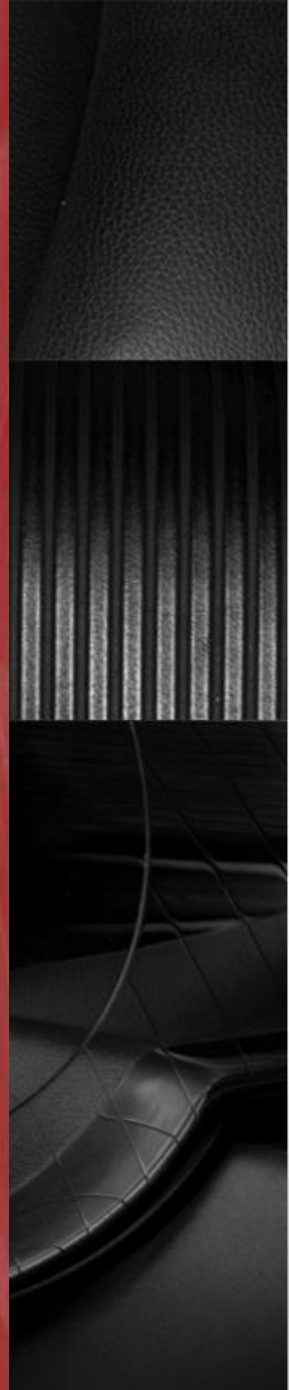


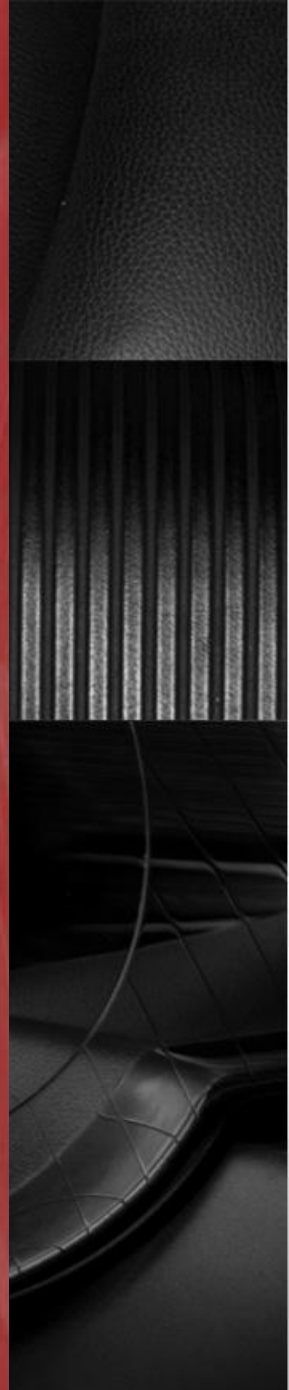
Introduction to Building Permit Procedures on VA Tech Properties.

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 comingled 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 fire new york city. [Web]. Retrieved from http://en.wikipedia.org/wiki/Great_Fire_of_New_York



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

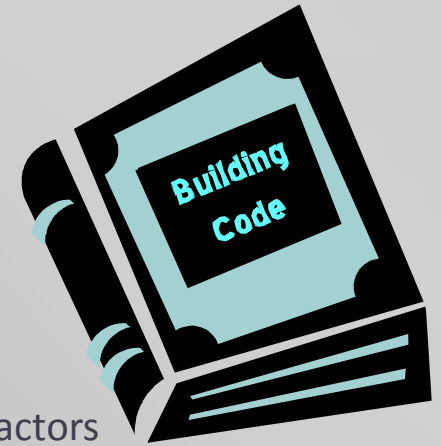
The great baltimore fire. [Web]. Retrieved from <http://archive.mdhs.org/library/mdf3.html>



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)

VirginiaTech

APPLICATION FOR HECO-REVIEW

(Rev. 07/11)
2006 & 2009 VUSBC

PLAN REVIEW

UBO Permit# (If Issued)

PROJECT: Code: 208 Description: Virginia Poly. Inst. & State Univ. FIPS Code: Location: Location
 Project #: OR Work Order #
 Project Title:
 Applicant (Owner): Name Owner Phone: Phone
 Owner Mail Stop: Mail Stop Owner Email: Email

Review Required (Check all that apply)
 Courtesy Preliminary ___ % Working ___ % Construction

DESCRIPTION OF WORK and STRUCTURE

Building Name: Buildings Building Number: Number
 Space or Room Number:
 Street Address:
 Nature of Work: Provide project description below:
 Description of Work:
 Purpose/Occupancy Notes:
 Building Code Edition: 2006 VUSBC Accessibility Standards: N/A
 Construction Type: N/A
 Separation:
 Occupancy Use Groups:
 Occupant Load:
 Building Height (feet): Number of Stories:
 Building Floor Area (gsf): Work Area (gsf):
 Roof Live Load (psf):
 Site Class: N/A Wind Speed (mph): N/A Wind Exposure Category: N/A Soil Bearing Capacity (psf): N/A
 Seismic Design Category: N/A Building Category: N/A Special Inspc. Required? N/A

Fire Suppression Elevators Fire Alarm System Key Dates
 Wet New Existing Automatic Manual AARB Approval Date:
 Dry Existing None Date of Plans & Specifications:
 Chemical Total 0 None Est'd Construction Start Date:
 Other Other Conveyors Not Required Est'd Construction Completion:
 None New Estimated Value:
 Not Required Existing

Architect of Record: License No.:
 Structural Engineer of Record: License No.:
 Geotechnical Engineer of Record: License No.:
 Mechanical Engineer of Record: License No.:
 Electrical Engineer of Record: License No.:
 Plumbing Engineer of Record: License No.:
 General Contractor (CM): License No.:

BUILDING OFFICIAL ACTION

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

VirginiaTech

APPLICATION FOR HECO-17

(Rev. 07/11)
2006 & 2009 VUSBC

BUILDING PERMIT

UBO Permit# (If Issued)

PROJECT: Code: 208 Description: Virginia Poly. Inst. & State Univ. FIPS Code: Location: Location
 Project #: OR Work Order #
 Project Title:
 Applicant (Owner): Name Owner Phone: Phone
 Owner Mail Stop: Mail Stop Owner Email: Email

Permit Type Required (Check all that apply) and Value of Work (line below):
 Building Mechanical Electrical Plumbing Fire Prot. Fuel Gas

DESCRIPTION OF WORK and STRUCTURE

Building Name: Buildings Building Number: Number
 Space or Room Number:
 Street Address:(if applicable):
 Nature of Work: Provide project description below:
 Description of Work:
 Purpose/Occupancy Notes:
 Building Code Edition: 2006 VUSBC Accessibility Standards: N/A
 Construction Type: N/A
 Separation:
 Occupancy Use Groups:
 Occupant Load:
 Building Height (feet): Number of Stories:
 Building Floor Area (gsf): Work Area (gsf):
 Code Modifications Issued: N/A (If yes, attach original copies of approved documents)
 Roof Live Load (psf):
 Site Class: N/A Wind Speed (mph): N/A Wind Exposure Category: N/A Soil Bearing Capacity (psf): N/A
 Seismic Design Category: N/A Building Category: N/A Special Inspc. Required? N/A

Fire Suppression Elevators Fire Alarm System Key Dates
 Wet New Existing Automatic Manual AARB Approval Date:
 Dry Existing None Date of Plans & Specifications:
 Chemical Total 0 None Est'd Construction Start Date:
 Other Other Conveyors Not Required Est'd Construction Completion:
 None New Estimated Value:
 Not Required Existing

Architect of Record: License No.:
 Structural Engineer of Record: License No.:
 Geotechnical Engineer of Record: License No.:
 Mechanical Engineer of Record: License No.:
 Electrical Engineer of Record: License No.:
 Plumbing Engineer of Record: License No.:
 Special Inspector (Agent 1): License No.:
 General Contractor (CM): License No.:
 Building Contractor: License No.:
 Mechanical Contractor: License No.:
 Electrical Contractor: License No.:
 Plumbing Contractor: License No.:
 Fire Protection Contractor: License No.:
 Fuel Gas Contractor: License No.:
 Other:(Define) License No.:

BUILDING OFFICIAL ACTION

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

(Rev. 07/11)
2006 & 2009 VUSBC

FOR
BUILDING PERMIT

UBO Permit# (If Issued)

Space for UBO Notes

Pull Down Menu's

PROJECT:	Code	Description	FIPS Code:	Location:
Agency:	208	Virginia Poly. Inst. & State Univ.		Location
Project #:			OR Work Order #	
Project Title:				
Applicant (Owner):	Name	Owner Phone:	Phone	
Owner Mail Stop:	Mail Stop	Owner Email:	Email	
Permit Type Required (Check all that apply) and Value of Work (line below):				
<input type="checkbox"/> Building	<input type="checkbox"/> Mechanical	<input type="checkbox"/> Electrical	<input type="checkbox"/> Plumbing	<input type="checkbox"/> Fire Prot. <input type="checkbox"/> Fuel Gas

Relevant Permits Required

Describe Work

DESCRIPTION OF WORK and STRUCTURE	
Building Name:	Buildings Building Number: Number
Space or Room Number:	
Street Address:(if applicable)	
Nature of Work:	Provide project description below:
Description of Work:	
Purpose/Occupancy Notes:	
Building Code Edition:	2006 VUSBC Accessibility Standards: N/A
Construction Type:	N/A
Separation:	
Occupancy Use Groups:	
Occupant Load:	
Building Height (feet):	Number of Stories:
Building Floor Area (gsf):	Work Area (gsf):
Code Modifications Issued:	N/A (If yes, attach original copies of approved documents)
Roof Live Load (psf):	Wind Speed (mph):
Site Class:	N/A Wind Exposure Category: N/A Soil Bearing Capacity (psf):
Seismic Design Category:	N/A Building Category: N/A Special Inspec. Required? N/A
Fire Suppression	Elevators
<input type="checkbox"/> Wet	<input type="checkbox"/> New
<input type="checkbox"/> Dry	<input type="checkbox"/> Existing
<input type="checkbox"/> Chemical	Total 0
<input type="checkbox"/> Other	Other Conveyors
<input type="checkbox"/> None	<input type="checkbox"/> New
<input type="checkbox"/> Not Required	<input type="checkbox"/> Existing
Fire Alarm System	Key Dates
<input type="checkbox"/> Automatic	AARB Approval Date:
<input type="checkbox"/> Manual	Date of Plans & Specifications:
<input type="checkbox"/> None	Est'd Construction Start Date:
<input type="checkbox"/> Not Required	Est'd Construction Completion:
	Estimated Value:

Building Data

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

Add professionals and contractors

Architect of Record:	License No.:
Structural Engineer of Record:	License No.:
Geotechnical Engineer of Record:	License No.:
Mechanical Engineer of Record:	License No.:
Electrical Engineer of Record:	License No.:
Plumbing Engineer of Record:	License No.:
Special Inspector (Agent 1):	License No.:
General Contractor (CM):	License No.:
Building Contractor:	License No.:
Mechanical Contractor:	License No.:
Electrical Contractor:	License No.:
Plumbing Contractor:	License No.:
Fire Protection Contractor:	License No.:
Fuel Gas Contractor:	License No.:
Other:(Define)	License No.:

Space for UBO Notes

BUILDING OFFICIAL ACTION	
Date Received:	YES NO
State Fire Marshall Notification Inspection Required:	<input type="checkbox"/> <input type="checkbox"/>
VA Department of Health Required, Prior to Issue:	<input type="checkbox"/> <input type="checkbox"/>
Site and Infrastructure Notification Required, Prior to Issue:	<input type="checkbox"/> <input type="checkbox"/>
Asbestos and Lead Investigation Required, Prior to Issue:	<input type="checkbox"/> <input type="checkbox"/>

**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 documents 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

VirginiaTech

(Rev. 07/11)

2006 & 2009 VUSBC

TRANSMITTAL
FOR

SUPPLEMENTAL INFORMATION

HECO-SUPPLEMENTAL

Building Permit #

PERMIT# [Redacted]

PROJECT:

Code	Description	FIPS Code:	Location:
208	Virginia Poly. Inst. & State Univ.	[Redacted]	Location
		OR Work Order #	[Redacted]
Project Title: [Redacted]			
Applicant (Owner):		Name	Owner Phone: Phone
Owner Mail Stop:		Mail Stop	Owner Email: Email

Permit Type (Check all that apply) and Value of Work (line below):

Building
 Mechancial
 Electrical
 Plumbing
 Fire Prot.
 Fuel Gas

PURPOSE OF TRANSMITTAL

Choose One: [Redacted]

DETAILS OF INFORMATION

Description: [Redacted]

Who and What Project

Describe

BUILDING OFFICIAL ACTION

Date Received: _____

	YES	NO
State Fire Marshall Notification Inspection Required:	<input type="checkbox"/>	<input type="checkbox"/>
VA Department of Health Required:	<input type="checkbox"/>	<input type="checkbox"/>
Site and Infrastructure Notification Required:	<input type="checkbox"/>	<input type="checkbox"/>
Asbestos and Lead Investigation Required:	<input type="checkbox"/>	<input type="checkbox"/>



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

Permit Number Here

VT VIRGINIA TECH
Office of the Univ Bldg Official
71 Sterrett Facilities Complex (0529)
Blacksburg, VA 24061
540-231-4678

ELECTRICAL PERMIT

E-11-100031


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

Date Issued: 6/07/2011 **Project Name:** Vet Med Building
Location: -447B VET MED 24061
Section: MAIN CAMPUS
Wrk Ord#: 11-061376-001
Zoned As:
Manager: Bruce Lytton
Address:
City, ST Zip: **Phone:** 357-0149

Coord.:
Address:
City, ST Zip: **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 mast 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 too 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