

การใช้เทคนิคของการ์ตูนเป็นเครื่องมือในการสร้างมโนภาพของสถาปัตยกรรม หลังเหตุผลนิยม

Comics: An Alternative Visualization Tool for Post-Rationalist Architecture

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Abstract

Representational tools are never just a neutral vehicle of communication. The postwar critique of modernist architecture and the emergence of certain strands of post-rationalist architecture that prioritized the aesthetic, socio-cultural and sensorial dimensions were accompanied by attempts by architects such as Alison and Peter Smithson and Nigel Coates to come up with alternative methods of architectural visualization that would correspond to their particular interests and directions. This paper traces their developments and then proposes the medium of comics as a way to document the specificity of the socio-cultural makeup of a place and to represent architecture that focuses on human perception and sensorial experiences. The paper focuses on three properties of comics: its sequential nature through the use of panels allowing for the element of time and therefore storytelling, the portrayal of characters and the graphical techniques that strive to render non-visual experiences visually. The architectural comics presented in this paper suggest that the medium has been employed and experimented with by contemporary architects, though works of a more poetical nature are still regarded as hobbies and beyond the boundary of professional practice. While narrative elements such as paneling and characterization have been handled effectively if somewhat straightforwardly, certain distinctive graphical techniques of comics remain little explored.

Keywords

Architectural Visualization

Comics

Post-Rationalist Architecture

บทคัดย่อ

เครื่องมือที่ถูกเลือกใช้ในการสร้างภาพเชิงสถาปัตยกรรมนั้นไม่เพียงแต่เป็นเครื่องมือในการสื่อสารแต่ยังส่งผลต่อแนวคิดและเนื้อหาของงาน ภายหลังสงครามโลกครั้งที่ 2 การวิพากษ์วิจารณ์สถาปัตยกรรมยุคสมัยใหม่และการเกิดขึ้นของแนวความคิดสถาปัตยกรรมหลังเหตุผลนิยมที่ให้ความสำคัญต่อสุนทรียศาสตร์ สังคมวัฒนธรรม และมีมิติด้านความรู้สึก ได้ก่อให้เกิดการสรรหาวิธีการสร้างมโนภาพเชิงสถาปัตยกรรมใหม่ ๆ เพื่อให้สอดคล้องกับความสนใจและทิศทางในการออกแบบของเหล่าสถาปนิกเช่น Alison และ Peter Smithson และ Nigel Coates บทความนี้เล่าเรื่องราวของพัฒนาการเครื่องมือการสื่อสารที่เกิดขึ้น แล้วจึงเสนอการใช้รูปแบบของการ์ตูนเป็นเครื่องมือในการนำเสนอข้อมูลด้านสังคมและวัฒนธรรมของพื้นที่ต่าง ๆ และสถาปัตยกรรมที่ให้ความสำคัญกับการรับรู้ของมนุษย์และประสบการณ์ด้านความรู้สึก โดยการใช้คุณสมบัติของการ์ตูนสามอย่าง ได้แก่ (1) การเรียงลำดับของเนื้อหาผ่านการใช้ช่อง (panels) ที่แสดงถึงช่วงเวลาและนำไปสู่การเล่าเรื่อง (storytelling) (2) การใช้ตัวละคร และ (3) เทคนิคการใช้เส้นกราฟฟิคต่าง ๆ ที่สื่อให้เห็นถึงประสบการณ์ที่ไม่ได้ใช้สายตารับรู้ การ์ตูนโดยสถาปนิกร่วมสมัยที่ถูกนำเสนอในบทความนี้แสดงให้เห็นว่ามีสถาปนิกที่ใช้หรือเคยทดลองกับการใช้การ์ตูนในการคิดหรือนำเสนองาน แม้ว่าการวาดการ์ตูนเกี่ยวกับสถาปัตยกรรมที่เน้นเรื่องของอารมณ์และจินตนาการมักจะยังถูกมองเป็นงานอดิเรกที่อยู่นอกกรอบของวิชาชีพสถาปนิก และแม้ว่าองค์ประกอบในการเล่าเรื่องเช่นการใช้ช่องและตัวละครจะถูกนำมาใช้ได้อย่างมีประสิทธิภาพ ยังมีรูปแบบทางกราฟฟิคที่โดดเด่นบางอย่างของการ์ตูนที่ถูกมองข้ามไป

คำสำคัญ

การสร้างมโนภาพเชิงสถาปัตยกรรม

การ์ตูน

สถาปัตยกรรมหลังเหตุผลนิยม

1. Introduction

The drive to present architecture as a purely objective – or scientific – discipline has a long tradition, but was most pronounced during the early period of modern architecture when engineers were held up as the ideal figure for architects to emulate.¹ The challenge to this view started to emerge in the 1950s and 1960s when a generation of postwar architects began to question the rationalist-functionalist paradigm of modern architecture and to offer other, often sociological-driven, ideologies that were being fueled by their interest in the social sciences and later by continental philosophy such as phenomenology, to reflect their belief in the importance of the human dimension in architecture and urban design.

The aim of this paper is to trace how this shift towards a “post-rationalist architecture”² (Mallgrave, 2005) has been reflected in the tools of representation used by architects such as Alison and Peter Smithson³ and Nigel Coates,⁴ and then to propose additional techniques from the overlooked medium of comics that are able to denote and depict more subjective and non-visual experiences visually, in order to offer supplementary – and arguably more human-centered – readings of our built environment. The debate raised by postwar architects against the modernist tradition seems especially pertinent today with the digital turn in architecture in this century, when design may be generated from a set of technical parameters and increasingly architectural drawings and perspectives are generated from 3D modeling software and focusing on iconic form or building performance in a way that can reduce architecture to a technological object.

2. Towards a Post-Rationalist Architecture and Its Representation

Ever since the Renaissance and the invention of linear perspective, architectural drawings have retained a surprisingly stable form, with a set of

widely-accepted representational conventions that even today still include mainly plans, sections, elevations and perspectival renderings, at times supplemented by diagrams and axonometric drawings. Inherent within this set of conventions is a quantitative and object-centric explication of architecture and the built environment.

The axonometric, in particular, is a technique that was developed by military engineers in the 17th century that allows for correct measurement, as opposed to the unmeasurable space of the perspective (Ackerman, 2000). There is also no fixed view inherent in axonometry, the object is represented as if in infinite Cartesian space and not from the viewpoint of any particular spectator. According to Yves-Alain Bois (1981), though the technique is ancient, the modern revival of its popularity with architects began in 1923 at the height of modernism, when the properties of axonometry would appear to be perfectly aligned with the functionalist-rationalist ideology and machine aesthetics espoused by architects such as Le Corbusier.

One of the most illustrative instances of how the break in the modernist tradition was expressed by visual representation was Alison and Peter Smithson’s Urban Re-identification Grid, presented at the 9th Congr s International d’Architecture Moderne (CIAM) in 1953. Half a decade earlier at the end of CIAM 6 in 1947, ASCORAL⁵ – led by Le Corbusier – was tasked to come up with a graphic format for presenting and comparing urban projects. The group presented the CIAM Grid (Figure 1) at the next meeting in Bergamo in 1949; it is described by Volker Welter (2003) as “a graphic means of classification that was conceived with the two-fold intentions of making different urban realities and designs comparable as well as helping architects and town planners to master whatever difficulties a particular city posed.” The CIAM Grid reduced the complexity of cities by classifying them, on the vertical axis, according to the four functions of urbanism as stipulated by the Athens Charter: Dwelling, Working,

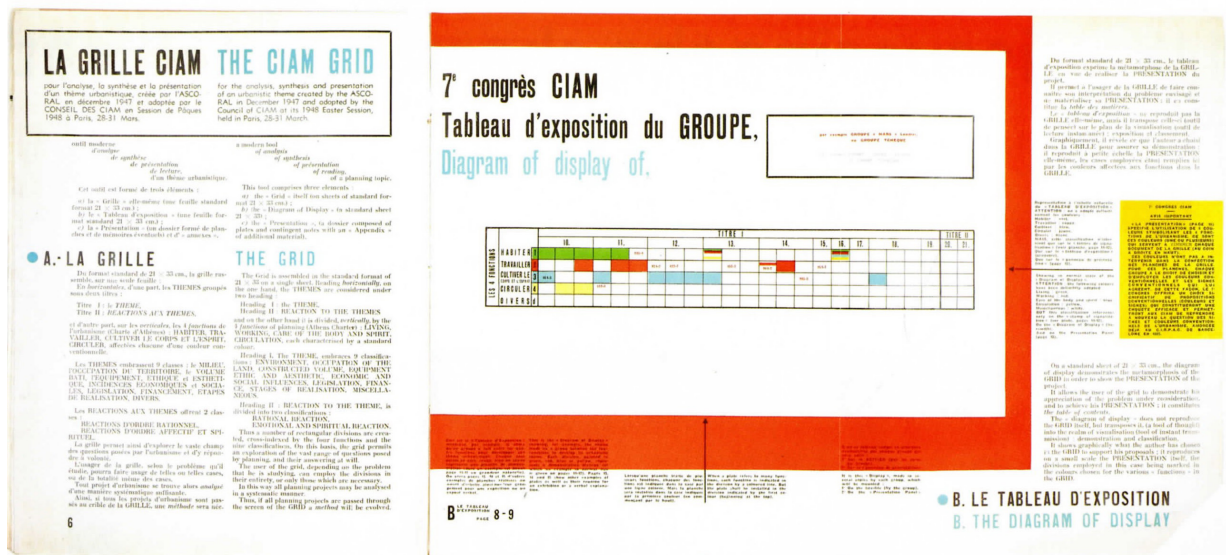


Figure 1. Instructions and examples of the CIAM Grid created by Le Corbusier and ASCORAL.

Cultivating the Body and the Mind, and Circulation (each with a color code to facilitate quick identification), to be analyzed against the horizontal axis that comprised 11 topics (such as Environment, Facilities, and Economic and Social Impact), which fall under the broader headings of Theme and Reactions to Theme.

The CIAM Grid's tabulation made possible the side-by-side systematic comparison of vastly different urban realities in a succinct graphical manner (while

the grid was expandable horizontally,⁶ it was fixed vertically), which was its goal, and can be seen as a manifestation of the rationalist attitude of the early masters of modern architecture. In their Urban Reidentification Grid (1953), the Smithsons challenged the functionalist perception of the city by displaying photographs of children playing on the streets of London⁷ and labeling the vertical columns under the headings of “house,” “street,” “district,” “city” and “relationship,” and left off specifying the y-axis

altogether, to express their conception of the city as the association and relationship of different scales, as opposed to an environment separated by functional zoning. The photographs, in particular, visualize the point that streets are not just a space for “circulation” (of vehicles) but are also places where people meet, mingle and make meaningful connections and relationships (Figure 2).

The use of such photographs as “data” followed a British tradition where “analysis based on visual observation is seen as equivalent, if not better to more statistical and factual ways of sociological enquiry” (Welter, 2003). The photographs of urban life were also a way for the Smithsons to argue for a “shift to the specific” against the tendency towards generalization and the tabula rasa approach of the previous generation of architects and urban planners. In effect, after the rush of postwar rebuilding and the spread of International Style modernist architecture, European architects were beginning to re-evaluate their cities in terms of their historical fabrics and national and local identities.

Another graphic technique used by the Smithsons was the imposition of photographic cutouts or hand-drawn sketches of people engaging in various activities into their section-perspectives in order to draw attention to the users who will inhabit the buildings.⁸ Showing buildings in use is something that is still lacking even today where architectural photography will often portray pristine spaces without a trace of human inhabitation.

3. Nigel Coates and the Body in Space

Another British architect who questioned and explored alternative modes of architectural representation was Nigel Coates, who studied under Bernard Tschumi at the Architectural Association (AA) in the 1970s before joining the latter to teach a studio unit together. In his works such as the *Manhattan Transcript*, Bernard Tschumi (1994) had investigated the use of alternative methods to represent architecture because he argued that the conventional modes (plan, section, elevation, axonometric, perspective) were “however precise and generative they have been, each implies a logical reduction of architectural thought to what can be shown, at the exclusion of other concerns.” These “concerns” being spatial and programmatic, especially their intersection or “disjunction,” in contradistinction to what Bernard Tschumi (1994) saw as architecture’s overemphasis on form and styles, or what he termed an “architecture as knowledge of form.”

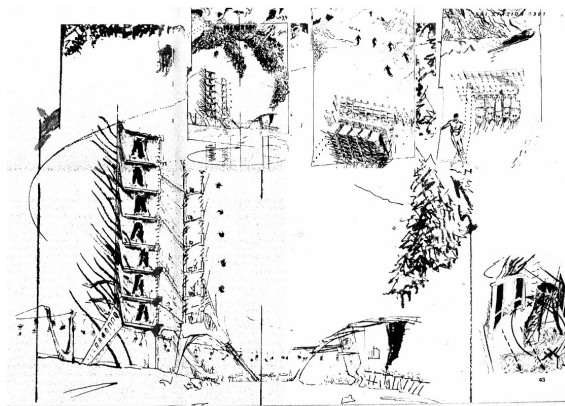
In her study of Nigel Coates’s works from 1975–82, Claire Jamieson (2015) traced how the architect gradually departed from his mentor’s highly theoretical approach, even as they were both becoming interested in how the human body affected space. Coates’s early works clearly displayed Tschumi’s influence in the use of photo-collages and diagrammatic sequencing, but later he began to experiment towards much more subjective drawing methods that could represent movements, emotions



Source: Risselada & van den Heuvel, 2005, pp.30-2

Figure 2. The Urban Re-Identification Grid by Alison and Peter Smithson presented at CIAM 9 in 1953. The human character breaking through the grid structure vertically is a reference to Le Corbusier’s Modular Man.

and sensations to reflect his interests in street life and club culture, which he saw as the most vital scene of urban life at that time. In a series of drawings that constituted the Ski Station (1981) project, Jamieson (2015) explained how “Coates gives architectural detail a lower priority than evoking the experience of the space.” Conventional architectural drawing techniques such as plans and perspectives were rendered with a painterly palette and combined with arrows and motion lines suggestive of the dynamic movements of skier-users (Figure 3).



Source: Coates, 1984, pp. 42-43.

Figure 3. Nigel Coates's Ski Station (1981) project.

Coates brought these ideas and methods to his teaching of Unit 10 at the AA in 1980-1982. The site for the 1981-1982 studio brief was the Isle of Dogs in the then still dilapidated, postindustrial landscape of East London. The students were encouraged to explore the site on foot and to document their findings in the form of a short film that was later extracted into a storyboard, and to combine rational analysis with subjective experiences through the process of layering the different activities and disparate spatial qualities that can be found on site. The final project proposals – which displayed programmatic complexity – were also presented unconventionally. In the project Chemical Works, Mark Prizeman used a loose drawing style without adhering to scale or even correct perspective; nevertheless, the rough sketches are able to convey the dense, dirty and messy postindustrial urban landscape and

the fragments of clashing urban elements that co-existed on-site (Figure 4).



Source: Architectural Association, 1984, pp. 20-21

Figure 4. Final project drawings for Chemical Works (1982) by Mark Prizeman.

While in another project titled Timber Fibre Factory by Carlos Villanueva-Brandt, more conventional perspectives from a variety of viewpoints and areas of the building have been collaged to form drawings that “display a fragmented, montaged sensibility, with flashes of views and sliced vignettes imbuing the scheme with a feeling of movement, interaction and inhabitation” (Jamieson, 2015).

Summing up Nigel Coates development in the period from 1975-1982, Jamieson describes his method as a “poly-vocal approach: that nurtured the plural and fragmented nature of the city, and thus a poly-phase, multi-valent model of narrativity.” The evolving methods of visualization that accompanied this approach made evident the limitation of conventional architectural drawings in portraying such a vision of the contemporary city.

4. Alternative Methods of Visualization: Comics

Among the critiques of rationalist architecture that precipitated and appear to call for alternative methods of architectural representation, then, are how to reflect the specificity of a place, its memories, its people and the implication of the human body and

its sensory experiences within architecture? How to visualize the non-visual qualities of a place and how to see and present architecture not merely as a formal object, but as an environment that impacts and is impacted by the human body, its movements, perception and activities?

This paper would like to suggest that there are certain techniques from the medium of comics that could help architects to represent, and by doing so, think about such qualities. The aim of this paper is not to cover all the techniques used to create comics nor to suggest that architects become comics artists, but to explore a set of tools that can supplement existing architectural drawing practices, especially for those who are looking for ways to capture not only the physical dimension of space but its “atmosphere” as well, which can result from manual drawing (van der Hoorn, 2012), and to understand our built environment with a more sensual, emotive and aesthetic approach. These techniques include the use of panels to create sequentiality, characterization and graphical techniques such as sound effects and motion lines.

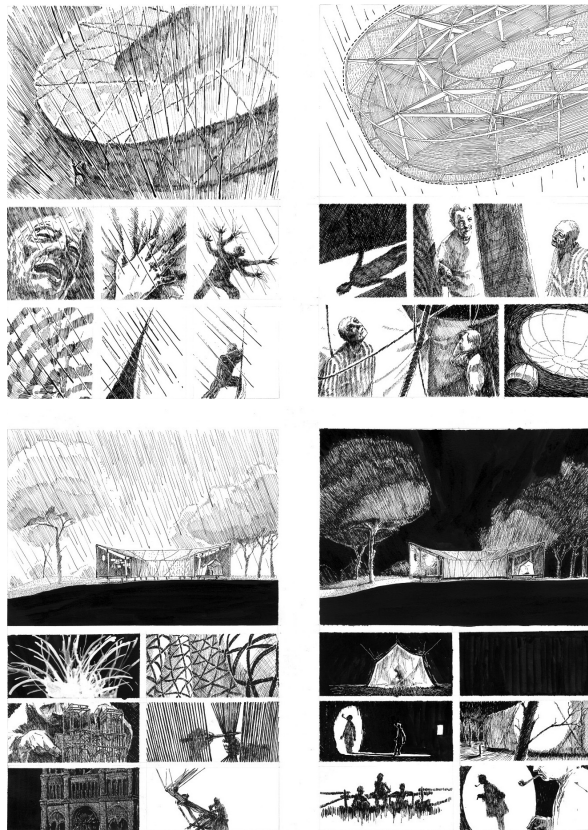
4.1 Storytelling: the use of panels and sequentiality

According to Marco Frascari (2012): “information conveys dry, isolated facts and figures; it explicates impersonal objects and events. However, storytelling explains nothing and implicates those who are present and those who are absent.” As a medium, comics is one of the most effective means of communicating stories along with film and literature. The advantage it has over literature is its ability to combine visual imagery with words, while requiring technical skills that are much closer to those of conventional architectural drawings than filmmaking. Hilary Chute (2011) has argued that the mechanics of comics as a medium contain conventions that are highly accommodating to the telling of life stories: “the ability to use the space of the page to interlace or overlay different temporalities, to place pressure on linearity and conventional notions of sequence, causality, and

progression, is a reason comics can address itself powerfully to historical and life narrative. And if comics is about mapping, it is also about bodies – about locating them in space and time” (Chute, 2011).

Panels are one of the core structural elements that define the comics medium. The temporal dimension of the medium is achieved through the layout of panels that are to be read sequentially. Unlike animation, which shares this characteristic but where the speed of the unfolding of scenes or the frame rate is fixed by the creator-camera, in comics, this is controlled by the reader. What this means is that viewers can spend as little or as long as they want over a single panel/frame, as well as the possibility to return to previous panels. This allows each panel to contain a much higher level of complexity of information and for the panels to relate to each other spatially as well as temporally, as it is possible for the reader to view a number of panels at the same time or to move between them however they want, and thus to be involved in a highly subjective and multi-layered reading.

In conventional architectural visualization, the temporal dimension is entirely lacking, yet this is crucial in exploring human activities and sensorial experiences, such as the movement of bodies across space or the environmental changes that affect space, such as the effects of light and shadow, temperature and acoustics. *Maison de Vair* is a comics by Parisian architect Alexandre Doucin. It is a personal passion project that lies entirely separate from his works as an architect. Yet it is clear that Doucin uses the medium as a way to explore his architectural ideas (and dreams) on paper. In the case of *Maison de Vair*, it is an exploration of the interactions between people, materials and natural phenomena. The material is textile and we see the expression of its suppleness against human touch and the wind; its opacity against both natural and artificial lights; the play of shadows on its surfaces, some of which are plain and some patterned (Figure 5).



Source: <http://alexandre Doucin.fr> © Alexandre Doucin (Doucin, 2012)

Figure 5. Plates from the wordless comics *Maison de Vair* (2012) by Alexandre Doucin

Sequential paneling combined with characterization can be highly effective at representing interactions and sensual experiences, because they require movement and also the depiction of the human body to aid in our empathetic identification with the sensual encounter – particularly touch. Doucin made the observation that unlike conventional architectural representations, which are instrumentalized and ultimately geared towards the realization of buildings, comics offers the freedom to explore the non-measurable and non-objective dimensions of the built environment (van der Hoorn, 2012). I would argue that the conventions of comics force the creator to think in term of narratives, which is increasingly important in contemporary architectural discourse, but whose requirements often fall beyond the traditional modes of architectural representation and “serious” architects feel compelled to only introduce the narrative dimension through the use of words.

4.2 Characterization: Human Interaction and the Senses

In the photographs of children playing on the streets presented by the Smithsons and the drawings by Nigel Coates and his students, we see the endeavor to document the ways in which people actually occupy their environments, and how, for example, a street may be occupied differently from one place to another depending on the culture and social makeup of an area. Buildings or whole swaths of the city may be repurposed and occupied differently from its original assigned function, even as parts or all of the original building fabric remain. The Smithsons and Coates sought to observe and understand people’s behaviors and inhabitation of space. In a sense, they were trying to imagine the lives of users and one way that this can be done is through narratives. This is where characterization and storytelling can be used to counter generic functions and strive towards the Smithsons’ call for a “shift to the specific.”

For the 12th International Architecture Exhibition in Venice in 2010, the Korean Pavilion explored the issue of housing in the context of Seoul’s rapid economic and population growth, focusing in particular on the effects of apartments and the public spaces around them. The exhibition was divided into three sections: the city’s past, present and future. In the “present” section, the research was carried out by architects Chung Kee Lee and Seung Soo Shin. While Lee used a digital map to present the number of apartments in the capital, alongside photography of actual apartment buildings along the Han River,⁹ Shin chose comics as the method to represent his findings, which he titled “Urban Space Bar: Extending Individual Domain.” The “space bar” refers to the public space in between apartment buildings in reference to the way the space bar on a keyboard is used to create the spaces that both separate and link words.

Shin stated that “public places contain memories and conversations between people filling up the space,” (Park, 2010) and that the aim of the comics was to present “a mini scenario about how we can get the fragmented individuals to communicate with each other and about the relationship between apartments, public places and external spaces” (Park, 2010). Shin’s comics documentation took the form of photography overlaid with drawn characters and text balloons. For the latter, some are direct quotations of people he had met, while the

rest are Shin’s own observations and projections (Figures 6 - 7).

The different modes of representation selected by Lee and Shin reflected the information each intended to convey. While maps, charts, plans and photography are well-suited to collect and communicate quantitative data, the social dimension that includes the opinions and activities of actual human users would appear to lie beyond the capacities of these conventional techniques of documentation and communication.



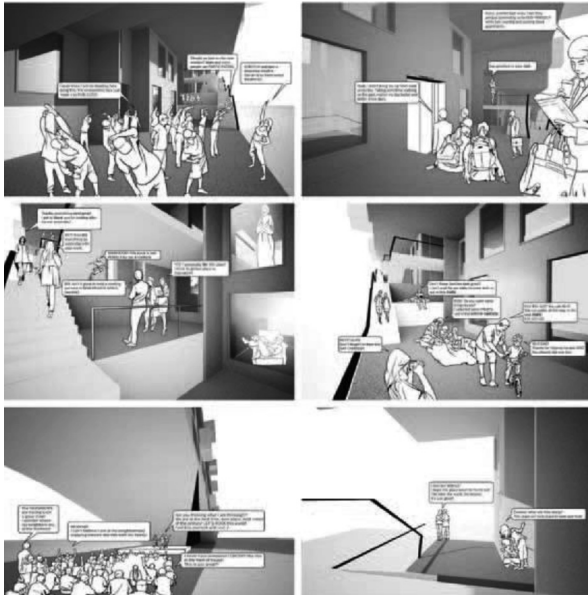
Source: Arts Council Korea, 2010, pp. 117-118

Figure 6. Seung Soo Shin superimposes line drawings and snatches of conversation onto documentary photography



Source: Arts Council Korea, 2010, pp. 120-121

Figure 7. Documentation of social interactions on the streets (left). In addition to characters, line drawings supplement photography where it is not possible or difficult to photograph, such as the bird’s-eye view of the city and maps (right).

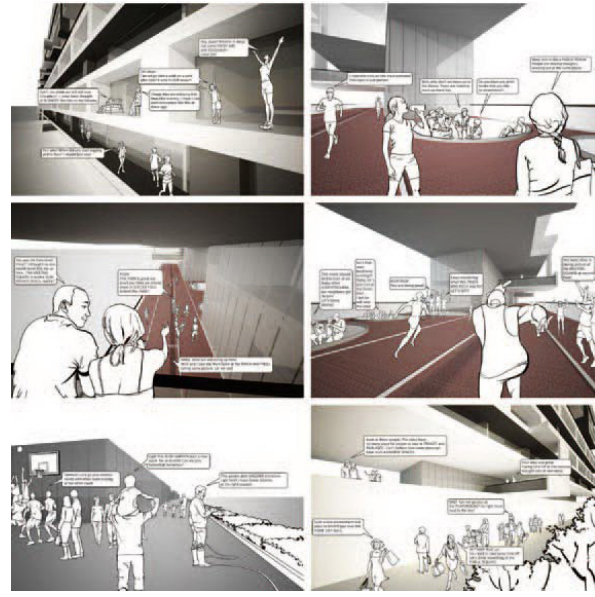


Source: Arts Council Korea, 2010, p. 138.

Figure 8. For the design proposal section, the same presentation technique is used but documentary photographs are replaced by computer-generated renderings.

The second half of Shin's research involved a set of proposed configurations for opening up the semi-private spaces of apartment complexes to be more accessible and open to public uses. Again, he chose comics as the format to communicate his ideas, replacing documentary photographs with computer-generated renderings (Figures 8 - 9). By doing so, the architectural spaces are populated, one might even say dominated, by the characters and their conversations, to reinforce the notion that the designs are driven by the users, their experiences and activities.

Another example of where architects have made use of characterization during the design process is OMA's CCTV Headquarters project in Beijing. The architect Ole Scheeren came up with a list of typical users or characters who will occupy the building and mapped their daily routines as part of the process to design the building zoning and circulation. A process that he advocates as "form follows fiction" (Scheeren, 2015), with the "fiction" here referring to a more human-centric approach to function.

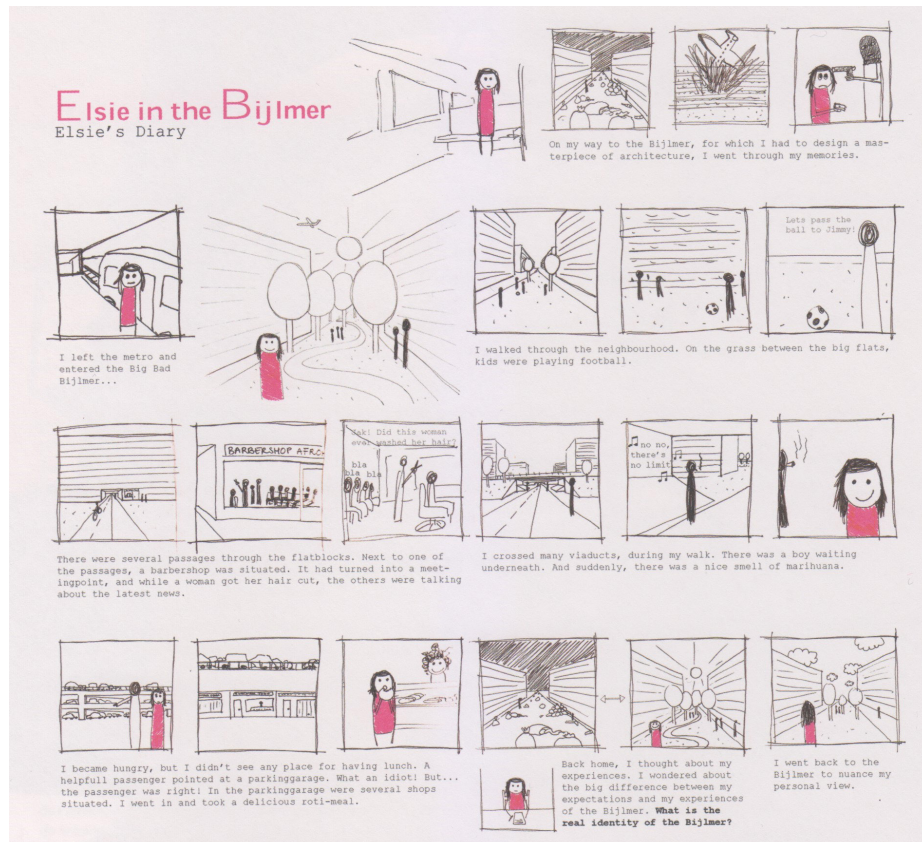


Source: Arts Council Korea, 2010, p. 139.

Figure 9. Characters help us make sense of the architectural spaces and to focus attention on users.

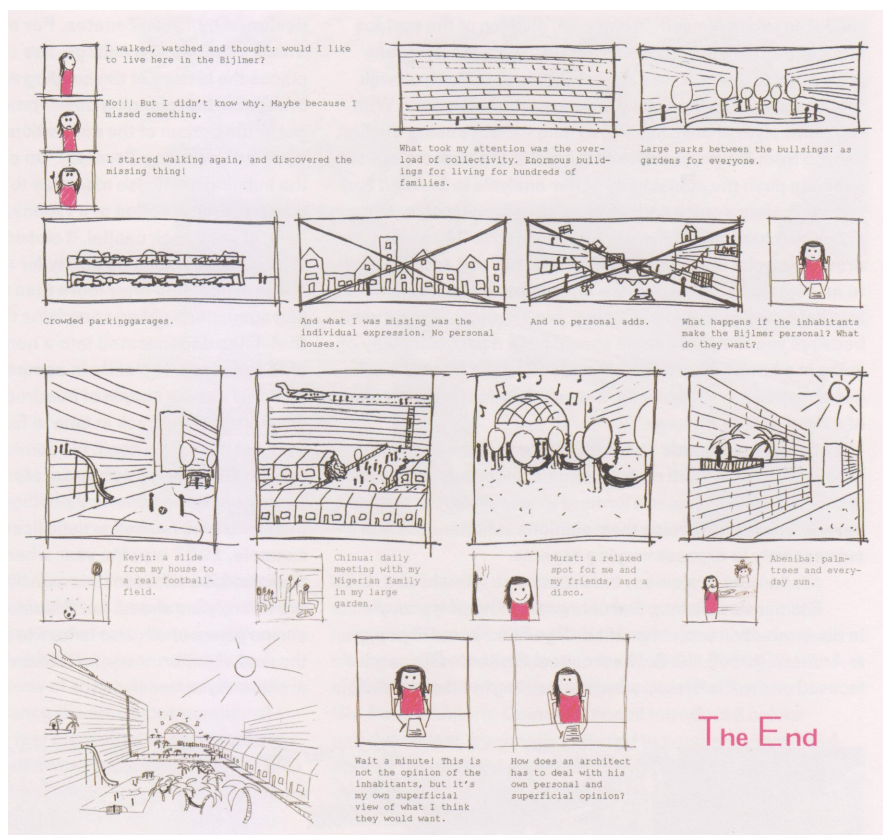
4.3 Graphical Techniques: Sound Effects and Motion Lines

While a student at the Faculty of Architecture at Delft University of Technology, Else Marijn Kruijswijk made a site visit to the Bijlmer¹¹ where her urban development assignment was to be located. The project brief had stipulated that there was to be "no map, no outline, no diagram" (van der Hoorn, 2012), so Kruijswijk used the comics form to present her impressions of the area. The exercise was setup to focus on personal perceptions and was clearly critical of the "scientific" process of conventional architectural site analysis, which would include quantitative methods such as the mapping of traffic routes, building masses and volumes, building functions, zoning and so on. While these analyses cover the physical characteristics of the built environment, they may not quite capture the atmosphere or memories associated with a place. The suggestion here is therefore to supplement such analyses with a deliberately subjective study, demonstrating how past histories and reputations



Source: van der Hoorn, 2012, p. 66.

Figure 10. Subjective urban analysis presented in the form of comics by Else Marijn Kruijswijk, titled *Elsie in the Bijlmer: Elsie's Diary*.



Source: van der Hoorn, 2012, p. 67.

Figure 11. Even though the comics form is used, text and drawing are mostly kept separate.

color people's perception of places. At the end of the strip, Kruijswijk also questions the apparent validity of how architects usually come up with a proposal, reflecting on the inevitability of a certain amount of subjectivity within the design process.

In Figure 10, the three panels on the right half of the third row is supplemented by the writing underneath, which reads "I crossed many viaducts, during my walk. There was a boy waiting underneath. And suddenly, there was a nice smell of marihuana." Here is an instance where the sense of sound (second panel) and smell (third panel and accompanying text) are evoked but where I would suggest that the graphical techniques available to comics have been underutilized.

Comics is a visual, mono-sensory and static medium. But, as Scott McCloud (1994) has argued, "the idea that a picture can evoke an emotional or sensual response in the viewer is vital to the art of comics." In order to immerse the viewer fully in the world of the story, the medium has developed a variety of techniques to evoke the other senses in the minds of the viewers. It is able to achieve this through the use of "sound effects," which are words incorporated into the image to suggest sound, but also smell, texture and taste. Variation and nuance are achieved through the size and form these letterings take. For example, a sound may be presented as large when it is loud and small when it is quieter (Figure 12). Movement is suggested through the use of "motion lines." While variation in lettering styles, symbols, expressionistic lines and graphic notations are means to suggest smell, sound and emotion (McCloud, 1994).

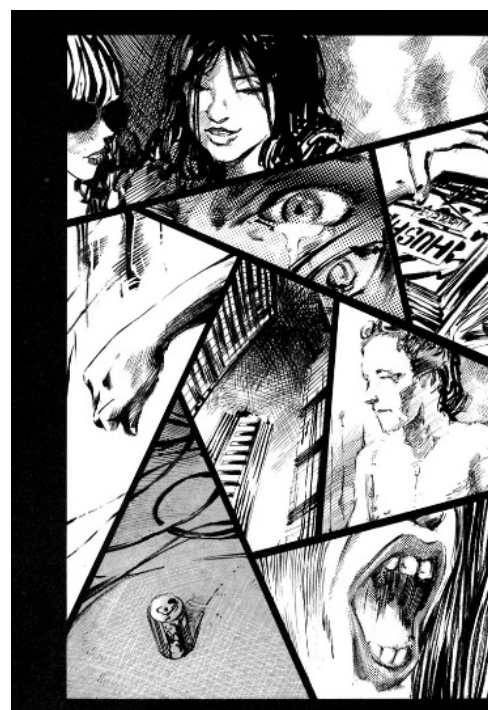
Another graphical technique that could be useful here is the shapes of panels, which can help to reinforce the psychological perception of a place. The variable forms of the panels is also the difference and an advantage that comics has over the storyboard; while the panels for the latter are all of the same size and shape as they represent the confines of the frame

or screen whose form the work will eventually take, the panels in comics are neither bound in shape nor size (Figure 13), and certain visual effects are even created by having an image or a set of images with no frame altogether.



Source: Tsutomu, 1994, p. 148-149

Figure 12. Example of sound effects from Japanese comics: the large size of the lettering of the sound effect and its prominent placement in relation to the rest of the image evoke its loudness, while the motion lines applied to the lettering suggest the movement of the sound as being dispersed from the area in the middle of the image.



Source: Tsutomu, 1997, p. 40

Figure 13. The fragmentary layout and jagged forms of the panels reflect the dark and violent psychological state of the scene.

5. Conclusion

If we view architecture not as an object situated in an undifferentiated field, but as something experienced by a human subject and rests within a context that contains local culture, historical memories, and specific human activities; and if we understand that no tool is neutral, whether it is axonometry or even that a sheet of paper in a landscape format will suggest by its horizontal physicality certain types of designs (Ackerman, 2000), then it is evident that there is a need to expand the set of visualization tools beyond the current conventions familiar to architects. The focus of this paper is mainly concerned with the employment of comics techniques as an investigative tool for the study of site and context, as each tool or method demands a certain way of engagement, it directly impacts the way we think and design. These alternative visualization tools are ways to engage with the aesthetic dimension of architecture and followed a line of enquiry into architectural representation initiated by the Smithsons and later by Nigel Coates. The selected techniques and examples from contemporary architects stress the visual representation of sensorial experience, tactility, acoustics as well as the potential of narratives in analyzing building uses and users.

The amount of projects – mainly from Europe – collected in the book *Bricks & Balloon: Architecture in Comic-Strip Form* by Mélanie van der Hoorn (2012), from which the examples in this paper were drawn, suggest that there is not a small number of contemporary architects who are using or have experimented with comics as a method of architectural representation in one way or another, from initial design process to communicating the final design and even as critique. Yet while most make effective use of paneling and characterization, albeit quite straightforwardly, other graphical techniques such as sound effects, motion lines and stylized markings that can help to visualize the non-visual senses and create the sense of movement and motion appear

underutilized, even as they are precisely what is lacking in conventional architectural drawings and fundamental to certain strands of postmodern architecture such as phenomenology.

Other visual disciplines offer a fertile ground on which architects can experiment with other methods of doing and thinking, especially where architecture is viewed not merely as a profession that seek only to produce more buildings but as a discipline that seek to understand, to appreciate and to contemplate the relationship between human beings and their human-made environments.

Remark

¹ The prominent historian of modern architecture Sigfried Giedion's book *Building in France, Building in Iron, Building in Ferroconcrete* (1928) propounded an evolutionary storyline from the development of bridges to modernist buildings while his prominent publication *Space, Time and Architecture* (first published in 1941) continued this narrative.

² Mallgrave used the term "postrationalist architecture" to encompass the new directions and movements that were emerging after World War II and that were challenging the rationalist attitudes of the modernist masters such as Le Corbusier and Walter Gropius. (Mallgrave, 2005, p. 356)

³ All three of whom are British architects. Alison Smithson (1928-1993) and Peter Smithson (1923-2003) rose to prominence in the British architectural scene in the 1950s and were influenced by the writings of the architectural critic Reyner Banham, who coined the term "New Brutalism" for their works. They were also members of the Independent Group, a mixed group of writers, artists and architects (including Nigel Henderson) who coalesced around the Institute of Contemporary Art (ICA) in London between 1952-1955. The group was highly interested in American popular culture while the Smithsons were particularly inspired by advertisement images.

- ⁴ Nigel Coates (1949) is a British architect who studied under Bernard Tschumi at the Architectural Association (AA). There is a strand that links Coates to the Smithsons through their association with the AA, where the Smithsons taught from the 1950s where another British architectural group Archigram also studied and taught. Archigram had also made use of comics, most memorably for Archigram 4, the fourth issue of their series of pamphlets. Archigram's use of comics was mainly to extract an iconographic lexicon of ready-made comics imagery. Though they mentioned the sense of movement in comics, they were more interested in its futuristic content than its set of distinctive techniques for visual expression.
- ⁵ The Assemblée des constructeurs pour la révolution architecturale (ASCORAL) was an organization created by Le Corbusier in 1943 (Cohen, 2014).
- ⁶ Up to 96 plates of 21 x 33 cm sheets.
- ⁷ The photographs were taken by their friend Nigel Henderson (1917-1985), who was a documentary artist and photographer.
- ⁸ If at times done with tongue-in-cheek, such as the collage of Marilyn Monroe in the perspective drawing of their Golden Lane public housing project.
- ⁹ Lee said of the photographs of apartments that "I am not trying to say that it is bad or good. It is just to show the facts" (Park, 2010), illustrating the still commonly-held – but highly debatable – belief that photography is an entirely objective method of representation.
- ¹⁰ In the few instances where a map or bird's-eye view of the cityscape is required, the whole panel is composed as line drawing.
- ¹¹ The Bijlmermeer (Known Colloquially as the Bijlmer) is a multicultural, Modernist planned neighborhood in the south east of Amsterdam comprising identical high-rise towers arranged in hexagonal grids, many of which has since been demolished. The area became associated with crimes, drugs and unemployment before an effort at urban renewal was initiated in the 1990s.

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