entirely in the realm of reference and employs a language of art that references art. The path for development leads to a gaping maw of white noise containing everything and nothing, often with dead ends of conceptual arithmetic. Yet an eventual endgame is in sight, and maybe this is, in fact, the real crisis. In this way, works like the Grilo laser piece, while not what I imagined the lost readymade to look like, achieved something rare through the art of disengaging and letting the act of creation drift into a realm in which the Surrealists and Abstract Expressionists first broke ground but to which we have not found a sincere way to return without the security of mannerism and loaded parentheses. One could surmise that Duchamp, aware of how his actions might be interpreted by future fans, set this all up as one of his many games full of clues, dead ends and intrigue – maybe his last great game. *The Green Box,* his immense treasure map to *The Large Glass,* certainly makes you wonder whether such a forensic strategy of planting the devil in the details was happening everywhere all along, forcing us to do a double-take at his every word. The "copy" had a different, almost performative meaning for Duchamp, one that related more to the nature of the word and referred not only to serializing, but even to mimicry and sublimation. As a whole, the exhibition at the Institute of Contemporary Art functions simultaneously as a conspiracy theory, a litmus test and a crystal ball, revealing the threadbare psychological paradoxes of the readymade. With a precise handicraft and an alchemist's desire, Duchamp's readymade penetrated the thin membrane of the retinal function of art, thereby releasing a flood of potential for future generations. And yet with this lost readymade he even broke the bond binding the idea to the form and, one could say, to the reference. Now one must discern whether his legacy is based on what is written, on an elaborately mistaken identity or on a possible hoax.

Emergency in Favour of Twice
Institute of Contemporary Art
1 April–2 August 2011
Participants: Marina Abramovič, Vladimir Archipov, Arts Science Research Laboratory, Behring Institute of Medical Research, Alighero Boetti, Chris Burden, Roisin Byrne, Maurizio Cattelan, Roberto Cuoghi, Marcel Duchamp, Bola Ecua, Carly Fisher, Carmelo Gavotta, Loris Gréaud, Rubén Grilo, Damien Hirst, Christian Jankowski, Leopold Kessler, Oliver Laric, Robert Lazzarini, David Levine, Sherrie Levine, Steve McQueen, Tito Mussoni, Roman Ondák, Hamid Piccardo, Bertrand Planes, Gedi Sibony, Situationists International, Alfred Stieglitz, Sturtevant and Jeffrey Vallance

THE WRONG PROGRAM

BARarchitekten

In 1995, we started drawing with pixels on the computer using the program SuperPaint.

This was a mistake: it was the wrong program for architects to use. So why didn't we start using one of the vector-based CAD programs that were already standard issue for architects? It was partly due to a lack of resources (acquiring the software and hardware was expensive), and partly due to a lack of knowledge (none of us had worked in established offices that used CAD, and we had finished our education just before the widespread adoption of the technology). As important, perhaps, was our unwillingness to simply follow the same path that most other architects were taking. One of the luxuries of living in low-rent Berlin shortly after the fall of the Wall was being able to look askance at conventional practice: the world of CAD seemed irredeemably associated with the bad buildings being built in the centre of Berlin. There was also the beguiling simplicity of using SuperPaint. Unlike the daunting and unintuitive complexity of a CAD program, which appeared to require an entirely new way of thinking, SuperPaint was just a new way of putting lines on a white surface, eliminating the inconvenience of drafting with rapidograph pens. We had always admired Ludwig Leo's extensive use of the one-millimetre pen in his drawings of the 1960s and 1970s, and now we could produce thick lines and black fills with no risk of smudged ink.

While our contemporaries worked at the somber screens of AutoCAD, we cheerfully nudged pixels around the small black-and-white screens of our Mac Classics, as if we were playing a primitive computer game. At a high zoom, working with SuperPaint became more like arranging a mosaic of black and white tiles than drafting. The

main project that we drafted with SuperPaint was called *Stadtbaustein,* a prototypical mixed-use building for Berlin in which a rationalized structure and the careful positioning of service shafts allowed for economical construction and flexible use. SuperPaint's restricted palette contributed to the formal reductiveness of the design. For one thing, only orthogonal lines looked good. At a 1:50 scale, one pixel corresponded to roughly two centimetres, which became our basic unit. And the novelty of "cutting and pasting" allowed us to quickly produce large numbers of plan variants with a set of standardized parts that showed different scenarios for the use and spatial arrangement of the floor plan. The one-pixel unit also produced a basic but highly legible, almost Op Art–like graphical language in which one-pixel-wide lines were separated by one-pixel-wide gaps. Through these gaps, each building element (window, partition wall, plumbing fixture or piece of furniture) retained an independent identity and a feeling of potential mobility. After a few months, we realized we had reached the limits of the software; we needed to produce usable architectural drawings. So we moved on to use a conventional vector-based CAD program with a more powerful computer. At first we missed the feeling of arranging elements on the screen and the comforting simplicity of the pixel unit. But that was soon forgotten as we got used to the many advantages of this new way of working.

For fifteen years, our SuperPaint period seemed to be nothing but an amusing misstep in our digital evolution – that is, until we recently started to work on a large housing project in Berlin that began to look remarkably like *Stadtbaustein.* This encouraged us to look again at the previous project. Although we had some old printouts of it, we found that SuperPaint would not run on a modern operating system and that the files could not be opened by any modern program: it was a classic example of digital obsolescence. By using an emulator called Basilisk, however, it was possible to run Mac OS7 and SuperPaint on a modern computer, and thereby to convert the files into a readable format.

In looking at the drawings again, it became clear that using SuperPaint as our medium had had a lasting influence on our work. We had always looked back on our SuperPaint period as a preliminary to our subsequent adoption of CAD; it is more telling, however, to see it as a coda to manual drafting. Robin Evans wrote extensively on the historical influence of techniques of architectural representation – types of orthogonal and perspective projections – on architectural imagination. He didn't write so much about the influence of different

Facing page: *Stadtbaustein,* **urban development**

sb/sta
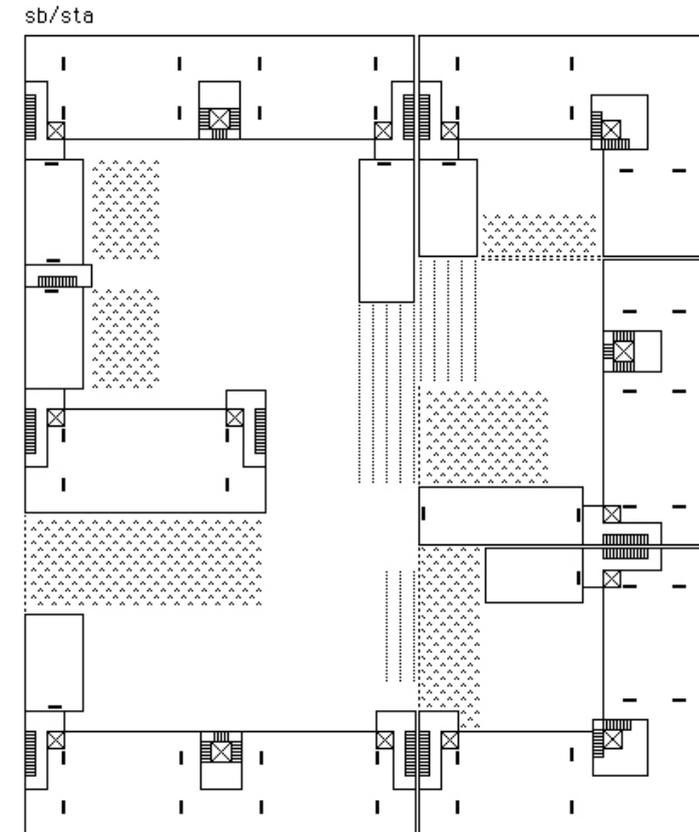
media and instruments – for example, the use of transparent paper – but, clearly, the (hand)work of making a drawing used to provide a continuous feedback to the imagination of the architect, and this feedback depended on the particularities of the medium. The SuperPaint drawings, though done on a screen, were still linked in our minds to the practice of making plans by arranging lines on a sheet of paper, a way of thinking that all but disappeared with the adoption of CAD. We still have the choice of using non-digital media (physical models, sketches), but the focus of our work, which now happens on the computer, no longer has this tangibility.

In their essay "The Shift", Alison and Peter Smithson described the unintended influence that collages and home-made prints that they made as their Christmas cards and other ephemera had had on their work. For us, SuperPaint was a medium that, through its limited capabilities, had brought certain ideas – such as rationalization and kit-of-parts construction – into focus, even if we didn't know it at the time. Contrary to normal expectations of technical progress, our new medium involved a limitation of choice, a return to basics. Unlike the Smithsons, who produced their Christmas cards year after year, we only used SuperPaint for the very short time it took us to realize that it was useless for the practical work of producing architectural drawings. So what if we had carried on with our pixel experiments? While it would be possible to set up a modern pixel-based program like Photoshop to allow us to draft in the same way, it is most unlikely that anyone would accept such self-imposed limitations. It would no longer be a mistake; it would be an affectation.

Stadtbaustein, **genealogy (right) and master level (facing page)**