

General Overview:

The United States is full of locations that maintain land use within its jurisdiction. Land Use regulations are designed to safeguard and promote the public health, and general welfare. Usually, they consist of the Zoning Ordinances that regulate development. Such ordinances include laws that control an extensive variety of development activities within each zoning area, including building construction, parking lot design, amount of activities such as entrances, exits from property, water and sewer facilities, storm water runoff, and landscaping.

As part of local Land Use regulations, many municipalities have adopted the International Building Code to regulate the design and construction of non-residential buildings. Although some jurisdictions within a state may not use the IBC, state or local regulations will typically adopt the IBC by reference, meaning that the requirements of the IBC apply within the jurisdiction of that state or other government body.

Rules that control other aspects of development vary and are published by each municipality. It is important to identify the codes and regulations that apply to a project and become familiar with the requirements for development before beginning the design of a project.

Proposal:

We want to make this Library a multi-purpose building for mainly educational and also allow gathering spaces for community betterment.

The existing building is approximately **76ft x 124ft and 20ft tall and is gutted**. No interior walls or fixtures remain. We will utilize the existing structure to its fullest extent and add a partial second floor to the structure. The part of the existing roof that is not enclosed for the new second floor will be converted to a green roof that will be accessible to the public.

We will redesign the existing building to create a plan for renovating the structure to serve as a public library. As necessary, we will replace existing building components or add new components to provide a safe and efficient building with adequate utilities and services. We will also create a site design that will provide sufficient parking, desirable traffic flow, and appropriate grading and stormwater management.

Proposed Design Features:

The library will have 2 floors, the ground floor (first level) and the 2nd floor (2nd level). The existing structure will be fully utilized as much as possible. The entry way as well as vestibule will provide accessibility. (w/ benches, tables) An elevator that transports one from the first floor to the second. The first floor will primarily include a circulation desk with a children's help desk as well as an open area for books/computer terminals. A public restroom must be in both the second and first floor. The Head Librarian's Office, staff workroom, staff restroom, the Noblesville History Room, and the mechanical room.

The second floor will primarily include an open area for book stacks, a public restroom, (add more features based on bubble diagram).

Interior Space Requirements

- The existing structure will be fully utilized when possible.
- A new modern entryway and vestibule will be added to improve the aesthetics of the building, provide full accessibility, and include an exterior covered area with benches.
- An elevator must be provided for accessibility.

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- **First Floor plan must include areas designated for**
 - **Entry and Circulation Desk area**
 - **Children's Help Desk**
 - **Open area for stacks (shelves of books and media) and computer terminals**
 - **Public restroom**
 - **Head Librarian's office**
 - **Staff workroom/ kitchenette**
 - **Staff restroom**
 - **Two meeting rooms**
 - **Noblesville History room**
 - **Mechanical room**

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- **Second Floor plan must include:**
 - **Open floor area for stacks**
 - **Public restroom**

Interior Aspects: (Separate the spaces so that they make sense with the organization: **Loud spaces**, **Quiet (private) Spaces**, **Transition (not very quiet or loud)**)

1. Cafe

--small refreshments, water fountain, vending machine

2. Children's Center (Books)

--beanbags, tables, chairs, chalkboards, aquarium, rugs, librarian desk, bathrooms, water fountain

3. Book Club Lounge

--beanbags, tables, chairs, rugs, water fountain

4. Teen/Young Adult Lounge (Books)

--beanbags, carpet, conference, bathroom

5. Computer Lab

--printers, ipads, computers, laptops

6. Adult Section (Books)

7. Librarian Office

--references, check-out, check-in,

8. Lounge for Librarians

--vending machine, sofa, desks, bathrooms

9. Communal Conference Room

--projection board, conference table (seats 20)

10. Quiet Room

--studying space, laptops, charging stations, desks

Building Codes & Considerations

The *Building Code* that applies in Noblesville by reviewing Section 154.04 Adoption of Rules by Reference in the Noblesville Code of Ordinances.

(A) Building rules of the Indiana Fire Prevention and Building Safety Commission as set out in the following Articles of Title 675 of the Indiana Administrative Code are hereby incorporated by reference in this code and shall include later amendments to those Articles as the same are published in the Indiana Register or the Indiana Administrative Code with effective dates as fixed therein:

- (1) Article 13 - Building Codes:
 - (a) Fire and Building Safety Standards
 - (b) Indiana Building Code
 - (c) Indiana Building Code Standards
 - (d) Indiana Handicapped Accessibility Code

2. On which model code is the current **Indiana Building Code** based?

Indiana Building Code: (675-IAC-13 IBC)

Based on: *2012 International Building Code* (1st printing) with 2014 Indiana Amendments, Effective December 1, 2014

3. Using the International Building Code, find the Use and Occupancy classification of the proposed new Keystone Building.
Assembly, A-4.

4. Using the International Building Code, describe each of the four types of construction. Based on the existing structure, under which of these types of construction could the Keystone Building fall? See section 503.1.

Types I and II construction are those types of construction in which the building elements are of noncombustible materials, except as permitted in Section 603 and elsewhere in this code. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code, *Fire-retardant-treated wood* framing. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. Type V construction is that type of construction in which the structural elements, *exterior walls* and interior walls are of any materials permitted by this code

5. Compare the allowable Building Heights and Areas (IBC 2009 Table 503) for the Keystone Library using different construction types. What is the least restrictive construction type that can be used for the Keystone Library? Is a fire-protective layer required over the structural elements? Note: The letter A indicates that the structural members are protected by a fire-rated coating or cover (sheetrock, spray on, or another approved method). The letter B indicates that the structural members are not protected by an additional fire-rated coating or cover. Type I is the least restrictive, but isn't the most practical for a library so either Type II or IV which allow the same amount for area and floors. Yes a fire-protective layer is required over the structural elements. I

6. What materials do you propose to use for the new interior walls and floor for the Keystone Building? Justify your answer.

Walls made of laminated fire retardant wood over aluminum framing.

7. Use the IBC to determine the Occupant Load (IBC 2009 Section 1004) for the Keystone Building assuming a second floor is added per the **Keystone Library Renovation Preliminary Building plans** (see Revit file). For now, conservatively assume that the second floor is entirely stacks and that the first floor is entirely reading rooms. In addition, because there is currently no plan to include an outside stairway to the roof, assume that the occupants of the green roof must exit through the 2nd floor. The building inspector has determined, based on the planned use of the green roof as additional reading area, that the occupant load for the green roof may be based on the requirements for reading rooms.

First Floor Occupancy load up to 178 people. 2nd Floor Occupancy load up to 145 people. The Roof Occupancy Load up to 120 people

8. The occupant load is used to determine the minimum egress width for the building. Use the IBC to determine the required total egress width (IBC 2009 Section 1005) for the Keystone Building including the second floor.

The total width of *means of egress* in inches (mm) shall not be less than the total *occupant load* served by the *means of egress* multiplied by 0.3 inch (7.62 mm) per occupant for stairways and by 0.2 inch (5.08 mm) per occupant for other egress components. From the second floor it is 40.5 in. From the first floor it is 62.6 in.

9. What is the minimum number of exits required for the Occupant Load (IBC 2009 Section 1021)?

There needs to be a minimum two per story, in order to allow a safe mode of safety for an occupancy of 200 people or less.

10. Read IBC 2009 Section 1021.2. Is it permissible to have only a single exit from the ground floor? From the second floor? Justify your answers.

No, but there will be more doors than needed to satisfy other codes. Thus, we will have more than the required amount of exits for aesthetic purposes but also for extra precaution.

The answers to the following questions should be researched in the Noblesville Code of Ordinances and the Noblesville Zoning Map.

11. In which zoning designation does the Keystone building property lie? (Refer to the Keystone Library Site Location Map to help locate the site on the zoning map.)

planned Business

12. Describe the purpose of this zoning designation. Document your answer with a section number from the code. Purpose.

The purpose of the PB District is to encourage well-planned business uses, particularly with respect to unified design, safe ingress-egress, adequate and properly located parking and service facilities and convenient and safe pedestrian accessibility. A library is a good example of a type of use in the PB District. The PB District is also designed to service the motoring public through such uses as public assistance. The PB District shall only be permitted along or at the intersection of major arterials as specified by the Thoroughfare Plan element of the Comprehensive Plan.

13. What is the minimum lot size within this designation? Does the Keystone Property meet this requirement? Document your answer with a section number of the code.

Our lot size will be optimized because we will build up, and therefore increase our square footage without having to expand our lot, which we are unable to do. The minimum lot size is 2,000 square footage.

14. What is the maximum building height according to the Noblesville ordinance?

The maximum building height according to the Noblesville ordinance is 3 stories with a maximum height of 35 ft

15. Read Section 159.120 of the Noblesville Code of Ordinances. Record any information that is important to the redevelopment of the Keystone building.

Agriculture shall be a permitted use in all districts pursuant to 159.120

Residential Care Homes. Residential Care Homes shall be a permitted use in all residential districts and shall be regulated by § [159.124](#).

Bed and Breakfast Establishments. Bed and Breakfast Establishments shall be a conditional use in all residential districts, the Downtown (D) District, and the General Business (GB) District. Where permitted, bed and breakfast establishments shall be regulated by § [159.125](#).

16. Is the Use proposed in Keystone Building Project permitted on this property? Document your answer.

Yes, since it is a library, our proposed design features can be developed as per appendix C, which states that a building is allowed to be restored or repurposed as long as the building party attains the correct permits, inspections and approval from the state.

17. When developing a property, when is landscaping and screening required?

Landscaping and screening is required whenever it borders residential property or other private properties in order to preserve privacy to the respective owners.

Conclusion

1. Why is it important to research building codes and local ordinances before beginning the design of a project?

It is important to research building codes and local ordinances in order to know the constraints, but also to make sure the building is completed in a legal process to ensure proper safety precautions for public use.

2. Give some examples of how building codes protect people and property.

Building codes protect people and property because requirements such as having a minimum number of emergency exit doors promotes preventive methods so that disasters and death can be minimized. Also, with more people will be able to escape quicker for a fire and there is more of a chance the building could be saved in order to aid the fire department.

3. How do local ordinances control development?

Local ordinances can keep some businesses out or require that the correct parties abide by their regulations to build their properties only if they cooperate fully with the state codes with correct licenses and permits.

<http://rachelscea.blogspot.com/2011/12/activity-312-land-use-and-development.html>