

6.1 PROGRESS SCHEDULES

If project schedules are required, the type of schedule and degree of detail to be used should be specified.

The Contractor whose work includes the majority of key items involved should prepare the progress schedule for the Project. The Architect, major subcontractors, and major separate contractors, if any, should be consulted for their input into schedule preparation.

All prime contractors agree to abide by the finalized progress schedule and to carry the work forward expeditiously with adequate forces in order to achieve completion within the scheduled time.

The planning and schedule should cover all work involved in the contract; this may include submittal and approval of shop drawings on critical items, fabrication and delivery of identifiable materials and equipment, specific items or work in the scope, interfaces required with other contracts that may be a part of an overall project, and specific dependencies upon acts or activities of parties not under the control of the contractor. The schedule should also show the following:

- The date that the building will be substantially enclosed.
- The date that heat from the permanent source will be available and into what parts of the building, if applicable.
- The date that permanent power will be required for notification of the proper utility company
- In the Fast Track method of operation, information should be available from the Owner and Architect to incorporate in the schedule when all phases will be out for bid.

Three generally used means of scheduling construction activity and recording its progress are available to the construction planner; the methods are the bar graph, CPM (Critical Path Method), and PERT (Program Evaluation and Review Technique). Following is a description of each of these three methods:

- The bar graph is a good graphic representation of activity which is easily read and understood by all levels of management and supervision. The shortcomings of the bar chart are that it does not lend itself to planning revisions and it is limited in what it can present. The bar graph cannot show or record interrelations and interdependencies which control the progress of the projects.
- CPM is the planning technique used almost exclusively by the construction industry. It requires contractors, subcontractors, architects, engineers and owner to do a thorough job of project planning and analysis in advance. This system easily adapts itself to changes in the actual work through periodic revisions. The total cost using the CPM system will depend on how long the services of the CPM consultant are used, how frequently the schedule is updated and other relevant considerations.
- The network basis for CPM and PERT is essentially the same. The basic difference between the two techniques, however, is in the type of problems each was developed to solve. The PERT schedule's main value is its integration of the following:
 - key milestones as used in CPM,
 - manpower requirements which show tasks required by various skilled trades,
 - percent of project completion (PERT tracks the entire schedule and reports actual completion against a scheduled target.)

As a result, PERT is used for all projects with critical completion dates and is used almost exclusively in military and aerospace work.

6.2 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

Paragraph 3.12 of AIA Document A201, *General Conditions of the Contract for Construction* should be modified in supplementary conditions as follows:

- 3.12.11 *Shop drawings, product data, samples and transmittal letters pertaining thereto shall be identified with title and location of the Project, Architect, Engineer, Contractor, submission date, specification section number and detail number to which the shop drawings pertain, manufacturer's name, local manufacturer's representative, quality and performance standard.*
- 3.12.11.1 *Shop drawings, quality and performance standards shall be submitted in the form of one reproducible transparency and three prints of each drawing, unless otherwise specified. Each drawing shall have a clear space of not less than 40 square inches on the right hand side for approval stamps and notes. Transparencies shall be transmitted in mailing tubes without folding where practical. Upon review, the Architect will obtain prints of the transparency for their record and will return the transparency to the Contractor. Transparencies returned "Resubmit" or "Disapproved" shall have the original drawing corrected and one new transparency made and resubmitted to the Architect.*
- 3.12.11.2 *Product data for standard manufactured items may be in the form of manufacturers' printed catalog sheets showing illustrated cuts clearly identified of items to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, wiring diagrams and controls and other pertinent information. Such product data shall be bound together with an index sheet listing each sheet in the binding. The index sheet shall have a blank space at least 4" x 8" in size for approval stamps and notes. The number of copies required should be specified. The Contractor shall furnish copies of approved shop drawings and product data to other prime contractors upon request.*
- 3.12.11.3 *Samples required shall be clearly identified in the contract documents. Samples shall be accompanied by a letter of transmittal, and manufacturer's brochures, shop drawings, installation instructions or other supporting information shall be submitted as required. Samples shall not be used in the work and shall remain in the Architect's possession until completion of the work, unless otherwise specified. The Contractor shall remove samples upon request.*

Electronic drawing files such as AutoCAD® may be requested by contractors or material suppliers for their use in preparation of various shop drawings and project documents. Electronic files can provide time efficiencies by saving contractors the step of re-drawing backgrounds and layouts. However, they can also be the source of errors and omissions. Contractors/suppliers must assume responsibility for verifying the accuracy of electronic drawing files, and in particular, of inclusion of all revisions and addenda.

Contractors/suppliers should be advised when electronic files are available, along with a cost per sheet to be paid to the Architect. The Architect should provide electronic drawing files only after obtaining an appropriate waiver from contractors/suppliers such as:

Electronic drawing files are provided solely for the convenience of (contractor/supplier) for preparation of certain drawings by (contractor/supplier). The files are considered a work in progress. (Contractor/supplier) assumes responsibility for reviewing all addenda and revisions and verifying the accuracy of the files. No warranties of any kind, express or implied, including warranties of merchantability and/or fitness for a particular purpose are included. Suitability of the files for construction must be verified by (contractor/supplier).

(Contractor/supplier) releases, covenants not to sue and agrees to defend, indemnify and hold harmless (the Architect) from any and all fees, costs or expenses (including attorneys' fees), claims or causes of action, whether in tort, contract, warranty, or otherwise, and waives all claims for consequential and/or liquidated damages against (the Architect), arising out of or resulting from the use of the files.

6.3 TEMPORARY SERVICES

6.3.1 TEMPORARY HEATING VENTILATION AND AIR CONDITIONING (HVAC)

The Contractor should be responsible for arranging for and maintaining temporary heat required during the construction phase. Architects should include a specification on temporary heat not only in the specification for the general contract, but also coordinated in other separate specifications where involved, such as for mechanical and electrical contracts. The Owner should be advised that it will be in their best interest to pay the cost of energy used for temporary heating

for remodeling.

The Owner should be made aware that the use of the new permanent system for temporary heat will affect the manufacturer's warranties on the equipment so used, and other alternatives such as a complete temporary system, though more costly, may be desirable. It should be pointed out that the warranty on equipment begins on the date equipment is placed in service. Do not use the return air duct system if permanent equipment is used for temporary heat.

During the construction of the building, prior to enclosure, each separate contractor should provide heat and services necessary to protect their work and materials against injury from dampness and cold until the building has been enclosed.

When the building is substantially enclosed and the need for temporary heating exists, the Contractor should give written notice to the Mechanical and Electrical Contractors, and the Architect requesting heat from the permanent system.

Filters should be provided on ducts used for return and outside air, to ensure the protection of specified new filters, until the completion of construction. Wiring and equipment required to activate the heating plant should also be provided. The building or units thereof should be deemed to be satisfactorily enclosed when, in the opinion of the Architect, the exterior walls are completed or covered with such protection as will provide reasonable heat retention, and roofing and roof insulation is complete to assure water tightness. Once the heating plant is used for temporary heating, controls either permanent or temporary should be provided. The temporary heating system should be capable of providing a minimum temperature of 45 degrees in the enclosed structure until finishing operations are commenced. Return, outside air, or exhaust air ducts should not be used for temporary heat unless protected from dust infiltration during the temporary heat period.

The Contractor should maintain and operate the heating system until substantial completion and/or final acceptance of the building. Fuel used should be furnished and paid for by the Contractor, or Owner, as defined by the specification, until substantial completion and/or partial occupancy by the Owner at which time the Owner should assume fuel costs.

For a period of at least ten days prior to the placing of interior woodwork and throughout the placing of this and other interior finish, varnishing, painting, etc. and until substantial completion or partial occupancy, the Contractor should provide sufficient heat to ensure a temperature in the spaces involved of not less than 60 degrees F.

6.3.2 TEMPORARY ELECTRICAL SERVICES

Until the temporary lighting and power system is installed each contractor should arrange for and pay costs for temporary lighting and power. In addition, each contractor should arrange for and pay the costs for temporary lighting and power for construction offices, trailers and storage facilities.

Recommended minimum electric service sizes for temporary lighting and power (hand tools):

<u>Project area in GSF</u>	<u>Recommended minimum service</u>	
30,000 GSF	200 A. @ 120/240V.,	1 phase, 3 wire
30,000 to 50,000 GSF	200 A. @ 120/208V.,	3 phase, 4 wire
50,000 to 100,000 GSF	400 A. @ 120/208V.,	3 phase, 4 wire
100,000 to 200,000 GSF	400 A. @ 277/480V.,	3 phase, 4 wire
200,000 to 300,000 GSF	600 A. @ 277/480V.,	3 phase, 4 wire
300,000 to 400,000 GSF	800 A. @ 277/480V.,	3 phase, 4 wire

The sizing of the electrical service should be increased to accommodate additional equipment that will be required during construction. The following can be used for approximate load requirements. Actual load information should be used whenever available:

Tower crane	200 A., 480 V.,	3 phase
-------------	-----------------	---------

Personnel hoist	100 A., 480 V.,	3 phase
Welders (six pack)	100 A., 480 V.,	3 phase
Construction trailer	100 A., 120/240 V.,	1 phase
Temporary heat unit	30 A., 208 V.,	1 phase

The temporary electrical system should be a complete system including a connection from a utility source, required metering, service disconnects, and all feeders, transformers, distribution panels and branch circuit panels required to provide a fully functional temporary electrical system.

Temporary branch circuits should be provided within the building to supply 15 amp GFCI protected convenience outlets. Convenience outlets should be located so that power is available to every point of use with no more than 100 feet of power cord.

The entire temporary electrical system should be in conformance with NFPA 70, OSHA standards, and all local codes. Upon completion of the project, all temporary wiring should be removed.

Trades requiring electrical service to specific equipment that can not be served through the convenience outlet system should be responsible for all costs associated with providing such service and should make their own arrangements for this service.

By the time the permanent heating system is ready for operation, provide either permanent or, if necessary, a temporary service and connection to the heating plant.

In accordance with job progress schedule and conditions, the Contractor should make the permanent electrical service and distribution system available for use for testing and adjusting of elevators.

6.3.3 TEMPORARY LIGHTING

Temporary lighting with local switching and adequate illumination for construction operations should be provided in conformance with applicable codes and standards. Additionally, temporary lighting should

- be installed a manner that coordinates with the construction schedule,
- provide one 100 watt incandescent lamp per 500 square feet, uniformly distributed, for general illumination.
provide one 100 watt incandescent lamp per 50 feet in traffic areas,
- provide one 100 watt incandescent lamp per story in stairways and at ladder locations, located to illuminate each landing and flight,
- Provide one 100 watt incandescent lamp at each building exit.

Equivalent illumination may be provided by alternative light sources such as HID lamps.

Contractors requiring illumination beyond the standard temporary lighting system should be responsible for coordinating the installation and also for the costs associated with this work.

The use of the permanent lighting system for construction operations may be permitted with the approval the project team. Consideration should be given for final cleaning and re-lamping of any permanent lighting used during construction. As an alternate to re-lamping, the electrical contractor may supply an agreed upon quantity of replacement lamps.

6.3.4 TEMPORARY TELEPHONE SERVICE

When cell phones are not available or can not be used at the construction site for any reason, the Contractor should provide temporary telephone facilities and regulate how other separate contractors (and subcontractors) may use these facilities.

When establishing telephone facilities, each contractor should provide their own facilities where a contract or subcontract is complex or of substantial value.

If the Owner's system is to be used, prior arrangements should be made.

Telephone requirements for architects or owners should be defined if required.

6.3.5 TEMPORARY WATER SERVICE

The Architect should coordinate this section with the Owner and Engineers. The party responsible for paying temporary water service should be clearly identified prior to bidding. Where the Owner has existing water service available for use, the specifications should define the limits of its use, if any, and who is to pay for the water consumption.

Sewer Access Charges (SAC) and Water Access Charges (WAC) must be paid by the Owner.

Until such time that the permanent water lines are extended to any building, water should be made available at the building site by the Contractor. As soon as practical the Mechanical Contractor should extend the permanent underground service to the building(s) with a meter in the Contractor's name and provide water lines to within approximately 300 feet apart within the building(s). At these points, the lines should be terminated with a suitable construction hose fitting.

6.3.6 TEMPORARY SANITARY ARRANGEMENTS

Specifications should include provisions to provide and maintain such temporary sanitary accommodations for the use of all contractors and their employees as may be necessary to comply with the requirements and regulations of the local and state departments of health.

Any use of the Owner's new or existing facilities should be fully defined in the specifications.

If the Contractor is allowed use of the new toilet facilities the Mechanical Contractor should install the necessary fixtures as soon as possible. It should be the Contractor's responsibility to maintain the facilities and restore the fixtures and finishes to the equivalent of new equipment.

6.3.7 TEMPORARY OFFICE AND STORAGE FACILITIES

Specifications should include requirements for any temporary office and storage facilities needed. For remodeling of existing structures provisions should be made for the location of the Contractor's office and storage facilities. If interior space is not be available for this use, a location should be established on the site plan for these facilities. Any restrictions on the use of such designated areas should also be defined.

6.4 SITE PROTECTION AND SECURITY

It is recommended that the Owner and the Architect study the requirements for site security prior to issuance of bid documents to determine the most practical way to meet these needs.

The type of system should be carefully delineated, and the appropriate Contractor(s) should be designated for responsibility to avoid disputes as to protection to be furnished. The time requirements of protection services should also be defined, i.e. until building is enclosed, roof on, etc. Security requirements that are to be phased such as during remodeling and additions to existing structures should also be noted.

The following are some of the more common types of security systems:

- perimeter fence. The type of fence required should be carefully specified, and the extent of fence noted on the plans. Periodic maintenance of the fence should also be included in the specifications.
- alarm systems (bell, siren, lights, ADT, etc.)
- general lighting of the Project (to be strategically done to benefit the Owner and not the intruder).
- electronic.
- surveillance by camera.

- random patrol.
- gate guard and/or night watchman.

In highly congested areas, such as downtown sites, reference should be made to traffic control responsibilities as well as street barricades and availability of sidewalk and street boulevards.

Damage to stored materials and materials installed in a structure prior to project acceptance can lead to delays in completion of a project. Consequently, responsibility for adequate protection of such materials should be defined. The following is suggested as a basis for responsibility:

- Individual contractor(s) should be responsible for protection of their stored materials prior to installation in the building. Specific material storage and protection requirements should be described in appropriate sections of the specifications. Responsibility should be assigned for administration of project site storage areas, with special consideration given to:
 - elevating and covering for water protection
 - roofing materials
 - masonry materials
 - mechanical and electrical materials
 - vandalism and theft
- Installed materials should be protected from damage by contractors working in the area. Financial responsibility for repair of damage to installed materials and systems should be clearly specified to all subcontractors working or around completed installations. Common problem areas that should be addressed once materials are installed are:
 - weather protection
 - floors
 - ceilings
 - wall surfaces
 - mechanical and electrical equipment
 - roofs
 - temperature and humidity control

6.5 SPECIAL INSPECTIONS, FUNCTION TESTING AND QUALITY CONTROL

Special inspections may be required by the local building official under the appropriate sections of prevailing building code and by the building code official or authority having jurisdiction at the project's location. These inspections are the responsibility of the Owner.

During preliminary code reviews with the building official, the Architect should determine the extent of inspections required for the Project and should establish the amount of the allowance with the appropriate testing or inspection agency.

To maintain the Owner's control of the special inspections, as required by code, the Owner should select and pay the testing agency.

Contract documents should include provisions for a field quality control program which addresses the following issues:

- What tests are required?
- What are the test methods?
- Who performs the test and how is it verified?
- How often is the test made?
- How are tests documented?
- How and to whom are tests reported?

- Who evaluates the results?
- How are failures corrected and how are corrective actions verified?
- Who pays for testing and retesting?

Following are the more common items tested on the construction site for compliance with specifications or specified standards:

- Subsurface, soil compaction, pile testing (static loads), soil fertility; concrete; mortar; structural steel connections; structural materials such as masonry units, steel, etc.; welds (destructive and non destructive testing, and welder certification); roof and plaza membranes.
- Acoustics, sound transmission, noise reduction, equipment noise; windows and window frames (infiltration); roofs and walls (heat loss); substrate moisture.
- Piping systems: water, gas, hydraulic, compressed gases, vacuum, oxygen and other medical gases; heating piping of steam, water, antifreeze solutions, refrigerant, distilled and deionized liquids; welded joints, soldered joints; sewer piping alignment, sewer leakage and infiltration, fire suppression systems.
- Other mechanical systems: air and water balance, duct leakage, equipment operation, cooling tower performance. Electrical systems: primary cable (416 volt and higher), motor generator sets, audio sound system, TV antenna and system, fire alarm and security system, lightning protection, transformers, ground fault protective system, infrared tests of wiring connections, polarity tests.

6.6 COMMISSIONING

Construction testing is normally included as part of the construction process. It is a functional test to show how equipment runs, but function testing does not calibrate and integrate multiple equipment components to operate as a system. When construction testing is done, equipment has been put into a state of “static completion.”

The purpose of Commissioning is to integrate system components and bring building systems on line for owner’s use. Commissioning brings systems from static completion to dynamic operation, to meet the engineer’s design intent, in accordance with contract drawings and specifications. Commissioning ensures comfort for building occupants as they use the building and its various systems. Hence every system (sound, data, telephone, fire alarm, security, etc) may require commissioning so they perform efficiently and economically.

6.6.1 THIRD PARTY COMMISSIONING AUTHORITY

A third party commissioning authority is sometimes selected by the Owner to commission building systems, depending on project requirements. On certain projects, third party commissioning is required. The commissioning authority works through the Owner and manages the commissioning process in cooperation with project contractors and their subcontractors.

6.6.2 SCOPE

The largest system that should be commissioned is HVAC. Many other systems, particularly stand alone systems including electrical, technology (data, video, voice, sound), fire alarm, fire protection, plumbing, architectural, building security and energy management should also be considered for commissioning. Each commissioning plan should cover the relevant specific system components as well as coordination with all related systems.

6.6.3 COMMISSIONING PROGRAM

Commissioning programs should include:

- preparation, submission and approval of the commissioning detailed plan,
- participation in preconstruction, planning, and pertinent construction meetings,
- coordination meetings among trades to assure compatibility of equipment, systems, and construction,
- development of a schedule to assure identification of milestones for the implementation of the commissioning process in coordination with the Contractor,
- documented design intent as a base document for commissioning, (Design intent often needs to include a sequence of operations).
- review of the equipment and systems submittal data for effect on systems commissioning,
- review of changes and alterations to plans and specification for effect on commissioning,

- review of records of flushing and cleaning,
- review of project status with the Owner to determine suitability of a substantially complete building for start-up,
- review of air and water test and balance reports to determine effect on commissioning,
- review of construction documentation, drawings, submittals, reports, inspections, manuals, warranties, and procedures for compliance with the requirements of the commissioning process,
- training of operation, maintenance, and management personnel,
- verification testing and calibration of building equipment and systems to comply with design intent,
- preparation of reports to certify the dynamic operational condition of the building equipment and systems under part-load, full-load, and seasonal operation, providing trend logging over a period of one month,
- review of construction documentation for compliance with standards such as ASHRAE for system performance criteria as required in the Minnesota State Energy Code, providing trend log data points of outside air calculations and actual measured outside air flow.
- prior to completion, on-site inspections relevant to indoor air quality for the facility (HVAC only).
- at final completion, air quality sampling before and after the facility has been in operation.

6.6.4 DRAWINGS AND SPECIFICATIONS

Shop drawings and record drawings and specifications should be assembled after completion of preliminary commissioning and prepared for delivery to the Owner. Changes as a result of subsequent commissioning procedures should be incorporated at the conclusion of final commissioning.

6.6.5 OPERATION AND MAINTENANCE MANUALS:

Operation and maintenance manuals should be delivered to the commissioning authority, assembled as specified in the construction documents. Manuals should be edited to limit the data to models of equipment utilized in the building. Manuals should be delivered to the Owner prior to start of training.

6.6.6 TRAINING

Training should take the form of classroom sessions to introduce operation, maintenance, and management personnel to the manuals, drawings, and other documents and aids available to operate and maintain the equipment and systems.

Factory specialists in the area of major equipment and systems should present sessions on their specific equipment or system, or both.

Extensive hands-on training should be conducted during commissioning so that actual operation and maintenance of the equipment and systems can be the responsibility of the Owner's personnel at the completion of commissioning.

6.6.7 VISUAL AIDS

Visual aids, such as slides and video should be used during training and made part of the Owner's permanent files to be used for reference, refresher, and retraining.

6.6.8 WARRANTY

At completion of commissioning, warranty documents should be completed and suppliers advised that their equipment has been put into operation. These documents should be delivered to the Owner.

6.6.9 SPARE PARTS/TOOLS

Prior to commissioning, a list of recommended spare parts, tools and supplies for dependable operation of the equipment and systems should be submitted to the Owner.

6.6.10 RETRAINING

After commissioning, operation and maintenance personnel should be instructed on changes and reconfiguration which may have occurred during the commissioning process.

6.7 CONSTRUCTION CLEANING AND DEBRIS DISPOSAL

Cleaning and rubbish removal work should be fully defined as to the requirements of each contractor involved in the project.

Responsibility for cleaning should be assigned for specific items such as toilet fixtures, light fixtures, cabinets, carpets, floor tile work, paneling, glass, metal, mechanical and electrical equipment items. Responsibility for complete and final cleaning of mechanical spaces should also be defined.

The quality of final cleaning required should also be specified, e.g.: broom cleaning; complete dusting and vacuuming, wall and ceiling cleaning; etc. Instances where the Owner elects to perform the final cleaning should be noted in the specifications.

Responsibility for rubbish removal during the construction period should also be delineated, including the cost of rubbish removal by the use of dumpsters. Where separate prime contracts exist the contractors should be made aware of their responsibilities to remove their rubble from the jobsite. Where a project has one prime contractor only, it is recommended that this contractor make arrangements for the costs for trash removal for subcontractors, or define financial responsibility to subcontractors working on site.

In advance of bidding, the Architect should advise the Owner of the proper governmental agencies involved in the plan review process in order to determine suitable disposition of debris from construction as well as requirements for erosion control, and handling other environmentally sensitive items. Phase 1 Audits and similar exploratory methods should be used where appropriate.

Where demolition involves removal of hazardous materials, such as asbestos, PCB's etc., the extent of these materials should be established. The Owner should ensure that proper research is done in advance of bidding to determine the extent and location of hazardous materials when they are known to exist, and have them removed prior to bidding.

State laws require the Owners of hazardous materials to be responsible for them forever, or until they are remediated, and are prohibited from transferring ownership to others without following specific disposal procedures.

6.8 RECYCLING CONSTRUCTION WASTE MATERIALS

Recycling of waste materials is a matter of great environmental concern. Solid waste management programs face increasing waste volumes, rising costs, and shrinking landfill capacity. Since volunteer recycling efforts are proving to be inadequate, many communities have enacted mandatory recycling laws for residential waste materials. Mandatory recycling of construction waste materials may be the next step.

Thus far, the construction industry has not responded to recycling needs in a significant way. Some demolition materials are salvaged and reused but most are consigned to fill. Waste materials from new construction are not often recycled although recycling of high value materials has increased in recent years.

The benefits of recycling waste materials may be substantial. Recycling saves energy and thus preserves important fuel resources. It also avoids the pollution created in extracting new resources from their natural environment. Through recycling, waste materials can be diverted from landfills, landfill space is preserved, and groundwater pollution is limited. Recycling may reduce construction costs through avoided disposal cost and can potentially generate revenues from recovered waste materials.

The United States Green Building Council (USGBC) has established design guidelines called Leadership in Energy Environmental Design (LEED). This program trains designers to become "LEED Certified." Owners are encouraged to inquire about this program through their Architect.

Responsible members of the construction industry should take the following steps toward recycling of construction waste materials:

- The Architect should urge the Owners to explore the benefits of recycling and make a commitment to the process for their projects.
- The Architect should specify that a construction waste recycling plan be developed for each project. (The Architect should offer to assist the Contractor in developing the recycling plan). Recycling firms should be named in the specification. Economic worksheets that can aid in determining the cost benefit of recycling should also be made available in the specifications. Assuming acceptance of the cost or savings of a recycling plan by the Owner, the following recycling policies should be implemented:
 - Reusable demolition materials should be salvaged and incorporated into new construction, stored for future use, or moved into the salvage market.
 - Non-reusable demolition materials (such as metal siding and roofing, metal framing members, conduit, piping, wire, and glass) and waste materials from new construction (such as corrugated cardboard packaging, scrap lumber, scrap conduit and piping, other scrap metal, beverage cans, plastic containers, and concrete) should be recycled.
 - The Owner and Architect should check with local authorities governing the location of the Project for local ordinances dealing with recycling and hazardous materials disposal.
 - Local waste management firms can be a resource for finding area recycling opportunities.
- The Contractor and Subcontractors should initiate salvage and recycling plans for projects even though they are not specified or required by law. Where there is a ready market for waste materials, such as dimensional lumber, concrete, asphaltic concrete paving materials, corrugated cardboard, and metals should receive first priority for recycling. The costs or savings of the recycling plans should be identified prior to project commencement with the assistance of the Owner and Architect. The recycling plan should be approved by the Owner prior to initiation.
- The Architect should specify reuse of salvaged materials for remodeling and new construction, when appropriate.
- Because a greater market demand for recyclable waste materials will stimulate the entire recycling process, the Architect should select and specify new products made of recycled materials whenever possible.