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### A design studio experiment

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# A Design Studio Experiment: Pedagogy, Digital Storytelling and Atmosphere in Architectural Education

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*Abstract: This article endeavors to present a skill-based pedagogical method that facilitates the process of architectural film/animation making, a creative practice that has already become part of the curricula of several architecture schools. Through a series of pedagogical experiments conducted in an under graduate design studio, architecture students, together with the author, attempted to design a practical filmmaking framework that focuses on communicating architectural qualities through the moving image. In the studio, students were provided with proper analysis and design tools to inform an effective architectural filmmaking matrix. This paper discusses how this pedagogical approach affected the journey of students during the studio, and, as a result, the skills of students to effectively employ film, animation, or any kind of time-based media, such as VR, to articulate qualitative and atmospheric aspects of architectural spaces.*

*Keywords: Film and Architecture, Architectural Design Pedagogy, Architectural Shortfilms, Pedagogy of Digital Practices*

## Introduction

In his documentary *The Form of the City* (1974), the Italian filmmaker and theorist Pier Paolo Pasolini remarked while pointing to the iris ring of his camera: “the only thing I have to do is to move this thing here...and the city’s form, its profile and its architectural ensemble will be shattered, spoiled and disfigured (Brunatto, 1974).”<sup>2</sup> Pasolini probably knew better than anyone that the camera does not precisely capture how a space is experienced; however, his explanation elucidates how an impactful cinematic representation of spaces is dependent on the strategic use of cinematic tools and methods, noting that a small change in the apparatus creates a huge difference in perception. As Italian author Italo Calvino predicted at the end of the twentieth century, we are, now, plunged into “the phantasmagoric” flux of an unelectable “rainfall of images” (Calvino 1993, 24). Surprisingly, in an age of “rainfall of images” when the process of production and distribution of videos is as easy as pressing a button on a smartphone, strategic and systematic use of film is not yet on the agenda of architecture pedagogy (Calvino 1993). After years of scholarly attempts to introduce film into architectural education, the use of film within the realm of architectural education has remained as a type of theoretical muse; rarely does this knowledge translate into applicable and practical skills. In cases where the pedagogy attempts to break away from the territory of theory, it falls into the trap of an immediate—in some cases even superficial—translation of film techniques to architectural forms and geometries. In other words, the film techniques, themes, and aesthetic systems are extracted and transmuted into so-called design proposals. The pedagogical experiments that deal with the subject of cinema have a tendency towards a direct and hasty translation of cinematic techniques to architectural forms (Cairns 2013, 201–214). In most cases in architecture schools, film is utilized only if, after a quick analysis, it can lead to a three-dimensional design technique or a design proposal.

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<sup>2</sup> In the documentary *Pasolini and the Form of the City* (Italy, 1974) made by Paolo Brunatto, Pier Paolo Pasolini speaks about the relationship between film, cities, and architecture. He mentions various examples and shows how adopting different cinematic strategies influences the image of the built environment in film.

With advances in easily accessible technology, film, animation, and pieces of virtual reality are prevalently utilized by architects and architecture. Nonetheless, the quality of these films, and particularly animations produced by architects and architecture students, is relentlessly criticized by scholars in the established field of film and architecture in several sources; the uneven choreography, weak frames compositions, coarse montage, and placeless architectures of the pieces of the films are usually what is highlighted in the criticisms. Francois Penz, one of the most productive scholars in the field, lamented the “jerky” camera movements in the fast-growing production of architectural animations and claimed that “architects should learn from filmmakers how to represent the movement through space” (Penz 1994, 41; Penz 2003, 135; Penz 2013, xi). The poor results from this undertaking reveal that the majority of architecture students who produce films and animations in the form of walkthroughs and flythroughs are not well-trained for communicating the true spatial experiences and atmospheres through moving images. If we borrow the metaphor of “sculpting in time” as a description of filmmaking from Andrei Tarkovsky, it can be concluded that architecture students are sculptors who own the sculpting tools (cameras, available software, and gadgets) but are not still in control of effective and apt use of the hammers, rasps, and carving tools; or as Pasolini put it, the way that the moving image is employed by them “destroys, shatters and disfigures” rather than enhance and communicate (Tarkovsky 1987, 6; Pasolini and Brunatto 1974).

These drawbacks in the films and animation produced by architecture students disclose a pedagogical gap that is rooted in two different levels of architectural education. Firstly, they demonstrate that architecture students are not adequately educated about the techniques, tools, and practical aspects of producing architectural time-based media such as film and animation. Indeed, there is an identifiable unfamiliarity with the suitable use of filmic tools and how they can serve as drivers for communicating the atmospheric qualities of spaces. The effortless and instantaneous act of image-making, in parallel, has falsely guided architecture students and educators into the realm of the production of images that are superficial and unmemorable—an exercise that does not truly maximize the potential of the digital media.

Secondly, a lack of comprehension of the properties that make an image or a piece of film atmospheric undermines the quality of the films created by architecture students. The dominance of form and geometry-driven design methods, on the one hand, and the obsession with generating alluring forms on the other, have led them to a situation where atmosphere, as an underlying quality of architecture and architectural images—something non-Euclidean and beyond form and function—is not recognized and sensitively considered.

Both problems, the unfamiliarity with cinematic tools and techniques and the alienation from the notion of atmosphere and the features that enhance it, were tackled in a one-semester design studio for undergraduate students at the University of Melbourne. The design studio was defined around two main components, each of them addressing one of the issues: a “cinematic toolbox” and an “atmospheric rubric.”

The “cinematic toolbox” includes a cinematic plan, timeline-scale diagram, and exploded diagram as its main tools. It was utilized for precedent studies, shot design, and self-learning of film techniques. In adopting the cinematic toolbox, the main intention was to familiarize students with cinematic techniques for narrating architecture.

As the second principal component of the studio, a system for the evaluation of atmospheric qualities of shots and scenes was designed. This evaluation framework, called “atmospheric rubric,” was devised to sensitize students to the concept of atmosphere in architectural images and how it is communicated through film.

The following sections discuss how this teaching approach affected the skills and level of understanding that architecture students require in order to effectively employ film, animation, or any kind of moving image to represent the qualitative aspects of architecture. The main objective of this paper is to tackle this apparent pedagogical gap between film and architecture by presenting a skill-based teaching method in architectural filmmaking. This paper will present

how students, together with their tutor (author), attempted to discover the atmospheric qualities of architectural spaces through moving images.

### Background of Studio Process: Phases and Tools

The belief that film entails certain qualities that make architecture and its atmospheres and experiences intelligible dates back to Modernism and the period of early cinema (Giedion 1995). This phenomenon was spotted by several prominent architects and architecture theorists but remained anchored in theoretical discussions. In addition, studies into the cine-spatial strategies through which the atmospheres of spaces in film are created are rare. Even the scarce texts that admit the fact that atmospheric qualities of cinema “eclipse its formal and aesthetic registers” become restricted within the inelastic frame of theoretical arguments, spatial psychology, exercising architectural applicability and/or finding equivalents in the field of architectural design (Tawa 2014, 10). The studio, on the contrary, endeavors to provide hands-on experience and practical skills through a specifically tailored teaching method that concentrates on the use of the medium of film and the notion of communication of atmosphere through it.

The process of the studio was comprised of four main phases (Figure 1). In the first two phases, students worked on two systems allowing them to dissect and evaluate the process and anatomy of the film creation and architectural atmosphere. In the first phase, students designed a framework for the purpose of evaluating qualitative aspects of architecture in film and, throughout the second phase, they were introduced to a design model called “cinematic toolbox.” The atmosphere evaluation framework, or rubric, and the cinematic toolbox were then used in the next two phases of the studio to execute a precedent study in Phase 3, and the architectural film design in Phase 4. The atmospheric rubric and cinematic toolbox were adopted as vehicles carrying analysis (in the phase of the precedent study) as well as design and synthesis (as a film design tool). Cases of the precedent study in Phase 3 were professional feature films and short films, selected by students and suggested by tutors. The subjects of the architectural films in Phase 4 were two buildings from Arts Wests and the Glynn Davis Building on the Parkville campus of the University of Melbourne.

	<i>Tasks</i>	<i>Tools</i>
<i>Phase 1</i>	<i>Atmospheric Rubric</i>	--
<i>Phase 2</i>	<i>Cinematic Toolbox</i>	--
<i>Phase 3</i>	<i>Precedent Study</i>	<i>Atmospheric Rubric</i>
		<i>Cinematic Toolbox</i>
<i>Phase 4</i>	<i>Architectural Films</i>	<i>Atmospheric Rubric</i>
		<i>Cinematic Toolbox</i>

Figure 1: Four Main Phases of the Design Studio

### Phase 1: Atmospheric Rubrics

The architectural education system has been blamed for its excessive preoccupation with form, particularly by architectural phenomenologists. Juhani Pallasmaa suggests that this “obsession” with form, geometry, and use results in an insufficient pedagogy regarding the teaching of the notion of atmosphere and its related realms (Pallasmaa 2014). The absence of pedagogical background and an underpinning preparation necessitates an introduction to what, exactly, defines the concept of atmosphere in architecture, which is commonly seen as an ambiguous

term within the discipline. As an introductory exercise, students were encouraged to inform their own definition of the term “atmosphere” by preparing two lists: a list of keywords that define the notion of atmosphere and the second featuring the characteristics that make the spatial atmospheres conveyable through film. The lexicons contained buzzwords such as “feel,” “soul,” “experience,” “ambiance,” “aura,” “mood,” “impression,” “look,” “milieu,” “spirit,” and “quality.” The first list provided an opportunity to think about what atmosphere is and how it is different from other architectural concepts. The second list, in contrast, allowed students to deliberate on what generates the sense of atmosphere in film.

In the group discussions, diverse examples of an atmospheric representation of space from film, television series, animation, video games, music videos, and television commercials were brought to the table. On the basis of their own personal experiences with various media, students drew conclusions that were traceable to theories of film, game design, and architecture. For example, during the group discussions, students noticed that visual ambiguity makes a shot more atmospheric. A visual vagueness in the cinematic images that blurs the geometric forms, lines, surfaces, and spaces intensifies the sense of immersion and atmosphere of a shot. This atmospheric tactic, weakening the formal clarity of a shot, can be achieved through discrete atmospheric choices such as low-key lighting that dissolves the sharp edges of the screen and architectural forms in the darkness, utilizing subtle mist and fog, and/or lens flare to make the formal clarity of the spaces and images murky to some extent. Interestingly, this point is acknowledged by authors and practitioners in architecture, cinema, and digital arts.

Greg Kasavin, a prominent game designer and the co-founder of Supergiant Games, remarks that “having good graphic and sound does not give a game atmosphere”; the elements such as mist, fog and dark parts (in contrast with lit parts) in the spaces of a game create a “tone” that makes the game more atmospheric (Kasavin 2016). The architectural theorist Michael Tawa, through an example from a film by Bela Tarr, confirms the claim about the relationship between the radical visual ambiguity and atmosphere in cinema and states that the ambiguity created by a “pervasive mist” and a “scintillating darkness” softens the sharp geometries; generating the conditions of atmosphere and ambiance (Tawa 2017, 3).

The deliberate strategy of producing visual ambiguity through the techniques of pouring white or black surfaces onto some parts of the screen for the purpose of softening geometries is not limited to one case or one style. It has been widely observed in the oeuvre of directors such as Theo Angelopoulos, Bela Tarr, Michelangelo Antonioni, and Andrei Tarkovsky, whose films are considered both architectural and atmospheric (Botz-bronstein 2017). There were similar observations made by students at this stage of the workshop that were applicable and, at the same time, defensible from a theoretical perspective.

The group discussion and the atmospheric lexicons were succeeded by a stage of synthesis. In Phase 1, students started to break down all the observations into identifiable and applicable techniques to be listed in the evaluating frameworks they were designing. Each group took on the task of designing an evaluating system to measure and quantify atmospheric qualities—a set of criteria that was later termed the “atmospheric rubric” by one of the students—to be used for evaluating precedent studies and architectural short films.

### *Designing the Atmospheric Rubric*

At the end of the group discussions, students were guided toward more fundamental and applicable aspects to be framed as parameters of their rubrics. The first group orchestrated the atmospheric rubric based on six main elements: effective sound design, a proper accentuation on materiality and textures, movement, light and shading, time, and depth. The group assumption was that the effective infusion of any of the six elements enhances the sense of the atmosphere of a shot/scene.

After sketching and testing different formats, the appearance of the rubric was based on the methods of visualization in sport video games such as soccer games, where the quality and strength of players is divided into different skills shown in a polygon demonstrating a player's skills, the overall strength and special skills of a player (Figure 2). Following the same visual logic, the first rubric was designed containing the mentioned atmospheric features with the overall atmospheric strength of a shot presented in the area of the polygonal shape. In terms of level, each of the atmospheric elements was subdivided into excellent, proficient, satisfactory, and unsatisfactory, all explained in a legend (Figure 3).

Figure 2: Screenshot from FIFA 2016  
Source: EA Sport

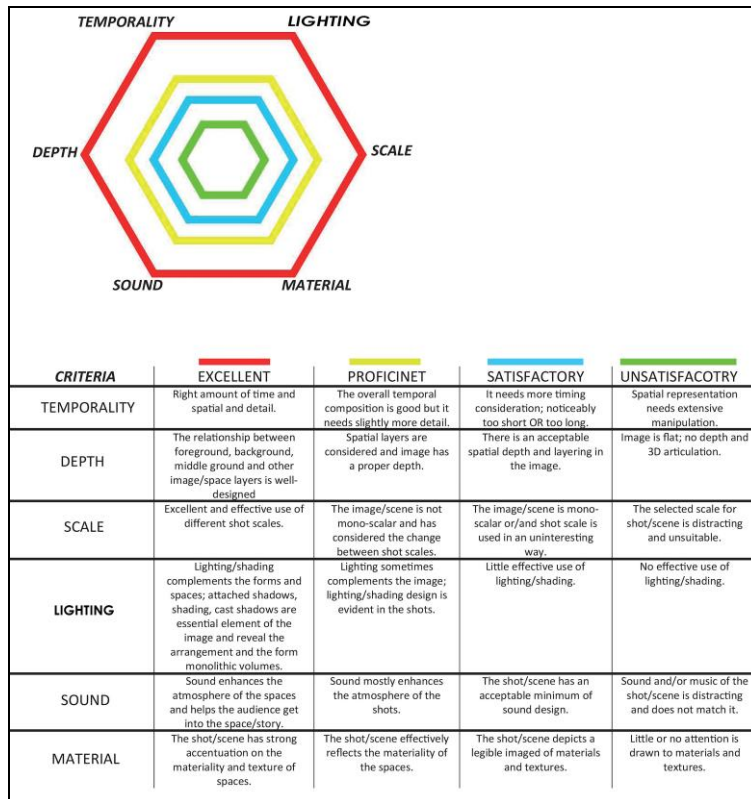


Figure 3: Atmospheric Rubric Designed by Tristan Wong, Yueting Wu, Cheetah Cheng, and Joe Zhu under the Supervision of the Author

The intention of devising the rubric was, firstly, to investigate the atmospheric shots of the precedents and highlight how components of the rubric function in relation to one another. In addition, by utilizing an atmospheric rubric, the weak qualities of an architectural shot can be examined, corrected, and enhanced before and after shooting. The atmospheric rubric of this group was designed and tested for a myriad of case studies (Figures 4 and 5). Keeping the spatial qualities discovered through atmospheric rubrics in mind, the student group started the process of designing their film and shooting based on the rubric as one of the main shot/scene design tools.

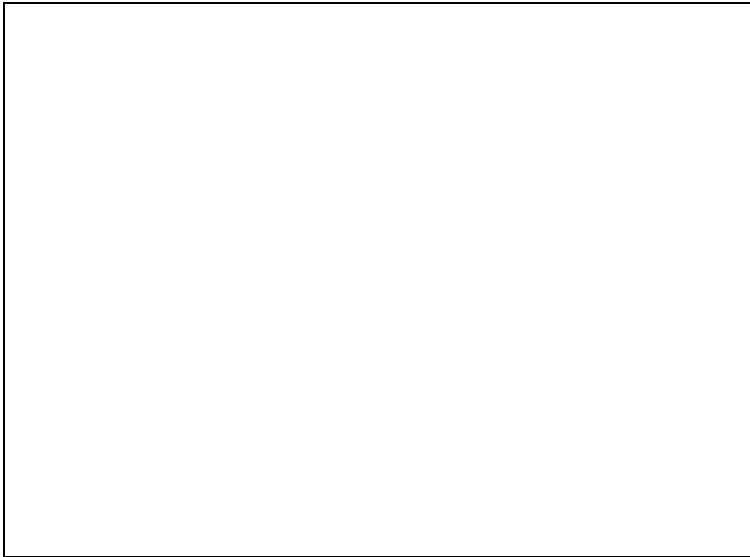


Figure 4: Two Screenshots from *The Turin Horse* By Bela Tarr,  
Evaluated through the Atmospheric Rubric  
Source: *The Turin Horse* © Gabor Teni

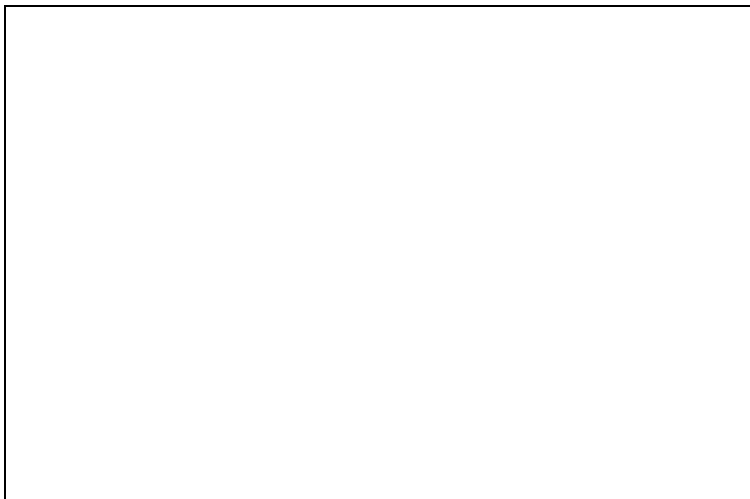


Figure 5: The Atmospheric Rubric for Evaluating a Shot from *Fantastic Mr. Fox*. *Fantastic*  
Source: *Mr. Fox* © Allison Abbate, Scott Rudin, Wes Anderson and Jeremy Dawson

While the first atmospheric rubric focused on evaluation, the second student group centered its rubric around the identification and categorization of atmospheric strategies and features.

Their rubric recognized eleven elements that inform the overall atmosphere of a shot. Each of these eleven atmospheric elements, then, was categorized into one of three typical architectonic/cinematic strategies and features. The rubric entails another column that shows whether the type of architectonic/cinematic strategy used for the specific element is successful (Figure 6). The first column encompasses all the atmospheric elements such as composition, sound, time, and material. The next column, divided into three categories, illustrates the type of strategy adopted for a specific element. And the third one lists the strategy used for successfully depicting an atmospheric element. The elements of sound, sense of depth (three-dimensionality), time, material, and lighting are the same elements as the rubric of the first group. In addition to these items, six different aspects were added: composition, camera use, angle of the shot, form of setting, scale, and organic elements. Students observed that the presence of organic and natural elements such as wind, rain, fog, and organic imperfections amplifies the naturality and the sense of place in a shot. As the first group, the second group employed its own rubric for analyzing the atmosphere and experience of various professional feature films along with the cinematic toolbox. In the next phase of the workshop, the same rubric was used for the self-evaluation of the shots of the short films made by students.

Atmospheric Element	<i>Atmospheric Rubric</i>			Successes
Sound/Background music	Silence	Ambiance and environment sound	Various layers of sound (with/without) music	✓
Depth/Layers/Three-dimensionality	Plain combination of a character and background	Frame-within-frame + Thought-out vanishing point	Different layers of spatial elements and characters	
Composition	Frontal mediocre composition	Balanced Composition	Strong composition and meaningful relationship between different objects	✓
Camera use	Still-shot with characters entering and leaving frame	Moving shot in P.O. V	Moving shot following a character and showing properly the environment as well	✓
Scale	CU	MS	LS	✓
Materiality of the shot	Reflective/Glossy/Polished/Neat/Soft	Rusty/Aged/Oxidized	Rough/Coarse/Porous	✓
Gaze of the shot	Camera focusing on a character	Camera shows the environment through peripheral vision	Camera that films a character or space through windows, mirrors, reflective materials and/or frames	
Lighting	Natural Light	Bright	Low-key	✓
Time	Fast cut(s)	Normal pace	Long Take	
Form of setting	Curvilinear	Angled	Rectilinear	
Organic Elements	Description: --			

Figure 6: Atmospheric Rubric designed by Tristan Wong, Yueting Wu, Cheetah Cheng, and Joe Zhu under the Supervision of the Author



## Phase 2: Cinematic Toolbox; Understanding Film Constructs

Student explorations during the workshop proved that one of their urgent needs was to grasp details, technical aspects, basic cinematic techniques and terms, and the actual methods of constructing a shot/scene in an architectural film. In his film *The Passenger* (1975), the Italian director Michelangelo Antonioni orchestrated what was considered at the time a technically complicated window-shot that involved the camera continuously and seamlessly gliding through a window while filming. In regard to the shot, he stated: “Filmmaking has always been a smooth/impossible process. Smooth in the sense that you watch it and it functions fluently. At the same time, it is impossible because when you watch it with the naked eye, you never realize how difficult, complex and impossible it is to make a similar shot” (Siciliano 1998, 39). Despite the availability of semi-professional filmmaking devices such as smartphones, DSLR cameras and action cams along with the presence of affordable video-editing software, the technical problems of filming compelling shots capable of communicating qualitative attributes of architectural spaces still remain.

Establishing a more profound comprehension of filmmaking technicalities and methods demands closer scrutiny of the complexities of filmmaking and the features that convert the cinematic images into atmospheric media.

### *Cinematic Toolbox*

David Leatherbarrow describes the traditional architectural tools of visualization such as plans, axonometric, and sections as a “sort of x-ray detection” (Leatherbarrow 2000, 89). In Leatherbarrow’s opinion, these descriptive tools “disclose aspects that would be unseen” by seeing (or being in) a space; no one would intrinsically start to draw a plan or section of space and, at the same time, inhabit (experience) the space or event and no one grasps the atmosphere of a physical space by looking at its plan or section. Similar to our perception of real space, experiencing spaces and atmospheres of scenes and films occurs, as Peter Zumthor remarks, “unconsciously” and without any detailed examination (Zumthor 2006, 13). This perceptual reaction is an “immersive” and “spontaneous” response or appreciation (Pallasmaa 2005, 15; Kreider and O’Leary 2009, 1; Degen, Melhuish, and Rose 2017, 13). Therefore, this immersive and unconscious phenomenon requires a process of demystification or x-raying as Leatherbarrow (2000) put it, through proper dissecting tools that are able to divulge the aspects that will be otherwise hidden. For the process of dissecting films and their construct, a toolbox that amalgamates the architectural analysis tools and film making knowledge was designed and introduced to students.

Through the course of multiple lectures and exercises, students became familiar with the tools that demonstrate how a shot is crafted. Although the same techniques or patterns used in an analyzed shot might not be adopted in the final projects, the tools allow students to establish awareness about the cinematic methods and techniques. These tools, all put together in a single toolbox, were devised for multiple aims. For example, “cinematic plans” were used to examine camera staging, choreography, and spatial configuration of shots and scenes. The “time-scale diagram” was designed to showcase the significance of time and the ways in which different typologies of shots contribute to enhancing a sense of atmosphere. The notion of depth and spatiality was reflected in the “layered diagram” and an “optic checklist” regarding the optic issues of the shots was organized for careful consideration of technical camera/lens settings.

While some of the tools—for example, cinematic plans—may seem banal, historically saturated, and commonly used, what will make their use in this toolbox practical is the role they play within a matrix of synthesis, together with other tools, to create the bigger descriptive picture of a scene. Furthermore, it should be noted that the essential benefit of the tools is only when they

are brought into play as principal design or analysis generators. The tools of the toolbox and how they underpinned the pedagogy of the studio are presented in the following sections.

### *Cinematic Plan*

Both architects and filmmakers employ plans as a means of planning and analysis. Staging plans—also known as top view scene blocking diagrams in the film industry—are frequently used in film grammar texts for teaching *mise-en-scene*, camera staging, and in filmmaking and film theory as a means of analysis (Katz 2004). In the studio, cinematic plans were suggested as an instrument of analysis, at the first stage, and as a tool for designing shots. The cinematic plans communicated the following characteristics of space: the form and scale of space, camera location, camera movement, location, and movement of the actors/protagonists. Finding a suitable location for the camera to capture a place (camera staging) is a difficult task for inexperienced and even sometimes experienced filmmakers. Working with cinematic plans in parallel with shots/storyboards taught students how to test their camera staging, camera movement, characters' choreography, and the three dimensionalities and depth of their shots (Figure 7). Using cinematic cinematic plans in combination with storyboards enables filmmakers to evaluate how the spatial layout of the scene affects the image on the screen. On another level, the cinematic plans disclose the complexities and the “inherent rigour” of the shots and scenes of cinema (Bazin 1992, 74).

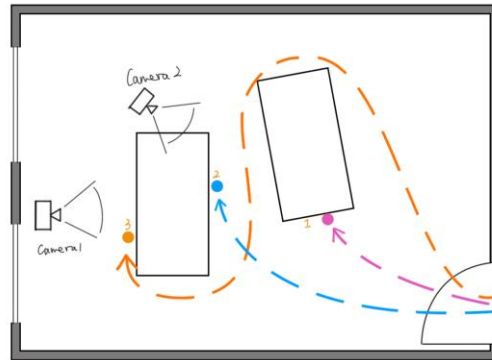
The cinematic plans were introduced to students through two exercises. In the first exercise, the plan of the classroom of the workshop was drawn by students and two camera locations were chosen. Then, using the cinematic plans, a sophisticated choreography was designed for the actors. After that, by manipulating and adjusting actors' movements on the two-dimensional plans, students tried to enhance the depth and composition of the final frame of their shots. Based on what was recorded in the shots, the choreography and staging of the cinematic plans were re-adjusted and tweaked (Figure 8).

In a second exercise involving a cinematic plan, students were instructed to capture the essence and atmosphere of a place in a single image. However, before taking any photo, students were to sketch a cinematic plan of a place depicting its overall form and how the place was occupied. The exercise allowed students to gain a deeper awareness of the use of the cinematic plans. Students witnessed how a small change in the two dimensions of a plan causes huge differences in what a camera captures. The exercise generated some high-quality architectural shots in which the influence of the cinematic plans was obvious (Figure 9).



Figure 7: Cinematic plan design by Simeon Chua under the supervision of the author. This cinematic plan was used to analyze the complex camera staging in one of the scenes of *Birdman* directed by Alejandro Inarritu.

Source: *Birdman* © Alejandro Inarritu, John Leshner, Arnon Milchan and James Skotchdopole



Cinematic Plan



Figure 8: The plan of the choreography of the characters and the final points where the characters finally sit (an exercise conducted during a tutorial); Camera staging, the spatial configuration of the scene and the choreography of the characters were adjusted several times based on the plan.



Figure 9: The use of the cinematic plan in architectural photography was tested by the spatial journey through a gallery. A page from the film-architecture diary of Simeon Chua, Eddi Mastoori, Annie Crone and Rui Ma supervised by the author.

### Phase 3: Precedents

Some of the tools from the cinematic toolbox were conceived as a means of film precedent analysis. Students chose from feature films, short films, and cut-scenes (in-game movies), and some of the students selected scenes from a list that was prepared by the author for the purpose of film precedent studies. Drawing cinematic plans next to still shots for the selected precedents uncovered the level of richness that can be foregrounded in terms of camera movement, actors' choreography, spatial compositions, and camera staging. The enthusiasm of what the cinematic plans offered to students made them decide to produce physical plans of some of the scenes in order to better comprehend how the two-dimensional geometry of the plan affects the three-dimensional view of the camera and vice versa (Figure 10).

Figure 10: The image shows how students Tristan Wong, Yueting Wu, Cheetah Cheng and Joe Zhu examined the *mise-en-scene*, camera staging and architecture in *Psycho* made by Alfred Hitchcock through the laser-cut physical cinematic plans  
 Source: *Psycho* © Alfred Hitchcock

### *Timeline/Scale Diagram*

The cinematic experience of watching film and the spatial atmosphere expressed through moving images is radically affected by the temporal regime of a film, and how the timing of a scene or shot is arranged. In effect, cinema converts and breaks down the physical spaces and events into slices of time and “duration” in the form of shots and scenes (Ranciere 2013, 33). Film, as a time-based medium, converts “a performance of a specific materiality to a specific temporality” (Colman 2014, 39). A film’s position toward the notion of time, and how time is articulated in a film, has a direct impact on how it conveys a sense of place, space, and atmosphere.

For example, with the emergence of the slow cinema movement, many film theorists argued that the slow pace and long takes of slow cinema generated a more tangible sense of place compared to the conventional cinema that “breaks up the sense of places and spaces” (Horton 2014, 15). Taking into account the importance of the notion of time in filmmaking, it should be mentioned that establishing an impactful relationship between the timing of shots and events and planning for an equilibrated distribution of various shot types and scales for a scene is a difficult challenge for novice filmmakers. To turn the challenge into an opportunity, we designed a diagram during the workshops.

The diagram, named the timeline-scale diagram, depicts the timing (duration) of the shots and a scene and simultaneously maps the distribution of the shots in a scene with all the transitions and changes of scale. This diagram, entailing the shots scales, close-up (CU), medium-shot (MS), and long-shot (LS); and intermediate scales such as medium-close-up (MCU) and medium-long-shot (MLS) on the side, functions as a timeline. Mapping a scene

utilizing this diagram clearly illustrates the distribution of different shot types, the transitions work between disparate shots, the duration of the shots, and the frequency and quantity of various shot types (Figures 11 and 12). After the diagram was introduced to students, each of them analyzed three scenes of different films with distinct cinematic styles. Examining films through the diagram and/or designing the temporality of a scene by it provides a remarkable comprehension and control over such a vague and intangible agency such as time, a factor that plays a significant role in the spatiality and the atmospheres produced by each shot/scene.

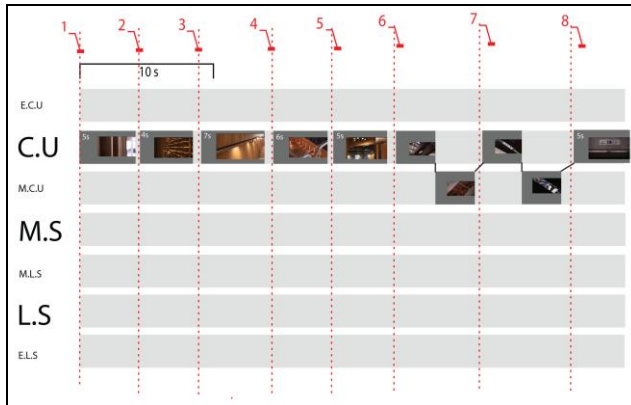


Figure 11: A timeline-scale diagram produced by Tristan Wong, Yueting Wu, Cheetah Cheng and Joe Zhu for an architectural short film supervised by the author.

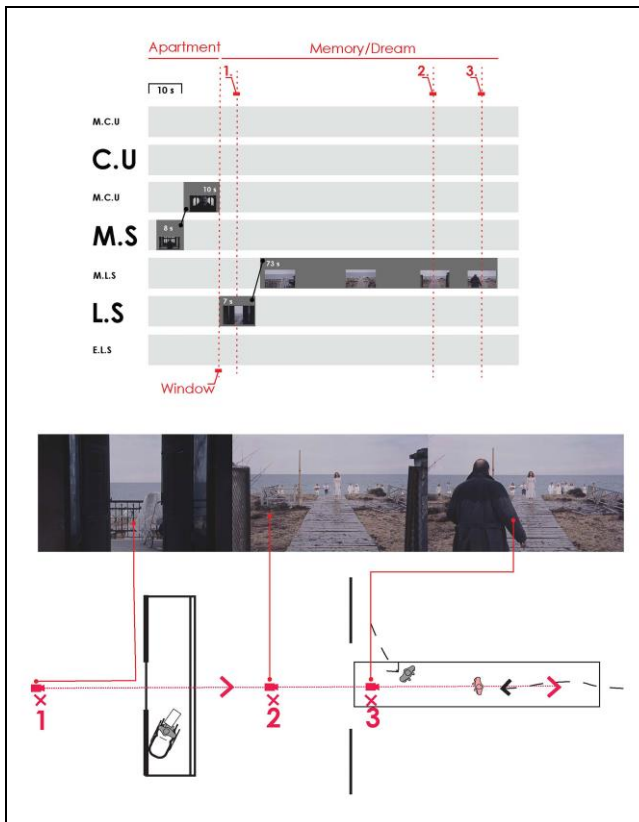


Figure 12: The Example Drawn by the Author Shows a Scale/Timeline Diagram Accompanying a Cinematic Plan

### *Exploded Diagram*

In film, it is through the “foreshortening effect” of the movie camera that three-dimensional spaces are transmuted into them moving images on a flat screen (Penz 2012, 10). This flattening and “deleterious effect” of film that transforms a three-dimensional space into a two-dimensional, non-spatial and depth-less image has been a source of criticism by architectural theorists (Vidler 2000, 45). Filmmakers, and other artists such as painters, endeavored to tackle the vanished sense of three-dimensionality and engaged with the daunting task of re-creating the volumetric nature of the foreshortened objects or spaces.

This inherent flattening attribute of film makes it crucial to have a plan for generating an impression of depth and space in the images on the screen. As a technique, articulating different layers of depth and space has always been in the core of the attempts of both architects and filmmakers. Many of the exemplary shots by masters of cinema are simply outstanding configurations of architectural depth, foreground, background, and middle-ground. The act of creating a sort of spatial design for the foreground, middle ground, and background of an image or space is considered an act of architectural design by some artists and architects. For instance, Steven Holl, in an interview in the documentary *Steven Holl: The Body in Space* (2000), claims that “architecture is all about the foreground, background and middle-ground” (Blackwood 2000).

Alongside the cinematic plans and other tools employed by students, an exploded diagram that detaches disparate spatial layers in an image, functioning as a tool to dissect the anatomy of cinematic images, was proposed. By adopting this tool, the composition of spatial layers, the arrangement of the spatial elements, and the manner in which they inform a deep and architectonic image in front of the camera were examined by each student. All the traced layers, with the original image projected on the last layer, form an exploded diagram exposing all the spatial layers condensed on the screen (Figures 13–15).

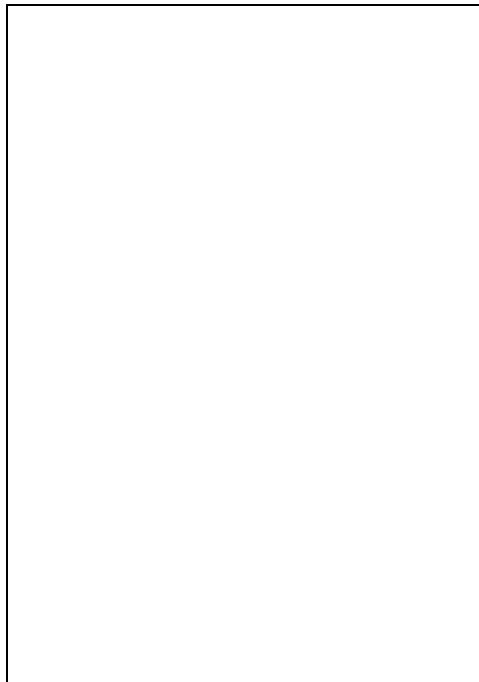


Figure 13: The diagram shows various spatial layers of a shot in *Damnation*, directed by Bela Tarr. The diagram entails camera position, spatial layers, the range of focus (depth of field-DoF).

Source: *Damnation* © Bela Tarr

In addition to the layers, the depth of field (the range of focus) and other types of annotation were shown on this diagram. By analyzing multiple shots through the diagram, students learned how to dexterously arrange and juxtapose the spatial layers to make an effective image. They also learned the importance of an atmospheric expression of a space, which is required to design a meaningful depth by utilizing existing spatial elements in a space/shot. By employing the tool for several cinematic shots, paintings, and photos, students reinforced the atmospheric construction and spatial arrangement of the shots of their exercises. The tool provided them with a remarkable grasp of depth and spatiality and the interplays between middle-ground, background, and foreground.

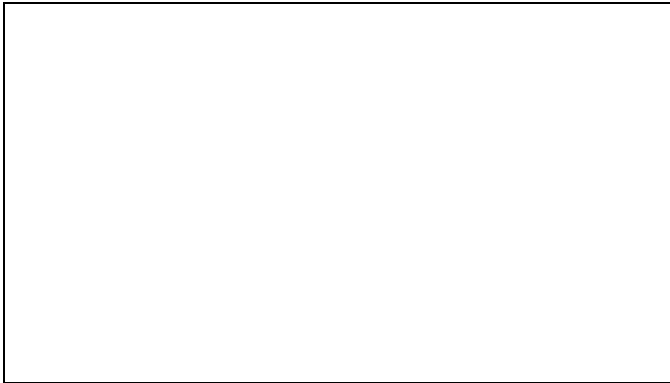


Figure 14: Cinematic plans, screenshots and the exploded diagram; the screen shots are from *Trilogia: The Weeping Meadow* directed by Theo Angelopoulos  
Source: *Trilogia: The Weeping Meadow* © Nikos Sekeris

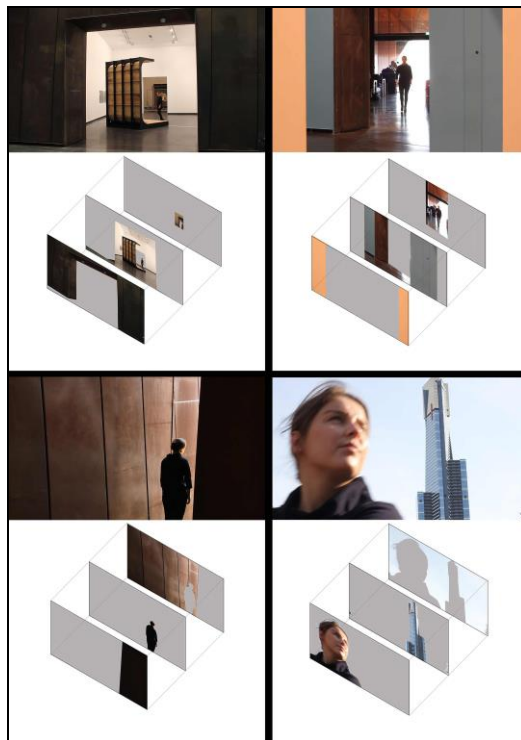


Figure 15: The exploded diagram is utilized for designing various shots in an architectural short film made by Simeon Chua, Eddi Mastoori, Annie Crone and Rui Ma and supervised by the author.

*Analytical Diagrams*

There were other types of analytical tools introduced to students during the workshop, such as diagrams regarding the relationship between human figures and architectural space, two-dimensional composition analysis diagrams, camera optic checklists, and techniques for perspectival analyses. According to Nicholas Proferes, film theorist and cinematographer, a “modicum familiarity” with the spatial effect of lenses and the optical aspects of the camera is necessary for anyone working with any kind of filmmaking (Proferes 2008, 48). Therefore, the examination of the optic and visual characteristics of a shot was the purpose of the analysis of all these diagrams (Figure 16).

Elements such as optic, type of lens, type of perspective, camera height, depth of field, and camera movement aspects might seem to be trivial technical issues but as film theorist and filmmaker Andre Bazin argued, these factors can “destroy any sense of space” or “give an entirely different reading” of the same space (Bazin 2005, 24, 137). There were other accompanying diagrams devised by students during the workshops. Innovative diagrams for analyzing perspective, composition, and color palette were devised by students as well. These analytical diagrams serve not only to understand and design film but provide a rich basis of knowledge that can be infused into the process of design and architectural culture of students (Figure 17).

All the tools, presented and designed as diagrams, canvassing methods, and checklists, will unpack the *techné*, the methods and techniques of realization of spatial atmospheres through film. Correspondingly, the need for a systematic framework for the analysis and evaluation of the underlying features and attributes that enhance the sense of atmosphere in architectural shots/images was fulfilled by atmospheric rubrics. The next section of the paper will discuss the outcomes of the studio (films produced by students), and how the toolbox, atmospheric rubrics, and the precedent study contributed to the architectural films.

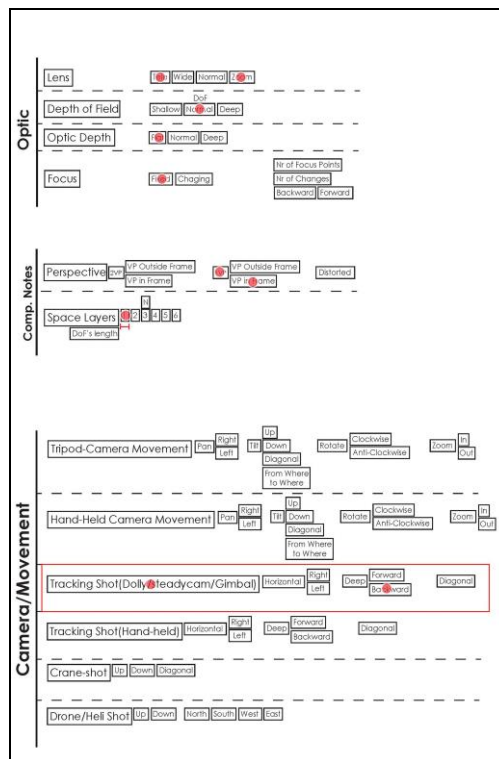


Figure 16: The Analytical Checklist That Functions as an Annotating Device Is Shown in the Image



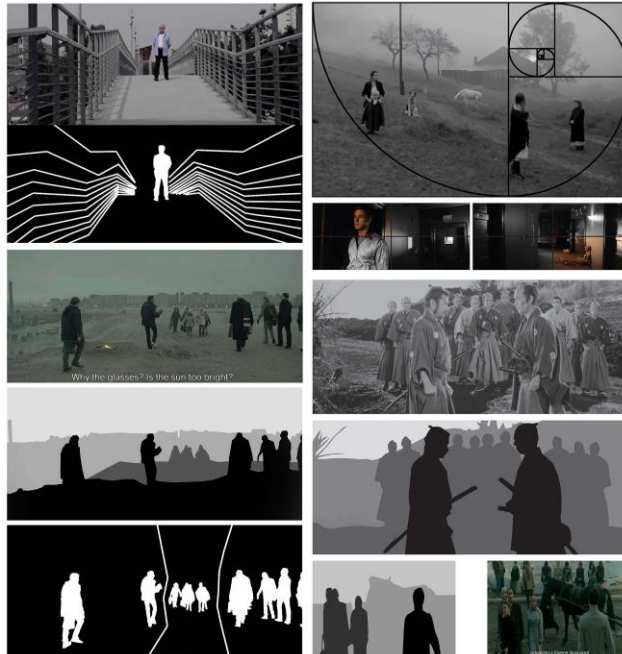


Figure 17: The Image Entails the Diagrams Created by Simeon Chua for Analyzing Concepts Such as Composition, Visual Weight, and the Method of Human Figures in Spaces

#### Phase 4: Architectural Short Films

The next phase in the process of the film and architecture workshop was the stage where students began to make use of the techniques, strategies, and tools tested in the previous phases of the workshop. The two groups were asked to make a short film about two buildings on the Parkville campus of the University of Melbourne. The atmospheric rubric and the cinematic toolbox were set as the main components of their shot/scene design. The decision about the narrative structure of the films was left to the discretion of students; however, they were advised to follow the spatial narrative and quality of spaces rather than constructing an imposed narrative that employs spaces as a mere backdrop.

The Glynn Davis building was chosen for the first film. A narrative was built upon the journey of two students (protagonists) in various spaces of the building. Architectural close-ups of the details of the building—junctions, door handles, textures, and materials along with the robust experience of the circulation spaces such as staircases, corridors, and lifts—were the main spatial themes addressed in the film. One of the key architectural experiences highlighted was the guided light pouring inside the building and framed through the openings in the ceiling. The dynamic views generated from diverse points of view by a moving subject in the corridors of the building were the other cinematic emphasis in the film. The rhythmicity of shots and the way they respond to the continuous movements of the main characters in corridors and staircases portrays a telling image of movement in the spaces. Starting in the early morning and ending at night, the film shows the disparate lighting/shading conditions during the course of one day.<sup>3</sup>

The second film takes place in the Arts West building. The structure is built upon the encounter of two characters. Engendering a striking contrast between the lighting, pace, and rhythm of outside and inside, the film situates its climax part in a chase scene in the convoluted

<sup>3</sup> To view the student architecture film, visit <https://www.youtube.com/watch?v=XqGLjNa0abg&t=7s>.

and labyrinthine staircases, ramps, and corridors where one of the characters chases the other one. The introduction of the film features an establishing shot of the exterior of the building, followed by a shot of the main character approaching the building in three extended shots developing a slow pace. Afterward, as the character enters the building, the scenes ascend into a high tempo narrated by a seamless continuity editing that matches the form and atmosphere of the spaces as well as the tension fashioned by the feeling of anticipation of an encounter that happens at the end of the film.<sup>4</sup>

## Concluding Discussion

Students' reflections in their film-architecture diaries acknowledged the radical influence of the atmospheric rubrics and cinematic toolbox on their films. The films themselves denote a rigorous design method and indicate that the aspects framed in the rubrics were meticulously considered. The properties highlighted in the rubrics laid the foundation for an effectual aesthetic system that can contribute to an effective cinematic articulation of the experiences and atmospheres associated with architectural spaces. Indeed, the task of designing the rubric itself, using it for precedent study and as a framework for constructing the atmospheric shots, made students aware of the importance of the features that can make a shot expressive of the qualitative aspects of architecture. A persuasive articulation of the notions such as movement, tactility, scale, spatial depth, composition, timing and pace, and the experience of light seeped into the films and the process of filmmaking from the rubrics.

The cinematic toolbox, from another standpoint, underpinned all these elements and translated them into cinematically applicable agencies. Both short films reflect the explicit impact of the cinematic toolbox. The balanced distribution of shot scales and how they are configured in terms of timing and pace in relation to other shots (and the whole film) demonstrate a compelling control supported by the overview created by the timeline/scale diagram. Comments made by students in the film-architecture diaries reveal that the timeline-scale diagrams helped them create a readable picture of the film structure in its entirety. The timeline-scale diagram lucidly illustrates how all the cinematic fragments (shots and scenes) are connected to each other and how and when they accentuate certain spatial qualities by manipulating scale and time. The diagram enabled students to improve the timing and sequence of their shots and scenes by adjusting the number of shots, their position within the whole film and their duration. The spaces that needed a more detailed spatial attention were broken down into close-ups and the parts of films that required a deeper experience of space were prolonged. Moreover, working with the diagrams resulted in a balance between close-ups, wide shots and medium shots in relation to the pace of each shot.

Cinematic plans allowed students to design precise and diegetic journeys through spaces. Functioning as a simplifying tool for designing, analyzing, and testing, the cinematic plans helped students cope confidently with the challenge of creating continuity, the 180-degree rule, and camera staging that are demanding undertakings even for professional filmmakers. The effect of combining the exploded diagrams and cinematic plans is evident in the complex relationship between different spatial layers of the shots of both films. The cinematic toolbox also encouraged students to experiment with other cinematic techniques such as depth of field, change of the focus pull, spatial layering, and the frame-within-a-frame technique (Figures 18 and 19).

Despite the technical limitations and the lack of camera movement devices, professional film tripods, and other required equipment, students' flexibility and creative methods, such as

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<sup>4</sup>To view the student architecture film, visit [https://www.youtube.com/watch?v=u2Zeh\\_5hGGQ&t=192s](https://www.youtube.com/watch?v=u2Zeh_5hGGQ&t=192s).

employing an office chair as a dolly, assisted students to produce accurate, yet absorbing, films about the architectural forms in motion, spatial experiences, and the atmospheres generated by manifold points of view.

The main purpose of the filmmaking exercise and the studio itself was to confront the challenge of communicating architectural atmospheres through film. Nevertheless, according to what was documented in film-architecture diaries of students, filmmaking and working with film leave an ever-lasting imprint on the architectural visualization skills of students as well as their thinking about the notion of space and architectural design. One of the students in her film-architecture diary remarked: “my imagination about spaces and architecture was always 2-D before making a film. Seeing architecture through the lens of a camera made me imagine spaces in 3D and from the point of view of someone who will occupy the space.” The ultimate goal of this experimental studio was not to train filmmakers. However, on the strength of feedback from students and the films, it appears that providing students with proper hands-on knowledge, equips them to fulfil a growing requirement that is becoming an inseparable part of architectural practice.

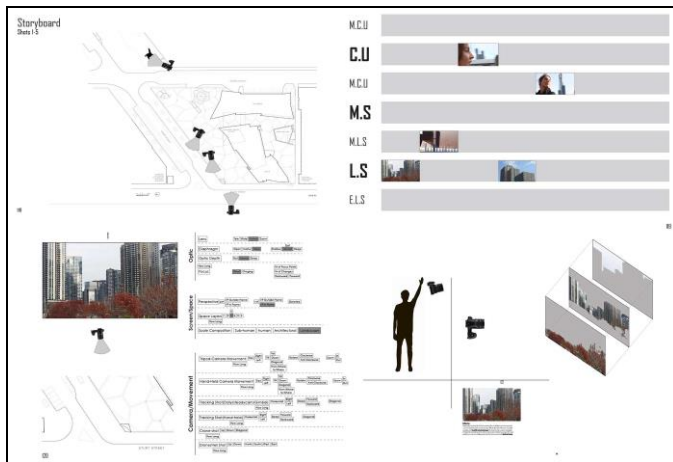


Figure 18: The image demonstrates how different tools of the cinematic toolbox are used in relation to each other and as a matrix of synthesis for designing an architectural film; the diagram has been produced under the supervision of the author Simeon Chua, Annie Crone, Rui Ma and Eddie Mastoori.

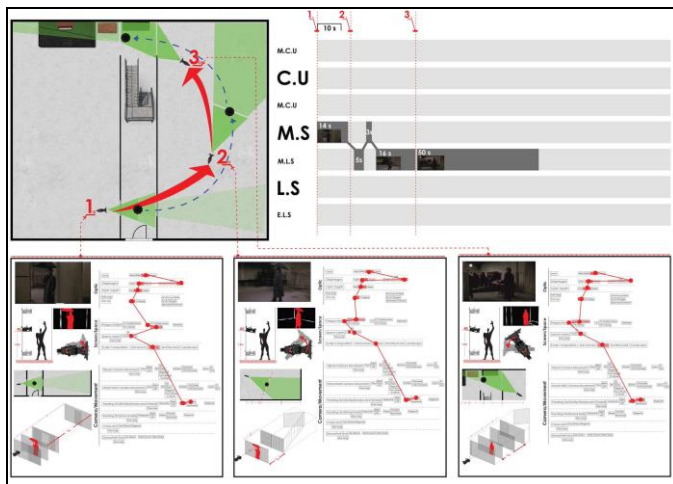


Figure 19: The Image Depicts How Various Tools of the Cinematic Toolbox Are Utilized as a Framework for the Purpose of Analysis; by the Author

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