DETERMINATION OF DESIGN PARAMETERS FOR COASTAL SETTLEMENTS IN THE CONTEXT OF TECTONIC UNDERSTANDING: THE CASE OF ISTANBUL MODERN AND WAREHOUSE

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Abstract. Coastal settlements are important threshold areas where urban environments and the dynamic nature of water converge. Architectural structures intended for public use in these areas exhibit different design dynamics to urban architectural structures, in terms of structural requirements and their relationship with the city and its inhabitants. In this context, the aim of this study is to determine new design parameters for architecture in coastal settlements within the framework of tectonic theory, and to examine these parameters using examples. This study's literature is based on an analysis of the ontological and representational forms of the concept of tectonics throughout history. The absence of parameters specific to architectural design in coastal settlements within the framework of tectonic theory enables this study to address this gap in the literature. The study's methodology involves determining the parameter criteria that constitute tectonic theory. The design criteria are therefore evaluated in two stages in terms of the tectonics of the architectural structure and its relationship with water. The tectonic properties of the architectural structure are discussed in terms of the building's foundation, structure, materials and construction techniques. When analysing the tectonic value of a building incorporating the water element, the tectonic nature of the water element itself is examined. This study examines design parameters related to the water element, such as heat, humidity and optical illusion. The aim is to determine design parameters within the framework of tectonic theory for future coastal settlements and the water elements to be incorporated into them.

Keywords: Tectonics, coastal architecture, design parameter, İstanbul Modern

Introduction

Coastal settlements are a unique field of architectural study due to the physical factors and representational features they are exposed to. Architectural structures in coastal settlements are important threshold areas where urban texture and water meet, and they differ from urban architectural structures in terms of their relationship with the city. For this reason, design

parameters that consider the structural and representational features of coastal settlements are needed. This study focuses on the Karaköy district in the Beyoğlu district of Istanbul. Karaköy has undergone port-, trade- and tourism-related transformations throughout its history (Kazgan, 1991; Akın, 1998). Due to these transformations and layered construction, Karaköy stands out among coastal settlements. The Istanbul Modern building, on the other hand, was chosen as a landmark to illustrate the transformation of the Karaköy coastal settlement in terms of its relationship with the port and trade history, public use, and the architectural expression created by its new design. The study discusses Istanbul Modern, which is not limited to the current building designed by Renzo Piano. The study also examines the building designed by Sedad Hakkı Eldem as a warehouse in 1957–58, which functioned as a modern art museum in 2004, and the current Istanbul Modern building, which was demolished and rebuilt. Tectonic theory is discussed in the study to reveal the design parameters of coastal settlements. This is because it deals with the architectural structure in a holistic, ontological and representative way. While the physical factors to which coastal settlements are exposed create ontological study areas for the design of the architectural structure, they also create representative study areas.

The study discusses tectonic theory in order to reveal the design parameters of coastal settlements. This is because it deals with architectural structures in a holistic, ontological and representative way. While the physical factors to which coastal settlements are exposed create ontological study areas for architectural design, they also create representative study areas due to factors such as the relationship they establish with water, their status as urban threshold areas, and their effect on the urban silhouette.

Examining the existing literature reveals that coastal settlements are primarily addressed in the context of landscape architecture and recreational areas (Acar & Bekar, 2017; Erdem et al., 2019; Sayan, 1998; Uzunali & Acar, 2020). Examining studies on architectural construction in coastal settlements reveals that most are conducted on an urban scale (Bulut & Taş, 2017; Totu Keskin & Durmuş Öztürk, 2026), with some focusing on silhouette and visual quality (Alemdar, 2022; Koçan & Ankaralı, 2016; Yaldız & Ak, 2022). The lack of design parameter determination in the literature will be addressed within the framework of tectonic theory. The technical and representational principles of architectural structure design (Frampton, 1995; Semper, 1989) were used as the basis for creating the proposal. The theoretical background of the study will be developed through an analysis of the conceptual and theoretical use of tectonics from its first recorded use in the Greek Archaic Period (Holst, 2017) to the present day. After identifying the characteristics of the concept, it will be applied to architectural

designs for buildings in coastal settlements. Additionally, the literature contains studies on Istanbul Modern focusing on interior spaces and exhibitions (Akın, 1998; Büyükparmak & Ermiş, 2021; Yakışkan, 2024), as well as studies analysing the architectural features of buildings and institutional identities in museum records through architectural discourse (Çiçek & Ceylanlı, 2025). However, the relationship between the building and the coast has not yet been examined in the context of architectural interpretation and tectonic theory.

The study aims to create a design guide for new building projects in coastal settlements, incorporating architectural structures and water features in line with the established parameters. Taking an ontological and representative approach to design decisions, this determination aims to create a holistic design for the new building and ensure that it is optimised for the city and its users.

1. Theoretical Framework

The concept of tectonics has an integrated structure that describes the process by which an object comes together through reason and systematic knowledge, as well as the meaning and expression created by the concrete reality that is revealed. This holistic feature was attributed to the artisan group known as the tekton in the Greek Archaic Period, but was divided between the tekton and the arkitekton when the group of architects known as the arkitekton emerged in the Greek Classical Period. During the Archaic period, the tekton, who had the ability to create things, was reduced to a simple construction worker, while the arkitekton, who had knowledge and understanding, began to be seen as a practitioner with technical skills. Arkitekton, on the other hand, was seen as someone with knowledge who could make sense of it (Holst, 2017). At this point, it is the subject, not the concept, that is reduced. This concept, categorised by theorists as both representational and ontological, has been studied in this way to make sense of the phenomenon. Theorists such as Frampton (1995), Semper (1989) and Bötticher (1992) have proposed that the representational and ontological dimensions are forms of expression rather than contradictions or disjointed situations. Although the concept is reduced to structuralism in some dictionary definitions and academic usage, it has embodied this holistic approach since its first use (Hasol, 2022, p. 460). In his study, Gupta (2020) argues that the concept of tectonics has been reduced to structuralism in modernism. This situation separates tectonics, confining it to the fields of technical or formal representation. The author presents Aldo van Eyck's understanding of the twin phenomenon as a solution to this and proposes a non-dualistic model for tectonics. However, this model confuses the ontological structure of tectonics with the

discourses of writers and theorists. Tectonics has described the unity of representation and ontology since its inception.

From its first use to modernisation, the concept was essentially handled in terms of existence, construction logic and representative value. Three architectural theorists who have written extensively on the subject are: Karl Bötticher, Gottfried Semper and Kenneth Frampton. Karl Bötticher (1992) was the first to systematically examine the concept of tectonics. The theorist considers tectonic theory to be the external reflection of the essence and his principles are based on the core form (kernform) and the art form (kunstform). This principle expresses the artistic expression of the structural features that make up the architectural object. Additionally, it advocates the honest conveyance of this expression, defining tectonics as the intersection and complement of the structurality and artistic expression of the architectural object. In this way, the material that constitutes the architectural object gains artistic expression. Semper (1989, 2004), on the other hand, based his understanding of tectonics on the forms of existence of the architectural structure and cladding theory. According to Semper, the architectural structure consists of a combination of massive (stereotomic) elements associated with the earth and skeletal elements associated with the air. These two construction logics should demonstrate structural honesty and impact the viewer's perception in accordance with the structure. In his Cladding Theory, Semper (2004) mentions that the first wall covering in architecture was formed by non-massive masonry, with the massive wall acting as a carrier. Consequently, the architectural element incorporated into the structure is not articulated; it forms the building's essence. However, this cladding element should not hide the building's construction logic and cladding technique.

The principles of tectonics are gathered under the following headings as a result of all these readings: Structural expression; joint details and articulation; material honesty and tactility; cladding and façade representation; and contextual representation value (Fig. 1).

Structural expression is the principle that represents the ontological truth relating tectonic honesty to the logic of construction. Combination details and articulation allow this ontology to be interpreted. Combination details have a representational value because they reflect constructional culture, period, and the impact of load transfer on human perception. Material honesty and tactility are also ontological, revealing the logic of construction and the building's essence. They have a representative tectonic value, creating a feeling and meaning in the viewer through the material's physical properties and texture. Cladding and façade representation are ontological in that they express the essence of the building, and have a

representative value in terms of the meaning they create on the façade. At this point, cladding strengthens tectonic expression by adding representational meaning to the bare ontological reality. Finally, contextual representation explains the relationship between the building's expression and environmental effects, culture, and urban texture.

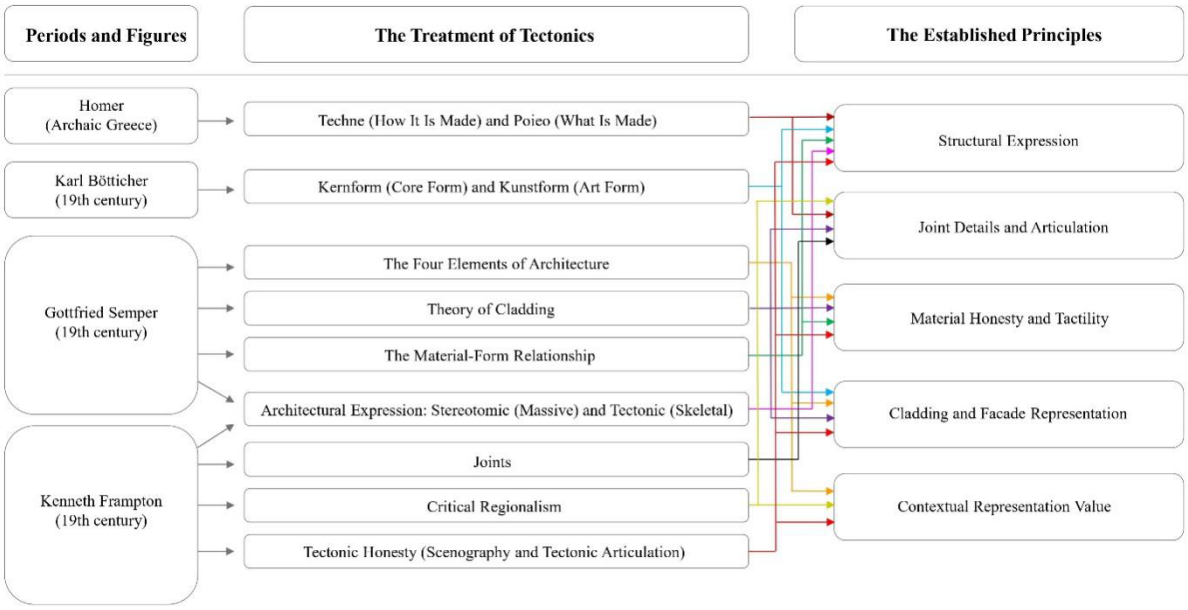


Fig. 1 - Approaches to the Concept of Tectonics and Determination of Basic Features (created by the author)

2. Method

The study examines the ontological and representational features of the concept of tectonics in architectural structures in coastal settlements, with the aim of producing new design parameters for this area in line with the theory. To this end, the study is a qualitative case study designed using the comparative spatial analysis method (Fig. 2). The existing Istanbul Modern building and the former warehouse were compared and analysed in line with the determined parameters. The Karaköy space was chosen as the sample location because it is a threshold space at the intersection of water and land, is one of the focal points on the coastline, and contains the ontological and representative features of tectonics in its structural setup. The study's data collection techniques are theoretical reading and on-site field observation. Sources used in the study include project documentation of the buildings, photographs, and archival sources related to the buildings and their theoretical infrastructure. The next part of the study reconstructs and details the parameter set put forward in the theoretical background section for

architectural designs in coastal settlements. Subsequently, the structures will be examined in accordance with the newly created parameter set and compared in terms of their tectonic value.

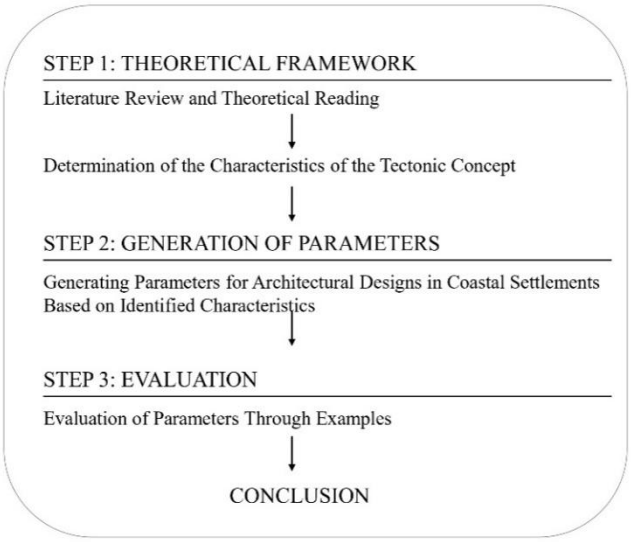


Fig. 2 - Method of the Study (created by the author)

3. Findings

3.1 Generating New Parameters for Coastal Designs in Line with Determined Tectonic Principles

In line with the tectonic principles established in this section of the study, design parameters were set for structures in coastal settlements (Fig. 3). The principle of structural expression is considered in terms of the mass-ground relationship and structural readability. According to the mass-ground relationship, a coastal design with tectonic value rises on a massive mass/pedestal in order to establish a relationship with the ground. The structure must also consist of a permeable skeletal system because coastal settlements have different physical characteristics to land settlements. If a structure on the shore has a massive base, it is exposed to high wind pressure and suction forces acting on the walls of the building. In a structure designed with a permeable skeletal system, these forces are less prevalent. This permeable structure also provides a solution to potential moisture issues on the shore by facilitating air circulation. The increased temperature in the building can be reduced by this air circulation due to the reflection created by the water, and the greenhouse effect is eliminated. According to tectonics, the details that make up a structure should be visible from the outside. For this reason, the building's massive and skeletal structure should be designed to be visible from the outside. Articulation and joint details also support the reading of the structural expression. Coastal settlements experience high temperature differences between day and night, resulting in intense

expansion and contraction effects. This should therefore be taken into consideration at the junction points of the building elements. However, coastal areas experience rapid wear and tear due to exposure to physical factors such as moisture, heat, salt and wind.

For this reason, the joints in these areas must be both removable and detachable. Since wear and tear to the joint details hidden behind the coatings may be overlooked, these details and the structural features should not be concealed. In the principle of material honesty, tactility is discussed under two separate headings: functional and perceptual. In coastal settlements, the sun reflecting from the water creates a glare problem and an increased risk of slipping on the ground. For this reason, textured surfaces play a functional role in coastal designs. The perceptual dimension of tactility enables people to establish a physical relationship with the building by creating a focal point when they are exposed to too many stimuli due to environmental factors such as sun, wind and salt. This textured structure establishes a relationship with physical reality, creating a scaffolding/shelter effect in human perception when exposed to harsh stimuli. Materials for buildings in coastal settlements should be selected based on the external factors to which the building will be exposed. Otherwise, materials that imitate other materials will deteriorate over time due to a lack of adaptation to the ground. In terms of the representative dimension of cladding and façades, the discussion covers the representation of horizontality, the abstract representation of marine culture, and the protective shell. Representing horizontality means moving in harmony with the horizon in the coastal settlement and not exceeding it. This is because the most dominant visual feature on the shore is this horizontal line. In this context, the building's permeable façade does not completely hide the rear of the building, creating a space for visual and perceptual interaction. Another feature that lends value to the façade is the way in which the building and object features of coastal culture are abstracted and used in the architectural structure.

This prevents the emergence of products that are neither completely incompatible nor kitsch. The structural evaluation criterion for the façade's tectonics is a secondary shell system that protects the structure, which is separate from the main carrier of the building envelope, from physical factors specific to the coast. This shell acts as a defence wall for the building against wind, moisture, salt, UV rays, heat and light. The contextual representation value is considered in terms of both the physical and the perceptual context. Above all, the designed structure should be in harmony with the coastal topography and morphology. However, the building should also be designed in accordance with human perception. This starts with recognising that coastal settlements are places of memory due to the wear and tear caused by

physical factors. Coastal settlements are transitional spaces between land and water. For this reason, designs in which the structure is permeable and fluid rather than a boundary support the human perception dimension of the context.

When using water in a building, the structural expression is to design in accordance with the physical properties of water. In terms of contextual representation, this means designing in accordance with the perceptual properties of water. The water element establishes a natural relationship with the building at ground level or at water level. However, if the water is transported and used elsewhere, it is removed from the location where it establishes a relationship. If the water is not continuously replenished, it evaporates in hot weather or freezes in cold weather. For the water to remain, it must be supplied continuously. However, if the building has a natural relationship with the ground and the design incorporates fluid water, it will have tectonic value. The design should take into account the mass and flow rate of the water. Water also represents fluidity and dynamism in human perception. For this reason, it should not be reduced to an illusory state with no circulation or barriers. In this design, the discharge and connection points of the water should be clearly visible. Apart from this, the corrosive effect of water and moisture problems must be considered when selecting materials.

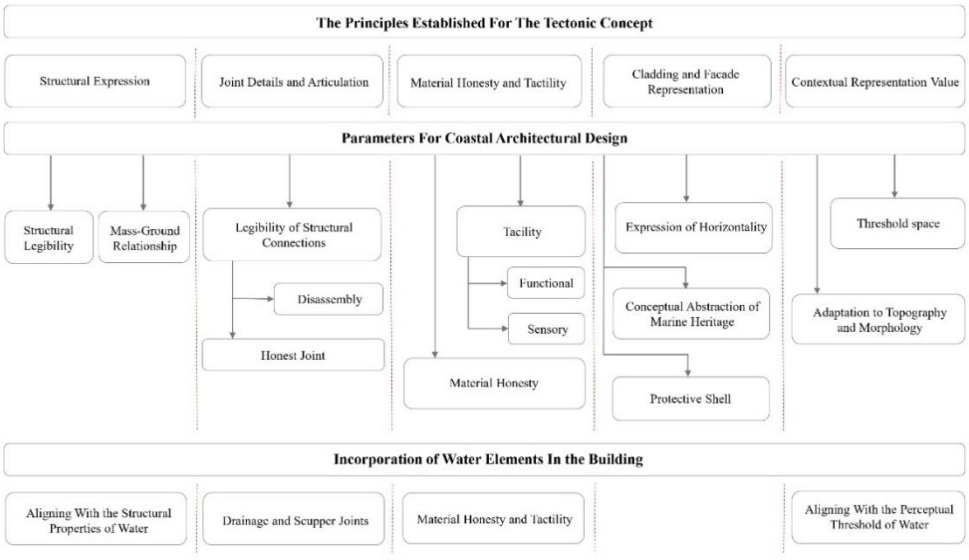


Fig. 3 - Determination of Design Parameters for Architectural Designs in Coastal Settlements in the Context of Tectonics (created by the author)

In areas where there is water, textured combinations found in nature should serve as inspiration. This supports tectonic honesty by offering a raw reality to artificiality.

3.2 Examination of Parameters on Designs in Coastal Settlements

3.2.1 Istanbul Modern Museum of Modern Art

The Istanbul Modern Art Museum, designed by Renzo Piano and completed in 2023, is a modern art museum. It is located in the Kılıçali Paşa neighbourhood of the Karaköy district in the Beyoğlu district. At this stage of the study, the building was examined in line with the parameters developed for architectural designs in coastal settlements.

Examining the building's structural expression reveals a clear distinction between the massive and the skeletal elements, particularly in terms of the relationship between mass and ground. The massive structure associated with the ground rises like a pedestal (Fig. 4). The structure has a tectonic value that is well-suited to coastal settlements, given its massive and skeletal nature. The skeleton rising from the massive base establishes a relationship with the ground, offering a strong structural expression and an approach that is compatible with the physical effects of coastal settlements. The building's mass is compatible with these two structural expressions, which can be interpreted.



Fig. 4 - Istanbul Modern mass-ground relationship (The photograph was taken by the author)

Structures on the coast tend to receive structural damage more quickly than inland structures due to abrasive physical factors. For this reason, structures on the coast must be articulated and damaged parts must be replaced in order to continue their existence. In order to identify damaged parts, the joints of the building should be clearly read. The building elements used in Istanbul Modern are both articulable and the joint details can be easily read. The joint details of the building and the modules are clearly legible (Fig. 5).

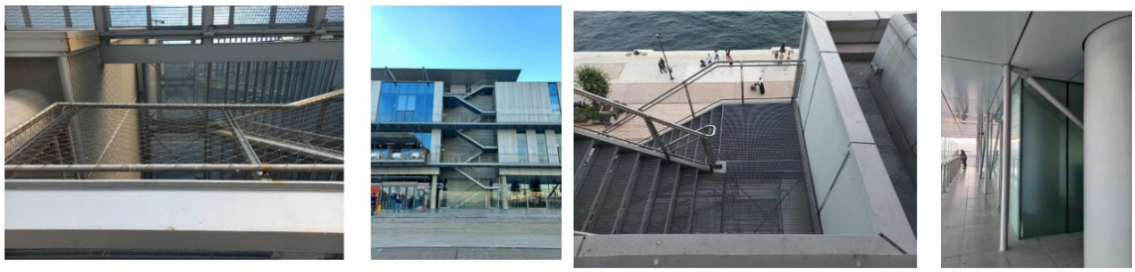


Fig. 5 - Istanbul Modern Joint Details and Articulation (taken by the author)

Examining the building in terms of tactility and material honesty reveals that, although there are no textured surfaces to establish a relationship with the coastal areas or be compatible with the water feature, the empty structure of the mass and the combination of different materials and forms create a tactile quality (Fig.6). This tactility enables people to form a physical connection with the building. Istanbul Modernn which, at first glance, reveals its different textures. While each material is not textured in itself, the combination of full and empty spaces, different materials and appearances, and various forms creates tactility in the building that can be perceived physically and perceptually.



Fig. 6 - Physical and Perceptual Tactility and Material Honesty at Istanbul Modern (The photograph was taken by the author)

Examining the building's cladding and façade reveals that it has a high tectonic value. Firstly, the building's horizontal expansion is compatible with the horizon line, one of the most important features of the coast. This creates a harmonious relationship with both the shore and the silhouette. The façade elements, formed by the abstraction of sea waves and reflected when sunlight hits them, carry the coastal heritage of the building. Apart from these aesthetic qualities, the building's exterior must also serve a protective function to guard against the negative effects of coastal erosion. The panels on the façade also serve a structural purpose in addition to their aesthetic value.

When considering the contextual representation of the building, it is evident that buildings designed in this area are threshold spaces, as coastal areas are transition spaces. While the building's permeability and fluidity are related to its structural expression, its place in human perception constitutes its representational value. The permeability of the building and its status as a threshold space are illustrated as a threshold space are illustrated (Fig. 7) perception constitutes its representational value.



Fig. 7 - Istanbul Modern as a Threshold Space (taken by the author)

Examining the relationship it establishes with the topography and morphology reveals that, while it is compatible with the topography, it does not reflect the formation of the city. Taking into account the dimensions of the roads, building blocks and buildings in the region, Istanbul Modern appears oversized, which diminishes its contextual representative value. shows the surroundings of the building as seen from the building's terrace (Fig. 8)

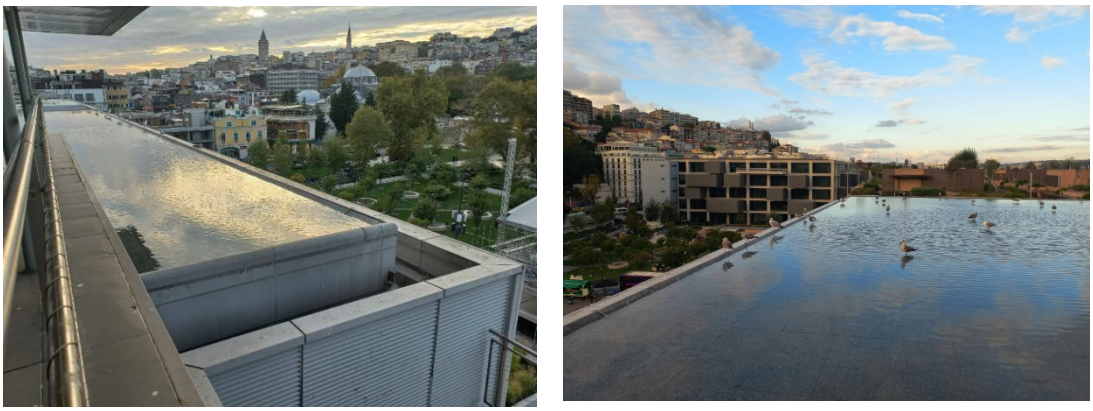


Fig. 8 - Photograph taken from the terrace of Istanbul Modern showing the construction around
Fig. 9 - İstanbul Modern water relationship (taken by the author)

When examining Istanbul Modern's relationship with water, the first topic to be discussed is the physical and perceptual relationship between the architectural structure and water. The building's physical relationship with water is based on the material properties of

water. Water's fluid nature relates directly to the structure on the ground. For this reason, the building's supporting structure must establish a direct relationship with the water at ground level and allow it to move in accordance with its fluid nature. However, the terrace-level pool at Istanbul Modern (Fig. 9) neither allows water to flow and circulate nor establishes a direct relationship with the water element at ground level.

Another important aspect of the building's relationship with water is the honesty and tactility of the materials used. There is no tactile effect at the points where the building interacts with the water. One of the most significant of these is the drainage system, which is an important feature of the building's relationship with the water element. These points are where the movement of water is clearly visible. However, in this building, the relationship between the water and the terrace is unclear. The concealment of the water's movement areas and the structural expression damaged the tectonic honesty, turning the water element on the terrace into a consumer product rather than establishing a relationship with the building. On the other hand, the building has established a representational tectonic relationship with water thanks to the light play of reflection and the feeling of serenity it creates (Fig. 10).



Fig.10 - Light plays on the terrace of Istanbul Modern (taken by the author)

3.2.2 Warehouse No. 4

Warehouse No. 4, a dry cargo warehouse designed by Sedad Hakkı Eldem, was built in 1957-1958. In 2003, the building, which was converted into a museum building by Tabanlıoğlu Architecture, was renovated with the principle of minimum intervention. The current Istanbul Museum of Modern Art, designed by Renzo Piano, is located on the site of the demolished Warehouse No. 4 (Istanbul Museum of Modern Art [IMSM], n.d.). .

When the structural expression of the building is examined, it is seen that the soil-mass relationship is not balanced. Although the structure is formed with a skeletal system and this can be read from the outside, it is seen as a closed massive mass (Fig. 11) due to the absence of gaps in the structure. For this reason, although the structure of the building is read, it does not honestly reflect its ontology; Since it reflects its tectonic existence massively, the tectonic value of its structural expression is low.



Fig. 11 - Stürktürk Expression of Warehouse No. 4. (Istanbul Museum of Modern Art [IMSM], n.d.).

Examining the building's connection points and articulation reveals that it has a cast concrete structure and cannot be dismantled (Figure 9). Nevertheless, the visibility of the building's connection points gives it tectonic honesty.



Fig. 12 - Warehouse Structure No. 4 and Connection Details (Tabanlıoğlu Arch. [TA_], n.d.).

Although the building has material honesty, there is no texture or texture, form and mass movements that provide tactility physically or perceptually. Examining the cladding and representative façade of the building reveals that it has a high tectonic value due to its horizontal

expansion. However, it has a low tectonic value because it does not contain any elements of marine heritage. Although the building does not have secondary cladding, the door's carrier and partition elements protect the building against external factors (Fig. 12).

When considering the contextual representative value of a building, the first evaluation is of its threshold space. Since coastal areas are transitional spaces between land and water, they should be permeable and fluid, rather than wall-like. However, Warehouse No. 4 is a bulky structure blocking the view of the shore (Fig. 13), and its design does not reflect the threshold features of the surrounding area. This reduces the building's tectonic value. Conversely, the building does adapt to the topography and urban morphology. This is because, when the building was constructed, there were port operations in the area, and the building's scale was compatible with the morphology. Over time, the area has transformed from a port and commercial area to a culture and art district, requiring a change in morphology and scale**.**



Fig. 13 - View of Warehouse No. 4 from the Bosphorus

4. Discussion

In this part of the study, the tectonic values of the buildings were determined by comparing the current Istanbul Modern building, designed by Renzo Piano, with Warehouse Building No. 4, designed by Sedad Hakkı Eldem and formerly located on the same site, in the context of the determined parameters. Figure 14 contains the five basic tectonic features and subheadings determined for architectural structures designed in coastal settlements. The grey areas show the parameters to be considered in the event of water ingress. As there is no water element in the warehouse structure, only the existing Istanbul Modern structure was evaluated in this context.

	Parameters Developed for Waterfront Design in a Tectonic Context														
	Structural Expression			Joint Details and Articulation			Material Honesty and Tactility				Cladding and Facade Representation			Contextual Representation Value		
	Mass-Ground Relationship	Structural Legibility	Aligning With the Structural Properties of Water	Legibility of Structural Connections: Disassembly	Legibility of Structural Connections: Honest Joint	Drainage and Scupper Joints	Tactility: Functional	Tactility: Sensory	Material Honesty	Material Honesty and Tactility	Expression of Horizontality	Conceptual Abstraction of Marine Heritage	Protective Shell	Threshold space	Adaptation to Topography and Morphology	Aligning With the Perceptual Threshold of Water
İstanbul Modern Art Museum 	×	×		×	×		×	×	×		×	×	×	×		×
Warehouse Structure 		×			×				×		×		×		×	

Gray areas have been assessed in case the structure contains a water element. It hasn't been evaluated because there is no water element in the warehouse structure.

Fig. 14 - Comparison of Sample Structures in the Context of Tectonics (created by the author)

When the structural features of the buildings are considered, it can be seen that Istanbul Modern has established a balanced ground-mass relationship, which can be discerned through its distinct structure. The building's massive and skeletal structural expressions are designed in a balanced way in accordance with the coastal settlement, and these two different expressions can be read structurally. The skeletal system of the warehouse structure can also be discerned. In this respect, both structures demonstrate structural integrity. However, despite the warehouse structure's skeletal system, the mass has a massive effect. Consequently, while the building's structural legibility is high, it lacks balance and legibility in terms of the ground-mass relationship. Considering the structural expression of the water feature on Istanbul Modern's terrace, it can be seen that the physical properties of water — fluidity, dynamism, and a natural connection to the ground — are not reflected; the water element merely creates a visual illusion rather than establishing a tectonic relationship with the building. This demonstrates that the water element is merely an object of consumption, rather than establishing a tectonic relationship with the architectural structure. When the connection points of the buildings are examined, it is seen that Istanbul Modern has building elements that can be assembled and removed, while the warehouse building has a cast concrete skeleton, so it is fixed and it is not possible to change it with possible deterioration. This is directly proportional to the legibility of the connection points. In addition, the ways in which the load is transferred can be read from the joint details of both buildings. In terms of the pool connection points on the terrace of Istanbul Modern, its tectonic value is low due to the lack of a readable drainage system that shows how the water is transported or discharged to that point.

Although flat and non-woven surfaces are used in Istanbul Modern and Warehouse No. 4, Istanbul Modern, with its full empty structure in the mass, creates physical tactility in different parts of the building by using different materials in different forms, and this tactility creates a focal point in the person and enables the person who is exposed to many stimuli to establish a relationship with physical reality.

When the cladding and façade of the buildings are considered, it can be seen that both have a horizontal structure that harmonises with the horizon line, one of the most important features of coastal regions. While the warehouse building does not reflect the coastal heritage, the undulating form of the Istanbul Modern façade's panels establishes an abstract resemblance to sea waves, increasing the building's tectonic value in this sense. Considering the protective feature of the shell, it can be seen that it is covered with panels that form a secondary façade on the Istanbul Modern building. However, the warehouse building's protective shell is its own monolithic mass.

When the contextual representative values of the buildings are considered, it is seen that Istanbul Modern has tectonic value in terms of being a threshold space, whereas the warehouse structure does not have the characteristics of a threshold space. Although both buildings are compatible with the topography, they differ in terms of the formation of the city. Although the warehouse structure achieved an urban formation in harmony with Karaköy, which was a port area at the time it was built, Istanbul, located in Karaköy, which is a culture, art and entertainment area today, is not suitable for today's modern urban formation and is large-scale for that area. Although the terrace in Istanbul Modern has a low tectonic value because it does not establish a relationship with the building as a structural expression, it gives the building a sense of fluidity and serenity due to the light plays and reflections made by the water at the perceptual level. For this reason, the water element and the building establish a strong relationship at the perceptual level.

Conclusion

As a result of the study, it is seen that Istanbul Modern has a higher tectonic value compared to Warehouse No. 4. As a result of the comparison, it is seen that Istanbul Modern has strong structural expression and connection points, while Warehouse 4 has a low value in this sense. While material honesty is observed in both buildings, physical and emotional tactility is present in Istanbul Modern, while Warehouse No. 4 is deficient. While both buildings are strong in terms of façade and representation, Istanbul Modern is a stronger option in terms of

contextual representation. Apart from these, the water element used in Istanbul Modern reveals a tectonic value in a perceptual sense, while structural. It has a low tectonic value in terms of connection point and material.

This study has been a study that explains that ontological and representative values should be considered together in designs in coastal settlements and aims to be a guide for new designs. Furthermore, this study has established standardized parameters by formulating a holistic design approach for coastal designs.

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REFERENCES

ACAR, H., & BEKAR, M. (2017). Peyzaj mimarlığı eğitiminde bir stüdyo çalışması: Kıyı alanı peyzaj tasarım projesi. Megaron, 12(2), 329-342. ISSN: 1309-6915. https://doi.org/10.5505/megaron.2017.65265

AKIN, N. (1998). 19. Yüzyılın ikinci yarısında Galata ve Pera (No. 24). Literatür Yayınları. ISBN: 9789758431012.

ALEMDAR, E. Ö. (2022). Kıyı Kenti İstanbul ve Siluet Değeri: Büyükada Siluetinin Sürdürülebilirliği [Yayımlanmamış yüksek lisans tezi]. Yıldız Teknik Üniversitesi Fen Bilimleri Enstitüsü.

BÖTTICHER, K. (1992). Excerpts from The Tectonic of the Hellenes. In H. F. Mallgrave & E. Ikonomou (Eds. & Trans.), Empathy, Form, and Space: Problems in German Aesthetics, 1873–1893 (pp. 47–52). Getty Center for the History of Art and the Humanities.

BULUT, E., & TAŞ, M. (2017). Kıyı mimari kimliğinin sürdürülebilirliği: Bursa/Gemlik. Süleyman Demirel Üniversitesi Yalvaç Akademi Dergisi, 2(1), 45-57. ISSN: 2149-1615.

BÜYÜKPARMAKSIZ, M. A., & ERMİŞ, Y. (2021). İstanbul Çağdaş Sanat Fuarlarına Eklektisizm'in Yansımaları. MANAS Sosyal Araştırmalar Dergisi, 10(1), 311-335. ISSN: 1694-7215. https://doi.org/10.33206/mjss.732994

ÇİÇEK, E., & CEYLANLI, Z. (2025). ART MUSEUM ARCHITECTURE AS DISCOURSE: DIFFERENTIATING INSTITUTIONAL IDENTITIES IN ISTANBUL. The Turkish Online Journal of Design Art and Communication, 15(2), 491-512. ISSN: 2146-5193. https://doi.org/10.7456/tojdac.1614995

ERDEM, Ü., ORTAÇEŞME, V., KELKIT, A., KARAHAN, F., AKTEN, M., ZÜLFİKAR, H. C., vd. (2019). Sürdürülebilir kıyı turizmi ve rekreasyon. Ş. Alp, O. Şatır, E. Baylan, P. Bostan, F. Aşur, G. Başdoğan, & H. E. Oktay (Ed.), XXI. Peyzaj Mimarlığı Akademik Topluluğu Toplantısı Çalışma Sonuçları içinde (ss. 28-38). Van Yüzüncü Yıl Üniversitesi Yayınları.

FRAMPTON, K. (1995). Studies in tectonic culture: The poetics of construction in nineteenth and twentieth century architecture. MIT Press.

GUPTA, Ö. A. (2020). A non-dualist tectonic thinking model in architecture: Aldo van Eyck [Doktora tezi, İstanbul Teknik Üniversitesi, Lisansüstü Eğitim Enstitüsü]. YÖK Ulusal Tez Merkezi. (Tez No: 649667)

HASOL, D. (2022). Ansiklopedik mimarlık sözlüğü (15. baskı). YEM Yayın.

HOLST, J. (2017). The fall of the tektōn and the rise of the architect: On the Greek origins of architectural craftsmanship. Architectural Histories, 5(1), 5. ISSN: 2050-5833. https://doi.org/10.5334/ah.239

KAZGAN, H. (1991). Galata Bankerleri. Türk Ekonomi Bankası A.Ş.

KOÇAN, N., & ANKARALI, N. (2016, 21-22 Nisan). İnkumu kıyı alanında görsel kaliteye ilişkin sorunlar ve çözümler [Bildiri sunumu]. International Multidisciplinary Conference (IMUCO), Antalya, Türkiye.

SAYAN, M. S. (1998). Antalya Kıyı Bandındaki Bazı Turizm Amaçlı Tesislerin Peyzaj Mimarlığı Yönünden İrdelenmesi Üzerinde Bir Araştırma [Yayımlanmamış doktora/yüksek lisans tezi]. Ankara Üniversitesi Fen Bilimleri Enstitüsü.

SEMPER, G. (1989). The four elements of architecture and other writings (H. F. Mallgrave & W. Herrmann, Çev.). Cambridge University Press.

SEMPER, G. (2004). Style in the technical and tectonic arts; or, Practical aesthetics (H. F. Mallgrave, Trans.). Getty Research Institute. (Original work published 1860–1863)

TOTU KESKİN, A., & DURMUŞ ÖZTÜRK, S. (2026). Sakin kent (Cittaslow) kıyı yerleşimlerinde gastronomik mekânsallaşma: Sığacık balıkçı kasabasında gastromekân-gastroyer ilişkisi. PLANARCH - Design and Planning Research, 10(2), 262-273. ISSN: 2717-7335. https://doi.org/10.54864/planarch.1947797

UZUNALİ, A., & ACAR, C. (2020). Trabzon kenti örnekleminde, kent-kıyı ilişkileri analizi. Artvin Çoruh Üniversitesi Orman Fakültesi Dergisi, 21(2), 181-190. ISSN: 2146-1880. https://doi.org/10.17474/artvinofd.648044

YAKIŞKAN, N. N. (2024). Sergileme Mekânlarının Sanal ve Fiziksel Ortam Arasındaki Farkının İncelenmesi: İstanbul Modern Örneği. Yedi, Sanatta Dijitalizm Özel Sayısı, 327-337. ISSN: 1307-9840. https://doi.org/10.17484/yedi.1458408

YALDIZ, B., & AK, M. K. (2022). Bandırma kıyı bandı örneğinde bitkisel tasarım ile görsel kalitenin değerlendirilmesi. PEYZAJ - Eğitim, Bilim, Kültür ve Sanat Dergisi, 4(1), 21-32. ISSN: 2687-6302. https://doi.org/10.53784/peyzaj.1078769

İstanbul Modern. (t.y.). Tarihçe. Accepted September 28, 2026 https://www.istanbulmodern.org/kurumsal/tarihce

Tabanlıoğlu Architects. (t.y.). İstanbul Modern Projesi. Accepted September 28, 2026, https://www.tabanlioglu.com/project/istanbul-modern/

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