

# Carnival and Construction

## *Towards a Scaffolding for the Inclusion of ICT in the Construction Process*

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*In this paper we explore the process of construction, we consider the construction site as a mediated collaborative environment in which many specialist crafts and esoteric skills are present and negotiated. Concrete information when pass onto a construction site becomes part of a fluid morphing object, the validity and meaning of information can change—or be lost—depending on where and when it is. We look at current models of construction and actual construction process and we explore the notion of Carnival as a tool to reconcile the concrete and fluid aspects to communication dynamics of mediated group working in general and of construction site practice specifically.*

**Keywords:** *Carnival; ICT; Construction; Mediation*

### **Construction**

Increasing construction process efficiency is one of the main goals of much of the research surrounding construction. There are two main approaches; re-modelling the construction process (Kagioglou et al., 2001, Li et al., 2002) and the insertion of an ICT (Information Communication Technology) to improve the process (Kagioglou et al., 2000; Peansupap and Walker, 2005). The latter is acknowledging the need for investigation into the actual point of work activity (PoWA) on construction sites, as much of the current work is funded by—and often limited to the offices of—Construction Organisations.

### **A Creative Locus**

As such the creative aspects of the construction site are often over shadowed by the procedural and liti-

gious aspects which dominate within these organisations. For anyone who has ever been involved in arbitration, the 'litigious' reality of construction underlies many of the existing practices and processes in the design and construction environments, and necessarily must underlie much of the research. For a moment however lets set aside this litigiousness, and look upon a construction project not merely a place in which Health and Safety regulations must be obeyed and instructions must be carried out in a linear/modular fashion, but rather lets look upon it as a locus of creative action.

### **Mediated Environment**

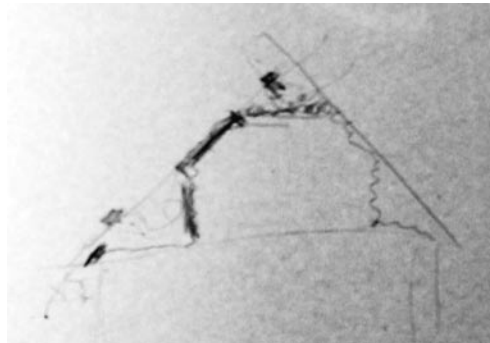
The construction site is a complex/hybrid mediated space which I have explored elsewhere (McMeel et al., 2005), it is an inter-mediate state and the inhabitants appropriate various hi/lo technological commu-

nication tools (sketches on walls, drawings, phone calls) in order that they all provide their specific contribution when and were necessary. The processes of communication within it are highly creative, complex and in many cases esoteric as a particular team of tradesmen might speak a particular vernacular—or even as is becoming more often the case a completely different—language, all of which must be overcome to negotiate the making of a building. I would suggest that sanctioned/formal modes of communication in such an environment could not fully represent or convey such esoteric information.

### **Fragile Information**

When these formal communicative systems do represent such information it is in danger of being misrepresented when they do not represent such information it becomes fragile and in danger of being lost. Within an environment such as the construction site, which is constantly in a fluid state, the perception and validity of specific information that is delivered in quantitative or schematic form from an office environment can accidentally be changed or be lost when it enters a construction site causing costly delays or confusion.

The relevance of a particular piece of information not only depends on who has it and where they have it but most importantly it can depend on when they have it. This information sketched on a plasterboard wall (Figure 1) regarding the position of insulation



*Figure 1*  
Construction detail sketch on  
plasterboard.

and the air gap required is right beside the location where the detail is applicable and it is relevant to the location until all the insulation and plasterboard is erected, at which point it will become redundant and will be subsequently plastered over.

### **Carnival**

A “Carnival” is an event, which on the surface may not seem directly related to construction, however it too involves a complex negotiation of official and unofficial channels, it involves protocol and procedure, it is noisy and dirty but yet can involve incredible sophistication within its rituals, it also includes esoteric behaviors and modes of communication all of which are embraced within the participation. So there is—at the very least—an engagement within the event with the unofficial elements of the society rather than a rejection of them.

### **Current Models**

The most widely accepted model of construction is the RIBA Plan of Work (Cox and Hamilton, 1995). On site activity features as only one of the twelve stage Plan. Eight of the previous stages being dedicated to design and planning. It has been suggested that this model is no longer representative of the process (Lawson, 2004) and several new process models have recently been put forth.

### **Constructions Next Top Model**

Lawson (2004) has investigated holistically the design/construction process and having analysed the workings of the designer concluding a unified model is unlikely due to the individualistic and complex nature of the process. Construction only plays a small part in Lawsons analysis, Kagioglou (2001) looks more closely at the specifics of construction and maps a potential model from the manufacturing sector onto it. Later in 2000 (Kagioglou et al., 2000) he suggests a generic model for the construction process which sets out to reduce the changes which typically occur when a building eventually starts on site.

Peansupap and Walker (2005) opt not for models but for recommendations for implementing ICT and identified PoWA on construction sites as a key areas for investigation, but the scope of their research was limited to ICT implementation in construction organizations not specifically on construction sites.

### **What's in a model?**

During pre-construction we expend vast amounts of time and energy to create and agree on accurate documentation for the purposes of construction. What we are in fact agreeing on is quantities, a cost and a series of schematic graphic representations of what each party will contribute. These graphic representation are inherently ambiguous, as such the 'virtual building', the notion of a completely unified virtual representation of a building before it is constructed is gathering momentum but is not without its problems (Plume and Mitchell, 2005). Such virtual models need to be incredibly accurate and robust, more robust in fact than designers typically used to constructing.

To ruthlessly plagiarise an analogy of construction perhaps rather than a 'model' (from the Latin meaning 'thing to be imitated'), we need a scaffold (from the Latin meaning 'prop' or 'support'), which would then enables the creation of that 'thing'.

### **ICT Interventions**

Proprietary ICT's often struggle for acceptance on construction sites, the digital Hardhat was rather cumbersome and new devices required staff to be instructed in their usage (Peansupap and Walker, 2005). Where they are adopted it is predominately in the management or monitoring (COMIT, 2003) of a process rather than assisting that process. Never the less ICT's have infiltrated the construction site, while we developed proprietary applications the humble mobile phone swept in and proliferated. While phones are loaded with tools and toys, a survey conducted by the author indicated only very elementary usage of phone functionality (phone, text, alarm) yet they have made considerable impact, and are both

adored and loathed on the construction site.

An analysis of phone usage was undertaken and is currently being tabulated to understand where this very affordable, robust and usable ICT is benefiting and being problematic in relation to PoWA on construction sites.

### **Construction and the Carnival**

Like construction, Carnival was a complex, sometimes seemingly chaotic event, explored by Rabalais and Bakhtin (1984) it embraced participation of many forms and from many people including those that were ordinarily expelled beyond the bounding walls of the medieval city in which it was held. In these instances 'dirt' was kept proximate and allowed to return so it can be engaged with during Carnival, looking at key Carnival phenomenon we can relate them to the construction site and group working.

### **Dirt**

It is suggested that proximity and engagement with the seemingly unwanted—the dirt—affords creativity, Hyde (1998) warns of the dangers of simply removing this 'dirt', suggesting that the process of purifying can result in sterility. Douglas (1978) however illustrates the problematic of dirt as "matter out of place", if some 'thing' appears as dirt it is as a result of ones perspective. From another perspective, the same 'thing' might not be considered dirt. This challenges many systemic assumptions that dirt and rubbish are tangible things that can be placed in a distinct category and expunged. This perhaps allows us to reframe certain communicated information as this kind of dirt and reconsider our tendency to completely erase it.

### **Graffiti**

Historically and contemporarily graffiti is a means of 'unofficially' marking or leaving a message, from the stonemason who marks each carved stone and the posting of messages on statues and deities during Carnival. More recently Banksy a contemporary graf-

fiti artist highlights another aspect of graffiti, “Imagine a city where graffiti wasn’t illegal. A city that felt like a living breathing thing which belonged to everybody”<sup>1</sup>. The presence of graffiti shows life and occupation, it is considered a temporary phenomenon and as such feels current, immediate and alive. Subversive in nature it is also suggested here that it creates a feeling of ownership or community, not just by the individual creator but by all individuals who interact with or see it.

Grffiti has traditionally played an important role in construction and its rituals, from temporarily marking the ground as a means of laying out the geometry of the encampment or building, to the use of stonemasons’ marks. Graffiti also plays a role in contemporary communications. On the one hand contractual formalities (working documents, specifications, forms); the sanctioned communications on site, are virtually superseded as soon as they are released. On the other hand, messages scribbled on a wall (graffiti) are throwaway statements (dirt) or something else (paint colours, the location of a pipe or wire, an impromptu detail). What initially appears as graffiti becomes knowledge critical to the life of that area of the site. The graffiti—of momentary importance—will eventually become redundant and overwritten plastered or painted, and disappear.

### **Rumour**

A message that passes through the crowd, it evolves and changes. We have seen rumour machines within the media facilitate an individual tarnish and end careers as effectively as they reveal political corruption. Leaving a residue of empowerment and faith in the cliché ‘one person can make a difference’. Rumour is a powerful phenomenon.

The unsanctioned channels of Internet and mobile ICT’s (PDA’s, mobile phones, texting, voice mail, camera-phones, video-messaging) seem to thrive on rumour, on construction sites they have subverted contractual communications which have yet to adapt to these new modes of communication and

<sup>1</sup> [www.banksy.co.uk](http://www.banksy.co.uk)

they undermine the traditional official modes which support legal and contractual processes which help to ensure the arrival at a satisfactory building.

Early response to the presence of these subversive mobile ICT’s by the custodians of construction site, the construction organisations is to limit and even ban them on construction sites. We conjecture that these communications promote creative discourse through the *rumorem* (Latin), that is, the noise and clamor of the construction site that cannot be ignored.

### **Interlocution**

Construction, a mediated space the goal of which is the collective production of a building. The theme of collective production has been explored by Attali (1985) in his analysis of the ‘game of catch’ in the painting ‘Carnivals Quarrel with Lent’. In the painting we see a group appropriate a water urn and re-invent its function within the game. The object has currency within the context of the game as it is tossed around and if returned to its previous state would also have value. However beside the players is a similar urn which has been dropped, once dropped and damaged it is no longer useful to the game or to its previous existence.

Within construction foremen are charged with this responsibility of moving objects and information around between the ‘players’ on the construction site. Pacheco was a site foreman who worked for architect and engineer Eladio Dieste. He was described as “a natural leader with an expansive personality, the ideal interlocutor between Dieste and the labour force” (Pedreschi, 2000). Dieste is often cited as a designer who engages in discussion and not just instruction.

During interview with site managers and construction organisation professionals it was found that being able to redirect queries to the appropriate people was very valuable and mobile phones had facilitated this rather well. This type of information request only becomes problematic in an instance when like the urn it is ‘dropped’ and forgotten.

## Conclusions

The drive for efficiency in construction seems to be looking towards an ever more concrete representation of a building and an assembly process akin to manufacturing. I would suggest that construction is a creative activity rather than a manufacturing process and have tried to explore it here as such. While construction models tend towards rigidity, we should perhaps consider creative activities that—like construction—have fluidity.

Currently the fluidity within construction seem to be in part enabled by mobile phones. In rigid construction models they are considered problematic (mainly by construction organisation directors), unlike formal methods of communication on construction sites there is little or no record of what is communicated through them (Figure 2) and as such are



problematic. Yet on the fluid construction site sub-contractors consider them very valuable when they require clarification or have to stop or change some aspect of their work package.

Rather than a model that attempts to represent a form, perhaps the adoption of a metaphorical scaffold which does not dictate rigid form but instead supports it. Having accepted that there is considerable value in using mobile ICTs for point of work activities perhaps they need to be treated like the 'dirt' during Carnival. I suggest like Carnival the solution is not to expunge this 'dirt' or to integrate it into the contractual or official channels where it would undoubtedly become sterile and lose its potency but to distance it and facilitate its periodic return.

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*Figure 2  
Critical information via TXT  
message.*

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