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현대 건축의 관점에서 바라본 '공간, 시간, 건축'의 재해석에 관한 연구

What Would Giedion Do?:
A Different Perspective on Space, Time, and Architecture

2012年 8月

서울대학교 대학원

건축학과

이 민 우

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이 논문을 공학석사 학위논문으로 제출함 2012년 8월

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What Would Giedion Do?: A Different Perspective on Space, Time, and Architecture

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Siegfried Giedion's *Space, Time, and Architecture* gives useful insights into the background and cultural context of modern architecture and urban planning through the author's establishment of a new 'space-time' concept. Though its significance lies in the introduction of a new concept of time, in light of the advancements in virtual space and time in this digital age, debate continues as to whether the so-called fourth dimension is applicable today.

By extracting and analyzing core themes from *Space, Time, and Architecture*, this research aims to envisage how the book can be revised appropriate to inform the development of digital design and technology in architecture today. Through the analysis of the key themes of his book, this study shows that despite the apparent criticism regarding Giedion's 'space-time' conception, some of the themes can still inform a new understanding of the 'space-time' concept that is relevant today.

Through a literature review of the varying critiques of Giedion's Space, Time and

Architecture and development of digital technologies to architectural practice and

the new understanding of 'space-time' concept, the thesis identifies the appropriate

persistence of a number of overarching themes informing architectural practice.

With the themes 'Thinking and Feeling', 'Spirit of the Age', 'Constituent Fact'

comprising Giedion's underlying synthesis in creating a new tradition, this study

seeks to integrate them into contemporary discussions to identify a shift in

space-time consideration in the digital age.

In substantiating its claim the study conducts case studies on projects that have

been specifically designed to extend and amplify the concept of transformation in

movement which acts as a fundamental element speculating the established

conceptions of space-time. The works illustrate the theoretical claim and provide a

model for further practical exploitation. In so doing the thesis proposes a minor

synopsis of 21st CenturySpace, TimeandArchitecture that is a reflection of Giedion's

theory on space conception and its potential to be integrated with the

opportunities offered by the exploration of the digital medium.

Keywords: Space Time and Architecture, Sigfried Giedion,

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space-time, movement, digital age

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CHAPTER 1

Introduction

Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, Space, Time and Architecture addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

Moving on from Giedion's view of the modern era, recent times saw new computing technologies transforming many relationships in society through the way we consume, portray and produce space. During the 1980s, the transition from analogue devices to digital systems affected our lifestyles and professions in many ways. As the concept of the internet as a public utility and cyberspace grew through literature and film, designers began to experiment with the computer-aided drawing tools, and write about how architecture could contribute to a digital society. Consequently creative work and texts began to emerge and formed a critical practice that can be described as digital architecture. It is in this context that the research seeks to envisage how the space-time concept in

architecture has changed since the time of Sigfried Giedion.

This thesis aims to provide a different understanding of the space-time concept based on Sigfried Giedion's underlying synthesis on this 20th century space conception and thereby enhance further development of digital architecture. It seeks to extend a theoretical framework for the field through the integration of Giedion's approach to creating a 'new tradition' and the contemporary architectural precedents made possible through the development of digital technologies. The end result is to produce a minor synopsis for a revised *Space*, *Time and Architecture* relevant to the 21st century atmosphere.

The central hypothesis behind the research is that, despite the contemporary view of Giedion's aforementioned space conception as 'naïve' and that architecture has moved to even more refined ideas of space and time, fundamental themes extracted from the book plays a vital role in informing this change in space conception. It is the view of this research that the themes Giedion applied in informing modern architecture — in the realm of space-time concept as a constituent fact, offers a valid theoretical framework into which digital architecture can establish a fresh context and fully engage with the current society. In addition, by demonstrating that Giedion's themes do inform a new space-time concept in the 21st century through the notion of 'transformation of movement' evident in contemporary precedents, the research argues that digital architecture has the opportunity to remain a valuable adjunct to mainstream architecture.

Proceeding from a particular reading and use of the literatures, the thesis constructs a critical narrative to support the framework for the study that revolves around the application of a past theoretical model to the present conditions. As a consequence of this the second chapter revisits Sigfried Giedion's fifth and final edition to *Space*, *Time and Architecture*, describing briefly the history of modern

architecture in the eyes of Giedion through a literature review of the book and how the development of a new Space-Time concept came about at the beginning of the 20th century.

The third chapter conducts a critical analysis of the three themes emphasized by Giedion as being indispensable ideas in creating a new tradition. They also become the backbone of the study which is examined from a 21stcentury perspective in chapter four.

In light of the themes discussed in chapter three that enabled the development of a 'new tradition', namely the new space-time concept in the 20th century, the fourth chapter seeks to validate the three themes examined in the 21st century context to not only determine the applicability of 'Thinking and Feeling', 'Spirit of the Age', and 'Constituent Facts', but to envisage how the space-time concept has evolved through the developments of digital technology.

It is the issue of the fourth chapter to investigate the integration of digital technologies into architectural design and the influence it has on the changing space-time concept. It is the argument of this study that the developments in 21st century space-time concept are still strongly grounded in the three themes informed by Giedion in *Space, Time and Architecture*.

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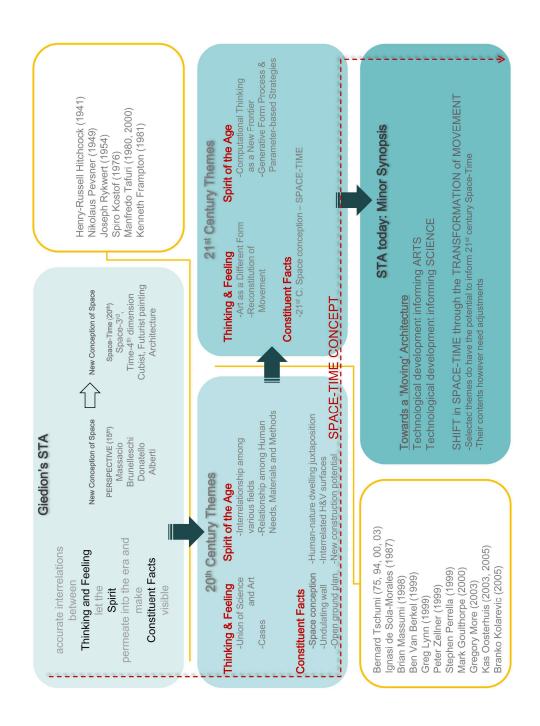


Figure 1. Flow chart of the study

CHAPTER 2

Giedion and the Space-Time Concept

2.1 Background: Space, Time and Architecture

Sigfried Giedion's book *Space, Time, and Architecture* was first published in 1941 in the United States. Since its first edition, four more were added in 1949, 1964, 1962, and 1967, with the inclusion of 76 new headings, 359 pages and 210 illustrations. In was not in the interest of Giedion to interfere with the existing nature of the book. Rather, he added on new topics in accordance with the developments made in architecture since the first edition.

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¹ ibid., p.378

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2.2 Space-Time and its Development

'The relationship in the Gothic period was the relationship of formerly closed volumes. Today we are moving toward a more dynamic conception of space created by solids and voids'²

Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, Space, Time and Architecture addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

2.2.1. Before the 20th Century Space-Time Conception

Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for

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² ibid., p.532

modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity

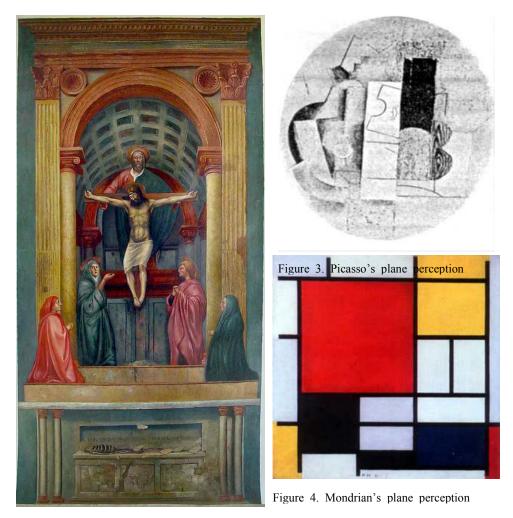


Figure 2. Masaccio's Fresco of Trinity

Space, Time and Architecture – The

Growth of A New Tradition written by an architectural historian Sigfried Giedion

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Moving on from Giedion's view of the modern era, recent times saw new computing technologies transforming many relationships in society through the way we consume, portray and produce space. During the 1980s, the transition from analogue devices to digital systems affected our lifestyles and professions in many ways. As the concept of the internet as a public utility and cyberspace grew through literature and film, designers began to experiment with the computer-aided drawing tools, and write about how architecture could contribute to a digital society. Consequently creative work and texts began to emerge and formed a critical practice that can be described as digital architecture. It is in this context that the research seeks to envisage how the space-time concept in architecture has changed since the time of Sigfried Giedion.

This thesis aims to provide a different understanding of the space-time concept based on Sigfried Giedion's underlying synthesis on this 20th century space conception and thereby enhance further development of digital architecture. It seeks to extend a theoretical framework for the field through the integration of

Giedion's approach to creating a 'new tradition' and the contemporary architectural precedents made possible through the development of digital technologies. The end result is to produce a minor synopsis for a revised *Space*, *Time and Architecture* relevant to the 21st century atmosphere.

The central hypothesis behind the research is that, despite the contemporary view of Giedion's aforementioned space conception as 'naïve' and that architecture has moved to even more refined ideas of space and time, fundamental themes extracted from the book plays a vital role in informing this change in space conception. It is the view of this research that the themes Giedion applied in informing modern architecture — in the realm of space-time concept as a constituent fact, offers a valid theoretical framework into which digital architecture can establish a fresh context and fully engage with the current society. In addition, by demonstrating that Giedion's themes do inform a new space-time concept in the 21st century through the notion of 'transformation of movement' evident in contemporary precedents, the research argues that digital architecture has the opportunity to remain a valuable adjunct to mainstream architecture.

Proceeding from a particular reading and use of the literatures, the thesis constructs a critical narrative to support the framework for the study that revolves around the application of a past theoretical model to the present conditions. As a consequence of this the second chapter revisits Sigfried Giedion's fifth and final edition to *Space*, *Time and Architecture*, describing briefly the history of modern architecture in the eyes of Giedion through a literature review of the book and how the development of a new Space-Time concept came about at the beginning of the 20th century.

Space, Time and Architecture - The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for



Figure 5. Versailles Palace, Louis Le Vau and Jules Hardouin-Mansard. Paris, 1661-1708 modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, *Space, Time and Architecture* addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

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2.2.2 Art and the New Space-Time Conception

Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, Space, Time and Architecture addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

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from analogue devices to digital systems affected our lifestyles and professions in many ways. As the concept of the internet as a public utility and cyberspace grew through literature and film, designers began to experiment with the computer-aided drawing tools, and write about how architecture could contribute to a digital society. Consequently creative work and texts began to emerge and formed a critical practice that can be described as digital architecture. It is in this context that the research seeks to envisage how the space-time concept in architecture has changed since the time of Sigfried Giedion.

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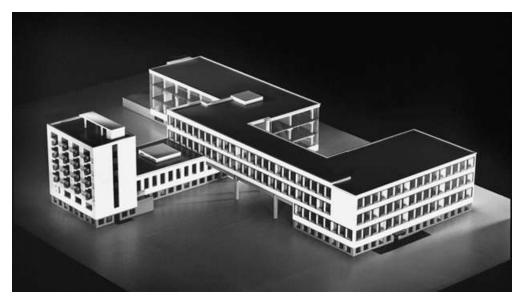


Figure 6. Bauhaus building in Dessau in 1926 Proceeding from a particular reading and use of the literatures, the thesis constructs a critical narrative to support the framework for the study that revolves around the application of a past theoretical model to the present conditions. As a consequence of this the second chapter revisits Sigfried Giedion's fifth and final edition to *Space*, *Time and Architecture*, describing briefly the history of modern architecture in the eyes of Giedion through a literature review of the book and

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³ ibid., p.6

CHAPTER 3

Space-Time and its Underlying Themes

It seeks to extend a theoretical framework for the field through the integration of Giedion's approach to creating a 'new tradition' and the contemporary architectural precedents made possible through the development of digital technologies. *Space, Time and Architecture – The Growth of A New Tradition* written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture.⁴. It seeks to extend a theoretical framework for the field through the integration of Giedion's approach to creating a 'new tradition' and the contemporary architectural precedents made possible through the development of digital technologies. *Space, Time and Architecture*.⁵; It seeks to extend a theoretical framework for the field through the integration of Giedion's approach to creating a 'new tradition' and the contemporary architectural precedents made possible through the development of digital technologies.

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⁴ Sigfried Giedion. Walter Gropius. (New York: Dover Publications Inc, 1992) Originally published Walter Gropius: Work and Teamwork. (New York: The Reinhold Publishing Corp., 1954)

⁵ ibid., p.7

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⁷ ibid., p.7

⁸ ibid., p.39

⁹ Giedion: 1967, p.505

3.1 Thinking and Feeling

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3.1.1 Need for Union in Art and Sciences

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3.1.2 Cases

It seeks to extend a theoretical framework for the field through the integration of Giedion's approach to creating a 'new tradition' and the contemporary

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²⁰ ibid., p.39

²¹ Giedion: 1967, p.505

²² Thomas R. Fisher. *In the Scheme of Things: Alternative Thinking on the Practice of Architecture.* (Minneapolis: University of Minnesota Press, 2000). p 70.

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Figure 7. Fagus Factory of Gropius designed in 1911

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²⁷ ibid., p.61-65

in the fields of science and art at the start of the twentieth century.

'Architecture is the art above all others which achieves a state of platonic grandeur, mathematical order, speculation, the perception of the harmony which lies in emotional relationships' 28

3.2 Spirit of the Age

'Only when he (the historian) is permeated by the spirit of his own time is he prepared to detect those tracts of the past which previous generations have overlooked'²⁹

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3.2.1 Interrelationship among Various Fields

The spirit of the age is responsible for the construction of the interrelationships

²⁸ Sigfried Giedion, "Le Corbusier in Genf", Neue Zürcher Zeitung no.1403, 27 July 1932, p.102-103

²⁹ ibid., p.5

among various fields, such as science -including physics, mathematics-, technology, philosophy, art, architecture, town planning, and naturally, history. This thesis aims to provide a different understanding of the space-time concept based on Sigfried Giedion's underlying synthesis on this 20th century space conception and thereby enhance further development of digital architecture. It seeks to extend a theoretical framework for the field through the integration of Giedion's approach to creating a 'new tradition' and the contemporary architectural precedents made possible through the development of digital technologies. Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, Space, Time and Architecture addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

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3.2.2 Relationship Among Human Needs, Materials and Methods

Giedion deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, *Space, Time and Architecture* addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

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3.3 Constituent Facts

Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, *Space, Time and Architecture* addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

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3.3.1 Cases

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Figure 8. Lantern of Sant' Ivo, Francesco Borromini. Rome, 1642-62

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3.4 Discussion

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CHAPTER 4

21st Century Space, Time, and Architecture: A Synopsis

4.1 Introduction

Moving on from Giedion's view of the modern era, recent times saw new computing technologies transforming many relationships in society through the way we consume, portray and produce space. During the 1980s, the transition from analogue devices to digital systems affected our lifestyles and professions in many ways. As the concept of the internet as a public utility and cyberspace grew through literature and film, designers began to experiment with the computer-aided drawing tools, and write about how architecture could contribute to a digital society. Consequently creative work and texts began to emerge and formed a critical practice that can be described as digital architecture. It is in this context that the research seeks to envisage how the space-time concept in architecture has changed since the time of Sigfried Giedion. It is in this context that the research seeks to envisage how the space-time concept in architecture has changed since the time of Sigfried Giedion.

4.1.1 Post-Giedion 20th Century

The impact of post-modernism upon architecture's relationship with science is discussed here, with the ultimate breakdown once again in the realm of thinking and feeling. It describes the *Space, Time and Architecture – The Growth of A New Tradition* written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special

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Figure 9. Post-modern was an era when architects had been discredited from their involvement in science and technology, notoriously represented through Prince Charles' humiliation of Richard Rogers' proposal for the 1984 extension to the National Gallery as a 'monstrous carbuncle'

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4.1.2 Space-Time in Contemporary Digital Design

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The central hypothesis behind the research is that, despite the contemporary view of Giedion's aforementioned space conception as 'naïve' and that architecture has moved to even more refined ideas of space and time, fundamental themes extracted from the book plays a vital role in informing this change in space conception. It is the view of this research that the themes Giedion applied in informing modern architecture — in the realm of space-time concept as a constituent fact, offers a valid theoretical framework into which digital architecture can establish a fresh context and fully engage with the current society. In addition, by demonstrating that Giedion's themes do inform a new space-time concept in the 21st century through the notion of 'transformation of movement' evident in contemporary precedents, the research argues that digital architecture has the opportunity to remain a valuable adjunct to mainstream architecture.

Proceeding from a particular reading and use of the literatures, the thesis constructs a critical narrative to support the framework for the study that revolves around the application of a past theoretical model to the present conditions. As a consequence of this the second chapter revisits Sigfried Giedion's fifth and final edition to *Space*, *Time and Architecture*, describing briefly the history of modern architecture in the eyes of Giedion through a literature review of the book and how the development of a new Space-Time concept came about at the beginning of the 20th century.

The third chapter conducts a critical analysis of the three themes emphasized by

Giedion as being indispensable ideas in creating a new tradition. They also become the backbone of the study which is examined from a 21st century perspective in chapter four.

In light of the themes discussed in chapter three that enabled the development of a 'new tradition', namely the new space-time concept in the 20th century, the fourth chapter seeks to validate the three themes examined in the 21st century context to not only determine the applicability of 'Thinking and Feeling', 'Spirit of the Age', and 'Constituent Facts', but to envisage how the space-time concept has evolved through the developments of digital technology.

It is the issue of the fourth chapter to investigate the integration of digital technologies into architectural design and the influence it has on the changing space-time concept. It is the argument of this study that the developments in 21st century space-time concept are still strongly grounded in the three themes informed by Giedion in *Space*, *Time and Architecture*.

Primarily, generation of architectural design by digital tools defines a detachment from the conventional design process. Rather as a tool for existing approaches to design, computational design is considered as a field accelerating another mode of architectural thinking. As Bernard Tschumi declares "by the unprecedented integration of computer tools in design studios, digital technology was conceptualized as a mode of thinking about architecture, rather than a simple drafting machine."³⁰

4.2 Unity in Thinking and Feeling Today

Moving on from Giedion's view of the modern era, recent times saw new

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³⁰ Bernard Tschumi, "Introduction", in INDEX Architecture, Bernard Tschumi and Matthew Berman Ed., Cambridge, London: The MIT Press, 2003, p. 66

computing technologies transforming many relationships in society through the way we consume, portray and produce space. During the 1980s, the transition from analogue devices to digital systems affected our lifestyles and professions in many ways. As the concept of the internet as a public utility and cyberspace grew through literature and film, designers began to experiment with the computer-aided drawing tools, and write about how architecture could contribute to a digital society. Consequently creative work and texts began to emerge and formed a critical practice that can be described as digital architecture. It is in this context that the research seeks to envisage how the space-time concept in architecture has changed since the time of Sigfried Giedion.

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4.2.1 Union of Art and Science through Reconstitution of Movement in

the 21st Century

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4.3 Spirit of the Age Today

4.3.1 Computational Thinking as a New Frontier

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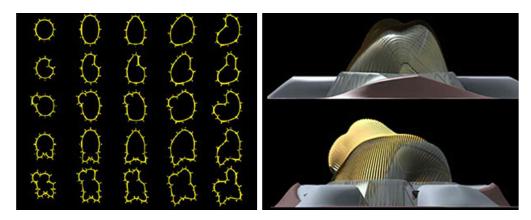


Figure 10. Embryologic House, Greg Lynn, 1998

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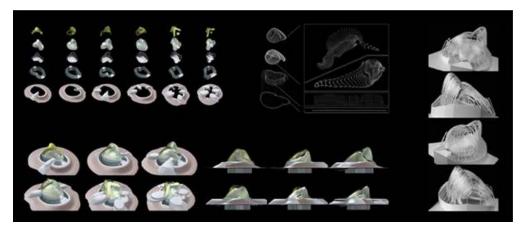


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4.3.2 Generative Form Process & Parameter-based Strategies

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4.3.3 Cases

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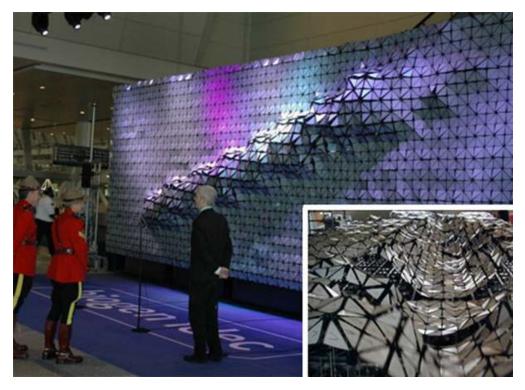


Figure 12. Aegis Hyposurface by dECOi, 1999

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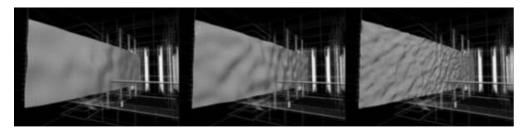


Figure 13. Visual progression of the surface movement

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4.4.1 Towards a 'Moving' Architecture

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Figure 14. The interior of the Salt Water Pavilion, by Kas Oosterhuis

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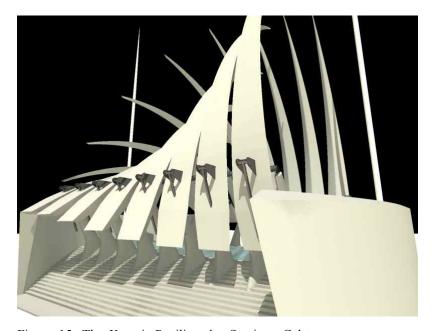


Figure 15. The Kuwait Pavilion, by Santiago Calatrava

e.³¹ Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for

modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time.

31 Bernard Tschumi, "Introduction", in INDEX Architecture, Bernard Tschumi and Matthew Berman Ed., Cambridge, London: The MIT Press, 2003, p. 66

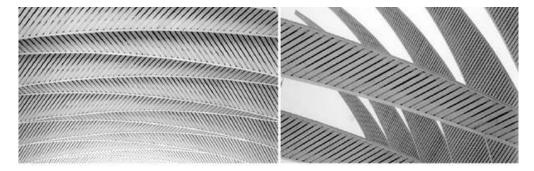


Figure 16. The Kuwait Pavilion, by Santiago Calatrava Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture by describing how architecture coming into the twentieth century created a new tradition by responding to the social conditions of its time. The bionic principle of the lamellas produce a consistent effect: Geometry, material, movement and light are seamlessly interrelated.



Figure 17. Yeosu Thematic Pavilion 2012

After sunset the analogue visual effect of the moving lamellas is intensified by linear LED. Different to the conventional media façade, light effect as an intensification of the movement of the lamellas at night is stressed in this project. The generation of responsive, interactive spaces that the architectural form is mutable, dynamic and evolving does not only an aid to respond the needs of the

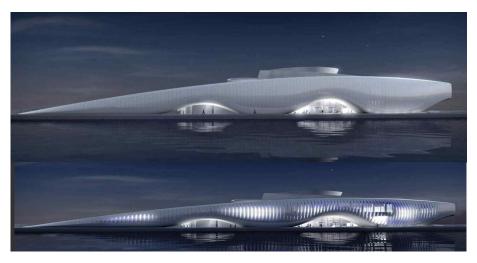


Figure 18. Movement of the lamellas at the Thematic Pavilion, Yeosu, Korea occupant or the visitor. In other words the intelligent architecture -or more specifically smart houses- are generated by some determinant purposes that will act due to some requirements, such as security needs or any other efficiency in

the built environment. The observed projects in this chapter can be observed as much more reliant on an experimental search of architects, which focuses on the unordinary considerations of space and time experiences.

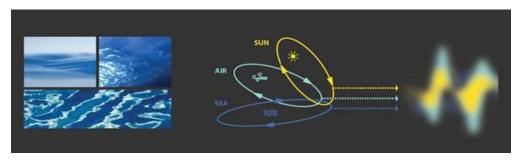


Figure 19. Movement according to the weather conditions

4.5 A Different Perspective on Space, Time, and Architecture

Space, Time and Architecture – The Growth of A New Tradition written by an architectural historian Sigfried Giedion provides a theoretical groundwork for modern architecture by describing how architecture coming into the twentieth

century created a new tradition by responding to the social conditions of its time. Giedion argues for the existence of an identity of methods in the fields of science and art at the start of the twentieth century, and thereby deduces a substantive linkage between the scientific notions of Special Theory of Relativity with the space-time conception developed in the field of art through simultaneity and movement represented in Cubist and Futurist paintings. With the author's assertion that art and architecture from the early twentieth century embodies a new space conception termed, space-time, *Space, Time and Architecture* addresses the new experience of space-time as assuming the form of multiplicity, fragmentation, an open system free from universal continuity recognizing the sovereignty of an individual's frame of view.

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architectural precedents made possible through the development of digital technologies. The end result is to produce a minor synopsis for a revised *Space*, *Time and Architecture* relevant to the 21st century atmosphere.

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4.5.1 Movement in the Eyes of Giedion

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Architects, throughout the history, considered the idea of movement as the travel of the moving eye in space, as a fact to be conceived in the built environment,

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Bernard Tschumi, "Introduction", in INDEX Architecture, Bernard Tschumi and Matthew Berman Ed., Cambridge, London: The MIT Press, 2003, p. 66



Figure 20. Bottle Evolving in Space: Boccioni 1912



Figure 21. Walking Dog: Balla 1913

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CHAPTER 5

Conclusion

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Based on such background study, this research sought to engage with the three themes deemed important to Giedion in producing a new space-time concept. Though the notion of movement in Futurism was not strongly emphasized by Giedion, contemporary discussion in light of the developments in the digital technology are emphasizing the notion of reconstitution of movement as a way of informing a new space-time concept that is relevant today.

The essential basis upon which this study is based is in line with Harris's argument that discrepancies of temporal and spatial ideas between sound and image come together through movement. The innate differences in space and time were brought together in the concept of 'space-time' at the start of the 20thcentury. Giedion's Space, Time and Architecture and Einstein's Special Theory of Relativity prove that a close link exists between an individual perception of space and time which therefore cannot be regarded as detached entities. This study examined Harris's assertion that movement today engages with both space and time, as do music, visual arts and architecture, particularly when related to the perception of an individual. Whereas the Renaissance representation of three dimensional space used the two dimensional technique of perspective which centers on a fixed, immovable point, the contemporary realization of space rests on the individual experience of space and time, or space described by what moves within it rather than by its physical characteristics. The attitude to space becomes a place where a viewer can explore and create their own individual experiences, essentially an open structure where the audience 'interacts' with the space.

As well as other fields of discussions inaugurated, the framework suggested by

Bernard Tschumi, "Introduction", in INDEX Architecture, Bernard Tschumi and Matthew Berman Ed., Cambridge, London: The MIT Press, 2003, p. 66

this thesis can serve as a tool to interpret design approaches of other projects. As every project develops different ways for its realization in physical environment, the process of applying the understandings behind the creation of Giedion's 20th century space-time concept has the potential to enhance the new digital conceptual fields.

This thesis has examined the underlying principles behind Sigfried Giedion's space-time conception to see its validity in informing the digital design process and spatial qualities offered thereby. Application of the three fundamental themes to the contemporary discussions has shown that the ideas of 'Thinking and Feeling, 'Spirit of the Age', and 'Constituent Facts' have potentials to raise new discursive fields for architecture, which will in turn contribute to architectural discourse by speculating the very fundamental assumptions of space and time.

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국문초록

현대 건축의 관점에서 바라본 '공간, 시간, 건축' 의 재해석에 관한 연구

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Siegfried Giedion 의 '공간, 시간과 건축'은 건축에서 시간 요소를 도입하여 새로운 공간 개념인 '시공간'으로 근대건축을 해석하였다는 것에 의의를 가진다. 본 연구의 특징은, Giedion 의 '공간, 시간과 건축'의 핵심 주제의 추출과 분석, 현재 디지털 시대의 건축 사례분석을 통해 오늘날 '공간, 시간과 건축'이 어떻게 보완될 수 있는지를 살펴보는 것이다.

Giedion의 시공간 개념은 과거에 논의 되었던 만큼 최근 디지털 시대에 적합하지 않다는 부정적인 평가를 받기도 한다. 하지만 핵심 주제 및 사례 분석을 통해서 몇 가지 주 핵심 주제에 있어서는 현 시대에 적합한 타당성을확인할 수 있었다. 이러한 관점에서 본 연구는 현 디지털 시대의 사회상에 맞추어 시공간과 관련한 새로운 주제를 도출하고 기존의 '공간, 시간과 건축'을 수정 보완하는데 목적이 있다.

본 연구의 특징은 문헌고찰을 통한 Giedion 의 '공간, 시간과 건축'의 핵심 주제들의 추출/분석, 그의 방법론/철학과 현재 디지털 시대의 사례들을 통해 오늘날 '공간, 시간과 건축'이 어떻게 보완될 수 있는지를 살펴보는 것이다. 따라서 20세기에 논의되었던 근대 건축물들과 21세기 건축물들을 연구대상으로 하고, 주제별로 비교분석하여 핵심 주제에 있어서 현 시대에 적합한타당성을 확인하는 것이다.