



DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive
Joseph T. Parisi

1919 Alliant Energy Center Way ♦ Madison, Wisconsin 53713
Phone: (608) 266-4018 ♦ Fax: (608) 267-1533

Commissioner / Director
Gerald J. Mandli

JANUARY 10, 2013

ATTENTION ALL REQUEST FOR PROPOSAL (RFP) HOLDERS

RFP NO. 312034 - ADDENDUM NO. 1

DESIGN SERVICES FOR MECHANICAL, ELECTRICAL & PLUMBING INFRASTRUCTURE IMPROVEMENTS

PROPOSALS DUE: THURSDAY, JANUARY 17, 2013, 2:00 PM. DUE DATE AND TIME ARE NOT CHANGED BY THIS ADDENDUM.

This Addendum is issued to modify, explain or clarify the original Request for Proposal (RFP) and is hereby made a part of the RFP. Please attach this Addendum to the RFP.

PLEASE MAKE THE FOLLOWING CHANGES:

1. Document Index

Delete current Document Index; replace with new Index, issued with this Addendum.

2. Requested Services and Business Information

Page RSBI-1 - Item B.4:

Change: "Preparation of Construction Documents for bidding (including working drawings and specifications of all building site, architectural, structural, mechanical, electrical, plumbing, controls, security, telecommunications, well, and waste treatment).",

To: "Preparation of Construction Documents for bidding (for an early major equipment bid package & the primary construction bid package, including working drawings and specifications of all building site, architectural, structural, mechanical, electrical, plumbing, controls, security, telecommunications, well, and waste treatment)."

Page RSBI-1 - Item B.8.:

Change: "Coordinate Work with Dane County Public Works Project Engineer.",
to: "Coordinate Work with Dane County Public Works Project Engineer. Plan for two (2) coordination meetings with representatives of Harris Corporation (building the penthouse and supplying communications equipment)."

Page RSBI-2 - Item G.:

Change: "January 11, 2013 - 2:00 p.m. Written inquiries due",
to: "January 15, 2013 - 9:00 a.m. Written inquiries due".

3. Blank Page (after Requested Services and Business Information)

Delete this page; replace with new Sample Agreement for Professional Services & Sample Agreement for Professional Services Schedules, issued with this Addendum.

4. Supplementary Content

Delete current Supplementary Conditions; replace with new Supplementary Content, issued with this Addendum. *Note: it is anticipated that Addendum No. 2 will contain the final two of four reports from Henneman Engineering.*

If any additional information about this Addendum is needed, please call Scott Carlson at 608/266-4179, carlson.scott@countyofdane.com.

Sincerely,

Scott Carlson

Project Engineer

Enclosures:

Document Index

Sample Agreement for Professional Services

Sample Agreement for Professional Services Schedules

Supplementary Content (including)

* Part 1 - Report for Existing HVAC Cooling Equipment Study

* Part 1 - Report for Electrical Infrastructure & Generator Capacity Study

S:\PubWork\Shared\Engineering Division\Construction Docs\Addendum 07-23-08.doc

DOCUMENT INDEX FOR RFP NO. 312034

PROPOSAL REQUIREMENTS

- RFP Cover
- RFP Cover Letter
- Documents Index
- Invitation to Propose (Legal Notice)
- Signature Page and Additional Dane County Requirements
- Fair Labor Practices Certification
- Requested Services and Business Information
- Sample Agreement for Professional Services
- Sample Agreement for Professional Services Schedules
- Equal Benefits Compliance Payment Certification
- Supplementary Content

**AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES FOR THE DANE
COUNTY MECHANICAL, ELECTRICAL & PLUMBING INFRASTRUCTURE
IMPROVEMENTS IN MADISON, WISCONSIN**

RFP NO. 312034

THIS AGREEMENT, made and entered into as of date by which authorized representatives of both parties have affixed their signatures, is by and between County of Dane (hereafter referred to as “OWNER”) and _____ (hereafter, “ENGINEER”).

WHEREAS, OWNER intends to construct Mechanical, Electrical & Plumbing Infrastructure Improvements in the City-County Building in Madison, Wisconsin; and

WHEREAS, OWNER desires to enter into an Agreement with ENGINEER for provision of ENGINEER’S services;

NOW, THEREFORE, in consideration of above recitals and mutual covenants of parties, receipt and sufficiency of which is acknowledged by each party for itself, parties do agree as follows:

SAMPLE
ARTICLE 1
ENGINEER’S SERVICES

BASIC SERVICES

(1) ENGINEER’S Basic Services with respect to design and construction of Dane County Mechanical, Electrical & Plumbing Infrastructure Improvements (hereinafter, “the Project”) shall be as set forth in Schedule A and Schedule C. Schedules are attached hereto, and shall consist of project phases described below, including all usual and customary engineering services incidental to and generally associated with provision of those services expressly enumerated in this Agreement and Schedules A and C.

DESIGN DEVELOPMENT PHASE

(2) ENGINEER shall review Studies from Henneman Engineering relative to the Project and shall develop design based on the recommendations agreed to by the OWNER.

(3) ENGINEER shall prepare Design Development Documents consisting of drawings and other documents to fix and describe size and character of the Project as to specifications, details, materials, components, equipment and systems, including site, utility, structural, mechanical, electrical, plumbing, controls, security, telecommunications, well and waste treatment systems. Design Development Documents shall be submitted to OWNER for written Approval.

(4) ENGINEER shall submit to OWNER revised construction cost estimate.

EARLY BID PACKAGE

(5) ENGINEER shall develop specification package sufficient for OWNER to separately purchase major long-lead time equipment, specifically, an emergency power generator set and room air conditioning units.

CONSTRUCTION DOCUMENTS PHASE

(6) Based on approved Design Development Documents, ENGINEER shall prepare Drawings and Specifications setting forth in detail requirements for bidding and constructing the Project, including necessary bidding information. OWNER shall prepare necessary invitation and instructions to bidders, bidding forms, form of Contract between OWNER and Contractor, General Conditions of Contract, and Supplementary Conditions. Drawings, Specifications and other documents prepared under this Construction Document Phase shall be submitted to OWNER for written Approval.

(7) ENGINEER shall advise OWNER of any adjustments to previously submitted construction cost estimate indicated by changes in requirements or general market conditions, and shall obtain OWNER'S written approval of any such changes.

(8) ENGINEER shall submit construction related documents requiring approval of governmental authorities having jurisdiction over the Project.

BIDDING OR NEGOTIATION PHASE

(9) Following OWNER'S approval of documents prepared under Construction Documents Phase and latest construction cost estimate, ENGINEER shall assist OWNER in obtaining bids or negotiated proposals, and in awarding and preparing construction contracts.

CONSTRUCTION PHASE

(10) Construction Phase shall commence with award of Construction Contract and shall terminate when OWNER accepts the Project.

(11) ENGINEER shall provide administration of Construction Contract and will report deviations from Drawings and Specifications discovered as result of inspection visits called for in Schedule A.

(12) ENGINEER, as representative of OWNER during Construction Phase, shall advise and consult with OWNER and all of OWNER'S instructions to Contractor shall be issued through ENGINEER. ENGINEER shall have authority to act on behalf of OWNER to extent provided in this Agreement unless otherwise modified in writing.

(13) ENGINEER shall at all times have access to the Project and work thereon. Give consideration and attention to facility staff's needs and surrounding environment and work accordingly. Coordinate concerns or questions about facility staff's needs and surrounding environment with Facility Manager or Public Works Project Engineer.

(14) ENGINEER shall endeavor to protect OWNER against defects and deficiencies in work of Contractor. ENGINEER shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Project.

(15) Based on site observations and on Contractor's Application & Certificate for Payment, ENGINEER shall determine amount owed to Contractor and shall certify such amounts.

Certifying of Application & Certificate for Payment shall constitute representation by ENGINEER to OWNER, based on ENGINEER'S site observations and data comprising Application & Certificate for Payment, that work has progressed to point indicated; that to ENGINEER'S best knowledge, information and belief, quality of work is in accordance with Construction Documents (subject to evaluation of work for conformance with Construction Documents upon substantial completion, to results of any subsequent tests required by Construction Documents, to minor deviations from Construction Documents correctable prior to completion, and to any specific qualifications stated in Application & Certificate for Payment); and that Contractor is entitled to payment in amount certified. By certifying Application & Certificate for Payment, ENGINEER shall not be deemed to represent that ENGINEER has made any examination to ascertain how and for what purpose Contractor has used money paid on account of contract sum.

(16) ENGINEER shall be, in first instance, interpreter of requirements of Construction Documents and shall make recommendations on all claims of OWNER or Contractor relating to execution and progress of the Project and on all other matters or questions relating thereto. ENGINEER'S decisions in matters relating to artistic effect shall be final if consistent with intent of Construction Documents.

(17) ENGINEER shall have authority to reject work that does not conform to Construction Documents. Whenever, in ENGINEER'S reasonable opinion, ENGINEER considers it necessary or advisable to insure proper implementation of intent of Construction Documents, ENGINEER will have authority to require reasonable number of inspections or testing of any work in accordance with provisions of Construction Documents whether or not such work be then fabricated, installed or completed.

(18) ENGINEER shall review and approve shop drawings, samples, and other submissions of Contractor for conformance with design concept of the Project and for compliance with Drawings and Specifications.

(19) ENGINEER shall prepare information for Change Orders and submit to OWNER for approval and publication.

(20) ENGINEER shall conduct inspections to determine progress for payment, substantial completion and final completion. They shall receive and review written guarantees and related documents assembled by Contractor, for OWNER'S permanent record, and shall certify final Application & Certificate for Payment.

(21) ENGINEER shall not be responsible for acts or omissions of Contractor, or any Subcontractors, or any of Contractor's or Subcontractor's agents or employees, or any other persons performing any of the Project.

(22) ENGINEER shall not be responsible for making investigations involving detailed appraisals and evaluations of existing facilities, and surveys or inventories required in connection with construction performed by OWNER.

(23) ENGINEER shall not be responsible for providing consultation concerning replacement of any work damaged by fire or other cause during construction, and furnishing professional services of type set forth under Basic Services section under Article 1 as may be required in connection with replacement of such work.

(24) ENGINEER shall not be responsible for providing professional services made necessary by default of Contractor or by major defects in work of Contractor in performance of Construction Contract.

(25) ENGINEER shall not be responsible for preparing to serve or serving as expert witness in connection with any public hearing, arbitration proceeding or legal proceeding.

(26) ENGINEER shall provide usual and customary services of architectural and engineering consultants for design and engineering of site, architectural, structural, mechanical, electrical, plumbing, controls, security, telecommunications, well, and waste treatment systems included in the Project.

(27) ENGINEER shall not be responsible for providing services not included in this Agreement and not customarily furnished in accordance with generally accepted architectural / engineering practices.

START-UP / TROUBLESHOOTING PHASE

(28) ENGINEER shall provide necessary assistance and expertise in Contractor's initial start-up, testing, adjusting and balancing, and troubleshooting of any equipment or system.

(29) ENGINEER shall provide necessary assistance and expertise in Contractor's preparation of operation and maintenance manuals, and Contractor's training personnel for operation and maintenance.

ARTICLE 2

OWNER'S RESPONSIBILITIES

(1) OWNER shall provide full information regarding requirements for the Project.

(2) OWNER shall designate, when necessary, representative authorized to act in OWNER'S behalf with respect to the Project. OWNER shall examine documents submitted by ENGINEER and shall render decisions pertaining thereto promptly, to avoid unreasonable delay in progress of ENGINEER'S services.

(3) OWNER shall furnish certified land survey of site giving, as applicable, grades and lines of streets, alleys, pavements and adjoining property, rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of site.

(4) OWNER shall pay for necessary testing services, including lab work, soil borings, compaction testing and concrete testing. ENGINEER shall supervise such testing.

(5) If OWNER becomes aware of any fault or defect in the Project or non-conformance with Construction Documents, RFP, or this Agreement, OWNER shall give prompt notice thereof to ENGINEER and ENGINEER shall take prompt action to correct such fault or defects.

(6) OWNER shall expeditiously furnish information required hereunder:

- (a) Recent, related MEP Studies of facility or project vicinity; and
- (b) Existing facility drawings and specifications.

ARTICLE 3

CONSTRUCTION COST

(1) Actual or probable construction cost is the OWNER accepted bid, alternates and Change Orders of the Project.

(2) Actual or probable construction cost is to be used as basis for determining ENGINEER'S compensation under this Agreement.

(3) Actual or probable construction cost does not include compensation of ENGINEER and ENGINEER'S consultants, cost of land, rights-of-way, or other costs which are responsibility of OWNER.

(4) Construction cost estimates prepared by ENGINEER represent ENGINEER'S best judgment as design professionals familiar with current construction industry. It is recognized, however, that neither ENGINEER nor OWNER has any control over cost of labor, materials or equipment, over methods of determining bid prices, or over competitive bidding or market conditions. Accordingly, ENGINEER does not guarantee that bids will not vary from any construction cost estimates prepared by ENGINEER.

(5) There shall be bidding contingency in amount equal to ten percent (10%) of cost of construction set forth in construction cost estimate approved by OWNER at Design Development Phase, including any adjustments approved at Construction Documents Phase.

(6) If Bidding or Negotiating Phase has not commenced within six months after ENGINEER submits Construction Documents to OWNER, construction cost estimate approved by OWNER at Design Development Phase, including adjustments approved at Construction Documents Phase, shall be adjusted to reflect any change in general level of prices which may have occurred in construction industry for area in which the Project is located. Adjustment shall

reflect changes between date of submission of Construction Documents to OWNER and date on which proposals are sought.

(7) If cost of construction set forth in construction cost estimate approved by OWNER at Design Development Phase (including any adjustments approved at Construction Documents Phase plus amount of bidding contingency established hereunder) is exceeded by lowest bona fide bid, OWNER shall:

- (a) Give written approval to proceed with the Project at said bid amount; or
- (b) Authorize re-bidding the Project within reasonable time and cooperate with ENGINEER in revising the Project scope and quality to reduce cost of the Project to amount not in excess of cost of construction set forth in construction cost estimate approved at Design Development Phase (including adjustments approved at Construction Documents Phase plus amount of bidding contingency).

(8) In case of (b), ENGINEER, without additional charge, shall modify Drawings and Specifications as necessary and as approved by OWNER to reduce cost of the Project prior to re-bid. Providing of such service shall be limit of ENGINEER'S responsibilities in this regard and, having done so, ENGINEER shall be entitled to compensation set forth in this Agreement.

ARTICLE 4

DIRECT PERSONNEL EXPENSE

(1) Direct Personnel Expense is defined as salaries of professional, technical and clerical employees engaged on the Project by ENGINEER, and cost of their mandatory and customary benefits such as statutory employee benefits, insurance, sick leave, holidays, vacations and pensions. Fixed fee for services performed under this Agreement shall include all Direct Personal Expenses incurred in providing such services unless otherwise approved by OWNER in writing.

ARTICLE 5

REIMBURSABLE EXPENSES

(1) Reimbursable Expenses are in addition to Compensation for Basic and Additional Services and include actual expenditures made by ENGINEER, its employees, or professional consultants in interest of the Project and subject to prior written consent of OWNER.

Reimbursable Expenses shall be directly billed to OWNER and may include following:

- (a) Expense of reproducing and mailing Drawings and Specifications for bidding.
- (b) Fees paid for securing approval of authorities having jurisdiction over the Project.
- (c) On and off site testing.

ARTICLE 6
PAYMENTS TO ENGINEER

(1) Fee for services to be provided under this Agreement is fixed at ____% of total construction cost.

- (a) Initial payments will be made based on cost estimates developed for the Project's current Phase; and
- (b) Final payments will be made based on actual total construction cost plus / minus all OWNER initiated change orders.
- (c) If Owner reduces scope after ENGINEER has completed services, fees will be reduced for future services, not for services already completed.

(2) Payments for services under this Agreement shall be made monthly in proportion to services performed and cost estimates provided at each Phase so that compensation at completion of each Phase shall equal following percentages of total fee for services hereunder:

Design Development Phase	35%
Construction Documents Phase	65%
Bidding or Negotiation Phase	75%

(3) Payments for additional services of ENGINEER and for Reimbursable Expenses shall be made monthly upon submission by ENGINEER of statements for services rendered. OWNER shall make payments for Reimbursable Expenses directly to provider of service.

(4) No deductions shall be made from ENGINEER'S compensation because of penalty, liquidated damages, or other sums withheld from payments of contractors.

(5) Submit Equal Benefits Compliance Payment Certification with final pay request. Payment may be denied if Certification is not included.

ARTICLE 7

ENGINEER'S ACCOUNTING RECORDS

(1) Records of Reimbursable Expenses and expenses pertaining to Additional Services on the Project and for any services approved to be performed on basis of Multiple of Direct Personnel Expense, shall be kept on generally recognized accounting basis and shall be available to OWNER or OWNER'S authorized representative at mutually convenient time.

ARTICLE 8

TERMINATION OF AGREEMENT

(1) This Agreement may be terminated by either party upon seven days' written notice should other party fail substantially to perform in accordance with its terms through no fault of party initiating termination.

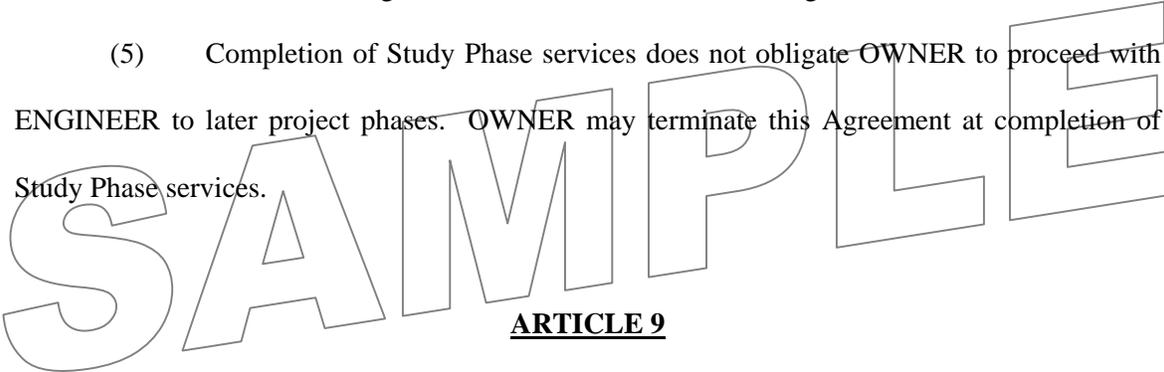
(2) In event of termination not due to fault of ENGINEER, ENGINEER shall be paid compensation for services performed to date of termination date, including Reimbursable Expenses.

(3) What follows shall constitute grounds for immediate termination:

- (a) Violation by ENGINEER of any State, Federal or local law, or failure by ENGINEER to comply with any applicable state and federal service standards, as expressed by applicable statutes, rules and regulations;
- (b) Failure by ENGINEER to carry applicable licenses or certifications as required by law;
- (c) Failure of ENGINEER to comply with reporting requirements contained herein; or
- (d) Inability of ENGINEER to perform the Project provided for herein.

(4) Failure of Dane County Board of Supervisors or State or Federal Governments to appropriate sufficient funds to carry out OWNER'S obligations hereunder shall result in automatic termination of this Agreement as of date funds are no longer available, without notice.

(5) Completion of Study Phase services does not obligate OWNER to proceed with ENGINEER to later project phases. OWNER may terminate this Agreement at completion of Study Phase services.



ARTICLE 9

OWNERSHIP OF DOCUMENTS

(1) Drawings and Specifications shall remain property of ENGINEER whether the Project for which they are made is executed or not. ENGINEER shall furnish OWNER with:

- (a) Design Development Phase Documents:
 - 1. Four (4) bound copies of drawings (full size - typical of all submissions) & specifications (in 8½ x 11 format - typical of all submissions); and
 - 2. Electronic version of all documents:
 - a. Drawings in Adobe Acrobat 8.0 (or earlier version; PDFs); and
 - b. Specifications in Word 2000 (or earlier version).
- (b) 95% Construction Documents:
 - 1. Four (4) bound copies of drawings & specifications; and
 - 2. Electronic version of all documents:

- a. Drawings in Adobe Acrobat 8.0 (or earlier version; PDFs); and
 - b. Project Manual in Word 2000 (or earlier version).
- (c) Final Construction Documents:
1. Original unbound copy of Drawings and Project Manual in reproducible format;
 2. Four (4) bound copies of Drawings and Project Manual;
 3. One (1) bound copy of Drawings and Project Manual to be submitted by ENGINEER to State of Wisconsin for stamped approval;
 4. One (1) bound copy of Drawings and Project Manual to be submitted by ENGINEER to City of Madison for stamped approval; and
 5. Electronic version of all documents on CD:
 - a. Drawings in AutoCAD 2007 (or earlier version);
 - b. Drawings in Adobe Acrobat 8.0 (or earlier version; minimize pdf file size by converting files from AutoCAD or other programs);
 - c. Project Manual in Word 2000 (or earlier version); and
 - d. Project Manual in Adobe Acrobat 8.0 (or earlier version; minimize pdf file size by converting files from Word or other programs, rather than scanning printouts).
- (d) Record Documents:
1. Original unbound copy of Drawings and Project Manual in reproducible format;
 2. Two (2) bound copies of Drawings and Project Manual; and
 3. Electronic version of all documents on CD:
 - a. Drawings in AutoCAD 2007 (or earlier version);
 - b. Drawings in Adobe Acrobat 8.0 (or earlier version; minimize pdf file size by converting files from AutoCAD or other programs);
 - c. Project Manual in Word 2000 (or earlier version); and
 - d. Project Manual in Adobe Acrobat 8.0 (or earlier version; minimize pdf file size by converting files from Word or other programs, rather than scanning printouts).

ARTICLE 10

SUCCESSORS AND ASSIGNS

(1) OWNER and ENGINEER each binds itself, its partners, successors, assigns and legal representatives to other parties to this Agreement and to partners, successors, assigns and legal representatives of such other party with respect to all covenants of this Agreement. Neither OWNER nor ENGINEER shall assign, sublet or transfer any interest in this Agreement without written consent of other.

ARTICLE 11

EXTENT OF AGREEMENT

(1) This Agreement, including Schedules A, B and C attached hereto, represents entire integrated agreement between OWNER and ENGINEER and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both OWNER and ENGINEER.

SAMPLE

ARTICLE 12

GOVERNING LAW

(1) Law of State of Wisconsin shall govern this Agreement, with venue in Dane County Circuit Court.

ARTICLE 13

ENGINEER'S LIABILITY INSURANCE

(1) ENGINEER shall, at all times during term of this Agreement, indemnify, save harmless and defend OWNER, its boards, commissions, agents, officers, employees and representatives against any and all liability, loss, damages, costs or expenses which OWNER, its officers, employees, agents, boards, commissions and representatives may sustain, incur or be required to pay by reason of ENGINEER furnishing services required to be provided under this

Agreement, provided, however, that provisions of this paragraph shall not apply to liabilities, losses, charges, costs, or expenses caused by or resulting from acts or omissions of OWNER, its agents, boards, commissions, officers, employees or representatives. Obligations of ENGINEER under this paragraph shall survive expiration or termination of this Agreement.

(2) In order to protect itself and OWNER, its officers, boards, commissions, agents, employees and representatives under indemnity provisions above, ENGINEER shall at all times during term of this Agreement keep in full force and effect comprehensive general liability and auto liability insurance policies (with OWNER as additional insured), together with professional malpractice or errors and omissions coverage, issued by company or companies authorized to do business in State of Wisconsin and licensed by Wisconsin Insurance Department, with liability coverage provided for therein in amounts of at least \$1,000,000.00 CSL (Combined Single Limits). Coverage afforded shall apply as primary. OWNER shall be given ten (10) days advance notice of cancellation or non-renewal. Upon execution of this Agreement, ENGINEER shall furnish OWNER with certificate of insurance and, upon request, certified copies of required insurance policies. If ENGINEER'S insurance is underwritten on Claims-Made basis, Retroactive Date shall be prior to or coincide with date of this Agreement, Certificate of Insurance shall state that coverage is Claims-Made and indicate Retroactive Date, ENGINEER shall maintain coverage for duration of this Agreement and for six years following completion of this Agreement, and ENGINEER shall furnish OWNER, annually on policy renewal date, Certificate of Insurance as evidence of coverage. It is further agreed that ENGINEER shall furnish OWNER with 30-day notice of aggregate erosion, in advance of Retroactive Date, cancellation, or renewal. In event any action, suit or other proceeding is brought against OWNER upon any matter herein indemnified against, OWNER shall give reasonable notice thereof to ENGINEER and shall cooperate with ENGINEER'S attorneys in defense of action, suit or other proceeding. ENGINEER shall furnish evidence of adequate Worker's Compensation Insurance.

(3) ENGINEER'S obligation to maintain professional errors and omissions insurance coverage shall remain in effect for period of two years following completion of construction of this Project. Copy of ENGINEER'S professional insurance shall be filed with OWNER prior to commencement of the Project. ENGINEER agrees to provide to OWNER at least thirty-day notice of intent to cancel any of these policies, whereupon OWNER shall have right to pay any premiums to retain insurance coverage or to obtain coverage from other companies, and OWNER shall be entitled to collect cost thereof from ENGINEER. Cessation of insurance coverage shall have no effect on obligations and duties of ENGINEER under law or this Agreement.

(4) In case of any sublet of work under this Agreement, ENGINEER shall furnish evidence that each and every subcontractor has in force and effect insurance policies providing coverage identical to that required of ENGINEER.

(5) Parties do hereby expressly agree that OWNER, acting at its sole option and through its Risk Manager, may waive any and all requirements contained in this Agreement, such waiver to be in writing only. Such waiver may include or be limited to reduction in amount of coverage required above. Extent of waiver shall be determined solely by OWNER'S Risk Manager taking into account nature of the Project and other factors relevant to OWNER'S exposure, if any, under this Agreement.

ARTICLE 14

NO WAIVER BY PAYMENT OR ACCEPTANCE

(1) In no event shall making of any payment or acceptance of any service or product required by this Agreement constitute or be construed as waiver by OWNER of any breach of covenants of this Agreement or a waiver of any default of ENGINEER and making of any such payment or acceptance of any such service or product by OWNER while any such default or breach shall exist shall in no way impair or prejudice right of OWNER with respect to recovery of damages or other remedy as result of such breach or default.

ARTICLE 15

NONDISCRIMINATION

(1) ENGINEER will not discriminate against any recipient of services, actual or potential, employee or applicant for employment, because of race, religion, color, sex, handicap, age, sexual preference, marital status, physical appearance, or national origin against any person, whether recipient of services (actual or potential), employee or applicant for employment. Such equal opportunity shall include but not be limited to following: employment, upgrading, demotion, transfer, recruitment, advertising, layoff, termination, training, rates of pay, any other form of compensation or level of service(s) and selection for training, including apprenticeship. ENGINEER agrees to post in conspicuous places, available to all employees and applicants for employment, notices setting forth provisions of this paragraph. Listing herein of prohibited bases for discrimination shall not be construed to amend in any fashion state or federal law setting forth additional bases and exceptions shall be permitted only to extent allowable in state or federal law.

(2) ENGINEER will, in all solicitations or advertisements for employees placed by or on behalf of ENGINEER, state that all qualified applicants will receive consideration for employment and ENGINEER shall include statement to effect that ENGINEER is "Equal Opportunity Employer".

(3) ENGINEER will send to each labor union or representative of workers with which ENGINEER has collective bargaining agreement or other contract or understanding, notice, to be provided by OWNER'S Affirmative Action Officer, advising labor union or workers' representative of commitments under this Agreement, and shall post copies of notice in conspicuous places available to employees and applicants for employment.

(4) ENGINEER shall furnish all information and reports required by Affirmative Action Commission, and by rules, regulations, and orders of Affirmative Action Officer and will permit access to its books, records, and accounts by OWNER and OWNER'S Affirmative Action Officer for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

ARTICLE 16

CIVIL RIGHTS COMPLIANCE

(1) If ENGINEER has twenty or more employees and receives \$20,000 in annual contracts with OWNER, ENGINEER shall submit to OWNER current Civil Rights Compliance Plan (CRC) for Meeting Equal Opportunity Requirements under Title VI of Civil Rights Act of 1964, Section 504 of Rehabilitation Act of 1973, Title VI and XVI of Public Service Health Act, Age Discrimination Act of 1975, Omnibus Budget Reconciliation Act of 1981 and Americans with Disabilities Act (ADA) of 1990. ENGINEER shall also file Affirmative Action (AA) Plan with OWNER in accordance with requirements of Chapter 19 of Dane County Code of Ordinances. ENGINEER shall submit copy of its discrimination complaint form with its CRC/AA Plan. CRC/AA Plan must be submitted prior to effective date of this Agreement and failure to do so by said date shall constitute grounds for immediate termination of this Agreement by OWNER. If approved plan has been received during previous calendar year, plan update is acceptable. Plan may cover two-year period. ENGINEER who has less than twenty employees, but who receives more than \$20,000.00 from OWNER in annual contracts, may be required to submit CRC Action Plan to correct any problems discovered as result of complaint investigation or other Civil Rights Compliance monitoring efforts set forth herein below. If ENGINEER submits CRC/AA Plan to a Department of Workforce Development Division or to Department of Health and Family Services Division that covers services purchased by OWNER, verification of acceptance by State of ENGINEER'S Plan is sufficient.

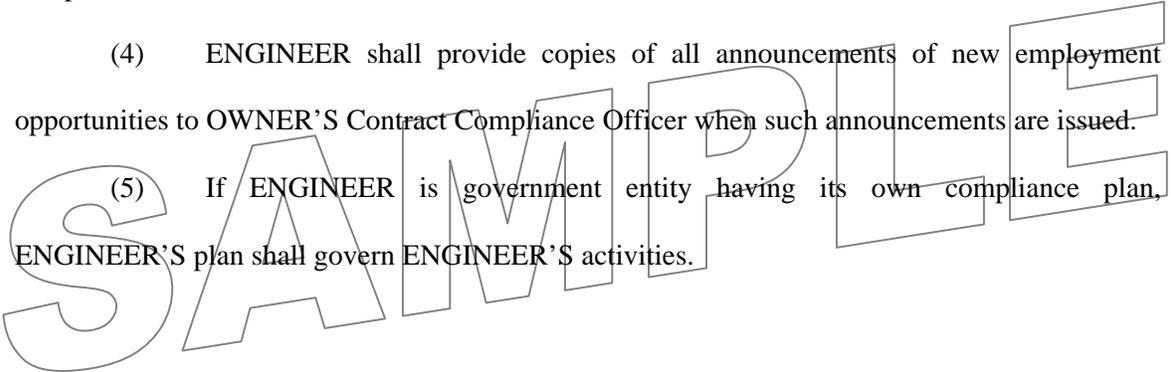
(2) ENGINEER agrees to comply with OWNER'S civil rights compliance policies and procedures. ENGINEER agrees to comply with civil rights monitoring reviews performed by OWNER, including examination of records and relevant files maintained by ENGINEER. ENGINEER agrees to furnish all information and reports required by OWNER as they relate to affirmative action and non-discrimination. ENGINEER further agrees to cooperate with

OWNER in developing, implementing, and monitoring corrective action plans that result from any reviews.

(3) ENGINEER shall post Equal Opportunity Policy, name of ENGINEER'S designated Equal Opportunity Coordinator and discrimination complaint process in conspicuous places available to applicants and clients of services, applicants for employment and employees. Complaint process will be according to OWNER'S policies and procedures, and made available in languages and formats understandable to applicants, clients and employees. ENGINEER shall supply to OWNER'S Contract Compliance Officer upon request, summary document of all client complaints related to perceived discrimination in service delivery. These documents shall include names of involved persons, nature of complaints, and description of any attempts made to achieve complaint resolution.

(4) ENGINEER shall provide copies of all announcements of new employment opportunities to OWNER'S Contract Compliance Officer when such announcements are issued.

(5) If ENGINEER is government entity having its own compliance plan, ENGINEER'S plan shall govern ENGINEER'S activities.



ARTICLE 17

DOMESTIC PARTNERSHIP BENEFITS

(1) ENGINEER agrees to provide same economic benefits to all of its employees with domestic partners as it does to employees with spouses, or cash equivalent if such benefit cannot reasonably be provided. ENGINEER agrees to make available for OWNER'S inspection ENGINEER'S payroll records relating to employees providing services on or under this Agreement or sub-agreement. If any payroll records of ENGINEER contain any false, misleading or fraudulent information, or if ENGINEER fails to comply with provisions of Chapter 25.016, Dane County Ordinances, contract compliance officer may withhold payments on Agreement; terminate, cancel or suspend Agreement in whole or in part; or, after due process hearing, deny ENGINEER right to participate in proposing on future County agreements for

period of one year after first violation is found and for period of three years after second or subsequent violation is found.

ARTICLE 18

LIVING WAGE

(1) ENGINEER agrees to pay all workers employed by ENGINEER in performance of this Agreement, whether on a full-time or part-time basis, prevailing living wage as defined in Chapter 25.015(1)(f), Dane County Ordinances. ENGINEER agrees to make available for OWNER inspection ENGINEER'S payroll records relating to employees providing services on or under this Agreement or subcontract.

(2) If any payroll records of ENGINEER contain any false, misleading or fraudulent information, or if ENGINEER fails to comply with provisions of Chapter 25.015 of Dane County Code of Ordinances, OWNER may withhold payments on Agreement, terminate, cancel or suspend Agreement in whole or in part, or, after due process hearing, deny ENGINEER right to participate in bidding on future OWNER contracts for period of one year after first violation is found and for period of 3 years after second violation is found.

(3) ENGINEER agrees to submit to OWNER certification as required in Chapter 25.015(7) of Dane County Code of Ordinances.

(4) ENGINEER agrees to display OWNER'S current living wage poster in prominent place where it can be easily seen and read by persons employed by ENGINEER.

(5) ENGINEER shall ensure that any subcontractors comply with provisions of this Chapter 25.

(6) What follows are exemptions from requirements of Chapter 25:

- (a) When Maximum Cost of Agreement is less than \$5,000;
- (b) When ENGINEER is school district, municipality, or other unit of government;

- (c) When employees are persons with disabilities working in employment programs and ENGINEER holds current sub-minimum wage certificate issued by U.S. Department of Labor or where such certificate could be issued but for fact that ENGINEER is paying wage higher than minimum wage;
- (d) When individual receives compensation for providing services to family member;
- (e) When employees are student interns;
- (f) When ENGINEER meets any other criteria for exemption outlined in Chapter 25.015(1)(d) of Dane County Code of Ordinances; and
- (g) Where Agreement is funded or co-funded by government agency requiring different living wage, higher wage requirement shall prevail.

SAMPLE

ARTICLE 19
MISCELLANEOUS

(1) ENGINEER warrants that it has complied with all necessary requirements to do business in State of Wisconsin, that persons executing this Agreement on its behalf are authorized to do so, and, if a corporation, that name and address of ENGINEER’S registered agent is follows:

(2) ENGINEER shall notify OWNER immediately, in writing, of any change in its registered agent, his or her address, and ENGINEER’S legal status. For partnership, term “registered agent” shall mean general partner.

(3) This Agreement is intended to be agreement solely between parties hereto and for their benefit only. No part of this Agreement shall be construed to add to, supplement, amend,

abridge or repeal existing duties, rights, benefits or privileges of any third party or parties, including but not limited to employees of either of parties.

(4) Entire agreement of parties is contained herein and this Agreement supersedes any and all oral agreements and negotiations between parties relating to subject matter hereof. Parties expressly agree that this Agreement shall not be amended in any fashion except in writing, executed by both parties.

(5) Parties may evidence their agreement to foregoing upon one or several counterparts of this instrument, which together shall constitute single instrument.

SAMPLE

IN WITNESS WHEREOF, OWNER and ENGINEER, by their respective authorized agents, have caused this Agreement and its Schedules to be executed, effective as of date by which all parties hereto have affixed their respective signatures, as indicate below.

* * * * *

FOR ENGINEER:

Signature Date

Printed or Typed Name and Title

Signature Date

Printed or Typed Name and Title

SAMPLE

* * * * *

FOR OWNER:

Joseph T. Parisi, County Executive Date

Karen Peters, County Clerk Date

**SCHEDULES FOR PROFESSIONAL ENGINEERING SERVICES FOR THE DANE
COUNTY MECHANICAL, ELECTRICAL & PLUMBING INFRASTRUCTURE
IMPROVEMENTS IN MADISON, WISCONSIN**

RFP NO. 312034

SCHEDULE “A”

A. Engineer’s Scope of Services Summary:

1. Design development.
2. Detailed cost estimates.
3. Preparation of final design for Owner review, input, and changes.
4. Preparation of Construction Documents for bidding (including working drawings and specifications of all building site, architectural, structural, mechanical, electrical, plumbing, controls, security, telecommunications, well and waste treatment systems). All drawings and specifications to be State and City approved and stamped.
5. Construction inspection and administration of at least two visits/week and construction meetings (two/month) including construction meeting minutes. At certain phases of the Project, daily visits may be required, but in no case, less than two visits per week. At least one visit per week shall be by an experienced construction manager to verify proper testing is being done and proper materials are being used and installed per drawings and specifications.
6. Processing construction paperwork such as pay requests, change orders and shop drawings.
7. Approve material submittals.
8. Coordinate all Work with Dane County Public Works Project Engineer. Plan for two (2) coordination meetings with representatives of Harris Corporation (building the penthouse and supplying communications equipment).
9. Estimates, specifications, design, locating, bidding and construction management of site utilities, electrical transformers and lines, telephone pedestals and lines and other services as may be needed.
10. Obtain all necessary registrations, licenses, permits, certificates of inspection reports, or other clearances requirements from any governmental or organizational agency, in order to enable full performance of terms of this Agreement.
11. All testing, major copying, reproductions and postage are to be done by third parties and paid directly by Dane County. Engineer is to administer and advise on all these issues and obtain best value for Dane County.

SCHEDULE “B”

- A. Payment for these services will be paid as work progresses and as scheduled in Agreement. . Agreement amount is ____% of total construction cost. Agreement amount includes all fees for data gathering, designs, processing, subcontractors, equipment and materials, construction administration, profit and mark-up.
- B. Invoices shall be submitted to: Scott Carlson, Public Works Project Engineer, Dane County Department of Public Works, Highway & Transportation, 1919 Alliant Energy Center Way, Madison, Wisconsin 53713.

SCHEDULE "C"

- A. This Agreement covers following expanded services:
1. Dane County will advertise and accept bids for construction phase.
 2. Single prime General Contractor will bid project construction phase.
 3. Progress meetings are to be held twice monthly at a minimum.
 4. Engineer is to oversee the Project, not only as Engineer, but also as a Construction Manager.
 5. Dane County Public Works Project Engineer shall receive and approve all Engineer approved submittals and payments.

SAMPLE

SUPPLEMENTARY CONTENT

1. BACKGROUND

- A. The Dane County Dept. of Public Safety Communications (PSC) has two upgrade projects planned for their spaces in the City-County Building (CCB):
 - 1. emergency radio communications upgrade; and
 - 2. computer aided dispatch equipment and systems upgrades.Additional equipment will added in the east penthouse and the first floor 911 Center. Mechanical, electrical & plumbing (fire protection) infrastructural upgrades are necessary to support these two upgrade projects.
- B. The emergency radio communications upgrade project is already ongoing, taking place in the CCB & other remote sites around Dane County. Other consultants, designers & contractors are involved in this work.
- C. The computer aided dispatch equipment and systems upgrades project is expected to begin in the Spring of 2013.

2. SCOPE OF WORK

- A. Design services are as detailed elsewhere in the RFP. Design direction & intent is detailed in the Henneman Engineering Studies (see below).
- B. A minimum of two coordination meetings will be required with the other consultants, designers & contractors working on the emergency radio communications upgrade project. It must be ensured that services, responsibilities, engineering & construction are organized & in sync between all involved parties.
- C. Expect to work with Dane County staff from the Public Works Engineering Division, the PSC Dept. & the Facilities Management Division. Others may need to be involved on an as needed basis.

3. HENNEMAN ENGINEERING STUDIES

- A. Studies related to PSC Dept. HVAC needs (1st floor) & electrical needs (penthouse & 1st floor) are included in this Section. They are to be used a guideline regarding what work needs to be done in the CCB for this Project.
- B. Four studies will be included via Addendum:
 - 1. Part 1 - Report for Existing HVAC Cooling Equipment Study
 - 2. Part 2 - Report for HVAC Equipment Options & Cost Estimates
 - 3. Part 1 - Report for Electrical Infrastructure & Generator Capacity Study
 - 4. Part 2 - Report for Electrical Infrastructure & Emergency Power Generator Options & Cost Estimates

4. PROPOSERS' SITE TOUR

- A. A sign-in sheet from the facility walk through on January 10, 2013 is included in this Section.

Dane County
Department of Public Works, Highway & Transportation
Madison, Wisconsin

Part 1 - Report for
***Existing HVAC Cooling
Equipment Study***

Dane County 911 Center Radio Systems
Upgrade City-County Building

October 2, 2012

Dane County Project #312023
Henneman Engineering Project # 12-7582B



Henneman Engineering Inc.
energy. focused.

Madison:
1232 Fourier Drive, Suite 101
Madison, Wisconsin 53717-1960
T 608.833.7000
F 608.833.6996

Toll Free 888.616.0216
Email info@henneman.com
www.henneman.com

Executive Summary

The HVAC cooling equipment serving the major equipment rooms of the 911 Center in the City County Building (CCB) is not sufficient for the current operations, nor is the distribution system properly balanced. Two major upgrades are currently planned for the 911 Center: 1) emergency radio communications upgrade; and 2) computer aided dispatch equipment and systems upgrades. Besides these upgrades the addition of disaster recovery equipment is planned. The existing HVAC cooling equipment and distribution system is not sufficient for these projects either.

Introduction

This report is provided at the request of Dane County Department of Public Works, Highway & Transportation to analyze the existing cooling equipment serving portions of the 911 Center in the City County Building (CCB). The spaces included are Radio Equipment Room 117, Computer Equipment Room 120, and the Telephone Equipment Room 121. These three spaces are served by two computer room air conditioning units, with a third unit intended to act as a redundant backup to either unit. Ongoing operational problems with these units were discussed with maintenance staff. These problems are addressed in this report. The capabilities and limitations of the units and the airflow distribution are discussed in regards to current operations and the planned upgrades. The cooling capacity calculation is based on information gathered about equipment present at the time of the last remodel as well as equipment added since that time. A cooling load calculation has been performed to assess whether the existing units have sufficient capacity. This cooling load calculation required an on-site survey to identify equipment added after the installation of the computer room units and verify all equipment heat gains. The results of these calculations are included.

Analysis

1. Existing Computer Room Air Conditioning Units

Radio Equipment Room 117, Computer Equipment Room 120, and Telephone Equipment Room 121 are served by three computer room air conditioning units. CRU-1 serves the computer equipment room and the telephone equipment room. CRU-2 serves the radio equipment room. CRU-3 is a redundant unit located in Storage 119. CRU-2 backs up either CRU-1 or CRU-3 but not both simultaneously.

Each unit has a chilled water cooling coil that provides the cooling and dehumidification. The cooling capacity of each unit is 5 tons (1 ton of cooling capacity equals 3.52 kW of heat removed). This capacity includes 4.5 tons of sensible capacity and 0.5 tons of latent capacity. Sensible capacity affects the room temperature. Latent capacity affects the relative humidity in the space. Refer to Appendix A for a summary of the existing cooling equipment capacities.

Because these units do not have the ability to reheat the air after it has been cooled, room temperature and relative humidity can't both be controlled simultaneously.

The supply air from CRU-1 is hard ducted from the unit to diffusers in the ceiling of Computer Equipment Room 120 and Telephone Equipment Room 121. The fan and motor of this unit are large enough to accommodate the static pressure caused by the ductwork. The motor is 2 horsepower.

The supply air from CRU-2 is not hard ducted. It is equipped with a distribution plenum that blows the air from the unit into Radio Equipment Room 117. The fan and motor in CRU-2 are large enough to accommodate the distribution plenum, but not large enough for ductwork. The motor is 1.5 horsepower.

The supply air from CRU-3 is hard ducted from the unit to diffusers in the ceiling of all three rooms. Motorized control dampers direct the air to either the Radio Equipment Room or the Computer Equipment

Room and the telephone equipment room. The fan and motor of this unit are large enough to accommodate the static pressure caused by the ductwork. The motor is 2 horsepower.

2. Existing Cooling Load Calculations

To calculate the cooling loads, the heat output of each piece of equipment is required. The equipment information was gathered from multiple on-site field surveys by Henneman Engineering with assistance from the 911 Center personnel. For some of the equipment identified in the survey heat output values are available from published manufacturer documents. For some equipment (for example the UPS), heat output was taken off the remodel project manufacturer submittals. For most of the equipment no heat output was available from the manufacturer, only nameplate power usage. Actual usage equates to heat output, but the nameplate power usage value typically overstates the actual power usage. Also any single piece of equipment does not run all the time. For this analysis it is assumed that the average heat output is equal to 40% of nameplate power usage.

Note that this initial analysis did not include future equipment upgrade projects (emergency radio communications upgrade, computer aided dispatch equipment and systems, and disaster recovery rack).

3. Radio Equipment Room 117

Cooling for the radio equipment room is provided by CRU-2.

Because CRU-2 does not have the ability to control both room temperature and relative humidity, it has been over-cooling the space in order to control the relative humidity.

CRU-2 is located in the southwestern corner of the room. The supply air blows from the unit out into the space. This configuration is not ideal because it precludes the use of a hot aisle / cold aisle strategy. The hot aisle / cold aisle strategy provides air distribution in which all the cold air is delivered at the electronic equipment's air inlets and all the hot air is collected at the electronic equipment's air outlets to be re-conditioned by the cooling equipment.

The sensible cooling load of this room is 3.6 tons. The capacity of CRU-2 is 4.5 tons. CRU-2 has sufficient sensible cooling capacity.

4. Computer Equipment Room 120 and Telephone Equipment Room 121

Cooling for the computer equipment room and the telephone equipment room is provided by CRU-1.

The sensible cooling load of these rooms is 6.6 tons. The sensible cooling capacity of CRU-1 is 4.5 tons. CRU-1 has insufficient sensible cooling capacity to maintain the room temperature in these spaces. To avoid over heating in these spaces, the redundant unit, CRU-3, has been over used to provide extra capacity for the Computer Equipment Room and the Telephone Equipment Room. On several occasions the control system failed to activate CRU-3 to provide additional cooling and the rooms began to overheat. Small temporary cooling units were installed in the Computer Equipment Room and the Telephone Equipment Room at that time.

Because the sensible cooling load of Computer Equipment Room 120 and Telephone Equipment Room 121 is greater than the sensible cooling capacity of CRU-3, it cannot provide cooling for these rooms if CRU-1 is not operating due to required maintenance. Also CRU-3 cannot simultaneously provide the supplemental cooling for the Computer Equipment Room and the Telephone Equipment Room and act as a redundant backup for CRU-2. For these reasons CRU-3 is not capable of acting as redundant backup unit as intended.

5. Planned Upgrades: Emergency Radio Communications Equipment & Systems, Computer Aided Dispatch Equipment & Systems, and Disaster Recovery Rack

New electrical loads to be added to the 911 Center will require additional cooling calculated to be 25,000 Btuh or 2.1 tons. Additional equipment modifications or changes will be required to properly condition the three rooms analyzed in this report.

Refer to Appendix B for these loads, reported to Henneman Engineering by 911 Center personnel.

6. Conclusions

CRU-1, serving Computer Equipment Room 120 and Telephone Equipment Room 121, does not have sufficient capacity to serve these rooms currently or for the planned upgrades.

CRU-2, serving Radio Equipment Room 117, has sufficient sensible capacity to control room temperature currently. The equipment is not capable of controlling relative humidity, except by over-cooling the space. CRU-2 is not capable of providing for a hot aisle / cold aisle strategy and does not have sufficient capacity for the planned upgrades.

CRU-3 does not have sufficient capacity to provide backup cooling for Computer Equipment Room 120 and Telephone Equipment Room 121 currently or for the planned upgrades.

Options

1. The computer room air conditioning units can be supplemented or replaced with units of sufficient capacity. A unit that can simultaneously dehumidify/humidify while holding room temperature would be recommended.
2. The ductwork within the rooms can be re-configured for optimal air distribution. With the correct computer room air conditioning units, this reconfiguration can possibly provide a better air distribution pattern for better humidity and temperature control.

Recommendations

1. Follow up meeting to review this analysis and discuss possible options to correct current deficiencies and meeting requirements for future cooling loads with Dane County staff.
2. Develop and analyze selected options and determine viability and define affordability.
3. Develop design and construction cost estimates for viable engineered solutions.
4. Provide professional recommendations for meeting HVAC requirements.

Appendix A

Existing Cooling Equipment Summary Table

Unit	Serves	Sensible Cooling Capacity (Tons)	Latent Cooling Capacity (Tons)
CRU-1	Computer Equipment Room 120, Telephone Equipment Room 121	4.5	0.5
CRU-2	Radio Equipment Room 117	4.5	0.5
CRU-3	Backup for CRU-1 and CRU-2	4.5	0.5

Appendix B

 Equipment Room Sensible Cooling Load Table
 Existing Equipment and Planned Upgrades

Room	Existing Sensible Cooling Load (Tons)	Planned Upgrade Sensible Cooling Load (Tons)	Total Sensible Cooling Load (Tons)
Radio Equipment Room 117	3.6	0.6	4.2
Computer Equipment Room 120*	5.5	1.2	6.7
Telephone Equipment Room 121*	1.1	0.3	1.4

* Computer Equipment Room 120 and Telephone Equipment Room 121 are served by one unit. The existing combined sensible cooling load is 6.6 tons; the future combined sensible cooling load is estimated to be 8.1 tons.

***Dane County
Department of Public Works, Highway & Transportation
Madison, Wisconsin***

**Part 1 - Report for
*Electrical Infrastructure &
Generator Capacity Study***

**Dane County 911 Center Radio Systems
Upgrade City-County Building**

August 28, 2012

**Dane County Project #312022
Henneman Project Number 12-7582**

Issued by:



Henneman Engineering Inc.
energy. focused.

Madison:
1232 Fourier Drive, Suite 101
Madison, Wisconsin 53717-1960
T 608.833.7000
F 608.833.6996

Toll Free 888.616.0216
Email info@henneman.com
www.henneman.com

Executive Summary

The electrical infrastructure and emergency electrical equipment distribution serving the 911 Center in the City County Building (CCB) is sufficient for the current operations. Two major upgrades are currently planned: 1) emergency radio communications upgrade; and 2) computer aided dispatch equipment and systems upgrades. The existing electrical infrastructure and distribution are sufficient for these projects, but the emergency electrical generator and distribution feeder system are not.

Introduction

This report is provided at the request of Dane County Department of Public Works, Highway & Transportation to analyze the electrical infrastructure and emergency electrical equipment distribution system serving the 911 Center in the CCB to support the planned two upgrades. The electrical infrastructure consist of all the wiring, circuit breakers, switches, motors starters, emergency generator, automatic transfer switches & electrical panels serving the 911 Center systems excluding the third floor training space. The 911 Center's electricity is supplied by the public utility company (MG&E) but is required to have a backup power system to maintain operations, including heating, ventilation & air conditioning systems during loss of utility power. The existing emergency generator for the 911 Center is located in the sub-basement of the facility. The primary cooling equipment for the 911 Center is located in the mechanical penthouse and roof above the 7th floor – west portion of the building. All other electrical and mechanical equipment is located in the 911 Center. Two upgrade projects are planned for the 911 Center: 1) emergency radio communications upgrade; and 2) computer aided dispatch equipment and systems upgrades. Dane County Department of Public Works, Highway & Transportation requested Henneman Engineering analyze the electrical infrastructure and emergency electrical equipment distribution system serving the 911 Center in the CCB to determine if the existing systems will accommodate the planned upgrades and if not, what options may be considered.

Analysis

1. Existing Conditions
 - a. Existing electrical infrastructure system for the 911 Center was upgraded and installed in 1987. The 911 Center 2009 upgrade did not replace or modify the existing electrical distribution.
 - b. Existing 911Center is served by a 400A, 480 volt automatic transfer switch (ATS) with an additional 200A, 208 volt ATS. The 400A ATS serves 911 equipment, mechanical heating, ventilation and cooling equipment. The 200A ATS serves 911 equipment and provides for a redundant power system.
 - c. The highest demand for 480 volt ATS was 64Kw recorded on June 10, 2012. The existing 400A ATS has approximately 200Kw future growth capacity.
 - d. The highest demand for 208 volt ATS was 22Kw recorded on June 9, 2012. The existing 200A ATS has approximately 35Kw future growth capacity.
 - e. The existing diesel emergency generator serving the 911 Center is rated at 180Kw at 277/480 volt, 3 phase. The existing emergency generator has approximately 58Kw future growth capacity.
 - f. The industry standards for electrical equipment ratings limit the connected continuous load to 80% of the name plate rating of equipment. The 400A ATS, 200A ATS and 180Kw generator must be limited to 80% of their total rated capacity. The above future growth capacities exceed the industry standards for de-rating of equipment to 80% of nameplate rating.
2. Emergency Radio Communications Equipment & Systems
 - a. New electrical loads to be added to the 911 Center distribution systems for this project are provided by Harris Corp (turnkey contractor for the emergency radio communications equipment and system project) is reported at 29 Kw.
 - b. For the purpose of this report, the expected cooling load required for the radio equipment will be used for the calculated emergency load capacities. Actual air conditioning equipment loads will be determined by a parallel path HVAC engineering study and will be addressed prior to any

actual engineering design. New electrical loads to be added to the 911 Center distribution systems for the cooling loads for the new equipment is estimated at 31.5 Kw.

- c. The anticipated impact on the 911 Center existing electrical distribution systems from the added loads will use approximately 30% of the 480V future growth capacity and 50% of the 208V future growth capacity.
- d. The individual electrical feeders and panel capacities for the various areas will be required to be evaluated based on exact locations of added equipment prior to final engineering design. The existing feeder and panel board for the existing radio room in the penthouse will be required to be upgraded to support the added equipment.
- e. The anticipated impact on the 911 Center existing emergency generator and feeder system from the added loads will exceed the existing generator capacity by approximately 5 Kw.

3. Computer Aided Dispatch Equipment & Systems

- a. New electrical loads to be added to the 911 Center distribution systems for this project are provided by Dane Co PSC (via equipment vendor Tri Tech for the computer aided dispatch equipment and systems project) is reported at 10 Kw.
- b. For the purpose of this report, the expected cooling load required for the Computer Aided Dispatch Equipment will be used for the calculated emergency load capacities. Actual air conditioning equipment loads will be determined by a parallel path HVAC engineering study and will be addressed prior to any actual engineering design. New electrical loads to be added to the 911 Center distribution systems for the cooling loads for this new equipment are estimated at 8.5 Kw.
- c. The anticipated impact on the 911 Center existing electrical distribution systems from the added loads will use approximately 13% of the 480V future growth capacity and 25% of the 208V future growth capacity.
- d. The individual electrical feeders and panel capacities for the various areas will be required to be evaluated based on exact locations of added equipment prior to final engineering design.

The anticipated impact on the 911 Center existing emergency generator and feeder system from the added loads will exceed the existing generator capacity by approximately 20 Kw.

4. Conclusions

- a. The additional new electrical loads for the two planned upgrade projects and their associated cooling equipment loads may safely be added to the existing electrical infrastructure and electrical distribution system serving the 911 Center.
- b. The additional new electrical loads for the two planned upgrade projects and their associated cooling equipment loads cannot be added to the existing the emergency generator serving the 911 Center.

Options

1. Infrastructure

- a. The existing electrical infrastructure system for the 911 Center is sufficient to support the added Emergency Radio Communications, Computer Aided Dispatch Equipment and associated cooling equipment loads. Increased capacity of feeders and panel boards to selected areas will be required to be evaluated based on final equipment selection and locations.

2. Equipment (refer to Figure 1)

- a. Option I: Replace existing emergency 180Kw generator with new single larger unit to support added loads
 - i. Existing physical space in the basement must be verified that a larger unit can be accommodated. Existing outside air for cooling and combustion air must be verified that it can be accommodated. New upsized feeder from generator will be required to comply with the current National Electric Code requiring 2 hour fire rated wiring. Route for new rated feeder must be determined.

- ii. Anticipated construction cost to replace existing unit with larger unit may be more expensive than option II noted below.
- b. Option II: Add additional emergency generator to support added or reconfigured loads. Retain existing 180Kw unit to continue to serve existing 911 Center loads.
 - i. New unit would most likely be smaller than the existing 180Kw unit.
 - ii. Location for added unit must be determined. Location will required outside air for cooling and combustion air. Location must accommodate fuel piping from existing fuel source or new fuel storage tank must be provided. Physical route for refueling hose must be verified. Physical route for new exhaust pipe through the building must be determined. New feeder from generator will be required to comply with the current National Electric Code requiring 2 hour fire rated wiring. Route for new rated feeder must be determined.
 - iii. Anticipated construction cost to add new smaller unit may be more expensive than option III noted below.
- c. Option III: Connect new radio equipment and associated air conditioning equipment to another existing emergency generator already existing in the CCB. Retain existing 180Kw unit to continue to serve existing 911 Center loads.
 - i. Existing generators currently located in the CCB that do not serve the 911 Center are as follows:
 - (1) Existing 60 Kw Onan unit (green) located in the sub-basement serves CCB emergency egress lighting and other building emergency loads.
 - (2) Existing 150 Kw Cummins unit (tan) located in the sub-basement serves the Juvenile Detention Center.
 - (3) Existing 200 Kw Kohler unit (green) located in the sub-basement serves the 911 Center.
 - (4) Existing Caterpillar unit (yellow) located in 7 West mechanical penthouse serves the IT department.
 - (5) Existing Cummins unit located in 7 West mechanical penthouse serves the Jail & IT department.
 - ii. Agreements between the emergency power users for the remaining excess capacity if available from the existing generators installed within the CCB would be required. The agreements may be very complex and have hidden costs.
 - iii. New feeder from existing generator distribution will be required to comply with the current National Electric Code requiring 2 hour fire rated wiring. Route for new rated feeder must be determined.
 - iv. Anticipated construction cost to connect new loads to an existing generator currently installed in the CCB may be the lowest, but unanticipated complexities may drive up these costs significantly.

Recommendations

1. Follow up meeting to review analysis and report with Dane County staff.
2. Further analyze selected options and determine viability and define affordability.
3. Develop design and construction cost estimates for engineered solutions describe in this report.
4. Provide professional recommendations to Dane County staff for proceeding with resolution of electrical requirements.

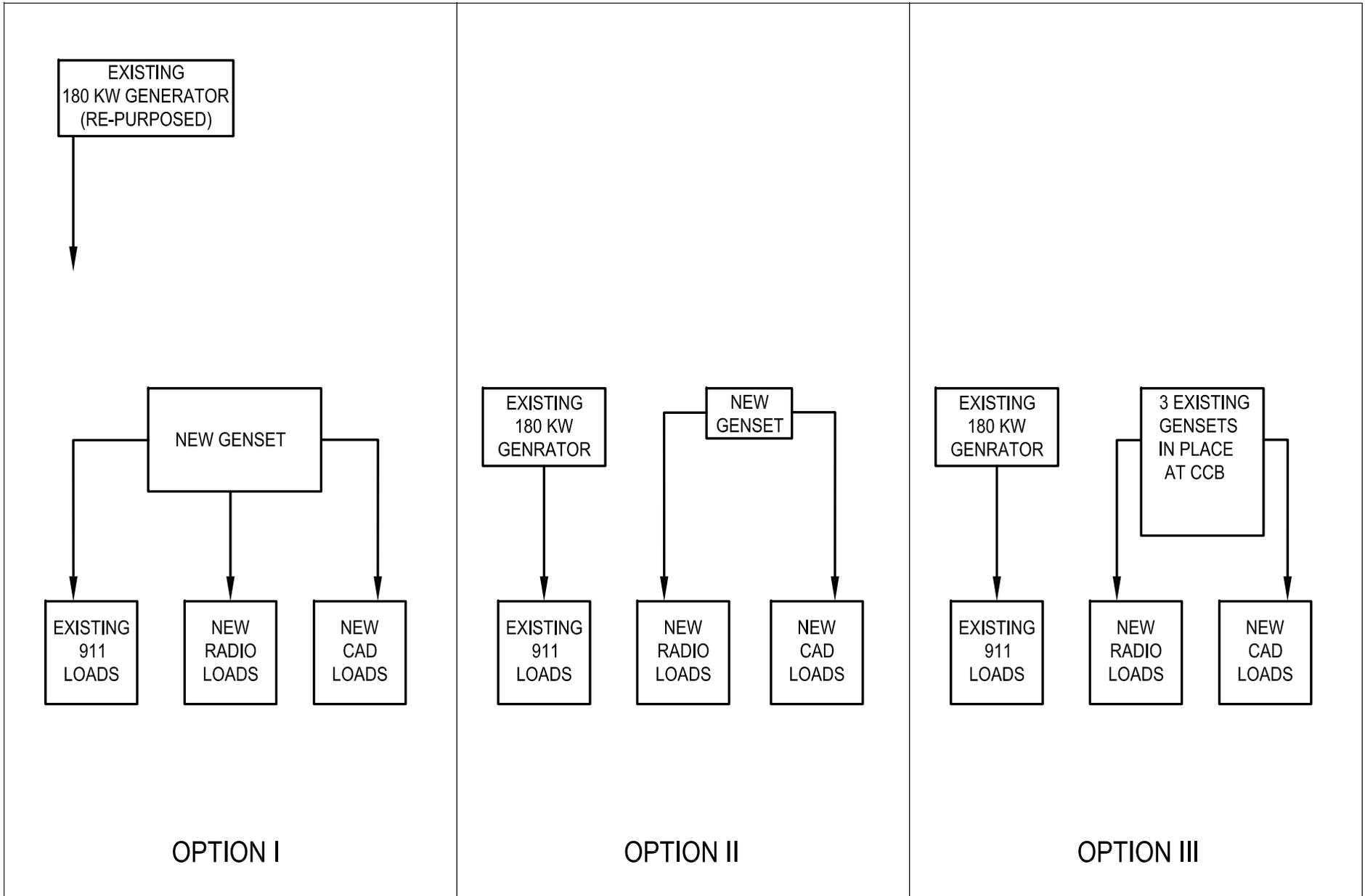


FIGURE I

Design Services for Mechanical, Electrical & Plumbing Infrastructure Improvements
City-County Building

Name	Company	Phone No.
SCOTT CARLSON	DC - PUBLIC WORKS	266 4179
LUKE VOSS	" " "	220-9762
Matt Heil	Hennehan Engineering	833-7000
GARY JAEGER	Venture Architects	414.271.3359
Steve Horanovic	Arnold And O'SHEA/DAW	262-720-5306
SHAWN WOLDT	PSJ ENGINEERING	608-223-9640 SHAWN@PSJENGINEERING.COM
John Dreher	Potter Lawson, Inc.	274-2741
ANDY WALTON	ANOVUS-YOUNG ASSOCIATES	608 756 2326
JASON LAROSH	ANOVUS - YOUNG ASSOCIATES	JASONL@ANOVUSYOUNG.COM 608-756-2326
MIKE LIBBY	STRANG	608 276 9201 X15
BRUCE KIMBALL	STRANG	2769201 X 142
Jim Janko	HARWOOD/ZIMMERMAN	414-918-1232
ROBERT LEX	HARWOOD ENGINEERING CONSULTANTS, LTD	414-918-1229
Danny Ho	" "	414-918-1201
Rich McVicar	DANE CO PSC	608 283 2911
Chad Flock	Danz Co PSC	608-283-2912