ARTS RESOURCE MANAGEMENT SCOTLAND

Report into Shared Storage and Asset Management Systems in Scotland's Cultural Sector

CREATIVE SCOTLAND

ALBA | CHRUTHACHAIL

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Table of Contents

1. Summary

This report, commissioned by Arts Resource Management Scotland (ARMS), explores the idea of shared storage and resource management software across the Creative Industries in Scotland. Crucially, it will make sharing these resources between partner organisations and the wider sectors more manageable, efficient and accessible to practitioners at different levels, due in part to standardised procedures. Introducing these innovations will also assist with national targets of carbon neutrality for the sector by 2045.

While informal sharing and material reuse has always been a feature of the sector, the reasons for exploring a formalised, sector-wide shared system at this time come from a combination of commercial and environmental concerns. From a commercial perspective, there is a common issue across the Creative Industries regarding a shortage of good quality, affordable and accessible storage space, and a lack of effective inventory and catalogue management.

The combination of the two results in duplication of resources, the under-utilisation of existing resources and wasted time and money looking for existing objects or buying new ones. From an environmental perspective, this results in a large number of items, each of which has taken precious energy and material resources to make, sitting unused. It favours the use of lesser quality, disposable items that will eventually end up in landfill, rather than better quality items that can be repaired and reused multiple times. Against a background of the Climate Emergency and an economic crisis, this simply doesn't make sense.

These problems with storage and resource management were consistently experienced to some degree amongst the 70 organisations and individuals in Scotland's creative sector who engaged with this research through interviews and a survey. The idea of a shared solution met with an overwhelmingly positive response. The benefits for each organisation include a better understanding of each organisation's assets and how to use them; eliminating duplication of resources and costs; carbon savings and clear carbon reporting; and access to a catalogue of fantastic assets from other parts of the creative sector. The environmental and sectoral benefits include avoiding the creation of new resources using virgin materials; diverting waste from landfill; equality of access across the sector to a catalogue of resources; and making the Creative Industries in Scotland an exemplar of good sustainable practice.

The benefits are clear, so the question is how to design a system that works for a wide range of organisations, from small 1-person workshops to large national organisations with multiple venues. Should there be one centralised store, a network of existing hubs or purely a digital solution? What purpose would the software serve and how can this best serve the needs of the sector? The research process has included exploring a range of storage and software options and gathering the views of the sector to feed into a set of recommendations for how to move this forward.

The recommendations include operating a trial across a smaller number of organisations from across the cultural sector to test the proposed concept, storage management, software solution and, perhaps most importantly, aptitude of a group of organisations to work together in a sharing economy. The very concept of transparency and sharing assets rather than preciously guarding them, will be a major mindset shift. In the short term it will require commitment to a bigger picture and a loosening up of the silos that currently exist, all at a time when economic reality is putting the sector under enormous strain. If this can be achieved it could result in a true sharing economy for the Scottish creative sector; access to a wealth of creative materials and resources; and a true appreciation of the economic and material value of those resources. These ideas have long been discussed but the time is now for meaningful and urgent action. A shared storage and resource management software solution is a practical way to implement a truly sustainable way of working for the Creative Sector in Scotland.

2. The Report

This report has been commissioned by the Arts Resource Management Scotland (ARMS) working group and has been funded by Creative Scotland. The ARMS group includes representatives from across the theatre, screen, visual arts sector and sustainability in the arts, who have a collective goal of finding ways to share resources, materials and equipment effectively across the cultural sector in Scotland. Its core values are sustainability and cross-artform collaboration. Regularly represented within the group are: Creative Carbon Scotland, ReSet Scenery, Circular Arts Network, Citizens Theatre, Birds of Paradise Theatre Company, Grid Iron Theatre Company, National Galleries of Scotland, Bectu and Royal Conservatoire Scotland. The report has been researched and carried out by Ostrero, a Circular Economy research and advocacy organisation.

Research Brief

The research brief was to explore the concept of a shared storage facility, managed by a third party, and operated by asset management software to allow resources to be listed and shared whilst being easily traceable and located. The research period was from July–October 2022 and included a mix of:

- Background research into sustainability in the Creative Industries in Scotland and examples of similar initiatives that are working successfully elsewhere;
- Interviews with 18 organisations and practitioners in the Creative Industries;
- Interviews with 6 software and storage providers;
- Meetings with 3 organisations to build a picture of the Circular Economy in the Creative Industries;
- A survey completed by 52 respondents in the Creative Industries to ascertain how they currently store and track their assets and their openness to a shared solution. Respondents were from diverse organisations within the sector, in terms of size, from 1 person workshops up to national bodies with multiple locations; sector, including theatre, visual arts, performing arts, crafts, design, galleries, heritage and education; and location, including Glasgow, Edinburgh, Dundee, Aberdeen and rural areas including Skye, Dumfriesshire and Aberdeenshire.
- The list of all organisations consulted can be seen in the appendix.

The interviews enabled the gathering of more qualitative information on organisations' views on a shared storage solution; whereas the survey generated more quantitative data to build up a picture of the issues surrounding storage and sourcing materials as and when needed; and how this could be redesigned into a shared solution.

Terms Used

- Asset Management System – in this context the term refers to software that enables organisations to keep an inventory of their material assets, such as props, costumes, lighting, showcases etc; track what they have and where it is; and enable sharing between organisations.
- Resources – refers to the material assets mentioned above.

70
organisations and individuals in Scotland's creative sector engaged with the research

3. Background
3.1

Climate Emergency

This research has been produced against the backdrop of the Climate Emergency, declared by the Scottish Government in 2019 and resulting in a target to reach net zero emissions by 2045. Creative Scotland has a key role in helping creative organisations adapt to this whilst continuing to encourage creativity and sustainable creative practices. Creative Scotland recently published their Climate Emergency and Sustainability Plan, in which they make this clear: "We also believe that, through the implementation of this Plan, we can further amplify the key role that culture and creativity already plays in helping to address the climate emergency, both in terms of the actions that we take and in the ability for creative practice in all its forms to tell the story of the climate emergency, to influence and inspire others to take action."[1]

The shared storage and software outlined in this report could help address the Creative Scotland Climate Emergency and Sustainability Plan by:
- Demonstrating a transition to a more sustainable society through the Creative Sector;
- Embedding sustainable and environmental practices in the sector;
- Reducing the environmental impact of the sector whilst still delivering sustainable creative practices.

The Climate Emergency is closely linked to our over-extraction of resources and overconsumption of material goods. As Zero Waste Scotland's "Material Flow Accounts" puts it, "The more materials we extract and use, the more damage we do to the climate and to nature." [2]. The Scottish Government has committed to, "embedding a fully circular economy approach, which is designed to reduce, reuse, repair and recycle" by 2032.[3] The Scottish Parliament is in the process of introducing its first Circular Economy Bill, which will include a ban on the destruction of unsold durable goods and incentivising the reuse of material goods.[4] Organisations of all shapes and sizes will need to incorporate this approach into both their strategic plans and their day to day working practices.

The Creative Sector is of course closely linked to the design, creation and use of interesting materials and objects. There is an urgent need for the sector to move from the current Linear Economy model of Take-Make-Use-Dispose; to a more Circular model, in which the whole lifecycle of every material is considered; waste is designed out of products and services; materials are kept at their highest value for as long as possible; and sharing items is encouraged. Using shared storage space would be an ideal vehicle for putting this theory into action, by valuing the materials already in circulation and ensuring they are used to their full capacity.

Furthermore, creative organisations will increasingly need to evidence to funders and to their audiences how they are addressing the Climate Emergency. There are many different frameworks for this, from Net Zero to the Circular Economy to Sustainable Development. The vital thing is to show they are taking meaningful action, and this shared storage approach represents a practical and impactful way to do this.

1. P12 A Climate Emergency and Sustainability Plan for Creative Scotland | Creative Scotland
2. p2 ZWS1658 Intro Scottish MFA doc v7_0.pdf (zerowastescotland.org.uk)
3. 3.5.9 Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update - gov.scot (www.gov.scot)
4. Delivering Scotland's circular economy - proposed Circular Economy Bill: consultation - gov.scot (www.gov.scot)

3. Background

3.2

The Sharing Revolution

Research into shared storage facilities is also taking place in London's theatre network and in Manchester's artistic community. France, Canada and the USA all have areas of their creative sectors investigating similar ideas. Growing out of similar concerns but in a different sector, the rise in tool libraries worldwide over the past 10 years has been enormous. The environmental motivations behind this, associated with cost and space savings for the end user, have made these a popular and successful model. The work already done into establishing these libraries is often freely shared, which gives the Creative Sector valuable knowledge when it comes to common hurdles and benefits.

In 2021, Circular Communities Scotland launched their Share & Repair Network, aiming to set up a nationwide sharing library and repair cafe network. The Share & Repair Network has much in common with this shared storage solution, namely the physical sharing of items across a loose network of people and organisations and an emphasis on valuing and looking after objects to make them last as long as possible. Circular Communities Scotland are open to the idea of working with ARMS when it comes to establishing regional storage hubs, which could tie in with their network and encourage the sharing of knowledge and experience.

3.3

Economic Crisis

The dire economic circumstances faced by cultural organisations is also important to note here. Two years of Covid restrictions, followed by a year dominated by the war in Ukraine and the sharp rise in the cost of living, are putting enormous pressure on theatres, galleries, and film production companies to even survive. While this shared storage solution could bring long-term efficiency and savings, the hurdle of getting organisations to engage with a new way of working and put resources into starting it up, should not be underestimated.

4. Scotland's Storage Problem

"How much waste for an image?"

Aude-Line Duliere 5

A lack of physical storage space for cultural organisations in Scotland is where many of the discussions around a shared storage space began. Indeed, in Circular Communities Scotland's' report, "The Creative Industries in Scotland: Embracing the Circular Economy,"6 it is noted that, "The single biggest barrier raised by stakeholders relates to space, or rather lack of sufficient space to store materials, resources, products or items, in order to facilitate their reuse or repurposing in a timely fashion. Space scarcity is identified as a major limiting factor for organisations of all sizes, scale and focus. It's a practical barrier that limits the intentions to adopt different solutions for materials or items at the end of their useful life. It goes further than having adequate storage space and relates to accessibility and visibility once in that space; resources can only be utilised effectively if the storage is convenient to access and items are electronically visible for speedy retrieval." 7

Almost anyone you speak to in the Creative Industries will nod knowingly when you ask them about the problems of storing and retrieving materials efficiently. Recurring issues include a lack of affordable, good quality storage that can be accessed as and when needed; and an absence of up to date inventories that are effectively used across the organisation. The consistent picture is of organisations putting items into storage when they are time poor at the end of production; meaning either this is not recorded properly so that the item is difficult to retrieve or forgotten about, or it is difficult to access in storage when it is needed. It is impossible to quantify this as by their nature many of these items are unrecorded, but just imagine the lights, plinths and handsaws sitting unused in storage facilities across the country. Imagine instead a system in which these were all recorded in one fully accessible digital catalogue that could be used by all cultural organisations.

Example

Only one day is allocated to take down an exhibition (in contrast to the 5 days allocated to build); everyone is tired at the end of the exhibition and there is a rush to get it dismantled, packed up and taken away. Spotlights, small plinth covers and labels are all packed up together in a box which isn't labelled and taken to the offsite storage facility. 6 months later, when a spotlight is needed at the last minute, no-one remembers that it was in that box. Rather than getting transport out to the offsite storage facility, which is only open 3 days a week, and being unsure if the spotlight will even be there, it's cheaper and quicker to order a new spotlight from Amazon. The organisation ends up with more material resources than it can actually use.

 5. 2018 Wheelwright Prize awarded to Belgian architect Aude-Line Dulière - Harvard
6. Creative-Industries-in-Scotland-Embracing-a-Circuar-Economy.pdf (circularcommunities.scot)
7. P15 Creative-Industries-in-Scotland-Embracing-a-Circuar-Economy.pdf (circularcommunities.scot)

One of the most surprising outcomes from the interviews and the survey was that very few organisations are using any form of asset management system. Indeed, 70% of survey respondents said they don't use any form of asset management software. Of those that did use an asset management system, 8% are using bar codes, 6% QR codes and 6% hybrid systems. 30% of respondents are using "other" systems, of which 5 are using Excel; 6 a written inventory; 3 Tracking This; 1 Mimsy; and 1 in-house tracking system. The lack of asset management systems also underlines the issues organisations have in identifying what resources they have available when they need them.

Keeping track of stored goods

Q14: What asset management system do you already use to keep track of your stored goods, if any? Please tick all that you have used.

70%

don't use any form of asset management software
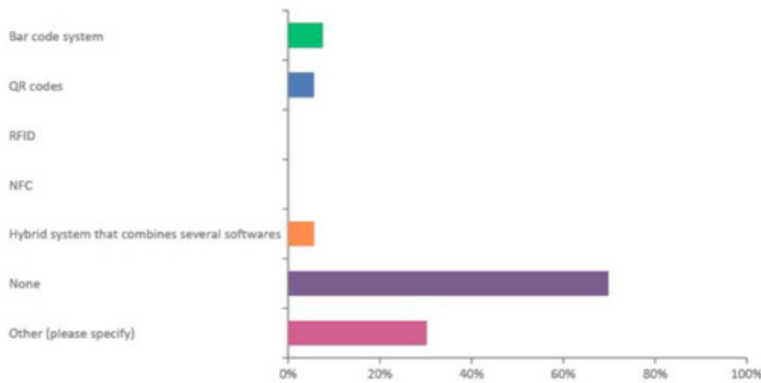
Barriers to storage

Q10: What are the barriers to storing material assets? Tick as many as relevant.
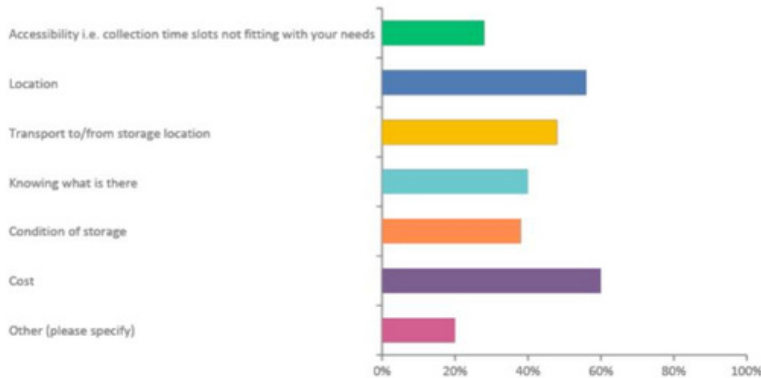
Survey respondents said that the main barriers to storing material assets were, in order: cost, location, transport to get there and back and knowing what is where.

The issues around storage

For cultural organisations, these issues around storage and inventories lead to a number of issues, evidenced by the survey, and including:

- Duplication of materials and the cost of this – 47% of survey respondents said they have to buy a new item because of an issue with retrieving the desired item (38% "sometimes" and 9% "usually");
- Wasted money – 47% reported losing some money replacing props and materials that couldn't be retrieved (43% reported "some money lost" and 4% reported a "significant amount of money lost").
- Wasted time – 49% reported losing time looking for props or materials in a month (15% at least 1–2 hrs; 19% up to half a day; 15% over half a day).
- Wasting money on storage that is underutilised – this is by its very nature hard to quantify as many of these "lost" items are unrecorded – but storage costs are high, with 5 survey respondents spending between £1,500– £3,500 a month on storage.

For the sector as a whole, environmental impacts of this include:
- Higher CO_2 emissions due to more items being made and bought;
- More waste in landfill due to duplication of resources;
- Use of precious virgin materials to make new objects;
- Choosing cheaper, lower quality resources than those that are made to last;
- Value leaking out from the sector to suppliers of low quality, cheaper materials that can provide convenience instead.

"You wouldn't want to go by yourself to our offsite storage. It's in the middle of nowhere, 2 of you need to go, and even opening the bolt is hard! So we bolt it shut after a show, it doesn't get reopened for 6 months and stuff gets lost and dies."

Creative Industries Interviewee

5. Proposed Solution and Benefits

5.1

Proposed Solution

The proposed solution to these issues is to implement a hybrid shared storage and software solution across Scotland's creative organisations. More detail about the options for storage and software can be found in Sections 7 and 8. This modular system would harness existing momentum and build up capacity as the scheme expands:

- Start with one central storage hub for larger items, managed by a third party and offering deliveries and collections;
- Smaller items are retained in each organisation's storage facility as are any items that they do NOT wish to share;
- Gradually add on regional hubs as the scheme grows and demand for this increases, working in partnership with Circular Communities Scotland's Share and Repair Network;
- If demand proves high enough, build up a shared library of commonly used items as the scheme grows, owned by the scheme, and managed and stored in the central storage facility;
- All supported by shared software that provides an easy to use digital catalogue of what is available and manages reservations, whether from the central storage facility or an individual organisation's store;
- Borrow from and lend to other organisations through the shared software system for the items you choose to share (ie you can choose which items are available for sharing and which are not), regardless of where they are stored;
- Signpost what should happen to materials at the end of life (i.e. once an organisation no longer wishes to keep them and they are removed from the shared storage facility). This could include donating items to a shared library; or working with organisations such as the Circular Arts Network and Re-Set Scenery to keep these materials at their highest value for as long as possible.

Shared storage

Q15: Would you support the idea of a shared storage facility?
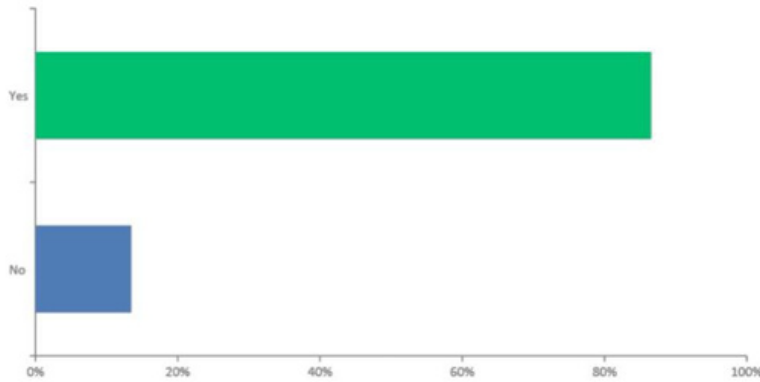
87%

would support a shared storage facility

The sectoral response to the idea of a shared storage facility has been overwhelmingly positive, with 87% of survey respondents supporting the idea. The small number of organisations who answered no to this question said that for various reasons (geographical location, current storage working effectively), such a scheme would not be suitable for them.

5.2

Fees for shared storage

While the scheme would require initial external funding to run a trial and to get started (see Section 9 for more detail), it could generate an income through:

- Membership Fees;
- Storage Fees;
- Potential for hiring certain resources;
- Additional services (to be developed as the scheme progresses) such as deliveries, repair and upgrading of items etc.

Several interviewees commented that they would see these fees as an alternative to the storage costs they are currently paying, the unneeded additional items ordered when something is lost and the time spent looking for things, rather than an additional cost to their current budget.

The table below shows there would be support for a model that is ultimately cost neutral to the organisation and 26% of respondents would be prepared to pay a bit more than they are currently paying, suggesting they recognise the added benefits of such a system.

There was strong support – 90% – for a sliding scale depending on the size of the organisation. However one large organisation added the following comment: "No. As a large organisation we could get charged the highest rate but use it the least." They preferred a charge on the number of items or the storage footprint.

Q22: Would you consider paying into a shared storage facility if the fees were: (tick all that apply)
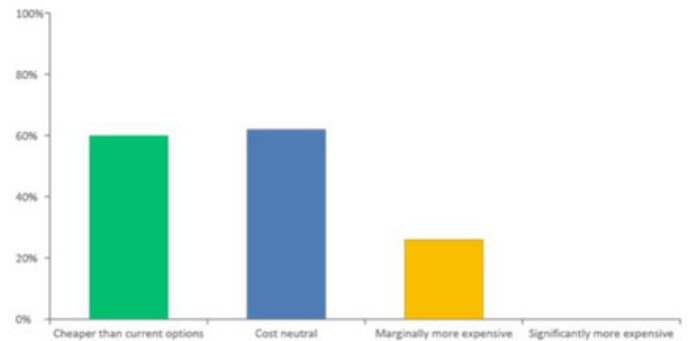
Q23: Would you support a sliding scale depending on the size of the organisation?
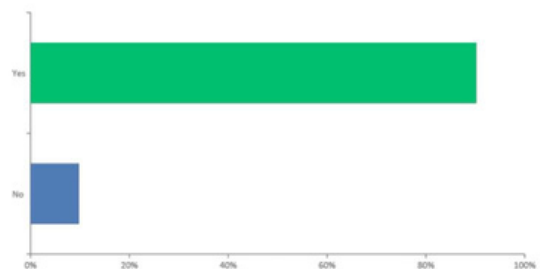
5.3

Benefits of shared storage

Informal sharing has of course always happened in the Creative Sector and has been trialled informally in some organisations. A shared, cross-sectoral solution means that sharing becomes accessible to organisations of all shapes and sizes and creates a system in which materials can be used to their full capacity. Other benefits of the system include, for organisations:

- Understand assets – what they are, where they are, and key useful facts about them making it easier to plan their use;
- Eliminates double procurement – save cost and time of buying new materials;
- Saves costs on storage of materials you are not using;
- Carbon Savings – software includes carbon calculators so organisations can estimate and report on their CO2 targets, especially useful for Creative Scotland's Regularly Funded Organisations, who are now required to report on this;
- Contributes to meeting sustainability objectives;
- Demonstrates sustainability commitment to customers and clients;
- Resilience – sourcing pre-used materials within Scotland makes organisations more resilient compared to sourcing from an increasingly expensive and unreliable import market;
- Equality of access: increases access to interesting tools and materials for everyone across the sector, not just those with strong networks.

With regards to CO2 savings, it is impossible at this stage to quantify how much carbon could be saved through a shared storage solution as there are so many variables: location, range, number and type of resources to be stored, transport etc. Measuring embodied carbon (the total amount of energy required to manufacture a product) is a complex process. One interviewee commented, however, that while measurement used to matter, now we just need to get to zero carbon emissions: the numbers don't matter so much as the change in behaviour.

The survey showed which benefits mattered most to organisations with other environmental benefits and carbon savings coming in above savings in money and time:

Q25: Which benefits of a shared storage facility would be of most interest to your organisation? Tick all that apply.
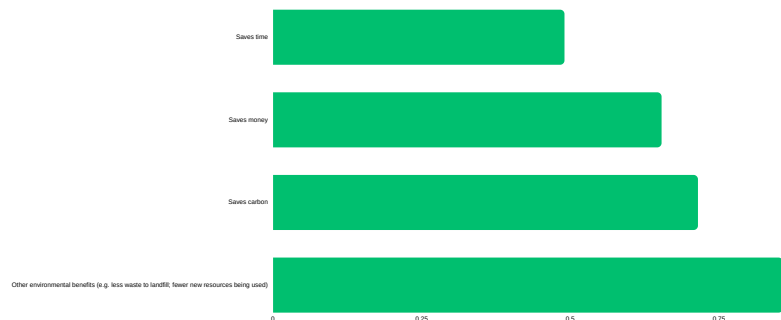
Benefits of sharing

From a sectoral and environmental perspective, benefits of shared storage include:

"The only reason we could do all this starting out was because people were kind and lent us stuff. It's only right that we pay that forward, especially after Covid, or there won't be an industry or the right skills left in 20 years. When you start out it's time consuming and daunting to ask to borrow things. This would mean everyone could go in and have a look at the catalogue, then have an informed conversation."

Creative Industries Interviewee

- Reducing resource use as fewer new resources being made;
- Carbon savings as fewer new resources being made;
- Reducing quantity going to landfill as the system encourages acquiring better materials designed to last and properly looking after them;
- Promoting exchange across different parts of the sector, for example from film to craft to design;
- Exemplar for other sectors of a successful Circular Economy approach across a whole sector, with the Creative Industries leading the way;
- Keeps value circulating locally and in the Creative Industries rather than leaking out to big business.

6. Hurdles

The hurdles to setting up a shared storage and resource management system must not be underestimated. While the idea sounds relatively straightforward, the difficulties will come in setting up and adequately resourcing the back end systems so that they work seamlessly across a wide range of organisations. Finding solutions to the following challenges will be key (more detail about costs can be found in Section 9):

- **Time and resources needed to get everyone onto the same system** – this will be more efficient in the long run but requires up front resource that can be difficult to get, especially in the current economic situation. Buy-in at all levels, including board and management is necessary to achieve this.

- **Time and resources required to set up and administer the scheme** – there will need to be consensus on how the scheme is run and external funding to pay for this.

- **Governance** – ARMS is not yet a formal organisation so the question of who will set up the scheme is key. All cultural organisations are under huge financial pressure and ARMS members are currently donating their time. A more sustainable model is required or there is a risk of burnout or the needs of individual organisations understandably being put above the needs of ARMS.

- **Convenience** – 4 people interviewed commented on the convenience of using sites like Amazon for last minute purchases. This scheme cannot compete in terms of convenience but the scheme can be designed to ensure maximum flexibility and a full understanding of the other benefits of the system, to be weighted against convenience.

"The unmaking, the dismantling, the breakdown is not often considered in the realm of art. There is not the idea of the art of unmaking. Everyone wants to build, to create, but careful deconstruction is becoming more meaningful, as well."8'

Aude-Line Duliere

- **Administrative issues** – insurance, security, maintenance, things not being returned, things coming back broken, quality control. The majority of these would be the responsibility of the company managing the storage facility but would need to be worked through in advance to ensure a consistent approach. It is worth noting that Edinburgh Tool Library reports only 4 items not being returned out of 22,000 loans, so the risk is perhaps lower than could be expected.

- **Supply and Demand** – the system needs to ensure there are enough items of interest to all users. Initially this will require input from ARMS to ensure a good mix of organisations in the trial.

- **IP and unique pieces** – some reluctance to share unique pieces and if these are shared, how are the designers credited? As detailed above, organisations can choose what to share so any particularly unique items need not be part of the scheme.

- **Difficulty of having a Circular facility in a Linear framework** – for this to really work, a circular approach should be embedded throughout organisations, e.g. adopting a Circular Design approach to ensure that materials are designed with disassembly in mind to maximise the potential for effective reuse; and scheduling in sufficient time and budget for set breakdowns to ensure that materials are carefully managed and packed to go on to the most appropriate next reuse.

- **Mindset shift** – this is a new way of doing things. Practitioners have been trained and experienced in working in a certain way, where their assets belong to them and they are entirely responsible for what happens to them. This system entails a loosening up of that control, a sharing of responsibility (as well as access to new things) that is a significant shift. Effective training and onboarding that makes the benefits of the system extremely clear, and an open communications channel about any problems will be essential in working past this. Again, buy-in at all levels, including board and management is necessary to achieve this.

7. Software Options

7.1

Software Parameters

The essential ingredient to make a shared storage and asset management system work is the efficacy of the software that will support it. This software will create a digital catalogue of what is available to share across different cultural organisations and it must therefore be easy to use and access. It needs to create a shared language of materials so that people from all institutions can search and find what they are looking for. This digital catalogue should hold enough information that visits to the physical storage site become largely redundant.

Bringing together a large amount of information from organisations of all shapes and sizes raises the obvious difficulty of compatibility – i.e. how organisations using different data management systems can plug into a single system.

We saw above that 70% of survey respondents are not using any form of asset management software. The fact that such a high proportion of organisations are not using any asset management software, and that those who are are using simple systems such as Word and Excel, will make integration into a shared system simpler than anticipated. For those who are using other software solutions, integration can be managed, depending on the system. For those organisations without an inventory, there will be a significant piece of work on joining in carrying out a full inventory of the assets they wish to share and uploading this information to the system.

While ARMS may be able to offer support to organisations as to the best way to do this, the time and cost of this must be factored into any trial and scheme costs, especially in the current economic climate.

8. From source material to demolition, Wheelwright-winner Aude-Line Dulière untangles the film industry's elusive supply chain - Harvard Graduate School of Design

What is needed from software?

What would users look for?

Survey participants were asked what they would look for in an asset management system. Respondents could tick as many answers as they wanted to. The table below shows that the top four functions chosen were:

- Ease of use (92%)
- Sustainable/Green (78%)
- Secure (47%)
- Intuitive (45%)

This was important in informing our research into different software solutions.

Information to be encoded

In addition, the minimum information to be encoded in the asset tracking system includes:
- Object Description – in standard language so things can easily be found
- Image
- Quantity
- Dimensions
- Location
- Availability
- Condition
- Testing Schedule
- Reservations system

In the future there should be the possibility to add:
- 3D images for more complex objects (see research project commissioned by ARMS by Ray Interactive for more detail on this);
- Video of more complex objects.

Q18: What would you look for in an asset management system? Please tick all that apply.
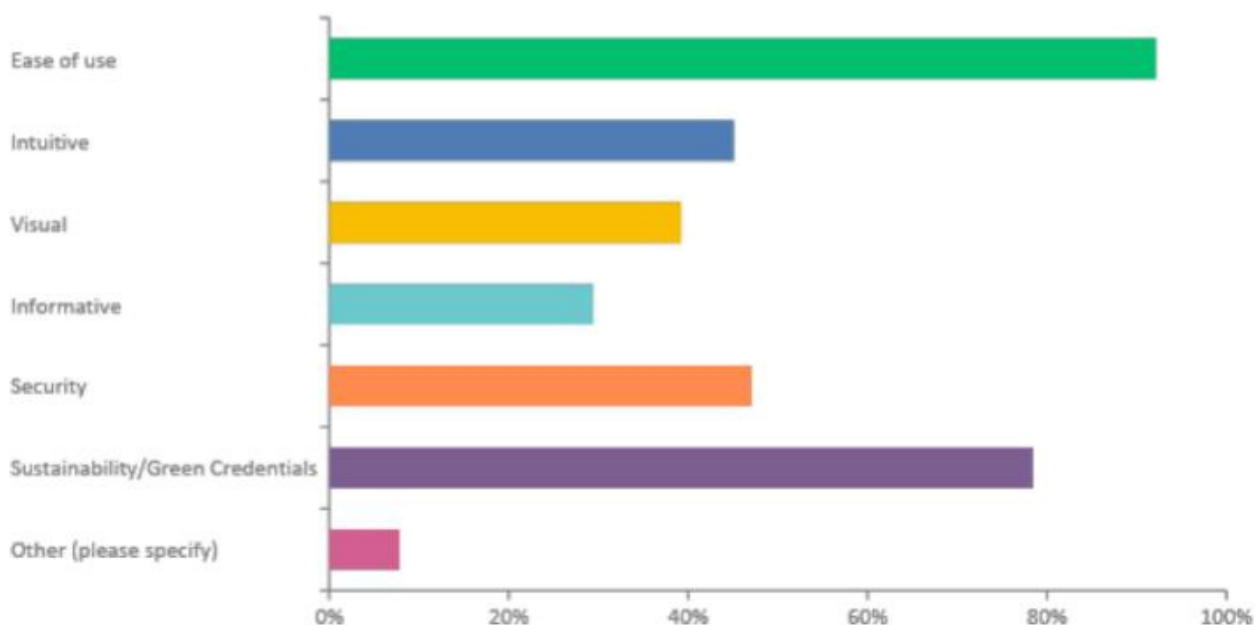
7.2
Software Providers

Background research included interviews with Pioneer Studios and Scottish Circular Economy technology company Reath. Taking the above parameters into account, we looked into several different asset management systems and created this comparison table below to show the key functions of each system:

System	Key Functions	Readiness	Interview/Demo
CAMA	Collections management softwareShare with othersExperience in film and theatre	Planned end 2022	Yes
Centrline	Scheduling and data management software with potential for sharing objectsSupports 3 API IntegrationsSuitable for organisations of all sizesExperience across creative industries	In development	Yes
Mimsy	Collections management softwareCatalogue, manage and organise collectionsConservation, monitoring	Commonly used in museums and heritage organisations	N/A
MyTurn	Asset trackingLend between multiple locationsReservationsAnalytics, including carbon savings"Library of Things" softwareCan help run a trial	Working with all sizes of companies in North America and Scotland	Yes
Rheaply	Exchange resources with connected organisationsInventory management systemPosts to sell, exchange, request or circulate resourcesGain insights into resourcesEmbodied carbon avoided reports	N/A	N/A – Didn't respond to requests for answers
Tracking This	Asset TrackingDigital logbook for every assetInspections and ComplianceBookings and rental	Used in Creative Industries	N/A
Trail	Asset Register and Asset CardEquipment reservationsAsset tagging with RFID, NFC or barcodeLending EquipmentMaintenance and defect managementInvestment Planning	Used in Creative Industries	Yes

7. Software Options

7.3

Recommendation:

Bearing in mind the parameters outlined above, we recommend running a trial with myTurn. Their software was designed and created specifically for "libraries of things" and is being used by tool libraries all over the world. Their background was in setting up a tool library in Seattle, which then led to creating and developing this platform over several years. This is in contrast to other solutions we investigated which come from a collections management perspective, rather than being built specifically to support a sharing economy model.

MyTurn can provide all the functions required and in addition they have been helpful, knowledgeable and easy to communicate with. We have asked two of their existing customers – Re–Set Scenery and the Edinburgh Tool Library – for feedback on their experience of working with them and have had very positive responses.

In addition, Circular Communities Scotland report using them, as do 90% of their Share and Repair members. They have had a positive experience of working with them and, if the shared storage facility were to seek some kind of partnership with Circular Communities' Share and Repair network, it would increase efficiency and keep costs lower if both networks used the same system. An estimate of costs for running a trial with myTurn has been included in Section 9.

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The work of Centrline and CAMA in developing their own bespoke asset management tracking systems specifically for the cultural sector is extremely interesting and we would recommend continuing to follow their progress with interest. However in trying to set up a shared storage solution there are already multiple hurdles. Using a bespoke system which is still in development could create further risk for the project in terms of additional funding being required to complete development, as yet no end date for completion and an as yet untested software system

In conclusion, we recommend running a trial with myTurn with a view to working with them to create a wider scheme; and also keeping the conversation open with CAMA and Centrline in order to understand best practice in the sector and before making a final choice for the creation of an expanded digital catalogue.

8. Storage Options

8.1

Storage Parameters

The next section includes more detail about the different options for storage. The scope of the research is to consider general storage options across the Creative Industries in Scotland, rather than museum standard storage.The research brief opened up several questions about the best way to go about this – should there be one central shared storage facility or a network of existing ones? Should there be a "library" of the most commonly used items?

The survey showed that just over 4,000 m² (46,000 ft²) would be required in total for the 33 respondents that were able to estimate their storage needs in a shared facility. However, it should be noted that, ¼ of respondents (11) to that question answered that they didn't know how much storage they would need. The difficulty of estimating storage needs was evidenced in one answer: "How long is a piece of string?" The range of sizes of the organisations that responded was so wide, from 1–person workshops up to national organisations with hundreds of staff, that it is difficult to estimate storage requirements across the sector.

In order to work through these many variables, a phased approach is recommended, beginning with a trial in Phase 1 before expanding the scheme more widely in Phase 2.

If we estimate involving 10 organisations of a range of sizes for a trial in Phase 1, before expanding to say 100 organisations in Phase 2, we can extrapolate from these figures to give us an estimate. This could obviously be amended up or down once the trial organisations have been identified.

No Organisations	Phase	Est Storage (m²)	Est Storage (ft²)
33	Survey	4,300	46,000
10	Trial, Phase 1	1,400	15,000
100	Expansion, Phase 2	14,000	150,000

8. Storage Options
Storage Parameters continued...

As with the asset management system, survey respondents were asked what they would consider most important in a shared storage facility, to ensure that their requirements are met in the design of any such system. The table below shows that the top four requirements were:

- **Good conditions**
- **Drive up access**
- **24/7 access**
- **Security**

It is interesting to note that access scores more highly than even security, and this was also highlighted as a key issue in why storage is so often not used effectively (i.e. access hours or physical accessibility make it difficult to get things out of storage when needed).

Taking these requirments into account, different categories of storage space were investigated:

- **Specialised storage facilities.**
- **Warehouse space that could be adapted for storage and managed by a 3rd party.**
- **Repurposing an existing unused space managed by a 3rd party.**

There was a huge range of storage options and sizes, a selection of which are detailed below, but most large storage spaces are currently unavailable.

Q26: What would you consider to be must haves in a shared storage facility? Tick all that apply.
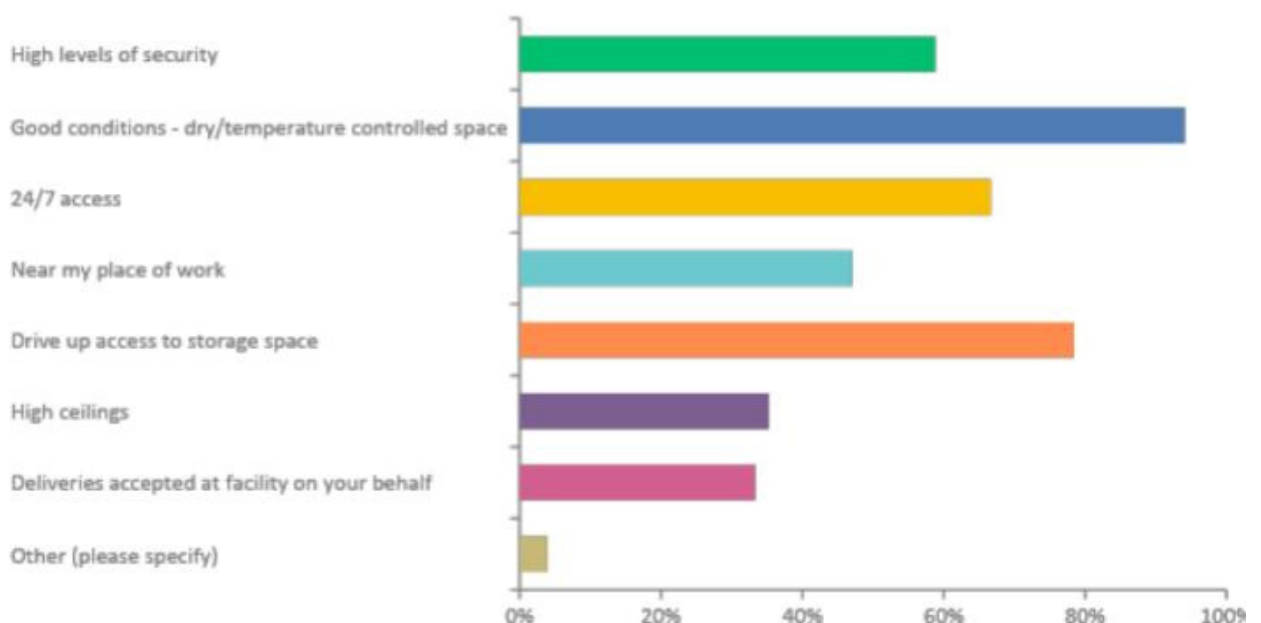
8. Storage Options

8.2
Specialised Storage Facilities

Research into the availability of storage in specialised facilities showed that, while some facilities have spaces of up to 700 m² (7,500 ft²), there is nothing currently available in Scotland of the size required, even for a trial. The majority of specialised storage facilities are up to 46 m² (500 ft²) and the largest spaces available at the time of this research were:

1. **Art Link in Milngavie, 700 m² (7,500 ft²) at £10–£30/m² per month, depending on length of storage;**
2. **The Storage Zone, Hamilton: 230 m² (2,500 ft²) at £1,400 per month;**
3. **Safestore, Glasgow: 46 m² (500 ft²) at £600 per month;**
4. **A2Z, East Kilbride: 46 m² (500 ft²) at £500 per month.**

These sorts of facilities currently do not have the capacity to host even a trial of a shared storage facility.

8.3
Commercial Properties that could be Adapted for Storage

A search for commercial properties designed for light industrial, storage and warehouse purposes revealed a range of potentially suitable spaces. These range from refurbished empty warehouses suitable for light industrial use, to restored older properties in Glasgow or Edinburgh that could be adapted for storage.

The majority of properties near Glasgow were south east of the city in East Kilbride, Uddingston and Carntyne. Obviously this is a fast moving area and properties that are currently available are unlikely to be available at the time of a trial or setting up an expanded network. However, in order to give an idea of costs and space available, the following properties in the Central Belt have been selected as an illustration:

1. **Light industrial unit near Motherwell, 1,565 m² (16,846 ft²). Annual cost £54,917 (rent and service charge) (£3.26/ft²)**
2. **Light industrial facility, East Kilbride, 1,516 m² (16,321 ft²). Annual cost £89,766 (£5.50/ft²)**
3. **Distribution Warehouse, Lanarkshire, 1,417m² (15,252 ft²). Annual cost £106,764 (£7/ft²)**
4. **Distribution Warehouse, Granton, Edinburgh, 4,694 m² (50,526 ft²). Annual cost £175,000 (£3.46/ft²)**

8. Storage Options

8.4

Repurposing an Existing Unused Space

The change in the way people shop, with a move to out of town malls and online shopping, mean that there are many empty spaces in town centres or older malls. It would be in line with the ethos of this project to find a space that is currently sitting unused, and convert that in order to conserve the embodied carbon in that building and preserve those building materials.

One advantage of this could be cheaper rent in a central location, but this saving could be offset by the costs of fitting out and improving access in comparison to an industrial unit. Preliminary research into this includes reaching out to Grand Bequest, a charity that repurposes buildings for community use, and Glasgow City Council. This is an area outwith the original brief but that certainly merits further investigation, especially for Phase 2 of the project.

8.5

Third Party Management

An essential component of a shared storage solution will be effective management of that storage space by a third party. This means that the store, access and lending of items is offered as a seamless service and does not have to be managed by individual organisations.

CAMA Asset Store have experience of storing and managing props and assets for film and theatre companies and are committed to embedding sustainability at the core of their operations. They are keen to support this project for shared storage and commented that it would be great for Scotland to be leading the way on this type of venture. An estimate of costs for doing this has been included in Section 9.

IGT, a current storage and transport provider for several cultural organisations in and around Glasgow, would also have the capability to manage a shared storage facility. They have the advantage of being local and have the experience of already working with some of the creative organisations concerned.

8. Storage Options

8.6

Centralised Storage or Network of Existing Facilities

The survey showed a fairly even split between those who would prefer one centralised shared facility (39%) or a network of existing facilities (41%). As detailed in the proposed solution in Section 5.1, it would make sense to start a trial with one centrally located storage unit for certain items and gradually add on regional hubs as the scheme grows and demand for this increases.

Q17: Would your preference be for one shared facility or to have access to a network of existing facilities?
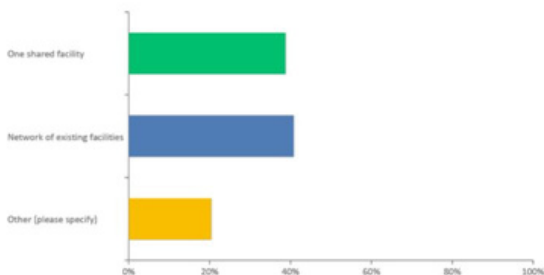
Powered by SurveyMonkey

8.7

Library of Common Items

The survey showed that organisations would be likely to use a Library of Common Items, owned by ARMS, rather than by individual organisations. 40% of respondents said they would use it sometimes; 30% said they would use it for some items; 20% said they would be very likely to use it and 10% said they would be unlikely to use it.

However, one of the main hurdles to setting up a shared storage and resource management system is in persuading people to use a new system and then mindsets and behaviours changing to actually use it day to day. This should not be underestimated and a risk of trying to establish a Library of Common Items at the same time is that this could be a distraction at this point, both in terms of raising funds and in terms of mindset change.

We therefore recommend keeping this idea warm during the trial and considering setting it up during Phase 2, once ARMS has established proof of concept for the software and shared storage. It may be that enough items are being shared that there is no need for this element; but if it is required, the Library could then be added on fairly seamlessly and information could be shared with member organisations about donating unwanted items to the Library.

8. Storage Options

8.8

Recommendation:

At the time of setting up a trial, we recommend checking with IGT to check their storage availability; or looking for a light industrial unit in a bigger industrial park, such as Flemington Industrial Park near Motherwell or Langlands Business Park in East Kilbride. Larger parks such as these offer different sized units which would mean that the trial could start with a smaller unit then have the option of expanding to a larger centralised store in the same location.

We also recommend looking further into the possibility of working with a local council or charity to identify disused buildings that could be repurposed for the shared storage area. We then recommend working with either CAMA or IGT, depending on their availability at the time, to manage the smaller space for the trial, with a view to creating a system that could expand in Phase 2.

9. Recommendations and Next Steps

Following this research into: current problems for the sector; what solutions the sector would support; and current storage and software solutions, we recommend the following course of action. The next section brings together all the recommendations so far from this report.

Phase 1 – Trial and Development

Pre-Trial

- Create a formal not-for-profit organisation for ARMS. This will help applications with funding, secure not-for-profit discounts with software providers and formalise decision making. We recommend keeping this new organisation as streamlined and light touch as possible to ensure efficient and sustainable working practices.
- Seek funding from Creative Scotland to run a trial, using this report to evidence the need for such a scheme.

Trial

- Trial with a range of 8-10 organisations from different areas of the cultural sector.
- If funding could be secured, this could start as early as spring 2023 and run for one year.
- Rent shared storage space either at IGT or in a light industrial unit in a bigger industrial park in the Central Belt.
- Use CAMA or IGT, depending on availability, to manage storage space.
- Use myTurn for software to support the system.
- By the end of the trial there would be a clear demonstration of what works (or doesn't) with regards to software, storage, management of storage and interactions between lending and borrowing organisations.

Development During Trial

- Develop method of data collection to evaluate success of trial and communicate the above.
- Use this year to develop the business plan for an expanded scheme across a larger number of organisations over the first 3 years.
- Investigate further disused spaces and costings for fit-out if necessary.
- Investigate having shared transport or regular deliveries as built in key component of scheme - consider providers and financial and CO_2 costs vs savings for scheme and for individual organisations.
- Use business plan and evidence from trial to secure start up funding for Phase 2 from Creative Scotland and other funding sources.

Estimated Trial Costs

With both storage and software, there are so many variables in this project that it is difficult to get accurate figures for the costs. The estimates below are to give some guidance as to costs but are subject to change depending on the economic situation and decisions around how the trial should work. Costs could be lowered by having a smaller storage space and some organisations requiring less time to migrate if they already have an Excel or Word inventory. The other major consideration is what proportion the participating organisations pay towards trial costs and what ARMS seek external funding for. As a starting point, the table below proposes which costs could be met by each organisation and which costs covered by external funding.

Operating Expenses	Detail	Estimated Trial Cost in £ (for 1 year)
Storage, 1,400 m² (15,000 ft²)	Based on average cost of £4/ft², taken from research into average available industrial rates and current storage fees	60,000
Fit out of storage space	Second hand shelving and furniture, dependent on unit found	3,000
Third party management	Warehouse staff – 1 full time Plant (forklift etc.) General waste disposal Insurance Above costs are an estimate from CAMA	56,0000
Administration of scheme and preparation for Phase 2	1 full time employee or 2 part-time employees	35,000
Software Set up, One time costs	ARMS Network configuration, setup, and training(includes project support setup and planningmeetings)Estimate from myTurn	1,500
Software Running Costs	Based on 10 organisations: 3 with 500 items at £50/month;3 with 2,000 items £125/month;3 with 4,000 items at £150/month;1 with 10,000 items at £225/month.Sub-total is £1,200/month x 12 for annual costEstimate from myTurn	14,400
Cost of organisations creating proper working inventory and migrating to myTurn	Based on 10 organisations at SRU rate for 3+ years experience of £264/day, assuming that bigger organisations will have multiple of same objects, making input quicker: 3 with 500 items – 2 days each = 6 days; 3 with 2,000 items – 4 days each = 12 days; 3 with 4,000 items – 6 days each = 18 days; 1 with 10,000 items – 10 days. Total 46 days x £264	12,144
Sub-Total Trial Cost		**182,044**
Trial Costs covered by organisations	Storage 3rd party management	**–60,000** **–56,000**
Trial Costs Requiring External Funding		**66,044**

9. Recommendations and Next Steps

Demonstration of Costs for a Medium Sized Organisation (once their materials have been inventoried and uploaded to a shared software system). There would be flex in the model to ensure different size organisations are paying for the storage and storage management they use; just as the software costs depend on the size of the organisation. The table below gives a demonstration of what this could look like and the savings that could be made once onboarded to the shared system:

Expense	Current Annual Cost	Annual Cost for Shared System
Storage	12,000	6,000
Third party storage management	0	5,600 (taking trial management costs divided by 10 organisations)
Inventory or Software	0	1,800 (based on 4,000 items)
Duplication of Resources	2,400 (£200x12)	0
Time Looking for Resources	1,584 (based on half a day/month at Scottish Artists Union rate for 3+ years' experience)	0
Totals	15,984	13,400

Trial Learning Outcomes

Such a system requires both **mindset and behaviour change** and there are bound to be unexpected elements that become evident during the trial. It is therefore essential that a robust evaluation system of the trial is designed to ensure that learnings are captured and used to design the next phase, whether that is Phase 2 as outlined below, or an alternative system based on the learnings from the trial. The trial data will be hugely valuable in understanding what elements of a shared system can work well within the Creative Industries and what elements pose a problem.

9. Recommendations and Next Steps

Phase 2 – Expand Scheme

- Use learnings from trial to build up strong structures in the key areas of storage, storage management, software and mindset change to be part of a sharing economy.

- Expand membership to organisations across Scotland, using a mix of centralised storage and own storage, supported by a shared software solution.

- Work with Circular Communities to identify key areas for regional hubs and investigate partnerships in these areas through their Share and Repair Network.

- Keep the Library of Common Items idea warm and consider whether this could be dovetailed in and at what stage.

- Develop signposting for best practice before and after this stage of shared storage, i.e. Before: adopt circular design principles; ensure circular approach is embedded in organisation's strategy so that as much time and resource is given to take-down as to set up, and to caring for materials as to disposal of materials. After: adopting positive destinations for items that can no longer be stored e.g. Circular Arts Network; Re-Set Scenery; reuse members of Circular Communities.

Estimated Phase 2 Costs

While a full business plan is beyond the scope of this report, the following costs should be incorporated into any business plan. These figures are just to give a rough estimate of costs and would need to be developed in Phase 1.

This model requires external funding for the trial and to incentivise organisations to come on board and complete the inventory and onboarding to the shared software. Once organisations are on board, the scheme should be able to break even, with organisations being able to participate and benefit from a slight cost saving compared to the current situation.

| Costs Requiring External Funding Years 1–2 | Cost of organisations creating proper working inventory and migrating to MyTurn – 1-time cost only per organisation. Assuming 100 organisations joining. Cost at SRU rate for 3+ years experience of £264/day, assuming that bigger organisations will have multiple of same objects, making input quicker:

 30 with 500 items – 2 days each = 60 days;
 30 with 2,000 items – 4 days each = 120 days;
 30 with 4,000 items – 6 days each = 180 days;
 10 with 10,000 items – 100 days.
 Total 460 days x £264 | £121,440 |

Phase 2 – Costings contd.

Operating Expenses	Detail	Est. Annual Cost in £
Storage, 14,000 m² (150,000 ft²)	Based on an average of £4/ft²	600,000
Fit out of storage space	Second hand shelving and furniture, dependent on unit found	10,000
Third party management	Warehouse staff – 2 full time Plant (forklift etc.) General waste disposal Insurance Estimate from CAMA	100,000 20,000 10,000 16,000
Administration of scheme and preparation for Phase 2	1 full time employee or 2 part-time employees	35,000
Onboarding and training	1 full time employee or 2 part-time employees	35,000
Software cost	Based on 100 organisations: 30 with 500 items at £50/month;30 with 2,000 items £125/month;30 with 4,000 items at £150/month;10 with 10,000 items at £225/month.Estimate from myTurn	144,000
Total Annual Cost covered by organisations		**970,000**
Average Annual Cost per Organisation		**9,700**

10. Conclusion

The research that fed into this report demonstrates consistent issues around storage and resource management in the Creative Industries in Scotland and the impact this has on individual organisations, the sector and the environment.

The research also found strong support for a shared solution - even at a time of unprecedented pressure on cultural organisations in the midst of the current economic crisis. Such a solution could meet the needs of each organisation and help them achieve their own environmental targets and responsibilities.

The benefits are clear and while there are hurdles, they are not insurmountable. By breaking the next steps down into two clear phases, ARMS will be able to test the concept on all fronts, from storage to management to software, before launching a wider scheme. Securing funding and incentives for organisations to take part will be absolutely key to the success of the system.

This two-phased approach would be a substantial step towards the creation of a long-term solution for sustainable and shared resource use in Scotland's cultural sector.

11. Appendix

Organisations interviewed
Aberdeen Performing Arts
Bectu
Birds of Paradise Theatre
Bryony Knox Silversmith
Circular Arts Network
Circular Communities Scotland
Creative Carbon Scotland and Edinburgh Festivals
Creative Scotland
Design Exhibition Scotland
Edinburgh Science
Edinburgh University
Fife Contemporary
Grid Iron
Mella Shaw Ceramics
National Galleries Scotland
National Theatre Scotland
Re-Set Scenery
Royal Conservatoire of Scotland
Scottish Goldsmiths Trust
Starcatchers

We would like to thank all those who gave their time to be interviewed or to take part in the survey.

Organisations surveyed
Aberdeen Performing Arts
Active Enquiry
Arika
Atlas Arts
Bijli Productions
Camban Studio
Cryptic
Dovecot Studios
Dundee Contemporary Arts
Dundee Rep and Scottish Dance Theatre Ltd
Edinburgh Festival Fringe Society
Edinburgh Science
Edinburgh Sculpture Workshop
Glasgow Sculpture Studios
Hannah Riordan Illustration
Hebrides Ensemble
Jonathon Rose Design
Lyra
Magnetic North
Mella Shaw Ceramics
Mischief La Bas
Morris of Portobello
National Galleries of Scotland
Panel
Paper Houses Design
Performance Collective Stranraer
Really Interesting Objects
Royal Conservatoire Scotland
Royal Lyceum Theatre Company
Solar Bear
Starcatchers
Scottish Dance Theatre
Scottish Theatre Producers
Talbot Rice Gallery
Tenterhooks
Theatre Gu Leor
The Common Guild
The Stove Network
The Touring Objects
Tortoise in a Nutshell
Traverse Theatre
Tron Theatre
Two Destination Language
Visible Fictions
Wasps Studios
WHALE Arts

11. Appendix

Reports Consulted

A Guide to Closing Greener- Broadway Green Alliance
Adapting our Culture Toolkit – Cultural Adaptations
Climate Emergency and Sustainability Plan – Creative Scotland
Combined Storage Facility Proposal – Manchester Artistic Sustainability Team
Creative Industries in Scotland: Embracing a Circular Economy – Circular Communities Scotland
Developing the Circular Economy in Parisian Cultural Spaces and Institutions – Ville de Paris, France
Greening Arts Practice – Chrysalis Arts
Greening Scotland's Screen Industry – Creative Carbon Scotland
Guide Methodologique Ecoconception des Decors – Pole Eco Design, France
How to Start a Lending Library – Share Starter
Research Study on Developing Reuse Networks in Europe – Helsinki Metropolitan Area Reuse Centre
Reuse and Recycling for London Theatre – Paddy Dillon
Scottish Material Flow Accounts – Zero Waste Scotland
The Repository – Manchester City Council
The Theatre Green Book – Buro Happold

Front Cover and P11 and 31 photos show Re–Set Scenery Stores

FOR MORE INFORMATION PLEASE CONTACT: arms.scotland@gmail.com

This report was prepared by **Ostrero**
for Arts Resource Management Scotland