

# MAKING SPACES



## SPRINGBOARD

### #3 SPACE

Relimagining space and where making happens in makerspaces.

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# SETTING THE CONTEXT



**Makerspaces are informal multipurpose sites designed for collaborative hands-on learning and creative production. These sites offer participants the opportunity to share materials, skills, interests and ideas in order to address a range of technological, personal and political goals. Makerspaces are a relatively new phenomena and the sector has rapidly expanded in recent years.**

Little research has been conducted with makerspaces to date and one of the aims of the *Making Spaces* project is to address the current gap in knowledge regarding the roles, practices and possibilities of these contemporary spaces.

Makerspaces occupy an interesting position with regard to the ongoing and entrenched exclusion of many communities from Science, Technology, Engineering and Mathematics (STEM), holding the potential to either reinforce or challenge these injustices. In particular, our project is interested in the practice of making (as a fundamental human activity) and its potential for transformative justice for marginalised communities. Whilst focusing on makerspace settings, we also want to consider the ways in which makerspaces might develop further to support equitable and sustainable living through making – not just in, but also beyond, their institutional spaces.

Despite the maker movement's early commitment to values of democracy and accessibility, in practice makerspace participants in the global north still predominantly reflect a traditional STEM demographic that is White, cis-male, middle class, and able-bodied [1]. As a result, these spaces tend to champion knowledge, values and ideas that reflect the histories and interests of privileged communities. Barriers to access and retention are found in these spaces just as they are in the wider science, engineering and technology sectors.

Yet, makerspaces have the potential to build communities, to support both individual and collective agency, and to shape sustainable and equitable futures. Equally, they can help tackle the under-representation of marginalised groups in engineering, science and technology. They have the capacity to embrace and champion the expertise and interests of those who have historically been excluded and ignored by STEM and have the potential to re-orientate making – and ultimately the technologies made – towards more equitable ends [2].

*Making Spaces* is a collaborative research and development project being conducted with young people, practitioners and researchers. The project seeks to identify transformative practice and help support the sector to adopt more equitable and inclusive practice.

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There are four publications in this short series:

**SPRINGBOARD #1: INTRO**

Relimagining makerspaces to support equity and social justice: introduction to the springboard series.

**SPRINGBOARD #2: VALUES**

Relimagining the values and purpose of makerspaces.

**SPRINGBOARD #3: SPACES**

Relimagining space and where making happens in makerspaces.

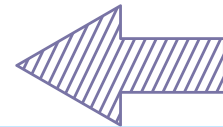
**SPRINGBOARD #4: OBJECTS**

Relimagining objects and what gets made in makerspaces.

Each *Springboard* summarises evidence and ideas from research conducted for the *Making Spaces* project and the wider literature.

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## SPRINGBOARD #3: SPACES



Relimagining space and where making happens in makerspaces.

The aim of this *Springboard* is to support and empower makerspaces in rethinking ideas about space within their settings. In particular, it encourages thinking expansively about space – to include material, social and emotional dimensions, as well as physical ones. It summarises key ideas and evidence to help practitioners to reimagine spaces in more equitable ways.

Two key tenets have been identified for practitioners to explore when reimagining space in makerspace settings. Namely, to enact social justice it is important for makerspaces to:

1.

Recognise that makerspaces are not just physical spaces and are not neutral spaces. They are complex and part of wider relations of power and oppression.

2.

Engage in critical reflection and action to ensure that spaces are safe and socially just by appropriately resourcing and supporting participatory approaches.

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**TENET 1:** Recognise that makerspaces are not just physical spaces and are not neutral spaces. They are complex and part of wider relations of power and oppression.

Spaces are complex. They are not simply physical and material places – they are social, emotional and digital arenas that are created through relationships, time, geographies, histories and politics. The Black feminist academic and activist, Audre Lorde highlights how spaces are shaped by the histories and experiences of the people and communities that participate in them. As such, spaces are never neutral – they reflect and perpetuate particular power relations and can either challenge, or reproduce, oppression. As a result, some people feel comfortable in particular spaces, whilst others feel (or are made to feel) like outsiders. Jack, a UK makerspace practitioner and facilitator, draws on his experience of school, and STEM subjects, as an example:

“I was really into football but I think that goes back to the stereotype ... I thought that's what a boy is and does. [...] In hindsight, I didn't particularly enjoy being told and forced to do things and again... Science and maths, all those kind of things I just... nah, I was really... I really hated school and did very badly in all of my exams [...] I never enjoyed academia and I've got enough hindsight now to realise that you're just put in a box as soon as you go to school and you're told that exams are the way that you are successful or not and I wasn't good in exams and that you're not smart if you don't do well in exams.”

Jack experienced school as a space that narrowed his ideas about what was possible for him. As has been noted by multiple research studies, many young people, like Jack, experience the 'exam culture' of UK schooling as contributing to feeling 'not good enough' to continue with particular subjects. This feeling is further amplified in STEM subjects, which are often portrayed as 'hard' and 'difficult' subjects requiring 'natural cleverness'.

Creating socially just makerspaces therefore demands the questioning of 'traditional' educational frameworks, elitist ideas about STEM and social stereotypes. Equitable spaces support young people to engage in making on their own terms, drawing on their own unique standpoints, interests and expertise. As discussed in Springboard #2, equitable practice can also entail healing and undoing damage, such as that which young people may have experienced within the education system.

The equitable potential of a space cannot be measured by the volume or the demographics of those who come through the doors. As Dana, a maker and researcher leading the development of equitable practice at a makerspace, put it: *"you don't want diversity for diversity's sake"*. Reimagining the space of a makerspace requires practitioners and policy makers to move beyond 'traditional' ideas of (STEM) learning and teaching and to address the relationships, expectations and representations that make up – and exist within – a space.

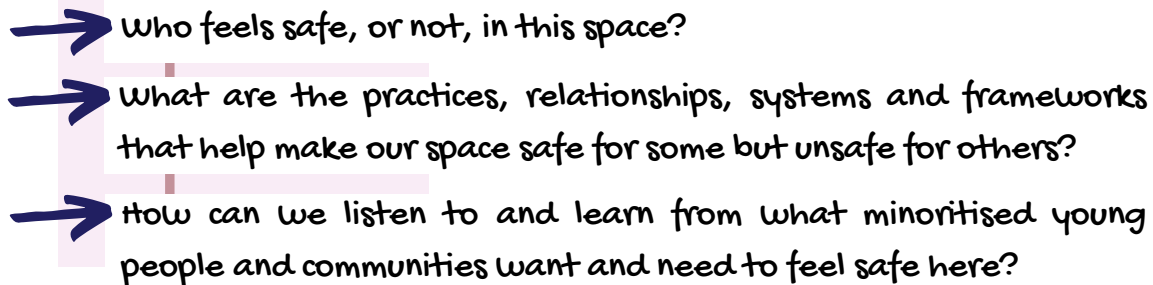
**TENET 2:** Engage in critical reflection and action to ensure that spaces are safe and socially just by appropriately resourcing and supporting participatory approaches.

Making a safe (or at least safer) and socially just space is not easy. It takes time, patience, resources and a readiness to engage in long-term reflection and action. It also needs the people who participate and work in the setting to willingly take accountability for how the space functions. A safe makerspace does not just protect participants from physical harm (through health and safety for instance), but it is also attuned to how (conscious and unconscious) injustices and practices can have an impact, whilst being aware that what may feel safe to some will not for others. Even though a diversity of people may participate in a space, they may not all feel safe and comfortable.

Nacho, a practitioner who works with young people at Knowle West Media Centre (KWMC) in the UK, stresses the importance of building relationships as a key requirement for creating safe, equitable spaces. Nacho describes how, in his experience, it takes time to create safe, trusting spaces and relations. Practitioners need to be present and actively listen to understand what young people want and need:

“ It is difficult at times gaining that trust, but I think time is your friend when it comes to stuff like that. We always build our relationships with young people all the time, but it's listening to them more than anything. It's meeting them where they're at and really understanding them, and making them feel like they are heard. Because sometimes, I think it's easy to just listen to them but not really listen to them. ”

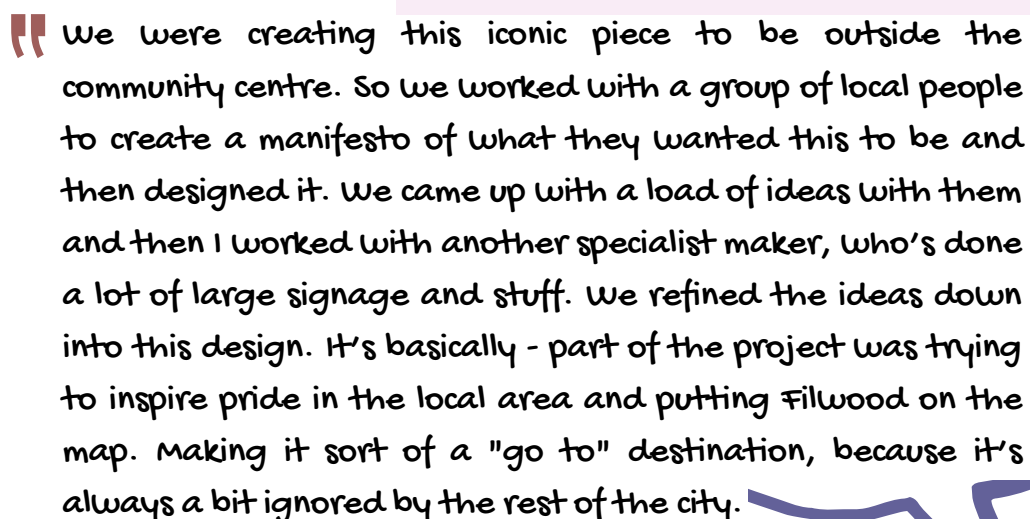
Rethinking ideas of safety in makerspaces means going beyond a list of 'isms' and recognising that prejudices are not just located in a few 'bad' individuals, but are embedded in social frameworks. This rethinking can be supported through collective, non-hierarchical reflection and action, for instance, working together to consider:

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- who feels safe, or not, in this space?
  - what are the practices, relationships, systems and frameworks that help make our space safe for some but unsafe for others?
  - how can we listen to and learn from what minoritised young people and communities want and need to feel safe here?

In this way, makerspaces can start to think about how they can create safe, caring spaces that are held together by a 'web' of care [3].

Making spaces safe and socially just also demands physical and emotional labour – this work does not happen without dedicated effort. Adequate **resources** and support must be provided for both critical reflection and action. This care work should be shared across an organisation, not just undertaken by a few individuals (e.g. those with a 'diversity remit'). It needs to be valued and owned by all members of the makerspace, with accountability distributed to ensure that duties of collective care are met.

**Participatory approaches** can be particularly valuable tools for creating safe, caring spaces. For instance, a project at KWMC in the UK used a process of co-design, working with people of all ages in the local community to reimagine community spaces. The project brought people together to showcase their creativity in celebrating Filwood, a local area often left out of the narrative of the city and that had suffered under austerity. Janis, a makerspace technician and head of skills training, explains:



“ We were creating this iconic piece to be outside the community centre. So we worked with a group of local people to create a manifesto of what they wanted this to be and then designed it. We came up with a load of ideas with them and then I worked with another specialist maker, who's done a lot of large signage and stuff. We refined the ideas down into this design. It's basically - part of the project was trying to inspire pride in the local area and putting Filwood on the map. Making it sort of a "go to" destination, because it's always a bit ignored by the rest of the city.

The project revolved around community-building and solidarity, with the makerspace providing a space to design and make signage that celebrates the neighbourhood. Establishing a manifesto provided a clear set of aims, created and owned by the community on their own terms. As Janis emphasises, “we worked with the people every step of the way” to co-create a lasting and iconic landmark, centred around community care and empowerment.



The Fillwood sign, co-designed by the community.

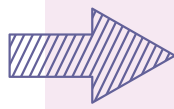


Young people working together on the design for the sign.

The importance of thinking beyond the physical setting of a makerspace, to recognise the importance of the social dimension of a space is underlined by the reconfiguration of the KWMC MakerCity programme into an online format as a result of the COVID-19 lockdown in 2020. The first action taken by practitioners was to reach out to the young people and their parents, so as to gain a greater understanding of what the young people might want and need from a digital space. They discovered that the young people's primary desire and need was not to make things (although that did still happen), but rather for a space for validation, praise and support in a time of deep anxiety. That is, they needed a space to experience caring social relationships. Pipa, a makerspace practitioner and project co-ordinator of the young people's programme, explained:

"We actually rang all the parents and said, "what is it that your young person, who usually comes to our sessions, is missing? what do they need?" And the responses we got back were, "they're missing social interaction [...] and they're also missing getting praise from their teachers". We assumed before we did the research, that young people probably are feeling a bit overwhelmed and ... everything is online and they probably just want to wait until we get back together and be in person. But actually what they wanted was to have a safe space where they can come and hang out virtually. We do it twice a week now and it's really popular and it's great."

These examples highlight how makerspaces can support social justice with – and for – young people and the community by co-creating safe, caring spaces through active listening and engagement.



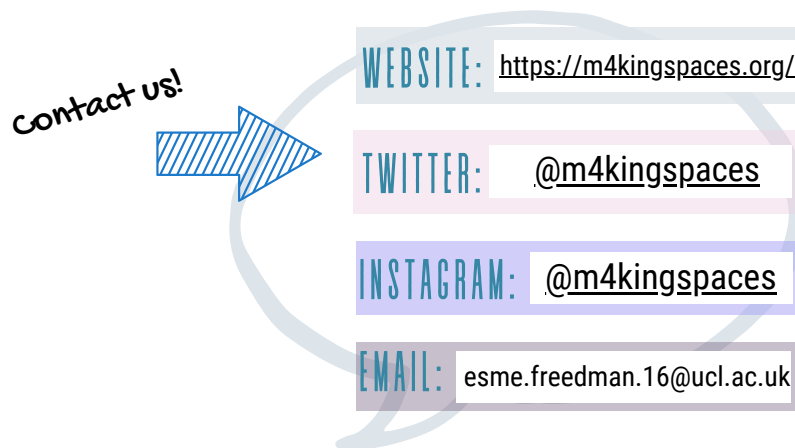
## ABOUT OUR PROJECT

The Making Spaces project is a collaborative research and development project, funded by the Lloyd's Register Foundation. It brings together researchers from UCL Institute of Education and makerspace practitioner partners from Knowle West Media Centre, MadLab and the Institute of making.

The project has been conducted with young people engaged in direct and sustainable action in makerspaces, and draws on theoretical frameworks of resistance including: **Decolonial Theory, Critical Race Theory, Critical Whiteness Studies, Black Feminism, and Science and Technology Studies.**

We are supported by a fantastic advisory group: Shirin Vossoughi, Kim Foale, Nettrice Gaskins, Ana María Ramírez, Edna Tan, Ayşe Inan, Kat Braybrooke, Heather King, Anna Bird and Tim Slingsby.

Please feel free to contact the team below and follow the links to our website and social media for more information:



Project research team: Louise Archer (director), Kylo Thomas (lead researcher), Jen DeWitt (researcher/ survey lead) and Esme Freedman (project admin and comms officer).





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# REFERENCES

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  3. Piepzna-Samarasinha, L. L. (2018). Care work: Dreaming disability justice. arsenal pulp press. P.78
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