth> (07.04.2022).

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Figure 4- 10: World of Warcraft (PC version). [Video game]. (2022). Blizzard Entertainment.