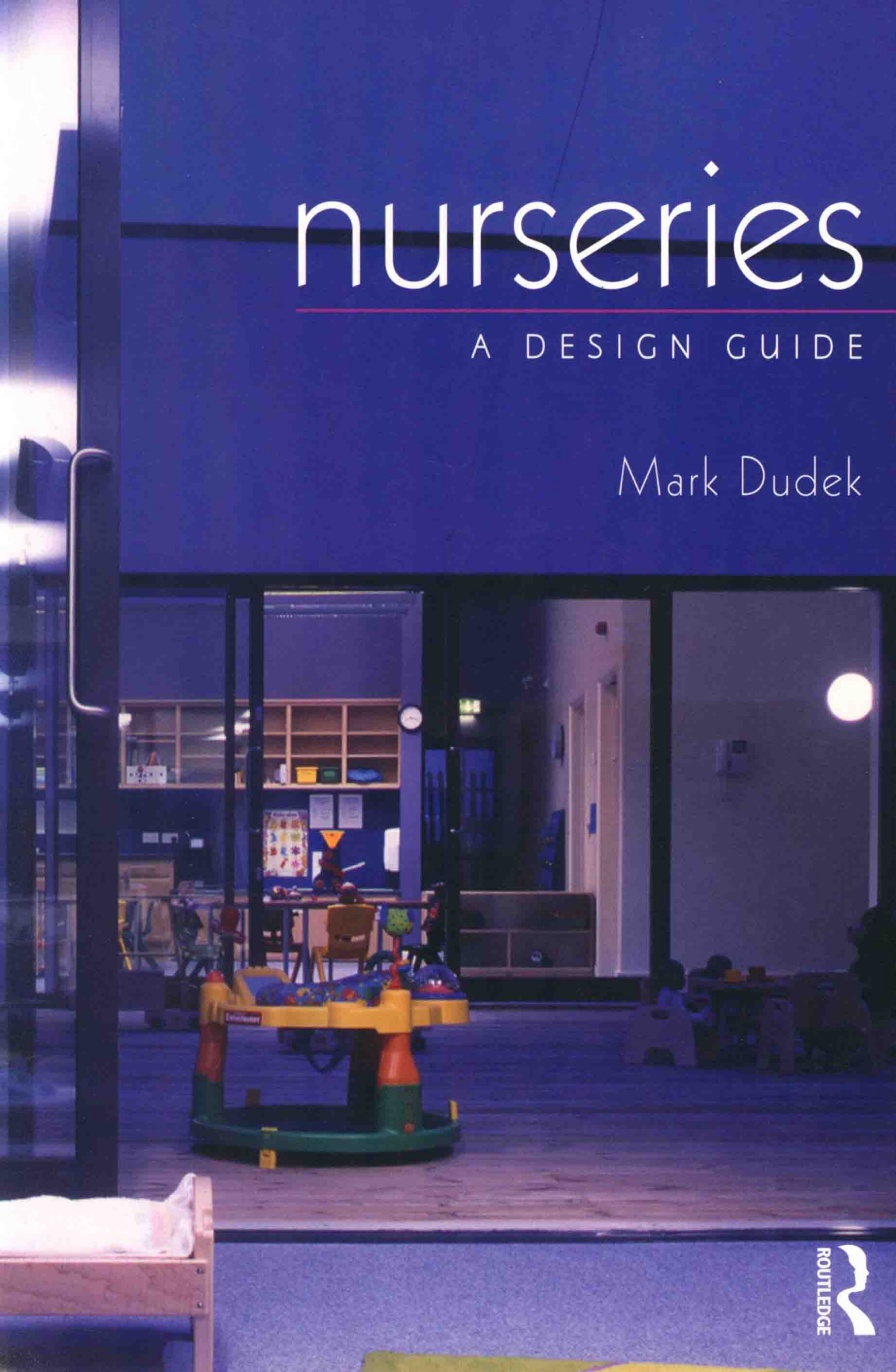
nurseries

A DESIGN GUIDE

Mark Dudek



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Nurseries: A Design Guide

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Nurseries: A Design Guide

Architecture can inspire young children; the very shape and form of a daycare centre can not only stimulate their imagination but can help children form strong relationships and help promote development.

This highly illustrated design guide presents all the elements of building design that combine to create the very best environment for young children and the people who work with them, including building materials, multi-functional spaces and design scaled to suit small children. For those involved in capital projects, the book provides a practical introduction to acquiring funds for a new integrated centre or early-years setting and also provides a technical guide to integrating features, such as rooms with many different areas, access to the outdoors and choice of fixtures and fittings.

Mark Dudek is a Research Fellow at the School of Architecture, University of Sheffield and is a practising architect. Mark runs his own London-based architectural practice, *Mark Dudek Architects*.

For Amy and Grace. My inspiration.

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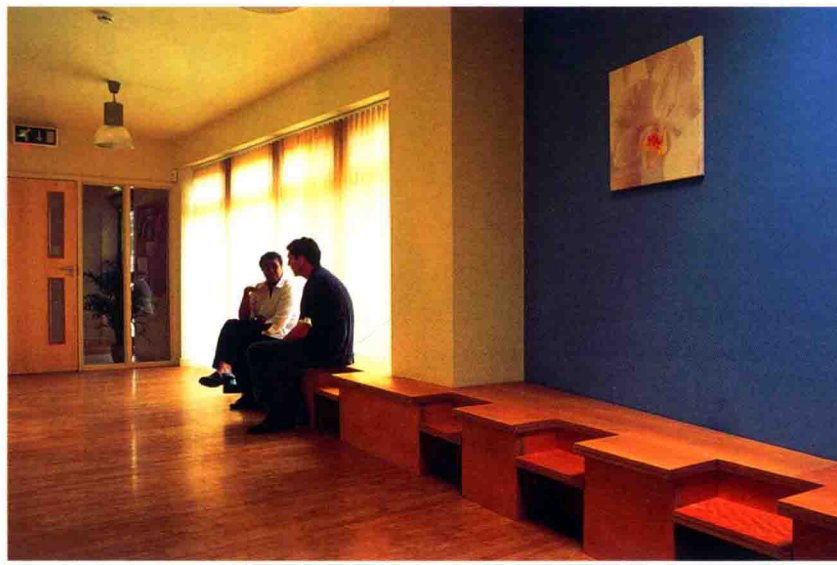
Introduction

Raising children is a rewarding but exhausting process. There is no getting away from the transformational nature of being a parent. Many of us fail to be



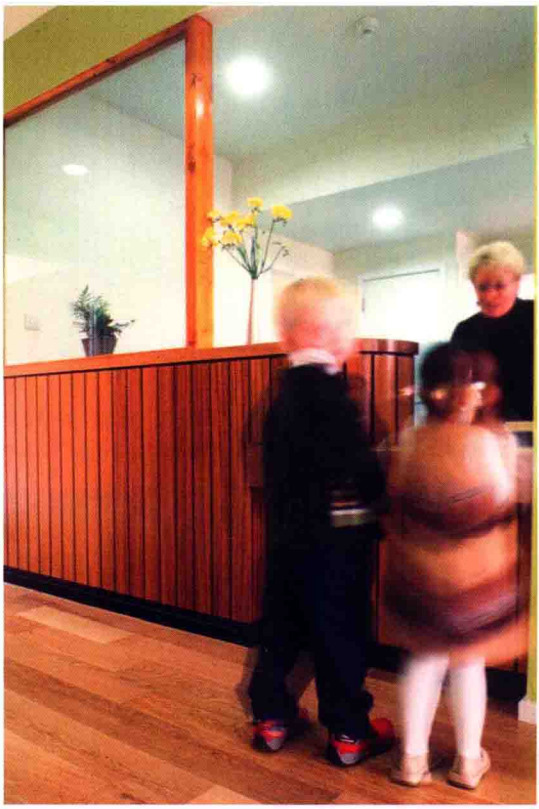
The issue of scale is fundamental when designing for children. Here the entrance area seat is set at two different levels, 290.5 mm above floor level and 490 mm for adults.

Hodge Hill Children's Centre by Mark Dudek Architects

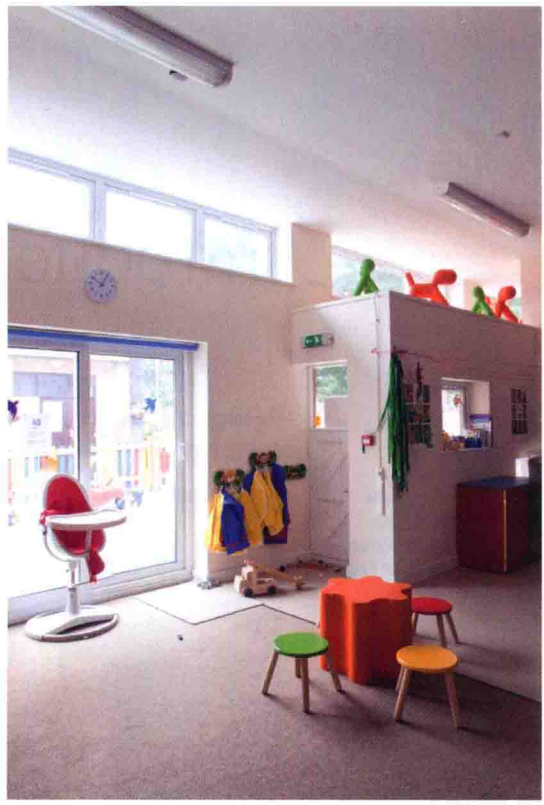
the parents we want to be, and I suspect that each generation, to a certain extent, repeats the successes and failures of the previous generation. However, today the world is a global and ever more frenetic one, usually dominated by short-term commercial expediency. People are less secure in their jobs, communities are more fragmented. This inevitably impacts on family lives; things feel less certain, more impermanent.

Seen in this context, modern lifestyles can be very stressful for children. This can be significantly relieved by good nursery provision. Simply adapting an existing building, such as a church hall, which is often an expedient approach to low-cost childcare in the United Kingdom, fails to recognize the rights of young children to their own space, and the need to support and reassure parents in every way possible. Equally, it demeans our view of the role of architecture as a power for good in society.

Despite its many shortcomings, it is my view that a coherent system of early-years care and education are the most important political and



Similarly, this reception desk is at child height and adult height, giving children a sense of belonging.

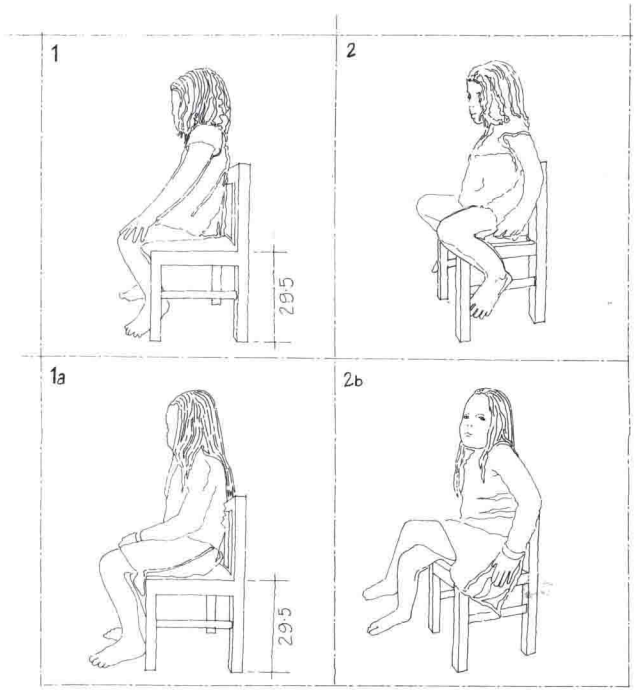


This child-height door gives access to the children's play area. Coat pegs are next to it for convenience at child height too. (Both projects designed by Mark Dudek Architects.)

social interventions of the past 15 years in the United Kingdom. Although I emphasize the people involved over and above any building as being the most important and critical factor in this, an environment which enables high-quality care and education to take place is an important aspect of this offer. Many of the 3,500 children's centres that have opened since 1996 are testament to this concern for children and the value of society as a whole. As the social structure of Britain becomes less equitable, so its social problems resemble more those of the post-industrial American cities, with many teenagers excluded from society, and particularly boys lacking male role models. In my view this is a direct result of the ineffectual nurturing during the early years, and the failure to support impoverished and poorly educated parents, itself probably because of second-rate early-years care in their own childhoods.

It is hard to place a price/value on long-term investment in good-quality nursery care and education. There are so many variables at work, and no systematic research has been undertaken that pins down the value of nurseries, let alone the importance of their architectural quality. All we know is that a building is required, and if it works well, then the circumstances of the users will be improved. The historic HighScope project in the United

The seat used in these comparative studies, is 29.5 cm high as recommended for 6–8-year-olds (BS5873). Grace who is 4.2 years old, (top sketch 1 and 2), can sit on the seat but not for very long; within five seconds she has repositioned herself supporting her body with feet on the higher intermediate foot rest. By comparision, Amy who 6.2 years old, is comfortable and stays in position 1a for 15 seconds. She can easily adjust her position when asked to look towards the camera, sketch 2b, by simply moving her legs and feet, which are in constant contact with the floor, across.



Amy stands at 'her' door at the Yiewsley Children's Centre, designed by Mark Dudek Architects (2010).

States, which tracked two sets of early-years children over a 30-year period (starting in 1964), is widely quoted. A huge amount of help was offered to one sample of disadvantaged families – extra tuition, therapeutic and practical support for mothers, every kind of welfare benefit. Nothing special was done for a comparison sample, and 30 years later the HighScope graduates had done dramatically better. For every dollar spent up front on HighScope, seven dollars were saved further down the road on the costs of police detecting crimes, judicial process, incarceration and those gained from taxes paid and benefits unclaimed.

The conclusion is that as long as the proper resources are provided to help them and offer good-quality early-years care, hundreds of thousands of children will not wreck their own and others' lives. What we hope to do here is explain how the environment not only supports this end, but also show how it can in some circumstances become the most important element in the equation.

A note on methodology

The chapters in this book represent a synthesis of my observations and research over 20 years working in this field. Key recommendations take into account as many as possible of the comments received from interested parties with whom I have debated long and hard during this time. In addition (and most importantly), three other sources have informed my recommendations.

First, research by others. Children's environments research is a growing discipline with key influences cited within the text when used to support the narrative. Second, my own experience of designing and building at least 15 new/refurbished nursery buildings and/or children's gardens for both public and private clients over the past 15 years. Information gathered following occupancy has been especially valuable. Finally, and by no means least valuable, has been the experience of watching my own young children, with half an eye on this publication. Thanks to Amy and Grace.

The recommendations are not cast in stone. Rather, they should be viewed as an evolving theory which aims to prioritize issues in a systematic way. As anyone who has had a hand in developing a new or refurbished nursery building could tell you, compromise is usually the name of the game. The architect, in conjunction with the client/users is there to choreograph competing needs. This publication makes reference to some of the very best international examples of early-years architecture. However, the perspective is very much a British one and focuses on the latest government-funded children's centre initiatives that are currently nearing completion.

There are five chapters, covering a number of linked areas, though each views nurseries and children's culture from a slightly different perspective. Chapter 1 focuses on the discipline of environmental psychology, disseminating some of the key lessons it has learned by close observation of human (and animal) behaviour, to provide helpful conceptual ideas about the nursery environment.

Chapter 2 is a brief summary of the key ideas that go to make up the sustainable nursery, using observations of some examples of nurseries in use to understand what is possible and also to appreciate common shortcomings. Chapter 2 also analyses the nursery school curriculum to explain how this informs architectural spaces.

Chapter 3 asks the question: how do we design for play? This is perhaps the most crucial aspect of nursery design, and is explained with some practical examples of how children relate to the environment in a positive way. There is also analysis of play outside by way of my colleague Susan Herrington's original research at the University of British Columbia.

Chapter 4 explores historical concepts that initiated design for children – starting in the eighteenth century, where early-years care was adopted as a moral crusade by the pioneers, right through to recent developments both in the United Kingdom and in Europe, which hold important lessons for the future.

Finally, Chapter 5 is a briefing document described in terms of the development of a new nursery building in Central Europe. It explains the process we went through to arrive at the final design, and how some of the concepts raised in Chapter 1 have been applied. It also includes detailed technical information which should be useful to anyone embarking on a new nursery building.

At the end of each chapter the reader will find a systematic designer's checklist of ideas and features, distilled from the text.

I would particularly like to thank Canny Ash and Phil Meadowcroft for their inspiring insights during our discussions, Peter Maxwell and Lucia Hutton at CABE for their promotion of 'the cause' and John Allen for his unswerving energy and optimism during my involvement in the Hillingdon Children's Centre projects.

I would also like to thank many other people who have contributed their expertise directly or indirectly over the years, including Eva Lloyd and Alison Clark at the Thomas Coram Research Unit, University of London, and Professor Helen Penn at the University of East London, Professor Cathy Burke at the Faculty of History, University of Cambridge. Rosie Long, Head of Windham Nursery, who has significantly aided my knowledge and understanding of details within the childcare environment (in particular in relation to the sand-pit at Windham).

Recognition goes to the School of Architecture, University of Sheffield, where I am engaged as a part-time Research Fellow. Without their support this publication would not have been possible.

Chapter 1

Environmental psychology

How to evaluate quality within the learning environment

It is now almost 20 years since I made my first visits to see a range of new purpose-built children's centres in Frankfurt, Germany. As an over-excited young architect, what attracted me were the high-end designers commissioned to create the new buildings. Up-and-coming names such as Toyo Ito and Bolles Wilson were commissioned to set the tone for a state-wide initiative aimed at sending out the message that children and families were of the highest priority. The new buildings were to be shiny and new, grand architectural statements, expressions of the architect's ego as much as the city fathers' visionary ideals. While visiting his signature building, one soon to be celebrity architect even told me that it was important to have the building photographed before the users took possession, 'as they would only ruin it'.

If irony was intended in that comment, it was certainly lost on me. The same could be said for those using the new facilities when they finally opened; they often found that the drawing board architecture did not work out for them as intended, the buildings were a little too austere and the children and families for whom they were intended found them cold, clinical places to be. However, I believed that they were a well-funded beginning and like any good building they merely needed time to bed-in. The landscape was immature and the structures set out within the architect's brief did not always reflect the emerging needs of the users. It occurred to me that learning to live with a building was as important as the architect's initial concept. The first five years of any building's life, particularly a childcare environment, is the minimum time frame required for the users to adapt and grow their environment. Yet architects and architectural critics rarely re-assess a building after the first shiny few weeks following hand-over.

During the intervening period of time, I reflected on how these Frankfurt buildings might have bedded down, and revisited some of the early-years examples I had designed myself to check how they were functioning in use. The conclusion I drew was that almost all of the facilities were proving a

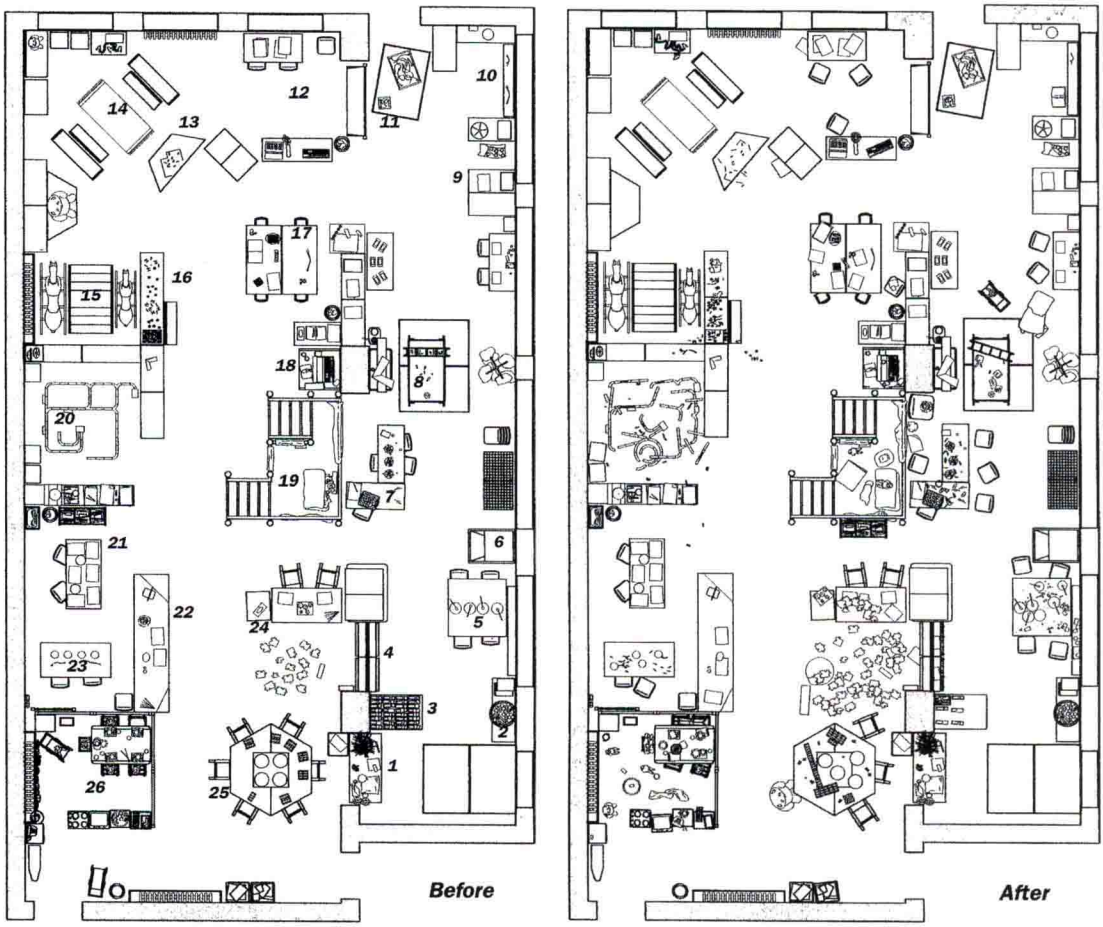
little too inflexible, perhaps too cellular in plan, with enclosed rooms dedicated to a particular function rather than being oriented to free use and adaptation. I decided that the test of any good children's architecture should be its capacity to develop and evolve together with its users, following a loose fit, long-life concept. The building should not be aloof, like some form of austere beautiful sculpture; rather, it should develop a more personal relationship with its users, becoming a sort of friend and partner, capable of adaptation, change and growth over time.

One of the Frankfurt architects described his building to me as being like a designer boutique or an art gallery. In my view the modern nursery building is more akin to an artist's studio than it is to an art gallery. It is a workshop environment for making and doing, usually messy things, but one that is also calm and reflective in its own right (I will explain the key activity patterns that often dictate the form of a children's building in Chapter 5). It should envelop its users in a warm, reassuring ambience. This reflects the idea that there is a multi-layered poetry to what many might view as a somewhat banal form of civic architecture. The nursery should be like an unfinished story, enabling each child to bring their own fresh response to its narrative verses. Clearly, this implies significant challenges for any designer working in this special area.

Therefore, rather than presenting here only the latest 'state of the art' projects, the aim of this publication is to re-visit a number of those first-generation children's buildings, some of which have now been in use for 10–15 years. Some are even older, and the clues they hold in terms of changes and adaptations implemented by the users over the years are as important as the architect's initial visions. In some instances there was no architect involved at all, rather the building has emerged as a resourceful adaptation out of what would originally have been a building totally unrelated to its final function. Evolving the special culture of a nursery is the talk of all of its users; sometimes the best nurseries, unlike almost any other building type, evolve in peculiar almost anarchic ways.

There is, I believe, no single prototype for the perfect nursery. As we will see, each is a particular response by those involved, relating to a special set of circumstances, some site-specific and some to what might be thought of as people-specific. The basic nursery and its wider community-oriented siblings – such as England's children's centre developments, the Kindertagesstatte in Germany and the Scuola dell'Infanzia in Italy – are so inextricably related to those who run and utilize their services that change and flexibility within the framework of high architectural expectations is the single most important quality indicator. As I believe it is people that make the environment work, their ability to effect the changes to the environment the architect initially gives them is fundamental. This essential understanding lies at the heart of my thinking; it is what makes the contemporary children's environment unique and significant, not just for those who use it, but for society as a whole.

The first key idea I wish to convey is that in an age where novelty for its own sake appears to be one of the supreme cultural values, architecture for childcare is not primarily concerned with the cult of the new, as much contemporary architecture must be by definition. Usually it relates more to



1 *Interactive display for Chinese New Year.*
2 *Fruit basket – children bring in fruit daily for consumption at break time.*
3 *Name table – children recognize and take their name card from the table and put it in a box to show they have arrived.*
4 *Easels for free painting – to encourage creativity and fine motor skills.*
5 *Malleable activity, making food for birds – science activity, looking at appropriate food for the birds and changes brought about by stirring it and adding fat to make it solidify.*
6 *Bugs in the sand – creative play to investigate what has been hidden in the sand.*
7 *Making birds for display from carboard tubes, feathers and paper – activity to develop fine motor skills, cutting, sticking and folding.*
8 *Water play – based on the story of Mrs Wishy-Washy washing all the animals.*
9 *Gluing – an area for independent work using recycled materials to make models, and opportunity to practise fine motor skills, cutting and sticking.*
10 *Science area – interactive display of animals in cold climates with books, animals and water, and pipettes to experiment with.*
11 *Three-dimensional maze – opportunity to practise fine motor skills moving coloured balls along the maze.*
12 *Office area – to encourage independent writing with a supply of writing materials, paper, card and chalk boards.*
13 *Small world, farm animals and a house – role play looking at homes for animals.*
14 *Book area.*
15 *Rocking horses – for imaginative role play.*
16 *Poppa beads – to practise fine motor skills making shapes and patterns.*
17 *Free drawing and emergent writing, based on the book* Daisy the Duck.
18 *Computer – selected program to complement current topic.*
19 *Loft – for role play activities, set up with* Ten in the Bed *big book and animals.*
20 *Brio train track, to encourage cooperative play.*
21 *Matching animals activity.*
22 *Eggs in the nest game – 1:1 counting game.*
23 *Linking elephants – counting game.*
24 *Puzzles.*
25 *Construction activity – H shapes.*
26 *Home corner – role play area.*

Two kinds of change within the nursery environment: a playroom at Windham Nursery, Richmond (designed by Mark Dudek Architects), before and after play. The range of activities indicates a highly proscriptive agenda, partly a response to the researcher's presence perhaps; evaluation by Mark Dudek and Gilian Wardle.

Snack time at the Windham Nursery, designed by Mark Dudek Architects.

the capacity that the environment has to grow and develop alongside the evolving patterns of its hosts, especially those of the children themselves, in a tidy and modest form. If a building appears tired and neglected after five years of use, it is a sure sign that it has been designed as a static moment in time, rather than as a vibrant organism with design and funding systems in place that make it capable of flexing to the needs of its users over subsequent years. This shows that design can and perhaps should be a continuing process, with the building growing along with its users, much as a family home will change over the years of the owners' lives there, even if it is in small, gradated stages.

This is not to say that this modest architectural expression cannot produce innovative and even iconic architecture. Far from it, the nursery has scope for the most imaginative architectural invention, which at its best is inspirational. It is simply that architecture for childcare emerges from a different set of influences to most normal building design for adults.

The second key idea that lies at the heart of this publication came to me a few years ago, when I visited my old family home for the first time in almost 40 years. It is, I guess, fairly common to grow up in a small town and then move away as personal horizons change. Yet the environment where we have our most formative experiences, aged 4–10 years of age, is lodged deep somewhere in our psyche. As Sancho Pansa said, 'A man's true home is his childhood.'[1] However, it is often a complete surprise when we re-visit our childhood haunts as adults. At least, it was for me.

The scales and qualities of the backyard where I played as a young child, viewed through my adult eyes were far less vivid than my childhood recollections of essentially the same suburban landscapes. Certainly, something strange had happened to the size of things. In my mind's eye, I remembered one particular environment of my childhood as an undulating mountain range of a landscape full of places to explore, from high up on the ledge beneath the garage to the shelter of the enormous rhubarb 'trees' with the aromas of mint and lavender wafting through from the adjacent herb patch. Now everything seemed ironed out, featureless and rather flat. Structures such as the high gate from which I could climb up onto the garage roof, which dripped icy 'stalactites' during the freezing cold winters, did not seem high anymore. The trees where I constructed my complex treehouse structures were bigger but felt less like the jungle eyrie I had imagined them to be. The postcards I'd pinned lovingly to the timber dwarf walls (to make it seem more homely), which would within a few days become the perfect nesting place for families of earwigs; removing the postcards and squashing the innocent creatures became a perverse pleasure. Now, my adult view could only discern a slightly overgrown suburban willow hedge. My magical childhood perspectives, admittedly tinged with a large dollop of sentimentality, had inevitably been transformed into a pragmatic adult view. It was a disappointment to say the least.

A second type of change relating more directly to the built environment. Windham Nursery, by Mark Dudek Architects, before and four years after. Initially the environment outside is bare and uninteresting, while four years later aromatic planting boxes raise its sensory quality, and a rudimentary plastic canopy extends the field of learning.

These memories are, of course, subjective observations tinged with the sentimentality of a happy childhood lived out 40 years ago. But are there any less subjective and more scientific assessments of the need for good childhood environments which might help to define what this might be, away from the world of the architectural criticism and subjective observation? Looking towards the discipline of environmental psychology, there is a huge and ever-expanding literature of research on environment–behaviour transactions. One must ask why so little mention is made of it within the architecture and planning professions; surely the most likely potential users of the findings in shaping future designs. Do they not know about it, or do they simply ignore it, given all other demands upon their attention?

The architect Thomas Fisher, in an article with the splendidly ambiguous title 'Architects behaving badly', suggests two apparently opposite reasons.[2] First, that all the findings of environmental psychology are so obvious as to be trivial ('Of course, people like nice views from their windows; enjoy greenery; and like places where they feel safe, while being able to see out'). Second, that the research findings are presented via inaccessible academic journals, written in abstruse language, cluttered with literature precedents, formal hypotheses, with an emphasis on data tables, data analyses and statistics, and with conclusions all hedged about with ifs and buts.

To the first point Fisher replies (to his own rhetorical questions): if these good suggestions are so obvious, then why have we not seen their products routinely present in all recent design from the professions? The second point poses the greater challenge: findings must be made more accessible and that awareness services must bring them to the attention of the professions. This is now happening in the work of UK organizations such as CABE and English Heritage, and new, easily accessible indexed summaries of research should make it as routinely accessible as all other information sources (for example, on products, materials, legal matters, etc.) already do for the designer and architect.

My friend and former colleague Emeritus Professor Christopher Spencer, who is based at the Department of Psychology, University of Sheffield, provides a very erudite explanation not just of the world of the nursery, but also the wider urban environments of the street and the park, where children spend much of their lives. Here I am using an article he produced specifically for this publication in its entirety. He starts by describing his early research into animal behaviour:

Once upon a time, in a Malaysian jungle, I was a field worker studying the largest of the lesser apes, the siamang (which looks like a larger, black gibbon); and as a social psychologist, I was most interested to observe the stable family group and its interactions. Typically, there would be a mated-for-life pair of adults, a confident juvenile, and a recent infant; a family holding a large area of jungle as its exclusive territory; and spending its time foraging for fruits and leaves high in the canopy.

Spending one's days beneath such a family (in our study site reserve, the animals were long-habituated to respectful observers), one quickly became aware of the infant working through the tasks of early childhood, heightening one's awareness of what faces the human young.