Engage4BIO

TAD: Ternary Amplitude Diffusion

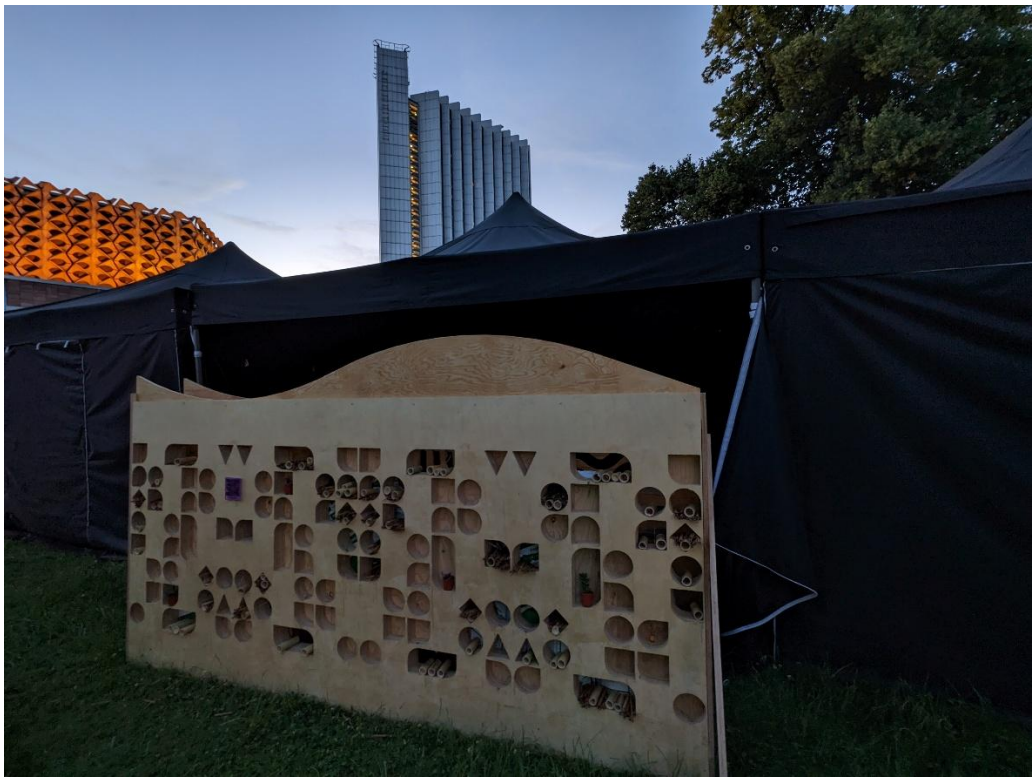
The Project

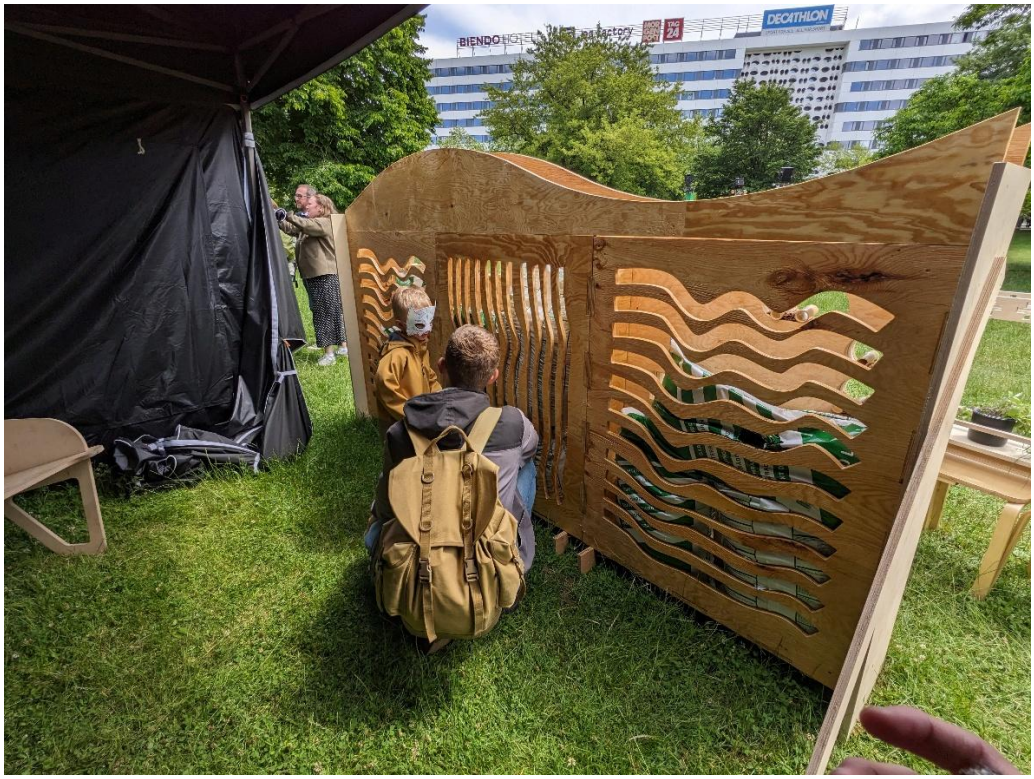
A circular acoustic barrier enhancing urban soundscapes and biodiversity

- Urban noise mitigation system based on MLS (Maximum Length Sequence) matrix
- Uses ternary diffusion pattern [1, 0, -1] to achieve destructive interference
- Backed by absorption substrate, reducing noise pollution by up to 13 dB
- Designed for road traffic noise and sensitive urban zones
- Creates quiet spaces for hearing-impaired and neurodivergent communities
- Integrates community garden and insect hotel to support urban biodiversity
- Promotes placemaking and multifunctional urban design
- Emphasizes circularity and sustainable acoustic architecture

Designer – Jeremy Leung

- Holds a Master in Music Technology from Utrecht University of the Arts
- Specializes in experience design and acoustic toolmaking
- Creator of irido, a modular, circular sonic crystal for music and spatial sound
- Involved in urban noise mitigation projects in Chemnitz (DE, EU Culture Capital 2025)
- Collaborated with Kaboom Festival (NL) on sonic branding
- Curates “Third Place” – a YouTube channel featuring Dutch artists
- Projects showcased at Schiphol Airport, Mikser Festival (Serbia), and more
- Finalist in BioDesign Challenge; supported by AMS Institute
- Active across Netherlands, Germany, and Italy on parametric sound design and biodesign

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> “Multi-stakeholder engagement to strengthen regional bioeconomy value-chains”

Consortium :

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www.engage4bio.eu

info@engage4bio.eu

@Engage4BIO