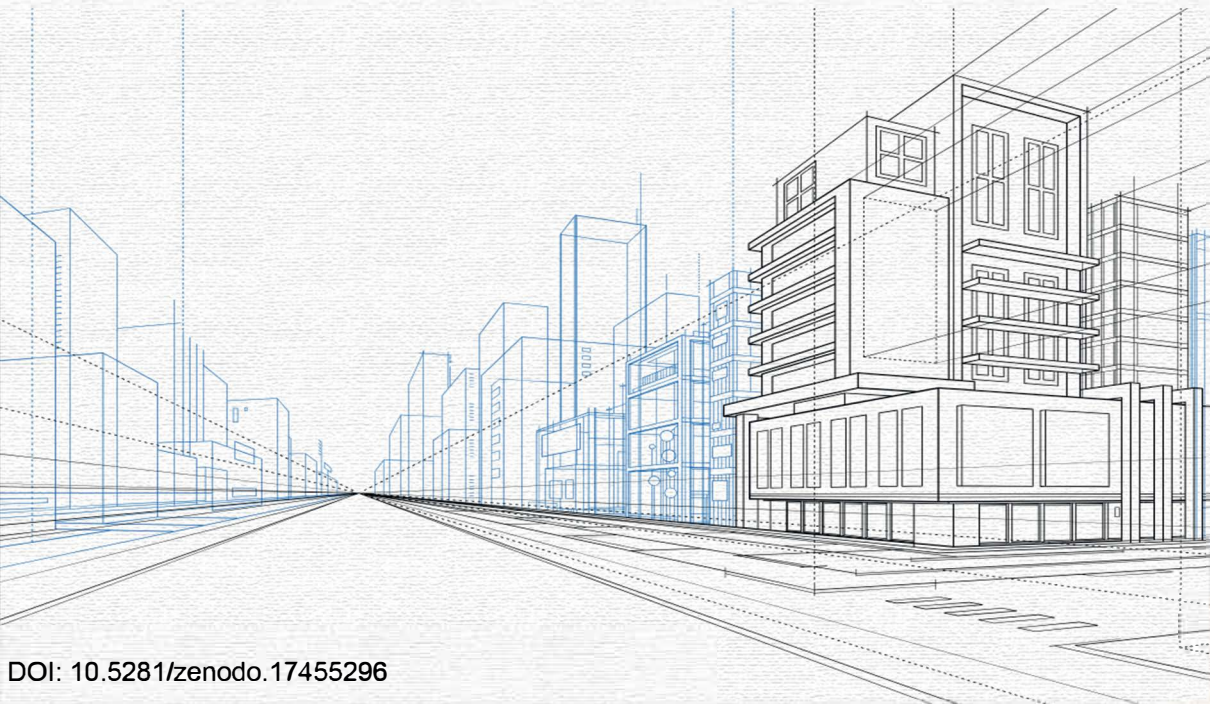


Modern Heritage: Principles and Conservation

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İçindekiler

1.Introduction	7
2. Modernism as a Concept	8
3.Modernizm and Architecture.....	10
3.1. The Birth of Modern Architecture.....	10
3.2. Early Principles and Figures of Modern Architecture	12
3.3. The Arts and Crafts Movement	12
3.4. Art Nouveau	14
3.5. Cubism and its Architectural Influence	16
3.6. Futurism	17
3.7. Neo-Plasticism (De Stijl).....	18
3.8. Functionalism	19
3.9. Purism.....	20
3.10. Expressionism	22
3.11. Constructivism	23
3.12. Brutalism	25
4. Modern Architectural Movements: Bauhaus and the Institutionalization of Modernism	27
4.1. Origins and Intellectual Foundations.....	27
4.2. The Werkbund and Pre-Bauhaus Influences	28
4.3. The Evolution of Bauhaus Pedagogy	30
4.4. The Dessau Period and Institutional Reorganization	31
4.5. The Later Years under Mies van der Rohe.....	31
4.6. Social Housing and the International Impact	33
5. Modern Architectural Heritage and Urban Conservation.....	34
5.1 The Philosophical Foundations of Modernity	34
5.2. Transformation in Conservation Theory	35
5.3. Integration of Modern Architecture and Conservation.....	37
6. International Approaches to the Preservation of Modern Heritage	40

7. Modern Heritage on the UNESCO World Heritage List.....	43
7.1. Tugendhat Villa in Brno-Czech Republic, Criteria: (ii)(iv)-2001	43
7.2. Fagus Factory in Alfeld-Germany, Criteria: (ii)(iv)-2011.....	44
7.3. Bauhaus and its Sites in Weimar, Dessau and Bernau-Germany, Criteria: (ii)(iv)(vi)i 1996-2017	45
7.4. The Architectural Work of Le Corbusier: An Outstanding Contribution to the Modern Movement (Transnational Serial Property), Criteria: (i)(ii)(vi), 2016	46
7.5. Modernist Kaunas: Architecture of Optimism, 1919/1939- Lithuania, Criteria: (iv), 2023.....	48
7.6. Pampulha Modern Ensemble-Brazil, Criteria: (i)(ii)(iv),2016	49
7.7. Victorian Gothic and Art Deco Ensembles of Mumbai-India, Criteria: (ii)(iv),2018	50
7.8. The 20th-Century Architecture of Frank Lloyd Wright-United States, Criteria: (ii),2019	52
7.9. Berlin Modernism Housing Estates-Germany, Criteria: (ii)(iv),2008	53
7.10. Van Nellefabriek-Netherlands, Criteria: (ii)(iv),2014.....	54
7.11. Sydney Opera House-Australia, Criteria: (i),2007	56
7.12. Brasília-Brazil, Criteria: (i)(iv), 1987	57
7.13. Centennial Hall in Wrocław-Poland, Criteria: (i)(ii)(iv),2006	59
7.14. Asmara: A Modernist African City-Eritrea, Criteria: (ii)(iv),2017	60
7.15. Zollverein Coal Mine Industrial Complex in Essen-Germany, Criteria: (ii)(iii),2001.....	62
7.16. Evaluation of Modern Heritage Examples on the UNESCO World Heritage List.....	64
8.Conclusion: Modern Heritage as a Living Legacy of the Twentieth Century	68

Figure List

Figure 1 Tugendhat Villa in Brno	44
Figure 2 Fagus Factory in Alfeld	45
Figure 3 Bauhaus and its Sites in Weimar.....	46
Figure 4 The Architectural Work of Le Corbusier: An Out-standing Contribution to the Modern Movement.....	47
Figure 5 Modernist Kaunas: Architecture of Optimism, 1919/1939..	48
Figure 6 Pampulha Modern Ensemble	50
Figure 7 Victorian Gothic and Art Deco Ensembles of Mumbai	51
Figure 8 The 20th-Century Architecture of Frank Lloyd Wright.....	52
Figure 9 Berlin Modernism Housing Estates	54
Figure 10 Van Nellefabriek.....	55
Figure 11 Sydney Opera House.....	57
Figure 12 Brasília-Brazil.....	58
Figure 13 Centennial Hall in Wrocław.....	60
Figure 14 Asmara: A Modernist African City.....	61
Figure 15 Zollverein Coal Mine Industrial Complex in Essen.....	63

1.Introduction

Modern architecture, emerging in the late 19th and early 20th centuries, represents a fundamental shift in the way humans perceive, construct, and inhabit space. Rooted in the philosophical ideals of the Enlightenment and propelled by the social, technological, and cultural transformations of industrialization, modern architecture challenged traditional forms, ornamentation, and hierarchical aesthetics. It embraced rationality, functionality, and technological innovation, giving rise to new building typologies, construction methods, and design philosophies. Architects such as Le Corbusier, Walter Gropius, Ludwig Mies van der Rohe, and Frank Lloyd Wright redefined the relationship between form and function, creating a universal architectural language that continues to influence contemporary design.

The emergence of modern architecture was not only a stylistic revolution but also a cultural and social phenomenon. It reflected the optimism of progress, the possibilities of industrial production, and the search for a built environment that could respond to human needs efficiently and creatively. Movements such as the Bauhaus, De Stijl, Futurism, and Expressionism explored the integration of art, craft, and technology, emphasizing interdisciplinary approaches and holistic design. At the same time, these movements challenged conventional ideas of aesthetics, blurring the boundaries between function, form, and cultural expression.

As modern architecture matured, its own historical and cultural significance became apparent. Buildings once seen as radical or ephemeral gradually gained recognition as heritage worthy of study, conservation, and critical reflection. Unlike traditional monuments, modernist structures embody principles of functionality, temporariness, and technological adaptation, which pose unique challenges for preservation. The preservation

of modern architectural heritage requires a nuanced understanding of design intent, material innovation, and social context, balancing the need for authenticity with the realities of aging materials and evolving urban environments.

This book examines the principles, methodologies, and strategies involved in modern architectural heritage and its preservation. By exploring both theoretical frameworks and practical case studies, it seeks to provide a comprehensive understanding of how modern architecture can be appreciated, protected, and integrated into contemporary urban life. In doing so, it highlights the enduring relevance of modernism, not only as a historical movement but as an intellectual and cultural foundation for contemporary architectural practice.

2. Modernism as a Concept

Modernism is a comprehensive movement of thought, art, and social transformation that emerged in Europe in the late 19th century and influenced the entire world throughout the 20th century. This movement is not merely an aesthetic orientation but also a reaction against traditional structures and an expression of a profound shift in mindset.

The concepts of modernism and modernity have been addressed with various definitions in different disciplines since the last quarter of the 19th century. The word “modern” is derived from the Latin words *modus* (measure) and *modo* (now). Over time, it acquired different layers of meaning, beginning to carry connotations such as “innovation,” “progress,” and “up to date-ness.” Modernism is essentially a school of thought that advocates reinterpreting the world, rationality, and cultural progress; it embraces positivism, individual freedom, and the universality of knowledge as principles.

The concept of modernity encompasses not only innovation and timeliness but also a revolutionary and progressive attitude. Modernity can be considered the reflection of modernism at the societal level. Modernity values individual freedom, progress, equality, and rationality. The process of modernization can be defined as a social transformation based on scientific and technological developments, industrialization, and democratization.

Modernism and modernization, although approached from different angles in different disciplines, generally reflect a positivist, secular, and universal worldview. In this context, modernism centers on human liberation and progress while critically intervening in social norms.

Historical processes such as the Age of Enlightenment, the French Revolution, and the Industrial Revolution played a decisive role in the emergence of modernism. The Enlightenment movement, which developed in the 17th and 18th centuries, was based on the struggle for individual liberation; it regarded reason as the source of knowledge and placed humanity at the center of the universe. With the Renaissance and Reformation movements, the influence of religion in the social and intellectual spheres diminished, while individualism and intellectual freedom gained strength. Enlightenment philosophy emphasized the belief that individuals could achieve their own happiness through reason (Habermas, 1987).

The French Revolution accelerated social transformation, paving the way for the dissolution of the feudal system and the rise of the nation-state. This process contributed to the strengthening of the ideal of individualism and the adoption of the principles of liberty, equality, and fraternity at the social level. The Industrial Revolution radically changed economic production methods, leading to the rise of capitalism, accelerated urbaniza-

tion, and the transformation of the social class structure (Harvey, 1990).

These historical transformations formed the intellectual and cultural foundations of modernism. From the second half of the 19th century onwards, modernism emerged as a reaction against traditional structures in both art and social life. In particular, phenomena such as industrialization, urbanization, gender roles, and the transformation of national identities have been influential in the development of modernist thought (Berman, 1982).

The philosophical background of modernism is marked by rationalism of the Enlightenment and a belief in the scientific method. However, postmodernism, which emerged in the mid-20th century, questioned modernism's notions of universality, progress, and singular truth. Postmodern thought took a critical approach to modernism's absolute truths by focusing on multiplicity, contradiction, and difference (Lyotard, 1984).

Consequently, modernism is not a fixed phenomenon; it is a constantly evolving phenomenon dependent on historical, social, and cultural conditions. It has been debated, reinterpreted, and addressed in different ways in every period.

3.Modernizm and Architecture

3.1. The Birth of Modern Architecture

Modern architecture traces its origins to the social, technological, and cultural transformations brought about by the Industrial Revolution in the 19th century. During this period, developments in science, technology, and industry fundamentally changed humanity's understanding of nature, space, and function. The simplification of taste and aesthetic perception, the prominence of functionality, and the emergence of new building

typologies played a decisive role in the birth of modern architecture.

Positivist philosophy, which developed as an extension of 19th-century Enlightenment thought, also influenced the theoretical foundations of architecture. This approach, which advocated reaching knowledge through reason and experience, reinforced the tendency to produce rational, functional, and measurable solutions in architecture. Positivism's inductive method and pragmatic worldview redefined the relationship between architecture, philosophy, and science, forming the fundamental intellectual framework of modern architecture (Frampton, 1992).

The historical origins of modern architecture lie in the new building types that emerged in the second half of the 19th century. The exhibition halls, train stations, factories, stock exchange buildings, bridges, and towers constructed during this period were designed using new engineering solutions that went beyond traditional building techniques. For example, Joseph Paxton's Crystal Palace (1851) and Gustave Eiffel's Eiffel Tower (1889) were pioneering examples of the use of industrial materials such as iron and glass, forming the technical basis of modern architecture (Curtis, 1996).

Technological developments during this period profoundly influenced the formal and structural character of architecture. Speed, mobility, and mass production led to the emergence of a new aesthetic language in architectural thought. Modern architects viewed technological advances not only as tools but also as cultural phenomena and took on the responsibility of integrating these developments into architecture.

3.2. Early Principles and Figures of Modern Architecture

The fundamental principles of modern architecture include the primacy of function, the rejection of ornamentation, economical production, standardization, and the adoption of industrial techniques. These principles transformed the aesthetic understanding of architecture under the influence of industrialization, which gained momentum in the 19th century. The new needs of the industrial society that developed in Europe from the 1750s onwards necessitated the emergence of new architectural typologies such as housing, factories, transportation structures, and public spaces (Giedion, 1941).

Adolf Loos, Tony Garnier, and Auguste Perret stand out among the early representatives of modern architecture. While continuing the aesthetic sensibility of the Art Nouveau movement, which was influential at the end of the 19th century, these architects emphasized the principles of formal simplicity and structural honesty. Adolf Loos's criticism of ornamentation and his work "Ornament and Crime" (1908) in particular formed the intellectual basis for modern architecture's undecorated, functional, and minimalist character (Loos, 1908/1982).

Modern architecture has taken shape as an approach that centers on human needs, prioritizes function over form, and creatively utilizes technological possibilities. This approach became institutionalized in the early 20th century through movements such as Bauhaus and the International Style and has continued to exert its influence on a global scale.

3.3. The Arts and Crafts Movement

When examining the movements that shaped the period, the Arts and Crafts movement stands out as a prominent formation in England, initiated particularly by William Morris and his as-

sociates. This England-centered movement arose as a reaction to the negative effects of industrialization on art and craftsmanship. Developed mainly through the initiatives of William Morris and his friends, Arts and Crafts defended an understanding of art based on handicrafts and craftsmanship against the mechanization brought about by industrial production. This intellectual orientation was largely inspired by John Ruskin's critiques of industry (Naylor, 1971).

John Ruskin (1819–1900) argued that industrial society had alienated human nature and that industrial production could not bring true happiness to society. According to Ruskin, the mechanization brought about by the industrial revolution suppressed human creativity and weakened emotional and aesthetic values. Therefore, he argued that social welfare could only be achieved by reviving the medieval understanding of craft-based production (Ruskin, 1907).

William Morris, influenced by Ruskin's views, aimed to make art a part of everyday life again. According to Morris, art had become detached from the people and trapped in the narrow confines of classical idealism. He argued that art needed to be revived as a social value and adopted an approach that combined aesthetic and functional aspects with manual production (Morris, 1882/1999). The Arts and Crafts movement, led by Morris, emphasized originality over imitation and functional simplicity over superficial decoration. This approach also brought with it principles such as the honest use of materials in architecture and the acceptance of structural integrity as an aesthetic value (Cumming & Kaplan, 1991).

However, this emphasis on craftsmanship failed to create a sustainable model in the face of rapidly advancing technological production and was criticized for its opposition to the industrialized nature of modern architecture. After Morris' death, the

movement's influence waned in England; however, it was reshaped in Germany with the Deutscher Werkbund movement and contributed to the institutional foundations of modern architecture (Banham, 1960).

3.4. Art Nouveau

Between 1890 and 1910, the Art Nouveau movement, inspired by the ideas of Ruskin and Morris, began to exert its influence across Europe. This movement strengthened the bond between art and craft by drawing on organic forms, curved lines, and botanical motifs taken from nature. Art Nouveau first emerged in Belgium; it was known by different names in other countries, such as Style Nouille or Style Guimard in France, Modernismo in Spain, Jugendstil in Germany, Sezession in Austria, and Stile Liberty in Italy (Greenhalgh, 2000). In Scotland, under the leadership of Charles Rennie Mackintosh, a unique interpretation of Art Nouveau developed, dominated by geometric forms, and this style has been referred to in literature as the “Mackintosh Style.”

Although the Arts and Crafts and Art Nouveau movements exhibited different formal orientations, both aimed to reclaim art as a human production sphere in opposition to the uniformity of industry.

Art Nouveau is an art and architecture movement that emerged in the late 19th century as a reaction to traditional styles and was inspired by nature. This movement embraced simplicity in contrast to the ornamental approach of older styles, reinterpreting organic forms and lines found in nature. While appreciating the idealism based on craftsmanship of Art Nouveau pioneers Henry Van de Velde, William Morris, and their circle, who were influenced by the Arts and Crafts movement, he noted that they failed to transcend their medieval romanticism (Benevolo, 1971). Van de Velde argued that aesthetic

beauty could also be found in machine production, developing the idea of reconciling art with industry.

Unlike Arts and Crafts, Art Nouveau did not reject mechanization; on the contrary, it viewed machines as a tool for aesthetic production. Influenced by Far Eastern art, the movement was characterized by plant motifs and sinuous lines. In architecture, this style produced original forms shaped by aesthetic concerns rather than structural requirements (Greenhalgh, 2000). The fundamental value of Art Nouveau lies in liberating art from traditional forms and granting designers freedom of expression.

Belgium's rapid industrialization provided a social and economic environment conducive to the birth of Art Nouveau. In this context, Victor Horta's Hôtel Tassel, built in Brussels in 1893, is considered one of the first examples of Art Nouveau in architecture. The use of iron construction as an aesthetic element in this building was considered an innovation in the architectural understanding of the period (Curtis, 1996). While this understanding became widespread with Van de Velde's designs, the Amsterdam Stock Exchange (Beurs van Berlage) building, completed by Hendrik Petrus Berlage in 1898, was an important step in the transition to modern architecture with its simplified surfaces and structural honesty (Frampton, 2007).

Art Nouveau has been influential not only in architecture but also in many other art forms such as graphic design, painting, sculpture, carpet weaving, and furniture design. Moving away from the complex forms of eclecticism, it created a new style in line with the modernist spirit of the era. In Art Nouveau buildings, the aesthetic potential of new building materials such as reinforced concrete and metal construction was brought to the fore.

However, the influence of Art Nouveau was short-lived and generally limited to urban elite circles. Sigfried Giedion (1941) defined this movement as “an interesting transitional period between the 19th and 20th centuries,” emphasizing that it laid the intellectual foundations for modern architecture. Leading representatives of the movement include artists such as Victor Horta, Hendrik Petrus Berlage, Antonio Gaudí, Otto Wagner, Hector Guimard, Charles Rennie Mackintosh, and Henry Van de Velde. The work of these figures directly contributed to the birth of modern architecture through the principles of structural honesty of materials, formal simplicity, and aesthetic originality.

3.5. Cubism and its Architectural Influence

Cubism, which emerged at the beginning of the 20th century, was an art movement greatly influenced by Albert Einstein's “theory of relativity,” expressing the relativity of time and space in an artistic way. Cubist artists emphasized the sense of timelessness and simultaneity by superimposing different views of the same object on the same surface (Birol, 1996). This approach first emerged in the field of painting, then went on to influence sculpture and architecture.

Bruno Zevi defined Cubism as an understanding that creates simultaneity by superimposing perceptions of an object or event in different times and spaces (Zevi, 1957). Cubism thus brought the concept of dynamism to the fore in sculpture and architecture. Cubist art represented the changing nature of the modern world on an artistic plane by adding the dimension of “time” to the three dimensions of perspective.

Although Cubism emerged from the figurative tendencies of the 19th century, it turned towards the expression of straight lines, pure geometry, and simple forms through pioneering artists such as Paul Cézanne and Pablo Picasso. This idea laid the

foundations for a functional and simple understanding of space with abstract geometries in architecture.

One of the innovations Cubism brought to architecture was the return of buildings to simplicity and their adaptation to modern requirements. In this movement, buildings were broken down according to their functions and then reassembled into a new composition. Flat roofs and simple facades, stripped of ornamentation, were combined with pure mass forms. White was a commonly used element in buildings (Curtis, 1996).

3.6. Futurism

Futurism was born with the Manifesto del Futurismo published by Italian poet Filippo Tommaso Marinetti on February 20, 1909, and advocated an understanding of art based on the ideals of speed, movement, and mechanization in the modern age (Marinetti, 1909/2009).

According to futurism, the continuous flow of time implies that space is also in a state of constant transformation. Therefore, speed, the symbol of the industrial age, has been seen as the new aesthetic value of contemporary life. Futurist artists interpreted machines as “living organisms” by harmonizing science and technology with art (Banham, 1960).

The most prominent example of Futurism in architecture is Antonio Sant'Elia and Mario Chiattoni's 1914 Città Nuova (New City) project. This project proposed that cities should consist of dynamic, multi-layered, and functionally differentiated structures. According to the Futurist city, buildings should resemble large machines; elevators should be visible on the facades, and industrial materials such as concrete, glass, and iron should form the aesthetics of the structure (Sant'Elia, 1914/1988). Thus, the idea that the modern city should be a liv-

ing organism, like a constantly evolving “construction site,” was put forward.

3.7. Neo-Plasticism (De Stijl)

Neo-Plasticism, or De Stijl as it is commonly known, emerged in the Netherlands in the early 20th century, spearheaded by artists such as Theo van Doesburg, Piet Mondrian, Bart van der Leek, Gerrit Rietveld, J. J. P. Oud, and others. The De Stijl magazine, which began publication in 1917, formed the theoretical basis of this movement (Blotkamp, 1993).

De Stijl embraced the general dynamism of the period; however, it focused on expressing the abstract essence through geometric forms. This approach aimed for a universal aesthetic order through right angles, pure colors (red, blue, yellow), and horizontal-vertical lines. Piet Mondrian defined this approach as “an effort to reduce the multiplicity in nature to unity” (Mondrian, 1920/1986).

Gerrit Rietveld, one of De Stijl's most important representatives in architecture, transferred these principles to the spatial dimension with the Schröder House, completed in 1924. This structure demonstrated that volumes could exist in a balance independent of each other through the composition of horizontal and vertical elements (Frampton, 2007). The movement defended an asymmetrical order against symmetry and rational creativity against limited instinctiveness.

De Stijl intersected with Art Nouveau's desire to break away from historical forms, Impressionism's search for abstract reality, Cubism's pure geometries, and Futurism's concept of movement; however, it differed from these movements by adhering solely to right-angled forms. Built on values such as universality, clarity, functionality, and objectivity, Neo-Plasticism directly contributed to the formal rationalism of modern architecture.

De Stijl has occasionally diverged from other movements to offer new proposals. Mondrian and Doesburg, in particular, introduced new approaches emphasizing absolute abstraction and the perception of spatial units as fragments bursting forth from the center of a cube. Mondrian defended absolute abstraction, stating “Always further away,” and expressed a desire to reach the pure essence. Doesburg, on the other hand, emphasized that New Architecture was inductive and that spatial units should be perceived as fragments bursting forth from the center of a cube.

3.8. Functionalism

Functionalism, as defined by Doğan Hasol, is a doctrine that advocates the design and development of a structure or object in a manner appropriate to its function (Hasol, 1998). Despite the changes in architecture throughout history, the concept of “function” has remained an unchanging component at its core. The functionalist approach is accepted not only as an aesthetic understanding but also as a general design method.

Between the First and Second World Wars, the emerging architectural philosophy, particularly within the International Style, showed clear influences of functionalism. During this period, building designs were shaped by a search for a rational and functional order, stripped of ornamentation (Hitchcock & Johnson, 1932). The concept of function became a common axis uniting the different schools of thought that formed the framework of modern architecture.

Particularly with the Neo-Plasticism (De Stijl) movement, the concept of “space cells,” where each function was expressed with its own specific measurements and forms, gained importance. This understanding reinforced the approach of deriving form from function and played a decisive role in the development of modernism (Frampton, 2007). Function is still ac-

cepted as a fundamental design parameter in contemporary architecture; it is seen as the rational basis of spatial organization.

The principle of “form follows function” is accepted as the concise expression of functionalism. This view was first proposed in 1843 by the American sculptor Horatio Greenough and later adopted by the architect Louis Sullivan (Greenough, 1843; Sullivan, 1896/1956). Sullivan, one of the pioneers of contemporary functionalism, argued that the form of a building should arise from its functional requirements.

According to Sullivan, what is important in architectural creation is not the order of priority between form and function, but the balance established between these two concepts. Architecture with realistic and useful functionality rationally defines the spaces required by different functions; however, it also considers the aesthetic integrity of these spaces. This balance reveals the unity of form and function, one of the most distinctive aspects of modern architecture (Curtis, 1996).

3.9. Purism

Purism is an art and architectural movement that crystallized into a manifesto with the publication of *Après le Cubisme* by Le Corbusier and Amédée Ozenfant in 1918 (Le Corbusier & Ozenfant, 1918/1995). Emerging in the aftermath of World War I, Purism sought to establish a new aesthetic order based on clarity, harmony, and rationality, in contrast to the perceived chaos and fragmentation of prewar avant-garde art. The movement arose as a conscious reaction against Cubism, Functionalism, and Neo-Plasticism, advocating an artistic understanding that rejected excessive formal complexity and visual randomness.

While Cubism deconstructed reality into multiple perspectives and fractured geometries, Purism aimed to restore unity and coherence through the disciplined use of pure forms. It em-

phasized single, elementary geometries such as cylinders, cones, and spheres as the foundation of artistic and architectural composition. These forms were considered the visual equivalents of universal order, embodying a kind of mathematical purity that could transcend cultural and temporal boundaries.

Contrary to the strict utilitarianism of early Functionalism, Purism proposed that all functions should be resolved within a predetermined primary form, rather than allowing functional requirements to dictate shape freely. This idea reflected Le Corbusier's conviction that architecture must embody ideal proportion and order, achieving balance between rational structure and aesthetic harmony. In this respect, Purism was not merely a visual style but a philosophical attitude a belief that simplicity and clarity could bring moral and spiritual peace to humanity after the disarray of industrial modernity.

In comparison with Futurism and Neo-Plasticism, Purism maintained a more static, symmetrical, and deductive aesthetic sensibility. Whereas Futurism glorified motion and technological dynamism, and Neo-Plasticism pursued abstraction through asymmetry and color, Purism sought equilibrium through proportion and restraint. It was, in essence, a modern classicism embracing modern materials and industrial production while maintaining timeless compositional logic.

The influence of Purism extended far beyond painting. Both Le Corbusier and Ludwig Mies van der Rohe implemented Purist principles in their architectural works, translating the discipline of geometric reduction into built form. Le Corbusier's early villas, such as Villa Le Lac and Villa Savoye, reflect this quest for pure volumes illuminated by natural light, while Mies's minimal structures demonstrate a similar pursuit of formal precision. Through these applications, Purism became one of the conceptual foundations of the International Style, bringing

abstraction, simplicity, and universality to the forefront of twentieth-century architecture.

Over time, Purism also inspired critical responses that shaped later movements, including Postmodernism. Its insistence on purity and order eventually provoked a counter-reaction that questioned universal aesthetics and celebrated diversity, symbolism, and historical reference. Yet despite these shifts, Purism retains its relevance in contemporary discourse as a reminder of architecture's ethical and formal responsibilities. It continues to influence minimalist and rationalist approaches, serving as an enduring ideal of purity, proportion, and intellectual clarity in modern design.

3.10. Expressionism

Expressionism is a modernist trend that developed in Germany between 1910 and 1930. Although it did not have an architectural manifesto, this movement was considered a fundamental quality of the aesthetic creation process in architecture. Expressionism emerged as a reaction to Purism and emphasized originality, dynamism, and emotional expression within the modernist approach (Frampton, 2007; Schulze, 1990).

In the expressionist approach, the aesthetic creation process begins with observations and impressions, then is completed with a spiritual synthesis. Naum Gabo defined expressionist architectural works as “absolute form,” emphasizing the movement's openness to dynamism and striking original forms (Gabo, 1920/1971). Expressionism advocates an inductive approach to creativity that opposes universal and rational rules and encourages the architect's originality.

Expressionism emerged as a reaction to rational-formal modernism, placing concepts such as emotion, originality, dynamism, and courage at the center of architectural creation.

Sharing a common modernist stance with movements such as Futurism and Neo-Plasticism, Expressionism represented the irrational and emotional dimension of modernism. This approach continues to exert its influence today, particularly in experimental and original architectural projects.

3.11. Constructivism

Constructivism is an art and architecture movement that emerged in Russia in the first half of the twentieth century under the leadership of Vladimir Tatlin and is sometimes referred to as “Tatlinism” (Paperny, 2002). It arose in the turbulent years following the 1917 Russian Revolution, when artists and architects sought to create a new visual language that would reflect the ideals of a socialist society. Unlike earlier avant-garde movements that emphasized individual expression, Constructivism positioned art and design as active agents in shaping the collective life of the new industrial world.

The theoretical foundations of Constructivism were formally articulated in the *Realist Manifesto* published by Naum Gabo and Antoine Pevsner in 1920 (Gabo & Pevsner, 1920). This manifesto established the movement’s core principles, calling for an art that rejected illusionism and decorative representation in favor of spatial and material realism. The *Realist Manifesto* summarized the essential tenets of Constructivism as follows:

- Rejecting closed boundaries in the shaping of space, advocating for spatial compositions designed from the inside out, where space itself becomes a material of construction.
- Rejecting closed masses in the creation of three-dimensional objects, favoring open, stereometric forms that express structure rather than conceal it.

- Rejecting color as mere ornament, instead treating material properties such as texture, reflection, and transparency as expressive and aesthetic elements.
- Rejecting decorative lines, using lines as a functional and structural element that defines form.
- Rejecting static composition, incorporating notions of time, motion, and transformation as integral to spatial experience.
- Embracing technology as an aesthetic value, merging the rational precision of industrial production with artistic creation.

These principles expressed a radical redefinition of art's purpose from representing reality to constructing it. Constructivism thus transformed the act of creation into a scientific and social endeavor, aligning the artist with the engineer and the architect.

As a design philosophy, Constructivism rejected imitation in art and focused on responding to the conditions of real life. Its practitioners aimed to develop objects and environments that served the new industrial society bridging art, architecture, and technology. Tatlin's *Monument to the Third International* (1919–1920) is one of the most emblematic examples, envisioned as a towering helical structure of glass and steel symbolizing modernity, dynamism, and revolutionary progress. Although never built, it became an enduring icon of modernist aspiration.

Other leading figures included Kazimir Malevich, El Lissitzky, Aleksandr Rodchenko, Naum Gabo, Varvara Stepanova, Liubov Popova, and the Vesnin Brothers. Each contributed uniquely to Constructivist theory and practice ranging from abstract art to graphic design, stage sets, and architectural experi-

ments (Paperny, 2002). Lissitzky's "Proun" compositions, for example, bridged two-dimensional painting and three-dimensional architecture, proposing "the station where one changes from painting to architecture."

Although Constructivism developed consciously as a movement, it never fully coalesced into a single, unified school. Rather, it functioned as a methodological framework, a way of thinking that promoted innovation, experimentation, and synthesis across disciplines. In architecture, the Constructivist approach emphasized structural transparency, modular design, and social utility—principles later echoed in the International Style. Its influence extended to the Bauhaus, the De Stijl movement, and, decades later, to Postmodern and Deconstructivist architecture.

Despite being curtailed by political repression in the Stalinist era, Constructivism's legacy endures as a foundation for modern design thinking. Its fusion of art, technology, and social responsibility reshaped how architecture and design could engage with modernity. Moreover, its emphasis on process, structure, and abstraction continues to inform digital and parametric design today, where architects similarly explore the dynamic relationship between form, material, and performance.

Constructivism, therefore, represents not merely an aesthetic but an ethical and conceptual revolution, one that sought to merge art and life into a single creative continuum. Its intellectual rigor and utopian optimism remain vital reminders of the transformative power of design in shaping both the material and ideological landscape of the modern world.

3.12. Brutalism

Brutalism was initiated in England in 1954 by Alison and Peter Smithson and was largely inspired by the works of Le Cor-

busier. The name of the movement is derived from the French expression “*beton brut*” (raw concrete) (Banham, 1966). Brutalism developed in two stages: first locally in England, and second internationally.

The beginning of international Brutalism is associated with Le Corbusier's Jaoul House in Paris. This structure pioneered subsequent Brutalist projects by emphasizing the bare use of materials and heavy masses (Curtis, 1996). Peter and Alison Smithson formulated the “New Brutalism” approach in 1954 based on the principles of reality, responsibility, objectivity, and comprehensibility.

Brutalism, Purism, and Functionalism have established the composition of spaces designed for different functions, distinct from other approaches. This stance contrasts with other approaches that aim to resolve functions within the elements that constitute the structure, rather than relying on predetermined geometric forms.

International Brutalism, which developed in the second phase, focused more on naturalness and the legibility of materials from the outside than on technical perfection. In this approach, exposed concrete and brick surfaces were preferred over metal, and the nature of the material itself was brought to the fore. Unlike approaches such as Purism and Functionalism, Brutalism ensured that spaces were composed according to their functions and offered a design strategy beyond predetermined geometric forms (Jencks, 2000).

Following Le Corbusier's pioneering work, the Brutalist approach was developed by architects such as Vittorio Vigano, James Stirling, Louis Kahn, Paul Rudolph, and Philip Johnson. Notable structures include Kahn's University of Pennsylvania Laboratory, Rudolph's Yale School of Art and Architecture, and

Johnson's Yale University Biology Department. Brutalist qualities can also be observed in some buildings by contemporary architects such as Kenzo Tange, Maekawa, Renzo Piano, and Richard Rogers; in particular, Piano and Rogers' Centre Pompidou in Paris and the Lloyd's Building in London are considered in this context due to the visibility of structural elements (Frampton, 2007).

4. Modern Architectural Movements: Bauhaus and the Institutionalization of Modernism

Despite existing for only 14 years (1919–1933), Bauhaus became the most influential school of architecture, design, and art of the 20th century. The school was founded by Walter Gropius (1863–1969) and was forced to move between Weimar, Dessau, and Berlin due to political pressure.

4.1. Origins and Intellectual Foundations

The origins of Bauhaus lie in the Arts and Crafts movement that emerged in England in the late 19th and early 20th centuries. This movement was born as a reaction to the mass production brought about by the industrial revolution and advocated combining craftsmanship with art. In 1919, Gropius used a woodcut by Lyonel Feininger as the cover for the Bauhaus founding manifesto and program. This illustration symbolized the metaphorical interplay between the arts of painting, sculpture, and architecture. By embracing the concept of *Gesamtkunstwerk*, Bauhaus envisioned an educational and production model in which all crafts and arts could have equal rights, as in the construction of a cathedral (Casciato et al., 2019).

In 1919, Gropius used a woodcut by Lyonel Feininger as the cover image for the Bauhaus founding manifesto and program.

This illustration symbolized the metaphorical interplay between the arts of painting, sculpture, and architecture. At the Bauhaus, the cathedral represented the Gesamtkunstwerk, which united architecture, craftsmanship, and art in ideal harmony, just as all crafts and arts had equal rights in the construction of cathedrals in the Middle Ages. In his manifesto, filled with mystical analogies between creative production and spiritual awakening, Gropius envisioned a new educational model that eliminated the existing distinction between fine and applied arts. In this way, he hoped that the new school would produce socially guiding and spiritually “satisfying” structures for the future, with various art practices such as painting, sculpture, architecture, and design working together (Casciato et al., 2019).

4.2. The Werkbund and Pre-Bauhaus Influences

The school was first established in Weimar and moved to Dessau in 1925. Gropius served as the school's director until 1927, followed by Hannes Meyer until 1932, and then Ludwig Mies van der Rohe took over in 1932. The Bauhaus educational program was designed to provide students with both theoretical and practical knowledge. Basic education included art and craft workshops as well as architecture and design studios.

In 1932, the school in Dessau was closed by the Nazi regime. Although it continued its activities in Berlin for a short time, it was forced to close completely in 1933.

The story of Bauhaus begins with the Werkbund, founded in the late 19th century. Established in Munich in 1907, the Werkbund consisted of artists, craftsmen, and architects who designed industrial and household products and practiced architecture. The group's leaders, influenced by Arts and Crafts, argued that form should be determined by function and that ornamentation should be eliminated.

The Werkbund later split into two factions. One faction argued for the preservation of the value of individual artistic expression. The other group advocated high mechanical mass production and standardized design, which the Werkbund embraced. The “Neue Sachlichkeit” (New Objectivity) movement emerged from this trend. This influence spread to German-speaking countries: the Schweizer Werkbund was founded in Switzerland and the Österreichischer Werkbund in Austria. Furthermore, Sweden's Slöjdföreningen adopted this approach in 1915, and the Design and Industry Association in England was also inspired by it (“Peter Behrens | Modernist, Industrial Design, AEG,” 2024).

Werkbund showcased modern design at an exhibition held in Cologne in 1914, featuring structures made of concrete, steel, and glass by architects such as van de Velde and Gropius. After World War I, the Weimar School of Applied Arts and the neighboring Academy of Fine Arts merged under the leadership of Walter Gropius and opened on April 1, 1919, under the name Staatliches Bauhaus. Walter Gropius was appointed Director of the Bauhaus.

Abstract painter Georg Muche was appointed master craftsman at the school. Workshops for stone carving, painting, murals, carpentry, and pottery were opened. During this period, Bauhaus education was equivalent to the apprenticeship training of the time and culminated in a master craftsman's examination.

Various workshops were established at the Bauhaus to strengthen the connection between art and crafts. Lyonel Feininger ran the print shop, Gerhard Marcks ran the pottery workshop, and Johannes Itten and Georg Muche ran the other workshops. Paul Klee, Oskar Schlemmer, and Lothar Schreyer also taught in the fields of stage design, painting, and other areas. Gropius and Adolf Meyer presented the first attempt to realize

the unity of the arts in architecture with the Sommerfeld House in Berlin-Steglitz.

4.3. The Evolution of Bauhaus Pedagogy

Theo van Doesburg of the Dutch De Stijl group spent a short time in Weimar and influenced the school's shift towards industrial design (1919–1933- Bauhaus-Archiv | Museum Für Gestaltung, Berlin, n.d.). The “Satzungen des Staatlichen Bauhauses in Weimar” (1919) statute made it mandatory for students to complete a preparatory course, and stage work also gained importance.

The Bauhaus-Siedlungsgemeinschaft (Bauhaus Settlement Association) was founded. Wassily Kandinsky was appointed as a teacher at the age of 65, taught form and color in the preparatory course, and managed the mural painting workshop.

In 1920, Gropius designed a cement monument in memory of nine workers killed when Reichswehr soldiers opened fire on them (Matzner, 2021). The first public attacks against the Bauhaus began in Weimar. Walter Gropius was always concerned that the government might stop funding the Bauhaus. During this period, the Bauhaus began producing marketable products in collaboration with industry, and Josef Albers and László Moholy-Nagy took over the preparatory course. (Von Alexandra Matzner, 2021).

Under pressure from the state government of the time, the Bauhaus Exhibition was opened. Works from workshops and classes, master craftsmen's independent works, and an international architecture exhibition were presented. In his opening speech, Gropius particularly emphasized the concept of industry as the defining force of the era. The exhibition featured works by Gropius, Van der Rohe, Oud, Le Corbusier, Wright, Behrens,

Fieger, Forbar, Meyer, Mendelson, Poelzig, and Taut (Von Alexandra Matzner, 2021).

4.4. The Dessau Period and Institutional Reorganization

In 1924, Dessau City Council deemed the school financially unsustainable and terminated the Bauhaus's employment contracts. In October 1924, the private company “Bauhaus Ltd.” was established. In March 1924, the municipality took over the Bauhaus as an official school, and education began in the new building in April. During this period, the school's mission was defined as focusing on the contemporary development of housing, “from simple household appliances to the finished home.”

Gropius' Meisterhäuser (master houses) project, located in a pine forest, gave Bauhaus university status. Marcel Breuer and Kalman Lengyel founded Standart Möbel GmbH and published the first furniture catalog of eight models in 1927. Under Hannes Meyer's leadership, new areas of expertise such as photography, plastic arts, weaving, and psychology were incorporated into the program (Matzner, 2021).

The Bauhaus also achieved an important position in stage education with its own stage. The Bauhaus stage toured Germany and Switzerland with Oskar Schlemmer's dance performances. (By Alexandra Matzner, 2021).

4.5. The Later Years under Mies van der Rohe

Under the leadership of Walter Peterhans, a photography department was established, and wallpaper production provided economic income. After Meyer left the school due to his communist tendencies, Mies van der Rohe took over the management. During Mies van der Rohe's tenure, architectural education came to the fore, and industrial design studies lost their importance.

The NSDAP became the strongest party in the local elections in Dessau. Their election manifestos called for the cancellation of aid to the Bauhaus and the demolition of Bauhaus buildings.

Van der Rohe published a new constitution with some changes to dispel negative perceptions of the Bauhaus. According to this, the Bauhaus offered a clearly defined six-term course program (1919–1933- Bauhaus-Archiv | Museum Für Gestaltung, Berlin, n.d.).

The Bauhaus Journal, published since 1926, released its last three issues in 1931. Model houses by Van der Rohe, Lilly Reich, and others were exhibited in the “Contemporary Housing” exhibition, part of the “German Building Exhibition” in Berlin.

As part of the “German Building Exhibition” in Berlin, model homes by Van der Rohe, Lilly Reich, and others were exhibited in the “Contemporary Housing” exhibition (By Alexandra Matzner, 2021).

Political conflicts at the university intensified, and the NSDAP's proposal to suspend education at the Bauhaus was accepted by the Dessau city council.

Van der Rohe decided to continue as a private institute in Berlin. In October, an empty telephone factory in Berlin Steglitz was rented and converted for school use, and education began with 114 students. Wassily Kandinsky, Josef Albers, Ludwig Hilberseimer, Lilly Reich, and Walter Peterhans were among the teachers (Von Alexandra Matzner, 2021; Berlin, n.d.). The reopening of the school was politically unacceptable, and on July 20, 1933, the teaching staff announced that the Bauhaus had dissolved itself. After the dissolution of the Bauhaus, many of

its teachers and students emigrated. These emigrants contributed significantly to the global spread of the Bauhaus idea.

4.6. Social Housing and the International Impact

The widespread recognition of Bauhaus was achieved primarily through its social housing projects. In the Weimar Republic, the housing problem became one of the fundamental elements of social policy.

Bauhaus's social housing projects ensured the school's recognition. The 1927 Stuttgart Weissenhofsiedlung exhibition presented examples of modern housing design internationally. Architects from 17 different countries participated in this exhibition and showcased the modernist architectural approach at the national and international levels. Gropius won the urban planning competition and developed the project with Otto Haesler and Franz Roedcke, constructing the buildings in parallel rows running north-south, transforming traditional parcel blocks with a modern approach.

Bauhaus played a decisive role in the formation of the universal style of modern architecture, the International Style. The exhibition “The International Style: Architecture Since 1922,” organized by Henry-Russell Hitchcock and Philip Johnson at the Museum of Modern Art in New York in 1932, introduced Bauhaus principles on an international scale. The buildings of Le Corbusier, Walter Gropius, and Mies van der Rohe were presented in this exhibition as examples of the “universal language” of modern architecture (Curtis, 1996).

The Bauhaus principles of formal simplicity, functionality, structural honesty, and social utility became the fundamental paradigm of modern architecture in the second half of the 20th century. These principles were influential not only in Europe but also in the institutionalization of modern architecture in different

regions such as Turkey, Japan, and Latin America. In Turkey, architectural education in the 1930s was directly inspired by the Bauhaus model, and basic design courses, particularly at the Istanbul State Academy of Fine Arts, were structured according to the principles of Bauhaus pedagogy (Bozdoğan, 2001).

The legacy of the Bauhaus continues to be a fundamental reference point in contemporary design education today. The interdisciplinary approach advocated by the school is being reinterpreted in the design processes of the digital age. Thus, the Bauhaus continues to exist not only as a historical institution but also as an intellectual foundation that ensures the continuity of modernism.

5. Modern Architectural Heritage and Urban Conservation

5.1 The Philosophical Foundations of Modernity

Modernity is based on the philosophical idea of the Enlightenment, which emphasizes the importance of reason and logic. During this period, science and rational thought came to the fore as a reaction against dogmatic beliefs and traditional authorities. The concept of “modern” encompasses the attitude of applying the "Enlightenment tradition, a rational scientific understanding based on reason- the attitude of applying this understanding to all areas, the approach of using the accumulation of specialized culture obtained through science to enrich daily life and rational organization, the process of economic organizations taking on a new form with the rise of technology, and the transformation from an abstract state to a bourgeois state."

The historical development of modern architecture should be evaluated not only as a new style but also as the construction of a new cultural memory. Until the mid-20th century, “modern” was associated with an ideal of progress toward the future and

therefore often conflicted with concepts related to the preservation of the past. However, starting in the 1970s, modern architectural products began to be accepted as structures with historical value, thus initiating modernism's process of producing its own heritage (Jencks, 2000).

Charles Jencks has linked the symbolic end of modernism to the demolition of the Pruitt-Igoe housing complex in St. Louis in 1972. This event marked not only the end of an architectural era but also the beginning of a critical re-examination of modernist urbanization ideals. Modernism's principles of “progress” and “orientation towards the new” have given way to a reinterpretative relationship with the past. Thus, modern architecture has become an object of preservation (Jencks, 1977; Forty, 2000).

5.2. Transformation in Conservation Theory

The evaluation of modern architecture as heritage has necessitated a fundamental transformation in conservation theory. Modernist structures, by design principles, embody the concepts of “temporariness,” “renewal,” and “functional change.” Consequently, the conservation of these structures is incompatible with the traditional monumental conservation approach. Conservation practice has necessitated the development of a new conceptual framework appropriate to the nature of modernist architecture (Bandarin & van Oers, 2012).

One of the most fundamental problems in preserving modern architectural heritage is the tendency toward “innovation” and “change” inherent in the design logic of modernist structures. Modern architecture has embraced the principle of adapting to the technology and production methods of each era. Therefore, modern structures encounter problems over time, such as material deterioration, technical inadequacy, and functional transformation. The short lifespan of reinforced concrete structures and the susceptibility of materials such as aluminum, glass, and

plastic to deterioration make it difficult to preserve these structures for long periods (Glendinning, 2013).

Another challenge for modern architecture in the context of conservation is the conflict between structural authenticity and the idea of “renewal.” While the classical approach to conservation aims to preserve the original materials and form of a building, modernist conservation prioritizes preserving the “original idea” of the building. This situation has necessitated a redefinition of the concept of “authenticity.” Indeed, in modern architecture, authenticity is associated more with conceptual design intent than with materials and form (Macdonald, 2013).

Most modernist buildings were designed to meet functional requirements during periods of rapid urbanization. Consequently, these buildings are generally part of everyday life rather than monumental. The process of industrialization and urbanization that began in the late 19th century played an important role in shaping the legacy of modern architecture. During this process, housing was designed to meet social needs and constructed using new building techniques.

The preservation of modern architecture generally aims to protect young and original appearances; in this context, the renewal or reconstruction of original materials may be necessary. Residential settlements and large-scale public buildings, in particular, are more difficult to preserve due to their designs being open to change and demolition.

Modern residences were planned to meet the needs of users and the environment, as well as aesthetic values. New technologies and materials were applied in a way that supports a healthy and hygienic lifestyle.

This situation has led to modern architectural products not being attributed sufficient historical value by society. In the conservation process, defending these structures, which have no place in the public memory, has become an ethical and political struggle for conservation institutions (Choay, 2001).

5.3. Integration of Modern Architecture and Conservation

Throughout the 20th century, modern architecture and conservation concepts were generally considered separately, but today they have come together and transformed conservation strategies. While traditional architectural heritage can be more easily defined by the distinction between different cultures and periods, the lack of cultural discontinuity in the modern era has delayed the acquisition of heritage status by modern structures. The persistence of modern understanding despite the end of the 20th century has led to a redefinition of the relationship between the conservation paradigm and history.

The conservation of modern architectural products has been supported by the acceptance of their status as cultural assets. The conservation criteria established for these products aim to preserve the qualities and values of the structures and pass them on to future generations. The preservation of modern architecture provides a framework that explains the fundamental approaches of architecture. Modernity has developed a concept of preservation based on the understanding of constant innovation and continuity. One of the fundamental problems of modern architecture is that the concept of transience is at the forefront of the design of its products.

Modernity's concept of preservation, aimed at ensuring continuity, is constantly being reproduced. One of the fundamental problems of modern architecture is that products are designed

based on the concept of transience, which is influential in the practice and theory of modern architecture.

While the concept of transience forms part of modern architecture, it conflicts with modern architecture's constant search for innovation. Modern architecture defines the desire to be constantly new as fluid sociality and dynamic characters.

Although some structures, such as Le Corbusier's Unite d'Habitation project, are associated with the concept of temporary architecture, the heavy and monumental character of these structures is also emphasized. Modern architecture strikes a balance between transience and the constant search for innovation, reflecting the dynamic and fluid social structure of architecture. The abundance of modern products has given rise to the idea that some structures in conservation areas may be demolished, necessitating a re-examination of the conservation paradigm.

The abundance of modern products is affecting the conservation process and has led to the idea that some products should be demolished. The conservation paradigm must be critically re-examined for the modern architectural heritage. The abundance of modern architectural products and the concept of transience require a re-examination of conservation strategies. Conservation should be designed to preserve the authenticity and values of modern architectural heritage and ensure that this heritage is passed on to future generations.

Modernity has influenced the conservation paradigm in various ways. With increased awareness, Modernity has heightened awareness of the value of the past. This has led to a better understanding of the importance of work that need to be preserved.

In the context of Legal Regulations, modern states have introduced legal regulations to protect historical works. These

regulations prohibit the destruction or alteration of works without restoration.

Institutions and organizations have been established for conservation work with the aim of institutionalization. These institutions carry out research, documentation, and restoration work aimed at protecting historical works.

The use of modern technology in conservation work has increased. This has accelerated processes and increased flexibility in the work.

The neo-modern production field generally finds the conservation field traditional and conservative, while the conservation field perceives the modern architecture movement as a threat that could destroy the old. As a reaction to modernism's universal conservation principles and standards, postmodern conservation emphasizes multiple perspectives and sensitivity to local contexts.

The postmodern approach to conservation argues that there is no single “correct” way to conserve. It acknowledges that different cultures, communities, and individuals may have different conservation needs and priorities. In this context, participation and pluralism have become important in conservation. Postmodern conservation encourages not only the preservation of historical artifacts but also their reuse. In this way, historical artifacts become a living part of the city and have the opportunity to interact with new generations.

As a modern discipline, the conservation paradigm must be constantly criticized, developed, and renewed within the framework of responsibility towards the era. This means that, just like other modern constructs, if the field of conservation becomes traditionalized, conservative, or stagnant in any way, it must

destroy its own essence and rebuild itself within contemporary parameters.

6. International Approaches to the Preservation of Modern Heritage

Many institutions and organizations have recognized that modern architectural products are worthy of preservation, and the fact that these products have been designated as cultural assets is proof of this. The conservation criteria developed for modern architectural products have been reviewed, and conservation has been defined as interventions aimed at preserving and transmitting the qualities and values of cultural assets to the future. The fundamental principles of conserving modern architectural heritage provide a framework that explains the basic approaches to architecture.

Since the 1990s, international organizations have been conducting various studies on the documentation and preservation of modern heritage. Throughout the 20th century, the concepts of ‘modern architecture’ and ‘conservation’, which were not very inclined to relate to each other, have come together today and changed the strategy of conservation.

Since the 1990s, international organizations have begun to systematically address the issue of conserving modern architectural heritage. DOCOMOMO International (Documentation and Conservation of Buildings, Sites and Neighborhoods of the Modern Movement), founded in 1988, carries out global-scale work on the documentation, research, and preservation of modern architectural heritage (DOCOMOMO, 1990).

DOCOMOMO has not limited modern heritage to iconic buildings, but has also evaluated it in its local, regional, and social contexts. This approach has revealed that modern archi-

texture is not a homogeneous style but rather has taken shape with unique interpretations in different geographical areas (Mumford, 2000).

DOCOMOMO identifies examples of modern heritage that should be preserved at local, national, and global levels, considering regional and technical differences as well as iconic structures. Within this framework, it creates an inventory that reflects the diversity and richness of modern architecture.

Modern dwellings prioritized characteristics such as functionality, openness, lightness, and transparency, aiming to respond to the needs of the masses rather than being monumental. In this context, DOCOMOMO defines modern heritage based on function, technical characteristics, and spatial organization rather than historical references. However, this approach highlights the monolithic nature of the modern movement without disregarding regional and technical differences. DOCOMOMO considers both iconic structures and regional diversity when identifying examples of modern heritage to be preserved at local, national, and global scales.

UNESCO and ICOMOS have also developed institutional frameworks for documenting, evaluating, and preserving 20th-century heritage as modern heritage. UNESCO emphasizes the need to preserve structures from the modern era by adopting a universal value approach to cultural heritage preservation. Modern structures are evaluated within the scope of cultural heritage not only for their aesthetic or historical value, but also for their ability to reflect social, technological, and functional innovations (UNESCO, 2011). The inclusion of modern structures and examples of modern movements in UNESCO's heritage lists has encouraged global recognition and preservation of modern architecture. This approach aims to consider modern structures not

only as iconic examples but also within their cultural, social, and regional contexts.

ICOMOS has reinterpreted the concepts of authenticity and integrity in the preservation of modern heritage. In particular, the Nara Document, published in 1994, stated that authenticity is not limited to physical materials and form; it must be evaluated together with the meaning, use, spatial context, and social function of the building (ICOMOS, 1994). This document has led to the development of a flexible and multidimensional approach to the preservation of modern architectural heritage. Thus, material alterations or functional transformations of modern buildings have been deemed acceptable as long as they do not harm the conceptual and cultural values of the structure.

ICOMOS, working in collaboration with DOCOMOMO, defines modern buildings not only through historical references but also through criteria such as functionality, technical innovation, and spatial organization. This approach emphasizes the fact that modern architectural heritage is not a homogeneous style but is enriched by regional differences (DOCOMOMO, 1990; Mumford, 2000). The strategies of ICOMOS and UNESCO regarding modern heritage have taken the preservation of buildings beyond traditional methods and provided a comprehensive framework aimed at transmitting the cultural values of modernist works to future generations.

In conclusion, UNESCO and ICOMOS' approaches to modern heritage reflect a universal and multidimensional conservation understanding that aims to protect not only the physical existence of modern architectural products but also their social, cultural, and technological meanings. These approaches contribute to the sustainability of modern architectural heritage by relating modern structures to contemporary society without disconnecting them from the past.

7. Modern Heritage on the UNESCO World Heritage List

7.1. Tugendhat Villa in Brno-Czech Republic, Criteria: (ii)(iv)-2001

Designed by Ludwig Mies van der Rohe and Lilly Reich between 1928 and 1930, Villa Tugendhat stands in Brno as one of the earliest and most refined examples of the International Style (UNESCO World Heritage Centre [UNESCO WHC], 2001). Commissioned by the Tugendhat family, the villa features open-plan interiors, slender chrome columns, and expansive glass façades that dissolve boundaries between inside and outside. Its structural innovation lies in the steel-frame skeleton supporting vast glass walls an early experiment in what would later define modernist transparency (Frampton, 2020).

The building's interior materials onyx wall, Makassar ebony panels, and travertine floors merge industrial precision with luxury. Functionally, the villa employed mechanical climate control and custom-designed furniture, aligning architecture with modern technology. Its inscription on the World Heritage List recognizes it as “an outstanding example of the International Style in the modern movement” (UNESCO WHC, 2001).

During the Second World War, the house suffered occupation and deterioration but was meticulously restored after 1989. The restoration maintained the integrity of materials and design intentions. Today, Villa Tugendhat operates as a museum and symbol of pre-war European modernism a case study in the intersection of architecture, social change, and technological optimism.



Figure 1 Tugendhat Villa in Brno

7.2. Fagus Factory in Alfeld-Germany, Criteria: (ii)(iv)-2011

Constructed between 1911 and 1913 by Walter Gropius and Adolf Meyer, the Fagus Factory is considered a precursor to the Bauhaus Movement (UNESCO WHC, 2011). It marked a radical departure from traditional industrial architecture by emphasizing transparency, rhythm, and functional clarity. The factory's façade steel frames filled with continuous glass bands created an unprecedented openness that symbolized a new age of industry (Banham, 1980).

The Fagus Factory's historical significance lies in its synthesis of aesthetics and production. Its light-filled workspaces improved labor conditions while visually representing progress and rationality (Curtis, 1996). UNESCO inscribed it for demonstrating “the emergence of modern architecture and the development of new building techniques” (UNESCO WHC, 2011).

The site remains operational, preserving continuity between early 20th-century industrial design and contemporary use. As modern heritage, it represents the architectural embodiment of modern industrial transparency, social reform, and technological ingenuity all critical aspects of architectural modernism.



Figure 2 Fagus Factory in Alfeld

7.3. Bauhaus and its Sites in Weimar, Dessau and Bernau-Germany, Criteria: (ii)(iv)(vi)i 1996-2017

The Bauhaus Sites in Weimar and Dessau commemorate the school founded by Walter Gropius in 1919, which became a crucible for modern design and pedagogy (Droste, 2002). The Dessau Bauhaus Building epitomizes functional architecture through glass curtain walls, flat roofs, and modular structures. Together with the Masters' Houses, these sites manifest the unity of art, craft, and technology.

The Bauhaus redefined architectural education, integrating painting, sculpture, typography, and industrial design. Its philosophy of “form follows function” shaped architecture globally.

UNESCO recognizes these buildings as “pioneering prototypes of functional architecture in the 20th century” (UNESCO WHC, 1996).

As heritage, the Bauhaus Sites illustrate how modernism became institutionalized as both aesthetic and social practice. Their conservation ensures the survival of modernism’s pedagogical and cultural legacy, reminding us that modern architecture was never purely stylistic was deeply ideological and reformist (Colquhoun, 2002).



Figure 3 Bauhaus and its Sites in Weimar

7.4. The Architectural Work of Le Corbusier: An Outstanding Contribution to the Modern Movement (Transnational Serial Property), Criteria: **(i)(ii)(vi)**, 2016

This serial inscription, adopted 2016, includes 17 sites across seven countries France, Switzerland, Belgium, Germany, India, Japan, and Argentina (UNESCO WHC, 2016b). Collectively they demonstrate the global diffusion of Le Corbusier’s architectural ideas. From the Unité d’Habitation in Marseille to the Capitol Complex in Chandigarh, these works translate modernist

ideals functionality, spatial purity, and social reform into diverse cultural contexts (Curtis, 1996).

The series underscores the universality of the modern movement, framing Le Corbusier as both designer and theorist who influenced urbanism, housing, and aesthetics. The inscription's value lies in showing architecture as a global dialogue shaped by industrialization, colonialism, and modern identity.

Conservation challenges involve diverse climates and political contexts, yet the networked protection of these sites represents a landmark in heritage methodology. Together they encapsulate a century defining evolution in architecture toward standardization, abstraction, and human-centered design.



Figure 4 The Architectural Work of Le Corbusier: An Out-standing Contribution to the Modern Movement

7.5. Modernist Kaunas: Architecture of Optimism, 1919/1939-Lithuania, Criteria: (iv), 2023

Kaunas, designated a UNESCO World Heritage Site in 2023, exemplifies interwar modernism shaped by optimism, nation-building, and local adaptation (UNESCO WHC, 2023). When Lithuania regained independence after World War I, Kaunas became the temporary capital. The city transformed rapidly from a garrison town into a thriving administrative and cultural center. Architects many educated in Western Europe embraced modernist ideals while reflecting national identity through proportion, ornament, and material choice (Budreikaitė, 2021).



Figure 5 Modernist Kaunas: Architecture of Optimism, 1919/1939

The city's ensemble of approximately 1,500 modernist buildings demonstrates a coherent urban narrative: functionalist schools, cinemas, banks, and private villas unified by human scale and contextual sensitivity. Rather than rigid internationalism, Kaunas reveals a "regional modernism" responsive to climate, topography, and civic symbolism (Frampton, 2020). The flowing façades of Kaunas' post office, or the graceful corner glazing of residential blocks, display optimism embedded in form.

UNESCO recognized Kaunas for its "outstanding testimony to the evolution of modern urbanism in a newly independent state" (UNESCO WHC, 2023). As modern heritage, Kaunas challenges Euro-centric narratives, proving that the modern movement was not a single style but a constellation of local modernities. Conservation efforts focus on maintaining authenticity while supporting active use of buildings keeping modernism a living part of the urban fabric.

7.6. Pampulha Modern Ensemble-Brazil, Criteria: (i)(ii)(iv),2016

The Pampulha Modern Ensemble, designed by architect Oscar Niemeyer with landscape architect Roberto Burle Marx and artist Cândido Portinari, was completed in 1943 and inscribed in 2016 (UNESCO WHC, 2016). The project comprises a church, a casino (now an arts museum), a ballroom, a yacht club, and the surrounding artificial lake. Together they form a synthesis of architecture, landscape, painting, and sculpture, expressing a distinctly Brazilian interpretation of modernism.

Unlike the rationalist tendencies of European modernism, Pampulha's forms are fluid and sensuous arched concrete shells and curves echoing the landscape. Niemeyer employed reinforced concrete to achieve expressive freedom, declaring that "it is not the right angle that attracts me, but the free and sensual

curve” (Niemeyer, 1998). The Church of Saint Francis of Assisi, with its parabolic vaults and blue-and-white tile murals, embodies this dialogue between structure and art.

UNESCO recognized Pampulha for demonstrating how modern architecture became a vehicle for cultural expression in Latin America. The ensemble paved the way for Brasília, showcasing how modernism could embody tropical climate, regional aesthetics, and social aspiration (Curtis, 1996). Its preservation underscores the challenge of maintaining reinforced concrete structures in humid environments while safeguarding intangible artistic unity.



Figure 6 Pampulha Modern Ensemble

7.7. Victorian Gothic and Art Deco Ensembles of Mumbai-India, Criteria: (ii)(iv),2018

Inscribed in 2018, the Victorian Gothic and Art Deco Ensembles of Mumbai comprise two contrasting yet complementary architectural expressions within the city’s Fort precinct

(UNESCO WHC, 2018). The late-19th-century Gothic Revival civic buildings such as the University Library and the Chhatrapati Shivaji Maharaj Vastu Sangrahalaya represent colonial ambitions and technological progress. By the 1930s, Art Deco private residences and cinemas along Marine Drive introduced curved balconies, geometric ornaments, and pastel hues inspired by modern lifestyles.

Together they form a coherent urban palimpsest where modernism intersects with colonial heritage. Mumbai's Art Deco scene was one of the world's largest after Miami yet adapted to tropical conditions through verandas and shading devices (Lang, Desai, & Desai, 1997). The UNESCO inscription acknowledges this ensemble as evidence of "the exchange of architectural influences across continents" (UNESCO WHC, 2018).



Figure 7 Victorian Gothic and Art Deco Ensembles of Mumbai

As modern heritage, Mumbai's Art Deco architecture illustrates how modernity arrived not through rupture but through negotiation between East and West. Conservation policies now seek to balance urban development pressures with maintaining façade integrity and urban skyline continuity, a constant challenge in a megacity of 20 million.

7.8. The 20th-Century Architecture of Frank Lloyd Wright United States, Criteria: (ii), 2019

UNESCO inscribed eight works by Frank Lloyd Wright spanning 1906 to 1969 as a serial property. These include iconic buildings such as Fallingwater, the Guggenheim Museum, and Unity Temple. Collectively they express Wright's philosophy of *organic architecture*, integrating human habitation with natural landscapes and materials (Levine, 1996).



Figure 8 The 20th-Century Architecture of Frank Lloyd Wright

Wright's innovations open floor plans, cantilevered roofs, and fluid spatial continuity reshaped domestic and civic architecture. Fallingwater (1935) fuses reinforced concrete terraces with the rock outcrop of a waterfall, creating an inhabitable landscape (Frampton, 2020). Unity Temple (1906) in Oak Park, Illinois, reimagines sacred space through concrete geometry and diffused light. UNESCO recognized these sites for their "profound influence on the development of modern architecture in the 20th century" (UNESCO WHC, 2019).

As modern heritage, Wright's buildings bridge the gap between modernism's technological optimism and humanistic spatial experience. Conservation focuses on structural stabilization of reinforced concrete, moisture control, and preserving Wright's delicate spatial qualities, especially natural light and material tactility.

7.9. Berlin Modernism Housing Estates-Germany, Criteria: (ii)(iv),2008

The Berlin Modernism Housing Estates, inscribed 2008, consist of six housing developments constructed between 1913 and 1934 (UNESCO WHC, 2008). Designed by architects such as Bruno Taut, Walter Gropius, and Martin Wagner, these estates like the Hufeisensiedlung and Weiße Stadt embody the social ideals of the early modern period.

Reacting to post-World War-I housing shortages, architects adopted functional layouts, abundant daylight, and communal green spaces. The estates illustrate how modern architecture was harnessed for social reform: providing affordable yet dignified living for working-class citizens (Bergdoll, 2000).

UNESCO inscribed them as "outstanding examples of the progressive housing policies of the Weimar Republic" (UNESCO WHC, 2008). As modern heritage, the estates em-

phasize that modernism was not purely aesthetic, it was deeply social. The challenge of preserving them today lies in balancing modernization, insulation standards, and heritage authenticity. Their continued residential use ensures these modernist ideals remain embedded in everyday life.



Figure 9 Berlin Modernism Housing Estates

7.10. Van Nellefabriek-Netherlands, Criteria: (ii)(iv), 2014

Constructed between 1925 and 1931 by architects Leendert van der Vlugt and Johannes Brinkman, with engineering by Jan Wiebenga, the Van Nelle Factory in Rotterdam represents one of the most refined examples of early 20th-century industrial modernism (UNESCO World Heritage Centre [UNESCO WHC], 2014). Commissioned for the processing of coffee, tea, and tobacco, the factory embodies the ideals of the “Nieuwe

Bouwen” (New Building) movement, emphasizing rational design, light, and transparency (Curtis, 1996).

The building’s glass curtain walls and reinforced concrete frame form a strikingly horizontal composition. Elevated walkways connect its different sections, reflecting Taylorist efficiency and worker circulation principles. UNESCO inscribed the site in 2014 for its “iconic example of the International Style applied to industrial architecture” (UNESCO WHC, 2014).



Figure 10 Van Nellefabriek

As modern heritage, the Van Nelle Factory exemplifies architecture's engagement with industrial production. Its daylight-filled spaces were conceived to improve labor conditions architecture serving social and technical progress (Frampton, 2020). Following adaptive reuse, the complex now houses creative offices, demonstrating that preservation and innovation can coexist. Conservation challenges include maintaining delicate steel and glass façades and adapting interiors to modern energy standards while preserving spatial integrity.

7.11. Sydney Opera House-Australia, Criteria: (i), 2007

The Sydney Opera House, completed in 1973 and inscribed on the UNESCO list in 2007, is a global icon of modern architecture. Designed by Danish architect Jørn Utzon, its soaring sail-like shells on Bennelong Point have become a symbol of Australia's identity and of the 20th century's architectural imagination.

Utzon's design emerged from an international competition in 1957 and introduced an unprecedented synthesis of structural engineering, sculpture, and acoustics (Weston, 2002). Its precast concrete shells, innovative computer-assisted geometry, and integration with Sydney Harbour marked a breakthrough in both aesthetics and technology. The building transcends the functional typology of the opera house creating a monumental public sculpture rooted in landscape and sea (Frampton, 2020).

UNESCO praised the Opera House as "a great urban sculpture set in a remarkable waterscape, at the tip of a peninsula projecting into Sydney Harbour" (UNESCO WHC, 2007). Its heritage significance lies in its capacity to unite art, engineering, and civic space. Preservation focuses on maintaining original materials and structural performance amid heavy public use. Today,

the Opera House stands as a living cultural venue, continuously renewing modern architecture's public mission.



Figure 11 Sydney Opera House

7.12. Brasília-Brazil, Criteria: (i)(iv), 1987

Inaugurated in 1960, Brasília was designed by urban planner Lúcio Costa and architect Oscar Niemeyer as Brazil's new capital and was inscribed on the World Heritage List in 1987. The city is an embodiment of modernist urban ideals translated into national symbolism. Costa's master plan, shaped like a bird or airplane, organized the city along two monumental axes—one

civic, one residential articulating rational zoning and formal clarity (Holston, 1989).

Niemeyer's monumental civic buildings the National Congress, Cathedral, and Palácio da Alvorada introduced free-form concrete geometry that redefined governmental architecture as expressive and humanistic. Brasília's inscription recognizes it as "a unique artistic achievement and an outstanding example of 20th-century urban planning" (UNESCO WHC, 1987).



Figure 12 Brasília-Brazil

As modern heritage, Brasília embodies both utopian aspiration and social critique. Designed for 500,000 inhabitants, it quickly exceeded that number, leading to debates on modernist planning and social segregation. Its preservation requires reconciling heritage status with a living metropolis. Brasília remains the world's only fully realized modernist capital a living monument to the 20th century's faith in progress and design.

7.13. Centennial Hall in Wrocław-Poland, Criteria: (i)(ii)(iv),2006

Built between 1911 and 1913 by architect Max Berg, the Centennial Hall (Hala Stulecia) in Wrocław was inscribed on the UNESCO list in 2006. This early reinforced concrete structure featuring a 65-metre dome and vast open interior anticipated many principles of modernism before World War I. Designed for exhibitions and gatherings, it demonstrated how new materials could transform spatial experience (Banham, 1980).

The Hall's rational geometry, modular structure, and concrete rib vaults exemplify engineering modernity. At the same time, its civic purpose aligns architecture with public life. UNESCO recognized it as "a key milestone in the development of reinforced concrete structures and modern architectural forms" (UNESCO WHC, 2006).

As a modern heritage site, Centennial Hall represents the technological origins of modernism. Its preservation involves addressing material decay and adapting to contemporary use while maintaining authenticity. The building's ongoing function as a concert and sports venue reinforces the modernist notion of architecture as living infrastructure rather than static monument



Figure 13 Centennial Hall in Wrocław

7.14. Asmara: A Modernist African City-Eritrea, Criteria: (ii)(iv), 2017

Asmara, inscribed in 2017, is a rare case of a whole modernist city designated as World Heritage. Built primarily in the 1930s during Italian colonial rule, the city contains hundreds of modernists, rationalist, and futurist buildings adapted to African climate and context (Denison, Guida, & Paoletti, 2003).

Key examples include the Fiat Tagliero Service Station, an aviation-inspired concrete structure with cantilevered wings, and the Cinema Impero, a masterpiece of streamlined Art Deco. Asmara's urban fabric integrates wide boulevards, low-rise

blocks, and monumental perspectives, forming an intact example of early modern urban planning.

UNESCO recognized Asmara as “an exceptional example of early modernist urbanism at an urban scale” (UNESCO WHC, 2017). Beyond aesthetics, Asmara’s modern heritage raises complex postcolonial questions: how to conserve colonial-era architecture as national heritage. Eritrea has embraced Asmara’s modernism as a symbol of creativity, resilience, and cosmopolitanism. Preservation efforts focus on restoring concrete façades, maintaining streetscapes, and developing sustainable tourism.

Asmara thus expands the geographical scope of modern heritage, proving that modernism was not merely a Western export, but a global phenomenon interpreted through local conditions.



Figure 14 Asmara: A Modernist African City

7.15. Zollverein Coal Mine Industrial Complex in Essen-Germany, Criteria: (ii)(iii),2001

The Zeche Zollverein Coal Mine Industrial Complex, located in Essen, Germany, is one of the most iconic examples of modern industrial heritage. Inscribed on the UNESCO World Heritage List in 2001, it is often referred to as the “most beautiful coal mine in the world” for its striking synthesis of function and form (UNESCO World Heritage Centre [UNESCO WHC], 2001). Originally designed by architects Fritz Schupp and Martin Krammer between 1928 and 1932, the complex exemplifies the application of Bauhaus principles to large-scale industrial architecture.

Zeche Zollverein was part of the Ruhr region’s vast coal mining network, which symbolized Germany’s industrial power in the early twentieth century. What distinguishes it from other mining sites is its rigorous geometric order, symmetry, and the aesthetic coherence of its brick-and-steel architecture. The designers aimed to create a functional industrial complex that was also architecturally elegant—a radical notion in an era when factories were rarely considered works of art (Frampton, 2020). The iconic Shaft 12 winding tower, with its monumental steel frame, became a symbol of industrial modernity, fusing engineering precision with visual clarity.

The architectural language of Zollverein reflects the influence of the New Objectivity (*Neue Sachlichkeit*) movement, characterized by an emphasis on rational design, simplicity, and the honest expression of materials. Every building within the complex—from the washhouses to the coking plant—was conceived as part of a unified design system. The red brick surfaces and steel frames follow a strict modular rhythm, giving the site a monumental yet human-scaled presence (Curtis, 1996). The integration of technology and design at Zollverein anticipated later

modernist approaches to industrial and civic architecture world-wide.

UNESCO inscribed Zollverein for its “outstanding architectural and technological ensemble” and its significance as “an example of the transformation of a traditional heavy industry into a cultural landscape” (UNESCO WHC, 2001). Its preservation underscores a new understanding of heritage: that modern industrial sites, once symbols of extraction and pollution, can become cultural assets celebrating creativity, innovation, and collective memory (Choay, 2001).



Figure 15 Zollverein Coal Mine Industrial Complex in Essen

7.16. Evaluation of Modern Heritage Examples on the UNESCO World Heritage List

The inclusion of modern architectural works in the UNESCO World Heritage List represents a turning point in the global understanding of cultural heritage. Traditionally, the concept of heritage was associated with antiquity, monumentality, and historic continuity. The recognition of modern architecture built largely in the 20th century has expanded this notion to include innovation, experimentation, and social transformation as integral parts of humanity's cultural legacy. Evaluating the modern heritage sites on the UNESCO list thus offers insight into how societies reinterpret the meaning of heritage in an age defined by rapid technological and ideological change.

The listed modern heritage sites, such as the Bauhaus buildings in Weimar and Dessau, Le Corbusier's transnational works, the Sydney Opera House, Brasília, the Van Nelle Factory, and the Zeche Zollverein Industrial Complex, reflect the diversity and universality of the modern movement. Each represents a distinct moment in the evolution of modernism—from early functionalist experiments to later expressions of structural and formal abstraction. Collectively, they articulate a narrative of the 20th century as an era of global interconnection, where architectural ideas transcended borders, political systems, and aesthetic traditions.

One of the most striking features of these sites is their shared philosophical foundation. Rooted in modernism's quest for rationality and progress, they embody the belief that architecture could be a catalyst for social reform. The Bauhaus, for instance, was not only a design school but a social project—an attempt to unite art, craft, and industry for the improvement of daily life. Similarly, Brasília and the Berlin Housing Estates translated these ideals into urban form, seeking to design equitable, effi-

cient, and visually coherent environments. These examples demonstrate that modern heritage cannot be reduced to style alone; it is deeply connected to the ethical and political aspirations of the modern age.

At the same time, the diversity among modern heritage sites underscores the plurality of modernism. While European examples emphasize rational planning and technological clarity, non-European sites reveal how modern principles were adapted to local climates, materials, and identities. Pampulha in Brazil fused modernist geometry with the organic fluidity of Oscar Niemeyer's forms, creating an architecture of sensual modernity. Asmara in Eritrea, on the other hand, illustrates how colonial modernism evolved into a symbol of national pride and cultural resilience. This global variation highlights that modernism was not a monolithic movement but a flexible framework capable of expressing different socio-political realities.

From the standpoint of conservation, modern heritage poses unique challenges. The materials that defined modern architecture reinforced concrete, glass, and steel are inherently vulnerable to weathering and corrosion. Moreover, many modernist structures were conceived for specific social or technological functions that have since become obsolete. The task of preserving such buildings thus requires both technical innovation and conceptual adaptation. The preservation of the Fagus Factory, for example, demanded advanced techniques to restore early reinforced concrete, while maintaining the transparency and lightness of its design. Similarly, the adaptive reuse of the Zeche Zollverein complex into a cultural hub exemplifies how industrial modern heritage can be reintegrated into contemporary urban life.

Another dimension of evaluation involves the ethical and theoretical implications of recognizing modernism as heritage.

Modern architecture was originally conceived as a forward-looking force symbol of progress, not preservation. Its architects often rejected historicism and continuity. The UNESCO designation, however, reframes modernism as part of history itself, transforming the once-radical language of innovation into a subject of protection. This paradox raises essential questions: how can a movement that sought to erase the past become an object of conservation? How can preservation respect the spirit of modernism, its openness to change without freezing it in time?

These questions have led to evolving conservation philosophies. UNESCO and ICOMOS now emphasize the “spirit of place” and the authenticity of intent rather than merely material preservation. In the case of modern heritage, this means maintaining not only the physical integrity of structures but also their conceptual and social meaning. Projects such as the rehabilitation of Le Corbusier’s buildings or the restoration of Bauhaus structures seek to preserve the balance between material conservation and living continuity.

Finally, the evaluation of modern heritage on the UNESCO list demonstrates the growing recognition of global cultural equity. By including sites from Africa, Latin America, and Asia alongside European and North American examples, UNESCO affirms that the modern movement was a worldwide phenomenon shaped by multiple voices. This inclusivity aligns with the broader mission of world heritage: to safeguard the shared cultural expressions of humanity, transcending regional or ideological boundaries.

In conclusion, the assessment of modern heritage within the UNESCO framework reveals not only the architectural brilliance of the 20th century but also its enduring social and cultural significance. Modern architecture once a symbol of rupture has become a medium of memory. Its preservation requires a

new ethical approach that values change, diversity, and adaptation as much as material authenticity. The UNESCO-listed modern sites thus stand as living testimonies to humanity’s creative optimism, technological ambition, and ongoing dialogue between past and future.

Category	Description
Chronology	Most modern heritage sites were built between the early and mid-20th century, representing the emergence and globalization of the modern movement in architecture and urban design.
Architectural Style	They typically follow Modernism or the International Style, emphasizing functionalism, geometric clarity, and the use of industrial materials such as steel, glass, and reinforced concrete.
Design Philosophy	Based on the principle of “form follows function,” these sites embody ideals of social progress, efficiency, and the belief that architecture can improve human life.
Materials and Technology	Characterized by innovative use of reinforced concrete, steel frames, and prefabrication methods, demonstrating the integration of engineering and aesthetics.
Integration with Context	Adapt modern design principles to local climates, landscapes, and cultural traditions, resulting in distinct regional variations of modernism.
Social and Urban Function	Extending beyond aesthetics to address social needs such as housing, industrial efficiency, cultural identity, and urban reform.
Cultural Significance	Represent milestones of innovation, modernization, and optimism during the industrial and post-industrial eras of the 20th century.
Aesthetic Values	Emphasize simplicity, light, openness, and proportional balance, rejecting ornamentation in favor of pure architectural expression.
Global Distribution	Found on every inhabited continent, reflecting the worldwide diffusion of modernist ideas through education, colonial networks, and technological exchange.
UNESCO Criteria	Typically recognized under Criteria (ii) and (iv), highlighting their contribution to the exchange of ideas and their representation of an important architectural typology.
Conservation Challenges	Require specialized preservation techniques due to the aging of modern materials, environmental exposure, and urban development pressures.
Adaptive Reuse	Many have been successfully repurposed into museums, cultural institutions, or public venues, ensuring the continuity of their cultural value.
Symbolic Meaning	Stand as symbols of 20th-century modernity, technological optimism, and the human capacity to shape a better, rational world through design.
Heritage Shift	Illustrate the transformation of heritage concepts, recognizing that modern and industrial architecture can hold the same cultural value as ancient monuments.

8. Conclusion: Modern Heritage as a Living Legacy of the Twentieth Century

The inscription of modern architectural and urban works on the UNESCO World Heritage List marks a crucial evolution in the understanding of heritage. Unlike traditional monuments rooted in antiquity or the medieval past, modern heritage celebrates the architectural imagination of the twentieth century, a period defined by industrialization, technological innovation, social transformation, and the global exchange of ideas. The fifteen sites discussed in this chapter illustrate how modernism transcended its Eurocentric origins to become a worldwide language of progress and identity, adapting to distinct social, political, and climatic contexts.

From the residential sophistication of Villa Tugendhat to the industrial clarity of the Fagus Factory, early modern heritage sites express faith in human rationality and the transformative power of technology. The Bauhaus, Le Corbusier's transnational works, and the Van Nelle Factory demonstrate that modernism was never monolithic; rather, it was a set of evolving principles—functionality, structural honesty, and social responsibility—that responded to the modern condition. These buildings signified not only aesthetic innovation but also new ways of living and producing.

As the movement spread beyond Europe, it took on diverse regional interpretations. In Kaunas and Mumbai, modernism merged with local materials and cultural aspirations; in Pamplona and Brasília, it became a tool of nation-building and social utopia; and in Asmara, it became a testament to colonial entanglements and postcolonial redefinition. The Sydney Opera House exemplifies the late flowering of modernism's sculptural imagination, transforming engineering into poetic form. Each of these cases underscores how the "modern" is no longer merely

contemporary but has become a subject of memory and preservation.

The recognition of modern heritage by UNESCO also reveals a shift in conservation philosophy. Protecting glass, steel, and reinforced concrete requires new technical approaches and ethical frameworks. The challenge lies not only in restoring material authenticity but also in preserving the spirit of innovation that these structures embody. Unlike ancient ruins, modern buildings were conceived as symbols of progress, movement, and change. Thus, their preservation must reconcile continuity with adaptability, ensuring they remain relevant to contemporary life.

Ultimately, modern heritage is more than a catalog of buildings, it is a narrative of humanity's twentieth-century optimism and its contradictions. It reflects a period when architecture sought to reform society through design, merging art and technology into a unified vision of the future. Today, these works stand as both historical documents and living laboratories, reminding us that the values of modernism clarity, social engagement, and creative freedom remain urgent in the face of new global challenges.

The UNESCO recognition of modern architecture invites us to view the recent past as heritage in its own right. It calls for inclusive and forward-looking conservation strategies that honor the modern spirit of experimentation. In doing so, we acknowledge that the legacy of modernism is not frozen in time but continues to inspire the architecture and urbanism of the twenty first century bridging innovation and memory, modernity and tradition.

Resources

- Bandarin, F., & van Oers, R. (2012). *The historic urban landscape: Managing heritage in an urban century*. Hoboken, NJ: Wiley-Blackwell.
- Banham, R. (1960). *Theory and design in the first machine age*. London: Architectural Press.
- Banham, R. (1966). *The new brutalism: Ethic or aesthetic?* London: Architectural Press.
- Banham, R. (1980). *Theory and design in the first machine age*. Cambridge, MA: MIT Press.
- Benevolo, L. (1971). *History of modern architecture: The tradition of modern architecture* (Vol. 1). Cambridge, MA: MIT Press.
- Benton, T. (2007). *The villas of Le Corbusier and Pierre Jeanneret, 1920–1930*. New Haven, CT: Yale University Press.
- Bergdoll, B. (2000). *European architecture 1750–1890*. Oxford: Oxford University Press.
- Berman, M. (1982). *All that is solid melts into air: The experience of modernity*. New York: Simon & Schuster.
- Birol, F. (1996). *Sanat akımları ve mimarlıkta modernizm*. İstanbul: Yapı Kredi Yayınları.
- Blotkamp, C. (1993). *Mondrian: The art of destruction*. London: Reaktion Books.
- Budreikaitė, L. (2021). *Modernism in Lithuania: Architecture of optimism*. Vilnius: Vilnius University Press.

- Choay, F. (2001). *The invention of the historic monument*. Cambridge: Cambridge University Press.
- Colquhoun, A. (2002). *Modern architecture*. Oxford: Oxford University Press.
- Cumming, E., & Kaplan, W. (1991). *The arts and crafts movement*. London: Thames & Hudson.
- Curtis, W. J. R. (1996). *Modern architecture since 1900* (3rd ed.). London: Phaidon Press.
- Denison, E., Guida, A., & Paoletti, I. (2003). *Asmara: Africa's secret modernist city*. London: Merrell Publishers.
- DOCOMOMO International. (1990). *DOCOMOMO International charter for the documentation and conservation of buildings, sites and neighborhoods of the modern movement*.
- Droste, M. (2002). *Bauhaus 1919–1933*. Cologne: Taschen.
- Forty, A. (2000). *Words and buildings: A vocabulary of modern architecture*. London: Thames & Hudson.
- Frampton, K. (2020). *Modern architecture: A critical history* (5th ed.). London: Thames & Hudson.
- Gabo, N. (1920/1971). *The constructivist art of space*. London: Tate Publishing.
- Gabo, N., & Pevsner, A. (1920). *The realist manifesto*. Moscow: VKhUTEMAS Publications.
- Giedion, S. (1941). *Space, time and architecture: The growth of a new tradition*. Cambridge, MA: Harvard University Press.

- Glendinning, M. (2013). *The conservation movement: A history of architectural preservation*. London: Routledge.
- Greenhalgh, P. (2000). *Art Nouveau 1890–1914*. London: V&A Publications.
- Greenough, H. (1843). *American architecture*. Cambridge, MA: Harvard University Press.
- Habermas, J. (1987). *The philosophical discourse of modernity: Twelve lectures*. Cambridge, MA: MIT Press.
- Harvey, D. (1990). *The condition of postmodernity: An enquiry into the origins of cultural change*. Oxford: Blackwell.
- Hasol, D. (1998). *Mimarlık sözlüğü*. İstanbul: Yapı-Endüstri Merkezi Yayınları.
- Hitchcock, H. R., & Johnson, P. (1932). *The international style: Architecture since 1922*. New York: W. W. Norton & Company.
- Holston, J. (1989). *The modernist city: An anthropological critique of Brasília*. Chicago: University of Chicago Press.
- Jencks, C. (1977). *The language of post-modern architecture*. New York: Rizzoli.
- Jencks, C. (2000). *Modern movements in architecture*. London: Penguin Books.
- Lang, J., Desai, M., & Desai, M. (1997). *Architecture and independence: The search for identity—India 1880 to 1980*. Oxford: Oxford University Press.

- Le Corbusier, & Ozenfant, A. (1918/1995). *Après le cubisme*. Paris: Éditions G. Crès.
- Levine, N. (1996). *The architecture of Frank Lloyd Wright*. Princeton, NJ: Princeton University Press.
- Loos, A. (1982). *Ornament and crime: Selected essays* (A. Opel, Ed.). Riverside, CA: Ariadne Press. (Original work published 1908)
- Macdonald, S. (2013). *Memorylands: Heritage and identity in Europe today*. London: Routledge.
- Marinetti, F. T. (1909/2009). The founding and manifesto of futurism. In L. Rainey, C. Poggi, & L. Wittman (Eds.), *Futurism: An anthology* (pp. 49–53). New Haven, CT: Yale University Press.
- Mondrian, P. (1920/1986). The new plastic in painting. In H. Holtzman & M. S. James (Eds.), *The new art—The new life: The collected writings of Piet Mondrian* (pp. 37–45). Boston, MA: G. K. Hall.
- Morris, W. (1999). *Hopes and fears for art*. London: Routledge/Thoemmes Press. (Original work published 1882)
- Mumford, E. (2000). *The CIAM discourse on urbanism, 1928–1960*. Cambridge, MA: MIT Press.
- Naylor, G. (1971). *The arts and crafts movement: A study of its sources, ideals, and influence on design theory*. London: Studio Vista.
- Niemeyer, O. (1998). *The curves of time: The memoirs of Oscar Niemeyer*. London: Phaidon Press.

- Paperny, V. (2002). *Architecture in the age of revolution: Constructivism and Soviet modernism*. London: Thames & Hudson.
- Ruskin, J. (1907). *The stones of Venice* (Vols. 1–3). London: George Allen.
- Sant’Elia, A. (1914/1988). Manifesto of futurist architecture. In U. Apollonio (Ed.), *Futurist manifestos* (pp. 160–162). London: Thames & Hudson.
- Schulze, F. (1990). *German architecture of the 20th century*. New York: Prestel.
- Sullivan, L. (1896/1956). The tall office building artistically considered. In I. A. Richards (Ed.), *Form and function: A source book for the history of architecture* (pp. 151–159). New York: Dover Publications.
- UNESCO World Heritage Centre. (1987). *Brasilia*. <https://whc.unesco.org/en/list/445/>
- UNESCO World Heritage Centre. (1996). *Bauhaus and its Sites in Weimar and Dessau*. <https://whc.unesco.org/en/list/729/>
- UNESCO World Heritage Centre. (2001). *Villa Tugendhat*. <https://whc.unesco.org/en/list/1052/>
- UNESCO World Heritage Centre. (2006). *Centennial Hall in Wrocław*. <https://whc.unesco.org/en/list/1169/>
- UNESCO World Heritage Centre. (2007). *Sydney Opera House*. <https://whc.unesco.org/en/list/166/>
- UNESCO World Heritage Centre. (2008). *Berlin Modernism Housing Estates*. <https://whc.unesco.org/en/list/1239/>

- UNESCO World Heritage Centre. (2011). *Fagus Factory in Alfeld*. <https://whc.unesco.org/en/list/1368/>
- UNESCO World Heritage Centre. (2014). *Van Nellefabriek*. <https://whc.unesco.org/en/list/1441/>
- UNESCO World Heritage Centre. (2016a). *Villa Le Lac Le Corbusier*. <https://whc.unesco.org/en/list/1321/>
- UNESCO World Heritage Centre. (2016b). *The Architectural Work of Le Corbusier: An Outstanding Contribution to the Modern Movement*. <https://whc.unesco.org/en/list/1321rev/>
- UNESCO World Heritage Centre. (2016c). *Pampulha Modern Ensemble*. <https://whc.unesco.org/en/list/1493/>
- UNESCO World Heritage Centre. (2017). *Asmara: A Modernist African City*. <https://whc.unesco.org/en/list/1550/>
- UNESCO World Heritage Centre. (2018). *Victorian Gothic and Art Deco Ensembles of Mumbai*. <https://whc.unesco.org/en/list/1480/>
- UNESCO World Heritage Centre. (2019). *The 20th-Century Architecture of Frank Lloyd Wright*. <https://whc.unesco.org/en/list/1496/>
- UNESCO World Heritage Centre. (2023). *Modernist Kanas: Architecture of Optimism, 1919–1939*. <https://whc.unesco.org/en/list/1661/>
- Yıldırım, A. (2010). *Modernizm ve toplumsal değişim*. Ankara: Ütopya Yayınevi.

Zevi, B. (1957). *Architecture as space: How to look at architecture*. New York: Horizon Press.