

Arch 464
ECS
Spring 2020

Name _____

Quiz #4

"Think Outside the Box-in-a-Box"

Read and look at everything before you write!

For this problem you are acoustically curious about a new rehearsal hall in Manchester, UK.



View across Cutting Room Square to the Oglesby Centre.

Music box-in-a-box: Manchester's Hallé orchestra's rehearsal facility

Manchester-based stephenson STUDIO has combined well-judged materials, technical expertise and bespoke detailing to create a solid and confident facility for the city's famous orchestra. 'It's a rugged, robust place,' says stephenson STUDIO managing partner Roger Stephenson of Ancoats, an area near Manchester's city centre often described as the 'cradle' of the Industrial Revolution. Located at its redbrick heart is the practice's recently completed Oglesby Centre, a rehearsal studio and hall attached to St. Peter's church, built in 1859 to designs by Isaac Holden and Son and described by Pevsner as 'Italian Romanesque'.

To be used mainly by the city's celebrated symphony orchestra, the Hallé, the new facility faces and completes the 20-year-old Cutting Room Square (its name harking back to Ancoats' cotton trade heritage), a European-style public plaza forming a public realm centrepiece to the newly gentrified district. The architectural language for the extension (named the Oglesby Centre after its funder) is a simple, large box,

described by the architects as ‘growing out of the main body of the church’. It references the area’s industrial history with a solid brick base that ‘cradles’ a rehearsal space clad in Cor-ten, recalling the water tanks of the district’s bygone steam-powered factories. Stephenson describes the materials as a ‘hand-made artisanal language’.

The site next to the Grade II-listed church was empty when the project was taken on. Constructed in 1858-9, the church was later abandoned and deconsecrated before being restored by Buttress Architects in 2013 as Phase 1 of Hallé St. Peter’s. Stephenson STUDIO’s expansion received planning approval in October 2016 and the concert hall opened in November 2019. ‘Our solution was the smallest of the entries but is packed full of stuff,’ says Stephenson, recalling the competition-winning proposal. The brief called for rehearsal, performance, educational and ancillary spaces for the Hallé, so there was a lot to fit in on a small and constrained plot.

The 1,145m² centre is arranged over basement, ground floor and first floor levels to incorporate the mixed-use, flexible and acoustically isolated spaces required. The basement accommodates education rooms, support spaces and offices benefiting from natural daylight via glazed pavements above. The ground floor, slightly elevated above street level, has a stepped main entrance accessed from the square, opening up into a triple-height atrium featuring a raked brick feature wall offset by a white stair rising towards a glazed roof link giving views of St. Peter’s campanile tower. Behind the new lobby is a café, taking up a large part of the ground floor with a buffer zone between the church doubling up as green room and servery. Sliding doors allow the entire space to be opened up for events.

Stuart Hollings, associate at the practice, describes the form of the extension as being ‘cut and carved’ out of a block, mimicking the ecclesiastical architecture of St. Peter’s. The architecture of the Oglesby Centre certainly feels substantial to the visitor, yet exactly how monolithic it is perhaps is most obviously demonstrated through stephenson STUDIO’s drawings of the scheme. The long section is solid—evidence of how much structure is required to create the column-free spans over the café area. It shows, too, the extent of the challenge of penetrating through a 1.4m thickness of bell tower wall to connect the church with new extension.

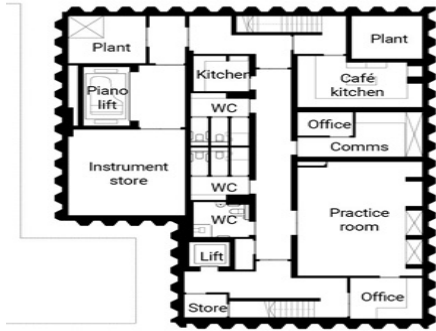
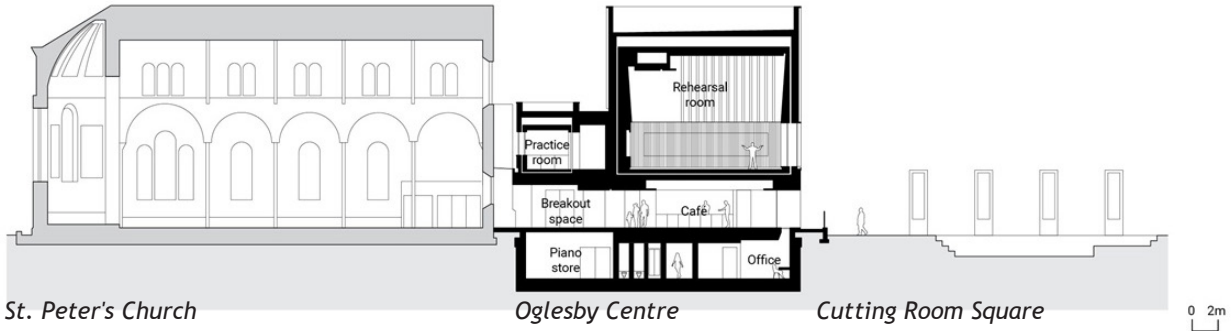
The biggest challenge of the project, says Stephenson, was creating the entirely acoustically isolated rehearsal and practice spaces on the first floor. Using a ‘box-inside-a-box’ construction developed with Arup, the rooms are totally disconnected from the primary structural frame to prevent sound transfer and ensure the highest level of acoustic performance in those key spaces. For the main rehearsal space’s floor build-up a floating slab was set upon acoustic isolators above the first-floor composite floor slab. ‘All of the walls are canted in different orientations to diffuse sound,’ says Hollings of this space, which overlooks Cutting Room Square through slotted windows—an unusual feature for a high-performing rehearsal room. The space features inclined panels at high level that create acoustic deflection. Lower-level fine sound diffusion is provided by solid oak fins concealing adjustable heavyweight acoustic curtains. Acoustically attenuated ventilation is achieved with low-velocity air.

Stephenson recalls that the Hallé’s chief executive, John Summers, ‘encouraged us to be inventive. He wanted a craft feel to the scheme’. So the mantra of the project was to spend money ‘only where needed’: high-quality materials and fittings were prioritised, creating a hard-wearing, long-lasting and striking palette of solid oak, exposed brickwork and blackened steel.

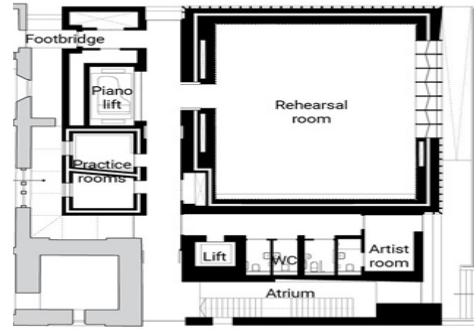
Using the right materials was also about how the project will be judged by the public ‘emotionally’, says Hollings. That is perhaps where music and architecture meet in the middle for this project. It’s about creating a sensation and a response—thinking about how musicians will feel in the building’s presence. The materials are a large part of the success of this project in this respect. You can really feel the joy of their specification in the building’s neatness and proportions. Both Hollings and Stephenson agree: ‘It is the most enjoyable project we have ever worked on.’ The result is a striking building that is quietly confident and stands strong within historic Ancoats. As the last piece of the jigsaw to the square out front, it completes a piece of public realm that one could imagine the musicians spilling out into come warmer weather.

—FRAN WILLIAMS

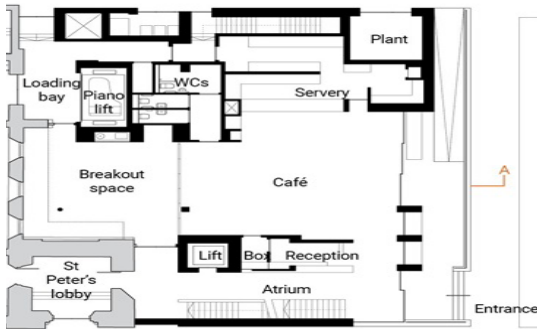
Section A-A



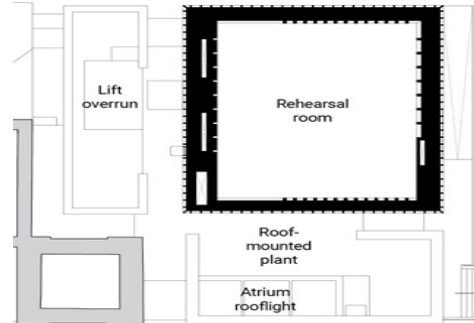
Basement Plan



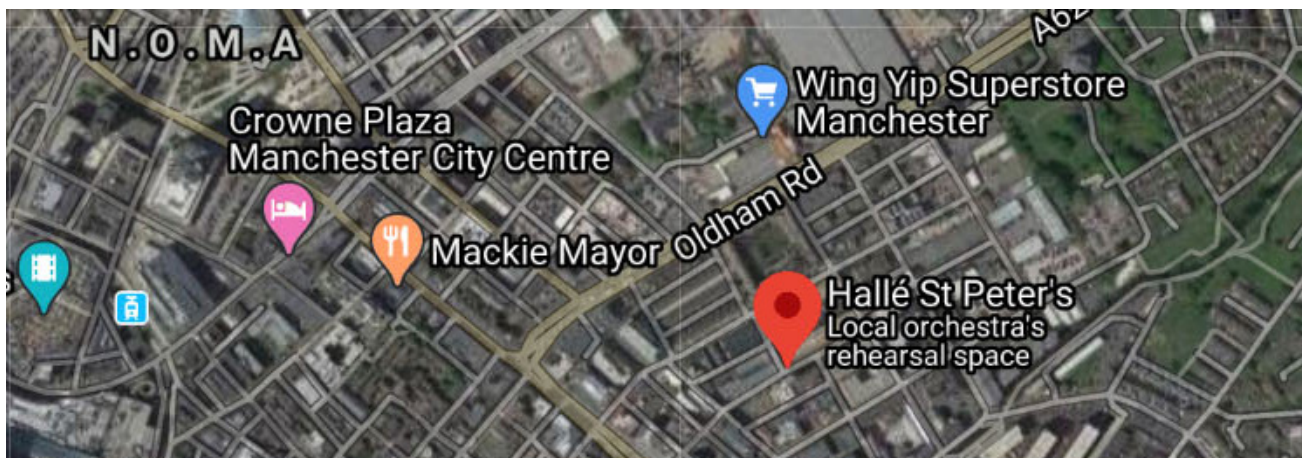
First Floor Plan



Ground Floor Plan



Second Floor Plan (rehearsal room open to below)



Hallé St. Peter's Manchester neighborhood. North is up.

Analysis

4 points

Windows are rarely found within high-performance practice rooms, due to the complex associated challenges of achieving acoustic isolation and diffusion. The rehearsal spaces at The Oglesby Centre feature twin window systems, each fixed to either the inner or outer box and completed by acoustic window liners that enforce the acoustic separation of the assemblies. The inner window is operable for maintenance purposes and incorporates an integral solar blind within the glazed cavity.

The acoustic inner box features monolithic plaster diffusion panels at high level. Solid oak fins provide finer acoustic diffusion at lower level, while concealed adjustable acoustic curtains give greater absorption during livelier rehearsals.

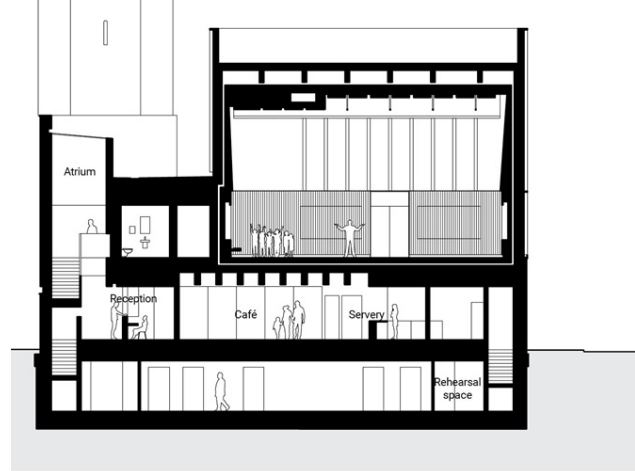
—Stuart Hollings, stephenson STUDIO

1. Give thorough acoustical explanations for how the upper and lower wall treatments, structure, and HVAC system enhance or detract from the acoustic quality of the space.

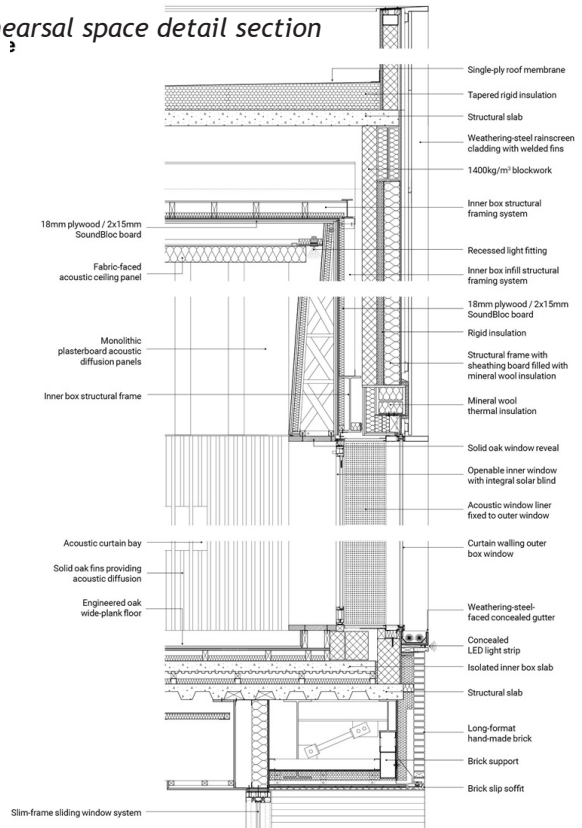
1. Walls

2. Structure

3. HVAC



Rehearsal space detail section



3 points

2. St. Peter's nave (pictured during a rehearsal) was Hallé's primary rehearsal space before the Oglesby Centre was built. It has a barrel vault ceiling over the center of the nave, a concave altar area, and exposed parallel brick walls.

Discuss each acoustic aspect of the room mentioned below.



1. Potential quirks (2)

2. Acoustic suitability for rehearsal (pluses and minuses)

3. Original acoustic goal of the nave vs. requirements for rehearsal halls vs. it's new role as performance hall

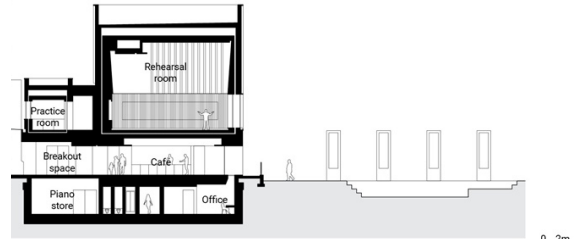
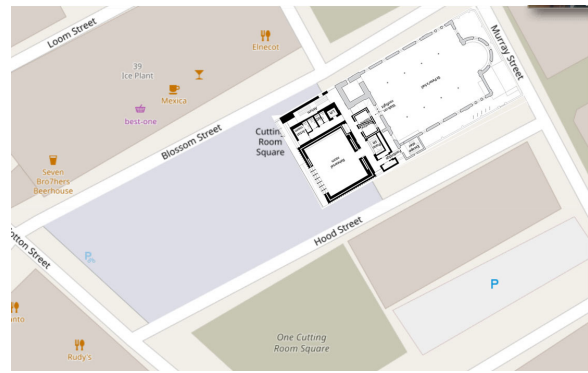
Advice

3 points

4. Fran Williams mused, 'As the last piece of the jigsaw to the square out front, it completes a piece of public realm that one could imagine the musicians spilling out into come warmer weather.' The section even suggests an smallish amphitheater in the square.

Give three sound (pun!) pieces of advice and/or warnings for outdoor performance in this space.

1



2



3

St. Peter's and Cutting Room Square from above during construction of the Oglesby Centre.