Architecture & Design Scotland
Ailtearachd is Dealbhadh na h-Alba

Understanding the barriers for inclusive and accessible learning environments

Contents

Introduction

The design of school environments plays a crucial role in accommodating the diverse needs of pupils, particularly those with complex needs. In October 2024, we facilitated a workshop with Education Scotland and their National Complex Needs Network, conducted to explore barriers and design opportunities in the learning spaces that the network teaches in.

This summary outlines some key considerations and barriers that were discussed during the workshop, in creating an ideal educational setting that supports both physical and sensory requirements.

The session provided an opportunity to accumulate all the expertise of this network to interrogate the spaces they work and teach in and how the design of them aid or hinder the learning and teaching process.

This is a short summary of the key spatial areas targeted through discussion:

- connections and approach

- arrival and drop-off

- circulation spaces

- social and outdoor spaces

- classroom and teaching spaces

- collaborative, private and flexible spaces

What we mean by inclusive spaces

This resource outlines principles to consider, rather than guidance. When we refer to inclusive and accessible approaches, this is very much in reference to our learning from the Craighalbert project and an additional supported needs (ASN) basis. There are many other factors and users to consider and collaborate with in creating fully inclusive spaces.

We hope to further expand these resources for the learning estate, and we are eager to develop further projects and case studies to deliver this form of support.

01

Connections and approach

This section outlines key factors to consider, focusing on accessibility, safety, and comfort in school design. It highlights essential elements such as calm entrances, clear signage, and secure pathways while also highlighting potential barriers, including financial constraints, space limitations, and transportation challenges.

Ideal learning environment

Calm, child-centred entrances:
Warm and soothing entrances without noisy alarms; positive greetings to start the day well.

Accessible location:
Schools should be easily reachable for the local community.

Pathways for navigation:
Different textures for transitions and covered walkways for all-weather comfort.

Safe roads and pavements:
Smooth surfaces for secure access.

Clear signage:
Guidance from car parks and drop-off points.

Security and accessibility:
Offices and staff should be positioned for safety and efficiency.

Comfortable lighting:
Avoid harsh lighting for a better atmosphere.

Sensory cues for orientation:
Floor texture changes aid navigation.

Parking and drop-off:
Ample parking, staggered drop-off times, and designated transport access points for efficiency.

Barriers to achieving an ideal learning environment

Space and design limitations:
Shared/co-located schools may struggle with limited bus access and excessive noise.

Financial constraints:
Budget issues affect the implementation of ideal features.

Large concrete spaces:
Lack of calming environments for transitions.

Parking and transport issues:
Limited spaces, double yellow lines, and congestion.
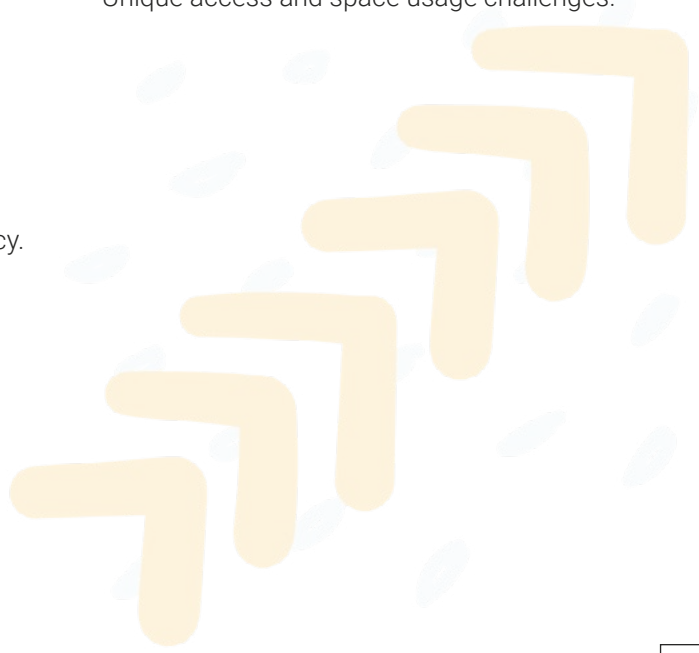
Security vs. accessibility:
Balancing both can be challenging.

Diverse needs:
Difficult to meet all user requirements.

Co-located schools:
Unique access and space usage challenges.

02

Arrival and drop-off

This section explores the key aspects of an ideal arrival and drop-off experience, ensuring accessibility, comfort, and inclusivity. It emphasises features like multiple entrance options, wide automatic doors, accessible toilets, and quiet waiting areas to support diverse needs. Additionally, it highlights challenges such as budget constraints, space limitations, and the balance between safety and independence in shared facilities.

Ideal learning environment

Entrances:
Multiple entrance options, including discrete, quiet, and multi-sensory entrances to accommodate different needs.

Doors:
Wide, powered, or automatic doors for easy accessibility.

Flooring:
Lino preferred over carpet for wheelchair ease and cleaning.

Toilets:
Accessible toilets near entrances for convenience.

Waiting areas:
Comfortable spaces with private areas for sensitive discussions.

Quiet spaces:
Designated areas near entrances for children struggling with transitions.

Design elements:
Bright, welcoming environment with rounded walls to reduce sensory overload.

Cultural sensitivity:
Thoughtful design, including appropriate flooring and paint colours.

Signage:
Boardmaker signs for universal accessibility.

Family and meeting rooms:
Dedicated spaces near the entrance for family support and meetings without affecting classroom sizes.

Barriers to achieving an ideal learning environment

Aesthetic limitations:
Functional choices like lino flooring may not align with aesthetic preferences.

Space constraints:
Limited space can impact the creation of family rooms and waiting areas.

Budget:
Financial restrictions may limit features like powered doors and comfortable parent spaces.

Community campus usage:
Shared facilities may limit access to essential spaces, such as disabled parking bays.

Safety vs. rights:
Balancing supervision needs with children's right to access spaces freely.

03

Circulation spaces

This section focuses on designing circulation spaces that promote accessibility, safety, and sensory wellbeing in schools. It highlights key features such as noise management, wide corridors, clear signage, and designated rest areas to support all children. However, challenges like poor acoustics, limited storage, restrictive layouts, and inadequate lighting can hinder these goals, particularly in areas where adaptations may be costly.

Ideal learning environment

Noise management:
Spaces designed to minimise echoes and excessive noise.

Classroom and equipment storage:
Dedicated storage areas for complex needs classes and external storage to free up classroom space.

Movement, safety and dignity:
Corridors should allow dignified movement, be quiet and safe, and have no blind spots.

Sensory and visual considerations:
Interactive displays, sensory pathways, calming colours, and soft natural lighting.

Accessibility:
Wide corridors and lifts to accommodate wheelchairs and equipment, with accessible toilets suitable for hoisting.

Lighting:
Soft, natural lighting to avoid harsh contrasts.

Safety and signage:
Clear, multi-sensory signage with at least three pieces of information per door and no hidden doors.

Rest and breakout spaces:
Designated quiet spaces for physical and sensory needs.

Barriers to achieving an ideal learning environment

Noise management:
Large, open spaces that amplify sound.

Classroom and equipment storage:
Limited space in classrooms and changing rooms; lack of external storage.

Movement, safety and dignity:
Open-plan or glass-fronted spaces compromise privacy; fire regulations and open upper-floor spaces complicate movement.

Sensory and visual considerations:
Fluorescent lights and noisy environments can be disruptive.

Accessibility:
Narrow corridors and one-way systems create congestion and restrict movement.

Lighting:
Fluorescent lighting can be harsh and distracting.

Safety and signage:
Insufficient signage and secret doors that cause confusion.

Rest and breakout spaces:
Bright colours and open spaces that don't support quiet or restful transitions.

Specific challenges in new schools

Toilet facilities:
Disabled toilets not large enough for hoisting, requiring costly adaptations.

Corridor safety:
Balconies and open spaces create challenges for dysregulated children.

04

Social and outdoor spaces

This section highlights the importance of well-designed social and outdoor spaces that support inclusion, independence, and sensory wellbeing. It emphasises features like appropriate seating, flexible playgrounds, quiet zones, and sheltered outdoor areas to create a welcoming environment for all children. Key considerations include accessibility, safety, and sensory management, ensuring that these spaces cater to diverse needs while promoting social interaction and learning.

Ideal learning environment

Variety of social spaces:
Age-appropriate social areas, including pods, sensory regulation spaces, and quiet zones with outdoor access.

Independent access:
Full school access, including outdoor learning areas, with at least one powered-door route.

Seating and furniture:
Suitable for ages 3-18, accommodating diverse physical needs.

Playground design:
Flexible, adaptable, and secure spaces without permanent fixtures.

Storage and safety:
Adequate storage near playgrounds for safe and accessible equipment.

Flexible multi-purpose areas:
Adaptable spaces for various activities and needs.

Smell and noise management:
Control of sensory inputs like cooking smells to maintain a pleasant environment.

Quiet and rest areas:
Designated spaces throughout the school for sensory breaks.

Sheltered outdoor access:
Covered outdoor areas to ensure year-round usability.

Internal gardens:
Contained garden spaces to promote independence and enhance the environment.

Separate areas:
Dining spaces distinct from gym areas for better functionality.

Lunch options:
Zoned outdoor spaces and meal choices catering to diverse needs.

Clear signage:
Multi-sensory signage for confident and independent navigation.

Barriers to achieving an ideal learning environment

Fixed play equipment making their adaptation and movement less flexible.

Transfer of cooking smells through spaces, eg. where dining and gym spaces are combined.

Lack of adequate spaces being provided.

Lack of clarity and governance when managing multi-use areas adds to confusion of how to use spaces.

05

Classroom and teaching spaces

This section outlines the key elements of effective classroom and teaching spaces. It highlights the need for flexible layouts, appropriate lighting, technology integration, and dedicated spaces for personal care and sensory support. Challenges such as design constraints, infrastructure limitations, and privacy concerns can hinder the creation of optimal learning environments, requiring thoughtful planning and resource allocation.

Ideal learning environment

Adaptability and flexibility
- Spaces should be easily adaptable for different needs, subjects, and equipment.
- Large classrooms to accommodate equipment, staff, and movement.
- Height-adjustable furniture and tracking hoists for accessibility.
- Observation spaces between classrooms without disrupting learning.
- Avoid open-plan classrooms/schools.

Safety and accessibility
- Safe routes to fire assembly points.
- Personal care spaces near classrooms for accessibility.
- Dignity-preserving spaces with privacy considerations.
- Space for equipment turning circles and ease of movement.

Sensory and lighting considerations
- Dimmable, flexible lighting to prevent flickering issues.
- Internal glass walls/windows with seating for sensory breaks and group work.
- Limit bright colours and excessive glass for a comfortable learning atmosphere.

Technology and connectivity
- Effective Wi-Fi and digital tools in all classrooms.
- Adequate plug points, including floor outlets for medical equipment.
- Phones in every room for communication and safety.
- Toilet alarms linked to classrooms for safety.

Personal care and sensory rooms
- Personal care spaces with wet rooms, dark rooms, and resource rooms.
- Additional sensory rooms for students needing alternative workspaces.

Nurture and breakout areas
- Cosy, protected rooms for nurture spaces.
- Breakout areas for one-on-one work with minimal distractions.

Storage and equipment
- Secure storage for multiple pieces of equipment.
- Classrooms with wall space for learning displays.
- Double sink areas for medical and general use.
- Environmental control
- Adjustable sensory settings to accommodate diverse needs.
- Acoustic considerations to minimiswe distractions.
- Small group teaching spaces with limited distractions.

Barriers to achieving an ideal learning environment

Design challenges
- Protecting classroom spaces from inappropriate use.
- Preventing sensory overload by limiting glass, bright colours, and harsh lighting.
- Infrastructure limitations
- Lack of dimmer switches affecting lighting adaptability.
- Insufficient storage space for equipment and materials.

Safety concerns
Overlooked spaces compromising children's privacy and dignity.

06

Collaborative, private and flexible spaces

This section emphasises the importance of collaborative, private, and flexible spaces that support diverse learning needs, staff wellbeing, and community engagement. It highlights key features such as sensory-friendly environments, adaptable learning areas, and independent living spaces while also addressing staff needs for decompression and collaboration. Challenges include space constraints, limited innovation in design, and the need for better access to technology and life skills facilities.

Ideal learning environment

SMART areas:
Spaces for functional life skills.

Hydrotherapy pools:
Facilities for therapeutic activities.

Sensory-friendly environments:
Noise reduction, sensory breaks, and rounded furniture for safety.

Variety of space sizes:
Different sized areas to support diverse learning needs.

Spaces for dignity and independence:
Areas like bedrooms, kitchens, and cafés to promote life skills.

Discreet help systems:
Call systems that do not disrupt the whole school.

Community spaces:
Facilities for parent workshops and learning sessions.

Flexible and varied spaces:
Adaptable areas to support different learning and community needs.

Staff needs and wellbeing

Decompression and nurturing spaces:
Areas for staff to support mental wellbeing.

Collaborative spaces:
Dedicated areas for collaboration between staff and children.

Training and meeting rooms:
Spaces for staff development and professional discussions.

Technology access:
Ensuring staff and learners have easy access to digital tools.

GIRFEC meeting rooms:
Dedicated spaces for child-focused planning meetings.

Barriers to achieving an ideal learning environment

Limited thinking and precedents:
Reliance on past designs limits innovation.

Space constraints:
Lack of space for nurturing and community use.

Technology access:
Ensuring accessibility for all remains a challenge.

Over-reliance on large spaces:
Some flexible spaces do not suit all learners.

Insufficient independent living facilities:
Lack of spaces designed for life skills development.

Understanding barriers to inclusive design

Credits and acknowledgements

Explore our work on inclusive and accessible learning spaces

Visit our website to explore our '*Designing for inclusive and accessible learning environments*' resource.

Understanding barriers to inclusive design

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