Augmented reality Co-design workshops

Introduction

The London Borough of Hounslow (LBH) is in the process of creating a new Public Realm Design Guidance (PRDG) SPD. As part of the public engagement and consultation that underpins the creation of this SPD, LBH, in collaboration with ARUP, have undertaken trails of a novel Augmented Reality (AR) based co-design workshop with the aims of both improving engagement and obtaining representations from an underrepresented group, 13 to 25 year olds from diverse backgrounds.

It has been shown that in previous engagement activities that 55% of consultation respondents identify as White British and that the modal age bracket of respondents is 50-69. Previous planning consultations have had very low levels of engagement with people under the age of 25, consisting of around only 2% of responses, even though young people make up 20.6% of Hounslow's population. Subsequently, the responses LBH receives are disproportionate to Hounslow's demographics and therefore there is a clear need to improve engagement processes to ensure higher rates of participation from under-heard groups, in particular young people and those from minority backgrounds. It is of high importance that responses from this demographic are used to shape the public realm design guidance as public spaces should be inclusive and reflect the needs and aspirations of all groups.

This co-design process was developed in order to target a recognised lack of facilities in town centres for young people. LBH organised a series of four workshops at local schools to obtain key insights into the needs of this underrepresented demographic that are seldom seen at public consultations. By using this AR application, LBH aimed to increase engagement with this demographic by removing both the need for prior knowledge of planning processes and the understanding of the complex language that is used to formulate planning documentation.

Methodology

AR works by superimposing digital information onto real-world objects to create a 3D experience application works by enabling users to interact with both the physical and digital worlds. In the AR system used in this co-design workshop, young people were enabled to place items of 3D rendered street furniture within selected public realm typologies as well as indicate if existing street furniture should be removed. Images of their proposed changes were then captured.

An initial scoping workshop was carried out in order to fine tune the selection of 3D assets within ARUPs app to meet the requirements of LBH. This workshop consisted of 2 sessions with each an hour in length. Each session had approximately 30 school students that were split into 3 groups of 9 or 10 students. Each group was given an example of the chosen typologies and asked to share their thoughts on improvements to the public realm through either conversation, drawings or sculptures.

Following on from this workshop, the 3D rendered assets that were selected were representative of the findings of the scoping workshop: Benches, chessboards that represented pubic entertainment, Trees and planters to represent urban greening, hydration points, lighting, signage that illustrated directions in the surrounding locations, clean air zones, alcohol free zones and signage for public toilets, Assets that represented public art displays, public Wi-Fi and various shapes to stand in for any other ideas. A red x was also provided so that participants could outline elements that already existed for removal.

Workshops were organised with 4 schools within Hounslow, three were staffed by a combination of LBH officers and ARUP staff and one staffed exclusively by LBH officers. School staff were present at each of the workshops. The workshops were structured in the following way:

- Introductions and a presentation of the application and instructions on its use
- Signing of photo consent forms and consent to use student data (age and ethnicity) within LBH metrics
- Use of the AR system at the each of three locations. Officers and ARUP staff engaged with the young people during this period to note insights and to troubleshoot issues with the app students encountered.
- A wrap up session for young people to share any further responses.

The insights gathered were collated by ARUP and are outlined in the following section.

Results

The findings from the initial scoping workshop identified that the desires of the young people can be broken down into larger categories. These categories are listed in the table below and are illustrated by comments and suggestions:

All of the suggestions from the workshops have been assigned to one of these categories and are illustrated on the graph below:
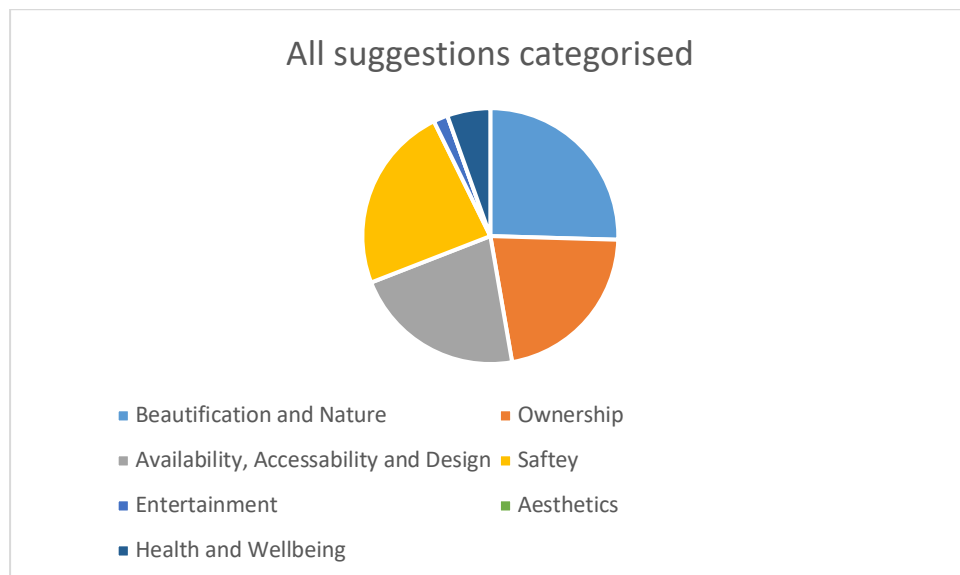
Of a total of 55 suggestions recorded during the workshop sessions, 14 were focused on beautification and nature, 13 were focussed on safety concerns and 12 on Availability, Accessibility and Design

Safety

The majority of comments made in regards to safety emphasised a need for additional street lighting especially in areas where it is currently lacking e.g. parks and open spaces. Additional comments were focussed on reducing rates of public drunkenness and smoking in order to promote a safer feeling while in the public realm along with an increase in the number of CCTV cameras. Parks and open spaces are deemed to be unsafe especially after dark.

Ownership

In terms of ownership, there is a clear need to provide spaces for younger people. Suggestions of areas include new public seating, football and basketball courts and areas where young people can enjoy a calm atmosphere.

Beautification and Nature

Improvements to the visual and environmental quality of the public realm was a recognised need by younger people. The majority of responses in this category was a need for greening the public realm through the use of planters and trees. A desire for improving the public realm through public art was made and this can be achieved through public art installation, murals and the use of colour in the public realm. Graffiti was also recognised as a problem within the local area. Young people are keen to improve the availability of nature within the borough, this is through improvements to urban greening and improvements to public open spaces, such as green trials.

Availability, Accessibility and Design

Younger people voiced a need for the provision of additional public seating especially around public transport connections. A need to declutter the public realm was made with young people suggesting that outdated street furniture, such as phone boxes, be removed. They also made recommendations that hireable e-bikes should be more restricted in where they can be left. Comments made were on the availability of public seating and litterbins.

Health and wellbeing

Health and wellbeing comments mainly focused around littering, rates of smoking and public drunkenness and access to public water fountains.

Entertainment

Entertainment needs were primarily made against the need for something to do whilst waiting for public transport. Suggestions included public Wi-Fi and the provision of public games such as chessboards.

AR Suggestions from the students and their application to chosen typologies

As mentioned in the methodology, the workshops focussed on areas that align with the chosen typologies within the upcoming public realm design guide (PRDG). In this section, a study of screenshots from the workshops has been made in order understand the changes younger people want to see within these chosen typologies. The AR technology was also used at pop-up engagement events with the general public. The table below presents feedback and compares findings between the students and the general public.

Table 1: Interpretation of AR images from the general public at the pop-up events and students at the AR workshops:

Typology	General public feedback (GP)	Student feedback	Similarities	Differences
Park entrance	The general public suggests adding lighting, clean air zones and entertainment, demonstrated through art installations, chess sets, and connect four playsets.	It can be seen that students want entertainment and a healthy environment, which is shown through the high number of suggestions for benches, chess boards, water fountains, and no alcohol signs.	Both groups of stakeholders' suggestions indicate a need for improved entertainment and a healthy environment in this typology, with water fountains, chess sets, and clean air zones making frequent appearances in their suggestions.	The different priorities between the GP and the students becomes clearer through their suggestions. The students did not include any lighting and a reduced amount of clean air zones compared to the GP, who opted for lighting in secluded and dark areas. This indicates the general public's greater focus on safety and wellbeing.
Shopping parade	The general public has a wide variety of suggestions, from greenery, lights and benches, to water fountains, clean air zones and public art installations.	The Students predominantly suggested an increase in greenery, lighting, and public seating, outlining a focus on beauty and Students also recommended removing phone boxes and bike and e-bike storage areas.	Students and the GP are unified in their concerns about lackluster clean air zones, green space, lighting, fountains, and public seating in this typology. The majority of both groups put their suggestions of benches and greenery to the side of the streets, keeping a clear pathway. This shows that the students and GP want these changes but only if they don't impede on the functionality of the walkways.	While both groups of stakeholders keep things to the side, Students' suggestions often remove outdated street furniture, such as phone boxes. On the other hand, the GP did not use any 'crosses' in their suggestions. This shows a trend in students' behaviour, preferring to phase out unsuited elements of this typology.

Station entrance	The general public recommends increased lighting, water fountains, chess sets, and benches. This indicates that the public wants a socially friendlier environment in this typology.	It can be seen that there is an increase in lighting around the entrance, any suggestions including seating, greenery and water fountains are further from the entrance. Furthermore, students suggest removing unnecessary clutter from the entrance and the provision of public Wi-fi.	The GP and students' suggestions are limited in their similarities to this typology. Both groups are concerned about the lack of lighting, which is a very consistent suggestion in this typology's screenshots. This could show a negative perception on the safety of this typology. Both groups also suggest increasing public seating while waiting for public transport.	There are numerous differences between the GP and students' suggestions. The general public's suggestions create a social and friendly environment, using greenery, seating, and entertainment to convey this. Meanwhile, students' suggestions lack any greenery and social aspects directly by the entrance, rather they suggest decluttering and adding public Wi-Fi. Students place a greater focus on the practical use of this typology.
School entrance	No data	Students suggested a wide range of greenery, including potted plants, grass, and trees. These suggestions were usually combined with lighting and public seating. Another common suggestion in this typology was clean air signs.		
Faith buildings	This typology saw a larger consensus on AR suggestions: benches and greenery were found in almost all the suggestions, with a few cases of water fountains and clean air zones.	No data		

	Notably there were no suggestions to increase lighting, which could mean that the GP perceives this typology as safer.			
Civic buildings	The GP suggests increasing the greenery, entertainment, and public seating in this typology, indicating that this typology lacks sociable aspects.	No data		
Marketplace / square	The Marketplace/square typology saw a significant amount of greenery and bench suggestions, along with a smaller amount of clean air zones, entertainment, and public art suggestions. These suggestions tell us that the GP perceives this typology as unfriendly and requiring more green spaces.	No data		

Appendix 1: Screenshots of the AR designs from the pop- up workshops

Shop Parade Typology

Pop-Ups

Brabazon Road, GWC Shop Parade, The Centre - Feltham

YARD 03
12/08/2024 - 14:40:47

YARD 03
12/08/2024 - 14:40:47

YARD 01

Park Entrance Typology

Pop-Ups

Watermans Park, Inwood Park

Clean air
ZONE

Faith Buildings Typology

Pop-Ups

Hounslow Jamia Masjid, Gurdwara Sri Guru

YARD 03
18/08/2024 - 15:40:48

YARD 05
18/08/2024 - 11:04:51

Civic Buildings Typology

Pop-Ups

Heston Library

YOU
VOIC
MATTE

STON LIBRA

Station Entrance Typology

Pop-Ups

Hounslow Central Station, Hounslow West Station

Squares / Marketplace Typology

Pop-Ups

Bell Square, Brentford Marketplace

Great West Corridor

Pop-Ups

GWC (Outside SEGA Building)

Appendix 2: Screenshots of the AR designs from the student workshops
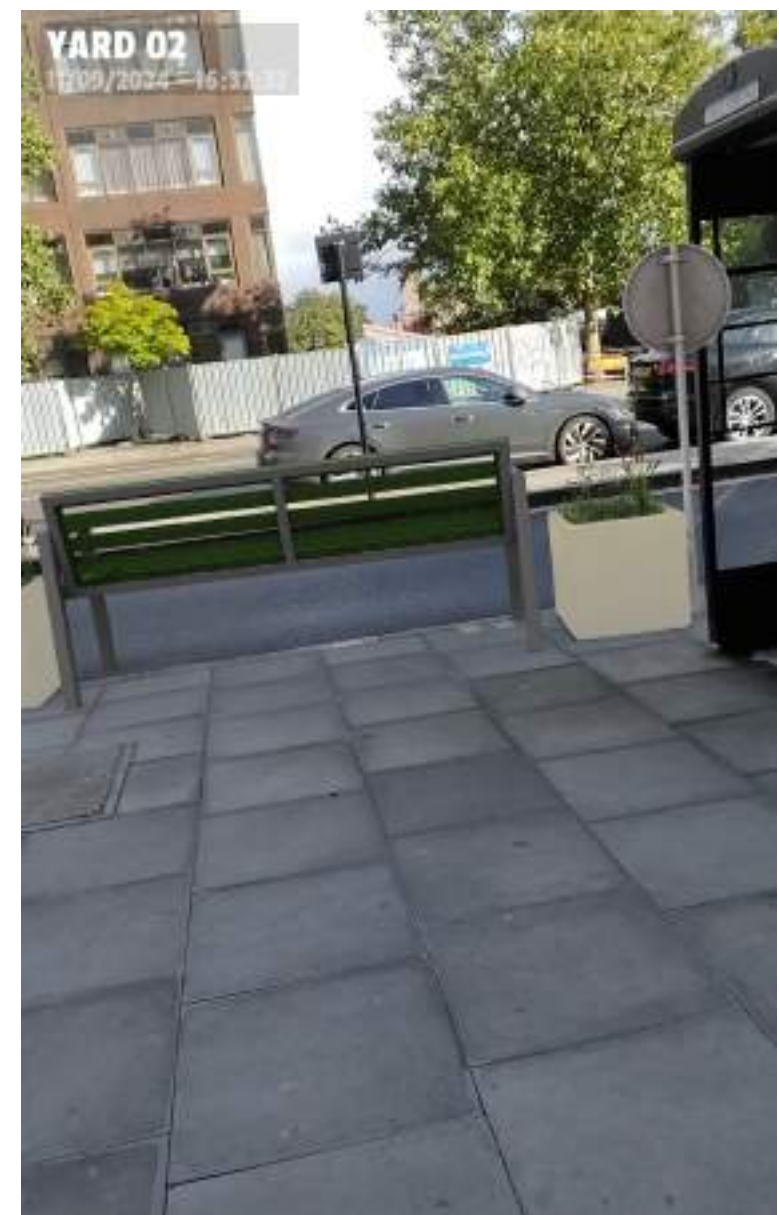
Shopping Parade Typology

Reach Foundation Workshop

11/09/24

NEW GYM

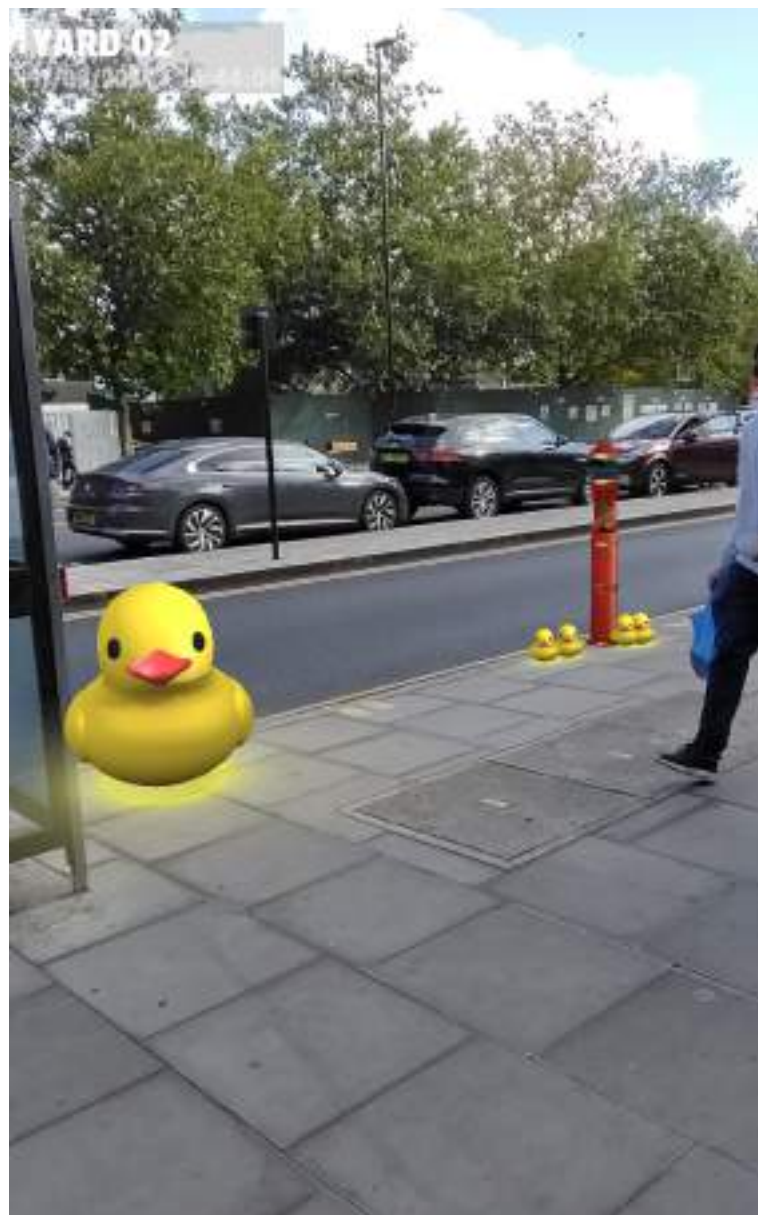NO CONTRACT

OPENING OFFER!

School Entrance Typology

Reach Foundation Workshop

11/09/24

Station Entrance Typology

Lampton School Workshop

16/09/24

Shopping Parade Typology

Lampton School Workshop

16/09/24

ALCOHOL FREE ZONE

Clean air ZONE

School Entrance Typology

Cranford Community College Workshop

20/09/24

YARD 13

YARD 15

YARD 05

YARD 12

talk to us

Make money work for you

BARCLAYS

StMungo's

We were here
when Kamal
lost his home

Park Entrance Typology

Cranford Community College Workshop

20/09/24

Mixed Typologies (Indoor Workshop)

Woodbridge Park (Aspire Centre) Workshop

15/07/24