Appendices

List of Figures

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APPENDIX 1 - Final Brief

Early Years Pilot Brief

V8 01-05-2018

Registered Capacity Kilmaurs Site:

72no 3-5yr olds & 10no 2yr olds.

The building is to be sized for 69no children.

An additional 20% of the capacity can be provided outdoors, which is 13no. children.

Registered Capacity Cumnock Site:

64no 3-5yr olds, 10 no 2-3yr olds & 9no 0-2yrs.

The building to be sized for 71no children.

An additional 20% of the 3-5yr and 2-3yr capacity can be provided outdoors, which is 12no. children.

Funding Envelope:

Kilmaurs = 5.8m2 x 69 children x £3000/m2 = **£1,200,600.00**

Cumnock = 5.8m2 x 71 children x £3000/m2 = **£1,235,400.00**

The building may not exceed the metric of 5.8m2

The number of children registered outside the building are not included in the funding calculation.

Entrance zone:

Welcoming and clearly identifiable.

A single point of entrance is preferred to monitor comings and goings.

From the entrance children would ideally disperse to their groups.

Opportunities for conversations to take place.

Access to admin / centre manager for sign-in purposes?

Storage space for childrens coats, bags, shoes;

- Wet items should have the opportunity to dry.
- Opportunity to sit while changing shoes.
- Sufficient space for up to 82 (Kilmaurs) / 83 (Cumnock) children and their care giver(s) and siblings to access / egress. Parking at a reasonable walking distance from the entrance.
- At Cumnock parents park at the community centre and walk across.
- 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.
- Close proximity of a room for private conversations and small meetings.

EAC will provide wet weather gear for outdoor play.

Children must bring indoor shoes.

Dining:

A central kitchen will provide food to the nurseries.

Dining refers to Lunch and High Tea.

Dining can happen indoor or outdoors, weather and space dependent.

Dining can overlap with other functions, such as the playroom.

Storage of additional tables and chairs for a single sitting.

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. Management of multiple sitting and staff deployment would need consideration.

Stainless steel countertops.

A single lunch sittings will start at 11.45

If multiple sittings lunch could start at 11.30

Lunch will serve all 82no children at Kilmaurs.

High Tea will be served after the PM session children have left at 16:00

High Tea will serve a maximum of 32 children at Kilmaurs and so in a single sitting.

High Tea will likely sandwiches and or soup.

Opportunity for indoor seating for all children for dining in one sitting.

Additional chairs may be required to be brought out for dining.

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 serving dishes 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 to allow for children to wash own dishes if managed as part of learning experience.

Children wash their hands in the playroom.

A trough provides for faster turnaround for all children to wash hands before eating.

All taps for childrens use to be sensor.

Adult taps to be lever operated

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.

Storage space for a third pint of milk per child per day.

Domestic cooker in kitchen for heating soup or children to participate in baking etc.

Milk Kitchen (Cumnock Only):

2 sinks, one hand-wash sink, one cleaning sink

Undercounter fridge for milk storage

Kitchen unit style storage

Space for sterilizing unit

Staff:

The building should provide an attractive environment to encourage staff into the profession and reduce turnover of existing staff.

Staff Numbers	
Kilmaurs	Cumnock
For a 72 FTE (3-5 yr) and 10 FTE (2yr olds) : 1 x Head of Centre 1 x Depute Manager 2 x Senior ELCPs 15 x ELCPs 1 x support assistant 2 x 20hr clerical assistants	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 ELCPs 17x ELCPs 1 x support assistant 2 x 20hr clerical assistant

Quiet space for non-playroom work is required.

Space required for a multipurpose printing device.

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.

Total staff number in building at any one time is 22 at Kilmaurs and 24 at Cumnock.

Maximum staffing is between 10.45-15.15

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.

Provide 1no cube locker per staff member.

Provide a staff only place to hang coats.

Space for staff training and CPD.

Provide a corporate workspace to accommodate all centre staff with the exception of the Head of Centre. This should include 3no. hot desking spaces that will be shared. Provide a private place to make calls. Provide a private place to have small meetings of a sensitive nature. Provide an informal zone for meeting.

Space for staff breaks may be within the workspace provided it is visually and acoustically screened off.

Head of Centre to have office with workspace and informal meeting area.

Families and Community:

Should provide opportunities for the family to access services within the building.

Opportunity to dwell and converse.

Provide a social link for parents / families.

Access to a space for private discussion.

Opportunity to participate in play in the facility.

Provide a Family and Community Room:

Informal space with sofas and coffee table.

Provision for tea preparation is required.

No workspace is required, care givers will be assisted in making applications using a tablet device.

An open plan family kitchen with breakfast bar and gated access may be provided.

Different activities noted: Speech and Language Therapy, Baby Massage, Cookery Group, Parent & Toddler Group, Parents Group Sessions, Book Bug, Baby Chat etc.

Supervised access visits facilitated by social work.

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 required.

At Kilmaurs provide sleep matts for: 3-5yrs 16no. 2-3yrs 8no.

At Cumnock provide sleep matts for: 3-5yrs 20 no. 2-3yrs 8 no, 0-2yrs 9 no.

Playrooms:

Playroom Sizes	
Kilmaurs	Cumnock
59 no 3-5yr @ 2.3m2 = 137.5m2 10 no 2yr @ 2.8 = 28m2 Total clear playroom area 163.7m2	53 no 3-5yr @ 2.3m2 = 121.9m2 9 no 2yr @ 2.8 = 25.2m2 9 no 0-2yr @ 3.7 = 33.3m2 Total clear playroom area 180.4m2

A naturalistic approach employing the attributes of biophilic design.

A fun and nurturing environment that children are excited to return to each day.

Provide a variety of spaces in terms of scale, light, sound.

Encourage active play and active learning.

An environment that provides challenge for children at different developmental stages.

Developmentally appropriate space for children, to manage their transition into the playroom.

Consider the building as the third teacher, as Reggio Emilia.

Provide opportunities for child led play.

Space must have a constant temperature in all weather conditions for it to be registered.

Surfaces must be durable and reflect the activities undertaken.

Quiet spaces for small group activities on literacy, numeracy and music are required.

Audio visual equipment, 1no adjustable height interactive screen on moveable stand.

Acoustic control is important to minimise sensory burden.

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

Match building temperature with activity.

Different Play Areas required;

Construction Area	-	Boxed up lego / duplo / megablocks / block play. 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 / clay
Arts & Crafts	-	Takes up a lot of storage. Easels / glue / paper etc. Hard flooring essential.
Small World Play	-	Dolls House / Cars / Railway

Many of these spaces can double up as they just require flexible space and storage.

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.

Play area should be an open, fun space with slides / ladders / nets etc

Art / Wet Play Area – Requires an amount of storage. Consider storage built into walls? Moveable units? Could the walls become display spaces? Flooring would have to be vinyl or similar.

Reading area - Different in nature to the activity and commotion of the rest of the nursery. Consider smaller pods / lowered ceilings. 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.

30/50% of time 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 to 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.

External access to toilet facilities preferable.

What should the Garden provide?

Woodwork - 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

Light – Natural light throughout the year. Summer / Winter.

Artificial lighting in the evening. Feature lighting.

Recycling and sustainability.

Accessible and child friendly. Access to toilets from the external space. Hand wash facilities. Water for cleaning.

Building structures – willow, bamboo, shelter

Fire pit / Barbeque – Forrest School& Forrest School

Training

Events / Drama / Puppet Shows / Story Time / Education

Eating / Seating

Physical energetic play / Bikes / Jumps

Transitional areas outdoor to indoor. 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.

Mud kitchen – encouraging messy play.

Visiting pets – chickens / rabbits / guinea pigs

Shuttered off storage areas.

Using roof space as play space

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.

Bike space – Hard surface.

Toilets:

All toilets to be unisex.

Toilet provision for 72no children is required indoors at Kilmaurs. This equates to 7no.

Toilet provision for 74no children is required indoors at Cumnock plus a nappy change within the 0-2 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 13no children at Kilmaurs and 12no at Cumnock is required outdoors. This equates to 1no. toilet.

Toilet provision for 22no staff at Kilmaurs and 24no at Cumnock is required. 1no. staff toilet should be provided near the playroom and 1no. near the staff room. *(2 no up to 25 no, 3 no 25-50 members of staff).* Student staffing will be variable, it is anticipated it will peak over the first few years and reduce thereafter.

Toilets for children within the playroom should not give access directly outdoors.

1no nappy change is required. Hand wash facility for children and staff i.e. 2 no.

- Nappy change to have adjustable height changing table. Changing table 1.4m in length.
- Storage for potties to be provided.
- Provide deep sink for potty wash and space for drying.

Children should be able to open doors unaided - weight of doors is critical.

Finger guards should be provided to all doors.

Ancillary Space:

Plantroom is required, refer to M&E report for more details.

A cleaners cupboard 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 is required. Long thin proportion preferred. High quality domestic washing machine and tumble drier to be provided. A sink with drainer and a separate wash hand basin is to be provided.

Reference Documents:

- 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
- Smarter Scotland: Pre-Birth to Three Positive Outcomes for Scotland's Children and Families

Early Years Pilot Design
Schedule of Accomodation

Ground Floor	
Room	Area (m2)
Accessible WC	4.5
Breakout/Parents' Room	12.3
Circulation	3.7
Cleaner's Store	4.3
Clerical/Touchdown	15.7
Developmental Play	28.5
Entrance Foyer	11.3
Escape Stair	11.4
Ext. WC	2.8
Family Room	13.6
Head of Centre	10.9
IVS	3
IVS	3.3
Kitchen	15.4
Kitchen WC and Change	3.7
Laundry	4
Main Playroom	76
Nappy Change	6.2
Platform Lift	2.5
Reading Nook	4.4
Store	8.2
WCs	13.6
Plant	8.9
Total	**268.2**

Upper Floor	
Room	Area (m2)
Escape Stair	11.4
IVS	4.8
Platform Lift	2.5
Playroom	70.3
Staff WC	2
Store	4.5
WCs	9.3
Total	**104.8**

Building Total	**373**

The Delivery and design of service delivery must change.

Model needs to be flexible.

- 1140 Hours

  55% of parents will sign up for a term timetable

  45% of parents will sign up for a calendar year timetable.

- Of 72 child spaces at the nursery:

  40 children will be there for the full day session

  32 children will be there for an AM half day session

  32 children will be there for a PM half day session.

- This equates to 104 sessions a day in a nursery that can accommodate 72 children at once.

- Longer hours give a less broken up, fragmented day for children.

- Gives an increased opportunity to help children in need of assistance.

Workshop 1

Question 1 - What is the Purpose of 1140 Hours?

Giving kids the best possible start and take parents along this route too.

Countering deprivation and creating equal opportunities.

Helping struggling parents.

Previous model doesn't fit the need of parents who wish to go back to work. Parents more economically active.

Giving children confidence to "Take on the world!"

Giving children more choices/freedom and developing risk awareness. Self-directed learning.

Self-risk assessment: involving kids in health and safety. Have to balance safety concerns over outdoor activities while allowing children to explore outside.

The outdoors can promote more engagement from some kids and enhance collaboration, learning and social skills. Also promotes the use of parks and outdoor space – teaching children how to be outdoor adults.

Counters an over reliance on indoor pursuits such as xbox etc. Challenging the dominance of social media.

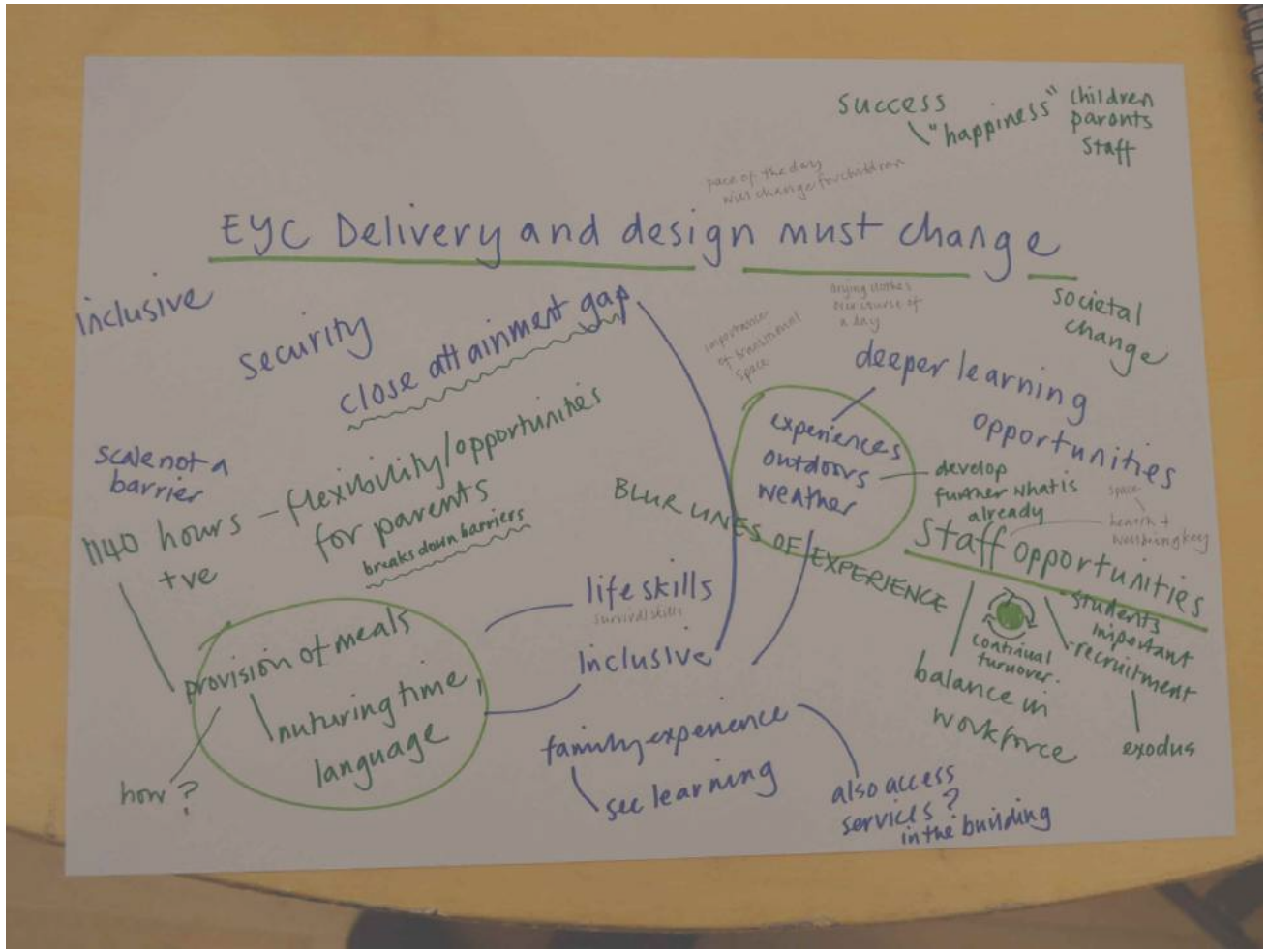
Nursery should be installing a knowledge/awareness of growing vegetables etc. Ability to produce seasonal varieties throughout the year. Improves health and wellbeing.

Lunches: Social setting for each. Promoting healthy eating food growing and cooking. Involving kids in preparation of food.

Should provide access to facilities outside of school hours. With the loss of many community facilities, the nursery could provide a social function in evenings/weekends. A place to go… A community café?

Embedding the facility into the community will make it more likely to be looked after. Community buy in.

Gives staff longer to know and support children, from the age of 2. Does this counter parents getting to know their children? Will this lead to an over reliance of the council to nurture/develop/provide care.



Success is happiness for Children, Parents & Staff

EYC Delivery and Design Must Change

Must be Inclusive – providing deeper learning opportunities, experiences (blurring lines between indoor and outdoor), security

Must provide opportunities for staff. A balance in work/life experience. Better facilities will make it easier to recruit and retain staff. Something that is difficult at the moment, a continual turnover of staff.

Should provide opportunities for the family to access services within the building.

Aims of the new facility

Build confidence / Life skills / Variety of experiences / Learning to care / Sustainability / Outdoor Rooms

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

Workshop 1

Question 2 – How to Maximize Benefits

Starting at 2 years of age for eligible kids. = An early intervention for speech/language and social interaction. Also provides support for parents.

ROVIDE A SOCIAL LINK FOR PARENTS, many of whom may be isolated and not have many opportunities to engage with others. Could a café provide a social space for parents to mingle while their kids are in nursery? At the moment there is a parent's room which is well used. Parents can get involved in activities with the group, observing care delivery that could be adopted at home.

Café could become a flexible meeting space used by visiting groups, eg baby massage/teeth cleaning.

Could café operate later to allow parents to stay after pick up? Supper club?

A query over the kind of kitchen being provided, most likely a regen type kitchen. Could this be used to prepare vegetables grown on site? Kitchen could prepare lunches for the children throughout the day whilst also preparing food for a community café.

DEVELOPING SOCIAL SKILLS FOR KIDS - Confidence/ Language/Caring/Play

How do we nurture confidence? Giving children the confidence to take on the world! The learning environment will go a long way to engaging children: Space/Light/Noise/Materials

The graduation between indoor and outdoor will be crucial. Trying to blur the lines between each. Indoor Space > Covered Outdoor Space > External Space. Boot room/transition space required to clean off outdoor clothes.

Large, airy, bright spaces that can be as flexible as possible. Smaller, more intimate spaces will be required for children that can find noise problematic. A variety of spaces that encourage exploring and discovery. Smaller spaces to rest/sleep/calm down/read. The nursery should be a stimulating space and most importantly, it should be a fun place that is appealing to the children. Interesting spaces… Angles and curves.

In comparison to what is available currently. This should be something different!

What is fun? Slides/Steps/Tunnels/Climbing (Has to be inclusive and accessible.)

Colours and materials will be carefully considered. Not just austere white plasterboard walls. Types of play: Creative/ Discovery/Exploration/Role Play/ onstruction & Maths

Digital learning is on wheels and can be used flexibly.

Role of the Care Inspectorate should be understood and engaged with as early as possible. The focus will be on the quality of outcomes for children

Workshop 1

Question 2 – How to Maximize Benefits

ENTRANCE

Should be welcoming and attractive. Bright and airy. Should not be intimidating to the parent and especially not to the child. Parents/children should feel uplifted upon entering the facility.

Should entrance route go past the external play area? An active/ joyous environment. Or would this be problematic for children seeing their parents leaving if they are not fully settled? External play area should be the back garden for children. Should be an alternative social space at the entrance for parents to engage with other parents/teachers etc. Would like parents to engage with the nursery as a whole, not just dropping off children and leaving.

A café that could link the nursery to the community, providing a social space for parents to converse. Kitchen could provide lunch to nursery as well as to a small snack/coffee shop.

Could just be a larger covered space at the entrance to encourage lingering.

Does encouraging parents to stay and join in put working parents at a disadvantage?

Parents invited to group time once a month, making them more comfortable coming into the facility.

Welcoming with appropriate storage for coats and shoes (allows drying of outdoor wear) Where should this be located? An external covered zone may make this area less crushed. Combine this area with the outdoor clothes zone.

Families bringing children in makes it a busy space. Toilets available for visitors & parents in foyer? A quiet room off of the reception would be good for upset children.

Security has to be considered.

Challenge the care commission on usable space – making space work harder thus generating other spaces for the community and staff.

2 year olds - Separate room from older kids / Snooze room or space. / Own access to outside.

ARIVAL

Parking/Park and Stride/Walking/Cycling/Taxi Drop off – Will longer hours result in more arriving by car?

Currently a security door within a community centre. A very tight entrance if you are bringing in a buggy. Also, many parents may have more than one child at the nursery so it can be very congested and hectic getting coats/hats/groves on and off.

Could entrance and dining double up as the same space? Might not work depending on clash with morning kids leaving unless lunchtimes were timetabled. Thought to be a good idea to introduce a (loose) structure to the day.

Need to consider the process of arrival/drop off.

Where to position the cloak room? At the front door? Large flexible space, could close off the coat storage and reuse the room throughout the rest of the day. Would mean there would have to be separate coats to be worn into the external play space.

Positioning the cloaks at the threshold to the garden would bring the parents deeper into the nursery, however that means that the activity and disruption of pick up times are brought further into the building too!

If kids are to wear their own coats etc it develops a sense of ownership and looking after their things.

Nursery currently has a multipurpose space that is heavily used throughout the week:

Speech and Language Therapy - Tuesday

Baby Massage - Wednesday

Cookery Group - Wednesday

Parent & Toddler Group - Thursday

Parents Group Sessions - Friday

Don't currently have any fixed kitchenette but would make such a difference if they did.

Workshop 2

Internal Spaces

Different Play Areas 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. Easels/glue/paper. Hard flooring essential.
- Small World Play - Dolls House/Cars/Railway

Many of these spaces can double up as they just require flexible space and storage.

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.

Play area should be an open, fun space with slides/ladders nets etc

Art / Wet Play Area – Requires an amount of storage. Built into walls? Moveable units? Could the walls become display spaces? Flooring would have to be vinyl or similar.

Hard wearing / easily maintained flooring throughout. As soon as you start using different kinds of flooring, you are limiting the flexibility of an area.

Walls should not be white plasterboard throughout. Liked idea of using veneered ply in order to provide warmth and texture as well as a robust long lasting finish that is economical as well. Liked the precedent of Hazelwood School for the visually impaired, using cork to clad a central wayfinding wall. Again, a tactile, warm finish. Materials should be selected with acoustic performance in mind. Nurseries are very noisy places and too much noise can be problematic to some children.

Library

A quiet space. Different in nature to the activity and commotion of the rest of the nursery. Smaller pods/lowered ceilings. Somewhere to retreat to. Doesn't need formal seats. Better to have large cushions / bean bags that can be pulled out on the floor.

Wellbeing

Provision of quiet areas away from the rest of the children in which to have a break. Children should be able to let off steam – Drumming Sessions / Shouting / Running Around

Toilets – Centrally located and available for all age groups with changing facilities if required. Query was raised about whether the handwashing area could double as the wet play area? Concerns over privacy / dignity. Heights to suit the ages attending the nursery. Inclusion cubicle.

Location of toilets is critical. Direct access from the playroom is key. Changing facilities for the 2-3 year olds and those with additional support needs.

2 WCs for every 12 children. Toilets should be accessible from inside and out along with changing Facilities. Some changing facilities directly off of play spaces to avoid 'Walk of Shame'.

Storage

Always an important consideration.

Outdoor toys tend to be larger items so a large container type unit accessed from the garden.

Play furniture – Kitchens / Bedrooms / Hospital / Santa's Workshop

Ability to change the environment from time to time. An amount of storage in each room allows a practitioner to supervise while accessing new equipment. Currently the nursery has one large central store.

Staff Accommodation

Staff room

- Got to provide a working space. Staff get 5 hours a week to write up and plan lessons. Require a location to do this away from the children. Lounge type idea with flexible spaces and kitchenette.

- Also need to provide a space to take a break in and have lunch.

Working /Talking / Eating

A workplace for the future. National recruitment campaign while retaining best staff.

A place is required for staff to get together as a group (CTD Room). Currently use a play room before kids arrive.

Workshop 2

External Spaces

GARDEN

Covered Transitional space to the garden. Should provide shade as well as cover. This space is key to the project. Blurring the line between inside and out. How does a free flow between inside and out manifest itself? A Semi heated space? Should include a boot room to store & dry off outdoor gear. Toilet facilities that span the inside / outside divide so that you can access from both sides.

50% of time to be spent outside under new 1140 hours provision. Outside space just as important as inside space in terms of design and materiality. May be the only external experience some children get from day to day.

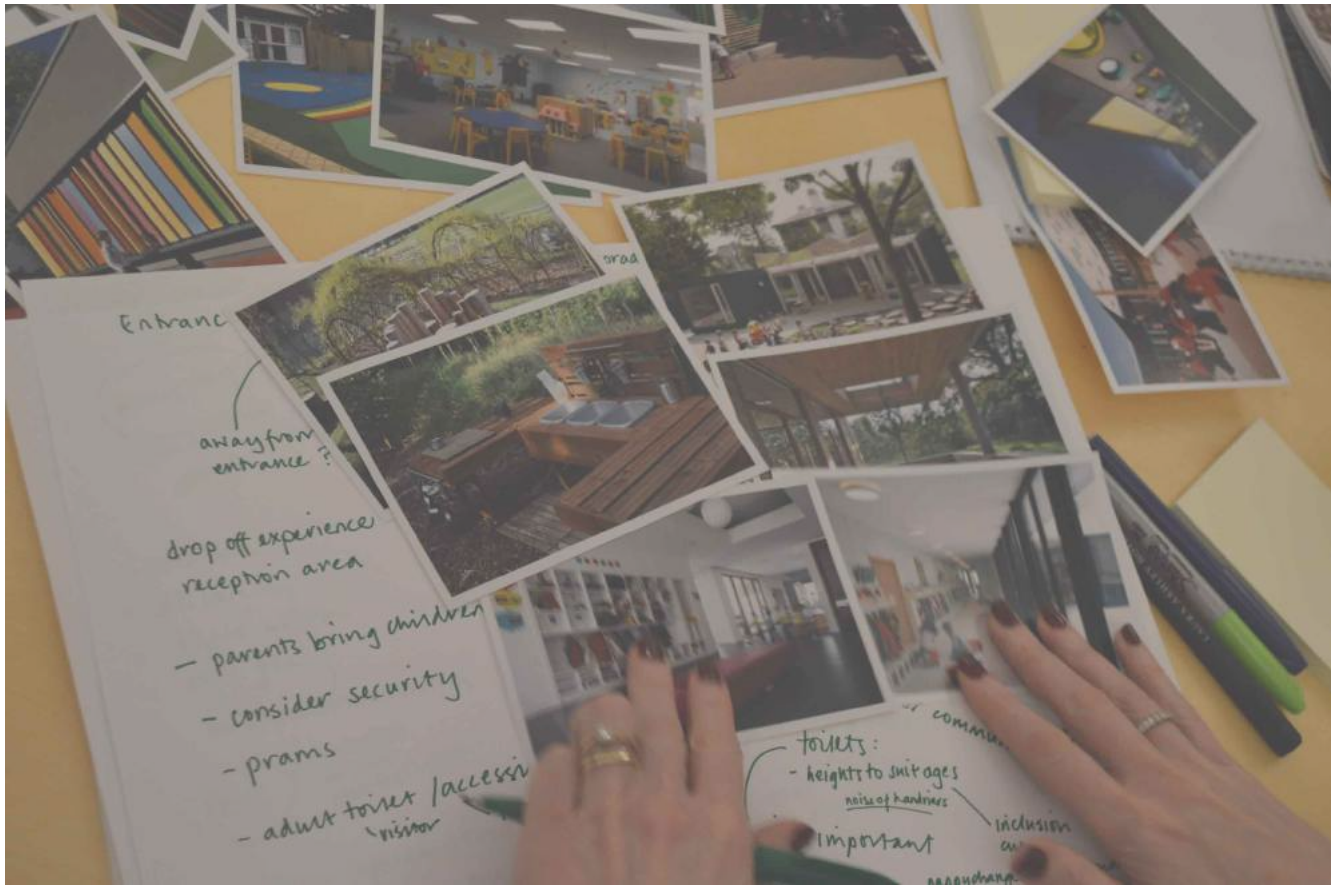
Create contours on a flat site to provide interest. Does the landscape have a theme specific to its site?

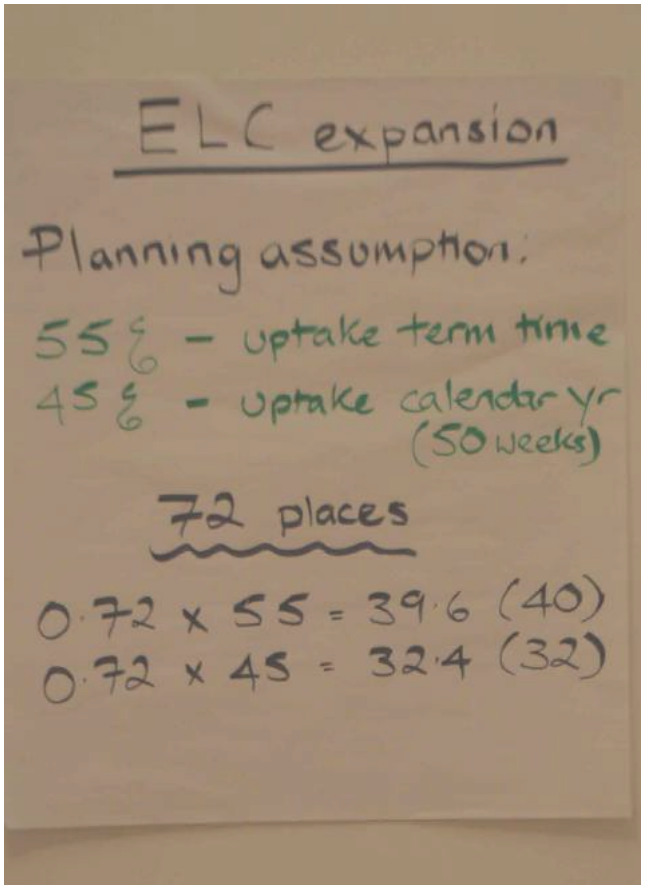
Ground maintenance, encourage community support to maintain. Should be able to see in and see out. No aversion to being an open asset. Will help embed the facility within the community.

Furniture that encourages play and imagination. Furniture should have built in storage, be weatherproof and of good quality. Should be adaptable and not fixed in terms of use and location.

Changes in level can be negotiated by ladders/nets/chutes/ climbing walls. Avoid synthetic materials such as rubber ground cover. Shouldn't have to go through play area to enter the building. Play area should be the 'back garden' to the facility. Play space should be maximized at the expense of support spaces such as offices and kitchens that should be made to work harder.

A covered garden to allow outdoor play in inclement weather. Good Drainage is essential to allow outdoor play all year round.





What should the Garden provide?

- Woodwork - 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
- Light – Natural light throughout the year. Summer/Winter. Artificial lighting in the evening. Feature lighting.
- Recycling and sustainability
- Accessible and child friendly. Access to toilets from the external space. Hand wash facilities. Water for cleaning
- Building structures – willow, bamboo, shelter
- Fire pit/Barbeque – Forrest School & Forrest School Training
- Events / Drama / Puppet Shows / Story Time / Education
- Eating / Seating
- Physical energetic play / Bikes / Jumps
- Transitional areas outdoor to indoor. 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.
- Mud kitchen – encouraging messy play.
- Pets – chickens / rabbits / guinea pigs
- Shuttered off storage areas.
- Using roof space as play space
- 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.
- Bike space – Hard surface.

Workshop 2

External Spaces

Outcomes

- Same learning outcomes as inside.
- Huge amount of options.
- 50/50 indoor / outdoor space

Get away from one solid building and one defined external space. Adopt a series of pods / shelters. The whole site as a learning environment. Indoor / Outdoor / Shelter. Open, easy access between each. Make moving between them fun – tunnels / slides / nets.

A set of buildings in a garden

Underground homes – Teletubby mounds with different functions.

Modular buildings that link together.

Using native trees and vegetation. Fill with woodland and carve spaces out.

Views & Communication with the external space

Roof gardens – Using available space / Take advantage of great views.

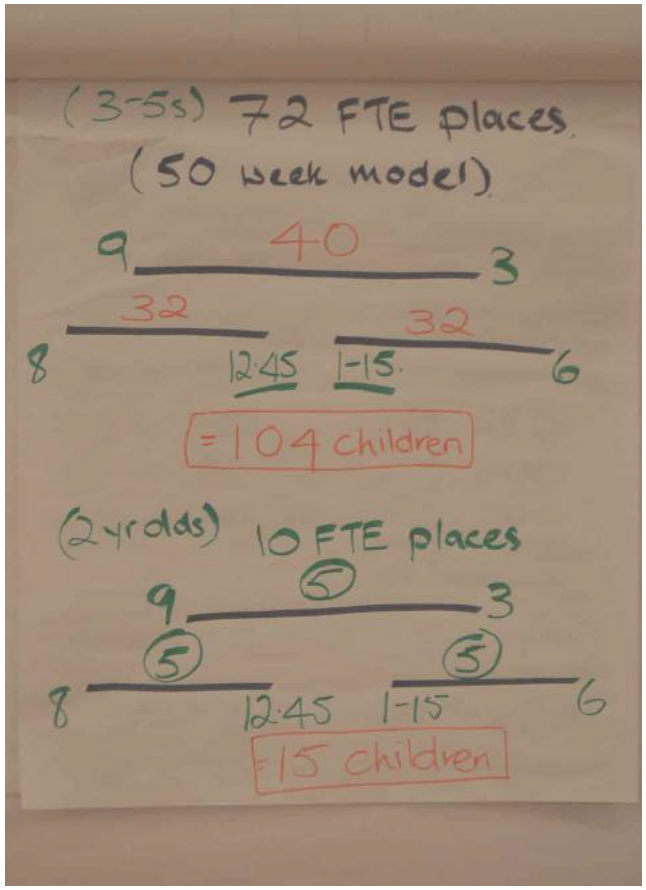
In terms of practitioners a more external based learning would have benefits:

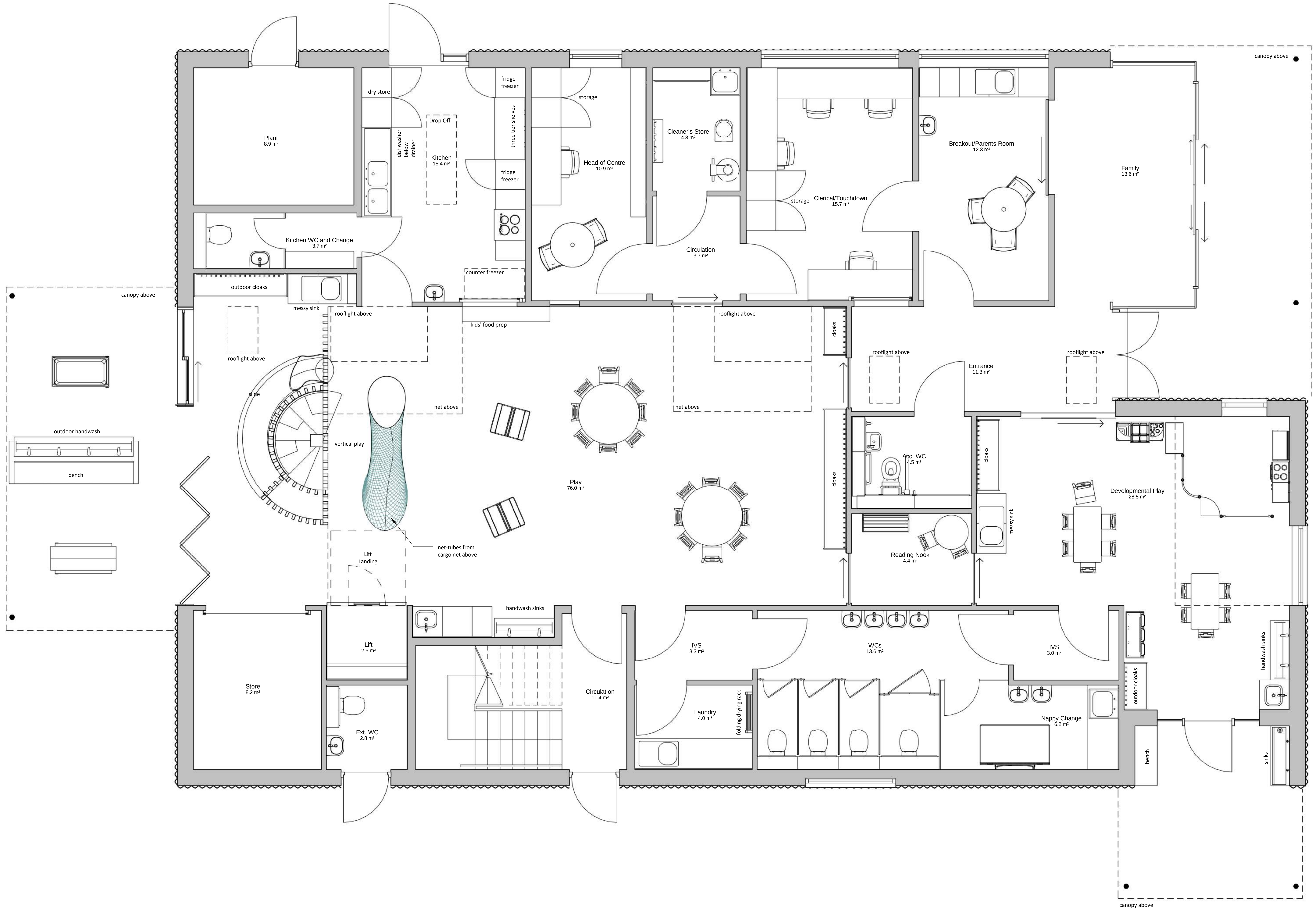
Male / Female balance – perhaps an outdoor environment will attract more men to the profession.

Beneficial to mental health being in the fresh air.

Practitioners have to buy into the new ideas of working outside – Seating / Comfort / Attractive / Sheltered.

Outdoor materials – Pods – Moveable structures – Flexible materials.





Rev	Date	Notes

RISK REGISTER

No.	Date	Description

NOTES

DO NOT SCALE
The Contractor must check & verify all Site & Building Dimensions, Levels & Sewer Inverts at DCM's before commencing work.
This Drawing must be read with the NBS Contract specification and any related Structural Engineer or Specialist Contractors Drawings.

INFORMATION

Project
Early Years Pilot

Client
Scottish Futures Trust

Drawing
Ground Floor

Job No.	Drg No.	Rev
1264	AL(0)001	

Scale	Sheet	Scale	Sheet	Scale	Sheet
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Drawn	Date	Checked
AC	18.05.18	SR

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CAD Ref.
CAD Ref

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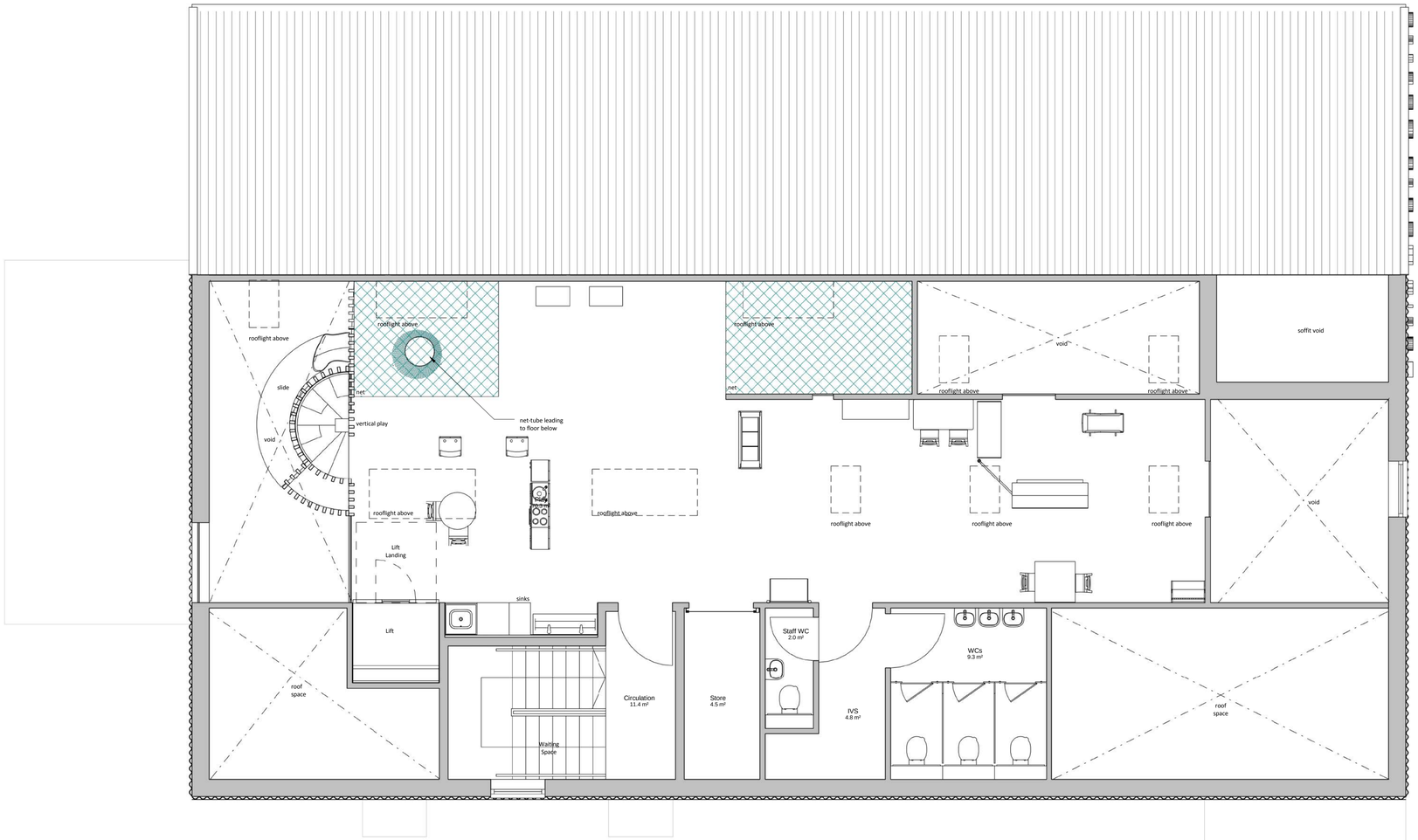

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Rev	Date	Notes

RISK REGISTER

No.	Date	Description

NOTES

INFORMATION

Project
Early Years Pilot

Client
Scottish Futures Trust

Drawing
First Floor

Job No.	Drg No.	Rev
1264	AL(0)002	

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Drawn	Date	Checked
AC	18.05.18	SR

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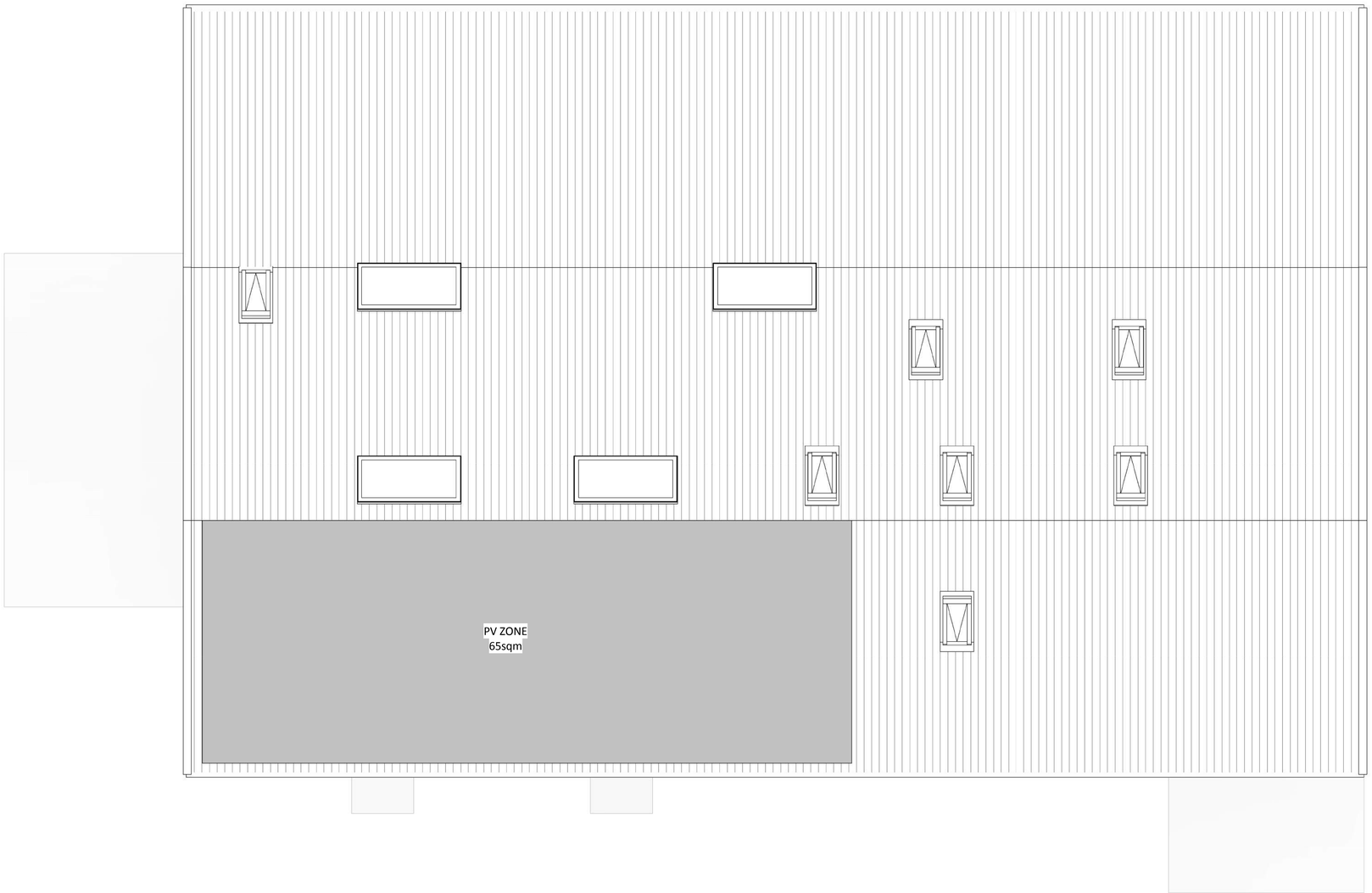

Rev	Date	Notes
A	28.03.18	RL101, RL103 and RL1035 omitted. Sun pipes proposed to replace RL101 and RL103, with one of RL102 also substituted with a sun pipe

RISK REGISTER

No.	Date	Description

NOTES

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INFORMATION

Project
Early Years Pilot

Client
Scottish Futures Trust

Drawing
Roof Plan

Job No.	Drg No.	Rev
1264	AL(0)003	A

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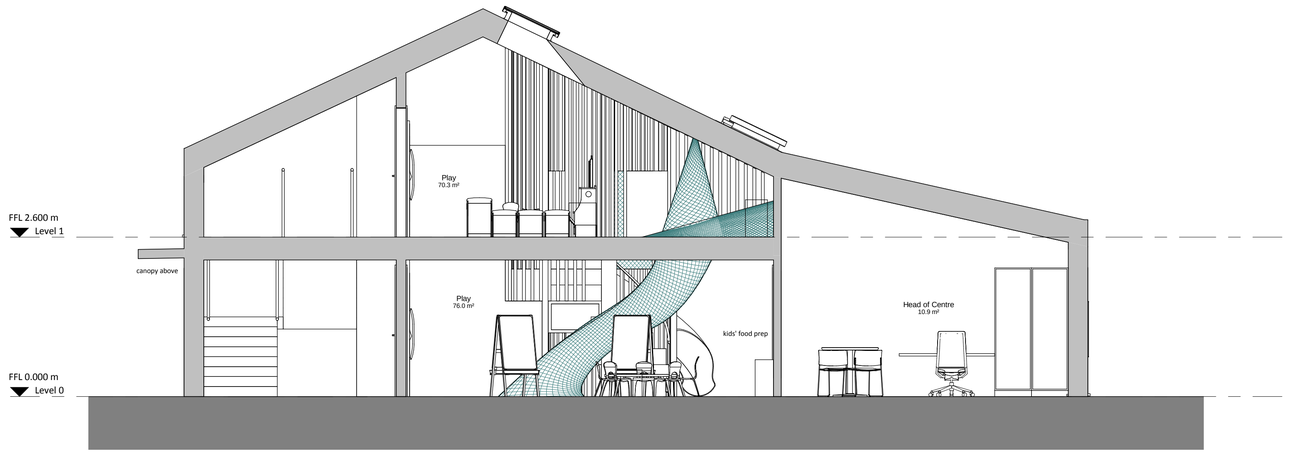

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RISK REGISTER		
No.	Date	Description

NOTES

INFORMATION

Project
Early Years Pilot

Client
Scottish Futures Trust

Drawing
Section

Job No.	Drg No.	Rev
1264	AL(0)004	

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Drawn	Date	Checked
AC	18.05.18	SR

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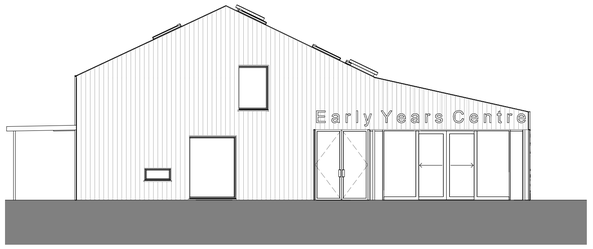
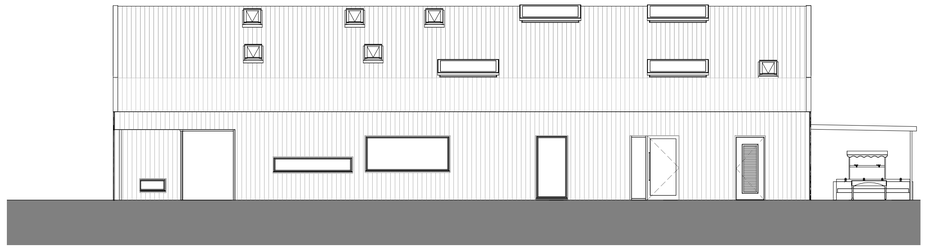
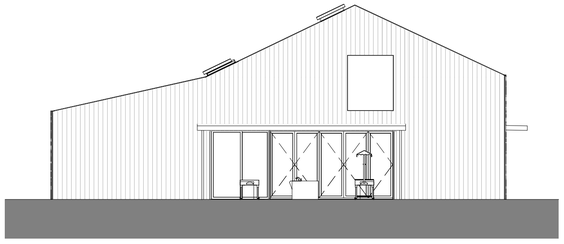


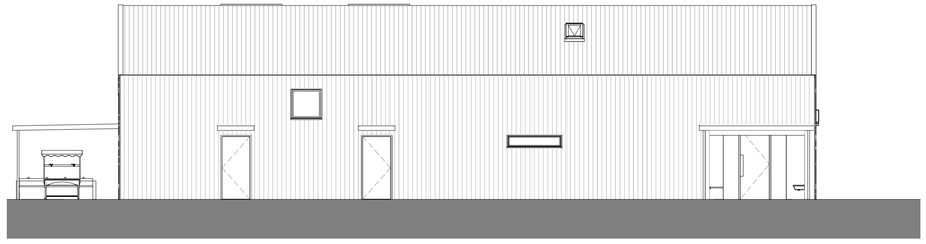
1 East Elevation
1 : 100



2 North Elevation
1 : 100



3 West Elevation
1 : 100



4 South Elevation
1 : 100

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Rev	Date	Notes

RISK REGISTER

No.	Date	Description

NOTES

INFORMATION

Project
Early Years Pilot

Client
Scottish Futures Trust

Drawing
Elevations

Job No.	Drg No.	Rev
1264	AL(0)005	

Scale / Sheet	Scale / Sheet	Scale / Sheet
1:50 / A1		

Drawn	Date	Checked
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CAD Ref

LEGEND/OUTLINE SPECIFICATION

ASPHALT PLAYGROUND SURFACE

CONCRETE BLOCK PAVING

SELF BINDING GRAVEL SURFACE
GOLDEN AMBER SELF BINDING GRAVEL SUPPLIED BY BREEDON, WWW.BREEDON-SPECIAL-AGGREGATE.COM, TELEPHONE: 01332 694001, OR EQUAL APPROVED.

MODULAR/SLAB PC CONCRETE PAVING
FUSION, 60mm THICK PAVING SUPPLIED BY TOBERMORE, WWW.TOBERMORE.CO.UK, TELEPHONE: 0844 800 5736, EMPLOYING A TWO COLOUR RANDOM MIX, CP BLANC AND GRAPHITE IN EQUAL PROPORTIONS.

DECKING
HANDMADE POLYURETHANE DECKING BOARDS, 176 x 360 x 32mm THICK SUPPLIED BY MILLBOARD, WWW.MILLBOARD.CO.UK, TELEPHONE: 02476439943, LAID ONTO A SUBFRAME CONSTRUCTED FROM TREATED SOFTWOOD TIMBER.

CAST IN-SITU CONCRETE BASE TO BIN STORE

BARK MULCH/GRAVEL MIX
AREAS DESIGNATED FOR WATER PLAY TO BE SURFACED WITH A 50mm CONSOLIDATED LAYER OF A MIX OF BARK MULCH AND 10-14mm PEA GRAVEL, LAID ONTO 150mm BASE OF TYPE 1.

PLAY SAND
SAND FOR USE IN PLAY PITS IS TO BE WASHED, DRIED AND SIEVED TO PROVIDE A SAFE, NON-TOXIC MATERIAL. THIS SHALL BE LAID TO A MINIMUM DEPTH OF 300mm UPON A STURDY GEOTEXTILE SEPARATION MEMBRANE OVER A 150mm LAYER OF FREE-DRAINING STONE. SAND PITS SHALL INCLUDE SUB-SOIL DRAINAGE WITH A POSITIVE OUTFALL. TO CONFORM TO BS EN 1177.

ROCK ARMOUR STONE
SLABBY SANDSTONE ROCKERY STONE, WITH A NOMINAL BLOCK THICKNESS OF 300mm, SUPPLIED IN VARIOUS PLAN SIZES, AVAILABLE FROM CED LIMITED, WWW.CEDSTONE.CO.UK, TELEPHONE: 01324 841321 (OR EQUAL APPROVED) SHALL BE LAID IN TIERS TO PROVIDE A RELATIVELY SMOOTH "TREAD". SUBSEQUENT LAYERS TO BE STAGGERED TO CREATE A STEPPED/TERRACED EFFECT. VOIDS BETWEEN ADJOINING BLOCKS TO BE FILLED WITH A SUITABLY SIZED AGGREGATE CONTAINING FINES TO ELIMINATE TRIP/TRAP HAZARDS. (3NO. COURSES IN TOTAL, THE BOTTOM ROW TO FORM THE EDGE TO THE SANDPIT).

SLEEPER RETAINING WALL
THE LOG WALL FORMING THE EDGE TO THE WALK-IN SANDPIT IS TO BE CONSTRUCTED FROM SECTIONS OF NEW, UNTREATED ENGLISH LARCH OR DOUGLAS FIR RAILWAY SLEEPERS, AVAILABLE FROM UK SLEEPERS, WWW.UKSLEEPERS.CO.UK, TELEPHONE: 01536 267107, OR EQUAL APPROVED. THE SLEEPERS SHALL BE SET INTO APPROPRIATE CONCRETE FOUNDATIONS AND BE FINISHED FLUSH WITH THE TOP SURFACE.

STEPS
STEPS SHALL BE CREATED USING SECTIONS OF 125 x 250mm, NEW UNTREATED ENGLISH LARCH OR DOUGLAS FIR RAILWAY SLEEPERS, SUPPLIED BY UK SLEEPERS, WWW.UKSLEEPERS.CO.UK, TELEPHONE: 01536 267107, OR EQUAL APPROVED. THE TREAD BACKFILL SHALL BE A SELF-BINDING GOLDEN AMBER GRAVEL, SUPPLIED BY BREEDON AGGREGATES OR EQUAL APPROVED.

CLOSE BOARDED TIMBER FENCE
THE SECURE BOUNDARY SHALL BE FORMED USING CLOSE BOARDED TIMBER FENCE 2.1M HIGH.

WELDMESH FENCE
THE SECURE BOUNDARY SHALL BE FORMED USING A POLYESTER POWER COATED AND GALVANISED PROPRIETARY WELDMESH FENCING SYSTEM 2.1M HIGH PALLAS, SUPPLIED BY HERAS. WWW.HERAS.CO.UK, TELEPHONE: 01302 364551 OR EQUAL APPROVED.

GREEN WALL
THE GREEN WALL SHALL BE FORMED USING WELDED MESH PANELS AS ABOVE, ONTO WHICH SHALL BE AFFIXED "WALLY ONE" GARDEN PLANTERS, SUPPLIED BY WOOLLY POCKETS, WWW.WOOLLYPOCKET.CO.UK, (ALLOW 20No).

NATURAL TURF
AREAS SHOWN AS GRASS SHALL BE ESTABLISHED USING A CULTIVATED LAWN TURF, LAID ONTO A MINIMUM 150mm LAYER OF TOPSOIL.

STEPPING STONES
PROPOSED STEPPING STONES 50mm THICK IN RANDOM SHAPES AND SIZES.

TREES
ADVANCED NURSERY STOCK. SEMI-MATURE SPECIMENS WITHIN GARDEN / HEAVY STANDARD TREES WITHIN PUBLIC REALM

FEATHERED TREES
FEATHERED BARE-ROOT BIRCH TREES, WITH A HEIGHT OF 125-150cm, PLANTED INTO PREPARED PITS AND SECURED TO 8' LONG (2.44M) 40-45mm NATURAL MOSO BAMBOO POLES, SET 600mm INTO THE GROUND.

FEATHERED TREES
FEATHERED BARE-ROOT BIRCH TREES, WITH A HEIGHT OF 200-250cm, PLANTED INTO PREPARED PITS AND SECURED TO 8' LONG (2.44M) 40-45mm NATURAL MOSO BAMBOO POLES, SET 600mm INTO THE GROUND.

BAMBOO POLES
A SERIES OF BAMBOO POLES ARE TO BE SET INTO APPROPRIATE CONCRETE FOUNDATIONS TO PRODUCE A RANDOM, HAPHAZARD EFFECT I.E. THE POLES ARE TO BE ARRANGED AT RAKISH ANGLES. TOTAL NUMBER 60NO. POLES (30NO. 10' (3.05M LONG) 55-70mm MOSO BAMBOO POLES AND 30NO. 12' (3.66M) LONG 40-45mm MOSO BAMBOO POLES. THE GENERAL DISTRIBUTION AND ARRANGEMENT OF THE POLES SHALL BE UNDERTAKEN UNDER THE GUIDANCE OF THE SUPERVISING LANDSCAPE ARCHITECT. POLES AVAILABLE FROM BS BAMBOO. WWW.BS-BAMBOO.CO.UK.

TIMBER PERGOLA
TIMBER PERGOLAS SHALL BE CONSTRUCTED USING 100 x 100mm LONG POSTS AND 100 x 50mm SECTION BEAMS AND CROSS-MEMBERS. AN ALLOWANCE SHALL BE MADE FOR THE INCORPORATION OF 6.0LIN.M OF DECORATIVE TIMBER TRELLIS, WITH A HEIGHT OF 1.2M.

SHRUB PLANTING
A MIX OF ORNAMENTAL CONTAINERISED SHRUBS, PLANTED AT THE AVERAGE DENSITY OF 4 PLANTS PER SQUARE METRE, INTO A MINIMUM 450mm DEPTH OF TOPSOIL. COMPLETED BEDS SHALL BE DRESSED WITH A 50mm LAYER OF ORNAMENTAL BARK NUGGETS APPLIED AS A MULCH.

JUNGLE CHIME
THE SUPPORT STRUCTURE FOR THIS PLAY ITEM IS TO BE CONSTRUCTED USING 100 x 100mm SECTION TREATED SOFTWOOD, WITH TOP RAILS AND CROSS-MEMBERS BEING PROVIDED USING 50 x 100mm SECTION TIMBER. THESE WILL BE USED TO SUPPORT A GRID OF BAMBOO POLES, OF VARYING DIAMETERS, SUSPENDED AT 300mm CENTRES. THE SUPPORT SYSTEM WILL EMPLOY CHAINS TO ALLOW THE BAMBOO POLES TO SWING FREELY AT A HEIGHT BETWEEN 200 AND 400mm ABOVE THE GROUND.

TREE TRUNK SECTIONS
SUBSTANTIAL SECTIONS OF LUMBER, 1.5M LONG, WITH A NOMINAL BOLE DIAMETER OF 400mm. THE LOGS SHALL RETAIN TRUNCATED SECTIONS OF LIMBS AND HEAVY BRANCHES TO PROVIDE AN INTERESTING CLIMBING EXPERIENCE.

MUD KITCHEN
600mm x 2.4M LONG BESPOKE TIMBER MUD KITCHENS, CONSTRUCTED TO INCORPORATE A STAINLESS-STEEL SINK AND A MOCK HOB, FORMED USING COLOURED SHEETS OF ACRYLIC.

FIRE PIT
FREE STANDING STEEL FIRE PIT

WATER PLAY
FREE STANDING WELDMESH FENCE PANELS PROVIDED TO SUPPORT RAINWATER FITTINGS GUTTER PIPES, WATER WHEELS, FUNNELS, HOSES AND CONTAINERS.

EXTERNAL STORE
FALCOLOK 250 STORAGE CONTAINER, 3.98 x 2.495M WIDE SUPPLIED BY FALCO, WWW.FALCO.CO.UK, TELEPHONE 01538 380080.

RAISED PLANTER
RAISED PLANTER CONSTRUCTED USING TREATED SOFTWOOD TIMBER, SHALL BE CONSTRUCTED TO AN OVERALL HEIGHT OF 400mm. PLANTERS TO BE LINED WITH A GEO-TEXTILE MEMBRANE, PRIOR TO BACKFILLING WITH A PROPRIETARY GROWING COMPOST.

BAMBOO PLANTING
A SELECTION OF SPECIMEN BAMBOO PLANTS, PLANTED AROUND THE PLAYGROUND PERIMETER AND IMMEDIATELY ADJACENT TO THE JUNGLE CHIMES.

IMPORTANT
The contractor will be held to have examined the site and checked all dimensions and levels before commencing construction work.
Do not make assumptions - refer to the Landscape Architect.
Do not scale from this drawing. If in doubt - ask!

REVISIONS

REV A - 27/03/18 - RCG/SJH
GENERAL UPDATE.
REV B - 11/04/18 - SS/SJH
LANDSCAPE LAYOUT UPDATED TO REFLECT COST PLAN.
REV C - 09/05/03 - CG/SJH
BUILDING FLOOR PLAN UPDATED.

Hirst
LANDSCAPE ARCHITECTS
18 ROYAL TERRACE, GLASGOW, G3 7NY - T: 0141-332-0292
F: 0141-332-2058 - E: info@hirsts.co.uk - W: www.hirsts.co.uk

Issue for
INFORMATION

Project
EAST AYRSHIRE
EARLY YEARS PILOT
KILMAURS

Title
LANDSCAPE MASTERPLAN
OUTLINE DESIGN

Client
HUB SOUTH WEST
SCOTLAND LTD

Drawn	Checked
RCG	SJH
Scale	**Date**
1:100@A1	23/03/18

Job No	Drawing No	Revision
1459	01	C

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Outline Specification

TO BE READ IN CONJUNCTION WITH REPORTS FROM ALL CONSULTANTS

Revision	Date	Purpose	Notes
1st	22.03.2018	Pricing	Initial Issue
A	02.05.2018	Feasability	Updated following Costings Review

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Outline Specification

Contents

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382 Great Western Road,
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1.0 SUB-STRUCTURE

- Refer to Structural Engineers' Specification.

2.0 SUPER STRUCTURE

2.1 Timber Frame

- Refer to Structural Engineers specification.

2.2 Structural Steel Frame

- Refer to Structural Engineers specification.

2.3 External Walls

2.3.1 Rainscreen Cladding

- Sinusoidal Insulated Cladding Panel System.
- Colour matched fixings.
- Structural infill framing between steel frame packed with 200mm Knauf Frametherm 32 mineral wool insulation
- Vapour control layer
- Service zone formed with 38 x 50mm battens
- 15mm British Gypsum Duraline plasterboard

2.3.2 External Finish – Steel Frame [Where Frame Supports First Floor Level]

- Fire rated to 60mins
- Factory applied intumescent coating

2.3.3 External Finish – Soffit to Canopy and Undercroft

- PPC (RAL tbc) 3mm aluminium cladding system
- Ventilated fire cavity barriers

2.3.4 Accessories

- PPC (RAL tbc to match 2.3.3) 3mm aluminium window reveals, soffits, cills and flashings with anti-drumming compound to underside of cills and aluminium support brackets at 400mm centres.

2.4 Internal Walls

All partition walls to have proprietary acoustic filler above and below.
All partition walls to meet flanking requirements of Acoustic Report.

2.4.1 Partitions FR 60 & 30 min

- Timber/metal studs to SE design.
- Racking panels to SE design.
- Sound insulation: Plasterboard and acoustic partition roll as required by Acoustic Report.
- Partition duty to BS 5234:1 and 2: SEVERE

2.4.2 Internal glazed partitions

- Deko FG Silent or e/a glazed partition system
- acoustic rating for meeting rooms: Rw 48 dB
- Doors within internal glazed system provided by same manufacturer for continuity.
- Manifestation: refer to art and environment strategy document.

2.4.3 Planar Glazing

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- Deko FG Silent or e/a glazed partition system
- Acoustic properties as acoustician's report.
- Toughened and laminated glazing.
- Manifestation – CA choice.

2.5 Internal Stairs

2.5.1 General escape and personnel stairs

- Precast concrete stair
- Treads: 300mm,
- Finish suitable for thin sheet Linoleum finish
- 60min fire resistance
- Handrails: wall mounted, 50mm diameter, white American oak, rebated and fixed from below, clear lacquer finish
- Balustrade: steel flat bars and rods, with 50mm diameter handrail (White American Oak, clear lacquer finish, rebated and fixed from below)

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2.6 Floor

2.6.1 Ground Floor [Playspace]

- 22mm Low profile underfloor heating system to M&E Design
- 22mm T&G Chipboard
- 50mm batten zone packed with mineral wool insulation
- 150mm Thick reinforced concrete slab to SE Design
- Seperating Layer
- 100mm Kingspan Kooltherm® K3 floorboard or equal and approved
    - Thickness: - 100mm.
    - Compressive strength (minimum): >120 kN/m².
    - Thermal conductivity (maximum): 0.020 W/m.K.
- Membranes to SE specification
- Construction to achieve 'Green Guide to Specification' A rating or better

2.6.2 Ground Floor

- 22mm 22mm T&G Chipboard
- 75mm batten zone
- 150mm Thick reinforced concrete slab to SE Design
- Seperating Layer
- 100mm Kingspan Kooltherm® K3 floorboard or equal and approved
    - Thickness: - 100mm.
    - Compressive strength (minimum): >120 kN/m².
    - Thermal conductivity (maximum): 0.020 W/m.K.
- Membranes to SE specification
- Construction to achieve 'Green Guide to Specification' A rating or better

2.6.3 Upper Floors

- 22mm T&G Chipboard
- 45*275mm Timber Joist to SE design
- 12.5mm fireline plasterboard
- 50mm timber brandering packed with mineral wool
- 12.5mm rigitone seamless acoustic ceiling board

2.7 Roof

All verges, flashings etc to be PPC 3mm aluminium. Any parapets to be used with pressure clips.

2.7.1 Roof Type 1 – Warm Roof

- KS1000 Insulated roofing panel system
- Roof structure as SE design.
- 100mm Mineral wool insulation laid across;
- 12.5mm rigitone suspended seamless acoustic ceiling system

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3.0 OPENINGS

3.1 Glazing

3.1.1 General

- Natural Ventilation: refer to plan and elevation drawings.
- Refer to M&E information for glazing G-value.
- Laminated glazing to ground floor.
- Glazing with any section below 800mm: Toughened.

3.1.2 Curtain Walling Generally

- Metal Technology or e/a
- Extruded Aluminium Curtain Walling system, PPC (colour tbc): Metal Technology System 17- Latitude or e/a.
- Stick system, pressure equalised and mullion drained, incorporating toggle fixings to the double glazing units only at horizontal joints between units.
- Insulating glass double glazed units with low emissivity, Argon filled
- U-value 1.6W/m²K
- Safety requirements: BS6262, Secure by Design for BREEAM HEA06 if required.
- Incorporated components: AA100CV top hung windows
- Manifestation, refer to Art and Environment Strategy Document.
- Trickle Ventilation to be applied.

3.1.4 Windows

- Metal Technology Tilturn Window, Equal or Approved
- Extruded aluminium alloy 6063 T6 to BS EN 755-9: 2001
- Thermally broken with EPS foam strip
- U-value 1.1-1.4 W/m²K
- Inward tilt before turn
- PPC finish RAL colour tbc
- Friction stays and restrictors as required
- Actuators as required by Fire Engineers report, for power and final connections refer to M&E information.
- Trickle Ventilation to be applied.

3.1.5 Roof light

- Lareine Engineering or equal and approved. For smoke venting and natural ventilation of atrium and stair. Refer Fire Engineer's Report
- Controls: Refer to M&E information. Vents connected to fire alarm system. Manual override required for natural ventilation. External actuators for ease of maintenance.

3.2 External Doors

3.2.1 Automatic Doors – Main Entrance Lobbies (North and South Elevations)

- GEZE Slimdrive SL-NT-09 bi-part slide or e/a
- Electro-magnetical Bi-parting sliding sliding door operator
- All visible surfaces to be PPC to Anodic RAL colour
- To provide both safety and activation monitored with fire alarm contact (on final escape routes, to comply Scottish Building Regulations)

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3.2.2 External Doors within Curtain Walling

- Metal Technology, System 5-20D, or e/a.
- Actuators as required by Fire Engineers report, for power and final connections refer to M&E information.
- Protection loops to outward opening doors. Broxap BX14/DB, Galvanised and PPC to match doors.

3.2.4 External Secure Doors

- External Steel Escape door
- Polyester powder coated, colour tbc
- Clear double glazing
- EPDM perimeter weatherseals
- Protection loops to outward opening doors.

3.2.6 Louvered Doors to Plant Room

- External Louvered Steel Security door
- Polyester powder coated, colour tbc
- EPDM perimeter weatherseals
- Protection loops to outward opening doors.

3.3 Internal Doors

3.3.1 Internal non-fire rated non-acoustic doors

- Flush veneered internal door sets
- Finish: Laminate, solid colour to architect's choice.
- Lippings: 8mm hardwood to all four edges
- Perimeter seals: Buffer strip
- Glazing: glazed in laminated safety glass (clear or opal as required), set in NFR glazing system
- Room ID disc
- Anti finger trap to hinge side

3.3.2 Internal FD 30 / FD 60 doors

- Flush veneered internal door sets
- Doors to be factory fitted with combined intumescent and cold smoke seals as required
- Fire disc and room ID disc
- Finish: Laminate, solid colour to architects choice.
- Lippings: 8mm hardwood to all four edges
- Perimeter seals: Buffer strip
- Glazing: glazed in FD30 / FD60 safety glass (clear or opal as required), set in FD60 glazing system
- Anti finger trap to hinge side

3.3.3 Internal acoustic doors

- Flush veneered internal door sets
- 35db acoustic rating subject to acoustician's report
- Doors to be factory fitted with combined intumescent and cold smoke seals
- Fire disc (FD 30 doors only) and room ID disc
- Finish: Laminate, solid colour to architect's choice.
- Lippings: 8mm hardwood to all four edges
- Perimeter seals: Buffer strip
- Glazing: as required by fire rating (clear or opal as required)
- Anti finger trap to hinge side

3.3.4 Sliding Pocket Doors

- Eclisse Sliding Pocket Door
- Telescopic Pocket Door System Single
- Classic Single Pocket Door System
- Classic 10mm Glass Pocket Door System Patterned plain satin
- Material: Manufacturer's standard
- Finish: Manufacturer's standard
- Glazing: glazed in laminated safety glass (clear or opal as required), set in NFR glazing system
- Accessories:
    - Syncronisation device
    - BIAS® soft-close with anti-slam
    - BIAS® DS Bi-directional soft-close with anti-slam
    - Self closing mechanism
    - soft-close
    - E-Motion linear motor for automatic open/close.

3.3.7 Ironmongery

- Aspex; Integra Select
- Satin finish stainless steel
- Category of duty of doors: Heavy duty
- Components: door hinges, overhead door closers, floor springs with electromagnetic hold open, door locks, emergency exit devices, door bolts (w. privacy indicator to WC cubicles/ showers/ acc WCs), lever handles, pull handles, push plates, kick plates, door stops

4.0 FINISHES

4.1 Internal Finishes

4.1.1 Intumescent Coating Systems

4.1.1.1 Off site

- Off-site coating to unprimed steel concealed beams: Fire resistance to BS 476-21: 60 minutes
- Preparation: blast clean
- Primer, dry film thickness and colour as per manufacturer's recommendation

4.1.1.2 On site

- Fire resistance to BS 476-21: 60 minutes
- Preparation and priming by steelwork contractor
- Primer: Zinc phosphate

4.2 Ceiling Finishes

4.2.1 General

- To be read in conjuction with roof and floor constructions
- Lining: 1 x 12.5mm Gyproc WallBoard or MR Wallboard to non-play spaces
- Accessories: Gyproc Profilex access panel

4.2.4 Acoustic Ceiling

- Lining: 1 x 12.5mm Rigitone (acoustic),
- Accessories: Gyptone access hatch (acoustic)
- Plasterboard strip to perimeters

4.2.5

4.2.6 Comms and Plant Rooms

- 12.5mm Fireline board

4.3 Floor Finishes

- Green guide to specification rating 'A' or better

4.3.1 Entrance

- Forbo; 'Nuway Grid': Ultragrip safety rubber, recessed Aluminium frame AMF213

4.3.3 Playrooms

- Forbo Flooring UK Ltd.; Marmoleum range; exact range/colour tbc
- Base: Screed with latex levelling compound and DPM
- Adhesive and seem welding as per manufacturer's recommendation
- Accessories: edging and covering strips, transition strips, coved skirtings
- Paint finish MDF skirtings
- Colour TBC. Different Colour to 4.3.4
- Slip Resistance: R9

4.3.4 Stores / Family Areas

- Forbo Flooring UK Ltd.; Marmoleum range; exact range/colour tbc
- Base: Screed with latex levelling compound and DPM
- Adhesive and seem welding as per manufacturer's recommendation
- Accessories: edging and covering strips, transition strips, coved skirtings
- Refer to art and environment strategy document.
- Paint finish MDF skirtings
- Colour TBC. Different Colour to 4.3.3
- Slip Resistance: R9

4.3.5 WCs, Cleaners Rooms, Kitchen, Breakout Areas

- Forbo Flooring UK Ltd.; Surestep; exact range/colour tbc
- Base: Screed with latex levelling compound and DPM
- Adhesive and seem welding as per manufacturer's recommendation
- Accessories: edging and covering strips, transition strips, coved skirtings
- Slip Resistance: R10

4.3.6 Upper Floor Play, Office areas

- Ege or e/a
- Colour and pattern tbc
- Base: Screed with latex levelling compound and DPM
- Underlay to manufacturer's recommendation
- Adhesive and seem welding as per manufacturer's recommendation
- Accessories: edging and covering strips, transition strips, painted MDF skirtings

4.3.7 Plant room

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- Floor coating to structural slab: Dulux 'Epo-dur 2PK Epoxy Floor Paint, or equal

4.4 Wall Finishes

4.4.1 General

- ICI Dulux; Emulsion paint to internal plaster boarded surfaces
- Diamond matte
- 1 no. initial coat, 1 no. undercoat, 2 no. finishing coats (matt vinyl)

4.4.3 High Humidity Rooms

- ICI Dulux; Trade diamond eggshell paint to internal plaster boarded surfaces (pre-primed and sealed
- 1 no. initial coat: Mist, 1 no. undercoat, 2 no. finishing coats (eggshell)
- Refer to Floor Finish Plans AS(0)140, AS(0)141 & AS(0)142- high humidity rooms are where an R10 slip resistant floor is shown.

4.4.4 Wall Lining

- Splashbacks and at cleaners sink and dilution device and within kitchen
- Altro Whiterock or e/a
- Hot weld joints and finishing strips to exposed edges.

4.4.6 White Walls

- Tektura Walltalkers WriteOn
- Adhered to surfaces as manufacturers written recommendation

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5.0 FIXTURES AND FITTINGS

5.1 Sanitary ware/Sanitary Fittings/IPS/Cubicles

5.1.1 Sanitaryware

- Armitage Shanks
- Onvo Troughs to Playspaces and external handwash.

5.1.2 IPS/cubicles

- Panel cubicles/system to WC's and cubicles: Interplan or e/a, 16mm solid grade laminate, full aluminium frame, including child height system
- Privacy screens to washrooms: Interplan or e/a, 12mm solid grade laminate, engineered anodised aluminium feet (height adjustable)
- Vanity ops: Interplan or e/a,
- Colour contrast to BS8300

5.2 General Fixtures

5.2.1 Blinds to be confirmed in office spaces, family and play spaces

- Kaydee Blinds Excluda Balck-Out Roller Blind or equal and approved
- Material: Standard finish is Black PVC coated polyester, with silver coating on outside to reduce heat radiation
- Manual crank operation with self-braking gearbox
- To comply with BS EN 13120:2009 + A1:2014

5.3 Signage - internal

- Door and wall signage system by National Sign Co.
- Lettering/signs: Refer to art and environment strategy document

5.4 Signage - external

- Signage system by National Sign Co.
- Main building signage to be backlit
- Lettering/signs: Refer to art and environment strategy document
- Refer to BS8300

6.0 SERVICES

6.1 Drainage

- Refer to M&E Engineer's specification.

6.2 Hot & Cold Water

- Refer to M&E Engineer's specification.

6.3 Heating Installation

- Refer to M&E Engineer's specification.

6.4 Renewables

- Refer to M&E Engineer's specification.

6.5 Gas Installation

- Refer to M&E Engineer's specification.

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7.0 ELECTRICAL SERVICES

7.1 General
- Refer to M&E Engineer's specification.

7.2 Mechanical Ventilation
- Refer to M&E Engineer's specification.

7.3 Passive Ventilation
- Refer to M&E Engineer's specification.

7.4 Security System
- Refer to M&E Engineer's specification.

7.5 Fire Alarm System
- Refer to M&E Engineer's specification.

7.6 Platform Lift
- Refer to M&E Engineer's specification.

7.6.1 Lift Floor/Walls /Ceiling finishes
- Tbc by Architect.

7.7 Exterior Lighting
- Refer to M&E Engineer's specification.
- Backlighting of rainscreen cladding to enhance art and environment strategy.

7.8 Access Controls
- Refer to Fire Engineers Report
- Refer to M&E information

7.9 Internal Feature Lighting
- TBC

8.0 LANDSCAPING

8.1 General
- Refer to Landscape Architects' information.

9.0 SECURE BY DESIGN

9.1 General
- The proposals and items noted throughout this specification are to align with Secure by Design principles.

EAST AYRSHIRE COUNCIL

Early Years ABC Reference Design

RIBA Stage 2 Cost Estimate

18 May 2018

FAITHFUL+GOULD

Contains *sensitive* information

Document Status					
Revision	**Date**	**Status or comment**	**Prepared by**	**Checked by**	**Authorised by**
0	11.05.18	Draft Issue	H McGreevy	R Gordon	B Young
1	17.05.18	Formal Issue	H McGreevy	R Gordon	B Young
2	18.05.18	Formal Issue	C Hendrie	R Gordon	B Young

Disclaimer

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Contents

1.0 Executive Summary

1.1 Our current estimated total project cost for Anderson Bell Christie's RIBA Stage 2 Reference Design is ***£1,198,864.00***

1.2 The total project cost is inclusive of Main Contractor Preliminaries, Overheads and Profit, Design Team fees, HUBCo fees and Risk.

1.3 The design has produced a Gross Internal Floor Area of **400m2** against the target area metric of 400m2.

1.4 The total project cost represents a cost metric of £2,997**/m2** against the target cost metric of £3,000/m2.

1.5 Costs are current and indexed at 2Q2018 rates and prices.

2.0 Analysis of Area Metric

2.1 Scottish Government “Space to Grow” publication June 2017 references Care Inspectorate expectations around spatial metrics and area compliance. Emphasis is placed on the balance between indoor/outdoor settings and the context of this to calculate the target area of any particular Early Years facility, where “*it is recommended that a maximum increase of 20% of the total registered number of children is considered as a guideline*”.

2.2 To calculate the guideline gross internal floor area (GIFA) for the Kilmaurs campus, designed by Anderson Bell Christie Architects, we have applied the following calculation:

Registered Capacity	82 nr				
20% allocation Outdoor (3-5yrs)	13 nr				
80% allocation Indoor (3-5yrs)	69 nr	@	***5.8 m2***	400 m2	

1. where ***5.8m2*** is considered the optimum area per child.
2. Where 400m2 is therefore the optimum GIFA for the facility.

2.3 The actual GIFA of the Anderson Bell Christie Architects design is **400m2; which is on the target area metric**.

3.0 RIBA Stage 2 Cost Estimate benchmarked against Cost Metric

3.1 The cost metric established for the Early Years Reference Design is £3,000/m2 excl. VAT.

3.2 Our current estimated cost for the proposed RIBA Stage 2 Concept Design for the Kilmaurs campus is detailed below:

Element	Amount (£)	Cost (£/m2)	Cost (£/child)	Average %age
Substructure	£60,100	£150	£733	5.01%
Superstructure	£281,200	£703	£3,429	23.46%
Internal Finishes	£40,600	£102	£495	3.39%
Fittings, Furnishings and Equipment	£46,500	£116	£567	3.88%
Services	£243,800	£610	£2,973	20.34%
Complete Buildings and Building Units	£0	£0	£0	0.00%
Works to Existing Buildings	£0	£0	£0	0.00%
External Works	£161,500	£404	£1,970	13.47%
Facilitating Works	£0	£0	£0	0.00%
Prime Cost Total	***£833,700***	***£2,084***	***£10,167***	***69.54%***
Main Contractor's Preliminaries	£135,200	£338	£1,649	11.28%
Main Contractor's Overheads & Profit	£43,600	£109	£532	3.64%
Construction Sub-Total	***£1,012,500***	***£2,531***	***£12,348***	***84.45%***
Project/Design Team Fees	£122,918	£307	£1,499	10.25%
Other Development/Project Costs	£6,358	£16	£78	0.53%
Risk Allowance	£57,088	£143	£696	4.76%
Inflation	£0	£0	£0	0.00%
Total	***£1,198,864***	***£2,997***	***£14,620***	***100.00%***

The overall Internal Gross Floor Area (GIFA) is 400m² with a registered capacity of 82nr children.

3.3 Appendix A enhances the above breakdown and presents this in full NRM1 elemental format.

4.0 Cost Plan Commentary & Clarifications

4.1 Commentary

Facilitating Works

- No allowance for demolitions. The Early Years programme is a new build and not a replacement programme, therefore any demolition enabling works do not form part of the cost metric calculation.

Substructure

- We have assumed pad and strip foundation solution. There are no allowances for abnormal foundations such as piling, vibro compaction, trench fill etc.
- There is no allowance for any gas intervention measures such as gas membranes, void protection etc.
- We have made an allowance for under slab drainage using a cost/m2 approach.

Superstructure - Frame

- We have used structural steel design and tonnage information provided by Watermans.
- We have allowed for minor fire protection to columns/beams supporting first floor slab only.

Superstructure – Upper Floors

- We have allowed for a timber rafter structure to form upper floor with 22mm chipboard deck with mineral wool insulation/sound deadening packed within the rafters.

Superstructure – Roof

- We have allowed for KS1000 insulated roofing panels and rooflights per ABC design; allowing for 1nr actuator opening vent to main rooflight.
- We have made an allowance for roof rainwater drainage using a cost/m2 approach.

Superstructure – Stairs

- There is an allowance of £15,750 for forming the quiet room and staircase access including all carcassing and finishing timbers within the 3-5s play zone.
- There is an allowance of £6,100 for the dogleg staircase accessing the raised deck above the WC and store zone.

Superstructure – External Walls

- We have allowed for Sinusoidal insulated wall cladding.

Superstructure – Windows and External Doors

- No comments.

Superstructure - Internal Walls and Partitions

- No comments.

Superstructure – Internal Doors

- No comments.

Internal Finishes – Wall Finishes

- Generally, emulsion paint finish throughout with hygienic wet wall to splashback only.

Internal Finishes – Floor Finishes

- Low/medium grade carpet and marmoleum throughout, with exception of plant room having epoxy floor paint.

Internal Finishes – Ceiling Finishes

- Rigitone acoustic ceiling finish to play and movement space; otherwise wallboard throughout.

Fittings, Furnishings and Equipment

- FF&E allows for fixed and loose fittings.
- There is an allowance of £14,978 for loose fittings within play zones.
- There is an allowance of £10,208 for dining equipment within play zones.
- There is an allowance of £5,000 for domestic kitchen fitout only, with standard white goods and hob/extract unit.
- There is an allowance of £800 for tea prep area within parent's room.
- There is an allowance of £500 for waste bins, storage, pin-boards, battery clocks etc.
- There is an allowance of £2,200 for internal and external signage.

Services

- We have market tested the M&E installation based on MaxFordham Stage 2 design. We have analysed the market intelligence we have gleaned and produced a normalised cost/m2 allowance of £550/m2 for full services installation.
- No allowance for sprinklers, public address system, CCTV, BMS, TV, projection and/or visual hardware (promethean boards etc), automated clock system, access control throughout the campus. The cost of these installations do not form part of the cost metric calculation.
- We have assumed an L1 Fire detection and alarm system.

External Works

- The cost assumes no contamination present.
- The cost assumes CBR results will produce a positive outcome with no requirement for structural capping fill below roads/footpaths.
- The cost allows for a nominal earthworks exercise, retaining and utilising all site won material from excavations within the site development.
- The cost allows for 24nr new car parking spaces.
- No allowance for any loose FF&E externally.
- There is no allowance for barrier pipework for incoming water pipework.
- There is an allowance for external fixtures: mud kitchen, willow tunnel and the likes.
- We have made an allowance for site wide drainage using a cost/m2 approach.
- We have made an allowance for Point of Connection for all mains utilities. We have assumed there is capacity within the existing network with no allowance for infrastructure upgrades such as substations etc.
- No allowance for utility/service diversions.

Preliminaries

- Preliminaries allowance has been established as 15% of the prime cost. This is commensurate with the market intelligence we have gathered. We appreciate the appetite of the market will dictate the level of preliminaries to be applied to a tender submission.

Overheads and Profit

- We have included an allowance of 4.5% of Prime Cost + Preliminaries for Overheads and Profit. This is commensurate with the market intelligence we have gathered. We appreciate the appetite of the market will dictate the level of margin to be applied to a tender submission.

Design Team Professional Services Fees

- We have included an allowance of 12.14% for Professional Fees.
- We have also allowed 0.56% fee for HUBCo fees.

Risk / Contingency

- We have included an allowance of 5% for Risk; commensurate with the end of a Stage 1 HUBCo gateway cost estimate.

Inflation

- No inflation allowed for. Costs are current and indexed at 2Q2018 rates and prices.

4.2 Items Assessed and not Required for this Pilot Reference Design

.1 Survey costs such as topographical and geotechnical and the like.

.2 Asbestos surveys and associated removal costs.

.3 Statutory and technical fees and charges.

.4 Demolition costs.

.5 Abnormal foundations such as piling, vibro compaction, trench fill etc.

.6 Gas intervention measures such as gas membranes, void protection etc.

.7 Public address system.

.8 CCTV.

.9 BMS.

.10 TV, projection and/or visual hardware (promethean boards etc).

.11 Automated clock system.

.12 Access control throughout the campus.

.13 Sprinkler Installation to comply with EAC specific insurers requirements. Note we anticipate the cost of a sprinkler installation inclusive of sprinkler heads, distribution pipework, sprinkler tank, pump set, GRP enclosure and sprinkler tank plinth would be in the region of £55,000 excl. VAT.

.14 Removal of ground obstructions.

.15 Removal of contaminated material.

.16 Structural fill resulting from unfavourable CBR test results.

.17 Importing and/or exporting materials to form levels.

.18 Utility and Scottish Water upgrades.

.19 Barrier pipework.

.20 Ecological surveys and associated works.

.21 Arboriculturalist surveys and associated works.

.22 Additional car parking requirements out with the 24nr car parking provision allowed for within the cost estimate.

.23 Any service diversions within and out with the site boundary.

.24 Legal fees and charges.

.25 Financing fees and charges.

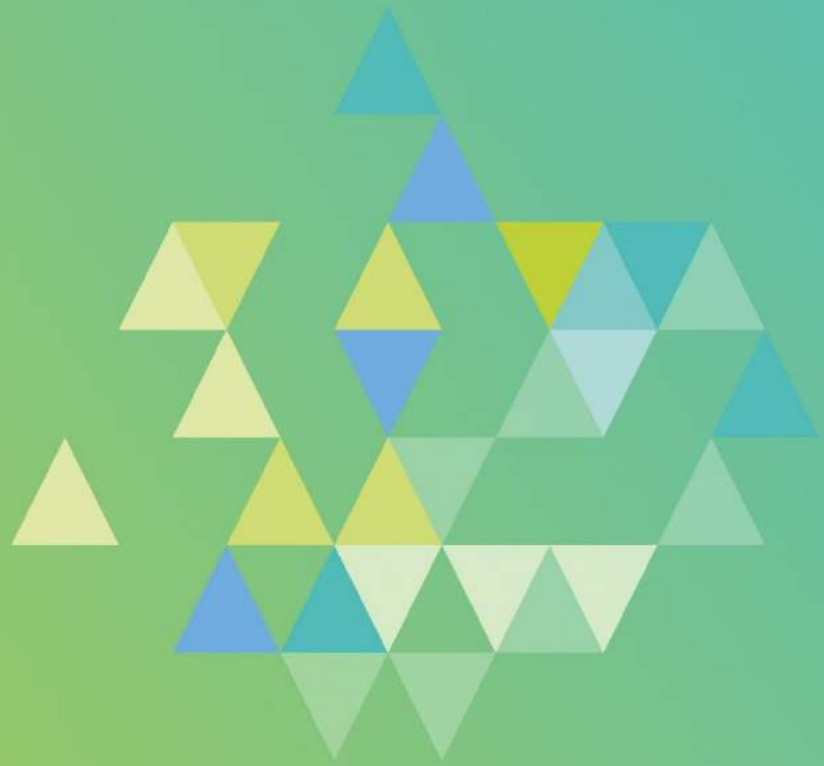
.26 VAT.

5.0 Appendices

Appendix A - Faithful+Gould Stage 2 Elemental Cost Plan.

Appendix A

Faithful+Gould Stage 2 Elemental Cost Plan.



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Early Years Reference Design Study

Civil & Structural Scope of Works

17th May 2018

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Client Name:	hub SouthWest / East Ayrshire Council
Document Reference:	STR14503/FC/CS/FEE/G
Project Number:	STR14503

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
01	17/05/2018	Michael Stevenson	Frank Chambers	Frank Chambers

Comments

Comments

Disclaimer

This report has been prepared by Waterman Structures Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client, together with incorporation of our General Terms and Condition of Business, and taking account of the resources developed to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.
This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Contents

4.1 CIVIL & STRUCTURAL

Waterman Structures were appointed to provide outline Structural Engineering input to the reference design. For the purposes of a reference design we were requested to provide advice during the design exercise to the architectural team, to stage 1 (stage C), 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.

4.1.1 Superstructure Frame

The structural form of the building comprises primarily of a main two storey area with a single storey area to North of the building floorspace, the roof is of duo pitched form and spans from the building perimeter at the Southern wall line to an internal wall line and then continues as a slope to the Northern perimeter wall. The internal spaces around the building are generally cellular comprising a series of smaller rooms, the walls of which can be utilised as either loadbearing or can accommodate columns within the wall construction. However, the central play area is largely an open space with no internal walls or columns requiring a steel frame structure to support the first floor structure above and transfer loads back to the columns positioned around the perimeter of the area, structural form of the upper floor has been set out to accommodate voids over the main play area and provide viewpoints to the space below.

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

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

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

Typical layouts are shown of the attached extract drawings.

We would comment on each form of construction as follows;

Timber Frame Construction (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

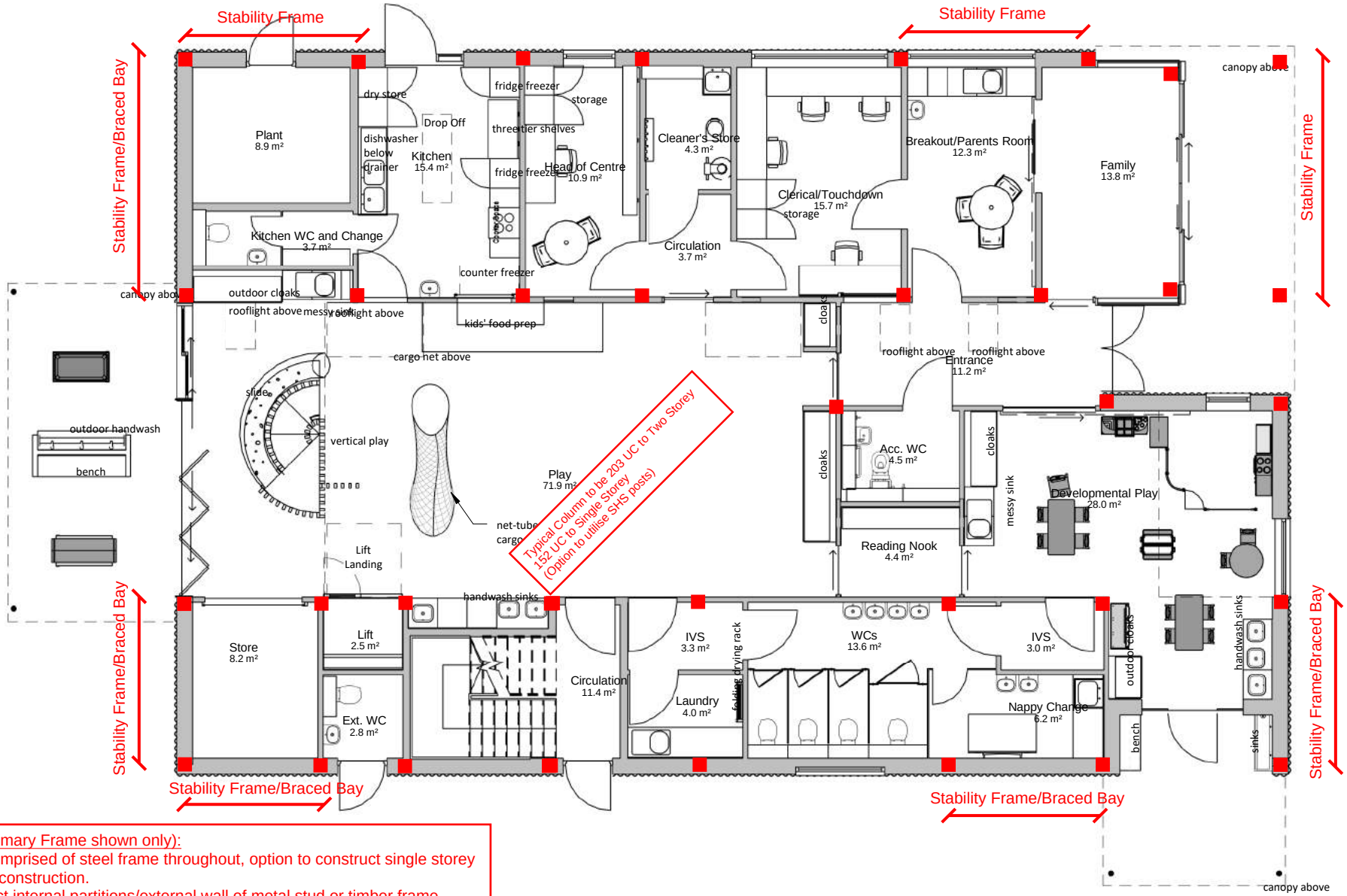
4.1.2 Substructure

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 Appendix A.

UK and Ireland Office Locations

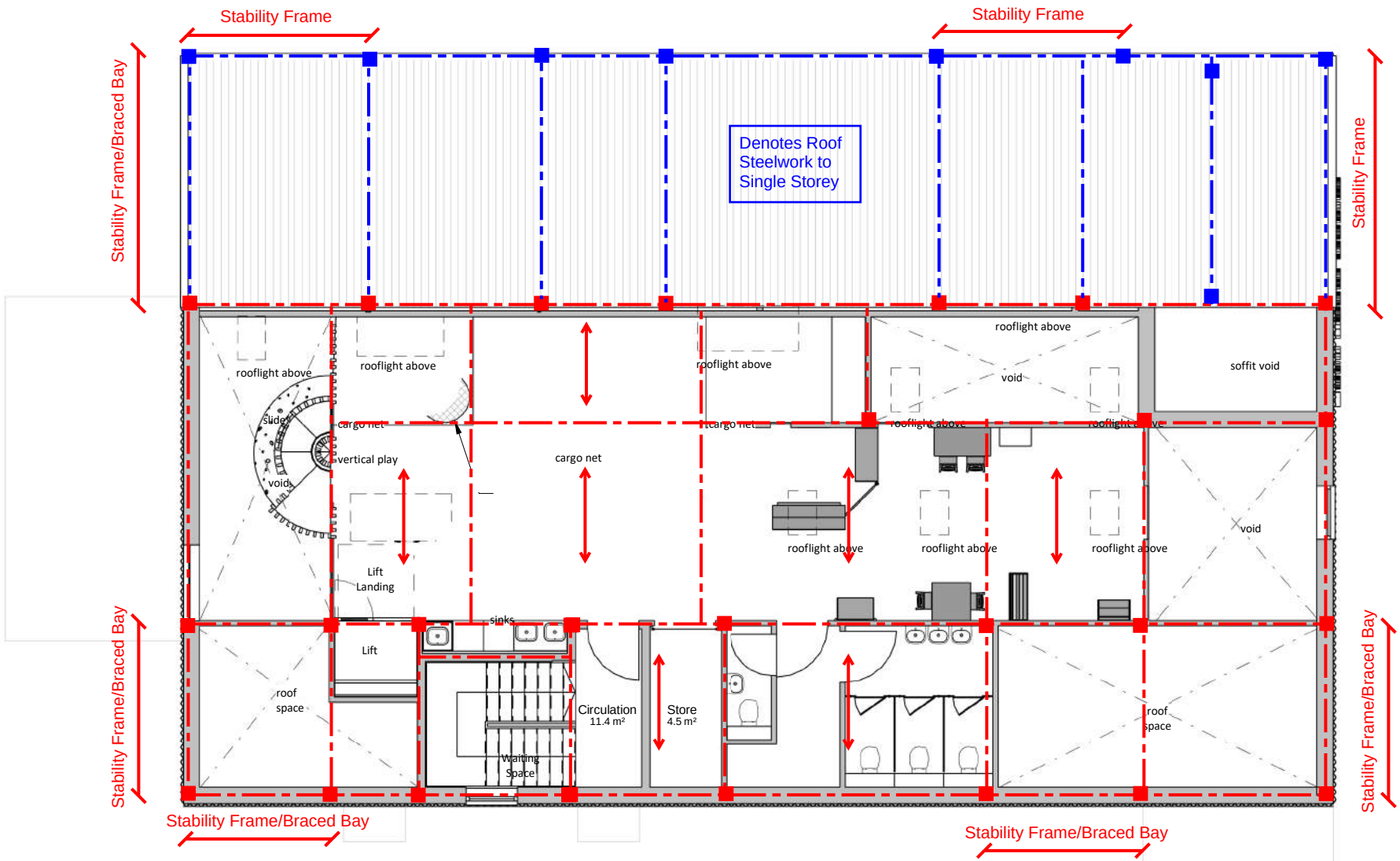


Structural Notes (Primary Frame shown only):

1. Structure to be comprised of steel frame throughout, option to construct single storey unit of timber frame construction.
2. Option to construct internal partitions/external wall of metal stud or timber frame.

■ Steel Column
(Typical Column 203 UC to Two Storey, 152 UC to Single Storey)

Waterman Overmark
Proposed Steel Frame - Column Layout
24/04/18
STR1314503-SK180424-01



Structural Notes (Primary Frame shown only):

1. Structure to be comprised of steel frame throughout, option to construct single storey unit of timber frame construction.
2. Option to construct internal partitions/external wall of metal stud or timber frame.

- Steel Column (Typical Column 203 UC to Two Storey, 152 UC to Single Storey)
- Steel Beam (Typical Beam 305x165 UB)
- Denotes span of floor joists. (45x250mm C24 Solid Floor Joists @400mm c/c)

Waterman Overmark
Proposed Steel Frame - First Floor Steelwork
24/04/18
STR1314503-SK180424-02

Jeremy Gardner Associates
Technical Note

Scottish Future Trust Early Years Centre – Kilmaurs
Fire Engineering Review

CGS322/rm/10abc
24 April 2018

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We have completed our Fire Engineering Review of the proposed two-storey Early Years Centre in Kilmaurs. Please find below a summary of the results of our review with regards to the key fire strategy issues. Additional fire strategy design guidance is contained in the Appendix.

This Fire Engineering Review is intended to inform design development and is not suitable for submission to the approving authorities.

CARGO NET & VERTICAL PLAY

The use of a cargo net/vertical play over an open void is not covered by the Technical Handbook. We consider this proposal reasonable based on the following:

- Extra supervision to be given by members of staff to children playing on the cargo net/vertical play. Management procedures should be in place to ensure that staff evacuate any children on the cargo net in a short period of time when the fire alarm is raised;
- A Category L1 automatic fire detection and alarm system throughout the building;
- No significant fire loads to be located directly beneath the cargo net/vertical play. We will need to carry out a fire engineering risk assessment to determine the restrictions on the allowable content beneath the cargo net/vertical play;
- Short travel distances to the enclosed stair on the upper floor; and
- The integrity of the cargo net/vertical play should not fail when exposed to fire and/or high smoke temperatures during the evacuation period.

We recommend that some high level smoke vents are allowed for at this stage to address any potential concerns of children using the cargo net/vertical play.

MEANS OF ESCAPE

Single Stair

The single stair configuration currently proposed for the building requires the following criteria to be met:

- The maximum number of occupants at Level 1 should be limited to 60;
- Travel distances measured to the door of the enclosed stair on the upper floor should be limited to 15m; and
- The enclosed escape stair should be provided with protected lobbies at Level 0 and 1.

Alternatively, if the building was to be provided with a Category L1 automatic fire detection and alarm system and the total occupancy of the building does not exceed 300; then the protected lobbies described above do not need to be provided.

Occupancy Number & Escape Capacity

The occupancy of the building can be established either by using the occupancy load factors provided in the Technical Handbook, or by providing a written occupancy statement of the occupancy capacity of the room/space.

The Technical Handbook provides occupancy load factors for some areas of the proposed building, e.g. kitchen, office and staff room areas. However, recommended occupancy load factors are not provided for other areas, such as Playrooms.

The nursery will be designed to accommodate 72 children and 24 members of staff. Flexibility is required to provide additional capacity for 13 children outdoors. The double door to the Entrance lobby and the exit via the stair will provide sufficient capacity to serve these occupants.

We understand that flexibility is required for community use within the building; therefore, the sliding door to the garden, and the internal sliding door between the Entrance lobby and the play area should be designed as automatic doors which fail open and open automatically from any position when the fire alarm is raised. As an alternative to providing automatic sliding doors, pass doors could be used instead if they are located adjacent to the manual sliding doors.

Open Balconies

All escape routes on the upper floor should be away from the open balconies. The stair exit should be located at least 4.5m away from any balcony edge on the upper floor.

Enclosed Nursery Garden Area

In order for the enclosed Nursery Garden area beyond the sliding door from the Play area to be considered a place of safety; there should be exits provided from the enclosed Nursery Garden area to an unenclosed area beyond that are of a width equivalent to the same width of the final exits. We recommend that a 2.4m wide gate to outside (swing in the direction of escape) should be provided to the Nursery Garden. The criteria for the escape route in the Nursery Garden are as illustrated in Figure 1 prepared by ABC.

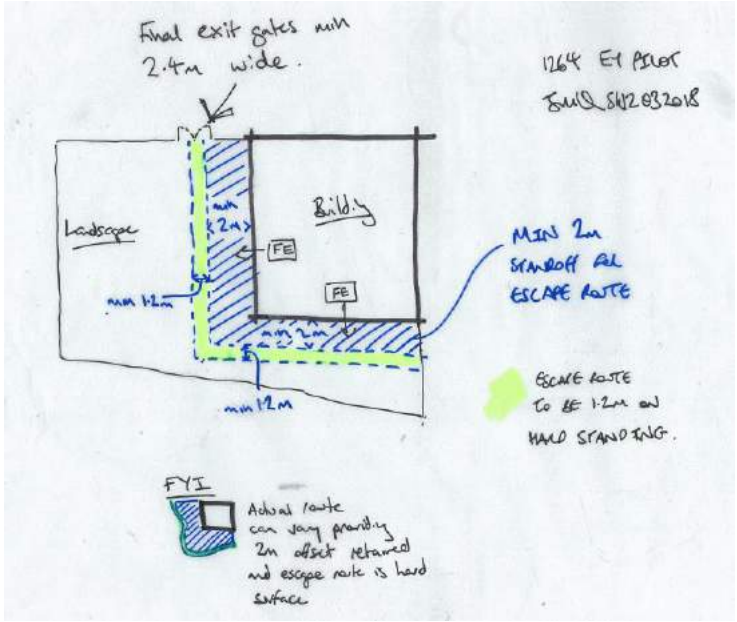


Figure 1 – Escape via Nursery Garden

COMPARTMENTATION & STRUCTURE

The structure of the building should achieve at least 30 minutes fire resistance.

The escape stairs and lift shaft should be enclosed with construction achieving at least 60 minutes fire resistance. Structure supporting the stair enclosure and lift shaft should also achieve at least 60 minutes fire resistance.

If the staff toilet at First Floor is to be fire separated from the adjoining accommodation; the door and wall between the First Floor toilet and the escape stair do not need to be fire rated.

If the plant room contains any equipment that would make it a place of special fire risk, the plant room should be enclosed with 60 minute fire rated construction.

AUTOMATIC FIRE DETECTION AND ALARM SYSTEM

Based on the occupancy of the building not being more 300 occupants, at least a Category L2 automatic fire detection and alarm system should be provided throughout the building. However, to omit the protected lobby to the stair, and to support the cargo net & vertical play over an open void, a Category L1 automatic fire detection and alarm system should be provided throughout the building.

EXTERNAL FIRE SPREAD

As sprinklers are not to be provided to the building, the external façades may require some protection to address spread between buildings. This can be confirmed once an updated site plan has been provided.

As the external façade is more than 2m from the external escape routes leading to the gates on site (See Figure 1 above); the external elevations next to the external escape route do not need to be fire rated.

FURTHER WORK

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

APPENDIX FURTHER INFORMATION

Intention of Review and Design Guidance

This Fire Engineering Review is intended to inform design development and is not suitable for submission to the approving authorities.

In line with the above, this Fire Engineering Review should be read in conjunction with Section 2: Fire of the Non-Domestic Technical Handbook. Unless otherwise noted, the fire strategy should be designed in line with the Technical Handbook's guidance.

Drawing Information Used

This review is based on the drawings received on the 23 April 2018.

Additional Design Guidance

Fire Fighting Facilities

The following fire fighting facilities should be provided:

- Fire fighting stair accessed directly from outside; and
- A automatically opening smoke vents by means of one of the following:
    - A ventilator of at least 1m^2 at the top of the stair, or
    - A ventilator of at least 0.5m^2 at each storey on an external wall.

Fire Appliance Access

Based on the building's area and perimeter, fire appliance access need only be to one elevation of the building.

Fire Hydrants

A fire hydrant should be provided at the front of the building. This should be located at least 6m from the building, adjacent to the fire appliance parking position and within 60m of all elevations.

Temporary Waiting Spaces

A temporary waiting space measuring at least 700mm by 1200mm should be provided within the stair enclosure. An emergency voice communication system should be provided adjacent to the temporary waiting space.

Graven®

East Ayrshire Early Years Centre Kilmaurs

Initial concept document

The project involves the design of an Early Years pilot project for 2 to 3 year olds and 3 to 5 year olds.

Graven has been asked to respond to the architecture by developing creative and practical interior design proposals that will support the objectives.

Our key considerations are:

- Safety
- Durability
- Sensory stimulation
- Flexibility
- Noise attenuation

All of these are in consideration of the range of functions and users, including staff and families.

- 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
- Linoleum flooring is used, with the correct slip resistance and suitable for the underfloor heating system
- Linoleum is cove formed and runs up to dado height for lower wall durability, and ease of cleaning
- Acoustic Wood/Wool wall tiles are used to help sound absorption and reduce reverberation times
- Fitted joinery formed in solid colour wood fibre panels give durability of fitted elements. Some of these may be perforated to add tactile variety
- Modular tables to allow re-formatting of the space for lunches and play time avoiding excessive movement and storage of furniture elements
- Modular carpet tiles can be swapped out easily if they become damaged
- Suspended fabric "clouds" add visual interest to the ceiling and provide sound absorption

The following pages illustrate the proposals

3- 5 years Play
Look & Feel / Ground

Family Area
Look & Feel

internal flooring

3D Built Up Signage

loose seating

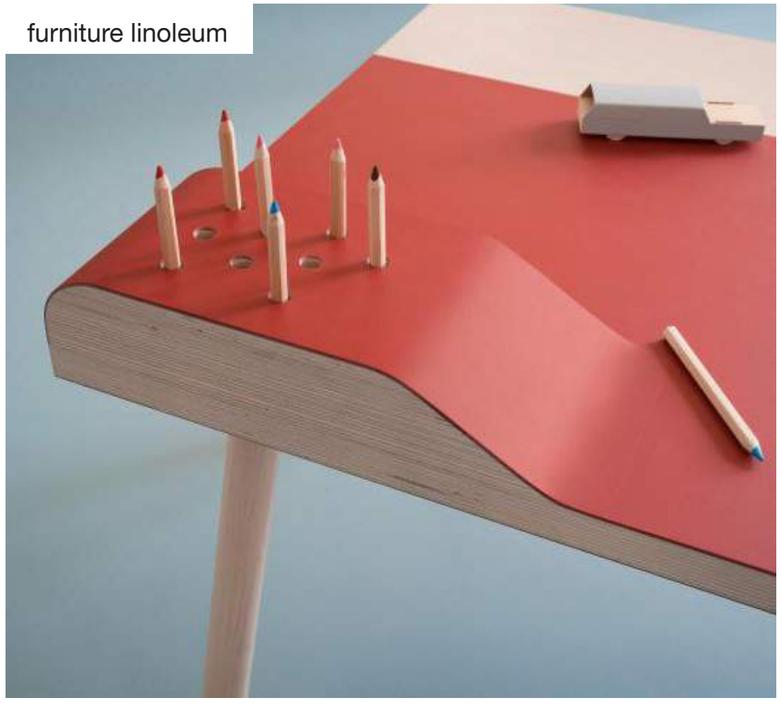
high back sofa

suspended pendent light

planting

solid colour joinery

furniture linoleum



Early Years Centre
Materials & Textures

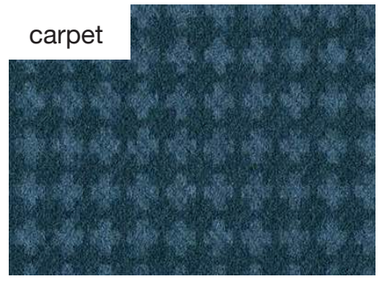
external flooring

cork flooring

flooring to dado height

acoustic linoleum

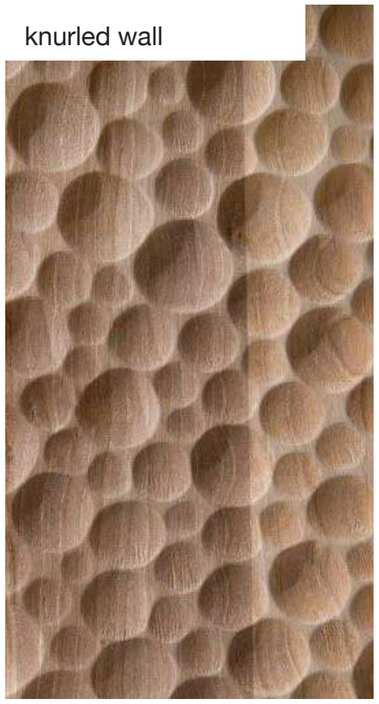
carpet



timber

suspended acoustic forms

knurled wall



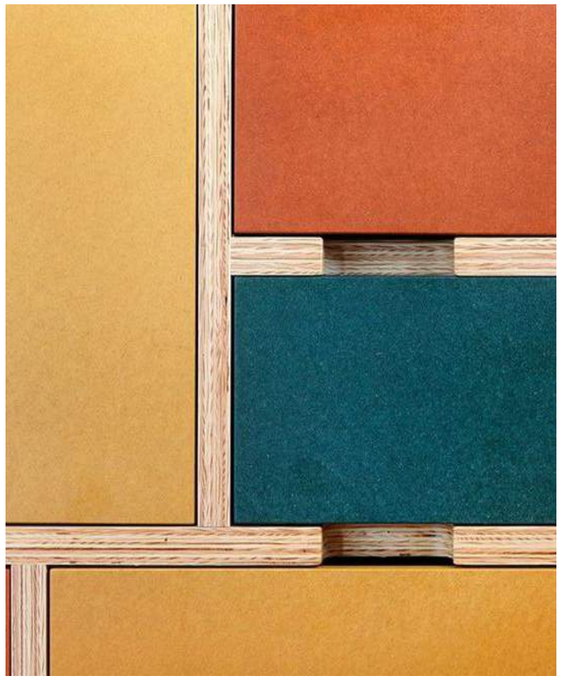
perforated

acoustic panels

pin-able

routered

Developmental Play
Look & Feel



3–5 years Play
Look & Feel / 1st Floor

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Early Years Reference Design

M&E Summary Scope of Works

RIBA Stage 2

Rev ABC

17 May 2018

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ISSUE HISTORY

Issue	Date	Description
Rev ABC	17/5/18	Final

MAX FORDHAM LLP TEAM CONTRIBUTORS

Engineer	Role
Ingrid Berkeley	Sustainability Consultant
Colin Hamilton	Senior Partner
Matt Thomas	Senior Engineer/Team Leader

CONTENTS

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1.0 M&E SUMMARY SCOPE OF WORKS

1.1 Incoming Services

The proposals described below are subject to final agreement with the suppliers. Allowance has been made for points of connection for the following mains utilities. It has been assumed that there is existing capacity in the network.

LV Power
A new 3 Phase low voltage electrical supply is required circa 100kVA supply if all electric heating, or about 60kVA if all gas heating. This assumes that a transformer is not required. This needs to be checked in the next stage of the design development.

Gas
A new, metered, circa 60kW gas supply is required to the new building to terminate in a meter in the plantroom. This load needs to be checked in the next stage of the design development.

Water
It is assumed that the domestic water supply can be direct from the street mains without any domestic cold water storage, water treatment or filtration. If EAC require storage or the infrastructure cannot deliver a direct supply then water storage will need to be added. This assumption and available mains pressure, quality and flow need to be checked in the next stage of the design development.

Telecomms
Telephone and data services will be required to the offices. Details to be checked in the next stage of the design development.

1.2 Building Envelope

This section is covered by the Architects specification, however is included here for coordination purposes.

The following table details the current maximum area weighted average U-values required for new buildings as set out in Section 6 from the Scottish Building Standards and our target values for best practice for this new building:

Element	2017 Area Weighted Av / U-value ($W/m^2/K$)	Target U Value ($W/m^2/K$)
Wall	0.27	0.15
Floor	0.22	0.16
Roof	0.2	0.15
Glazing	2.0	1.5

Air permeability testing has not been enforced under the Building Standards for new developments; however design issues are likely to be required so as to achieve the current 43% reduction in carbon dioxide as set out within the Regulations and it is recommended that buildings be designed to achieve a value of $10m^3/hr/m^2$ @50Pa.or better. We recommend reducing this target to $5m^3/hr/m^2$ @50Pa as it will reduce the quantity of renewables required. Use accredited construction details rather than default PSI values as this will reduce the quantity of renewables required.

1.3 Equipment

N13 Sanitary Appliances / Fittings
Sanitaryware will be assessed and selected based on performance, suitability, efficiency of water use and running costs. For example, where possible, sanitaryware such as low flush toilets and sensor controlled taps will be used to minimise water usage. Fixtures and fittings in the childrens toilet area must be sufficiently robust to avoid vandalism. Size and fixing height of sanitaryware must be appropriate for its location and must incorporate the needs of disabled persons.

All appliances will be provided with local service valves and all range of appliances will be provided with isolation valves. Sensor flow taps to wash hand basins.

1.4 Disposal Systems

R10 Rainwater Installation

DESIGN PARAMETERS

- The Scottish Building Standards 2017- Section 3 (Environment)
- CIBSE Guide G: Public Health and Plumbing Engineering :2014
- BS EN12056
- Rainfall Design Intensity: to be confirmed

SYSTEM DESCRIPTION

A complete rainwater installation will be provide to convey water from the roof to the below ground drainage points provided by others. The system will be designed in accordance with BS EN 12056 with the design rainfall intensity dependent on the final design of the building. If internal rainwater pipework is installed it will be in uPVC and insulated to control noise and condensation.

R11 Above Ground Drainage

DESIGN PARAMETERS

- The Scottish Building Standards 2017 - Section 3 (Environment)
- CIBSE Guide G: Public Health and Plumbing Engineering :2014
- Water Regulations Advisory Scheme (WRAS): The Water Regulations Guide, Information and guidance notes
- BS EN12056, BS8000 part 13, BS8301 and all other relevant British Standards

SYSTEM DESCRIPTION

A complete above ground drainage installation will be provided to convey wastewater from all sanitary and other devices within the building to below ground drainage points provided by others.

All above ground drainage will be PVC where enclosed or chrome plated copper where exposed

1.5 Water & Gas Distribution

S10 Hot and Cold Water Services

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 3 (Environment) & Section 6 (Energy)
- The Water Supply (Water Fittings) Regulations 1999
- Pressure Equipment Directive (PED) 97/23/EC, implemented in the UK through the Pressure Equipment Safety Regulations 2016
- CIBSE Guide G: Public Health and Plumbing Engineering :2014
- CIBSE Commissioning Code W: Water Distribution Systems
- CIBSE TM 13: Minimising the Risk of Legionnaires' Disease
- Building Services Research and Information Association (BSRIA)
- Variable flow Water Systems - Design, installation and commissioning guidance AG16/2002
- Commissioning Water Systems application procedures for buildings, AG 2/89.3
- Guide to Legionellosis - Operation and maintenance Log Book BAG BG/58/2015 Guide to Legionellosis - Risk assessment BAG BG/57/2015
- Cold Water Storage Tanks TN13/98
- Water Regulations Advisory Scheme (WRAS): The Water Regulations Guide, Information and guidance notes
- The Water Supply (Water Fittings) Scotland Byelaws 2014
- British Standards: BS EN806, BS8558, BS7291, BS EN 1057
- BS EN 12828
- HSC L8 - Legionnaires' Disease - Control of Legionella Bacteria in Water Systems ACOP + HSG274
- IOP Plumber's Engineering Services Design Guide 2002

SYSTEM DESCRIPTION

It is assumed that the domestic water supply can be direct from the street mains without any domestic cold water storage, water treatment or filtration. A new metered water supply will be provided to the nursery building.

Assume an indirect pressurised hot water cylinder in the plantroom for hot water production. The hot water system will be a sealed system with secondary circulation return (note that trace heating is an alternative if the council prefer).

Hot water will be distributed at least 60°C for control of legionella. Provide TMV3 approved mixing valves.

All hot and cold water services will be distributed to appliances in either copper or cross linked polyethylene pipework installed in service risers and voids. All pipework will be insulated for control of condensation, heat gain and heat loss.

S14 Irrigation

SYSTEM DESCRIPTION

Allow for two external taps provided around the building perimeter for external wet play and garden use. External taps will be key operated. Provide backflow protection in accordance with WRAS and water supply regulations.

S17 Rainwater Reclamation System

Assume no rainwater collection and storage.

S32 Natural Gas

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 2 (Fire), Section 3 (Environment), Section 4 (Safety)
- The Gas Safety (installations and use) Regulations 1998 (Amendment) 2018Health & Safety Commission - Approved Code of Practice and Guidance
- IGE Gas Measurement (GM) and General Procedures Regulations: IGE/TD/3 & IGE/TD/4
- Gas Safe good practice recommendations
- British Gas Guide to the safe use of gas in buildings
- Gas Safe Technical Bulletin TB008
- Pipelines Safety Regulations 1996 - Design, construction and installation of gas service pipes, L81.
- CORGI Regulations
- Institute of Gas Engineers Publication IGE/UP/2
- Gas Installations for Educational Establishments UP11, published by the Institute of Gas Engineers & Managers, 2010.
- Health & Safety - The Gas safety (Installation and Use) regulations 1994 (Amendment) 2018
- British Standards: BS 6400-1, PD CEN/TR 16061, BS EN 1775, BS EN 15001-1, BS 6173, BS EN 12279, BS EN 13611, BS 6891

Available gas pressure: TBC

SYSTEM DESCRIPTION

A new metered gas supply will be provided to a utilities meter (location to be agreed). Gas supplies will be provided to the plantroom only.

All internal gas pipework will be medium grade screwed steel painted yellow run within ventilated spaces. A shut off solenoid valve will be provided on the supply to the plantroom to isolate the entire building on fire alarm (TBC as it can be a nuisance). An emergency shut off button will be provided to the plantroom.

S60 Fire Fighting Equipment

Portable fire fighting equipment (Extinguishers, etc,) are to be provided by others.

It is assumed that no new fire hydrants are required on site (to be checked in the next stage of the design development.).

Fire strategy and provision for fire fighting to be confirmed by fire consultant JGA.

S63 Sprinklers

THE FIRE STRATEGY CONSULTANT HAS CONFIRMED THAT SPRINKLERS ARE NOT REQUIRED BY CURRENT BUILDING REGULATIONS. INDIVIDUAL COUNCILS MAY REQUIRE SPRINKLERS.

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 2 (Fire)
- NFPA 13
- CIBSE TM13 and the HSE's Approved Code of Practice L8
- British Standards: BS EN 12845, BS EN 12259-1

SYSTEM DESCRIPTION

New standalone nursery buildings do not require sprinklers due to their type classification.
New standalone nursery buildings may require sprinklers depending on their design.
The reference designs have been assessed by architects/JGA fire consultants and are assumed not to require sprinkler systems.
Nurseries provided as part of a new school building will require a sprinkler system due to their classification.
All cases need to be assessed individually.

1.6 Heating & Cooling

T10 - Gas Boilers

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 2 (Fire), Section 3 (Environment), Section 4 (Safety)
- Pressure Equipment Directive (PED)2014/68/EU , implemented in the UK through the Pressure Equipment Regulations 1999
- Environment Act 1995, Pollution Prevention & Control Act 1999, Pollution & Prevention Control (Scotland) Regulations 2012, , Air Quality Standards (Scotland) Regulations 2010
- Clean Air Act 1993 and Clean Air Act Memorandum
- The Gas Safety (Installation and Use) Regulations 1998 (Amendment) 2018
- CIBSE: Commissioning Code B 2002, CIBSE B guide, CIBSE AM14 Non-Domestic Hot Water Heating Systems, CIBSE KS07 Variable Flow Pipework Systems, CIBSE KS09 Commissioning Variable Flow Pipework Systems
- BSRIA:
  - Energy Efficient Pumping Systems (BG12/2011)
  - Commissioning Water Systems (BG 2/2010)
  - Pre-Commission Cleaning of Pipework Systems (BG 29/2012)
  - Water Treatment for Closed Heating and Cooling Systems (BG50/2013).
  - Variable Flow Water Systems - Design, installation and commissioning guidance (AG16/2002)
  - Selection of Control Valves in Variable Flow Systems (BG 51/2014)
- British Standards: BS 5440-2, BS 5546, BS 5854, BS 6880, BS EN 12828, BS EN 12831, BS EN 14336

Design flow temperature for heating system:	70°C max
Design return temperature for heating system:	40°C max (return temperature will be higher for hot water calorifier.
Maximum system working pressure:	3.5bar
Gas Boiler NOx Levels	less than 20mg/kWhr

SYSTEM DESCRIPTION

The heat source for space heating and hot water will be gas fired wall hung condensing boilers. Provide at least two boilers to provide continuity of heat during maintenance. Alternate the lead and sequence the starting to meet the load. The boilers will be provided with individual shunt pumps circulating water through a low loss header. Temperature compensation will be provided to maximise system efficiency.

T31 Low Temperature Hot Water Heating

DESIGN PARAMETERS

- The Scottish Building Standards 2017 : Section 3 (Environment), Section 6 (Energy)
- Pressure Equipment Directive (PED) 2014/68/EU, implemented in the UK through the Pressure Equipment Regulations 1999
- Environment Act 1995, Pollution Prevention & Control Act 1999, Pollution & Prevention Control (Scotland) Regulations 2012, , Air Quality Standards (Scotland) Regulations 2010
- Clean Air Act 1993 and Clean Air Act Memorandum
- The Gas Safety (Installation and Use) Regulations 1998 (Amendment) 2018
- CIBSE: Commissioning Code W 2010, CIBSE A guide, CIBSE B guide, CIBSE C guide, AM14 Non-Domestic Hot Water Heating Systems, KS07

Variable Flow Pipework Systems, KS09 Commissioning Variable Flow Pipework Systems, KS14 Energy Efficient Heating

- BSRIA:
  - Commissioning HVAC Systems: Guidance on the division of responsibilities (TM 1/88.1)
  - Commissioning Water Systems (BG 2/2010)
  - Commissioning Management (AG 5/2002)
  - Energy Efficient Pumping Systems (BG 12/2011)
  - Variable Flow Water Systems - Design, installation and commissioning guidance (AG 16/2002)
  - Commissioning of Pipe Work Systems (AG 20/95)
  - Pre-Commission Cleaning of Pipework Systems (BG 29/2012)
  - Water Treatment for Closed Heating and Cooling Systems (BG 50/2013).
  - Selection of Control Valves in Variable Flow Systems (BG 51/2014)
- British Standards: BS 5422, BS 6880, BS EN 12828, BS EN 12831, BS EN 14336

Internal Design Temperature Teaching spaces	21°C
Internal Design Temperature Offices /staff room	21°C
Internal Design Temperature Circulation	19°C
Internal Design Temperature stores	16°C
External Design Temperature (Note this is location specific)	-6°C
Infiltration rate (unoccupied)	1.0 AC/H
Infiltration rate (occupied)	5l/s/person
Heat emitter warm up margin	10%
LTHW flow temp	Max: 80°C
LTHW return temp	Max 70°C

SYSTEM DESCRIPTION

A sealed pressurised LTHW system will be provided. Twin head variable speed pump will circulate water from the low loss header to all LST heat emitters in the building. Separate pumped circuit to serve underfloor. All pipework will run in service voids and risers with zone valves provided to zone the building. All internal pipework will be either steel, copper or cross linked polyethylene with integral oxygen diffusion barrier.

All low level or accessible heat emitters for the building will be sized to operate at surface temperatures of max 43°C.

It is proposed that heating will be provided to the play spaces using underfloor piped water heating and LST radiators in all other areas. The underfloor heating will be in a thin screed construction or light weight timber floor construction to minimise the reaction time. Vinyl or Marmoleum floor finish or other equivalent product is anticipated.

It is proposed that temperature control will be via local thermostatic radiator valves to radiators and multiple temperature sensors to control the underfloor heating. Provide simple timeclock heating and HWS control for each circuit. Compensated flow to radiator circuits with outdoor temperature sensor. Underfloor heating control by adjustable temperature set point to enable management to adjust the set point within limits. Building is intended to be used only five days a week so the LST radiator timeclock and the underfloor heating timeclock need to be separate to reflect their different reaction times.

T60 Air Conditioning

A small IT cabinet will be provided (1.2m high) installed in an area of the office but this is not anticipated to require air conditioning (TBC). All areas would be served by a wireless hub. This means that there are no areas requiring air conditioning.

1.7 Ventilation

U10 General Supply and Extract Ventilation

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 2 (Fire), Section 3 (Environment), Section 6 (Energy)
- Environment Act 1995, Pollution Prevention & Control Act 1999, Pollution & Prevention Control (Scotland) Regulations 2012, , Air Quality Standards (Scotland) Regulations 2010
- Clean Air Act 1993 and Clean Air Act Memorandum

- CIBSE: Commissioning Code A 2006, CIBSE A guide, CIBSE B guide, CIBSE C guide, AM10 Natural Ventilation in Non-Domestic Buildings, AM13 Mixed Mode Ventilation, KS17 Indoor Air Quality and Ventilation
- BSRIA:
  - Commissioning HVAC Systems: Guidance on the division of responsibilities (TM 1/88.1), Commissioning Management (AG 5/2002)
  - Building & Engineering Services Association BESA (formerly B&ES and formerly HVCA
  - DW143 Guide to Good Practice – Ductwork Air Leakage Testing
  - DW144 Specification for Sheet Metal Ductwork
  - DW154 Specification for Plastics Ductwork
  - TR19 Guide to Good Practice - Internal Cleanliness of Ventilation Systems
- British Standards: BS 476-24, BS 5422, BS 8233, BS 9999, BS EN 13779, BS EN 15423
- Building Bulletin 87, 93, 101
- The School Premises Scotland Regulations
- Comply with the objectives, all relevant British Standards and Codes of Practice, and the IEE Regulations (BS7671:2008)
- For guidance on ventilating catering kitchens see the following publications:
- Health and Safety Executive (2000), Catering Information Sheet No 10 www.hse.gov.uk/pubns/cais10.pdf
- Health and Safety Executive (2000), Catering Information Sheet No 11 www.hse.gov.uk/pubns/cais11.pdf

Area	Ventilation Rate
WCs/nappy change	10 air changes per hour.
Laundry/cleaners stores	10 air changes per hour.
Kitchen	Control heat and remove the products of combustion DW172

SYSTEM DESCRIPTION

The building will be predominantly naturally ventilated.

All accommodation will have openable windows under user control. Acoustically attenuated ventilation paths will be provided to allow cross ventilation through into the corridors/open plan space.

Local mechanical extract ventilation will be provided to all WCs and wet areas. Low speed constant background setting with timeclock control of boost for normal hours of use.

Electric only oven, hob and microwave/reheat facilities with extract filter hood over hob will be provided as part of the FFE. Provide ducted mechanical extract from hood in kitchen.

Provide natural make up air ventilation to lobbies or ducted make up air where controllable natural ventilation is not practical.

It is understood from the fire strategy consultant that motorised automatic smoke vents are not required.

1.8 Electrical Power, Distribution and Lighting

V10 Electrical Generation Plant

DESIGN PARAMETERS

- The Scottish Building Standards 2017 - Section 6 (Energy)
- CIBSE: CIBSE F guide, CIBSE J guide, CIBSE K guide, KS15 Capturing Solar Energy, TM38 Renewable Energy Sources for Buildings
- BSRIA: BSRIA Power quality guide (AG 2/2000), Design Checks for Electrical Services - A quality control framework for electrical engineers (BG 3/2006)
- Energy Networks Association: Connection of Generation > 3.68kW (G59)
- British Standards: BS 7430, BS7671 Wiring Regulations 18th Edition July 2018, BS EN 60947-6, BS IEC 62548
- ECA Guide to the Installation of PV Systems – 3rd Edition

MAX FORDHAM

SYSTEM DESCRIPTION

At this stage it is proposed that a photovoltaic system is installed to meet the council planning requirements for on-site renewable energy generation. Current proposals are for a system just short of 10kWp (to ensure that the present 4kWp-10kWp Feed-In-Tariff band is met), made up of 30No. 270W PV panels, taking up approximately 50m^2 of the proposed south facing pitched roof. This requires an option study and modelling to determine the optimum solution in the next stage of the design development..

V20 Low Voltage Distribution

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 6 (Energy)
- The Memorandum of guidance on the Electricity at Work Regulations 1989 (HSR25 3rd Edition 2015))
- IET Wiring Regulations 18th Edition, July 2018 (BS7671:2008+AMD1:2011+AMD2:2013+AMD3:2015)
- CIBSE: CIBSE K guide, CIBSE TM39: Building Energy Metering 2009
- BSRIA:
  - BSRIA Power quality guide (AG 2/2000)
  - Design Checks for Electrical Services - A quality control framework for electrical engineers (BG 3/2006)
- HSG85 Electricity at work: Safe working practices
- NICEIC Technical Guidance
- British Standards: BS 7430, BS 7671, BS EN 50085-1, BS EN 50085-2-1, BS EN 50085-2-2, BS EN 60947-6

Incoming supply, approx 60kVA 415V, to be checked in the next stage of the design development.

SYSTEM DESCRIPTION

A new utilities supply will be provided to the supply authorities meter head within the plant room.

A new MCCB will be provided adjacent to the supply head for supplies to local MCB boards, control panels and dispersed loads such as a lift.

A final circuit panel board will be provided within plant room for final circuits. All internal sub-mains will run in service risers and voids on heavy duty cable basket or tray. Multicore XLPE insulated armoured cable will be used for internal sub-mains with separate CPC's.

V21 General Lighting

DESIGN PARAMETERS

- The Memorandum of guidance on the Electricity at Work Regulations 1989 (the Memorandum)
- IET Wiring Regulations 18th Edition, July 2018
- (BS7671:2008+AMD1:2011+AMD2:2013+AMD3:2015)
- The Scottish Building Standards 2017: Section 6 (Energy)
- CIBSE:
  - CIBSE Guide F: Energy Efficiency in Buildings
  - CIBSE Guide K: Electricity in Buildings
  - CIBSE Commissioning Code L: Lighting
  - SLL Lighting Guides
  - SLL Code for Lighting 2013
  - TM39 Building Energy Metering 2009
- BSRIA: Design Checks for Electrical Services (BG3/2006), BSRIA Power Quality Guide (AG2/2000)
- NIC/EIC: Technical Guidance
- British Standards: BS 7671, BS EN 50085-1, BS EN 50085-2-1, BS EN 50085-2-2, BS EN 60598-1
- BB87 & BB90

The uniformity ratio (min/average) across the classrooms, excluding a perimeter zone of 0.5m from the walls, must not be less than 0.6 at desk height. Uniformity over each task area must not be less than 0.8 at desk height. The illuminance of the immediate surrounding area must be related to the illuminance of the task area, with a uniformity of not less than 0.5.

The installation shall be designed to achieve a glare index of no more than 19.

An intermediate colour temperature of about 4000K and a colour rending index greater than 80 would be preferable for the play/class room areas and CAT 2 glare free diffusers for the offices and teaching spaces.

Lighting efficiency shall be >= 80 lumens/W (internal) or >= 70 lumens/W (external) and classroom general lighting shall be <= 3 W/m2 per 100 lux. Note that 60 lamp lumens per circuit Watt is currently the minimum requirement in building regulations March 2018. This is to be confirmed and developed in more detail at the next stage as there may be flexibility on efficiencies for display lighting.

Lighting levels tabulated below are at work surface level, unless stated otherwise:

Play and Teaching Spaces Generally	300lux
Circulation	150-200lux
Admin and offices	300lux
Kitchen	500lux
Store rooms	100lux
Plant Areas	150-200lux

SYSTEM DESCRIPTION

Lighting will be provided by high efficiency LED lamp sources.

Lighting in play/teaching spaces and admin areas will be predominantly linear LED tube light fittings with up/downlight distribution. This will be further developed at the next stage.

Lighting to other areas will generally be as follows:

- In areas with false ceilings such as sanitary areas, lighting will be recessed LED downlights. Appropriately rated IP rated covers will be provided to areas such as changing areas where water spray is likely.
- Feature lighting will be required at entrances and displays.
- Stairs will be lit by wall mounted circular fittings or similar
- The main kitchen will be lit by recessed fittings with appropriately IP rated and wipeable diffusers.
- Stores and plantrooms are to be generally lit by shatterproof bulkhead style LED fittings.
- Circulation and other spaces will generally be provided with high efficiency LED downlighters supplemented with localised feature lighting.

CONTROL REQUIREMENTS

The light fittings will be split into zones to allow separate control of the play/teaching/demonstration space. Each play/teaching space zone and space will be provided with simple on/off switches at low level to encourage use by staff and children as part of the learning experience. Provide a key switch for testing the emergency lighting in each area.

V22 General LV Power

DESIGN PARAMETERS

- The Memorandum of guidance on the Electricity at Work Regulations 1989 (HSR25 3rd Edition 2015 ()
- IET Wiring Regulations 18th Edition, July 2018
- (BS7671:2008+AMD1:2011+AMD2:2013+AMD3:2015)
- The Scottish Building Standards 2017: Section 6 (Energy)
- CIBSE: CIBSE K guide, CIBSE TM39: Building Energy Metering
- BSRIA: Power quality guide (AG 2/2000), Design Checks for Electrical Services - A quality control framework for electrical engineers (BG 3/2006)
- NICEIC: Technical Guidance
- British Standards: BS 7430, BS7671 Wiring Regulations 18th Edition (July 2018), BS EN 50085-1, BS EN 50085-2-1, BS EN 50085-2-2, BS EN 60947-6

MAX FORDHAM

SYSTEM DESCRIPTION

LV power will be provided from distribution boards to light fittings and electrical accessories with MCB/RCBO protection.

Consideration will be given to various wiring systems on the basis of whole life costs and to enable flexibility in use. Wiring systems to be considered include;

- LSF singles in trunking and conduit
- Multicore sheathed cables on cable basket tray.
- Pre-wired modular wiring systems

LV power will be provided from the distribution boards to light fittings and electrical accessories with MCB/RCBO protection. Generally LV containment will run in service risers and voids at high level. Dado trunking will be used within the offices only for power and distribution.

Provide power to powered doors and windows and rooflights.

Provide power to plantroom frost protection heater. Includes provision of plant room electric heater. Automatic temperature control frost protection to plant room.

Provide power to all controls, communications systems, CCTV, access, security, fire, refuge and disabled alarms.

V32 Uninterruptible Power Supply

There is no requirement for uninterruptible power supplies, surge protection or power factor correction.

V40 Emergency Lighting

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 6 (Energy)
- CIBSE:
  - CIBSE Guide F: Energy Efficiency in Buildings
  - CIBSE Guide K: Electricity in Buildings
  - CIBSE Commissioning Code L: Lighting
  - SLL Lighting Guides
  - SLL Code for Lighting 2013
- Industry Committee for Emergency Lighting (ICEL)
  - ICEL 1001:1999: Scheme of Product and Authenticated Photometric data Registration for Emergency Luminaires and Conversion Modules.
  - ICEL 1004:2014: The use of Emergency Lighting Modification Units
  - ICEL 1006:2012: Emergency Lighting Guide
- Building Services Research and Information Association (BSRIA):
  - Design Checks for Electrical Services (BG3/2006)
  - BSRIA Power Quality Guide (AG2/2000)
- British Standards: BS 5266-1, BS 5499-4, BS 7671, BS 9991, BS 9999, BS EN 1838, BS EN 50172, BS EN 60598-1, BS EN 60598-2-22, BS EN 62034, BS EN 50200, BS5489

SYSTEM DESCRIPTION

It is not a requirement of building standards to provide emergency lighting in areas of schools or nurseries with natural daylighting and only used during normal school working hours. However, it is proposed to provide emergency lighting throughout the building to enable flexibility for extended working hours and community use.

Emergency lighting will be provided throughout the building. Emergency light fittings will be self-contained dedicated emergency LED fittings. Keyswitches will be provided adjacent to the MCB boards for testing.

V41 External Lighting

DESIGN PARAMETERS

- Comply with the performance objectives and:-
- The Scottish Building Standards 2017: Section 6 (Energy)
- All relevant British Standards and Codes of Practice including
- BS EN 13201-2: 2015, BS 5489-1:2013, BS 7671:2008 (IEE Regulations)
- Guidance Notes for the Reduction of Light Pollution', The Institution of Lighting Engineers (ILE), GN01 2011, www.ile.org.uk.
- Lighting and Crime', The Institution of Lighting Engineers (ILE), GN01 2011,, www.ile.org.uk.

- Lighting the Environment – A Guide to Good Urban Lighting', ILE/CIBSE.
- The guidelines in the CIBSE code for Exterior Lighting
- Guide to the Lighting of Urban Areas', Commission Internationale De L'Eclairage (CIE), 2000, CIE 136-2000.
- Recommendations for the Lighting of Roads for Motor and Pedestrian Traffic', Commission Internationale De L'Eclairage (CIE), 1995, CIE 115-1995.
- Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations', Commission Internationale De L'Eclairage (CIE), 2003, CIE 150-2003.
- Guidelines for Minimising Sky Glow', Commission Internationale De L'Eclairage (CIE), 1997, CIE 126-1997.
- Guidelines for Minimising Urban Sky Glow near Astronomical Observatories', International Astronomical Union (IAU) / Commission Internationale De L'Eclairage (CIE), 1980, Publication IAU/CIE No1:1980.
- 'Secured by Design Principles', 2014 inc. guidance for New Schools ACPO System Description

The extent of external lighting proposed will provide background and wayfinding lighting on the building to the playground areas to provide a secure, lit route to the entrance gate.

Extent and ownership of any lighting to the access road and car park areas to be confirmed by the nursery or Council.

The external lighting installation will be designed to minimise light pollution and impact to neighbouring properties, while still supporting natural surveillance of the site and operation of CCTV.

All lighting to paths, car park areas and decorative lighting control will be controlled by means of daylight sensors and timeclocks to allow lighting to be switched off between 11pm and 7am to limit light pollution and energy use.

1.9 Communications, Security and Control Systems

W11 Staff Paging/Location

It is not proposed to install any paging system.

W12 Public Address System & Sound Amplification

It is understood no voice alarm, message system or bell system to be installed.

W15 Facilities for the Disabled

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 2 (Fire), Section 4 (Safety)
- CIBSE D Guide
- BS 8300: 2009
- Building Bulletin 77, 91, 94
- DDA Act 1995, SENDA Act 2001
- Equality Act 2010

SYSTEM DESCRIPTION

Disabled alarms will be provided in each disabled toilet. The disabled alarm will comprise a simple pull switch located inside each disabled toilet which when operated, will activate an alarm (buzzer) and warning light outside the toilet and a call controller with on-board audible and visual indication of call and reset, in the reception or other dedicated points.

The alarm will stay activated until acknowledged or re-set by the single call controller or a reset button in the disabled WC.

ABC design is two storey with lift so requires a disabled refuge intercom at the head of the stair at first floor. A dedicated disabled refuge intercom system will be provided to all disabled refuges to BS 5839 part 9. Each disabled refuge will be equipped with an intercom outstation to communicate with a panel at the base of the stair and back to a central panel in the main reception adjacent to the main fire alarm panel.

Induction Loops

Allow for one number portable induction loop

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MAX FORDHAM

W20 Radio/TV/CCTV

DESIGN PARAMETERS

- Data Protection Act 1998 + GDPR (Reguaiton (EU) 2016/679)
- The Scottish Building Standards 2017: Section 4 (Safety)
- CIBSE K Guide
- BSRIA: Guidance and Specification for Electronic Security Systems (FMS3/98)
- National Security Inspectorate (NSI): Code of Practice NCP 104 for the design, installation and maintenance of CCTV systems
- IEC 60728
- CCTV installations to BS EN 50132 and BS 8220 BS 8418.

SYSTEM DESCRIPTION

TV & RADIO

No TV or radio distribution will be provided. It is assumed that any audio/TV/projector/screen systems will be part of the FF&E.

CCTV

No CCTV will be required

W21 Projection

We understand that a mobile interactive screen will be required. We assume that any audio/TV/projector/screen systems will be part of the FF&E.

W23 Clocks

We assume that any clocks will be part of the FF&E.

W40 Access Control

DESIGN PARAMETERS

- BS EN 50133
- The Scottish Building Standards 2017*:* Section 2 (Fire)*,* Section 4 (Safety)
- CIBSE K Guide
- BSRIA: Guidance and Specification for Electronic Security Systems (FMS3/98)
- British Standards: BS 7273-4, BS 7671, BS 8300, BS EN 50486, BS EN 60839-11-1, BS EN 60839-11-2

SYSTEM DESCRIPTION

Provide video door entry control to the main entrance monitored in reception.

W41 Security, Detection and Alarm

DESIGN PARAMETERS

- The Scottish Building Standards 2015: Section 2 (Fire), Section 4 (Safety)
- CIBSE K Guide
- BSRIA:
  - BSRIA Power Quality Guide (AG2/2000)
  - Design Checks for Electrical Services (BG3/2006)
  - Guidance and Specification for Electronic Security Systems (FMS3/98)
- British Security Industry Association (BSIA): Technical Guidance
- British Standards: BS 7273-4, BS 7671, BS 8300, BS EN 50486, BS EN 60839-11-1, BS EN 60839-11-2

SYSTEM DESCRIPTION

There will be an intruder alarm system for the building with magnetic contacts on external doors and PIR detectors to ground floor corridors, staircases and perimeter rooms. The system will be controlled by a central panel with a remote keypad for staff to set and unset the system and will be zoned to allow for various parts of the building to be separately alarmed. The control panel will incorporate a digital communicator to transmit alarm signals to a manned central monitoring station. Wiring will be laid on cable tray or in conduit chased into walls.

W50 Fire Detection & Alarm

DESIGN PARAMETERS

The system shall comply with the requirements of the following standards and regulations:

- The Scottish Building Standards 2017: Section 2 (Fire), Section 4 (Safety)
- CIBSE: E Guide, K Guide
- BSRIA: AG2/2000, BG3/2006, FMS3/98
- Fire Industry Association: Technical Guidance
- British Standards: BS 7671, BS EN 54, BS 9999
- British Standard BS 5839 Part 1:2017 and Part 4, systems for Life safety class L1;
- British Standard BS 7443 Specification for sound systems for emergency purposes;
- The British Fire Protection Systems Association Code of Practice for the design, installation and servicing of voice alarm systems associated with fire detection systems;
- The requirements of Building Control and the local Fire Officer

SYSTEM DESCRIPTION

The installation will comprise an analogue addressable system with smoke or heat detectors with combined sounders and xenon beacons in all areas of the building(s) and with break glass units at final exits as required by BS5839.

A single system control and power supply panel will be provided in the main entrance.

It is understood from the fire strategy consultants that an L1 system is required.

The lift to receive a fire condition and return to the ground floor. (to be confirmed in the next stage of the design development).

W51 Earthing and Bonding

DESIGN PARAMETERS

The entire LV distribution system shall be designed, installed, tested and commissioned in accordance with the requirements of the IEE Wiring regulations (18th Edition (July 2018), BS 7671:2008) and the following other standards:

- The Scottish Building Standards 2017: Section 6 (Energy)
- CIBSE K guide
- BSRIA: BSRIA Power quality guide (AG 2/2000), Design Checks for Electrical Services - A quality control framework for electrical engineers (BG 3/2006)
- Health and Safety Executive: HSG85 Electricity at work: Safe working practices, 2013
- NICEIC: Technical Guidance
- Energy Networks Association: Engineering Recommendation: Guidelines for the Provision of Low Voltage Connections to Multiple Occupancy Buildings (G87/2015), Distribution Code: Engineering Recommendation G12/4 (Requirements for the application of protective multiple earthing to low voltage networks) – a review of Engineering Recommendation G12/3
- British Standards: BS 7430, BS 7671, BS EN 62305-1, BS EN 62305-2, BS EN 62305-3, BS EN 62305-4, BIP 2118
- Local Electricity Utility supplier requirements (inc. PME Requirements)
- Electricity Association Engineering Recommendation G12/4
- Local Authority and other statutory requirements
- Electricity at Work Regulations

SYSTEM DESCRIPTION

To protect occupants and equipment from the effects of short circuits and fault currents.

W52 Lightning Protection

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 6 (Energy)
- CIBSE: CIBSE K guide, CIBSE TM39: Building Energy Metering
- BSRIA: BSRIA Power quality guide (AG 2/2000), Design Checks for Electrical Services - A quality control framework for electrical engineers (BG 3/2006)
- Health and Safety Executive: HSG85 Electricity at work: Safe working practices
- NICEIC: Technical Guidance
- Energy Networks Association: Engineering Recommendation: Guidelines for the Provision of Low Voltage Connections to Multiple Occupancy Buildings (G87/2010), Distribution Code: Engineering

Recommendation G12/4 (Requirements for the application of protective multiple earthing to low voltage networks) – a review of Engineering Recommendation G12/3
- British Standards: BS 7430, BS 7671, BS EN 50171, BS EN 62305-4

SYSTEM DESCRIPTION

The building fabric will be utilised as far as possible as the lightning protection system. This means that structural steel and concrete reinforcement will all be bonded together and bonded to the ground floor slab, which will in turn be bonded to lightning protection ground termination network. The air termination will be by a metal roof or by aluminium air terminations if a suitable metal roof is not installed.

The earth resistance of the ground termination network will be tested to check less than 10ohms, as required by BS EN 62305. A provisional sum should be included in the construction contract for the inclusion of earth rods if further measures are required to bring the resistance to earth down to this level. Earth resistivity needs to be tested on site during ground investigations.

W60 Building Management System

There is no requirement for a Building Management System. Relay building alarms to a council central monitoring facility

W70 Structured Cabling Network

DESIGN PARAMETERS

- The Scottish Building Standards 2017: Section 4 (Fire), Section 6 (Energy)
- ANSI/E1A/T1A 568: Commercial Building Telecommunications Wiring Standard TSB
  OSI/IEC 11801: Information Technology - Generic Cabling
- BS 50174
- BS 6701 Pts 1 & 2, BS 7718 and BS 7671

SYSTEM DESCRIPTION

At present we have assumed telephony will mainly be by voice over IP technology and a separate phone lines will not be installed. Direct phone lines to critical devices including the lifts, fire and security alarms and security will be provided.

Hard wired data connections will be provided to the server rack in the office and from the rack to four data points in the office and to the nominated position in the play area for the mobile interactive screen.

All active IT equipment will be provided by the client as part of the ICT fit out.

1.10 Transportation Systems

X10 Lift Installations

DESIGN PARAMETERS

- Building Regulations, the requirements of the Statutory Authorities, the insurers requirements and all relevant British Standards and Codes of Practice. In particular comply with:
- BS 5655, BS EN 81-70, BS 7671:2015 (IEE Regulations),
- BS 7255:2012, BS 5588 Pt8:1999, BS 8300,
- BS EN 60204-1:2006, BS EN 12015: 2014,
- BS EN 12016: 2013, BS EN ISO 11200:1996, BS EN 61000:2001
- The Lifts Regulations 2016
- The Scottish Building Standards 2017: Section 2 (Fire), Section 3 (Environment), Section 4 (Safety)
- CIBSE: Guide D, E, K
- DDA
- Minimum lift speed 0.15m/s
- Doors
- Upper Limit for the indoor ambient noise level in neighbouring room
- Laeq, 30 mins 40 dB.

SYSTEM DESCRIPTION

A single 5 person motor room less type platform lift will be installed to meet the requirements of the Building Standards. A keyswitch will be provided to prevent unauthorised access.
Assume pit depth of 200mm below ground FFL, headroom of 2500mm AFFL of top floor.

16th May 2018

R-8104-RGM-MI

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SCOTTISH FUTURES TRUST, EARLY YEARS REFERENCE DESIGN
ACOUSTIC DESIGN STRATAGY FOR TWO STORY OPTION

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

The acoustic design of the building will follow the guidance provided in the department for education building bulletin BB93 'Acoustics design of schools: performance standards 2015 v17'.

The acoustic design of the building covers four areas:

1. Control of external noise
2. Control of reverberant sound
3. Sound insulation between spaces
4. Control of building services noise

The design criteria and strategy adopted to achieve an appropriate acoustic environment is set out below.

Control of external environmental noise

As part of the detailed design of the building, an acoustic site survey will be required to quantify the acoustic environment, establishing the presence of transport noise sources, industrial sources and specific environmental sources such as strong prevailing winds, which can be a factor on exposed sites.

The proposal is to naturally ventilate the building through openable windows. In order to achieve the internal criteria of L_{Aeq} 35 dB the external facade noise level will need to be below L_{Aeq} 55 dB. Any facades exposed to higher noise levels will require acoustically attenuated ventilation or a mechanical ventilation system, to avoid excessive noise ingress when windows are opened to provide ventilation.

The control of rain noise on the roof structure is also important to avoid excessive internal noise levels. The pitched roof build up will incorporate either mineral fibre insulation or ridged plastic insulation combined with an acoustic dampening membrane to control rain noise.

Within the development site, the building orientation and external landscaping should be designed to provide a play area with a noise level below L_{Aeq} 55 dB. The design stage external site survey will determine the influence the external noise environment will have on site design.

Control of reverberant sound

The control of reverberant noise levels is key to providing a quiet learning environment where the children can listen and communicate easily. Controlling noise build up will also ensure good speech intelligibility and help to avoid staff voice strain.

The nursery spaces should have a reverberation time of under 0.6 seconds. Offices and meeting rooms should be under 1.0 seconds and ancillary spaces such as kitchens can be under 1.5 seconds.

Within the offices, meeting rooms and kitchens, the level of reverberation will be adequately controlled through the specification of an absorbent tiled ceiling of at least Class C.

Within the main nursery space, it is proposed to control the reverberation time by specifying minimum Class C acoustic perforated plasterboard to the underside of the roof and the ceiling of the ground floor. The void behind the perforated boards will be filled with absorbent insulation.

The perforated plasterboard will not provide enough absorption on its own to achieve the design target.

Additional Class A acoustic wall panelling will be provided to available upper wall areas, particularly in the double height space. Hanging absorbent cubes or clouds will also be utilised were practicable. Ideally an additional Class A equivalent absorption area of 30m^2 should be achieved within the main nursery space.

The design calculations also allow for additional absorption provided in the main nursery space from a floor finish with an absorption coefficient of 0.1 and rugs supplied as part of fit out covering approximately 25% of the floor area.

Sound insulation between spaces

It is important to provide a space within the nursery were private conversations can be held. A quiet room for children and families should also be available. In addition noise spill from the main nursery area into the adjacent noise sensitive spaces should be controlled.

Partitions separating noise sensitive rooms will have a minimum acoustic rating of R_w 52 dB. Partitions to corridors and separating room interconnected by doors will have a minimum acoustic rating of R_w 40 dB. The partition separating the kitchen for head of centre will a minimum acoustic rating of R_w 52 dB. The plant room wall should have a minimum acoustic rating of R_w 50 dB. All acoustic partitions should be taken to the underside of the roof or first floor structure, such that flanking over the partition head is avoided.

Glazed screens in walls between noise sensitive spaces will have a minimum acoustic rating of R_w 40 dB.

Doors to noise sensitive spaces will have a minimum acoustic rating of R_w 30 dB. Interconnecting doors between noise sensitive spaces should have a minimum acoustic rating of R_w 35 dB. All acoustic doors will require perimeter acoustic seals. Sliding doors between noise sensitive spaces will required acoustic seals and ironmongery specifically designed for this application to achieve R_w 35 dB.

The first floor design will need to control excessive impact from footsteps. This will be achieved by a floor finish with a minimum impact performance of ΔL_w 17 dB. The specification of carpet to the upper floor will achieve this.

Control of building services noise

Any building services serving the offices and nursery spaces will be designed to control noise to below L_{Aeq} 35 dB. This includes any non-natural ventilation, heating system and lighting.

Any external noise from building services equipment should be controlled to meet the local authorities planning guidelines for noise.

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