

## **BUILDING AUTOMATION AND SYSTEMS INTEGRATION ANALYST**

### **DEFINITION**

Under general supervision of assigned manager/supervisor performing all duties with minimal technical supervision. Technical specialist with responsibility for the operation, maintenance, and future expansion of all hardware and software for large, complex Campus Facility Automation Systems. Building Automation Systems include: Energy Management Systems (Honeywell, etc.); HVAC Direct Digital Controls systems, HVAC Pneumatic Controls Systems; Fire Alarm Systems (Simplex, Silent Night, etc.); Intrusion Alarm Systems (ADT, Elk, Ademco, etc.); Card Access Systems (Locknetics); and Lighting Control Systems (nLight).

### **TYPICAL DUTIES**

#### **General**

Assess, plan, budget and manage daily operations and future expansion of the Campus Facility Automation Systems. Technical advisor and resource for College and District staff that are maintainers and end-users of the Campus Facility Automation Systems.

#### **Building Automation System Support**

Troubleshoot system problems to provide continued operation and optimize building automation system performance through analysis of trend data. Develop and implement: standard specifications, programming standards, standard sequences of operation, and commissioning procedures; plan for re-commissioning existing building systems to achieve optimum energy efficiency; plan for re-commissioning, maintenance and calibration of pneumatic control systems; and documentation standards for hardware and cabling.

#### **Programming**

Design, code, test, and de-bug: SQL Database; network supervisory controllers; workstation-level Human-Machine Interfaces (HMI); Graphical User Interfaces (GUI); Internet Interfaces; supervisory-level energy conservation strategies. Program energy management system I/O and trend databases development and maintenance; develop and implement documentation standards for software; and maintain code, code archives, code documentation and backups.

#### **Network Support**

Maintain large-scale control network optimization; install and maintain network components in the organization-wide network; maintain network availability, performance and security; work with campus and district technicians, specialists and analysts to implement and maintain needed connectivity; and resolve network connectivity problems.

#### **Systems Integration**

Integrating the following networks to HMI workstations via LRCCD WAN: Building Automation controls, Energy Management Systems, Fire Alarm, Intrusion Alarm, and Card Access.

#### **Project Management**

Work as project manager for Facilities projects by contractors to expand Campus Facility Automation System; including, but not limited to: define scope of work and specifications, design and produce

working drawings, develop budgets, and schedules. Review all hardware designs and submittals, and software programming to determine compliance with specifications. Work as primary contact for consultants during project design and primary contact for contractors during project execution. Inspect project during installation and act as Commissioning Agent at project completion.

## **QUALIFICATIONS**

### **EXPERIENCE AND EDUCATION**

An Associate's degree in computer science or equivalent (or completion of a certificate program equivalent to an Associate's degree in computer science) **AND** two years in class of IT Assistant II with increasingly more responsible activities; **OR**, an Associate's degree in computer science or equivalent (or completion of a certificate program equivalent to an Associate's degree in computer science) **AND** five years' experience directly related to job duties; **OR**, any combination of training and/or experience totaling eight years that is likely to have provided the required level of knowledge and abilities.

One year of experience is equal to 12 months of experience at 40 hours per week. Applicable part-time experience will be converted to the full-time equivalent for purposes of meeting the experience requirement.

One year of education is equal to 30 semester units. Education must be from an accredited institution.

### **SPECIAL REQUIREMENT**

Possess and maintain a valid California Driver's License in compliance with Los Rios Board Regulation R-8343; employment is contingent upon meeting the requirements of Los Rios Board Regulation R-8343. This position may require operating a District or personal vehicle in order to complete assigned work within the scope of the position duties. Willingness to monitor projects on other than regular working hours. Any offer of employment is contingent upon the successful completion of a medical evaluation.

### **KNOWLEDGE OF**

Knowledge of hardware, software, system architecture, network topology, operating systems, programming, telecommunications equipment and protocols of large-scale, multi-campus building automation systems. Knowledge of Energy Management System I/O and trend database structure; Human-Machine Interfaces (HMI) and Graphical User Interfaces (GUI) for building automation systems; and internet Interfaces for building automation systems. Knowledge of Line Programming, Block Programming and Relay Ladder Logic; Windows server and Windows. Knowledge of NT 4.0 workstation operating systems, LonWorks, BACnet, Internet enabled systems, and other emerging control system protocols and technologies. Knowledge of Active Directory. Knowledge of networking topology, protocols and routing including OSI seven-layer model; third party HMI's (CADgraphics, WonderWare, Intellution, etc.); trend database structure and trend data analysis techniques; PC based instrumentation and data logging devices. Knowledge of relational database (SQL). Knowledge of application and specification of stand-alone instrumentation, sensors and transmitters; project management software (Microsoft Project); effective leadership and project management practices and procedures; and knowledge of industry standards for documentation of hardware and cabling. Knowledge of building management systems, Uniform Building Code, Uniform Mechanical Code, and National Electric Code; commissioning procedures for building automation systems. Knowledge of building energy conservation strategies. Knowledge of Fire Alarm Systems (Simplex, Silent Night, etc.), Intrusion Alarm Systems (ADT, Elk, Ademco, etc.), Card Access Systems (UnityIS), and Lighting Control Systems (nLight). Knowledge of CAD/reprographics (AutoCAD), building energy audits, and policies and procedures for execution of controls contracts. Knowledge of major DDC systems on the market.

**ABILITY TO (ESSENTIAL FUNCTIONS)**

Ability to develop and diagnose control drawings and software; read and interpret HVAC drawings, control schematics, blueprints, and other construction documents and specifications; and work with standard office software such as Word and Excel. Ability to perform emergency, planned and preventative maintenance on all control related equipment; to assume work duties normally completed by control contractors including but not limited to repair, replacement and emergency service of control devices (control devices include but are not limited to Operator Work Stations, Interface Cards, and Network Interface Devices). Ability to perform corrective measures to resolve urgent building operational issues; to work at the level needed for successful job performance with tools and instruments used for installing and trouble shooting controls systems such as multimeters, amp meters, etc. Ability to provide training to other maintenance personnel for the proper ongoing scheduling, operation and continuous improvement of District automation systems; to be self reliant and able take on diverse responsibilities to ensure quality work; and to master specialty software specific to Honeywell EBI or other vendors used by the District. Ability to communicate at the level required for success job performance using interpersonal skills and the ability to address contentious technical issues in an expedient and professional manner. The ability to clearly communicate requirements of control systems; to professionally prepare required written documents such as letters, requests for proposals and other job related matters; to have written and oral communications at a level to insure successful job performance. The ability to interact with diverse constituency having varying levels of technical and practical expertise; to have the ability to prioritize in scheduling of competing job requirements; and to work with planners, maintenance personnel, consultants, contractors, and inspectors on multiple projects.

**Physical and Environmental Factors:** Ability to move about freely at construction sites; lift and/or carry heavy objects up to 50 pounds, with or without assistance, from floor level to above shoulder level; climb ladders; maneuver through tight and cramped spaces (i.e. trenches, crawl spaces, electrical and mechanical vaults, etc.). Exposure to safety hazards routinely associated with construction sites and maintenance spaces.

**TYPICAL EQUIPMENT USED (May include, but not limited to)**

Current office technologies, computers, printers, copiers, faxes and telephones.