

What about acoustics in open plan spaces?

Acoustic design of schools: performance standards

Building bulletin 93

February 2015

Table 6: performance standards for reverberation time

Type of room	T _{mf} seconds	
	New build	Refurbishment
Nursery school room <i>Primary school:</i> classroom, class base, general teaching area, small group room, SEN calming room	≤ 0.6	≤ 0.8
<i>Secondary school:</i> classroom, general teaching area, seminar room, tutorial room, language laboratory Study room (individual study, withdrawal, remedial work, teacher preparation) Science laboratory Design and technology: Resistant materials, CAD/CAM area, Electronics/control, textiles, food, graphics, design/resource area, ICT room, art	≤ 0.8	≤ 1.0
<i>Open plan:</i> Teaching area Resource/Breakout area	≤ 0.5 [see section 1.8] ≤ 1.2 [see section 1.8]	≤ 0.5 [see section 1.8] ≤ 1.2 [see section 1.8]

Table 8: Performance standards for speech intelligibility and privacy in open plan spaces – speech transmission index (STI)

Condition	Speech transmission index (STI)
Instruction or critical listening activity – within group	≥ 0.6 ¹
Between groups (during critical listening activities)	≤ 0.3



Are there examples of where this has been done before?



Shaping Scotland's Learning Spaces

Learning from the Education Buildings Scotland Awards 2019

Creating new spaces for learning: Bertha Park High School

What the judges say: "A well thought-out and forward-looking approach, integrating technology into learning and the life of the school. The tie-in with Microsoft will support the teachers' professional learning too."

Scotland's first new secondary school to open since 2002 is housed in a brand new 1,100-capacity campus designed to support learning that prepares young people for life and work in the 21st century.

Bertha Park's curriculum incorporates virtual and augmented reality, digital video and audio production, multimedia broadcasting, coding and robotics delivered through project-based learning.

The design of the building interior supports this emphasis on digital and collaborative learning: it does not look or feel like a typical secondary school. With a central amphitheatre, sizeable flexible learning spaces and floods of natural light, it provides areas for collaborative working, as well as seamless wifi throughout for connectivity.

Bertha Park hopes to become Scotland's leading centre for digital learning and creativity – it is one of only 17 schools worldwide to be awarded Microsoft Flagship School status for its commitment to innovative learning in a stimulating environment.

From the structure of the school day to curriculum content, the school aims to tackle inequality of opportunity and gaps in digital skills through excellent learning and teaching. The hope is that this environment can be emulated elsewhere in Scotland.

What works well?

- Innovative spaces to support a digitally orientated curriculum for the 21st century
- Open spaces encourage collaboration
- Digital technology integrated throughout as a context for, and enabler of, modern learning

What the judges say:
"A well thought-out and forward-looking approach, integrating technology into learning and the life of the school. The tie-in with Microsoft will support the teachers' professional learning too."

Fact file

EBS 2019 Award: Technology: Transforming Learning, Teaching and the Curriculum

Consultant; architect: hub East Central Scotland; NORR Architect Ltd.

Client: Perth & Kinross Council

Location: Perth

Opened: August 2019



Creating new spaces for learning:

Glenpark Early Years Centre

What the judges say: “Makes the most of its physical location, combining high quality indoor and outdoor settings. The design maximises natural light and is an uplifting and nurturing environment.”

This purpose-built new early years centre providing pre-school care for children aged three to five aims to provide a nurturing, inclusive environment where children feel secure, happy and confident.

The design is simple and flexible: spacious main play areas are flooded with natural light thanks to the double-height pitched roof. Beyond these are smaller zones with softer lighting and fabrics – nurturing spaces ideal for sleeping, reading and small group activities. Children can find the type of space that suits them best.

Once outside, integral shelter provides a transition between indoors and the outdoor learning space, which takes cues from Greenock’s nautical heritage and has the potential to be adapted in response to learners’ needs. Plans are afoot to develop a nature garden in consultation with parents, staff, children and the local community.

- What works well?**
- Spacious, flexible main spaces complemented by more intimate areas to support learner-led choices
 - Outdoor play environment links to the area’s heritage

What the judges say:
“Makes the most of its physical location, combining high quality indoor and outdoor settings. The design maximises natural light and is an uplifting and nurturing environment.”

Fact file

EBS 2019 Award: Early Learning & Childcare

Architect: Holmes Miller

Client: Inverclyde Council

Location: West End, Greenock

Completed: October 2018



Glenpark: Holmes Miller/Paul Zappi Photography

Creating new spaces for learning:

West Calder High School

What the judges say: “Holistic in terms of design... with creative approaches to teaching and learning, and the staff and pupils feel valued.”

This innovative new 1,100-capacity building is the fourth to house West Calder High School. With an ambition to transform learning in the local community, the school includes facilities for shared community use, such as a 20m swimming pool and sports pitches.

At the heart of the deep plan building is a central space which doubles as an assembly amphitheatre, events space and dining hall. Outside the school day, this space is also used by senior pupils for community charity events.

The open-plan interior draws light throughout the building, and offers pupils choices in the type of spaces they can access. As well as formal teaching spaces, there are semi-enclosed, flexible break-out areas (‘snugs’) dotted throughout the three storeys, often on half levels and of differing scales. These are used for socialising as well as informal learning and group work. The internal spaces have glass walls to provide light and visual connectivity.

According to head teacher Julie Calder, the building not just meets its brief, but transcends it, delivering a rich, stimulating and radical learning environment for young people.

Since relocating to the new building in 2018, the school has seen improved attendance and a cultural change among staff and students. Key to this success was preparing everyone for the new school, including creating pilot spaces as part of the Inspiring Learning Spaces programme.

The open-plan social spaces, combined with passive staff supervision, has reportedly led to fewer incidents of bullying. The open learning spaces have also facilitated greater interaction between staff and encouraged collaborative working.

- What works well?**
- Sports facilities for community use; central amphitheatre also available for community events
 - Open-plan spaces encourage collaboration
 - Improved attendance
 - On time, on budget and exceeding the brief, with additional spaces provided

What the judges say:
“Holistic in terms of design... with creative approaches to teaching and learning, and the staff and pupils feel valued.”

Fact file

EBS 2019 Award: Project of the Year

Architect; contractor: NORR Architects; Morrison Construction

Client: West Lothian Council, hub South East

Location: West Calder, West Lothian

Project value: £32 million

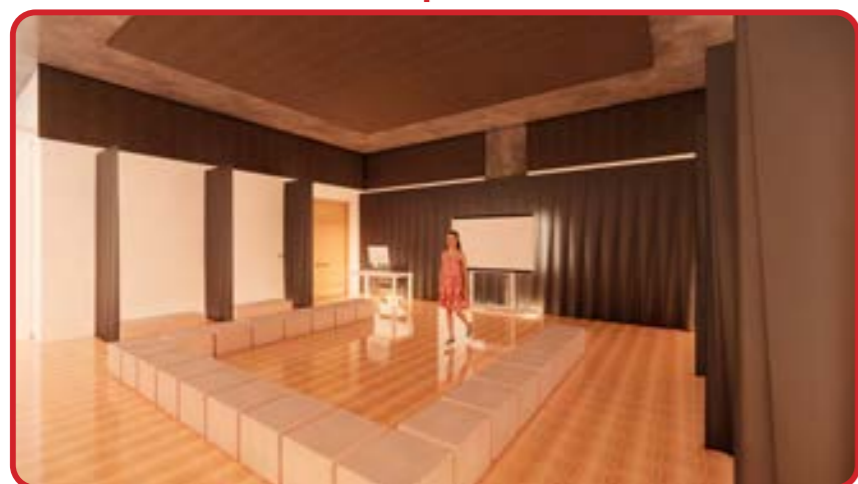
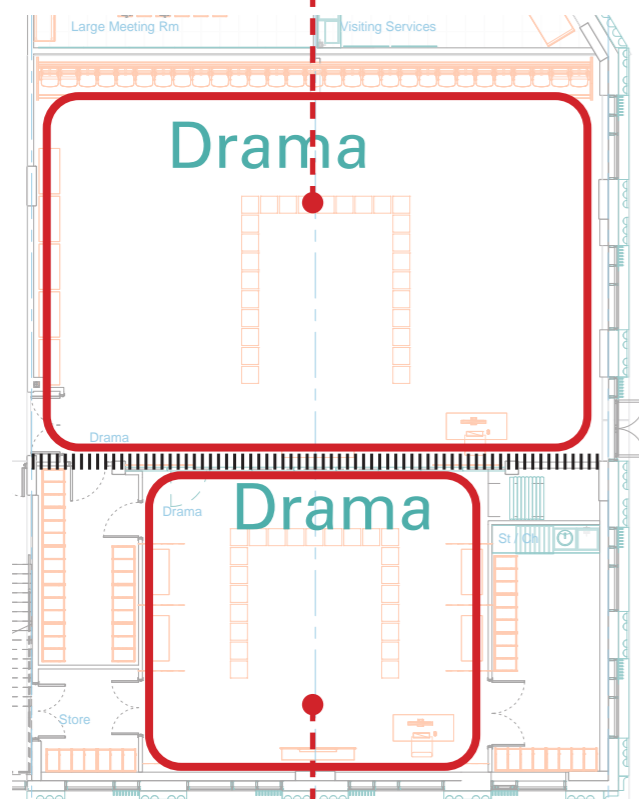


West Calder High School - NORR Architects

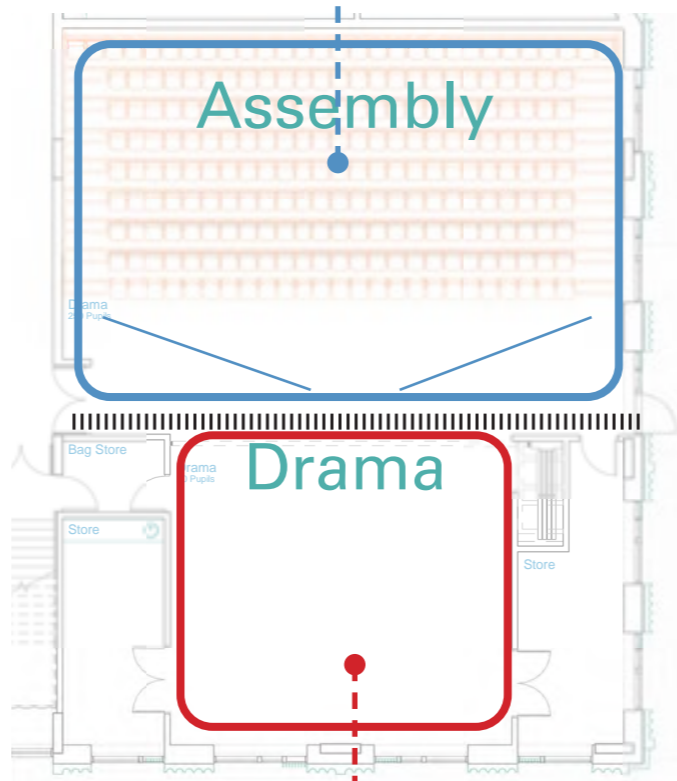
How does assembly work with Drama?

FAQs

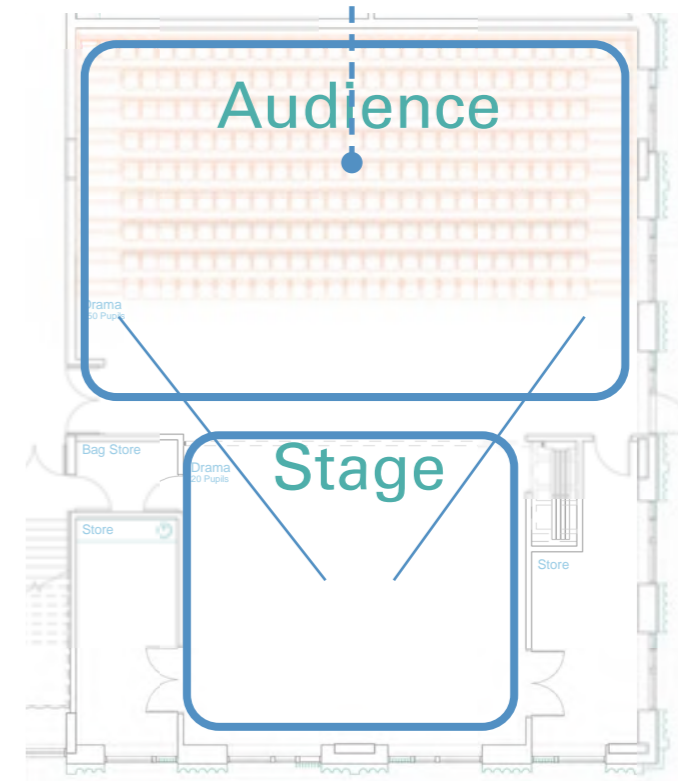
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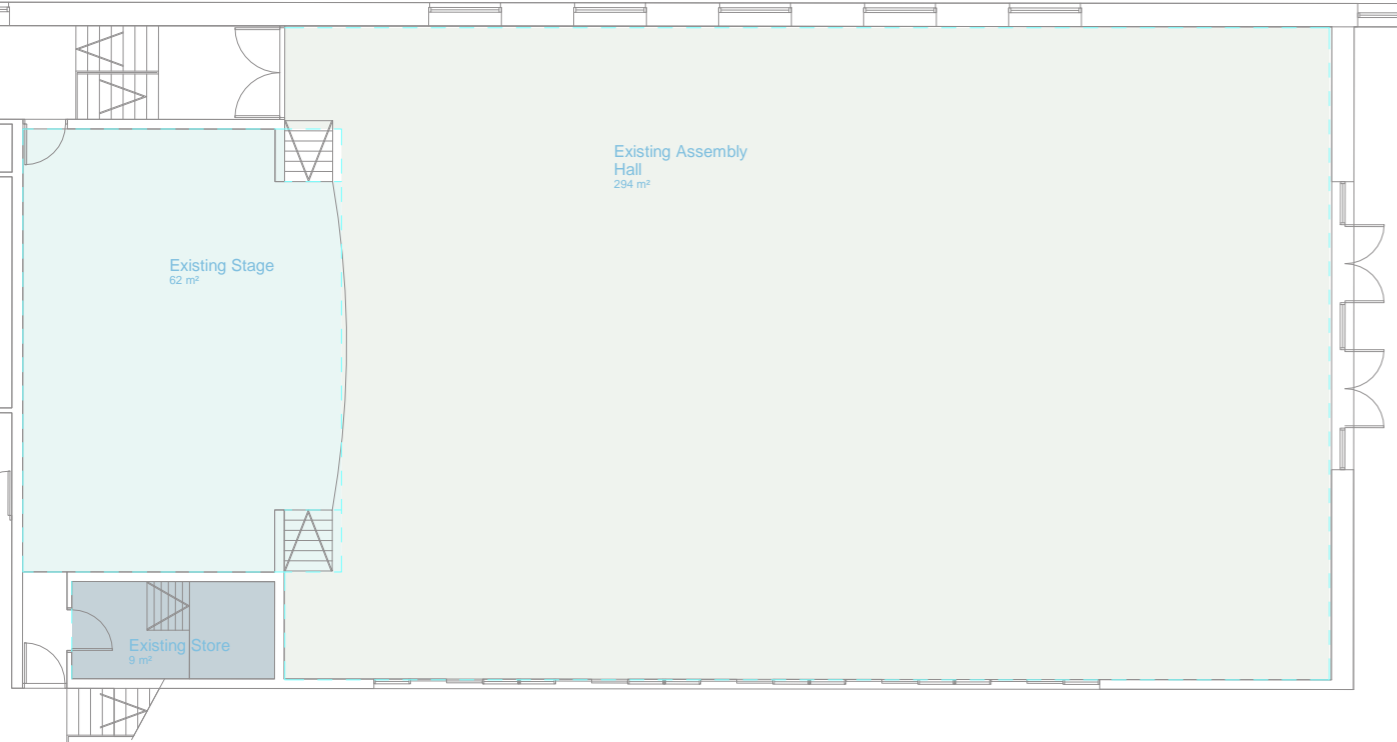


Drama	
No. Teaching Professionals	2
Max Capacity (33 periods p/w)	66 Periods
Current use	48 Periods
Efficiency	72.7 %
Proposed Teaching Bases	2
	72.7 %

How does Assembly and Drama Compare to Existing?

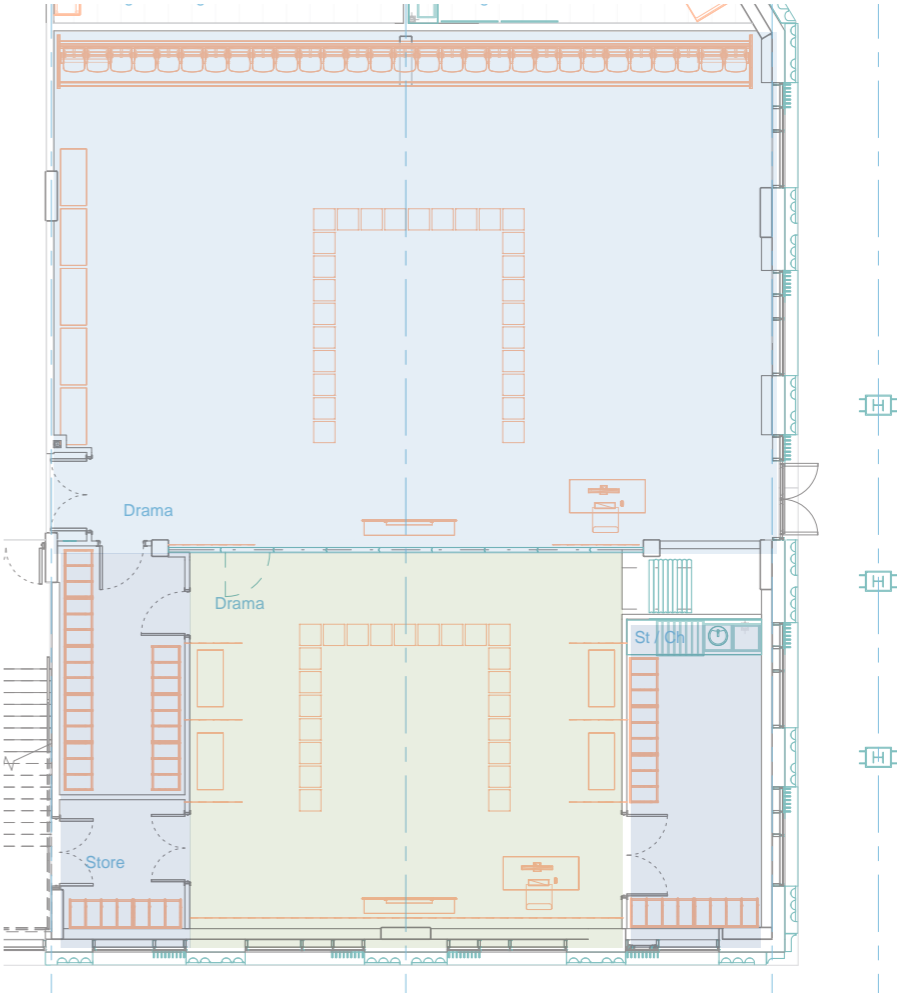
FAQs

Existing School Assembly and Proposed Drama drawn at the Same Scale



Existing Assembly Hall

Seating Area = 294m2
Performance Area = 62m2
Store = 9m2
(Total = 365m2)

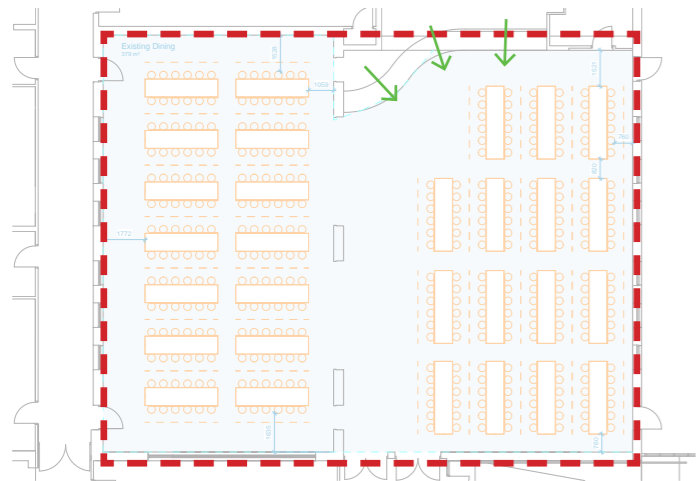


Proposed Drama/ Assembly

Seating Area = 161m2
Performance Area = 79m2
Stores = 40m2
(Total = 280m2)

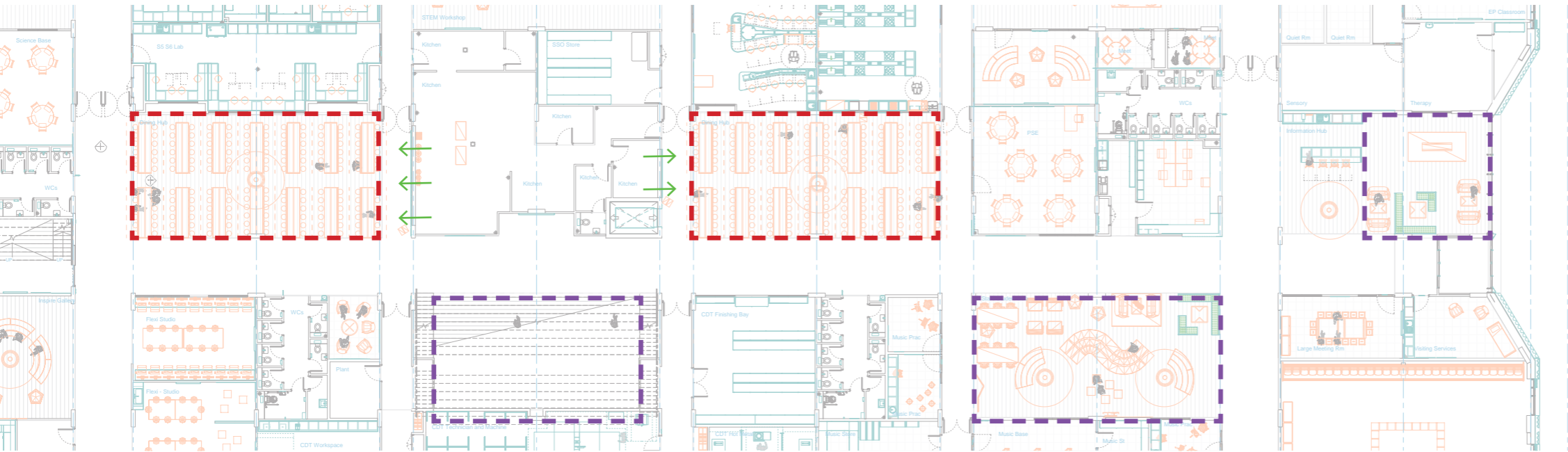
How many formal dining spaces are there?

FAQs



Existing School Dining Hall

Area: 372m2
No.Tables = 29
No. Seats = 348



Proposed Formal Dining Areas

Area: 238m2
No.Tables = 28
No. Seats = 336

Dining Area

Potential To Augment

(Further opportunities upstairs)

- Note:
- New spaces are much more efficient in chairs/m2 due to utilising adjacent circulation spaces which aren't counted in the area.
 - Min gap between tables/walls in both plans = 760mm
 - Both Plans are the same scale

How are the toilets arranged?

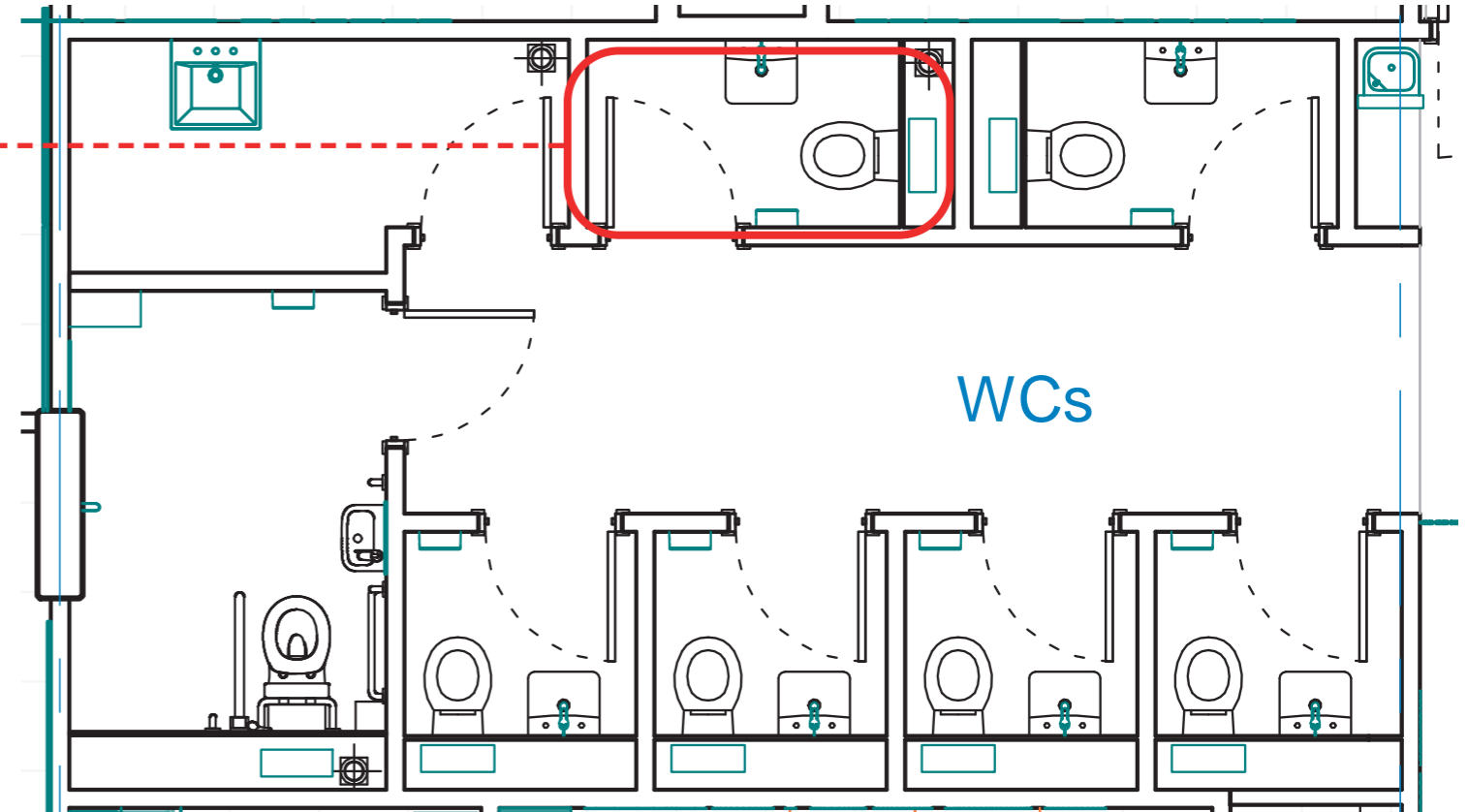
FAQs

Every toilet is a “superloo” which is a fully self-enclosed room incorporating a WC, a washhandbasin, mirror, hand drier and a solid (not cubicle) door. Toilets are clustered typically in groups of 6 or 7 and are dispersed around the school

Each individual superloo can be assigned to any combination of Male, Female, Unisex, Teacher or Pupil. This will be the decision of the school management.



Example superloo



Ground Floor Cluster locations



First Floor Cluster Locations