Introduction to Building Permit Procedures on VA Tech Properties.

Presented by
the VA Tech Office of the University Building Official.
Before we begin....

• This presentation should run 45-60 minutes
• Time for questions will be provided during the last 15 minutes.
• Please turn off all cells/pagers/etc.
• Please sign in
Change is the Key to the Future

Past Practice at VT is not the model for the future.
Observations of the Past

• BCOM uses a “trash can” permit process, one permit covers everything.
• Effectively, no building code inspections (No Building Code Official on Campus). BCOM does not significantly track or “manage” permits and code enforcement beyond the initial reviews, the building permit and the Certificate of Occupancy.
• Construction Inspection, Special Inspection, Misc. Inspections generally comingle and not well understood.
• Many documents appear to be “received and filed” with little VT oversight or review of results.
• Work is often Contract/Contractor Driven (vs. quality or compliance driven).
**Basic Definitions**

**Plan Review**
- Courtesy
- Schematic
- Preliminary
- Working Drawings
- Construction or Permit

**Permits**
- Building
- Mechanical
- Electrical
- Plumbing
- Fire Protection
- Demolition

*These six (6) cover towers, tents, buildings, tunnels, trailers, residences, barns

**Inspections**
- Construction Inspections
- Code Inspections
- Special Inspections
- Third Party Independent Inspections
- Fire Code Inspections
- Other Agency Inspections
  - Site and Infrastructure
  - Health Department
The Building Code

The building code is a fire, life, and general safety code based on fires and structural failures dating back into the 19th century. (Chicago, Baltimore City, New York, Kansas City, Rhode Island, etc.)

The Great Fire New York City, December 16, 1835

The Great Baltimore Fire raged in Baltimore, Maryland, on Sunday, February 7, and Monday, February 8, 1904
The Building Code

- The building code is based on a verifiable trail of personal and organizational accountability.

- The building code is an “old school” application....
  - It often requires written documents
  - Signatures and seals are common requirements
    - Electronic signatures and applications need to have paper back ups and original signature pages to verify.
  - Duplicate copies of documents are typical
  - It is a system of checks and verifications with an audit trail
  - Based on personal experiences, the audit trail can and does end up in court in construction claims, accident claims, slip and fall cases, etc.
The Building Code

- Codes and Enforcement Documents:
  - VUSBC – mandatory
  - ADAAG standards – mandatory for state agencies and federal contractors
  - ICC/ANSI A117 Accessibility Standards – mandatory if not in conflict with ADAAG
  - CPSM – applies until VA Tech provides our own documents and manual.
  - VA Tech Design and Construction Standards – deviate by Chief of Facilities approved exception
  - DPOR regulations for professionals - mandatory

- “Common Sense combined with general, life and fire safety as paramount considerations”

- Always consider “Present impact and future implications”
  - Renovations and Maintenance
  - Fire Code Compliance
Document Hierarchy

- Approved Construction Documents
  - Specifications
  - Shop Drawings as approved by the RDP
  - Original Equipment Manufacturer (OEM) documentation

Requirements

- Construction documents must be approved and stamped by UBO Office.
- UBO approved documents must be on site, failure to have them on site for inspection will result in a rejection and re-inspection.
- Approved RFI is to be made part of approved construction drawings.
- RFI must be submitted, reviewed, and approved by UBO prior to inspection.
- OEM documents need to be on site.
- Shop drawings and submittals need to be approved by the responsible design professional and approved copies provided to the contractor, owner, UBO, Special Inspector and others as required.
Building Permits

- The building code establishes Building Permits.
- The code provides for building permits to be broken down into several different types.
- Building permits will be sub-divided into Building, Mechanical, Electrical, Plumbing, Fire Protection, Demolition and Tents/Stages/Special Events.
- One specific type of Building Permit is an Annual Permit which will not be issued until further notice.
Building permits

- What requires a permit:
  - Easier to say what does not need a building permit.
  - Replacement in kind type maintenance is a good example of something that does not need a permit.
    - Repairs, repainting, re-carpeting do not need permits.
    - Low voltage is generally excluded such as phone or internet cables (fire alarms are part of fire protections and is covered by the building code).
  - Changes in buildings and structures do need them, as well as increases in electric systems, plumbing or mechanical systems.
  - When in doubt, ask.
  - Failure to get a permit is cause for a Notice of Violation and/or stop work order.
The Process, General

- The UBO does not manage or direct any other department how to operate within its own borders. Please direct issues about inter-department issues to the department head.

- The UBO Office is available to provide courtesy schematic, preliminary, and working drawing review prior to construction drawings, but we are not responsible for document and/or design coordination.

- After permit issued, the UBO office will provide enforcement inspections based on the approved plans.
The Process, General

- Conduct all maintenance, renovations, alterations, additions, change of use, and new Construction in conformance with the laws of the Commonwealth of Virginia.
  - Building Code
  - Fire Code
  - Health Code
  - Environmental Codes
  - State Requirements
  - University Standards
- Apply for and provide documentation for gaining a permit to work under the VUSBC prior to beginning work
- Call for required inspections during construction.
- Occupy after a Certificate of Occupancy is issued or a successful final inspection.
The Process, General

As the people assigned the management of projects, the PM shall generally:

- Review and scope work
- Develop the project documents
- **Secure the permits**
- Manage resources
- Manage the various inspections
- Coordinate with staff.
In order to secure a permit

Provide a Completed Plan Review Application or
Provide a Completed Permit Application

Provide Construction Documents as Appropriate

- Sealed Construction Drawings
- Sealed Specifications
- Completed Special Inspection Documents
- Other documentation as required based on the project
Types of Reviews

**Courtesy**
- Informal with no specific documents or requirements

**Schematic**
- Program alternatives
- Design Narratives
- General layouts and few details

**Preliminary Review/Working Drawings**
- Design Narratives
- Bigger Picture with more details
- As the project progresses, details are added

**Final Design or Construction Drawings**
- Lots of Details Provided
- Documents Coordinated
- Level of detail to clearly be constructible
Our Plan Review Application (HECO-REVIEW) and Building Permit Application (HECO -17)
### Virginia Tech

**Application for Building Permit**

**Project:**
- **Agency:** Virginia Poly. Inst. & State Univ.
- **FIPS Code:**
- **Location:**
- **Project #:**
- **Project Title:**
- **Applicant (Owner):**
- **Owner Phone:**
- **Owner Mail Stop:**
- **Owner Email:**
- **Permit Type Required:**
- **Value of Work:**
- **Building:**
- **Mechanical:**
- **Electrical:**
- **Plumbing:**
- **Fire Prot:**
- **Fuel Gas:**

### Description of Work and Structure

- **Building Name:**
- **Building Number:**
- **Spaces or Room Number:**
- **Street Address:**
- **Nature of Work:**
- **Description of Work:**
- **Purpose/Occupancy Notes:**
- **Building Code Edition:**
- **Construction Type:**
- **Separation:**
- **Occupancy Use Groups:**
- **Occupant Load:**
- **Building Height (ft):**
- **Building Floor Area (sf):**
- **Code Modifications Issued:**
- **Roof Live Load (psf):**
- **Site Class:**
- **Seismic Design Category:**
- **Number of Stories:**
- **Wind Speed (mph):**
- **Wind Exposure Category:**
- **Soil Bearing Capacity (psf):**
- **Special Inspec. Required:**
- **Fire Suppression:**
- **Elevators:**
- **Fire Alarm System:**
- **Key Dates:**
- **Wet:**
- **Dry:**
- **Chemical:**
- **Other:**
- **Not Required:**
- **Total:**
- **Automatic:**
- **Manual:**
- **New:**
- **Existing:**
- **None:**
- **Existing Conveyors:**
- **Building Category:**
- **Architect of Record:**
- **Structural Engineer of Record:**
- **Geotechnical Engineer of Record:**
- **Mechanical Engineer of Record:**
- **Electrical Engineer of Record:**
- **Plumbing Engineer of Record:**
- **Special Inspector (Agent 1):**
- **General Contractor (CM):**
- **Building Contractor:**
- **Mechanical Contractor:**
- **Electrical Contractor:**
- **Plumbing Contractor:**
- **Fire Protection Contractor:**
- **Fuel Gas Contractor:**
- **License No.:**
- **Date of Plans & Specifications:**
- **Est'd Construction Start Date:**
- **Est'd Construction Completion:**
- **Estimated Value:**

### Building Official Action

- **Date Received:**
- **State Fire Marshall Notification Inspection Required:**
- **VA Department of Health Required, Prior to Issue:**
- **Site and Infrastructure Notification Required, Prior to Issue:**
- **Asbestos and Lead Investigation Required, Prior to Issue:**
- **YES**
- **NO**

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### Relevant Permits Required

(Not all blocks may be needed. A project in an existing building need only fill in the areas impacted.)

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### Building Data

Add professionals and contractors.
We will review, and if necessary, comment or ask questions.
Courtesy, schematic and preliminary plans will all need to have additional details following our review and based on the extent of the issues noted in construction documents, there may be a resubmission of required documents prior to any permitting.
Once the documents are in general conformance we will issue the permits with a copy of the approved construction documents.
BUILDING PERMIT

FOR CONSTRUCTION AND ARCHITECTURAL WORK GOVERNED BY THE VUSBC

- New Construction
- Renovations, Additions, Modifications
- Demolition
- Change of Use
- Change of occupancy
- Trailers, construction
- Towers
MECHANICAL PERMIT

FOR MECHANICAL WORK GOVERNED BY THE IMC, FOR EXAMPLE:

- New Mechanical Systems
- Additions, Modifications, Renovations to Existing Mechanical Systems
- Hoods
- Refrigeration
- Ducts and Exhaust Systems
- Solar Power
ELECTRICAL PERMIT

FOR ELECTRICAL WORK GOVERNED BY THE NEC, FOR EXAMPLE

- New Systems
- Additions, Modifications, Electrical Renovations to Existing Electrical Systems
- New Panels
- New Circuits
- New or Temporary Services
- Generators
PLUMBING PERMIT

FOR PLUMBING WORK GOVERNED BY THE IPC OR IFGC, FOR EXAMPLE:

- New Systems
- Additions, Modifications, Renovations to Existing Plumbing Systems
- Additional Toilets
- Addition or relocated safety showers
- Changes or new fuel gas piping
- New water service
- New sewage service
FIRE PROTECTION PERMIT

FOR WORK GOVERNED BY THE NFPA 33/72, FOR EXAMPLE:

- New Systems
- Additions, Modifications, Renovations to Existing Fire Protection System
- New Mag Locks
- Relocated Alarms
- Reconfigured Sprinkler Piping
Following Issuance of Permits.....Inspections

Construction may begin after issues based on the scope of work contained within the permit and approved construction documents. There may be limited permits based on the schedule or documents provided as follows.

Examples:

- Foundation only – authorizes work up to and including floor slabs
- Framing – authorizes work up to and including framing and support system
- Building – authorizes work up to structural fire assembly, weather tight
- Mechanical – authorizes only the mechanical system
- Electrical – authorizes only the electrical system
- Plumbing – authorizes only the plumbing system
- Fire Protection – authorizes only the fire protection system
Call for Inspections as work progresses

PM’s need to review construction document’s inspection reports for issuance, remedial work and potential back charges
What if Design Changed due to Scope change or RFI’s?

- Submit documents from or approved by the Responsible Design Professional (RDP) as soon as possible prior to our inspection.
- We will reject any work not approved prior to inspection.
HECO Supplement

Who and What Project

Describe

Building Permit #
HECO Forms

We are developing a suite of HECO forms to replace the BCOM CO Series. Additional forms will be VT Specific. We will provide updates as we move forward.
So on a Typical Job What Permits are expected?

- Temporary Power
- Construction Trailer
- Building
- Mechanical, HVAC
- Electrical
- Plumbing
- Plumbing, Fuel Gas
- Fire Suppression
What Do I do with them?

- Post Them near the work
- Use the Building Permit # for ALL correspondence with our office including Special Inspection Requests
- Do only the work authorized

ELECTRICAL PERMIT
E-11-100031

Permission is hereby granted for building construction as listed below. All work shall conform to the 2006 VUBCC.

- Date issued: 6/07/2011
- Location: -447B VET MED 24061
- Section: MAIN CAMPUS
- Wrk Ord#: 11-061376-001
- Zoned As:
  - Manager: Bruce Lytton
  - Address: Phone: 357-0149
  - Coord.: City, ST Zip:
  - Address: Phone:

Description of work: ELECTRIC
Installation is for: Building had two services. Removed water heater from panel 1 to make room to feed panel 2 from panel 1. Now feeding water heater from panel 2 (added disconnect switch). New service must out the end of the building.

Remarks:

Code Official:

All holders of permit, or their agents shall notify the University Building Official at the appropriate stage of construction so that approval may be given before work is continued.

THIS PERMIT EXPIRES 180 DAYS FROM ISSUANCE OR 1 YEAR FROM DATE OF LAST CALLED INSPECTION.
At the end.....

After the final inspection....

- File the substantial completion forms.
- File the special inspection final reports.
- Request the building final.
- File for the certificate of occupancy.
Recap Change

Past

- BCOM to far away for efficiently managing details.
- Little or few building code inspections.
- Permits jumbled into one large permit for BCOM convenience.
- Construction not strictly held to construction documents
- Contractor and Sub-Contractor driven
  Prior or little schedule management required
Present and Future

- VT Driven
  - Contractor must schedule for tests and inspections.
- Document and Code Driven
- UBO on site and can address details
- Full suite of code required inspections will be performed.
- Through permits and inspections, non-code related inspections and issues will be pulled out and handled outside code officials office.
Results

- **Attention to detail.**
- More RFI’s will result and drive the A/E to address issues during construction.
- Contractor/PM will need to plan for inspection.
- Contractor/PM will need to get, review and submit documents to UBO office.
- Additional contracts possible due to separation and other definitions of Professional Testing Services.
- Improved identification of the costs of special tests versus construction tests and potential areas to reduce cost through better oversight.
- Better construction outcomes
Questions