Scotland’s schools: The changing learning landscape

A paper prepared for Architecture and Design Scotland by Space Strategies
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Background
1.1 Introduction

Scotland’s school estate is in a period of investment. Architecture & Design Scotland have recently been involved in a “lessons learned” study to explore the successes of the recently completed projects and examine what could have been done better.

As an extension of this exploration, SPACE strategies have been asked to consider their work in the schools programme and explore the journey of change and innovation in the way schools are being designed and specified.

1.2 Scope

This paper explores some of the ongoing shift changes in how we learn and teach and the impact these have on the specification, scale and design of space for learning activity. There is little doubt that if schools are designed to the same templates we used in the past then these new approaches will be constrained.

As part of our (SPACE strategies) work, we are regularly asked to provide examples of innovative new school designs which can better support the principles being promoted within Curriculum for Excellence and other ongoing National Education initiatives. By sharing the experiences of others, this paper hopes to demonstrate that bold new approaches can be realistic and achievable.

There is a responsibility for those involved in the construction process to help ensure that investment in our schools does more than create “shiny” new examples of the school models which were built in the 1970’s (“New, old schools”). There is a need to design spaces which can respond to the ongoing transformational change and innovation in teaching and learning. Designing for change requires innovative thinking from the educational and design professionals involved, along with new approaches to the spatial configurations. This paper seeks to promote the opportunity of using a new building or refurbishment project to help catalyse change as well as support new and better ways of teaching and learning.

Within this report we aim to highlight three key areas which can contribute to success:

- An understanding of how the user communities can be brought along in the process with a particular focus on leadership
- An understanding of what can be delivered within an efficient and sustainable envelope area if traditional approaches of class ownership are challenged and new utilisation cultures are considered
- A persuasive argument to encourage those involved in the specification and design of learning spaces to consider educational and organisational strategy side by side with the development of the architectural brief and evolving design concepts.

We explore case studies where authorities have been bold and have looked beyond the traditional viewpoint of a school. We consider the spatial and organisational constructs which have been put in place to enable these innovative approaches. Within this we explore the issues of change in learning and teaching, the impact these changes are having on the specification of spaces and some of the change management focussed approaches which will hopefully ensure these new learning spaces are used as they are intended.
Teaching and learning is in a period of transformational change in Scotland. The introduction of Curriculum for Excellence in 2010 / 2011 along with other Scottish Government strategic initiatives such as “Getting It Right For Every Child” have resulted in a radical shift of emphasis on how we teach and learn. In our (SPACE strategies) engagement with many authorities and schools there are consistent themes which are raised. These are factors which should influence the specification and design criteria, or in other words the brief for the new (or refurbished / remodelled) accommodation:

- Using knowledge and skills in an interdisciplinary context is seen as key to making learning relevant and engaging
- There is a focus on learning through application of knowledge rather than passively accepting that knowledge
- There is an understanding that learners are individuals and “one size fits all” approaches are no longer relevant
- Learner choice and personalisation of the learning experience is a high priority
- Building learner resilience is a priority
- There is a shift in the way knowledge is being assessed: Evidence based assessment, including use of portfolios and project work, is becoming more common and there is less reliance on the exam being the only means of quantifying understanding. In addition to the traditional written content, many mediums of evidencing knowledge are being increasingly promoted, including films and other multi media options which harness the power of technology
- Boundaries are becoming blurred between early years, primary, secondary, further and higher education
- The appetite to better integrate community learning programmes with school and college curriculums is growing
- Partnership approaches between schools, colleges, universities, industry and employers are seen as essential to the provision of a suitably skilled future workforce
- The focus is on creating many pathways and opportunities into employment and careers for school learners
- Having greater transparency and visibility into the learning process is seen as important

Life Long Learning: Integrated approaches to education
1.4 Financial context & pressure on resources

The environmental and financial context in the 21st century has heightened awareness regarding the cost of the built environment. There has been an increasing pressure on financial budgets and there is also an awareness that it is irresponsible in terms of the environment to over specify the size of our buildings. Efficiency has become increasingly important both in terms of the initial capital costs but also in terms of ongoing operational impact.

Many of our current schools are below capacity having been designed for much larger rolls than exist today. This means that very often each teacher has ownership of their own classroom, including part time staff. This is despite the fact that the maximum contracted time for teaching is 22.5 hours of a 35 hour working week. A high percentage of staff have guidance and managerial roles, which further reduces their contact time with students in the classroom.

School spaces are often highly under-utilised. This practice is unsustainable both in terms of the operational costs of space which is lying empty but also in terms of the environmental impact of the built environment. The need to ensure more intensive use of the teaching spaces is recognised by the local authorities we have been working with.

There is feedback at a strategic and leadership level, in the authorities we have been working with, that the “one size fits all” classroom solution is also unsustainable in terms of learning and teaching needs.

The need to consider the Senior Phase (generally defined as secondary years 4 - 6) and maximise the opportunity for subject choice means that schools are looking at class offers across age groups. These approaches around teaching efficiency can maximise the opportunity for individual subject choices. Cohort mixes can however be constrained by rigid physical environments where the spaces are all focussed on 30 learners and 1 teacher in a cellular classroom.

The investments being made in the school estate are being viewed by many authorities as an opportunity to deliver value across the community the schools serve, both within and outwith the school day and terms. The school estate is being considered within a wider asset management context with collaboration opportunities across service areas within councils and with public sector partners being a driver for many authorities.

The factors outlined in this section of this paper have had a big impact on the provision of spaces for learning. Curriculum delivery recognises that there are many modes of learning and aims to foster the learner’s understanding of how they learn best. There is a recognition that the traditional classroom cannot always respond effectively to more collaborative, discursive, individual and participative learning styles. To respond to the varied demands of today’s teaching and learning there is an increasing demand to create a rich variety of settings to cater for individual preference, different cohort numbers and more active learning. We explore these spaces in the next section.
Impact on space: The argument for change
2.1 Choice & variety: Spaces to teach & learn

We explore the key issues which can affect the design and specification of space in this section of the paper.

Our findings are based on four years of intense engagement with a number of the Schools for the Future programme participant authorities including: Education departments, Senior Management Teams within schools as well as staff and students within schools.

The architecture and interior specification of learning spaces are inextricably linked in all of this. If spaces are not configured to suit the learning settings which will support the desired learning modes they will fail. The interior fitments and furniture within those spaces and settings need to be properly designed, specified and coordinated.

The interior design and specification of a school was easy when the majority of spaces required the same thing (30 - 32 desks, 30 - 32 chairs, a smart board and a teaching wall). Flexibility in teaching and the ability to accommodate the many modes involved in modern learning is dependent on the settings within that space and the design of that space. Designing from the “inside out” has become increasingly important.

2.2 The classroom

There is still very much a place for the traditional classroom, with the learning timetable remaining focused on the 30 - 32 student cohort supported by a single teacher. The classroom is an effective and efficient space to support teacher led learning, however, there is a need to reconsider the configuration, design and size of the traditional classroom.

Schools built in earlier decades often have a high space standard per pupil. Historically, part of the reason class sizes were increased was the need to incorporate benches to the rear of classrooms to accommodate fixed PCs within the class. This need is now increasingly becoming obsolete. There is an increasing demand to ensure that every learning space can deliver IT rich learning through mobile and portable technologies whether these are lap tops, tablets or in fact students owned devices.

Some educators we have worked with believe that the traditional approach of a large teacher’s desk at the front of the class is outdated. It is also a space hungry set up. The teacher’s desk tends to include a PC. The desk often doubles as their “office” space for use in non-contact periods as there is often nowhere else for them to work. In the modern workplace desks are shared through ‘virtual desktop’ approaches, where any PC can be used to access personal and corporate resources, email accounts and information. This is also now the case in many schools. Providing teachers with lap tops or tablets along with a modern approach to their workspace, eliminates the need for the traditional approach to a teacher’s desk.

Providing good quality staff work space for non-contact desk activities is not hard and is a priority for a number of authorities we have worked with. A modern approach to work space in schools is essential and the “staff base” approach should also be reconsidered to create better quality and more flexible shared spaces without territorial boundaries.
Classrooms are often full of clutter with out of date resources. There is advantage in considering shared departmental resources as part of the early design strategies. Good storage systems can help teachers “de-clutter” and can influence the early architectural concepts, for example storage wall concepts could be adopted in the transition spaces and corridors. Shared resource storage helps avoid duplication and supports shared teaching spaces.

There is a need to compliment the traditional classrooms with a range of other spaces to accommodate the wide range of other learning modes. If we are to include a variety of other spaces we also need to be very efficient with the classroom and ensure it is more utilised. There is also a need to reconsider the design and fit out of a 21st century class room. The quality of space is often more important than the size of that space and the furniture, fittings, and technology within the space are an integral part of the quality of an effective modern day teaching and learning environment. Carefully considered interior approaches can allow delivery of more, for less.

2.3 Space to support Group working

Within every authority we have worked with, the demand for good quality break out and group working spaces within the school environment is increasing. It can be difficult to accommodate up to 8 groups of 4 students for good quality project activity in the classroom. Feedback from the “Try before you buy” pilot space at Campbeltown Grammar School, indicated that “booth” style seating is very effective for group working. The high back bench seats offer a good level of privacy to allow students to focus on their work and not be influenced by what others are doing. Classroom activity can be extended into breakout space with such settings. A well designed dining space can offer good quality project working space, as can a learning plaza or LRC (Learning Resource Centre). In Higher and Further Education environments the cafe and refectory spaces are often highly utilised all day, with students working individually and in groups between lectures. The modern school library tends to be in high demand for exactly this kind of activity, and it is often the only fluid learning space in a school.
2.4 Space for specialist subject areas

Specialist teaching spaces are being reimagined in terms of curriculum delivery in many authorities and schools currently. They are often the most under-utilised spaces in schools and are also very expensive in terms of fit out costs for equipment and furniture. Traditionally laboratories are equipped to facilitate both theory and practical work but students often complain of sore backs whilst doing theory work on high stools and benches.

The emphasis on STEM (Science, Technology, Engineering and Maths) along with the bringing together of creative and design subject areas including Expressive Arts subjects and technologies, as well as new approaches in areas such as media studies is contributing to an increased importance of specialist teaching spaces offering more flexibility in the way teaching and learning can be delivered. It is hard to facilitate good quality group working in a “one size fits all” laboratory, kitchen or technical workshop, as they are generally configured for individual activities and break out space is particularly well suited for these subject areas.

Many IT rich subjects such as Business, Computing and Graphic Communications are commonly taught in PC laboratories. Fixed PC laboratories are very space hungry and inflexible spaces. The constraints of space often mean they are configured to suit didactic teaching and individual activities rather than group activity. This can be constraining. We have been repeatedly told by senior staff that group work and other learning modes are also important in these subject areas. The use of portable devices including lap tops, along with high speed wi-fi, will allow more flexibility in teaching and learning. In the main staff welcome the opportunity to access more flexible environments to teach and learn in when dealing with IT rich subject areas.

Some staff do have concerns however. CAD (Computer Aided Design) and other high end software based teaching requires high specification devices and the cost of these needs to be considered. Staff concern around the use of lap tops in these areas is usually alleviated when they realise that they will be provided with the correct specification of portable hardware to support high end software.
2.5 Independent & experiential learning

In the Curriculum for Excellence, there is a focus on learning being facilitated through the application of knowledge rather than passively accepting knowledge. There is an understanding that learners are individuals and that “one size fits all” approaches are no longer relevant. Learner choice and personalisation of the learning experience is becoming increasingly important. The need to learn through application of knowledge creates a different relationship between educator and student. Some teachers are “flipping” their classroom and instead of downloading knowledge in the classroom and asking students to apply that knowledge to worksheets in homework time, teachers are producing on line material and pod casts which allows the knowledge to be downloaded at home and then applied in the class. Teachers who are using this approach talk about how flipping the classroom allows them to support a wider cross section of learner abilities in a single session and about how much more engaged their students are. We are aware of this both through workshops with teaching staff but also from many videos on flipped classes which are available on the internet.

Students are being enabled to research independently and are being encouraged to discover and create programmes to suit their own individual learning styles. This requires a greater level of trust and the empowerment of students, as well as a wider range of spaces and places to work. Traditionally we enable students to move out of the classroom into independent learning spaces much more extensively in primary education. Innovative primary school staff are being consulted in the briefing process for secondary school spaces. An example of this is the West Lothian case study contained in section 5.0 of this document. Independent learning and research activity is also often supported through readily accessible information content through on line sources. Again the principles of extended classrooms (classrooms with access to break out space) which allow an easy flow of student movement from the class to a more fluid and shared environment are relevant. In many schools the only place where independent learning and research can be carried out is the library and this can constrain learning according to the teachers we engaged with.

Students are keen to access spaces to work in free periods, before and after school, as well as at break and lunch times. Spaces need to support individual tasks, paired tasks, revision and group project tasks. Student engagement has highlighted that within many current school environments:

- Library spaces are often booked out for teaching activities or closed because the librarian is not always available for student ad-hoc use during free periods
- Social spaces are not fitted out for study and are noisy
- Common rooms tend to be noisy
2.6 Interdisciplinary learning (IDL) & team teaching

Using knowledge and skills in an interdisciplinary context is seen as key to making learning relevant and engaging. These approaches create connections across curriculum areas. Interdisciplinary learning encourages active and collaborative learning. It is an important element within Curriculum for Excellence.

Interdisciplinary learning requires teaching staff to collaborate in planning learning. Often it requires large groups of students to come together, when the timetable is “collapsed” (the ordinary timetable is suspended for a whole or half day) and work around a theme which brings curriculum areas together. This can require a “download” (where the purpose of the day and tasks are explained), at the start of the day to take instruction on the aims, with a plenary feedback session at the close. Students disperse into smaller group working spaces for the main part of the day. This could involve 8 teachers working with 240 students if the spatial configurations can support this.

Team and open teaching is new to many teachers and there are many fears and concerns regarding working in this way. Noise and behavioural issues are often identified as a disabler. It is often however a big empty assembly hall which has limited or no sound absorption which is being used for these activities. There are few spaces within the existing school estates we have seen in Scotland, which can support large cohort teaching or the necessary small group working associated with thematic sessions. As a result, there is an increasing appetite to re-consider the traditional large spaces within our schools (dining, assembly, LRC and the like) through careful space planning, the specification of the fittings, furniture and equipment along with clever consideration of the interior design to allow these spaces to be more flexible allowing for a number of uses, including the opportunity to stage IDL events. Clever use of these spaces used in connection with other fluid space such as break out across the school can allow great flexibility in accommodating team teaching and Interdisciplinary Learning.
2.7 Learning through discourse & debate

As learning becomes more hands on and less passive, the need to discuss, review and exchange knowledge has become more important. Interpretation, critical analysis and the ability to challenge are important skills. Debate, discourse and discussion are becoming increasingly important.

Team versus team events are becoming more common in secondary schools and principal teachers we have met in engagement, (in areas such as social studies and particularly in religious education) talk about a desire to have spaces which can easily accommodate interactive discussion and debate. An example of this would be James Gillespie’s High School who hold mock United Nations events.

Approaches to what was traditionally termed Personal and Social Development are changing and this is becoming much more integrated with other areas of the curriculum. It is becoming more important for students to discuss issues such as sexual health, drugs in an open and engaged way. Again a more relaxed environment can help open discussion and provide greater comfort to engage with sensitive matters.
2.8 Presentation and use of multi-media

The development of Presentation skills is being encouraged in many subject areas and students are being asked to present the outcomes of their work to peers. Many schools emphasise the need to foster confidence in their learners and the school environment can support this by providing spaces to facilitate small group, class based and large group presentations.

Use of different mediums to present findings is also being encouraged, with the use of film and similar tools becoming a more common means for students to express their ideas and conclusions as well as their understanding of topics.

All of this demonstrates the need for a wider mix and choice of spaces to learn and work in. It also shows that a more embedded approach to technology with choice and variety of mediums should be available.
Technology: The third horizon
3.1 The modern learner & technology

The Three Horizons approach is a simple and intuitive framework for thinking about the future. It promotes thinking around challenges which face performance or outcomes in the present, our aspirations for the future and the steps which can be undertaken in order to address both at the same time. In terms of the kinds of innovation discussed in this paper, much of this can be described as Horizon 2 thinking: “the transition into emerging innovation”. There are various issues to consider in connection with the use of ICT and web content in teaching and learning. Real change in how schools harness and support current and future generations of learners, natural capacity and comfort in use of technology, devices and web content ventures into the realms of Horizon 3. The world is connected and students use the internet in all aspects in their lives outside school. Educators tell us that key to engaging students is the ability to respond to their need for connectivity, yet they report that there are challenges in delivering learner connectivity.

Many local authorities are looking to use their school estate for a wider community of learners considering the 16 plus catchment of learners, the needs of Community Learning & Development as well as adult returners. There is an increasing focus on asset management approaches across the Scottish Local Authority estates. The needs of Culture and Leisure along with Adult Learning are being considered alongside the needs of school provision as part of this asset management approach which seeks to ensure the investment can offer wider service delivery opportunities. (Fife, Aberdeenshire and Angus Councils are examples of this). Partnership approaches to space are starting to emerge between schools and colleges. All of this is feeding a demand for public and accessible wireless networks.

There is an appetite to make ICT and connectivity a core part of day to day school life, invisible and embedded part in all learning activity. In the same way that the choice of physical spaces is important for learners, enabling learner choice in the context of technology and virtual space is being considered by many education departments within local authorities. The physical and virtual spaces we inhabit are inextricably linked in much that we do at home and in the office and this congruence should be as important in our learning environments. The key issues around ICT which are fed back when engaging with school communities are summarised below:

- Staff training, skills, comfort and confidence in use of devices, internet content and software packages
- Security issues around child protection in terms of access to content on the internet
- Public Sector Network (PSN) compliance legislation
- Band width and capacity issues
- Availability of up-to-date equipment, operating systems and software

There is a growing recognition that traditional teaching tools are not always sufficiently engaging for today’s learner who is used to fast and easy access to knowledge and information. Educators often highlight that this lack of engagement can lead to behavioural issues. Lack of engagement prevents the students full learning potential being achieved and is frustrating for students and staff.

The financial cost associated with increased course choice puts pressure on resources and unless there is a large uptake in subject areas it is difficult to run many courses. Strategic direction within many Local Authorities, is focussed on supporting many pathways into further education, higher education, apprenticeships and work opportunities for those leaving school, and a wide range of course choices and options can support this. The development of the virtual campus is an objective for many authorities and greater innovation in how we harness technology is key to making the virtual campus happen effectively.

The learner’s virtual space is part of a complex jigsaw. The shape of this jigsaw is emerging as we move from the traditional viewpoint of a school consisting of little more than a series of spaces which accommodate 30 students along with a single teacher in a single cellular space. As we move towards greater choice and variety of spaces and settings to learn in, we need to consider what choices are available in regards to the use of devices, internet content, applications and software programmes.
Horizon 1:
The Horizon of current practice

Over time H1 methods (current practice) will no longer meet needs and requirements, and will result in the organisation failing to move towards new opportunities and becoming ill equipped for the future.

Remaining on the first horizon will ultimately lead to an inability to respond to changes and an outdated mode of operation.

Horizon 2:
The Horizon of inevitable change

This horizon demonstrates the transition and transformation of emerging innovation. It responds to the short comings of the first horizon and anticipates possibilities from the third.

Here it is important to judge present trends and bring together ideas of how to make changes for now.

Horizon 3:
The Horizon of innovative & forward thinking

The implementation of truly new methods of working and learning that will better fit future needs and requirements.

Introducing a new approach that is out of reach of the first horizon and may currently appear improbable is only possible from the second horizon.
3.2 Any time / Anywhere Learning at West Lothian Council

BYOD Diagram : Whitburn Academy, West Lothian

3.2.1 Background

Many authorities are talking about the opportunity to allow students to use their own devices in class. To support this objective West Lothian Council (WLC) have been developing an “anytime, anywhere” approach to the use of technology in learning. They have been working on this for the last 8 years.

WLC believe that radical thinking is required to transform learning and make the pedagogy fit for the next 10 years of learners. The authority believes that learners need to be trusted and empowered.

Within the Education Department there is a Learning and Teaching Development team whose role is to push the boundaries of ICT in learning and teaching. With a background as teachers, part of the team’s role is to act as the Education interface with the Corporate ICT department to help find ways to implement the educational strategic objectives and find ways through the issues.

Enabling and harnessing the learner’s capacity in ICT is high on their agenda strategically. Key to this is future thinking around learner enablement and empowerment. Learning is viewed as something to explore rather than something to control.

Children use technology from a very young age in everything they do and the authority believe their learners should be enabled to use technology in a personalised and intuitive way as they see fit in their everyday learning. Key to this is the mobilisation of portable devices including their own.

3.2.2 Anywhere, Anytime Learning and Bring Your Own Device (BYOD) Pilot

BYOD was launched in WLC in 2012, in 20 schools (10 primary schools and 10 secondary schools) across the authority. The first step was to open up the existing wireless network to allow the connection of pupil devices. Filters were as liberal as possible within the constraints of the corporate security framework. Because of issues related to Public Services Network (PSN) compliance and local network design, the programme had to be paused. Capacity in the infrastructure was the main issue and the high volume of use could not always be supported by existing coverage. For example, video streaming needs lots of capacity and students use videos frequently. A programme of work is underway to increase schools bandwidth, change the network design and upgrade the wireless access points.
The initial roll out has however been helpful in developing the strategy and the evidence dispelled many fears and concerns regarding enabling students own devices as follows:

- Behaviours such as social chat happen in class time anyway, whether physically or virtually, and students need to understand the agreed protocols in the same way as always
- Just having devices “above the table” helps with learner engagement
- There is high ownership of devices across socio economic groups, there is no correlation with deprivation (despite concerns which were raised), so it has not been a socially divisive matter.
- Where students do not own a device they are happy to pick up a school owned device and use that
- Staff do not need to understand how each device works or understand the specific application the student uses; they can focus on student evidence of learning outcomes

After the programme was paused it was difficult for some schools to then limit use of student devices. This has indicated that the use of students’ own 3G and 4G contracts to access the internet can be divisive, as not all students have high data limits on their mobile phones. This shows that free wireless connectivity is key for the success of the BYOD approach.

3.2.3 Key issues which had to be overcome

The key issues have been described by West Lothian Council as follows:

- The restrictions of the Public Sector Network (PSN) compliance have been a key hurdle which the authority has been working hard to overcome. PSN is a UK Government programme to unify the provision of network infrastructure across the United Kingdom public sector into an interconnected “network of networks” to increase efficiency and reduce overall public expenditure. This interconnection of networks increases the need for security in regard to data protection and means local authority networks require onerous “lock down” protocols to be in place, to protect data. Interestingly this is an issue peculiar to Scotland as in England and in Wales schools have control over their own network and are autonomous as opposed to the Scottish system where school networks are often part of the local authority corporate infrastructure.
- The Anytime, Anywhere Learning approaches in the initial pilot had illustrated there were capacity issues, the wireless connections were not providing adequate capacity to deal with the increased uptake. This was a common issue within Local authorities in Scotland and resulted in the development of the Scottish Wide Area Network (SWAN), which is a single public services network for the use of all public service organisations within Scotland.

The solutions which are currently being rolled out across the estate have been summarised as follows;

- The creation of a distinct Education “network”, without routes into the local authority corporate system and the protected data within the secure zone which is subject to PSN compliance regulation
- The creation of secure solutions to the management of and access to personal & sensitive data required within educational establishments
- Upgrading the West Lothian Council Wide Area Network (using the SWAN contract) to increase capacity and provide access directly from each school
- Enhanced network infrastructure within each school
- Improved wireless connectivity to extend connectivity numbers, capacity and coverage
3.2.4 Roll out: A change management approach

The opportunity to enable student devices is now being comprehensively rolled out over the next two years. Once technical readiness is achieved, the capacity for increased connectivity will not be automatically available. The schools need to be ready for this change. Engagement with staff, students and parents is key to this process. The aim is to have an aligned and agreed ethos towards internet accessibility and the use of internet enabled devices. 20 schools are currently operating the programme successfully having applied the principles outlined. (10 primaries and 10 secondaries).

There are three levels of engagement; the teaching staff, the students and the parents and this process is supported by the Learning and Teaching Development team in WLC.

Staff Engagement:

In the same way that new approaches to space cannot be foisted upon teaching staff who are not engaged in the new methodologies they support, staff need to be supportive of the new approaches with technology. They need to be able to give the students freedom to make choices, and be confident of why they are doing this. Prior to the programme rolling out, teaching staff are exploring the fears and concerns they have around behavioural issues and find ways to manage them.

Teaching staff can be concerned if they are not very technology literate. The WLC approach is that they do not necessarily need to be experts. Through technology, alternative mediums to demonstrate understanding of concepts are possible. If a student chooses to demonstrate that understanding by way of a video or an animation, the teacher only needs to check the content and not necessarily know how that video or animation was produced. Whilst training is important, it is not about the teachers being better at technology use than their students, as in reality this could be a challenge in many instances.

Student Engagement:

Student working groups have been formed in all of the schools. These working groups are tasked with considering behaviours and rules by which the new opportunities are to be managed. They are asked to consider the concerns the teaching staff have and how these can be mitigated and propose a set of rules which support the desired behaviours. The students then discuss these with the teaching staff and work together on managing and rolling out the agreed protocols.

Parental Engagement:

Parents are then asked to get involved. It is important they understand the benefits which are possible, the behaviours which are expected of their children and that their fears and concerns and aired and mitigated. In some schools the students have engaged with parent groups in workshops to help them understand the benefits and why they want to access the internet more readily for their learning. Easing parental concerns is fundamental to success and the parents’ “buy in” is being sought as the programme rolls out.

Fundamental to the concept is that devices need to be used intuitively when required and not handed out like a text book. The concept is predicated on enabling opportunity to allow choices for the learners and that they are in control of those choices. These choices can then harness the many skills which learners have developed through use of technology in other aspects of their lives. Like any innovation in its implementation stage, it is anticipated that the schools which are initially rolling out “Anytime, Anywhere Learning” and “Bring Your Own Device”, will help create confidence and enthusiasm as the programme roll out gains momentum across other schools in West Lothian Council.
4.0

Case studies :

Context
4.1 Context of case studies

A building project offers the opportunity to consider the impact of innovation and change in teaching and learning methodologies, and evaluate the way current spatial configurations support new ways of learning and teaching. Where the current built environment is not supporting change and new methodologies, there is an opportunity to consider new and more appropriate spatial configurations. A number of local authorities have been using their replacement school projects to catalyse a discussion around how they can provide new, better and transformed environments for learning and teaching.

Transformational change is not easy, there are many cultural issues which need to be addressed to ensure success. In many ways it is much easier to replicate current practices and create new versions of our old schools. There is, however, a growing enthusiasm to develop spatial configurations which look beyond the traditional classroom. More flexible responses are seen as an opportunity to maximise the value of the investment.

The case studies explored in this report are all new build projects, however, there is an interest to apply these new approaches to learning spaces in the existing estate. Many of our existing schools are ideally suited to accommodate these concepts, with minimal building interventions and through the clever specification of settings, furniture and fitments. There is opportunity in the Victorian and period buildings as well as in the 1970’s and more recent modern school buildings which have been designed to suit traditional learning and teaching models.

As Curriculum for Excellence beds in, there has been a big shift in how the spatial configurations in the school estate are being considered. The case studies we have referenced in this paper have all a number of factors in common.

4.1.1 Engagement & governance

Today's context requires a new understanding of the value of space planning, settings, furniture, technology and interior focused design and planning approaches. In an “inside out” approach, such as this, there is a need to understand the boundaries of educational vision for innovation within an engaged process. The engagement needs to consider the strategic context (the broader local authority strategic context) and the operational context (the particular needs of the school involved). This approach has been embraced by all the local authorities involved in the projects documented within section 5.0 of this document.

All of the projects have been informed by an engaged process with various participants. This includes strategic personnel within the authority, as well as participation from the schools involved (operational groups). In all cases the engagement process has been structured with clarity; identifying operational groups who can inform decision making and strategic participants who are the decision makers. Leadership is really important if innovation is to be realised. For example, in the case of the Garnock and Largs projects (North Ayrshire Council), as well as the West Calder project (West Lothian Council), the Head of Education has been an active participant in the engagement, attending workshops and leading conversations on pedagogy and methodology.

All the case study projects documented have followed a process whereby fundamental concepts of the spatial model have been agreed in advance of the architects commencing the design. The initial phase has focused exploring supply and demand. While the architects have focused on the site context factors (supply), the demand model has been developed through engagement with strategic and operational stakeholders.

As part of the strategic brief and the demand model, the accommodation schedule (space budget) is informed by tested space standards considering desired cohort numbers and the needs of learning activities. Once the strategic brief has been agreed, the architects are able to match demand with supply and develop the building concepts.
4.1.2 Maximising space use

The case studies (section 5.0) showcase schools which aspired to implement a new culture of sharing space and higher levels of space utilisation.

The most space efficient teaching & learning activity in a classrooms is didactic teaching (where students sit in rows facing the front). More collaborative learning activities require a higher space standard per person. If a wide range of learning modes are to be effectively catered for, then appropriate space standards need to be carefully considered and implemented.

As the need for spaces which are flexible and able to be easily reconfigured increases, the efficient use of space becomes more important. In all of the case studies in section 5.0, the initial demand requirement (based on the full aspiration) has been in excess of the area which could be afforded within the business case. The decision makers have carefully considered the current timetable and space utilisation targets and through this process the total space allocation has been brought back to, or under, the area allowed for in the business case. The school estate needs to deliver maximum value for the learner. If user occupation and the settings which enable a space are considered from the outset (whether refurbishment or new build project) the usefulness of every square metre of space can be maximised. It is important to consider the impact of all the spaces discussed and then prioritise these against what is reasonable and affordable.

The architectural responses in the case studies were informed by early strategic space planning and programming, which set the parameters prior to architectural concepts being considered. When designing for change, the briefing process needs to deliver more than an accommodation schedule. Equally a brief without an accommodation schedule and an area allocation within the GIFA (Gross Internal Floor Area) caps agreed in the funding models and the business case is not much use.

There are a number of key principles which emphasise the need for strategic leadership:

**Class ownership**

Staff can be resistant to losing ownership of classrooms despite the fact these are generally under-utilised. Whilst “other kinds of spaces” are broadly embraced, the feedback from teaching staff is often “not at the expense of losing my classroom”. The case studies illustrate that by driving the utilisation of 30 cohort class rooms at 85% and above the space metric will allow a variety of shared (whole school/campus use) spaces to be included. Where these shared spaces are envisaged as being open and fluid, this is a change for teaching staff many of whom prefer closed doors to the classroom. The educational authorities in the case studies have supported the head teachers and their drive to implement cultural change, both in terms of having shared use spaces and in terms of improving the balance of open and fluid spaces to traditional classrooms than currently exists.

**Providing large cohort spaces**

If there is to be a provision of fluid learning spaces such as learning plazas, which can accommodate large cohort groups, these need to be part of the time tabled allocation and in use throughout the day. The large spaces, such as assembly halls, dining spaces and libraries can be used as multi functioning spaces. A dining space can easily be used for learning outwith lunch and social times. In all the case studies the dining space is also a learning and teaching space. This involves a rethink on space management and facilities management issues and again is a strategically important decision to be made early on.
Assembly halls and dining spaces are such large areas that it is important to consider how they can be used intensively across the day. Two different models for assembly are illustrated in the case studies. A flexible arrangement to suit traditional approaches to performance is seen in the Brechin, Waid, Garnock and Largs case studies. There is a more open approach in the West Lothian case study. These big spaces can also be transformed to support increased use across the day in existing schools through minimal building interventions and the inclusion of bespoke joinery and furniture items.

The provision of break out space

Break out space, which is intended for use in class time to compliment the traditional class space activities, should not be time tabled. Break out spaces adjacent to the classroom allow learning activity to extend into these spaces. They are used in an ad hoc way and it is challenging to allocate area for them within the GIFA. Breakout spaces are embraced by teaching staff across the schools we have worked with, and allow for a range of activities:

- Group learning
- Individual study and research
- Staff work space
- Peer presentation
- Social interaction

These flexible spaces require careful consideration of the classrooms size if they are to be afforded. In all of the case studies area for break out activity was factored into the initial space budget. In all examples except West Calder an allowance of 8% of the classroom area was included for breakout. This allows a 1200 mm strip of breakout space along the length of the corridor (assuming there are classrooms either side of that corridor). In the West Calder example an allowance of 16% of classroom area was allowed for breakout activity. The classroom utilisation is higher at West Calder as is the time tabled utilisation of shared spaces to afford this.

Many of our existing schools have “pockets” of space within the transition areas which can accommodate breakout activity. Classrooms are often under-utilised and opening up a selection of these can provide good quality breakout opportunities.

Class sizes

All of the case studies have a similar approach to the classroom sizes with the majority of classrooms being 56.25 sq m. This class size has been rigorously tested against different furniture solutions and configurations. There are also a limited number of larger classrooms which are 67.5 sq.m. In all cases the tests on these spaces assume a new approach to the provision of the teacher desk which is facilitated with a mobile device (laptop or tablet).

Whole Campus Spaces

All of the case studies have a suite of spaces which are shared across the campus including cellular and more open spaces. These spaces can be shared and booked by any subject area for:

- More relaxed learning with a wide mix of settings
- Craft based activities (poster making, textiles, papier-mâché and the like)
- IT enhanced and media focused activities
- Paired and team teaching
- Seminar, tutorial and conference type activities
**Dining at the New Garnock Campus, North Ayrshire Council:** Flexible spaces which offer dining and learning opportunities, developed in conjunction with Educational and Catering staff.

**Open assembly / Performance at West Calder, West Lothian Council:** An open approach to assembly and performance which can sit at the heart of the school.

**Breakout opportunity in Science at Brechin Community Campus, Angus Council:** Concept agreed with teaching staff and students and balanced with the area allocations in the space budget.

**NB:** Illustrations indicate design intent only. As built settings have been modified through detailed design development.
Factoring in primary use in shared campus approaches

Both the Garnock and the Largs projects have primary school students as well as secondary school students on site. Largs represents a campus of 4 individual establishments (a denominational and a non denominational primary school), a combined early years nursery and a secondary school. Garnock is an “all-through” single 2-18 establishment. For North Ayrshire Council it was extremely important that the opportunities of shared spaces were exploited across ages and stages to maximise the learner advantage.

The primary usage was factored into the calculation of how many specialist spaces for science, art, home economics, technologies, drama and PE were required as part of the space budgeting exercise. The primary and secondary schools both had separate “pots” of space which were defined by the funding model. The time-tabled use of these specialist spaces in the primary schools was determined as a percentage in the utilisation calculation and this was used to define their area contribution, reconciled back to the allocated space metric. With joint approaches to time tabling and adequate provision of shared spaces, the primary demand for these spaces is protected. Shared use of spaces such as dining spaces, LRC and assembly spaces have also been carefully considered to maximise the value of the space allocations for all learners.

Community use of school spaces during the day

PE halls are large and if the most is to be made of the total school area allocation, they need to be well utilised. In both the Garnock and Brechin Campuses the community can use the pool and fitness suite during the day. In the case of Brechin the local authority funded additional PE area in the campus to support community use during the daytime, following the closure of a community leisure centre. Public access to PE teaching spaces at Garnock, will only take place out of hours.

In the case of Waid and Brechin the public can access the campus throughout the day to use the learning facilities also. The opportunity for the investment to look at a wider community of learners is fundamental to the vision for both schools. The cafe and dining areas are accessible across the day as well as some of the whole campus learning spaces such as the LRC. It is hoped the new buildings in Brechin and in Anstruther (Waid Campus) can foster greater opportunity for the school and Community Learning and Development departments to collaborate and the schools are discussing joint curriculum planning for the 16 plus learner and areas of alternative curriculum delivery.

4.1.3 A focus on FF&E & technology

There is a consistent thread running through the projects featured in the case studies which emphasises the importance of the furniture, fittings and equipment to support curriculum delivery. Modern and innovative technology is also critical in supporting new ways of learning within the developed visions at each of these new Campuses. This is discussed in the conclusions section as traditionally it is the area where value engineering is focussed. It is an area where design coordination is required between the building envelope, the interior design and the services outlets within the interiors. It is also the area which, if not specified correctly, will fail to offer effective alternatives to the traditional classrooms.

It is our assertion that budget for the interior specifications including built in and loose furnishings along with suitable infrastructure to cater for modern technology needs should be included within budgets. There needs to be a clear understanding of what this budget will allow for as an integrated part of the design development and cost planning from the outset.
5.0

Case Studies :
Exploring key principles
5.1 Brechin Community Campus

Context

Brechin High school were already on a journey towards implementing new ways of learning and hoped to use the new building project to support the changes being implemented. The introduction of Curriculum for Excellence and the implementation of the national standard were key drivers for innovative approaches to the creation of learning environments.

Angus College and the council’s Community Learning and Development department (CLD), were seen as partners in the journey towards blending social and learning environments and the new campus was seen as an ideal opportunity to further support their joint activities.

The local authority had undertaken significant work engaging with a wide community of strategic stakeholders to visualise such a campus prior to engaging private consultants. The strategic stakeholders forum included senior representation from a number of user stakeholders; the school, Angus Council Community Learning and Development, Angus Council Leisure Services and Angus College. They had identified an over arching desire for the building to respond not only to the needs of the user groups in terms of their individual space demands, but also to ensure that the new building facilitated collaboration between these user communities in an open, transparent and mutually beneficial way.

Flexibility through design was key to all of this. The stakeholders highlighted that the building and its components needed to be responsive and easily adaptable in order to accommodate the different user groups occupying spaces at the same times throughout the course of the day.

A context specific menu of settings for the new community campus was developed and prioritised by the steering group. This menu of settings became the basis for the spatial allocation within the space budget and the key requirements for each space were agreed at a high level in the briefing document for the architects.

Strategic briefing process

The briefing process involved:

- Interviews and workshops with the strategic stakeholders’ group which included senior staff from the school, Community Learning and Development, Leisure and Angus College
- Interviews with all school principle teachers
- Interviews with key Community and Learning delivery staff
- Workshops with staff, students and community users
- Community, staff and student questionnaires

The client was the Education Department and they made the final decisions. The Head Teacher had a key and very active role and was fully consulted by the Education Department at all times. The Hub company were supportive of the process and attended all key workshops as did the Project Director from the architects.
Lower Ground Floor:
Science (1), Maths (2), Flexible Learning (3), Breakout (4)

Ground Floor:
Sports Halls / Pool (5), Community cafe (6), Office / Administration (7), Dining / Social (8), Amphitheatre (9), CDT (10), General Teaching (11), Music (12), Performance / Assembly (13), Drama (14), Flexible learning / IT rich space (15)

First Floor:
General teaching (11), Art (16), Home Economics (17), LRC (18), Project Space (19), CLD (20), Staff Space (21), Dance Studio (22)
Vision

The broad vision was focused on the need to look beyond the traditional idea of a school and can be summarised as below:

- Learning being visible and happening everywhere
- Attractive and welcoming spaces
- Multi-generational interaction opportunities created
- A place that people want to be
- Non-threatening and welcoming to vulnerable users who may have had bad experiences of school in the past
- Community and school occupying the same spaces.
- Flow of learning (inside & out)
- Buzzy atmosphere

It was recognised that the vision was bold and would require cultural change, which would have to be supported and enabled. These enablers gave cues to the organisational change which would have to be put in place to ensure the mixed user concept could be successfully implemented. The key spatial concepts were predicated on shared spaces being facilitated through integrated systems including IT, booking systems and FM protocols.

Change management process to deliver the vision

A building project takes a long time and as the building got nearer to completion the vision was revisited. Community Learning and Development and the Head Teacher started to consider in greater detail how they will operate in partnership in the building. The Head Teacher considered the following in greater detail working with the community:

- How the open aspect of the school can be maintained without having “lock down” zones through the registration system at the front desk, good procedures and management of behaviours including self policing and awareness
- How zones can be identified through signage, graphics and colour
- Development of the new campus values and gaining school and community buy in to them
- Dealing with teaching staff concerns about having the community on site during school hours

Given the shared nature of the leisure facilities with community use across the day, meetings were held between school and leisure staff to consider how they will work together. Issues around changing room protocols and the like were aired and overcome. It was hoped the community will make good use of the facilities, such as the community cafe, and specialist spaces, such as the Home Economics kitchens, the metalwork workshops and art studios. This required a “marketing” exercise to build community awareness and appetite to use the new facilities. The Head Teacher along with Leisure and Community Development colleagues have worked very hard to promote the new facilities well in advance of the opening date. This work continues as they bed in.

Staff have had concerns as they realised that there is a need to share space and that they might not always be teaching in the same space. A “de-cluttering” exercise took place and staff cleared out their existing spaces, binning out of date resources and the like, in readiness for the move to the new school. The spaces were chalked out on floors so that staff could see the sizes of the new classrooms, which in some cases are smaller than what staff are used to. Within all of this there was also a strong appetite from staff for the new facilities and there is a recognition that the new adjacencies and spaces offer great opportunity to link subject areas effectively.
Organisational Diagram: Zoning & high level adjacencies

Early concept sketch: Section

Developed design: Entrance

Construction: External treatment & flexible learning spaces
5.2 Garnock Campus

Current secondary roll : 1015
Design roll : 1200
Scottish Futures Trust Secondary area cap : 12,906 sq.m
Primary roll : 292 early years & primary
Scottish Futures Trust Primary Area cap : 2190 sq.m
Pool allowance : 1140 sq.m
Total Area cap (secondary, primary, pool allowance) : 16236 sq.m

Briefed area : 16,141 sq.m
Architects : JM Architects
Contractor : Kier Construction
Hub Company : South West Scotland Ltd
Client : North Ayrshire Council
Date for Completion : December 2016

Context

This campus is the amalgamation of a primary and a secondary school as a 2-18 campus. It includes a replacement leisure pool facility which can also be used by the community.

The authority were keen from the outset to ensure that development of the strategic brief and the spatial model was informed through engagement with the strategic staff within both Education and Culture departments within the council and also with the school staff and students.

The new Head of Education was keen that the new building project would help deliver learner focussed opportunity. It was felt that the learner focus was currently constrained by the existing rigid “classroom and corridor” environment. The Head of Education was very keen that the new environment was a “looser fit” and that it would offer greater flexibility for a rich choice of learning modes and environments.

The authority wanted to be bold and really challenge their own thinking. They were determined not to create “new old schools”. They had tested new ideas in their primary school estate and were determined to develop some of the principles and bold thinking that had been emerging within the new primary schools.

The lead contractor was appointed at the strategic briefing stage and was responsible for the project management procedures. This meant the architects and the contractor were up to speed on the strategic principles at the start of the design process. Whilst the architects were on board at the strategic stage in all the other projects, this is the only project in this document where the contractor gained an insight to the client’s vision at this early stage. The contractor’s involvement at this stage has helped ensure an understanding of the key principles within the full project team from the outset.

The strategic briefing process

The briefing process involved:

- Interviews and workshops with the strategic stakeholders group which comprised a small group of decision making senior staff from the Education and Skills Department
- Interviews with the school senior management team
- Interviews with key strategic staff within the Education and Youth Employment departments who represented the needs of: learning innovation in early years, primary and secondary education; Educational Psychology; ASN and Culture
- Questionnaires for primary and secondary students and staff
- Workshops with staff, students and parents council groups

The client was the Education and Youth Employment Department and its Corporate Director chaired the strategic stakeholders group. It was this group who made the final decisions. The Head of Education had a key
Ground Floor:
- Community Cafe (1)
- Sports accommodation (2)
- Technical workshops (3)
- Music (4)
- Assembly / Drama / Performance (5)
- General Teaching (6)
- Flexible dining / learning spaces & Amphitheatre (7)
- Library (8)
- Nursery (9)
- Primary (10)

First Floor:
- Pupil Support / guidance (11)
- Home Economics (12)
- Art (13)
- Science (14)
- Whole Campus (15)

Second Floor:
- General teaching (6)
- IT (16)

Support spaces:
- Cellular / Enclosed teaching spaces
- Flexible teaching spaces
- Vertical circulation
- Circulation

Vertical circulation:
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 10
- 11
- 12
- 13
- 14
- 15
- 16
5.2 Garnock Campus (continued)

and active role in this and participated in all but the student workshops. The Head of Culture and Leisure played a key role and was also actively involved in the development of the vision and the space budget. A Senior Manager responsible for Resources and Infrastructure, within Education, acted as a project champion, helped challenge the school communities thinking and supported them through the process.

Vision

The vision was focused on the opportunity to exploit local context to align with the following authority objectives:

- Enhanced learning opportunities with a focus on employability, through better facilities, enterprise opportunity and through collaboration / links with local businesses and with local industry
- A focus on improving outcomes for students who traditionally would not have had opportunity to continue learning and develop their skills beyond school
- An opportunity to give students employability skills through strengthening their “softer skills”
- Creating learner resilience which can then extend into subject and ability learning
- New approaches, supported by new spatial models
- An opportunity to build in capacity to support ASN students and to overcome barriers in a more integrated manner locally to where these students live whenever possible
- Learning support and ASN delivered and assessed with minimal intrusion and within an ethos of maximising opportunities for all learners
- Schools becoming “core hubs” for joined up service delivery, particularly considering social work opportunities and delivering improved support for parents of vulnerable students
- Early interventions and support through the collaboration of social work, home link, support and guidance professionals
- Schools becoming community hubs responding to cultural and leisure needs of the wider community, helping to build greater local community capacity and focusing on what draws and attracts the community
- Welcoming the community including adult returners, at all times of the day, being a place of local pride and adding value for all
- An opportunity to exploit and celebrate local success both in the expressive arts fields and in sports

The change management process to deliver the vision

The Head Teacher at the time of the briefing process was retiring. The new Head Teacher came on board in the early design stages and fully engaged with the architects as the brief developed through the initial design stages.

His role has been key to the realisation of the vision. He has managed a bold change programme with staff support. He has also been supported by the Education Department and in particular the Head of Education who has taken a keen interest in the detail aspects of the evolving design, helping to ground the design development back to the original vision.
Artists impression: Approach to main entrance
The Head Teacher has brought staff along with the new space configurations which respond to the vision. Some of the issues he has highlighted are explored below:

- A key challenge has been keeping staff, parents and community on board regarding community access during the day. A (cluster**) parent consultation group have been involved every step of the way and this has helped to alleviate staff concerns. Regular Community Council meetings have also been important as the community had worried about the effect of the new facility on other local provisions.
- Managing the staff change in teaching methods to suit the flexible and open learning environments has been really important. Some staff members question the change as they are already getting good results. The changes have strong support and leadership at Principle Teacher (Faculty leader) level. There are also members of staff who want to explore the opportunity to innovate and are eager to contribute. They can help and persuade more anxious staff members along the journey of change.
- Some members of staff have struggled to understand the new approaches and how shared spaces will work with the timetable. If flexible spaces are time tabled and utilisation of class departmental class spaces is increased, they have worried whether there will be enough teaching spaces at times of peak demand in subject areas when subjects are block booked in the broad general phase. The demands of the timetable have been thoroughly explored and tested to reassure staff.
- There are concerns about possible noise problems in open spaces. Staff need reassurance. Despite these issues staff accept that the current spaces don’t support all that they are trying to do and that the change is necessary.

The aim of the new school, which all staff support, is to foster independent, autonomous, inspired learners using appropriate teaching and learning methods. Change is not easy and staff need to consider existing practices and ways and leave behind those that do not support the aims. In the new campus staff should be able to plan, encourage and facilitate greater diversity, innovation and new delivery areas. The Head Teacher, the Senior Manager Champion and the Head of Education are real advocates of recognising that educators needs to adopt dynamic approaches and keep up with what is new. Their support and enthusiasm has been key in this project.

The vision and IT

The development of the IT strategy is an integral part of the project. Development has focussed on embedding IT naturally in all aspects of learning. The key challenge is that some staff like and are used to IT labs and may feel they do not have skills for a more IT rich environment. There has been a need to up-skill staff, create greater capacity for them to support use of technology more intuitively and make them confident around IT. There has been a “baby steps” approach so far, and the use of 160 ipads currently available shows that there is varying uptake. There is wifi throughout currently but it is not being over used. The Head Teachers approach is to exploit existing pockets of great work happening on the ground by individual teaching staff of departments to persuade others of the benefits.

** The cluster parents group involves parents from the feeder primary and secondary schools

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5.2 Garnock Campus (continued)
Change management tips

- Quick wins are important, focus on wins which are realistic to move forward.
- The focus on IT has been persuasive for staff and sells some of the new teaching methodologies being encouraged.
- Working parties including teaching staff, senior staff and students have been helpful.
- Engaging the students has been important and they are currently working on: identity, vision, values and aims, what will it mean to be part of a campus; colour in the building as well as uniforms; helping to articulate finishes; making key decisions on toilet models.
- Young people have also been doing presentations to councillors, helping with confidence and a sense of ownership.
- Understand the challenge of changing mindsets: staff, parents and students.
- A Team / project base room has been set up in the school and is supported by the authority project management team, this has been essential with drop in sessions being facilitated. The project team have explained the new campus drawings and have been available to answer queries.
- Use the project as a driver for CPD.
- Getting the curriculum leaders on board and their championship of the principles.
- Staff have been working on de-cluttering from an early date, throwing out the old book stocks and materials.
5.3 The Waid

**Current roll**: 689 students  
**Design roll**: 800 students  
**Scottish Futures Trust Area cap**: 9600 sq. m  
**Briefed area excl. com. use**: 8592 sqm  
**Briefed area incl. com. use**: 9528 sqm  
**Actual area**: 8839 sq. m

**Architects**: BDP Architects  
**Contractor**: BAM Construction Scotland  
**Hub Company**: East Central Scotland Ltd  
**Client**: Fife Council  
**Date for Completion**: Spring 2017  
(Excluding demolition, car park and sports pitches which will be complete summer 2018)

**Context**

Fife Council is involved in an extensive new schools programme with a number of schools at various stages of development. One of the likely projects within this programme was Waid Academy in Anstruther. Part of the funding for this secondary school was identified and options were being considered to bridge the funding gap.

Fife Council wanted to explore ways to maximise the impact of investment considering the needs of the learning community in its widest sense. They were keen to consider the opportunity of integrated services and explore ways in which space could support innovative organisational strategies flexibly, effectively and efficiently. They wanted a whole place approach to the master planning; reflecting the opportunities to enhance and reinforce a sense of identity and place and deliver well-informed, innovative and joined up outcomes for the local community. An integrated and wider place based approach was seen to potentially maximise opportunity for the school learners and to stretch their thinking about what a school was in 2015 and how it could deliver maximum value to the wider local community.

This school community was seen as an ideal opportunity to challenge thinking around school design because of a unique combination of factors already in place as follows:

- There was an appetite to embrace change and innovation within the school leadership team  
- The school were mature adopters of Fife Council’s policy on integrated learning support without stigma  
- There was already a well-established community use of the school out of hours  
- Cross service collaboration was already ongoing despite the restrictions of the existing environment including collaborations between Education, Social work and Community Learning and Development departments along with support agencies, such as Health and Police and voluntary agencies.

**The strategic briefing process**

The briefing process involved engaging with a wide range of stakeholders including:

- Strategic personnel within the Education department (interviews)  
- Strategic and operational Community Learning Development staff (interviews and workshops)  
- Local Councillors (interviews)  
- The school leadership team (interviews and workshops)  
- Principal teachers (interviews and workshops)  
- Teaching staff (workshops and feedback presentations)  
- School students and parents (workshops)
Ground Floor:
Community / School shared spaces (1),
Sports accommodation (2),
Technical workshops (3),
PSE / PCS spaces (4) & Flexible dining / learning spaces (5)

First Floor:
Assembly / Performance / Drama (6),
Music (7), General teaching spaces (8),
Science (9), Innovation bridge (10), Staff Work Hub (11)

Second Floor:
General Teaching spaces (12),
Art (13)
5.3 The Waid (continued)

Vision

From the outset the new Waid was seen as far more than a school, at a high level the vision for the new facility was articulated as an environment which could:

- Have the learner at the centre of everything
- Have all learners being supported, empowered and at the heart of everything including learners in the community and those learners who are traditionally harder to reach
- Serve a wider definition of learners including all ages and stages
- Support new ways of learning including innovative methodologies and pedagogy
- Support enterprise and pathways into local opportunities
- Have classes across the day, which are open to all learners in the community
- Be efficient, effective and expressing the community ethos

A new generation of school design

The council were keen to promote the new ideas within the articulated vision for a new generation of school design, with key principles which could be adopted elsewhere in the estate. These principles were articulated in a short animation which concludes in a series of non-negotiable constructs. A link to this video is included below:

http://www.spacestrategies.co.uk/video-the-waid/

The Waid was seen as an opportunity to link the investment to other local services in the town. The school is already seen as a key local community asset and is not referred to as the Academy, but is locally known as “The Waid”. It was an obvious conclusion that an extension of the pre existing innovative practices in integrated community approaches, could lead the way as a new kind of community learning facility, where the community were welcomed across the day as well as after hours. This aligned with the vision for participation, empowerment and the importance of the school community at the heart of a wider community of learners.

The new building brings together a number of local facilities under one roof beyond the school provision as follows:

- Community Learning and Development (including youth work, adult learning and employment support)
- Community Education (including formal adult education classes across the day and after hours)
- Council local office provision (scheduled meetings and the like)
- Library (the community will be welcome to use the library facility)
- Police (touch down facilities)
- Fife College (collaborative teaching approaches)
- Enterprise facilities

The Head Teacher and the school leadership team championed this approach and saw this as an obvious extension to the innovative work they had already been doing around support and inclusion to the benefit of all learners. The authority welcomed this as it is in line with their educational strategy and also in line with their wider asset management strategies and it would allow the significant investment in the new building to bring wider value.

The school already had a strong relationship with Community Learning and Development (CLD) and the opportunity to share space was seen as an opportunity to enhance this relationship further, through joint
Artists impression: Flexible dining / learning

Artists impression: Shared library space

Artists impression: External view
curriculums and other initiatives. This relationship was seen as key to delivering the vision. This joint planning is still ongoing.

There is a wide range of Community Education Programmes taking place currently out of hours in the school. The key difference in the new campus will be that these can be programmed during the school day.

There is a close liaison with the local college. The geography and travel for college staff has been a challenge and for this reason spaces are being developed for virtual learning enhancements through IT rich spaces which can deliver to cohorts of learners working with a remote college staff member.

The change management process to deliver the vision

The Waid is using the new building project to support the new learning and teaching methodologies through new and better spatial configurations, as well as to encourage much wider use and opportunities for this new community learning facility. All of this will mean this project has a life beyond the initial building project. How staff and community adapt into the new opportunity depends on the vision of future learning leading the design development. The change management process with staff and stakeholders has been running in parallel with the design development.

The change management need has three key aspects: The needs of the school stakeholders, those of the stakeholder and partner user organisations and those of the wider community users, including parents. The Head Teacher's role (with support from the authority) has been pivotal in all of this.

The School staff

The new spatial configurations will be a big change for teaching staff. The Head Teacher and his school leadership team colleagues are championing and facilitating ongoing discussions with staff keeping them well informed and abreast of progress, consulting them on decisions about layouts, configuration changes and the like. Decisions have been considered in the context of the teaching and learning methodologies which are being promoted rather than subjective personal choices. The process has not always been easy but staff are behind the new environment and are looking forward to the opportunities it will enable. Buy-in to the big picture and the big ideas about new ways of learning and innovative teaching and learning practice has been easier as the staff know and understand what this means for the learner. Where this can be more difficult is when this is considered in the context of how people as individuals are affected. This is especially so, where staff have been used to “owning” their own classrooms. Without engagement and communication about sharing space, how this will work and will be supported, enthusiasm could have been dampened. Resistance to change is normal in a new building project and where that building project is hoping to catalyse innovation and new ways, the management of staff expectations and aspirations is really important.

The process is ongoing. Like in any building project, practical issues emerge during the process and these require changes to be made to layouts. The project at the time of writing, is still in the development phase. Design teams can often jump to conclusions about overcoming practical issues which emerge, however it has been important to allow staff to consider how any change will impact, what it is they are hoping to do, and how they are hoping to use the new spaces. The negotiations have been time consuming but this process has been essential to ensure the new spaces are going to be fit for purpose and allow staff to use them to their potential. There has been consistent referral back to the learning and teaching opportunities and how the spaces will in fact be used. Without this kind of leadership and championing of the principles it would be easy for the vision to be diluted.
An attitude of compromise has been really important. Working within a budget requires priorities to be carefully discussed, balanced and agreed. Consultation and communication has been key. If people are not kept informed then fears and concerns can set in.

Partners and Stakeholders

When dealing with a partnership approach which involves a number of organisations hoping to collaborate and share space within a single building, there are many issues which need to be understood and negotiated. Partners do not always accept programme time lines for decision making. Getting everyone in the same room to discuss things jointly can be near impossible. If the programme stages are not agreed, then conflicting requirements can be harder to resolve.

Where there are pre-existing relationships and opportunities, streamlining of the process has been easier. There are new relationships and opportunities within the organisational model of this new facility. The journey of cultural change needs to be a joint one and developing an aligned approach through the process has been challenging at times. Discussions are still ongoing at a detail level and this process is likely to be ongoing until the building is complete.

The Wider Community and Parents

There have been a number of demands around engaging with the community. Communication has again been key. Rumours have abounded as people hear about the new facility. Locals have worried about the bigger master plan for the site, what the existing school building and the site are to be used for and how that will impact on their lives and that of the community. Public conceptions of how a shared use campus will work have raised concerns, particularly for parents.

Again the school have been at the centre of these discussions and negotiations. Involving the chairs of parent councils for all of the schools involved (the feeder primaries and the secondary) and other partners has been an important part of the engagement and communications.

Change management tips

• Stand your ground and remain true to the vision
• Keep your focus on the aspirations for learning and teaching and what it is you need to support that
• Communicate, consult and engage all the way, with everyone who has an interest
**5.4 West Calder High School**

**Current roll:** 850 students  
**Design roll:** 1100 students  
**Scottish Futures Trust Area cap:** 12,100 sq. m  
**Briefed area:** 12,030 sqm  
**Architects:** Archial NORR  
**Contractor:** Morrison Construction  
**Hub Company:** South East Scotland Ltd  
**Client:** West Lothian Council  
**Date for Completion:** March 2018

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**Context**

West Lothian Council were keen to consider how the new school building could catalyse change and maximise the benefit of the investment for the learner now and in the future. They had been working hard on their educational strategies, considering new and innovative teaching and learning methodologies and how these could be implemented across the authority. The building project was seen as a key opportunity to link this thinking with re-imagining how the new school can better support modern learner demands.

**The strategic briefing process**

A number of stakeholders were interviewed initially. Workshops were then held with a small group of strategic and operational personnel who were responsible for decision making. The engagement focus was as follows:

- The Head of Education (Interview and workshop)
- The Education Support Officer responsible for Learning and Teaching ICT development (Interview and workshop)
- An Education Development Officer who is also a Primary school Head Teacher (Interview and workshop)
- The Education Development Officer responsible for the Senior Phase and Raising Attainment (Interview and workshop)
- The Education Support Officer responsible for this locality (Interview and workshop)
- School Head Teacher (Interview and workshop)
- School Depute Head Teacher and Project Champion (Interview and workshop)

The engagement on this project was rapid and kept within a small group of strategically focussed individuals.

**Vision**

Participants in this process have explored the opportunities the new school could create for the learners within a well defined over arching council educational context. The need to articulate and address a wide range of learning styles and modes was very important for the authority. The strategy reflected the key objective of providing the best facilities for all learners across the community served by this school.

The project was seen as far more than a building project: it was an opportunity to consider the pedagogy and methodology which could define the spatial geography. New approaches need to be supported by the new building. Current practice is still predominantly didactic. If the new building is to help catalyse transformational change in the learner experience, there is a fundamental need to create spaces which can deal with many modes of learning.
Level - 1.5:
Support & Administration (1), Business, Design & Computing (2), Sports changing accommodation (3)

Level 0.5:
Science (18), Maths (19)

Level - 0.5:
English (9), Social subjects (10), Learning plaza (11), LRC (12)

Level 0:
Home Economics (13), Music (14), Dining (15), Kitchens (16), Learning plaza (17)

Level - 1:
Art (20), MFL (21), Learning plaza (22)

Level 1:
Sports (4), Assembly / Performance / Dance / Drama (5), Multi skills vocational (6), Central amphitheatre (7), Technology workshops (8)
5.4 West Calder High School (continued)

As part of the new school vision, opportunities which should be supported were defined as:

- Better quality group working opportunities
- Space for individual and self-led study
- Space which could support team and cross-disciplinary approaches, including larger group interdisciplinary learning activities
- Spaces which could support different learner preferences and modes of learning

The need to engage students in planning their learning was a priority. The need to empower them and accept they can be responsible, was discussed at length. The example set in primary education, where students are often empowered and take this responsibility for their learning, was noted. Without this empowerment, learning does not have the necessary relevance for today’s learner. None of this was viewed as easy, however the need to be bold and remain educationally strong was emphasised.

The change management process to deliver the vision

It was recognised that unless the teaching and learning innovation is supported and championed, flexible spatial solutions would not be embraced. Much of the engagement focussed on the need to remain strong and true to the vision throughout the design development and implementation. The move away from didactic practice equals a high level of change for many staff members and this was recognised. The current school is under occupied and so all teachers own their own class, even those who are on part-time hours. Eliminating ownership of classrooms and fostering a culture of sharing space, is fundamental to realising the vision.

The need to build staff confidence and engage with them as the project moves forward was highlighted. Engaging with other school communities who have been bold and innovative in the design of their new schools was seen as helpful and consequently contact with colleagues in North Ayrshire Council was established.

Existing cultural challenges were identified and it was agreed these were important to understand and overcome. Some of these were identified in the briefing phase as follows:

- Exams, the structure of timetables and the needs of record keeping
- Teachers like their “own classrooms” and their own laboratories, with this ownership of space being seen as a good, efficient use of resources
- Moves to shared space are sometimes seen as fraught with management issues in regard maintaining the spaces and the shared resources for many educators
- There are fears about interdisciplinary learning, large cohort teaching and learning and team teaching approaches
- These come with concerns about noise and control in more fluid/open spaces
- Issues around learner empowerment and responsibility are also areas which concern staff

Key organisational challenges were also highlighted, particularly in the context of enabling 21st century technologies in the new environment. These are summarised as follows:

- Corporate demands for learner security and the need to block internet content accessibility
- Budgetary constraints (capital and ongoing costs) for high end hardware which runs high end software packages (CAD, revit and the like)
- Being future ready
Concept development: Form
New Technologies

Emphasis was placed on creating congruence between the physical and virtual spaces for learning. This was seen as essential to engage with the learner. All of the new school is seen as IT enabled supporting wireless and mobile devices.

Using interactive devices to allow work content to be shared dynamically was also seen as a key enabler to the learning strategies. There are compatibility issues between different manufacturers devices, and real time sharing of information between devices and screens is challenging currently. However, it was viewed that when the new school opens, suitable technologies are likely to be in place. The flexible and more fluid spaces were viewed as an ideal opportunity to encourage such dynamic and interactive approaches.

As outlined earlier in this document WLC have been doing a lot of work in this area. ICT is seen as an enabler for delivering the vision rather than a driver. Avoiding spaces being constrained by “shifting and lifting” current ICT practices was important. Fixed PCs are inflexible in terms of the space use and don’t encourage alternative learning modes. As such they are not the solution moving forward for West Lothian Council. The spatial configurations within the area allocation and strategic brief, are based on mobile technologies, both within the cellular traditional spaces and within the fluid and more collaborative spaces.
## 5.5 Largs Campus

| Largs Academy current roll: 1072 students | Briefed area : 19,385 sqm |
| Largs Academy Design roll: 1200 students | Actual area : design work in progress |
| Area Cap: 13,200 sq. m * | Architects : JM Architects |
| Amalgamated primary roll: 610 | Contractor : Morrison Construction |
| St Mary's Primary roll: 210 | Hub Company : South West Scotland |
| Combined Early Years: 100 | Client : North Ayrshire Council |
| Area cap : 6505 sq. m * | Date for Completion : January 2018 |
| Combined Campus Area Cap: 19,705 sq. m | * Area caps are authority led and are based on 10 sqm per student in secondary and 6.5 sqm in primary |

### Context

Largs Campus comprises 4 individual establishments in a campus setting, with a number of shared facilities, as follows:

- Largs Academy
- Brisbane and Kelburn (non denominational) Primary schools which are to be amalgamated
- St Mary’s (denominational) Primary school
- An early years provision

The authority wanted to build upon the key constructs identified in the strategic brief for the Garnock Campus (see case study 5.2). This overarching strategic educational context was to be the driving force in the development of the new Largs project. The authority were also keen to engage with the schools and develop the principles within the local context. One key difference between the Garnock project and this campus is the scale of primary and early years use and the opportunities this presents. The authority were keen to ensure that strategic issues relating to primary and early years, were fully understood and aligned with the strategic constructs developed during the briefing of the Garnock Campus. This project is unusual as the primary and early years capacity means that most students will be part of the campus from their initial entry into primary, through to age 16 and beyond. It offers great opportunity to streamline the transitions from 2 - 18 years.

### The strategic briefing process

The starting point was to revisit the Garnock Campus Strategic principles and to explore any lessons learned as the Garnock project was well underway. This process was undertaken through a number of interviews and a workshop and the participants included:

- The new Corporate Director with responsibility for Education
- The Head of Education
- The Senior Manager responsible for Resources and Infrastructure within Education
- The new Head Teacher of Garnock
- The Senior Manager of early years provision across the authority

This allowed the vision to be refreshed and developed. The translation of the vision into the local context was developed through a series of workshops, considering primary and secondary aspirations separately, followed by joint workshops to align thinking amongst:

- The Head of Education
- The Senior Manager responsible for Resources and Infrastructure within Education
- The Head Teacher of Largs Academy and her Senior Management Team
Development: Adjacencies & Massing
5.5 Largs Campus (continued)

- The Head Teachers of both Brisbane and Kelburn Primary Schools
- The Head Teacher of St Mary’s Primary School

**Vision**

The refreshed over-arching vision which was developed initially was summarised under 4 headings as noted below and was summarised in a short animation. A link to this animation can be found below also:

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**Corporate Context**

Delivering against core objectives as follows:

- Regeneration: Increasing employment
- People and Communities: Protecting vulnerable people
- Aspiration and Ambition: Improving educational achievement
- Improving services: Operating efficiently and effectively, adaptive to change

**Local context: People**

- A broad range of learner experiences to suit a broad range of diverse learners
- Learning enabled through facilitation in supportive spaces
- Collegiate approaches around team working
- Interaction and equity across primary, secondary, ASN, pastoral and support staff
- Collaboration and elimination of silos

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**Local context: Process**

- A nurturing nest without constraining opportunity
- “Loosening up” the upper school
- Access to indoor space for students out with class time, managed to enable social activity and social learning
- Digital participation in blended spaces which can respond flexibly to change
- Collective space ownership and elimination of territories with management practices which support this
- Greater visibility into learning
- 21st century high performance technology hub
- Pushing boundaries of seamless approaches to IT, access to virtual space wherever you are through supported and owned devices
- Supportive infrastructure with choices of hard wired and wireless access to the internet
- Innovation in technology pervading everything
- STEM - delivering against this agenda needs to be prominent & promoted from early years and beyond

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**Local context: Place**

- An appropriate balance between cellular provision and more fluid open spaces
- Realistic “future proofing”
- Extending the boundaries of the classroom, exploiting the transition spaces, learning visibly happening everywhere
- Spaces to engage rather than exclude
- Permeability and vision throughout, windows into learning
- Engendering an immediate belief in the value of students and community
- Emphasis on fun and colour
- Look, feel and the impact of FF&E providing an exciting environment and supporting the delivery of innovative learning
- Student support strategies with a support base at the heart which welcomes all learners and can break down barriers of stigma
- Greater emphasis on easily accessible outdoor spaces for learning through the architecture and landscape design

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Vision animation link: https://vimeo.com/140898650
Development: Sketches
Key aspects of the aspiration for the primary schools

The three primaries identified the following aligned aspirations:

- Seamless and integrated transitions between early years, primary and secondary
- A focus on spaces to support STEM activities and active learning
- Equitable access to shared spaces for the denominational and non denominational primaries, as well the ability to create distinction without segregation
- Equitable access to secondary focussed whole campus shared spaces, sports halls and specialist spaces based on time tabled demand
- Flexibility to deal with time tabling of shared spaces
- Fluidity and blurring the boundaries between what is nursery and what is P1, P2 and P3

(The primary demand was factored into the utilisation modelling of the secondary focussed specialist spaces of PE, Art, Music and Home Economics to ensure that there were adequate spaces to cater for primary demand when required, see page 26 where this approach is also discussed)

Key aspects of the aspiration for the secondary school

The aspirations for the secondary school were summarised as follows:

- Spatial configurations with adequate flexibility to support the differing needs of all learners
- Choice and variety of spaces to learn, both in terms of formal learning activity (32 learners in a traditional class configuration), larger cohort learning and collegiate approaches, as well as more ad-hoc individual and group learning activities
- Fluidity and care in matching the building envelope design with the space planning of the interiors and “population” of spaces with furniture and “kit”
Conclusion: Round up, Conclusions and Recommendations
6.0 Round up, Conclusions and Recommendations

The feedback in this section relates to a wider context than that of the case studies.

6.1 Efficiency, Effectiveness and Expression

The way we teach and learn is in a period of change. This change is affecting the way we consider the design of our schools and the spaces within. The quality and design of the interior spaces is becoming increasingly important in allowing a rich mix of learner choices about the best style and approach to their learning. The focus is on creating effective learning spaces.

The environmental and financial context within which we live and work has changed and it is recognised that we should not over specify the quantity of space. Efficient use of space has become critical. Spaces lying empty across large parts of the day is no longer considered sustainable. Spaces need to accommodate a wide range of uses and users across the day.

There is an ongoing evolutionary journey of cultural change in learning environments. Many modes of learning exist now. There is an appetite to enable learners to participate actively in learning rather than passively accepting knowledge. The need to embed technology in all aspects of learning and harness young people’s pre-existing skills in this area is acknowledged. Wider opportunity for community participation is often being advocated. There is an opportunity for a new innovative generation of school designs to express and reinforce the new cultures, behaviours and values which are being advocated.
6.2 Defining Demand

A well structured briefing process to define the vision, the broad spatial concepts and the apportionment of spaces within a given allocation of space in advance of architectural design work commencing is helpful. By considering the full vision, aspiration and aims, along with the appetite for change through an engaged process, the decision makers, stakeholders and users can make priority decisions at an early stage around objective criteria which relates to the agreed learning and teaching drivers. The early design process requires key decisions around the scale, the quantity, the configuration and the kind of spaces which are needed. If these decisions are not clear prior to design commencing, then design will lead the decision making process and this can be compromising for end use. At the same time, there is a need to develop the brief iteratively through the design stages also.

The financial budget will always be a factor. Budget is defined by a given pot of space dictated by funding metrics or an existing building, and the cost to build or refurbish/re-imagine that pot of space. It is only however by considering what it is you want to achieve and then considering how you can achieve this within the budgetary constraints that the correct priorities can be set and decisions can be made.

This requires those involved to think differently and take a strategic approach to the decision making. Issues around cohort numbers, utilisation targets, the balance between traditional spaces and more fluid learning spaces should be considered at the outset of the process to maximise the opportunity of the given space allocation and financial boundaries.

6.3 Mind sets, Skills sets and Tool sets

Designing for innovation, change and new ways of doing things requires new mind sets from all those involved in the project, including the client, the stakeholders and users, along with the project team of project managers, architects, design team colleagues and contractors.

We have discussed the importance of the “stuff” which populates space, including fixed and loose furniture along with technology. Without seeing how spaces are going to be populated with fittings it is hard for users to review the early design proposals meaningfully. Unless designers test the spaces during the design process they will not be clear that these spaces are correctly sized and configured. The interior design and space planning should not be an add on at a late stage in the construction process and should be an integrated part of the full design process.

Furniture manufacturers often produce layouts which only show didactic settings in classrooms. Whilst it is understood that these settings can be reconfigured, without illustrating how this will look for group learning settings, horseshoe type learning arrangements and other configurations, it is unknown whether the furniture can fit in the spaces being provided. It is also hard for the leaders of educational innovation to discuss the new practices with their staff, when the only layouts available have desks lined in rows facing the front.

Feedback from clients and architects, says that the space planning is not always coordinated with the building layout. There is a perception that FF and E (fittings, furnishings and equipment) solutions are often being promoted as loose furniture options only and that contractors are anxious not to go down the route of fixed joinery items. The architects are asked to provide shell and fit-out spaces only which are then populated by loose furniture.

Building elements are easy to map and cost plan, however the cost of the interior design and fit out of the spaces is perceived as being harder to “de-risk” in terms of cost planning. If however the design and cost of the
interiors is progressed in tandem with the architectural design from an early stage, it can become part of the early cost planning and any compromises can be agreed in a coordinated manner.

It may be that it makes more sense to reduce the floor area to balance the needs for quality fit out. Flexibility of use will increase space utilisation and this can often be delivered through the FF and E solutions. A higher quality of space can reduce the need for a higher quantity of space. All too often the conversations around interior budgets are happening at a late stage in the design process and the opportunity to reduce area to afford the necessary quality of interior fit out is lost.

There are good built examples where it is clear that the architectural development, the furniture and fixtures, the colour and the graphics have been carefully coordinated, but this is not always the case. The Scottish Futures Trust reference primary school illustrated below is an example where space planning and interior studies were produced as part of the early architectural development sketches.

To establish this approach clients need to push this priority from the outset and the industry also needs to respond and consider how the interior aspects can be better coordinated from the outset.

Lairdsland School, East Dunbartonshire Council: The architect was responsible for the interior design, the furniture selections, custom joinery items, along with the colour and graphics. This interior study was produced at a very early design stage and the end result is fairly true to these studies.
6.4 Watch points

Some watch points when creating more fluid learning spaces are noted below:

**Acoustics:** There are worries that where open learning spaces are being specified, there will be noise issues. Open learning spaces do need to be considered acoustically, especially if they exist in atrium and double volume spaces. Transparency into learning is often a big driver in the vision development. A glass wall or acoustic absorbers, between an open learning space and an atrium can help reduce noise pollution and create the desired transparency. A large glass wall comes with a cost however, as do high quality absorbers, so this needs to be built into the cost planning if it is essential to the performance of the space. Soft furnishings and acoustic absorbers can ensure many users work effectively without interference in an open learning space. If these spaces are to be effective, they need to be active and full of buzzy creative activity, which needs acoustic management.

**Fixed settings and “built in” joinery items:** Open learning activities can require an element of shelter and privacy. Carefully considered and located storage walls and walls which can support screen technology or projection can help create delineation and shelter. Built-in learning settings such as cafe type booths, can do the same and can help create zones of activity. They are also settings which the majority of educators embrace as good opportunities for group work, offering a degree of privacy and shelter to the groups working within these spaces. Fixed settings are especially effective in corridor break out areas where it is important not to impede on egress.

**Effective storage solutions:** There is often an appetite to “de-clutter” in a new school project. A storage wall in a breakout space or an open learning space can offer a high volume of storage, whilst also helping create distinction between spaces. By comparison a loose cupboard cannot achieve this and provides much less shelving per linear metre. If teachers are giving up their ownership of classrooms, they need effective responses to their needs of shared resource storage and also need a place to store personal belongings. Built-in wardrobes along with lockers for example can be an appropriate response to the personal storage needs of staff.

*Portobello High School, City of Edinburgh Council:* The circulation spaces are being enabled through bespoke joinery fitments.