

From Team 4 to Foster
Associates: condensed narratives
and expanded storytelling —
Gabriel Hernández

This article explores the creation and evolution of architectural narratives by examining a set of drawing strategies produced by Team 4 Architects (1963-1967) and Foster Associates (1967-1992, henceforth FA), one of the two practices founded in the wake of Team 4's split.¹ Emerging in the pre-digital era and navigating the intersection of new representational modes and media, their work illustrates how architectural approaches in the period integrated narrative construction, communication strategies and media expertise. This synergy was particularly significant in the context of 1960s Britain, in which the rise of various architectural discourses was heavily dependent on the narrative power of drawings and their role in mediation. The beginning of Alvin Boyarsky's tenure at the Architectural Association in 1972 coincided with a burgeoning sensibility that valued architectural drawings as distinct entities, reconceptualised as autonomous and collectable artefacts associated with, but not necessarily derived from, the building process.² In what follows, I analyse the agency that drawings have in crafting a visual narrative, the resulting strategies created around them, and their role in shaping an evolving design methodology.³ The focus on narrative underlines the importance of storytelling and the capacity of drawings to combine different temporalities and spatial conditions, examined here through a series of hand-drawn visual representations held in the Norman Foster Foundation Archive in Madrid.⁴

Team 4 established a robust foundation for FA's design dynamics during its brief existence. During its four-year lifespan, Team 4 integrated North American, British and continental European influences, testimony to the experiences and connections of its members – Richard and Su Rogers met Norman Foster at Yale University in New Haven, USA, while Georgie Cheeseman shared a connection with Richard Rogers through the Architectural Association in London. All were passionate travellers who had embarked on architectural pilgrimages across Europe before uniting in their practice.⁵ Collaborating with multi-disciplinary team members, FA enhanced Team 4's visual communication strategies by placing drawings at the forefront of conversations among various stakeholders.⁶ This approach quickly exploited the ability of drawings to serve as a vital narrative device. As a result, FA's drawing repertoire expanded rapidly, with specific concepts tailored to individual drawings and an emphasis on experimenting with various representational techniques, adjusting them as necessary. Their narrative methods arose within a period and context (the cultural effervescence of 1960s London) in which artists, architects and designers probed disciplinary boundaries, offering innovative perspectives on architectural practice.

When analysing FA's early work (1967–79), we can identify two drawing dynamics directly connected to the preceding period of Team 4.⁷ Each suggests distinct but opposing narrative approaches, namely, 'condensed' and 'expanded'. Condensed narratives occur when a single drawing compiles temporal or spatial multiplicity, bringing together several aspects of the building's tectonics and materiality. In contrast, expanded storytelling implies a set of drawings, chronological or sequential, which conveys an architectural decision-making process. Although at first glance it may seem that one drawing type describes and the other explains, thereby suggesting a description v. explanation dichotomy, inevitably both of these are entangled and co-dependent in the drawings that we will be discussing. In terms of imaginative engagement and aesthetic experience, in the first drawing type the viewer is invited to 'travel' inside the building. In contrast, in the second, the sequence builds up an explanatory story. Analysing the coexistence of both drawing types is vital to understanding FA's narrative shift from Team 4 and to situating it within a larger context – that of London's buoyant architectural scene, in which many of their contemporaries were developing representational techniques of strong mediatory and narrative agency.

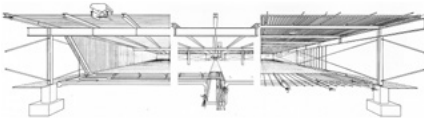
Condensed narratives: multiplicity and multi-temporalities

Condensed narratives arise in the case of drawings that strategically use shifting viewpoints, different temporalities or construction stages, and spatial ubiquity – all embedded in a single depiction. Although similar drafting techniques have been used for centuries, FA's innovations are to do with how they experimented with condensing several viewpoints or temporalities and incorporated media strategies. In most cases, depictions of this kind are concerned with the building's tectonics and materiality and they document the final design scheme, conveying an idealised version of the 'as built'. Balancing the distinction between imaginative and notational use of architectural drawings, I will start by analysing a kind of representation closely associated with Foster – the cutaway sectional perspective – as the prime example of a condensed narrative. From a visual culture and media point of view, such drawings were instrumental in helping to disseminate the practice's work in a burgeoning context of globally distributed architectural publications.

An important tendency, which we recognise in Team 4, is the way the industrial tradition of British drafting and its concomitant visual imagery (the use of isometric and exploded axonometric views, etc.) expanded by incorporating North American drawing and narrative techniques, which flooded Europe through architectural magazines such as *Architectural Forum*, *Architectural Record*, *Progressive Architecture* and *Arts & Architecture*. In 1961, Norman Foster and Richard Rogers became active agents of UK-US cultural exchange, travelling to Yale University to study for their master's degrees under the mentorship of Paul Rudolph, who had turned Yale into the epicentre of the East Coast architectural scene.⁸ While learning and adopting Rudolph's spectacular cutaway perspectives at the Yale School of Architecture, Foster also worked briefly at his office, becoming aware of his drawing techniques and design development process.⁹ Once the 1961–62 academic year ended, Foster and Rogers took internships in California, interested in the relation of visual and communication strategies with architectural experimentation exemplified by the Eameses and the Case Study houses. Although by the time Foster arrived in San Francisco Richard and Su Rogers had already returned to the UK, they had shared several recommendations with him, in addition to those suggested by James Stirling. In early 1963, following Richard and Su's invitation to set up a practice together, Norman Foster returned to London to join forces in kick-starting a Yale offspring in the UK, Team 4 Architects.

Cross-sections and cutaway perspectives: overcoming the 'ghost of Rudolph'

Team 4's design methodology had already been tested when Norman Foster and Richard Rogers worked together as students at Yale. Indirectly, Su Rogers had been exposed to the same work dynamics, as, although enrolled in Urban Design at the Town Planning Department within the same school, she was a frequent visitor and collaborated in much of her husband's work. After an initial period of practice, in 1965 Team 4 received their most significant commission through a Yale connection, James Stirling – the Reliance Controls factory in Swindon (UK).¹⁰ This became an opportunity to experiment with an updated tectonic approach, departing from the 'wet construction' tradition (concrete, mortar, plaster, etc.) in favour of a higher degree of industrialised 'dry' building components. The resulting design combined North American and British references, amalgamating the West Coast Case Study Houses and Ehrenkrantz's Californian SCSD (Schools Construction Systems Development) with Alison and Peter Smithson's Hunstanton High School in Norfolk and Tony Hunt's engineering expertise. Which drawing type could best convey this architectural hybrid, and how to communicate its novel tectonic approach?

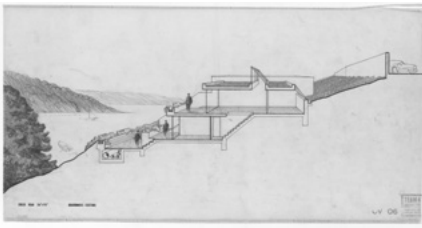


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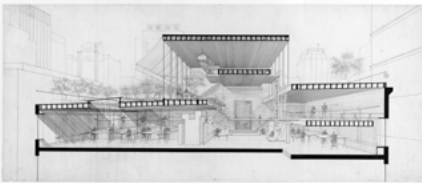
The collection of surviving Reliance Controls drawings at the Norman Foster Foundation (NFF) Archive contains aerial perspectives, elevations and axonometric diagrams that convey the project's design and construction process. In 1966, when the building was nearing completion, the team realised the importance of creating presentation drawings – drawings that reflected their concern with material functionality, prefabricated components, and the visible steel frame structure – in order to attract the attention of architectural publications, which at that time in the UK were mostly dominated by the *Architectural Review* and *Architectural Design*. Ingeniously, Team 4 invoked the 'ghost of Rudolph' by using a cross-section to condense all the building's tectonic relations into a set of three drawings, which come together to form a single image (Fig.1). Although the horizon line remains constant, the segments' vanishing points do not coincide with one another, and there are elements which remain uncut, making the drawing a kind of hybrid of a 'cutaway' and sectional perspective. The customised representation reveals a series of condensed narrative strategies concerning the building's implied symbolism, its temporal and spatial readability, and the implications derived by the choice of such a large format.¹¹ Following Team 4's evolution into Foster Associates, these aspects would appear in different variations in several drawing types, which I will discuss later.

The choice of employing a popular drawing style championed by Paul Rudolph – the cross-section with a one-point perspective – to convey their novel approach symbolically links Team 4 to the US architectural publishing scene. It reflects an aspiration to engage with a broader context than the UK and demonstrates a keen awareness of international architectural discourses. Although many architects, particularly those educated under Gropius at Harvard's Graduate School of Design, utilised cross-section perspectives, it emerged, in particular, as the signature drawing of Rudolph. As Timothy Rohan describes, Rudolph produced numerous cross-section perspectives to highlight the spatial qualities of his designs, which often incorporated double, triple, and quadruple height spaces.¹² Consequently, cross-sections became crucial for illustrating the spatial complexity of multi-level structures. Integrating a focal point perspective into a cross-section enhances the legibility of the space, creating a rich spatial atmosphere that incorporates depth and usually makes visible the texture and articulation of all surfaces, including the undersides of floor slabs. Through their richness of detail, Rudolph's renderings were intended to be perceived as akin to cross-section photographs and became highly

sought-after representations for architectural magazines thanks to their graphic density. After observing Rudolph's extensive publishing successes, Team 4's ambition to create 'publishable' drawings probably influenced the decision to incorporate cross-section perspectives and cutaways into their drawing repertoire.



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Team 4 had already experimented with the cross-section perspective in a housing proposal for Cornwall in 1964 (Fig.2), although this is different from the canonical Rudolph cross-section type. Signed by Norman Foster, this drawing illustrates the scheme's adaptation to its sloping site. The horizon line is roughly on the (upper) street level, offering a bird's-eye view of the surrounding area and its visual connection with Pill Creek. The drawing provides minimal information regarding construction and, with the interior spaces left empty, the viewer's gaze is drawn towards the site's natural scenery. If we compare this early use of a cutaway perspective by Team 4 with a contemporaneous drawing by Paul Rudolph, we can discern operational differences that reveal distinct strategies. In a drawing Rudolph developed to illustrate a new office project for his practice in Manhattan in 1964 (Fig.3), he places the viewer within the building, inviting them to engage with its atmosphere and spatial complexity. Conversely, Foster positions the viewer at a distance to observe the building's integration within the landscape, accentuated by three human figures on outdoor terraces gazing towards the creek. Here, the emphasis lies on the external environment, while Rudolph's illustrated figures are depicted indoors, absorbed in their work despite the symbolic absence of their 'master', whose upper-level office remains conveniently hidden by the perspective. Moreover, while Rudolph's hatching underscores the focal perspective, the shading in Team 4's drawing is applied primarily for compositional balance. Overall, it is evident that Team 4 is already adapting Rudolph's cross-section strategies and visual metaphors, evolving the approach that will culminate in the Reliance Controls drawing.

The second point of interest to be addressed through the Reliance Controls cross-section is the evolution of the viewer's engagement through strategies of spatial and temporal multiplicity. This factory was a regular rectangular one-floor building, meaning that a standard cross-section perspective would be relatively 'information-poor' compared to Rudolph's intricate sections. However, Team 4 altered the 'true' cross-section perspective by bringing together spaces that existed in different locations and presenting them within the same drawing. Looking carefully at the complex spatial arrangement, we see that the cutaway perspective is vertically divided into three segments, which resemble a triptych: reading from left to right, the first and second correspond to the same longitudinal section, whereas the third corresponds to a transversal section, perpendicular to the other two. The drawings have been arranged to be read linearly, from left to right. Despite the segments seeming to blend into one, because of the lack of framing lines, each drawing conveys information that is complementary to the others, providing a subtle but complex narrative intentionality. The cross-section begins to suggest a rotating model and implicates the users' involvement in completing the picture. This is seen when analysing the structural components and floor system, drawn in greater detail in segments 1 and 3. While segment 1 illustrates the cladding system, segment 3 shows the lightweight structure that supports it – there is a dependency between segments that requires them to be read together.¹³

In addition to its spatial multiplicities, the lack of a roof in the central segment implies that there are different levels of completion for each part of the drawing and that, as a consequence, multiple temporalities are recorded. By combining the information in the three segments, we can

A technical drawing of a bridge structure, showing a cross-section with a truss roof and a central support.

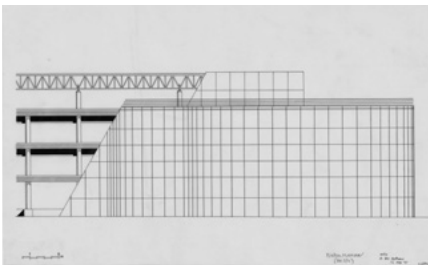
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Review presents a cropped version that avoids the stark emptiness of the earlier version by incorporating a photographic image in the background, which asserts the building's transparency (Fig.5). In contrast to the previous cross-section, which may have served as an underlay for tracing, the human scale is integrated, as the drawing features two human figures that accentuate the eye-level height of the perspective construction. Colour draws attention to the technical equipment, emphasising the marked detail in which it is drawn – this signalling the practice's interest in servicing systems while marking the start of FA's early instrumental use of colour. The graphic weight of the trees in the background declares the connection between interior and exterior via the transparent façade. With the incorporation of colour, different media and selective use of perspective, the FA team advanced and tailored their mediation instruments, decisively moving beyond Rudolph's cross-section orthodoxy.

A dialectic of flatness and depth

FA's narrative techniques were pivotal in the development of the practice's design methodology and the expansion of their architectural language, moving from the kind of condensed mediation techniques developed in Team 4 to approaches that explored the coexistence of several drawing types. This shift suggests a related epistemological divide: on one hand, building tectonics, structure and materiality are represented by multi-layered elevation drawings, losing their perspective background and its cognitive effect; and on the other, sequential drawings that involve vignettes and comic-like graphic techniques emerge to depict processes and programmatic aspects – especially in projects with specific social concerns. As FA's work developed, the one-point perspective would tend to disappear and be replaced by 'flat' drawings, such as sections or elevations. The practice's representations rapidly evolved towards a logic of 'skin and bones'. However, perspectives did not entirely disappear from FA's drawing repertoire. Birkin Haward, one of the practice's most celebrated draughtsmen, complemented the previous drawing types with informal sketch perspectives to indicate spatial ambiances.



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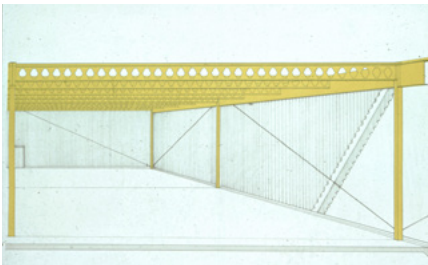


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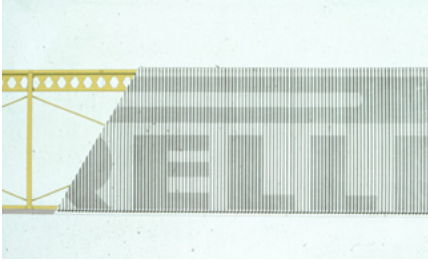
Additionally, the practice would collaborate with Helmut Jacoby to produce a series of striking and graphically intense perspective vistas, conceived primarily as additional documentation for clients or competition entries.¹⁶ Jacoby focused on depicting depth, describing the interior spaces of the building through lively perspective drawings without a cutaway. The drawings shown in Figures 6 and 7 suggest how these representational modes complemented each other – suggesting that once we peel off the elevation and understand its tectonics, we can enter the perspective to perceive the interior's spatial qualities and ambience.

From 3D to 2D tectonics: cutaway elevations

Figures 8 and 9 represent a pivotal moment in this transition to two-dimensional drawings, where tectonic narratives are described from the exterior. This marks a move away from perspective views and the embrace of a dichotomy between spatiality and materiality. In the wake of various industrial projects, Pirelli commissioned FA to design a warehouse in 1970, building upon the tectonic principles established at Reliance Controls. The cross-section (Fig.8) utilises a similar one-point perspective to that seen at Reliance Controls (Fig.1), disclosing a diagonal cut through the cladding to reveal its layering in a cut-away strategy. Similarly, a diagonal cut appears in the frontal elevation drawing (Fig.9), abandoning a view of the internal volume to focus on the building's materiality, presented through layers and their relationship to the underlying structural arrangement. The cutaway elevation engages the viewer in an action of uncovering a multi-layered system, consonant with the development of FA's architectural preoccupations.¹⁷ Moreover, the elevation illustrates how the cladding could



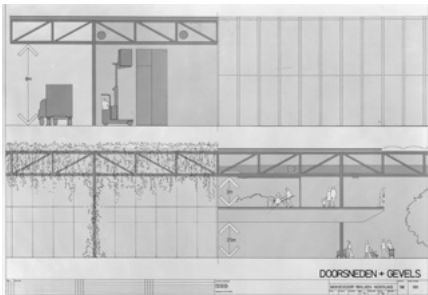
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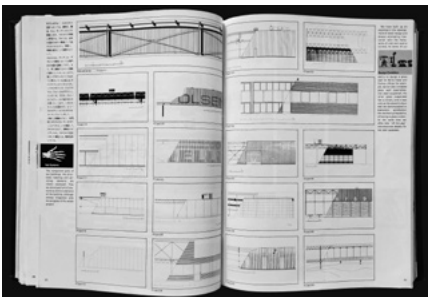
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be customised to prominently display the company's name. If the tectonics of the building reflect FA's architectural ethos, the drawing illustrates how the envelope can, at the same time, act as a graphic surface.

Cutaway elevations became a frequently employed vehicle for conveying FA's updated tectonic approach, ultimately replacing the cross-section perspective. A significant conceptual shift occurs as the elevation positions the viewer outside the building, making its skin (or façade) the central subject of the depiction. This shift from three-dimensional to two-dimensional representation facilitated the narration of their evolving technological approach, the kit-of-parts assembly. In the same way that FA had adapted Rudolph's cutaway sections to show multiple views, the practice customised cutaway elevations to reveal layering systems. Peeling away reveals layers that correspond to different building components or materials and thus may narrate a construction process. Reading from left to right, these cutaway elevations invite the viewer to imagine the sequence of construction by adding layers until a final assembly is arrived at. We can trace the evolution of FA's use of cutaway elevations by comparing a set drawn for the Pirelli warehouse in 1970 (Fig.10) with those produced in 1974 for the Badhoevedorp Pavilion (Fig.11).

In the Pirelli warehouse drawing, three simplified elevations are vertically aligned and ready to be compared by the viewer. Each communicates a different aspect: the top, the structural logic and volumetric simplicity of the warehouse; the middle, the shading effect of its cantilevered roof; and the third, the façade's possibilities as a semiotic surface. The way these elevations have been placed within the sheet invites the viewer to combine the information depicted on each elevation. Taken together they produce a virtual 'architectural promenade' that resembles the Reliance Controls cutaway perspective – except in this case it is each side of the building that is rotated, in order to understand its form. These concepts are further explored in the elevations produced for the Badhoevedorp Pavilion (Fig.11), which, within one drawing, work with a similar logic of visual 'rotation' while going a step further, by virtue of the introduction of tectonic information. In both elevations, the façades are partially peeled off, following a narrative approach of unveiling. The glass façade acts like a theatre curtain that, once removed, reveals the structure behind it. Instead of distributing the information in different façade drawings, as in the Pirelli case, the Pavilion's tectonic aspects are shown as combined and interconnected.

FA had the opportunity to publicise this virtual reconstruction of the building's tectonics through a series of cutaway elevation drawings presented in the September 1975 issue of the Japanese magazine *a+u* (*architecture + urbanism*) – their first in-depth coverage in an international publication. This 14-page article encompassed the practice's design philosophy, selected works and cultural references and featured a double-page spread that presented a graphic genealogy of its work. The information was presented with the same distinctive cutaway elevation style (Fig.12), each of the buildings having been redrawn to convey a sense of unity and 'family resemblance'.

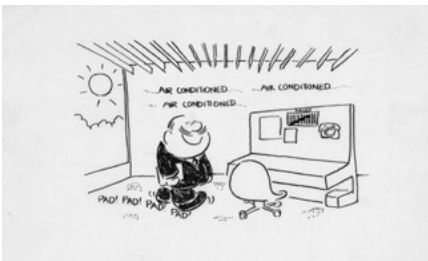
Expanded storytelling: narrative processes through sequential drawings

While elevations became their 'trademark drawing' for publications, at the same time FA elaborated a type of sequential or serial drawing, primarily for use in meetings in ways that combined visual and oral agency. In contrast to the drawings previously described, these focused on illustrating the 'why' rather than the 'what' by combining methods of explanation and description. This expanded narrative technique followed some of those that had already emerged in FA's condensed

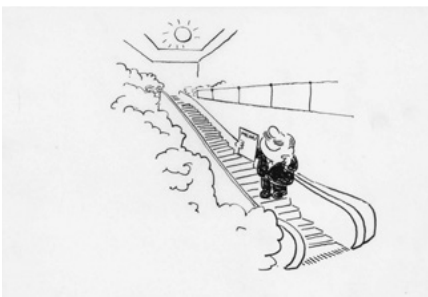
cross-sections but used simpler and smaller drawings focusing on design processes – something that a single drawing could not condense. These drawings differed from previous approaches as they created a linear or chronological narrative through a collection of interdependent drawings or sketches, which created a whole.¹⁸ Importantly, these sequential drawings – sketches, vignettes and cartoons, informal and non-technical modes of representation familiar from popular media – aimed to convey architectural decisions to a non-expert audience and encourage feedback from clients or users during the design process. Based on their intention, FA's sequential drawings, which were possibly influenced by Gordon Cullen's *Townscape*,¹⁹ can be organised into two types – those that communicate the decision-making process and those that narrate the architectural experience from the user's point of view, resulting in drawing sequences that depict the stages of the design process or movement through the building.

Storytelling architectural decisions through cartoons

The first examples of expanded storytelling arrive around 1973 with FA's commission of Frank Dickens, the author of *The Evening Standard's* daily Bristow cartoons, which ran between 1961 and 2012. The goal was to produce similar cartoons to communicate to prospective users how they would experience the future Willis Faber and Dumas office building in Norwich, which was under construction (concerns had been raised about its *Bürolandschaft* configuration). In the second volume of *Norman Foster: Buildings and Projects*, Ian Lambot writes that FA commissioned Dickens to convey the 'why' of the building and convince its reluctant future users how an open-plan office arrangement would improve their work environment.²⁰ The strategy was clear – to hire one of the most influential cartoonists in the country to connect with the staff through a familiar visual language.



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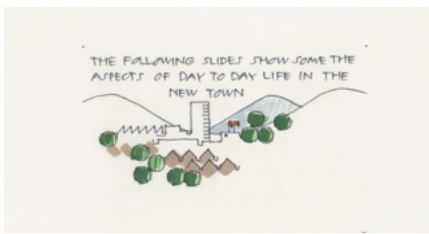


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Dickens's cartoons, an unexpected find in the NFF archive, consist of 40 vignettes that narrate the scheme's benefits compared to the company's previous office spaces in London. The emphasis is placed on how crowded, noisy and poorly climate-controlled spaces were remedied in the design of the new building in Ipswich, utilising the before/after narrative. Once in Ipswich, each cartoon follows Bristow's architectural promenade through the new building, and a typical day at work (Figs 13, 14). Perspective is incorporated to assist in situating Bristow spatially within the building, while only essential details are added to the image. This is the opposite approach to Helmut Jacoby's perspective vistas (Fig.7), in which the building ambience and most iconic spaces are painstakingly detailed. Bristow offers an easy-to-understand narrative where the viewer learns about acoustic and thermal comfort with the aid of words like 'pad!' and 'air-conditioned', which allow acoustic and atmospheric conditions to have their own figurative presence in the image (Fig.13). The building's spatial design, especially its central spine where the escalators are located, is depicted through a smiling and ascending Bristow holding a 'Menu', signifying that the new building incorporates a specific restaurant area in the upper level (Fig.14). Altogether, the Bristow series displays an ease and a humour that are both relaxed and persuasive.

Drawing the process with pictograms, sketches and vignettes

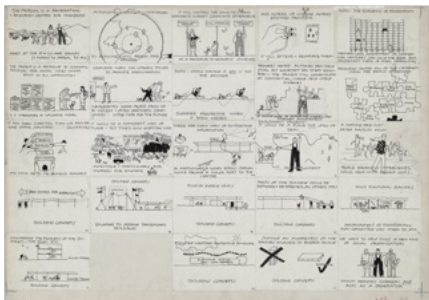
In the wake of this project, FA would receive a growing number of commissions with programmes that offered new challenges to their design expertise. As their design methodology expanded, their representation and presentation techniques evolved accordingly. We can measure the success of Dickens's cartoons when we see how FA elaborated their own in-house versions. Moreover, these became instrumental for projects that included social programmes and focused on specific user needs, the sequential drawings allowing easy readability by conveying design decisions



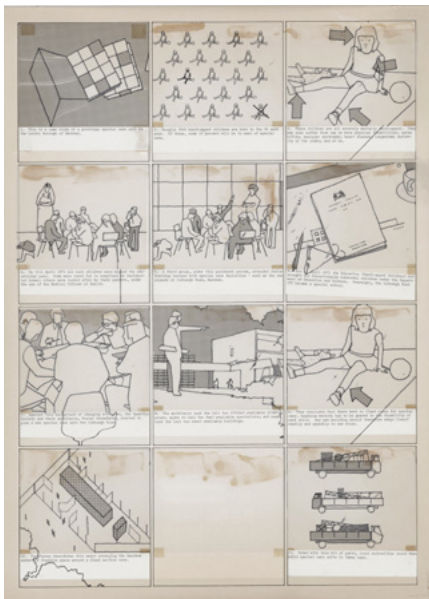
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separately, step by step. Three notable commissions where vignettes and cartoons served as *lingua franca* are the Open House Community Centre in Cwmbran, Wales (Figs 15, 16) and two special schools developed for the Spastics Society (Figs 17, 18). This narrative approach relied on Birkin Haward's drawing expertise, which departed from the Dickens graphic style – Haward has noted that the Belgian comic strip artist Hergé, author of the Tintin stories, was a significant reference for his drawing style and colour palette.²¹

These sequential drawings are design process mediators that operate in specific contexts, whether a particular moment (during a meeting) or a particular space (the meeting room at FA's office in Fitzroy Street in London). These depictions function as 'snapshots' of the decision-making process, as illustrated in the first drawing presented to the Open House stakeholders in 1978: 'The following slides show some aspects of day-to-day life in the New Town' (Fig.15). Here, the drawing becomes a slide, part of a larger narrative that combines easily interpretable sketches with titles or descriptions. Another drawing from the Open House series features a notation number, further underscoring the sequential nature of the narrative, which establishes interdependencies and a specific order for interpretation. Each drawing conveys a single message, endorsing the architectural narrative and concentrating the meaning. The 21 x 30 cm illustrations are rendered loosely, as intricate details are deemed unnecessary – these simply coloured drawings acted as pictograms. They were presented as stills of the architectural narrative during client meetings with the Cwmbran Municipality, setting the presentation's pace and tone, simplifying abstract concepts and possibly enabling the client to interact and provide feedback at any stage. Although this strategy seeks to avoid the audience's disengagement or an oversimplified analysis – which Edward Tufte remarks upon in his celebrated critique of PowerPoint's cognitive style – we can certainly identify an effort to persuade decision-makers of the architects' proposals.²²

The sequential images held at the NFF archive vary in format as they were mainly produced for meetings and rarely published outside internal reports. Occasionally, the vignettes were compiled on big presentation boards, revealing the practice's intention to narrate and display the complete architectural decision-making process (Figs 17, 18). On some occasions, a set of vignettes would serve as a script from which to draft concepts later developed individually. An example of this can be identified in the panel comprising 24 sketches related to the Cwmbran Open House presentation drawings (Fig.17), which preceded the development of each concept into an individual drawing of the kind shown in Figures 15 and 16. In contrast, the 11-drawing compilation for the Palmerston School board (Fig.18) displays more detailed drawings with typed annotations that suggest that these were to be shown to clients or users. Whereas the Open House board's vignettes utilise pictograms, elevations and simple perspectives, the Palmerston board incorporates a cinematic point of view that combines elevations, perspectives and axonometric views.

These boards show how sequential narratives became instrumental in depicting a process, especially when the design decisions imply an action, evolution, or assembly process. The linearity implied confirms that the meaning of each drawing is shaped by what comes before and after it. The Open House board resonates with the storyboards produced around the same time by Superstudio as part of their *Continuous Monument* project (1969–70). As FA sequences expanded on presentation boards, these functioned as 'architectural scripts' that had a particular performative role during meetings. FA's Fitzroy Street meeting space was a hexagonal sector within the open-plan office, shaped by Herman Miller Action Office-2 panels.²³



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These partitions became the support on which to pin up drawings, models and other media that could be referred to during the meeting – in a contemporary image (Fig.19) we see Norman Foster standing and pointing to a plan on the wall. Although the photograph was taken in c.1972, before the vignette-boards were incorporated into FA's drawing repertoire, we can still discern the heterogeneous forms of architectural representation the practice employed. Moreover, the space of the meetings – or presentation stage – is also equipped with a projector, confirming the use of slides and, by implication, sequential narratives. In conversations with the author, Birkin Haward has described how, later, several easels on which boards could be displayed became part of the presentations. The setting created a compelling and immersive installation for staging the practice's explorations in narrative representation and its adoption of the latest technologies. The Fitzroy Street meeting space thus became an immersive installation, where a variety of drawing types pinned on the walls, presentation boards, slides and models transformed architectural representation into a shared narrative experience.

Reflections

We have considered how Foster Associates developed, expanded and experimented with Team 4's representational legacy, mainly through moving from what I have called 'condensed narratives' to 'expanded storytelling', and ultimately combining them. The drawings featured in this article exemplify a blend of operational intent, pragmatism and experimentation, showing how an emerging architectural practice evolved various narrative strategies to engage specific audiences, including architectural magazines, clients and users. When Team 4 focused on adapting and customising cross-section perspectives to articulate their emerging tectonic approach, they laid a strong foundation for exploring new directions encompassing various temporalities and spatialities within a single drawing. This method also illustrates the tectonic advances achieved at the Reliance Controls factory, often recognised as a pioneering high-tech building. Similarly, FA embarked on a strategy to reinterpret a set of shared influences, such as Paul Rudolph, Gordon Cullen and Hergé, by expanding their narrative techniques and representational methods that communicated its design process and systems thinking by incorporating multiple drawing types such as anatomical cutaway elevations and composite storyboard-like arrays. This powerful repertoire of drawing techniques demonstrates a remarkable ability to adapt and 'hack' various drawing styles in order to articulate different kinds of stories. The variety of drawing techniques FA employed allowed them to supplant Rudolph's influence with a conceptual narrative approach, resonating with a time and context which explored an operational use of visual communication strategies, revealing affinities with peers such as Cedric Price and Archigram.²⁴

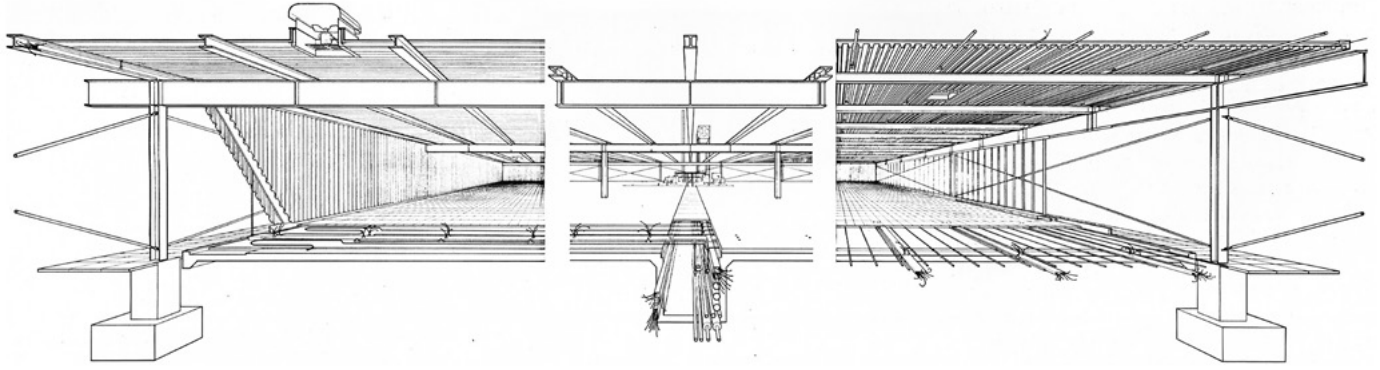
The shift from condensed narratives to expanded storytelling reflects a cognitive adaptation and a strategic use of different drawing types to deliver specific information, balancing them to make the medium as effective as possible, a key feature of FA's approach. At first, it may seem that condensed narratives were tailored for publication strategies, while expanded sequences aimed to convey design processes to a non-architectural audience. However, a deeper analysis reveals significant nuances. Navigating diverse dichotomies – from straightforward description to deeper explanation, from precise abstract cutaway perspectives to whimsical cartoons – the role of drawing becomes essential in showcasing both conceptual diversity and an empirical, social approach to technological development. By shifting our focus from the audience to the content, we can observe how FA, a process-oriented practice, skilfully balanced the articulation of the design process – the

‘why’ – with the representation of the finalised architectural object – the ‘what’. This duality not only anticipated the evolving significance of graphic mediation but also underscores the changing landscape of architectural communication, challenging us to examine the role and agency of architectural drawings in the light of ongoing advancements in rendering technologies and visualisation techniques.

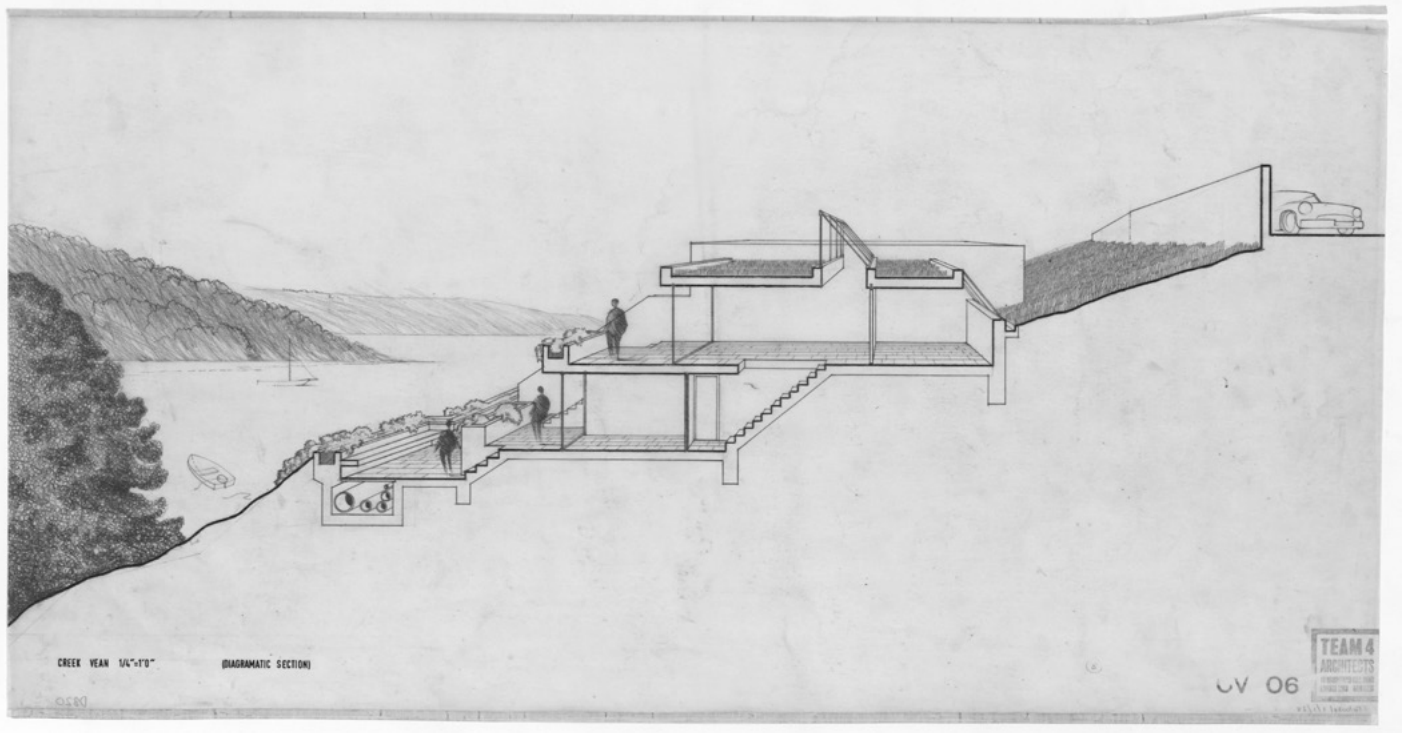
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- 1 Team 4 Architects (1963–67) was founded by Richard and Su Rogers together with Norman Foster and Wendy Cheeseman and her sister, Georgie Cheeseman. When Team 4 was dismantled in 1967, Norman and Wendy co-founded Foster Associates, whereas Richard and Su co-founded Richard + Su Rogers Partnership.
- 2 *Drawing Ambience, Alvin Boyarsky and the Architectural Association*, eds Igor Marjanovic and Jan Howard, provides an excellent account of the 1970s drawings scene around the Boyarsky and the AA. Jordan Kauffman's *Drawing on Architecture. The Object of Lines, 1970–1990* offers a study about how architectural drawings became commodified objects promoted by a network of galleries, collectors and institutions – sometimes intended for viewers outside the discipline.
- 3 This article is part of a more extensive study in the form of a doctoral dissertation developed at Universidad Politécnica de Madrid under the mentorship of Prof. Dr Javier Girón Sierra, complemented with a Fulbright predoctoral research stay at Yale School of Architecture and at the History, Theory and Criticism of Art and Architecture (HTC) group at MIT.
- 4 Part of Team 4 drawings and most of Foster Associates' original contents are archived at the Norman Foster Foundation Archive in Madrid, where I was enrolled as the founding Archive and Projects Coordinator first, and then as the founding Head of Education and Research Units from 2015–19.
- 5 Richard and Su Rogers and Norman Foster attended Yale University in 1961–62. During this period, they travelled extensively through the East and West Coast, visiting the work of many of the American masters, such as Louis Sullivan, Frank Lloyd Wright, Louis Kahn, Paul Rudolph and Charles and Ray Eames. While at Yale, they became connected with the British visiting faculty, such as James Stirling, Colin St John Wilson and others. Back in the UK, the Rogerses provided many connections with their British peers, primarily via the AA. Richard Rogers's family connections to Italy and Italian architecture (Ernesto Nathan Rogers/BBPR) was augmented with additional references such as Pierre Chareau's *Maison de Verre* and Jean Prouvé's work. Similarly, as a student at Manchester University (1957–61), Norman Foster travelled through France, Italy and Denmark, visiting the XII Milan Triennale and recent works by Carlo Scarpa, Le Corbusier and Arne Jacobsen.
- 6 Among the key figures who played a significant role in this endeavour, alongside Norman and Wendy Foster, were the architect and painter Birkin Haward and the graphic designer James Meller, who served as Buckminster Fuller's ambassador in the UK. Both were deeply engaged in London's architectural scene of the 1960s, actively participating in lectures and discussions at the Architectural Association and the Institute of Contemporary Arts, where Meller was particularly influential. For an analysis of Haward's work at FA see Gabriel Hernández, 'Las estrategias de comunicación de Foster Associates en Fitzroy Street (1971–1981): Una mirada a la cadena de producción gráfica a través de Birkin Haward, Helmut Jacoby y Jan Kaplicky', *Ra. Revista De Arquitectura* 23 (2021), 82–95.
- 7 I am considering Foster Associates' early years from its founding in 1967 until 1979, the year in which the practice had its first solo exhibition, published its first monograph and, most importantly, won its first big international commission, the HSBC bank.
- 8 Both Foster and Rogers have cited, in their respective monographs, that they chose Yale over other North American options because of Rudolph's cross-sections, which were widely published in *Progressive Architecture*.
- 9 While consulting Norman Foster's student drawings at the University of Manchester (1956–61) and at Yale (1961–62), his first cutaway section appears in his work for the studio briefs developed by Rudolph and King-Lui Wu.
- 10 Norman Foster and the Rogerses met Stirling, member of the British community at Yale, where he was frequently invited as a visiting critic.
- 11 The 'Ghost of Rudolph' concept was developed in conversations with Prof. Dr Morgan Ng, at his 'Architecture Drawing in the Expanded Field' seminar at Yale University, during the Spring 2023 semester.
- 12 For more information on how cutaway perspective sections became Rudolph's trademark drawing, see Timothy Rohan's 'Drawing as Signature: Paul Rudolph and the Perspective Section', in *Reassessing Rudolph*, ed. Timothy Rohan (New Haven: Yale School of Architecture, 2017).
- 13 The treatment of different perspectives but identical viewpoints condensed in a single drawing resembles a Cubist approach, similar to those avant-garde artists who broke with the linear perspective system at the beginning of the 20th century.
- 14 Consultation at the Library of Congress, Paul M. Rudolph Fonds, in July 2023.
- 15 Segment 1: 70 x 91cm, Segment 2: 70 x 46cm, Segment 3: 70 x 91cm.
- 16 Helmut Jacoby was an external collaborator at Foster Associates between 1971 and 1992.
- 17 Peeled-off elevation drawings and anatomical drawings were popular during the 19th century to describe large-scale structural systems, such as Baltard's elevations for the Parisian Les Halles Centrales de Paris in 1863. Different construction stages in the same drawing also connect with drawings elaborated centuries before, such as Fabricio Castello's exquisite El Escorial bird's-eye perspective drawing, dated 1576.
- 18 One of the most classic comic-like examples is Le Corbusier's letter to Madame Mayer in October 1925, in which he explains through an *architectural promenade* her prospective house. This letter, archived at Fondation Le Corbusier, has been the subject of extensive analysis by Paul Clarke. See his 'Drawing Conversations: Clients – Le Corbusier and José Oubrière', *Drawing Matter*: <https://drawingmatter.org/letters-to-clients-le-corbusier-jose-oubrierie/> [accessed 2 September 2025].
- 19 In conversations with Norman Foster, he declared his admiration of Gordon Cullen's work. When Cullen died, in 1994, Foster paid tribute to him by publishing a brief obituary in the *Architectural Review*.
- 20 Ian Lambot, *Norman Foster: Buildings and Projects Volume 1 1964–1973* (London: Watermark Publications, 1991), 22.
- 21 During this research, Birkin Haward has been interviewed on several occasions. His feedback and generosity have been instrumental in many of the key points presented in this article. Haward was an essential part of Foster Associates' early years and was responsible for a large part of the practice's narrative efforts through his exquisite draughtsmanship. Now retired, he continues developing his skills through painting, currently represented by the Beardsmore Gallery in London.
- 22 Edward R. Tufte, *The Cognitive Style of Powerpoint: Pitching Out Corrupts Within* (Cheshire, CT: Graphics Press, 2003).
- 23 For an extensive analysis of how the office space shaped Foster Associates' design methodology, see Gabriel Hernández, 'From Domestic Setting to Display Space: The Evolution of the Foster Associates' Work Spaces and Methodology', *Cahiers de la recherche architecturale, urbaine et paysagère*, 9/10 – L'Agence d'architecture (XVIIIe-XXIe siècle) <https://doi.org/10.4000/craup.6137> [accessed 20 November 2024].
- 24 There are further research possibilities, such as studying and comparing how other figures from the same context reacted to the same media developments and, additionally, how they influenced each other – such as the connection of James Stirling's diagrams and cutaway axonometric representations to Foster Associates' drawing repertoire.

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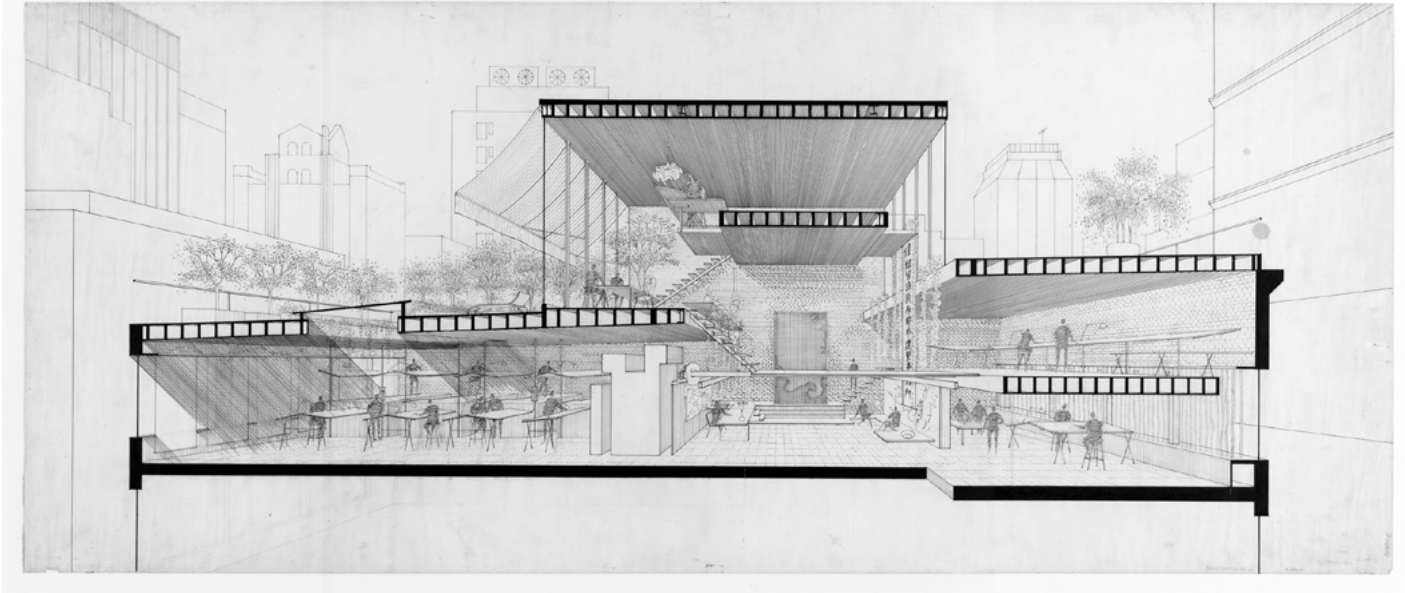


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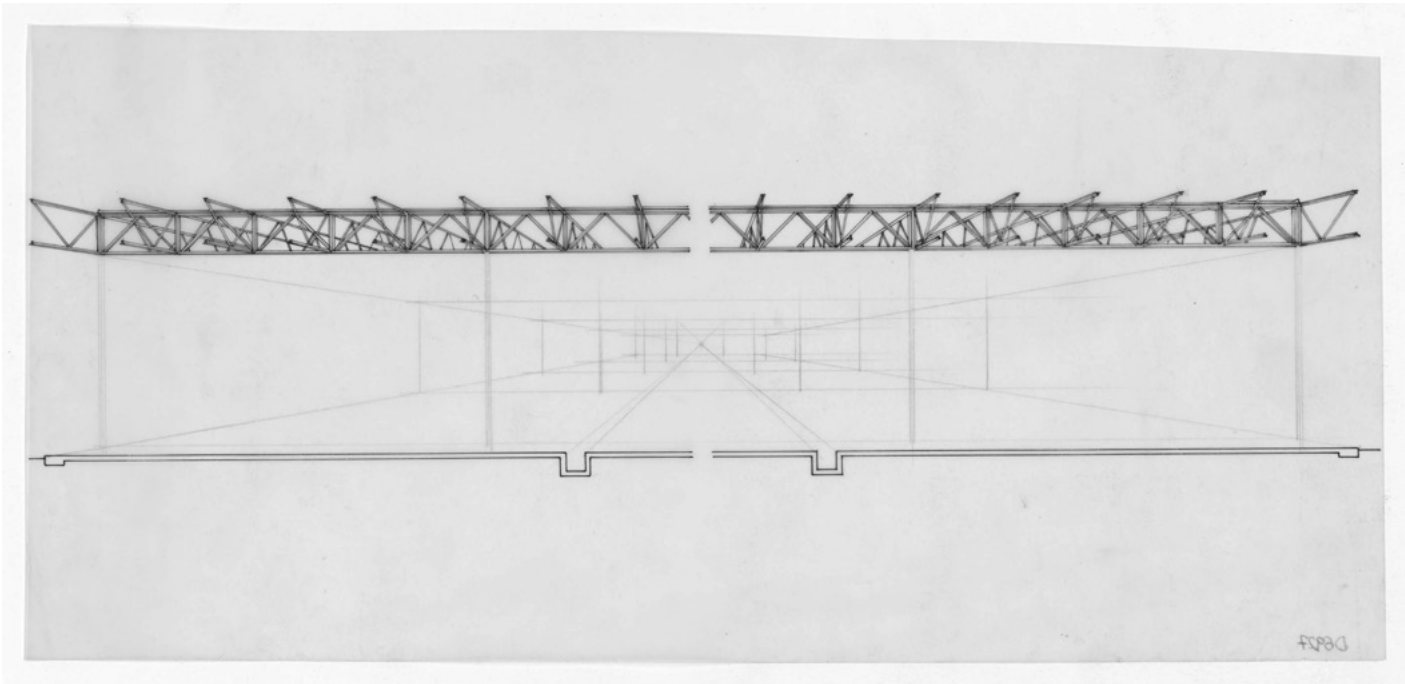


- 1— Team 4, Cross-section perspectives for the Reliance Controls factory building, 1966. Pen and ink, 70 x 228 cm.
 © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0097D_027.
- 2— Team 4, Creek Vean Diagrammatic Section, 1964. Pencil and ink, 45.3 x 87.85 cm. © Norman Foster Foundation
 Archive, Madrid. Archival reference: NFF_0076-03D_038.

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4—



3— Paul Rudolph, Paul Rudolph Architecture Office, New York City, New York, 1964. Graphite, pen and ink, 61 x 147 cm. Paul Rudolph Archive, Library of Congress Prints & Photographs Division, Washington DC. Archival reference: unprocessed in PMR-0049, no. 1, Control number 2010648344.

4— Foster Associates, Cutaway perspective of the IBM Pilot Head Office, Cosham, 1968. Pencil and ink, 20.8 x 41.5 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0125-02D_004.

Architects
Foster Associates.

Consultants
Structural engineers: Anthony Hunt Associates.
Mechanical and electrical engineers: R. S. Willcox Associates.
Quantity surveyors: G. A. Hanscomb Partnership.
Acoustic consultants: Engineering Design Consultants.

Client
IBM (United Kingdom).

Brief
Brief for temporary offices for 750 personnel (expanding to 1000) received April 1970. Three-phase building operation started September 1970 and finished ahead of schedule in September 1971. Phase 4, bringing capacity to 1000 personnel, begins January 1972.

Site
8.9 acre (3.60 hectare) level site reclaimed from sea about 40 years ago by refuse tipping; immediately north of Portsbridge intersection and M27; adjoined by Cosham playing fields and by future site of IBM permanent head office. Mature tree belt along south and east boundaries, and underground services reservation adjoining Western Road which cannot be built on. Estimated noise levels from future motorway and intersection a little over 60 dB. With start of fourth phase additional car park will be provided south of Western Road with existing underpass connection.

Planning
Planning authority determined positions of two site entrances and maintained interest in landscape design.

Organisation
Single-storey building 480ft by 240ft

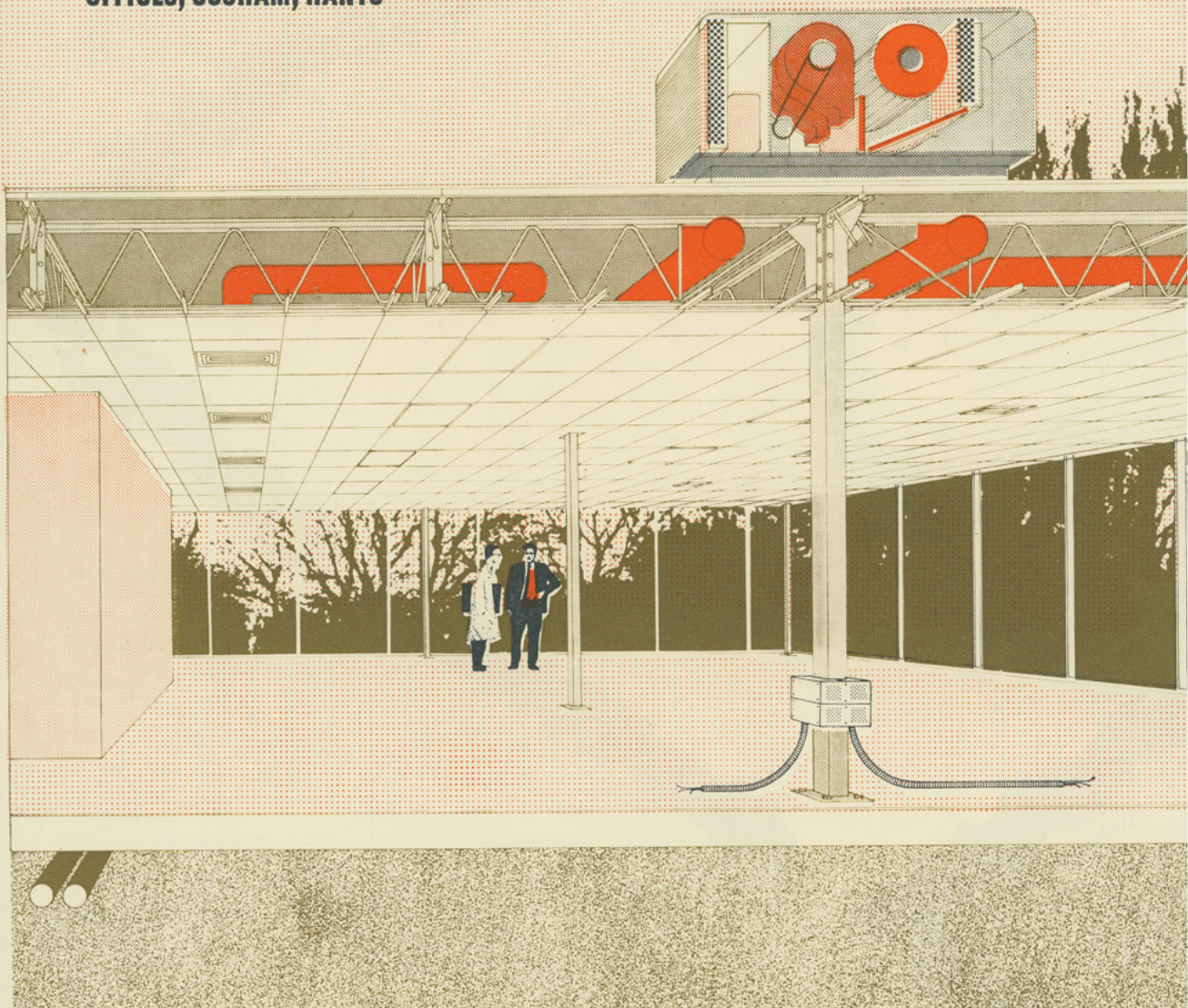
(146 m by 73 m) with clear ceiling height of 9ft 8in (2.94 m) providing flexible office accommodation with supporting machine space, cafeteria and ancillary. Fixed functions of building, plant and wet waste concentrated in two cores. Principal internal mall runs east-west south of core areas and gives direct access to north-south inter-departmental aisles and to cafeteria.

Total area
117 000 sq ft (10 869.30 m²).

Cost
Information refused by client but cheaper than any suitable prefabricated timber building.

Structure
24ft (7.315 m) grid of open-webbed lattice steel joists 22in (0.254 m) deep. Columns from 6in square hollow steel sections used as ducts for GPO and power cables which emerge through pre-drilled holes

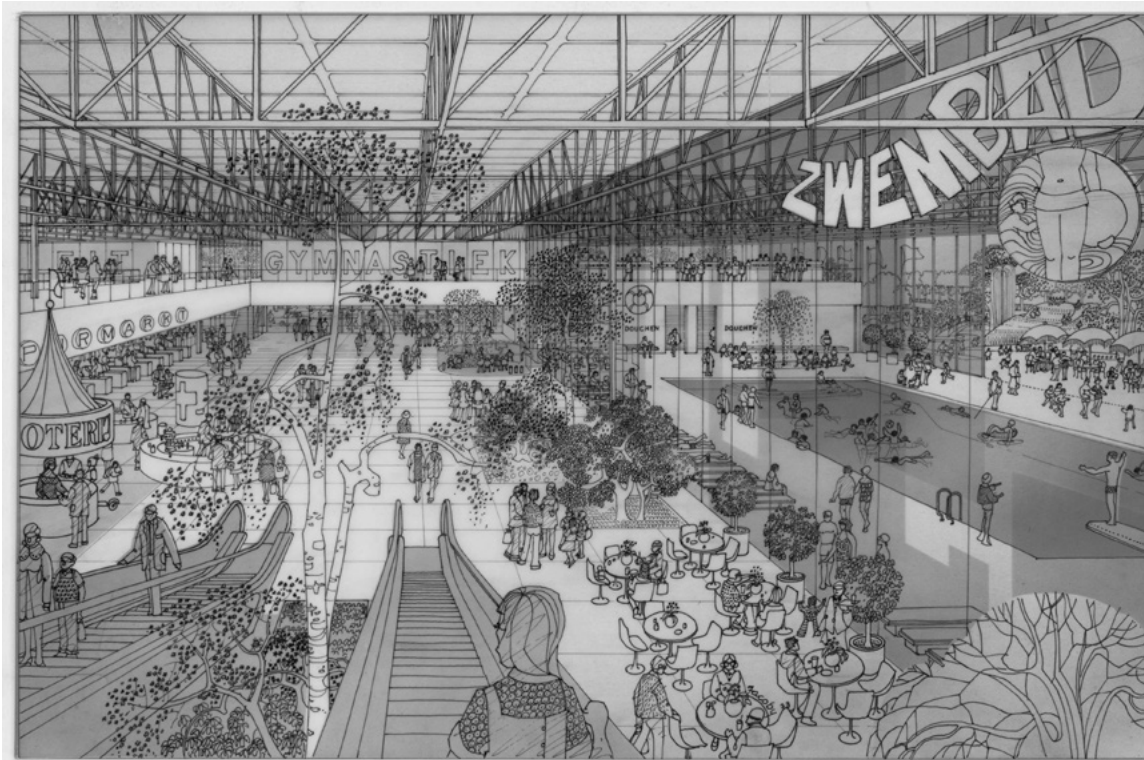
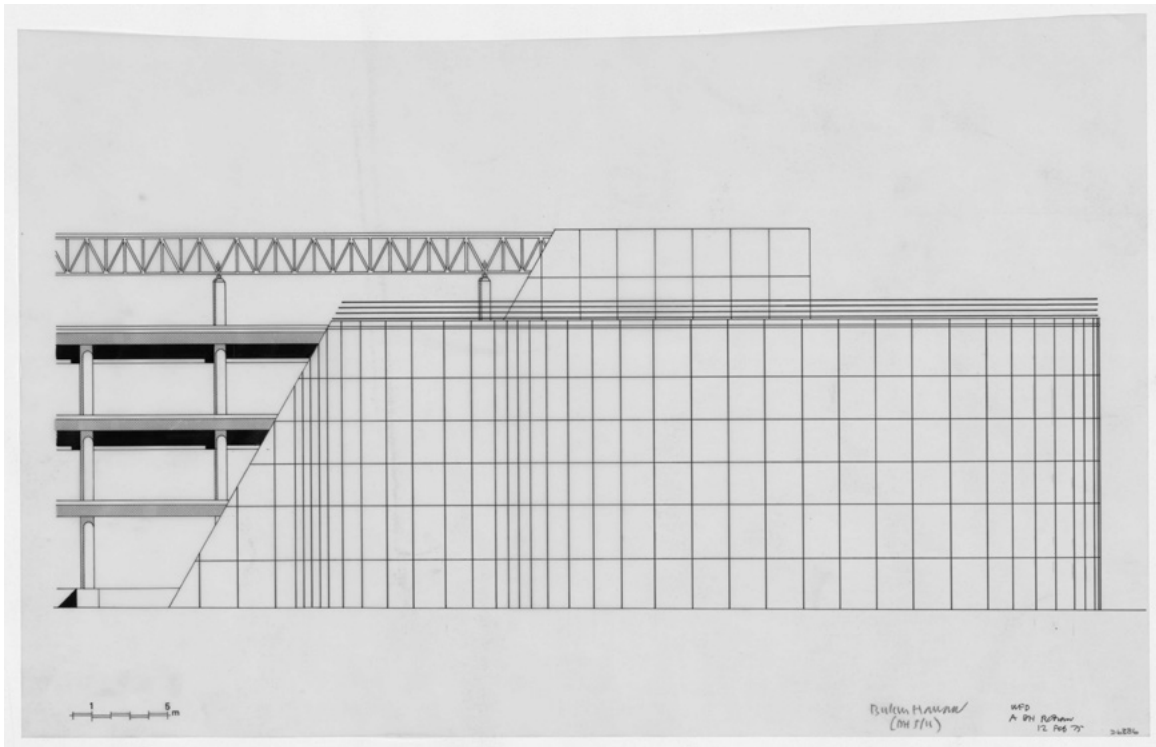
OFFICES, COSHAM, HANTS



1 (page 15), 'what could be simpler . . . glass panels running from floor to eaves capping, held in neoprene gaskets . . . ?'

2 (opposite, top), 'It is this simple device which, coupled with the use of bronze glass, makes the building merge into the landscape: the mirror effect "bleeds off" into the surrounding greenery.'

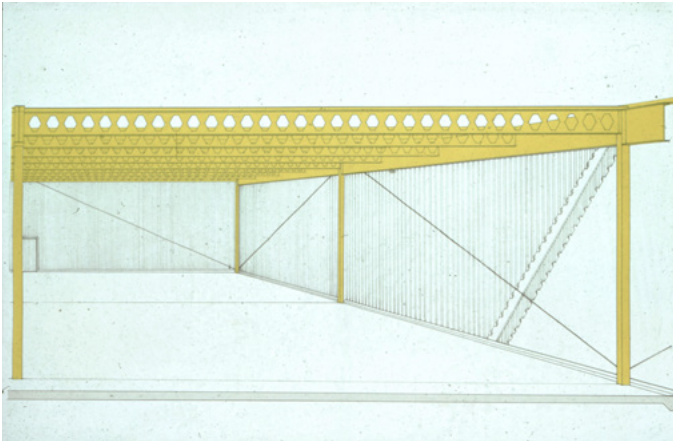
3 (opposite, bottom), 'indoors, the fact that the ceiling stops short, not only of the wind itself but even of the perimeter beam adds to the feeling of insubstantiality and un-dress'. Above, sectional perspective.



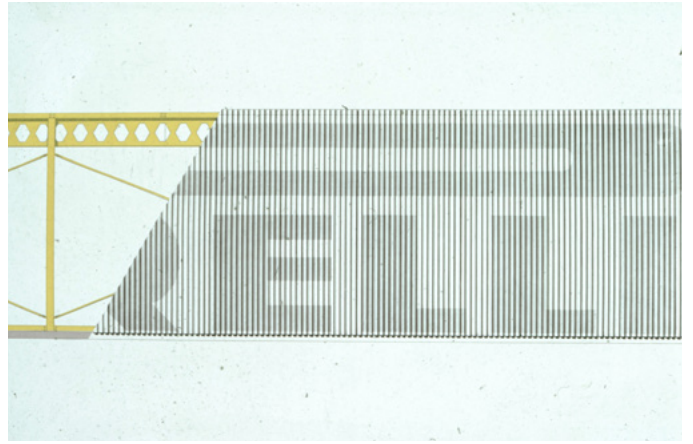
6— Foster Associates, Elevation drawing for Willis Faber and Dumas building, Ipswich, 1974. Pen and ink, 37.1 x 59.25 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0102D_095.

7— Helmut Jacoby (for Foster Associates), Inside vista of Badhoevedorp Pavilion, Netherlands, 1973. Pen and ink, 30.55 x 46.8 x 0.2 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0168D_013.

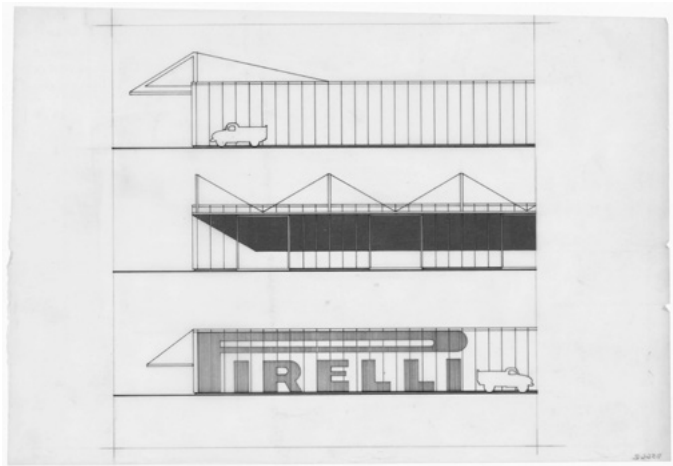
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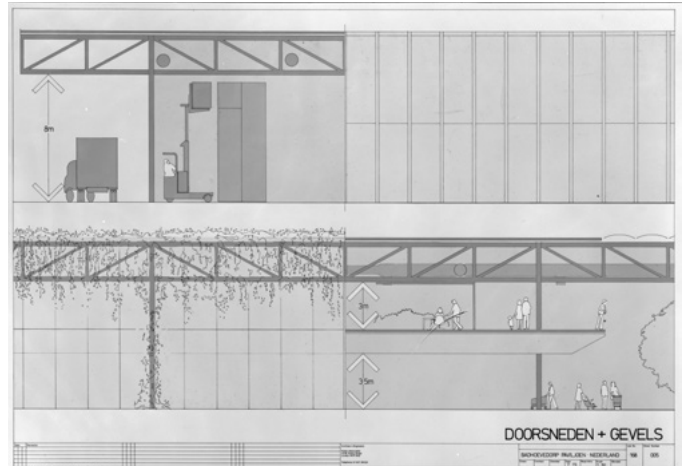
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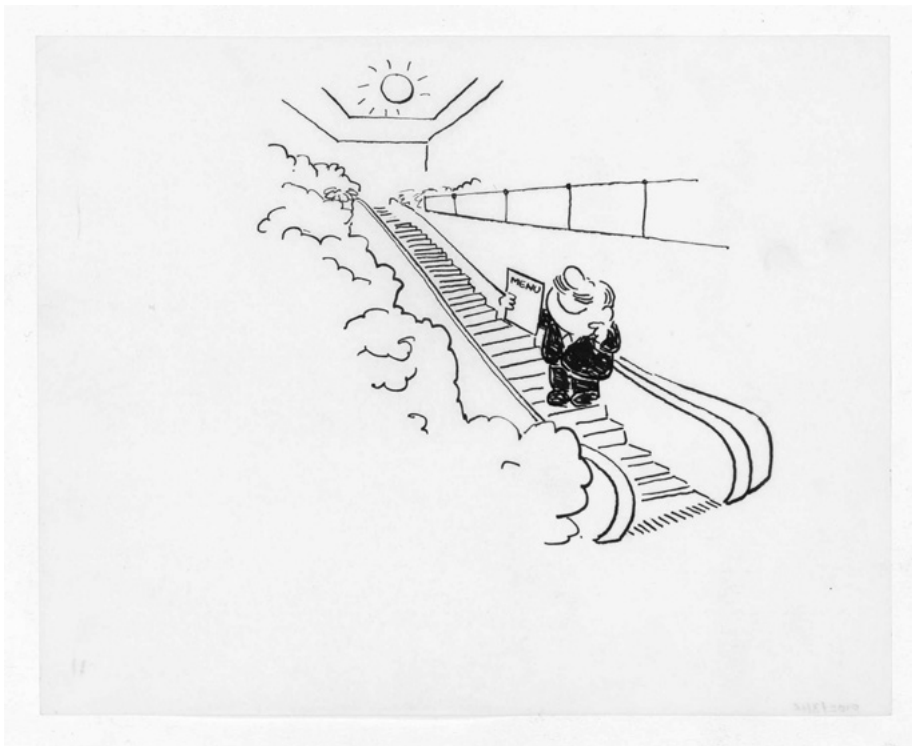


8— Foster Associates, Pirelli Warehouse cutaway perspective, 1970. Slide, 3.5 x 3.5 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0094S_01-003.

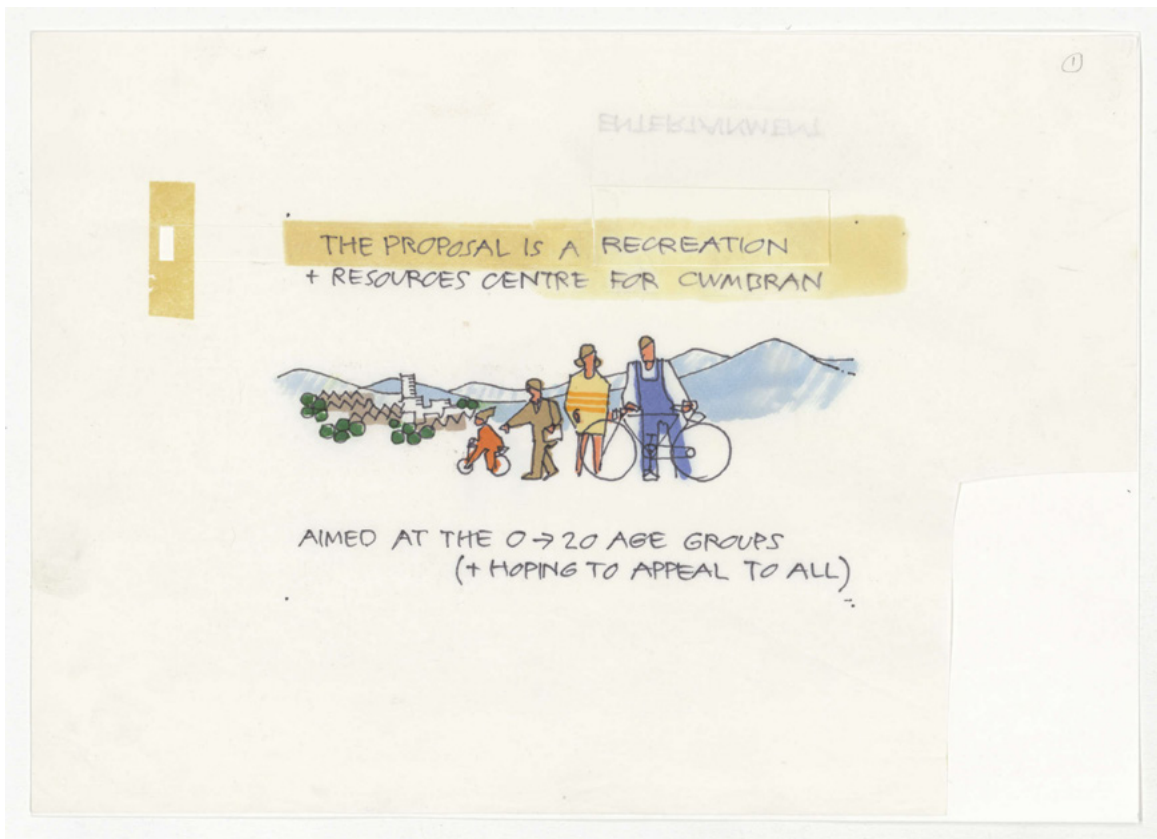
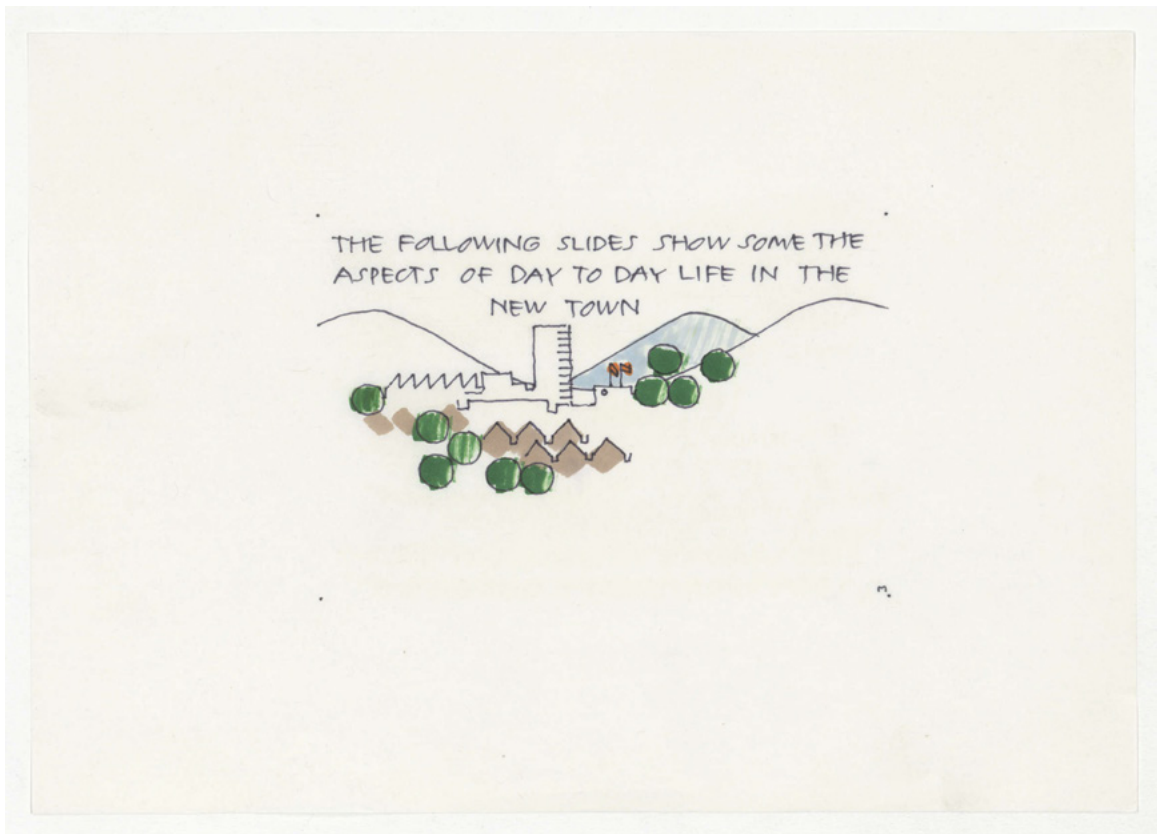
9— Foster Associates, Pirelli Warehouse elevation, 1970. Slide, 3.5 x 3.5 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0094S_01-002.

10— Foster Associates, Pirelli Warehouse elevations, 1970. Pen and ink, 22 x 31.8 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0094D_001.

11— Foster Associates, Badhoevedorp Pavilion elevations, 1974. Glass negative plate, 16.5 x 21.5 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0168Ng_002.

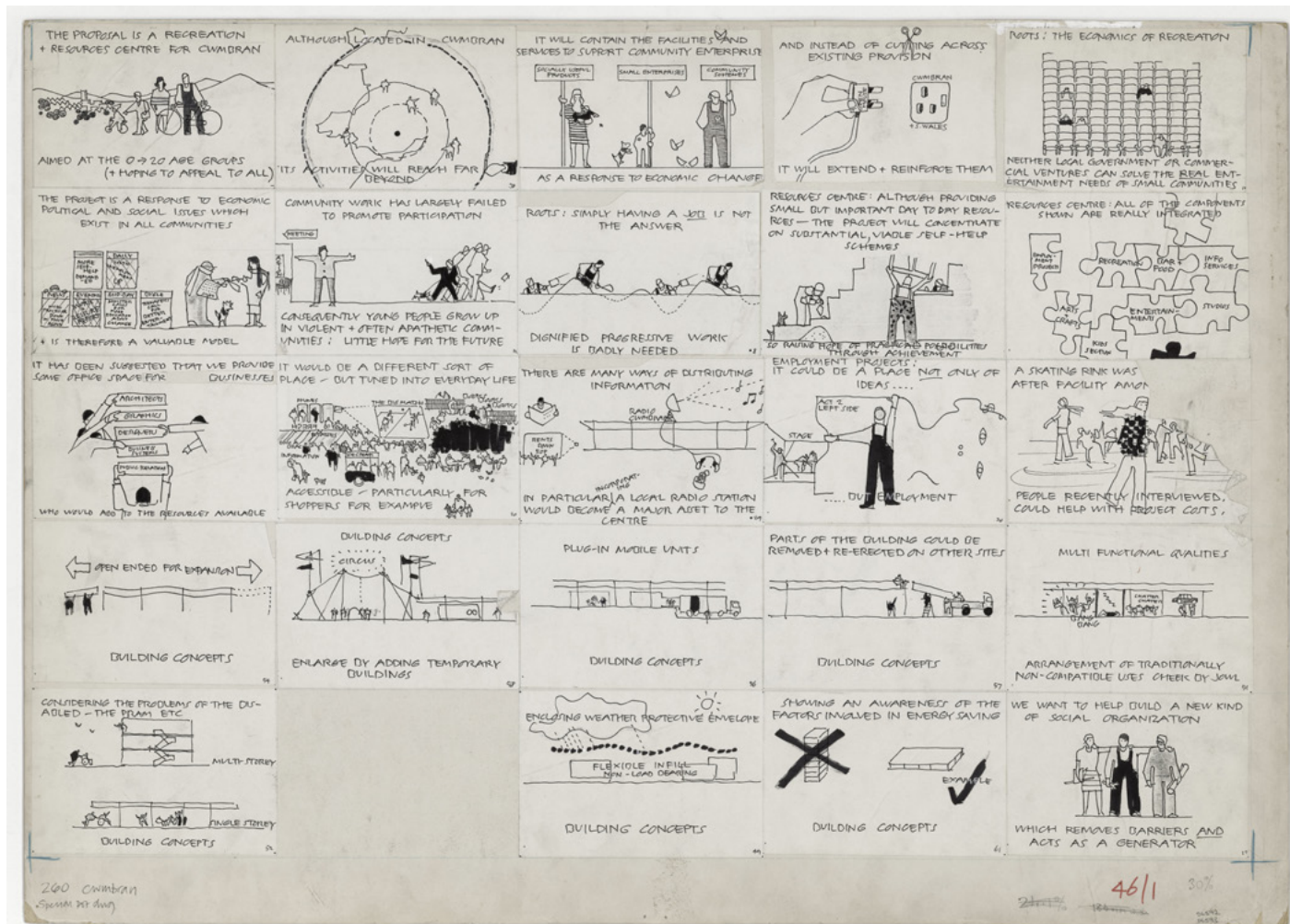


- 13— Frank Dickens (for Foster Associates), Extract from Bristow cartoon series for Willis Faber and Dumas Building (unnumbered), c.1973. Pen and ink, 20.2 x 25.2 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0102D_004.
- 14— Frank Dickens (for Foster Associates), Extract from Bristow cartoon series for Willis Faber and Dumas Building (unnumbered), c.1973. Pen and ink, 20.2 x 25.2 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0102D_016.

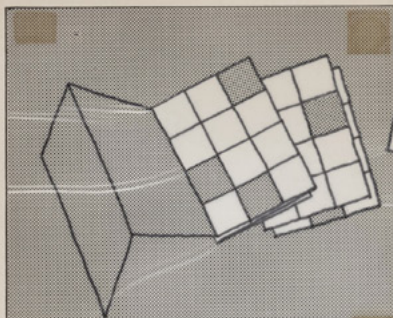


15— Birkin Haward (Foster Associates), Sketch for Cwmbran Open House, 1978. Pen and coloured ink, 20.95 x 29.65 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0267D_068.

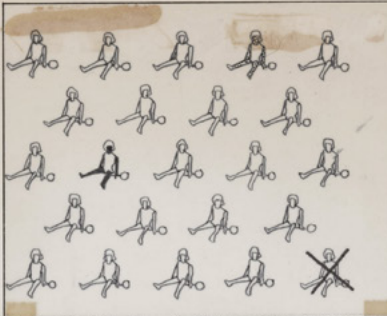
16— Birkin Haward (Foster Associates), Sketch for Cwmbran Open House, 1978. Pen and coloured ink, 21.1 x 29.65 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0267D_066.



Birkin Haward (Foster Associates), Presentation board for Cwmbran Community Centre, 1978. Pen and ink, 57 x 80 x 0.1 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0267D_063.



1. This is a case study of a prototype special care unit in the London Borough of Hackney.



2. Roughly 3000 handicapped children are born in the UK each year. Of these, some 15 percent will be in need of special care.



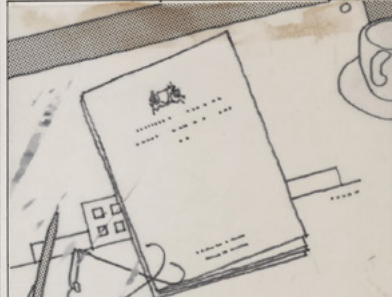
3. These children are all severely mentally handicapped. They may also suffer from one or more physical disabilities; spina bifida; muscular dystrophy; heart disease; congenital deformity of the limbs; and so on.



4. Up till April 1971 all such children were beyond the educational pale. Some were cared for in hospitals or residential homes; others were looked after by their parents, under the eye of the Medical Officer of Health.



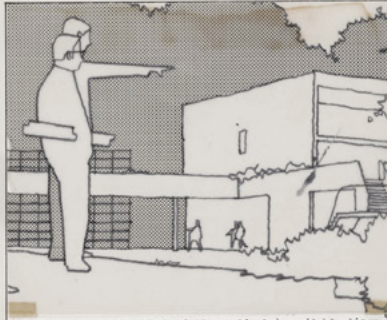
5. A third group, under this patchwork system, attended Junior Training Centres with special care facilities - such as the one already at Ickburgh Road, Hackney.



6. But on April 1971 the Education (Handicapped Children) Act brought all educationally subnormal children under the Department of Education and Science. Overnight, the Ickburgh Road JTC became a special school.



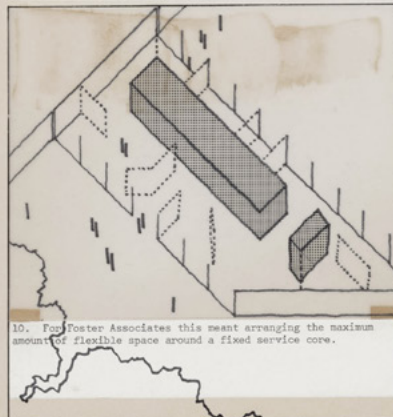
7. Against this background of changing attitudes, the Spastics Society and their architects, Foster Associates, started to plan a new special care unit for Ickburgh Road.



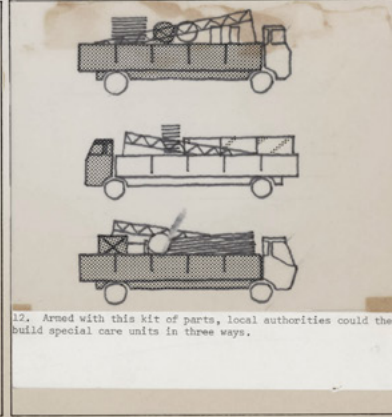
8. The architects read the (all too little) available literature; spoke to (all too few) available specialists; and examined the (all too rare) available buildings.



9. They concluded that there were no fixed rules for special care; teaching methods had to be geared to the disability of each child. Any new building should therefore adapt itself readily and speedily to new roles.



10. For Foster Associates this meant arranging the maximum amount of flexible space around a fixed service core.



12. Armed with this kit of parts, local authorities could then build special care units in three ways.



A meeting in Fitzroy Street office meetings space, c.1972. Slide, 3.5 x 3.5 cm. © Norman Foster Foundation Archive, Madrid. Archival reference: NFF_0111S_027.