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Sound and architecture is a combined subject that has been touched upon quite frequently for thousands of years. It is suggested that the first considerations for sound in relation to architecture can be seen as far back as Ancient Greece. Through Pythagoras theory on string vibration and proportion being relative to its frequency wavelengths, we can see the first signs of sound being directly related to mathematical form and the proportions of space.

More often than not, the writings on architecture and sound are usually in relation to the physical visual elements that sound can create ‘on paper’ and rarely address the ‘soundscapes’ of spaces and environments. It is important for us to consider sound from a designer’s perspective as it is an aspect which can be seen as the core of any known place. Sound exists constantly and is part of every given environment whether it is an exterior or interior space.

An aspect to sound that is often looked at but becomes insubstantial to creating place not specific to its space is ‘performance’. Performance is an anticipation of sound which entertains us and brings about interactions with not just the sound itself but also becomes a stimulus within the audience e.g. through song and dance. ‘Sound is materially invisible but very visceral and emotive’, and therefore it is hard to physically measure. By researching into the unique atmospheres that house Irish traditional music, one can look upon social interactions which occur within these spaces due to the fact that the music is usually held in public houses. The interconnection between the static element of the public house in terms of architecture and the ephemeral sound of traditional music creates an ‘in-between space’. The architecture and the performance are intertwined through the sound of a space, building upon the already established soundscape.

The research of sound through a unique performance soundscape – in particular the performance of traditional Irish music, we may be able to establish ‘in-between’ spaces as unintentional ‘performing’ spaces.

The nature of Traditional Irish music is one that is casual and often unrehearsed. There is an element to it which is very much ‘of the moment’ and it is often the musicians who find the most suitable, already built spaces, rather than the performances taking place in purpose built auditoriums and theatres. This then creates interesting soundscapes as the acoustic music is combined with social activity. With the research into specific public houses in Belfast there is evidence that puts forward an argument for these spaces to act as ‘in-between’ spaces and possibly set up soundscape focal points within the city determined by social entities.


“I listen to the sound of space, to the way materials and surfaces respond to touching and tapping, and to the silence that is a prerequisite of hearing.”³
When looking at sound and architecture, the relevance of space for performance is often the pervading focus of attention. If it is a major design factor within a brief it is often regarded in terms of acoustical enhancement. There is often little regard on the contextual soundscape. This paper is a study on ‘in-between’, social spaces which aren’t necessarily designed for performance through the medium of Irish traditional music and its social culture.
In Blesser and Salter’s essay on ‘Ancient acoustic spaces’, they make a point that ‘An architect designs a structure or a space for its visual or utilitarian properties, while being generally oblivious to its acoustic attributes the aural personal- ity’. As architects we are encouraged to analyse our surrounding context and design to best suit the environment. There is a long list of factors that one must take into consideration when analysing a site. However, most of these issues that would be evident on site do not address the nature of sound. An architect’s education is very much focused on the ability to see and thus the other senses seem to take a back seat. With the initial investigation of a ‘soundscape’, we may be able to understand further the fundamentals of a site in a broader sense.

“Sound and social space cannot live without each other; it’s a love affair.”

The idea of ‘Soundsapes’ is one that ‘enriches’ our understanding of social and cultural geography and one may argue music as an ‘organised sound’, provides unique insight into the world of noise. Essentially, the soundscape is the basis of an initial context. It is the foundation on which sound or ‘structured sound’ can begin to build although it is what we could describe as a ‘constant variable’ where by it is always present yet is unpredictable. The soundscape of a space is a feature which relates to one of the most powerful senses in the human body and with this in mind; we must question why there is not as much emphasis on sound as there is on sight. One could argue that architecture is most likely to succeed in design when it relates to all the senses therefore creating an ‘aural picture’.

Performance is an element of sound which could be described as music or ‘organised sound’. It is the ‘anticipation of music in a space… the anticipation of not knowing when and what kind of sound may be heard… [This] is perhaps as important as the aural itself’. We can therefore argue that a ‘performance’ involving organised sound is one that is relevant to architecture and can be used as a tool to decipher or potentially design a space.

Apart from nature, which one could argue is the first element to be contained within the ‘soundscape diameter’; architecture contributes a permanent fixed space which would have an element of noise, even without its inhabitants. Thanks to the work of sonic artist Jacob Kirkegaard in Chernobyl, we can see that even the most silent of rooms contain an aspect of noise. By visiting the abandoned city, his work took one aspect out of the architecture’s soundscape – the inhabitation of space. Through Kirkegaard’s piece AION (2006), the listener can hear the ‘recorded voices of rooms’ through the re-recording of a previous recording. His work, inspired by I am sitting in a room (1969) by artist Alvin Lucier, makes us aware that architecture speaks, whether it be abandoned or full of inhabitants. Essentially Kirkegaard is discovering the breakdown of the ‘structure’ of a specific soundscape. As well as the inhabitants of a space, Kirkegaard has found a place which eliminates the working building services,
outside traffic and street soundscape. Instead, Kirkegaard explores rooms which are being overtaken by nature yet still remain a living, yet manufactured structure. These rooms become the context for which Kirkegaard bases his pieces, and works solely with that which is there.

“Sound is the vocabulary of Nature.
When we hear the wind, the wind says ‘I’m blowing.’
When we hear water, the water says I’m running”
The objective of this research is to examine space through sound and its connection to social elements of society. The project concentrates solely on Belfast due to the interesting history it has had through the peace process and although the spaces examined are common in most cities, Belfast’s Public Houses have filled the need for unique public, sociable spaces. Due to the troubles within Northern Ireland and the fact that Belfast has been the centre of most of the unrest, there has been an effect on the nature of the cities social spaces. Although a thriving city at the turn of the 19th century with the linen and ship industries leading the forefront of the economy, Belfast’s history had led to public spaces being potential areas for conflict. This therefore makes Belfast unique in that the outdoor public and ‘in-between’ spaces were seen in a negative light and one could argue that this encouraged many residents to seek social space within safer confinements – such as public houses. Belfast’s lack of comfortable and useable public space would have been a catalyst for the public houses to fill that gap.

Public houses in any city can be seen to be ‘in-between’ spaces. This can be argued because they act as social spaces which can often lack destination however in a positive sense. The establishments within a city become places of new and old social interactions, places to create contacts, meet with friends and enjoy the atmosphere or the sound of a performance. In terms of traditional Irish music, the public house bridges the gap between the initial performance space being the kitchen and the professional, acoustic venue which is usually designed to suit amplified performance. These spaces are normally designed around the vocal point which would be the bar area with any furniture within being orientated for social interaction. Public houses seem to fulfil a different perspective on soundscapes down due to the unique intertwining of social, performance and static soundscapes.

The main objective of this research was to understand social ‘in-between’ space which can be seen as a catalyst for connection within a community. This does not necessarily mean out door. Here we are taking the idea of the public house as the ground in the social interaction between performance, space and audience. Taking a simple traditional music space is just one element of ephemeral performance which is so frequent within the culture and therefore, much like architecture the music itself is a lot to do with the space combined with a moment. It is hard to make an accurate analysis of a soundscape as it is not an aspect to site analysis that we can easily record. It does not directly relate to the visual therefore we cannot specifically record it on paper without using certain instruments or creating personal abstract imagery. However, through personal experience from a performing background combined with architectural understanding, this research project has concentrated on spaces which would predominantly hold traditional Irish Music sessions. The research carried out has looked at suitable and unsuitable spaces through different social perceptions; e.g. performer

2.0 Methodology

vs. audience. With these elements in mind, the research establishes measurements of the spaces to fulfil the architectural analysis along with the notation of material. Another important element is the information collected from interviews from both musicians and bar staff to satisfy different perspectives and stances. The overall experience and atmosphere to the space has also been noted in conjunction to architectural, performance and audience response.

The public houses in question would be considered the most popular venues for traditional music in Belfast. They have also been chosen due recommendations to the types of spaces and acoustics and also through popularity and audience satisfaction. Each bar is located within rather a small radius of one another yet all are surrounded by very different urban ‘scenescapes’ which in turn affects the soundscape of the interior spaces.

The documentation of the sound ‘is not just a hollow version of reality, but it is in itself a complete autonomous entity that exists within its own space and time, and with its own role and implications on the world.’

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There have been many artists who have looked into the relationship between sound and space, and the relevance space has to performance, however not necessarily from an architectural stance. For example, the Museum of Modern Art’s publication Soundings, A contemporary source gives us examples of mainly sound artists who are starting to look at sound, art and/or space. These artists’ backgrounds are mainly from an art or sound education for example, Marco Fusinato who appreciates the cross discipline nature that the subject of sound can easily adhere to. Although immersing himself in the work of Iannis Xenakis, Fusinato is foremost an artist and perhaps understanding the works from a more visual perspective. Sound artists today seem to be more aware of how important space is to sound and are more concerned with the ‘sculpting’ of the already rooted soundscape.

Most writing and research carried out that combines sound with architecture is usually concerned with basic acoustics and noise pollution. Noise pollution has always been seen as a problem within urban landscapes throughout the century and has been addressed in such documents as the ‘Sounder City: The Mayor’s Ambient Noise strategy’, where there are technical reports referring to the consideration of noise pollution in the early stages of design, mainly affiliated with transport. The basic acoustics some architects face are usually in reference to the ‘science of sound’. Although not necessarily concerned with the wider soundscape, acoustical architecture is usually exercised with protecting a specific area from sound and noise pollution e.g. Cinemas, theatres, sound booths.

As well as acoustics, numerous distinguished theatres and venues have been designed with the ‘performance’ in mind however; this is not an attribute that is engrained throughout an architect’s design process and usually it is the consideration of the potential sound or noise within a space rather than the preservation of the ubiquity of noise and sound: ‘Few architects have been listening’ where ‘to listen is to ‘stretch the ear’ while to [actually] hear is to ‘understand’”. Most of the writings about ‘music and architecture’ from an architect’s or engineer’s approach, usually concentrate on the mathematical or rhythmic elements to specific musical pieces or structures. Within this subject, architecture is often described as ‘frozen music’, and further more ‘Architecture, as the music of plastic arts’; Architecture in this sense is described as more of a ‘static’ or formalised notion and there seems to be no concern over soundscape when architecture is suggestively referred to as ‘concrete music”.

The Stretto House, Texas by Steven Holl is an example of architecture which is designed with the intention of mimicking the ‘mathematical theory’ of music. Although fluid in structure it is essentially based on the composer Bartok’s music. In short, Holl took the physical elements of Bartok’s Music for Strings, Percussion and Celesta in particular during the ‘Stretto’\textsuperscript{15}, combined with traditional music against the contemporary and turned it into a piece of architecture. One could argue that the building does not do the piece justice as it seems to be related too much to the visual. There is little writing on the soundscape of the project, which in many ways should be the main point of the design.

Throughout his career Iannis Xenakis, was a successful, composer and architect-engineer working for a period under Le Corbusier in Paris. Le Corbusier encouraged this link between architecture and music and his fascination with musical rhythm became an inspiration for the façade of the Monastery of La Tourette; by playing with the distances between the frames on the West façade, Xenakis gave the design of the window panes and frames more of an asymmetrical appearance. Again, this is an example of an architect basing a design on the rhythm or mathematical proportions which are established in music rather than the fluidity that can be so easily found in music itself.

Figure 2 : Xenakis, I. Diatope – Combination of sound and light, [1977]
Iannis Xenakis http://www.tunedcity.net/?page_id=362
If we look at the other end of the spectrum when relating architecture to music there are many strong examples where architecture becomes the musical instruments that make a physical sound. There is an aural personality that is created by the physical attributes that make up a space. An example of this is the recent project in New Orleans, Dithyrambalina. The city of New Orleans whilst it is known for its magnificent musical heritage, architecture and culture, houses many abandoned buildings. Through this project, a group of 25 visual and sound artists got together to create a ‘musical architecture’ with the intention to provide a playful combination of music and architecture for the surrounding community. The project, although concerned about the spaces, did not feel the need to keep the sound acoustically inside. The building’s structure and materiality are the foundations of sound and therefore we see an example of architecture which is concerned with the production of sound, rather than the capture and silencing of sound which can often be seen in many spaces that are built for ‘performance’. The Dithyrambalina project pushed the boundaries with the already static element of architecture and music and turned it into something that can be physically seen to make sound thus creating visual, audio architecture.

In terms of ‘static architecture’ that produces sound we can look at the ‘Singing Ringing tree’ in Lancaster designed by architects Tonkin-Liu. Located within the Penine Hills overlooking Burnley, this sculpture is designed so that the structure is powered by the howling winds one would find at such a height. Constructed from different scaffolding poles, with varying diameter, the structure is tuned specifically so that they would ‘emit a melodious hum as the wind blows through them’.

Although useful from a musical/performance perspective, there is usually no exploration into the fundamental attributes of the space itself. The writings that are most established when researching sound and architecture are suggested to be at two opposite extremes: 1. the static/concrete perspective; 2. the ‘physical sounding and visual’ perspective. Within this spectrum then since the functionality aspect where noise pollution is the main concern and documents are drafted for the control of and even the extermination of sound itself.

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More often than not, we must look towards others who are not architects in regards to the combination of sound and architecture. Paul Valery, a French poet and philosopher ‘states in Eupalinos ou l’architecte, in this context, music and architecture differ from the other arts in their capacity to surround man entirely’\(^\text{18}\). This interpretation puts forward the idea that ‘both arts deal with space’\(^\text{19}\) and music and architecture have similar attributes in terms of the ‘third element’ which combines ‘mathematical proportions’ with the ‘concept of space’.

In particular, sound artists seem to have a strong fascination with not only noise, but with the space in which noise is held. The spaces studied are usually ones that ‘speak for themselves’ rather than being dampened by acoustic buffers and barriers. For example, in Susan Philipsz’ installation – lowlands (2010), she carried out the piece ‘beneath the bridges of Glasgow [where] the trains trundling overhead provided an intermittent bass rumble that connected the viewer to the space’\(^\text{20}\). These ‘spaces are often seen as in between’ and regularly act as a platform for experimental performance; enticing onlookers and encouraging interaction with immediate context. They can be found in unexpected places, from a back alley, to a tube station or a public house. These particular spaces aren’t necessarily set up or designed for performance. However flexibility of the spaces allows for more of a unique environment, encouraging ephemeral performances and creates ‘extra-acoustic dimensions that enhance the sonic experience’\(^\text{21}\). In a fixed performance venue, artists are limited to the environment they have, which is usually designed to control sound on top of an unnatural soundscape – ‘Traditional concert halls, despite superior acoustics, are … ill adapted for sonic experimentation. Their fixed seating and elevated stages render them unsuitable for presenting not only sound as an art form but also innovative forms of new music’\(^\text{22}\). These designed spaces also create a barrier between the performances and the audience. The ‘fixed seating’ does not allow for the audience’s ability to move and experience a different perspective to the soundscape and the notion of the ‘elevated stage’ creates a certain kind of dominance over the audience that doesn’t naturally encourage participation or new role relationships between performer and their audience and ‘the notion of a completely neutral, silent space frequently remains the ideal.’\(^\text{23}\)

Carsten Nicolais’ Sonic art piece – ‘Wellenwanne Ifo’ takes a look at the transmission of low frequency sound waves onto the surface of a pool of water\(^\text{24}\). Nicolai is concerned with not necessarily main open spaces; but the ‘spaces in between’ which in their initial environment create ‘order/disorder’ and records these spaces as ‘hidden hearings’. One could question whether these types of spaces are more suitable to performance, as any type of sound produced is using the context as a backdrop to the performance. In this sense, sound relates back to the visual and the performance in question becomes more of an ephemeral experience for audience members.
The Belfast Sound map is an online platform which maps the soundscape of Belfast. The research was carried out as an attempt to ‘engage local communities in capturing everyday sound and hence characteris[ing] the soundscape of the city’\textsuperscript{25}. The exploration of spaces through the term ‘soundscape’ inspires one to analyse the space through the sound of the context. For example, at certain times of the year marching bands can be heard from The Ormeau Park in East Belfast. This is combined with the humming, drone of nearby traffic and contrasted with the delicate sounds of the birds singing. This soundscape, without knowing where it is officially recorded triggers our senses to develop an ‘inception’ of this space without actually being there. The fact that it is outside suggests that it is the ‘cities basic natural soundscape’. These public spaces may be seen as ‘in-between spaces’ within the city and as it is outside; the soundscape becomes wider and more diverse. By immersing ourselves in the ‘soundscape’ of a city, we may be able to develop a way of designing around and imagining through our senses.

An important feature to cities in Northern Ireland and the Republic of Ireland, and which could be considered an ‘in-between space’ is that of the public house. Over the years many cities have seen a fluctuation in the number of public houses usually depending on the state of the city in economic growth or social wellbeing. As a thriving city at the turn of the 19th century, Belfast was home to many prosperous public houses. An example of this can be found in a piece of writing from a ‘Temperance supporter’ in the Belfast news-letter – ‘A man from Queen’s Island with wages in his pocket has to pass 67 public houses on his way to the head of the Shankill Road’\textsuperscript{26}. Since then, Belfast has been through a lot of social and economic changes which would have had a strained effect on the number of pubs in the city. However, the few that survived throughout the century have been substantial elements in the incline of Belfast’s growing culture. These pubs have acted as ‘in-between spaces’, in terms of not just the city soundscape but also in relation to the surrounding community. A visit to a pub can more often than not be a spontaneous event and within certain areas of the city centre in particular, there is much evidence of cross community integration. These public houses within the centre have therefore been encouraged and enhanced by in-house music and entertainment.

A type of performance which would usually take place in ‘in-between spaces’, is that of Traditional Irish music. These spaces are not specifically designed for performance purposes however there may have had more of a design intent skewed towards social engagement. A basic example of this would be the conventional Irish kitchen as this is the basis where the unique music was established. The music itself is one which arguably engages as social interaction encouraging others to join in or just listen. It has filtered


through to public houses and more often than not to popular musical venues and theatres.

The particular environments that have been researched are that of the public house. This is because it has a link to the city which is maintained through the sociality of the establishment and can arguably be seen as an ‘in-between’ space. Session environments react differently to their soundscape and if successful may maintain an ambiance that works well with the unique sounds from the instruments. The frequency range of traditional music commonly hits around the middle of the spectrum with most traditional tunes dominating around the keys of D and G Major where D major regarded as ‘concert pitch’. With this in mind, depending on how many players are present and the quality and loudness of each individual instrument, Irish traditional music is usually well suited to corners of small spaces. There in the sound is more contained and each player is able to hear each other. As noted by Daithi Kearney ‘the space of musical performance helps create the context in which the music is experienced and interpreted.’\textsuperscript{27} For example, as Irish Traditional music is fundamentally dance music (therefore background music), there will always be a wide soundscape as it is normally not amplified and is not the type of music which would dominate a space.

5.0 Irish traditional music environments

The aural personality of Irish Traditional music has always been one that is affected by space, whether it is structure, materiality or even the temperature. It is a type of music which is related solely to Ireland yet is played all over the world in many different avenues of space. More often than not, its compositions are also inspired by its surroundings. Many of the songs and tunes composed are about the Irish landscape, and usually relate to specific counties or towns. Therefore this is arguably a way of linking the ‘sound landscape’ of Ireland to its architecture as this is also very true of the spaces – surroundings really do matter.

“[The music arises from] the laws of nature and the law of the land… The laws of nature are the environment and the creatures of that environment since Ireland first began”

Irish traditional music is an ideal example of sound artistry to study when looking at ‘in-between spaces’. Its impromptu nature is the fundamental basis to the tradition and with its strong links to landscape it connects relevantly to architecture and its context.

Between the 1930s and 1970s, Irish music was ‘mostly played in private houses, laying the foundation for today’s familiar session scene’ which would predominantly take place in public houses. Brendan Begley, a traditional button accordion player from Kerry recalls how “house parties were frequent, particularly in the summer months, with the annual flush of visiting ‘Yanks’” and remembers how the sounds “[filtered] through to the bedroom”. The ‘original sessions’ would have also been heard at ‘crossroads. These ‘in-between’ session spaces catered for people from the surrounding towns and encouraged social engagement through dance. Essentially traditional music therefore was very much a social phenomenon to rural Ireland which brought different communities together. The bringing together of different communities can still be seen today but now in a wider global context.

The urban ‘scenescape’ and ‘soundscape’ was not much different to the rural. The ‘scenescape’, the unique setting associated with Irish traditional music was ‘often old and in a state of disrepair’. However, this is what adds to the character of the ‘Irish session’. There has been criticism about the redevelopment of Temple bar in Dublin in which the local pubs, although look the same as they did 50 years ago from the outside, inside have turned into a ‘stage set’ of Ireland for tourist superficiality. Many musicians have accused commercial interests ‘of changing pubs with charm, character and comfortable lived in interiors into tourist superficiality’, however after the change, it has arguably become a vibrant and lively part of the city in which many musicians flock to.

28 Tansey, S (Oct. 1996), Irish music magazine
It is important to acknowledge the soundscape environments in which these Traditional Irish music ‘sessions’ take place; the sound environments are obviously made up of the ‘permanent elements’ such as the uninhabited building combined with the natural, ‘outdoors’ aspect. However when it comes down to the actual ‘performance’ there is a combination of factors at play: the audience members, the performance, the building’s services and general movement all have an effect on the space and the performance resulting in the transitory environment. Scottish geographer Frances Morton, recognises the ‘crucial roles played by the audience as well as the performers in the development of these spaces’, which results in the outward effect on the performance space. It is known that human beings have an absorption coefficient at an average of approximately 3.833 Sabins/sq ft when there is a frequency ranging from 125-4000Hz. This means that these public house session spaces which are filled with a varied number of audience members will never create exactly the same soundscape consecutively; it is therefore harder to actually pin down noise analysis. These ephemeral moments make the spaces of the performances more important and the varying number of people in the room will therefore make the moment unique.

In regard to the performance within a space, ‘live music is one of the most prominent activities through which people express and construct meaning and identity within specific spatial parameters’. Players and audience members identify with the space and may be seen to adapt to it. One could then consider Irish music to be a ‘sound mark’ within a ‘soundscape’ of a space, meaning that within the ‘given sounding environment’ the music is a mark of sound that holds ‘particular cultural or social meaning to the local acoustic community’. In terms of the audience it is a lot about the witnessing of the ‘actual creation of sound, the audible vibrations of a bow moving against a violin string... that is lost in recording’. This relationship to the visual gives the individual performers exclusive personalities which relate from their movements to the sounds and therefore making the space more apparent. One could then look beyond the static approach when initially analysing sound and architecture.


The case studies chosen are all located in the centre of Belfast. They are all within close proximity of each other yet were chosen on the grounds that the immediate contexts within the city are different.
6.1 Madden’s Bar

Figure 5: Madden’s Bar, Sketch Elevation, Scale N/A
One of the most popular traditional music public houses in Belfast is Madden’s Bar (74 Berry Street, BT11). Located in what used to be the Smithfield area of the city with a history dating back to 1751, Madden’s is a very popular place amongst locals and tourists and due to this contains a very relaxed atmosphere\(^{39}\).

Music is played every night in the pub; however the first floor is considered a popular place for traditional sessions due to the layout and generic acoustics. From interviewing local musicians who play regularly in the pub, the general consensus is that the best acoustics are located in the booth to the top left of the plan (session space #1). With an internal volume of 2.3x1.7x2.4m there is a limited amount of room within the booth. Due to this there is probably only room for about six musicians comfortably and with each with their instruments, six players can cause a cramped situation. Arguably this may be considered a good number of musicians for an acoustic session as there would be a successful balance between the instruments.

The materiality of the booth and the surrounding area is predominantly timber and with the backs of the seats enclosing the booth at a height of 1.3m, the area is quite confined. This, combined with the window located to the centre of the booth in question creates a balanced reverberant environment, meaning the instruments being played can more often than not be heard individually at the volume level, blending well into within the wider interior soundscape.

With this in mind as well as presumably the absorption of the timber amalgamated with the reflection of the glass window within the external wall, you could argue that a comfortable atmosphere is created mainly for the musicians in the booth and the punters on looking from the immediate area. The reflection of the glass of the window panes allows for a very small percentage of absorption but a higher percentage of reflection of sound back into the booth. The timber acting as the walls of the booth, reflect most high frequencies and a small amount of low frequencies. Thus, one could argue that this environment is therefore suited to Irish traditional music due to the frequencies being produced, hitting the middle of the frequency spectrum. The combination of frequencies against materiality could then create a balanced, collective sound - “Take a sound from whatever source, a note on a violin, a scream, a moan, a creaking door, and there is always this symmetry between the sound basis, which is complex and has numerous characteristics which emerge through a process of comparison within our perception.”40

However, as it is a tight corner, the sound seems to be contained within the booth and the soundscape of the rest of the room during peak hours over-whelms the acoustic music. In this case, the audience will struggle to appreciate the inherent quality of the music being produced in this space. As well as this, according to bar staff the positioning of the booth becomes rather an inconvenience, as the bar is located directly next to the main opening to the booth and is constantly surrounded by customers queuing for drinks and trying to hear the music.

For these reasons, an alternative session space was suggested. When the first floor bar is busy, musicians located themselves to the bottom right hand corner of the plan (session space #2). The second space is quite different to the initial area as it is a lot more open. It becomes a place where the audience can see the musicians as well as being able hear them clearly. Musicians however would say that the space is not suitable for sessions as it is too exposed. The potential to have more than six musicians, although maybe seen as a positive attribute, creates the possibility that the music will become out of time and hence creating a disjointed quality of soundscape within that environment. The partitions throughout this corner create inconvenient divides between players. Essentially, the partitions will result in two musicians sitting within 300mm of each other to not being able to hear the other individual at all. This unintentionally creates ‘session zones’ within the ‘session scape’ and suggests that the individuals playing have a completely different individual ‘soundscape’ to the person sitting next to them.

Another aspect to the spaces in question would be the sense of interaction between players and audience. Session space #1 can be perceived to be more of an ‘anti-social’ environment as the high backs to the seats create an obvious divide between performer and listeners. Furthermore, the booths act as not only ‘social barriers’, but also sound barriers. By looking at the fundamentals that make up an acoustic wall, there is always a form of absorbent material, followed by a ‘bass trap’\(^{41}\) which is a recommended distance between the absorbent material and the external wall. In light of this, the space that accommodates the table within the booth acts as a ‘base trap’ and creates a sound barrier between the music and the rest of the room.

6.2 Kelly’s Cellars

Figure 8: Kelly’s Cellars Sketch elevation
- scale n/a
Established in 1720, (although experts believe it didn’t open its doors officially until 1780) Kelly’s Cellars is arguably one of the oldest, if not the oldest ‘continually run pub in Belfast’\(^\text{42}\). Its rich history and culture, especially relating to certain historical events, make it a popular attraction amongst tourists, and with locals, many famous people have experienced the drink and ‘craic’ within the bar.

As a former spirit merchant, it used to provide refreshment to the members of the Society of United Irish men whilst they held meetings in secret. Located at 30-32 Bank Street, around the corner from Madden’s Bar, it is the only pub within the vicinity which faces onto Bank Square.

It is highly regarded as a place for its high quality traditional music, making it a good spot for musicians to come and play. Similar to Madden’s however, there are divided opinions about where the best place to play and to be heard is located. To the East side of the bar, there is what would be considered one of the best places to play music in Belfast (session space #1). The space in question is believed to have been used as a ‘large snug set aside for women’\(^\text{43}\) during the 1940s. Directly off this space you are lead either to the rest of the bar through a walkway from the main entrance or to the men’s toilets. The interior materiality of the space is again predominantly timber. However in this case the walls are plastered in a dishevelled manner creating a suggestive, characteristic texture. Above the plaster, just below the timber board ceiling, there is approximately 300mm of black painted, exposed brickwork. The area where the musicians would usually sit is located to the far back of the space. The seating arrangement is combined of built in, ‘booth like’ timber benches upholstered with leather however the area is very open, much like the second space analysed in Madden’s. None the less, the space in Kelly’s is different in a positive sense to Madden’s as there are no partitions which would unintentionally create ‘session zones’.

\(^{42}\text{Gary Law, ‘Historic Pubs of Belfast, Appletree Press, (2002), p 49-50}\)
\(^{43}\text{Gary Law, ‘Historic Pubs of Belfast, Appletree Press, (2002)\}
The space in question is cut off from the bar space by a type of corridor which leads in from the main entrance. The corridor acts as a sound barrier or ‘base trap’ towards the rest of the establishment thus causing the rest of the customers to hear very little of the music even on quiet evenings. Again, we could relate similarities to the acoustic wall theory where two separate entities which do not touch create a completely sound proof barrier from one space to the other. This is not the full case in this sense as the openings within the partitions create ways for sound to escape, however it still contains elements of the same theory.

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The space where performances usually take place is located to the far right of the pub (session space #2). It is more open to listeners unlike space #1 and has a layout which could be seen as beneficial towards players as well as audience members. It is situated right next to a fireplace which one might say reverberates the sound back into the room, emphasising the performance aural personality of the music rather than the establishment’s soundscape. Within this space there is a large amount of beams, however they aren’t very prominent with a depth of only 150mm and approximately 1m apart. However, there is a beam which is measured to approximately 400mm in depth which is located towards the end of the bar (dotted line shown on plan). This would have some impact towards the listeners on the far side as the soundwaves could arguably be dispersed. Another factor that would contribute to this would be the area where the wall extends out. Not only does this block the musicians from view of the audience, but the sound is enclosed in the performance space more so with this architectural element.
6.3 The Duke of York

Figure 11: The Duke of York, Sketch elevation, scale n/a
Situated down a cobbled back alley, veering off from Donegall Street in the heart of the Cathedral Quarter, the Duke of York has established itself as a popular, historic public house and has been of great importance to the city of Belfast. Popular amongst journalists over the years, conveniently located near offices, the Duke of York as an establishment has outlived many of the local publications of the area. It is therefore an example of a public house which has overcome economic and social turmoil, especially during the Troubles. The pub, once ‘home to Belfast’s first boxing club’ situated upstairs in the establishment has been located on the site since approximately 1810. Since then it has undergone many changes under different owners, and managed to overcome turmoil when in 1973 ‘the building took the full force of a massive bomb explosion and had to be completely demolished’. Today, it has been renovated near to what it used to be and maintains a distinctive personality linked to its situation in the city and catering for a diverse musical culture.

Figure 12: The Duke of York, plan of session space, scale n/a

The main area used by the musicians for performing traditional Irish music is located at the back of the pub towards the second bar on the ground floor. The musicians sit in the space which is approximately 3.6x3.3m directly in front of the bar. The bar in question is 1.3m in height and creates an advantage for the musicians, not just in terms of ‘distance to the bar’ but also the enclosure the bar makes. It acts essentially the same as the booth, however the bar staff are not the desired target as an audience. The ceiling within the space is considerably higher than the rest of the establishment. At a height of about 3.2m the ceiling is held up by a beam clad in timber casing which bring the room height down to approximately 2.2m where the normal ceiling height continues to where the audience would gather at 2.4m. With this in mind, the beam is quite an important attribute to the ‘aural personality’ of the session. It acts to compress the tones of the instruments though the tiled floor and metallic ornaments, accentuate the zoned soundscape and with the help of the elongated plan which push the sounds outwards towards the listeners. This again is not an overpowering sound and with an average of about 5 musicians, the performance acts as ‘muzak’ for the punters to converse comfortably.

Figure 13: Sketch elevation of session space in front of bar
Towards the opposite end of the space at the back of an elongation, the walls are littered with quirky trinkets, representing moments in time relating to the history of Belfast and the establishment. Taking this into consideration, there is an abundance of reflective materials that would be prone to emulate the music. These materials would therefore contribute to the soundscape just as much as the interior furnishings and fittings. The fundamental furnishings would also be considered to be somewhat different to other traditional public houses around Belfast. The reflection of sound is not only emulated through the ornaments, but it is also emphasised by the tiled floor and the brass tables. The seating is still wooden and much like Madden’s, some of the seating is formed in booths. The booths, where situated have a lot more room within their immediate vicinity and therefore more exposed if the session were to move to another part of the room.
6.4 The John Hewitt

Figure 14: The John Hewitt, Sketch elevation - scale n/a
Named after the famous Ulster Poet, the John Hewitt is an example of a public house with the all-out intention of housing live music. Officially opening its doors in December 1999, the bar is more of a younger establishment compared to the rest of the public houses that house traditional Irish music. Like many other public houses, it also has the option for amplification and with this; local bands can play quite regularly.

There are two main session spaces within the pub. One of which may be used for ‘personal sessions’ i.e. sessions organised by musicians for their own enjoyment rather than for audience entertainment. This space is located in a ‘snug’ to the right of the bar when entering the space. The other space is located to the left of the entrance on a slight raise surrounded by a barrier. The element that makes this session space different to the rest of the session spaces in other pub

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Figure 15: The John Hewitt, sketchplan – scale n/a
This particular space could presumably be the most public out of the establishments studied as the musicians are elevated up to a height which is not only dominant internally but the players are directly at eye level to passers-by on Donegall Street. This would entice potential custom as well as upholding a specific space for the players themselves. This is particular example of newly designed establishments where the potential for performance is a necessity.

The soundscape within the John Hewitt is one that is affected greatly by the outside traffic. It is the only one studied within this research that is directly situated on a busy high street in the centre of Belfast. This, combined with the high ceilings on a busy night, does not make the pub suitable for an acoustic session and it may be the case that on these more popular nights, it is more suited towards an amplified band. However, as commonly practiced within traditional Irish Music, a Sunday afternoon session is ideal in this establishment as the vastness of the space itself compared to the much more zoned, compartmented spaces one would see in Kelly’s Cellars, Madden’s and the Duke of York creates a longer resonance.
To conclude the research findings, one must take into consideration the popular factors which contribute and characterise these ‘in-between’ spaces. The essential argument being dealt with is the idea that these spaces, although not specifically designed with sound in mind, act as places where sound is a predominant factor. With this, it becomes the immaterial focal point and through the examination of the soundscape and the social entities through the medium of acoustic traditional Irish music, one can consider these spaces as ‘in-between’. One must remember that this type of music has come from an environment far removed from the cityscape: sessions at crossroads and domestic spaces. The domestic setting is still a place for more personal and private performances and for practice. Yet with time, this domestic setting has transferred to the public house and with more professionalism within the music to more organised ‘sessions’ thus the venues become more formal.

By concentrating on the public house aspect of the culture, one of the main aspects to come from this data is that of how much the small details of a space contribute more than initially considered. The measurements of each of the spaces relative to its furniture which in terms of the booths would be a fixed element make an enhancement in terms of the proportions of a space. Combined with this, comes the materiality; the soft wood of the tables and benches create a counter balancing soft resonance to the hard tones which may be reflected from the hard surfaces such as tiled floor or stoned walls. The measurement of openings through ‘static’ elements to a space – e.g. fire places, door and booth openings, contribute to the soundscape by letting certain snippets of sound to escape or contribute to another spatial soundscape. The public house in general is essentially designed for the engagement of social interaction and human enjoyment. The focal point of any given interior is usually the bar area where there would be at least a metre space around the bar for customers to buy drinks. Secondly, the furniture, if not fixed is nearly always orientated around small circular tables or in the case of many of the pubs in Belfast with built in booths where only a certain number of customers can sit. This encourages the ‘casual’ element due to the fact that these booths cannot fit big groups of people within. In contributing to the soundscape therefore the booths disperse the element of ‘human noise’ around the space, which is then sometimes cordoned off into zones by wooden partitions much like that of Maddens. Typically the ‘zones’ become quite different when we look at Kelly’s Cellars and the Duke of York. They both contain spaces which are more open in terms of furniture yet the proportions of the spaces within the partitions establish different, ‘wider’ tones within the soundscape where the resonance of the note may linger slightly longer. There is more of a sense of ‘openness’ when in proximity of the musician’s area and the performance can arguably satisfy both the musicians and the performer in terms of volume within the ‘session zone’ and outside of it.
The location of beams which is a structural, design element to the establishments plays a vital role in the in-between soundscapes. In the Duke of York, the beam acts as an invisible barrier where by the musicians are located on one side, and most of the audience members sit on the other. Although the musicians are on the same level as the audience, there is a natural draw for the audience passed the ‘barrier’ whereby they receive a condensed sound established by the source within the confined space, which is brought out into the openness of the rest of the elongated plan. This could also be related to the step in the John Hewitt, where there is an invisible, but arguably a more established barrier between musicians and audience, yet the soundscape is shared more equally between musicians and audience due to the openness of the rest of the establishment’s interior space.

These are all fluid spaces where movement is a common factor in each study. As there is never really a fixed location for these Irish music sessions, there is always a sense of ambiguity where the situation and location of the performance shifts. This can affect the number of musicians being able to ‘join in’ and depending on the number of musicians the volume of the performance is directly affected. In conjunction with this, the audience can differ in size and concentration. This can sometimes depend on the day on which the traditional session is taking place. The days nearest the weekend would contain more of a dense crowd compared to those during the week. Performers, audience members and bar staff all have different roles to play within the space and a lot of the soundscape is sculpted by the ‘territory’. As the performers are usually located in a corner of a space, it becomes the focal point for the audience, who fill the gap between the performance and the bar, which is specifically for bar staff. By looking back at session space one in Madden’s which is located nearest the bar, it is one where the initial surrounding area becomes densely populated quickly and the audience surrounding the booth in question create a sound barrier as well as a physical one which breaks up the soundscape for the rest of the space. The audience therefore inhabits this ‘in-between’ space between the booth where the session is taking place and the bar. However, here it becomes more of a static space rather than that voiced on the ‘fluidity’ argument put forward for in-between spaces in this research. With this, one must remember that the audience play a vital role in the soundscape and experience of a space. The in-between element is emphasised on busier nights by the situation in which more of the listeners find themselves standing rather than sitting. This may create less scope for movement depending on the density, however the standing nature of the listeners suggests more of a connection between musicians and audience unlike a concert hall or theatre where the audience are seated and on a lower level.

The unpredictability of a space is another ‘fluid’ aspect which could arguably be a catalyst for many other soundscape contributors. Public houses are usually
more popular on specific days e.g. the weekend and specific nights for entertainment. The impromptu nature of traditional music however illustrates the variety for which public houses are renowned. One could argue that the public house remains a casual place to meet socially with no particular sense of destination. In terms of the general soundscape; there is a heightened “ambience” due to the ‘muzak’ nature of the music. There is characteristically no sense of dominance within traditional sessions due to its acoustic nature, but at the same time the materiality of the pub will have created soft and hard moments within the music to produce zones where the music can be heard better than others.

As these spaces are not designed for performance, these ‘moments’ become accidental and reinforce the ephemeral nature of the music and space.

In conjunction to the ‘fluidity’ of space, there are ranging definitions of control within the spaces. These are constricted by the physical, static elements previously mentioned such as the furniture and spatial confinements; it is also established by the social entities surrounding the running of a public establishment. Within the space of the musicians the control lies between themselves, and the size of the session space controls the amount of musicians contributing to the performance. The control of the audience is usually left down to remaining space however, the density usually has to be watched and controlled by the bar staff to make sure the space remains comfortable and accessible.

These spaces are never purposefully designed as performance spaces and therefore examining the spaces gives a whole different meaning. If it is feasible to choose a space (i.e. not busy), the process of choosing is usually down to the musicians preference in terms of the space which comfortably suits their individual instrument as well as the number of musicians. In this case, they would also consider the soundscape and best choose the space which controls the sound of the performance against any background noise. This is a characteristic that needs to be drawn upon within site analysis. One can analyse space through elements such as measurement, movement, density, proportion, and scale yet the careful consideration of soundscape from an unpredictable, acoustic aspect, isn’t often addressed by architects.

By using acoustic instruments to understand an in-between space, one can be drawn to how the space feels with the combination of the visual and the audio rather than one ‘sense at a time’. Essentially, sound and architecture both deal with space and need to be addressed together, not just in terms of performance, but in ways that will affect the simplest of social interaction such as conversation. The importance of sound is also driven (especially in Belfast) by the engagement of local communities. As seen in the ‘Belfast Sound Map’, the public houses which have been evaluated all have attributes which are unique to the city and could be seen as encouraging the engagement of local communities within the city centre. However, in this particular project, the research is only
addressing one type of ‘in-between’ space – the public house. To further the research, it would be interesting to examine outdoor public space which may be used for busking and might contain the similar elements addressed in this research.

The understanding of soundscapes for architects should be a fundamental component within site analysis. Although hard to map, it remains a dominant sense within the human perception which cannot be ignored, especially within social space. By listening to these spaces, one will create a deeper knowledge and understanding of proportions, movement, the human element etc. and by building upon this architecture will be able to attune itself more closely to an urban landscape. By looking at the broader soundscape of the city and zoning into the in-between spaces, there is an understanding of potential stimuli for surrounding communities to use the city centre. In experiencing the ephemeral soundscape a social ‘melting pot’ may be the outcome. One could establish that in-between soundscapes can be unique to a space and combined; they could arguably create a ‘voice’ for specific areas achieving a combined identity unique to place. And by making city inhabitants more aware of ‘in-between’ and wider soundscapes, there may be more of a case or incentive for soundscapes to be one of the forefront considerations within design relative to its context.

The ‘In-between’ element to this research is focused on the fact that these spaces seem to be more accidental in the moments that they seem to create. Older, more established public houses were not designed with performance in mind. However they became public ‘hubs’ for music, song and dance and their soundscapes will remain as long as the space is there. This can be related therefore to other shared space whether they are destinations, or in-between spaces. Although it has been established that it is hard to map sound, there is the potential to read a space differently. It becomes a catalyst for local conversation and listening to the local context and community. The context of a place is made of not only the architecture and landscape, but the cultural sounds of the music and even the accents. In a post-conflict city such as Belfast, this should be a necessary way of understanding context. It poses questions as to what entices certain people to come to such spaces. In order to design for the public we must broaden our horizon by a greater analysis of soundscape; to do so the architect would do well to focus on listening more to the environment.
8.0 Bibliography


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