

A FRAMEWORK FOR THE CONSERVATION AND VALORISATION OF COLONIAL ARCHITECTURAL HERITAGE OF COASTAL COLONIAL TOWNS, GHANA

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Abstract

Coastal Colonial Towns (CCTs) of Ghana contain Colonial Architectural Heritage (CAH). The CAH are valuable asset; they possess social and economic values that can be harnessed to improve the physical, social and economic conditions of the CCTs for sustainable development. Over the years, the morphologies of the CCTs have been exposed to destructive forces, putting the CAH at risk. There is the need to formulate intervention programmes to rescue the CAH. This study focused on establishing a framework to guide the identification, conservation and valorisation of the CAH, not only to prevent their destruction but most importantly make them socio-economically viable to national developments. The study relied mostly on scholarly literature to first identify the gaps associated with pertinent theories; none of the morphological theoretical approaches considers both the micro and macro- Urban Tissues (UT) and both the human and environmental factors at the same time; and the theories have not been explored well in Ghana to enable the identification and conservation of heritage items. The proposed framework which is to fill the gap, is a synthesis of the morphological approaches (Historico- geographic, Process- typological and Space syntax), the Power theory and the Historic Urban Landscape approach. The study makes significant contribution by allowing both the macro and micro UTs as well as the environmental and human factors to be considered for the identification, conservation and valorization of CAH. Moreso, the study produced a framework which can be adapted to conserve and valorise the CAH of the CCTs of Ghana.

Keywords: *Urban Morphology, Colonial Architectural Heritage, Conservation, Valorisation and Framework*

1. Introduction

Even though colonial legacies resuscitate the painful past, they are extremely valuable due to the outstanding universal values that we associate with some colonial activities and artefacts. Thus, colonialism represent a significant phase in global history and it demonstrates the interchange of human values (Europeans and African) over a period of time (Igboin, 2011; Silva, 2015; Blakemore, 2019). Moreso, the study of colonialism helps to shed light on the formation of national identities for understanding deep-rooted structures of power and exploitation (Adarkwa, 2012). Consequently, colonial legacies present opportunities that must be harnessed for socio-economic and sustainable development (Home, 2015; Njoh, 2015; Silva, 2015; Beinart and Dubow, 2013). One group of colonial legacies which have remained important and valuable on the Ghanaian landscape are Coastal Colonial Towns (CCTs) (Simon, 1989). CCTs are urban centres that emerged between the 15th and 19th centuries along the coast of Ghana, as a result of the trade relations that occurred between Europeans and the local people. More than 40 CCTs emerged in Ghana such as

Axim, Elmina, Cape Coast, Accra and Keta (Dickson, 1965; Bredwa- Mensah, 1999). The CCTs contain important Colonial Architectural Heritage (CAH) which are monuments, places and artefacts that bear witness to important pre-colonial (antecedents to colonialism) and colonial events, activities and stories that are of national and global significance (Igboin, 2011; Silva, 2015). After Ghana gained its independence in the second half of the 20th century, the CCTs declined thereby subjecting the CAH to destructive forces such as spontaneous teardowns, gentrification and neglect (Jackson, 2019; Nunu-Amarteifio, 2015). Some CCTs such as Jamestown and Ussertown in Accra-Ghana have even transformed into urban slums, compromising on the quality of life of the residents and the CAH (Commonwealth Heritage Forum [CHF], 2010; Nunu- Amarteifio, 2015). The need to safeguard and harness the potentials of the CAH to revitalize the CCTs and to improve the quality of life of the residents has never been so important. A conservation and valorisation programme that looks at the CCTs and CAH from the morphological perspective is therefore required to inform a holistic intervention programme to prevent irreversible damage (Barke, 2018; McCartney and Krishnamurthy, 2018; Oppong et al., 2018).

This study focused on formulating a framework founded upon existing literature to serve as the guide and ballast of the conservation and valorisation. The framework will help to inculcate colonial heritage conservation and valorisation strategies in the physical planning and design of the CCTs. This will in turn help to retain important colonial assets, improve the spatial attractiveness of the CCTs and diversify the economies of the CCTs by taking advantage of the economic potentials of the CAH (Marcus, 2017; Hobeika, 2021). Indeed, in the agenda for sustainable development, heritage is mentioned explicitly as an aim to protect the worlds cultural and natural heritage under Sustainable Development Goal (SDG) 11 (Hobeika, 2021). The framework thus facilitates the attainment of sustainable and resilient cities in Ghana.

2. Methodology

An exploratory approach was adopted for this study. The paper adopts the qualitative approach to gather and analyse secondary documents and data. Information for this study was obtained from existing literature on urban morphology, CCTs, CAH, conservation, valorisation, framework and urban planning and design. These themes formed the basis of the literature search in major electronic databases such as ScienceDirect Journals Online, JSTOR, SCOPUS and Google Scholar. Existing literature from theorists (Conzen 1960; Hillier, 2007; Njoh, 2015; Oliveira, 2016; Ginzerly et al., 2018; Kropf, 2017, Gu et al., 2019) provided an important source for both historical and current issues to serve as a strong basis for gap identification and the formulation of the framework to fill the gap. After reviewing them, key references that were cited or cite the theories were identified, selected and reviewed. This continued until the researcher became abreast with issues. In all, eighty-two (82) scholarly sources were reviewed of which 13 were from Ghana, 13 from the rest of Africa, 13 from Asia and 43 from the rest of the world. These multiple sources enabled data triangulation to be conducted where the findings from different articles were used to confirm and validate the findings from other articles. This method was adapted from Ahmadi et al. (2009) who employed the same method to study a similar issue- the theoretical base of urban morphology.

3. Findings from Literature

3.1 Urban Morphology

Urban Morphology is the study of human settlements, their structure and the processes of their formation and transformation (Kropf, 2017). The object of focus of urban morphology studies is the Urban Tissue (UT) (Oliveira, 2016). The UT is an abstraction of the physical form of the city; a complex, yet a structured phenomenon that represents the urban environment in all its parts and the relationship that exist amongst them (Çalışkan & Marshall, 2011). The UT can be viewed at two levels; the micro scale level which reveals individual built forms and block plans and the macro scale level which reveals larger territories and neighbourhoods. It is important to understand the morphological issues of both the micro and macro UTs to inform holistic interventions (Oliveira, 2016). The process of studying morphology involves the abstraction of morphological elements

from the UT and finding out how morphological factors affect, transform and configure the elements in the UT. The process of abstracting the elements and factors from the UT is called the morphological process (Çalışkan & Marshall, 2011). Every urban morphology study commences with two major steps; abstracting morphological elements of interest and determining relevant morphological factors. Morphological elements are forms, patterns and matrixes that can be abstracted from the UT (Oliveira, 2016; Çalışkan & Marshall, 2011). Numerous morphological elements can be abstracted, for instance, nodes, landmarks and typologies at the micro-UT level as well as street system, plot structure and suburbs at the macro-UT level (Lynch, 1960; Conzen, 1960). Morphological factors on the other hand are human (socio-cultural and economic) and environmental (climate, topography and drainage) parameters that affect and transform the morphological elements over time (Gamesby, 2020; Mohannadi et al., 2019; Tao et al., 2017; Stewart, 1999). The morphological factors are dynamic and change as morphological periods change. Morphological period is the time frame within when the conditions of the morphological factors are fairly constant, leading to the production of similar urban forms and patterns (Whitehand et al., 2014). Urban morphology therefore aims to understand how the changing human and environmental conditions of various morphological periods create and transforms the morphological elements of the UT of a given urban environment. Since the second half of the 20th century, four theoretical approaches have emerged for the study of urban morphology; the Historico- geographic, the Process- typological, Space Syntax (Configurational) and Spatial Analysis approaches (Kropf; 2017; Oliveira, 2019). These theories differ based on the UT, morphological elements and morphological factors of focus. As a result, their outcomes are often different.

The Historico-geographic approach involves the abstraction of three morphological elements (street system, plot system and built forms) from the macro-UT and finding out how economic and socio-cultural factors affect their configuration and transformation. It assumes that the UT is a palimpsest of UTs of all the past morphological periods and each additional UT layer causes changes in the three morphological elements. The three morphological elements however change at varying rates, for instance the street system sustains the highest level of permanence (Conzen, 1960; Samuels, 2009). In addition, the intensity with which the morphological factors act on the three morphological elements vary with geographical location. For instance, economic dynamics intensifies as one moves from the fringes to the inner city. Overtime, areas of unitary characteristics (*Morphological Regions*) and areas that bear witness to the long-term limitations to urban growth (*Fringe Belts*) develop throughout the UT (Oliveira, 2019). Thus, the ultimate goal of the Historico-geographic approach is to delineate *Morphological regions* and *Fringe Belts* as a means of gaining better understanding of the evolutionary and transformative processes that confront and shape the UT to inform urban planning and design decisions. In heritage studies, the Historico-geographic approach helps to identify characteristic areas and their significant features for safeguarding (Whitehand, 2007). The approach does not address issues related to the micro-UT and it does not directly consider how environmental morphological factors such as climate and topography affect and transforms the morphological elements (Conzen, 1960; Whitehand, 2007; Hazar and Kubat 2015; Conzen 2007).

The Process-Typological Approach focuses on abstracting *types* and *typologies* at the micro-UT level. It decodes the processes of the formation of specific *types* and *typologies* by relating them to history and context (economic and socio-cultural) (Gu et al., 2019). It posits that there exist ideal built '*types*' and '*leitmotifs*' which are produced due to how history and context interact (Whitehand et al., 2014; Gu et al., 2019; Caniggia and Maffei, 2001). Similar to Darwin's theory of evolution, a *type* has to mutate when conditions change to survive, leading to the emergence of '*new typologies*' (Gu et al., 2019). Identifying and understanding the different *types and typologies* that an urban environment has produced over the course of its history is therefore the means to understanding the issues and forces that affects its evolution and transformation. The Process-typological approach is often applied in urban heritage studies since it helps to identify important typologies and their characteristic features for conservation (Mohamed et al., 2018; AlSadaty, 2022; Petruccioli, 1995; Sanders and Baker, 2016). Nevertheless, it only focuses on the micro-UT (individual types and typologies) and it also does not directly consider the role played by the environmental morphological factors (Gu et al, 2019; Petruccioli, 1995; Guo and Ding, 2021).

Space syntax approach, otherwise referred to as the configurational approach offers an alternative (quantitative) approach to studying urban morphology (Kropf, 2017; Oliveira, 2019). It abstracts floor plans (micro-UT element) and street systems (macro-UT element) as the morphological elements of interest. Unlike the previous approaches which assume a one-way linear relationship between the morphological factors and the morphological elements (thus, the morphological factors determine the arrangement of the morphological elements in the UT), Space Syntax assumes a two-way relationship where each one (morphological elements and factors) determine the other (Hillier and Hanson, 1984; Hillier, 2007; Hillier and Stonor, 2010; Sun, 2013). It assumes that on one hand, space is ordered by syntactic laws which are rooted in social-economic behaviour and on the other hand, socio-economic behaviour is also shaped by the spaces we produce. Thus, the morphological factor of interest is socio-economic behaviour. Space syntax assumes that the syntactic laws which emanates from socio-economic behaviour and which determine how space is ordered is expressed in movement and therefore can be operationalized by analysing how movement is engendered in the UT topologically (Hillier and Stonor, 2010; Hillier, 2007; Dalton and Dalton, 2007; Kooshari, et al., 2019; Karimi, 2018). It therefore resort to quantitative topological concepts such as integration, connectivity, and axial maps to operationalize movement in the UT which helps to interpret the syntactic laws and therefore the relationship between socio-economic behaviours and space (Hillier and Hanson, 1984; Hillier, 2007, Sun 2013). Space syntax can be used to investigate how space affects land use. Thus, more integrated streets or spaces tend to attract more economic land uses whereas residential and agriculture land uses are often relegated to the least integrated spaces (Hillier and Hanson, 1984; Hillier and Stoner, 2010; Hillier, 2007). From this perspective, Space syntax can be employed in heritage valorisation (Stoner, 2017). Space syntax is the only approach that considers issues of both UTs (Oliveira, 2016; 2019). Nevertheless, it completely fails to consider the environmental factors.

Spatial Analysis Approach is a heterogeneous approach consisting of different models such as the Agent-Based Models and Fractal Geometry used for simulating and evaluating the macro- UT (Kropf, 2017). Each model studies the global form of a complex and dynamic system and concludes that, underneath such complexity are simplistic local processes which translate into structural laws, and which in turn determine how the sub-components are positioned and interact (Falah et al., 2020; Heppenstall et al., 2016). The models assume that such structural laws are similar in all complex and dynamic systems. They also consider the UT as composed of numerous and heterogeneous components which are continually being altered by a wide range of change agents, just like the complex systems (Heppenstall et al., 2016). Hence, the UT is also a complex system and underpinned by similar structural laws. Spatial Analysis models thus study complex systems to deduct structural laws which is then applied to simulate and understand the UT and its transformations (Pinto and Antunes, 2007). Morphological elements of the macro-UT such as the town plan and streetscapes are often the elements of interest. Each model devices its own means of operationalizing the structural laws which are then entered into special computer software programmes to explain the direction and trend of change of the UT. The morphological factor of interest is thus structural laws which emanate from both human (socio-cultural and economic) and environmental processes and can be captured through critical observation.

The main advantage of Spatial analysis is

Table 1: A Summary of the four (4) Theoretical Approaches of Urban Morphology

	Historico-Geographic Approach (HGA)	Process-Typological Approach (PTA)	Space Syntax Approach (SSA)	Spatial Analysis Approach (SAA)
Urban Tissue (UT) of focus	Macro-UT (Oliveira, 2016)	Micro-UT (Oliveira, 2016)	Macro-UT Micro-UT (Oliveira, 2016)	Macro-UT (Oliveira, 2016)
Morphological Elements abstracted	Street system Plot system Built forms (Conzen 1960)	Types Typologies (Gu et al., 2019)	Street System Floor plans (Hillier, 2007)	Town Plans Streetscapes (Kropf, 2017)
Human morphological factors of focus	Economic Social Cultural (Oliveira, 2019)	Economic Social Cultural (Oliveira, 2019)	Socio- economic behavior (Movement) (Hillier, 2007)	It considers human factors by deriving structural laws (Heppenstall et al., 2016)
Environmental morphological factors of focus	Indirect consideration of environmental factors (Oliveira, 2019)	Indirect consideration of environmental factors (Oliveira, 2019)	Does not consider environmental factors	It considers environmental factors by deriving structural laws (Heppenstall et al., 2016)
Urban Heritage Conservation & Valorization	Helps to identify characteristic areas for conservation (Whitehand, 2007)	Helps to identify unique types and typologies for conservation (Petruccioli, 1995)	Helps to determine the values of the streets along which the heritage items are situated during heritage valorization (Stoner, 21017)	Not used for heritage conservation and valorisation (Oliveira, 2016)

In Ghana these four morphological approaches have not been explored well to yield adequate morphological information about its cities for holistic intervention programmes. Most urban studies rather focus on only the morphological factors such as the economic and socio-cultural dynamics (Lall et al., 2017; Agbola, 1997) and that, it is the only approach that directly considers environmental factors (Heppenstall et al., 2016). However, it is rarely applied in urban heritage studies since it is predominantly used to simulate the future UT (Oliveira, 2019). Table 1 summarizes the main finding of the four (4) morphological approaches.

Environmental and climate change (Sanni et al., 2019; Salami et al., 2017). Other studies including Wellington and Oppong (2018) and Jackson (2019) also only study morphological elements. Studies that seek to investigate how the morphological factors affect and transform the morphological elements in the manner of any of the four approaches are rare. There is therefore a dearth of information concerning the morphological characteristics of Ghanaian cities including the CCTs.

3.2 Heritage Conservation and Valorisation

The concept of Valorisation (Verwertung- German) was first used by the German philosopher, Karl Marx to describe the capitalist activities which involved buying of commodities to sell to realize more value. Valorisation is therefore an economic concept that has been fused with heritage studies. It assumes that the heritage asset is a capital asset that should be invested to generate surplus and profit (Rakitovac and Urosevic, 2015; Zerai, 2020). Heritage valorisation can thus be defined as the improvement of the economic value of any heritage asset or finding economic uses for heritage assets (Zerai, 2020). It requires that, all the approaches and procedures of the heritage conservation process should culminate in creating an economic use. As a sub-theme under heritage conservation, its ideas are often expressed within the heritage conservation approaches (Rakitovac and Urosevic, 2015).

Heritage conservation is the safeguarding of any heritage item and its character-defining elements from destruction (Mehr, 2019). Heritage conservation is underpinned by four approaches; Material approach, Value-based approach, Living heritage approach and the Historic Urban Landscape approach. The Material approach seeks to preserve the traditional values of the heritage (archaeological, historic and aesthetic values). Since these values are expressed in the physical fabric, the Material approach always see the tangible heritage as a non-renewable resource and the main object of focus (Zeayter & Mansour, 2018; Jokilehto, 2016; Poullos, 2014). Nevertheless, its adoption in cultures outside of Europe such as Ghana (where the cultures are rarely based on monuments) is problematic (Jokilehto, 2016). Furthermore, the approach impedes almost all forms of valorisation programmes- Once a heritage item is designated for conservation, restrictions over use is imposed to preserve the physical fabric (Jokilehto, 2016).

The Value-Based Approach considers the non-traditional values (social, religious and spiritual) in addition to the traditional values. It recognizes that, heritage status is based on the values that stakeholders ascribe to the heritage item. On this basis, 'values' and 'stakeholders' are the main items of focus and not necessarily the physical object (Poullos, 2014; Mason and Avrami 2002; Zeayter & Mansour, 2018). This enables for a flexible application in cultures outside of Europe such as Ghana. It also allows valorization programmes to be implemented as far as the heritage values are not compromised. However, it tends to introduce multiple stakeholders into the conservation programme which results in conflicting interests and tensions. Often, it relies on democratic processes to manage stakeholder- interests. But to every heritage item, there is a core stakeholder group who should dominate in decision making (Poullos, 2014).

The Living heritage approach is a modified version of the Value-Based approach, which puts the core stakeholder group at the forefront of the conservation programme and relegates all other stakeholders and conservation professionals to secondary supporters (Wijesuriya, 2013; Poullos, 2014). Moreso, the Living heritage approach assumes that the heritage continues to add on values, hence it permits continuity, change and valorisation as long as it is sanctioned by the core stakeholders (Wijesuriya, 2013). The Living heritage approach is therefore a liberal approach to conservation which poses the danger of eroding the very values it seeks to protect if not managed well, especially since conservation expects play secondary roles.

The Historic Urban Landscape (HUL) approach is not a substitute or alternative to the previous approaches. It is a holistic approach that complements and integrates all the other approaches. It is also the only approach that looks at conservation and valorization from the morphological perspective. It was developed as a practical tool and it inculcates spatial planning, spatial organization and urban management (Ginzerly et al., 2018; UNESCO, 2013). Despite this, its implementation is mostly organized by UNESCO at the international level and it has not been adequately explored in local communities. HUL outlines six (6) practical steps that simplifies the conservation and valorisation programme;

- (1) Survey and map out all heritage assets of the urban environment;
- (2) Identify and consult relevant stakeholder groups;
- (3) Identify the vulnerabilities of the heritage item;
- (4) Develop and integrate strategies for conservation and valorization;
- (5) Prioritize actions for conservation and valorization and;
- (6) Establish partnerships for conservation and valorization.

3.3 Relationship Between Heritage Conservation and Valorisation and Urban Morphology

Heritage conservation and valorisation are two of the numerous issues that are considered during urban planning and urban design (Jiang et al., 2022; Guzman et al., 2014). According to Çalişkan & Marshall (2011) and McCartney and Krishnamurthy (2018), the morphology of a settlement must inform its planning and design, hence, the morphology should inform all the heritage conservation and valorisation strategies. Indeed, urban morphology and urban planning/design (urban heritage conservation and valorisation) are part of a single process and interact as shown in Figure 1. Thus, through the morphological process, the study of morphology helps to abstract morphological elements and morphological factors from the existing urban fabric which further makes it possible to investigate the relationship and interaction between the two.

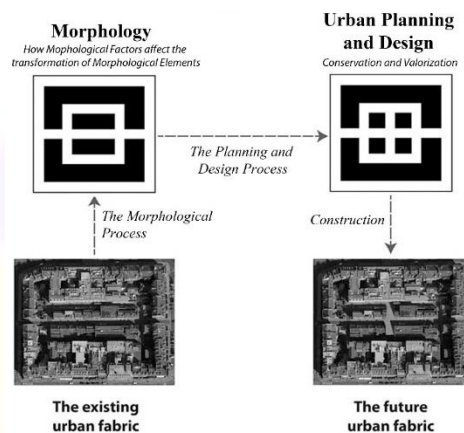


Figure 1: The Relationship Between Urban Morphology and Urban Conservation and Valorisation (Source: Çalişkan & Marshall, 2011)

This enables the identification of heritage items and the underlying issues. It is after this that conservation and valorisation strategies can be formulated through the planning and design process. Afterwards, the strategies can be implemented or constructed to realize the improved future urban fabric.

3.4 Coastal Colonial Towns (CCTs)

CCTs are coastal urban centres which evolved mostly between the 15th and 19th centuries in Ghana as a result of trade relations that occurred between Africans and Europeans such as the Portuguese, Swedes, Danes, Dutch and the British (Dickson, 1965; Simon, 1989; Home 2015; Njoh 2015; Silva, 2015). The evolution of CCTs always commenced with the building of an European trade fortification (castle, forts or lodge) by a European nation near or within an allied coastal village to secure monopoly over trade (Dickson, 1966; Wellington and Oppong, 2018). As trading flourished, the trade fortifications became the focal points and developments drifted towards them. A CCT therefore has at least one European trade fortification as a prominent feature. The CCTs were the first points of contact between the indigenes and Europeans. They served as hubs for the exchange of human ideas which engendered unique developments. By the turn of the 20th century, when European governments began to fully occupy and govern their territories in Africa, the CCTs had become the most important economic and administrative urban centres (Simon, 1989). As a result, most of the colonial monuments were built within the CCTs. For instance, the CCTs were the sites for most of the colonial infrastructure projects such as railways, schools and hospitals (Dickson, 1965; Demissie, 2017). Many of the colonial monuments have survived within the CCTs as Colonial Architectural Heritage.

3.5 Colonial Architectural Heritage

Architectural heritage constitutes a major component of cultural heritage and represents the tangible (monuments, built forms and sites) aspects of culture. UNESCO (1972) explains that the concept of Outstanding Universal Value (OUV) should be the basis upon which any object is designated as a cultural and/or architectural heritage. The concept of OUV means that certain objects are so exceptional and highly valued by everybody irrespective of race, gender etc. Therefore, such objects need to be protected for the interest of humanity. Architectural heritage is therefore defined as any monument and group of buildings which are of OUV from the point of view of history, art or science (UNESCO, 1972). UNESCO has established Ten (10) basic OUV criteria for cultural heritage. Of these, six (6) apply to architectural heritage and the remaining four (4) apply to natural heritage (Table 2). A monument, building or site must conform to at least one (1) of the six (6) criteria to qualify as an architectural heritage (Labadi, 2013). One group of built forms that qualify as architectural heritage are colonial built forms. Colonial built forms satisfy two of the criteria (Table 2). Colonial built forms serve as physical evidence of an important period of interchange of human values (Silva, 2015)– Criteria number two. Furthermore, colonial built forms are outstanding architectural features of the colonial era which occupies a very significant phase in global history (Blakemore, 2019)- Criteria number 4. Such colonial-built forms are herein referred to as Colonial

Table 2: UNESCO’s Outstanding Universal Value (OUV) Criteria and how it applies to Colonial Built Forms (Labadi, 2013)

Number	Heritage Type	Criterion for Outstanding Universal Value	Colonial Built Forms
I	Architectural Heritage	To represent a masterpiece of human creative genius	
II		To exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design	✓
III		To bear a unique or at least exceptional testimony to a cultural tradition	
IV		To be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history	✓
V		To be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment.	
VI		To be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.	
VII	Natural Heritage	To contain superlative natural phenomena or areas of exceptional natural beauty.	
VIII		To be outstanding examples representing major stages of earth’s history	
IX		To be outstanding examples representing significant on-going ecological and biological processes	
X		To contain the most important and significant natural habitats for in-situ conservation of biological bio-diversity.	

Architectural Heritage (CAH).

The largest concentration of CAH in Ghana can be found in CCTs. It was in these CCTs that most of the colonial activities which led to the construction of most of the CAH took place (Demissie, 2017). Notwithstanding, the process of identifying the CAH can be very confusing. Njoh (2015) and Dovey (1999) have proposed the *Power Theory* for use in identifying CAH. According to them, the CAH emerged based on how ‘power’ was expressed. Indeed, power occupied a central position in the colonialism process. As the French philosopher Michael Foucault (1926-1984) pointed out, ‘Architecture, by virtue of the restrictions and liberty it affords, can be utilized as an instrument to express power’. The CAH were used to express five (5) forms of colonial power; Force, Coercion, Seduction, Manipulation and Segregation (Njoh, 2015; Dovey, 1999). Force manifested through the design of physical structures to confine the indigenous people. Coercion was a more liberal form of force which utilized threats, domination and intimidation instead of the direct application of force (Njoh, 2015). For the purposes of this research, Force and Coercion are merged as one (Force and Coercion) since they are similar and produced the same forms of CAH. Thus, at the micro-UT level Force and Coercion produced dungeons, fences, walls and military fortifications such as forts and castles (Beinart and Dubow, 2013; Hove, 2018). At the macro-UT level Force and Coercion led to the creation of high-security, military and judicial zones within the CCTs (Gocking, 1997).

Seduction involved the use of enticements and strategies in promoting Eurocentric ideas. At the micro-UT level, the CAH that evolved from Seduction included cinemas, night clubs, race-courses and numerous recreational built forms (Jackson, 2019). At the macro-UT level, the CAH included enclaves where such recreational activities aggregated. Manipulation involved the withholding of information and truth to conceal true intentions. The Europeans built numerous public buildings including schools and churches (micro-UT) on the basis that they held the moral responsibility to develop Africa. In other situations, they established whole new public and welfare institutions (macro-UT) usually along the fringes of the CCTs (Brukum, 2005). Ironically, the true intention was to colonize, rule the people of Africa and exploit Africa’s resources (Rodney, 2018; Dickson, 1965;1966). Finally, Segregation involved the compartmentalization of the built environment based on racial, ethnic and other grounds (Home, 2015, Silva, 2015; Beinart and Dubow, 2013). At the macro-UT level, segregation led to the designation of European, indigenous, labour and local-elite enclaves within the CCTs. Unique residential typologies were subsequently developed in the segregated enclaves at the micro scale level. The Power theory however is mostly explored theoretically, and it has not been thoroughly explored within the CCTs of Africa and for that matter Ghana identify important CAH.

3.6 A Framework

A framework serves as a guide and ballast to research. It functions as an integrating ecosystem that helps the researcher to intentionally bring all aspect of the study together (Ravitch and Carl, 2021). Designing a framework for any research involves three basic steps (Swaen and George, 2022); choosing the research questions, selecting relevant variables and visualizing cause-and-effect relationship. Firstly, choosing the research questions enables the researcher to determine exactly what to find. Secondly, identifying the relevant variables is important and it facilitates the third step which is visualizing cause-and-effect relationships. According to Mcleod (2023), an independent variable is what is assumed to affect the dependent variable and it is what the researcher directly manipulates. The dependent variable is the variable being tested and it is dependent on the independent variable. The visualization of cause-and-effect is often done with simple boxes and arrows. The variables appear in boxes and an arrow is drawn from the independent variable to the dependent variable to indicate cause and effect as shown in Figure 2.



Figure 2: Visualizing the Cause-and-Effect Relationship of a Framework

(Source: Swaen and George, 2022)

4.0 Discussion- Developing the Framework

Table 3 summarizes the research gaps that were identified from the literature survey

Table 3: Research gaps identified from the literature survey

Thematic Area	Gap
Urban Morphology	Its theoretical approaches over-concentrate on the human factors, providing limited opportunities to knowing how environmental factors affect and transform the UT.
	Its theoretical approaches predominantly focused on only one aspect of the UT (macro or micro) even though knowledge of both UTs is necessary to inform holistic interventions.
	None of its theories is self-sufficient; none consider both the human and environmental factors and the micro and macro-UT.
	Its theoretical approaches have not been well explored in Ghana hence, there is inadequate morphological information on Ghanaian settlements.
Heritage Conservation and Valorization	HUL is a practical approach that looks at conservation and valorization from the morphological perspective. Yet it is mainly implemented by UNESCO at the international level.
Colonial Architectural Heritage and Coastal Colonial Towns	The Power theory has not been explored well within the CCTs to identify important CAH, thereby rendering them vulnerable.

As it can be visualized from Table 3 the main gaps associated with the study of urban morphology are that, most of the morphological approaches (Historico-geographic approach, Process-typological approach and Space syntax approach) emphasize on the human factors, hence they provide limited opportunities to knowing how environmental factors such as climate change, sea level rise and ecological degradation creates and transforms the UT. These environmental factors are equally important as they also play major roles in the formation and transformation of the UT

(Gamesby, 2020; Oliveira, 2016). Furthermore, most of the morphological approaches (Historico-geographic approach, Process-typological approach and Space syntax approach) predominantly provide the means to understanding issues of only one aspect of the UT but not both. Meanwhile, a holistic knowledge of urban morphology requires thorough knowledge of both the micro and macro UTs (Oliveira, 2016). Each of the four morphological approaches is deficient- none considers both UTs and both the human and environmental factors. To address these gaps, the proposed framework must strategically combine the approaches (Whitehand 2009, Oliveira, 2016). This will result in a composite approach that considers both the human and environmental morphological factors as well as both the macro and micro urban tissues for a holistic conservation and valorization programme within the CCTs of Ghana.

In this framework (Figure 3), Historico-geographic approach, Process-typological approach and Space syntax approach were combined. The Historico-geographic and Process-typological approaches were used to identify the CAH and to inform the conservation aspect whereas the Space syntax (configurational) approach was employed to inform the valorization aspect. Thus, the Historico-geographic approach was used to abstract colonial morphological regions of the macro-UT and to find out how socio-cultural and economic factors as well as environmental factors (which is stated explicitly) affected their evolution and transformations. The Process-typological approach was also used to abstract colonial typologies of the micro-UT and to find out how they were also affected and transformed by socio-cultural, economic and environmental morphological factors. Space syntax approach was used to determine the level of integration of the streets along which the CAH were located. The higher integrated the streets were, the more they attracted economic activities (Hillier and Stoner, 2010; Hillier, 2007). This was critical in making valorisation decisions since it informed how the CAH should be improved to attract economic activity. The Spatial Analysis Approach was not considered in the framework since it was predominantly used for simulating the future UT and therefore did not directly make significant contributions to urban heritage conservation and valorisation (Oliveira, 2019).

The proposed framework answers three main questions;

- (1) What constitute as the CAH of the CCTs of Ghana and how are they important?
- (2) How has the morphological transformations affected the CAH? and
- (3) How can the CAH be conserved and valorized for development?

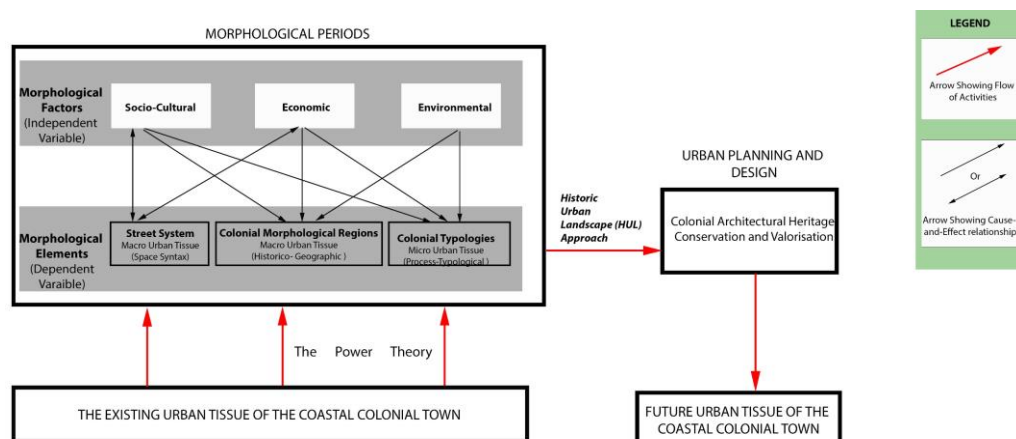


Figure 3: A Graphical Visualization of the Proposed Framework
 Source: Authors construct

In answering the first question, the framework recognized that the morphological elements were colonial architectural forms, hence the same as the CAH. Thus, the CAH were the colonial typologies and colonial morphological regions. The abstraction of the CAH was guided by the Power theory, which helped to explain the significance as CAH of force and coercion, manipulation, seduction and segregation (Dovey, 1999; Njoh, 2015). To answer the second question, the framework designated the morphological elements (CAH) as the dependent variables which were affected and transformed by the morphological factors (economic, socio-cultural and environmental factors- independent variables). To ensure that all morphological factors were adequately considered, the environmental factor was stated explicitly just as the economic and socio-cultural factors. Finally, the framework adopted the six practical steps of the HUL approach to inform the conservation and valorization procedures. This helped to answer the third question. The proposed framework is visualized graphically in Figure 3.

5. Conclusion

Although the CCTs of Ghana contain important CAH which can be harnessed for national development, nothing is being done to protect them (CCTs and CAH), putting them at risk of destruction. Owing to this the study sought to develop a framework to inform conservation and valorisation intervention programmes. After reviewing literature on the major themes of the study, it was found that none of the four morphological approaches was self-sufficient and the HUL approach to conservation and valorization had not been adequately explored at the local level. The proposed framework combined the morphological approaches (Historico-geographic, Process-typological and Space Syntax), the Power theory and the HUL approach as a strategy to overcoming the research gaps and answering important research questions. The resulting framework presented in Section 4.0 of this study offers an effective and a comprehensive approach for identifying, conserving and valorizing the CAH of the CCTs of Ghana. Already, the framework has been tested in an unpublished PhD thesis (Owusu, 2023) where it helped to identify 87 CAH within three CCTs of Ghana (Accra, Cape Coast and Axim) for conservation and valorization for tourism purposes. The proposed framework will therefore help to harness the potentials of the CCTs and CAH for socio-economic development. Furthermore, by addressing the research gaps stated, the framework and hence this study make significant contributions to urban morphology and heritage conservation and valorization scholarship.

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