ENDRIANA AUDISHO

Liveness, mediation and the simulated: Effects of the digital screen on architectural representation post-1990

Introduction

The effects of the digital screen in pedagogy have been significantly explored in the field of architecture since 1990. The introduction of the computer through the 1994 Paperless Studios at Columbia University's Graduate School of Architecture, Planning and Preservation (GSAPP) became a defining moment for the discipline to experiment with the unfamiliar tool of the computer and reconsider its relationship with the digital screen. It was also an opportunity to theorise the effects of the digital screen on architectural representation.

This paper explores the interplay between the digital screen and its effects on architectural representation from the early 1990s to the early 2000s. The digital screen is used to encapsulate both media and technology, and representation is understood as the attempt to be the equivalent of the real (Baudrillard, 1981: 2-4). The paper recognises that the relationship between the digital screen and architectural representation traverses architecture, by looking in broader media history of the decade and, specifically, within the context of the media spectacle of two key events: first, Cable News Network's (CNN) 24-hour live coverage of the Gulf War in 1991; and second, the 2002 competition to design the new World Trade Centre (WTC) post the historic attacks of September 2011 (9/11). These mediatised events present two modalities of the tension between the simulated and the real. CNN's coverage was the first *live* reporting of a conflict in the world. It saw the screen materialise real-time images of Baghdad with a grainy phosphor-green night-vision filter, making it difficult to distinguish between reality and its simulated representation of the city (Baudrillard, 1995: 82). Marking another shift in the discourse on simulation and the real are the images that circulated through digital media during and after the 9/11 attacks. Although the proliferation of images of 9/11 played an evidential role as they were used to identify victims and investigate the attack, they were also implicated in the conflict as their hyperreal quality raises questions of legitimacy. Architectural renderings in the WTC competition post 9/11 are an extension of this discussion. The renderings simulated a "progressive architecture" (Martin, 2004: 217) where digital technological innovation constructed a hyperreality that disengaged with the historical and political dimension of the event itself or the implications of its representation. These two case studies will be used as vehicles to unpack discourse

on the simulated and real, and consequently to trace the associated impact on architectural representation, specifically on the work produced by the digital avant-garde of the Paperless Studios.

Situating the Paperless Studios in relation to the broader media and theoretical context of the early 1990s-2000s recognises a larger set of relations beyond the screen or the technology of the image itself. The constellation between two mediatised events, media theory and the Paperless Studios, formulates a short history of the digital in architecture that is not autonomous, but acknowledges that it is relative to, and has been shaped by, discourse external to the field itself. To demonstrate this, the first section of the paper, "Screen conflict 01", will unpack CNN's live coverage to establish a theoretical framework that postures the impact of simulation, via the digital screen, on our experience of the real. The theoretical framework set up in the first section informed by the works of Paul Virilio and Jean Baudrillard will be used to discuss the tension between the simulated and the real in the Paperless Studios in the second section of the paper, "Screen conflict 02". The paper culminates by discussing a shift in the interplay between the digital screen and representation in architecture by the early 2000s. Ultimately, this paper connects chronological yet disparate moments to show that the transformation in architectural representation is relative to, and has been shaped by, a broader media context.

Screen conflict 01: Liveness, mediation, and the simulated real in CNN's coverage of the Gulf War

Something is happening outside . . .

— Bernard Shaw, CNN Live, 16 January 1991

Midnight, 16 January 1991, was the deadline issued by the United Nations Security Council for Iraq to withdraw from Kuwait. Iraqi forces invaded Kuwait on 2 August 1990, at about 2 a.m. local time. The invasion occurred over the controversy over Iraqi debt in which the Kuwaitis insisted repayment (Klare, 2003: 5), Iraq's territorial claims over Kuwait, and accusations of oil theft (Klare, 2003: 14). Various news channels such as ABC, NBC, CBS, and CNN attempted to get reporters into this potential war zone between Kuwait and Iraq. News executives highlighted, "getting there and getting pictures remained a top priority, if not the only priority" (Gerard, 1990: 1). The 16 January 1991 deadline imposed on Iraq was now shared with news organisations. The midnight deadline loomed and passed quietly. The United Nations had permitted its member nations to exercise all necessary means to drive Iraqi troops out of Kuwait if they did not adhere to the deadline. Iraq did not withdraw from Kuwait. On 16 January, at 2:45 a.m. Baghdad local time, the United States coalition led a military intervention under code name *Operation Desert Storm*. This marked the start of the Gulf War. CNN gained early dominance of the coverage of the air raids over Baghdad with their continuous live audio reports from the Al-Rashid Hotel in Baghdad. One day before war broke out, CNN's vice president for news, Ed Turner, distinguished CNN by stating: "other networks are in the entertainment business, and at some point, they have to return to normal programming. We just do one thing" (Kurtz, 1991: 2). The emerging CNN, established in 1980, was determined to cover the story live and make media history.

CNN did make media history as the Gulf War was the first conflict to appear *live*, a format that saw a global audience presented with real-time images unfolding round the clock on television screens (Formanek, 2016). CNN's 24-hour live coverage also foregrounded the political implications of what it means to report live. The statement voiced by CNN corresponded Bernard Shaw on the first night of the conflict, is representative of these implications. To state that *something* is happening *outside* suggests a speculative and disembodied engagement that anticipates the real. Whereas a foreign correspondent in the traditional sense would be able to confirm news by visiting the sites of events to record what has happened, the CNN correspondents were confined to a hotel room on the ninth floor of the Al Rashid Hotel (Fig. 1) in Baghdad (Formanek, 2016). The confinement limited them to view at a distance and report on what they could hear and see as it rolled out in real-time.

Fig. 1 Endriana Audisho (2020). Site plan of Al-Rashid Hotel, Baghdad [Drawing]
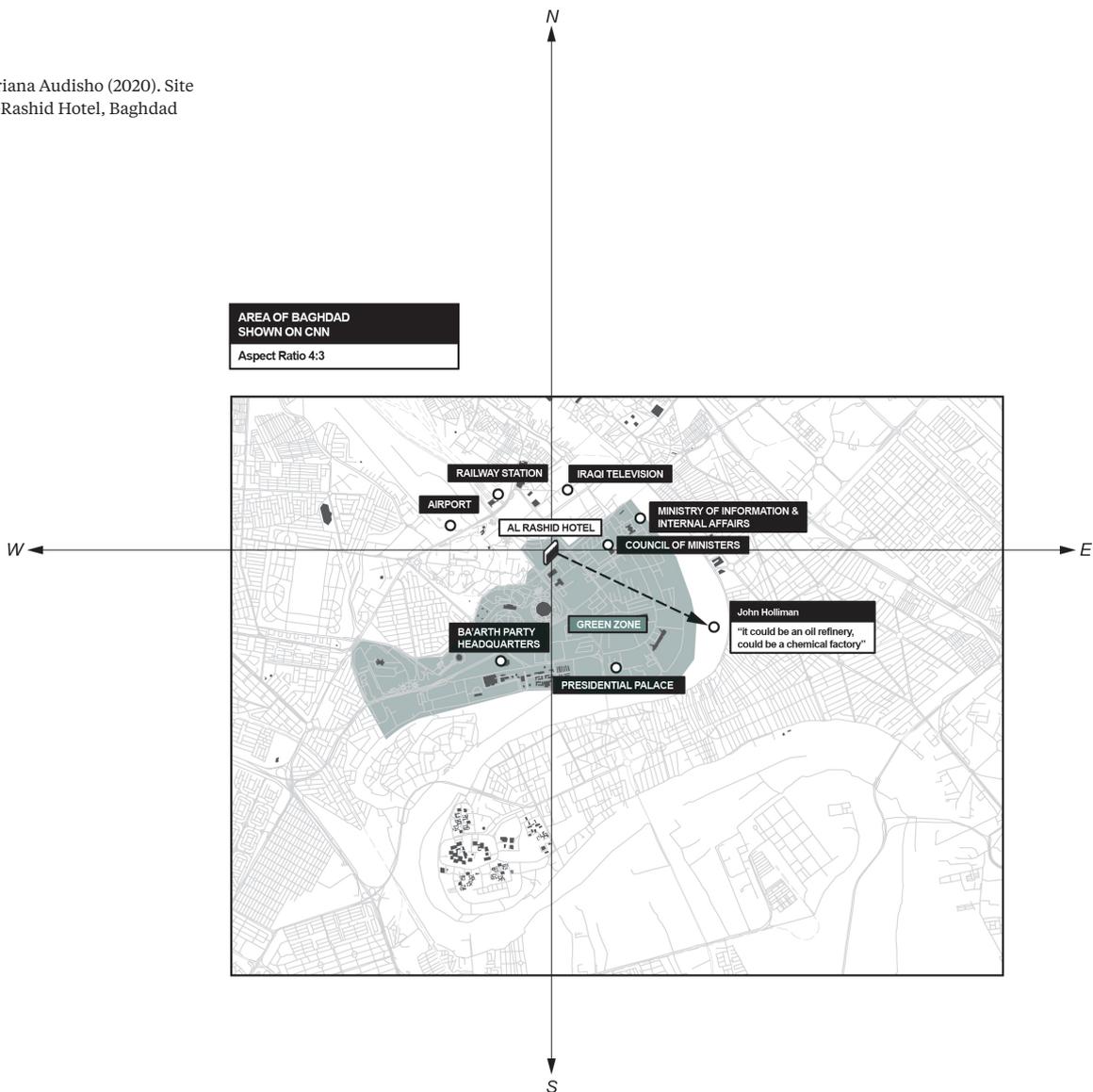
CNN's Baghdad correspondents Bernard Shaw, John Holliman and Peter Arnett navigated both their actions and words to stitch multiple vantage points into a decisive account from the Al Rashid hotel room (Fig. 2). For instance, Shaw remarked, "I'm going to crawl [via the corridor] to the other side of the hotel" (1991). At a subsequent point, Holliman said, "I'm going to get a longer microphone cord so I can travel more distance through this place and give you better outlook from all sides of the hotel" (1991). By outlook, he meant audio coverage as the microphone was held outside the window. Eight hours into the coverage, Holliman looked outside an eastern facing window to report on a cloud of smoke in the distance "it could be an oil refinery, could be a chemical factory" (1991). Due to the distant location from the hotel, Holliman was not able to specify the target. This ambiguity in the reporting blurs dichotomies of near and far. This commentary is precisely speculative as the Baghdad correspondents were forced to report first-hand accounts of what they could see and hear as a consequence of *liveness*.

Fig. 2 Endriana Audisho (2020). Location of the CNN correspondents in the Al-Rashid Hotel, Baghdad [Drawing]
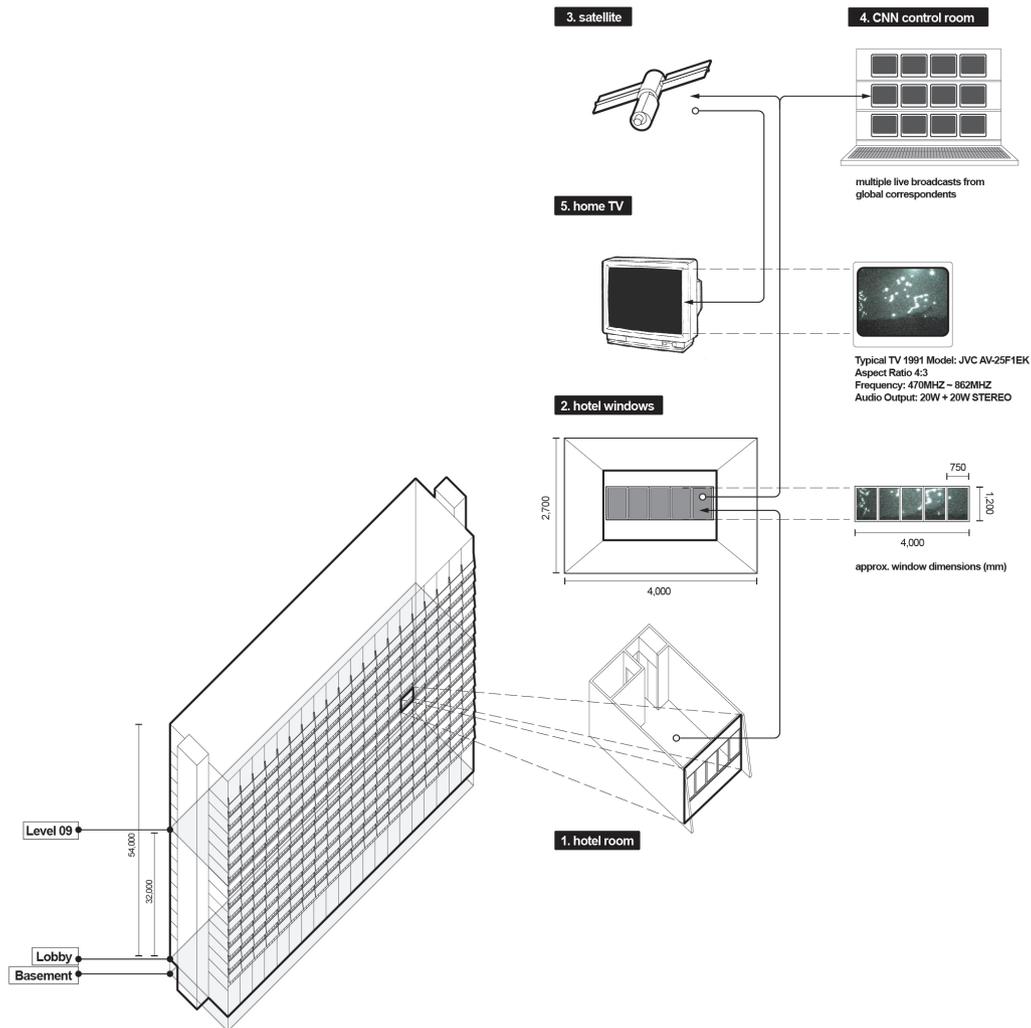
The speculative format has an underlying political problematic as simulations of all possible futures are presented in real-time (May, 2020: 230). This differs from historical time, which "was predicated on technical regimes and gestures that continually related present and future to the past [. . .] real-time is the time of statistical thought, in which futures knowable and unknowable are posed simultaneously" (231). Simulation is to be understood in Baudrillardian terms as the copy of a real without the origin (Baudrillard, 1981: 1). Simulation differs from representation as it substitutes the signs of the real for the real, whilst representation is an attempt to be the equivalent of the real (2-4). CNN's speculative *live* reportage is the substitute sign of the real, a deterrence to the real (2), that makes it difficult for the audience to distinguish between the real war and its simulated representation.
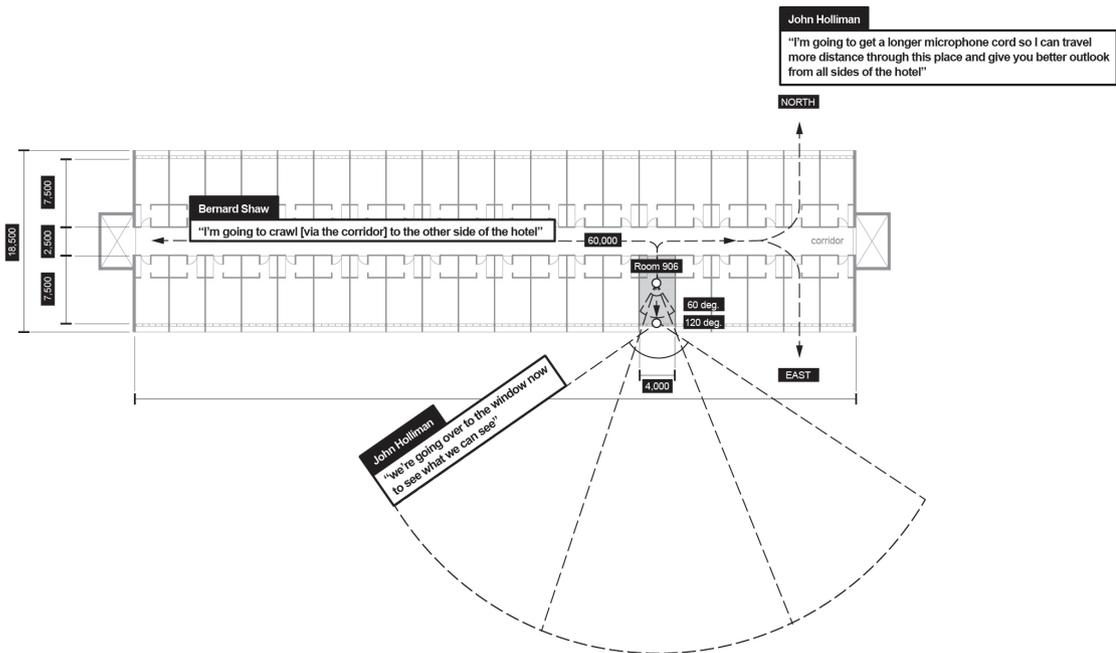

Fig. 3 Endriana Audisho (2020). Floor plan of the Level 9 hotel room of the Al-Rashid Hotel, showing the confined nature of CNN's reportage [Drawing]

The speculative format was also shaped by the spatial constraints of the hotel room when air strikes hit Baghdad. The Iraqis had confined all correspondents to the air-raid shelters in the basement of the Al-Rashid Hotel, but the CNN correspondents were allowed to remain on the ninth floor with a secured phone line (Diamond, 1991: 20). The phone line was instrumental as the first days of coverage were primarily audio, as opposed to real images of the conflict. The interior of the hotel was equivalent to a newsroom and the archetypes of the space became the instruments of reporting. The 1.2m high by 3.8m strip window, from which to be an eye-witness, the 4m by 7.5m room that operated as a quasi-broadcasting station, and the 2.5m wide corridor that enabled the correspondents to navigate to other orientations and panoramas of the city, became the very instruments to construct audio-visual accounts (Fig. 3). The reliance on these architectural elements to simulate some sense of ground-truthing can be demonstrated through their constant reference in the commentary. For example, "we're going over to the [hotel room] *window* now to see what we can see" (Holliman, 1991) followed by "I'm getting away from the *window* here now" (Holliman, 1991), as crackling sounds disrupted the audio reportage, or "something is happening

outside" (Shaw, 1991), draws an immediate visual connection between the interior of the hotel and the city of Baghdad. This visual imaginary collapses scales as the room and the urban are juxtaposed. With the absence of real footage on the first days of conflict, the window frame, which was a cropped frame of the city of Baghdad, and the corridor, which was used to navigate to other views of the city, were the sources of information. Due to the static nature of the window frame, the correspondents had to navigate the interior to view up close. The audience was exposed to the same information as the correspondents, as this live *mediation* saw both actors became hostages to the effects of *liveness*, situated in a space that anticipates the real through the simulated. Baudrillard indicates that McLuhan's axiom, the medium is the message, is central to our era of simulation, as without a message, the medium falls under our systems of judgement and values (1981: 55).
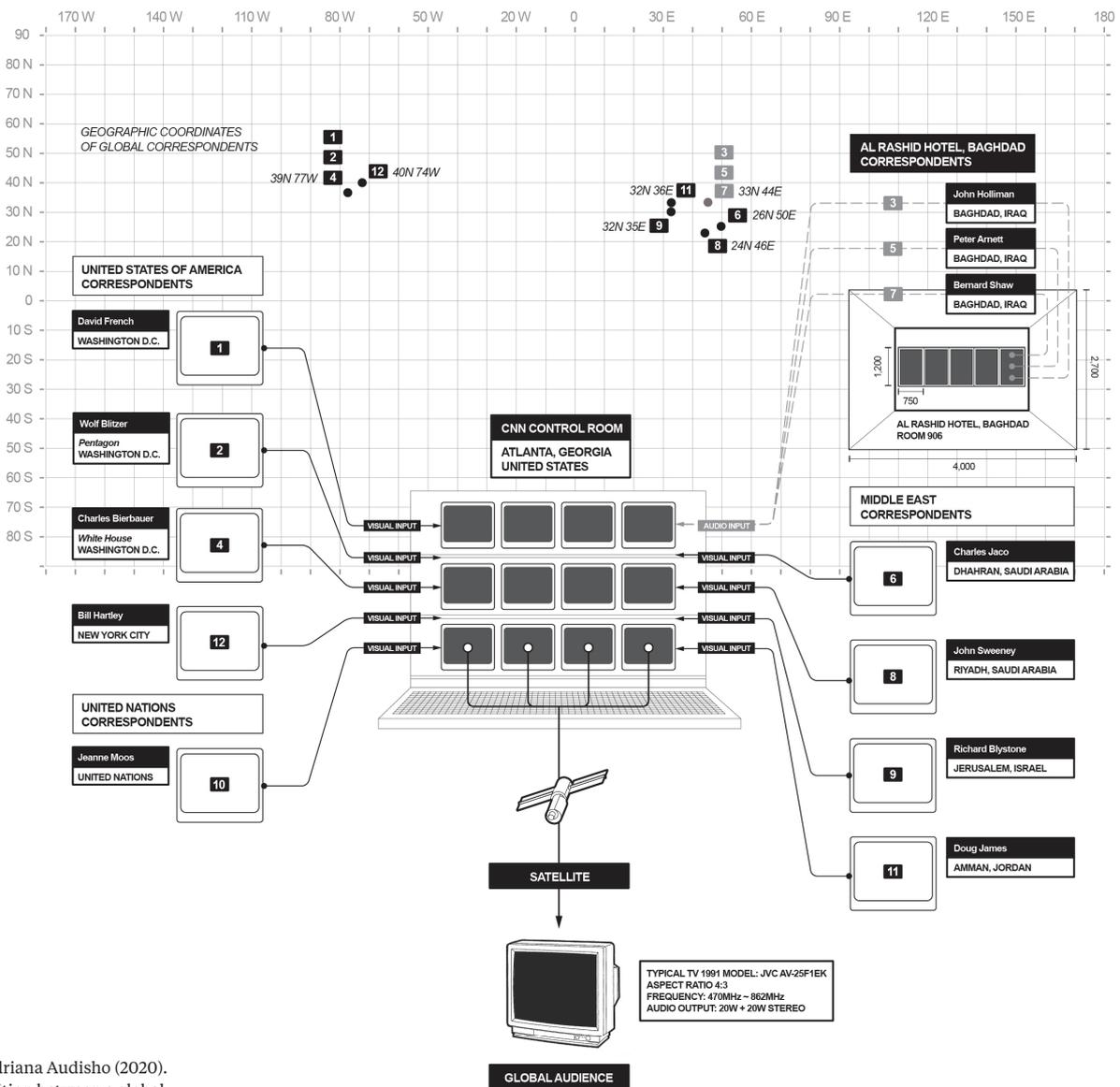

Fig. 4 Endriana Audisho (2020). Transposition between a global network of screens, correspondent locations and audience as seen in CNN's live coverage of the Gulf War [Drawing]

One can argue that reporting *live* from the front line suggests validity and legitimacy as it proves the correspondent is on the ground and at the very source of the event. However, it is key to point out that the phosphor-green night-vision video clips and images of Baghdad, which became iconic representations of the Gulf War, were transmitted a few days after the start of the war (Hoskins, 2004: 24). This delay resulted in the *image* of the war, and the city of Baghdad, framed through a montage of abstract representations for the first 24 hours of coverage. The absence of images saw the coverage constrained to broken live audio and a transposition between 19 CNN correspondent locations, television studios, vague maps, and diagrams of Baghdad, as well as the inclusion of unedited pool videos (the pool press, which refers to a group of journalists who share their resources in the collection of news, were accompanied by US military officials during the Gulf War). These multiple electronic feeds (Fig. 4) and image-text combinations were misaligned with the audio coverage and operated as placeholders to fill in visual gaps and as decoys to the real images of the conflict.

CNN's fragmented medium and message challenged traditional forms of reporting. As noted by architectural theorist Mark Dorrian referring to the 2003 Iraq War, the broadcasted images were "hidden under annotation, the 'evidence', as it were, being covered up by the graphic screen" (2008: 107). The equivalent of the annotations in the context of CNN's coverage of the Gulf War is the transposition between the live audio and vague diagrams and maps of Baghdad, which construct the graphic screen. For instance, when Holliman put the microphone outside the window so that we could "hear the sounds of the bombs" (1991), a crackling sound was heard for roughly 25 seconds, all while a portrait of Holliman was overlaid on a map of Iraq. His superimposed portrait, whose mugshot was the same scale as Iraq on the map, mismatched the audio narration of crackling sounds of the bombs in the background. This form of representation implies that interpretation, rather than the object itself, is delivered as evidence. CNN's simulated coverage of the Gulf War compensates for its lack of visual evidence and, therefore, acts as a deterrence to the real image of the event via its double (Baudrillard, 1981: 2). Interpretation dominates as real-time presents simulations of all possible futures (May, 2020: 230), collapsing the present and future, and, therefore, not allowing time to reflect on the *evidence* being presented. The consequence of the collapse of time on representation is further expanded on by Virilio as he states, "what happens more and more quickly is perceived less and less" (2005: 118), implying that speed, and in this case *liveness*, regulates access to the evidential object.

The relationship between the simulated and the real was further complicated once the evidential object, in this case the images of the war, were transmitted days after the start of the war. The images of the war visualised Baghdad through the language of pixels and resolution. Veiling the city with a grainy phosphor-green night-vision filter, the images possessed an "eerie, remote control quality" (Finnegan, 1991: 21), making it difficult to distinguish between reality and its simulated representation of the city. Subjected to the spectacle of the simulated, viewers did not witness images of the battlefield, but rather images of the effects of digital technology. This intersection between conflict, technology, and representation has been readily discussed in the lead up to, as well as with direct reference to, the Gulf War through the writings of Virilio and Baudrillard. Virilio in direct reference to the Gulf War states:

> we have been living in a theatre of operations, spectators of a theatrical pro-
> duction [mise-en-scène]. We have been living in a complete fiction. Faced
> with war, we must not only be conscientious objectors but also objectors to
> the objectivity of its representation. We must not believe our eyes. (2002: 41)

Virilio draws attention to the spectacle of the war and continues to problema-
tise this form of representation by claiming that the electronic war is not neutral
(2002: 53). The shift to the *image* of the war has produced what Virilio describes
as paradoxical logic. This logic challenges the concept of reality as real-time dom-
inates the thing presented and virtuality prevails over real space (1994: 63). In
this case, images replace the real and construct a substitute reality that deranges
the logics of perception (Virilio, 1989: 72). Baudrillard, by contrast, theorises sim-
ulation as a complete takeover of reality where "the real is no longer possible"
(1981, 13). Simulation collapses the relationship between reality and representa-
tion as the copy replaces the original, constructing a hyperreality (Baudrillard,
1981: 1). In *The Gulf War Did Not Take Place*, Baudrillard asks: "how is it that a real
war did not generate real images?" (1995: 82) and further argues that the Gulf War
was a "simulated war" (1995: 82), one that only took place on the screen. When
Baudrillard questions the absence of real images of the war (82), he is also re-
ferring to the absence of the Iraqis in the live images of the war, as if they were
electrocuted and surrendering to reportage (67-8). The one-sided nature of the
conflict, as materialised through the screen, has political effects as it influenced
public opinion in support of the war (Baudrillard, 1995: 13).

The theoretical lines of inquiry provoked by CNN's coverage of the Gulf War,
specifically the tension between the simulated and the real, are fundamental
when exploring the effects of the digital screen in architecture as they counter
a techno-deterministic perspective. GSAPP's Paperless Studio is situated in rela-
tion to the media coverage of 9/11 and the subsequent World Trade Centre design
competition, to recognise the shift in the interplay between the digital and archi-
tectural representation in the early 2000s to that of the hyperreal. Baudrillard's
theoretical positioning on simulation will be used to unpack the politics of rep-
resentation implicit in the hyperreal.

Screen conflict 02: Liveness, mediation, and the hyperreal in architecture as seen through the avant-garde of the digital

Experimentation with the digital screen in the early 1990s became an oppor-
tunity for the discipline of architecture to redefine its relationship with digital
technology. This momentum for experimentation can be attributed to a direct
response to technological developments, encouraged by the release of the World
Wide Web in 1989, but more importantly, the need to negotiate architecture's
relationship to theory and digital technology in a moment of crisis present in
the late 1980s and early 1990s. For Bernard Tschumi (2019) this crisis was an
"interesting junction" that presented a dichotomy between mainstream archi-
tecture and those who were interested in expanding the field. He explains that
a certain depth of questioning was taking place in opposition to the mainstream
of architecture, which at the time was described as post-modern (Tschumi,
2019). Tschumi was appointed as Dean of GSAPP in 1988, coinciding with the
Deconstructivist Exhibition at New York's Museum of Modern Art (MoMA). He
felt that it was an appropriate time to question how an engagement with digital

technology would further expand the field. This interest coalesced with the resurgence of media theory, and, architecture's relationship to media, theory, and digital technology became a core concern for GSAPP.

When asked whether the school was engaging with the media spectacle of CNN's live coverage of the Gulf War, Hani Rashid, who was one of the first to teach a Paperless Studio, responded "Yes [. . .] the 24-hour coverage, those crazy nocturnal images, and a lot of stuff that was relatively new to most people but not so new to those of us that were monitoring tech. And so, there was a lot of discussion and theory around it [. . .] we were always theorizing media" (Rashid, 2019). He foregrounded this statement by recounting the day the Gulf War started and remembers having a discussion with a professor stating that the "Gulf War could be the world's first Photoshop war" (Rashid, 2019). The professor questioned what he meant by this, to which Rashid responded, "it wouldn't take much to doctor it [. . .] I mean we've always known about doctoring images historically, but you can doctor an image in five seconds now [. . .] you could Photoshop tanks coming in over the Kuwait border and show it to people and say, look, this is what's happening" (Rashid, 2019). Rashid recalls the professor having a shocked look on his face and probably thought he was "insane to think like that", but to Rashid, who at the time had just started using Photoshop 1.0, there was a recognition of the effects of digital technology, in this case, notions of augmentation and the simulated real, on architectural representation.

GSAPP's speculative Paperless Studios in 1994 was unfolded in real-time with no clear intention on an outcome. Tschumi later explains that one of his main ambitions for GSAPP was to focus on the new, and the young generation of architects who would be able to generate their own language and discourse for the school (2013). Former alumni and the then young professors, Greg Lynn, Hani Rashid, and Scott Marble, volunteered to each teach a Paperless Design Studio. Ironically, they were not computer experts. In fact, Rashid recalls, "n[o]one had computer experience [. . .] I held up a floppy disk and asked the students if they knew what it was" (Cramer & Guiney, 2000: 95). Tschumi established a new teaching model where computer-savvy students, such as Ed Keller and Greg Pasquarelli, became digital assistants for Lynn, Rashid, and Marble (95). As Tschumi (2013) points out, a very experimental group emerged who accepted the fact that they were testing without a plan. It was an experiment to explore the effects of digital technology on architectural representation.

The speculative format of the Paperless Studio was influenced by the spatio-temporal effects of using computers in the studio space. Computer became "a radical reversal of the standard notion of the student's home-base as a manual drafting table in a walled cubicle" (GSAPP, 1993: 29). GSAPP's self-study in 1993 outlines that each of the 33 students received "his or her dedicated workstation (Silicon Graphics' Indy or Apple Computer's Power Macintosh) with the advanced software and network capabilities" (29). Situating computers in studio had spatio-temporal implications. Stan Allen, who renovated the Avery's 700-Level for the Paperless Studios, points out that spaces typically allocated for computer labs in school were neglected basement spaces (GSAPP, 1994: 9), which reflects the anxieties around the new technologies. He juxtaposes this by saying, "to integrate the computers directly in the design studio implies that the computer is not an adjunct resource but an everyday working tool" (9). The inclusion of the computer in studio added a provisional character to the space (9), where the screen

constantly redefine the users' engagement with both the tool and the space in a live format. Adjunct assistant professors, Eden Muir and Rory O'Neil, further elaborate on the embedded relationship of tool and space as they describe the configuration of the Paperless Studio as a series of "hardware clusters" where "SGI (Silicon Graphics Inc) workstations will be networked to Macintoshes on adjacent desks" (11). Files could be transferred through the network in real-time and presented on the screen or via projection, without ever existing on paper. This resulted in two scales of mediation; a physical negotiation between the subject and computer screen amid an intangible network of file transfers.

The mediation between the subject and object, in this instance the digital screen, is a consequence of the paradigm shift from the mechanical to the electronic (Eisenman, 1992: 16). Whereas in mechanical reproduction the subject holds an authoritative role over the object, electronic reproduction reconfigures the subject as reproduction takes place without the need for the subject to control or interpret the object (16). Interpretation is needed only when the architectural object is removed from the virtual and translated into the real. Digital media introduces ambiguity in how and what we see, which counters the long tradition of architecture being dominated by the mechanics of vision (16). As Eisenman explains, "architecture never adequately thought through the problem of vision because it remained within the concept of the subject and the four walls. Architecture [. . .] concretised vision" (18). Architecture, which has traditionally been seen as the home of reality (24), is challenged through the electronic paradigm as the simulated dominates real space. This simulation is infinite as the very nature of digital media derives from "number-based notations, of files, that can move and change all the time" (15). The temporal nature of digital media challenges architecture as there is no pure access to a single object. Access is mediated by inanimate actors, including the digital screen, digital formats, and software. The digital model of the architectural object transforms through the iterations of digital commands and transfer between digital files, which again are inanimate processes, naked to the eye, countering the long tradition of architecture being dominated by the mechanics of vision (16). Therefore, the digital screen curates a series of mediations, from the unseen digital processes to the very simulated nature of the architectural model in virtual space, that challenge the subject's (architect's) access to the object.

As highlighted by Aaron Betksy, Lynn and Rashid defined two poles with their different approaches (2007). Lynn was purely interested in operations within the computer screen, the digital model as a self-referential virtue, whilst Rashid was interested in unpacking mediascapes through the translation between virtual and physical space. If Virilio argues that digital technologies have altered our mode of perception and experience of space (1989: 72), we can argue that Lynn's operations within the computer construct a disembodied engagement, as the architecture remains within the computer and is experienced through simulation, whilst Rashid's attempts to translate the simulated into real space. In other words, there is a splitting of viewpoint and sharing of perception between the inanimate—the object of the screen—and the animate—the architecture in physical space (Virilio, 1994: 59-60) in Rashid's work. Even though Lynn and Rashid define two distinct polarities, both approaches reflect Eisenman's observation regarding a mediated access to the architectural object that challenges reality and notions of the origin. Lynn's architectural objects, which are digitally produced,

undergo a series of formal manipulations and echo Baudrillard's theory that the real is substituted by copies. Rashid's translation of the simulated into real space, via 1:1 screen-based architectural installations, fabricates a state of flux that constantly redefines reality.

Fig. 5 Endriana Audisho (2020). Diagram of installation from Hani Rashid's 1994 Fall Paperless Studio, *Media City: Architecture at the Interval* [Drawing]
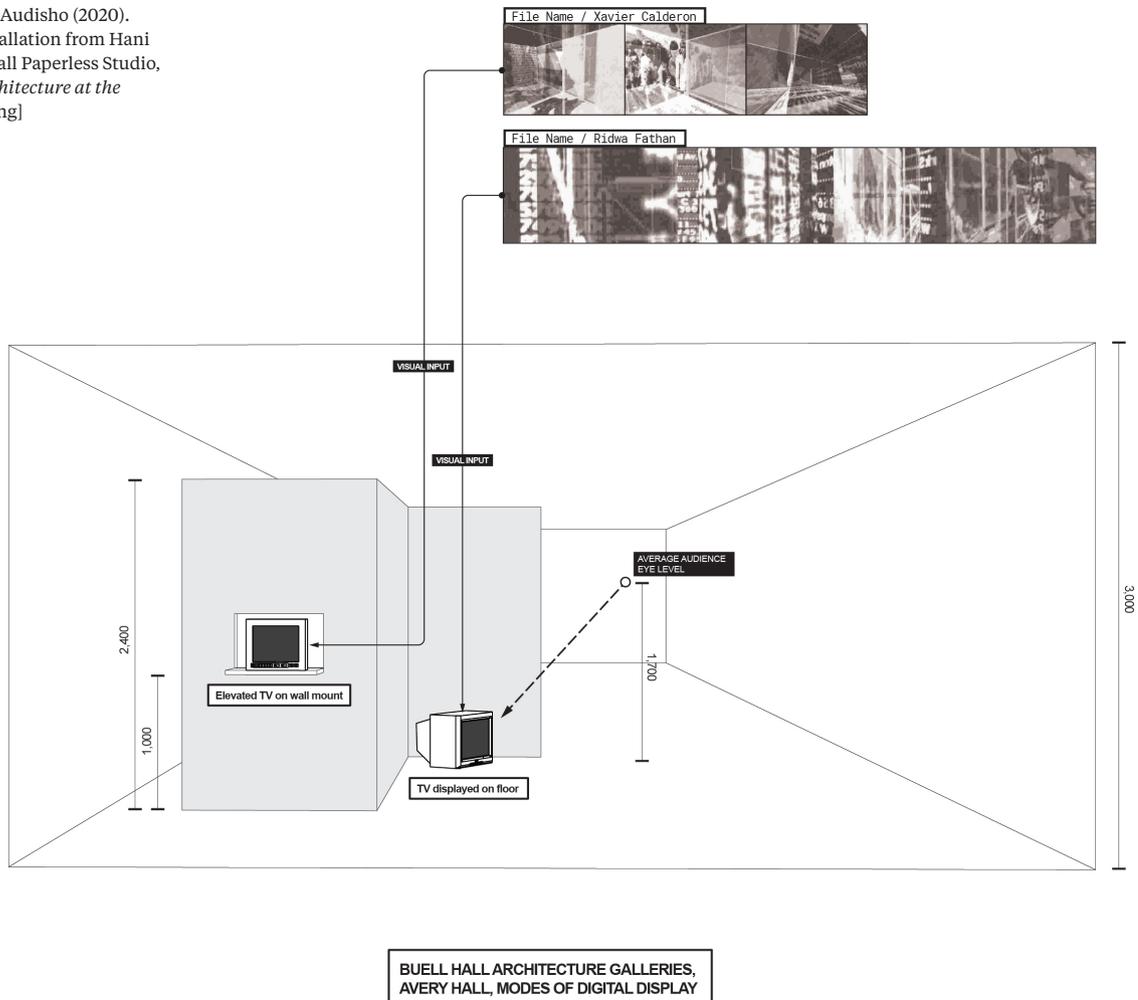
The two modalities of meditation of architecture via the digital screen in Lynn and Rashid's work were evident in their 1994 Fall syllabi. Rashid's studio, titled *Media City: Architecture at the Interval*, used digital technologies and techniques to create a media-urbanism (GSAPP, 1995: 7). The brief highlighted the importance of twentieth-century visual culture to the studio, from performance art to photography, as well as notions of speed, efficiency, control, and delirium (7). These references were materialised in the student work. For instance, Xavier Caideron's "NEW(z)ONE" and Ridwa Fathan's "Demography Dump" projects applied avant-garde techniques of montage and collage to produce "images" of the media city. The studio work was projected through a real-time large-scale installation in Wood Hall in December 1994, translating the virtual into the physical (Fig. 5). The shift from the virtual into the physical presents an altered engagement with liveness. Their translation in the physical demands a

live and embodied engagement by the audience. The audience is no longer passive and fixed to a single perspective as the screen-based installations construct a mediated environment that demands the audience to be both a spectator and a performer.

Fig. 6 Endriana Audisho (2020). Diagram of installation from Hani Rashid's 1995 Spring Studio, *Tokyo Extreme* [Drawing]
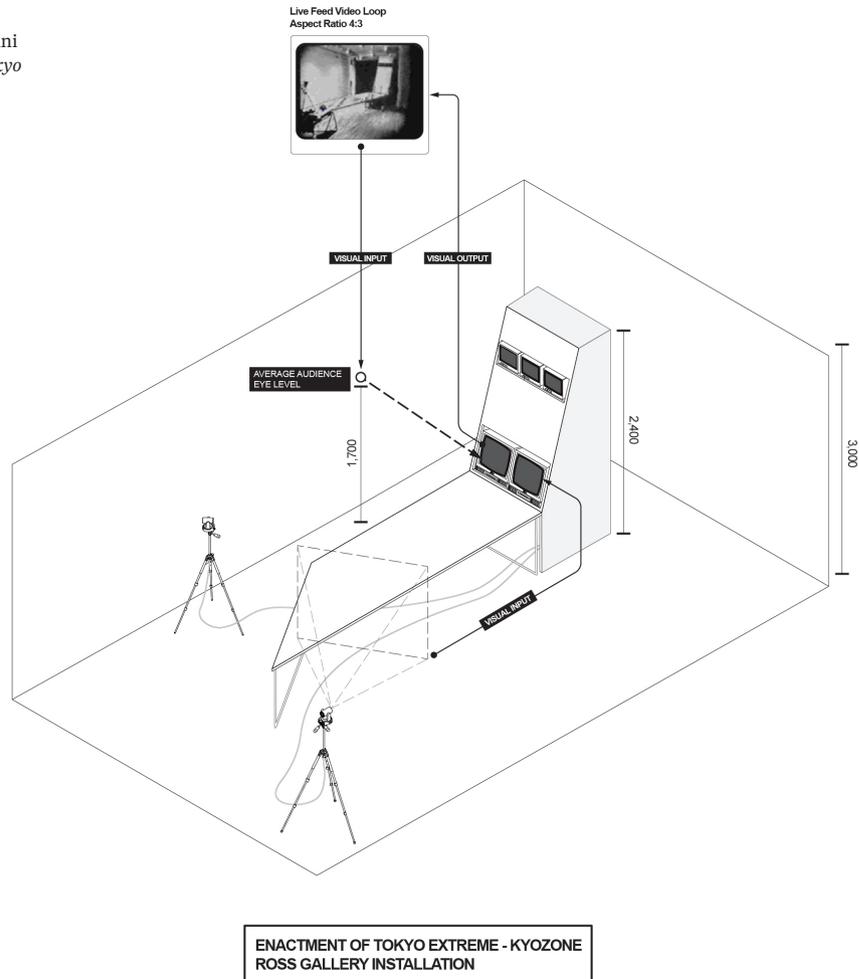
Rashid's Paperless Studio expands on the theoretical lines of inquiry provoked by CNN's coverage of the Gulf War, specifically the spatio-temporal and fragmented media experience generated by the digital screen. When Rashid made remarks on the ability to "doctor an image in five seconds now" (Rashid, 2019) in the context of the Gulf War, he was also questioning the effects of this doctoring on architectural representation. In a 2013 lecture, Rashid's associated rhetoric when describing his screen-based installation works reflects that of the ability to *warp*, *distort*, and *augment* space. Rashid clarifies that he was not interested in the computer as a formal tool, but rather, a tool to unravel phenomenon. This is explicitly seen in his 1995 spring studio, titled *Tokyo Extreme*, which saw an audience crowd around an installation, watching a series of projections, whilst being simultaneously recorded in real-time and displayed on one of the screens in the room (Fig 6). This feedback loop inverts reality as the physical presence of the audience as well as the virtual projections on the screens were doubled, relayed, and simultaneously virtualised in real time and space.
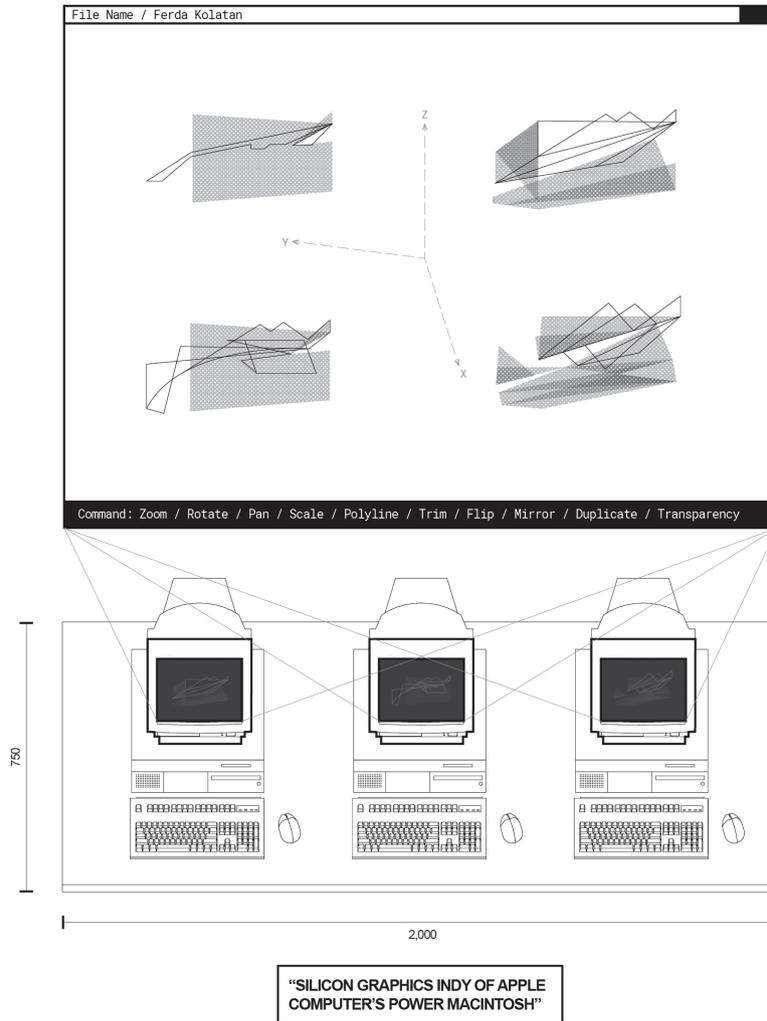
File Name / Ferda Kolatan

Command: Zoom / Rotate / Pan / Scale / Polyline / Trim / Flip / Mirror / Duplicate / Transparency

750

2,000

"SILICON GRAPHICS INDY OF APPLE
COMPUTER'S POWER MACINTOSH"

Fig. 7 Endriana Audisho (2020). Diagram of studio work from Greg Lynn's 1994 Fall Paperless Studio, *The Topological Organization of Free Particles: Parking Garage Studio* [Drawing]

In contrast, Greg Lynn's studio, titled *The Topological Organization of Free Particles: Parking Garage Studio*, demands a live engagement that remains autonomous from real space. The studio set out an agenda to use "advanced modelling software to generate form in alternative ways that include surface, particle, blob, kinematic and procedural modelling" (GSAPP, 1995: 6). A student project by Ferda Kolatan (Fig. 7) saw images titled "four alternative possibilities for programming during the day and night, phasing over several years" (1995: 6). The key terms here are *alternative possibilities*, which suggest a constant form-finding exercise. These alternatives are a consequence of *liveness*. Similar to CNN's live representations of the real, Lynn's real-time formal explorations also saw the digital screen as a site of simulation and calculation. The simulation of all possible futures in real-time (May, 2020: 230) highlights that our relation to the architectural object is shaped by an interpretation of the object and always mediated by the digital screen. The architectural object, which resides in virtual space, is a projection of an "idea of an indeterminate, unspecifiable future, open-endedness, the pre-eminence of futurity over the present and the past" (Grosz, 2001: 89). The real-time explorations challenge the concept of the origin as the architectural object is under constant transformation and architecture is defined by the temporal nature of digital media. Consequently, the virtual

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transposes the architectural object into the temporal (Grosz, 2001: 87) in Lynn's pedagogical project.

Although Rashid and Lynn's pedagogical projects differ, in the sense that Rashid's translates into real space whilst Lynn's operates within the virtual, they both expand the discourse on the simulated as provoked by the theoretical work of Baudrillard. Both studios used the digital screen as a site of deterrence to the real. In Rashid's Paperless Studio, this deterrence occurs as the large-scale screen-based installations rely on the audience's engagement for them to operate. Therefore, without the subject, the digital screen remains passive. A live engagement with the screen-based installations abolishes the distinction between passive and active, and in turn, recognises the shift from the system of the panoptic to a system of deterrence. The installations are conscious of this paradigm shift and act as vehicles to unpack and experience the mediated effects of the digital screen at 1:1 scale. With Lynn's Paperless Studio, the deterrence occurs through the transformation of the digital model, infinite copies of the real without the real. Although the concept of the origin, and the real, is challenged in Lynn's studio work, the process of real-time augmentation of the digital model recognises the indistinguishable relationship between the medium and the message provoked by the digital. Lynn's simulated models also predicate that the digital era witnesses the end of the panoptic system, which is linked with all the classical analyses of the "objective". As the transformation of the digital model occurs through live augmentation, the medium and the message are intangible, diffused, and diffracted, which reflects the mediated effects of the digital screen.

According to Lynn the Paperless Studio pedagogical project revolutionised the way designers engaged with the digital screen, which, in turn, also influenced their form of practice (Lynn, 2003: 24-5). Many of the young teachers who were engaged with the rise of digital technology translated these skills and techniques of representation into their experimental practices. Suddenly, a group of digital screen-based avant-garde architects, which includes Lynn and Rashid, among others, emerged. Preceding the discourse on the role of the computer relative to optimisation and efficiency, the Paperless Studio marked a significant period in architectural history. Inevitably, with many avant-garde projects, this reality was short lived. Lynn explains that the three original tracks of fabrication, form, and media began to homogenise as the Paperless Studios became mainstream within five years. In the same line of commentary, Tschumi discusses the homogenous effect on the work in the late 1990s and early 2000s, and exclaims that commercial offices in New York got equipped with the same facilities as the school. As they picked up the software, the computer was being used purely as a representation tool, as opposed to his advocacy for the computer to be used as a tool for thinking.

Transformation of digital screen from a tool for thinking about the effects of the digital screen on architectural representation to a tool for pure representation, is epitomised through the media spectacle of 9/11. The media coverage of 9/11 and the ensuing invasion of Iraq and Afghanistan was extensively covered from military reports to leaked images that were initially hidden from the public, such as the execution of Saddam Hussein (Fallon, 2019: 2-3). The coverage, like that of the Gulf War, was relayed in real-time across the television screens of a global audience, but the difference here was the scale of the qualitative aspects attached to the reportage. In the case of 9/11, qualities ranging from sense of loss, public

display of collective emotion, ensuing context of war, mass media, and scientific and technological advancement occurred "at the same time, in real time, on a world scale" (Kowal, 3012: 30). Consequently, Baudrillard dubbed 9/11 as an image-event and the first "symbolic event on a world scale" (2002: 27). Dissimilar to the Gulf War, which saw the absence of real images Baudrillard (1995:82) claims that the proliferation of images from 9/11 consumed the event, absorbed it, and offered it for consumption (2002: 27). The event was reduced to a repetition of a few images looped in motion (Kowal, 2012: 30), the image of the twin towers on fire being the most notable. The images replaced reality by simulacra, mere signs or representations (Baudrillard, 1981: 2), whilst the "fascination with the attack is primarily a fascination with the image" (Baudrillard, 2002: 26-27).

Post 9/11, the proposals for the 2002 competition to design the new World Trade Centre extended this fascination with the image-event. As critically observed by architectural writer, editor, and critic, Cynthia Davidson, "immediately the image is what everyone was talking about. What is the image of the project? What does it look like on the skyline?" (2019). To contextualise Davidson's comment in regard to the fetishising of the image, we have to understand that unlike other competitions in the late 1990s and early 2000s, the outcome for this competition was not internal to the field but was one that was heavily reported on and subject to an external and public review.

The WTC competition guidelines stated that the Lower Manhattan Development Corporation (LMDC) was committed to a transparent planning process in which the public would play a central role in shaping the future of lower Manhattan (LMDC, 2003: 2). After the widespread public dissatisfaction with the six initial concept plans by Beyer Blinder Belle in July 2002, LMDC engaged with a broader network of actors ranging from advisory councils to public hearings and meetings with public officials (Young, 2014). Nine advisory councils representing groups affected by the attacks were established to regularly consult with LMDC (LMDC, 2003: 2). Engagement with the public began in February 2002 through LMDC's "Listening to the City" forum (Young, 2014), which subsequently provoked a global design competition with revised design requirements, notably the restoration of a tall, powerful, and *symbolic skyline* (Young, 2014). On 26 September 2002, the LMDC selected six finalists from the global pool whose competition proposals were released for public review at the Winter Garden in the World Financial Centre. Although the LMDC aimed for a transparent and public planning process, the process was politically contested. After the public review at the Winter Garden, LMDC denied full accountability of meeting public opinions, stating that to satisfy everyone would be impossible and that the final decision would be made by LMDC and the Port Authority, who owned the WTC site (Young, 2014). To complicate matters more, the planning process coincided with gubernatorial election that saw New York Governor George E. Pataki, who controlled the WTC site, criticised for his neutral politics in a bid to be re-elected (Sagalyn, 2005: 33-24). The political fragmentation between the multiple stakeholders, including LMDC, the Port Authority, and the lack of direction from the governor, substituted the portrayed *publicness* of the planning process with endless posturing, symbolic rhetoric, and a political narrative (Sagalyn, 2005: 63).

The competition was a media spectacle as it became the focal point of worldwide coverage and "architectural interests were thrust into the spotlight of an unprecedented level of popular attention" (Sagalyn, 2005: 25). Architecture

was now operating in a new communication paradigm, obsessed with the image-event and that this global public attention played a significant role in the outcome (Lynn, 2019). For instance, Lynn explains that CNN had a live voting on the presentation of the finalist's schemes (Lynn, 2019). Therefore, the *image* of both the architects and their proposals was of importance. Aware of the role that mass media would play in the outcome of the competition, Lynn explains that he intentionally asked filmmaker Tom Jennings to film United Architects,1 who were one of the six finalists, during their design process for the competition, to construct "a centre of gravity as having a camera around would make us feel like a band, like a team" (Lynn, 2019). Lynn recalls, the day they arrived for the competition briefing, "Tom had the camera on in the cab and it was the day that Bush announced he was starting the second Gulf War. And so, he starts to film with the radio of Bush in the background" (Lynn, 2019). This live documentation of the design process is reflective of the media spectacle that is substituting the architectural object itself. The intention of the film, *Architects: A Story of Loss, Memory and Real Estate*, was to profile the winning team, but United Architects, who represented the digital avant-garde, did not end up winning the competition and the film is currently unavailable for public viewing. It existed in a specific moment, in real-time within the media spectacle of the competition, which itself exemplifies that the condition of live reporting and documenting during an event is instrumental in curating and shaping realities.

United Architects' proposal comprised five towers that conjoined at different heights and all visualisation associated with the project presents an external view of the tower. The focus on images of the exterior, which highlights the diagonal structural brace, is a response to both the revised design requirements that advocated for a tall, powerful, and symbolic skyline, as well as the discourse on safety in the wake of 9/11. At a time when citizens of New York City were seeking "stability, certainty, and tradition" (Jennings, 2016), the computer-generated renders of the tower reassured this through the technical aesthetic that was foregrounded in the renders. In response to public concerns of tall buildings in the wake of 9/11, the diagonally braced exterior skin is apparent in the renders and its structural strength, to resist tremendous force, is highlighted. These simulated images were conscious of the role that images can play in shaping public opinion in the context of CNN's live voting as well as in the aftershock of an event, that being 9/11.

What is concerning about the simulated images produced by United Architects for the competition is that they echo Baudrillard's theory that reality disappears in hyperreality. To be specific, the political reality of the event itself and the politics of its representation are not visible in the images. According to Reinhold Martin, the competition generated a specific assemblage of aesthetics and politics (2004: 217) where architects were being asked to project a (neo-)modern design on the site that symbolises cultural and economic imperialism, in the process, dismissing the historico-political aspect of the event (218). Martin criticises the proposals by claiming that the rhetoric of the rebuilding was "dedicated to producing striking images of the future" (218-19) whilst foreclosing "any real public debate regarding the historical dimensions of the event itself" (218). The images produced by United Architects depoliticised the event as the "progressive" aesthetics is associated with discourse on technological innovation (219) and responds to the rhetoric of the competition design guideline to restore a tall,

powerful, and symbolic skyline. Aesthetics becomes a form of politics itself as it acts as a filter that deters the reality of the event. As opposed to the passive nature of the audience in CNN's coverage of the Gulf War, the competition was an opportunity for architecture to publicly engage itself and a broader audience with politics. It is evident that the renders produced by United Architects fall into the "matter of fact" category, presenting a sanitised solution that is blind to the violence of the event. The render of the skyline sees the proposed twisted, asymmetrical towers reflect the composition of the Statue of Liberty, which is also featured in the render. The inclusion of the Statue of Liberty, an icon of free-dom, symbolises a liberation from the reality of the event, as once again, reality is being replaced by mere representation, symbols of the real (Baudrillard, 1981: 2). Furthermore, the renders always show the towers from the exterior and at a distance, with no relation to the ground, which we know is contested because of the physical void left in the ground after the attacks. The one render that gives a zoomed-in detail is a view from the memorial looking up, which frames the tower receding into the sky, emblematic of a future vision and a hyperreality devoid of a political reality. United Architects' competition proposal can, therefore, be crit-icised for reducing architecture to a series of techno-formal concerns that do not address the realities of the event of 9/11.

Conclusion

In order to explore the interplay between the digital screen and architectural representation relative to a broader media and theoretical context of the early 1990s-early 2000s, this paper situated the Paperless Studio in relation to the me-dia spectacle of two events: (1) Cable News Network's (CNN) 24-hour live coverage of the Gulf War in 1991; and (2) the 2002 competition to design the new World Trade Centre (WTC) post the image-event of 9/11. The two events were used to demonstrate the shift in the interplay between the digital screen and its effects on architectural representation from a speculative and intellectual engagement with the effects of the digital screen in the early 1990s, to that of pure representa-tion in the early 2000s.

CNN's fragmented medium and message of the Gulf War problematised the polit-ical implications of liveness, mediation, and the simulated real, and became the theoretical background to the Paperless Studio. Whereas the lack of resolution in CNN's reporting of the Gulf War produced a scattered representation of the conflict, the lack of resolution in the GSAPP's early explorations with the digital screen were productive as they were speculating on architecture's relationship with digital media and engaged with its associated theory. United Architects' proposal, which represented the digital avant-garde, surrendered the specula-tive and theoretical project of the Paperless Studio in favour of a "progressive architecture" that became a pure representation, with no regard to the history, politics, or the reality of the event itself.

INTERSTICES **20**

ENDNOTES

1 United Architects was a collaboration between Alejandro Zaera-Polo and Farshid Moussavi of Foreign Office Architects, Greg Lynn of Greg Lynn FORM, Kevin Kennon of Kevin Kennon Architects, Jesse Reiser and Nanako Umemoto of Reiser + Umemoto Architects, and Ben van Berkel of UNStudio.

REFERENCES

Baudrillard, J. (1981). *Simulacra and simulation*, Ann Arbor, MI: The University of Michigan Press.

Baudrillard, J. (1995). *The Gulf War did not take place*. Bloomington, IL: Indiana University Press.

Baudrillard, J. (2002). *The spirit of terrorism or requiem for the Twin Towers* (C. Turner, Trans.). New York, NY, NY: Verso.

Betsky, A. (2007). A virtual reality: The legacy of digital architecture. *Artforum*, *46*(1).

Caldwell, J. (1995). *Televisuality: Style, crisis, and authority in American television*. New Brunswick: Rutgers University Press.

Canadian Centre for Architecture. (2013, August 14). *Toolkit for Today 2013: Bernard Tschumi* [video file]. Retrieved from https://www.youtube.com/watch?v=PE9LHXEsB4A

Chomsky, N (1992). The media and the war: What war? In H. Mowlana et al. (Eds.), *Triumph of the image: The media's war in the Persian Gulf—a global perspective* (pp. 51-61). Boulder, CO: Westview Press.

Cramer, N. & Guiney, A. (2000). The computer school. *Architecture*, September issue, p.95.

Davidson, C. (2019, February 9). An interview with Cynthia Davidson on *Anyone Corporation/*Interviewer:

Endriana Audisho [transcription and MP3].

Diamond, E. (1991, January 28). CNN's triumph. *New York, NYer Magazine*, p.20.

Dorrian, M. (2008). Transcoded indexicality. In C. Davidson (Ed.). *Log, 12* (pp. 105-115). New York, NY: Anyone Corporation.

Dorrian, M. (2015). *Writing on the image: Architecture, the city and the politics of representation.* London, UK: I.B. Tauris.

Eisenman, P. (1992). Visions unfolding: Architecture in the age of electronic media. In Carpo. M. (Ed.). *The digital turn in architecture 1992-2012.* Hoboken, NJ: Wiley.

Eisenman, P. (1992). The Affects of Singularity. In Carpo. M. (Ed.). *The digital turn in architecture 1992-2012.* Hoboken, NJ: Wiley.

Fallon, K. (2019). *Where truth lies: Digital culture and documentary media after 9/11*. Oakland, CA: University of California Press.

Finnegan, W. (1991, Monday January 28). The talk of the town. *The New York, NYer,* p.21.

Formanek, I. (2016). *Operation Design Storm: 25 years on.* Retrieved from https://edition.cnn.com/2016/01/19/middleeast/operation-desert-storm-25-years-later/index.html

Gerard, J. (1990, Thursday August 9). TV reporting recalls radio days. *The New York, NY Times*, p.1.

Grosz, E. (2001). *Architecture from the outside: Essays on virtual and real space.* Cambridge, MA: The MIT Press.

GSAPP, Columbia University. (1994). *Newsline*. Summer/Sept/Oct issue. New York, NY: Columbia University Press.

GSAPP, Columbia University. (1995). *Newsline*. January/February issue. New York, NY: Columbia University Press.

GSAPP, Columbia University. (1993). *School self study*, Section III.7 Physical Resources, Provost BOX 570, Folders 23-23.

HDiNDEMAND. (2013 September 4). *Operation Desert Storm – CNN Live News Coverage – Part 1* [Video]. YouTube. URL https://www.youtube.com/watch?v=vn8mfg_oEz4

HDiNDEMAND. (2013 September 6). *Operation Desert Storm – CNN Live News Coverage – Part 2* [Video]. YouTube. URL https://www.youtube.com/watch?v=7dv7aCudtHk

HDiNDEMAND. (2013 September 10). *Operation Desert Storm – CNN Live News Coverage – Part 5* [Video]. YouTube. URL https://www.youtube.com/watch?v=G_AGqikQ4wg&t=4811s

Hoskins, A. (2004). *Televising war: From Vietnam to Iraq*. London, UK: Continuum International Publishing Group.

Klare, T. M. (2003). Arms transfers to Iran and Iraq during the Iran-Iraq War of 1980-88 and the origins of the Gulf War. In Bacevish, J.A and Efraim, E. (Eds.). *Gulf War of 1991 reconsidered*. London, UK: Routledge.

Kowal, E. (2012). *The "image-event" in the early post-9/11 novel literary representations of terror after September 11, 2001*. Krakow: Jagiellonian University Press.

Kurtz, H. (1991, Wednesday January 16). The media, mobilizing for conflict; audiences grow as Gulf story grips nation. *The Washington Post*, p.2.

Lower Manhattan Development Corporation. (2003). *World Trade Centre site memorial competition guidelines*. Retrieved from https://www.911memorial.org/sites/default/files/inline-files/2003%20april.28%20LMDC%20Memorial%20Guidelines.pdf

Lynn, G. (2019, February 15). *An interview with Greg Lynn on the Paperless Studio/*Interviewer: Endriana Audisho [Transcription and MP3].

Lynn, G. (2003). In: Tschumi, B & Berman, M (Ed.). *INDEX Architecture*. Cambridge, MA: The MIT Press.

Lynn, G. (2014). *Fold, bodies & blobs collected essays.* Bruxelles: La Lettre volée.

Martin, R. (2004). Architecture at war: a report from ground zero. *Angelaki, 9(2)*, 217–225.

May, J. (2020). Architecture in real time. In May, J and Alexander, Z.C. (Eds.). *Design technics: Archaeologies of architectural practice* (pp. 219-240). Minneapolis, MI: University of Minnesota Press.

Rashid, H. (2003). Prologue. In Rashid, H and Lynn, G (Eds.). *Architectural laboratories*. Rotterdam: NAi Uitgevers.

Rashid, H. (2019, February 9). *An interview with Hani Rashid on the Paperless Studio/* Interviewer: Endriana Audisho [Transcription and MP3].

Reiser, J. (2019, February 2). *An interview with Jesse Reiser on the Paperless Studio/* Interviewer: Endriana Audisho [Transcription and MP3].

Reiser, J., Umemoto, N., & Benjamin, A.E. (2019). *Projects and their consequences*. New York, NY: Princeton Architectural Press.

RUR. *World Trade Centre*. Retrieved from http://www.reiser-umemoto.com/world-trade-center.html

Sagalyn, L. (2005). The politics of planning the world's most visible urban redevelopment project. In Mollenkopf, J. (Ed) *Contentious city: The politics of recovery in New York, NY City*. New York, NY City: The Russel Sage Foundation.

Tschumi, B. (2019, February 6). *An interview with Bernard Tschumi on the Paperless Studio/* Interviewer: Endriana Audisho [Transcription and MP3].

Virilio, P. (1989). *War and cinema: The logistics of perception* (P. Camiller Trans.). London, UK: Verso.

Virilio, P. (1994). *The vision machine* (J. Rose Trans.). London, UK: British Film Institute.

Virilio, P. (2002). *Desert screen: War at the speed of light*. New York, NY: Continuum.

Virilio, P. (2005). *Negative horizons: An essay in dromoscopy* (Michael Degener Trans.). New York, NY: Continuum.

Virilio, P., Bertrand, R. (2012). *The administration of fear*. Los Angeles: Semiotext(e).

Young, M. (2014). *The NYC that never was: 1 WTC and the competition for the World Trade Center Site*. Retrieved from https://untappedcities.com/2014/11/04/the-nyc-that-never-was-1-wtc-and-the-competition-for-the-world-trade-center-site/