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## New submission from 2020 Shared Value Awards application - Shared Value Project of the Year

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### Primary contact

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#### Where did you hear about the Shared Value Awards?

[sharedvalue.org.au](http://sharedvalue.org.au)

### About your organisation

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#### Organisation name

Arup

#### Organisation type

Corporate

#### Website

<https://www.arup.com/>

#### Overview

People's experiences on the streets and perceptions of safety at night, particularly of women and girls, is not adequately considered in the way we design and light cities. When people don't feel safe, they are not able to actively participate in public life. This has flow-on effects for how well a city functions at night, the night-time economy and social wellbeing in communities. The participatory data-based approach used in the project collaboration tackled assumptions in current lighting standards. It has influenced lighting design for cities and to create spaces that are inclusive and safe for everyone.

### What is your shared value project or initiative?

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#### Name of project or initiative

Safer lighting – improving perceptions of safety for women and girls in cities after dark

### What makes your project or initiative a leading example of shared value in action?

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#### What economic opportunity does your shared value project/initiative deliver?

In 2018 Australia's night-time economy (NTE) sectors employed <1.1m people and generated almost \$134bn turnover. With increasing urbanisation, designing '24hour cities' requires strategic night-time planning and design to maximise city potentials. Designing public spaces use that enables gender participation and inclusion, recognised as fundamental human right and linked to a country's economic performance, also unlocks extensive social and economic benefits.

Yet night-time presents challenges to cities globally, with safety and fear being significant contributing factors. The FreeToBe program highlighted how 90% of women don't feel safe in a city like Sydney after dark. Over a third of Australian participants noted lighting as a factor to their city experiences, good or bad. Following these findings, Arup's 'Safer Lighting' initiative delved into how different lighting affects perceptions of safety and how this can be addressed through more holistic view of urban lighting and designing night-time experiences.

Arup's lighting designers are the first to be actively researching this topic, the initiative is contributing to evidence-based design approaches and solutions, and finding have been actively incorporated into our work. It differentiates our 24hour lighting service offering to address issues a large proportion of our society face everyday, and creates opportunities for safer, more inclusive and comfortable night-time experiences, and a more prosperous NTE. From this work Arup has also launched three new streams of services in multi-discipline, user-experience design and urban digital twins which have been commissioned to be undertaken by clients. This has led to tangible business growth and Arup's industry standing as a leader in human-centered, evidence-based design services. This is core to Arup's role as city shapers building city resilience and improving citizens' quality of life.

### **What social issue(s) does your shared value project/initiative address?**

Melbourne and Sydney — two of the world's most liveable cities — aren't equally liveable for everyone. Crowded spaces, unpredictable people, and risks of assault or harassment can make urban environments an intimidating and dangerous place for many, especially after dark. As cities grow, we see alarming increases in gender discrimination, sexual violence, harassment and insecurity, representing a significant barrier to achieving gender equality (SDG 5).

Perceptions of safety, anchored in experiences — particularly of harassment and abuse, often go unreported and thus do not show up in crime statistics policymakers and designers use to design urban environments. Formal design processes often fail to consider the needs of marginalised communities. Similarly design standards used for lighting compliance largely focus on visibility for cars rather than people, and doesn't reflect human experiences favouring quality of light rather than the level or quantity of lighting to improve safety perceptions.

Improving urban lighting offers an opportunity to address social, economic and environmental challenges affecting the use and function of our cities at night by:

- Supporting the removal of barriers in movement which impacts lives and livelihood. By making streets feel safe we enable greater and more inclusive participation in public life.
- Enabling thriving urban economies at local and city scale, including the economic value of night-time economies (NTE) by influencing human behaviour, use and experience of spaces at night-time.
- Incorporating energy-efficient lighting technology upgrades and adoption of smart LED/OLED systems responsive to contexts and to address over-lit areas which saves costs and energy.

By gaining greater understanding of under-represented voices into design and decision-making processes innovations in our design methodologies and new service offers drive outcomes in the built environment to support safety, and facilitate equal inclusive access to public spaces.

### **Shared value solution description**

Informed by challenges and opportunities identified by clients and partners, this initiative supports designing cities, infrastructure and projects that create better outcomes for society. It includes:

- Shareable research: Through education and knowledge-sharing of our publicly available report with industry and external design practitioners we seek to influence change in their practise to incorporate this information to create wider impact beyond Arup's own direct projects.
- New co-design community engagement workshops for safer night-time environments: We are pioneering a new way of how lighting design practitioners engage with community for urban lighting design. Normally consultation is only completed for the day-time, not the night. We've developed a service that can be both digitally enabled online, or through face-to-face workshops to educate, empower and generate a better understanding of how light works at night to improve communication between clients, key stakeholders and the community.
- Lighting Vulnerability Assessments for safer night-time environments: We have developed a systematic way of identifying risk in public spaces where perceptions of safety are influenced by certain elements within that space. Practitioners can drill down into practical design features within a particular space that can be implemented across existing and new urban designs and spaces.
- New 'Night-time Masterplanning' service: Evidence-based findings identified a large proportion of society continuing to have bad night-time experiences. It also challenges current assumptions and previous research of the relationship between high levels of light, cool colour temperatures and uniformity, with perceptions of "safety". With densification and globalisation, we are increasingly relying on a 24hour city. However, not enough attention is being afforded to how light can shape and promote activities, events, pedestrian movement and perceptions of safety at night. We have highlighting the importance of clients investing in lighting masterplans which are tailored to night-time activity and wellbeing as a service offering.
- Digital lighting tools: An online platform for FreeToBe research and advocacy. Spurred by Victorian lockdowns, we have also developed an online platform where we scan sites at night-time to create a digital twin, and then host educational webinars. This has created greater reach and opportunities for community participation. We have also developed an online tool 'brightness journey' mapping tool - being the light levels that correspond to a route you might take, e.g. from home to train. The data from this can be compared to the original research to estimate how it would be perceived. We are also now developing machine learning methods to forecast which areas may have safety issues.

By combining holistic evidence-based experience design, cutting edge research techniques, and cross-disciplinary collaboration we've moved beyond compliance of appropriate standards and are working to include more voices that were previously ignored in city-shaping conversations. By designing for the challenges faced by vulnerable and/or marginalised members of our communities, quite often we create solutions that positively impacts us all. In creating safer, more inclusive and more equitable cities we are creating vibrant communities that can be enjoyed by all of us, no matter what time of day.

### **Market segment and potential for scaling the solution**

The initiative enables greater inclusion and equal access to public spaces, particularly for women and girls, through advocacy, research and urban design.

The FreeToBe project collaboration (between Plan International, Monash University, XYX Labs and Arup) mapping city experiences in Melbourne has been expanded internationally. It contributes to Plan International's 'Safer Cities for Girls' global programme implementation, working with governments and institutions, families and communities, and girls and boys to become active citizens and effective change-makers in the development of their cities.

Arup leveraged this approach and work to inform urban planning and design policy and projects across Australia, United Kingdom, Hong Kong and Solomon Islands, seeking to fundamentally change how lighting design is undertaken within cities and urban public spaces. The design principles and processes are transferrable across various fields of academia, urban-design, planning, digital, experience design – scalable from small private gardens of private asset owners to large scale citywide masterplanning for asset managers in councils, state and federal government. The methodology contributes to global public datasets based on hard evidence and the voices from community who are not usually part of the solution.

Arup's digital, scalable process for night-time community consultation further increases our reach. Our Lighting Vulnerability Assessments digitally 3D scan night-time spaces which provides contextualisation on an accessible online platform for clients to easily identify problem areas and gather user feedback from hundreds of community members through hosted webinars. Layers of this process in isolation are not new in the field of design, however combining them into a product which focuses on public space at night-time is definitely a revelation. We've applied this to projects including Federation Square's Lighting Masterplan, Darebin City Council, and the Western Programme Alliance level crossing removal rail, and are projecting a pipeline of work with councils and private clients within the year.

### **Key activities and resources including a basic development plan**

Key activities include:

#### Advocacy

- Results of FreeToBe city research undertaken in Melbourne, Sydney, Dehli, Kampala, Lima and Madrid have been published and contributes to Plan International's Safer Cities programme.

- Community engagement processes hosted at Melbourne Knowledge Week festival. We have since run multiple practical workshops teaching women about lighting and so they can share their experiences.

#### Research & Influence

- Sharing research finding outcomes within Arup locally and globally through continuing webinars and presentations to ensure rollout via Arup worldwide. This contributes to growing our lighting and our multi-disciplinary service offerings (e.g. within our Cities, Buildings, Planning, Safety and security, and International Development businesses).

- Presentations to external clients, industry bodies and urban design conferences, with plans to submit presentation at the 2021 PLDC and IALD global lighting conferences. The initiative has enabled us to diversify beyond just lighting and will branch-out to urban designers and landscape architect conferences too.

- Establishing an ongoing relationship with the Victorian Department of Justice as a practice-leader, trusted partner and authoring a new 'Safer Lighting Guide' to aide their community safety infrastructure grants.

#### Urban design

- Actively promoting this methodology to clients via one-on-one presentations and social media. We are broadening our relationships with urban designers and planning consultants.

- There has also been a huge impact on local councils who have received this research very positively and we are hosting webinars on new digital tools developed and development work targeting local councils.

- Completion of client projects and on-going development of work leveraging initiative methodologies, design processes and practices, insights, tools and service offerings.

- Applying learnings to a project with local Council, whereby workshops completing a lighting vulnerability assessment will lead to a community-led safety focused lighting upgrade on a major street.

### **Measurability**

The core motivation of the initiative is to enable social change locally, nationally and globally by increasing people's awareness and understanding of night-time safety, and provide practical guidance on designing impactful lighting to create safe and inclusive night-time environments. Arup has received direct financial returns as a result of winning work, developing service offerings, and increasing client and market engagement through the initiative. More importantly, we seek to measure the number of new and unique people we can reach and positively impact through implementing this work across cities.

The processes we've created allows clients to have a greater understanding of the challenges experienced by community members in public spaces and make more informed decisions about effective design interventions. This will ensure efficient expenditure of large investments in capital works and changes in traditional crime-prevention responses for night-time designs – more light and CCTV – to be more effective in improving human use of, and perceptions of safety in public spaces during hours of darkness. This can lead to direct cost savings for capital expenditure, lighting infrastructure and night-time management, as well as potential indirect savings and through improving perceptions of safety.

Qualitative experiences from the FreeToBe campaign combined with quantitative measures in lighting assessments has informed the human-centred evidence-based design to adapt and innovate Arup's lighting practices. The digital tools we've developed also allow for qualitative and quantitative measurement of improvements in experience, movement and use of public spaces, and can create links for tracking levels of participation, particularly of women and girls, in public life at night-time. To date, the timeline for this initiative is too short to demonstrate tangible economic impact at city scale. We expect though that through the implementation of lighting design and measures, there will be measurable long-term economic benefits for the night-time economy of city precincts.

### **Tangible results to date**

Strengthened collaborative relationships including with:

- Plan International, Monash University and XYX Labs creating foundations for ongoing research and programs.
- Victorian Department of Justice to collectively achieve more equitable outcomes for people in our cities through design.

Increased business returns through:

- Increased market and industry engagement with this unique offer and approach to market of improving society and night-time experiences.
- Pioneering how lighting design practitioners engage with the community for urban lighting design, including incorporating digital technology into the community engagement process and developing new ways of mapping lighting and experience through digital mapping.
- Winning project work with current and new clients through new tools, services and ways of working developed through the initiative. This includes undertaking projects with Plan International, UN Women, Federation Square, Caulfield Racecourse, Sydney Metro, and local Councils.

Increased industry leadership and visibility through:

- Generating a positive profile and increasing the number of views, media engagements, and industry and client presentations on the initiative and resulting work.
- Creating City of Yarra Council's Lighting Guidance, applying insights to Arup's 'Child-Centred Crime Prevention through Environmental-Design' approach and Child-Centred Urban Resilience Frameworks used by Arup globally, as well as informing the Gender Guidelines for.
- Highlighting Arup's human-centred, evidence-based approach and deep values that informs our practice and solutions as city-shapers who promote social resilience and improve the quality of life of citizens by creating vibrant, prosperous, safe and inclusive places for all who live work and play in cities at all hours.

### **Please provide relevant documentation to support claims made in this application.**

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#### **Upload any supporting documentation**

- [FreeToBe\\_Attachments.pdf](#)

#### **Official endorsement**

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##### **Endorsement**

- I am authorised to submit this application on behalf of my organisation and confirm that all required approvals have been sought and received.
- I acknowledge that in order to finalise this application I will pay the relevant administration fee.