SOL-ART Visions

Public Exhibition

17-31 July 2023, Tobacco Factory, Bristol

Concepts for solar facade artworks by

Andy Council
Bex Glover
Dave Bain
Elaine Carr
Luke Palmer (Acerone)

Presented by Upfest

as part of

Towards Solar Facades as Participatory Public Art
A UWE Bristol project in partnership with Upfest and BIPVco

Project Lead: Dr Eleonora Nicoletti

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Building-Integrated Photovoltaic (BIPV) technology enables the replacement of conventional building envelope materials with photovoltaics (PVs) that generate electrical energy from sunlight. PVs can be integrated visibly or invisibly into roofs and facades and may be used to compose and display visual content on building exteriors.

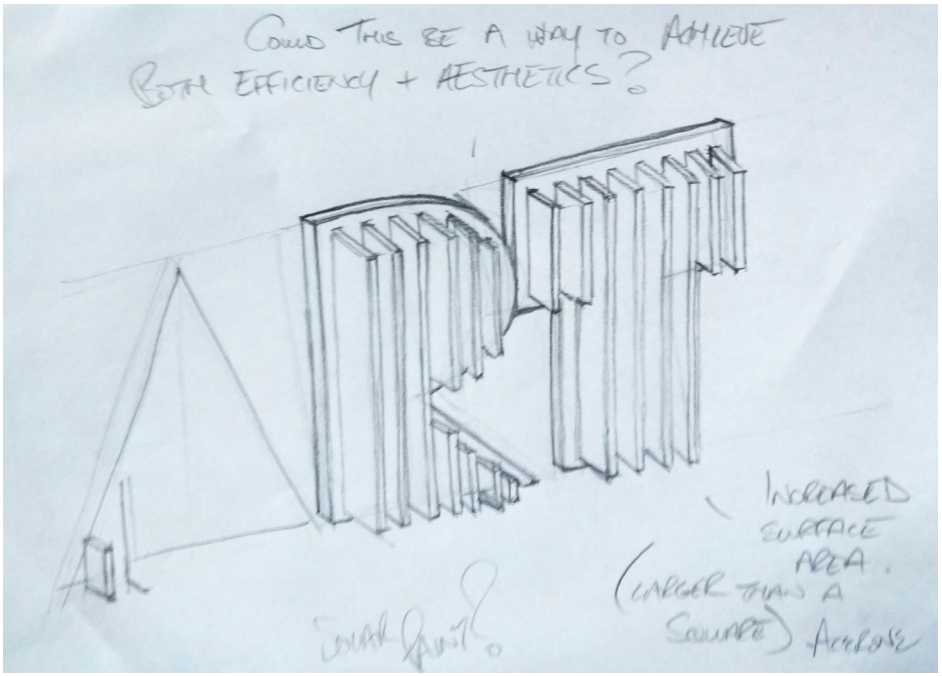
The technology has seen improvements in performance, cost and visual characteristics like module forms, colours, and transparency, offering options for design customisation. Emerging PVs with enhanced efficiency, as well as lifecycle and visual properties, expand the potential of BIPV solutions. These may be used in façade retrofit projects to improve buildings' energy performance, with design variations according to the context.

As the city of Bristol is rich in street art, questions arise about how PVs would visually relate to artworks if used in façade renovations. Photovoltaic façade designs may be combined with or conceived as public art creating new urban attractions and generating energy.

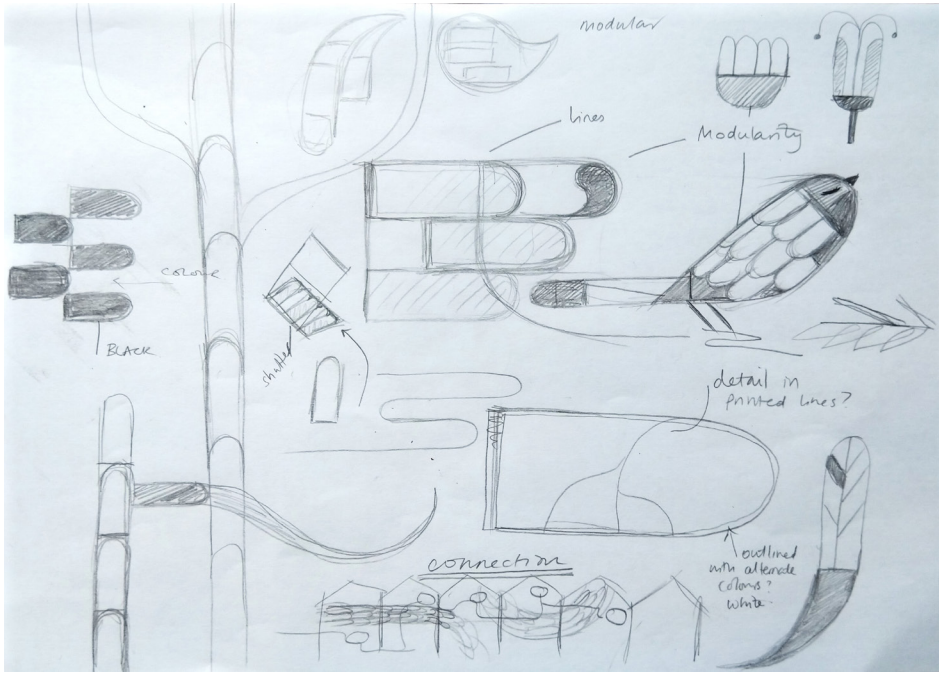
To explore this potential, we engaged the people of Bristol in envisioning photovoltaic facades for the city. We ran co-design workshops with local building design stakeholders and residents, facilitated by local artists who then developed illustrations of solar façade concepts from views expressed by participants.

This exhibition shows the artists' visualisations of solar façade concepts for Bedminster that are outputs of co-design workshops. The broader Bristol community is invited to join the conversation about the visual design of solar façades for the city by expressing views anonymously through an online questionnaire.

Examples of Skeches from the Co-Design Workshops

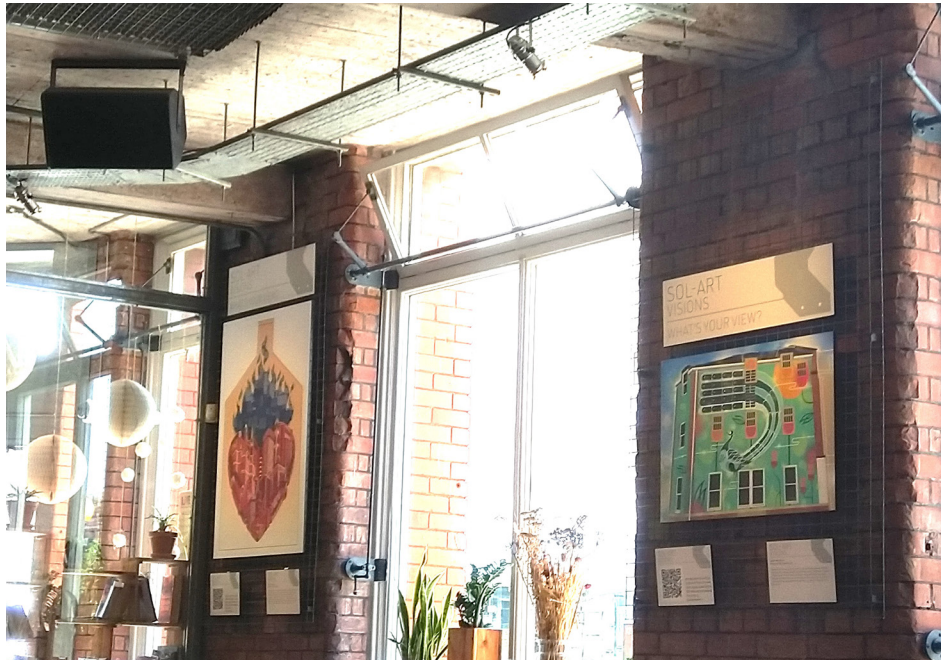


Sketch by Luke Palmer (Acerone), produced during a co-design workshop.



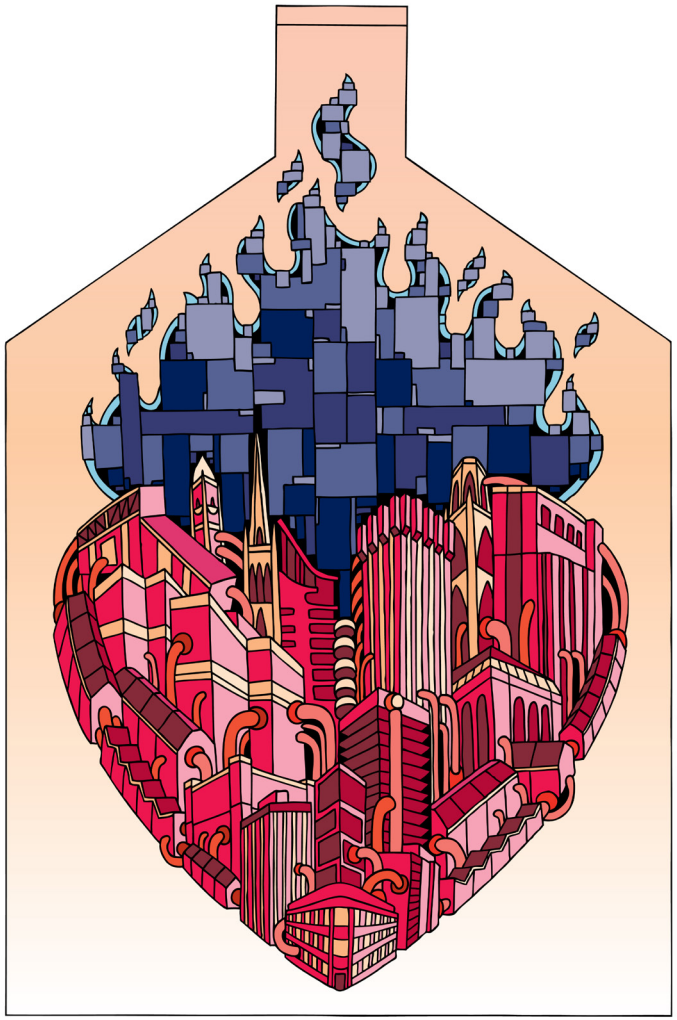
Sketch by Bex Glover, produced during a co-design workshop.

The *SOL-ART Visions* Exhibition



From left to right, artworks by Andy Council, Bex Glover, Dave Bain, Elaine Carr, and Luke Palmer (Acerone)

Artwork Title: *Solar Heart*
Artist: Andy Council



The idea for this piece came from participants' preference to have the Photovoltaics visible but integrated into the artwork at the top where there is more solar energy. The bulk of the artwork is at the bottom where there is less solar energy. The colours are a reversal of visualisations of solar potential where the top would be red and the bottom blue. I also wanted the buildings to be in reds/warm colours to represent the Heat Island Effect.

(Description by Andy Council)

Artwork Title: *Light for Life*
Artist: Bex Glover

The inspiration for this artwork comes from celebrating the natural world and the process of capturing solar energy as a way of moving towards a more sustainable future. At the same time, the piece considers the modular nature of solar panels and how rather than trying to conceal them completely, they could be combined with an artwork in a fun and inspiring way.

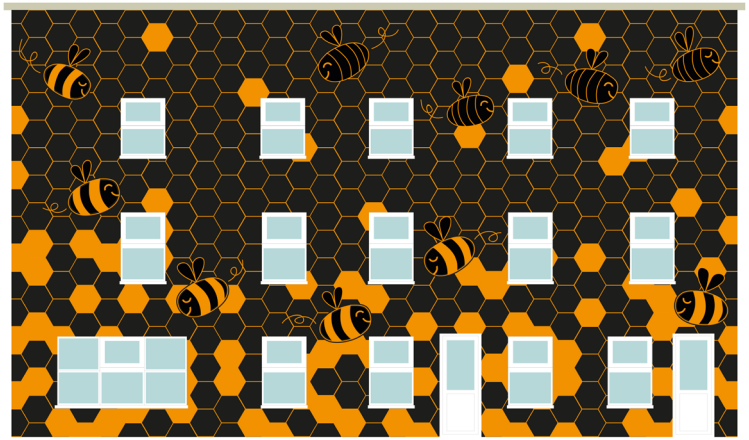
The panels in this concept are located nearer the top of the building where the available light is greatest, with the artwork more prominent towards the bottom, as well as forming a background for the panels. Working on the basis that as the technology advances, panels may be able to be created in more interesting shapes and sizes, a rounded rectangular shape has been chosen for the panels, that when used in modular configurations can form organic shapes and patterns, including the tail feathers of the peacock and the flowers growing up the building towards the sun. The panels used in the tail feathers also show how printing onto panels might be used to add interest.

Smaller solar panels are shown featured on daytime window shutters, which, with rising temperatures and hotter summers, are a suggestion of how we might utilize solar panels in a practical way.

(Description by Bex Glover)

Artwork Title: ***Soaking up the rays {top}***
Hive energy {bottom}

Artist: Dave Bain



{top}

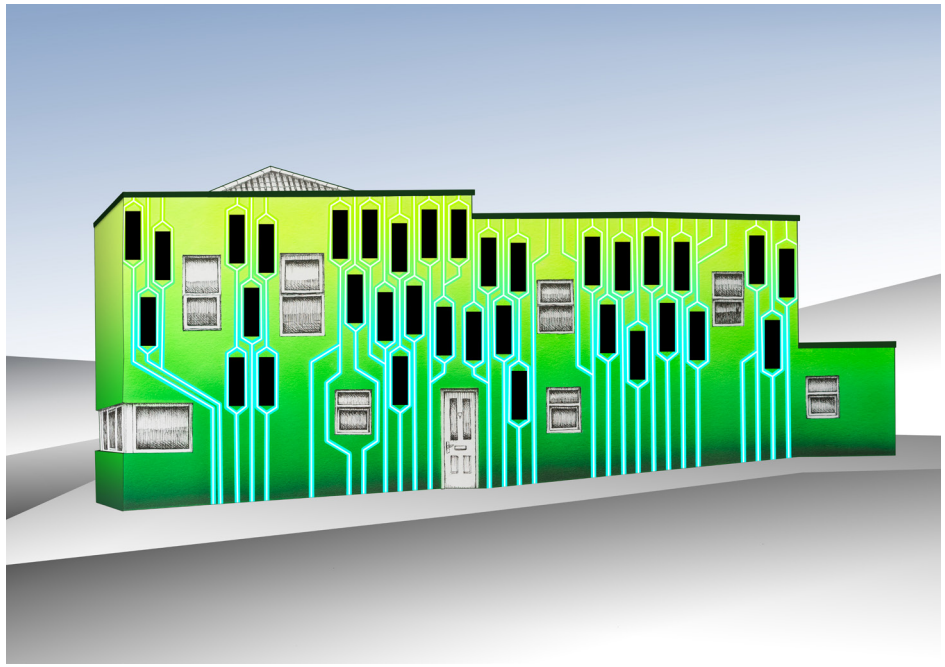
The artwork shows a character emerging from vibrant undergrowth soaked in the rays of sunshine, providing life, energy and positivity. A community view expressed a desire to see art integrated into a solar panel facade without lowering solar panel potential. The upper portion of the wall contains panels with thin yellow sunray lines minimally obscuring solar cells. The black colour of the solar panels is carried through in the lower artwork area to further disguise the panels.

{bottom}

The artwork shows a honeycomb pattern complete with characterful bees buzzing about. Each hexagon "black" shape is a potential future-design solar panel shape to be modular in build. The artwork design is designed to have minimum impact/coverage of the solar cells. Community views expressed a desire for an artwork that celebrated the creation of energy, was flexible or modular to suit different building shapes, felt positive and helped maximise the solar facade's potential.

(Description by Dave Bain)

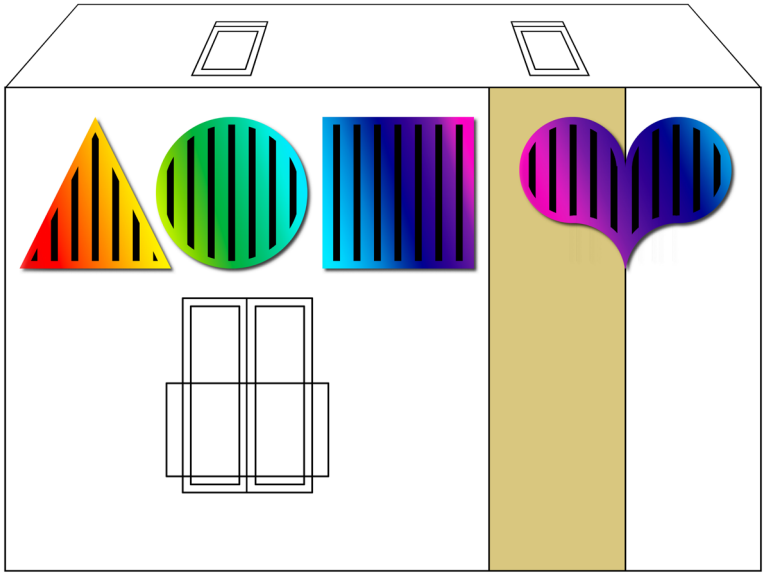
Artwork Title: *Solarsynthesis*
Artist: Elaine Carr



This artwork celebrates the natural world, and how it has solved the problem of harnessing sunlight to generate energy in the cell structures of leaves. I seek to reflect this process in graphic form, to help connect us to why the panels are there. The community were keen to show the photovoltaic panels clearly, so I have made them a focal point of the design to highlight their importance.

(Description by Elaine Carr)

Artwork Title: *More Power to You*
Artist: Luke Palmer (Acerone)



This artwork represents the beginnings of an exploration into whether 3-dimensional street art could be developed with the purpose of harvesting more energy than 2-dimensional solar cladding would.

The conversations that inspired me to begin thinking about working in 3D were around the question of efficiency V aesthetics. Logic says that the most effective way to harvest energy would be to convert the largest surface area with solar panels, whereas a 2D artwork would inevitably take some of this area away and therefore reduce efficiency.

My question then became: 'Is it possible to create a piece of art that increases the amount of energy a particular surface can harvest?'

(Description by Luke Palmer/Acerone)