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# Social & Informal Learning Spaces

Survey Report

Created in partnership with Sodex





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#### About Sodexo

Founded in Marseille in 1966 by Pierre Bellon, Sodexo is the global leader in services that improve Quality of Life, an essential factor in individual and organizational performance. Operating in 55 countries, Sodexo serves 100 million consumers each day through its unique combination of On-site Food and Facilities Management Services, Benefits & Rewards Services and Personal & Home Services.

In the UK Sodexo provides a diverse range of catering, integrated facilities management, and professional property services to a diverse range of public and private sectors. Partnering with over twenty university-sector clients, a key area of focus for the Sodexo universities team is optimising spaces and facilities management services whilst ensuring that students, and their experiences at university, remain central in all aspects of service design and delivery.

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# 1. Survey background and context

AUDE set the brief on managing social and informal learning spaces (S&ILS) in the context of what AUDE's members need to consider in terms of the key space management issues, including metrics and management practices to ensure students are attracted to campus to socialise, undertake group work and individual study outside of formal academic instruction and exam times. To address this, Sodexo convened a team from its operations in the UK and internationally involved in delivering property management services, including facilities management and catering services, to clients in higher education, government and corporations.

AUDE also suggested the following phases and objectives to guide the research on managing and operating S&ILS within the higher education estate:

- Phase 1: Establish a common understanding of the key space management issues with respect to S&ILS within UK universities at both a strategic and operational level.
- Phase 2: The creation of a consolidated understanding of future requirements with respect to S&ILS.
- Phase 3: Identify key management issues and best practice with respect to the operational management of S&ILS.



To inform the development of phase 1, we undertook the following:

- A brief literature review to provide a wider context to the development of S&ILS within the university estate.
- A survey to AUDE members involved at a senior level in facilities and estate management, including follow-up interviews with a number of the respondents.
- A survey to students on their perceptions about the most important attribute of S&ILS.

In completing the above, we identified a range of challenges in operating S&ILS within the university estate, including adapting to changes in demand and providing facilities that are inclusive and are what students want to use. The survey results and research then informed the recommendations made to AUDE in considering the extent to which S&ILS should be provided as part of the mix of academic and administrative spaces within a campus. The recommendations also point to further work to provide estate managers with a consistent set of metrics to measure how S&ILS are utilised, and costs to maintain and operate. Related to this is a need to have a better understanding of the range of design features S&ILS can include to fulfil an intended purpose, notwithstanding that this may change over the course of an academic year. For example, to maximise utilisation it would be ideal to have a flexible/modular space for group study early in the year but then nearer exam time easily reconfigure the space to make it suitable for individual study.

# 2. Situating S&ILS in the university estate

### 2.1 DEFINING S&ILS

AUDE's definition of 'S&ILS' is as follows:

These are spaces that support independent, self-guided study as well as group study, outside of the traditional timetabled sessions. The spaces can vary considerably in terms of furniture and layout (to support different group sizes) and also vary from silent through to active collaboration/noisy environments. One thing that does seem to be consistent is the need for spaces to have good Wi-Fi and be near good coffee. They may or may not be located in traditional library environments; indeed, an informal learning environment is where the student decides to study, and may not be designed as a designated study space at all – instead an alcove or even a window sill – so the location of the space is very important as to what degree it is used as an informal learning space.

S&ILS appears to be a relatively new term but relates to similar terms that have appeared in relation to universities for at least 20 years such as 'informal learning space', 'flexible learning spaces', 'student commons', 'learning commons', 'social hubs' and 'social learning spaces' (for the sake of uniformity in this report, 'S&ILS' is used to refer to these and similar terms).<sup>1</sup>

In breaking down the elements of S&ILS, the 'social' part refers to spaces where students gather to connect and form a sense of community and belonging to their university. 'Informal learning' is defined by Jamieson (2009, 19) "as course-related activity undertaken individually and collaboratively on campus that occurs outside the classroom and does not directly involve the classroom teacher."<sup>2</sup> However, according to Matthews and Walton (2017) there is no agreed definition of informal leaning space. While the semantics may be fluid, they go on to suggest that it would be helpful in the work of planning the physical estate to have an agreed definition as the range of areas across a campus need to be classified to manage the estate effectively, as AUDE members are acutely aware. A key reference on learning spaces for the UK is Paul Temple's 'Learning spaces for the 21st century: A review of the literature' (Temple, 2007). Much of this review remains relevant when reflecting on S&ILS today as it sets the context of how universities have the flexibility to provide both social spaces and informal learning spaces. While it is beyond this scope of the current research, reflecting on Temple's recommendations to understand contemporary best practices in space management and how it interacts with learning and social activities would be revealing.

Critiques of the new pedagogies of learning and the relationship with the estate, such as that by Berman (2019), should also be considered for perspective on how the student experience relates tohow S&ILS may need to be designed to function to benefit a diverse student community.<sup>3</sup> Furthermore, at broad level, as many universities operate within a global context they are influenced by global megatrends and indeed influence trends as producers of knowledge (OECD 2019). The OECD goes on to say that for universities to be relevant and attractive to students, they need to continually review and reorganise their formal and informal learning environments. Of course, the university estate can be guite complex with a diverse range of spaces such as general teaching, laboratories, performance spaces, administration offices, halls of residence and so on. But for S&ILS the important point is that as part of the estate they can also be marketed as an additional reason for students to select a university to attend. As such, planning what floorspace is needed and how best design and manage S&ILS is as important as for all other areas on campus.

<sup>1</sup> While this is inferred from the terminology and literature reviewed in Temple (2007) and a useful overview Morieson, et al. (2018, 15-16), Eigenbrodt (2017, 35) indicated it being an "issue in pedagogical and architectural debates about campus planning and design within the English-speaking word for nearly two decades" followed later by other countries.

<sup>2</sup> This definition, while cited by a number of authors, is clearly linked to the physical on-campus experience. However, it could be expanded to include students who meet off campus to engage in group study/discussion and online activities done from home/anywhere, whether they be university provided learning tools or informal social networks (Morieson, et al. 2018, 16, Cox, Benson Marshall, et al. 2020, 17).

<sup>3</sup> The student experience should also consider off-campus spaces in terms of allocating floorspace to S&ILS. For example, if there are a plethora of cafes, pubs and other social gathering places off campus but adjacent to campus buildings, as is common for inner-city university campuses, there may be a less compelling argument to devote floorspace to social spaces. It has also been observed that students will use whatever space is available on or off campus to engage in informal learning activities, but will gravitate to spaces that have better amenities (Eigenbrodt 2017, 38-39).

# 2.2 S&ILS IN THE CONTEXT OF THE WIDER ESTATE

A useful way to understand the context of each type of space across a university campus estate is along a continuum from the unstructured learning space to the structured, as illustrated in Figure 1. This way of thinking about campus spaces attempts to correlate the learning modality with the type of space, which is helpful in terms of recognising what type of spaces/facilities should be provided to support these modalities. Accepting that AUDE's definition of S&ILS is more flexible than the 'social learning spaces' in this model, it is evident that such spaces are the least structured of the learning spaces but also bridge reflective and active learning modalities. Yet there is a compelling argument for more attention to be placed on physical spaces for informal learning and socialisation (Oliveira, Tahsiri and Everett 2022) particularly if the impact of the Covid-19 pandemic 'disrupting' traditional campus based learning persists beyond the pandemic in encouraging innovation in how students can still be present on campus.



#### Figure 1 Place for learning spectrum (Wilson 2009, 20)

The role of university library, which in Wilson's (2009) view occupy the middle ground of un/structured space, provides an insight into changes in learning and the estate over time. For example, as libraries tend to be managed separately from faculties and the university's estate managers they depend on maintaining their relevance to their customers. But despite the academic library seeming to cast an 'aura' around the expected behaviours within its space (Regalado and Smale 2015, 900), being innovative and flexible to meet student needs in particular is essential for libraries to stay relevant, which they have largely been successful in doing in providing a social focus and informal and formal learning spaces (ODonnell and Anderson 2021). Libraries have, after all, traditionally served as the main site of informal learning spaces by offering reading rooms, private study carrels, rooms for students to access computing and audio visual materials, and other resources such as printing, internet access and librarians (Cox 2018, Barnett and Temple 2006, King 2000).

In terms of spaces provided for self-directed or informal learning, there has been shift in space planning from a librarycentric model to the learning commons (McMullen 2008, 1) which in contemporary language are S&ILS. Whether or not libraries are in competition with the rest of the estate to provide S&ILS, a testament to the library's ability to stay relevant, has been explored in Cox (2022), which includes a proposed model of factors that influence changes in library use notwithstanding the likelihood of Covid-19 having an enduring impact on how libraries are used. Although focusing on libraries, it is reasonable to also consider Cox's (2022) model in Figure 2 in the light of how S&ILS anywhere across the estate are provided, designed and operated as it brings together a wide range of factors quite specific to the university setting that can influence how effective they are in serving the student community.





#### Figure 2 Model of factors shaping changes in library use - arrow size shows relative importance of the factor with dotted line arrows showing likely importance in the next decade (Cox 2022, 13)

A linear model, while useful in placing S&ILS in the context of other facilities that support learning on campus, has limitations in how S&ILS are managed. Instead, the approach used for space management by AUDE advances the model by highlighting the core university functions of research, learning and working and the spaces that fall within these, plus a number of ancillary spaces (Figure 3). In the learning area, AUDE recognises social learning spaces and there is an argument to also consider the liminal spaces as having potential utility for S&ILS activities (such spaces may already be informally used by students but may not be formally managed with this use in mind)4.

<sup>4</sup> See also Temple (2021) who seeks to define these as connective spaces in the physical sense, like corridors, in addition to intellectual/mental spaces as this can provide some insight into how the physical space, educational space and mental space interact, which in the university setting Temple argues needs further consideration. For example, this can mean the form of spatial practices regarding how intellectual and social knowledge is transmitted and relationships are influenced by how a campus, buildings and rooms are designed.



# Strategic A. STRATEGIC PLANNING 2. Visioning and Key Principles Strategy Development Objectives and KPIs 4. Scenario Planning and Modelling **B. POLICY** D. CHANGE DEVELOPMENT ays of working, processes, cult 1. Business case integration 1. Aligning Governance and Decision Making 4. Design engagement 5. Move management & FM integration 3. Determining Space Management Resourcing

#### Figure 3 AUDE space management model

With the 12 spaces in mind, AUDE have also defined the strategic, tactical and operational elements of effective space management, as shown in Figure 4. Here, S&ILS are considered in the broader context of campus strategic planning and policy development that will speak to how the estate adapts to changes in an institution's strategy, technology, pedagogy, social change, student demographic and other demands that influence the design and operation of existing, new or refurbished buildings/spaces. To be effective in managing space, there is a need to have sufficient building data to understand the extent of the estate and the various facilities that are available to support the strategic plan, which can be a challenge for older buildings where digital models have never existed - in such cases it is possible to complete 3D surveys to generate a model. With this information, the operational realities need to be understood to allocate the right space in the right places to support the university's functions. For most spaces this data is available, such as the number of university staff requiring a workspace and room booking information for formal learning spaces. Utilisation of S&ILS, however, have been more difficult to measure and as such manage efficiently and as such forms one of the main discussion points of this research.



#### Figure 4 AUDE elements of effective space management

### 2.3 WIDER INFLUENCES ON THE DEVELOPMENT OF S&ILS

The built environment of the university campus is influenced by other types of building design, such as schools with a basis in child pedagogy, modern office designs and consumer spaces. As will be shown below, there is a logic in this, but essentially university students occupy a liminal space between finishing school and their ultimate destination in engaging in the workforce. Along the way, they, like the rest of society, are influenced by spaces of consumption (e.g. shops, restaurants, entertainment, virtual spaces). It is contended that these spaces frame the creation of S&ILS, whether they are created 'officially' as part of the planned campus or informally carved out by students as individuals or groups making best use of the spaces they can access.

#### Schools

To take schools as the first example, the design and organisation of multipurpose, open and flexible spaces have emerged to support modern teaching methods such as personalised learning, individual pathway planning, team teaching, inquiry approaches, teamwork, problem solving etc. (Arnot & Reay, 2007). More recently, a distinction has been made that it is the school learning programme that influences how the space is configured, not the space dictating or limiting what can be done (Wall 2016, 24). That learning matters, the features designed into a space can influence behaviours provided the user of the space 'reads' these features in the way the designer intended to have the desired behavioural effect (Kvan 2021).

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#### C. MANAGING INFORMATION

1. Measuring and recording 2. Auditing and benchmarking performance Reporting and analysing results
 Presenting relevant narrative
 2d/3D drawn info
 BIM for Space Management

# Operational E. APPLYING CONSISTENCY

mplementing desig ndards inc. furnitur

Customer Service

#### F. ALLOCATION & MONITORING

Tactical

#### Corporate office buildings

Office spaces have also gone through a transformation that in some measure may have influenced the S&ILS, as one AUDE member surveyed indicated. Broadly, the open plan offices that emerged in the 1960s themselves started to 'recubicalise' as seen in the cubical farms of the 1980s. But then the Silicon Valley technology enterprises inspired new ways to create and use office spaces that reflected their identities that saw working collaboratively, which cubicles supposedly prevented, as important to success. Elements such as break out spaces, soft furnishings, plants, games and so on have since influenced contemporary office design globally (K2 Space n.d.). The often cited example of Google creating spaces at its 'Googleplex' campus in Mountain View, California and its other offices for collaboration and relaxation have taken on almost mythical status but is much par for the course in today's office designs (Temple 2021). This said, collaborative space design at least for offices is a balance between creating spaces that appeal to most people versus accommodating individual preferences, and the business decision on the trade-offs in what collaborative behaviours to encourage or discourage, the time for workers to have uninterrupted focus on tasks, and consideration of optimising real estate costs per employee (Bernstein and Waber 2019).

#### **Consumer spaces**

Consumer spaces should also be considered in the mix of influences in the production of S&ILS. This was pointed out by Jamieson (2009, 73) where the social element of design from shopping malls to bookstores incorporating coffee zones have been drawn upon by universities. He goes on to cite as a "benchmark in learning commons design" the Saltire Centre at Glasgow Caledonian University. Here, it is telling that the University used feedback and success of its 2001 'Learning Café' that was "developed around the concept of people and learningful conversation" to provide a social learning environment that recognised learning can also be a social process (Watson 2006, 5). Furthermore, "It was deliberately designed like an open plan office as many of Glasgow Caledonian's students will experience this type of environment in, at least part, of their working lives and need to understand it, and know how to make best use of it" (Watson 2006, 5).

#### For the Saltire Centre's design the creation of

"microenvironments" were seen to provide flexibility in how the space is used for individual study through to group work, which can change in intensity throughout the academic year; but it is telling that the architect described it going "from the monastic to the mall" (Watson 2006, 6). This has a wider resonance, for example, Mackenzie (2016) said: "For many designers, a sticky place means relaxed, comfortable and primary coloured: half

### 2.4 MANAGING AND OPERATING S&ILS

#### Engaging students in their social and informal learning spaces

The importance of student engagement in designing and managing spaces is highly important as it brings their perspective to bear as opposed to assumptions on what others think students need (Morieson, et al. 2018, Ward 2017), In the context of the university, an interplay between the spatial environment people occupy and their behaviours in terms of how they relate to and use a space has been previously acknowledged (Temple 2007) and there is a growing body of research helping to illuminate these relationships. For example, there are number of studies that link student preferences for certain kinds of features that attract them to informal learning spaces, such as the extent of socialisation or individual isolation depending on the student's need at the time through to locational convenience such as proximity to a lecture hall or food outlet (Harrop and Turpin 2013).

Cox et al. (2020, 3) have also sought to understand "the campus as a learning landscape" where they recognise "learning as more than a cognitive activity" as the physical space and physical movement can influence the learning that takes place. In using participatory walking interviews with students at Sheffield University, Cox et al. (2020) found most students when asked to describe places they learn, including where they are taught

#### **Design features**

Although it is beyond the scope of this research to go into detail about the decision making in providing and designing new spaces for S&ILS, it is instructive to highlight design principles and how these are sufficiently robust (proven because they have stood the test of time) in creating the physical learning environment. The Massachusetts Institute of Technology (MIT 2018, 5) have a building design philosophy that was established when its 'Main Group' of buildings were built in 1916 that demonstrate this, which are:

- 1. An abundance of window light and a flood of controlled ventilation and filtered air.
- 2. Maximum economy in energy and time of students and instructors.
- 3. Maximum economy in cost of efficient service in heating, ventilating, janitor service and general maintenance.
- 4. Maximum resistance to fire, decay and wear.
- 5. Maximum economy in cost of building per square foot of useful space.

From this, it seems clear that the design engineer responsible at the time had a clear view that included considering the learning experience in alignment with the indoor environmental quality and costs of maintaining and sustaining the buildings. There

- and are general power outlets in convenient location for powered cleaning equipment and to avoid a tripping hazard (however, battery operated equipment is becoming more cost effective to mitigating this).
- luminaries or cleaning diffusers/fittings and does it require a ladder/elevated work platform, with safety and floor load bearing needing to be considered.
- lifecycle painting, repair, cleaning,



If facility operators are consulted early in the design phase many constraints can be either designed out or workarounds included to lower the time cost of performing maintenance. Given it is possible to rapid prototype and visual designs/ configurations, this is a good investment to test what works rather than go through an expensive upfront design and build process (Bernstein and Waber 2019). In other words: "Maintenance matters: it is not trivial in supporting learning" (Temple 2008, 235).

It is also worth noting Wall's (2016) review where poorly designed spaces are said to affect learning, predicating that there at least needs to be an 'adequate' level of features such as acoustics and comfort of furnishings and the levels of heating, lighting and ventilation to promote learning. A poorly design space will therefore not fulfil educational objectives, which is likely to also be relevant to informal learning spaces. The same can be said for designing spaces that encourage social networking.

#### Creating spaces – example

An example of how a university has grasped the need to change the way it configures its estate is City, University of London where its estate programme for "next-generation learning spaces" has been part of its Strategic Plan 2012 to 2016 and its subsequent Vision and Strategy 2026 (City, University of London 2016). Here, City (2016: 30) point to its plan to continue in its investment in "responsive learning environments, characterised by formal and informal learning spaces and collaborative learning". A number of blogs on the City website provide an insight into how learning spaces have been changing there at least since about 2012. For example, the earliest blog

in 2013 says that City had embarked on a program to refurbish spaces across it campus "as flexible learning spaces enabling interactive, collaborative learning and supporting students to use their own electronic devices" (anise 2013). In remodelling its Drysdale Building's ground floor in 2018 from a very open and austere space, City created a visually interesting layout with a mezzanine level that utilised the available vertical space effectively to create an attractive and usable space with open access PCs (going from 244 to 400+ within the same floor plate (LTS Architects n.d.)) and informal study spaces (Egan 2018) as shown in Figure 1.



Figure 5 Drysdale ground floor before (tl) and after with a new mezzanine (tr) (source: Egan, 2018) and new ground floor beneath the mezzanine (bl) and open spaces (br) (LTS Architects n.d.)

#### Classifying S&ILS within the estate

The international experience is also relevant in understanding how the wider campus management community (and subcommunities, such as academic librarians) has over time come to refine the types of space to better support student needs. A useful overview is provided by Australian-based international architects, Hassell, who reference a publication for space planning in universities released in 2002 where only "Reader space in library" could be considered an informal learning space but by 2009 new guidelines considered "Private study, reader space and collaborative space" and "External cafeteria/easting space used for informal learning experiences' (Hassell 2017, 6) While the reports they cite are available only to members of the Tertiary Education Facilities Management Association (TEFMA),<sup>5</sup> it can be inferred from public documents the extent to which universities, at least in Australia, have been categorising S&ILStype spaces. For example, Griffith University (2017) has used TEFMA-defined room types in its asset data standards where, out of the 24 rooms classified for Information Services (library) facilities, 12 at least can be used by students:

- Reading Room
- Private Study Carrel
- Presentation Practice
- Learning Centre Computer
- Group Study Room
- Collab Zone Internal
- Collab Zone External
- Collab Zone Library
- Quiet Study Zone
- Silent Study Zone
- Research Zone
- Study Hall.

TEEMA publish a number of reports and guidelines for its members only, including the '2020 Benchmarking Report' (see https://www.tefma.com/news/2020benchmark-report) and 'Space Planning Guidelines Edition 3' (see https://www.tefma.com/resources/space-planning-guidelines).

Other S&ILS-type rooms are noted under 'General Facilities' and include Common Room; Canteen/Dining; Recreation/ Lounge; Indoor Sport Facility; and Club/Society. What is not captured in this data but highlighted in a recent TEFMA report is the value to students of external spaces for socialisation and learning (TEFMA 2022, 61).

Given the descriptions used for the various rooms, it is unclear the extent (if any) that rooms where it is specifically stated that they are for teaching, administrative or other activities if they are available to students for informal learning. Hence, the list may only partially capture the extent of areas for social activities and informal learning. In terms of space benchmarking, without full access to TEFMA documents it is difficult to cite allocations. Yet documents produced by some university estate teams include data based on TEFMA guidance, such as 2 to 3 m<sup>2</sup> usable floor area (UFA) for 'Informal learning spaces such as Courtyard areas etc – external' and 3.5 m<sup>2</sup> UFA for 'Laboratory Student Information Commons – Computing' (Edith Cowan University 2021).

In reflecting on defining S&ILS, the TEFMA guidance is an example of what has been evolving as foreshadowed by Matthews and Walton (2017) as noted earlier. What is possibly missing, and this is inferred from the publicly-available documents that quote TEFMA guidance, is how the student experience has been considered in each of these types of space. In other words, what does or should the student experience look like in a silent study zone, study hall etc.? This brings up further questions on, for example, the informal pedagogy and how this informs S&ILS provision and design; student (mis)behaviours; providing supervision or monitoring of S&ILS; and estate operations in terms of maintenance and moves/changes to adapt S&ILS to meet the varying demands of the academic year.

Bringing the above together, it is apparent that universities are able to recognise that flexibility in space design is important to avoid high future refurbishment costs and that design needs to be inclusive of a "wide cross-section of physical abilities and cultural backgrounds, and produce environments that promote inclusivity, equity and diversity" (Edith Cowan University 2021, 13) and other factors such as sustainability and mental health as highlighted previously in Figure 2. The tension between such varying demands and how universities manage the S&ILS part of their estates becomes evident in the stakeholder surveys and in student surveys Sodexo did with YouthSight in 2020 (Sodexo 2020). This surveyed 983 students before March 2020 where 75% said they were satisfied with their life in general but by June 2020 this had dropped to 52% (566 surveyed). In another recent survey between 25 February to 7 March 2022 by the Office for National Statistics (2022) they indicate that 36% of students reported that their mental health and wellbeing had worsened since the start of the Autumn 2021 term, although 36% also said it had improved (25% said there was no change). The question is how S&ILS can be used to attract students to campus and as an avenue to improve the student experience and wellbeing.

# 3. Stakeholder surveys

As the aim of this report is to establish a common understanding of the key strategic and operational space management issues with respect to S&ILS within UK universities, it was prudent to use AUDE's member base to solicit responses to a survey and to also seek the viewpoint from a representative sample of students on their perceptions of these spaces. Both stakeholder groups have different expectations around providing/using S&ILS, as illustrated in the key findings highlighted below.

# 3.1 AUDE MEMBER SURVEY RESULTS

Sodexo deployed a 14-question survey to AUDE's key space management professionals. It included 9 questions with selectable answers, 5 open-ended questions and an 'any other feedback' question. The questions were structured based on Sodexo's prior discussions with AUDE and its own direct experience providing facilities management services on university campuses across the UK and globally.

There were 12 respondents representing different universities from across England, most of whom had head or senior roles in space management or planning. The survey results, which were completed between 28 June and 13 July 2021, are detailed further in appendix 1. Whilst a small sample size, the seniority of the respondents provided a well of estate management and operational experience. This is further supported by a number of the respondents who subsequently provided Sodexo with the opportunity to have follow-up conversations to reflect on their survey response, the comments of which are reflected upon in this research.

To provide an understanding of the current spatial extent or significance of S&ILS, respondents were asked about the sufficiency of S&ILS on their campus. It was clear for 75% of respondents that they were seeing a need to increase S&ILS to meet future demand. Two respondents however considered that they were providing enough S&ILS. That no one recorded there was an excess indicates that their estate strategy seems aligned with demand. In terms of the factors influencing the S&ILS strategy, respondents predominately rated 'gaining meaningful insight on what students want from social and informal learning spaces' as the most important. This also came out in some of the comments on understanding stakeholder's views on how the spaces are being used while considered how flexible or fixed the space could be made, ostensibly to provide some futureproofing. For example, interviewee 1 emphasised that at least for their university the most important element in developing the strategy is soliciting the meaningful insight into what students want as this is a significant gap. This said, they noted that students also don't know what they want that has prompted their university to create a few types of spaces and see how the spaces are being used in practice, such as where students are choosing to linger in study groups rather than purely socialising.

The second most important factor influencing the strategy was 'securing the business case/ financial sign off'. However, ways to measure the performance of S&ILS were rated relatively low – this was also reflected in an open-ended question about the extent of metrics being applied to S&ILS, to which 64% said there were no KPIs. Indeed, interviewee 1 noted that they rely on personal connections and experience to understand what seems to be right in terms of provisioning space like numbers of desks or S&ILS space per student. Two respondents did, however, indicate a metric of library usage, with one noting a ratio of 8 students per seat in the library and 15 students per seat outside the library, a separate but related question asked respondents to consider if their existing space management metrics were appropriate for S&ILS. One out of 12 respondents said they were. When then asked what metrics or KPIs respondents should be considered for S&ILS, which received 6 responses, the following metrics were suggested:

- Student satisfaction
- Availability versus demand (utilisation), also considering activity types
- Space/seats per student ratios
- Ratio of use versus contact hours and engagement with online material.

In attempt to get a metric relevant to S&ILS, respondents were also asked for the study space ratio, to which a range of desks to students was given:

- 1:13 in the library and 1:28 students outside the library
- 1:10 to 1:8 depending on definition
- 1:12
- 1:10
- Or 0.6 m<sup>2</sup> per student FTE.

In recognising the significance of libraries as informal learning spaces, respondents offered a range of answers to the percentage of study spaces in their traditional library buildings. This included one respondent indicating around 50% and one with 90%; 2 respondents said around 80%; and 3 respondents had ranges between 60% and 70%. One of the respondents who reported that 66% of the library was study spaces also indicated that this proportion would decrease to 39% if cafes and social areas were included. A comment from interviewee 1 was that a lot of S&ILS spaces are not necessarily a room as such and could be in an atrium, but with a student looking at a week of 28 hours and 12 hours contact time, they posed "where does the student need to be to do their degree? Not everyone wants to be in the library." In contrast, interviewee 2 noted that libraries offer a range of difference spaces and in general do not have distracting alternative activities taking place.

When asked across a number of questions to rate the extent of the challenge around developing a S&ILS strategy, it was clear that respondents need to have access to relevant data to make informed decisions. This underscores the importance of having suitable metrics that measure the performance of S&ILS. However, stakeholder input on what the spaces should provide were recognised next as a challenge. Some comments also demonstrated why stakeholder input is important, for example where post-graduate study spaces and desk allocation should be differentiated. This is also reflected in some of the answers respondents gave to highlight any trends in the sector will see over the next 3-5 years as they relate to S&ILS.

Most comments from respondents mentioned issues associated with space, such as the desire for flexibility of space (e.g. hybrid forms of learning, work and study space being blended), more space likely being required, and making spaces that students want to be in by providing supporting infrastructure and different modes of use. Estate managers also need to be able to understand the peaks and troughs of activity over the academic year as interviewee 1 mentioned, and then have the ability to then manage spaces with flexibility accordingly to be accepting of, for example freshers week but then shift mode for individual and group study. However, of the 11 respondents who were asked is their university had a S&ILS policy, and if not, if they plan to have one, 8 said they did not while 3 said a policy is being considered. Taken together and in the light of the extent of S&ILS available on campus, engaging stakeholders to understand their needs in using S&ILS becomes more significant and may also be important in establishing a relevant policy position. In spite of this, it was telling that when respondents were asked if they intended to increase provision of S&ILS in the near future based on existing or forecast demand, Four respondents indicated that there was no or an unknown requirement to increase study spaces while the remaining 8 indicated an increase. Two respondents add comments that providing study spaces outside the library footprint was being planned.

Universities engaging students to better understand their needs also featured strongly in the responses selected from 13 options considering the biggest operational challenges in managing the provision of S&ILS on campus. From a total of 47 selections, just over half of selections said that the most important operational challenges involved designing spaces that are: flexible to meet different needs and level of demand; inclusive spaces; extended periods of availability / continual use; and their general cleanliness and presentation. Less important were some of the 'routine' operational issues that normally, with good planning, are provided at adequate levels, such as delivering facility services, security/access control and having provision of washrooms. Three respondents provided free text additions, such as managing behaviour issues, booking group spaces, addressing complex student needs, and providing technical support (presumably for students to connect to digital infrastructure). Indeed, not having enough space, interviewee 1 noted, can cause behaviour issues where groups take over a space and are loud and consequently annoying to others using the space. Designing spaces for multiple uses but without conflicting uses would be a solution. A number of these points were also emphasised in one interviewee 1 highlighting that commuter students (as opposed to those who live in a university or privately-run hall of residence) are a large proportion of the student population at their university but they do not have a place to belong in feeling part of the university. It was recognised that they need a social space to chat with their peers and study particularly when they have long breaks during the day between lectures. Interviewee 1 also said that universities were now actively engaging and consulting with students about space. This view has also been noted in ethnographic research in library use where commuter students have been shown to value having a space to use on campus, specifically a library, where they can undertake their studies (Regalado and Smale 2015). This is backed up by interviewee 1 who commented in relation to the commuter student population at their university that the S&ILS spaces need to have 'a bit of life and lets them linger for a longer time if they want'. Elements of the space these students said they would like to have includes a level of comfort, temperature control and daylight.

Overall, it is telling that the there is a high level of appreciation by the AUDE members surveyed and interviewed for the provision of S&ILS on campus and making them inclusive and useful to students, with most respondents recording a need for more of these spaces. However, a lack of a S&ILS policy would suggest a level of inconsistent definition of the term and what ratio or space metrics would be useful in determining the number of students to S&ILS spaces and what can practically be provided. Even the reported range of spaces in libraries devoted to study is quite wide and without further information and definition it is difficult to meaningfully benchmark.

# 3.2 STUDENT SURVEY RESULTS

Sodexo engaged YouthSight to deploy a series of S&ILS related questions to a sample of undergraduate students in the UK with the aim to receive over 1000 responses representative of gender, course year and university group. The survey was issued within an omnibus on 21 October 2021 and open for a number of days to reach the required response rate with results submitted back to Sodexo on 27 October. The respondents are part of YouthSight's student panel, comprised of over 65,000 current higher education students in the UK. Students come directly from UCAS and are encouraged to sign-up to the panel using their ac.uk email to help ensure validity of responses. They are also paid an incentive for completing surveys.

Student panellists were asked: 'Thinking about Social and Informal Learning Space at University, what do you consider to be most important to you?' The 1014 respondents then selected from number of statements as shown in Table 1 set up as a standard multi select question with results and selection order not ranked. The results shown in Table 1 have been weighted so that it is representative of the UK student population in terms of gender, course year and university type based on HESA population data (appendix 2 includes a breakdown of respondent characteristics).

The average number of answer options selected are referred in the table below as 'number of mentions' where for the total population they selected an average of 4.6 answers. The standard deviation is based on this and for the total respondent population is 0.9, indicating most respondents gave a similar number of responses around the average (although it is notable that the standard deviation for males was 1.2 and females 0.7 with the females completing an average of 4.7 answers compared to males with 4.3). Using the survey results, 42% of respondents selected as most important to them a 'secure, safe environment', however there was a relatively large gap of 23% between male and female respondents with 35% males and 47% females rating this most important. There is also a wide gap between the course year of the respondents, with 51% of first year; 43% of second year; and 33% of third year respondents selecting this answer. Other large gaps between year groups included 'general cleanliness and presentation' where of those that rated its importance 41% were first year respondents compared to 32% and 34% for second and third year respectively, and for second years putting more importance on 'having extended periods of availability' and 'access to drinking water' than the other year groups. While there are, in percentage terms, wide gaps also between some of the other answers as these were less frequently selected the gaps are more difficult to interpret.

For the university groups, the Russell Group tended to have greater importance attached to having 'quiet space', 'sufficient seating', 'individual work spaces', 'appropriate access to power and digital infrastructure' and 'extended periods of availability' compared to the others. However, post-1992 universities put greater importance than the others on 'secure, safe environment', 'general cleanliness and presentation', and 'easy access to washroom and toilet facilities'. Pre-1992 and specialist universities fell in between these, only starting to outrank the others in terms of 'access to drinking water', 'space that is flexible' and 'inclusive spaces that meet a range of needs' although the number of respondents to these answers is getting to be less than half of the higher response answers.



#### Table 1 Student survey results

		Conden		Course					
		Gender		course y	edr		oniversity		
	Total	Male	Female	1st Year	2nd Year	3rd Year +	Russell	Pre-1992 and Specialist	Post- 1992
Total respondents	1014	447	567	356	302	356	283	238	493
Secure, safe environment	42%	36%	47%	51%	43%	33%	37%	40%	45%
Quiet space	40%	39%	41%	41%	41%	39%	45%	36%	39%
Sufficient seating	39%	36%	42%	38%	40%	39%	45%	36%	37%
Individual work spaces	36%	32%	40%	38%	36%	36%	39%	34%	36%
General cleanliness and presentation	36%	34%	38%	41%	32%	34%	35%	36%	37%
Appropriate access to power and digital infrastructure	35%	34%	36%	36%	34%	34%	41%	30%	34%
Easy access to washroom and toilet facilities	33%	27%	37%	33%	29%	35%	30%	33%	34%
Extended periods of availability	26%	28%	26%	23%	30%	27%	33%	29%	22%
Access to drinking water	24%	23%	26%	22%	29%	23%	24%	29%	23%
Group working space	22%	22%	23%	23%	22%	21%	19%	20%	25%
Appropriate temperature	22%	22%	21%	23%	20%	22%	24%	19%	21%
Social spaces / informal seating	21%	18%	23%	19%	24%	18%	21%	20%	21%
Space that is flexible (e.g. can be used for different functions)	20%	23%	17%	21%	19%	20%	17%	25%	19%
Inclusive spaces that meet a range of needs	17%	15%	17%	18%	16%	16%	13%	19%	18%
Bookable space for group study	16%	16%	16%	16%	15%	16%	17%	16%	15%
Easy access to catering and refreshment facilities	15%	13%	16%	15%	16%	14%	11%	17%	16%
Ability to host unauthorised or unplanned events	7%	11%	4%	7%	5%	10%	9%	6%	7%
Access to microwaves	5%	6%	5%	4%	5%	6%	5%	4%	6%
Number of mentions	4.6	4.3	4.7	4.7	4.6	4.4	4.6	4.5	4.6
Standard deviation	0.9	1.2	0.7	0.9	0.9	1.0	0.9	1.1	0.9

# 4. Discussion

# 4.1 CHALLENGES IN PROVIDING AND MANAGING S&ILS AS PART OF THE ESTATE

#### The changing demand on how space is used

The traditional delivery of lectures has been adapting to better engage students and use learning technologies that has seen a shift from the traditional 'sage on a stage' (Barr and Tagg 1995) to when in the early 2000s recording lectures for distribution on CD was considered innovative in enabling students to learn at a time and location of their choosing (Müller and Nulty 2011, 83-84). Today, many students have their own personal computing device to access digital learning resources on- and off-campus (Jisc n.d.). *Online learning*, a book in the popular 'Dummies' series, seems to affirm this change by providing the student with a contemporary guide on being effective in online learning (Manning and Johnson 2021). Equally, in the social sphere of university social groups interactions are occurring online through various social media platforms.

From the AUDE survey it was evident that S&ILS have become a more prominent feature of the campus estate compared to formal learning spaces. The impact of hybrid learning that has accelerated in terms of significance during the Covid-19 pandemic will provide an opportunity for estate managers to reconsider how formal and S&ILS spaces can be reorientated. While students particularly in STEM, arts and performing arts subjects will likely need to be present on campus to use laboratories and studios, for other students, and for that matter their educators, it is clear that hybrid learning may see demand increase for smaller face-to-face group seminars and studying in the library (ARUP 2021). In addition, the value of the campus social experience is expected to still be important, including for international students, even if a large part of learning goes online (ARUP 2021). Monitoring campus occupancy will ground truth the impact of hybrid learning and from that help to inform how the estate needs to respond. For S&ILS, this may also require an innovative approach to providing more 'socially sized' spaces.

#### Providing S&ILS that students want to use

Creating the environment on campus to encourage students to use informal leaning time for both group and individual study could consider relevant design and technology developments in schools, offices and consumer spaces. However, understanding what works best for students while balancing various constraints such as budgets through to the university's strategic intent in providing education and research is a key question that universities need to grapple. It should also be noted that the link between architectural design and learning outcomes has been largely put into practice in schools, rather than universities (Berman 2019). As such, making tangible links between university spaces and the influence of teaching and learning on student academic outcomes seem "elusive", which may be due to challenges in applying an empirically robust methodology to understand this better. A theoretically deeper view suggests a number of aspects around how spaces are constructed within the campus to support or produce knowledge-making in relation to design and ultimately the student experience that should also be considered (Temple 2021). At issue here for S&ILS, given they seem to be increasingly important as hybrid learning becomes normalised, is how these spaces can have their various attributes described/ quantified, such as the nature of the space and facilities available, and to link these causally to positive learning or broader student outcomes as (Berman 2019, Oliveira, Tahsiri and Everett 2022).

S&ILS are as much a geographic experience as any other space people occupy and as such have their own place-making characteristics. While this seems microcosmic in the context of a campus and the city or town it may be located in, for those occupying it, it needs to meet their needs to be considered an effective space, much like any other environment. With this in mind, it is clear from a synthesis of the literature<sup>6</sup> that a 'good space' that facilitates various learning styles and inter alia is a comfortable social and individual space needs to consider at least a combination of the following:

 Physical space – the volume occupied by, or conversely the absence of, solid forms that give a sense of spaciousness, which can also extend to external areas (the original meaning of 'campus' is 'field' (Foreground, 2019)). This also considers the shaping of the space with features such as angles and curves, repetition or not of shapes and any furnishings within the space. By implication this influences the ergonomics of occupying, cleaning and maintaining the space.

- Sensory space related to the physical but considers features such as lighting (natural, artificial 'plain' or mood lighting), ventilation (natural, recirculated), temperature, smell (neutral, volatile organic compounds), texture (feel of the floor, walls, fixtures and furnishings), sound (resonance/echo, dead, external noise intrusion). More broadly, this could also be considered the 'cosmetic space', where " cosmetic quality is more important to [student] outcomes than structural quality" (Wall, 2016, p. 8). However, there is a body of work in office environment concerning open planned offices that would also be relevant to evaluating the sensory aspects of S&ILS and impacts on the learning environment (a useful review is in Sander et al. (2021)).
- Connected space again related to the physical, this is how isolated or integrated the space is in relation to other types of activity and liminal spaces (e.g. lecture theatres, café, academics' offices, laboratories, corridors, lifts, building entrances etc.).
- Serviced space how well the space is maintained and cleaned and how well it stands up to use owing to the durability of the materials/facilities used and provided to occupants.
- Amenity space comfort offered and the extent to which any person using a space has the autonomy and a sense of ownership to change the space (Yu 2021), which also need to consider how inclusive the space can be made for different learning styles, account for neurodiversity, and be accessible for people with disability. This may also be extended to being given the knowledge (feeding back into having the agency) to control the various aspects of the space, such as temperature, noise attenuation, lighting (including colour), where furniture is placed, being able to hide/be visible etc. versus what is automated through building controls and fixed furnishings.
- Occupied space the number of people who can comfortably use the space for the intended types of activities.
- Observed space related to sensory and services spaces, this is the feeling of occupants in terms of being passively observed or overhead by passers-by or being activity surveilled by regular security patrols and CCTV. The inverse is the extent occupants can observe others without themselves being seen. An implication is the extent of security layer covering the S&ILS and how open/welcoming the space is to encourage active use as a deterrent to criminals (Temple 2007, 59).
- Social space the social sense of space that is valued by students as part of a vibrant university campus as a positive means to engage with others (ARUP, 2021) or conversely the extent to which one can be willingly or unwillingly isolated from others.
- Technology space the extent to which there are visible technology connections like power outlets to connect personal and other devices and digital screens to the invisible like Wi-Fi signal, Bluetooth and internet of things connectivity.
- Flexible space the extent to which a space has been designed to be modular and can be reconfigured for different uses, including being expanded by joining adjacent spaces.

 Cost of space – costs to build, operate and maintain also need to be considered as part of the design/creation of such spaces.

#### Adapting to changes in how campus spaces are used

With the virtual sage becoming more like a facilitator in the contemporary personalised learning model with its dependence on technology (Alamri 2020), it is clear in reviewing the literature and understanding the AUDE member survey responses that university campuses are quite capable of adapting. As outlined above, libraries have led the way in this regard as they have sought to adapt to technological changes such as digitalisation of formerly printed materials. There also seemed to be a better sense of the proportion of S&ILS space available in libraries completed to the rest of the campus, with responses ranging from 50% to 90% of space assigned to study spaces. However, one of the respondents pointed out that while 66% of the library was study spaces, this proportion would decrease to 39% if cafes and social areas were included. Indeed, one other respondent asked for a definition of "a traditional library building", which raises the question on considering the purpose and services provided in the contemporary library, which has been discussed extensively in the library planning and operations literature.<sup>7</sup> Possibly aside from libraries, however, there appears to be no formula when it comes to the amount of space per student should be apportioned to S&ILS. This perhaps reflects differing perspectives indicated by Interviewee 2 between university management where the campus manager typically puts a commercial lens to space while library managers tend to take a service-led approach.

With the AUDE survey showing a range of responses concerning classifying and measuring S&ILS, a whole of campus 'S&ILS offer' in terms of the location, types and extent of S&ILS areas made available becomes problematic. On the face of it, this may also make benchmarking between universities difficult given the nature of activities at each university, geographic setting, student cohorts, budgets and other factors are quite different. However, as Walton and Matthews (2017) initially suggest, benchmarking can still be useful to inform plans but then they outline various stakeholder inputs and challenges of evaluating spaces in a valid and reliable manner. But while it may be difficult to undertake benchmarking except at the most basic level, such as measuring the UFA for each category of S&ILS on campus as shown in documents using TEFMA as mentioned previously, it is certainly not beyond the capabilities of estate managers to be creative in their response. For example, what can be distilled from Walton and Matthews (2017) as they work through the issues is that it may be a more useful exercise to build internal benchmarks based on a uniform definition of the different S&ILS areas (i.e. room/space types). In this manner, there would be at least a common denominator across institutions and any institutional variations can be better explained by the particular characteristics of each intuition, such as the stud ent demographic, geography etc. that in turn can be fairly compared among those universities that shares such characteristics. This then focuses practices back on Walton and Mathews' (2017, 156) conclusion where they highlight the importance of understanding the User Experience (UX), or in other words the student experience, in the design and operation of their learning spaces.<sup>8</sup>

<sup>7</sup> Several journals attest to this, for example: College and Research Libraries (US, from 1939), Journal of Librarianship and Information Science (UK, from 1969), The Journal of Academic Librarianship (UK, from 1975) and Library and Information Science Research (UK, from 1987).

<sup>8</sup> There are several insights in space planning and space management systems used routinely in the corporate sector that can be applied to benchmarking and managing S&ILS within the broader estate, as demonstrated in the brief case studies in Appendix 3. Here, there is an emphasis on collecting a wide range of data and ensuring the building user experience, along with using the expertise of estate managers in looking at the future estate, would likely be relevant.

Feeding into a level of uncertainty in what exactly to plan for, a study made by the architectural firm Hassell (2017) across 8 S&ILS in Australia, Singapore and the UK, used full day observations and student surveys that indicated an intermixing of focused study work whilst simultaneously social and discussion group activities are occurring in the same spaces. For them, they saw it as "impossible to delineate the activities on a floor plan accurately" as students seemed quite capable to adapt by using headphone and to shift furniture around, where possible (Hassell 2017, 11). Several studies referenced in May and Swabey (2015, 771-772) concerning libraries add another layer of uncertainty to how students use space, as students have been observed to make use of spaces provided for informal learning and social activities both as intended by design and in unintended ways. When the Biological Sciences Library was redeveloped at the University of Queensland where new spaces were created for group study and social interaction, the post-occupancy survey found that while these spaces were appreciated, an unintended consequence was that the guite study spaces of the neighbouring Law Library were used more (Webster 2009, 35).

To accommodate both intended and unintended uses would suggest further research is required to better inform where to locate S&ILS across the campus and their specific configuration (or classification) to keep most students happy. In addition and to broaden this, the design and ongoing operation of S&ILS should draw upon interdisciplinary perspectives and interdepartmental collaboration to get the best outcomes (Eigenbrodt 2017, 44). This including working to share spaces between departments rather than building new spaces, which is something TEFMA suggests has been a feature across a number of Australian institutions in the past few years (TEFMA 2022). With this in mind, a wider stakeholder net should be cast by estate managers to solicit input into the broader campus's S&ILS strategy, including academics with specific expertise in areas such as education, technology, ethnography and behavioural psychology in addition to faculty/departmental leadership and librarians who have an acute appreciation of how students use spaces for study and socialisation. Looking at this strategically may also open up parts of the estate for temporary S&ILS to address busy times of the year, such as exam time where individual study spaces are in higher demand but when teaching spaces are infrequently used. At least by providing movable furniture and having access to power points in teaching rooms then reconfiguring rooms is less time consuming.

Maintenance also needs to be considered, such as high usage areas that suffer a comparatively large amount of wear and tear or are 'battered' by the sheer number of users as interviewee 1 noted. As such, refreshes of these areas should ideally be considered as a programme of activities to keep the areas fit for use, pleasant and attractive to students. The broader asset lifecycle strategy should also consider the budget for technology updates and innovative furnishings that keep spaces relevant to the students using them.

#### Planning for demand for S&ILS

Without sound benchmarking of S&ILS, a key challenge does seem to be how much space is required for S&ILS. Yet change is broadly occurring nonetheless, with the flux occurring across campuses seemingly to be captured in what interviewee 2 mentioned where the quality of student space has gone up while the quality of academic space had gone down. On face value, this could mean lecture halls and other traditional formal learning spaces become less important (and indeed providing academics with exclusive office spaces). However, as a counter point not often captured in narratives, for the moment at least students in STEM, arts and performing arts subjects in particular still need to use laboratories and studios for hands-on learning activities, although there also seems to also be a role for S&ILS in these learning environments, as noted by Temple (2008, 233-234).

Also relevant to the demand on the estate is the potential in the growth of degree apprenticeships where apprentices only need spend at least 20% of their time in study or training, which could be campus-based and or online, with the rest of their time of at least 30 hours per week off-campus (Hubble and Bolton 2019, 5). Interestingly, in terms of how a focus on supporting students in apprentices if reflected in space design, and possibly in what needs to be included in a demarcating what a S&ILS is, is the example of the Passmore Centre at London South Bank University that they describe as a "business and networking hub for professional and technical education" that includes "spaces for employer meetings, community engagement and teaching facilities" (MillionPlus, 2019, p. 17).

It is clear that there are a number of space classifications and factors, including the geographic catchment of students in various disciplines, that can make consistent benchmarking of space categories across universities difficult. This makes it sensible to evaluate the validity of those benchmarking tools that exist such as those used by TEFMA<sup>9</sup>. However, to make these or any internal benchmarks a university may design useful they should consider being linked to existing higher education performance in terms of research outputs, student outcomes and similar produced by organisations such as the Higher Education Statistics Agency and Office for Students.

While planning space for different activities may remain difficult, the stickiness of the campus as a place to be look to remain: it was observed during the first year of the Covid-19 pandemic in survey data from European students cited by the OECD (2021, p. 4) that students have a strong desire to be on campus to experience social life and collaborations yet there seems an inevitability that the flexibility afforded by learning through digital platforms (including alternative pathways to qualifications than the traditional academic degrees, including 'micro-credentials') will become normalised.<sup>10</sup> Yet as both the OECD noted and in a comment by Interviewee 2, there is a tension between on and off campus yet to play out where Interviewee 2 pointed out that Covid-19 revealed a number of gaps, including the extent of online resources was found

9 As noted elsewhere, TEFMA picks up on several types of informal and social areas on campus although it may not be as fine-tuned to capture the full variety of S&ILS. Another rating system is the 'Learning Space Rating System' by Educause (https://www.educause.edu), however while they focus on formal learning spaces they have not included informal learning spaces in their latest edition "due mainly to the wide variability of informal learning space contexts".

10 The OECD (2021) in referencing a number of studies noted the difficulties a significant number of students and teaching staff found in the quality of the online experience to be less than desirable, including accessibility to digital resources, and negatively impacted the motivation and wellbeing of some students and staff. However, they also point out a number of higher education institutions that put in place initiatives to counter these and other negative effects on students. If these initiatives endure and become best practice, as the OECD (2021, p. 37) suggest, it is conceivable that how space is managed on campus will need to adjust (e.g. more online learning delivered for non-practical based courses could free up space for other purposes, including S&ILS that may increase in their prominence as useful locations for students to have a campus experience).

wanting and that the digital enablement of students could not be presumed at comprehensive. While this first point is not directly linked with S&ILS, the second may illustrate the need for universities to maintain or enhance IT resources in S&ILS. IT support should also be considered as more than just making computing devices and digital infrastructure available, although in the student survey while it was the third most important answer, for the AUDE member survey only 3 out of the 47 picks rated access to digital infrastructure and power as the biggest operational challenges in managing the provision of S&ILS. This contrast will need to be resolved to better understand the dimensions of student access to digital infrastructure to pursue informal learning.

Other practical challenges also exist in how S&ILS can be managed as part of the estate. For example, Interviewee 1 commented that at their university the ability to books rooms centrally was largely impractical as the faculties preferred to maintain control; this is guite justifiable where students need access to specialist spaces like a psychology laboratory or media editing suite. An example provided by Cox et al. (2020) demonstrates the differences in how some students used spaces, such as the architecture students who found their department's studio space useful for collaboration on assignments. How they book this space or if non-architectural students could access the studios was not mentioned. Interviewee 1 also said that by enlarge S&ILS are not regulated at their university and while they reported that having 'yet another system' for bookings would perhaps be burdensome, there are examples of such systems working and being able to release prebooked rooms if not subsequently occupied.

#### Table 2 Student survey preference results for types of space

		Gender		Course Ye	ar		University Group				
	Total	Male	Female	1st Year	2nd Year	3rd Year +	Russell	Pre-1992 and Specialist	Post- 1992		
Individual work spaces	36%	32%	40%	38%	36%	36%	39%	34%	36%		
Quiet space	40%	39%	41%	41%	41%	39%	45%	36%	39%		
Group working space	22%	22%	23%	23%	22%	21%	19%	20%	25%		
Bookable space for group study	16%	16%	16%	16%	15%	16%	17%	16%	15%		
Social spaces / informal seating	21%	18%	23%	19%	24%	18%	21%	20%	21%		
Space that is flexible (e.g. can be used for different functions)	20%	23%	17%	21%	19%	20%	17%	25%	19%		
Ability to host unauthorised or unplanned events	7%	11%	4%	7%	5%	10%	9%	6%	7%		

# 4.2 THE STUDENT VOICE

#### Student preferences for different types of space

The student survey data has enough refinement to understand the level of importance students placed on the types of physical space they have a preference to use, namely: individual work space (36%), group working space (22%) and social spaces/ informal seating (21%). Some of the other attributes posed in the question set can link to these as well, as shown in the groupings in Table 2. The remaining questions as listed in Table 1 can be considered as 'universals' applied to all these spaces, for example, appropriate access to power and digital infrastructure (AUDE member interviewee 2 noted that top requirements in spaces from their perspective in engaging with students included having Wi-Fi and power for phones). What this perspective reveals is the relative importance students attribute to individual work spaces and when taken together with guite space it is almost double that of both group working and social spaces. The question posed to students to rate the level of importance attributed to each question does not, however, reveal if the student has a need for more or less of such spaces (i.e. the student my feel having a quite space is important but not if a quiet space is available or not).

When looking at preferences for different types of S&ILS, it is important to recognise the responses of the different year groups, as research has suggested that at least for new students who are transitioning into university they are at a developmental stage in becoming responsible for their learning and living independently (Thompson, Pawson and Evans 2021). Although the study by Thompson et al. (2021) involved 11 first and second year participants, one of their findings supported previous research on the importance of establishing new social networks with their peers, with only spatial aspect raised in their paper concerned students living in residencies where establishing these networks seemed to be easier. If such a finding is extended to the campus, then it is notable that in the student panel survey that first year students tended to have a slightly higher preference at 23% for group working spaces than second (22%) and third year students (21%). However, this is somewhat confounded when looking at social spaces and informal seating areas where the second year students reported the highest preference (24%) compared to first (18%) and third year students (18%). It may be expected that first year students would have had a much stronger preference for social and group spaces, if indeed creating social connections outside residences was important. Perhaps more emphasis on providing suitable social spaces would make these areas more visible to new students and give them an incentive to use them, thus helping them to establish their peer networks and having an easier transition into university life.

The annual National Student Survey (NSS), which is completed by around half a million final-year students (National Student Survey, 2021), provides statistics that indirectly reference informal learning facilities. Using the NSS data for England for fulltime students only from 2016 to 2021, these questions are shown in Table 3, noting that in 2016 the question set was slightly different and did not include 'Learning community'. As stated by the NSS, figures used in the table represent percentage of respondents who 'definitely' or 'mostly' agreed with the question. Overall satisfaction is also included in the table for context. Added into the table is a percentage drop, which is calculated based on the average of 2016 (or 2017 in the case of learning community) and the 2021 result.

What the NSS data shows, accepting the across the board decline in 2021 likely due to the Covid-19 pandemic, is that for learning resources there has been a decline from 2016 in the IT resources and a smaller decline in library resources (inclusive of leaning spaces, which presumably is analogous to informal spaces) although there we an increase in accessing course-specific resources when student require. For the learning community, while there was a small trend decline in satisfaction, feelings of being part of the community are less than overall satisfaction (which has also been trending down) although the opportunities to work with other students is just higher than overall satisfaction, although is also trending down slightly. While further insight would be useful, it seems reasonable to attribute at least part of this to students having opportunities to collaborate outside of formal learning spaces. Indeed, when the pandemic's impact is evaluated, apart from a 16% decline in satisfaction for a question on student voice, all the learning resources and learning community questions show the most substantial set of declines out of all other questions. It is likely that this would translate to the importance students attribute to having the physical space and infrastructure on campus to undertake self-directed learning and interact with their peers; S&ILS can provide this space.

#### Table 3 NSS 2016 to 2021 for England (source: (Office for Students 2021)

	2016	2017	2018	2019	2020	2021	% change
Question	%	%	%	%	%	%	
Learning resources							
18 - The IT resources and facilities provided have supported my learning well.	87	83	83	83	83	71	-15
19 - The library resources (e.g. books, online services and learning spaces) have supported my learning well.	89	87	87	87	87	75	-14
20 - I have been able to access course-specific resources (e.g. equipment, facilities, software, collections) when I needed to.	83	86	87	87	87	73	-16
Learning community							
21 - I feel part of a community of staff and students.	n/a	72	70	69	69	59	-15
22 - I have had the right opportunities to work with other students as part of my course.	n/a	86	85	85	84	75	-12
Overall satisfaction							
27 - Overall, I am satisfied with the quality of the course.	85	84	83	83	82	74	-11

#### Importance of diverse and inclusive student consultation

One of the strongest sentiments that have emerged from the AUDE member survey and comments by interviewees is that student consultation is highly important to consider in the future construction and use of S&ILS. It is prudent, however, for such consultation to come with a proviso – the consultation process will need to appreciate that students will bring a range of perspectives depending on, for example, their discipline and methods their university uses to engage them (Walton and Matthews 2017, 148-149) and that not all students will have a 'pedagogic voice' that is equal (Arnot and Reay 2007, 321-322). Indeed, as interviewee 2 noted, the decolonisation of the curriculum and disparities in access to technology used for learning activities would suggest that student consultation needs to enable people from diverse backgrounds to recognise themselves using a S&ILS space rather than be unilaterally fitted into a space defined by a non-representative group. Interviewee 2's insight builds on a range of voices in the literature that goes back some years but has been put into sharp focus given the Covid-19 pandemic and social justice movements.<sup>11</sup> Put another way, S&ILS should be designed from the outset to be inclusive social spaces and pedagogical spaces to make self-directed learning effective, although this is said with caution as a causal relationship between design and such an outcome is not well as noted previously. This may well mean several spatial typologies may need to be provided that (de) emphasise certain design features typically included in S&ILS (and for that matter the campus more widely). This may also then need to consider the impact on operating and maintaining a range of spaces rather than a simpler set of areas/room types.



11 For example, the OECD (2000) in the context of many countries at the time forming policies around a knowledge based economy recognised the 'digital divide' and inherent inequalities this may produce into the future, which seemed to be realised during the pandemic (Office for Students, 2020; Barber, 2021). Social justice issues leading into inequalities in access to and outcomes in education has similarly been discussed for many years (see for example Macedo (1994)). However, despite various theoretical treatments, there appears to be a gap between the pedagogic methods used to convey/generate knowledge and the physical spaces where formal teaching/learning occurs. Partially filling this gap however is in Gravett, Taylor and Fairchild (2021) where they discuss important issues in higher education around socially just pedagogies, relational pedagogies and touch on the idea that "[s]paces physically represent institutions' expectations and care for their students, materialing values regarding learning and they shape our relationships and learning experiences." Even with this contribution, that material spaces matter in formal learning seems under researched. The opportunity for estate managers is to explore further the theory and examine in practice how S&ILS (and for that matter all spaces) can be created and better designed to contribute to an inclusive campus.

Interestingly, while the student survey is implicitly a form of consultation, when it came to preferencing the answer 'Inclusive spaces that meet a range of needs' it only attracted 17% of the mentions. Of these, there were just over 10% more females answering this than males, while in the university groups it is noticeable that around a third less Russell Group respondents thought this was important compared to the other two groups. Reasons for the lower number of mentions of this answer cannot be directly discerned from the data but the definition of 'inclusive' could have been too subjective for many respondents as it can range from meaning having wheelchair access to spaces free from symbols of colonisation to spaces that cater to neurodiverse students.

# 5. Recommendations for AUDE in managing S&ILS

### 5.1 MANAGING S&ILS AS AN ASSET

AUDE members will recognise that space is an asset and how it is managed to best accommodate a diverse range of user needs requires a flexible asset-driven model. With this in mind and S&ILS as the focus, the illustration in Figure 6 draws upon the current research to highlight key links between asset management inputs with operational requirements to keep S&ILS relevant in serving students' needs. Here, the audit of S&ILS spaces is about identifying what is currently on campus and the condition of assets. With this, each space may be categorised in a uniform manner, ideally using definitions agreed by AUDE members to enable interuniversity comparisons and benchmarking. From there, the operational management strategy can be better defined to respond to how S&ILS are being used and their ongoing maintenance requirements and budgets. More broadly, this enables estate managers to take a view on the types of spaces in demand across campus and where opportunities may exist to refurbish or re-purpose space This will also be informed by stakeholder engagements, which should occur at several times during the academic year as there will likely be changes in how spaces are used or preferred to be used.



#### Figure 6 Key aspects in supporting the creation and maintenance of S&ILS

From the structure above, there are a number of recommendations presented below to provide guidance to AUDE members to improve S&ILS as part of their respective university's estate strategies and operational plans. Ultimately, it is hoped that AUDE members will take this work further towards sharing common S&ILS definitions and methodologies to quantify utilisation within the broader estate. At least by agreeing a consistent approach it will be a small step in the wider challenge noted by Oliveira, et al. (2022) to link the types of spaces within the estate to student outcomes.

# 5.2 RECOMMENDATIONS TO MANAGE AND OPERATE S&ILS

#### Recommendation 1 – Categorising types of S&ILS

current S&ILS A S&ILS 'typology' will describe the type of purpose-built spaces available and their linked assets such as furnishings, The demand for new or redesigned S&ILS will need to consider internet availability, refreshment stations, PCs, printers etc., the wider estate strategy, budget and expected demand as and enable S&ILS to be included in the gross internal area (GIA). informed by the student experience and occupancy data. This will provide the basis for estate managers to use consistent Where and how the spaces are designed – their structure and ratios, such as number of students to chairs, S&ILS spaces as a form - should be informed by the values and requirements of proportion of formal learning spaces, or proportion of the total the university and its community of stakeholders, as noted in estate's GIA. This then leads to reliable benchmarking and in recommendation 2. understanding operating costs amongst other financial metrics.

To scope design options, AUDE members would benefit from Furnishings, layout and design features need to address various exposure to the latest design trends and efficient use of assets needs for self-directed/group learning and social networking that have been successfully implemented in the corporate (including networking with external parties, such as potential world. This requires specific architectural, engineering design employers) – student consultation needs to be an input to and asset maintenance input to understand what is feasible design spaces that are inclusive. and financially prudent over the lifecycle of a building/space and related assets.

Flexibility and future proofing needs to be considered in the S&ILS typology. At a basic level, this means having spaces that can be easily and inexpensively reconfigured at different times of the year or over the long term should student needs change. However, the extent to which furnishings can be fitted to be moved easily needs to be balanced with giving students the capability to shift furnishings whenever they wish as this would then need porters to be assigned to frequently reset the space.

The typology, which ideally should be designed to be consistent across AUDE members, will enable the definition of S&ILS to be revised to better differentiate them from other spaces. For example, if the definition is contingent on seating being available in a space, then the other spaces a student may use for socialisation or informal learning such as a window sill along a corridor can be categorised as a liminal or other type of space. From this, AUDE's elements of effective space management (noted in Figure 4) can be systematically applied as for other parts of the estate to improve how S&ILS are managed and provide a useful 'service' to students that encourages them to stay on campus outside of lesson and exam times.

#### Recommendation 2 – Collaboration between university departments/faculties

Good collaboration between departments and faculties should enable S&ILS to be provided, managed and operated in an optimised manner. Consideration can be given to sharing spaces between departments/faculties where it best serves the overall student need and to creating flexible teaching spaces that may be quickly reconfigured to study spaces during exam times should there be demand.

Collaboration also presents the possibility of spurring further investigations on how S&ILS provide value to the university in the context of supporting students in their self-directed learning and socialisation opportunities on campus. For example, engaging academics to research relationships between how S&ILS are designed and operated to achieve informal learning and socialisation outcomes should be fruitful in creating spaces that are inclusive and socially just for a diverse student community.

# Recommendation 3 – Creating new and or redesigning

#### Recommendation 4 – Defining a clear operational strategy

With several types of S&ILS provided, which may include flexible spaces that change in usage over the course of a year, an operational strategy will be necessary to manage the budgets for labour and parts/consumables for planned and reactive maintenance, cleaning, security and reconfigurations through to refurbishments and lifecycle asset replacements. Interleaved with this is the robustness of furnishings, fixtures and fittings, particularly in high use areas and where it is known that students may move or break items, and hours of operation because S&ILS open for long periods or for 24 hours will need to consider providing security cover and the best times to avoid disturbing students to undertake maintenance/cleaning and reset furnishings

The proximity of refreshment facilities should be considered, such as vending machines or kitchenettes, particularly if a S&ILS is isolated from existing food outlets on campus or on nearby streets. New ways to deliver food and beverages to students can also be considered in improving their 'S&ILS experience'.

Regular condition audits of facilities would need to be programmed into the management schedule to ensure the quality and safety of S&ILS is upheld. Combining such audits with the occupancy data will help in getting the assets to work harder.

The estate risk management plan should consider the operational needs to quickly reconfigure or close S&ILS should Covid-19 or similar public health emergencies require reducing indoor occupancy rates.

# Recommendation 5 – Consulting students on their needs and experience

Surveys and ethnographic research into how students 'consume' S&ILS will provide estate managers with a deep understanding of how these spaces can be improved to increase student satisfaction. This would take into consideration the design of physical and sensory elements, access to technology (particularly for students without personal computers), wellbeing, mental health, socialisation benefits, and self-directed and group learning outcome benefits.

Engaging students through surveys, which may include focus groups, individual interviews and direct observations, will ensure views are considered in the design/operation across a broad demographic; different year groups and postgraduates; and commuter and residential students. Engagement activities should occur at different times of the year to understand how demand on S&ILS may change. Questions should cover current perceptions on the quality/usefulness of S&ILS plus preferences on how much and what types of space and facilities students prefer. Consideration should also be given to providing students with a way to give their feedback at any time on their S&ILS experience.

#### Recommendation 6 – Sustainability requirements

Capital projects to develop new or refurbish areas for S&ILS will need to include firm environmental performance requirements in the design through to the materials and furnishings used, construction waste management, room/building energy performance, recyclability of materials at end of life etc. Requirements should also be developed to address broader social value issues, such as sustainable sourcing of materials through to assurances around modern slavery.

During operations, monitoring energy consumption and carbon emissions where submetering or a reliable estimate can be made may be necessary according to the university's policy.

#### Recommendation 7 – Utilisation metrics and occupancy status

Measurement of S&ILS utilisation across the day to capture peak/low times as a ratio of seats used/unused or number of people in the space will provide insight into how useful the space is in practice and inform the operational requirements.

Occupancy counting methods will need to be applied consistently to get useful data (methods may include physical counts, door counters, room proximity sensors, room thermal AI sensors).

From the utilisation data, students should ideally be able to use an app to book certain spaces or at least be able to view in real time the occupancy level for a room, if not the predicted occupancy for an hour/day in the future. This will help students plan their time and avoid wasting time travelling into campus to use a space when it is already fully occupied.



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# **Appendix 1: AUDE survey** results on social and informal learning spaces

# SURVEY CONTEXT

As part of Sodexo's strategic partnership with AUDE on a project to review the key space management issues associated with social and informal learning spaces (S&ILS), we deployed a 14-question survey to AUDE's key space management professionals. There were 12 respondents representing different universities from across England, most of whom are in department head or senior roles in space management or planning. The survey results, which were completed between 28 June and 13 July 2021, are presented below along with an interpretive commentary.

### 1. PERCEPTION ON THE EXTENT OF S&ILS

We asked: "When thinking about social and informal learning spaces my university has:'

Question	Responses
insufficient social and informal learning space for our estimated future demand	7
an appropriate level of social and informal learning space at this time	2
an inability to predict future requirements at present due to uncertainty in the sector	1
an excess of social and informal learning space based on estimated future demand	0
Other	a requirement to increase the amount of social learning space over the next 5 years.
an appetite to deliver social and informal learning spaces but no plans in play just yet.	nage
Total responses	12

When considering the context of the 'other' responses, it is clear that 75% of respondents were seeing a need to increase S&ILS to meet future demand. Two respondents however considered that they were providing enough S&ILS. That no one recorded there was an excess indicates that S&ILS are currently, at least, are a valid part of the estate strategy and in demand.

# 2. FACTORS INFLUENCING THE S&ILS STRATEGY

We asked to rate a number of questions on the level of importance: "When thinking about developing a social and informal learning space strategy for your university please indicate which aspects are most important on a scale of 1 to 7 with 1 being 'not important at all' and 7 being 'extremely important'." Respondents were also able to include free text on other factors they felt important. The results were:

Gaining meaningful insight on what students want from social and informal learning spaces	3	5	5	5	6	6	6	6	7	7	7	7
Securing the business case/ financial sign off	4	5	5	5	6	6	6	6	6	7	7	7
Developing a strategy that is compatible with existing space/property constraints	3	4	4	5	5	6	6	6	6	7	7	7
Determining the optimum allocation of space between individual study and group learning	2	2	4	4	5	6	6	6	6	6	7	7
Obtaining relevant data to make informed decisions (e.g. space utilisation data)	3	4	4	5	5	5	6	6	6	7	7	7
Obtaining a clear consensus from all stakeholders on what social and informal learning space should deliver	3	3	3	3	5	5	5	6	6	7	7	7
Accurately predicting operating costs	1	2	3	3	4	4	4	6	6	6	7	7
Obtaining meaningful predictions on future enrolment levels	3	3	4	4	4	4	4	4	7	7	7	7
Understanding how to measure the performance of social and informal learning space	2	3	3	4	4	4	4	5	6	6	6	7
Determining the right digital/technology solution within social and informal learning spaces	2	3	3	4	4	5	5	5	6	6	6	7
Obtaining accurate and relevant benchmarking data	2	3	3	3	3	4	4	5	5	6	6	7
Additional factors mentioned by respondents included summarised): - Talk to institutional stakeholders intensively, especially libraries.												
Future is hard to predict, but a blend of space between	• Determining how flexible or fixed the space needs to										ds to	

- work, study, informal learning, social and general teaching with an ability to flex across these areas to futureproof our campuses.
- Determining a budget for refreshing the space in x years' time.
- Emphasis should be put on studying how different groups of students actually use these spaces and to talking to students and academic staff directly about choices to be made.
- Determining what management controls of the space, . booking rooms, technology, behaviour etc. need to be considered and built into the business case.

be all year round, and where to store furniture from flexible spaces.

From the responses, it is evident that student and other stakeholder insight and data on what S&ILS should ideally provide ranks high, along with justifying this with a business case that supports the estate space strategy.

# *3. CHALLENGES IN DEVELOPING THE S&ILS STRATEGY*

We asked to rate a number of questions in order of 'challenge': "When thinking about developing a social and informal learning space strategy for your university please indicate which aspects are most challenging on a scale of 1 to 7 with 1 being 'no challenge whatsoever' and 7 being 'extremely challenging'." Respondents were also able enter free text and respond to the related questions "Are there any other aspects of developing a strategy for social and informal learning spaces that you consider challenging or noteworthy?" The results were:

Obtaining relevant data to make informed decisions (e.g. space utilisation data)	2	3	5	5	5	6	6	6	6	7	7	7
Understanding how to measure the performance of social and informal learning space	4	4	4	4	4	5	5	6	6	6	6	7
Securing the business case/ financial sign off	2	3	3	4	4	5	5	5	6	6	7	7
Gaining meaningful insight on what students want from social and informal learning spaces	2	2	3	4	5	5	5	5	6	6	6	7
Obtaining a clear consensus from all stakeholders on what social and informal learning space should deliver	2	3	3	4	5	5	5	5	5	6	7	7
Obtaining meaningful predictions on future enrolment levels	2	2	3	3	4	4	4	5	5	6	6	7
Obtaining accurate and relevant benchmarking data	2	3	3	4	4	4	4	4	5	6	6	6
Developing a strategy that is compatible with existing space/property constraints	3	3	3	3	4	4	4	5	5	5	6	6
Determining the right digital/technology solution within social and informal learning spaces	2	2	3	4	4	4	4	4	5	5	6	6
Determining the optimum allocation of space between individual study and group learning	3	4	4	4	4	4	5	5	5	5	5	6
Accurately predicting operating costs	2	2	3	3	3	4	4	4	5	5	5	6

In the free text, one respondent added that an understanding of what different courses needed from a S&ILS is required, which speaks to understanding from stakeholders what S&ILS need to offer. Similarly, another respondent called attention to the impact of blended learning on space requirements and another indicated that post-graduate study spaces and desk allocation should be differentiated. This latter point may extend into considering if and what a post-graduate S&ILS space may look like compared to ones used by undergraduates (should there even be separate spaces?). Prioritising the factors and challenges (based on summing the 6 and 7 rankings) influencing the S&ILS strategy and then what is important in activating it is shown below. Here, obtaining data and measuring performance are key challenges, although developing the business case is important in supporting/ influencing the S&ILS strategy. Soliciting stakeholder involvement still remains relatively important in both the influence on S&ILS and in developing the strategy. In both cases, however, the digital solutions, operating costs and how space is allocated remain relatively unimportant challenges presumably because these are relatively well-known by those managing estates.

Factors influencing	Compa
Gaining meaningful insight on what	
students want from social and informal	
learning spaces	
Securing the business case/ financial sign off	
	$ \searrow $
Developing a strategy that is compatible	
with existing space/property constraints	
Determining the optimum allocation of	
space between individual study and group	$\backslash$
learning	$\Lambda$
Obtaining relevant data to make informed	$ X \rangle$
decisions (e.g. space utilisation data)	$\langle \rangle \rangle$
Obtaining a clear consensus from all	$\square$
stakeholders on what social and informal	X
learning space should deliver	
Accurately predicting operating costs	
	$\land \lor$
Obtaining meaningful predictions on future	X
enrolment levels	$  / \rangle$
Understanding how to measure the	
performance of social and informal learning	
space	
Determining the right digital/technology	
solution within social and informal learning	
spaces	
Obtaining accurate and relevant	V
benchmarking data	

# 4. CHALLENGES IN MANAGING S&ILS

We asked to pick up to five responses to: "What do you consider to be the biggest operational challenges in managing the provision of social and informal leaning spaces on campus?"

The response count below indicates that from 47 picks, that just over half of the most important operational challenges involved designing spaces that are flexible to meet different needs and level of demand, inclusive spaces, extended periods of availability / continual use and their general cleanliness





and presentation. Less important were some of the 'routine' operational issues that normally with good planning are provided at adequate levels, such as planning and delivering facility services, security/access control and having provision of washrooms. Three respondents provided free text additions, such as managing behaviour issues, booking group spaces, addressing complex student needs, and providing technical support (presumably for students to connect to digital infrastructure).

# 5. TRENDS IN PROVIDING S&ILS

We asked the open-ended question: "Thinking about the provision of social and informal leaning space on campus what trends do you think the sector will see over the next 3-5 years?"

Eleven responses on near-term trends were offered, with comments that included the desire for flexibility of space (e.g. 'hybrid' forms of learning, work and study space being blended), more space likely being required, and making spaces that students want to be in by providing supporting infrastructure and different modes of use. The word cloud below picks up on the prominent words/phrases (73% of responses used the word 'space').

crucially expand increase in space University year hybrid space remote participants eg workspace learning relevant for students space relevant for students

### 6. KPIS FOR S&ILS

We asked the open-ended question: "What metrics or KPIs does your university currently apply to social and informal learning spaces?"

Of the 11 respondents, 64% said there were no KPIs for their S&ILS. Two respondents indicated a metric of library usage, with one noting metrics of 8 students per seat in the library and 15 students per seat outside the library (assigned as 2.5m2 per student). The two other respondents indicated the number or area and location of spaces, with one indicating an aspiration to better understand utilisation.

# 7. APPROPRIATENESS OF SPACE MANAGEMENT METRICS

We asked the yes/no question and for justification: "Do you feel that your university's existing space management metrics are appropriate for social and informal leaning spaces?"

In the light of the KPI question above, of the 12 respondents, only one said that their university's space management metrics were appropriate for S&ILS. This clearly indicates an issue, that was elucidated by the comments that included a lack of S&ILS-specific metrics, which makes benchmarking with other universities impossible. One comment added that the space policy did not specifically consider S&ILS, which would be interesting to investigate further across AUDE members – if S&ILS and how they are measured as part of the estate is in a policy then it is more likely their utilisation, how they meet demand, and what they cost to provide would be better able to be understood and then managed. Indeed, a further question on what metrics or KPIs respondents should consider for S&ILS, which received 6 responses, included the following suggested metrics:

- Student satisfaction
- Availability versus demand (utilisation), also considering activity types
- Space/seats per student ratios
- Ratio of use versus contact hours and engagement with online material.

# 8. BEST-IN-CLASS S&ILS OR FLEXIBLE WORKSPACE EXAMPLES

We asked the open-ended question: "What organisations do you consider demonstrate a best in class approach to social and informal leaning spaces or flexible workspace?"

While all 12 respondents commented, 6 had no specific examples, but of those that provided examples they included:

- 'Touch down' office spaces, modern private sector workplaces (although not all), and Dyson with their Institute of Engineering and Technology.
- Universities such as Manchester and Staffordshire
  and many Australian universities
- The Library of Birmingham and the Sir Duncan Rice Library at the University of Aberdeen.

### *9. SPACE CURRENTLY ALLOCATED TO S&ILS*

We asked respondents to rate: "Thinking about all learning space (formal and informal) at your university, what proportion of space is currently allocated to social and informal learning spaces?"

From the 12 respondents, 9 indicated less than 25% of their estate were allocated to S&ILS while the remaining 3 indicated between 25% and 50%.

Proportion of space allocated to S&ILS



# 10. S&ILS POLICY

We asked the open-ended question: "Does your University have a social/informal learning space policy, and if not, do you plan to have one?"

Eleven respondents provided a response, of which 8 said there was no policy while 3 said a policy approach is being developed or considered.

# 11. STUDY SPACE RATIO

We asked for a metric: "What is your study space ratio (if known)? – i.e. 1 desk for every 8 student FTE."

Of those who provided a metric to indicate a ratio existed for desks to students, it ranged from:

- 1:13 in the library and 1:28 students outside the library
- 1:10 to 1:8 depending on definition
- 1:12
- 1:10
- Or 0.6m2 per student FTE.

### 12. STUDY SPACE RATIO IN LIBRARIES

We asked for a metric: "What percentage of study spaces are in your traditional library buildings?"

The extent of study space ranged from one 'unknown' to one indicating around 50% and one with 90%; 2 respondents said around 80%; and 3 respondents had ranges between 60% and 70%. One of the respondents who indicated that 66% of the library was study spaces also indicated that this proportion would decrease to 39% if cafes and social were included. Indeed, one other respondent asked for a definition of 'a traditional library building' – a good question as it raises the counter question on what is not a traditional library building. Online libraries may fit this definition.

# 13. FUTURE STUDY SPACE PROVISION

We asked the open-ended question: "Do you intend to increase provision in the near future, based on existing or forecast demand?"

Four respondents indicated that there was no or an unknown requirement to increase study spaces while the remaining 8 indicated an increase. Two of these respondents added that providing study spaces outside the library footprint was being planned

# 14. OTHER FEEDBACK

We asked for any other feedback or comments. One respondent offered that they have started student consultation on improving S&ILS provision that will be considered in feasibility plans in the near term.

# Appendix 2: Student panel dataset

#### All respondents by gender, course year and university group

		Ger	nder	Course year			University group				
	Total	Male	Female	1st Year	2nd Year	3rd Year +	Russell	Pre- 1992 & Specialist	Post- 1992		
Total number of respondents	1014	436	578	365	289	360	291	229	494		
Gender											
Male	43%	100%	0%	43%	42%	44%	46%	42%	42%		
Female	57%	0%	100%	57%	58%	56%	54%	58%	58%		
Course year											
1st Year	36%	36%	36%	100%	0%	0%	32%	37%	38%		
2nd Year	29%	28%	29%	0%	100%	0%	29%	28%	29%		
3rd Year +	36%	36%	35%	0%	0%	100%	39%	36%	33%		
University group											
Russell	29%	31%	27%	25%	29%	31%	100%	0%	0%		
Pre-1992 and Specialist	23%	22%	23%	23%	22%	23%	0%	100%	0%		
Post-1992	49%	47%	50%	52%	49%	46%	0%	0%	100%		

# Appendix 3: Sodexo space planning case studies

CASE STUDY 1: UNDERSTANDING THE AMOUNT AND TYPE OF SPACE REQUIRED IS ESSENTIAL IN DEVELOPING A COMPREHENSIVE ESTATE STRATEGY

Sodexo are currently engaged with a high-profile public sector client in Northern Ireland on a large, complex estate. Working with them, Sodexo have developed an estate strategy that is enabling them to make critical estate decisions. As shown in Figure A below, this has broadly involved progressing an investigation on the client's operational strategy and the building condition that is geared to optimise and reduce the size of their estate over time.



#### Figure A: Strategic portfolio assessment matrix

A structured investigation initially enabled Sodexo to establish the operational suitability of the estate that incorporated feedback from a widespread engagement with key stakeholders and employees. As part of this, the space required for each role and activity was able to be defined and benchmarked against other organisations that Sodexo then used to confirm future space requirements. This was then collated with the estate's condition, which involved a detailed asset survey across the 300,000 m2 estate that enabled an understanding of costs across a number of maintenance strategies, such as statutory compliance, discretionary and run to failure. The outcome of the investigation included identifying the future of each building location considering the costs and benefits to maintain, upgrade, change or divest each building. Capital investment to modernise and upgrade has also been modelled to show net cash savings over a 15-year period. With such insights, Sodexo have continued to work with the client to progress with the rationalisation of floor space that will reduce spending and future maintenance liabilities without reducing their workforce's operational capability or for the estate to meet future requirements.

Sodexo have also incorporated carbon modelling for every asset, linking this to lifecycle maintenance. The intention here is to refine and evolve expected carbon emissions by using interim targets to ensure critical estate decisions are completely aligned to net zero over the coming decades.

The approach taken with the client meant that by investing time into talking with a cross section of people using the estate and those involved in planning for its future, Sodexo were able to use the asset survey to demonstrate the future cost profile of the current estate versus what an optimised estate would look like. They also helped to futureproof the estate through the asset management plan, including decisions on net zero, which have put the client ahead of the curve by providing the data, modelling and insight to know the likely impact of changes required on the estate and the associated financial implications.

# CASE STUDY 2: BENEFITS OF IMPLEMENTING AN EFFECTIVE SPACE MANAGEMENT SYSTEM

Sodexo worked with a client occupying more than 930,000 m2 of office and retail locations to capture their estate plans in a single system. This experience and real-life application of expertise has demonstrated substantial benefits of accurately analysing workplace space and utilisation.

To start with, Sodexo used their expertise to identify and analyse the space under occupation across the client's portfolio of properties, as shown in the first step of Figure B. Working closely with the client's estate team Sodexo were able to understand actual usage and the future estate strategy, providing a high degree of confidence when it came to detailing the types of workplace settings that were available, their locations and the actual and proportion of space allocated to various functions and building users. Informing this, Sodexo also incorporated utilisation data into floorplans and the space management system where available to understand building utilisation, such as from HR data, ad hoc occupancy surveys, IT logins, access systems, and desk and other space sensors.



Figure B: Key benefits of using a space management system

By taking a deep dive into the data and iterating various scenarios, Sodexo completed a comprehensive analysis of space occupiers to understand those properties that worked well in achieving the client's objectives through to where layouts needed to be reviewed and where there was potential for underutilised properties to be disposed. Demonstrating this within the space management system made it much clearer to the client where there were opportunities to shift or consolidate functions to free up space or to optimise/focus work locations. For Sodexo, the successful progression of the project further demonstrated the benefits of engaging with the client 'on the ground' to see what is really happening and applying a logical and disciplined process to make the best use of space for the here and now and into the future. The benefits of accurately measuring and analysing workplace space and utilisation include:

- Estate optimisation and cost reduction: analyse space to easily identify underutilised and vacant space, which can then be reviewed and managed aligning with the client's future estate strategy.
- Improve talent acquisition and retention: a strategy to focus functions into specific spaces helps to target recruitment campaigns.
- iii. Less environmental impact, more sustainability: blending a rich source of space data with other attributes across Sodexo's integrated systems platform enables building management systems to make better adjustments (e.g. to lighting, heating/cooling) and to support decisions for refurbishments that reduce waste and incorporate the latest proven building energy and carbon reduction technologies.
- Better insights that improve performance: interactive dashboards with reliable information gives estate managers the ability to easily generate analysis and reports that elevates their tactical and strategic decisions to manage portfolio costs but balanced against building user productivity and organisational objectives.





# AUDE

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