arq (2021), **25.2**, 108–124. © The Author(s), 2021. Published by Cambridge University Press.
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1 **Interior of the Interaction Centre, Double Main Hall, CPF DR 2004/1211/010.**

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Cedric Price's notion of Calculated Uncertainty is unfolded through a meticulous analysis of his Interaction Centre, revealing inherent tensions between Price's discursive production and built output.

Building Calculated Uncertainty: Cedric Price's Interaction Centre

Marcela Aragüez

As his friend Niall Hobhouse claimed, Cedric Price 'wasn't really an architect, but a social critic to the left of the Left who stumbled on the post-war ruins of modernism'.[1] The role of Price's unbuilt legacy for Western architectural culture has been praised extensively, with a special emphasis on the unorthodox nature of both his practice and academic contributions.[2] Succeeding generations have found inspiration in Price's personal view of the architectural profession, his work being positioned often within radical and utopian approaches yet involving a committed social agenda. The social role of architecture was for Price tightly linked to the capacity of the built environment to be adapted by its users. Buildings should be understood as temporary commodities, malleable objects with a short lifespan dictated by their usefulness for the community. Conceived as infrastructures, unbuilt projects such as the famous Fun Palace, Potteries Thinkbelt, or Magnet were formulated as productive objects with a profound commitment for socially regenerating the contexts into which they were to be inserted.

While acknowledging Price's leading position in framing the conception of socially active and temporary environments, little has been said about the design processes through which he conceived the capacity for change in his few built works. The extent to which Price, as the planner of such environments, may have induced strategies of control, which enabled potential changes in the built form, has not been a topic of discussion in critical accounts of his work.[3] At the centre of Price's aim for managing change stands the concept of 'Calculated Uncertainty', coined by Price in the early 1970s. The notion became recurrent in his discourse especially during that decade and coincided with the design and construction of one of Price's few realised projects, the Interaction Centre – built in Kentish Town, North London, between 1971 and 1977 *[1]*. Calculated Uncertainty arguably encapsulates the paradox of combining freedom and control in the design process and outcome of an architectural work. As a result of its ubiquity, the phrase has been adopted by critics as a way to emphasise Price's interest in the understanding and production of unstable systems in architecture and their projected changes in time, yet no clarification of the loose meanings by which the phrase was used by Price have been provided.[4]

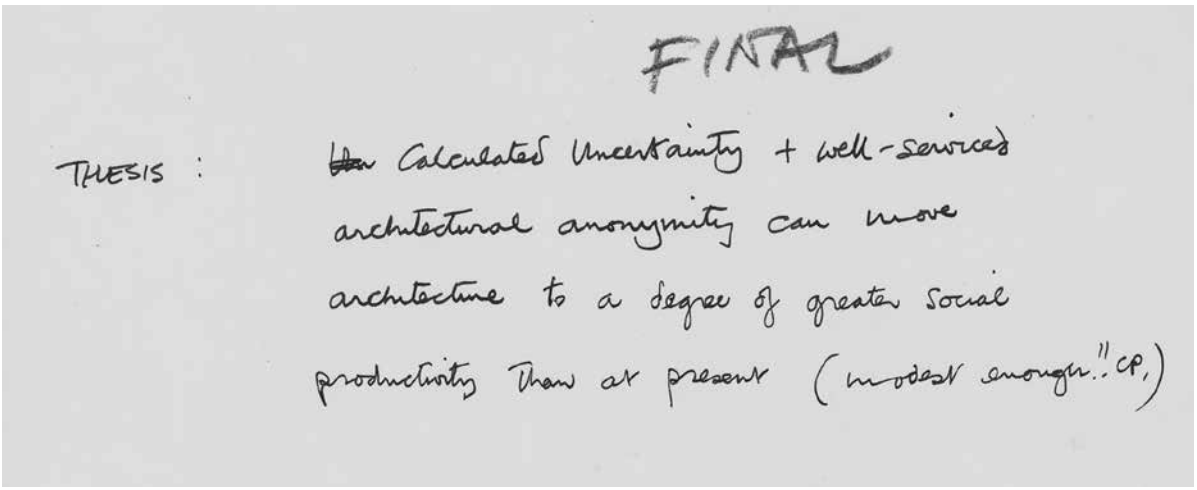
This article investigates the theoretical and practical roots, and the applications of such meanings by establishing the intended connections between the concept of Calculated Uncertainty and the Interaction Centre. It does so by first unpacking the phrase 'Calculated Uncertainty', and understanding the manifold perspectives, sources, and changing interpretations with which Price fuelled the phrase in lectures and writings. This is done with an investigation of Price's largely unpublished lecture notes, and by a discussion of selected texts in which related ideas, implying a tension between control and change in design processes, take centre stage. Both lecture notes and texts analysed here were produced in the decade spanning 1969 to 1979, immediately before, during, and after the construction of the Interaction Centre.

In the second part of this article, the theoretical construct of Calculated Uncertainty is tested against the design process and implementation of the Interaction Centre. This is done by investigating drawings, documents, and correspondence produced in different design stages, as well as through a critical discussion of the building's performance and the role it played for the neighbourhood and its users. The research aims at questioning the relationship between Price's discursive and built production. In so doing, it assesses the extent to which the conception and implementation of seemingly adaptable buildings in the work of Price were linked to control strategies, and whether such strategies ever worked as planned by the architect. Finally, the use of original unpublished material aims to contribute to the scholarship of Price's work beyond the operative role his writings and buildings play in the argument of this artcle.

The paradox of Calculated Uncertainty

Hovering between a journalistic and theoretical tone, Price's language often appears both engaging and confusing, witty in its form and serious in its content,

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2 Conceptual thesis including Calculated Uncertainty, CPF DR 2004/1429/002.

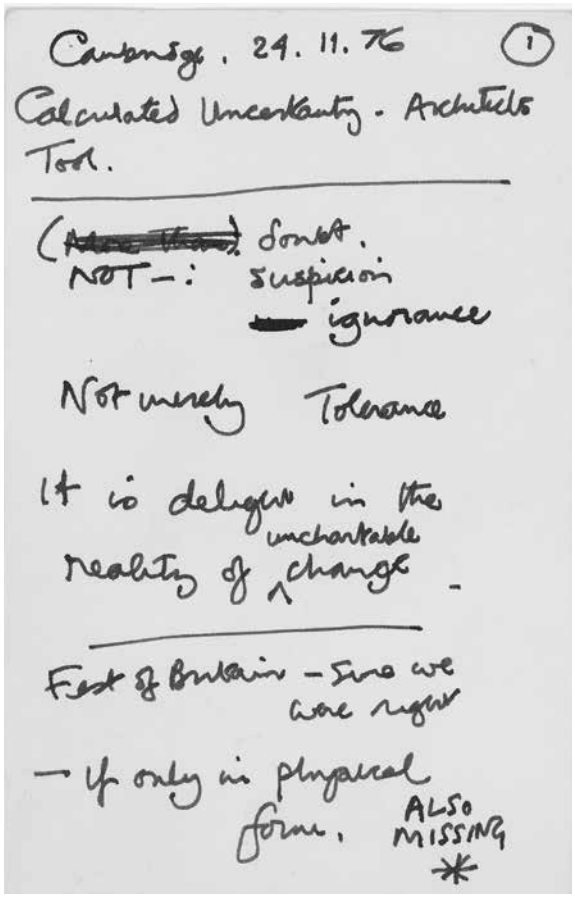
achieving what Jim Njoo calls a 'dialogic criticism' of the architectural profession.[5] Price's lectures were organised with loose sheets and notecards with annotated ideas, keywords, and quotes. Rather than well-structured presentations with a clear introduction, research body and compiling conclusion, his talks were almost 'acting' exercises, in which a set of linked ideas revolved around a common topic. An apparently unstructured narrative is also present in many of Price's articles published in magazines and architectural newspapers.

Borrowing concepts from disciplines tangential to architecture is commonly present throughout the vast amount of lecture notes available in the Cedric Price archive, dating from the late 1950s to early 2000s, as well as in Price's published texts. Phrases such as 'anticipatory design' – drawing upon Buckminster Fuller's famous call for a 'comprehensive anticipatory design science' – and 'planned obsolescence' – most notably brought about by American journalist Vance Packard in his book *The Waste Makers* in 1965 – are common in Price's discourse.[6] These concepts were undeniably familiar in the architectural mindset of the 1960s and especially in Britain, where the understanding of architecture as an expendable commodity was coupled with a particular building aesthetic borrowed from industrial production. The phrase Calculated Uncertainty is exclusive to Price and became recurrent in his discourse from the early 1970s without ever holding a clear definition.

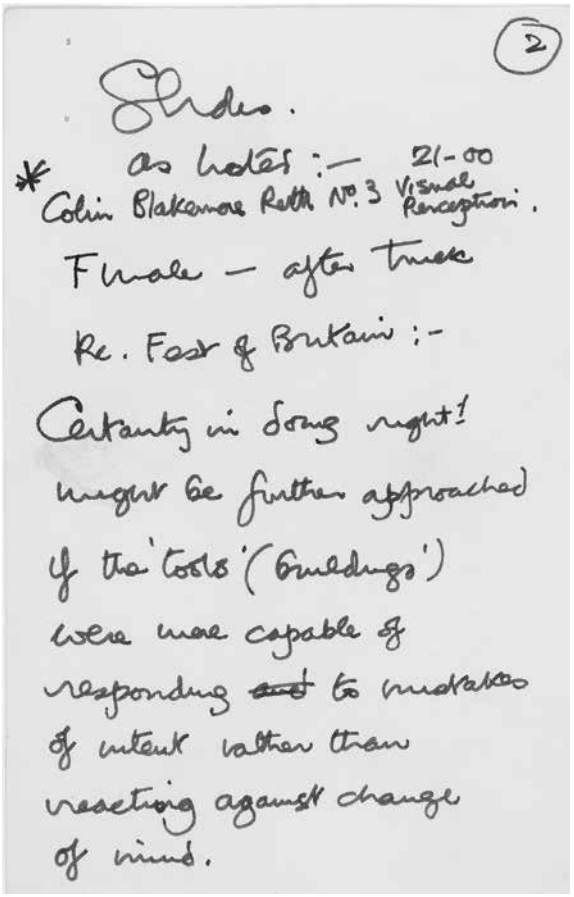
The importance of addressing the notion of Calculated Uncertainty in Price's discursive production lies in its allusion to a paradoxical goal that seems idiosyncratic in his work: that of imprinting a potential variability of space and use, and by defining the control systems that would regulate them. As with other recurrent notions such as 'anticipation' and 'obsolescence', borrowed from tangential disciplines, the same may have occurred with 'uncertainty', rarely present in texts on architecture and more common in discourses around economic theory, statistics, and policymaking.[7] The accommodation of unknown variables within economic processes also goes in line with major transformations being produced in other fields of knowledge during the 1940s and 1950s, like Werner Heisenberg's 'Uncertainty Principle' in quantum mechanics and Karl Popper's theories about the rejection of governmental and institutional impositions, as explained in his seminal *The Open Society and His Enemies*.[8] However, it is probably Price's fondness for the theories developed by systems thinker Sir Geoffrey Vickers that can be more closely associated with his idea of Calculated Uncertainty. The author most often quoted in Price's notes, Vickers stresses in his writings the need for institutional rules that would accommodate change and instability. This would allow for what he called 'multi-valued choice' within a regulated environment, a tool that humans, as active variables in a social system, can use in order to regulate these systems themselves.[9] According to Vickers, calculating the limitations imprinted within the system will keep the needed stability to ensure society's prosperous development.

Drawing upon these roots, Calculated Uncertainty is found in Price's lecture notes with a variety of meanings, suggesting that the actual sense of the phrase depends on the overall topic of the lecture in which it is included. In 1979, Price recorded his famous 'Technology is the Answer, but what was the Question?', as part of a series of talks curated by editor and architectural writer Monica Pidgeon. The phrase appears in the preparatory notes for the talk: 'Thesis: Calculated Uncertainty + well-serviced architectural anonymity can move architecture to a degree of greater social productivity than at present (modest enough, CP)' *[2]*.[10] Calculated Uncertainty is here associated with the social value that architecture should have in relation to the provision of a certain formal neutrality or 'anonymity'. In other instances, the phrase is loaded with a fitting definition borrowed from a different discipline, as in a lecture given at Cambridge in 1976 entitled 'Calculated Uncertainty – Architects Tool'.[11] The notes start with a reference to Imre Lakatos, who published that same year his seminal *Proofs*

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3a



3b

3a,b Notes for lecture 'Calculated Uncertainty: The Architect's Tool', 24 November 1976. CPF DR 2004/1429/001.

and Refutations: The Logic of Mathematical Discovery. Price uses Lakatos's definition of mathematics: 'Most painless language of easy approximation for the wilfully lazy that he had yet discovered.'[12] The phrase suggests that mathematics is not infallible and, although having a strict structure, must constantly improve and get tested within its own logic. Later on, Price refers to the Interaction Centre as an applied example, pointing to the existence of an imagined final building identifiable as a process. This lecture seems to be the foundation for a homonymous one given only two months later also in Cambridge, in which a more comprehensive definition of Calculated Uncertainty is provided: 'Not doubt, suspicion, ignorance. Not merely tolerance. It is delight in the reality of unchartable change' *[3]*.[13] This definition must be placed in the context of Price's fondness for the creation of charts and diagrams throughout the design process, in order to foresee potential changes in the built form, and for planning what the user would do at certain points in time. The acknowledgment and enjoyment of what cannot be predicted is therefore framed within a process in which other variables will be charted instead. Price's interest in the tension between individual freedom and control becomes evident by the number of notes taken during the panel 'Individual in an Institutionalised World', held in 1976 at the Art Net Gallery in London. In particular, Price recorded a handful of notes from a lecture given by Sir Geoffrey Vickers, to whom he professed almost devotion.[14] Avidly registered by Price, and directly related to the idea of Calculated Uncertainty, one of Vickers's opening statements argued that both enablement and constraints are needed in any kind of organisation in order to ensure human commitment.

The use of Calculated Uncertainty in Price's published articles is scarcer. This suggests that it was indeed a working concept, whose fixation into printed words may have seemed inappropriate. Instead, other terms relating to control and freedom are more commonly used in texts for architecture magazines, Price's other common channel of public outreach aside from lectures. In 'Expediency', an essay published in the *Architectural Design* issue of September 1969 dedicated to systems thinking – with contributions by Karl Popper, Imre Lakatos, and Gordon Pask, among others – Price directly tackled the tension between planned and apparently free and changing spatial arrangements.[15] The text criticises the use of computer models that generate multiple random spatial distributions and in which only measurable variables are taken into account. Price proposes instead 'expediency' as the decisive factor defining the set of design operations to be implemented in a building. However, he equally warns about the danger of such a notion, for 'once a design tool is required, then the *narrowness of directional permissiveness* is encompassed if not specifically accepted, and *designing for increasing choice*

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becomes as limited as is *planning for freedom*'.[16] Price's use of italics to emphasise the three paradoxes mentioned in this phrase suggests an awareness of the spatial, and more importantly, social control that the architect projects in his decision-making process. In order for such designs not to become constraining, Price proposed to add time to the process, as well as continuously questioning the initial design decisions.

In addition to considerations of time, Price's texts reflect on the creation of design tools that would balance the equation between control and freedom. In this respect, the term 'approximation' is used in a text published in 1972, arguing against the need for knowing in advance every parameter that affects a project.[17] According to Price, the processes by which architecture is conceived need to stand in tune with the uneven variations, disruptions, and discontinuities of a rapidly changing society. Finally, in 'Creativity and Technology', an essay originally published in French in 1975 for the magazine *Techniques et Architecture*, Price points out the necessity for understanding technology as an element to be 'created' by the architect, rather than just a useful tool, and how creativity should become a measurable variable.[18] Understanding technology as something to be generated by the architect, and creativity as part of this technology, leads to an architectural production, says Price, in which the 'completeness of the end-product' should not be of much concern. Instead, the outcome of such a design process, which itself 'must contain elements of approximation and Calculated Uncertainty', are conditions rather than products that will develop over time. This implies that not only the design outcome, but also the process itself is partially shaped by the accommodation of elements that are not exactly known by the designer. In this respect and drawing upon the arguments presented in his previous texts, Price categorically concludes that 'the clarification of the usefulness of an uncertain and indeterminate process by the architect is one of his duties to society'.[19]

From the lectures and texts analysed above, a variety of direct and indirect meanings can be associated with Calculated Uncertainty. It is a driving force for the generation of social value in architecture; a tool to use for an approximately imagined result in the built environment; and an instrument with which to control spatial and functional change, that allows for 'unchartable' variations. Calculated Uncertainty is related to the existence of expediency in the design process and for the achievement of a desired open ending; it counterbalances designing for choice and planning for freedom, and ultimately lays the theoretical foundations of an architectural production that must, by default, be carefully designed for an unknown future. However, the usefulness of these reflections remains largely in the discursive realm of Price's production, providing little chance to understand whether these ideas are translatable into built form. As is well known, the Fun Palace was not built and it is not possible to know, for instance, if the cybernetic system that was planned to control its changing spaces would have ever worked. In turn, this question arguably kept Price's intention of implementing cybernetics alive in the following years.[20]

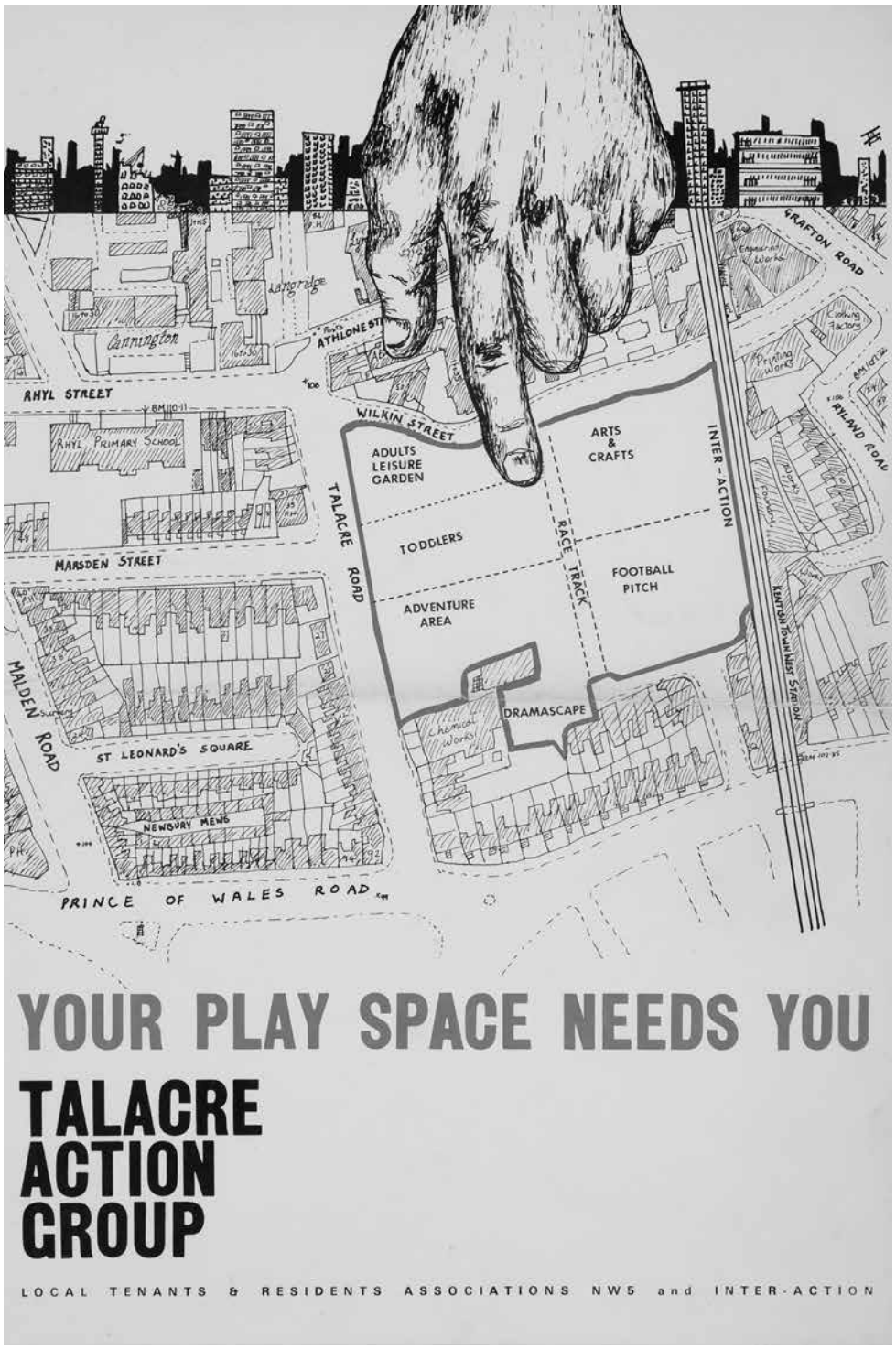
Often considered to be a smaller built version of the Fun Palace, the Interaction Centre provides a rare example in Price's work of a structure whose ethos seemed to follow his major investigations on the production of control and freedom in space.[21] Given that the lectures and texts analysed above were produced while the Interaction Centre was being conceived and built, reflections on Calculated Uncertainty may have been linked to its design process. Jumping into a real case after discussing Price's discursive formulation of Calculated Uncertainty will provide further clues into the operative significance of the phrase and its translation into built form.

Aiming to miss: the Interaction Centre

The Interaction Centre was built in Kentish Town, North London, to improve the social conditions of a highly neglected area. It is said to be the first purpose-built community arts centre in the UK, a new building typology that proved to be successful in the years to come and especially in working-class neighbourhoods.[22] By the second half of the 1960s, the plot of four acres of land known as Talacre and owned by Camden Council slowly evolved from a waste ground into a playground, and started being used by the charity organisation Interaction Trust to perform theatre plays and entertainment for children and young adults. Interaction Trust was founded by American activist, social worker, and playwright Edward David 'ED' Berman to initiate cultural projects that could counteract the rough day-to-day reality of the area *[4]*.[23] Berman made use of his connections with the London alternative theatre scene to attract professionals and volunteers to Talacre. His intention was to create a new building typology, part-theatre, part-office, part-school, part-social club.[24] Probably through a recommendation by fellow theatre director Joan Littlewood, on 1 February 1972 Price was appointed architect of the future Interaction Centre.[25] By that time, Price had developed a considerable amount of mostly unbuilt design proposals, and was running a small office with a handful of collaborators.[26] All technical drawings and construction management for the Interaction Centre were assigned to the young and inexperienced Will Alsop and Paul Hyett, although most of the early drawings bear Price's singular line tracing and handwriting. As proved by the attendance lists registered in meeting minutes, it was Price himself who dealt with most of the management and correspondence between the office, ED Berman, the construction company, and Camden Council.

No clear role for the local community during the design process was deduced from minutes and correspondence, although they were, in fact, an important component before Price's appointment. As part of the Talacre Action Group, a local assembly created by Berman and colleagues – young adults,

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4 Advertisement for participation in the activities organised by the Talacre Action Group, Interaction Trust. CPF DR 1995/0252/632/014/002.

parents, and even children from around the area – were invited to take part in debates and discussions with the Council, requesting the regeneration of the Talacre area in 1971. Joint efforts between Interaction Trust and the local community made it possible to convince Camden Council to use the urban void of Talacre for community purposes. Importantly, it was demanded that the space be managed by Interaction Trust and the community without the Council's involvement. Meetings between locals, Interaction Trust, and representatives of Camden Council went on as far as October 1973, more than a year after Price was officially appointed architect for the project. No record of Price participating in these meetings was found, suggesting that the architect was not involved in such processes. Indeed, from material kept in the archive, and confirmed by Berman, the local community was set aside during the long design process, spanning almost six years until the opening of the building in 1977.[27]

After long insistence on the part of Interaction Trust and the local community, the four acres of Talacre were leased by Camden Council in 1972 for a period of twenty-seven years and the Council also granted 25% of the initial capital to build the Centre.[28] The remaining 75% was topped up through a long fundraising campaign led by

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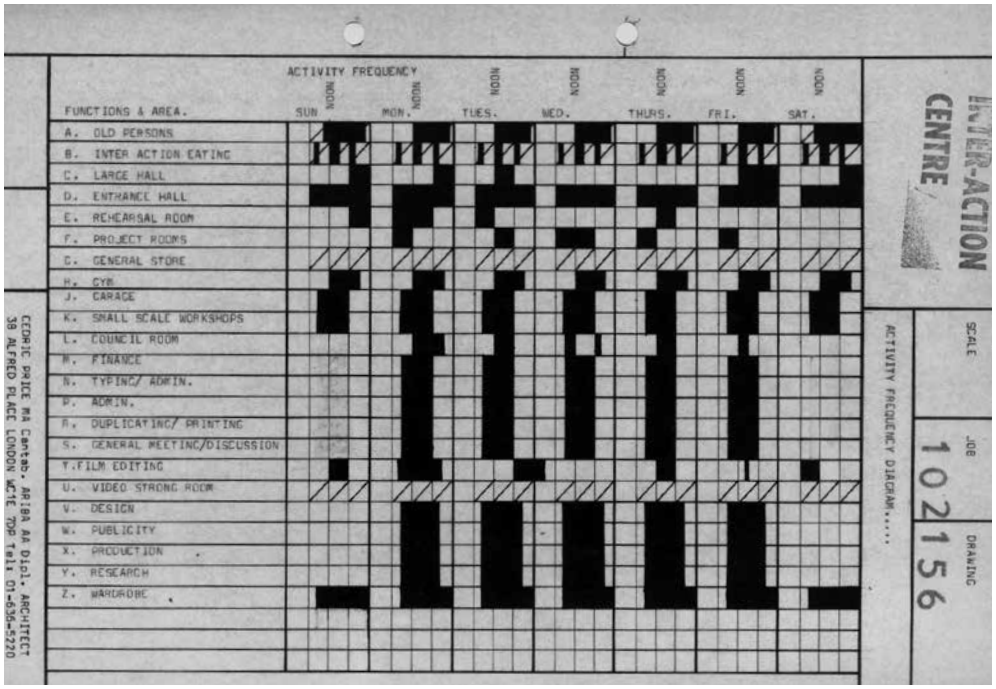
Berman, bringing institutions like the Arts Council of Great Britain and the Gulbenkian Foundation to support construction.[29] The continuous need to seek financial support also explains why it took six years to design and complete what was a relatively small building, about 100 metres long, 25 metres wide, and two storeys tall. However, the slow pace of construction allowed, according to Price, the clients to experience and use the building in its 'skeletal stage', providing the opportunity to imagine on site how activities could be organised within the structure *[5]*.[30] This was achieved in 1974 by the initial erection of a structural frame known as the 'supergrid', which for three years remained the only built element.

The forced temporality of the building due to the limited land lease was translated into a defining contingency of the design process. Following similar ideas already theorised in earlier projects such as the Fun Palace or Potteries Thinkbelt, the Interaction Centre was built with low-cost and recycled materials, and its constructive systems were designed in theory to be easily dismantled. In addition, the design process was very much informed by a precise definition of functions and activities largely specified by Berman and other members of the Interaction Trust. The functional and programmatic requirements for the Interaction Centre were detailed in briefs issued to Price as early as 1971, as well as in a so-called 'wedding list' with an inventory of furniture and specific equipment that the Interaction Trust prepared for the architect in 1974. The briefs emphasised the need to include a large foyer, and a public meeting area 'with all of the activities radiating from it as from the hub of a wheel'.[31] They also pointed out the importance of taking into account which programmes would need to be soundproof so that they could coexist with other activities. The need to organise construction in different stages was also suggested by Interaction Trust, 'which would be useful both in terms of developing a programme and fund-raising, as well as community participation'.[32] In addition, Price asked Berman and colleagues to fill in a questionnaire to further describe their requirements for the building.[33] This would complement an apparently thorough understanding on the part of Price of the use of the Interaction Trust's factory building at 156 Malden Road, where the organisation was based while the Interaction Centre was being built.[34]

Added to an Activity Frequency Diagram – a chart conceived by Price around 1973 as a temporal organisation of uses inside the building – Interaction Trust's functional and programmatic requirements became the main generator of the shape and spaces of the building *[6]*. Early drawings represent programmatic organisations, where overlapping bubbles suggest the mixing of dissociated uses like rehearsal rooms, children's play areas, and administrative offices. Eventually, the bubbles were transformed into boxes that were again labelled with specific functions *[7]*. The way that these programmatic boxes were displayed offered a kind of spatial organisation that, despite



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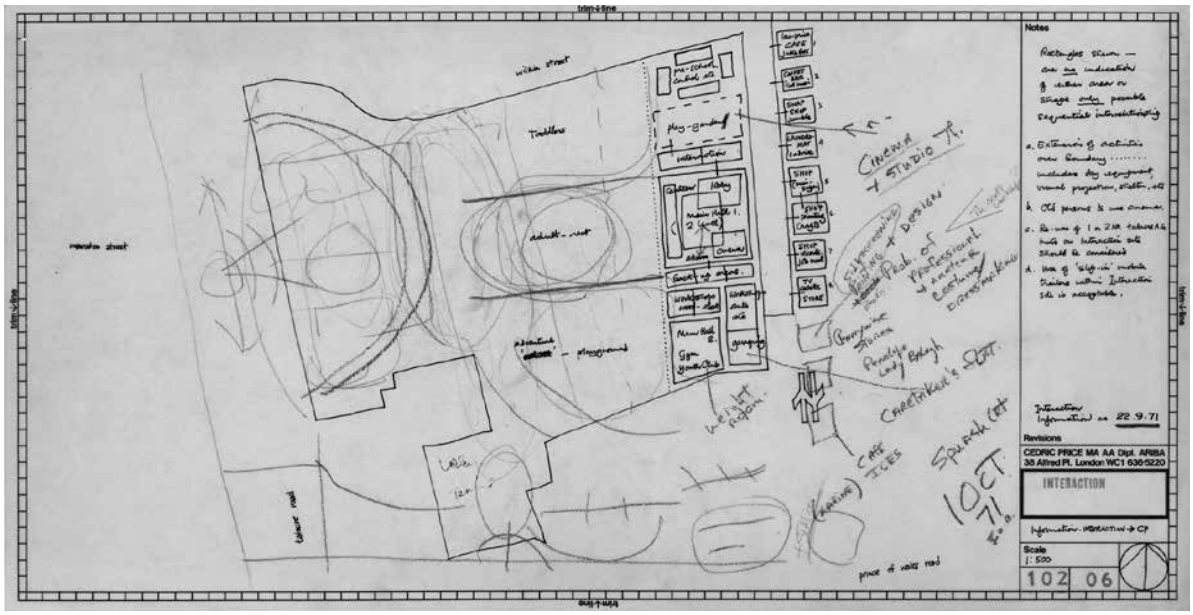


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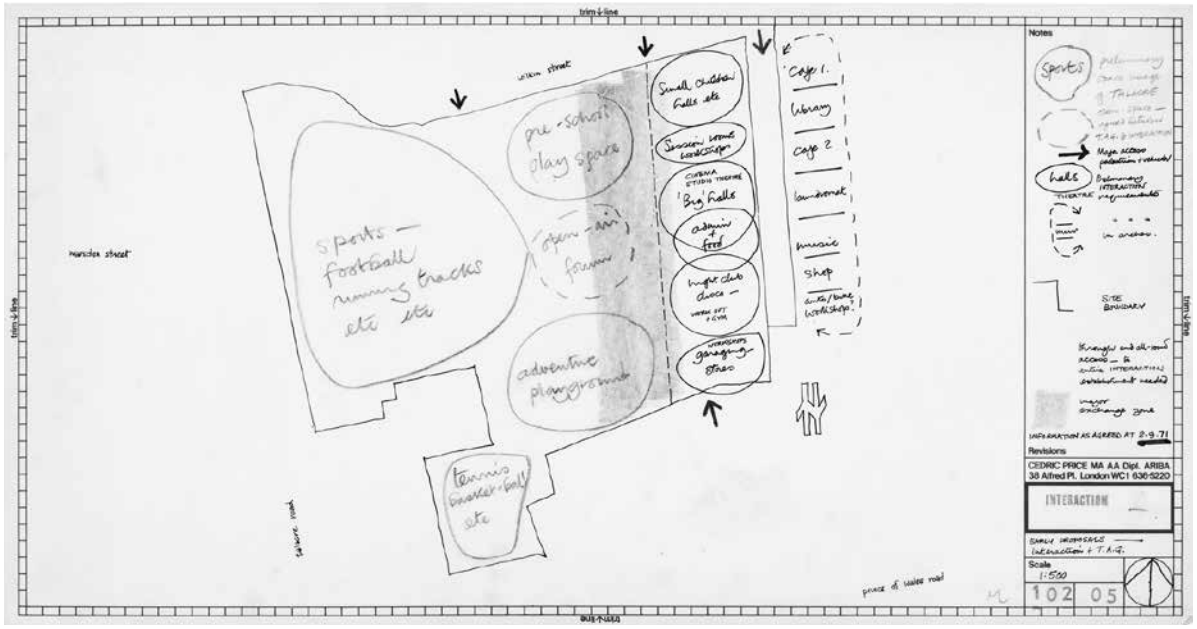
5 A temporary fair taking place under the supergrid of the Interaction Centre. CPF DR 2004/1211/009.

6 Activity Frequency Diagram. CPF DR 1995/0252/632/012/001.

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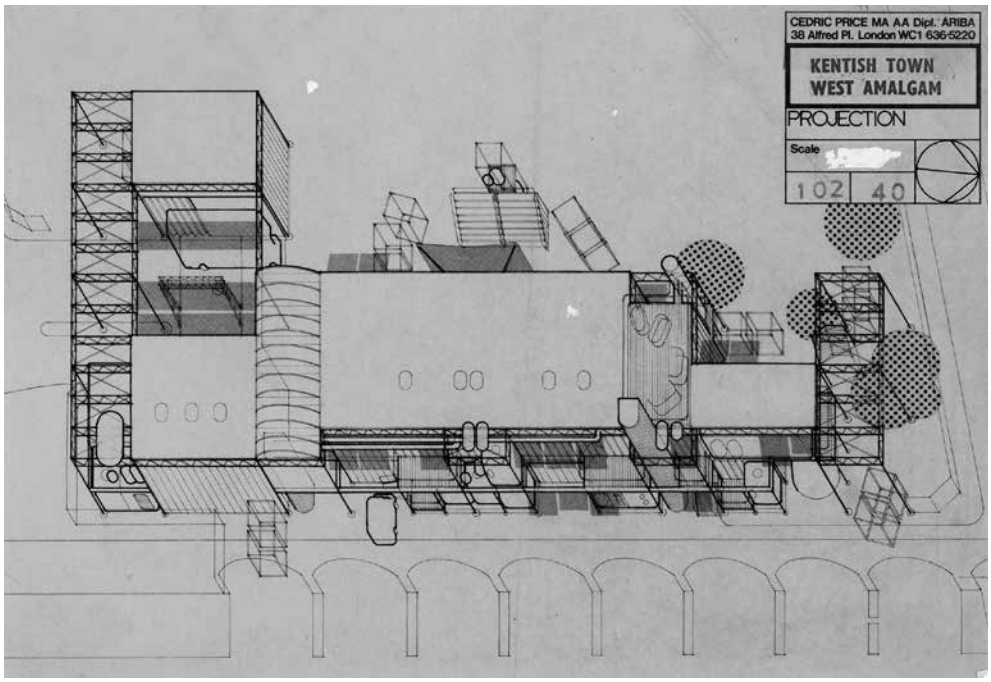
7b

7a,b **Functional organisation of the Interaction Centre as agreed on 2 September and 22 September 1971. CPF DR 1995/0252/019/021.**

the looseness suggested by the sketches, already implied a rigid spatial definition. In the end, this organisation became the final layout of the building. In fact, the functional specificity already present in these first stages of the design process added to the request by Interaction Trust to carefully define a system that would dictate the evolution of the building. To do so, building elements were classified into four categories defined by temporal stages, as well as by their location in and around the plot.[35] The first category, 'fundamental', contained half of the total programme and included, among other uses, the service grid, offices, workshops, and theatre. A second, 'integrating' category was intended to be an extension of the 'fundamental' functions, 'desired by the local community and/or required by Inter-Action as it grows'.[36] These extensions were to be ideally planned as the result of local voting participation. A third, 'mobile' category was to be composed of vehicles that could be placed inside the building but would also continue the Centre's activity beyond its physical boundaries. Finally, the railway arches, property of British Rail and aligned on the western side of Talacre, was the fourth category with uses such as shops, cafes, a community laundry, and music projects considered unsuitable for the main building.

The combination of these four categories would generate a building which, as labelled in early axonometric drawings, was conceived as an 'amalgam' of pieces, independent but interrelated, all being part of a system defined by temporal stages as well as specific spatial locations and functional purposes [8].[37] However, the design eventually evolved into a far more simplified

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8 Perspective drawing of the Interaction Centre, still labelled as 'Kentish Town West Amalgam'. CPF DR1995/0252/088.

8

spatial layout *[9]*. Initially, only the elements under the 'fundamental' category were completed, with the Fun Art Bus as the sole 'mobile' object operating only for a few years. In the end, British Rail also decided not to lease its arches.[38] The spaces left empty under the supergrid, which were to constitute the 'integrating' category, were only partially filled by small buildings. Contrary to the delineated plan, the addition of this and other minor constructions occurred before the opening of the Interaction Centre and without the input of the local community. Instead, decisions were taken only through conversations between the architect and the client. However, regular meetings between Berman's and Price's teams also became less frequent after 1974, with correspondence over the last few years turning sour. In particular, Berman would ask about who was responsible for construction delays, deficiencies, and misconceptions in the building's flexibility, discussed below.

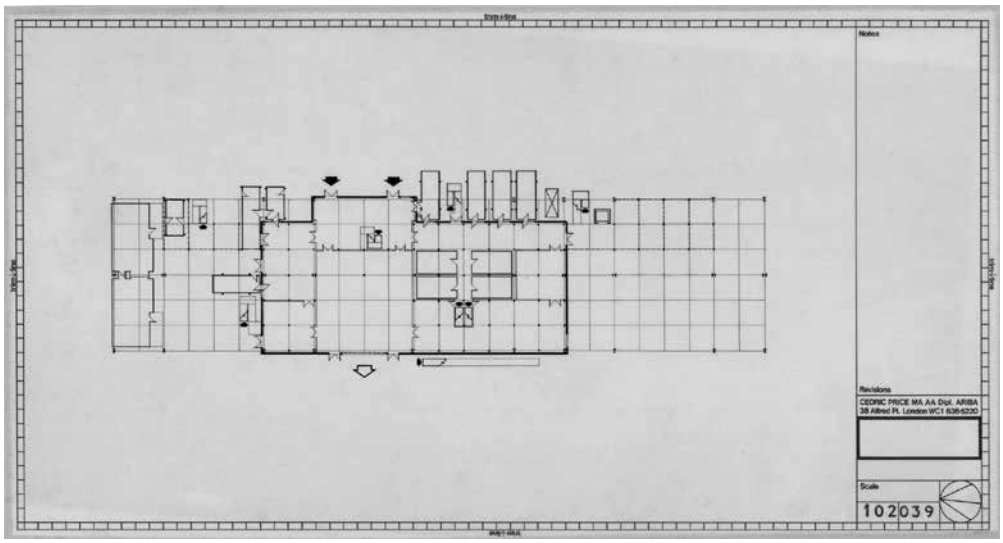
After almost seven years, the Interaction Centre was finally opened by Princess Anne on 26 April 1977. It consisted of three main components: first, the supergrid; second, an enclosed space occupying about half of the space underneath; and third, a set of independent Portakabins, either lying under the supergrid or 'plugged' into the main enclosed space *[10]*.[39] This enclosed space was organised around a double-height main hall, which remained the only multipurpose area of the building. Functional specificity applied not only to the rooms enclosed by the main volume, but also to the Portakabins. Their layout and built-in equipment had to be thoroughly designed for production and assembly in the factory *[11]*. The Portakabins became highly specific, purpose-built elements, keeping only the image of an object whose loose contact with the main volume anticipated future movement. Although the design process called for an active participation of both clients and users, with special attention given to the dynamic adaptability of building components and their easy replacement, a letter by Berman a year after completion of the building suggests a different reality *[12]*. The document evidences how Price was to prepare a 'Maintenance & Alteration Methods Brief', which he apparently never delivered. In the letter, Berman claims:

> *You have often stated that the building can be very simply extended by builders under reasonable supervision, because of the systems employed. We, of course, do not understand these systems because they have never really been explained to us.* [...] *I would be most grateful if you could fulfil this aspect of the teaching process about the flexibility of the building.*[40]

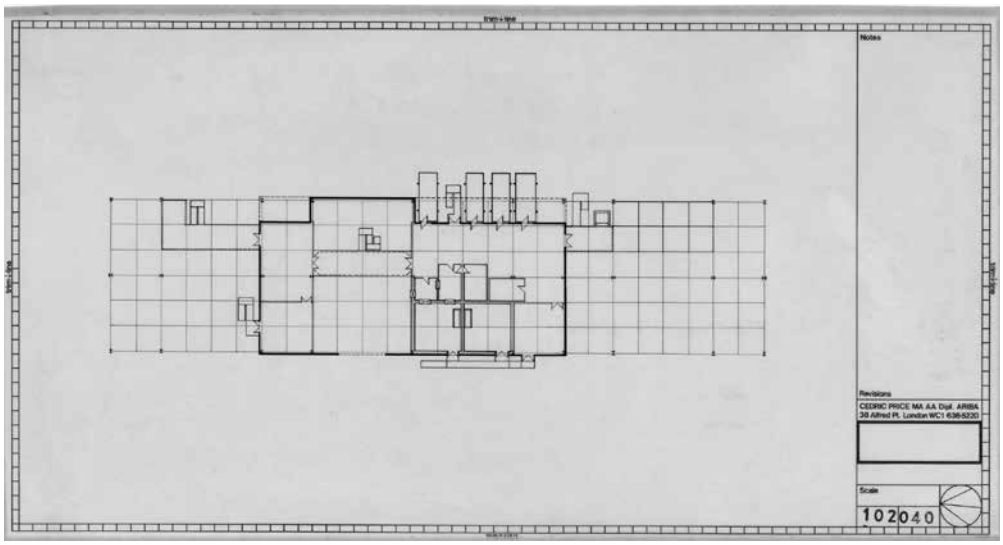
Berman's request proves that the Interaction Centre was originally intended to change without the supervision of the architect, an aim that Price eventually was either unwilling or uncapable of fulfilling.

No response to this letter was ever found, and the building never changed over time as much as its materiality suggested. In addition, the compliance with basic comfort standards in the building were apparently not met, leading Berman to sue both the construction company and Price himself. The experts' report prepared on behalf of the plaintiff explains how the conflict originated between the construction of a supposedly temporary and prefabricated architecture, and the aim of such architecture to be functionally specific, with rooms requiring distinct heating and acoustic conditions 'in a prefabricated demountable lightweight and temporary building'.[41] The report also emphasises the unique construction systems required to build the Interaction Centre and the consequent challenge for the construction company, a contingency worsened by the apparently deficient technical drawings provided by Price's office: 'the

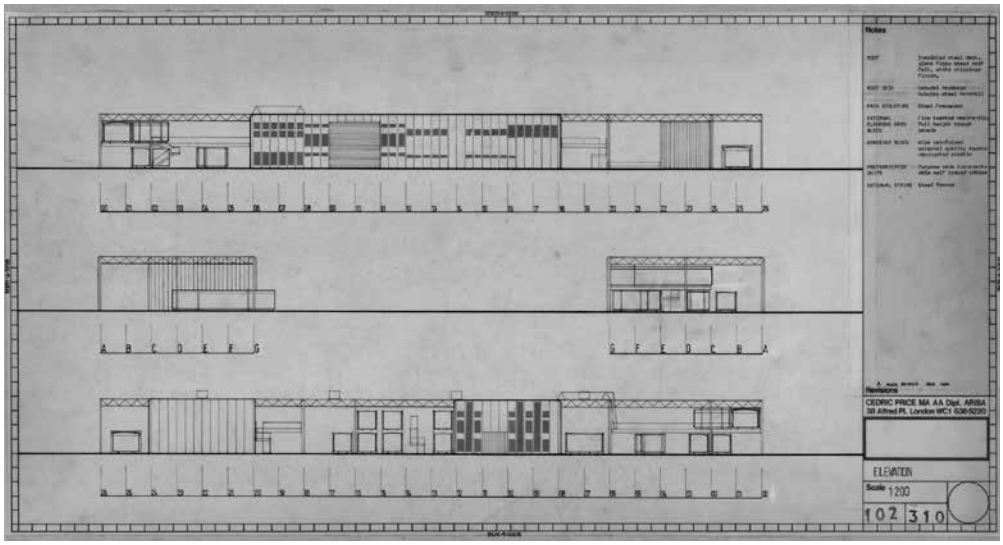
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9b



9c

9a.b **Floor plans of the final version. CPF DR 1995/0252.108–09.**

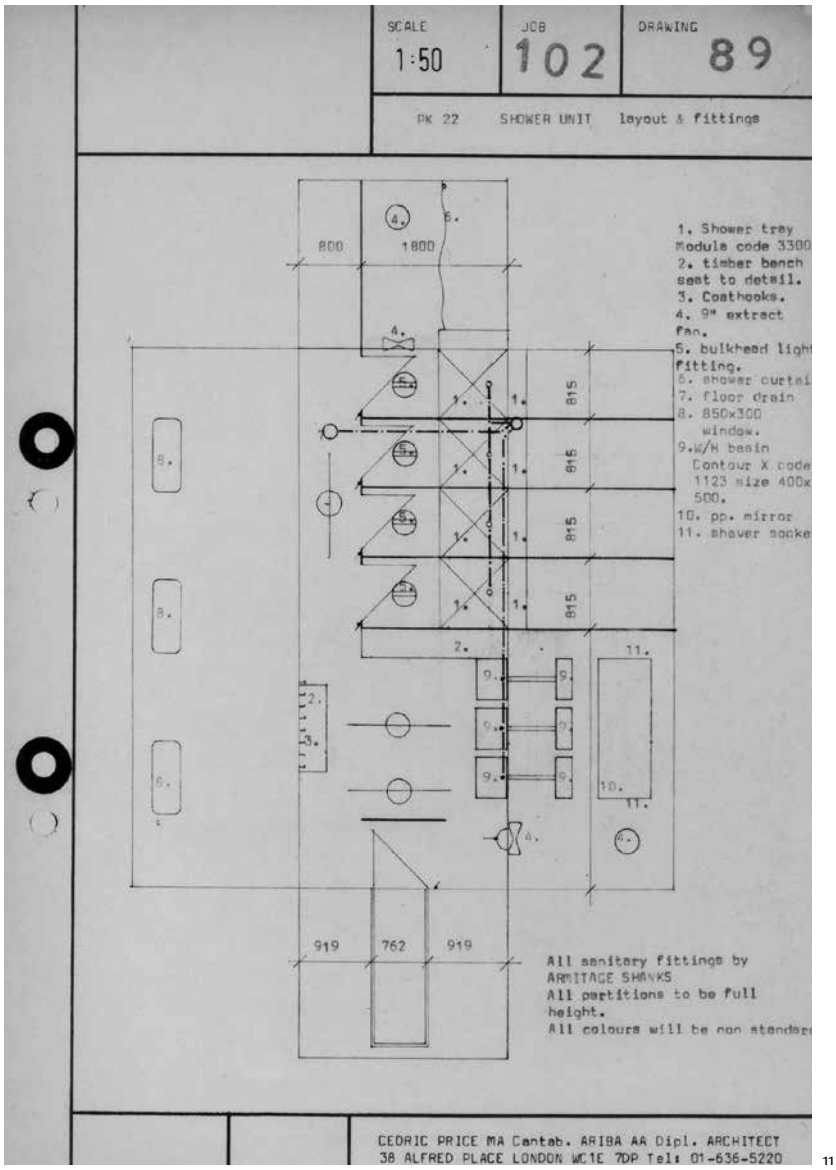
9c **Elevations of the final version. CPF DR 1995/0252/196.**

Architect's Drawings issued during the Contract are unusual. They are poor and confusing in that they lack useful, if not in this case essential, information such as clear titles, cross-references, grid lines, nature and date of revisions, annotations and dimensions.'[42] This lack of specificity may have resulted from Will Alsop's and Paul Hyett's lack of experience, but also from Price's lack of supervision.[43] Further points in the report show that although the construction systems were intended to ease change, the building turned into an inflexibly permanent lightweight construction.

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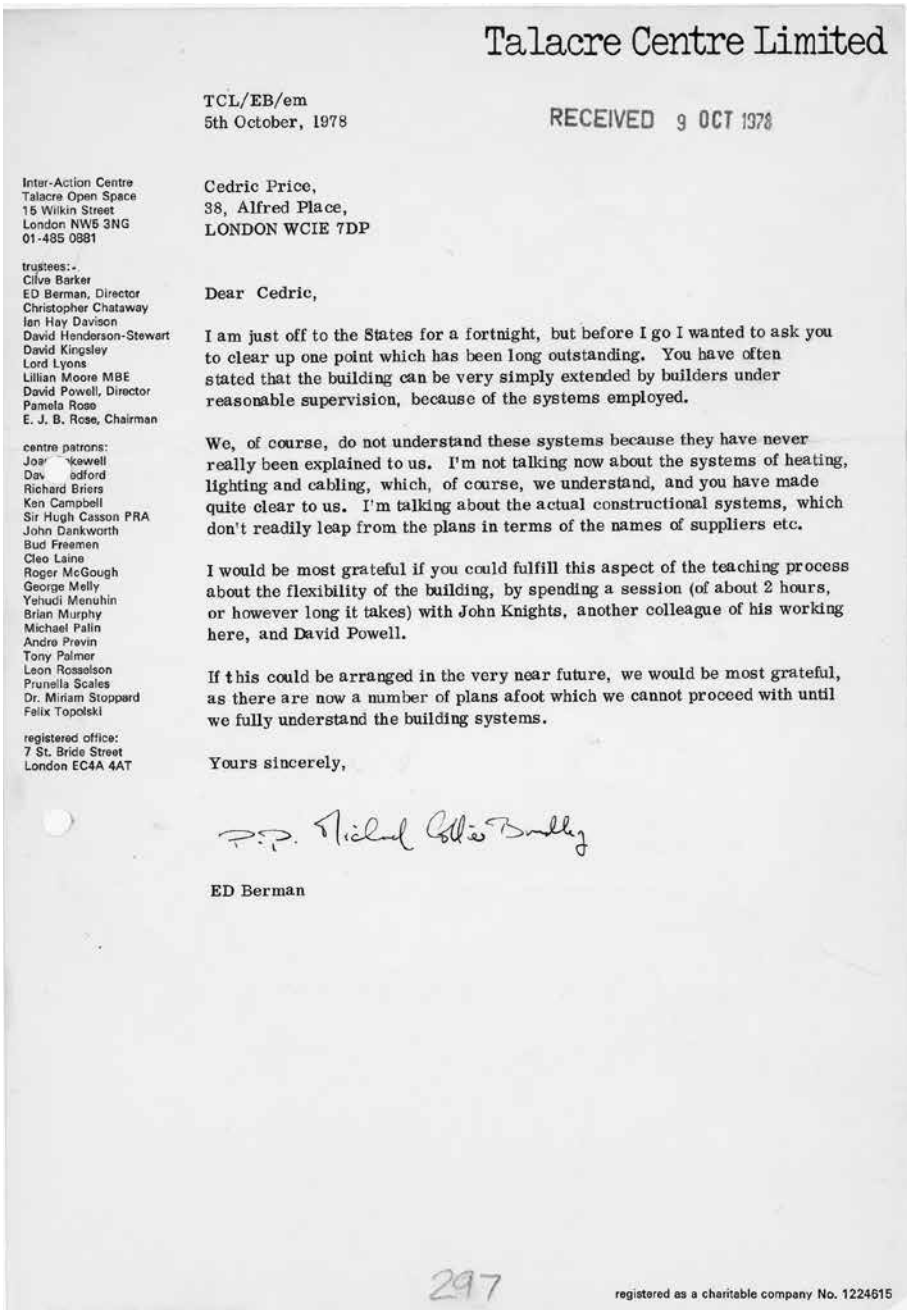


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10 Picture of a Portakabin being assembled during construction of the Interaction Centre. CPF DR 2004/1212/088.

11 Layout of a Portakabin Shower Unit. CPF DR 1995/0252/632/012/002.

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Talacre Centre Limited

TCL/EB/em
5th October, 1978

RECEIVED 9 OCT 1978

Inter-Action Centre
Talacre Open Space
15 Wilkin Street
London NW5 3NG
01-485 0881

trustees:-
Clive Barker
ED Berman, Director
Christopher Chataway
Ian Hay Davison
David Henderson-Stewart
David Kingsley
Lord Lyons
Lillian Moore MBE
David Powell, Director
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7 St. Bride Street
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Cedric Price,
38, Alfred Place,
LONDON WCIE 7DP

Dear Cedric,

I am just off to the States for a fortnight, but before I go I wanted to ask you to clear up one point which has been long outstanding. You have often stated that the building can be very simply extended by builders under reasonable supervision, because of the systems employed.

We, of course, do not understand these systems because they have never really been explained to us. I'm not talking now about the systems of heating, lighting and cabling, which, of course, we understand, and you have made quite clear to us. I'm talking about the actual constructional systems, which don't readily leap from the plans in terms of the names of suppliers etc.

I would be most grateful if you could fulfill this aspect of the teaching process about the flexibility of the building, by spending a session (of about 2 hours, or however long it takes) with John Knights, another colleague of his working here, and David Powell.

If this could be arranged in the very near future, we would be most grateful, as there are now a number of plans afoot which we cannot proceed with until we fully understand the building systems.

Yours sincerely,

P.P. Michael Collis Bradley

ED Berman

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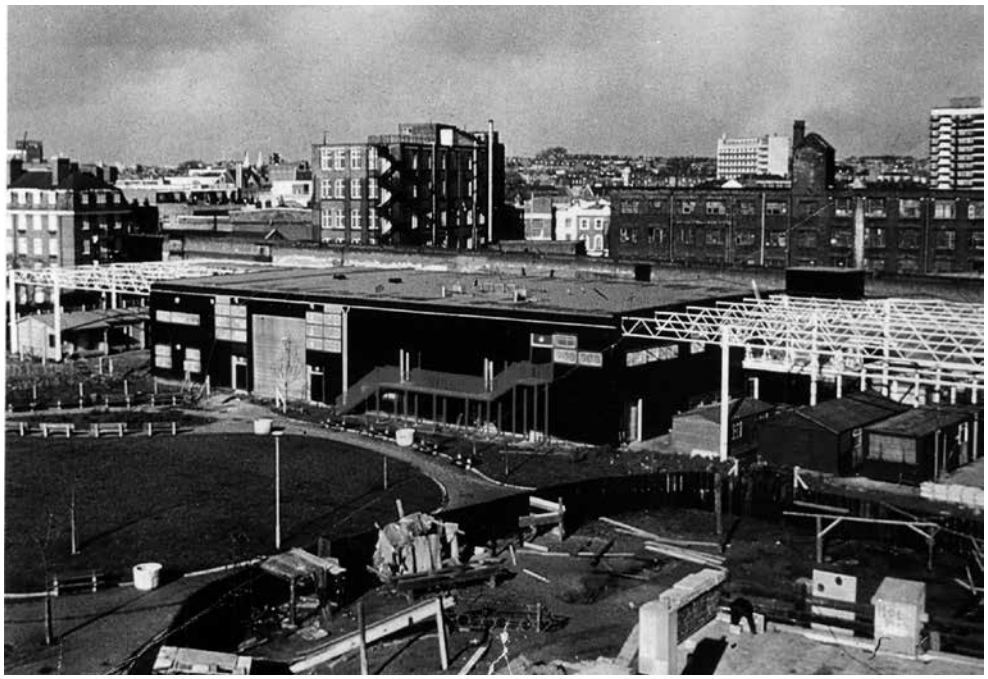
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12 Letter from Ed Berman to Cedric Price from 5 October 1978 with respect to the future flexibility of the Interaction Centre. CPF DR1995/0252/632/006/001.

Berman's awareness of the many flaws that the building had could not have been a sudden realisation since he was part of intermittent meetings and conversations with the architect and the construction company throughout the process. Berman highlighted the lack of flexibility in the building as early as February 1975 saying, 'we are building ourselves into a bind which will be obsolete on the second day (assuming we don't use the rooms on the first day)'.[44] Comfort problems, however, became much more evident once the building was used. With the break down in the relationship between Berman and Price at the end of a long design and construction process, one may think that in the end, all parties wanted the building completed regardless of its foreseen functional problems.

Despite its apparent malfunctioning, the Interaction Centre was a success in Kentish Town. Evidence suggests that the building ended up hosting a vibrant and varied programme of activities, demonstrating that the structure could be used for a wide range of different purposes, such as dancing nights, music workshops, sports, social clubs, as well as being the headquarters for various festivals and outdoor activities taking place in the Talacre open space.[45] The building, in fact, changed owners in 1984, less than eight years after it was completed. Renamed InterChange, it kept working as a community centre until its demolition in 2003.[46] However, Berman's idea of planting the seed for a project whose management would eventually be taken over by the community was certainly not achieved. Indeed, Interaction Trust left the site, but only to give way to a similar organisation. Community involvement rather came from the variety of theatre-related activities that Berman and his colleagues would put together especially for

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13 Overall image of the IC right after its opening. *Domus*, 581 (April 1978).

children and young adults, as well as the successful running of the nearby Kentish Town City Farm, also managed by Interaction Trust.[47] After the success of the building's programme, it became obvious that the Council had to keep the site as a leisure area. The open space eventually acquired Town Green Status, and the Interaction Centre was replaced by sports facilities occupying almost the exact footprint of its predecessor.

A contested theory

In the end, the Interaction Centre evolved from a building initially conceived to be modified over time into a fixed construction accommodating a great range of planned and unplanned activities. Time would prove that the 'plugged-in' Portakabins were difficult to move, and instead remained fixed and functionally specific over the ensuing years. Photographs of the Interaction Centre by the end of the 1990s show that its main features and the supposedly replaceable Portakabins stayed as they were initially assembled [13–15]. It was only the supergrid that created an empty field for free use defined by a lightweight metal frame. The enclosed volume and its internal partitions did not change either. The success of the building as a symbol of regeneration in the Kentish Town area was not achieved by engaging with the local community during the design process or through change over time, as Berman initially wanted. Rather, it became a hub for a wide range of events and activities for people of all ages without the need to modify its layout. The performance of the Interaction Centre raises three main topics for discussion in relation to the premises established in the first part of this article: the relationship between Calculated Uncertainty and the design process at the Interaction Centre; the effects of Calculated Uncertainty upon the *real* functioning of the building; and the usefulness of such a theory, when applied with a debatable degree of success, to the built environment.

The story of the Interaction Centre shows that its design process can be connected to key theoretical notions by which Calculated Uncertainty has been defined. At the same time, it shows that its premises where often defined by external contingencies rather than by Price himself. Calculated Uncertainty is present in the intention of generating a 'degree of social productivity', as Price would claim, by planning a particular aesthetic of change that projected the image of a malleable building easily appropriated by the users. It is also present in a language of 'approximation' used in the Interaction Centre to produce a final building, governed by an unfinished structure with surplus space for agency on the part of the user. In addition, the production of charts arranging activities, as well as the delineation of construction stages denote the presence of Calculated Uncertainty as an instrument to define spatial and functional changes in the design process and outcome of the building, while at the same time leaving space for 'unchartable change'. However, it has been shown that the staging in the construction process was in fact a premise imposed by Interaction Trust. Lastly, Price's drawings and correspondence, and especially Berman's letter requesting the once promised guidance to modify the building, proves that the Interaction Centre was, at least initially, designed for 'increasing choice' and 'planned for freedom', and its construction systems would in theory grant this capacity for change.

However, the building did not operate as planned. Firstly, despite the careful preparation of spaces for specific purposes, activities were undertaken with difficulty, particularly due to issues related to noise, thermal comfort, and

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even safety.[48] Secondly, despite the planning of construction stages and areas subject to the growth of community engagement, the Interaction Centre largely remained unchanged. Local users became extremely excited with the building and they made good use of its services, but they were not, by any means, active agents in the decision-making process during the long design phase and even in the minor modifications occurring after the opening.[49] The attempt to generate an accumulation of spatial elements over time under the supergrid failed, as it did to easily replace building components, and the building in fact remained incomplete until its demolition. One could argue that the success of the Interaction Centre as an important social hub for the community of Kentish Town was not achieved by any spatial quality of the building, but rather thanks to the programme of activities and events managed by Interaction Trust and InterChange.

Just like the condensed and ambiguous meanings contained within Calculated Uncertainty, the Interaction Centre provided an incomplete environment, only suggesting the idea of users' appropriation over time. Reflection on the real application of Calculated Uncertainty reveals that user participation was never intended to be an important part of the design process. In fact, the design process of the Interaction Centre proved to be rather conventional. Only the long span of its construction provided a certain space for the client to intervene in the design of the building. Berman and colleagues were eventually aware that the building was going to be a permanent cage, with a fixed layout that in some cases was not even validated by them before construction.[50] But what really set up open fire between the client and the architect was the lack of basic comfort inside the building, a condition that went beyond the ideals of temporality and flexibility. Still, the imperfect nature of the Interaction Centre, and its ever-incomplete form, may have invited people to adopt the building as their own, extending its influence beyond its walls and into the neighbourhood by becoming a hub of diverse activities without the need of physical alteration.

Calculated Uncertainty therefore remains a thinking method that deliberately brings into the design process a conscious attempt to plan for freedom in architecture, but which proved to have a contested practical application. Ideas fuelling the concept loosened aspirations to achieve a fixed built artifact and set up the basis to carefully plan for the existence of room for unforeseen performances. The malfunctioning of the Interaction Centre, its failure to behave as initially planned, and the distance between discursive ethos and real application arguably brings forth three features to bear in mind

14a,b,c **Photographs of details of the IC right after its opening. *Domus*, 581 (April 1978).**



14a


14b


14c

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15a



15b



15c

15a,b,c **Photographs of the Interaction Centre by the end of the 1990s.**

when reflecting upon planning for freedom in architecture: (1) the conscious design of a building and its capacity to be transformed in the future; (2) the image born by a building and its eventual transformation; and (3) the actual transformation occurring in reality. The analysis of the meanings of Calculated Uncertainty, as observable in the design, construction, and performance of the Interaction Centre reveal that these three features might coexist within the same built object. However, while the capacity for, and image of, transformation in a building are features subjected to design decisions, they do not guarantee that actual changes will occur, and so they will remain unavoidably incalculable.

Conclusion

The design process and later performance of the Interaction Centre offers an important ground on which to test Price's theories and the extent to which they were accommodated in this rare built production. The concept of Calculated Uncertainty has served in this article as a means to explore the theoretical foundations of Price's discourse and to understand his contribution to ideas related to temporality, flexibility, and planning for change in architecture. Based on notions earlier coined in disciplines such as economic theory and mathematics, Calculated Uncertainty became for Price the perfect paradox to call for an architecture that must inevitably be the result of unstable processes and unforeseen circumstances, a condition that is almost invariably faced in any form of professional architectural practice. But Calculated Uncertainty also sets the premises of a materialised built environment whose capacity to be changed by different parties is imprinted in its very *raison d'etre*. In this sense, this research evidences the tension between Price's theory and a built example, a tension that is manifested in the dysfunctional performance of the Interaction Centre.

The Interaction Centre faced a complex and long design process involving fundraising, numerous meetings with the Council, initial community engagement, and inexperience on the part of both the architect's and client's teams in the construction of an exceptional building typology. However, despite the struggle, the building ended up being a success in Kentish Town. One could ultimately argue that the delineation of a functional plan and the expectation that the building would evolve over time, both features which significantly failed to work in the Interaction Centre, were necessary to generate a building that would be used actively by the local community until its demolition. It seems that the paradox imprinted in Calculated Uncertainty not only lay in the attempt to define what was intended to change, but also in the expectation that such definitions would ultimately be disregarded.

Notes

1. Niall Hobhouse, 'Cedric Price Disappears', *AA Files*, 50 (spring 2004), 70–9.
2. The most complete publication on the work of Price is Samantha Hardingham and Cedric Price, *Cedric Price Works, 1952–2003: A Forward-Minded Retrospective* (London and Montreal, 2016: Architectural Association Canadian Centre for Architecture, 2016). The aim of this book is less to produce a critical discourse on the ideas developed by Price, but rather a much-needed *oeuvre* complete of Price's design projects, articles, and lectures.
3. The research carried out by Tanja Herdt is arguably the most complete critical account to date on

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the work of Price. Tanja Herdt, *The City and the Architecture of Change: The Work and Radical Visions of Cedric Price* (Zurich: Park books, 2017). Apart from Herdt's work, other authors have published research on Price with a more descriptive tone, such as Stanley Mathews, *From Agit-Prop to Free Space: The Architecture of Cedric Price* (London: Black Dog Publishing, 2007). For critical papers on the Fun Palace and the Interaction Centre, see the work of Mary Lou Lobsinger in 'Cybernetic Theory and the Architecture of Performance: Cedric Price's Fun Palace', in Sarah Williams Goldhagen and Réjean Legault, *Anxious Modernisms: Experimentation in Postwar Architectural Culture* (Montréal and Cambridge, MA: Canadian Centre for Architecture and MIT Press, 2000), pp. 119–37; and Mary Lou Lobsinger, 'Das Programm programmieren', *werk, bauen + wohnen*, 12 (December 2007), 38–45.

4. In *Cedric Price Works, 1952–2003*, Samantha Hardingham makes use of Calculated Uncertainty as the label for the section about Price's projects during the 1980s. However, the introduction to this section does not provide any further discussion of the phrase. As for clear definitions of the phrase in scholarly literature, they remain scarce. For instance, Molly Wright Steenson borrows the definition of Calculated Uncertainty given by an anonymous obituary in the *Daily Telegraph* on the occasion of Price's death in 2003: 'the creation of temporary, adaptable structures that can be altered, transformed or demolished, serving the need of the moment'. 'Cedric Price', *The Telegraph* (UK), 15 August 2003 [accessed 23 March 2018] <http://www.telegraph.co.uk/news/obituaries/1438827/Cedric-Price.html> [accessed 6 June 2021].
5. Jim Njoo, 'Dialogic Criticism: Cedric Price's Supplements, Reviews and Columns 1960–1999', *CLARA*, 7 (2020/1), 46–61.
6. Jonathan Massey, 'Buckminster Fuller's Reflexive Modernism', *Design and Culture*, 4:3 (1 November 2012), 325–44. For a complete account of obsolescence in architecture, see Daniel M. Abramson, *Obsolescence: An Architectural History* (Chicago, IL: The University of Chicago Press, 2016).
7. Uncertainty was, in 1960s economics, a relatively innovative concept. In 1921 the American Chicago School economist Frank Knight first wrote about the idea of uncertainty as embodying the fact of facing 'unknown probabilities' in the future, versus the existence of known probabilities, labelled as risk. Frank Hyneman, *Knight, Risk, Uncertainty, and Profit* (s. l.: Dodo, 2009).
8. Karl Raimund Popper, *The Open Society and Its Enemies* (London and Henley: Routledge & Kegan Paul, 1945).
9. Geoffrey Vickers, 'The Multi-Valued Choice', *Value Systems and Social Process* (New York, NY: Basic Books, 1968), pp. 125–43.
10. The definition is part of the notes gathered for the recording of the talk 'Technology is the Answer but what was the Question?' The recording took place in 1979 for a series of talks curated by editor and architectural writer Monica Pidgeon. Available at: <https://www.pidgeondigital.com/talks/technology-is-the-answer-but-what-was-the-question-/> [accessed 28 June 2021]. Cedric Price Fonds (hereafter CPF) DR 2004/1429, Lectures, Conferences.
11. CPF DR 2004/1429, Lectures, Conferences.
12. Ibid.
13. Ibid.
14. As mentioned above, quotes by Sir Geoffrey Vickers are, by far, the most often found in Price's lecture notes, further suggesting Price's strong interest in understanding systems thinking in a broader sense, and particularly with respect to the anticipation and inclusion of gaps, tricks, and space for freedom within them. That is precisely the focus of Vickers's most often quoted reference by Price: 'It is quite possible for the world as we know it now to become unregulable in important fields, in that it might pass the point beyond which any considered action might have a statistical probability of being worse than random. There are many situations in which to be systematically late is to be systematically wrong.' Vickers, *Value Systems and Social Process*, p. 96. The paper including this quote, entitled 'The Limits of Government', was originally a lecture at the London School of Economics and Political Science, given on 22 November 1966, under the title 'The Regulation of Political Systems'.
15. Cedric Price, 'Expediency', *Architectural Design* (September 1969), 493.
16. Ibid.
17. Cedric Price, 'Approaching an Architecture of Approximation', *Architectural Design* (October 1972), 645–7.
18. Cedric Price, 'Creativité et Technologie', *Techniques et Architecture* (March 1975), 45–7. English translation in Hardingham and Price, *Cedric Price Works, 1952–2003*, pp. 234–5.
19. Ibid.
20. A good example of this pursuit is the Generator Project, developed up to the early 1980s, and based on a cybernetic system that enabled the modification of a set of cubes according to the user's wishes, but also in an unpredictable, random fashion if the system was left still for too long.
21. According to Hardingham, 'The [Interaction Centre] was also the first physical manifestation of Price's architectural principles of indeterminacy combined with his philosophy of enabling – an abridged Fun Palace: the people were in control.' Hardingham and Price, *Cedric Price Works, 1952–2003*, p. 300.
22. Some authors, however, argue that similar programmatic typologies were already being tested at the time. Stanley Mathews poses the examples of the Arts Lab on Drury Lane in London set up by Jim Haynes in 1967. He claims that by 1969 around 150 Arts Labs were functioning in the UK. Mathews, *From Agit-Prop to Free Space: The Architecture of Cedric Price*, p. 269, n. 13.
23. Author's conversation with Berman, London, 28 September 2016.
24. Berman and colleagues wanted to translate in a purpose-built building the range of activities that were taking place not only in Talacre at the time, but also at their improvised headquarters in an old warehouse located nearby.
25. Berman mentioned that his contact with Littlewood was probably the reason why he appointed Price for the design of the Interaction Centre. Author's conversation with Berman, London, 28 September 2016.
26. By that time, the work developed by Price and collaborators was also having particular recognition through the publication of the 'Cedric Price Supplements' in Architectural Design. These were a series of summaries of previous designs including annotations added by Price at the time of their publication.
27. Author's conversation with Berman, London, 28 September 2016.
28. The intention by Camden Council to use the site for leisure purposes is repeatedly mentioned in the

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correspondence held between the Council and the Interaction Trust especially in 1971 and 1972, when the conditions of the land lease were being discussed. CPF DR 1995/0252/632/001, Projects, Interaction Centre. The capital support by the Council was specified in a letter to Berman by the London Borough of Camden on 3 May 1971. The maximum capital expenditure was to be £80,000. This amount would, however, increase to almost £500,000 by the end of the construction process in 1977. CPF DR 1995/0252/002–04, Interaction Centre.

29. Donors are listed in an advertising pamphlet issued by the Interaction Trust while the building was still under construction. CPF DR 1995/0252/632/015, Interaction Centre.
30. In a letter from Price to Berman on 19 February 1975, Price invites Berman and his colleagues to 'walk round the structure, pacing out the spaces between the columns and visually assessing the heights. Few clients have the opportunity of unrestricted visits to their own toy in its skeletal stage.' CPF DR 1995/0252/632/001, Projects, Interaction Centre. In addition, Will Alsop pointed out that the construction of the 'supergrid' with the money the Trust had raised up till then – which was only enough to erect the structure over a concrete slab and drainage system – was due to high inflation in the British economy at the time. Cedric Price Memory Bank (2014). Interview recording of Will Alsop available on <https://vimeo.com/114326652> [accessed 30 March 2021].
31. CPF DR 1995/0252/632/001, 'Additional Incomplete Notes for Brief on Inter-Action's Centre', Letter from ED Berman to Cedric Price, 13 May 1971.
32. Ibid.
33. Ibid.
34. The layout of the factory site was redrawn during the early stages of the design process, and seems to have been a reference for the kinds of spaces and functions to be implemented in the Interaction Centre. CPF DR 1995/0252/632/012, Interaction Centre.
35. These categories were specified in a 'Short Paper on the Current Position of Inter-Actions Development' (January 1973). CPF DR 1995/0252/632/014, Interaction Centre.
36. Ibid.
37. The Interaction Centre was in fact called 'Kentish Town West Amalgam' during the first stages of the design process.
38. The Fun Art Bus was a double-decker converted to host activities related to theatre, literature, and education, and even included sound and video equipment. It intended to be a mobile extension of the activities performed in the Interaction Centre. Claire Bishop, *Artificial Hells: Participatory Art and the Politics of Spectatorship* (New York, NY: Verso Books, 2012), pp. 202–03.
39. Portakabins is the name of a British company producing modular buildings manufactured in the factory. The model used by Price in the Interaction Centre had approximately the dimensions of a shipping container: 2.45 x 2.60 x 6 metres.
40. CPF DR 1995/0252/632/006, Projects, Interaction Centre.
41. Andrews, Downie & Partners. 'Report on the Role of Consultants of the Building Design Team and Builders Concerning the Multi-Use Arts Centre at Telecare [*sic*] Site, Kentish Town, 20-10-1982', Experts' Reports prepared on behalf of the plaintiffs by counterclaim, CPF DR 1995/0252/632/011.
42. Lyall Addleson, Report – 1. J Murphy & Sons Ltd DEFECTS, Talacre Centre Kentish Town NW5, 10 May 1982, p. 8.
43. Will Alsop claims with this respect that 'when it came to the details, Cedric did not have much to say about these things. I was not exactly experienced either.' Alsop further explains that Price would always postpone discussions on questions related to detailing and they would be ultimately solved by Alsop alone. Cedric Price Memory Bank (2014).
44. CPF DR 1995/0252/632/001, Interaction Centre, Letter from Berman to Price, 13 February 1975.
45. A great range of activities taking place in the Interaction Centre illustrate the 1978 Kentish Town Community Calendar, which also contains an application form to be part of the Family Social Club. CPF DR 1995/0252/632/015, Interaction Centre.
46. Price's support of the Interaction Centre's demolition is a famous fact, and despite efforts made by bodies such as the 20th Century Foundation to get the building listed, the Interaction Centre was finally torn down, as planned, once the land lease expired.
47. Claire Bishop relates some of the performative activities taking place at the Interaction Centre, like the Almost Free Theatre and the Black Theatre, with plays directed by Berman and actors such as Prunella Scales and Corin Redgrave. Bishop, *Artificial Hells*, p. 203. For a thorough account of the City Farm movement, see Christopher Wardle, *City Farming and Community Gardening: Book 1* (London: Inter-Action, 1983).
48. One of Berman's recurrent complaints was that people could easily break into the building through the gaps left between the Portakabins and the main structure, leading to robberies.
49. Evidence of such excitement can be seen in the 1,300 application forms received by the Interaction Trust to join the Family Social Club even before the building was finalised, as mentioned in one of the many advertising pamphlets issued by the Interaction Trust. CPF DR 1995/0252/632/003, Interaction Centre,.
50. The final layout for the Portakabins was apparently not checked by the clients before construction. In a long letter from David Powell from Interaction Trust on October 1976 – about six months before the opening of the building – he asks when they will be able to see inside the Portakabins: 'I don't want to take a lot of people into them, but simply to check through storage space, portable equipment, etc.' CPF DR 1995/0252/632/005, Interaction Centre.

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Competing interests
The author declares none.

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Marcela Aragüez is Assistant Professor and Associate Director of undergraduate studies in architecture at IE University. She is a licensed architect with a PhD from the Bartlett, UCL. Her academic career has been developed in the UK, Switzerland and Japan, with teaching and research posts at UCL, ETH Zurich, Hochschule Luzern, and Tokyo Institute of Technology. Her research focuses on cross-cultural investigations of adaptable architecture in Britain and Japan, and her work has received grants and awards from the Sasakawa Foundation and the SAHGB among others.

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