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# COMMENT

## ARCHITECTS CAN LEARN MUCH FROM THE DESIGN TECHNIQUES OF HOLLYWOOD, SAY TINO SCHAEGLER AND MICHAEL J BROWN

**The roles of film director, architect and digital designer have begun to slowly melt together.** Thus far this silent revolution has remained below the surface, making its presence felt primarily in architecture's avant-garde. But driven by a confluence of software and the implementation of more sophisticated ideas of spatial narrative, a new group of professionals is emerging, who bridge the gaps between these fields and pioneer new work models in the process.

Granted, symbiotic exchanges between film and architecture have a long history. However, from Fritz Lang's bold use of imaginary architecture in *Metropolis* (1927) to *Blade Runner*'s 1982 dystopia from Ridley Scott, the transfer has remained at a largely symbolic, referential level. The narrative and scenographic aspects of film can inform architecture far more, as these speak directly to the complex symphony of impulses that we define as spatial perception. After all, it is through our wandering eyes, scanning the sensations of colour, proportion and rhythm that we read and define space. Our perception is never static. Even when we sit motionless, our gaze wanders, activating the space around us.

Until recently few architects have managed to incorporate elements of movement and time into their designs. Our reliance on projective geometry is perhaps partially to blame. Its main assets – plan, section and elevation – promote an inert notion of space: the architecture we create cannot be separated from the means by which we represent, and thereby evaluate, it. Thus significant changes in architecture must be grounded in the revolutions that change the way we design and communicate it. The invention of linear perspective drawing in the 15th century, for example, saw an explosion during the Renaissance and Baroque periods of axial architectural and urban compositions meant to be enjoyed from a few set vantage points.

It is only in recent years, through advances in digital technology, that the possibility of cinematic-architectural narratives has been made real. By cross-breeding techniques originally intended for film and animation, architects have begun to incorporate time and variation into their work. With its Yokohama Port Terminal, Foreign Office Architects' attempt to 'de-territorialise' the terminal spaces led to a solution that renders plan and section irrelevant. Conceived instead as a continuously interwoven landscape, the practice applied CAD systems such as flow charts to provide multifaceted and dynamic horizons that guide arrival and departure sequences.

Crossovers in the visualisation and film worlds are the best harbinger of what is to come. While most pre-production and

film-set design is still performed with hand sketches and drafting boards, a few directors, such as David Fincher, have borrowed from the animation world, employing the extensive use of pre-visualisation during film production. Pre-vis is a technique in which low-cost digital 3D animation aids the film-making process by creating rough versions of the shots in a movie sequence. Such Fincher films as *Fight Club* (1999) and *Panic Room* (2002) feature complex and fast-paced camera moves – inconceivable without the assistance of pre-vis. These camera moves penetrate buildings and rapidly change scale, delivering unprecedented spatial narratives.

These applications are already spilling over into the grey margins of the architectural world. NAU architecture recently developed an approach, aptly named '4D modelling', that puts dynamic perception at the core of digital, virtual design. Applied originally in the design of stadiums for a futuristic American football video game, it assumes gaming's ubiquitous 'first-person' narrative, animating various camera paths that simulate the character's future/possible movements. By running through these cameras' perspectives, geometry is first roughed out, then refined with details that sculpt the experience into the fourth dimension. The result is virtual spaces that reveal their depth and variety only through the player's movement across the pitch. This technique has now moved into architectural work, and has already been harnessed in the design of a private residence.

These experiments are redefining the use of animations in architectural practice, elevating and liberating them from roles as a stale presentation medium – uninspired fly-throughs – and embedding them directly in the design process. Techniques such as 4D modelling allow architects to develop a design intuitively in terms of storytelling and temporally unfolding composition, closer to the work of an animator than the traditional 'master builder'. Architecture can be planned as an event, integrating aspects such as the change of lighting, texture and surface.

It is only a short step to foreseeing a fusion of these technologies to allow for interactive evaluation of a design on-site and in real time.

Design mediums will cease to be simply reduced, abstracted sketches of reality, and become parallel, overlapping versions of it. Beginning with a 3D model of the site, architects will be able to develop their script for the building, evaluating various speeds, approaches and lighting conditions. Before thinking about architecture per se, they can focus on movement into and up through the building, blocking out the basic geometry and pathway. With advanced game engines, architects will explore the building on-site through a visor, tuning the interior and exterior as an assistant makes real-time adjustments. Transfers between real and digital modes will continue throughout the design process, in each step educating and surprising the designer ■



**Tino Schaedler** has an academic background in architecture and visual effects. He co-founded design collective Nau with Michael J Brown, and now works in film design



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