Social Ends, Technical Means

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When the Willis Faber and Dumas building was first published most magazines at the time began and ended their coverage of the building with pictures of curved glass walls and high technology. Whilst one should not underestimate the importance of such technical means, for me they have never been ends in themselves. The ends are always social — generated by people rather than the hardware of buildings. However, the relationship between ends and means is a vital part of our approach. Together with my known association with Buckminster Fuller, any study of the practice's earlier work, from 1963 onwards (without which it would have been impossible to contemplate this design) should make clear our position on adopting what we believe to be appropriate technologies in achieving social goals.

In a fundamental sense the building is really about people and their place of work. Socially, of course, this is a moving target. Herman Kahn, American futurologist of the Hudson Institute, once made the point that those office buildings that failed to anticipate what he saw as inevitable social changes would simply become obsolete if they did not respond by raising standards and providing a high proportion of amenities. In his view, these were not philanthropic gestures, just the hard cutting edges of changing real estate values. My own experience bears this out.

It is perhaps worth a reminder of the concept — the *parti* — of the Willis Faber building. Essentially, two office floors — for around 1300 people — are elevated and sandwiched between amenity and support areas above and below them. The ground level comprises a concourse, swimming pool, coffee bar, gymnasium, crèche (since changed), mechanical and electrical plant, computer suite and internal truck-loading docks. The roof level comprises a glass restaurant pavilion set in a landscaped garden.

All floors are connected and penetrated by a vertical movement space containing banks of escalators. This space is filled with palm trees and flooded with daylight from generously glazed rooflights; it forms the centre of gravity of the building and is important functionally, socially and symbolically. Giving it a precise

name or label is difficult; the various titles of ‘winter garden’, ‘internal court’ or ‘atrium’ provide clues to its character but do not adequately convey the spirit of the place.

The proportion of amenity area to work area is high, especially if the near acre of roof garden is included in the equation. This is due in large part to design ingenuity as well as resource allocation. This emphasis on amenity in the work place and raising standards represented a virtual about-face from the office buildings of the time, whether prestige one-offs or reach-me-down spec developments. Most office buildings raise standards for the visitor ‘front of house’ — gobbling up disproportionate slices of funds in the process — and gradually dilute them as you move further ‘backstage’ towards the users.

The reverse is true at Willis Faber. The entrance has exposed concrete structure (enlivened with emulsion paint), studded rubber flooring (the same as the boiler room and lavatories) and demountable metal partitions (like everywhere else). This compares in the two office floors with carpet (the same carpet, incidentally, that was laid in the 1970s) and custom-designed ceilings with glare-free light fittings. This is not a reaction against fine finishes; it is more a question of how you define priorities and reflect them in the allocation of fixed financial resources.

If the workplace is so vital that it determines the priority of finishes, then the spaces themselves are conceived in the same spirit. In a typical office building the working areas are ‘out of sight and out of mind’; the only aids to orientation are the lift floor button you push, the number on the door. The better-designed versions might have sleeker skins but they are fundamentally the same animal underneath. The reverse is everywhere apparent at Willis Faber. Movement is open, literally in the sun and social contact is natural and relaxed across the spectrum of the company. Orientation is immediate; you always know where you are. The barriers are few and seldom visual.

A management approach characterised by an open-door policy in Willis Faber’s original building is here reflected by a virtual absence of doors. The only planned cellular office — for the Deputy Chairman — was lost *en route* in the design process; and by the same token the ‘directors’ dining room’ became an exercise in furniture design to define a part of the main restaurant. Even that space has now become a ‘visitors’ dining room’. The kinds of spaces described here are in no manner fixed for the future. Indeed the technology that enables them to work at present also provides the flexibility for them to reflex into quite different patterns.

The plan form and cross section are a response to balancing and reconciling a range of priorities that are frequently in conflict: namely how to achieve the sympathetic integration of the company and the community. Or, to put it another way, how to relate a large new building on the edge of an historic town. The key factor was to adopt a very low deep building which enables a commercially viable content to equate with a low profile. There are other significant benefits; for example: fewer larger floors allow more efficient space utilisation, greater flexibility and far lower energy consumption.

At this point it is worth considering the kinds of outdoor space that typify a town like Ipswich. They must surely be its streets? It seemed to me that so many modern buildings have largely ignored random street patterns by imposing hard rectilinear geometries. That might be appropriate on a green-field site or in low-density suburbia, but it is alien to dense, complex urban areas (excepting, of course, those cities that come with 90-degree gridiron plans). Apart from destroying the coherence of the street pattern, the leftover spaces produced by such developments tend to be hostile and unusable. In Ipswich, by pushing the building to the limit of the site boundaries the original street pattern was reinforced. This is the complete opposite of arbitrary shape making, whether rectilinear or free form.

The remainder of our townscape proposals are as yet unrealised. Our early drawings show a gravelled urban space with trees, forming a forecourt to the Unitarian Meeting House. In the tradition of pedestrian thoroughfares elsewhere in the town it was intended to link this forecourt through the existing passageway to St Nicholas Street to encourage small-scale additions to the adjacent shops, restaurants and cafés.

The building was the outcome of a team approach, in which the key was to shift the traditional roles of those concerned with designing and fabrication. For example, many activities were streamed in parallel in the early stages of the project. This was essential on a crash programme: two years of feverish design and building activity with a minimum run-up period. The client's lawyers described the site as having 'every problem in the book', but we found new ones to swell its pages. During the complexities of demolitions and services diversions, as architects we were more involved in what might be better described as management consultancy than the exercise of any normal design-based skill. In any discussion of 'means' one should not forget the operational and management techniques that we virtually take for granted; management can never be divorced from the design process.

A briefing guide was specifically developed for the project to provide insight into the client's organisation and its working methods. In collaboration with Willis Faber a joint management committee was established to oversee the project; it was chaired by the Company Secretary and involved the past company Chairman. This working group, with permanent architect representation, was able to co-opt other consultants as necessary. It could monitor progress and review options and had direct communication with the main Board at regular intervals.

This collaboration began so early in the life of the project that it actually preceded the final definition and purchase of the site itself. We developed many preliminary design strategies in response to varying early site options — some involved closing roads, others spanning over them. It soon became apparent, however, that the real estate process was so volatile that it was impossible to reflex quickly enough with traditional on-off design responses. Allied with a detailed understanding of the brief and its major fixes, a careful analysis of ground conditions beneath the building, and an insight into the process of site acquisition, provided the main clues.

We found that an overall column grid of 14x14 metres — which kept within an acceptable cost threshold — related well to office planning constraints and allowed us to straddle such fixes as a swimming pool and, if necessary, roads and truck docks. In a building that has no 'back' or 'front', the latter have to be located inside the building, at least if good street manners are to be respected. Furthermore, providing an edge 'necklace' of columns allowed us to tune the perimeter to follow closely the lines of existing street boundaries.

The detailed development of the structure was also influenced by the constraints of mechanical and electrical engineering systems. The integrated nature of the practice was a key factor at all times. The consulting structural engineer devised an ingenious modular system based on a specially designed plastic mould. This eliminated downstand beams throughout — which kept the overall height of the building down while providing the maximum flexibility for duct runs — and provided a structure that is handsome enough to stand in its own right. This was good for the budget (no need to paste over it) and good for the programme (fewer on-site trades). In its final form the structure was boiled down to remarkably few elements: columns and floor slabs internally; and a necklace of columns with a cantilevered slab at the perimeter. In designing the structure we also had to anticipate the mechanics of building swiftly and economically on a tight urban site.

Ultimately, the structure was the only site-based wet trade. Everything else was shop fabricated to maximise quality control and speed of erection. These were not the only reasons, although they are fairly persuasive, especially when programme, cost and attention to detail are taken into account. A belief and joy in using the materials of the age, allied with an economy of means, were important additional factors. This approach also involved a shift in roles because if the product we wanted was not available 'off the peg' (and hardly anything was in the integrated sense of the word) then we designed a new one and collaborated with the manufacturers to produce it. This meant secondment to industry where appropriate and the frequent use of full-scale tests and mock-ups. A brief summary of how some key elements developed might give an insight into the relationship between design and the management techniques that made our creative goals technically feasible.

The suspended glass wall was a response to the notion that most people are happier inside a building when they are able to see outside, provided that they do not suffer some discomfort as a consequence. That concept could no doubt be phrased in a more scientific manner but it would come down to the same sentiments. Unlike shallow-plan buildings — where a fully glazed perimeter can have a drastic effect on energy loads — in a deep-plan building such as this the effect is relatively insignificant. Furthermore, unlike shallow plans where a hole in the wall will suffice, to ensure that everybody in a deep building (not just those closest to the perimeter) enjoys visual contact with the outside world, the proportion of glass has to be generous. This led us to consider several alternative glazing systems that would combine such qualities of transparency with acoustic and solar control.

An awareness that glass is at its strongest in tension prompted the concept of a glazed curtain suspended from the top edge of the building. Unfortunately we were unable to convince anyone outside the office that it was technically feasible. For that reason all the interior perspectives of that period show a steel mullion system designed for the project and test-bedded in a smaller installation in Thamesmead. Eventually, however, enough calculations and technical details emerged to convince specialist suppliers and sub-contractors that the idea was not only viable but also looked very attractive in cost terms (hardly surprising since it reduced the major elements down to just glass and glue). At this point we found that industry was so keen to get in on the act that Pilkington (the glazing sub-contractor) happily traded design warranties in exchange for rights to our details.

The office floor and ceiling systems followed similar development paths; in both cases the design process was driven by a desire to integrate what had hitherto been separate products in single-system solutions.

The parabolic light fittings, for example, which are integrated within the ceiling, are designed to accommodate the air distribution and extract grilles for office areas and house sprinkler runs, as well as providing a separate emergency lighting system. Additionally, the power and cable runs on the office floors telegraph through the lighting grid above and below. Compare this with the more usual proliferation (and redundancy) of separate suspended elements, which are typically brought together on-site in the equivalent of a last-minute shotgun marriage.

Conscious that future flexibility would be thwarted by fixed cable trunking runs (then the norm) and aware that wet screeds take forever to install and cure, we searched for more viable alternatives. The result is a suspended floor system, with continuous lines of easily removable access panels, which was developed by a manufacturer specifically for this project. Our goals were high speed, low cost, optimum appearance and maximum flexibility, although not necessarily in that order (then, as now, it was extremely difficult to consider these factors in a precise hierarchy since they are so closely related).

Similarly, the design development and final definition of facilities and standards was inextricably linked with continuous financial appraisals: quite the opposite of a static brief and cost response. A wide variety of options were examined, always related back to a base yardstick of minimum shell cost. One analogy was the Ford Mustang which, given a basic chassis, could produce infinite variations of models. Alternatives were evaluated with particular sensitivity to cost-in-use. The exterior of the building, for example, is virtually maintenance-free; the glass wall almost wipes its own face and apart from an occasional haircut, the turf roof looks after itself.

Considerable ingenuity was deployed to minimise the on-cost of potential fringe benefits and thereby encourage their introduction. For example, in capital terms, a landscaped roof is certainly more expensive than asphalt. However, by beefing it up a little it provided such a good insulating quilt that we were able to eliminate expansion joints across the entire building, with their attendant (and costly) double rows of columns and piles. Allied to that are considerable long-term energy savings.

For financial justification the building had to be potentially sub-lettable. Three factors make such an option quite straightforward. Firstly, the internal court with its escalators is capable of functioning as a semi-public space used by all office tenants. Secondly, each floor has four cores enclosing escape stairs and utilities to allow up to four major sub-divisions of space from a common access gallery formed by the escalator well.

Smaller suites would be possible with shared rather than private toilets. Thirdly, the internal servicing systems allow total sub-division into cellular offices if required.

This design approach is perhaps best characterised as a process of integration, reconciling views and polarities which might otherwise be in conflict; for example: the company versus the community; public versus private; new versus old; time and cost versus quality and innovation; socially acceptable versus commercially viable. Another vital part of the approach is a conscious attempt to put all those dry objective pieces of the jigsaw (research, statistics, cost plan, site analysis, structural options — the check list is endless) together with some very subjective joy.