# THE EXPANSION OF EARLY LEARNING AND CHILDCARE IN SCOTLAND
# REFERENCE DESIGN REPORT - MAY 2018


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# 1.
# Introduction

# 1. Introduction

## 1.1 Foreword

*"The decision to almost double the number of hours and extend the flexibility of free early learning and childcare in Scotland from 2020 is a significant opportunity to explore ways in which refurbished, extended and new facilities can create the additional physical capacity needed to deliver the ambition. Providing a high-quality experience in facilities specifically designed for young children was at the heart of this initiative.*

*The development of three reference designs was very much a collaborative exercise. East Ayrshire Council, the Scottish Futures Trust, architects, consultants and contractors all brought a wealth of experience along with a willingness to consider new ideas and test alternative solutions. The Care Inspectorate has been consulted throughout and will continue to provide comments to East Ayrshire Council to support the development of these designs to provide the best possible outcomes for children.*

*As well as considering the experience for children indoors, the approach to this reference design work also embraces the many benefits that outdoor learning and play can offer in terms of health and wellbeing as well as physical and cognitive development.*

*Across Scotland many new early years facilities will be developed which will reflect the needs of their local communities. These reference designs provide a platform to inform local choices as to how individual buildings can best respond to local needs and emerging operating models of early learning and childcare. They provide a reference point to show how space in particular models can be designed in an efficient and flexible manner to provide welcoming and accessible facilities for children, staff and families whilst working within Scottish Government's Early Learning and Childcare Programme Baseline Planning Assumptions metrics for the area and cost of new build facilities.*

*Many of the individual ideas and concepts that have been incorporated in each of the reference designs have the potential to be taken on their own and used as part of a catalogue of ideas to inform options for any refurbishment, extension or new build early learning and childcare facility.*

*This reference design initiative was made possible by the considerable commitment and dedication of all involved and the collaborative approach adopted provides a firm foundation to take the early learning and childcare expansion programme to the next stage."*

Grant Robertson - Education Design Director - Scottish Futures Trust

Alex McPhee - Depute Chief Executive (Economy and Skills) East Ayrshire Council

### Background

Over the past year SFT has been working with the Scottish Government and all 32 local authorities to support the development of local Early Learning and Childcare (ELC) expansion plans to meet the ambition to almost double the provision of free early learning and childcare in Scotland from 600 to 1140 hours by 2020.

SFT wishes to encourage all stakeholders in the programme to consider new, innovative and affordable solutions for future ELC services. To deliver the forecast increase in registered capacity to reflect future service models and the anticipated demand for early learning and childcare services there is a significant pipeline of capital projects.

Whilst local service planning priorities are rooted in making best use of existing assets, it is currently forecast that the ELC expansion programme will require around 140 new-build ELC facilities across Scotland.

This expansion programme presents the opportunity for local authorities to collaborate and identify options for commonality in design and building layouts both for indoor and outdoor ELC environments.

In support of this opportunity, SFT in partnership with East Ayrshire Council (EAC), has developed this reference design material for future ELC settings across Scotland. This work has been informed by consultation and engagement with the Care Inspectorate, Early Years Practitioners and parents of children who currently take up their funded ELC entitlement.

The priority for this reference design initiative was to develop early learning and childcare facilities that provide a high-quality environment specifically designed to address the needs of young children, ELC practitioners and parents in a manner that promotes the innovative and efficient utilisation of space.

The designs were also required to respond to the requirements and guidance of Space to Grow, showing how suitable outdoor space can be accommodated as part of the design.

Another key aspect of this reference design initiative was to provide an evidence base to show how high-quality ELC environments can be delivered in a manner that is compliant with the new build area and cost metrics as set out in the SG's ELC Baseline Planning Assumptions.

### Reference Design Development Work

Following the submission of each local authorities' initial ELC expansion plan in September 2017, SFT approached East Ayrshire Council to explore the potential to jointly develop reference design material for future ELC facilities. East Ayrshire Council and SFT agreed that this should be a collaborative exercise and that the outputs of this collaboration would be of benefit to the expansion programme as a whole.

It was also agreed that the guidance and advice of the Care Inspectorate would be essential. The input of and guidance from the Care Inspectorate in the development of these reference designs has been greatly appreciated.

To expose this reference design initiative to as many architectural practices as possible, it was decided to procure the required external support via the hub South West supply chain. Two separate architectural practices (which included input from specialist landscape architects) worked collaboratively to share concepts and ideas, but in turn, developed independent solutions for two separate new build projects currently being considered by EAC.

To complement this work EAC's internal design team have also developed a third option. This reference design is not attached to any site but provides a further illustration as to how an early learning and childcare facility could be developed to provide a high-quality environment for children, staff and parents alike which in a manner that adopts a flexible and efficient use of space and embraces outdoor learning.

For all three reference designs a cost consultant, civil/structural engineer, M&E engineer, an acoustician, fire engineer and interior designer were also appointed to inform the approach to design and the associated costs. A specialist illustrator was appointed to help communicate the designs and lessons learned.

Key to the success of this reference design initiative has been the consultation and engagement of staff and parents. Throughout the design development process there has been on-going dialogue to ensure that proposed solutions reflect the envisaged operating model and deliver on the core objective to deliver a high-quality facility.

### Outputs

This Initiative has produced three separate reference designs. All three responded to the same core brief and EAC's envisaged operating model but are slightly different in terms of the total registered capacity and age groups of the children they are designed for. All three designs have been developed architecturally to RIBA Stage 2 with supporting information from other consultants. All are compliant with the new build area and cost metrics as set out in the SG's ELC Baseline Planning Assumptions of July 2017.

This report is one of three separate reports and it specifically relates to the reference design developed by Anderson Bell + Christie Architects for the proposed facility at Kilmaurs.

# 1. Introduction

## 1.4 The Team

### Client Team

Scottish Futures Trust (SFT) facilitated the creation of the Early Learning and Childcare (ELC) Reference Design project and provided expert advice and guidance throughout the process.

Hub South West generated the scope of services for the Early Learning and Childcare Reference Design project and procured all consultants required for its delivery. Hub South West also facilitated engagement with Tier 1 contractors to allow market testing of costs and provide construction advice.

The Care Inspectorate (CI) were key participants in the process and had input throughout the design development of the Early Learning and Childcare Reference Design. This included contribution to brief building, design development and sign-off of the final proposals.

East Ayrshire Council (EAC) provided full access to their Early Years, Capital Asset, Education, Design Services and Statutory Approvals teams. East Ayrshire Council also provided two sites to apply the Reference Designs to, which provided a grounding for the projects and allowed all aspects to be thoroughly tested against a real world setting.

### Design Team

Hub South West appointed two architecture practices were appointed to develop separate proposals and these practices were each supported by a practice of landscape architects. The remainder of the design team were appointed to offer expert input to both sets of proposals:

| | |
|---|---|
| Architects and Landscape Architect Team 1 | Anderson Bell Christie and Hirst Landscape Architects |
| Architects and Landscape Architect Team 2 | Norr and ERZ Landscpae Architects |
| Architects and Landscape Architect Team 3 | East Ayrshire Council and Hirst Landscape Architects |
| Cost Consultants | Faithful & Gould |
| Mechanical and Electrical Engineers | Max Fordham |
| Civil and Structural Engineers | Waterman |
| Fire Engineer | Jeremy Gardener Associates |
| Acoustician | RMP |
| Interior Design | Graven |

Reflecting the Government's national priorities of giving all children the best start in life, local authorities across Scotland are currently developing their Early Learning and Childcare (ELC) Expansion Plans to meet the requirement to provide 1140 hours of free Early Learning and Childcare (ELC) for all three and four year olds, and eligible two year olds, from August 2020.

To meet this challenge, services will require to make the best of existing assets, and to provide a number of stimulating new build ELC facilities. These will be required across Scotland in order to meet the needs of the ELC Expansion Programme.

Following the commission of Hub SW by East Ayrshire Council, and working closely with the Scottish Futures Trust (SFT) this report is the output of a exercise to develop a Reference Design and supporting cost information to assist all Local Authorities in responding to the requirements of the Early Learning and Childcare Expansion Programme.

Anderson Bell Christie with Hirst Landscape Architects, NORR with erz Landscape Architects and East Ayrshire Council with Hirst Landscape Architects were subsequently appointed to develop an appropriate reference design.

All teams, and their supporting consultants, have worked closely with East Ayrshire Council, the SFT and the Care Inspectorate to develop proposals which directly reflect the current requirements of the CI outlined in their recently published "Space to Grow" document.

This report provides a framework which meets the learning and environmental requirements of Space to Grow, whilst also addressing the economic requirements of the metric and budget, demonstrating that the Scottish Government's Expansion Programme Baseline Planning Assumptions for new build nurseries of 5.8m2 per child and cost metric provision of £3,000/m2 are realistic, achievable and capable of delivering high quality environments. This has been done hand in hand with a full design team and wider stakeholder group, ensuring that a reasonable and prudent set of assumptions has been made.

All sites are however different and all have their own unique opportunities and constraints. Consequently 3 models have been developed, with each based on a set of components that can be configured in a variety of ways to suit the particular context and functional requirements.

In this instance, the report goes on to test the framework in a 'real' context, in a project that East Ayrshire Council have identified as part of their current ELC Expansion Plans on a site in Kilmaurs. This output, together with site and budgetary considerations, has resulted in a simple, dynamic and efficient building design whilst also accommodating the various critical internal relationships required in order to achieve the optimum child focused environment within.

The Reference Design study sought to achieve a comprehensive Stage 2 design. The design and content of this report therefore incorporates design team input to the project noted above. Engagement was also carried out with Statutory Authorities on various aspects of the proposal throughout the process.

Whilst the Reference Design project is presented as a whole building solution, it can also be read as a collection of ideas that can be applied to a variety of settings, both new build and refurbishment.

The main aim of the Reference Design was to ensure learning opportunities and outcome were at the heart of each project, they prioritise the children's development throughout and aim to provide functional fun learning spaces where pupils can feel at home whilst providing the opportunity for challenge and development.

This has been achieved by ensuring a variety of spaces are provided within the schemes to cater for a multitude of learning experiences and encouraging free flow play to an enriched external landscape.

# 2.
# Building the Brief

# 2. Building the Brief

## 2.1 Project Objectives

The Scottish Futures Trust outlined the project objectives as the following;

- The reference designs should be innovative and efficient in space utilisation, and enable learning and childcare to take place in good quality stimulating environments which are specifically designed to address the needs of young children, staff and parents and make them "feel happy" when they visit the building.

- The designs should also respond to the requirements and guidance of the recently published Space to Grow document. Further detail on these requirements follows within this section.

- The reference designs will be required to accommodate circa 80 children and be scalable (up and down) whilst demonstrating cost affordability within an overall area metric of 5.8 m2/child (total building GIFA) and £3,000/m2 (all in rate including design and development costs as well as furniture, fixtures and equipment at 2Q 2018).

A cost plan based on the Kilmaurs proposal is included within Consultants' Reports, appended.

*" Children therefore will be spending more time in early learning and childcare settings, and as such, the environment needs to be of a high quality to support positive outcomes for children. Research confirms that the environment can have both a positive impact on child development and improve learning outcomes for children. Early learning and childcare and out of school care settings must be provided from an environment which is fit for purpose and positively supports children to access play and learning opportunities that will impact on their development, health and well-being and happiness. The environment is also important to both parents and providers. This is a view which is supported by a recent survey carried out by the Care Inspectorate, where 69% of parents said the environment was one of the main factors when choosing the service for their child."*

- Scottish Government (2017). *Space to Grow - Design guidance for early learning and childcare and out of school care services*

The basis of the brief is developed from the total GIFA, utilising the area metric of 5.8m2/child, together with cost affordability of £3000/m2. This is outlined in the Scottish Government's Expansion Programme Baseline Planning Assumptions for new build nurseries. These planning assumptions were issued to local authorities in July 2017 by the Scottish Government as part of a wider suite of capital and revenue cost and planning assumptions.

The registered number of children utilising an Early Learning Care setting can be increased by recognition of the importance of outdoor, as well as indoor, learning and care.

The Care Inspectorate, The Scottish Government and Scottish Futures Trust have recommended that a maximum increase of 20% of the total registered number of children is applicable dependent on the quality of outdoor space and plans for how it would be used.

The reference design requires to provide a comfortable environment and be inclusive for all, and particularly for those with additional support needs. The reference design will strive to create a welcoming, comfortable and considerate design through each zone of the building; from the physical spaces themselves to the lighting, acoustics, surfaces and equipment therein.

*"For almost any other special need, the classroom only becomes disabling when a demand to perform a given task is made. For the child with autism, disability begins at the door"*

- Handbury, M.(2007). *Positive Behaviour Strategies to Support Children and Young People with Autism*. London


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The operating model may of course differ across local authorities. The proposed models for East Ayrshire Council are set out below and will be delivered in either term time or full year centres which will operate from 9.00am - 3.00pm, or 8.00am - 6.00pm respectively.

Option 1 - Monday to Friday 09:00 - 15.00 (6 hours) term time during the school year (38 weeks)

Option 2 - 5 block sessions of 4 hours 45 minutes (08.00 to 12.45 or 13.15 to 18.00) per week for 48 weeks of the year, 5 mornings, 5 afternoons or a combination of mornings and afternoons can be chosen to create full daycare.

Option 3 - 6 block sessions per week for 38 weeks term time for the school year. Additional hours during the holiday periods may be purchased in blocks of 4hrs 45 minutes, where there is capacity.

Staffing - It is proposed that staff who work in full year services will work shift patterns:

- 07.45hrs to 15.15hrs
- 08.45hrs to 16.15hrs and
- 10.45hrs to 18.15hrs

The number of staff required is based on the adult: child ratio, the model of delivery and the pattern of hours across a day and a week.

The current proposed management structure of full year services will consist of a Head of Centre, Depute Manager, Senior early learning and childcare practitioners (ELCPs) and the number of ELCPs required to meet service delivery. There will also be an ELC support assistant and clerical assistant posts to cover the hours of operation. This model may be progressed or revised as EAC develop their ELC expansion programme.

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A Consultation day was held 02.02.18, at which a diverse range of Stakeholders was invited to participate. These included key staff and parents from existing East Ayrshire Council ELCs, Local Authority Stakeholders, the SFT, Hub SW, the Care Inspectorate and Hub SW Tier 1 Contractors.

The day intended to discuss all aspects of what this Reference Design should be with all of the relevant parties, all in order to establish an overall vision for the project, whilst also allowing the designers to listen and to question everyone's views as the discussion developed.

The session began with a presentation on the requirement for 1140 hours and of the model for the provision of these hours as developed by East Ayrshire Council. The workshop then focussed on the need for the delivery and design of ELC to change, and on the need for the Reference Design to be flexible for different Authorities' requirements, and also for potential future provisions.

Further sessions during the day focussed on both internal and external spaces; their design, relationships and functionalities.

*" It is understood that good design continuously evolves, with innovative solutions constantly being sought as to how to enhance environments in areas such as space, maximising finite resources, the best use of outdoor space, sustainability and how the physical environment can genuinely help to contribute to the best outcomes for Scotland's children. As such, it is anticipated that this guidance will also evolve as new solutions and new approaches to innovative delivery of settings are identified, allowing these to be incorporated and shared across all those working in this important sector. "*

- Scottish Government (2017). *Space to Grow - Design guidance for early learning and childcare and out of school care services*


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### Workshop 1

The day started with the fundamental, philosophical basis for the increased ELC provision:

- What is the purpose of the increased ELC provision?
- What should the impact be on learner experience?
- What should the impact be on family experience?
- What is success?
- How to maximise benefits?

### Workshop 2

Focused on the term "outcomes and experiences". It is key to determining "quality" in particular for the external landscape environment but also for the learning experiences within the building itself. Core questions applied to each theme:

- What are the learning outcomes indoors/outdoors?
- What learning experiences should be provided indoors/outdoors?
- How could these be delivered indoors/outdoors?

The following aspects being considered key drivers which the Reference Design project requires to support:

- Previous model doesn't fit with parents returning to work
- Building could become embedded into the community and used by the community after hours and weekends
- Success equals happiness for children, parents and staff
- Must be inclusive
- Must provide opportunities for staff
- Can be a social link for parents/carers and provide opportunities for families to access services

### Indoor space

- The environment should provide a balance between learning experiences and opportunities inside and outside
- The learning environment must engage children through space, light, noise, materials to stimulate and nurture
- Designs should allow for free-flow between inside and outside – indeed boundary must be blurred
- Outdoor space is key in the expansion of ELC and accommodation should be built around the outdoor space
- Need for an external covered space to be used in all weathers
- Need for flexible and a variety of spaces from small intimate spaces scaled for children and small groups to large spaces

### Outdoor space

- New Early Learning and Childcare education should provide a coherent and seamless indoor/outdoor environment. This is backed up by policy documents such as the Scottish Government's 'Play Strategy for Scotland - Action Plan' (2013) and the Care Inspectorate's 'My World Outdoors' (2016).
- Interaction with nature has a meaningful impact on a child's health and wellbeing, can promote more engagement from some children and enhance learning, collaboration and social skills.
- External space should be safe, but also offer appropriate challenges which encourage children to take more risks.
- Provide core outdoor activity of sand pit, mud kitchen, loop route for bikes and trikes, story-telling, loose parts play, performance space, shelter, sensory garden with raised beds & outdoor store.

A collation of the outcomes recorded at each of the engagement sessions can be found within Appendix 3.

The quality of the external environment is fundamental in determining whether the particular ELC actually satisfies the requirements of Space to Grow and can therefore register up to 20% additional capacity.

The development of outdoor settings has been increasing over recent years. Not all settings can provide solely outdoor provision, or a blended approach of outdoor and indoor learning and care in many settings. There are some existing early learning and childcare settings where account has already been taken of the quality of, and children's use of, outdoor space and the number of registered places has been increased accordingly, all in acknowledgement of the positive experiences children have.

There is no agreed standard for the provision of outdoor space. Consequently we have used parameters on the outdoor space to support registration of an increased number of children within an indoor/outdoor setting. The recommended maximum increase of 20% of the total registered number of children is considered as a guideline. This is however dependent on the suit-ability of the outdoor space and plans for how it would be consistently used.

The quality of children's experiences and their learning outcomes are of paramount importance in the design of external spaces. This reference design therefore seeks to deliver such quality.


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### Meal Delivery

It is envisaged that the proposals for food preparation and delivery will vary across local authorities to cover the delivery of a lunch and high tea, as well as snacks mid-morning and afternoon.

The delivery of such meals requires careful consideration of the sequence of events around dining and the associated spatial implications, as well as the preparation/delivery to the settings and within the playroom. The model that East Ayrshire Council aim to adopt is outlined within Section 3.0.

### Changing Places

Through the consultation process with East Ayrshire Council and the Care Inspectorate it was confirmed that there was no requirement for inclusion of a Changing Places facility in the proposed Reference Design. An accessible WC will be required, accessible to all building users.

### Insurance

Some local authority insurance providers have specific requirements that may influence the overall design; e.g. restriction on use of combustible cladding, such as timber weather boarding, or requirement to provide sprinklers for property protection and CCTV systems. Each local authority will require to seek appropriate advice in relation to each setting.

Both sprinklers and CCTV are not a requirement in this classification of building in order to comply with the Building Standards Division Technical Guidance, and as such, these do not form part of the reference design.

### Planning

As part of the development of the design specifically for Kilmaurs, ABC met with East Ayrshire Council Planning Department to discuss the existing site conditions and context, proposed building location and massing. This would be a normal procedure to be followed for all buildings with any Local Authority. The detail and extent of dialogue will depend entirely on site location and context.

### Technical Standards and Building Control

All materials and works will require to comply with all relevant statutory regulations current at the time of construction (NB the cost plan is based on current Regulations May 2018). In particular all materials and works will comply with the Building (Scotland) Regulations and any amendments current at the time of application for building warrant.

Where manufacturers are referenced this is to be assumed as or equal or approved.

A more detailed dialogue with Building Control will be arranged during the next stage. Meetings were held with the catering team to establish requirements for the Kitchen facility and food preparation.

### Roads and Transport

Through consultation with East Ayrshire Roads Alliance, it was confirmed that car parking standards to be applied to this reference design are based on universal parking standards.

There are exceptions to this where parking strategies are outlined as part of Local Plans. As with other Statutory Consultees it would be a normal procedure to meet with all those relevant to each particular site.

Equally the detail and extent of dialogue will depend entirely on site location and context. Further specific detail on the reference design is covered under Section 3.0.

### Scottish Fire and Rescue

Discussions / meetings with Scottish Fire and Rescue will take place during the next stage of the project.

### Environmental Health

East Ayrshire Council's Environmental Health department has been consulted and have provided comments. These comments have been included in the design. This has resulted in the inclusion of a toilet and changing space dedicated to catering staff. It is understood however that this may not be required by all local authorities.

# 3.
# The Reference Design

# 3. The Reference Design

## 3.1 Introduction

The Reference Design has been developed to be applicable in the majority of localities, it provides key information on strategic approaches to specific challenges which can be used together to create a new build scheme or used individually to help develop, upgrade or refurbish existing facilities.

The following section describes these component parts, starting with the high level approach, then moving into the detail of the interior and outdoor spaces.

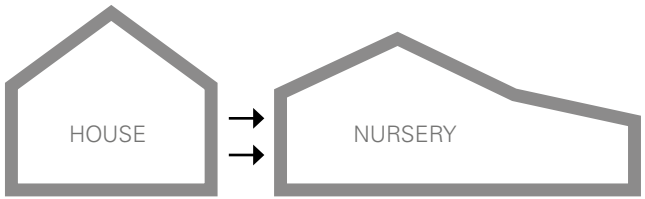

### Scale and Massing

The majority of nurseries will be located in residential areas, either as part of a school estate or a standalone facility. The character of these residential areas may differ, but they will predominantly be one and two storey housing with pitched roofs. Various consultations were taken with Local Authority Planning Departments and it was considered that this sympathetic approach was likely to be acceptable in similar areas.

There are two considerations that then dictate the scale and form of the nursery:

- A building typology that has forms recognisable to children.
- A building form that will be more readily acceptable across planning authorities.

Consequently, the building is no higher than a 2 storey house with a dual pitched roof. The building also presents a gable to the street, this is a recognisable form that will match the streetscape in most localities. The building is then an extrusion of the gable form which sits as subservient to the street facade.

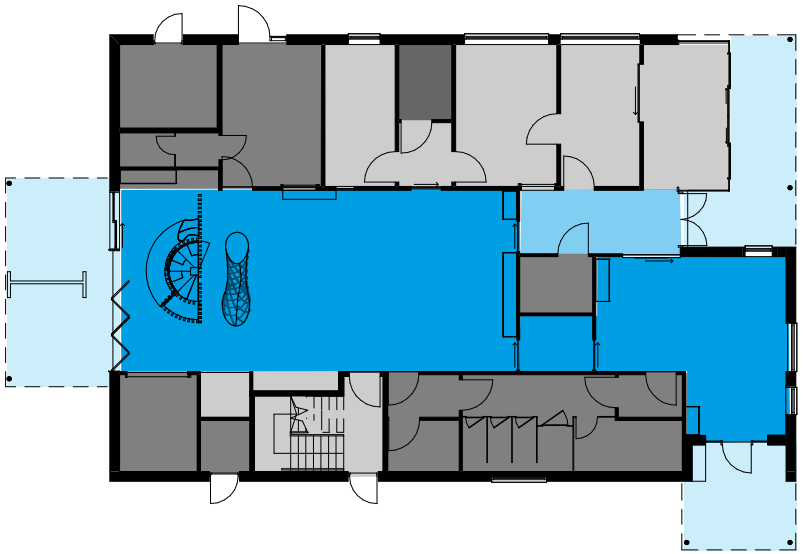


## Building Organisation

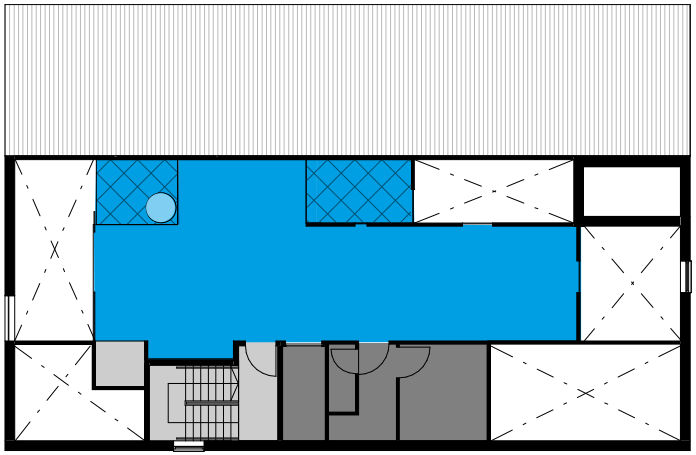
The building diagram comprises a zone of play space between two bands of supporting accommodation. The public spaces of the building are concentrated around the entrance, with individual playrooms separated by an island of cloaks, accessible toilet and shared reading space.

The building accommodation is split over two levels to catalyse a variety of spaces to enrich learning and give an opportunity for exploration within the play areas. The following sections will go into the detail of the spatial organisation and functional relationships both within the building and out to the external space which wraps around the building in an L shape.

- Play
- Transition
- Shelter
- Administration/Circulation
- Service

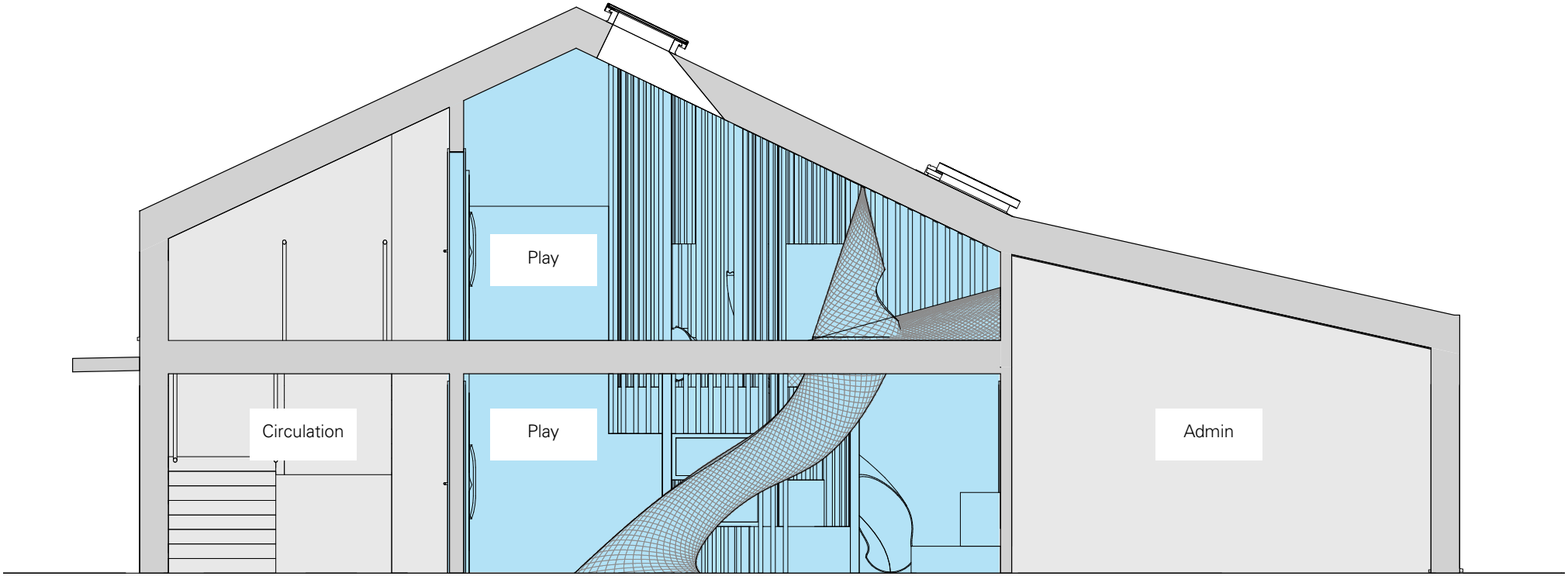


Ground Floor

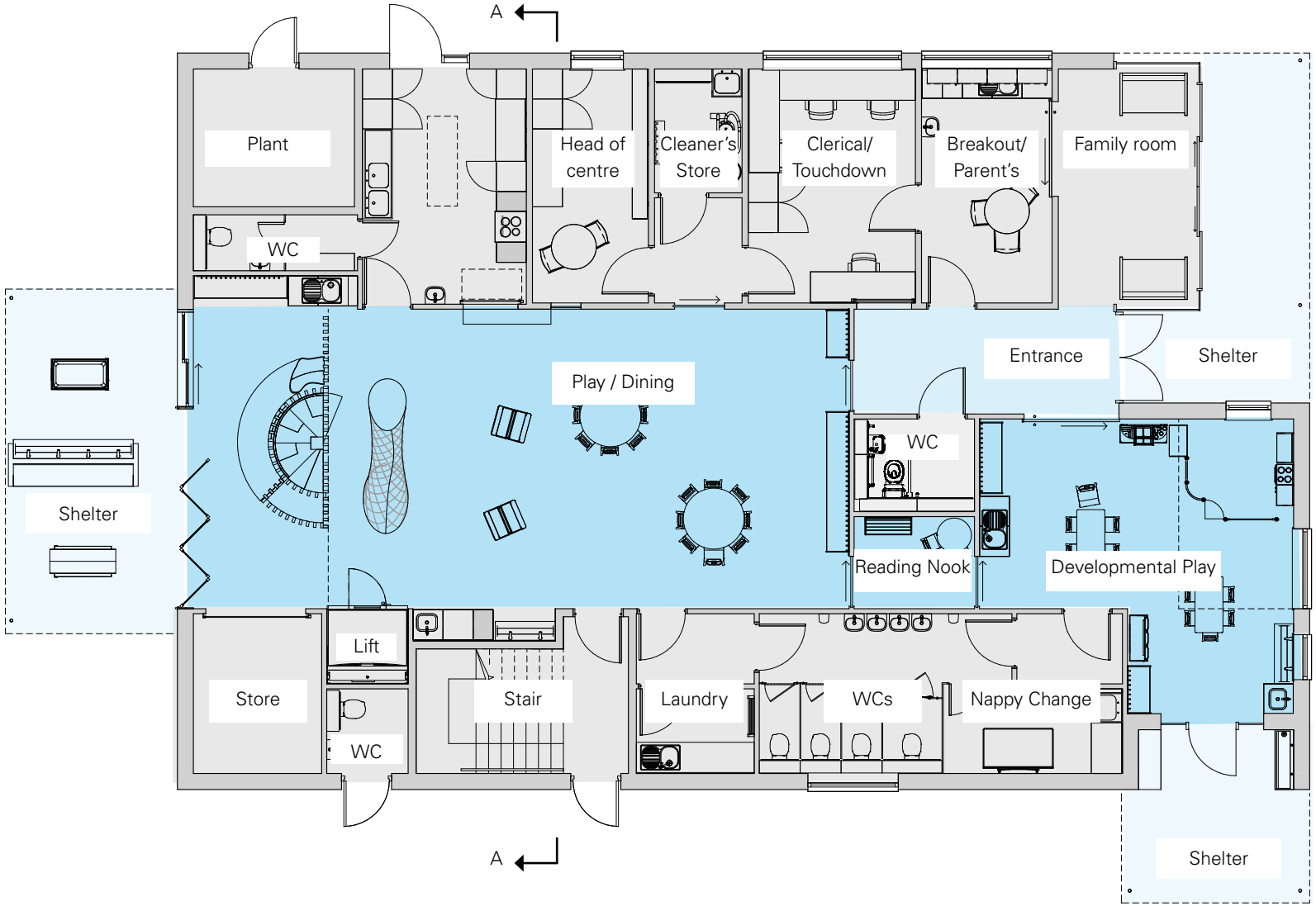


Upper Floor

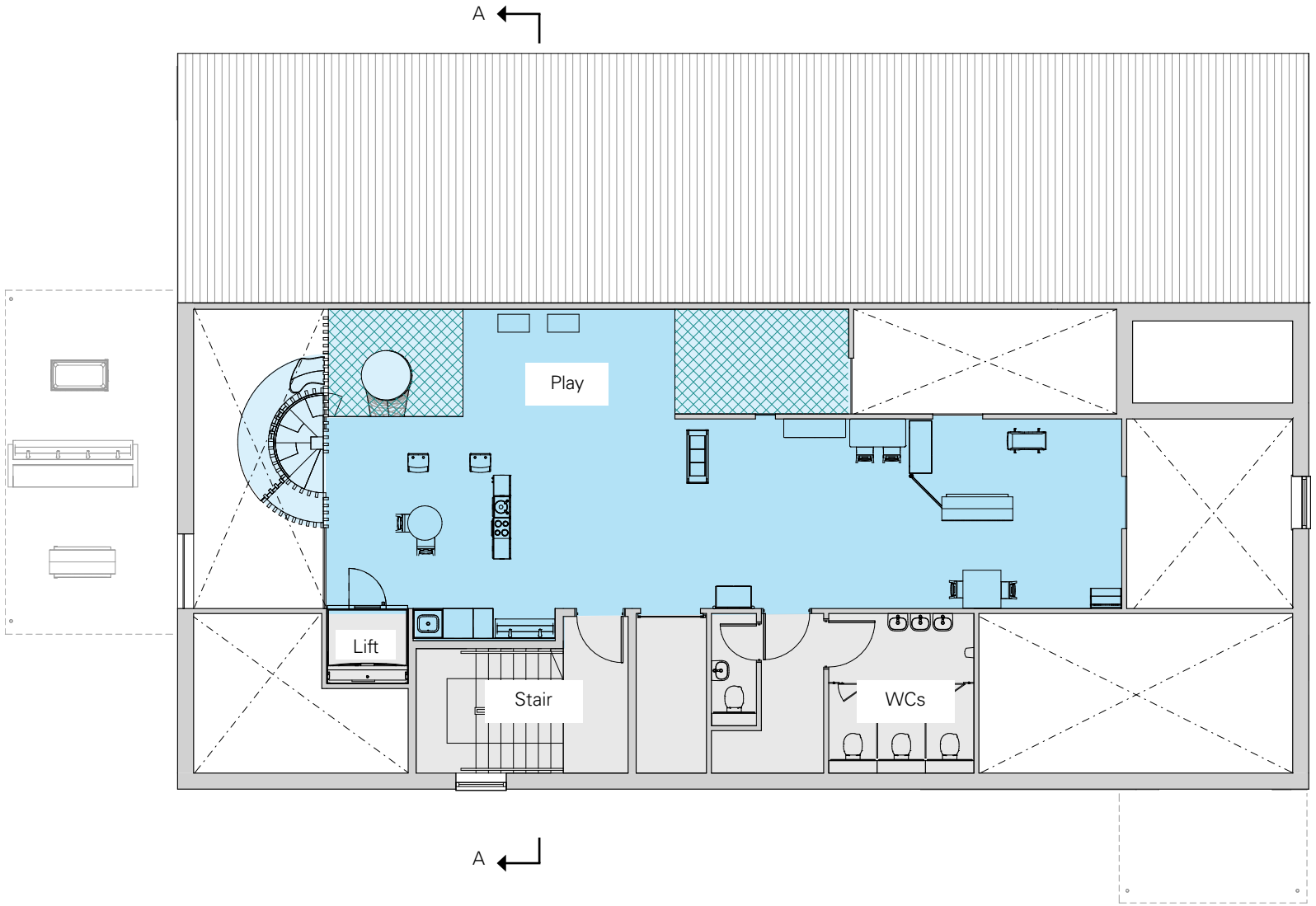
Section A-A



### Ground Floor Plan



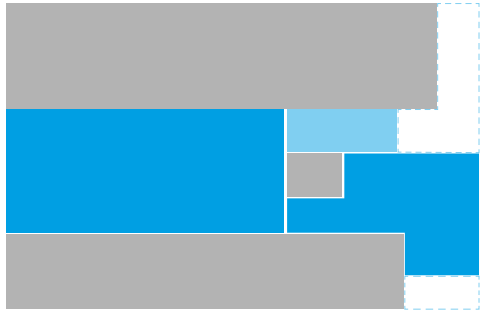
Upper Floor Plan



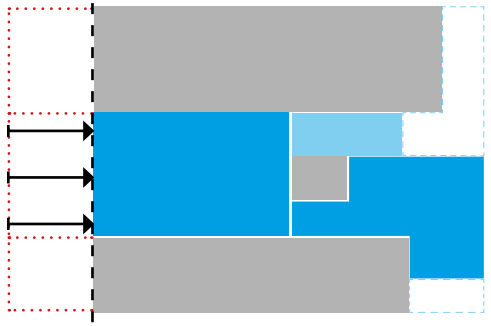
### Scalability

The building can scale up or down to suit the numbers required for each playroom. Imagine taking opposing corners of the plan and stretching or squashing it. The playrooms will then grow or contract in size, the support spaces in the wings will scale up or down in line with the toilets and staff spaces.

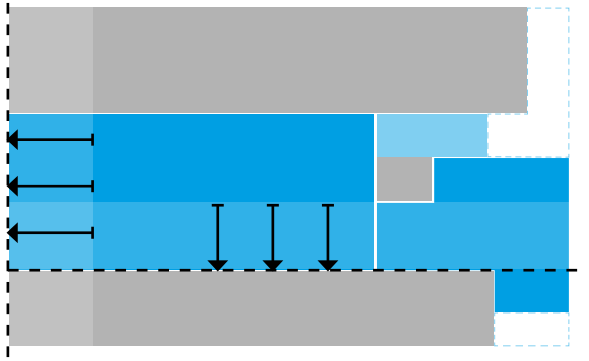
Design Option A:
Current Proposal



Design Option B: Area reduced to service fewer children



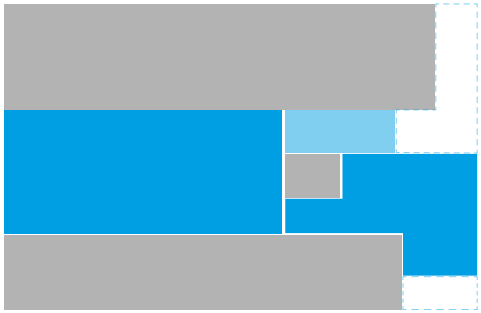
Design Option C: Area increased to service more children



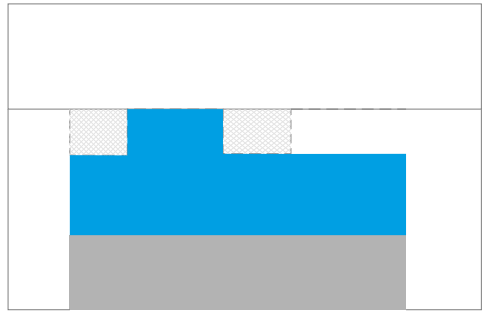
## Increasing Capacity

One method of increasing capacity is by extending the building. The building can be extended by adding onto the end facing the play area with a projecting feature space.

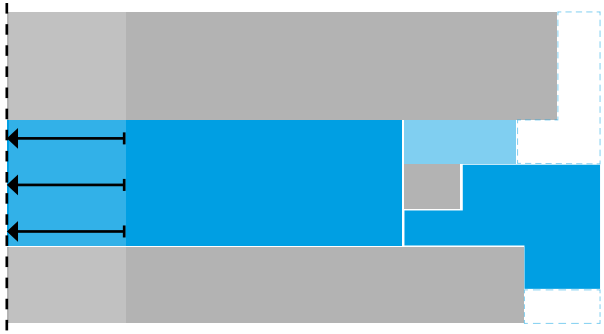
There also options to increase capacity by infilling voids on the upper level, or by bringing further roof space into use.



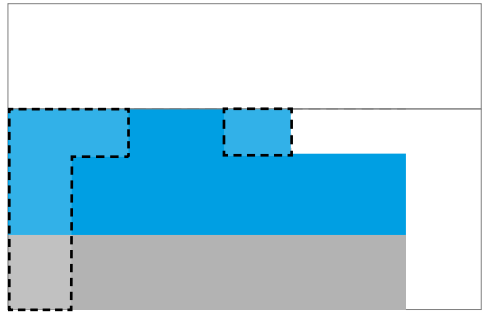
Ground Floor



Upper Floor



Ground Floor extended



Upper Floor with voids infilled

### Envelope Materiality

The design utilises a rainscreen cladding system. To provide a simplified monolithic aesthetic, one material has been proposed across the wall and roof surfaces. In this case, sinusoidal rainscreen cladding has been used.

These sheets have a rhythm and tactility that is pleasant at street level. We envisage children running their hands along the walls and driving toy cars over its surface.

These sheets can be procured in a variety of colours to suit local preference or style.

The strategy of using rainscreen cladding means that any number of materials could be used. For examples, the walls could be brick, or timber, or render or whatever works best in each location


Alternate Option 1 - Timber


Alternate Option 2 - Fibre Cement


Alternate Option 3 - Brick

## Introduction

With well-crafted design we have the ability to create environments that evoke an emotional response It is within our gift, to create buildings and spaces that make people happy. Our starting point on the Early Learning and Childcare Reference Design project was to consider the principal user of the spaces, the children, then to ask ourselves what sort of space would make them happy?

During their early years children learn through play. Observing children at play you quickly realise that they utilise all of their available environment, searching for spaces or opportunities which suit their mood at any given moment. Their world of play is not limited in the way that the adult environment is limited, and to help cater for this the play space has to be truly free-flow.

- It incorporates small spaces which are under and inside.
- It incorporates objects to climb, lift and move.
- It incorporates large open spaces to jump, run and move freely.
- It incorporates elements of challenge, bridges to cross, chutes to slide and tools to use.
- It incorporates different sensations, heat, touch, smell, light, sound and feeling.
- It is a dynamic three dimensional world.

To date nursery design in the UK has predominantly followed a single storey typology where playrooms are created as a singular volume. The minimum height of the playroom is dictated by adult uses. Elements of challenge and dynamic play in these facilities are typically provided by items of loose equipment within the volume offering a prosaic approach.

The building form, the spaces within, the moments it creates, the challenges it provides, they should all be designed from a child's perspective. Play can be extruded through the height of the building and provided on multiple levels.

The Care Inspectorate have been consulted on this approach and are in agreement that a nursery can have registerable play space on two levels. The provisions for creation of a two storey Indoor/Outdoor nursery with free flow play (beyond the standard considerations) are as follows:

- That the upper and lower play spaces operate as a singular whole.
- That children are provided with freeflow vertical play elements as the main access between levels as well as discreet assisted access when this is needed.

In the following section we will describe the experience from the child's perspective. The elements of vertical play are not definitive. These can be shaped and augmented as each provider feels is appropriate, provided that they remain objects of play.

It is extremely important that there is an equality of access for all children, as such the facility is provided with a platform lift that moves between each play area.

### Adherence to Metrics

The reference design building is sized to accommodate 82no children.

The building itself is sized to accommodate 69no children plus an additional 20% outdoor allocation [13no.] broken down as follows:

- 72no 3-5yrs
- 10no 2-3yrs

The Care Inspectorate noted a preference that for the playrooms the 2-3yr group should not be considered for the outdoor provision. However, in practice they will also be key users of the outdoor space. The outdoor space allocation is a notional allocation that does not specifically require children to be outdoors all of the time.

The size of the building is based around the Scottish Government's Expansion Programme Baseline Planning Assumptions of 5.8m2 per child and the area metrics from Space to Grow of 2.3m2 play per child aged 3-5 and 2.8m2 per child aged 2-3:

- 69no x 5.8 = 400.2m2 GIFA
- 3-5yr playroom = 59no. children x 2.3m2 = 135.7m2
- 2-3yr playroom = 10no. children x 2.8m2 = 28m2

The Anderson Bell Christie Reference Design took full advantage of the 5.8m2 metric and actually allows for the following enhanced play areas:

- 3-5yr playroom = 146.3m2
- 2-3yr playroom = 28.4m2
- Reading nook [shared play space] = 4.4m2

This has been achieved through careful consideration of how to manage the supporting accommodation and has yielded a higher amount of play space per child:

- 3-5 playroom and shared use of the reading nook = 59no. children with 2.5m2 per child
- 2-3yr playroom and shared use of the reading nook = 10no. children with 3.1m2 per child.

It is worth noting that this additional play space would actually allow for a higher registrable capacity within the reference design. The building is provided with 8no unisex WCs, inclusive of the nappy change facility, for indoor play which in accordance with space to grow "or part thereof" could notionally provide for up to 84 No. Children.

In this scenario the building could be registered as follows:

- 3-5 playroom inclusive of the reading nook = 65no. children with 2.3m2 per child
- 2-3yr playroom = 10no. children x 2.8m2 = 28m2

In addition to that the 20% outdoor allocation would allow for registration of another 14no. children [This is restricted from the full 20%. due to only one WC being available for outdoor use]

### Total potential registerable capacity: 89No Children

In addition to the above, the Play Net areas provide a further 13.2m2 of play space within the 3-5 playroom. This area has not yet confirmed to be registerable however the Care Inspectorate are keen to see the model built to allow them to assess the possibility of inclusion within registerable area, having the potential of adding another 5no. children to the registerable capacity.

### Accessibility

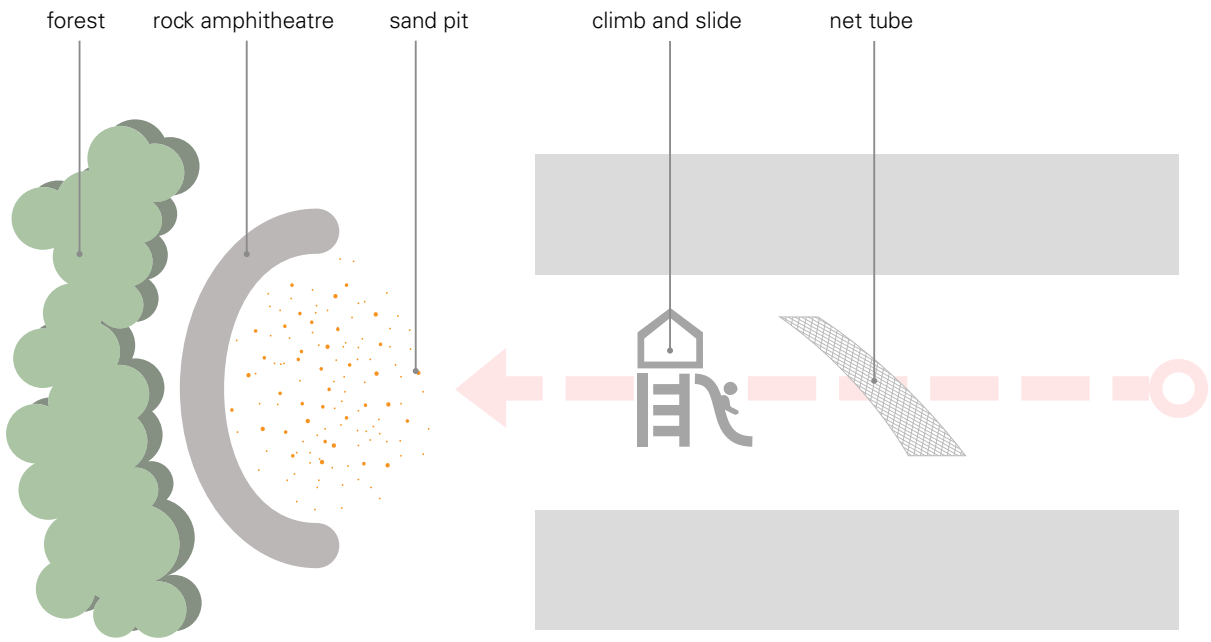
The reference design has been developed to ensure the building is as accessible as possible to users with a variety of abilities. The proposals have been reviewed with accessibility officers at East Ayrshire Council.

Visibility - The central, open plan play area encourages clear lines of sight across the floor plate and beyond to the external areas, assisting in way-finding and easing orientation. Additionally, high levels of glazing and strategically placed voids can ensure the space is bright throughout the day.

Sound - lots of children in one space can undoubtedly result in heightened noise levels, however to mitigate this an acoustician has specified material finishes and construction details. This will control the noise to a level appropriate to an educational setting.

Horizontal circulation - Transition between internal spaces, as well as between internal and external ground level is as seamless as possible.

Vertical circulation - alongside the traditional stair core with dual height balustrades, the building can be negotiated vertically in a number of different ways. The 'Climb and Slide' uses familiar, traditional 'play' forms integrated into a child appropriate stair. This is provided alongside a chute to create functional pieces of child appropriate circulation. A platform lift is directly accessed from the playroom to ensure the ascending and descending journeys of children of all abilities start and end at the same points. Accordingly, it will be entered/exited close to the proposed entry/exit of the Climb and Slide.




Physical experiences along the route of the nursery

### Visual Connections - First Impressions

As a child enters the playroom they should feel ownership of the space. They should be excited by what is in front, around and above them. The playroom is set out as a linear space with a glass wall at the end, through which the focal point of the garden can be seen. Along the length of the playroom there are elements of vertical play, which invite closer inspection and draw children deeper into the space. Above the children are voids in the floor through which they can see activity on the upper level and through rooflights to the sky. These architectural decisions foster a curiosity and a thirst for exploration.

This sequence of events provides full legibility of the building. A child on entering the building will be able to understand their full environment, they will instinctively know how to get to where they want to go. They will understand that this is a space for children in a building created for them.

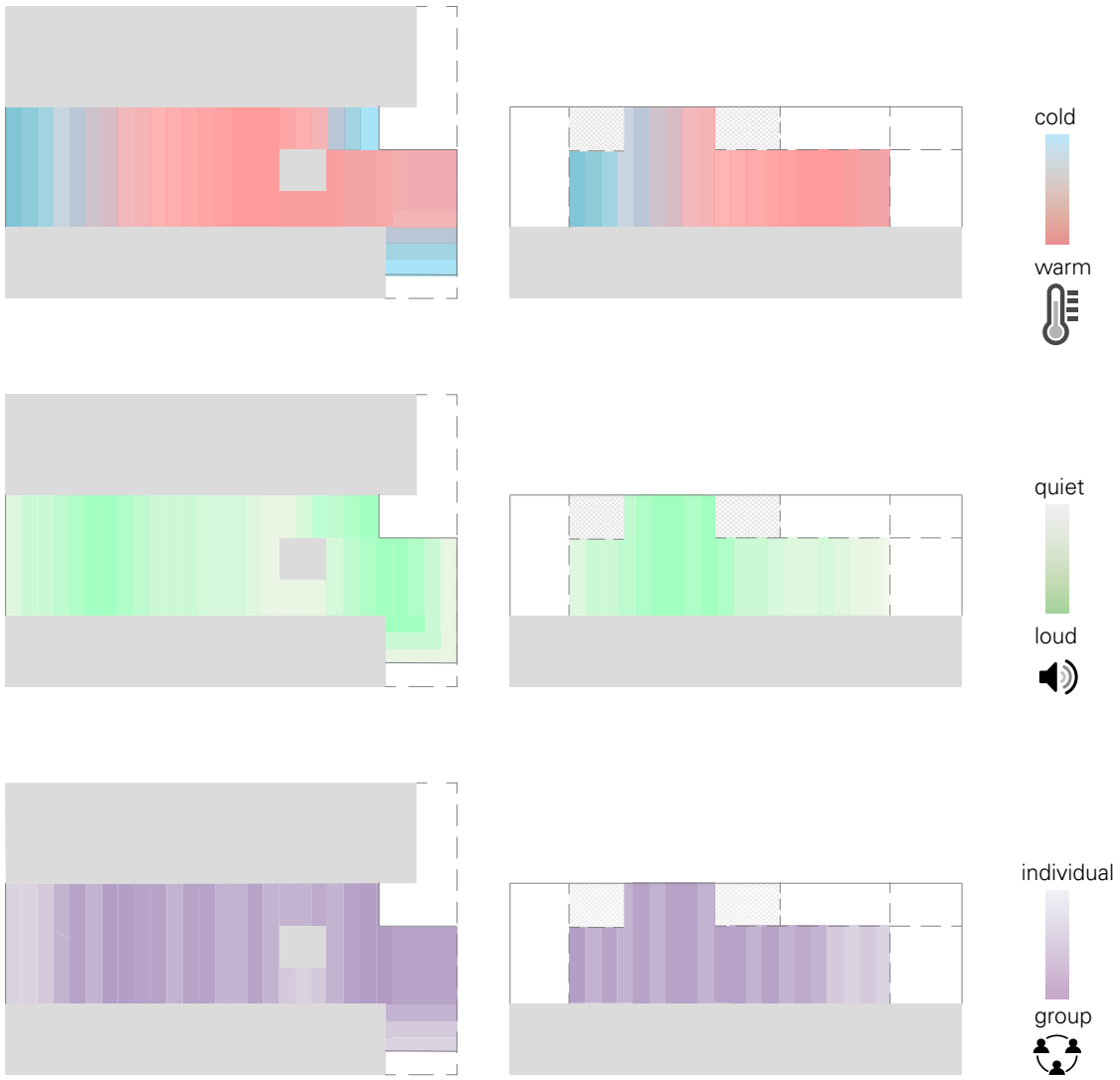
The playroom bleeds out into the garden under a canopy, blurring the inside/outside boundary sparking imagination and offering opportunities for play and fun. Every new layer of activity offers new exciting way to engage in horizontal or vertical play in a truly free-flow environment.

### Zoning Play

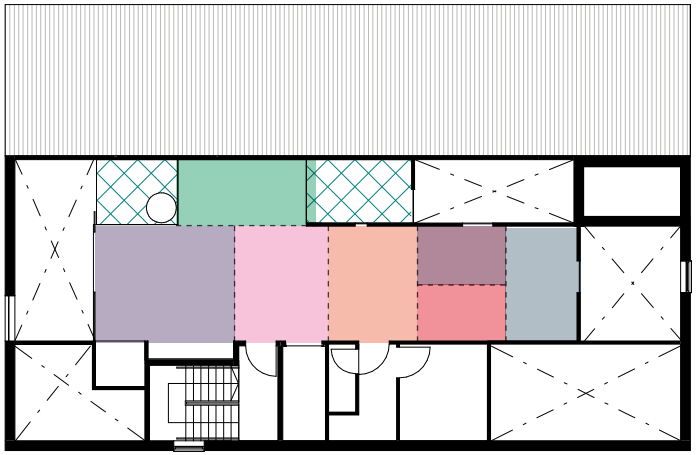
Playrooms are open plan spaces notionally subdivided into thematic zones using play equipment. For example, art, messy play, construction, literacy, role play and so on. The sequence of these zones in previous nurseries are not typically considered in relation to environmental conditions of each space. The Reference Design sequences the zones in relation to temperature and noise, so that children have optimal play environments.

Space to Grow requires that indoor/outdoor nurseries seeking to utilising up to 20% outdoor provision provide free flow play. To achieve free flow, playrooms must open directly onto the outdoor space. The Care Inspectorate define direct access as a single door from the playroom. The door onto the outdoor space should be open at all times except in unfavourable weather conditions at which point the door should be easily openable by a child. As a result of this requirement, play zones nearest the garden access will be cooler than those positioned further away.

Mitigating measures have been developed with the M&E Engineer, such as underfloor heating in the ground floor play room, which is radiant and less affected by air temperatures than convection heating methods. This radiant heating approach allows a stable temperature at child height. The heat within the building is then also retained when doors are open. In extreme conditions a sliding door with push to exit pads either side at child height can be utilised to control heat loss. The ground floor has been zoned to accommodate themes that are more active and so need lower temperatures. These zones will also therefore be louder. As the building is two storeys with open voids, heat will rise to the upper level through natural buoyancy. As such spaces on the upper level will be warmer. The further you move to the back of this space the zones become warmer and quieter. The overall acoustic performance of the building has been developed in detail with an acoustician.



Ground Floor



Upper Floor

## Fixtures, Fittings and Equipment

The loose equipment in the building is to be provided from a variety of sources to meet the thematic zones and functional requirements of each space. Loose equipment strategies have been developed with input from Graven, Community Playthings and East Ayrshire Council.

The indoor play spaces are zoned in the Developmentally Appropriate Play area as follows: Creative/Art, Construction, Role Play, Mark Marking and Wet Play. The indoor play spaces are zoned in the downstairs Main Playroom area as follows: Sand and Water Play, Vertical Play, Creative/Art, Dining.

The indoor play spaces are zoned in the upstairs Main Playroom area as follows: Role Play, Literacy, Large Construction, Small World, Maths, Computers, Books, Cosy. There is also a dedicated area for group activities on the upper floor between the floor voids.

The thematic grouping of these spaces on the upper and lower floor areas tie's back to the zoning of play and helps children associate activities with environments whilst leaving them free to flow wherever they want.

- Sand and Water play
- Vertical Play
- Creative Art / Dining
- Reading
- Creative Art
- Construction
- Role Play
- Mark Making
- Wet Play
- Group Area
- Maths
- Literacy
- Computers
- Cosy

### 3D play elements - Climb and Slide

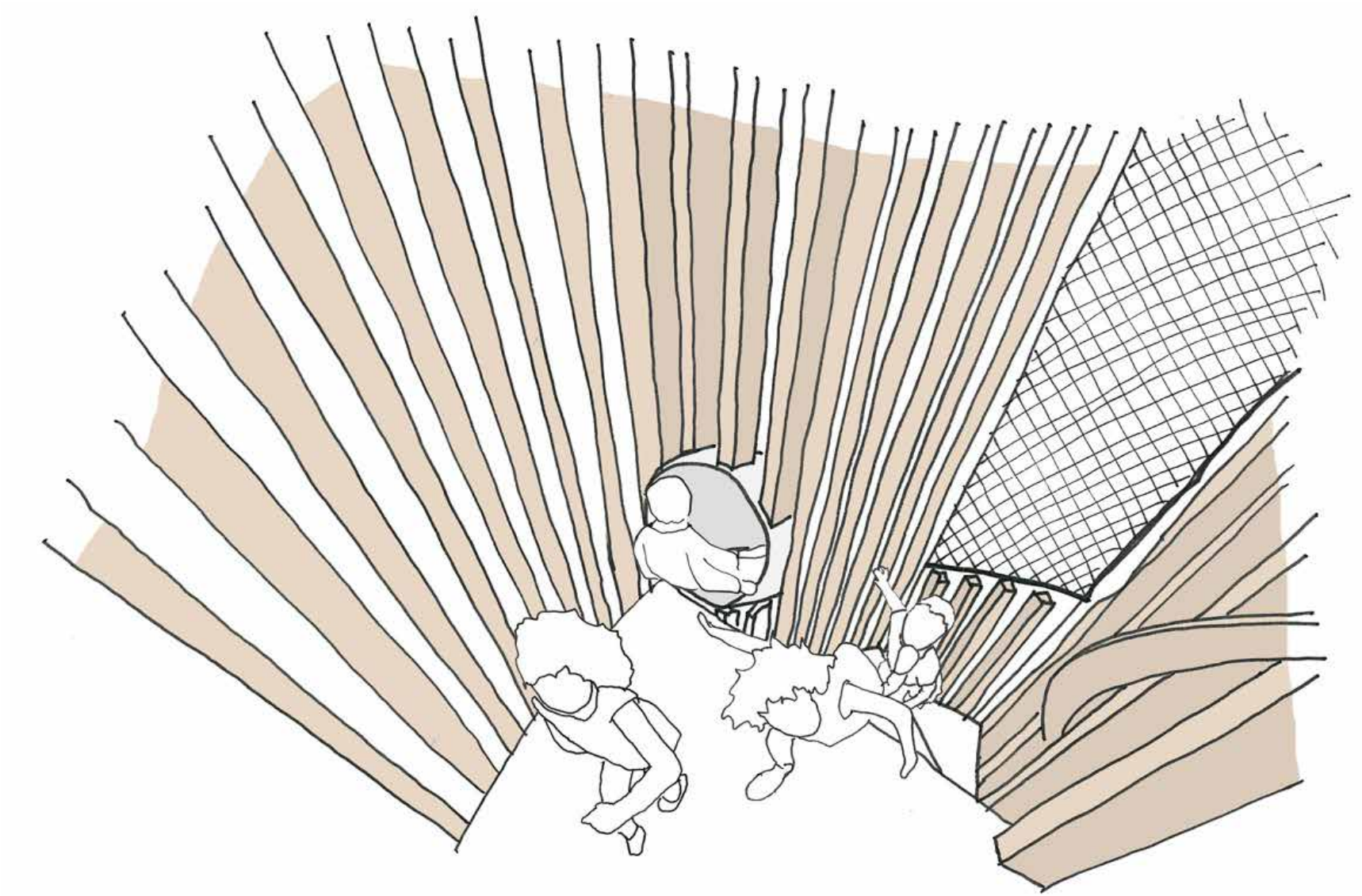
Vertical movement from the playroom is primarily facilitated by a combined climbing feature and slide. This acts as a stair for children that is fully visible from all parts of the playroom. Children are able to freely move to the upper level, each rise is a soft surface enclosed by oak slats that rise to roof level. This gives the overall appearance of a treehouse, or a tower or a crow's nest on a tall ship.

Some of this vertical play element will be manipulated to facilitate imaginative play. One may act as a shelf, which can become a shop or a cot for a toy. The underside may be missing from another one higher up, so that it may become a pretend TV set when a child stands up with their head inside it, or the stage for a puppet show.

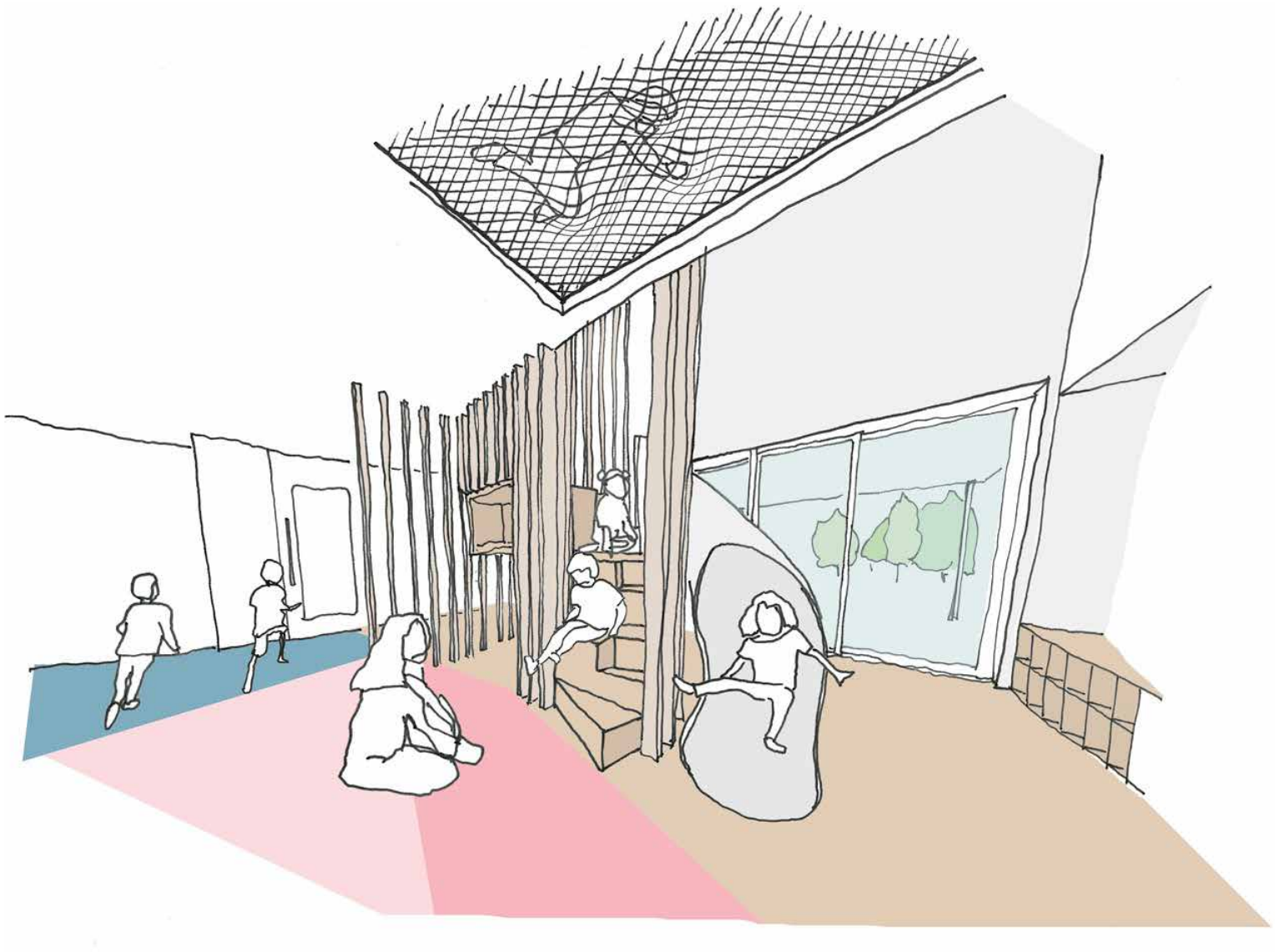
The underside of the feature play element is left open so that children can use the spaces underneath for imaginative play. These are small spaces for children to clamber into, however are easy for staff to access without having to get in themselves.

A slide is provided, this starts from a platform part of the way up the feature so that the overall drop equates to that found in most playgrounds. Its aim is to encourage physical activity as children race up and down using the slide, it's also a perfect mechanism to allow free flow of children from the upper level to outdoors.

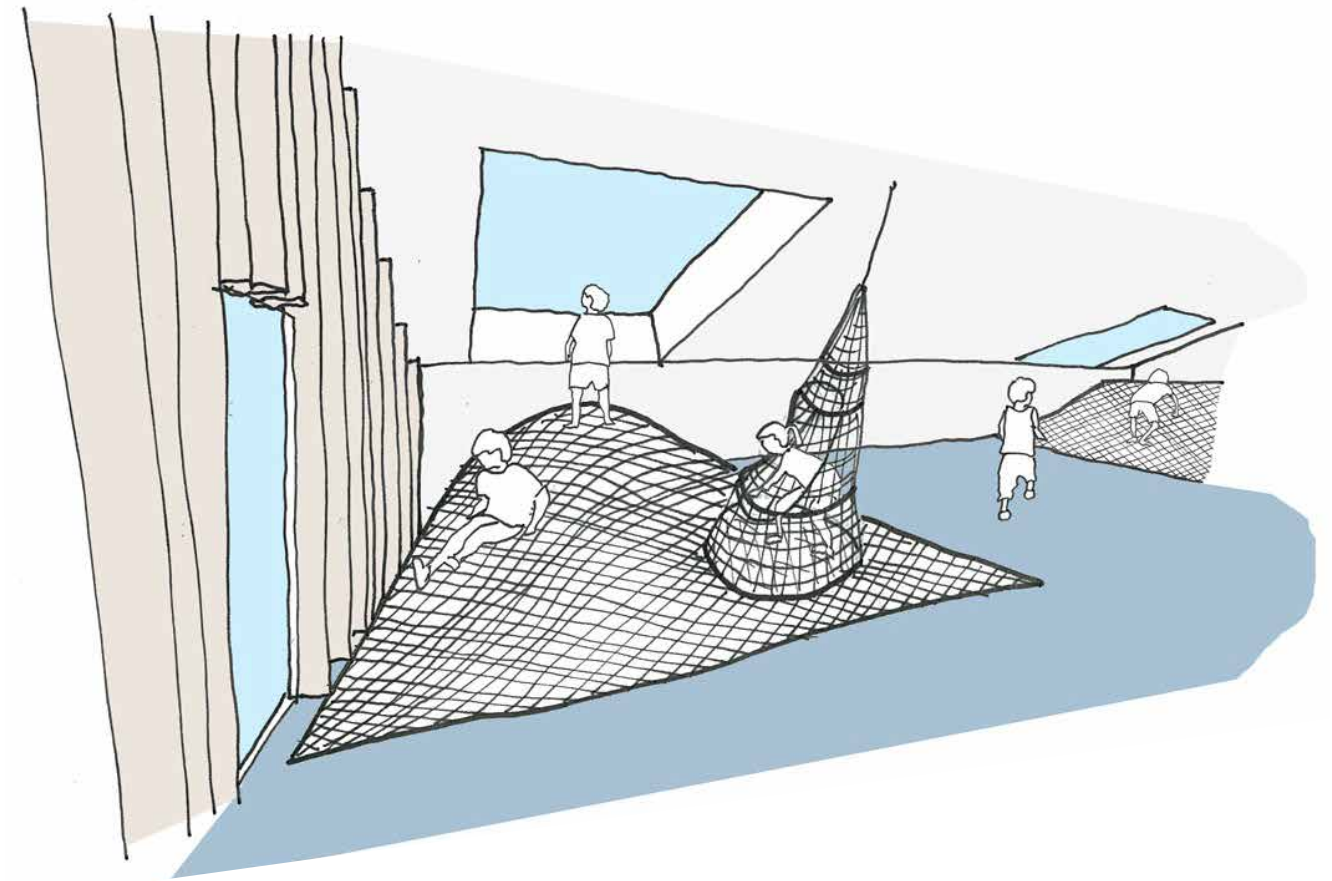
Play and Climbing



Play Slide entry



Vertical climbing experience with the Play Slide



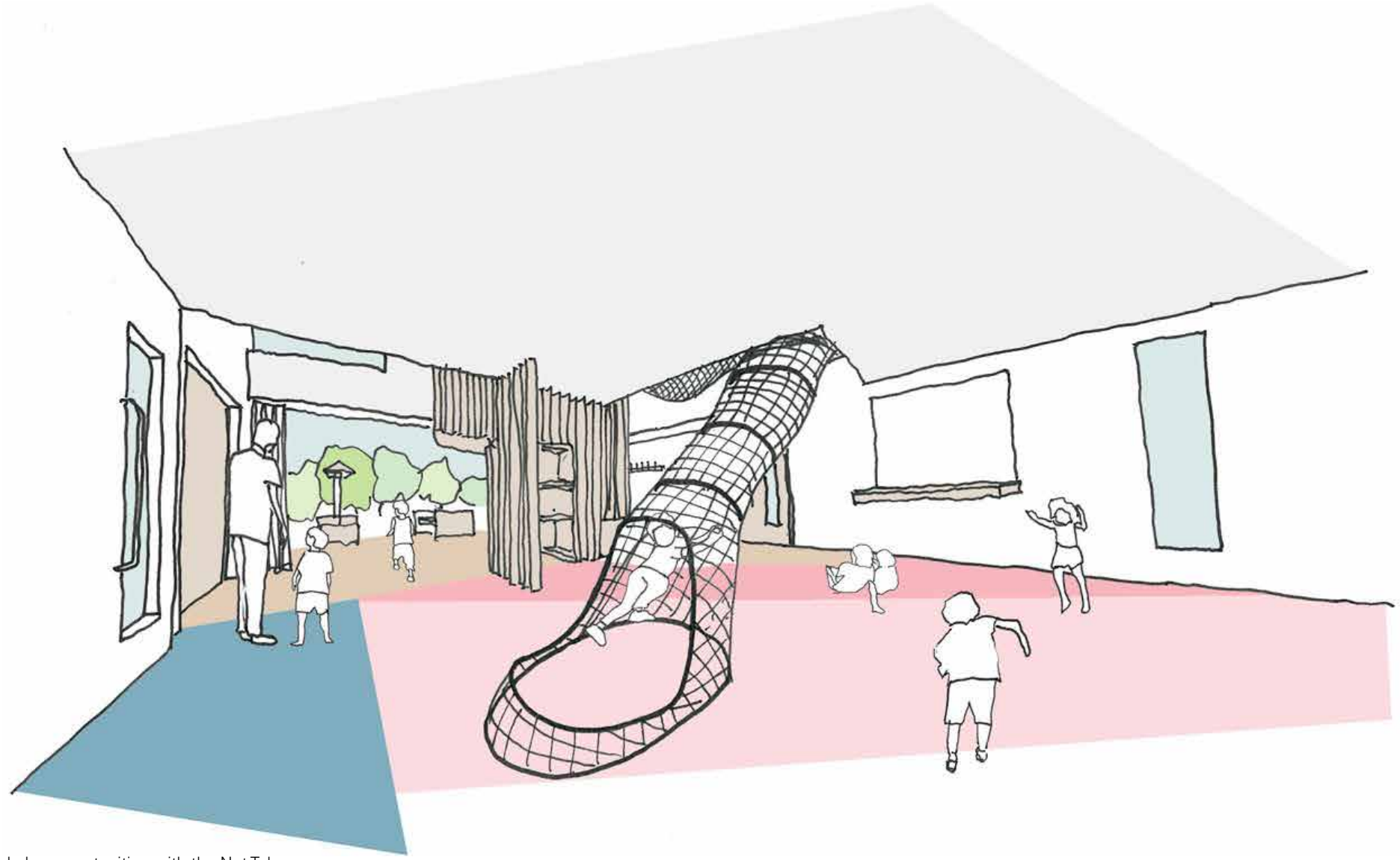
Views to Sky and down to Lower Level

### 3D play elements - Net and Tube

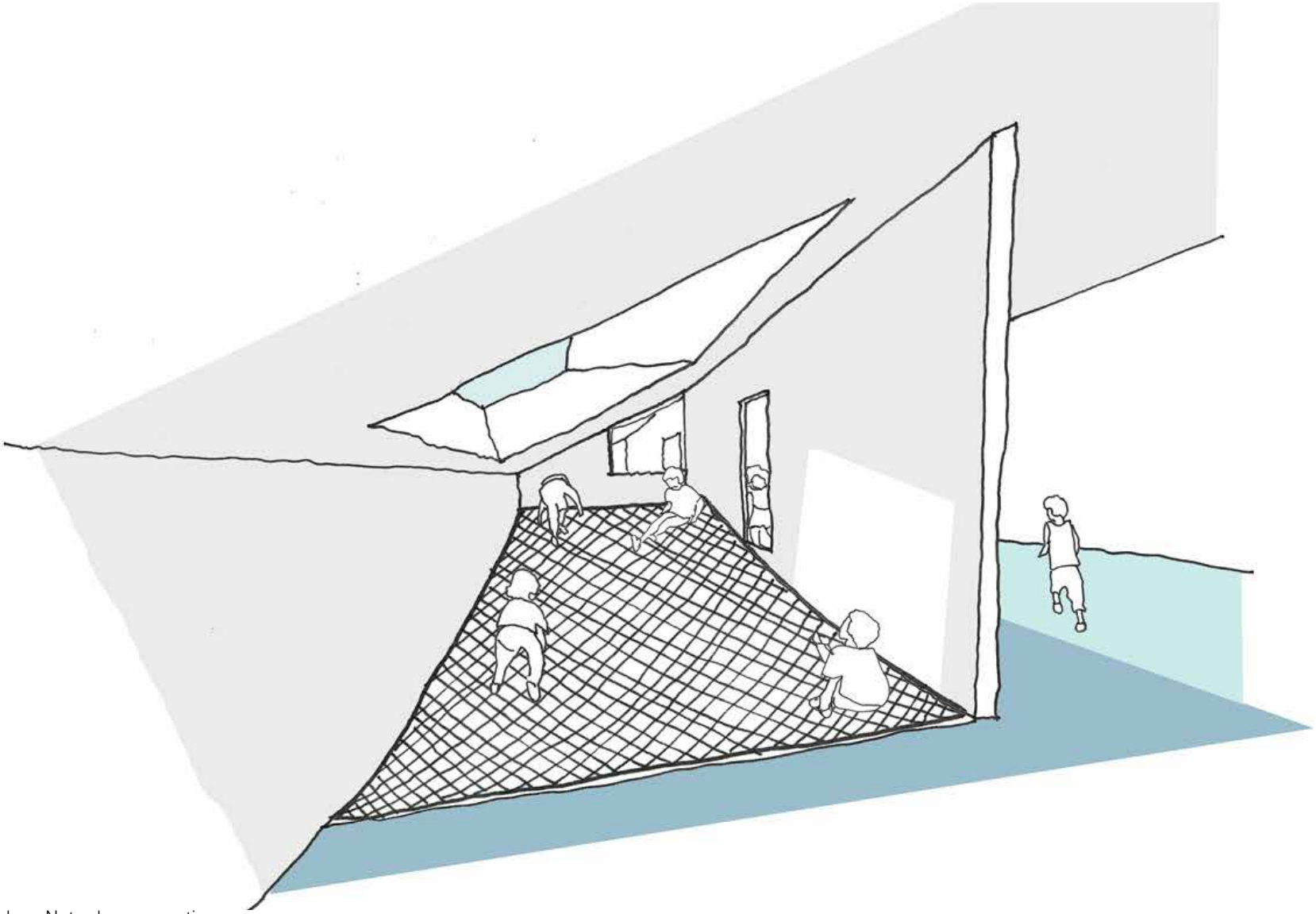
A net is provided in the void spaces of the upper floor. The net can be climbed on from the upper level and becomes an extension of the useable floor area, but is not currently counted as registerable play space. The net can take the weight of adults and children without deforming greatly. It is formed using a high tenacity polypropylene fire retardant mesh. The mesh spacing is set at minimum 50mm so that it is easily walked upon and is supportive when used as a hammock. A fine subnet prevents objects passing through. The parameters of the net have been developed in conjunction with the Fire and Structural Engineers.

Parts of the net may be connected to the ceiling or run up the wall. In doing so the net takes on a form of its own and acts like topography, mimicking the rises created in the garden area. This also allows children to get up close to the roof lights, as such they can put their head up and get a view of the world, or they can lie on their back on the netting and have a panoramic view of the sky to watch the clouds go by. From one of the nets a robust netting tube goes down to meet the ground offering another opportunity for free flow access between spaces. This is set at an angle where children could in effect safely slide down it, making it impossible to fall. The tube and its openings are of a size where staff can reach in from above or below to access all parts of it.

Most children will be used to this type of installation from soft plays however, the purpose of the netting here is to provide learning opportunities. This may be from the challenge around the physical nature of the installation, it may be from watching the world or alternatively, it may just be a nice place to have a nap. One net is partly screened by a wall to make it more intimate, a 'secret' space to watch the people below, while the other is in close proximity to the climb and slide feature. Between each is an area for groups to gather, so the nets may form a natural extension to this function.



Vertical play opportunities with the Net Tube



Play/relaxation nook on Nets above reception

### Visual Connections - Watching the World

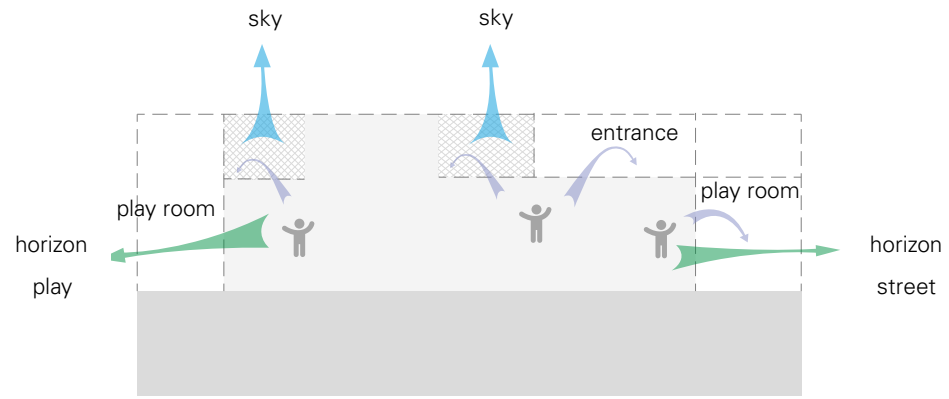
This is a building designed from the inside out, from the child's perspective. As a result, windows and skylights are positioned where children will benefit most from them. They allow children to see activity at different levels.

Larger apertures give views out to horizons at the front and rear at either end of the playroom. Greater emphasis is placed on the garden to reinforce the feeling of ownership of spaces within the site boundaries and encourage it's use as part of the complete playscape.

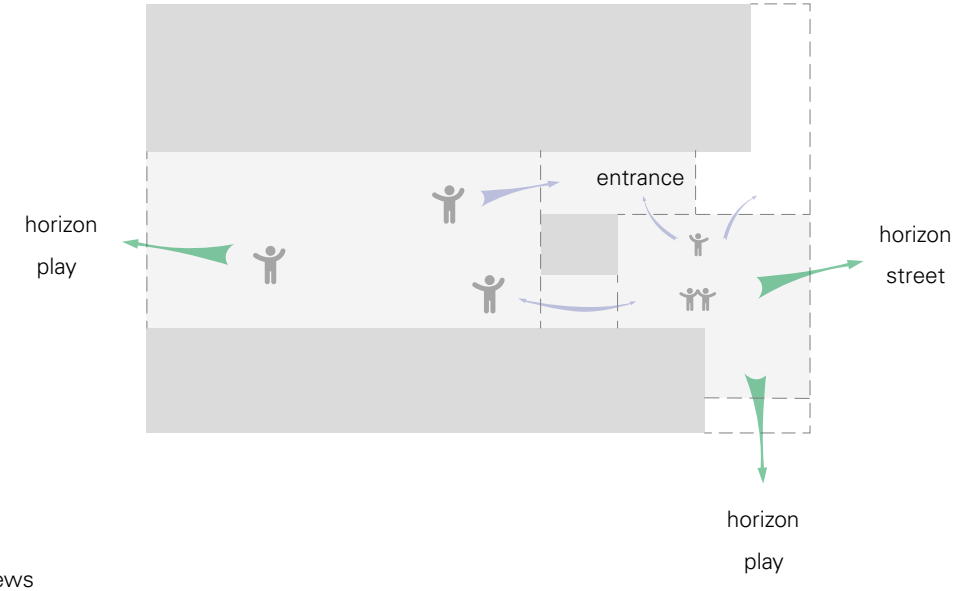
Large skylights are positioned at a low level within the eaves of the roof so that children can have a direct visual connection to the sky.

Internal views are also facilitated so that children can see all of the comings and goings. This allows them to get a greater understanding of the rhythms of the day and help to settle into the nursery. These connections also help children to understand the layout of the building and so their spatial awareness.

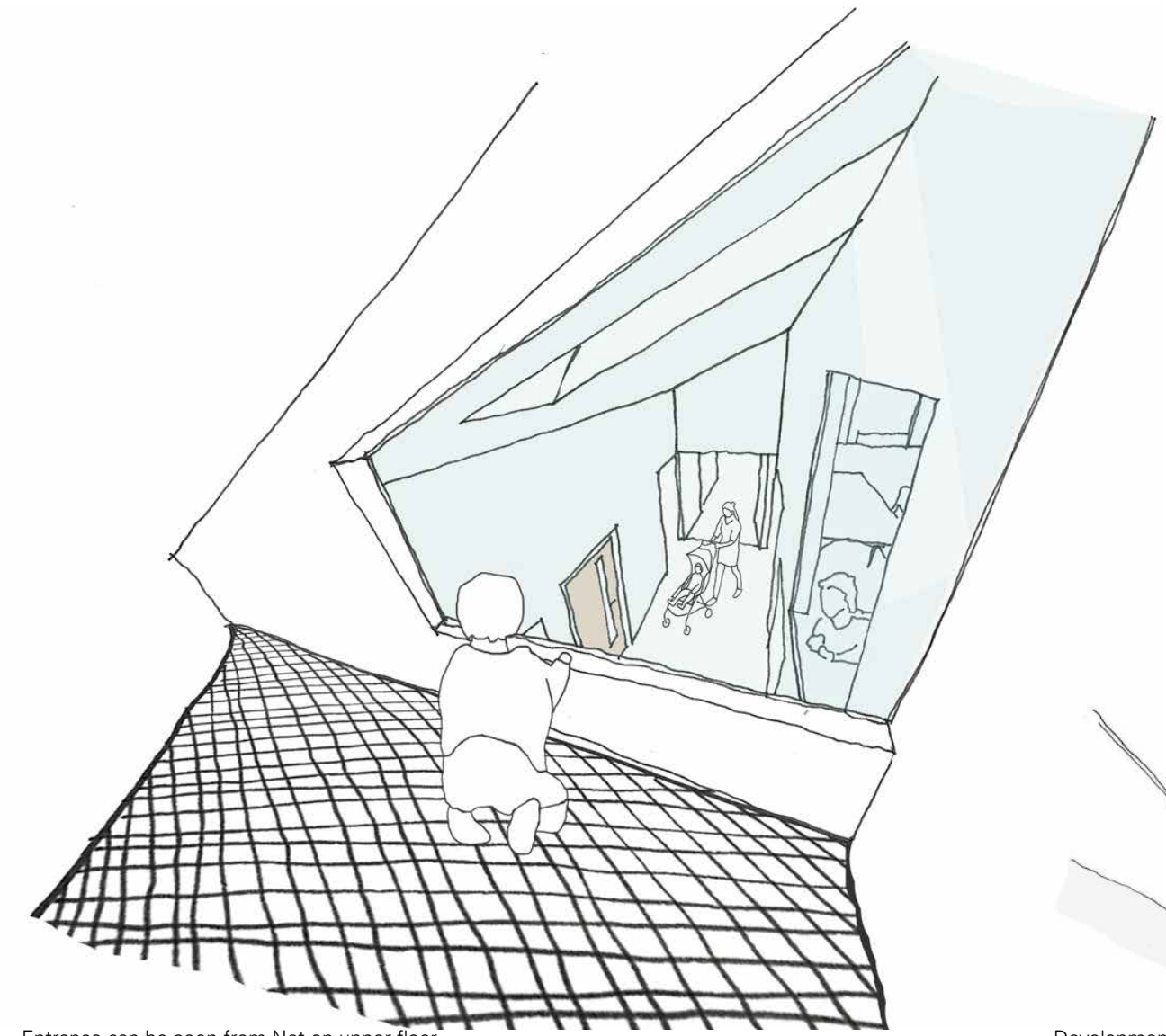
The steel frame construction allows us to position apertures where required while coordinating technical parameters. Work has been undertaken with mechanical and electrical teams to ensure adequate levels of daylighting across the building.



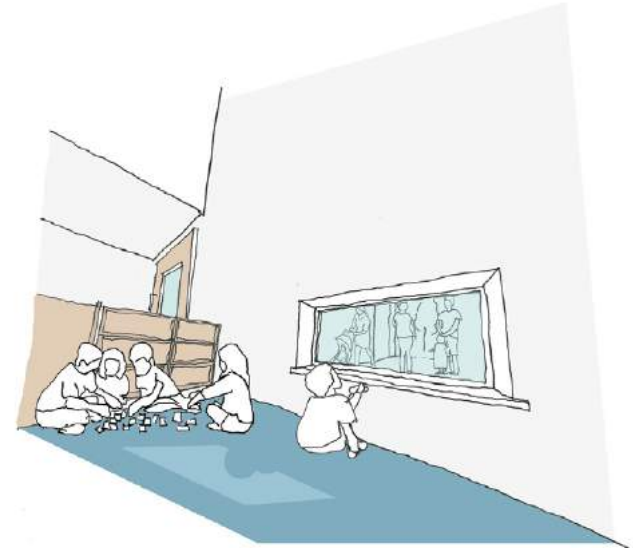

Upper Floor views



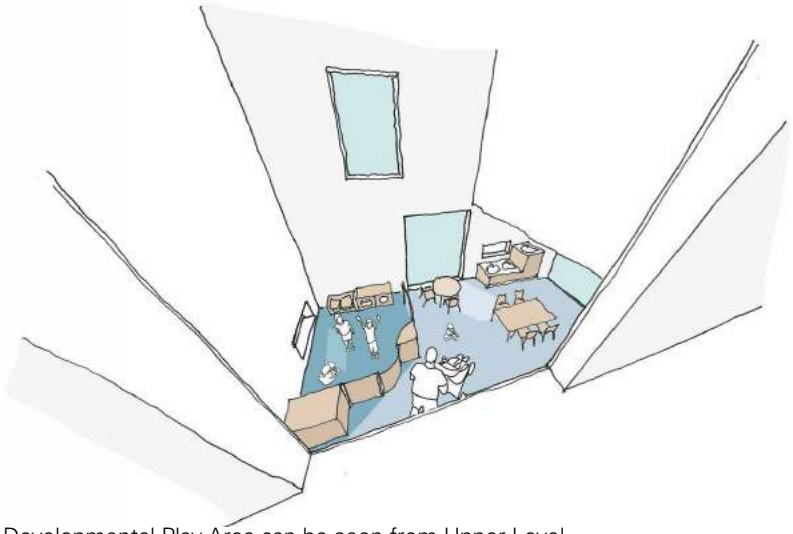

Ground Floor views



Entrance can be seen from Net on upper floor



Entrance can be seen from Play Area



Developmental Play Area can be seen from Upper Level

## Developmentally Appropriate Play

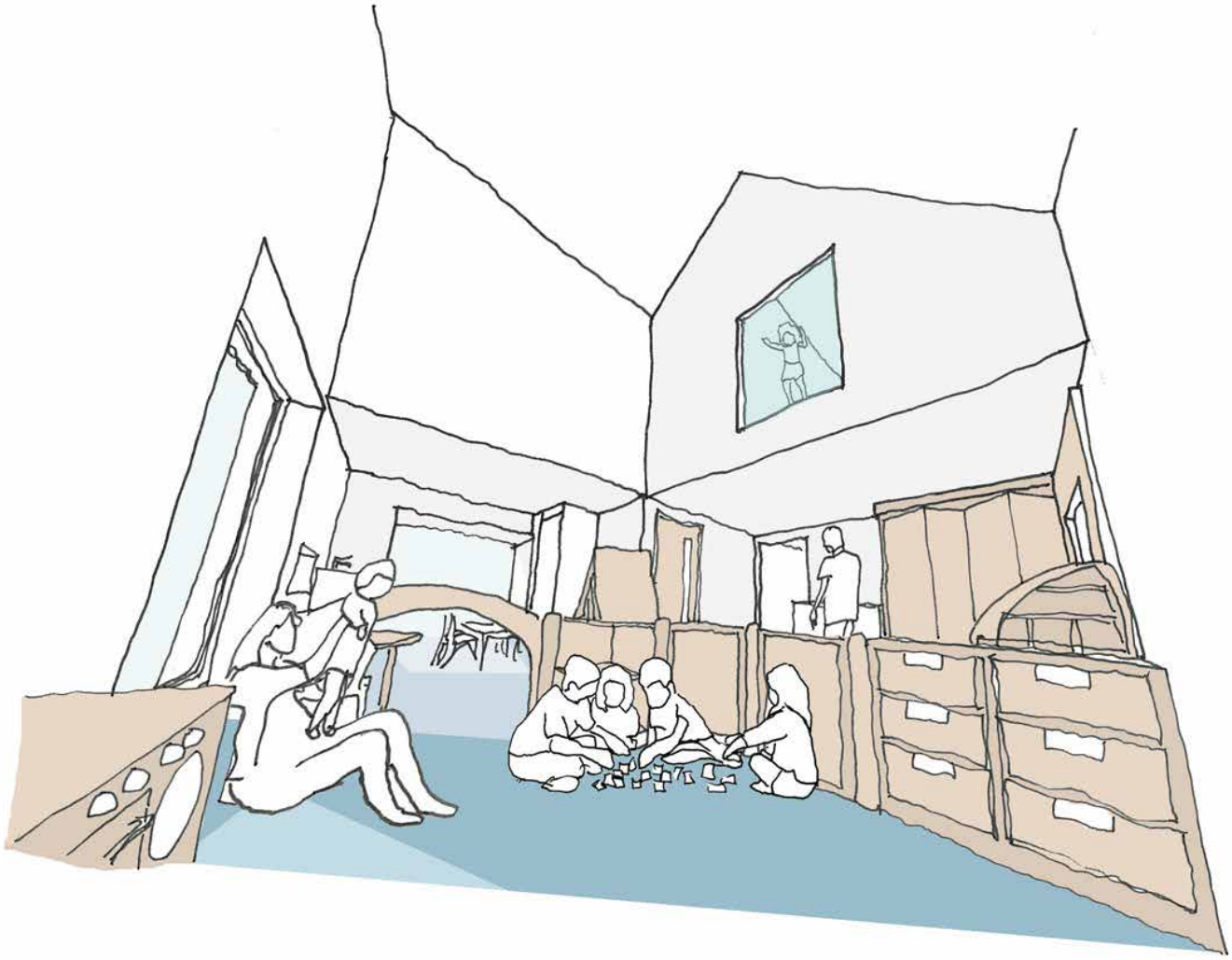
This space is, in most nurseries, designated as a room for children of 2 years old. The space is designed to manage the transition from home to the nursery environment.

In practice the space may not only be used by 2 year olds, it may also be used by older children who have not yet developed sufficient confidence to allow them to transition to the main playroom. As such we have referred to this space as Developmentally Appropriate Play, rather than the traditional terminology of, "2s room".

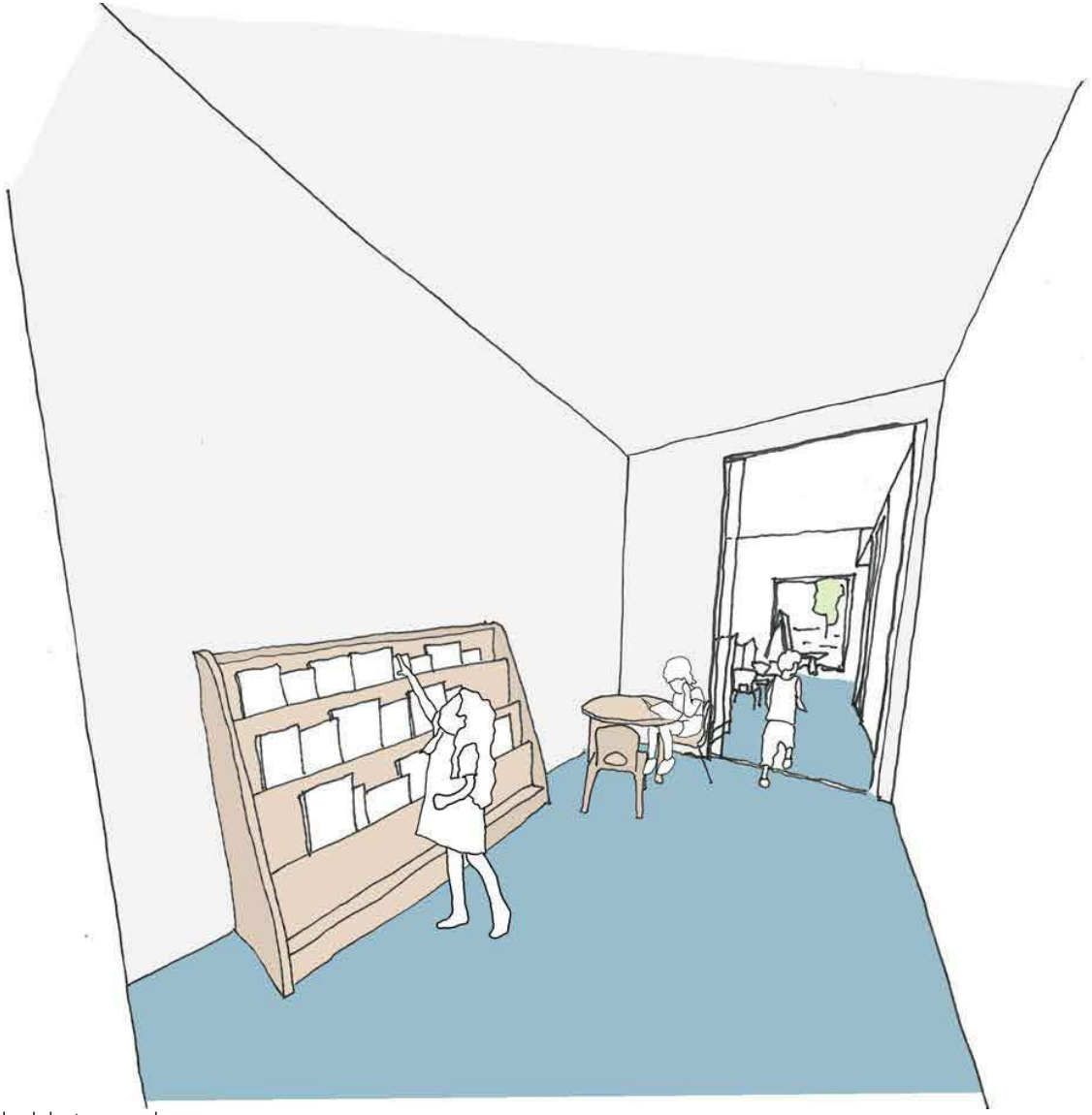
This space is a mirror of the operations and functions of the main playroom. The playroom is zoned in a similar manner as the main playroom, except the more challenging play equipment is not provided. The volumes provided in this space reflect the volumes in the main playrooms so that there is a consistency in the feel of the building and provision of natural light.

Crucially, the playroom is physically and acoustically separated from the rest of the building providing an intimate space where children can feel comfortable and challenged but not overwhelmed. There are visual connections through to both levels of the main playroom which are intended as cues to suggest that there is a wider world to explore so that when children are ready they can express an interest in doing so.

The playroom, like the main playspace, has direct access free flow access to the outdoor space. Again there is a dedicated play garden that is a mirror of the operations and functions of the main garden. However, there are no barriers proposed between the outdoor spaces, if a child feels drawn to play in the other areas they are able to do so.



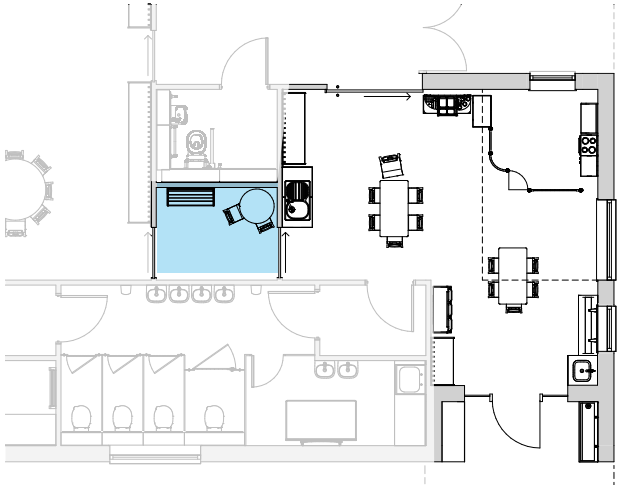
Developmental Play Area offers views to Play Area on Upper Floor



Reading Nook between play spaces

## Reading Nook

There is a shared space between the Main Playroom and the Developmentally Appropriate Playroom, named the reading nook. This is intended to provide a private quiet space, useable from both playrooms. It is a space that individual children can retreat to, or it can be used as a managed way to bring a selected group of each cohort together.



Reading Nook

## Dining

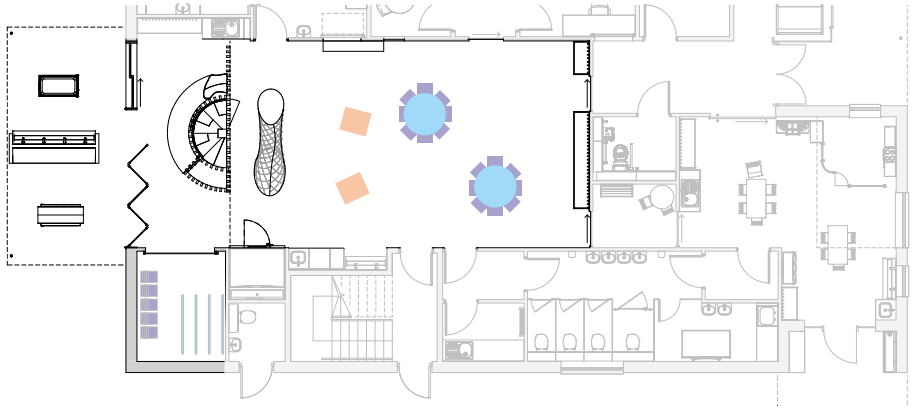
The AM / PM service model requires careful consideration of the sequence of events around dining and the associated spatial implications. Food will be prepared off site. It will be delivered to the facility each day from a central kitchen in portable appliances that keep the food at temperature. As a result, the kitchen in the nursery is predominantly for reheat purposes and so can be smaller than a catering kitchen.

The service model requires all children to be fed lunch. All children are to be fed in a single sitting. Tables and chairs must be provided to accommodate all children indoors at one time. Dining is to happen on the ground floor level. It may also be facilitated outdoors, weather permitting. The 3-5yr playroom must accommodate 72 children, in groups of 7, each with a staff member.

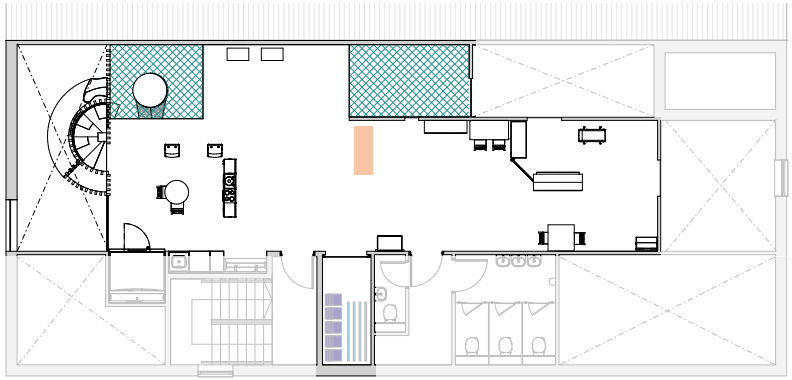
One sitting, two sittings, or rolling lunch can work with the Refernce Design. a single sitting has been illustrated as this is the most space hungry solution. The single sitting has been illustrated on both levels of the building to provide a variety of opportunities and experiences for children. They can chose what suits them best. Stores are provided on both levelsto accommodate tables and chairs. These are brought out for lunchtime to ensure sufficient play space during the course of the day. It is undersood that the delivery of dining will vary in each level dependant on:

- quality of experience
- funding models
- staff supervision

## Play Mode

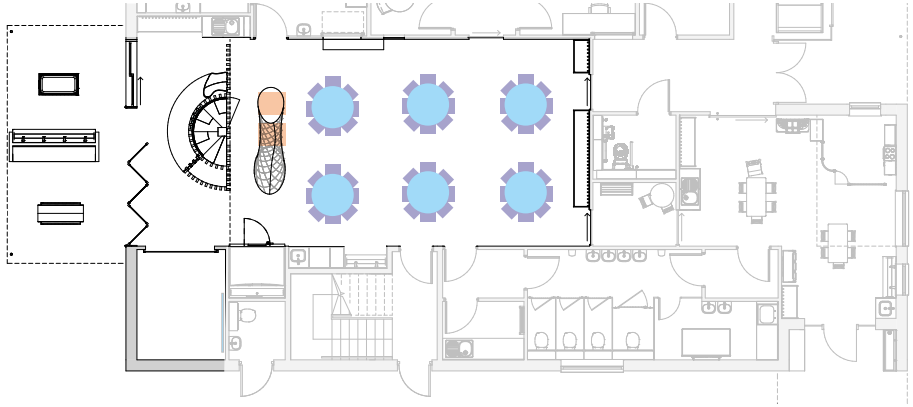


Lower Level

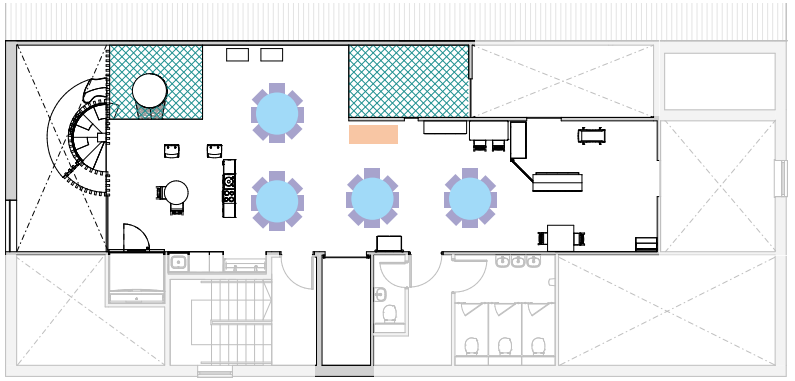


Upper Level

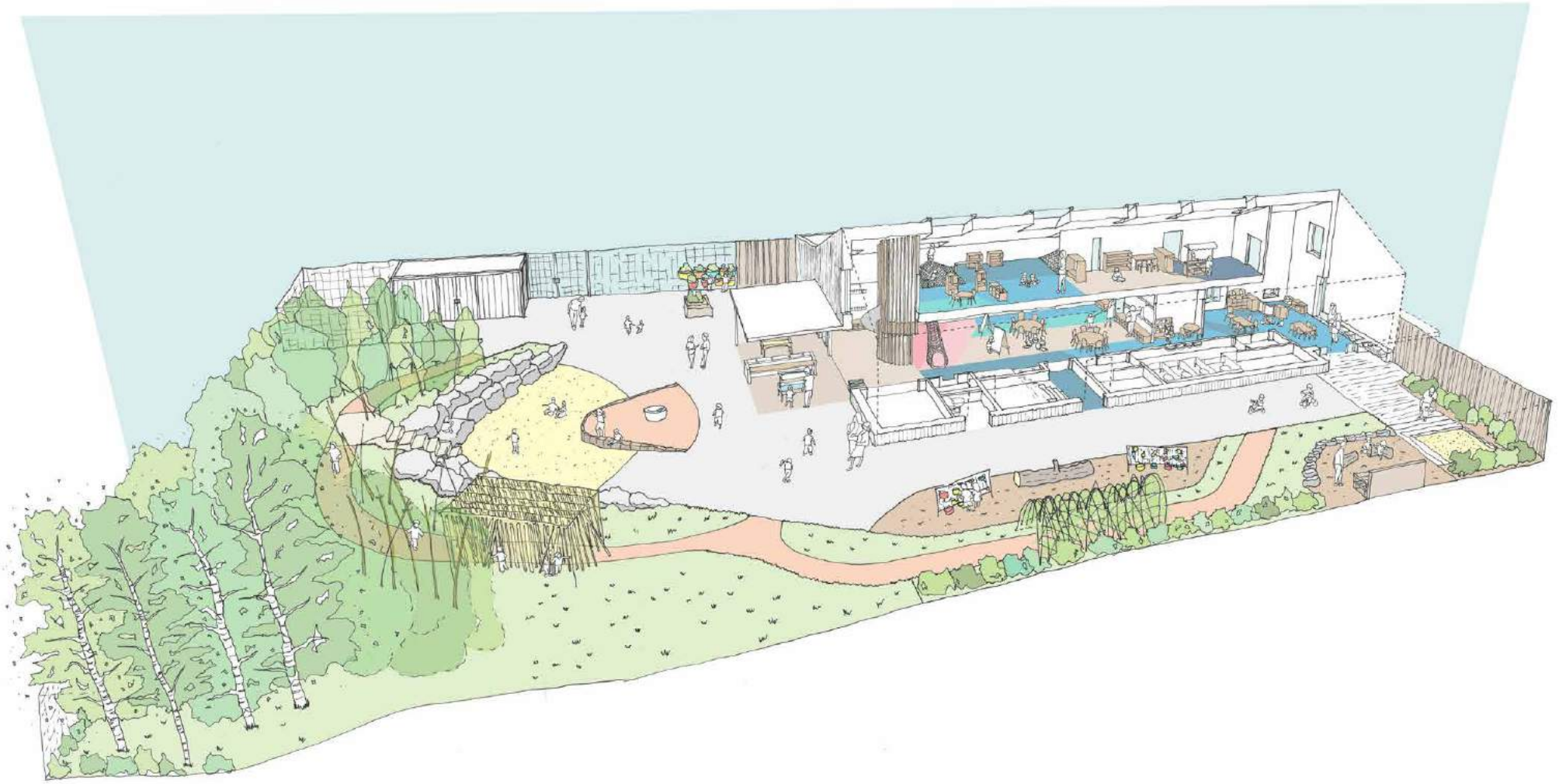
## Dining Mode



Lower Level (single sitting)



Upper Level (single sitting)



Freeflow between indoors and outdoors

## Introduction

The garden spaces have been designed with the same child first consideration as applied to the building spaces. The garden provides the same variety of learning outcomes as the inside of the building, however in a notably different manner. This provides contrast, interest and a dynamic learning environment.

The Care Inspectorate have reviewed the garden design in context of Space to Grow. This assessment confirms that the experience and outcomes from this environment would allow a nursery to achieve 20% of the registered capacity outdoors.

The outside space is designed to be open and unconstrained. Children are free to run around, jump, climb and explore throughout the garden. Interest and challenge is added through natural physical elements provided over generous areas. Woodland, sand, mud, grass, rock are all deployed in large scale.

Play outdoors is created as a 3 dimensional experience, reflecting the design philosophy of the indoors. Hills and slopes are formed using landforms created from earth and rock on site, material that is ordinarily sent away for recycling. These are carefully managed so that the highest point is no greater than 1.2m and the transition is carefully managed onto a soft surface.

The garden provides an element of considered risk, here it is deemed that the benefits of the play and learning experience greatly outweighs any other factor. Yet the naturalistic approach to the space presents the challenge in a familiar form to children. There is nothing created in the space that children would not enjoy playing safely with in a woodland or on a beach.

The boundary of the space is framed with foliage but there are opportunities to see out of the boundary fence and watch the world. The use of a variety of scale of planting, from shrubs to small birch trees and heavy standard trees gives a rich environment that provides opportunity for learning, not just about the plants but the animals and insects that will be attracted to them.

Plenty of space is also afforded to wheeled vehicles. Tarmac is a very practical all weather surface that children can use for riding bikes, trikes, karts and pushing buggies, trolleys and so on. It is also good to draw on in chalk. A balance must be struck between the amount of hard surface for this use in comparison to soft surfaces.

## Spatial Provision

An assessment was carried out to assess the spatial requirements associated with the various learning opportunities and outcomes which need to be accommodated in the outdoor environment. Workshops and detailed dialogue with providers and the Care Inspectorate allowed the desired learning outcomes and experiences to be identified.

It was acknowledged that the Reference Design may need to be adapted to suit specific sites and as such a strategy evolved based on a kit of parts; the parts themselves being the provision of areas providing different learning opportunities. This was developed under the common concept of an informal design within a wild environment. These parts could be brought together to reflect the particular nuances of a range of site conditions while still retaining the core concept.

The Reference Design then needed to establish a series of design parameters which together would inform the overall site area, needed to deliver the required learning outcomes and experiences.

Every site will have its own optimal solution, based on topography and existing natural features. Each building will require to be surrounded by an area of hardstanding to act as both a serviceable apron for maintenance purposes, as well as a clean and flexible circulation space suitable for trikes and other wheeled toys.

It is anticipated that this apron should be a minimum of 4m deep, but that it's shape should be articulated in such a way as to provide interest and create links into the wider landscape beyond. The scheme for the reference design includes approximately 230sqm of homogenous hardstanding.

Beyond this zone, the Reference Design scheme is based upon the creation of a "Jungle Wilderness" and a landform which embraces the garden. To create a meaningful mound, approximately 1m high with 1:3 side slopes and with a 2m wide route along the ridge would command an overall width of nothing less than 8.0m. Over a notional length of 30m, this would occupy approximately 240sqm.

In addition to these two core zones, the other principal facilities demanding their own designated spaces, which are considered to be fundamental to the success of any scheme, include a Walk-in Sandpit, (with a provisional allocation of 40sqm); a Growing Area (of approximately 50sqm); and a Mud Kitchen and Dirty/Water Play Area (of approximately 65sqm) - the grand total for these additional facilities being 155sqm.

It has been estimated therefore that the aggregated area needed to create a Nursery Garden which responds adequately to the brief, would extend to approximately 625sqm. In the case of the reference design, where the nursery roll is 82 children, this equates to a little over 7.6sqm per child.

Obviously, each site will need to be assessed on its own merits, but as a general rule, it is considered that this level of provision would be sufficient to more than cater for a child's physical, mental and emotional wellbeing and could therefore be used as a benchmark for similar initiatives. This was reviewed with the Care Inspectorate to ensure that the design proposals delivered the necessary learning opportunities and outcomes to achieve the 20% outdoor provision.


CLOSE BOARDED TIMBER FENCE
ACCESS / ESCAPE
GROWING AREA
STORAGE
BINS
67.50
AMPHITHEATRE
SAND PIT
68.00
STEPS
ROCKS
LOGWALL
FIRE PIT
67.00
DECK
CANOPY ABOVE
FFL 67.50
ENTRANCE
CANOPY ABOVE
NEW FOOTPATH
CANOPY ABOVE
DECK
67.30
MUD KITCHEN & WATER PLAY
66.50
JUNGLE
WILLOW TUNNEL
SAND PIT
MUD KITCHEN & WATER PLAY
66.30

## Nursery Garden

To develop the children's knowledge of plants, food and nutrition, a small allotment area is to be provided in a sunny spot, located discretely off to one side of the playground, in an area away from noisy activities.

This will comprise a sizable plot at ground level, divided into smaller beds, which will be accessed via a path of stepping stones. The area will also include a raised timber planter to cater for anybody with impaired mobility. In addition, the boundary fence partially containing the area will be designed to incorporate shelving to support pots and troughs, or alternatively, act as a frame onto which can be attached wall baskets and planting pockets for individual use. The area could be defined by a pergola, over which climbing plants could sprawl, to provide dappled shade.

It is anticipated that the children will cultivate their own herbs, fruit and vegetable crops and that this produce will be used in the preparation of meals and snacks. The varied plant types envisaged will also serve as a useful learning tool as well as stimulating the senses of sight (colour and form); touch (texture); smell (aromatic, foliage); and taste. The area could also provide a quiet refuge for the use of children, away from the hustle and bustle of the Main Playground, as well as an intimate Outdoor Classroom with the addition of informal seating.

Nursery Garden offers a variety of experiences

## Space to Explore

Children need plenty of space to move. Outside, children are more likely to be running, jumping and playing at speed so we have provided two and half times the amount of play space externally as we have internally. Regular physical exercise outdoors, as noted by The Daily Mile promotes "physical, social, emotional and mental health and wellbeing of our children". Removing all physical barriers creates a single open space, one that is dynamic, with changes of surface and changes of level. Children can choose where and how they transition between zones, and how they want to move about.

Routes are provided through the different zones as a notional guide, they can be used as a running route or bike trail. The boundaries are porous to children on foot, so children can move about and use imaginative play within the spaces and at the transitions. The diagram on this page illustrate how children may move about in the garden and the opportunities available to them.


15

### Instant Forest

There's something special about a forest, perhaps because its usually a special occasion when children venture into the countryside and experience this type of environment. Most homes and certainly most sites earmarked for nursery development are likely to be devoid of such rich vegetation and the challenge has been to replicate nature in a believable way within a limited budget.

It has been necessary to create an immediate effect, but one which will nevertheless have the potential to mature and grow over time. To achieve this, we are proposing a matrix of young Birch trees with occasional Bamboo planted at relatively close centres.

The delicate tracery of these plants and the light aerial canopy will provide the desired sense of enclosure and volume from the outset, without limiting access or the need to monitor activities within.

To reinforce the early effect, it is intended to incorporate Bamboo poles up to 3.0m long, both to support the young saplings and as free-standing structural elements, which will give scale as well as providing a sense of drama.

It is envisaged that there will be free flow of movement between the trees - the forest floor developing wildflowers in those pockets where the ground will not be trampled. The opportunities for learning and play in such an environment are considerable and will be enhanced by the introduction of other elements such as logs, tree stumps and branches which can be used variously to construct trim trails and build dens.

Over time, the area will become more of a wilderness and it is anticipated that discrete zones will evolve which could include digging pits, bug hotels and the like.

The management of this natural resource will respond appropriately as the plants mature, with pruning and the selective removal of individual specimens occurring on an as needs basis to reflect how the space is being used.

This cropping exercise itself will generate its own material, which can then be used for building purposes, or alternatively, left on the forest floor to decay and become its own unique habitat for invertebrates which themselves will attract a host of other small animals and birds.

16

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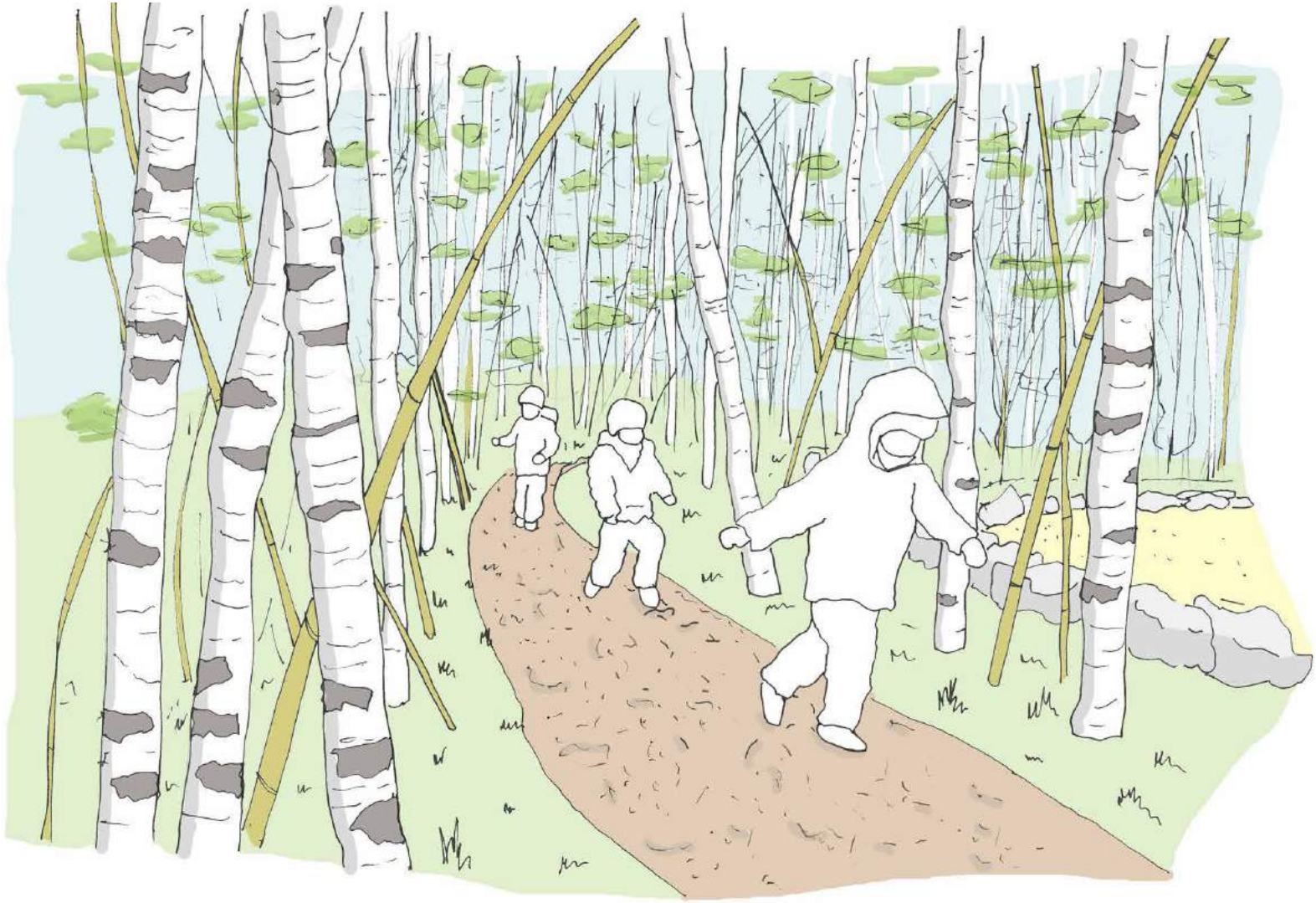
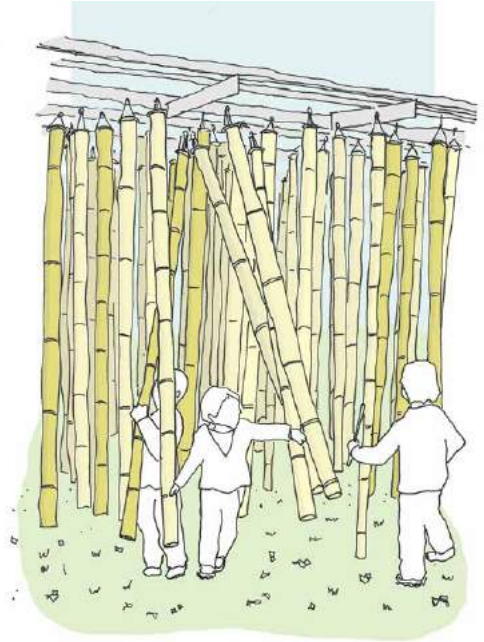


Forest experience

### Jungle Bells

Within the Bamboo/Birch forest it is envisaged that a trail will evolve which could potentially include rustic elements such as logs, to be used as stepping stones; tree trunks as balance beams and potentially more sophisticated elements such as rope bridges.

However, an integral element of the jungle experience will be the provision of a dense thicket of Bamboo poles, suspended from a frame, which would clatter as children push their way through. The varying lengths and diameters of each of these hollow tubes will also resemble a set of Tubular Bells. The availability of sticks and other improvised beaters will add to the piece's attraction.



Jungle Bells

Growing Area

### Rock Amphitheatre

An added feature associated with the main sand pit is the rock containing the area at the base of the encircling mound. This will be tiered and provide a natural amphitheatre which can be used as informal seating as well as a climbing zone. Children will be able to sit on these to watch plays, listen to stories or even eat their lunch. It adds a degree of physical challenge and the opportunity to climb and jump into a soft sand surface below. The rocks will have a smooth surface and fit together neatly so joints are minimal.

### Fire Pit

Naked flames are increasingly anathema to children, who don't get the opportunity to experience the heat, light and drama of a fire. The closest they get being the family barbeque or the annual organised bonfire on the 5th of November. It is nevertheless an element which children need to learn to respect and enjoy in a safe environment.

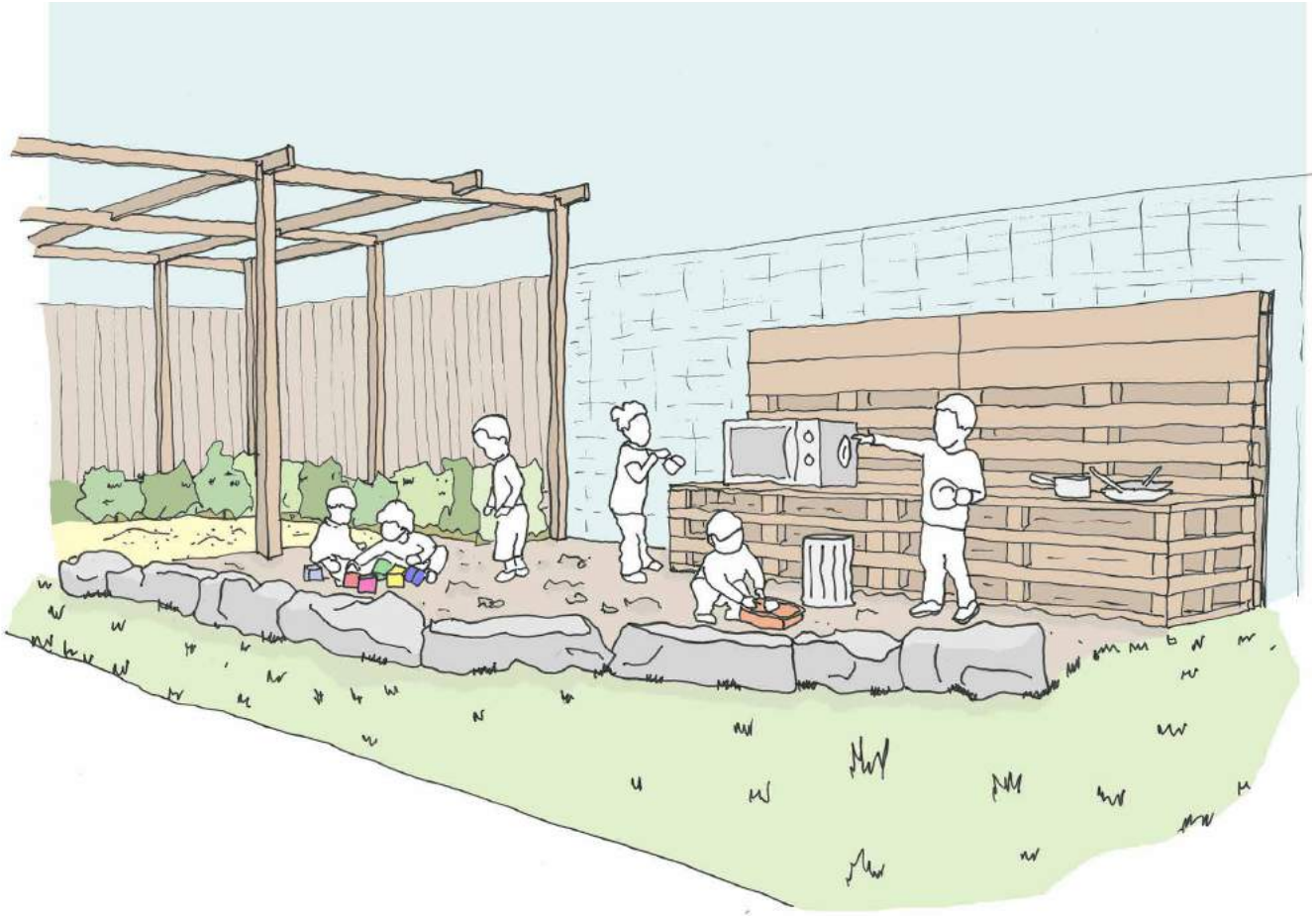
Within the Nursery Garden, an area has been created, remote from the building, which could accommodate a free-standing proprietary fire pit which could be brought out from storage from time to time to provide the focus of a supervised social gathering. It is nevertheless recognised that this would only ever be an occasional event and the allocated space has therefore been designed as an integral part of the wider play experience – uncompromised by the absence of the pit.

19

## Mud Kitchen

Role play is an important part in a child's development. A Mud Kitchen allows them to mimic the activities of grownups without the need for cleanliness. The most attractive installation from a child's perspective, is a makeshift concoction, made from pallets and off-cuts of timber, but these tend to be elements which are introduced to a garden over time and with the contribution of adults. It would be the aim therefore to try to replicate such informality by providing an item which is rustic in character and contains all the necessary components of a working kitchen i.e. sinks, hobs, ovens and shelving. Proprietary products have been avoided as being too prescriptive.

Nevertheless, it is recognised that the basic unit will not be complete without the clutter of the pots, pans, kettles, basins and other utensils which will be added once the kitchens come into use. Scale is important, and the unit has to reflect the child's size, whilst at the same time, being large enough to accommodate a large group at play together.



Mud Kitchen

Water Play

## Water Play

Water provides an inviting and playful learning opportunity for children. Play facilities should allow them to interact with a versatile array of elements. To exploit this play potential, it is intended to erect two free-standing fence panels, onto which can be attached a variety of rainwater fittings, which could include gutters, pipes, water wheels, funnels, hoses and containers in an infinitely variable configuration to demonstrate how water flows, generates energy and can be collected.

The fact that the system can be double-sided also increases capacity. An outdoor tap will be available nearby meaning that the water will need to be transported across the playground – a task which requires dexterity and balance in itself. In addition, it is anticipated that water will constitute a major ingredient within the Mud Kitchen and also the Sand Pit.

### Sand Play

A trip to the beach provides a variety of opportunities for play and learning. The feel of the sand under foot and the ability to mould the material into mounds and castles and to bury and unearth treasure trove is a source of learning and great fun.

Small standalone sand pits are a poor substitute, so we have created a large walk-in immersive space, designed to accommodate a large number of children all at once. This will be naturally contained on all sides but can be entered via shallow "slipways" or jumped into from the projecting from the edge of the playground or alternatively, off of the rock amphitheatre.

To heighten the sense of exploration, other small items of interest could be added to the mix. These could include shells, pebbles, coins and other articles which might typically be lost beneath the sand during a family outing to the seaside.

Water will be available close by and can be used to explore how the character of the sand changes when wet.

Like the beach, the sand pit is an empty canvas which, with imagination and the essential tools of "bucket and spade", can be particularly enticing. In preparation for such an adventure, a smaller, more formal sand pit is to be provided to form part of the developmental play experience - a place to explore before plucking up the courage to venture to the beach with the big children.

It is important that these sand pits are provided with adequately designed drainage to ensure that they remain useable.

### Garden Development

The Reference Design Scheme has endeavoured to create a framework within which play opportunities and play experience can evolve, through the combined contribution of the users – the children, the teachers and parents. It is anticipated that each space will employ similar building blocks, albeit in various configurations. These spaces will only ever be personalised and become unique to that community through the introduction of secondary elements. These might include items of street furniture i.e. benches and picnic tables; or less formal facilities represented by logs and tree trunks. Every available surface will become a canvas, fences and gates can be clad with sheets of chalkboard or acrylic to become Art Walls. Playhouses and storytelling areas can be squeezed into any available niche. Only by populating the Garden with toys, furniture and people, with the space come alive. The outdoor space is not a formal rigid garden it is the framework for an ever-evolving play landscape. The formula applied to the Reference Design should be regarded as being flexible and its adaptation will be a necessary strategy to meet the specific needs of its chosen location.

20

22

21

### Developmentally Appropriate Garden

A garden is provided for use by those children in the Developmentally Appropriate Playroom. This is accessed directly from the space. The garden is a mirror image of the wider garden environment. There is no divide proposed between the gardens. This is to provide the opportunity for children to transition into the main garden area when they feel ready.

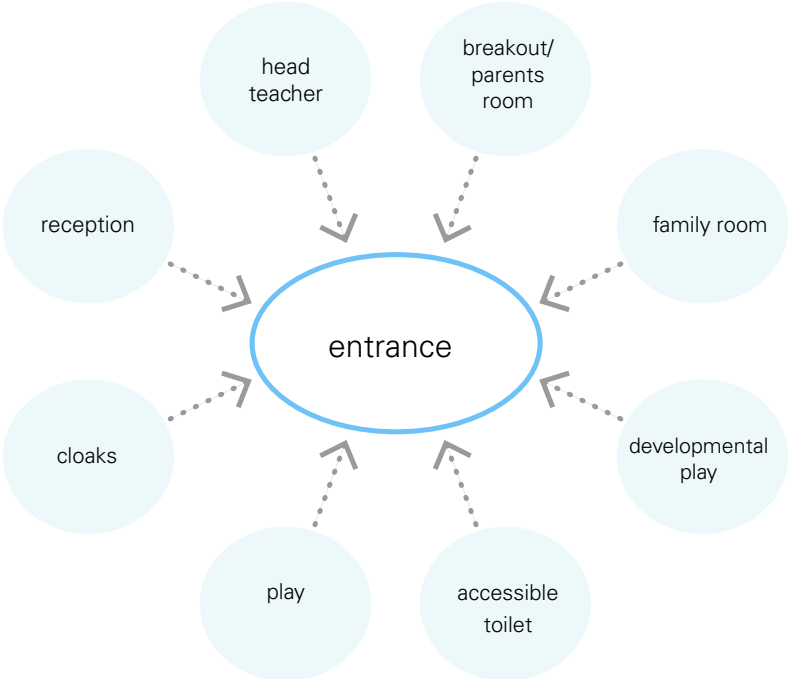

23

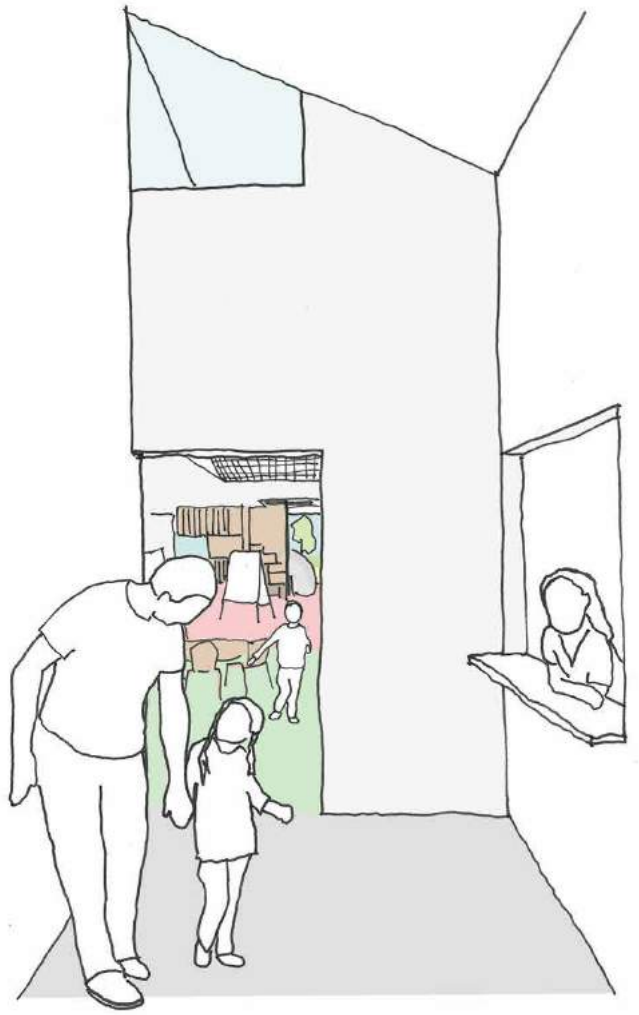
### Entrance Demands

The entrance has a large number of competing demands that create a lot of pressure on the space. This diagram indicates the requirements that were placed on the entrance during the development of the Reference Design.

Fundamentally, the primary requirement of the entrance is to provide a warm welcome. Adults and children should look forward to visiting the nursery. Adults should feel engaged with the nursery and comfortable to chat with staff and other adults. Children should feel relaxed and even excited about going to nursery.

If their day begins with an adult wary of a stressful drop off the experience can easily become a negative one. If every demand were to be provided in the entrance then the welcome loses its warmth and would most likely become a stressful experience for all. Through the Reference Design process each demand was assessed and a more considered approach was developed. Not all spaces could be accessed from the entrance, however the compromise has created a significantly improved entrance to the nursery. The following sections explain the entrance sequence.



Play Entrance

Cloak Area

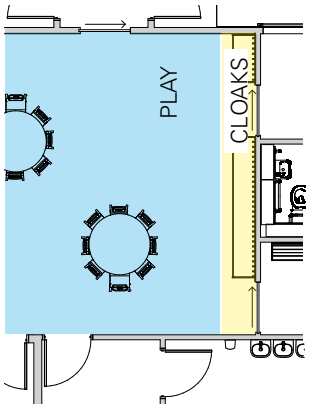
## Cloaks

The cloaks are embedded within the playroom. This is to encourage parents and carers deeper into the plan of the building to increase interactions with staff and the learning environment.

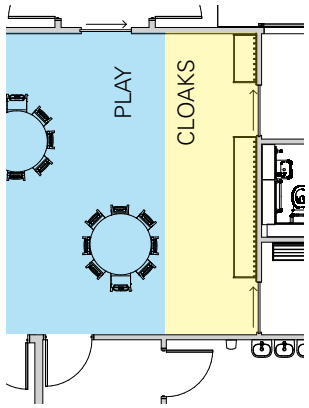
The benefit of this approach is that a much greater space is afforded to the cloakroom experience. This helps to take the pressure out of the changeover and remove some of the stresses for parents and caregivers, while also allowing children the opportunity to move freely into the nursery.

The space immediately in front of the cloak units is registerable play space. Discussion with the Care Inspectorate identified this as an appropriate approach provided that there is no delineation of the cloak zone, such as a change in floor covering, elements of structure or partitioning.

The time period of the peak changeover is short and overlaps with other shifts during the day and so has no impact on the experience for children.




Cloak Area during play




Cloak Area during pick up

### Family

Nursery school is the first point of contact for adults to the education system, not just children. The increase in Early Learning and Childcare childcare provision has been identified as a key opportunity in narrowing the attainment gap. If parents and care givers can be engaged with their child's education from a young age, then there is a greater opportunity of success for that child.

If a parent or care giver who has limited education can be given the opportunity to improve their own learning then they will be able to participate further in their child's development. To realise the opportunities, it is necessary to connect with parents and care givers. To make the connections then nurseries must be designed in a way to facilitate that engagement.

Through the Reference design development consideration was given on how to promote engagement. Two key design moves were taken to facilitate this, as shown in the diagram.

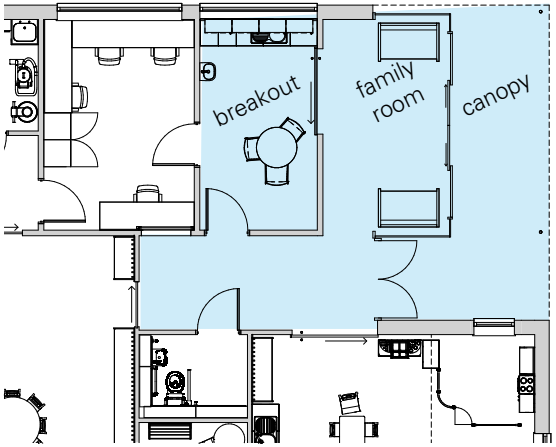
Firstly, a family room was provided by the front door. The family room is able to open up fully onto a concourse, which is partially sheltered beneath a canopy. This creates the opportunity for adults to dwell at the nursery and make connections.

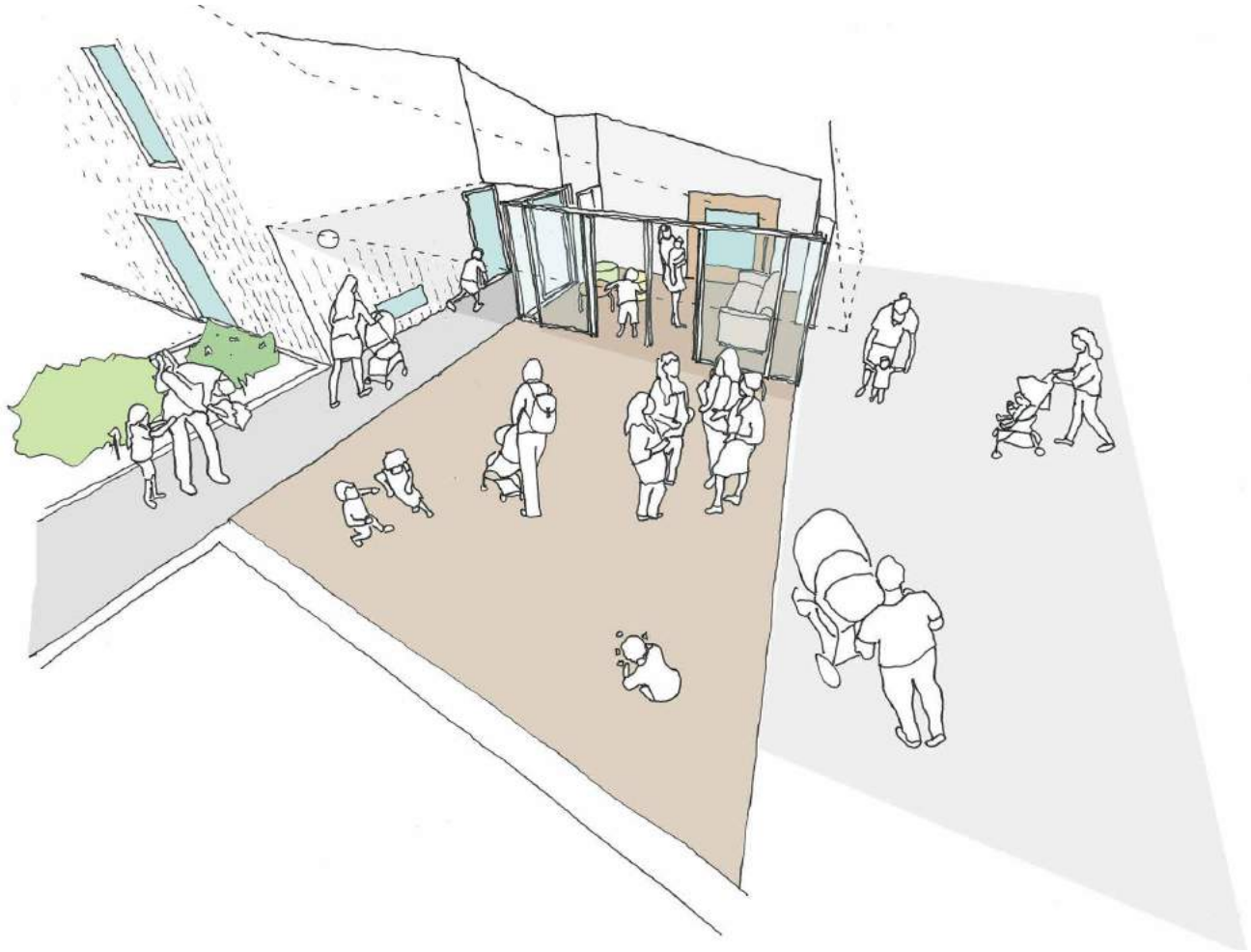
The family room is a soft and welcoming space, not unlike a living room. Chairs and tables could be placed outside the family room to provide further seating. Adults can share a coffee and spend time together.

Some staff, or the head teacher would be able to have a presence here during peak pick up and drop off times so that there was a visible presence for the adults.

Secondly, the cloaks have been brought inside the playroom. In doing so parents and care givers must come much deeper into the building. This allows them to see the place where their child spends all day. It allows them to meet the playroom staff who work with their child each day.

By bringing the cloaks into the playroom significantly more space can be created around them. Freeing up the cloaks will create a much more relaxed and less stressful drop-off and pick-up.

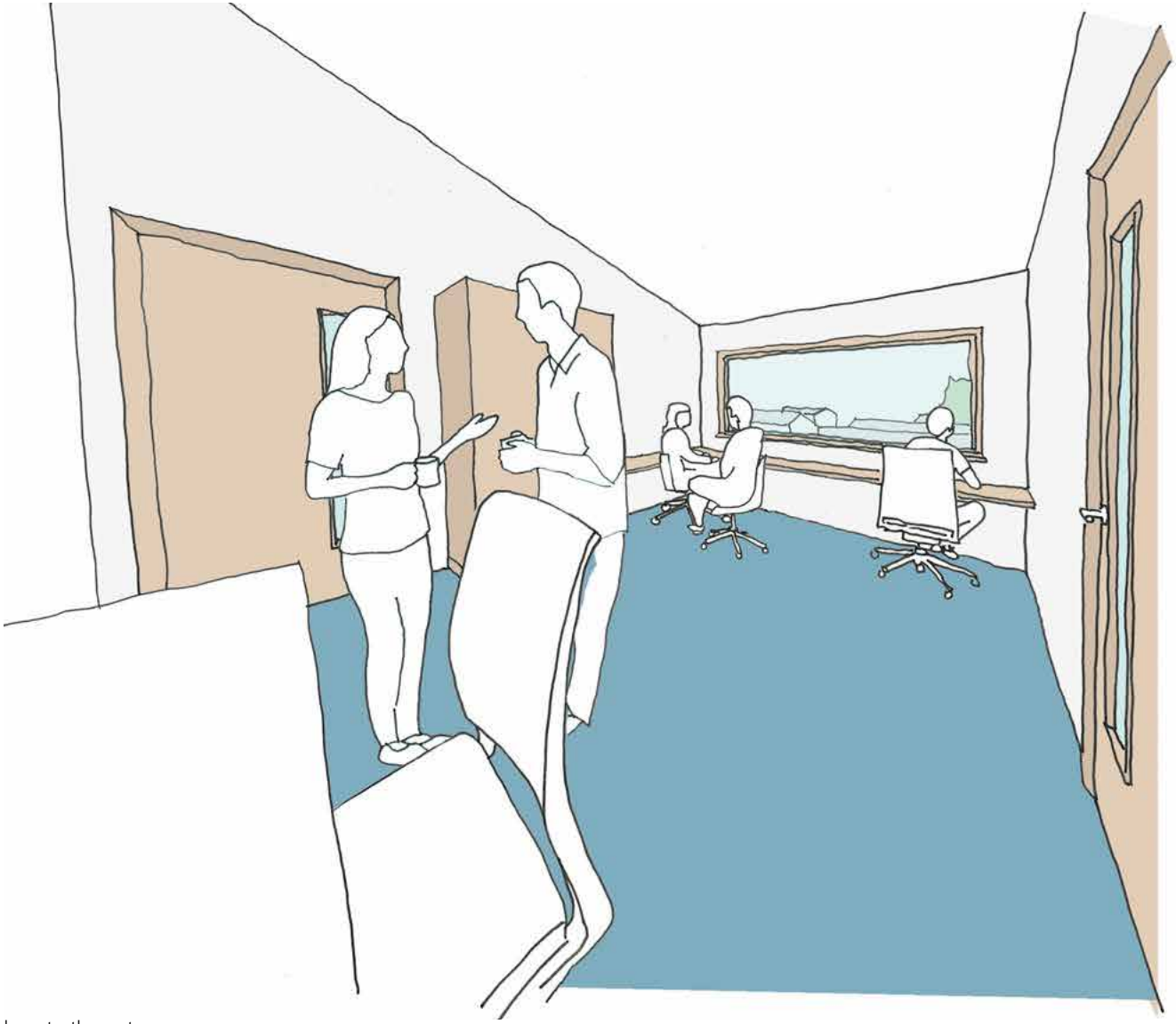




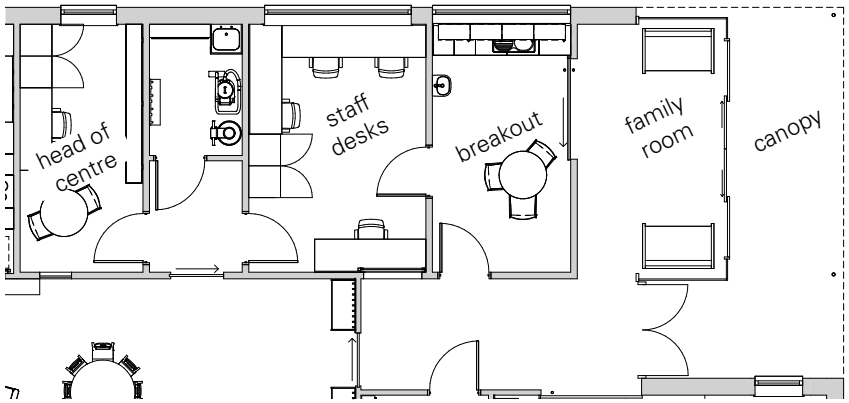
Entrance during drop off/pick up times

Family Room can open during drop off/pick up times

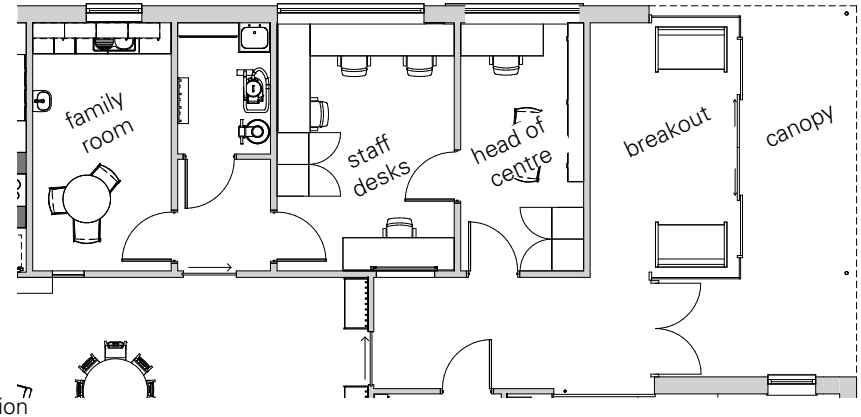
Clear and simple sequence of entry



Staff Desk Area is located close to the entrance




Configuration as proposed for Kilmaurs site




Alternative configuration

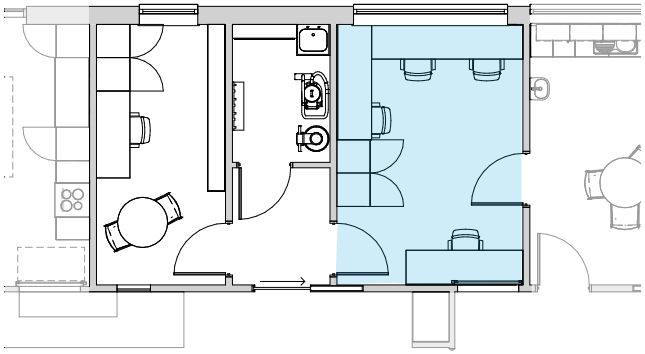
### Staff - Desk Space

Staff are provided with a clerical room which has a number of shared desk spaces. The staff room has a generous ceiling height and a large window to provide lots of natural light and a view out.

The Reference Design has a separate room for the Head of Centre. An alternative option is to swap the position of the Cleaners Store and then amalgamate the Head of Centre into the Clerical Room. This would provide one generous Clerical Space.

The Clerical Space has access to the playroom and also has an opening onto the entrance foyer that acts as a reception desk. This ensures that the reception position always has support and is supervised.

For sensitive calls and conversations, either the breakout or the family room can be used, which can be shut off from its adjacent spaces.



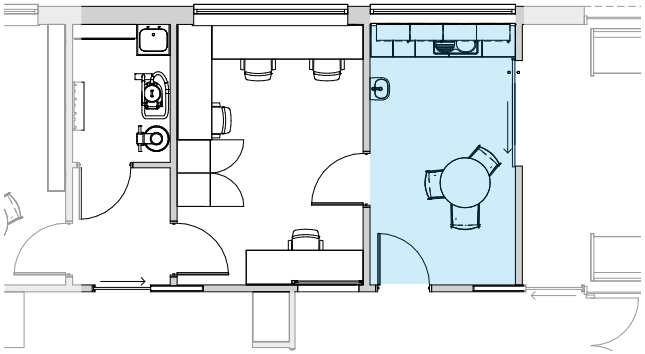
Entrance during staff lunchtime

Staff Breakout Space

### Staff - Rest Space

Staff break times will be staggered, with a maximum of 4no playroom staff and 2no management staff on break at any one time. Staff break times will be determined around shift rotas and so will be scheduled out each day. The activities in the Breakout Room and Family Room will be scheduled taking cognisance of staff break times. Room scheduling will be managed by the centre management staff. Break time will then take place utilizing the kitchenette in the Breakout Room and also use the informal seating of the Family Room.

When there is good weather staff can use the outdoor space at the front entrance, which allows them outdoor access in an adult only space. This will ensure a level of activity by the entrance through the day.



Toilets

Downstairs: a block of toilets incorporating the nappy change and laundry is shared between Developmentally Appropriate Play and the Main Playroom. This spans each play area and provides an IVS at either end. A staff toilet is accessed from the entrance foyer, which acts as the IVS.

A WC is provided off a lobby to the kitchen. This is a requirement of East Ayrshire Council Environmental Health and may not be applicable in all Local Authorities.

Upstairs: toilets are provided to suit the registered capacity of the play area. A staff toilet is also provided upstairs.

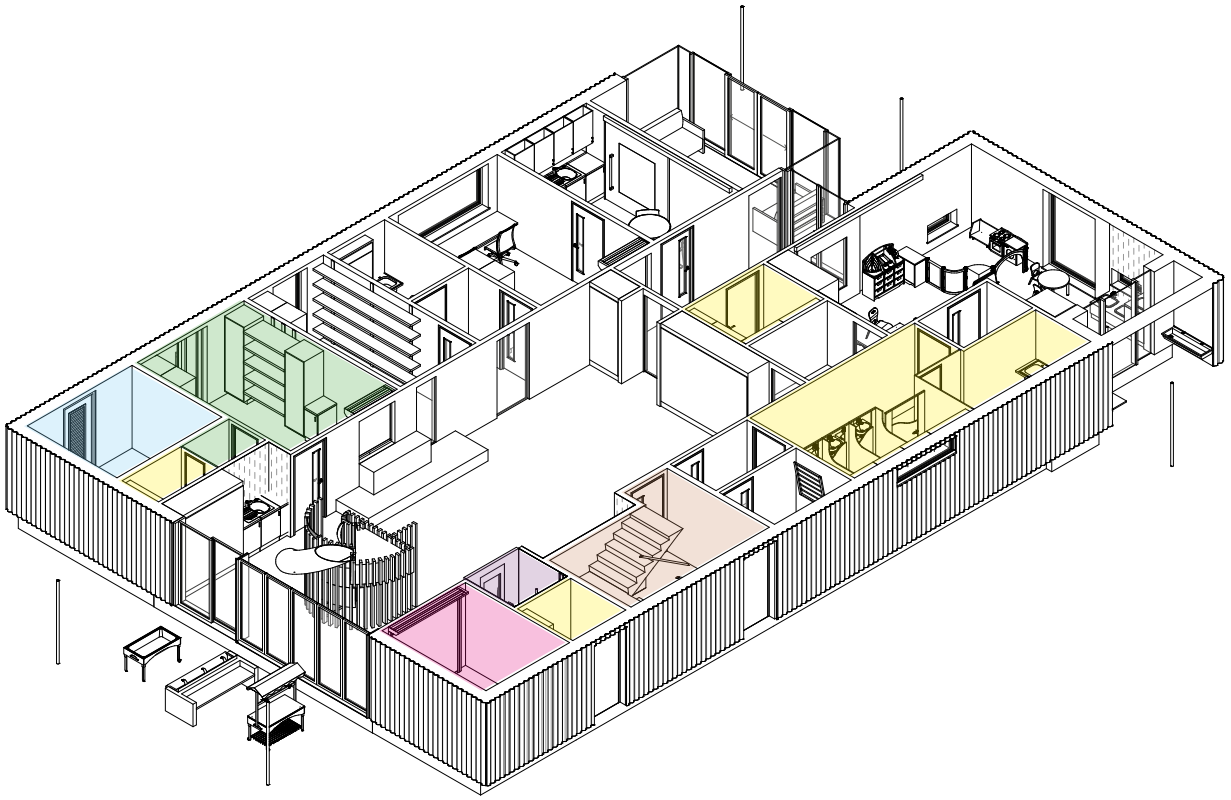
Outdoors: a single toilet is provided to support the 20% outdoor provision.

Kitchen

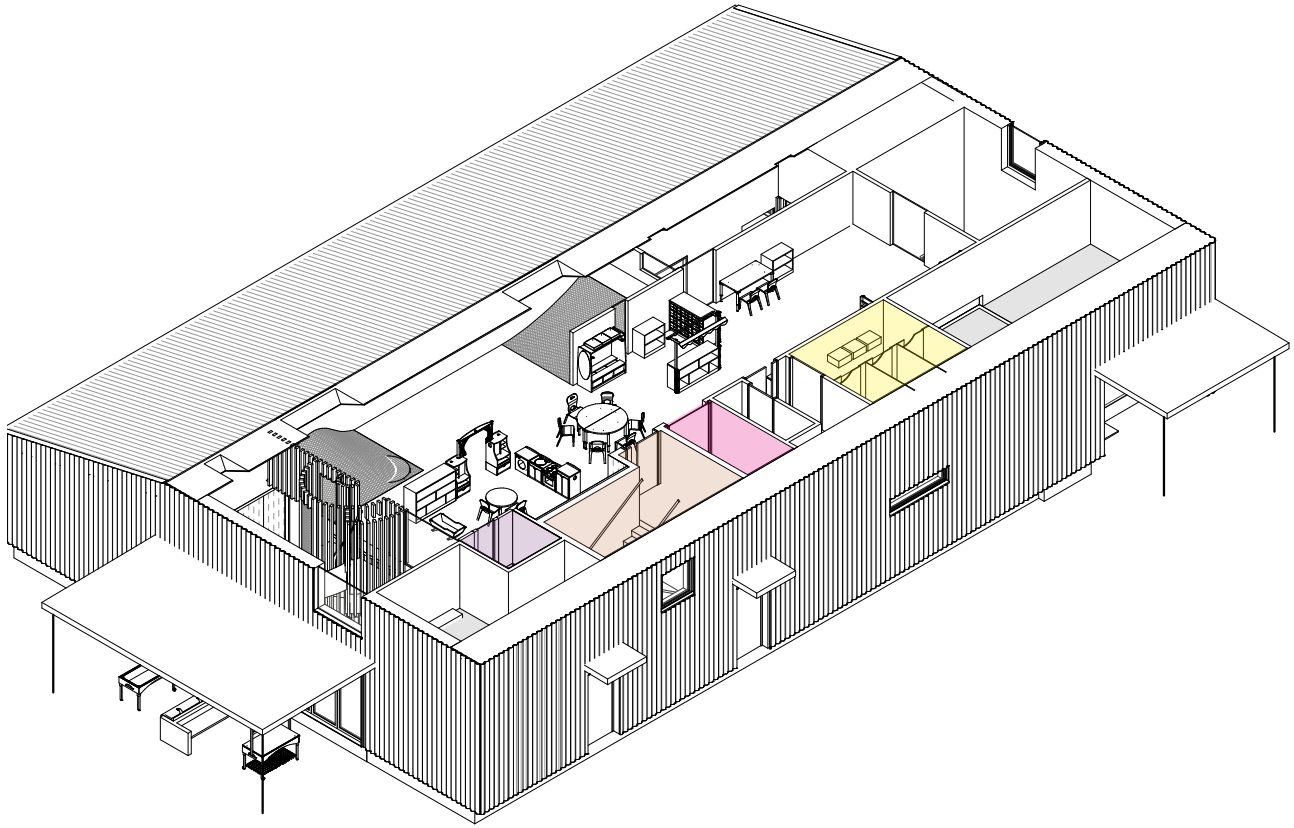
The kitchen will be reheat only. The units provided are of a domestic nature with stainless steel worksurface. Direct access to the outside space is required for the daily drop-off of pre-cooked food. A domestic oven is provided so that the kitchen may be used under supervision for the children to try baking.

Storage

Stores are provided upstairs and downstairs. Future storage may be created by lining the floor of the loft spaces in the first floor with plywood.



Ground Floor



Upper Floor

Plantroom

A 9m2 plantroom is provided. The size has been determined with the input of a Mechanical & Electrical Engineer. More detailed information is available in the appendix.

Escape Stair

A single stair is provided to building control compliant standards. The escape door opens onto the play area so that children may be gathered in a secure safe location before being escorted through the final exit gate.

Platform Lift

A platform lift is provided. This has a full door at each level. It is key operated so it can only be used under staff supervision. This type of lift is affordable, does not require a pit or over run and does not need any special fire considerations.

# 4.
# Supporting Consultants

# 4. Supporting Consultants

## Civil/Structural

Waterman Group were appointed to provide outline Structural Engineering input to the reference design. The engineers were asked to provide advice during the design exercise to the architectural team to inform the structural principles in terms of walls, floors, roofs and overall stability of the building framework, resulting in the most economic structural solution(s) to the proposed building design, assuming that ground conditions were favourable.

The structural form of the building comprises primarily of a main two storey area with a single storey area to North of the building floorspace, the roof is of duo pitched form and spans from the building perimeter at the Southern wall line to an internal wall line and then continues as a monopitched slope to the Northern perimeter wall.

The internal spaces around the building are generally cellular comprising a series of smaller rooms, the walls of which can be utilised as either loadbearing or can accommodate columns within the wall construction. However, the central play area is largely an open space with no internal walls or columns requiring a steel frame structure to support the first floor structure above and transfer loads back to the columns positioned around the perimeter of the area, structural form of the upper floor has been set out to accommodate voids over the main play area and provide viewpoints to the space below.

The roof line continues from the building perimeter at the North East corner and extends outwards creating a canopy over the main entrance and is to be supported on external steel columns in turn supporting steel beams spanning back to the main building structure.

We have considered viable construction options for the superstructure framework comprising the following construction forms:

- Timber Frame Construction – Only applicable to the single storey area.
- Steel Frame Construction

Typical layouts are shown of the attached extract drawings. We would comment on each form of construction as follows;

### Timber Frame Construction – Single Storey Only

Advantages

- Off-site construction leading to increased quality control
- Faster on site erection
- Can be fabricated and erected by single contractor
- Lightweight construction/reduced high point loads to foundations

Disadvantages

- Reduced flexibility for future alterations. Internal shear/ racking walls
- Central play space requiring additional steel framing.

### Steel Frame Construction

Advantages

- Increased quality control through European CE marking
- Pitched roof can be formed in steel with secondary steel framing
- Flat roofs can be formed in steel with secondary steel framing
- Faster on site erection

Disadvantages

- Vertical bracing co-ordination with door/window openings
- Positioning of vertical bracing to suit wall build up
- Infill panels (Masonry/timber/Cold Rolled Steel) between steel columns by secondary subcontractor

Substructure

No Geotechnical/Enivironmental assessment information, or information relative to mineral stability of the site, has been provided on the site and as such no assessment has been made of the building substructure beyond what could reasonably be considered as normal ground conditions with an allowable safe bearing capacity of 75kN/m2.

Accordingly foundations have been assumed to be traditional pad and strip footings placed at shallow depth commensurate with the building loads. Similarly the ground floor construction has been assumed to be that of a lightly reinforced concrete slab formed on compacted hardcore.

A steel frame has been incorporated at this time in the reference design, with the outline envelope design developed coordinating these requirements. The structural design of the building would develop during the next stage of the design process, initially in assessment of a site investigation exercise to establish ground conditions and therefore foundation requirements, together with a drainage design. Similarly the structural design options would be considered more fully and coordinated with the building design as the Design Team would work towards submission of Building Warrants, tender packages and production information.

## M&E

Max Fordham were appointed to provide outline Mechanical and Electrical Engineering input to the reference design. The engineers were asked to provide advice during the design exercise to the architectural team in relation to ventilation, day-lighting, thermal comfort, heating, domestic water, lighting, M+E distribution, plant requirements as well as requirements in order to meet the Technical Standards.

The key requirements of the design are to ensure compliance with Technical Standards at the time of collation of the report, ensure the M+E design meets the requirements of Space to Grow whilst also ensuring the proposals are in line with the cost plan.

The reference design is considered to be generic so it does not take account of local issues such as external noise, pollution, site contamination, or exposed locations such as wind or sea. Availability of utility supplies such as gas, water, electric, data etc. need to be considered. Local council risk assessments, planning requirements and aspirations need to be considered for each individual site.

The proposed design will utilise best practice thermal envelope, solar control, day-lighting and natural ventilation to minimise the need for energy and to minimise the reliance on mechanical and electrical installations. The mechanical and electrical installations use contemporary products and solutions that are generally available and avoids overly sophisticated controls or technology. These are more intuitive to use, easily understood and can be maintained by local teams. The designs can be used as part of the early years learning experience about environmental and sustainable design.

The design of the envelope of the reference design incorporates good target u-values, with the design developed to account for building orientation, ensuring good provision of natural daylight and ventilation throughout the building. The proposed heating strategy is reflective of recommendations within Space to Grow.

The M+E design of the building will develop further during the next stage of the design process, and take account of each of the specific site related items noted above. Similarly the M+E proposals will be considered more fully and coordinated with the building design as the Design Team would work towards submission of Building Warrants, tender packages and production information.

Full details of the Mechanical and Electrical outline proposals are available within the Appendix.

# 4. Supporting Consultants

## Fire Consultant

Jeremy Gardner Associates were appointed to provide a Fire Engineering Review of the proposed reference design and provide commentary on the key points of the fire strategy. The key requirements of the exercise were to highlight any areas of potential non-compliance of the Technical Standards where Fire Engineering could be developed in order to support the reference design proposals.

For the purpose of the reference design, no site issues that would affect the design of the envelope or building's orientation have been assumed.

The review of the reference design has reviewed the size of the building with proposed number of occupants in relation to capacity and means of escape, any compartmentation requirements and requirement for provision for fire fighting and automatic fire detection, sprinklers and alarm systems.

The next stage will be to review the site plan before preparing a Fire Strategy Report (if required) summarising the proposed fire strategy.

The full summary of the results of the review with regards to the key fire strategy issues is included within the appendix.

## Acoustic Engineer

Robin Mackenzie Partnership were appointed to provide a review of the acoustic design requirements for the reference design in line with the guidance provided in the department for education building bulletin BB93 'Acoustics design of schools: performance standards 2015 v17'.

Providing a building with the appropriate acoustic environment to enhance children's ability to develop and learn is a key project aim.

For the purpose of the reference design, no site specific acoustic issues that would affect the design of the envelope or building's orientation have been assumed.

The acoustic design of the building covers four areas. Requirements for each aspect as necessary within the reference design are outlined below:

1. Control of external noise; The proposal is to naturally ventilate the building through open-able windows. In order to control rain noise on the roof structure the roof build up incorporates mineral fibre insulation or an acoustic membrane were plastic insulation is used. Proposed roof-lights are double glazed.

2. 2. Control of reverberant sound to enable good listening and communication; Class C or better absorbent ceiling tiles are proposed to offices, meeting rooms and kitchen areas. A combination of Class C perforated plasterboard to the ceiling and additional Class A absorption panels is proposed to the main nursery play-space with agreement to also supplement in provision of a cushioned vinyl flooring and rugs to cover approximately 25% of the floor area (note the loose rugs are not incorporated within the cost plan).

3. Sound insulation between spaces; Acoustic ratings of proposed partitions have been incorporated to reflect the requirements of the acoustic consultants report. The partitions are specified to achieve the BB93 requirements and provide privacy and quite as required. Rw52dB to partitions separating noise sensitive rooms, Rw40dB to partitions to corridors, Rw50dB to plant room. Glazed screens to be Rw40dB. Doors to noise sensitive spaces to be Rw30dB, with doors between noise sensitive spaces being Rw35dB. The first floor will be provided with a floor finish capable of reducing impact noise to the ground floor.

4. Control of building services noise; Any building services serving the offices and nursery spaces will be designed to control noise to below LAeq 35 dB. This includes any non-natural ventilation, heating system and lighting.

The starting point for the next stage will be to carry out an acoustic site survey to quantify the acoustic environment. The detailed design should then be developed in conjunction with the project acoustic consultant to ensure the design goals.

## Interior Consultant

Graven were asked to respond to the architecture by developing creative and practical interior design proposals that will support the objectives. In doing so they established their key considerations for this type of building as; safety, durability, sensory stimulation, flexibility and noise attenuation.

Each of these are in consideration of the range of functions and users, including staff and families. Elements of the proposals have been incorporated into the current design.

- Tactile textures and surfaces invite curiosity and help inform use
- Natural materials such as timber and cork add warmth
- Organisation of colours & materials helps to visually define areas and their uses
- A restrained colour palette means that strong colours can be introduced with loose furniture items & the children's creativity
  Pin board surfaces support the easy display of artworks, and other information
- Writeable surfaces support creative play
- Suspended & wall mounted acoustic shapes help to control sound and add visual interest
- Modular products give flexibility including tables and carpet tiles

Graven prepared an outline interior finishes proposal which will be developed in more detail with the client as part of the development of the next stage.

The design proposals and strategy are set out in further detail within the Appendix.

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