

## The Medium Is the Matter

*Critical Observations and Strategic Perspectives at Half-time*

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### Abstract

This paper critically re-views the professional impact and functionality of the pervasive digital 'matter' we have come to believe we can no longer do without.

On the basis of a playful exploration of the first 'half-century' of our digital age, an attempt is made to draw new perspectives for the next 'level' of our digital culture in a broader (multi)media perspective and more specifically: the domains of Architecture.

To stimulate an open-minded 'second-half' debate, the paper puts forward some potentially promising (and hopefully provocative) conceptions and strategies for imaginative interface applications and game-based architectural study initiatives.

Furthermore, the paper proposes the establishment of a new cultural platform for the exchange of Critical Digital hypotheses and the evolvment of visionary design concepts through creative digital innovation, with the (inter)active involvement of older *and* younger team-players...

### Introduction

The 'Digital Age' was heralded in with an air of optimism and opportunity.

This initial technological and cultural positivism, dominated by the promises and expected benefits of an all-encompassing *digital culture* has pervaded to this day. As a consequence, the digital discourse has hardly been 'critical'.

As inevitable as the cycles of development and implementation of computer-based media may now seem, it is worth realising that, on a cultural time-scale, they have actually only been 'around' relatively briefly...

In fact, if we were to think of our Digital Age in terms of a Digital *Century*, we should realise that we now find ourselves more or less half way! So, as we approach the beginning of our second half-century, it seems justified to have a *time-out*...

Time to count the blessings, but also the *shortcomings*, of our increasingly digitised culture and to think clearheadedly, but imaginatively, about where we might – and indeed should – be heading in the (near) future...

What are to be the 'winning strategies' for the 'second half'?

### From digital cult to new media culture

The first thirty years of our digital century were characterised by fascination on the one hand and technical innovation on the other.

In the Sixties and Seventies the computer was still considered an exponent of a 'brave new world'. The issue of computation was associated with scientific rationalism but was also

surrounded by starry-eyed expectations and hopes for a better global (indeed: *universal*) society. This optimism was at the same time tempered by the looming spectre of an impending 'anti-society', centrally controlled by a predominant *Big Brother*...

After the mind-expanding Sixties and Seventies it was no longer just the media specialists and scientists, but the public at large that started considering the digital revolution as the Next Big Thing. The new media culture (or cult?) was proclaimed with a passion.

"Digital" became a kind of mantra for innumerable devotees.

The slogan: "Thanks to the Computer we are now (or: *will soon be*) able to ..... ."

After the early, 'heroic' research-and-development phase, the eighties witnessed the true flowering of the digital revolution as a popular movement. Over a period of a mere twenty years the steady proliferation of digital technology took place via a series of iterative loops. From clean-room mainframe environment, via still relatively specialised text processor, personal computer and eventually desktop publisher for the masses, the resulting technological *and* cultural shift was not only extremely swift but also seemingly inevitable.

Some of the rapidly evolving permutations of this process, which have shaken up the way we work (and indeed play):

- From 'analogue' to digital;
- From hard to 'soft' technologies;
- From mass media to 'personalised' tool;
- From traditional skill to 'choice-based' interface;
- From complex calculation to 'easy' manipulation;
- From 'centralised' communication to networked environment.

The effects of these cycles of development, implementation, upgrading, mainstreaming and hybridisation have not been entirely painless. After the gold rush era, whereby new 'generations' of digital applications were hurriedly brought onto the market, we now find ourselves collectively lumbered with operationally, ergonomically and aesthetically 'poor' instruments.

### **The 'matter' of media**

Over the years our conceptions of (digital) media have been changing constantly.

Early Media gurus (notably McLuhan) saw the medium not merely as a 'messenger', but as the *Message* (even the *Massage*).<sup>1</sup>

Scholars of architectural design began to see computer-based media not just as 'tools', but increasingly as the *Method*.<sup>2</sup>

We would argue that, in the present cultural time frame and technological state-of-the-art, digital media – as such – are no longer 'the thing that matters'. They have evolved from being the driving forces 'between', to becoming the base condition, the *Matter* on which new concepts are (to be) built...

'Digital or not' is hardly an issue any longer. Indeed, from a user point-of-view, the fixation on digitalisation has become almost irrelevant and even distracting. What is needed is a more imaginative kind of instrumentality that can facilitate a new cultural avant-garde!

This means that next generations of design media applications will need to redress the notorious drawbacks of the machinery of today.

To name a few:

- The limitations of the archaic typewriter / screen interface;

- The 'flatness' of orientation and lack of spatial 'presence';
- The untamed 'much-ness' of information and absence of mapping;
- The visual impersonality and lack of aesthetic sensibility;
- The insufficient compatibility of media: virtual and physical;
- The lack of spontaneity in design modelling and sketching;
- The constraints upon physical manifestations of ideas in the 'real world'.

Digitised systems have nonetheless become the Modus Operandi of the late twentieth- and early twenty-first century and have had a profound impact on various fields of creative enterprise, such as Architecture...

After an extensive period of fine-tuning existing conventions, it is time for *inventions*. What is needed is a wholly new conception of the physical interface, which can stimulate the imagination and concretisation of new realities.

### Virtual architectonics

From the late Eighties onward, institutes of architectural education embraced the (somewhat dubious) motto: "Think Digital!"

For established centres of learning this was largely a matter of 'keeping up' and not losing the 'edge' – and consequently status – to newer institutes and younger members of faculty. According to some, this fixation on digitalisation on *all* levels threatened the foundations of the 'art' of teaching architecture (in a technological as well as an intellectual sense).

In some cases the preoccupation with 'all things digital' admittedly led to pseudo-systematisation and a painful simplification of the true issues of design. However, after the initial growing pains had subsided, most architectural schools proved able to absorb computation as an *added value* and increasingly became 'laboratories' for new applications. Consequently, computer-literate graduates have contributed considerably to changing the face of the architectural practice...

The architectural discipline was initially slow to catch on (with computation primarily used for structural and budgetary calculation and subsequently for two-dimensional computer-aided drafting). This changed as the fascination for spatial modelling and texture-mapped renderings spread through the international design community.

As a consequence, CAAD arguably contributed to a new kind of – 'global' – architectural vocabulary, characterised by complex geometries and sleek (im)materialisation concepts. The mere fact that hitherto 'inconceivable' architectural configurations could now be modelled accurately and visualised seductively (at least in the computer) resulted in new waves of 'solid liquid' architectures and other 'hypermodern' form experiments.

The problem in many cases was that the built results tended to be considerably less convincing in *real* reality than in their 'virtually real' design environments – particularly on the level of detailing and materialisation – unless a *very* considerable budget was available.

The various guises of computer aided architectural design have arguably given a meaningful impulse to contemporary aesthetics, but have not led to a new, universal 'style'. On the contrary, we currently find ourselves confronted with an *array* of formal agendas.

At the same time, a shift has been taking place in the field of design *media*...

Whereas, only a few years ago, computer generated 'special effects' would not fail to impress, there is now a tendency to shake off the constraints of standardised software and to adopt a more personal 'signature'. 'Old school' techniques are becoming credible again, but now: enhanced by the digitised formats of emerging media and other art forms.

At the same time we witness a trend towards moving away from purely digital architectonics, back to the physical world, particularly in the field of computer-based physical modelling and manufacturing.

Some topical issues:

- Imaginative and dynamic visualisation and testing (design);
- Intelligently produced architectonic components (technology);
- Contemporary forms of architectural ornamentation (aesthetics);
- Improved understanding and structuring of information (research);
- Cross-disciplinary mixing of media platforms (communication).

The question: what kinds of design development and representation applications might be expected to 'matter' in the future?

### Second-half perspectives...

As we anticipate being called out for the second-half of our digital century, we must be acutely aware of the paradigm-shifts that are in the air and lend an ear to the fresh ideas of younger 'team-players' who have grown up with the established matter of our digital culture. This does not mean that our tactics should necessarily deviate from what we have been doing up to now...

On the contrary, there is considerable opportunity to *sharpen* existing strategies whilst at the same time giving room to fresh ideas and innovations via *combined* approaches of:

- Fine-tuning proven instruments, formats and operations;
- Renewed attention towards earlier ambitions that have drifted off the critical radar;
- Wholly new conceptions and applications.

To contribute to the Critical Digital agenda discussion we would like to propose some 'moves', which we will discuss briefly.

Some themes we consider worthy of exploration – and expansion – in the near future:

- *Playful Media* (learning from game formats and game theory);
- *Interactive Interfaces* (developing personalised input/output alternatives);
- *Gesture-based Connectivity* (towards more tangible forms of interaction);
- *New 3D Visions* (creating new impulses for spatial experiencing).

#### *Playful Media:*

Whilst the collective attention in the 'first half' was mainly on the transition from 'analogue' to digital, we are now confronted with a situation where 'digital' has become ubiquitous to such an extent that it is a 'given' we need hardly be aware of any more.

At the same time, the steadily progressing digital evolution has altered our working methods and conceptions in various fields of enterprise, from commerce to the arts.

As we are inclined to consider architecture as an *art form*, we might study and learn from other artistic disciplines, such as *moviemaking* (cinematographic approaches, sequencing and animation), *theatre* (physical expression, interaction, improvisation) and *music* (rhythm, harmonic variation, but also digital recording and sampling). These may expand the 'palette' of architecture (traditionally making use of drawings, models, pictures and symbols).

But perhaps the most meaningful phenomenon to consider is contemporary *game culture*...

Digital games have emerged as a 'serious medium'. The operational cleverness, interactivity and elegance of particular digital game applications can give new incentives to the practice and education of architecture.

In this context, the concept of design as 'playing with ideas' visually and interactively might generate new 'game-worlds' in an architectural context. On the basis of pedagogical game situations, students and professionals would be able to get actively involved in explorations of design composition and perception issues, using digital media imaginatively and with a stimulating measure of *competitiveness*.

Such 'designerly' studies may not only be thought-provoking for the participants but, if intelligently organised as *experimental* studies, may lead to a better *understanding* of the issues of the discipline in the context of education and research.

Linking up with gaming communities and the creative industries may create a 'laboratory' for new techniques and manipulations and the evolvement of computer interfaces relevant to the architectural field.

#### *Interactive Interfaces:*

The proliferation of 'soft' technologies has been so successful that in many ways software has become the new hardware: an intrinsic 'cultural commodity', to such an extent that one might argue that is too important to leave its development to (big) business...

The digital applications we constantly work with are hardly user-friendly. Instead of interacting freely with 'personalised tools', we find ourselves struggling with the limitations of *mass products* that are no longer fitting in our present digital era, and certainly not adequate for the applications of the future...

Arguably, recent waves of 'Apple-chique' products have led to a much-needed stylistic upgrading of many of our digital utensils, but the question remains as to whether, on the whole, the effects have been more than *skin deep*...

Essentially, digital working (and gaming) environments are based on (pre)determined *choice* formats. In daily practice, the supposedly 'easy' manipulations prove to be cumbersome and irritating rather than stimulating. A lot of this has to do with the rigidity of many existing software packages and the serious limitations of the human-computer keyboard/mouse/screen interface.

One important limitation to creative interaction is arguably the *typewriter* interface; which in many ways can be considered a 'living fossil'. Ergonomically developed for specialised 'blind' typists, it has become a *fixed* standard, used extensively by people with hardly any typing skills and for specialised applications that might demand an altogether *different* set-up.

The keyboard is hardly optimal for *new* generations of users and for *specialised* applications, such as film editing, architectural modelling and graphic design, to name but a few, which should benefit from wholly *different* kinds of tactile formats.

At the same time there is considerable 'software-hardship' amongst users having to resort to seemingly endless file searching or antiquated keyboard-codes.

Whilst the software applications might be complex in themselves, on an interface level there should be 'interactive simplicity': affording ultra-easy selections of *preferred* options, via changeable 'touch & see' screens, rather than the standard keyboard and mouse. An important added value would be the integration of *sound*: not 'total' sound recognition but *most preferred* actions ("select all", "copy", "paste" etc. etc.) being activated via voice *request* (rather than: 'command').

As a consequence, what is now a – push-button – keyboard should evolve into a truly *dynamic* 'what-you-want-is-what-you-get' interface console, able to 'morph' into any

number of preferred *guises* at will, such as: mixing desk, editing table, sketch board, graphic composer, musical instrument, as well as touch sensitive typewriter keyboard.

#### *Gesture-based Connectivity:*

As *professional* interfaces still tend to be conservative in their design and slow in development, changes might be expected to come from the game- and entertainment industries.

Some years ago, expectations were high concerning Virtual/Physical interfaces. As high-end VR formats 'flopped', expectations were downgraded considerably. Nonetheless, it may be worth reviving some of the tactile concepts of the recent past and cultivating *physically responsive* forms of interaction.

From the outset, it has been the game industry, rather than the computer manufacturers, that have been active in the research-and-development of *controllers* for various kinds of virtual activities (such as: playing tennis; skiing; driving a motorbike; gunning someone down). Although truly touch-sensitive 'glove' interfaces have not become a great success, it may be time to revitalise the concept: to explore the opportunities of motion- and gravitation sensitive gizmos, making optimal use of eye-hand (iHand?) coordination.

Other *visual language* formats might be beneficial for the study of architectural design conceptions, whereby 'real movements' could underscore and enhance design-driven enquiry and intellectual discourse. An indicator of how things might develop can be seen in the Nintendo Wii interface, in which hand and body motion – essentially *gesturing* – is the key to a more spontaneous physical interaction with software-driven applications. The end is not in sight, and developing specialised formats for architectural applications and other 'artistic' operations would be a worthwhile challenge for the 'second half', particularly for younger players.

An extra advantage of such a development would be that it might liberate architectural designers and scholars, who now feel 'tied down' by their computers. We should look for opportunities that make such digitally based activity more appealing: a critical *and* physical *workout* while you work!

#### *New 3D Visions:*

As standard *screen* interfaces have serious shortcomings (particularly in architecture) due to their visual flatness, lack of orientation and limited 'presence', it may be opportune to rekindle certain spatial interaction concepts of the recent past, as the technological state-of-the art develops, offering new opportunities for *virtual spatiality*.

A new development, which might be of considerable interest for the 'digital architecture' community is *3D cinema*. As formats such as 3-D IMAX and REAL D come into view, experts and students should get seriously involved. Whilst the techniques will initially target a broader 'cinema' audience, one might envisage perspectives for productions targeting more specialised groups and potentially even becoming tools for the design studio of the future.

As regards to architecture as a discipline, such techniques may offer an important stimulus, though the exploration and evocation of important architectural *precedents*, via 3D model-based studies and the pursuit of *new* forms of architecture.

One possibility might be the construction of simulated spatial building environments (virtual building labs), for the benefit of didactic demonstrations or even interactive design 'in situ'.

From experimental to new mainstream, such 3D presentation platforms might stimulate the systematic generation of new or *imagined* forms of architecture, on the basis of varying parameters, conventions, climates, environment or tastes. An added benefit should be more imaginative approach to the representation of architectural 'realities' in movies and games.

### Towards a Digital Critical Salon

What is called for is a new 'free place' for the exchange, development and evaluation of Digital Critical ideas: a 'stamping ground' for different parties to get involved in the advancement of *digital matter*. A place where the acknowledged and the upcoming can meet to discuss meaningful issues in a simulating setting...

What we envisage is a kind of return of the *Salon*. A cultural meeting place where connoisseurs and artists (the established *and* the avant-garde) can meet, present work, exchange opinions and judgements, discuss the course ahead and set the targets and ambitions for following meetings worth looking forward to.

What such a 'Critical Digital Salon' might achieve is to bring media-players together on the basis of clearly defined themes and targeted experiments: not only concerning questions of 'interface' and 'operation', but particularly concerning the *cultural* impacts and meanings of existing and *foreseeable* digital applications in the arts and particularly architecture...

The Salon should set *tasks* (as in a good game situation) with challenges and constraints, with incentives and rewards, calling for visionary and/or analytical 'architectures' using existing, emerging or experimental media. The Salon might connect with sponsors, active in affiliated fields or industries, in order to offer *stipends* and *rewards* for the effectuation of projects to be exhibited and debated at forthcoming meetings.

Some suggestions for potential themes, on the basis of recent experiences:

- *Dietrological Architectures*<sup>3</sup> (unravelling architectural artefacts, to 'get behind' the workings of fundamental architectural issues);
- *Information and Data Spaces* ('taming' data overloads, creating immersive, stimulating interfaces, like virtual exhibitions or museum spaces<sup>4</sup>);
- *Reviving Formal Articulation* (addressing contemporary design issues, notably the return Ornamentation with the influx of CAAM techniques<sup>5</sup>);
- *Groundbreaking Spatial Scenarios* (free-form architectural explorations for new or imagined environments or conditions, suitable for 3D screening).

All in all, it is a matter of teaming up 'old dogs' and fresh team players within a stimulating and competitively challenging, creative interplay, whereby: the Medium is the Matter and the Game is the Method...

### Endnotes

<sup>1</sup> The idea of the medium as the 'message' was introduced by Marshall McLuhan in: *Understanding media: The extensions of man*, McGraw-Hill, New York, 1964. Not adverse to the occasional pun, a following book by McLuhan, with Quentin Fiore and Jerome Angel, was titled: *The Medium is the Massage*, Bantam, New York, 1967.

<sup>2</sup> The role of design media as a form of 'method' in design and research, was explored in: Jack Breen: *The Medium is the Method, Media approaches to the designerly enquiry of architectural compositions*, in: *Architectural Design and Research: Composition, Education, Analysis*, C. Steenbergen et al (ed.), THOTH publishing, Bussum, The Netherlands, 2000.

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<sup>3</sup> A novel by Don DeLillo inspired the concept of 'dietrological' studies in architecture: *Underworld*, Scribner, 1997. Excerpt: "There is a word in Italian. *Dietrologia*. It means the science of what is behind something. A suspicious event, the science of what is behind an event" (italics by the authors).

<sup>4</sup> The idea of a 'Virtual Media Museum' was introduced in a conference workshop by Jack Breen at the 6<sup>th</sup> conference of the European Architectural Endoscopy Association and published in the Proceedings: *Spatial Simulation and Evaluation*, Bratislava, 2003.

<sup>5</sup> The notion that computer aided modeling and manufacturing techniques may bring about new forms of *ornamentation* is investigated at the Delft faculty of Architecture in an ongoing 'Ornamatics' course. Ambitions and results have been presented at recent eCAADe meetings and published in the Proceedings of the 2006, 2007 conferences plus the forthcoming 2008 conference.