

## **SYSTEMS ENGINEER, Research Installations and Sculpture Environments**

Seifert Beesley Architect Inc./Living Architecture Systems Group (SBAI/LASG)

**Position:** Systems Engineer, Installations and Sculpture Environments

**Start date:** Immediate [negotiable]

**Place of Employment:** 213 Sterling Road Suite 200, Toronto

**Conditions:** Salary negotiable according to work experience

Seifert Beesley Architect Inc. /Living Architecture Systems Group (SBAI/LASG) is looking for a full-time systems engineer, responsible for developing and installing experimental art environments and for developing test-beds for research. The engineer would work as a core member of a small design, prototyping and installation team, responsible for a continually evolving series of experimental research projects installed in public international venues. Daily work would be located at the SBAI/LASG Toronto studio. The position would also involve occasional expenses-paid travel to international installation sites. While direct experience in all technologies is not required, the position requires advanced skill in circuit design and layout, component selection, and network design. Involvement in academic research initiatives would be included. Physical fabrication and design experience is an asset. Growth and development of individual approaches to work within the studio can be supported.

**SBAI/LASG** is an interdisciplinary design company located in Toronto, Canada. SBAI specializes in public art and experimental installations, architectural design of public buildings, and publication design. The multi-partner LASG is associated with the School of Architecture and Faculty of Engineering at the University of Waterloo. SBAI and LASG work in close partnership, with sculpture and architecture environments designed by SBAI integrated with research test-beds for the LASG. Projects in the past two decades have focused on immersive textile environments, landscape installations and intricate geometric structures. The most recent generations of these works feature interactive sound, light and kinetic mechanisms with distributed control systems. Studio research focuses on aesthetics, technology and craft of responsive envelope systems including digital fabrication of extremely light-weight, flexible component arrays containing embedded sensors and actuators.

For more information visit [www.livingarchitecturesystems.ca](http://www.livingarchitecturesystems.ca)

### **Required Skills**

- Undergraduate degree in Engineering or equivalent; Graduate degree preferred
- general expertise in electronics including light and sound devices; and kinetic mechanisms (servos, motors, and other mechanical actuation)
- prototyping using shop equipment and hand tools
- PCB procurement, design and fabrication using EagleCAD, Altium Designer, or similar
- design for repeatability and mass production including electronics, custom cabling, encapsulation, cable management
- basic operational knowledge of communications protocols such as ZigBee, RS-485, USB, UDP, TCP/IP, I2C, I2S, DMX, etc.)

### **Additional Skills**

- competency in software: scripting and manipulating object oriented and procedural code written in Arduino, C++, and Python for firmware deployment and interfacing with design and visualization software-management of software development including version control with Git
- Familiarity with CAD tools (AutoCAD, Solidworks, etc.), graphic design software (Adobe Suite), audio design software (Pro Tools, Logic, etc.) a plus but not required.

### **Working Methods**

- skilled in cyclical project development methods including circuit design and layout, prototyping, short-run manufacturing, testing process
- troubleshooting methods for electrical issues (line noise, ground loop, hum and buzz, etc.)
- spreadsheet-based work management (BOM, inventory, project management, etc.)
- safely work with mains power (120V-240V) and low voltage circuitry.
- safe work practices at heights equivalent to theatre attics for rigging, wiring, troubleshooting during installation

### **Key Qualities**

- interested in experimental interactive systems applied to next-generation architecture and sculpture
- flexible, able to take on widely varying responsibilities including occasional expenses-paid travel and installation abroad
- high-spirited, self-motivated, and self-governed individual who thrives in a small, agile work environment.
- highly cooperative and communicative
- able to manage small groups including volunteers

### **Contact**

Please submit a cover letter, resume and links to projects/GitHub if available in confidence via email to Salvador Miranda, SBAI/LASG Development and Communications Manager.

[smiranda@pbarch.ca](mailto:smiranda@pbarch.ca)