

The Expansion of Early Learning and Childcare in Scotland Reference Design Report



Section 01

Introduction

Section 01 - Introduction

Foreword

ELC Reference Design 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.

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Section 01 - Introduction

Preface

1.1 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.

1.2 Reference 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.

1.3 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 NORR for the proposed facility at Netherthird in Cumnock.

Section 01 - Introduction

The Team

Client Team

Scottish Futures Trust facilitated the creation of the early years pilot project and provided expert advice and guidance throughout the process.

Hub South West generated the scope of services for the early years pilot 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 were key participants in the process and had input throughout the design development of the early years pilot. This included contribution to brief building, design development and final proposals.

East Ayrshire Council 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 pilot designs to. This provided a grounding for the projects and allowed all aspects to be thoroughly tested against a real world setting.

Design Team

A full design team were procured by Hub South West to deliver the pilot project. Two architecture practices were appointed to develop separate pilot projects. These practices were each supported by a practice of landscape architects. A single team of consultants were appointed to work with each set of architects.

Architects and Landscape Architect

Anderson Bell Christie and Hirst Landscape Architects

Architects and Landscape Architect

NORR and ERZ

Architects and Landscape Architect

EAC in-house and Hirst Landscape Architects

Cost Consultants

Faithful & Gould

Mechanical and Electrical Engineers

Max Fordham

Civil and Structural Engineers

Waterman

Fire Engineer

Jeremy Gardner 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 an exercise to develop a Reference Design and supporting cost information to assist all Local Authorities in responding to the requirements of the Early Years Expansion Programme. NORR with ERZ Landscape Architects and Anderson Bell Christie with Hirst Landscape Architects and EAC in-house team with Simon Hirst, 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 (CI) 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 SFT's spatial allocation 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 Cumnock. 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.

Section 02

Building the Brief

Section 02 - Building the Brief

Introduction

The brief is arguably the most important aspect of any project; it is the foundation from which all other decisions flow. Consequently, the team has taken great care to develop the brief in close collaboration with East Ayrshire Council, the SFT, and the Care Inspectorate, all of whom have informed its development.

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 Nether-third proposal is included within Appendix.

Background Demand Service Projections (Projected children numbers and by age group, any requirements for children with additional needs etc.)

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.

“Children 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.”

— SPACE TO GROW

“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

Section 02 - Building the Brief

Introduction

Proposed Operating Model

The operating model may of course differ across local authorities and across different settings with a local authority. The current models being considered by 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 currently proposed by East Ayrshire Council that staff who work in full year services will work shift patterns as follows:

- 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, 2 x 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 2 x 20 hour clerical assistant posts to cover the hours of operation.



“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.”

— SPACE TO GROW

Consultation

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 facilities, Local Authority stakeholders, the SFT, Hub SW, the Care Inspectorate and Hub SW Tier 1 Contractors.

The day discussed what this reference design should be about with all of the relevant parties, all in order to establish an overall vision for the reference design initiative, 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 current model for the provision of these hours as developed by East Ayrshire Council for the facilities under consideration for this reference design initiative. The workshop then focussed on the need for the delivery and design of ELC to evolve, and on the need for the reference design to be flexible to accommodate the range of operating model that are likely to be required across Scotland. Further sessions during the day focussed on both internal and external spaces; their design, relationships and functionalities.

To commence the briefing and design process, various stakeholders were mixed at a number of tables, facilitating wider discussion on the various topics across each of the sessions. The day was split into 2 main workshops, outlined below, with particular questions raised to enable and encourage the discussion.

The following criteria were put to each group:

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 day was energetic and full of optimism. There was generally a consensus of aspiration across all stakeholders, with the following aspects being considered key drivers which the reference design project requires to support:

- The previous model doesn’t fit with parents returning to work
- The building could become embedded into the community and used by the community after hours and weekends
- Success equals happiness for children, parents and staff
- The facility must be inclusive
- The facility must provide opportunities for staff
- The facility could be a social link for parents/carers and provide opportunities for families to access services



Section 02 - Building the Brief

Development of a Strategic Brief

Previous model doesn't fit the need of parents who wish to go back to work

Give children more choices / freedom and developing risk awareness.

Developing Social Skills for Kids

Self-directed learning

Giving children confidence to "Take on the world!"

Smaller spaces that children can retreat to for some quiet time

The outdoors can promote more engagement from some kids and enhance collaboration, learning and social skills.

Counters an over reliance on indoor pursuits

warmth and texture

Success is happiness for Children, Parents & Staff

blurring lines between indoor and outdoor

retaining best staff

This should be something different!

Must provide opportunities for staff. Better facilities will make it easier to recruit and retain staff

Arts & Crafts

Storage

Free Play – Indoor / Outdoor – Child decides where to play

Wellbeing

Space / Light / Noise / Materials

areas Spaces should be sized for children with multiple uses and inbuilt flexibility

Provide a social link for parents

robust

Interesting spaces...

The graduation between indoor and outdoor will be crucial

comfortable and welcoming

Lighting

Large, airy, bright spaces that can be as flexible as possible

Smaller, more intimate spaces will be required

Acoustics

A workplace for the future

flexibility

A variety of spaces that encourage exploring and discovery

Snack Area

Messy Play Area

A stimulating space

Small World Play

Should provide opportunities for the family to access services

Role Play

Windows with deep reveals become seating areas

Construction Area

making space work harder thus generating other spaces for the community and staff

General

- 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 years 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 A.

Space to Grow

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 suitability 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.



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 look 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 is provided for 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.

Section 02 - Building the Brief

Summary of Statutory Consultations

Planning

As part of the development of the design specifically for the Nertherthird facility in Cumnock, NORR met with East Ayrshire Council Planning 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 + 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 will take place during the next stage of the project.





Section 03

The Reference Design

Section 03 - The Reference Design

Introduction

The opportunity presented by this reference design initiative has been to develop a high quality facility, specifically designed to meet the needs of young children, the envisaged operating model currently proposed by East Ayrshire Council and the requirements of the Care Inspectorate, whilst at the same time working within the area and cost metrics for new build nurseries set out in Scottish Government's ELC Baseline Planning Assumptions.

BUILDING FOOTPRINT AND AFFORDABILITY CAP

The reference design initiative and the brief are based on an appropriate scale of ELC provision considered by East Ayrshire Council. Any increase, or decrease to the registered capacity would be subject to some of the aspects of the brief to be adjusted accordingly.

The key principles of the building's overall footprint / permitted GIFA is based on an allocation of 5.8m² per child. The affordability cap of the reference design is based on this area metric and a cost metric of £3,000/m² (all in rate including design and development costs as well as furniture, fixtures and equipment at 2Q, 2018).

THE REGISTERED CAPACITY FOR THE REFERENCE DESIGN STUDY

Based on information provided by East Ayrshire Council and their envisaged operating model, the facilities has been designed for:

- 64 no 3-5yr olds, 10 no 2-3yr olds, 9 no 0-2yr olds; 83 children in total
- Staff allocations are based on these numbers.
- In terms of building area, this corresponded to 71 no children,
- The additional 20% of 2-5yr olds equates to 12 no total. In the instance of Cumnock this equates to 11 no 3-5yr olds and 1 no 2-3yr olds.
- The 20% additional provision does not apply to 0-2yr olds due to the fact that they will spend less time out of doors.

This equated to the following Affordability Cap for this reference design study;

$$5.8m^2 \times 71 \times \pounds 3000/m^2 = \pounds 1,235,400$$

The development of the cost plan for the building included in the .

SPACE STANDARDS

The above provided the GIFA for the building and albeit a relatively small building, the brief and particularly the relationships between spaces is key to the success of the functionality of it. The minimum clear play-space area per child is out-lined in Space to Grow as;

- Children up to two years – 3.7m² per child minimum
- Children aged two to three years – 2.8m² per child minimum
- Children aged three and over – 2.3m² per child minimum

It should be noted that this reference design includes the provision of 9 no. 0 – 2-year olds. The 1140 hours Expansion Programme does not cover the provision of early learning for 0 to 2 year olds. However, this reference design has sought to accommodate the additional play space area for 0-2 year olds within the overall building footprint of 5.8m² per child.

Both East Ayrshire Council and the Care Inspectorate have worked flexibly and collaboratively with the design team to support innovation and improvement in the delivery of high quality Early Learning and Childcare. The brief as collated and outlined below was prepared during this process. Further support information to aspects of the brief is included within Space to Grow.



THE BRIEF

Various workshops were held with East Ayrshire Council and involved detailed dialogue with the Care Inspectorate and management teams from some of the existing EYCs. These focused sessions allowed the brief to be developed in more detail. The provision of support accommodation was outlined as below, although space standards were not stipulated, beyond their function;

Entrance zone:

- The entrance zone should be welcoming and clearly identifiable.
- A single point of entrance is preferred to monitor comings and goings.
- From the entrance children should be able to disperse to their groups.
- Opportunities for conversations to take place between parents and staff should be afforded.
- Access to an administration area / centre manager for sign-in purposes should be provided
- Storage space for children's coats, bags, shoes should be provided with wet items having the opportunity to dry.
- Children to have the opportunity to sit while changing shoes.
- Sufficient space for up to 83 children and their care giver(s) and siblings to access / egress.
- Parking should be at a reasonable walking distance from the entrance. (At Netherthird, in Cumnock parents may park in the former Primary School car park and walk to the new facility).
- There will be 3no periods of peak flow, 08.00-09.00 / 13.30-14.45 / 15:00-16:30
- The facility will accept children at any time of day, however outside of peak times numbers will be significantly reduced.
- A room for private conversations and small meetings should be provided in close proximity of the entrance zone.
- EAC will provide wet weather gear for outdoor play.
- Children must bring indoor shoes.
- Some buggies may be left at the facility all day, with storage provided for these.
- Provision of a partially covered external space with opportunity to secure buggies should be provided

Dining:

- A central kitchen will provide food to the nurseries in East Ayrshire.
- Dining refers to Lunch and High Tea.
- Dining can happen indoors or outdoors.
- Dining can overlap with other functions, such as the playroom.
- Tables can be multi-functional, being used for messy play and dining, provided an oil cloth is used.
- If dining overlaps with the playroom then a single sitting is required.
- If dining overlaps with other spaces, then multiple sittings could be possible.
- A single lunch sitting will start at 11.45
- If multiple sittings are required lunch would start at 11.30
- Lunch will serve all 83 no children.
- High Tea will be served after the PM session children have left at 16:00
- High Tea will likely be sandwiches and or soup.
- Opportunity for indoor seating for all children for dining in one sitting should be provided.
- Additional tables and chairs may be required to be brought out for dining. These require to be stored in a store room.
- A re-heat kitchen is required with cold and dry food storage, commercial dishwasher, food preparation area, reheat facility.
- Food will be taken out from the kitchen in larger containers for self-service.
- 1no wash hand basin needs to be close to the dining areas.
- 1no sink needs to be close to the dining areas for children to wash own dishes.
- Children may wash their hands in the playroom A trough provides for faster turnaround for all children to wash hands before eating.
- All taps for children's use to be sensor operated.
- Adult taps to be lever operated.



Section 03 - The Reference Design

Introduction

Snacks:

- Snacks will be given between 9.30-10.30 and 13.45-14:15
- Snacks may be prepared in the playroom at a table by the children, or in the kitchen.
- An area for preparation is required in the playroom, unless the main kitchen is immediately adjacent to the playroom and accessible through a hatch.
- The full dining set up is not required for snack time.
- No cooker is required for snack preparation.
- A fridge is required in the playroom snack preparation area.
- Storage space for a third pint of milk per child per day is required.
- A domestic cooker is required within the kitchen for heating soup or for baking activities

Milk Kitchen within 0-2 room:

- Two sinks, one hand-wash sink, one cleaning sink are required.
- Undercounter fridge for milk storage should be provided.
- Kitchen unit style storage is also required.

Staff:

The building should provide an attractive environment to encourage staff into the profession and reduce turnover of existing staff. Estimated staff numbers based on East Ayrshire Council's envisaged operating model the required staff to children ratios are set out below.

Netherthird, Cumnock
For a 64 fte (3-5 yr) 10 FtE (2yr olds) and 9 fte (0-2): 1 x Head of Centre 1 x Depute Manager 2 x Senior Early Learning & Childcare Practitioners 17x Early Learning & Childcare Practitioners 1 x support assistant 2 x part-time clerical assistants

- A quiet space for non-playroom work is required.
- Space for staff to have a break in an adult environment is required.
- Staff are expected to work on shifts of 7.45 to 3.15 / 8.45 to 4.15 / 10.45 to 18.15.
- Staff numbers will be at the maximum point in the middle of the day, between 10.45 and 15.15.
- The maximum staff number in building at any one time is expected to be 24.
- Staff break times will be staggered, with a maximum of 4no playroom staff and 2no management staff on break at any one time.
- Staff admin times will be staggered, with a maximum of 2no staff on admin at any one time.
- Staff parking of 24no spaces is required to EAC Roads Department Requirements.
- 1no cube locker per staff member should be provided.
- A staff only place to hang coats should be provided.
- Space for staff training and CPD should be provided.
- A corporate workspace to accommodate all centre staff, with the exception of the Head of Service, should be provided. This should include 3no. hot desking spaces that will be shared.
- Provision of a private place to make calls should be included.
- There should be a private place to have small meetings of a sensitive nature.
- An informal zone for meetings should be provided.
- Space for staff breaks may be within the workspace provided it is visually and acoustically screened off.
- Head of service should have an office with workspace and informal meeting area.

Families and Community:

- The design should provide opportunities for the family to access services within the building as well as opportunity to dwell and converse, providing a social link for parents / families.
- Access to a space for private discussion should be provided.
- Opportunity to participate in play in the facility along with the provision of a Family and Community Room should be provided
- An informal space with sofas and coffee table along with the provision for tea / coffee preparation is required. This space can be used by care givers in making applications using a tablet device.
- Different family and community activities that could be provided at the facility include: Speech and Language Therapy, Baby Massage, Cookery Group, Parent & Toddler Group, Parents Group Sessions. Further it may be possible that supervised access facilitated by social work could be accommodated within the facility.

Sleep:

- Children will be able to choose where they sleep.
- Children will be able to sleep when they are tired.
- Control of light levels in different zones is required.
- Provision of sleep matts for 20 no 3-5yrs and 8 no 2-3yrs is required.
- 9 no. coracles or cots will be provided within the 0-2yrs

Playrooms:

The playroom sizes should be as set out in Space to Grow. A summary for this facility is given below.

Netherthird, Cumnock
53 no 3-5yr @ 2.3m ² = 121.9m ²
9 no 2yr @ 2.8 = 25.2m ²
9 no 0-2yr @ 3.7 = 33.3m ²
Total clear playroom area 180.4m ²

Specific requirements for the playrooms include:

- The adoption of a naturalistic approach employing the attributes of biophilic design.
- A fun and nurturing environment that children are excited to return to each day.
- Provision of a variety of spaces in terms of scale, light, sound.
- Spaces that encourage active play and active learning.
- An environment that provides challenge for children at different developmental stages.
- Developmentally appropriate spaces for children, to manage their transition into the playroom.
- Consider the building as the third teacher, as Reggio Emilia
- Provision of opportunities for child led play.
- Space must have a consistent range of temperature in all weather conditions for it to be registered.
- All surfaces must be durable and reflect the activities to be undertaken.
- Quiet spaces for small group activities on literacy, numeracy and music are required.
- The play rooms should be able to accommodate audio visual equipment, including 1no adjustable height interactive screen on moveable stand .
- Acoustic control is important to minimise the sensory burden.

Section 03 - The Reference Design

Introduction

- Freeflow play from inside to outside is required.
- A transition space for children to put their own outdoor gear on is required.
- Wet clothes must be capable of drying.
- Storage is required of approximately 12m² across all playspaces

Different Play Areas required;

The following play areas are required:

- Construction Area- Boxed up lego / duplo / megablocks. Large space required.
- Role Play- Shop / Doctors / Vets
- Snack Area- Children help to prepare their snacks. Also used for tooth brushing.
- Messy Play Area- Dough / slime / water
- Arts & Crafts- Takes up a lot of storage. Consideration should be given to storage built into walls and moveable units. The walls could become display spaces Easels / glue / paper. Hard vinyl or similar appropriate flooring is essential.
- Small World Play - Dolls House / Cars / Railway
- Many of these spaces can double up as they just require flexible space and storage.
- EAC are not looking for a defined sleeping area. A smaller, quieter space could be used for any children that needed some quiet time. Comfy seating / bean bags should be allowed for.
- Play area should be an open, fun space with slides / ladders / nets etc.
- The reading area should be different in nature to the activity and commotion of the rest of the nursery. Consideration should be given to smaller pods / lowered ceilings. This area doesn't need formal seats.

Outdoors:

- Redefine the outdoor space as a garden, a planned and structured environment.
- Learning outcomes and indoors should be the same.
- The external environment should be capable of accommodating all children that may be outside at one moment.
- 30% to 50% of time is anticipated to be spent outdoors.
- The local authority will provide high quality outdoor clothing and footwear.
- There is no metric to determine the minimum area of outdoor space.
- Children to be clearly visible in all areas, unless in areas agreed for staff supervision.
- Lighting is required to facilitate outdoor play during hours of darkness, especially important in winter months.
- There should be challenge and risk for children in the environment.
- There should be opportunity for warmth outdoors.
- The use of fire is possible if risks are managed.
- Water can be used but must be flowing and shallow.
- Space for external storage is required which will allow items to dry.
- Storage should be integrated into a structure and have ease of access.
- Food growing opportunities should be considered.
- The outdoor space should be easily maintainable.
- Opportunity for fauna should be considered.
- External access to toilet facilities are preferable.

What should the Garden provide?

The garden should provide opportunities for the following aspects and activities:

- Arts & Crafts Painting & Making
- Cooking & Food growing. Gardening vegetables.
- Musical Noisy Play
- Changes in level, slopes and stepping stones.
- Embracing existing natural things – Trees / Vegetation / Slopes / Mini beasts & Bugs
- Natural light throughout the year. Summer / Winter, artificial lighting may be providing in the evenings.
- Recycling and sustainability activities.
- The garden should be accessible and child friendly with access to toilets from the external space. Hand wash facilities and water for cleaning should also be required.
- Building structures – willow, bamboo, shelter
- Fire pit / Barbeque – Forrest School & Forrest School
- Training of staff at the facility may be provided.
- Events / Drama / Puppet Shows / Story Time / Education
- Eating / Seating
- Physical energetic play including bikes and jumps
- Transitional areas outdoor to indoor, or boot room, drying rooms / cloak rooms / coat hooks
- Outside power and water.
- Water for play.
- Like indoor spaces there should be a choice in terms of size and nature of space.
- Mud kitchen – encouraging messy play.
- Visiting pets – chickens / rabbits / guinea pigs
- Shuttered off storage areas.
- Potential for incorporation of a greenhouse
- Seasonality – How things grow / Tying in to the rural environment / Where food comes from / Animals

- The garden as a sensory environment; Sensory plants / sounds / smells.
- Wildlife – Birds / Hedgehogs / Foxes – using CCTV to watch visitors to the garden.
- Rainwater harvesting / Wind turbines / Solar Panels. / Growing walls / Herbs, Fruits and Vegetables
- Hills for rolling down / climbing up. Slides & Tunnels.
- Canopies allow outdoor play all year round.

Toilets:

- All toilets are to be unisex.
- Toilet provision for 71 no children is required indoors plus nappy change provision within the 0-2 and 2-3 room. This equates to 7no.
- Heights to be provided relative to age group.
- 2-3s and 3-5s can share same WCs.
- Toilet provision for 12 no children is required outdoors. This equates to 1no. toilet.
- Toilet provision for 24 no staff is required. 1no. staff toilet should be provided near the playroom and 1no. near the staff room.
- Toilets for children within the playroom should not give access directly outdoors.
- 1no nappy change is required within the baby room and 1 no within the 2-3 toilet zone. Hand wash facility for children and staff i.e. 2 no.
- Nappy changing is to have an adjustable height changing table. Changing table 1.4m in length.
- Storage for potties is to be provided.
- Provision of a deep sink, or sluice for potty wash is required.
- Children should be able to open doors unaided.
- Finger guards should be provided to doors

Section 03 - The Reference Design

Introduction

Ancillary Space:

- A plantroom of 10m² is required. Refer to M&E report for more details see Appendix C.
- A cleaner's cupboard of 5 to 8m² is required. This should include a janitorial unit, dilution unit and space for floor buffers. Only one wall needs to be shelved.
- A laundry room of long thin proportions are preferred. High quality domestic washing machine and tumble drier are to be provided. A sink with drainer and a separate wash hand basin is to be provided.

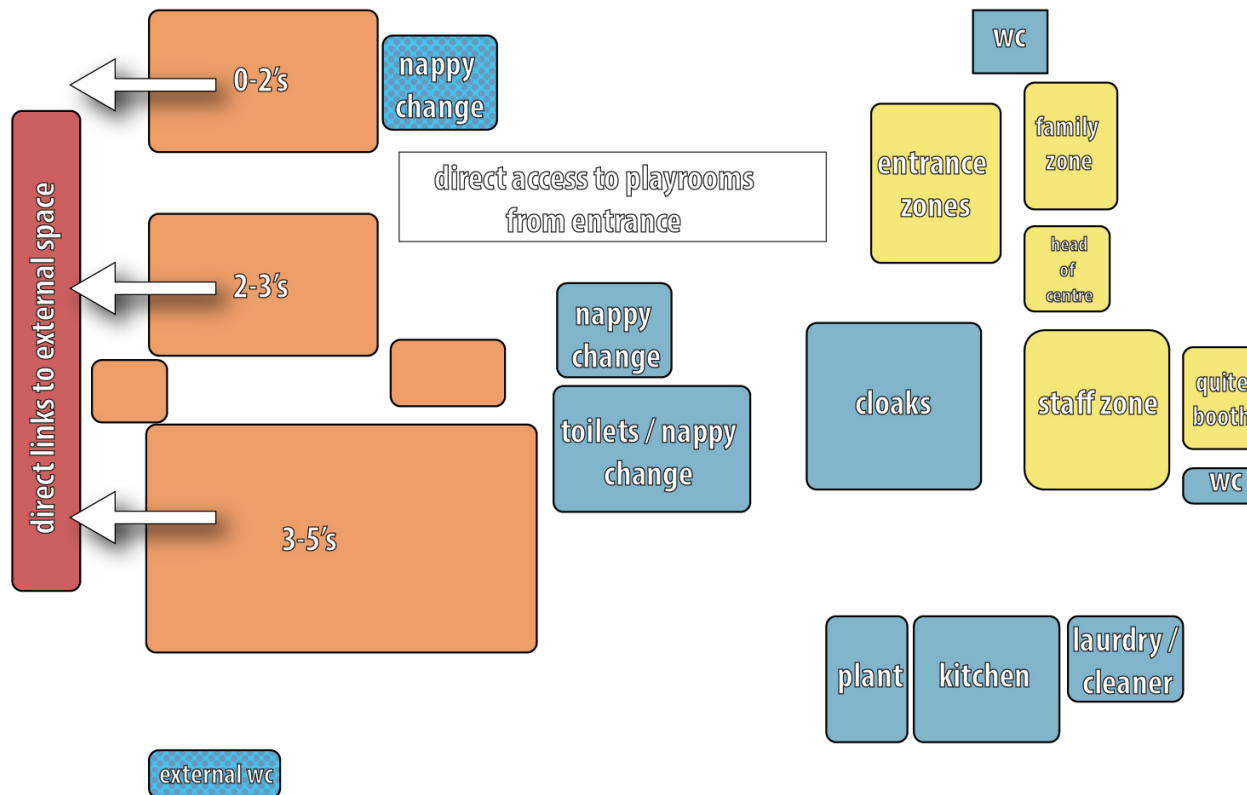
Reference Documents:

The following documents have been used as guide in further developing the brief and the reference design:

- The Scottish Government - Building the Ambition
- Care Inspectorate - Space to Grow
- Care Inspectorate - Nappy Changing facilities in early years, nurseries and large child minding services
- Care Inspectorate - My World Outdoors
- Care Inspectorate - Hand Hygiene
- BS8300 – Design of an accessible and inclusive built environment
- Smarter Scotland: Pre-Birth to Three Positive Outcomes for Scotland's Children and Families

Section 03 - The Reference Design

Building Organisation



The floor plans included within this document have been developed and reviewed in conjunction with East Ayrshire Council and the Care Inspectorate following the initial engagement sessions, with comments being incorporated as the layouts developed.

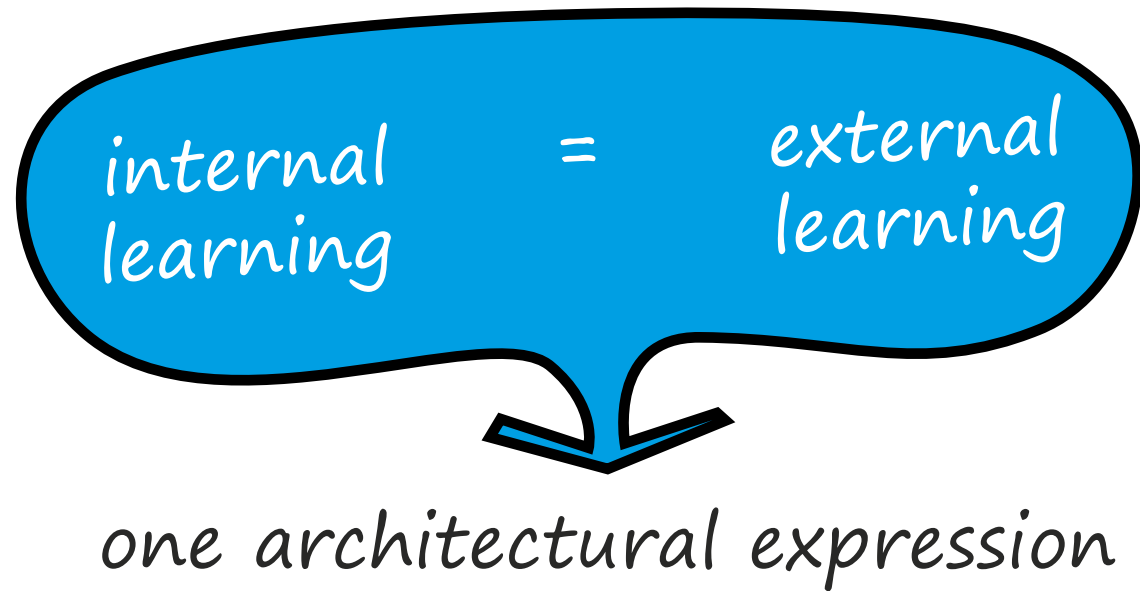
Following the development of the reference design proposal in conjunction with East Ayrshire Council, we were asked to apply the principles to one of their proposed sites. This would allow the reference design to be tested in a local context. This is covered in Section 5.0.

Throughout the briefing dialogue and in reviewing the Space to Grow guidance, the diagram below outlines the various accommodation requirements of the reference design. Each space as shown depicts the relative area required. Critical aspects in terms of adjacency at the initial stage as noted were the direct links to external space from each of the play-spaces, and requirement for the play-rooms to be accessed directly from the entrance.

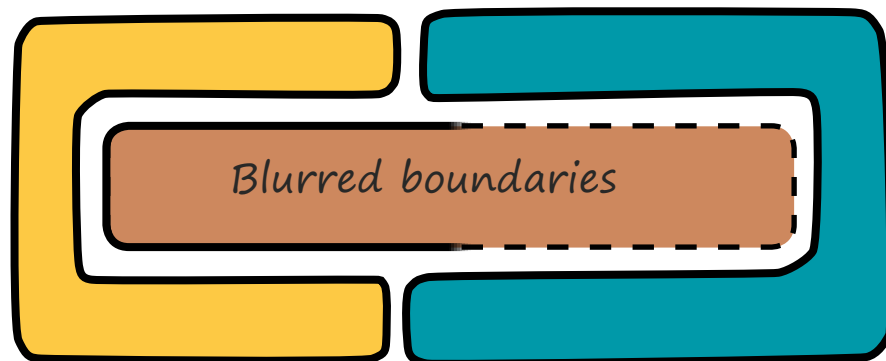
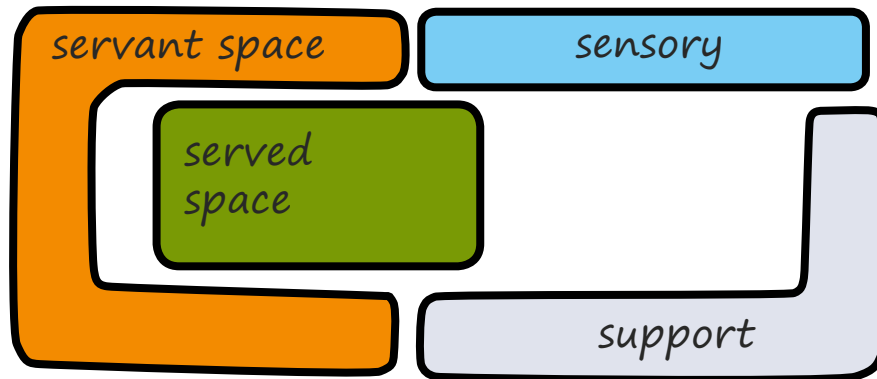
Section 03 - The Reference Design

Design Considerations

The importance in relationship between inside and out in the expansion of reference design is key to the development of the building's design. Both areas have equal importance in providing learning through play for the children, and it is expected that children will spend as much time outside as they do inside. The blurring of boundaries between both zones is also key in providing a seamless transition between all play-spaces. Extending the inside to the outside and alternatively extending the outside to the inside. Depending on each specific site and location, the nursery could add further extensions to the outdoor area, enabling the reference design to blend or share facilities with adjacent community assets or a play-space to an adjacent Primary School.



inside = outside

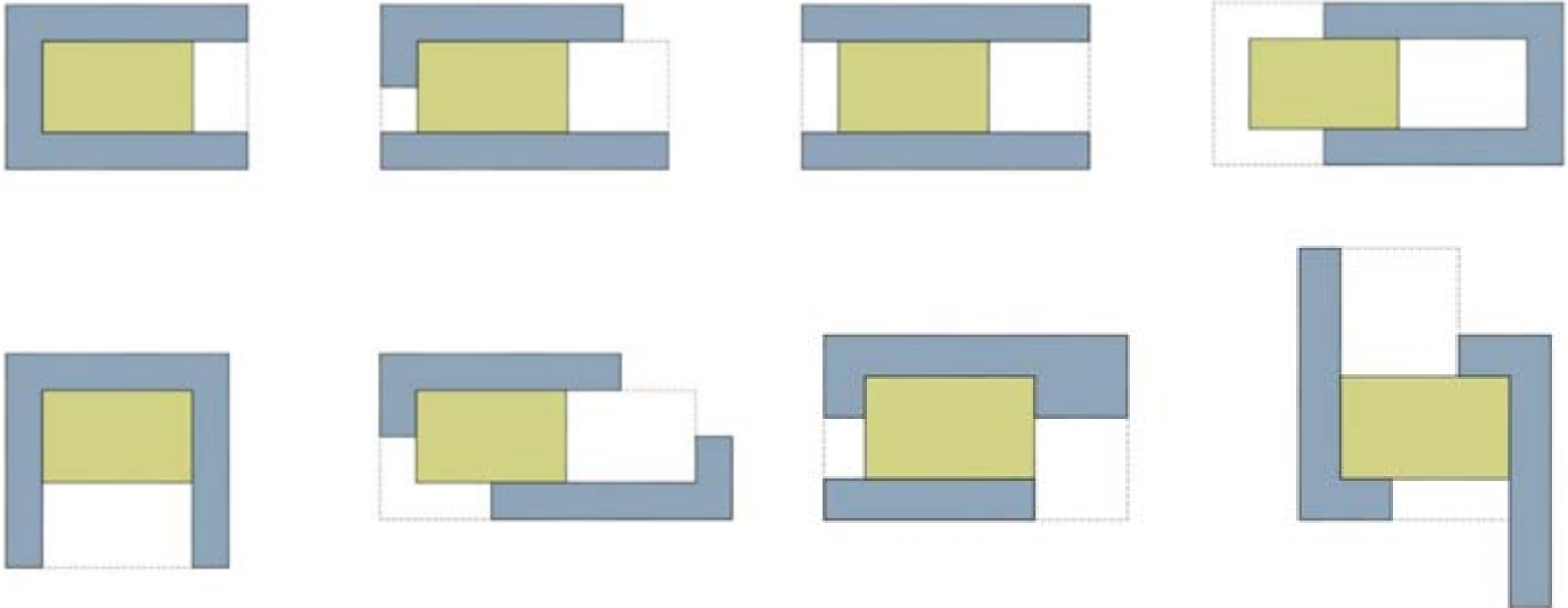


indoor rooms
+
outdoor rooms

- protective
- convivial
- creates a sense of place
- equality between inside + out...

Section 03 - The Reference Design

Creation of a Flexible Reference Design



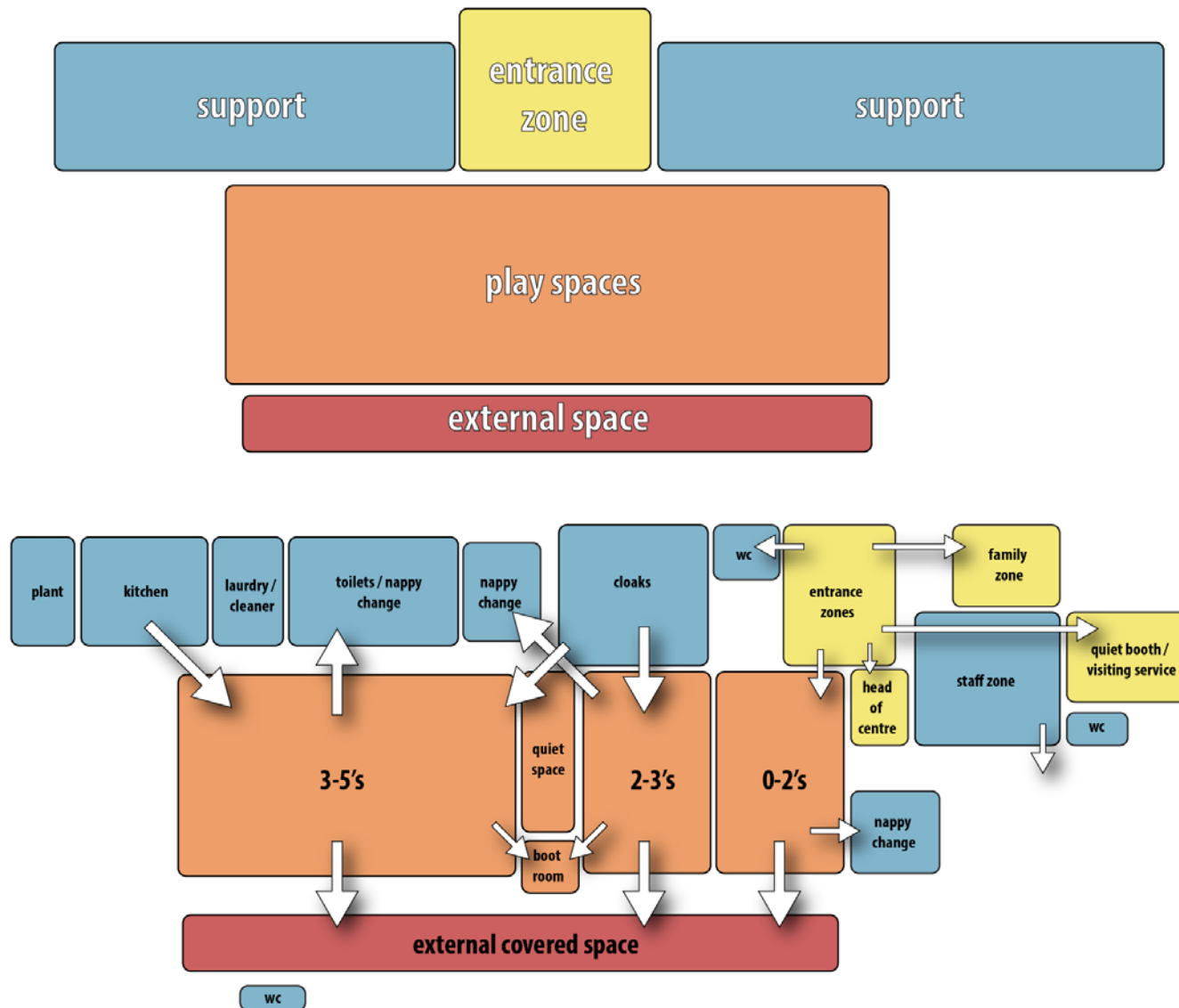
The ability of the reference design to be adaptable to reflect its' context, orientation or location is critical to the success. During the evolution of the accommodation schedule our initial conceptual designs developed the simple idea of wrapping support or 'servant' spaces around the 'served' spaces. The wrapping or protection of the larger play-spaces could extend out to form a protected external space, again protected by support, active or sensory spaces. The balance of cellular or small spaces with larger play-spaces could allow this strategy to be developed. The benefit to a reference design is the flexibility this simple strategy provides in enabling the wrapping element and large spaces to change to be site specific.

These simple diagrams show various arrangements of the large flexible spaces in gold with the servant spaces wrapping it in blue.

The difference between some services will be that a 0-2yr play-room is not required in some instances. This reference design allows this to be added simply as an extension to the servant space, permitting it to also have direct access to an external space.

Section 03 - The Reference Design

Creation of a Flexible Reference Design



As a simple diagram, the main zones to be incorporated are as illustrated below. The area that each of these zones require, based on the briefing exercise, are also depicted in this diagram. The extent of support accommodation, the cellular nature of these spaces and the interconnection requirements between the spaces do not lend themselves to this linear form of building as readily as it would initially appear. This led us to adjust our developing approach to address these adjacency issues.

Issues / commentary:

- Remoteness of kitchen to 2-3 room
- Cross over of 2-3 with 3-5s in accessing the WCs / nappy change and indirect provision of the adjacency
- Requirement to pass through 2-3 zone to get to the 3-5 space and cross-over of each of these spaces for staff to access staff zone
- Linear plan not conducive to every site
- The same simple zoning diagram outlines the next variation to our approach.

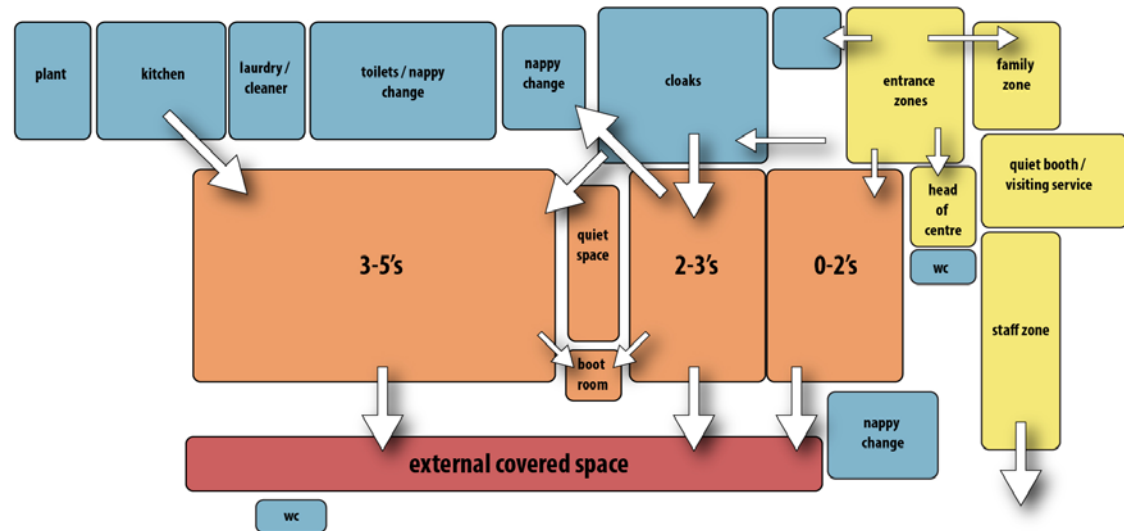
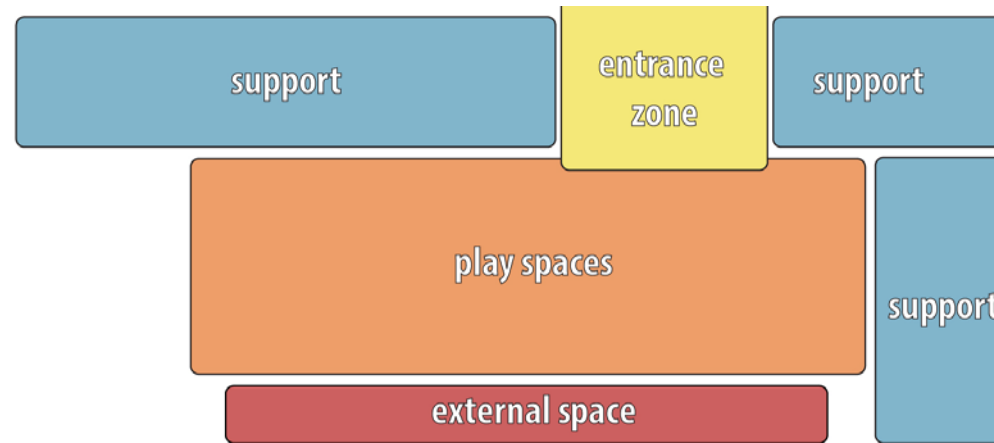
Section 03 - The Reference Design

Creation of a Flexible Reference Design

In providing an L-shape of support accommodation around the play-space zone we can begin to improve the connectivity with support spaces. This not only improves functionality but also begins to 'wrap' around the play-spaces; from a conceptual approach providing protection to the central spaces of the building. This arrangement could be applied to a 2-5 Early Learning Care setting, however this reference design requires to provide a 0-5 setting. The further intricacies of this arrangement required a further development of our strategy.

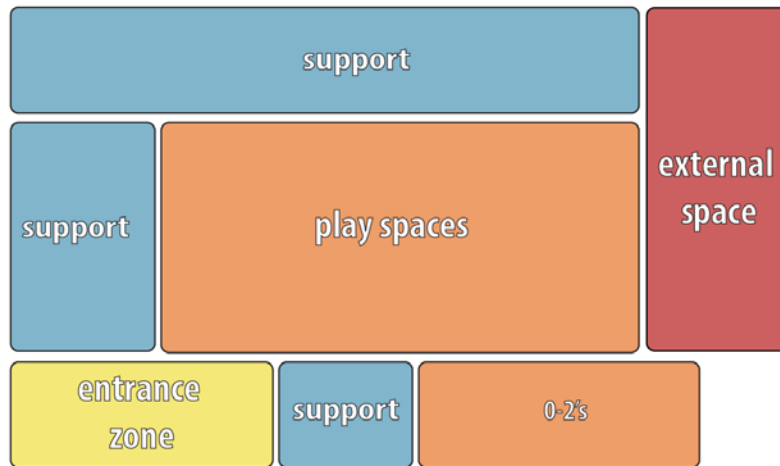
Issues / commentary

- Remoteness of kitchen to 2-3 room
- Due to the location of the 0-2 room, cross-over of 2-3 with 3-5s in accessing the WCs / nappy change and indirect provision of the adjacency
- Requirement to pass through 2-3 zone to get to the 3-5 space and cross-over of each of these spaces for staff to access staff zone
- L-shaped arrangement can vary depending on site



Section 03 - The Reference Design

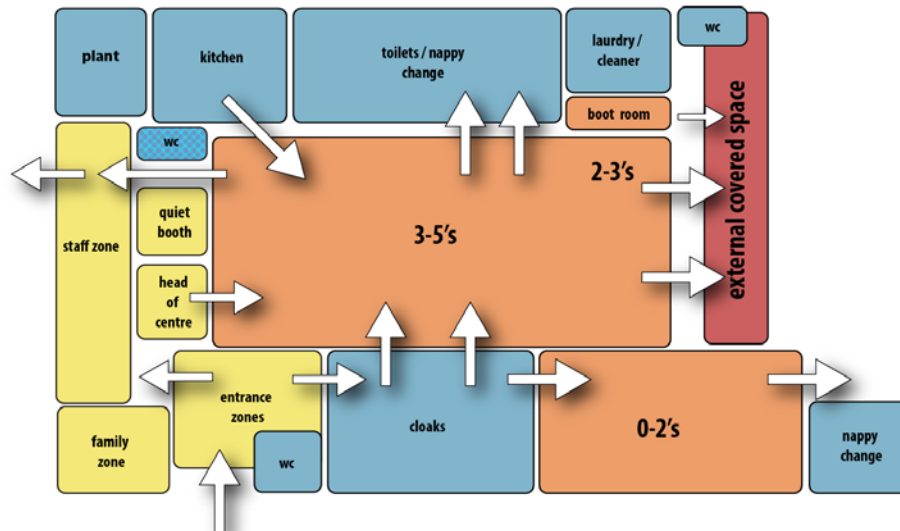
Creation of a Flexible Reference Design



This variation as a simple diagram is shown below. The same wrap-around of the central play-space is applied however to 3 sides of the central and largest part of the building's accommodation. The 0-2 room is separated from that of the 2-5 play-spaces enabling direct links from all play-spaces both internally and to the external space.

Issues / commentary

- Requirement to pass through the 3-5 space to access the 2-3 space and vice versa staff
- Good functionality and space around the entrance and staff support zones
- Good link between the 2-3 space and the toilet zone
- Configuration conducive to a variety of solutions depending on orientation and site
- Doubling up of cloakroom function with 3-5 play-space in this solution required access to all play-spaces via the 3-5 demise.



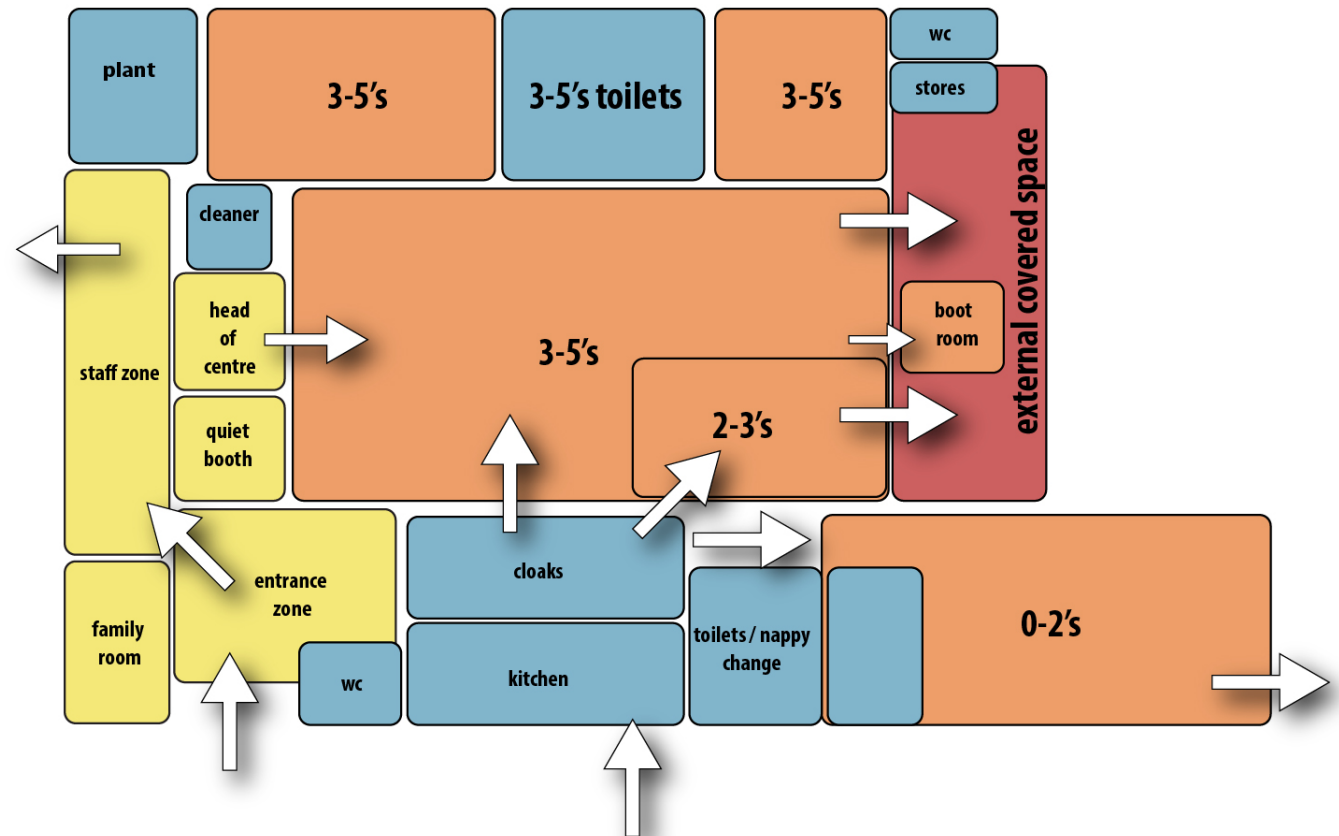
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Creation of a Flexible Reference Design

The final variation takes cognisance of the previous commentary, resolving the issues around the access to toilet zones from each of the play-spaces and ensures that cross-over of activities is controlled in moving the kitchen function to the entrance side of the layout. Further the cloakroom function is restricted to this whilst providing direct circulation to each of the play-spaces. Whilst there are further variations that can be derived from this solution, this arrangement is preferred by East Ayrshire Council and the Care Inspectorate due to the ability to provide a variety of different internal spaces within the overall 3-5 zone.

We have designed a variety of spaces for the children to use over the course of their day; spaces for large or small groups where relationships can flourish and where children can be highly active, as well as providing spaces for children to be alone and relax. In providing flexibility in the spaces created will offer opportunity in their use during the reference design setting as well as out-with these times. The baby room is a separate space providing a different type of environment. The staff zone provides areas for working, relaxing, eating as well as private space to hold small meetings or make private calls. A family room, or community room can be used for a variety of purposes and therefore will be occupied frequently over the course of a day.

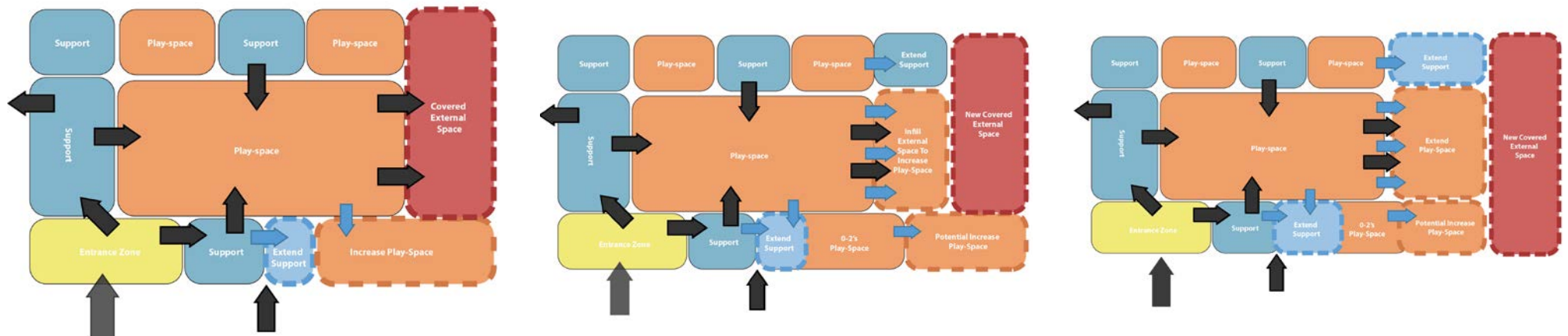
Being essentially single storey provides a setting which is inclusive through the play spaces. There is space provision that would allow the addition of a platform lift to provide access to the small upper level of the play space.



Section 03 - The Reference Design

Scalability

The reference design is readily extendable; whether to add a 0-2 play-space or increase the registerable space within the 2-3 or 3-5 play-spaces and associated support accommodation



Section 03 - The Reference Design

Indoor Experience + Environment



The bright airy space that welcomes you on arrival to the building continues throughout with the plentiful provision of natural light, together with a natural palette of internal materials, colours and finishes. Once you circulate within the building the external space unveils itself. The visual and physical linkages between inside and outside are clear for all users, enabling the blurring of the boundary between. Each playroom has been designed to have a variety of zones in which to play and provide different learning outcomes. These spaces are provided within a variety of different environments which can support the activity. It is envisaged that dining will be provided throughout the playroom. More detail is covered under this section.

Similarly in the 2-3 zone a variety of play settings are designed. Free-flow access between the playrooms and the external space was a stipulation of the brief.

The proposed single storey reference design is defined into 2 main zones; the support spaces which wrap around the central larger scale playrooms. Increasing the volume in the larger playrooms not only reflects the spaces within but offer the opportunity to bring natural light and ventilation into the deeper parts of the plan, whilst also introducing the possibility of the playroom to extend in 3-dimensions. This offers interest for children within their space and the ability to climb and explore the environment independently, as well as creating more intimate spaces; nooks and cubby holes within the active wall. The added benefit being of great visual interest and excitement on arrival at the setting.

The FF+E as proposed is a combination of both Community Playthings settings and feature or designed in furniture which offers both functional and efficient use of the space.

The area of each space as defined is based on the space standards referred to within the brief.

The design utilises 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. In maximising natural light, this is beneficial to the wellbeing of all users, as is natural ventilation. Windows are appropriately positioned to allow children of all ages to benefit from views out as well as ensuring control of sunlight where required. The level of noise within what will be a busy, vibrant space has been considered by an acoustic consultant. Details of this is included within section 4.0 of this report. It is proposed that underfloor heating is provided within the larger spaces, with radiators proposed to some of the more cellular spaces where appropriate.



Section 03 - The Reference Design
Indoor Experience + Environment



Section 03 - The Reference Design

Programmatic Considerations

CAR PARKING + DROP-OFF

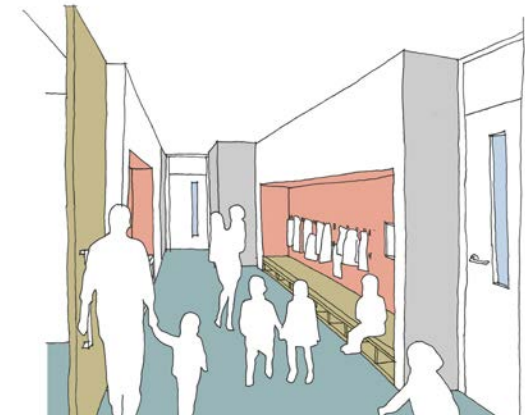
Consultation was undertaken with East Ayrshire Roads Alliance with regard provision of car parking for this reference design project. It was confirmed that a minimum of 1 space per member of staff was required, and provision for drop-off, with accessible parking provision @ 5% of the total parking provision was also required. This equates to 24 no car parking space and 2 accessible parking spaces.



ENTRANCE + CLOAKS

It is important that this zone can support the various functions and numbers that it requires to be accommodate. As a starting point a bright, welcoming and calming environment is of utmost importance to its' success, as is the ability to accommodate the volume of people at peak times over the course of the day. The entrance is secure and controlled from reception of via video-phone from the playrooms. During the day the reception will be manned providing further support and security for visitors and users of the building. At peak times the large door will be open providing a large open zone, improving circulation through from the entrance to the cloakroom zone to all of the playrooms. The cloakroom is shared between the 2-3 and 3-5 playrooms; each of which is accessible directly from this generous space. At peak times sliding doors between the cloakroom and the playrooms may be open to ease the flow of children with parents/carers.

In providing these larger zones this will offer opportunity for parents to meet and chat with others.



Section 03 - The Reference Design

Programmatic Considerations

PARENTS AND THE COMMUNITY

To encourage parents and the wider community to benefit from use of the ELC setting a number of facilities are incorporated into the reference design. There is provision for Visiting Services within the building which can provide direct support to parents. Additionally a family / community room is accessible from the main entrance which could be used to support a number of activities. Further this space could accommodate staff meetings or training.

This space has large opening doors and blinds to windows which allows it to adapt to the function it is being used for

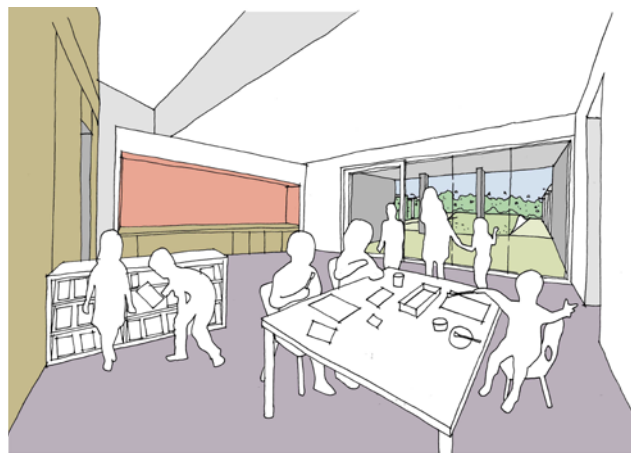


Play

The play spaces have been broken down to reflect age groups with spaces designed relative to their needs.

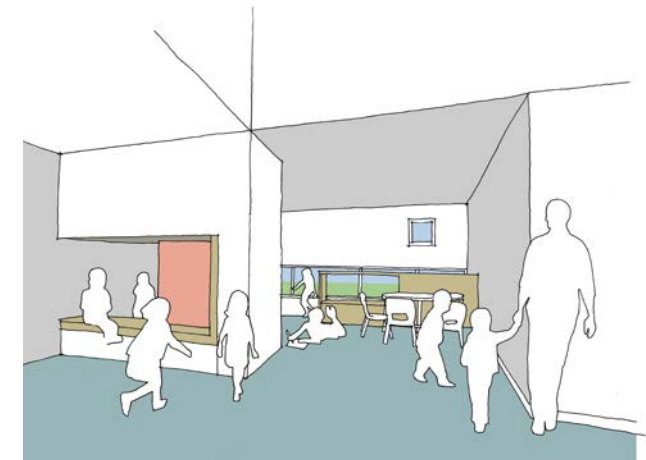


A small 0-2 play-space has been incorporated for a small group of children. This space has its own designated external space, milk kitchens, changing area and storage.



The 2-3 developmental playspace is accessed directly from the cloakroom and has its own WCs, nappy change, storage and access to the external space and covered external space. It also have the

ability to be opened up to the 3-5 space should that be required during the course of the day.



The 3-5 play-space is the largest space within the building, however it has been designed to create smaller spaces within the overall space which can be used by smaller groups. Different types of activity can be separated out within the overall volume. Additionally there is a quiet zone and intimate nooks to ensure the space provides options for all children. The play-space can also freely access the outdoors either via the bootroom or directly. The external covered zone ensures external activities all year round are possible below a protected area.



Section 03 - The Reference Design

Programmatic Considerations

'SPACE TO EAT'

The proposed service model requires careful consideration of the sequence of events before and after dining and the associated spatial implications.



The principle for this model is that a central kitchen will provide food to the ELC, with warm food being reheated in a regen kitchen before being taken into the playroom, food being 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 and significantly lower specification than a catering kitchen. The service model requires all children to be fed lunch. The number of sittings will be determined by East Ayrshire Council. Tables and chairs must be provided to accommodate all children dining indoors. It may also be facilitated outdoors, weather permitting. Each playroom must accommodate the children, in groups, each supervised by a member of staff. To have furniture for these numbers on the playroom floor at all times constricts the available space. Likewise it is unrealistic to require staff to bring all of the required furniture out every day. Each authority will require to review and confirm whether a single or dual setting will be provided. To facilitate the changeover children can be asked to play for a short period either outdoors or in the external transition space.

It is proposed that in a single sitting the required additional tables would require to be stored within storage in the playrooms. A dual sitting potentially could be accommodated by utilising the tables permanently within the play spaces. This is the case for the 0-2 and 2-3 play spaces. East Ayrshire Council currently signal the point of change-over to the routine of the den by putting tablecloths on permanent tables in the playroom, which allows the playroom setting to be adjusted for lunch/mealtimes.

The diagrams here illustrate two modes of operation; 1) play, and 2) dining.



SLEEP

Due to the length of time some children will attend there will be a need for some to rest or sleep during the course of the day. It is expected that children may rest as they need and can be accommodated in some of the quieter and smaller zones of the space within both the 2-3 and 3-5 playrooms. There is no defined area within the 2-3 or 3-5 space, however sleep-mats will be provided. Cots or dream coracles will be provided within the 0-2 room.

TOILETS

Toilets have been split across the floor-plan. Accessible from each of the playrooms, this not only prevents a need to cross another playroom to access them but also allows ease of access which ensures a child finds the experience as comfortable as possible. Further, all doors to and within the space are lightweight to encourage independence. The proposed toilets are unisex with age appropriate cubicles and sanitaryware. A nappy change is provided in both the 0-2 and 2-3 zones. An external toilet is also provided for use by all. Staff toilets are located within the entrance area and staff zone. There is statutory guidance that covers the provision required, and this is also covered in Space to Grow.

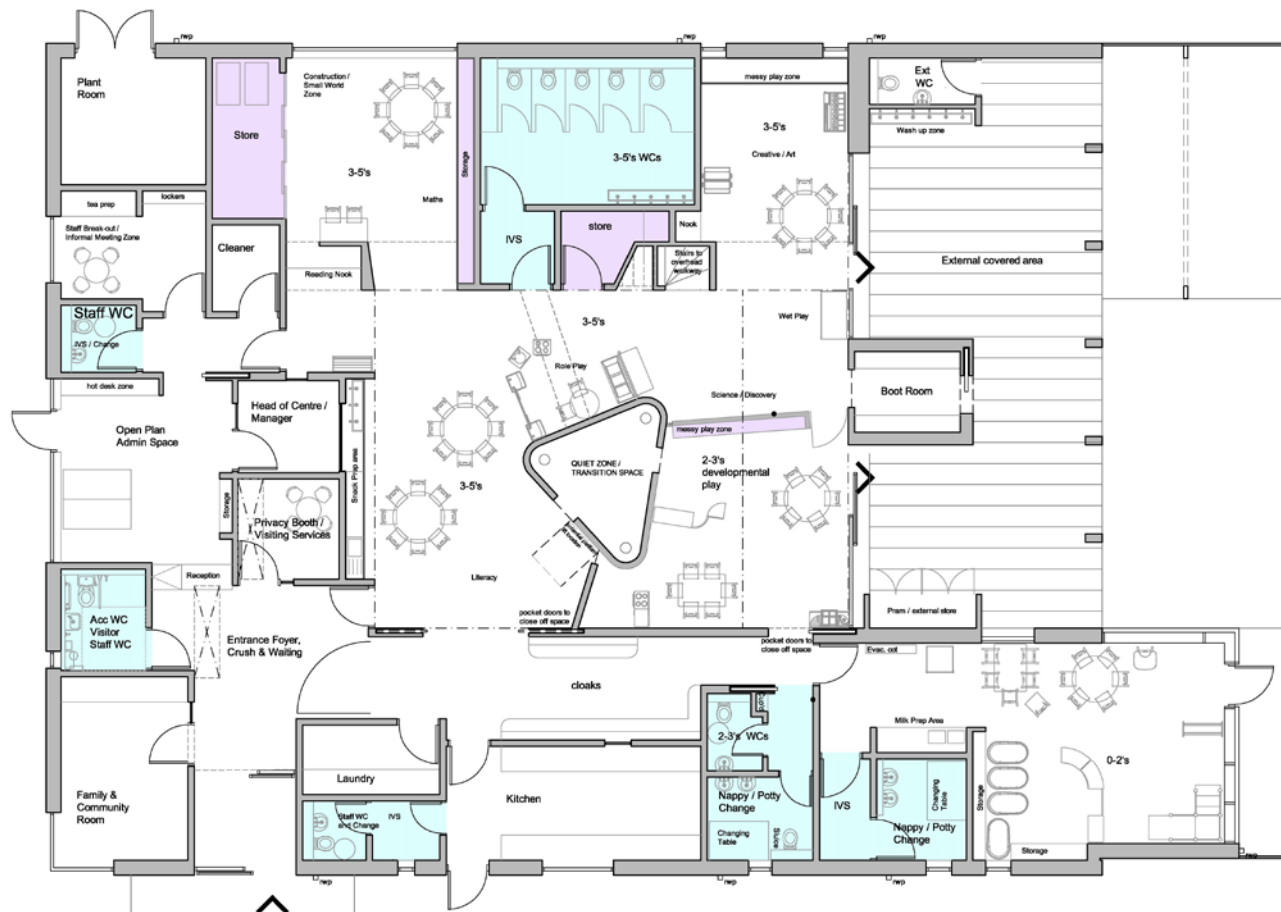
Section 03 - The Reference Design

Programmatic Considerations

STORAGE

The practicality of storage is critical within the reference design setting. The storage is distributed across the building's footprint and playrooms in a variety of manners; from the buggy store at the main entrance, the cloakroom and boot room, to the storage zones within each playroom. There are 2 large stores within the 3-5 playroom for large equipment and roll away dining furniture,

together with a large storage wall which provides efficient storage of smaller items. This type of storage is also included within the 0-2 and 2-3 spaces.



STAFF

The staff zone provides a permanent space for staff to take time off the floor within a small social space and kitchen facility. There are some lockers for staff to store their personal belongings and change.

The office zone includes a flexible work zone as well as permanent admin staff space and reception with associated storage.



A small meeting room, or privacy booth is accessible from the main entrance area as it can also facilitate visiting services, which is a requirement of this facility. The Head of Centre will have their own office.

The staff zone has access to its own external space.

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Building Form – functional, adaptable, sustainable, cost effective

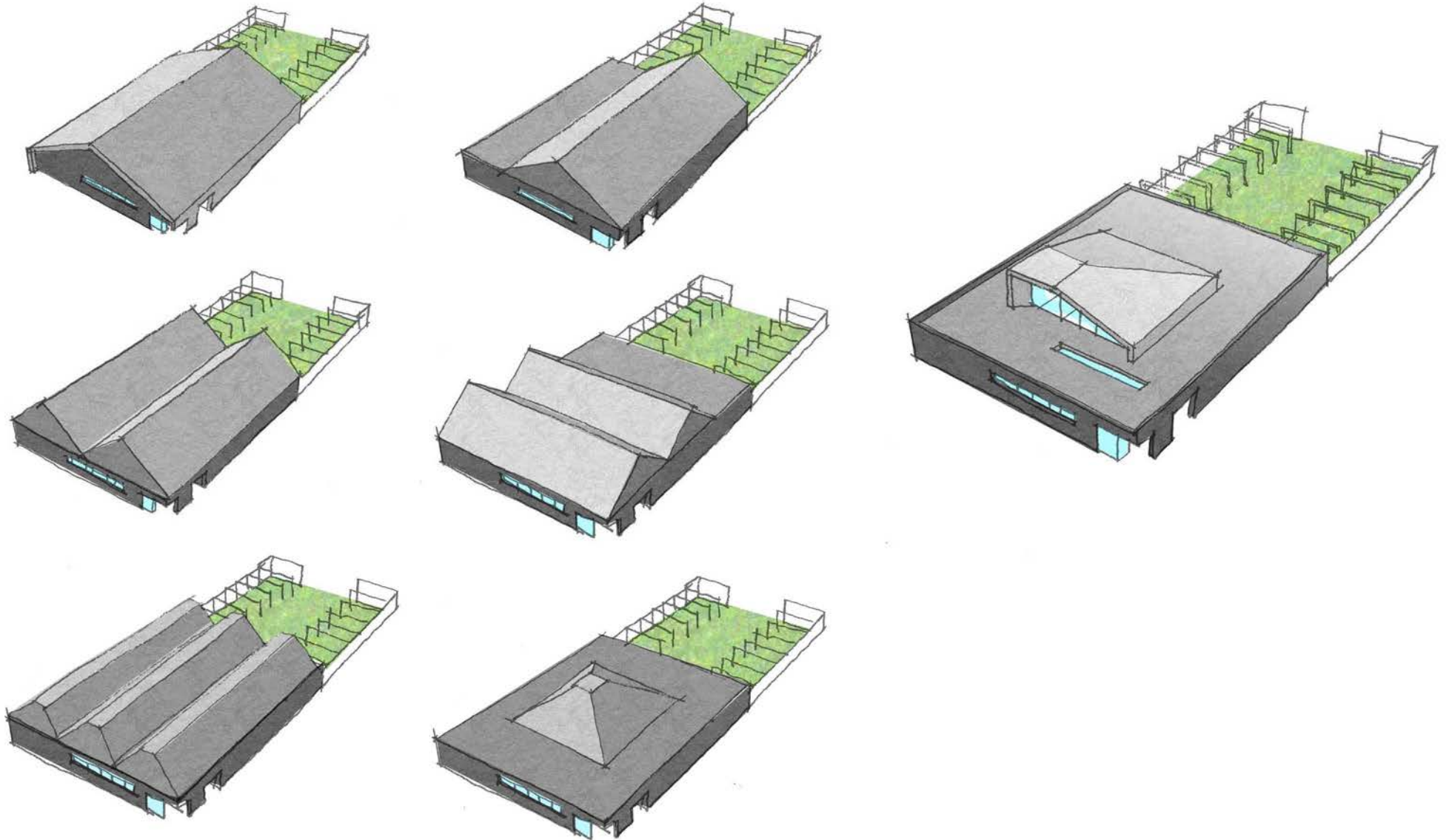
SCALE AND MASSING

Various building forms have been assessed in relation to both internal adjacencies between the various aspects of the building, potential site constraints, orientation, the available budget and appropriate construction methodologies. (Some sketch examples are illustrated here). There are of course advantages and disadvantages to each of these approaches, all of which have different implications for quality, function and cost.

In essence the support accommodation is in each case generally grouped around the perimeter of a central volume, the roof form of the latter varying depending on the particular site and context. A wide variety of permutations are available.



Section 03 - The Reference Design
Programmatic Considerations



Section 03 - The Reference Design

Programmatic Considerations

INTERNAL ENVIRONMENT

The sectional design is extremely important in a simple building, facilitating interesting relationships between not just the reference design internal spaces, but also in relation to their relationships with the external environment.



MATERIALITY

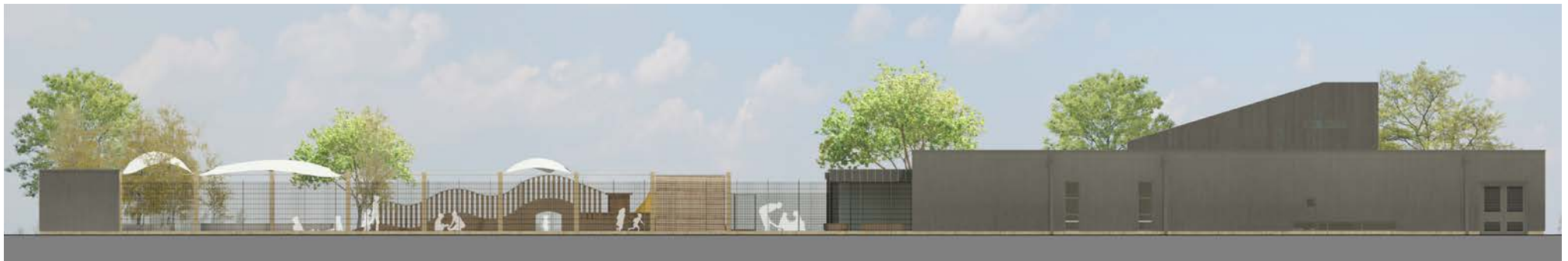
The reference design's external expression is based on a number of important considerations:

- The provision of a convivial, welcoming form with a dignified and elegant civic presence.
- Simple legibility through an honest expression of the building's internal functions.
- Manipulation of scale, especially in relation to younger children through the provision of a building form which is not too monolithic, but rather is clearly composed of smaller scaled elements.
- The use of components which are conducive to speed and efficiency in their erection, thereby enhancing the contractors' ability to meet EAC's programme requirements.
- The creation of a visual consistency within a contemporary aesthetic.
- The creation of a powerful *sense of place*



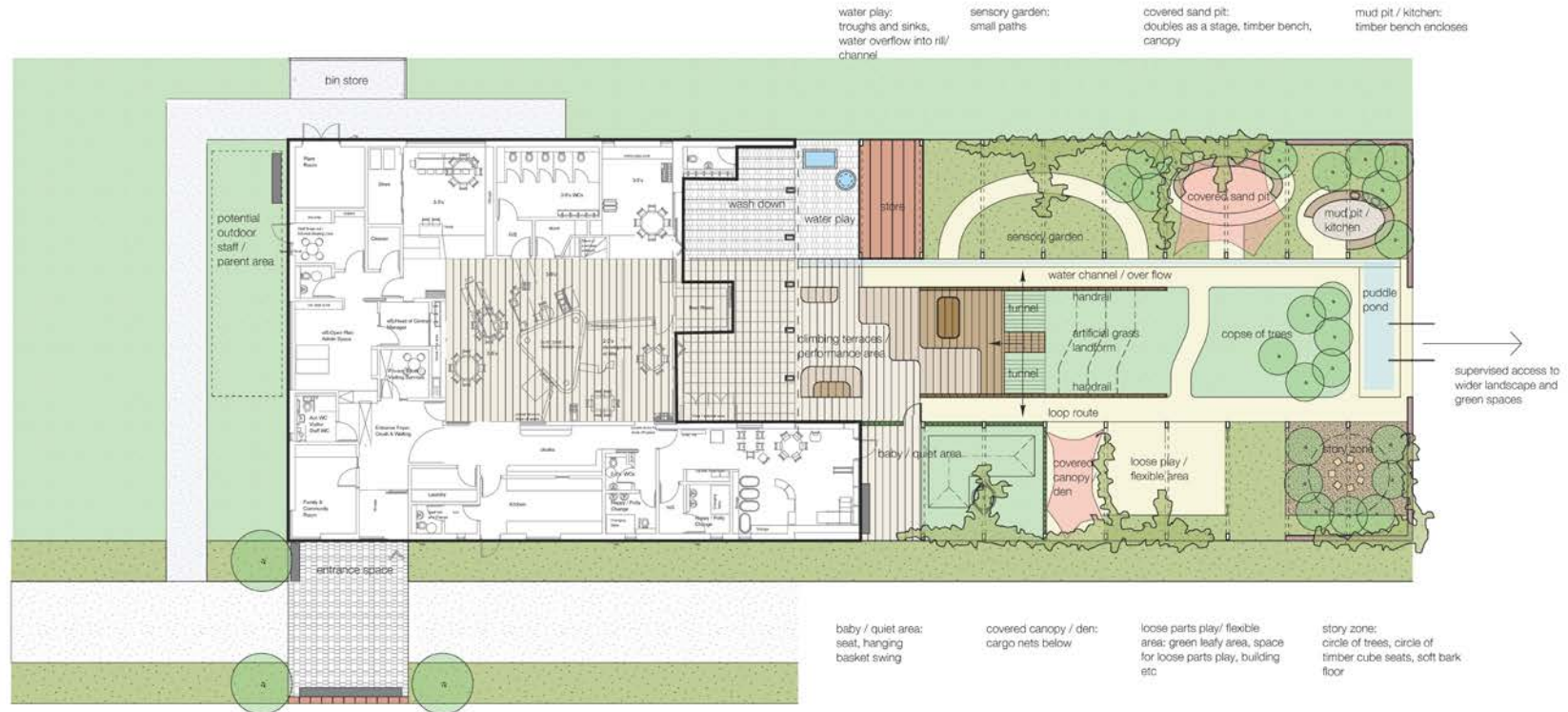
Section 03 - The Reference Design

External Fabric



The Material palette of the reference design can be developed to reflect context or alternative requirements of a local authority. Alternative elevational treatments are possible but subject to cost checking.

Section 03 - The Reference Design Landscape



water play: troughs and sinks, water overflow into nil/channel

sensory garden: small paths

covered sand pit: doubles as a stage, timber bench, canopy

mud pit / kitchen: timber bench encloses

baby / quiet area: seat, hanging basket swing

covered canopy / den: cargo nets below

loose parts play/ flexible area: green leafy area, space for loose parts play, building etc

stone zone: circle of trees, circle of timber cube seats, soft bark floor

- KEY:
- New tree planting
 - Shrub / herbaceous planting
 - Amenity Grass
 - Siberian larch timber deck with grip deck inserts
 - Self binding gravel path
 - Precast concrete paving
 - Tarmac path
 - Play surface - bark
 - Play surface - mud
 - Play surface - sand

erz East Ayrshire Pilot Nursery - Garden Masterplan
Scale 1:200 @ A3
16/05/2018



Section 03 - The Reference Design

Landscape

***“Why are you sitting in a box?”
“It’s not a box...”***

— Antoinette Portis, Not a Box,
Harper Collins 2006

The nursery landscape is conceived as a flexible and adaptable series of child scaled boxes – defined spaces ready to be filled with action, imagination and creativity.

Early years education provides a foundation for the Curriculum for Excellence, within which outdoor learning is recognised as fundamental. The early dialogue with stakeholders and user groups in East Ayrshire reinforced the need for useful, educational and stimulating outdoor spaces for the pilot nursery. The NORR/erz scheme is conceived as an indoor/outdoor nursery where the space allocated and activities facilitated inside are reflected by the space and facilities outside, with a seamless flow between them.



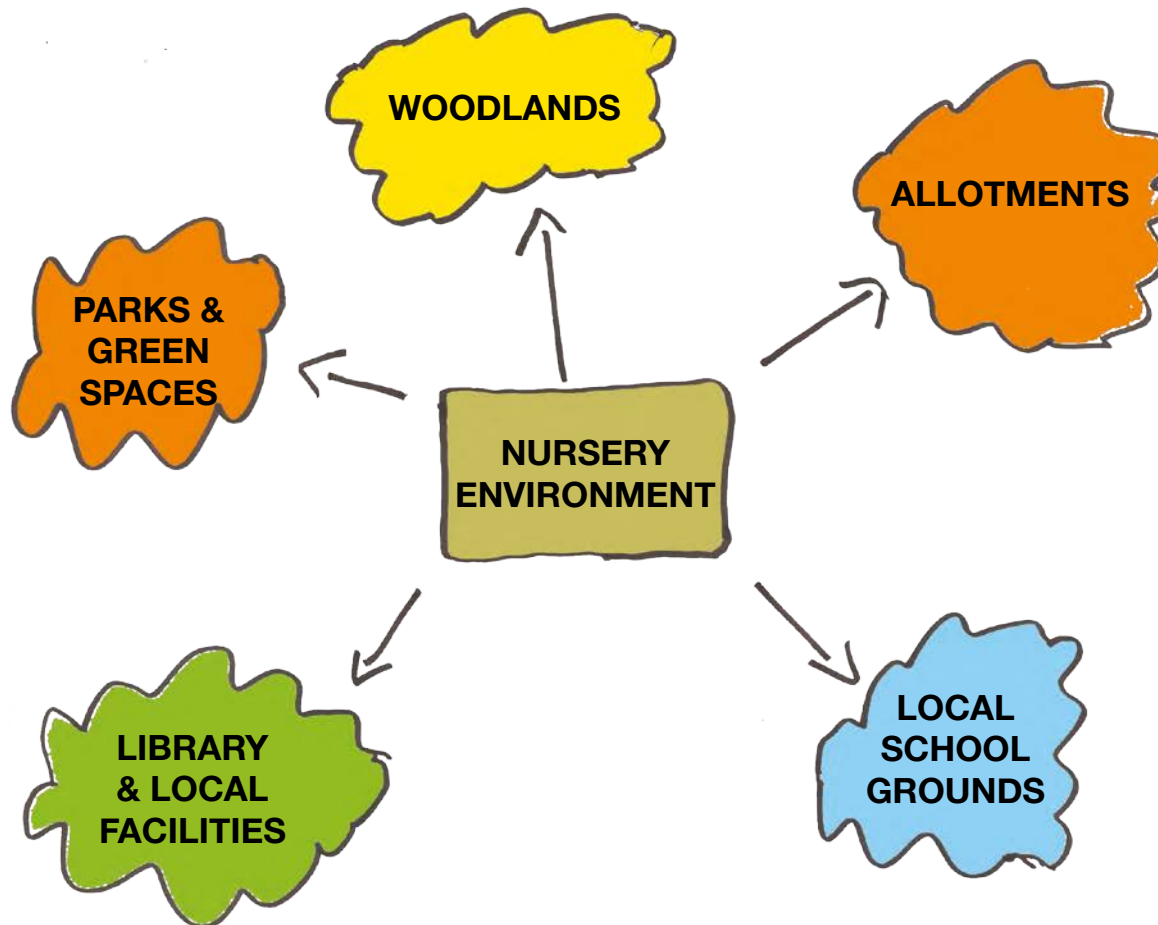
“Outdoor learning experiences are often remembered for a lifetime. Integrating learning and outdoor experiences, whether through play in the immediate grounds or adventures further afield, provides relevance and depth to the curriculum in ways that are difficult to achieve indoors.

Learning outdoors can be enjoyable, creative, challenging and adventurous and helps children and young people learn by experience and grow as confident and responsible citizens who value and appreciate the spectacular landscapes, natural heritage and culture of Scotland.

The journey through education for any child in Scotland must include opportunities for a series of planned, quality outdoor learning experiences.

Curriculum for Excellence through Outdoor Learning.”

— Learning and Teaching Scotland 2010



This approach has been developed in dialogue with the Care Inspectorate and seeks to provide a suitably high quality of outdoor provision to allow the nursery to expand its capacity, by up to 20%. This would be entirely dependent of the quality of the outdoor spaces and what they offer children and staff in enhanced activity and environment. Care Inspectorate guidance for this says:

“The environment should provide a balance between experiences and opportunities both inside and outside. For example, the Care Inspectorate note that being outside in fresh air is beneficial, but when children are helped to actively explore nature for themselves the dividends for improving outcomes are exponential. If staff help children to develop their own free play activities outdoors they can learn through nature. From this, we can begin to see children flourish. Many children become more confident, co-operative, calm and content. For some it can be transformative.”

— Space to Grow, Scottish Futures Trust/
Care Inspectorate/Scottish Government 2017

This design seeks to maximise quality and usefulness of the outdoor space to increase the number of children in the nursery where possible. The following elements have been considered to support the provision of indoor/outdoor settings:

• **Consultation**

Dialogue with East Ayrshire Council Education department, nursery heads and staff, parents and children has fed into the development of these designs. The dialogue emphasised the value and need for good outdoor spaces and enabled Norr/erz to create a list of activities that were seen to be essential for a good nursery garden.

Section 03 - The Reference Design

Landscape

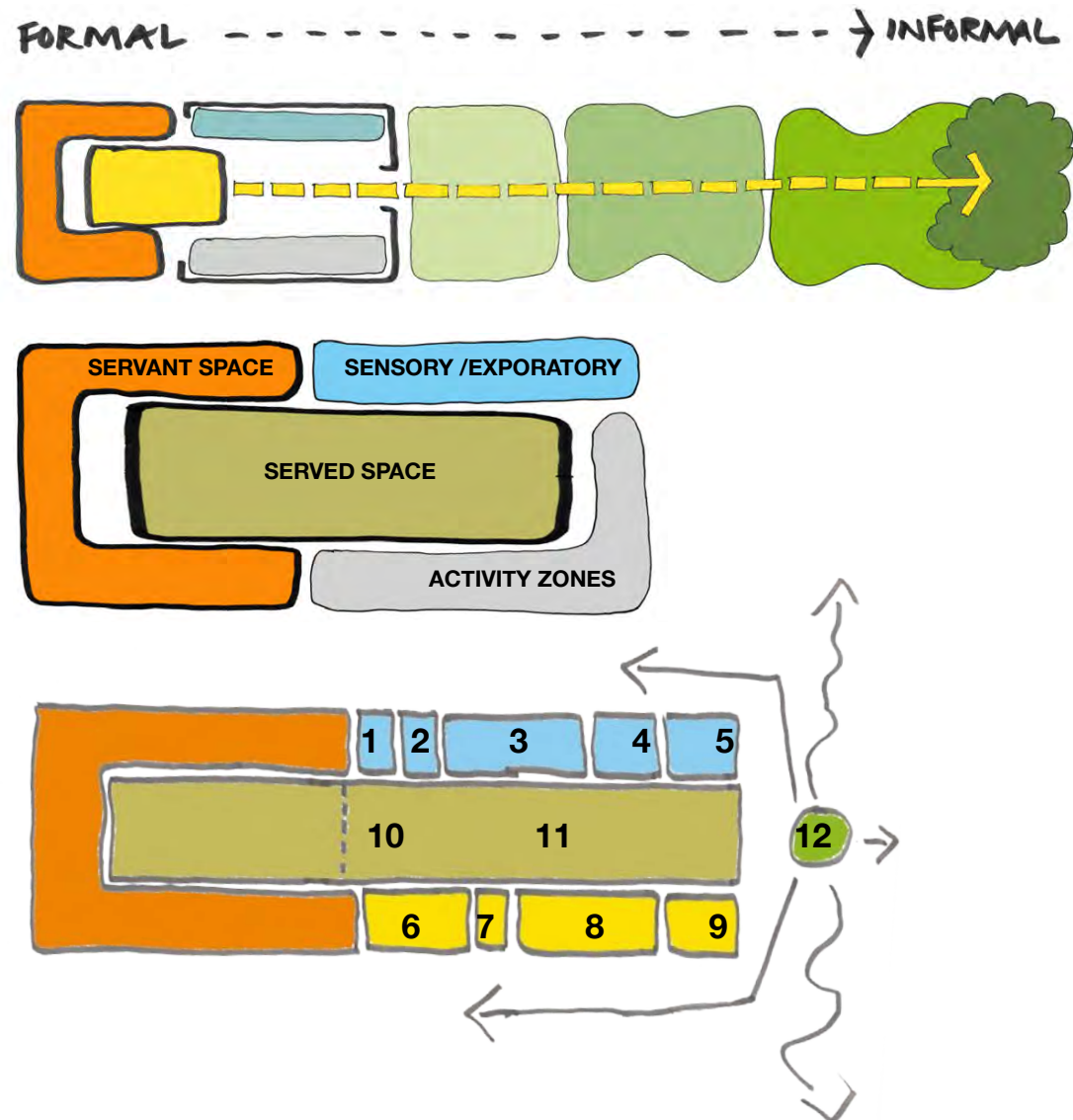
- **Space allowances**

Space to Grow suggests that if the external spaces are of a high enough quality then an additional 20% can be added to the nursery role. This requires the outdoor space to be simultaneously sensory, active and offer sanctuary. The space requirements for such spaces are open to interpretation, but previous guidance suggests 9.3m² per child.

In terms of our design for the pilot scheme the space allowed is 627m². Of this, approximately 40% is soft (255m² of grass or shrubs) and 60% hard (372m² of timber deck and paving). The design of the pilot nursery has been developed to create interesting and exciting, child scaled spaces – crammed full of sensory and spatial experiences. The space for the garden is shown as a workable minimum and other adjacent spaces could be adopted depending on the site: at Netherthird a strip of greenspace between the nursery and the boundary fence is adopted.

The prototype is designed for 82 children. The total area shown for the garden is 627m² which would compare with the 762m² at a rate of 9.3Sq.M per child. In percentage terms, this represents a reduction in area of approximately 17% against the statutory recommended minimum. It seems reasonable therefore to assume that as a general guide, 80% of the 9.3Sq.M would be sufficient to accommodate the range of facilities and activities envisaged.

This, however, presupposes both a high-quality garden environment and a fluid relationship between indoors and outside. Essential also is a wider landscape plan that examines the potential connectivity of each site to other good outdoor places: parks, schools, churchyards etc opening up a wide range of other opportunities and tying the nursery into its community. At Netherthird, the primary school playground, the adjacent pitches and allotments, and access to a small local stream would all be assimilated into the nursery outdoor space network.



Section 03 - The Reference Design Landscape

• Design elements

Consultation outcomes led us to include the following “shopping list essential items” which have been built into the nursery garden design:

1. Water play, with taps, troughs and flowing water
2. Outdoor store for toys and equipment
3. Sensory garden, sensory plants and space for growing
4. Sand pit and mud kitchen
5. Looping paths for trikes, scooters and tig
6. Separate babies' area, protected and enclosed
7. Covered areas for dens and shelter
8. Flexible area / loose parts play/ adaptable spaces
9. Story telling corner/outdoor classroom
10. Changes in level for climbing, performing, showing off, rolling down etc
11. Big doors and easy access between inside and out – children in charge
12. Access to other greenspaces in the community – a garden gate and paths beyond the garden boundary

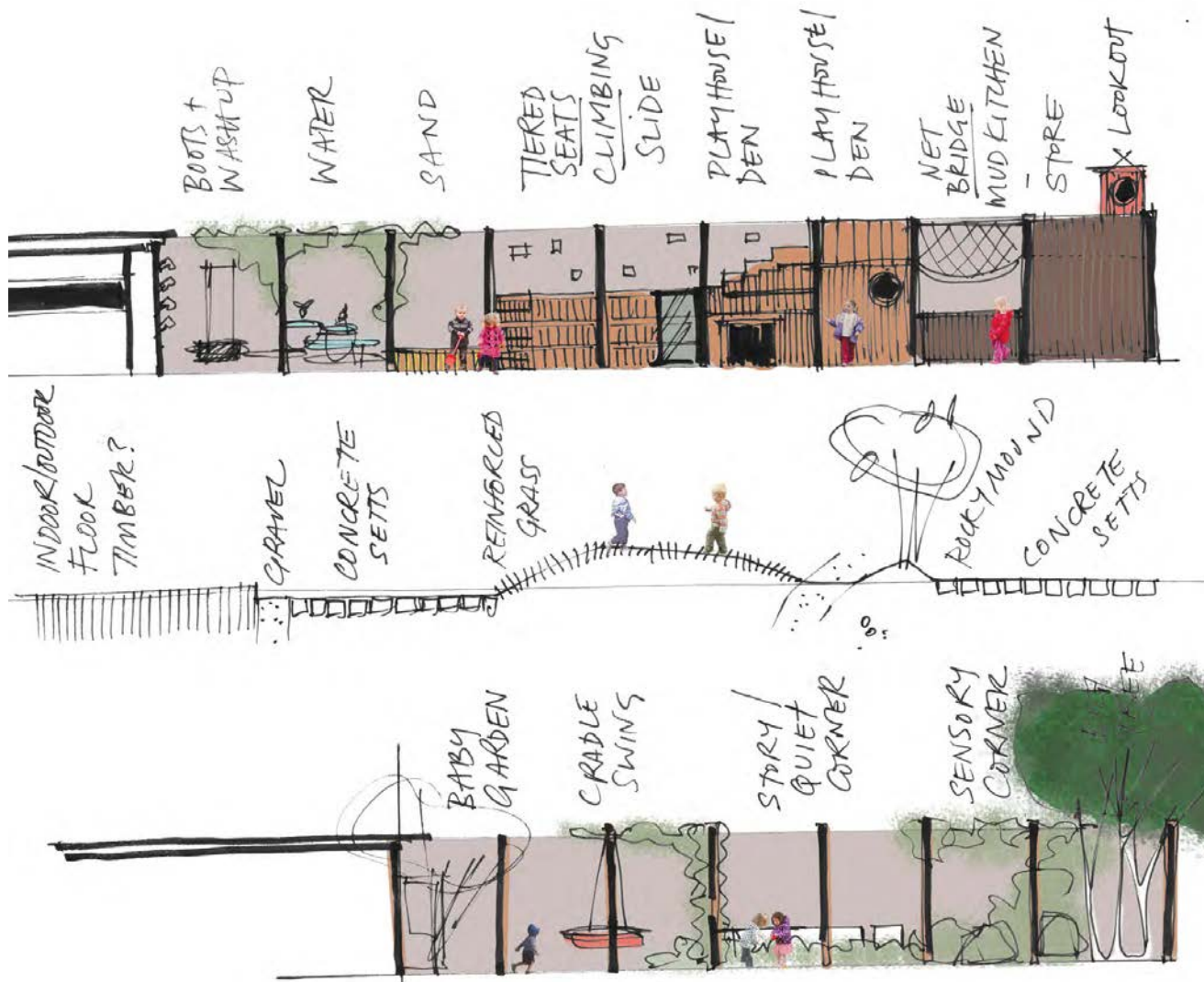
To create a garden that enables the provision of all these items we have developed a structure that is an enclosed space flowing out from the building canopy. It is enclosed by a pergola structure on each side which creates a framework for a wide variety of spaces, additions and structures, whilst also bringing the scale of the spaces down immediately to child friendly size.

Between the pergolas is a central adventure zone with decks, slopes and a tunnel.

A network of paths connect spaces and create several different loops for running, scooting and trikes.

A water rill channels the run off from rain and water play through the garden as a positive statement useful for play and learning. This terminates in a drainable puddle pond (with plug!).

Planting creates smaller richer pockets of smaller space, shifting light patterns, shelter, ecology and seasonal colour.



Design development sketches through the activity zones

Section 03 - The Reference Design

Landscape

• Adaptability to weather

Outdoor space in Scotland needs to be usable every day, so shelter from the weather is vital. This means that canopies are very important, and are integrated into the pergola design, but our tunnels and dens offer alternative wet day places.

Puddles and celebrating water is also valuable – enjoying all sorts of weather. For this reason, lots of lawn is not a good solution and our design offers a range of surfaces from grass to self-binding gravel, deck and astro-turf carpet.

• Microclimate

The garden environment is also mediated by planting of trees and shrubs offering shelter from wind and bright sunshine and by the enclosed nature of the “walled garden” and the pergola.

• Diversity

The outside spaces should not replicate those found inside – certain activities are better outside: running, cycling, scooting, mud, sand, water, plants. Some activities can be done differently indoor and out – den building, eating, growing food etc.

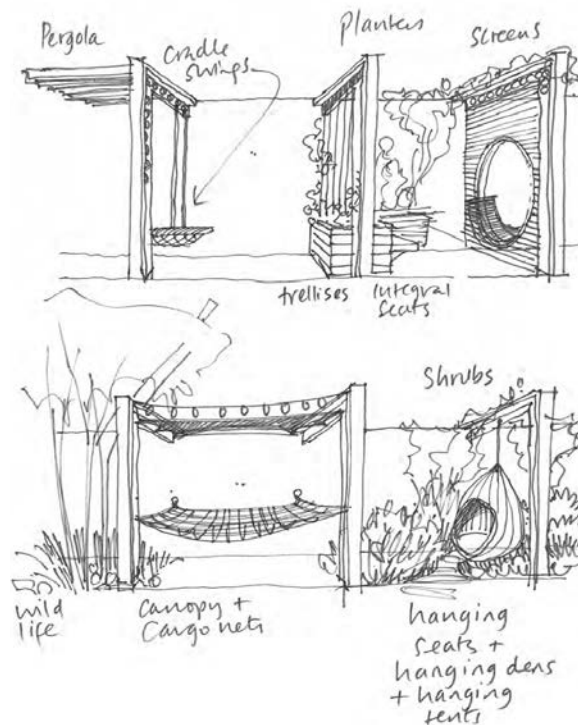
• Staff needs

Grown-ups are important too and need to be enticed outside by the spaces provided. Seating, shelter and the capacity to make a mark on the space and adapt it each day to nursery needs are all essential. This design has an appealing scale and form, that suggests a garden rather than a play space, whilst offering a wide variety of activities and opportunities for creative, imaginative and active play and learning.

• Enticement to go outside for staff and kids:

The garden needs to have an appealing, enticing character – a place for fun and surprises, exploration and experiment:

- * The outdoor is conceived as a garden for learning and play and will look delightful and appealing to all ages, with an attractive pergola structure, shrub and woodland planting



and eight mature trees.

- * Seating is built in for staff and kids, but can be supplemented by moveable furniture too, such as outdoor beanbags, spinning chairs, wheeled toys etc.
- * Outdoor spaces are directly accessed from the playrooms.
- * Children can go outside independently when they choose to.
- * The outdoor area is as natural as possible, and offers a range of different surfaces, levels, sights sounds smells and textures to create a delightful and a stimulating environment.
- * Elements are included that promote challenge and provide elements of risk for children to manage, such as sloping

decks, steps, tunnels, rills of water, trees, cargo nets, puddles and roly-poly slopes.

- * Moveable canopies provide shelter, as do dens and tunnels. There is space to put up a tent or two.
- * The pergola is a very flexible structure from which to hang canopies, planting, artwork, cargo nets, den building equipment, bird feeders, flags, wind socks, wind chimes, solar lights etc. It also separates the garden into child sized comfortable spaces for different activities
- * At the end of the garden softer greener spaces are available for quiet time, story-telling and outdoor learning. The vegetation here will provide for mini-beasts, growing things and daisy-chains etc.

• Resources

- * Water play with taps and troughs draining to a rill which runs along the floor of the garden for dams, splashing and boats. This in turn leads to a puddle pond, for jumping in. The water is set up so you can use just the troughs and taps – or on a sunny day the whole system. Rainwater will also be channelled into the rill for natural drainage and all-weather water play.
- * A sand pit is generous and surrounded by seating – which also holds the sand in. The mud kitchen is adaptable to a range of messy play.
- * There is easy access to toilets, hand hygiene and to changing facilities in the interstitial space between the indoors and outdoors. A boot store is also provided under the shelter of the building canopy, as is an accessible outdoor toilet.
- * A storage shed provides tidy space for toys and trikes and gardening equipment.

• Planting design:

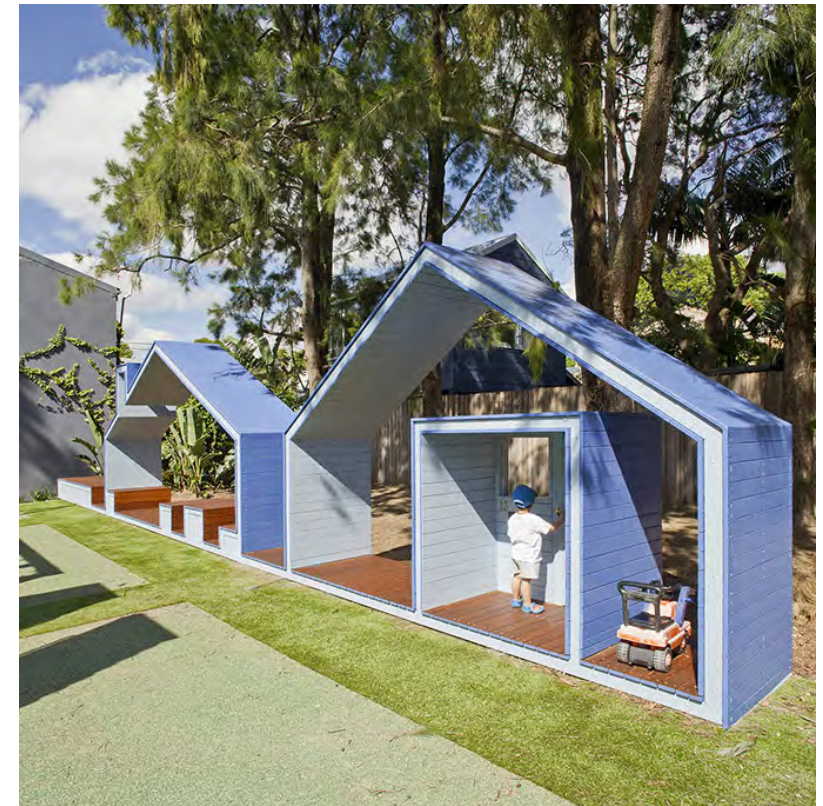
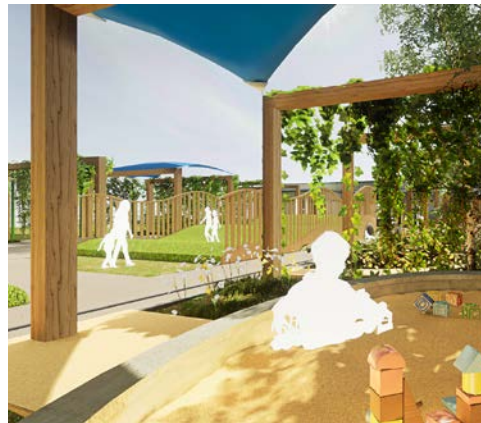
The planting design will use resilient and hardy native trees and shrubs, which are non-toxic and where possible edible. Scratchy and thorny planting will be avoided. The planting palette will include a variety of sensory trees, shrubs, climbers and covers. This is a basic structural planting approach which will allow each nursery to customise with bulbs, flowers, special trees etc. Example plants are:

Trees:

- Malus spp* (apple)
- Betula pendula*, both single and multi-stem specimens (birches)
- Salix spp* (willows)
- Sorbus aria* (rowans)

Shrubs:

- Phyllostacys spp* (bamboos)
- Stachys lanata* (lamb's ears for texture)
- Vaccinium myrtillus* (blueberries for fruit)
- Lonicera japonica* (non toxic climbing honeysuckles)



Grasses and ground covers:

- Vinca species* (periwinkles)
- Chamaemelum nobile* (chamomile)
- Nassella tenuissima* (hair grass)
- Miscanthus 'Little Kitten'* (grass)

Summary:

The garden design greatly extends the usability and scope for activity with the nursery, complementing and extending the rich internal environment. It is a unique and characterful set of spaces for play and learning, with potential for customisation by each nursery and capacity to develop over time.



Section 04 Supporting Consultants

Section 04 - Supporting Consultants

4.1 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.

Superstructure Frame

The structural form of the building comprises primarily of a single storey structure to the building perimeter with a flat roof construction over. The central area rises above the main perimeter roof area to form a high level north light with the roof tapering from this north light to merge with the general flat roof to the rear area. The internal spaces around the building perimeter 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 roof structure and transfer loads back to the columns positioned around the perimeter of the area. The roof structure will act as a diaphragm transferring the horizontal loads to the external stability frames.

The flat roof construction extends to the southern rear area and is supported on external colonnade columns creating a sheltered entrance from the external play space to the internal building floor space. The external play space is enclosed by a boundary fence on three sides with the main building to the north.

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

- Timber Frame Construction
- Steel Frame Construction

Typical layouts of each are shown in the appending drawings.

We would comment on each form of construction as follows;

Timber Frame Construction (Designed in accordance with BS EN1995 and UK NAs)

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 (Designed in accordance with BS EN1993 and UK NAs)

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/Environmental 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.

Full details of the structural options are available within the Appendix B.

Section 04 - Supporting Consultants

4.2 Mechanical and Electrical

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 C.

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 Handbook 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.

As the proposed building is essentially single storey with a number of external doors from each of the areas, there is no requirement for fire engineering within the building. Each local authority may have fire safety requirements which will require to be incorporated as necessary.

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 D.

Section 04 - Supporting Consultants

4.4 Acoustic Consultant

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 slabs.

Proposed roof-lights are double glazed.

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.

Class A absorbent ceiling tiles are proposed to the 0-2 room.

A combination of Class A absorbent ceilings tiles and Class C perforated wall or ceiling absorption is proposed to the larger 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 – 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.

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 design criteria and strategy adopted to achieve an appropriate acoustic environment is set out in further detail within the Acoustic Report, Appendix F.

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 E.

