

BIO LUM

THE WORLD'S FIRST BIOLUMINESCENT CONSERVATORY

AND ICON FOR SAN JOSE

Bioluminescence has an almost inexplicable way of capturing human attention and imagination. Countless childhood memories recall the magical dancing of fireflies during precious summer evenings. Tourists trek to the remotest areas of the earth to witness the spectacular illuminance of glow worms in the underground caves of New Zealand and the seasonal algal blooms on shorelines from China to California. Foxfire, a bioluminescent species of fungi, has fascinated forest-goers for nearly a millennium. Also called 'fairy fire,' it was often used in place of candles to provide a guiding light to navigate the dark.

Beyond the compelling beauty of bioluminescent organisms, however, is their value as a latent resource for understanding and developing sustainable models of illuminance. There is a growing body of research dedicated to the engineering of bioluminescent flora through various means, from embedding nanoparticles in plant leaves to inserting specific fungal genes into plant DNA. This research suggests society is at the cusp of a lighting revolution - soon plants will illuminate our homes, businesses, and streets, a shift that has the potential to greatly reduce the energy demands of urban infrastructure around the world.

With these biotechnological advancements in mind, BIO LUM proposes to build upon San Jose's identity as a hub of innovation and ingenuity, while reconnecting to the city's agricultural roots and relationship to the surrounding natural ecosystems of Silicon Valley and the Bay Area. BIO LUM, the world's first bioluminescent conservatory, will serve as a center for biotechnology research, development and exhibition pertaining to the engineering of bioluminescent organisms. For research groups and academics, BIO LUM will act as a physical hub for observation, collaboration, information exchange, and experimentation. For the residents of San Jose, BIO LUM will serve as an educational, civic, and cultural center where visitors can immerse themselves in the enchantment of the natural world.