02 Design in Scotland Today

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Scotland’s hidden gem

Design is a nationally significant industry

Contributing £6.79Bn aGVA per year to the Scottish economy and employing 137,000 people (Design Council, 2022), the Design sector is of comparable size to the Food and Drink sector, a well known and recognised national priority ‘Growth Sector’ (Scottish Government, 2022).

Sector	**Food and drink**	**Life Sciences**	**Energy (inc. renewables)**	**Sustainable tourism**	**Design**
a£GVA	£5,80Bn	£1.59Bn	£19.9Bn	£4.5Bn	£6.79Bn
Employment	119,000	20,000	69,000	189,000	137,000

Table 1: Overview of sector approximate Gross Value Added (£), 2019 (Scottish Government and Design Council, 2022)

Previous estimates of the design sector’s size (as shown in the Scottish Government’s Growth Sector Database) have taken a limited view of its scope: concentrating on design businesses and employment within the Creative Industries. However, the Design Council’s ‘Design Economy’ research (2018-2022) acknowledges the significant role designers play in the working of so-called ‘non-design industries’; taking these into account – alongside traditional measures of the design sector in design industries – in their methodology (Design Council, 2022).

What’s more, even this revised larger estimate of the design sector’s economic contribution and employment size is acknowledged to be conservative; due to the prevalence of freelance ‘sole traders’ working in the design sector (as in the Creative Industries more generally), and their corresponding absence from sector statistical databases due to lack of Limited Company or VAT Registration.

The relative good health of the design sector in Scotland has been achieved organically and without policy recognition of its contribution, both within the creative industries and – more importantly – the broader economy.

While there is currently a complex ecosystem of organisations working to support the design sector and its individual disciplines, its current size has been achieved without coordinated action to prioritise effort and resources. Most other major industries and growth sectors in Scotland – tourism, food and drink, life sciences – have their own Scottish industry bodies, strategic government support programmes, and in some cases the dedicated resources of a non-departmental public body.

In growth and gaining productivity

Zooming out from the Design sector’s relative size versus other sectors, it is clear that design in Scotland is in rude health: between 2017 and 2019, it grew the fastest of any part of the UK design economy (33 per cent) and five times faster than the Scottish economy as a whole. However, in the same period, Design Occupations employment in Scotland grew by just 5% - a fraction of the growth seen in other UK regions such as Wales (13 per cent), London (22 per cent) and Northern Ireland (31 per cent). Design in Scotland is making a fast-growing economic contribution through slower growth in employment, meaning the sector as a whole is becoming more productive (Design Council, 2022).

Not only is Design more productive in Scotland than other comparable regions in the UK, it is also more productive than other strategically important sectors; for example, contributing 50 per cent more £aGVA to the economy than Tourism (Scottish Government and Design Council, 2022), despite employing 50 per cent less people.

Embedded across the economy

The design sector is diverse. It includes designers from across disciplines, working as sole traders or design businesses in the Creative Industries; from architecture and advertising, clothing and crafts, to digital, graphic, multimedia and product designers.

Significantly, the Design sector also includes large numbers of designers working in other sectors of the economy, such as Financial Services, Food and Drink, Local and National Government and Universities. 40% of the 500 largest private companies, public sector bodies and charities in Scotland have 'in-house' Designers and teams (Aitchison et al., 2021).

In fact, figures show that, in 2020, 81.5 per cent of 'total Design Occupations employment' came from non-design industries, versus 18.5 per cent from Design Industries (Design Council, 2022). Designers in non-design industries are of significant importance to the productivity of the Scottish design sector, making up over 80 per cent of total design occupations.

Furthermore, of the total aGVA contributed by the Design sector to the Scottish economy in 2019, £5.44Bn (80 per cent) was generated by 'Designers in other sectors' - 13 per cent more than London, and 10 per cent more than Great Britain as a whole. Design is Scotland is embedded across Scotland's economy to a greater extent than comparable regions; indicating a correlation between the high growth seen in Scotland's design economy, and the greater numbers of designers working in non-design sectors. Whether this link is causal would be worthy of future research.

Scotland's design ecosystem

In seeking to paint a rounded picture of the scope and extent of the design sector in Scotland today, we have used the 'Design Innovation Ecosystem Model' (Whicher, 2017) to direct desk research efforts, to ensure that the multiple facets required of a successful design economy are considered, both in terms of: supply of designers, design skills and design knowledge; and demand for design across the economy and society at large.

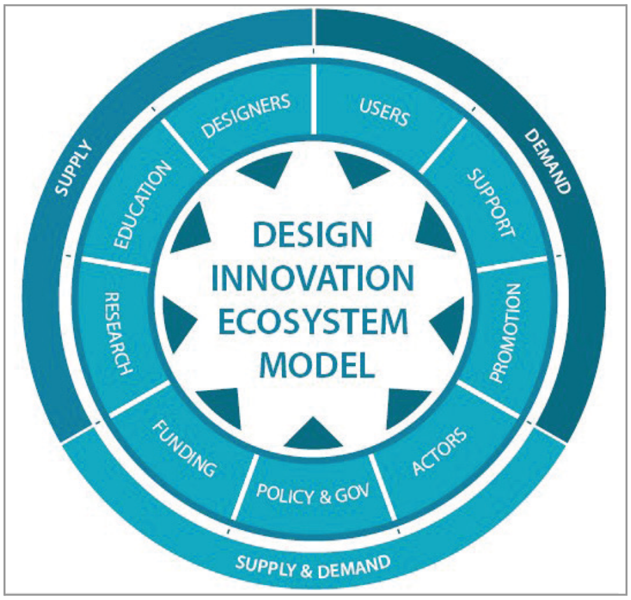

Figure 1: Design Innovation Ecosystem Model (Whicher, 2017)

In seeking to survey design in Scotland along these dimensions, we aim to gain a better understanding of the current situation to better inform the future opportunities for the sector. While previous efforts to use the Design Innovation Ecosystem Model to map the Scottish design sector (e.g. 'Towards a Design Action Plan for Scotland', 2018), have taken the form of sector-stakeholder workshops; Design for Scotland builds on these efforts with a data-driven approach enabled by the availability of sector-wide statistical databases and other recent sector research.

Over the following sections we survey the different aspects of the design ecosystem in Scotland in order to understand the current makeup of:

- Design industries and non-design industries (Designers & Users)
- Design education, skills and research (Education & Research)
- Design stakeholders (Funding, Actors, Promotion & Support)

Design industries

Digging into Scotland's Design Economy

As outlined in Chapter 1 'Introduction', the Design Council's 'Design Economy' research (2018-2022) outlines that the design economy encompasses design activity both in design industries and across the wider economy, ie.

- **Designers working in design industries** (any industry that has 30% or more workers in design occupations), e.g. architects, web designers, product designers.
- **Other roles in design industries** which are supporting the main function of those industries, e.g. administration, finance, distribution.
- **Designers working in other sectors of the economy**, e.g. finance, retail, construction.

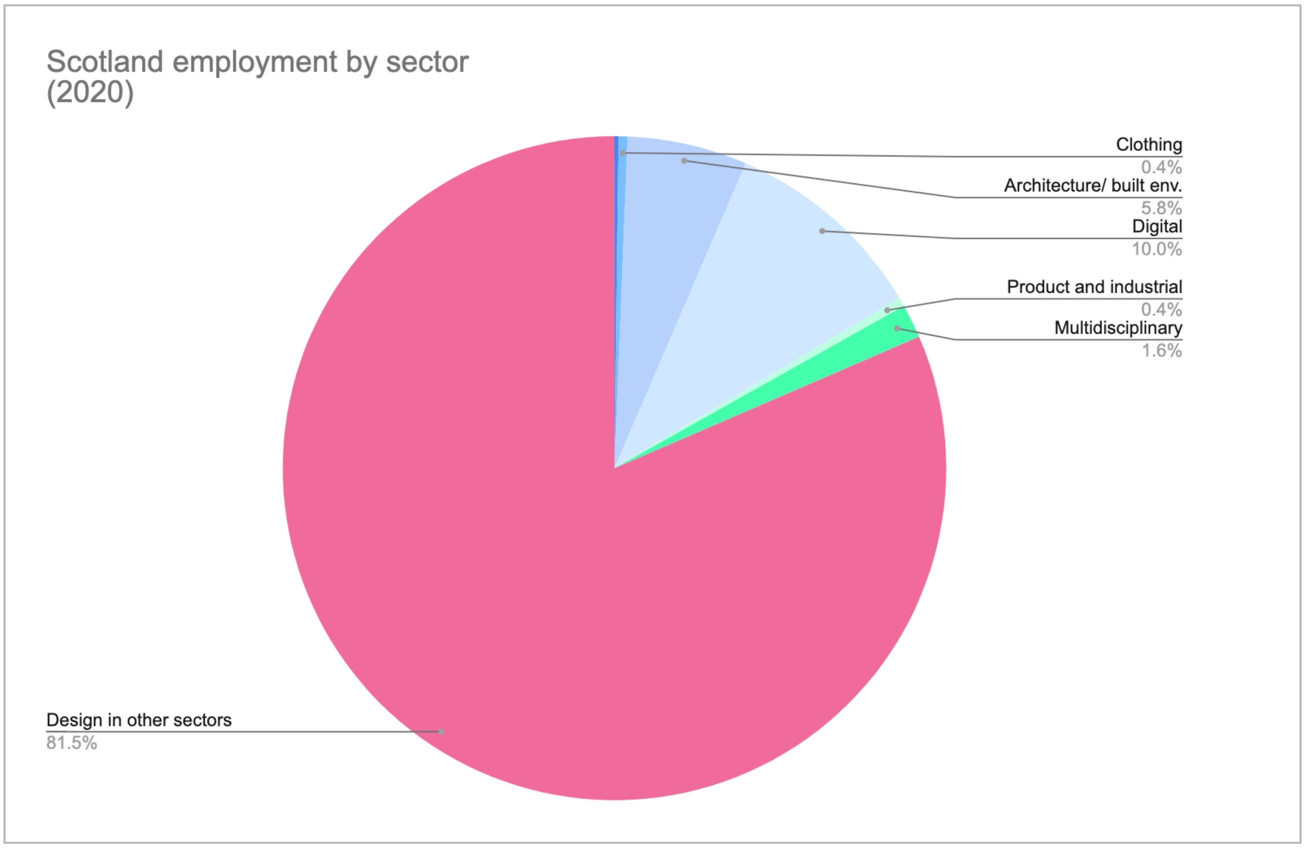

Figure 2: Design employment in Scotland by design industry sub-sector vs. other sectors of economy, 2020 Source: Design Council Design Economy data tables (2022)

What this data highlights is the overwhelming concentration of sub-sector employment in other sectors of the economy, with over 110,000 jobs; alongside the specialised employment of design subsector industries accounting for a smaller proportion but significant 25,000 jobs.

It is on the latter that we focus for the rest of this section on Scotland's Design Industries, returning to designers in 'Non-design Industries' in Section 3.4.

Design industries in Scotland: framing the economic geography

Granted access to unpublished Scotland-specific data tables from the Design Council's most recent 'Design Economy' report (2022), we were able to build a hitherto untold story of design industries in Scotland – in terms of employment and number of design businesses, overall and per design sub-sector (Craft, Clothing, Architecture and Built Environment, Digital, Product and Industrial and Multidisciplinary design) – at both at a national level and across each Local Authority Area (LAA).

In addition, by further grouping LAA data according to the Scottish Government's Urban-Rural classification (Scottish Government, 2016) we were able to analyse the economic geography of Scotland's design industries at different levels of abstraction: from national and central belt versus rest of country; to cities/urban/rural areas and at an individual Local Authority level. This 'weave' of different data points and dimensions allows us to see a fuller picture of the rich tapestry of the design industries in Scotland, and hence identify and recognise the varying contexts in which the sector is working today.

N.B. All data presented in this section is sourced from the Scotland-specific data tables from the Design Council's 'Design Economy' report (2022).

Design Industries employment: a tale of two cities, and beyond

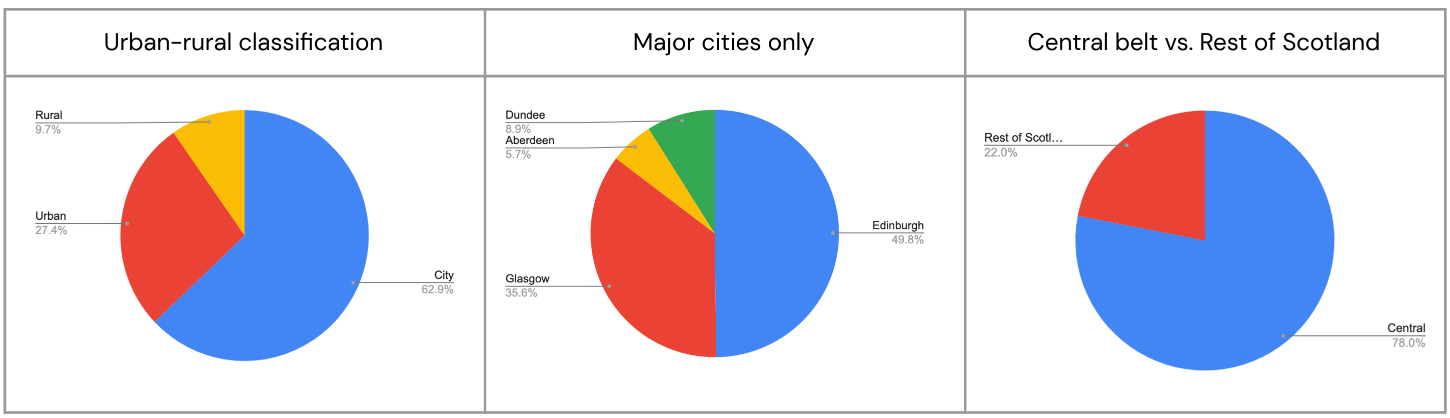

Figure 3: Design industries employment in Scotland: by urban-rural classification, major cities and Central Belt vs Rest of Scotland, 2020. Source: Design Council Design Economy data tables (2022)

Of the 25,000 people employed in design industries in Scotland, the vast majority (62.9 per cent) are based within Scotland's major cities: Edinburgh, Glasgow, Aberdeen and Dundee. Edinburgh has the highest level of Design Industries employment (7,615) with Glasgow in second (5,435). While Dundee has significantly lower numbers than the central cities (1,365), taken on a per capita basis its design industry employment – at 9.2 Design Industry jobs per 1,000 inhabitants – is higher than Glasgow's (at 8.6). Both cities though lag Edinburgh's rate of 14.7 design industry jobs per 1,000 inhabitants.

Between 2015 and 2020, Edinburgh saw Design Industries employment grow by 65 per cent; Dundee and Glasgow also saw strong employment growth of 56 per cent and 52 per cent respectively. Aberdeen has the lowest Design Industries employment (870) and also saw the lowest growth during this period - 23 per cent - half that of the other major cities.

With almost 30 per cent of employment in design industries in urban areas outside of major cities, and further 10 per cent in rural areas, what if design employment across all of Scotland was recognised, supported and encouraged?

The assumption that the majority of activity occurs in the central belt of Scotland, is confirmed by research data. However, many Local Authority Areas, beyond the cities, are home to significant portions of the Design workforce, while others serve as important hubs for the specialised sub-sectors of Design. North Lanarkshire, notably, has greater employment in design industries than Dundee (see Figure 4).

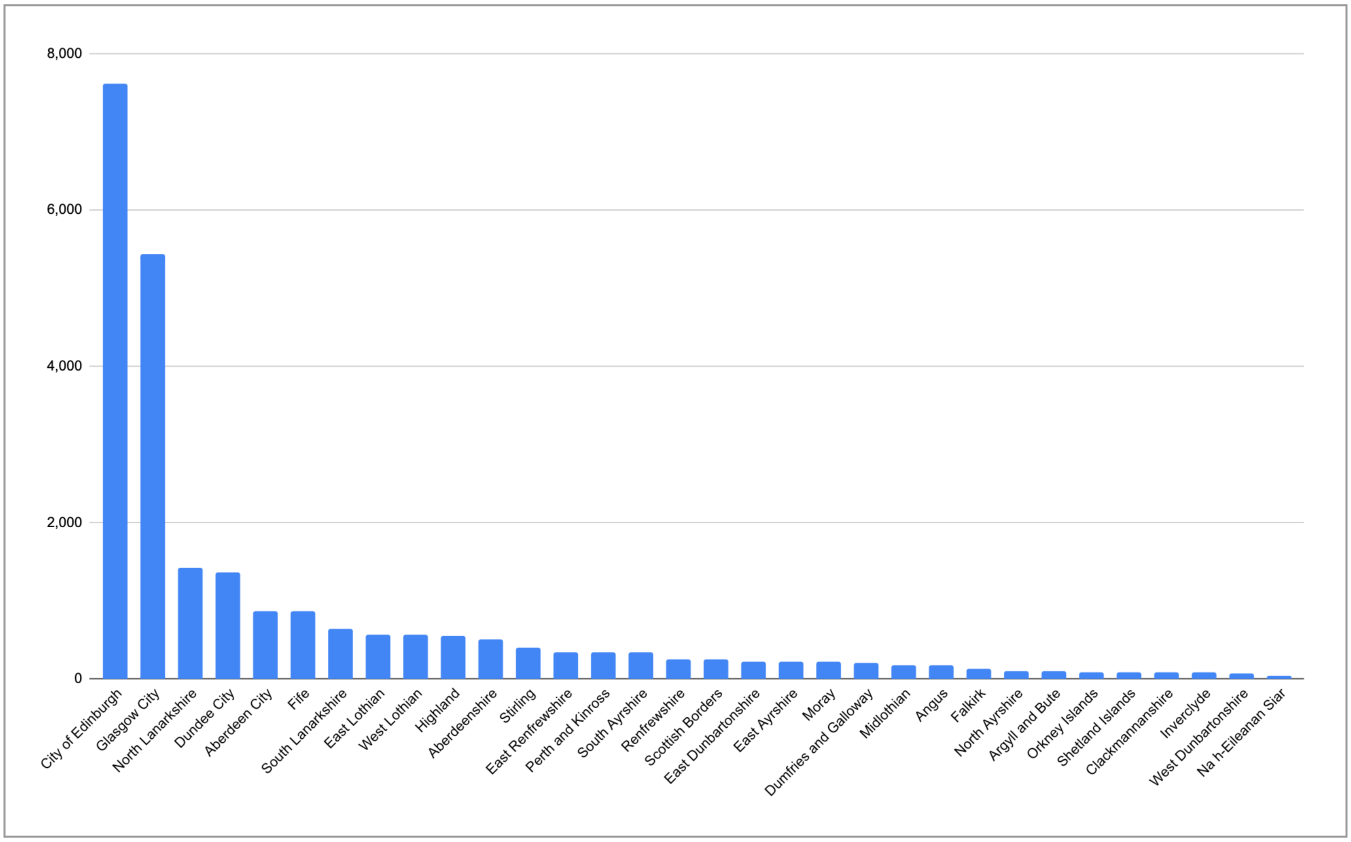

Figure 4: Design Industries Employment by Local Authority Area, 2020
Source: Design Council Design Economy data tables (2022)

Of the 10 rural or remote local authority areas in Scotland, The Highlands has the highest level of design employment at 545, with Aberdeenshire just behind at 505 - roughly the same as East and West Lothian, in the central belt.

Na h-Eileanan Siar has the lowest at 35 - half the numbers of the next lowest Local Authorities, West Dunbartonshire, Inverclyde and Clackmannanshire, all of which are classified as predominantly urban/sub-urban, and central. Therefore, while the majority of Design Industries employment across Scotland occurs in the central belt, a Local Authority being in the central belt does not, in itself, indicate high levels of Design employment.

Between 2015-20, there was a lot of variation in employment growth across these different areas of Scotland. The Shetland Islands saw a growth of 89 per cent in design employment during this period, along with The Scottish Borders, which saw 72 per cent growth. However, Moray saw a 70 per cent decline.

The majority of the urban/sub-urban areas (ie. non-rural or major city) are considered to be in the central belt (16 out of 18). Of these, North Lanarkshire reports the highest Design Industries employment (1,430), which is higher than Dundee City. This largely stems from the architecture and built environment sector. However, taken on a per capita basis, North Lanarkshire's design industry employment still lags behind the major cities at 4.2 design industry jobs per 1,000 inhabitants.

East Lothian has seen significant growth (470 per cent) in Design Industries employment in recent years. This, again, stems largely from architecture and built environment - the area is considered to be an important Design Industries employment cluster at a UK level. Digital and multidisciplinary design employment has also seen strong growth in the area.

In reviewing how Design Industries employment is distributed across sub-sectors, it can be seen that the majority stems from Digital design (53.9 per cent), followed by Architecture & Built Environment (31 per cent). Taken together, these two sub-sectors comprise 84.9 per cent of Scotland's Design Industries employment.

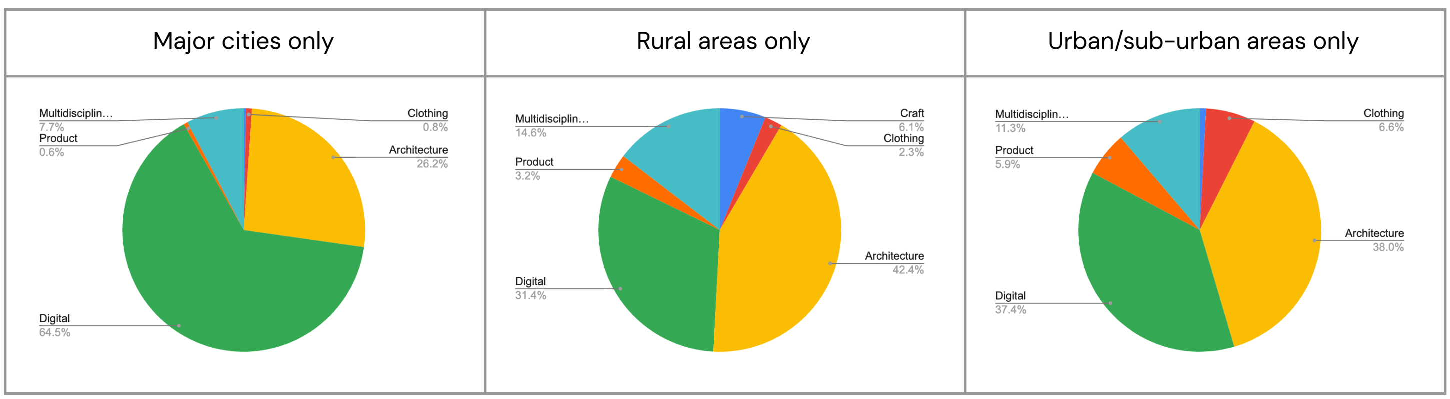

Figure 5: Design industries employment in Scotland by sub-sector: by urban-rural classification, 2020. Source: Design Council Design Economy data tables (2022)

However, the picture shifts upon 'zooming in' to the different geographies (see figure X). In the major cities, there is a greater share of Digital design. In rural areas, we see a greater share of Architecture & Built Environment, Multidisciplinary design and Craft. The urban/sub-urban areas sit between these two extremes, with Architecture and Digital design taking a roughly equal share of Design Industries employment, while Clothing and Product & Industrial design play a greater role than in other geographies.

Design Industries Businesses: a tale of less extremes

In comparing Design Industries employment with the number of Design businesses (See Figure X, below) in each Local Authority (excluding Edinburgh and Glasgow, to improve legibility), we can see that the correlation between employment and the number of Design businesses is not direct. This means that some areas have a higher number of Design Industries jobs per Design business, particularly Dundee City and North Lanarkshire.

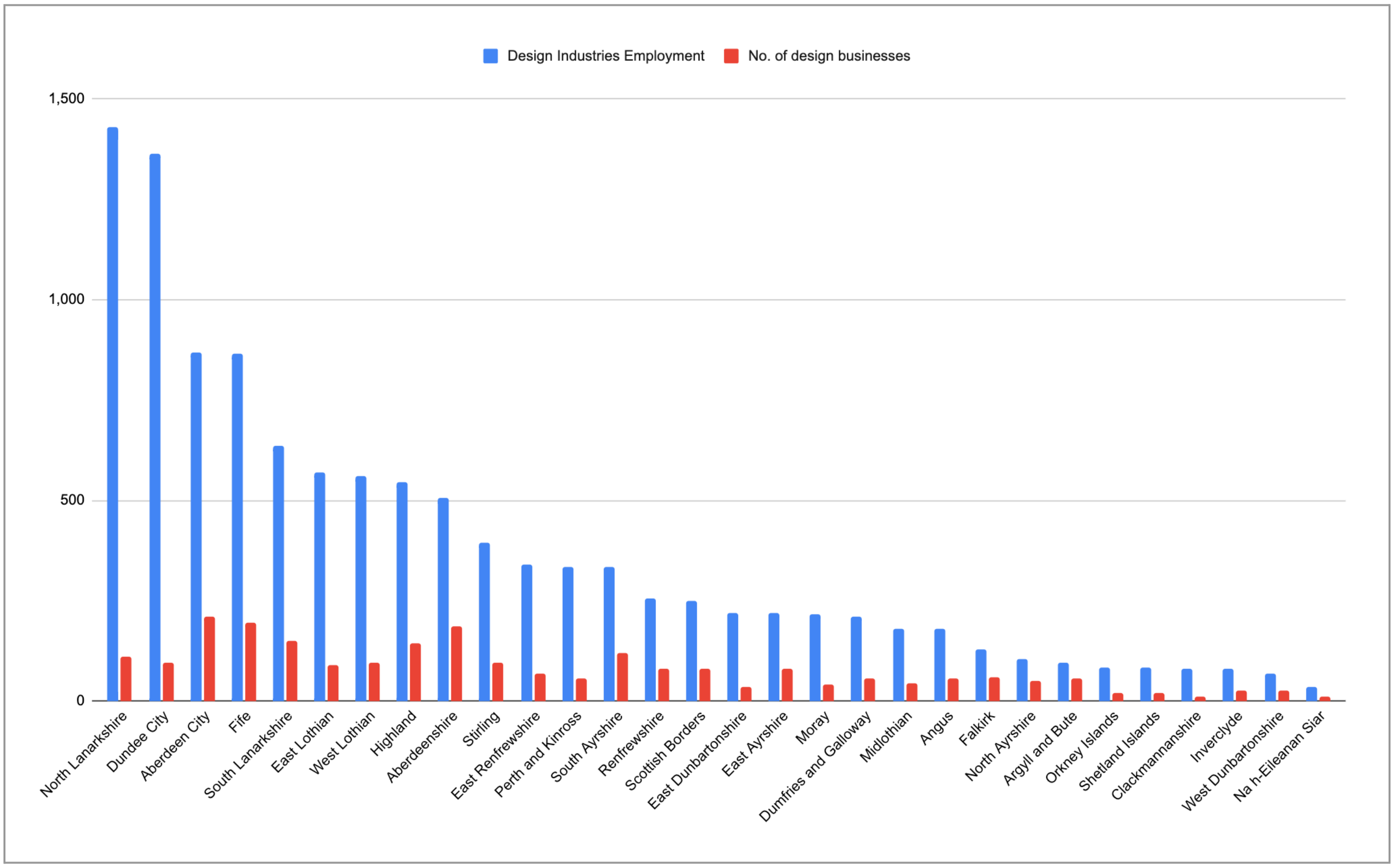

Figure 6: Design Industries employment and No. of Design businesses by LAA, excluding City of Edinburgh and Glasgow City, 2021. Source: Design Council Design Economy data tables (2022)

In the cities, in 2021, Edinburgh had the highest number of design businesses at 855, above Glasgow with 600. Dundee had the least, with only 95. Aberdeen had 210, however, of all the major cities, it saw the highest growth between 2016-21 of 8 per cent - Edinburgh and Glasgow saw no growth in this period, and Dundee saw a decline of 5 per cent. Taken as a percentage of all businesses, Edinburgh has the highest rate with 4.6 per cent; Glasgow has 3.1 per cent, Dundee 2.8 per cent and Aberdeen 2.5 per cent.

Similar to Design Industries employment, Aberdeenshire and The Highlands have the highest number of Design businesses of Scotland's rural areas, closely followed by Perth and Kinross. In considering Design businesses as a percentage of all businesses, none of the rural areas have a rate higher than 2 per cent.

The three local authorities which saw the greatest shifts in Design Industries employment numbers (positive or negative) all had less than 100 design businesses in 2021. This highlights the importance of each individual Design business, and the impact on local livelihoods.

While the number of design businesses in Orkney, Shetland and Na h-Eileanan Siar are the smallest in Scotland, they have shown longevity; there has been no change between 2016-21. For context, The

Scottish Borders and Aberdeenshire both saw a decline in the number of design businesses in this period, while Argyll and Bute and Dumfries and Galloway both saw growth of 22%.

Fife and South Lanarkshire have the highest numbers of Design businesses in urban/sub-urban areas, primarily in the Architecture & Built Environment, Digital and Multidisciplinary design sectors. Between 2016-21, the only areas to see positive growth were East Lothian (38%), Angus (22%), North Ayrshire (11%) and Stirling (6%); the rest remained static or declined.

Design Industry sub-sectors: UK significant centres of excellence

At the outset of this project it was assumed that the design sector was largely based in Scotland's cities. Indeed, data has shown that Scotland's main cities and urban areas have well developed design industry ecosystems across design subsectors – with Glasgow, Edinburgh and Dundee major centres of design employment and business creation. Scotland's main cities have as developed as diverse a design industry as their comparators across the UK.

However, a city-only focus glosses over significant outliers beyond the main urban centres, which highlight design industry sub-sectors that are distinctive and uniquely Scottish. Scotland is home to significant geographic sub-sector clusters outside of the cities as revealed by the Design Council's 'location quotient' (LQ) metric: in Clothing (South Ayrshire), Architecture (East Lothian), Craft (Orkney) and Product/industrial design (East Renfrewshire). These are significant not only within Scotland but at a UK level, where they are among the top five design employment clusters in their sub-sector (Design Council, 2022).

Over the coming pages, a rich picture is painted of the – often highly localised – strengths of design industry sub-sectors across Scotland.

Introducing 'Location Quotients' (LQ) "The Design Council's 'Design Economy' research uses the concept of the location quotient (LQ) as a way of showing how concentrated a particularly industry or occupation is within a geographic area, compared to the rest of the country. This research used this approach to understand how an area's economy would look if it were the same size as the UK, revealing areas with more – or fewer – businesses and employment within the design economy than would be expected. A high LQ indicates specific areas of strength. For instance an LQ of 1.0 can indicate that the concentration of firms within an area matches the national average. An LQ of 1.5 means that there is 50% more of a particular activity in the area than one might expect to find. Conversely, an LQ of 0.5 means that there is 50% less of an activity in the area than one might expect." Design Council, Design Economy (2018).

Table 2: Location Quotients introduction (Design Council, 2018)

Craft

Craft in The Orkney Islands is one of the UK's most significant design clusters, across all sub-sectors. Around the time of 2020-21, 5 craft businesses employed 75 people; this represents a highly significant employment cluster with location quotient (LQ) of 19.9, and Design business location quotient of 6.1. In plain terms this means that design employment in Craft in Orkney is almost 20 times more concentrated than the UK national average, and businesses six times more concentrated. The area saw a 50 per cent growth in craft employment between 2015-20.

There are also smaller craft employment clusters in The Shetland Islands, Argyll and Bute, and The Highlands, as well as pockets of activity across other areas of Scotland. There is little Craft activity occurring in Scotland's major cities, compared to other sub-sectors; what there is occurs in Edinburgh and Glasgow.

Clothing

The central belt has a small but mighty clothing industry; South Ayrshire and East Ayrshire are home to highly significant Design employment clusters at a UK level (with employment location quotients of 16.5 and 12.6 respectively), employing a total of 250 people in 2020.

Edinburgh and Glasgow each have 10 design businesses in this sector, employing a total of 50 people in 2020. A decline of clothing employment in Glasgow of 50 per cent between 2015-20, and a 100 per cent growth in design businesses in Edinburgh between 2016-21 with a corresponding growth of 11 per cent employment (in roughly the same period), highlights the vulnerability of these businesses.

The Scottish Borders can be considered a Design employment cluster for clothing (with an LQ of 2.2 - higher than the major cities). However, the figures across the rural areas are very low. Employment levels range from 10 to 20 in four local authority areas, with 0 in the rest; employment was derived from just 15 businesses across these areas in 2021.

Architecture and built environment

East Lothian is considered a Design Industries employment cluster for Architecture & Built Environment at a UK level (Employment LQ of 4); the area boasts 20 practices with approximately 20 design employees apiece, and has seen an increase of 1233 per cent in Architecture employment between 2015-20. North Lanarkshire is also a sizable Architecture cluster (Employment LQ of 2.4) which saw growth of 471 per cent in the same period.

In terms of sheer numbers, Edinburgh and Glasgow are the main centres of Architectural employment in Scotland (both 1,750 in 2020). It is worth highlighting, however, that Aberdeen is the city with the highest rate of Architectural employment as a percentage of overall Design Industries employment (Aberdeen 34 per cent; Glasgow 32 per cent; Edinburgh 23 per cent; Dundee 15 per cent).

Architecture & Built Environment is also the strongest of the Design Industries in the rural areas of Scotland. Half of the local authority areas employed 100 people or more in 2020, with Aberdeenshire and The Highlands both reporting 250. The number of businesses in rural areas is high, comparative to other design sub-sectors, ranging from 5 to 75; this shows that employers are small practices of 1-7 designers.

Lastly, it should be noted that in all of the rural areas - with the exception of The Orkney Islands - Architecture employment represents a significant portion (29-57 per cent) of the total Design employment. There is no doubt that the Architecture & Built Environment sector is one of Scotland's strongest assets.

Digital

Digital design in Scotland's cities represents a major portion of the design employment in Scotland. Edinburgh is the biggest employer of digital design in terms of numbers (5,305), but Dundee has the highest percentage of digital designers as a percentage of total design employment in the city, at 75 per cent (Edinburgh is just behind at 70 per cent). The percentage of digital design is still high in Glasgow and Aberdeen, at 57 per cent and 53 per cent respectively.

All four cities have seen huge growth in digital design employment between 2015-20; Glasgow is the highest at 143 per cent and Dundee the lowest at 85 per cent. Edinburgh and Dundee are both digital design employment clusters at a UK level (Employment LQs of 2.1 and 1.9 respectively).

We see the same pattern with the proportion of digital design businesses as a percentage of total design businesses (Dundee and Edinburgh, 53 per cent; Aberdeen and Glasgow 43-45 per cent). While Aberdeen lags behind in terms of digital design employment rates, it is the only city to have seen significant growth in the number of design businesses at 38 per cent. Edinburgh has a high digital design business location quotient, at a UK level, of 1.9.

Fife and West Lothian are both comparable to Aberdeen in terms of Digital design employment levels (Fife, 500; Aberdeen City, 460; West Lothian, 415). Like Dundee, West Lothian has a high level of Digital design employment as a percentage of total design employment (74 per cent), and it also has the highest rate of Digital design businesses as a percentage of total design businesses (74 per cent), of all the local authorities in Scotland.

Digital design is strongly represented in rural areas, in terms of employment and business numbers. The same four local authorities - Aberdeenshire, Perth & Kinross, The Highlands and Moray - are the strongest in numbers across both Digital design and Architecture and Built Environment.

However, the picture of employment growth is very different, with 5 of the 10 rural local authorities reporting growth of over 130 per cent. The Shetland Islands reports the highest growth in Digital design employment, at 300 per cent between 2015-20; 40 employees in 2020 represented 47 per cent of Shetland's total design industries employment.

In Na h-Eileanan Siar, digital design businesses represent 50% of their total design businesses, despite having the smallest number in Scotland. Again, similar to architecture, digital design businesses in rural areas are small, with 1-8 design employees.

Product & industrial

East Renfrewshire is a highly significant employment cluster for Product and Industrial design in the UK (Employment LQ of 21.2); it is home to approximately 150 design employees across 5 design businesses.

Smaller employment clusters are seen in South Ayrshire (LQ 3.3) - which has seen 150 per cent growth in employment in recent years - and Na h-Eileanan Siar (LQ 2). The Borders also has a comparatively high design business location quotient of 1.9.

While product design employment figures are low in Edinburgh and Glasgow compared to other sub-sectors, both cities saw positive employment growth between 2015-20, of 350 per cent and 100 per cent respectively. Meanwhile, a number of other local authority areas saw significant decline in the same period; West Dunbartonshire, Perth and Kinross and Aberdeenshire all declined 100 per cent, resulting in 0 product design employment in 2020.

Multidisciplinary

Our cities have a small, but not insignificant, multidisciplinary design industry. Edinburgh and Glasgow have the greatest numbers of design employees of this type; however, at 11 per cent Aberdeen has the greatest share of multidisciplinary designers as a proportion of overall design employment (Glasgow and Dundee, 9 per cent; Edinburgh 6 per cent).

Outside of the cities, a number of areas have seen significant growth in Multidisciplinary design employment; Dumfries and Galloway and West Lothian both saw 250 per cent between 2015-20. Furthermore, in a number of urban/sub-urban areas of the central belt - West Dunbartonshire, North Ayrshire, Midlothian and Clackmannanshire - Multidisciplinary design contributes over a quarter of their overall design employment.

Edinburgh has the most multidisciplinary design businesses (195), followed by Glasgow (155). However, in this sub-sector, even the areas with the lowest levels of employment have a relatively high number of design businesses (such as East Renfrewshire, with 15 design employees vs. 15 design businesses), which suggests that they are predominantly individual practitioners or small agencies/consultancies of under 5 people.

From design industries, to design in other sectors of the economy

In this section we have profiled the 25,000 employees within Scotland's Design Industries – and the businesses they work for – across geographies and within major industry sub-sectors.

We now turn our attention to profiling the remaining 110,000 people working in the design economy across Scotland, in other sectors of the economy.

Design in non-design industries

Profiling the mass-ranks of designers working across Scotland's economy

Over 80 per cent of designers working in Scotland today – a figure of over 110,000 people – are employed in other sectors of the economy, outside of the design industries.

Who are they, where do they work, and what do they do?

'Scotland's Design Insiders: Profiling in-house design across the private, public and third sectors'

To address these gaps in data we draw on 'Scotland's Design Insiders', a self-funded research project by Edinburgh-based strategic design and innovation consultancy, Graft, who are also leading this 'Design for Scotland' project.

Initiated to investigate anecdotal evidence of a burgeoning in-house design sector in Scotland, this project ran from 2018-2021 and has been published nationally and internationally in academic journals (Aitchison, Dunne, Steiner; 2019) and conference proceedings (Aitchison, I., Steiner, E., & Tinning, A., 2020); as well as being published and publicly available (Aitchison, Butcher, Dunne, Henderson, Kaleta-Pyrek, Steiner, Tinning; 2021).

Gathering robust data on these designers is no easy task, given that frameworks like the Office for National Statistics' Standard Occupational Classification (SOC) codes and Standard Industry Classification (SIC) codes are designed to capture and categorise design employment within the design industries, and creative industries at large. Nor do these datasets provide the means to capture the ever-changing job titles and scope of specialised design occupations, or provide a way of identifying and analysing designers working in-house within public or third sector organisations (Aitchison, I., Steiner, E., & Tinning, A., 2020).

To counter these limitations, this work took a pragmatic approach. Firstly, a sample of organisations was selected that represents a range of organisations across sectors: from Scotland's top 500 private sector companies (Business Insider, 2018), 226 public sector organisations in Scotland (Scottish Government, 2018), and 300 highest income charities (OSCR, 2021). Secondly, this project worked with publicly accessible data on job titles: by performing an organisation-by-organisation search of social networking site LinkedIn to record the incidence of employees with design-related job titles in 1026 organisations. Thirdly, analysis took a 'grounded' approach; working from the data gathered to develop a framework of design role types that best reflects the job title data gathered, providing an up-to- date way of analysing the state of our in-house design nation.

The in-house design population

From searching all 1,026 organisations across public, private and third sector organisations a total of 2,847 specialised design jobs were identified and classified.

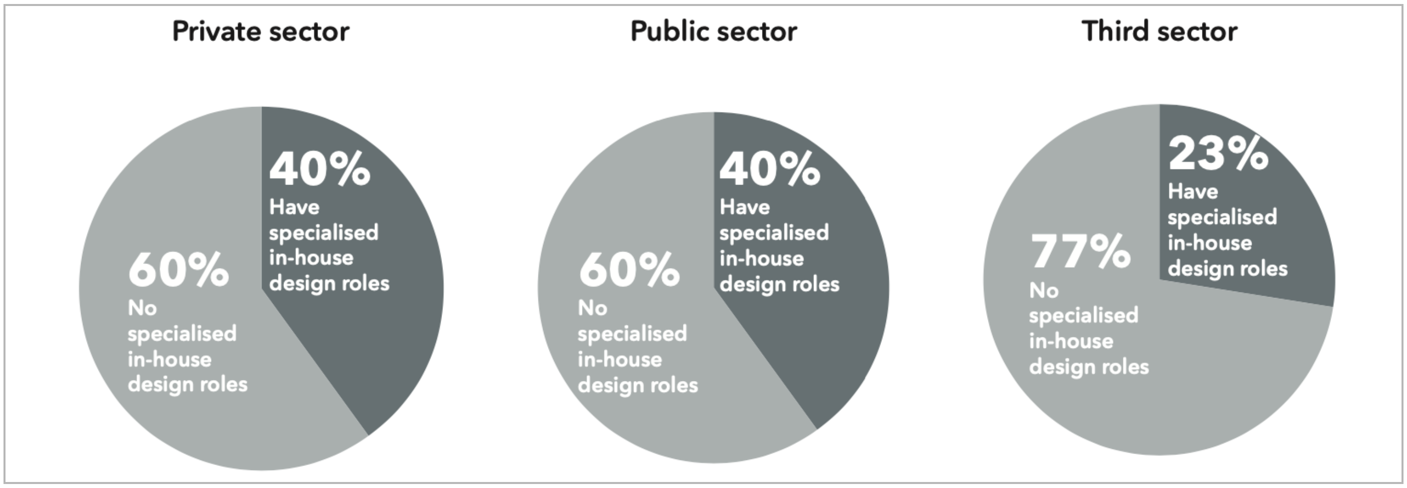

Figure 7: Percentage of organisations researched who have specialised in-house design roles (Aitchison et al., 2021)

It was found that 40 per cent of the top 500 private sector companies in Scotland have employees performing specialist in-house design roles. Although these in-house roles are found across all sectors of the economy, companies in energy production, financial services, IT and extraction industries are more likely to have designers than those in other sectors.

In the public sector, it was again found that 40 per cent of the 226 public bodies studied have in-house design jobs; with the greatest concentration found in the executive agencies of the Scottish Government, together with Scotland's 32 Local Authorities, and 16 Health Boards.

In the third sector, 23 per cent of 300 third sector organisations studied have in-house design jobs: with the vast majority of these placed within Scotland's further and higher educational institutions. Indeed, when viewed across all sectors, the education sector – alongside financial services – is one of the largest design employers in Scotland.

Interestingly, 65 per cent of organisations studied in all sectors do not employ any designers; representing a significant opportunity for introduction, education and development.

19 In-house design role types

Taking a bottom-up 'grounded' approach, hundreds of different job titles were identified from the 2,847 designers researched; these job titles were then coded, grouped and structured into 19 types of in- house design roles, with each representing a collection of job titles.

To describe the range of abilities and disciplines of design represented by these role types, an adapted version of Richard Buchanan's 'Four Orders of Design' framework (Buchanan, 1998) was used to structure them into four macro categories. By analysing job titles in this way from easily accessible data sources it has been possible to survey and frame a broad landscape of contemporary in-house design practice

Public sector

The public sector in Scotland is a complex landscape of organisations: including the wide range of devolved parliamentary, governmental, civil service and government-sponsored but 'arm's length' public bodies; and a range of 'reserved' UK public sector functions with a presence in Scotland. Notably, while the Scottish Government has the largest number and widest range of design roles today (at date of research in 2019) there are also significant concentrations within Scotland's Local Authorities and regional NHS Health Boards.

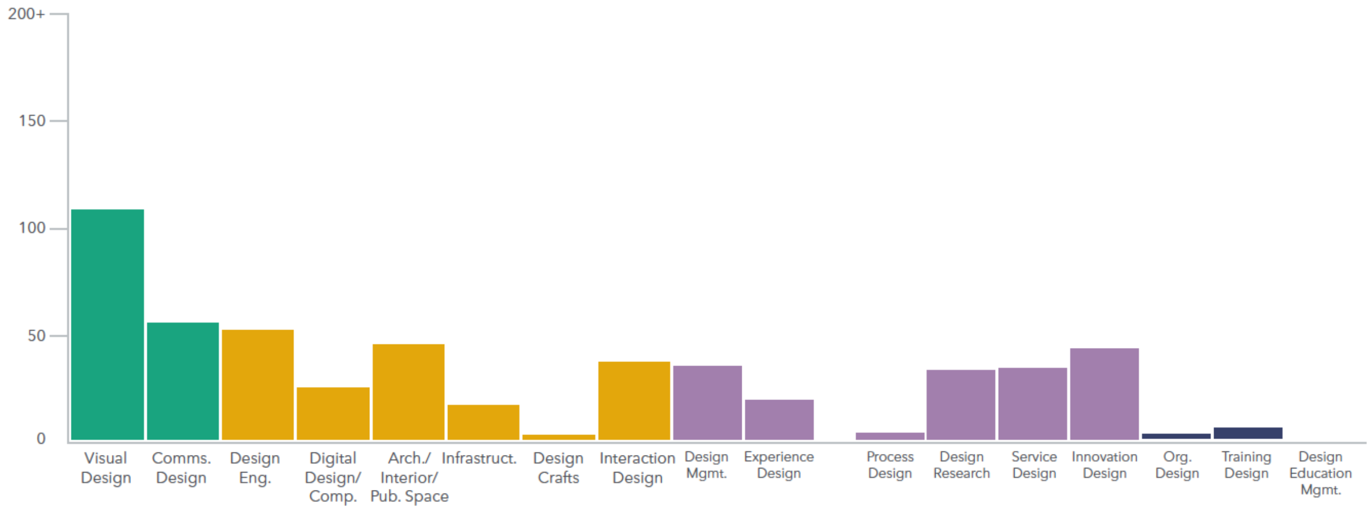

Figure 8: Number of designers in each 'role type' in the 226 public bodies studied (Aitchison et al., 2021)

Private sector

With a range of global players in financial services, energy, engineering and food and drinks sectors reporting multi-billion pound turnovers and tens of thousands of staff the top 10 companies in Scotland are in rude health (at date of research in 2019). Beyond these behemoths, the remaining 490 companies studied represent a diverse and prospering industrial base encompassing established industries such as construction, retail and transportation, together with emerging global players in media, software and life sciences.

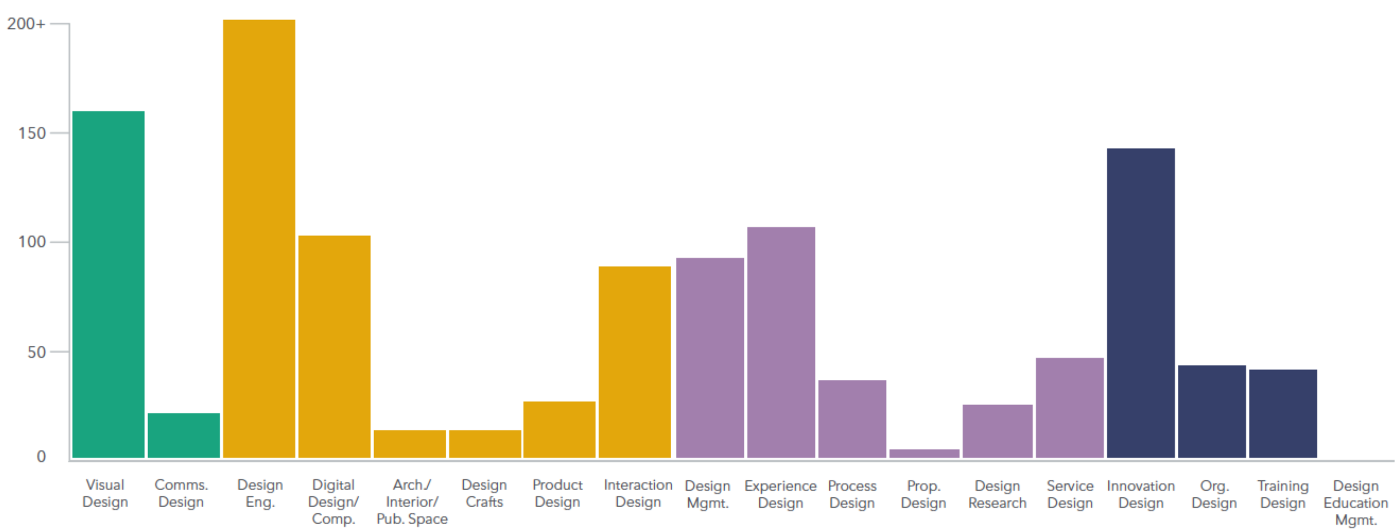

Figure 9: Number of designers in each 'role type' in the top 500 largest businesses studied (Aitchison et al., 2021)

Third sector

Scotland's Third Sector is a network of charities, social enterprises and voluntary groups. The sector is dominated by its largest employers: Scotland's 15 Universities and 26 Colleges of Further Education. What's noticeable is the dominance of the Higher and Further Education institutions in design employment, accounting for the majority of design roles. These are concentrated in 'student facing' teaching roles; found across all design orders and role types, from visual design to training design. In addition, a distinct 'Design Education Management' role was found, without equivalent in the private and public sectors.

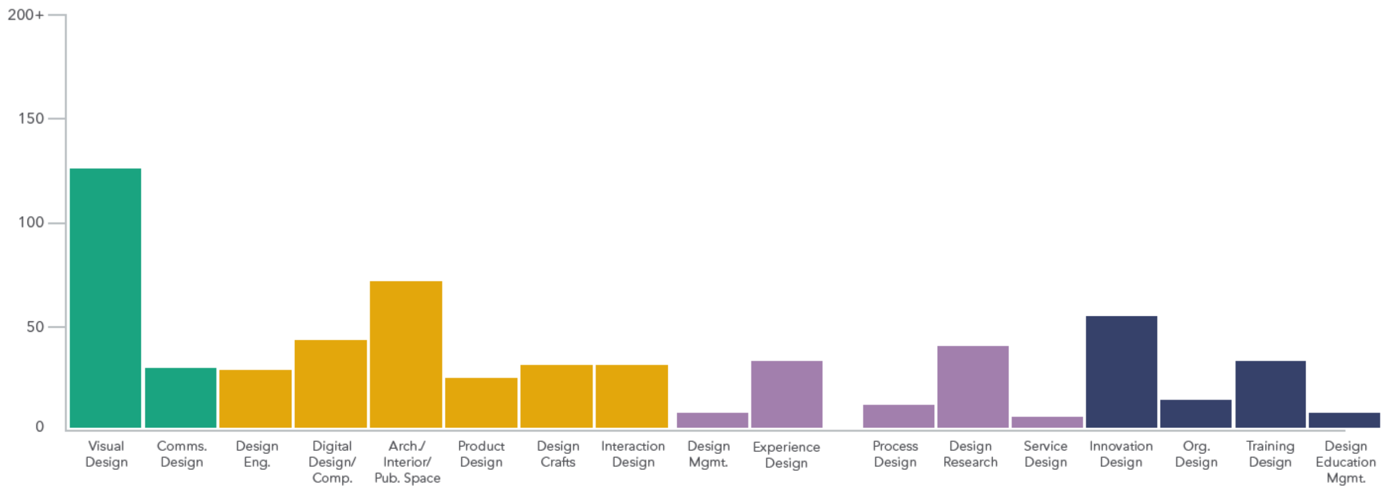

Figure 10: Number of designers in each 'role type' in the 300 largest charities studied (Aitchison et al., 2021)

In-house design archetypes

With in-house design in Scotland quantified and categorised, we wanted to understand how these organisations' use of design compares and varies across variables such as industry and organisational size, as well public and private sectors. Through analysis of the number, spread and concentrations of design roles within organisations, we were able to uncover a selection of reoccurring patterns that point towards typical configurations of in-house design functions in Scotland.

From 360 organisations with design roles in Scotland, we identified 18 archetypical in-house design configurations—each representing a cluster of organisations who sport similar numbers and concentrations of in-house design roles, typically with analogous organisational design challenges to tackle.

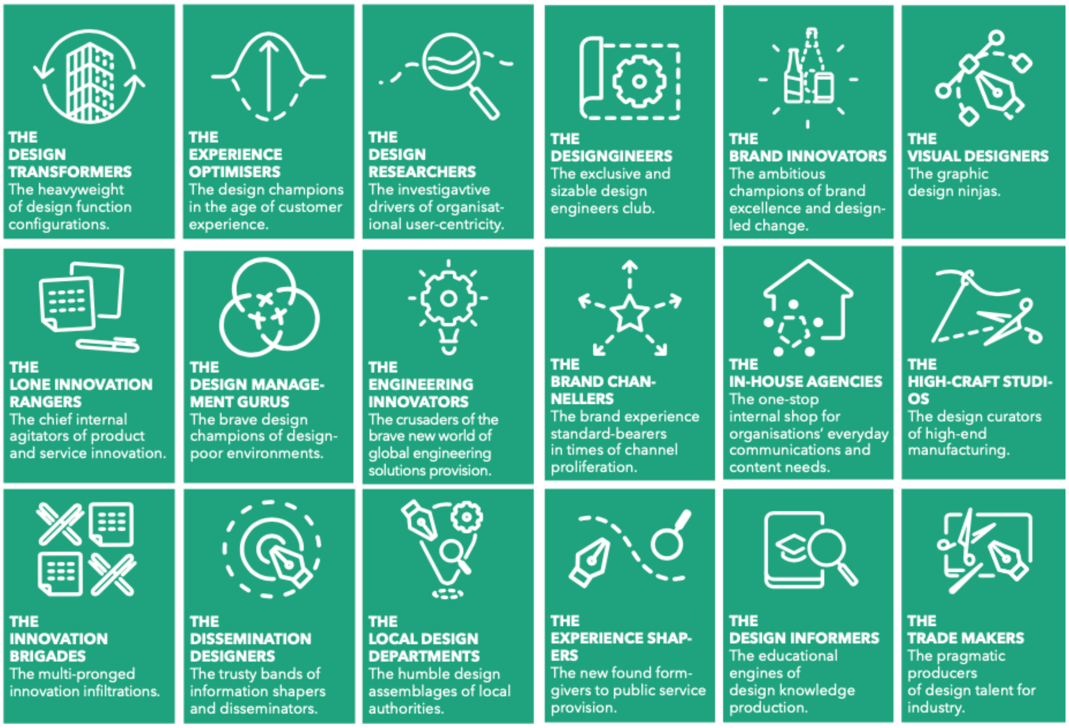

Figure 11: 18 in-house 'design archetypes' derived from concentration of design roles (Aitchison et al., 2021)

Design education

A significant part of Scotland's national design ecosystem

As we have seen from the previous section: taken together, Scotland's Higher Education Institutes and Further Education Colleges are one of the largest employers of designers – as educators, researchers and academic managers – in the country. But what of the student population itself: how large is it, where is it located, and where is it studying?

For a detail of the design education sector in Scotland we have drawn on the Higher Education Statistics Agency's (HESA) public databases, which provide in depth annual figures on the Higher Education sector as a whole, student population and Higher Education Institutes at which they study (HEIs).

A student census

In 2022 there were 5,200 students studying design in Scotland, across undergraduate and postgraduate 'Design Studies' programmes, set against a total enrolled student population at HEIs of over 300,000.

In Scotland, 2.5 per cent of all students at HEIs across the UK are enrolled in programmes classified as 'Design Studies' subjects. In Scotland the share of all students studying design is lower than the UK average at 1.7 per cent. However when the number of design students is calculated per million inhabitants, Scotland's population share of design students is on a par with the UK average at just under 1,000 enrolled design students per 1 million people (see Table X).

For students resident in Scotland, Design is in the top 20 most popular subjects of study, with 2 per cent of students enrolled in programmes classified within the Design Studies subject area by HESA.
This places design on a par with Management Studies and Mechanical Engineering; and just behind Medicine and Nursing.

	UK	England	N. Ireland	Scotland	Wales
Total 'Design Studies' enrollment	**70,685**	**62,330**	**720**	**5,200**	**2,435**
All postgraduate	11,275	10,145	20	875	235
All undergraduate	59,410	52,185	700	4,325	2,200
Design students as % of total students	**2.47%**	**2.66%**	**1.03%**	**1.73%**	**1.63%**
Number of design students per million population	**1,050**	**1,102**	**378**	**949**	**784**

Table 3: Enrollment in Design Studies subjects across the UK and its nations (HESA, 2021-22 and author analysis)

Growing against the grain

Looking at the growth in total student enrolment between 2019 and 2022, we see a thirteen per cent rise across the UK, with Scottish Universities mirroring this trend at 15 per cent growth.

However, when looking at enrolment in 'Design Studies' subjects, at a UK level there was only marginal two per cent growth in this period. In contrast, total Design Studies enrolment in Scotland during this period grew by 21 per cent, with postgraduate enrolment – across taught and research programmes – growing by a significant 62 per cent.

This is in marked contrast to England which saw stagnant growth, and Northern Ireland and Wales which saw declines. Growth was particularly concentrated at postgraduate level, which saw 67 per cent growth of taught Design Studies programmes. However, the growth of undergraduate provision in Scotland also bucked the UK trend (a small decline), with 15 per cent growth (see Table X).

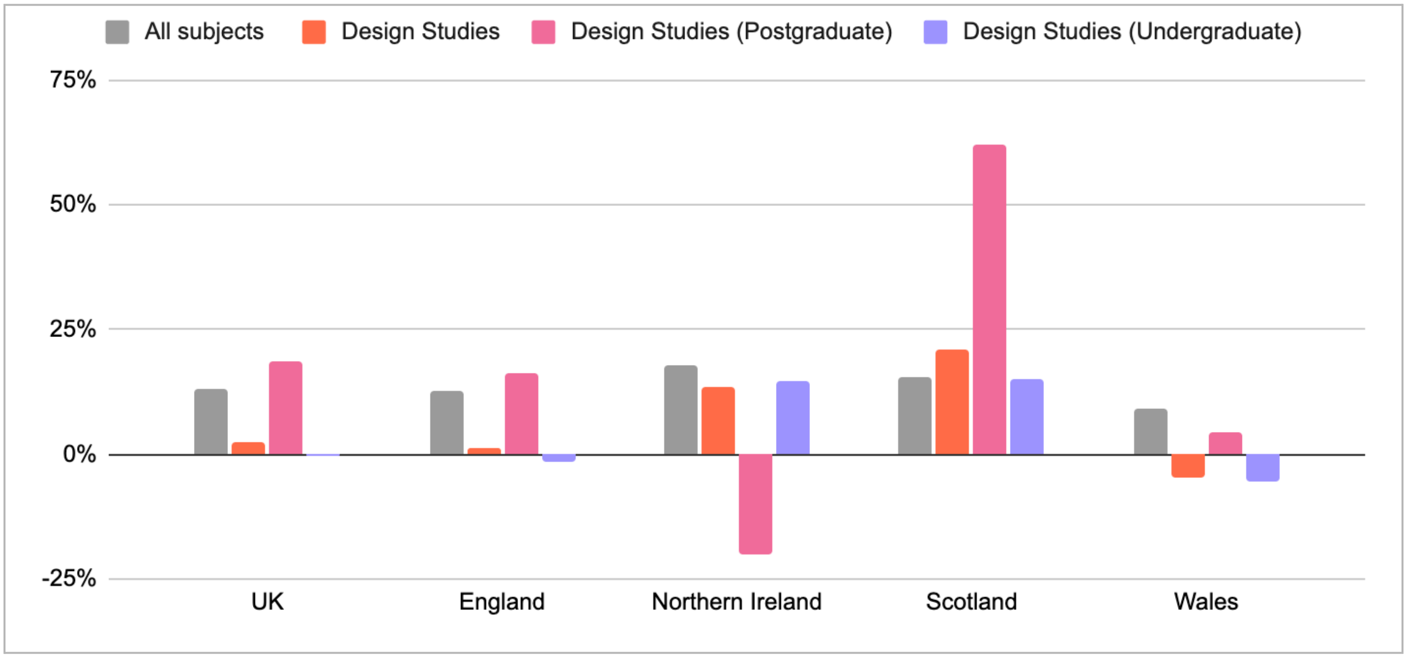

Figure 12: Growth in student enrollment in all subjects and 'Design Studies', 2019-2022 (HESA, 2022 and author analysis)

Strength in depth

While design education in Scotland may once have been considered the preserve of the country's four Art Schools (all bar one of which is now integrated into a larger University), today design education is distributed across the country in the majority of Higher Education Institutes (HEIs).

According to HESA statistics, 13 out of 19 HEIs in Scotland offer programmes in Design Studies subjects. Overall, the single biggest concentrations of design students – across undergraduate and postgraduate – are at the University of Edinburgh (17 per cent), Glasgow School of Art and Abertay (14 per cent each). However, this leaves over half of students distributed across the remaining 10 HEIs.

When undergraduate studies alone are considered, Abertay has the largest population of design students, followed by the University of Dundee, Heriot Watt and Glasgow School of Art. At postgraduate level, the University of Edinburgh is host to almost 50 per cent of Scotland's total design enrollment at that level.

Looking across institutions, the largest geographic concentrations of design students are found in Edinburgh (27 per cent), Dundee (26 per cent) and Glasgow (25 per cent).

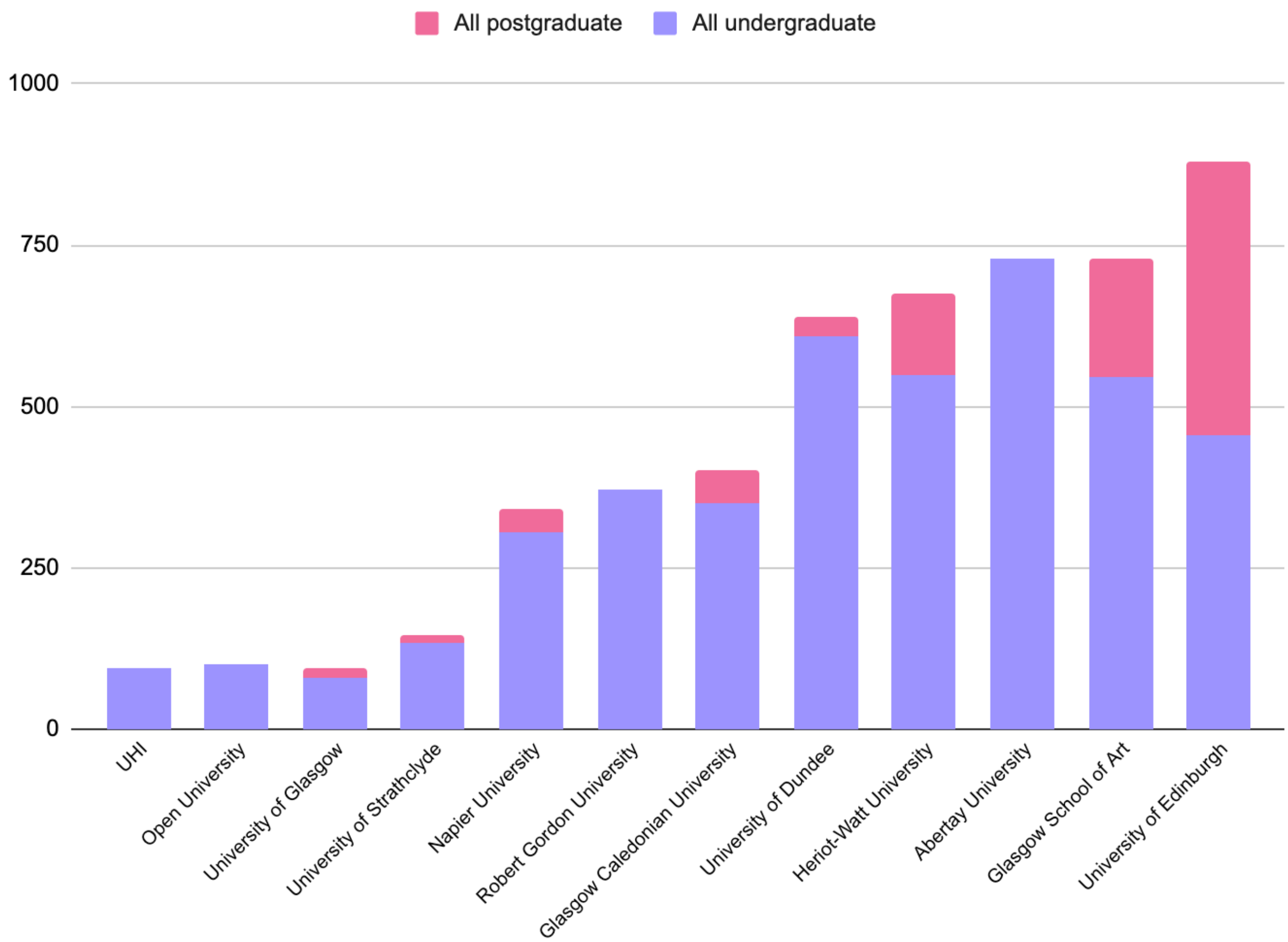

Figure 13: Student enrollment in Design Studies subjects at Scottish HEIs, 2021-2022 (HESA, 2022 and author analysis)

The undergraduate picture

From these HESA statistics we can see that over 80 per cent of design students in Scotland are studying at undergraduate level spread across the country's Universities and Art Schools. What are they studying though?

Surveying the UK wide government 'Discover Uni' website, In Scotland, there are 59 on-campus design programmes being delivered, accounting for only 1 per cent of programmes listed in Scotland.
Across 15 HEIs, we can see a snapshot of the types of undergraduate programmes on offer (as of December 2022).

Game Design and Production	Interior Design	Textile Design	Web Design and Development	Digital Design	Costume Design
Interaction Design	Jewellery and Metal Design	Sound Design	Mechanical Design Engineering	Fashion Design	Computing and Creative Design
Graphic Design	Product Design	User experience design	Product Design Engineering	Communication Design	Three Dimensional Design
Production Arts And Design	Garden and Greenspace Design	Product Design and Innovation	Sports Design Engineering	Computer-Aided Design	Design and Production with

					Retail

Table 4: Summary of types of undergraduate design programme in Scotland (Discover Uni, 2022)

The postgraduate picture

From HESA enrolment statistics we can see that over 80 per cent of the 800 plus postgraduate design students in Scotland are enrolled at three institutions: University of Edinburgh, Glasgow School of Art and Heriot Watt University.

The predominantly one-year format of post-graduate programmes has facilitated their fast growth in recent years; and has seen programme development allied to university's research activities and campus expansion plans. For example, Glasgow School of Art's development of its MDes Design Innovation portfolio at its satellite campus in Forres; and more recent efforts aligned to the University of Edinburgh's development of the Edinburgh Future's Institute (EFI). The current postgraduate programme provision of these three HEIs is summarised below:

University of Edinburgh	Glasgow School of Art	Heriot Watt
MSc Advanced Sustainable Design	MDes Communication Design	MA Digital Design and Innovation
MSc Architectural and Urban Design	MDes in Design Innovation and Circular Economy	MA Interior Architecture and Design
MSc Design and Digital Media	MDes in Design Innovation and Citizenship	MSc Design Management
MA Design for Change	MDes in Design Innovation and Collaborative Creativity	MA Fashion and Textiles Design
MSc/MA Design Informatics	M.Des in Design Innovation & Environmental Design	MDes Games Design and Development
MSc Digital Design and Manufacture	MDes in Design Innovation and Future Heritage Design	
MA Graphic Design	MDes in Design Innovation and Interaction Design	
MA Illustration	M.Des in Design Innovation & Service Design	
MA Interior, Architectural and Spatial Design	MDes in Design Innovation and Transformation Design	
MSc Service Management and Design	MDes Fashion + Textiles	
MSc Urban Strategies and Design	MSc International Management and Design Innovation	
MSc Advanced Sustainable Design	MSc Product Design Engineering	

Table 5: Summary of postgraduate design programmes in Scotland at three largest providers (Author analysis, 2022)

Other design education providers

It is worth noting that while HESA provides statistics and desk research into the student population and programme provision of HEIs, this is not an exhaustive view of the extent of design education in Scotland today.

Firstly, it does not include design education or student population at Scotland's network of 26 Further Education (FE) colleges. With 213,135 students enrolled in total (Colleges Scotland, 2022), the FE sector is almost as large as the HEI sector, catering to a diverse student population of whom the majority choose to study part time. From desk research, we do know that a range of design education is available from FE colleges; from short skills development courses, through to vocational qualifications and full undergraduate degrees. Unfortunately, specific FE sector statistics at the level of design subjects are not available publicly to enable a comprehensive overview.

Secondly, we should highlight the emergence over the last 10 years of a new breed of 'alternative design education provider' that exists outside of, or as offshoots of, the formal education sector. Examples include Service Design Academy, V&A Dundee's Design for Business Workshop Programme and in-house training by consultancies such as Snook.

Small, but mighty

Zooming out from the size and shape of design education provision and student population today, we can situate design education in Scotland in a broader context.

The QS World University Rankings by Subject are compiled annually to help prospective students identify the leading universities in a particular subject, based on research citations and surveys of employers and academics.

Three Scottish universities – Glasgow School of Art, The University of Edinburgh and University of Dundee – are ranking in the top 100 universities globally in QS's Art and Design category; with Glasgow School of Art consistently placed in or just outside of the top 10 for the last 10 years.

Accounting for population size, per capita, Scotland has more of its art and design schools in the global top 100 ranking Universities, than any other European country (QS Rankings, 2022; author analysis); including Denmark, England, Finland, Sweden, The Netherlands and Switzerland, who all feature prominently.

Design stakeholder landscape

Creating the enabling conditions for success

Having examined the inputs to Scotland's design sector in the form of education, and the outcomes in the form of its design economy, we now turn to the support provided by its major stakeholders, creating the enabling conditions for success.

This support takes various forms; as highlighted by the Design Innovation Ecosystem Model' (Whicher, 2017) from stimulating demand for design across the economy and society at large via design promotion, business support and engagement with 'users' of design services; through the funding, policy and stakeholder action aimed at matching the supply of design skills, knowledge and expertise with appropriate areas of demand across public, private and third sectors.

A landscape of support for the design sector

In surveying the landscape of support for the design sector, a sample list of key stakeholders was generated, and their geographic remit and industry remit identified. Using publicly available information on their websites, the organisational aims, objectives and activities were captured and analysed to determine the nature of support provided, and whether they offer specific support for the design industries, or a sub-sector thereof.

For the purposes of this research, it is assumed that 'design in non-design industries' receives support via organisations and programmes targeted at Scotland's other major industries. Global organisations and networks were also excluded.

Design-specific support identified: Yes / No

	Industry remit			
Geographic remit	**Wider business industries**	**Wider creative industries**	**All design industries**	**Design sub-sectors**
Whole UK	Innovate UK (UKRI) Federation of Small Businesses British Chambers of Commerce	Creative & Cultural Skills Arts & Humanities Research Council (UKRI)	Design Council Design Business Association Design Museum D&AD	Service Design in Government conference
Whole Scotland	Scottish Enterprise Skills Development Scotland Scottish Development International Business Gateway	Creative Scotland	V&A Dundee The Lighthouse Scottish Design Awards Catalyst 23 conference	RIAS Architecture & Design Scotland Craft Scotland Product Design Scotland Scottish Fashion Awards Design it; Build it conference UX Scotland conference Civ/Tech programme (ScotGov)
Regional Scotland	Elevator UK Highlands and Island Enterprise Opportunity North East Codebase (Edinburgh/Stirling) South of Scotland Enterprise	Creative Edinburgh Creative Dundee Creative Dumfries Creative Borders Creative Stirling XPo North Digital Dundee Contemporary Arts	Dundee UNESCO City of Design	Perth UNESCO City of Craft & Folk Art

Table 6: Summary of key stakeholders, their organisational remit and whether they provide specific support to the design industries

All design industries

Well-rounded support for the UK's design industries

At a UK level, there are strong focal points for the design industries in the form of Design Council, Design Business Association and Design Museum. The objectives and activities of these organisations are multifaceted, going beyond promotion and advocacy to provide support for research, capability building, networking and collaboration.

As the UK's national strategic adviser for design, the Design Council has a clear purpose to influence policy and strategy on behalf of the sector, evidencing its value through its research activities and embedding design knowledge and skills across the economy and society through its work with organisations.

The Design Business Association, as the UK's trade association for design, also has a remit to be a sector voice and drive design up the agenda of business and government. It seeks to build confidence in design investment and enable partnerships that realise design's potential as a catalyst for growth.

Design Museum serves as a beacon for design in the UK, showcasing and promoting its varied forms, both domestically and on the international stage. In addition to its programme of exhibitions, the museum has numerous academic connections, including its Future Observatory research programme which supports the UK's response to the climate crisis. It also has a range of learning opportunities for all ages, and puts a focus on developing international partnerships.

A picture of potential for Scotland

While at a UK level there is clear sector support provided by the Design Council, Design Museum and sector organisations such as the Design Business Association. In contrast in Scotland there is a complex ecosystem of organisations working to support the design sector and its individual disciplines, without co-ordinated action and prioritisation of effort and resources (see Table 6 above).

In comparison to other small-sized European countries and sub-states, there is (outside of Architecture) a historically rooted absence of sector-led professional bodies and membership associations in Scotland; therefore the sector is not adequately represented in policy discussions.

However, in the stakeholder landscape illustrated above in Table 6, the V&A Dundee is unique in the breadth of its remit and role.

Through its work since its inception, V&A Dundee has already begun to fulfil all of the roles provided at at a UK level – by the Design Council, Design Museum and Design Business Associattion – for Scotland, all under one roof. As Scotland's design museum, it showcases the nation's rich history of design and provides a platform for Scottish design projects of all shapes and sizes, highlighting their value to both the economy and society.

Through its Design for Business workshop programme, like Design Council, V&A Dundee has been working with organisations across private, public and third sectors to teach and embed design mindsets and skills for growth and prosperity, and in doing so have provided a forum for networking and collaboration.

Other learning programmes, such as its Young People's Collective and National School's programme bring design to a broader audience across communities and education, further amplifying the organisation's potential for impact. And with the team behind 'Dundee UNESCO City of Design' now hosted and supported within V&A Dundee, the opportunities to access international networks and develop partnerships are enhanced.

With the University of Dundee (UoD) and Abertay University as two of its founding partners, and a Knowledge Transfer agreement with UoD that funds a research position within the Design for Business team, there is an established link with academia and potential to build upon innovative, design-led research projects such as 'Sewing Box for the Future' and 'Design for Scotland'.

Now, with its enhanced remit as Scotland's national centre for design, the organisation has entered a new era in its position as representing design within the realms of government and policy. Drawing comparison with the UK landscape, what is missing from the current landscape is a formalised connection with the design industries themselves, which would allow V&A Dundee to bring sector voices directly into these realms.

Keeping a foot in the central belt

In light of the data surfaced in preceding sections, the geographic positioning of V&A Dundee can also be considered an asset, serving as a bridge between the central belt and the rest of Scotland; particularly the North East, where there appear to be opportunities for development that have, until now, flown under the radar.

However, international comparators to Scotland, Austria and Denmark, have established the benefits of satellite centres in ensuring that national sector development efforts are geographically distributed (see Chapter 5).

The Lighthouse was the focus of a previous effort to establish a national centre instituted in preparation for Glasgow's status as UK City of Architecture and Design 1999. After sustaining a high profile events and exhibitions programme for 10 years, the Lighthouse went into administration in 2009, before being reopened under the management of Glasgow City Council. It has remained closed to the public since the start of the Covid-19 pandemic in March 2020.

While The Lighthouse remains well known and respected in the design community; and given the high concentration of designers in West and Central Scotland, continues to live on the sector imagination as a focal point for activity, even if it doesn't actively play this role today.

In considering the future sector support infrastructure needed, the best way to enable localised support for design promotion, advocacy and networking should be considered alongside national efforts.

Design sub-sectors

A fragmented network of formal sub-sector support

In examining the support for specific design sub-sectors in Scotland, we can see a fragmented picture; only three of the six design sub-sectors in Scotland have their own professional network or trade body. Having their own professional body provides design sub-sectors with a focal point, where they can cohere around common values and goals, showcase value to the wider economy, and develop a sector voice that allows them to advocate for support needs at a regional or national level.

As a chartered profession, Architecture has long-established support in the form of the Royal Incorporation of Architects in Scotland (RIAS), who provide member services and offer opportunities for networking and collaboration. Architecture & Design Scotland was set up by Scottish Government as a Non-Departmental Public Body (NDPB) to provide leadership on the Place Principle and demonstrate a joined-up partnership approach. In doing so it serves a purpose in promoting and advocating for the value the sub-sector brings, making Architecture & Built Environment the best-served design sub-sector in terms of support.

Product Design Scotland was established by Technology Scotland (the representative body for Scotland's Enabling Technologies sector) to support the product and industrial design sector. It aims to be a focal point for the community and provides support in the form of promotion and advocacy, and networking and collaboration.

Craft Scotland is the national development agency supporting makers and promoting craft; it was established as a charity and is supported by Creative Scotland. With an aim to promote the contribution of craft to Scotland's economic and social wellbeing, it supports the sector through promotion and advocacy, and creates opportunities for networking and collaboration through digital platforms and strategic partnerships.

Equivalent organisations for the Clothing, Digital and Multidisciplinary design sub-sectors were not identified through this research. The Scottish Clothing design sector is small, but the research outlined in previous sections highlights its importance at a UK level, and its vulnerability. The Digital sector, while young in comparison to Architecture & Built Environment, is making considerable contributions to Scotland's design economy. Finally, Multidisciplinary design, while newer and perhaps more diverse in its activities, is growing and has huge potential to contribute across all four value domains of the Design Value Framework.

To counter the varying states of self-organisation and representation within the design industry's sub-sectors today, there is an opportunity for the development of a unifying cross-sector body to galvanise the design sector in all its forms, provide a focal point for effective representation to, and partnership with government and industry stakeholders.

Events and initiatives filling the void

However, in the absence of existing sub-sector organisations, it should be highlighted that a number of award schemes and conference events have been supporting the sector with opportunities for promotion and networking, such as the Scottish Fashion Awards, 'Design it; Build it' (a digital products conference), UX Scotland conference, and Catalyst 23 (a design leadership conference). These initiatives, and others, showcase best practice and thought leadership within different specialisms, and raise awareness of the great work being done by designers in individual sub-sectors, and across the design industries as a whole.

Wider creative industries

A breadth of UK-wide support for the creative industries

'Zooming out' to the wider creative industries, at a national level, we see greater breadth in the nature of support provided to the sector, albeit less specific to the design industries.

Creative & Cultural Skills provides promotion and advocacy for the UK creative industries, but also has a remit to generate research, build capability and influence policy. In the past, they have delivered targeted support for the design sector, with one example being the 'Design Blueprint', a series of recommendations set out in the Design Industry Skills Development Plan, published in May 2007.

Under the umbrella of the UK Research and Innovation (UKRI), the Arts & Humanities Research Council (AHRC) have also provided specific support to the design sector with the Design Exchange Partnership, a funding scheme which was part of the 'Future Observatory: design the green transition' programme with Design Museum.

It is worth noting that both of these projects were in partnership with the Design Council.

A lynchpin of the design industries, with untapped potential

In Scotland, Creative Scotland is the public body that supports the arts, screen and creative industries; it provides support through both promotion and advocacy and financial support, by distributing funds from Scottish Government and National Lottery. Creative Scotland could be considered the primary - and indeed only - distributor of public funding for design sector development in Scotland, via project support and regular funding for Creative Industries sector development organisations.

It has commissioned and funded numerous projects in direct support of the design industries, including 'Selling Platforms for Art, Craft and Design in Scotland: A Report', 'Mapping contemporary visual art and design education in Scotland', and 'Collect 2018: Showcasing Scottish design and craft talent'.

In support of the diverse geographic needs of Scotland's creative industries, Creative Scotland supports a network of centres across different regions of Scotland – such as Creative Edinburgh, Dundee, Dumfries, Stirling and the Borders– through regular funding. While these centres do not explicitly provide tailored support to the design industries, this infrastructure could be leveraged as an asset. What if they were utilised as venues for specific networking, collaboration and capability building initiatives for the design industries, reflective of the strengths and fragilities in different geographic areas of the country?

Wider business industries

Looking across organisations and institutions that support the wider business industries of the UK and Scotland, Innovate UK (part of UKRI) appears to be alone in providing explicit and direct support of the design industries.

Innovate UK (the UK's national innovation agency) produced its own explicitly design-focused strategy 'Design in Innovation Strategy: 2020-2024' with four priority aims of 'Making the case for investment in design', 'Reducing the cost of entry for those new to design', 'Helping businesses maximise the value contribution of design' and 'Helping businesses access the best design talent'. (reference)

Through its 'Design Foundations' funding programme it invests up to £2million to: 'help businesses engage with customers, users or wider stakeholders through early-stage, people and planet centred design research' to foster product, service and business model innovation.

In addition, via its 'Design in Innovation' Knowledge Transfer Network (KTN) it connects designers with businesses needing human-centred design support, helps businesses understand design, and hosts a Design Innovation Network to foster knowledge sharing and collaboration.

Wider industry support in Scotland

A number of public sector organisations and agencies in Scotland provide support across sectors, aligned to the Scottish Government's priority growth sectors. To a varying degree these organisations include implicit or explicit emphasis on design, for example:

Scottish Enterprise: Previously issued 'By Design' grants to encourage uptake of design services by businesses, but this is now closed. As a key stakeholder in V&A Dundee and Design for Scotland project it is now focused on other mechanisms of support.

Scottish Development International: No explicit design sector support but promotes innovation and inward investment.

Skills Development Scotland: No explicit design support but recent Career Review took a design-led approach, and is host to a sizable in-house design team.

Business Gateway Increasingly embedding design into courses and guides (e.g. design for business, designing for your customers)

Reading between the lines: support for design in non-design industries

However, looking for explicit support of the design industries does not necessarily tell the whole story. A number of organisations researched - such as the regional enterprise agencies, and local incubators and accelerator programmes - provide support targeted at 'innovation', 'technology' or 'digital technology'; fields which inherently involve various types of design.

As a result, it remains to be seen to what extent funding for other major business industries supports design in non-design industries.

A strategic opportunity

Having shown in this chapter the economic and employment significance of the design sector alongside other key national priorities, it might be argued that with greater awareness and recognition of the contribution that the design sector makes to the Scottish economy – and a concerted effort to engage policymakers and stakeholders in the value of design – that strategic support for design sector development could be encourage, to the benefit of the economy and society at large.

Areas for further research

In this chapter we have drawn on existing research data on the design economy in design industries and other industries, on design education, and on the stakeholder landscape of design sector support.

It is, however, worth noting that there are several knowledge gaps on the state of the design sector in Scotland, when considering international best practices such as the International Design Scoreboard (Moultrey and Livesey, 2009).

Future Design for Scotland research would benefit from data and understanding on several areas, for example:

- Public sector expenditure on design services: to aid identification of opportunities for sector support through procurement practices.
- Design awareness and adoption across industries: to assess the 'design readiness' and 'maturity' of organisations in Scotland, drawing on international efforts such as the Danish Design Ladder.

In addition, further sector-specific data on Scotland's design economy, for example, on design exports and aGVA at a sub-sector and Local Authority Area level would aid further understanding of the sector and targeting of specific support where needed.

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