

Buro Happold

■ Workspace design

Founded in Bath in 1976 by the late Professor Sir ‘Ted’ Happold, Buro Happold is one of the UK’s leading multi-disciplinary engineering consultancies. Set up initially as a specialist structural engineering practice, the firm has grown organically over the years to provide many other services.

The partners have long believed that clients are best served by an integrated, multi-disciplinary service and they have made this approach a central tenet of the company’s work philosophy. Nevertheless, Buro Happold’s offices have traditionally been organised by engineering discipline, with structural engineers, building services engineers working in organisationally and physically separate groups. In a recent review the partners concluded that this should change: to improve multi-disciplinary working, engineers should work in future in ‘Integrated Business Groups’ (IBGs) made up of staff from a range of disciplines sitting together.

As refurbishments become due, a new **workspace design** is being rolled out to support the new organisational structure and actively encourage inter-disciplinary collaboration and knowledge sharing in general. The new workspaces are also more space-efficient, so they will help accommodate growing staff numbers.

Starting points

The London office was made the prototype. 17 Newman Street had become an uninspiring workplace, dominated by filing and desktop computers. Visitors could have been excused for not realising that it was an engineering design office — the only clues were a few framed pictures of completed projects.

After a series of initial investigations, refurbishment started in early 2003 with a small area, to test the new design. Reactions to this were encouraging, and the rest of the office was completed about a year later.

To help realise their vision for the new workspaces, Buro Happold called in specialist design consultancy DEGW and consulted other companies they admired, such as product designers IDEO.

Buro Happold staff were consulted, too. Their wish list was simple: storage, daylight and a working computer. As long as they had these, they expected to be happy. But the refurbishment project team wanted the new design to do more than simply meet the most basic needs: they wanted to change working habits for the better. In particular, when traditional drawing boards were abandoned in favour of CAD it had been noticed that the discussion of



“What I know about engineering is that it has to be a group activity”

Ted Happold

Practice Profile

Staff: 772 UK staff (952 worldwide)

Offices: 6 UK offices (14 worldwide)

Services: Building engineering, infrastructure, transport & urban development, environmental consultancy, project management

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design dwindled: it is next to impossible at a computer screen on a normal desk. Buro Happold wanted the new workspace design to bring discussion back.

In addition to being asked what they wanted, staff were observed to see how they worked and interacted. This gave the project team many insights. They found, for example, that desks were unoccupied for long stretches of time; that designers had nowhere to lay out drawings; and that staff did not get up to speak to people sitting more than a few metres, but relied on email or phone.

The team also visited various furniture showrooms to discover how far the space-efficiency and flexibility of new desk systems could improve on Newman Street's existing furniture.

The prototype

At this stage Design Engine Architects became involved, and they eventually took the design forward to prototype and final design. They considered the wider office environment as well as the individual workspace, and they looked at the relationship between the various activities an office has to accommodate and the spaces where they can take place. As part of the process, they carried out a series of studies to analyse how desk space was currently being used, and how it could be used in future if additional, shared spaces were provided to allow selected activities to be shifted away from the individual desk.

A prototype workspace was set up to their design on the ground floor of the office. This had a number of key innovations:

- work benches at two heights, 725mm (the conventional height) and 1050mm. The higher benches were designed to bring the heads of seated people and standing colleagues to the same level, making it possible for the first time to

hold useful discussions around a computer monitor, and facilitating conversation in general.

- flat screens rear-mounted on movable brackets and posts, to save desk space
- CPU racks at the ends of the benches, de-cluttering desks and facilitating maintenance
- personal storage units on wheels, to make it easy for people to change seats.

Carpet was replaced with a hard linoleum floor, and white walls with blocks of bright accent colours replaced an off-white, bland colour scheme.

Design Engine also designed a new raised, open meeting space at the back of the ground floor office, recognising that the area was a focal point for anyone entering the main floor area. This wall had previously been covered with shelves of filing, and these were replaced with metal ceiling tiles and sliding white boards to enable designs to be pinned up and discussed.

Sixteen staff were invited to use the new desk spaces, and everyone in the office to use the new meeting space. After a few weeks, staff were asked for their comments. They liked the new desk spaces and flexible layout tables. They approved of the better shared spaces, and liked the under-desk storage units, the new, simpler colour scheme, and the white boards and metal walls for pinning up drawings. They found the high work benches challenging, but they recognised the opportunity they gave to collaborate and interact more freely.

The final design

Design Engine took the best ideas from the prototype and used these to inform the design of the rest of the office, including workspaces, social spaces, the library, kitchen/dining area and meeting rooms.

Evolution of a workspace



Before: A typical design office — paper everywhere, and everyone head-down in their own private world



After: De-cluttered, interactive

The final design incorporates several new break out and meeting room spaces, varying in formality from the table area designed to encourage spontaneous gatherings among project teams, to more formal conference rooms. All the meeting areas are arranged around the edge of the floor plan, next to the windows and stairwells, surrounding the centrally-placed workbenches.

Inspired by bookshops which have thriving coffee shops where people meet to talk, the dining area and library have been combined — for many staff, lunch hour is the only convenient time to 'browse'. The dining area can also be used as a formal or informal meeting space throughout the day.

Break out areas and hot desks have been provided on every floor. In the past, hot desks were separate from the workspaces, typically near the front door; placing them within the work areas has increased the opportunities for interac-

tion and knowledge sharing between local and visiting staff.

The result is an office in which personal work spaces are smaller than they used to be, but they are less cluttered, and there are many more shared surfaces and spaces to use. This re-balancing between personal and shared space deliberately favours collaboration and ad hoc conversation, and in the long term it is expected to make a real difference to knowledge sharing.

Assessing the results

Buro Happold canvassed staff opinion on the original workspace before the prototype area was occupied to provide a benchmark against which the new design could be assessed, and on the new arrangements after the whole refurbishment had been completed.

They developed a bespoke questionnaire based on the Office Productivity Network Survey, with some ideas



The key changes

- ❶ Work benches 1050mm high
- ❷ New chairs to match the high benches
- ❸ Flat computer screens rear-mounted on movable posts and brackets
- ❹ Computer racks at the ends of benches
- ❺ Personal storage trolleys
- ❻ Walls covered with perforated metal tiles to use for displaying drawings (attached with magnets) and as a projection screen
- ❼ Sliding white boards with metal backs for sketching and displaying drawings
- ❽ Meeting spaces
- ❾ Hard linoleum instead of carpet
- ❿ Layout tables for drawings (out of shot)

brought in from the Building Use Studies survey¹. Both the 'before' and 'after' surveys asked respondents to assess their satisfaction with office facilities, with questions on the space, furnishings and equipment. In the 'after' survey, respondents were also asked how well they thought the new office layout supported a range of specific tasks and activities such as collaboration, quiet concentration and creative work. 5-point response scales were used for all the questions.

The questionnaires were distributed to different samples of 36 employees; 24 completed the first survey and 14 the second.

Among the 'public' spaces, the new break-out, conference and café areas proved popular — the café area even brings people together from different floors. On the other hand, there is widespread dissatisfaction with the areas provided for reading and quiet study; this appears to be largely an acoustic problem, and should be relatively easy to fix. Research has shown that noise is a central issue in the success of open-plan offices, so it is not surprising that Buro Happold's new fit-out needs some fine-tuning in this respect.

The before and after assessments of personal workspaces show no significant changes in satisfaction with desk space, storage or chairs. Reactions to the high desks and chairs is mixed, as it was in the pilot trial. Mobile staff and managers whose work is communication-based are relatively unconcerned about the height, but it is more controversial with technical staff who spend long periods at their desks. One clear message is that though the new design provides more space than the old office to spread out drawings and plans, staff would like even more.

Perceived improvements in collaboration, creativity, concentration, minimising error at work and meeting deadlines

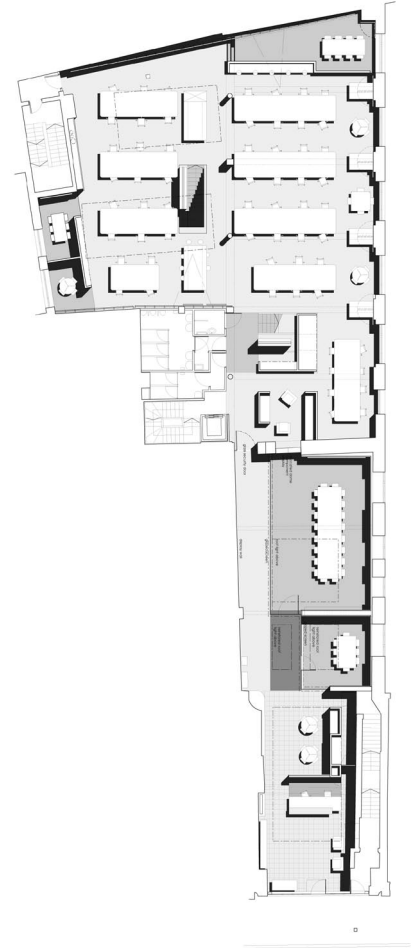
are all smaller than Buro Happold hoped. This is not surprising. The organisational changes which took place at the same time will have had a much larger influence on behaviours like these than the office redesign, and the unsettling effect that organisational change always has will inevitably have coloured reactions to the new office. It will be interesting to see how staff assess it in 6-9 months' time, when they have become used to working in Integrated Business Groups. Anecdotal evidence suggests that perceptions are already becoming more clearly positive.

As well as giving valuable feedback on the new office, the surveys have had the incidental benefit of increasing awareness of the effect that the working environment has on staff performance and well-being. Respondents valued an opportunity to express their opinions and influence the design of their workspace, and they were keen to hear what results emerged from the survey.

Having taken first steps towards developing both a workspace design which encourages knowledge sharing and a systematic way to assess the effect of design features, Buro Happold intend to continue making and monitoring changes until they realise their vision.

Designing workspaces to meet the complex needs of an organisation like a multi-disciplinary consultancy is not easy. Buro Happold's step-by-step approach — careful design, a small pilot, assessment, a larger trial, further assessment and a period of fine-tuning before large-scale roll-out — shows how it should be done. 17 Newman Street has not solved all the problems, but it is undoubtedly an important stage in the evolution of an office fit for the knowledge age. ■

The new ground floor



¹ More details of these surveys are available from the Office Productivity Network at www.officeproductivity.co.uk and the Usable Buildings Trust at www.usablebuildings.co.uk, respectively.