### **SMALL SCALE DEVELOPER HANDBOOK**

South Bend Pre-Approved Buildings





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### Small Scale Developer Handbook | Introduction



Overhead View of South Bend Neighborhood (Google Earth)

This Developer Handbook is meant to assist property owners, developers and builders in successfully implementing a building from the City of South Bend's pre-approved plan catalog.

This handbook is broken into five sections to provide context behind the design, site development, financial considerations, and implementation information necessary to complete such a project. These sections are:

- (1) Neighborhood Infill Strategies
- (2) Lot Level Considerations
- (3) Constructability
- (4) Alternative Construction Methods
- (5) Building Code and Regulatory Issues
- (6) Financial Considerations

The Build South Bend website is an important companion resource:

#### https://southbendin.gov/bsb/

This website includes a wide variety of information on the development of buildings at the scale of those included in the pre-approved plans catalog. This includes a glossary of real estate terms, information for acquiring properties from public agencies, contact information for financial institutions active in the South Bend region, sample financial proforma templates, and information about obtaining various types of permits in the city.

Another critical download for the pre-approved plan program available from this website is the Process and Exterior Inspection Checklist. These are the forms that will be used by city inspectors to confirm compliance with the rules of the program.

https://southbendin.gov/wp-content/uploads/2022/08/SBBT\_Process\_22-0812.pdf

South Bend is a city of neighborhoods, the core of which were built on a 19th century network of human scaled streets and blocks. There is a great variety of lot sizes on these blocks, most of which are serviced by alley in various levels of surface improvement. This section addresses some of the most important financial and physical considerations to keep in mind in order to place the right building, on the right lot, in the right location.







Existing Housing Stock (explainer/sources)

#### Matching a Type to a Lot

Lots in the core neighborhoods of South Bend vary in width, but most are at or around 33', 40' or 50'. While there are areas of the city where private or public land owners control a series of contiguous lots, in most cases, a land owner will control only one lot and require solutions that fit the property lines without modification.

The Narrow House, at 20' wide, is able to fit on nearly any lot in the city, as with the addition of five foot setbacks on each side, it can fit on lots as narrow as 30'. The Standard House and Stacked Duplex fit comfortably on slightly larger lots from 36'-40' and up. The Small Apartment is 40' wide and with the same setbacks can fit on a 50' wide lot. To achieve the most compact lot width, each of these designs assumes access via an alley. However, wider lots could accommodate a driveway from the street to access the rear of the lot, a garage, or other parking. Thus, adding 10' to each of these lot widths provides the minimum width for non alley lots.

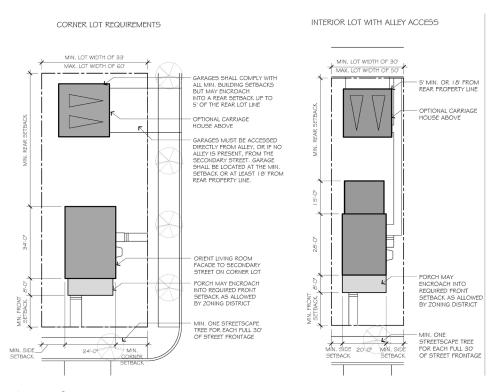
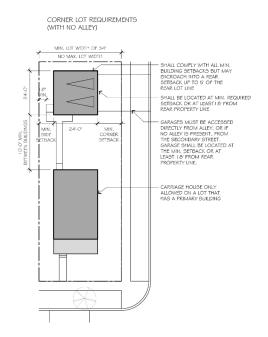
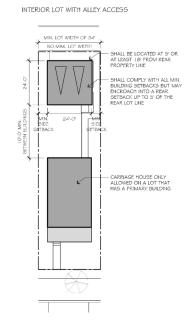


Diagram of Houses on Lots

(Left: Standard House on Corner Lot, Right: Narrow House on Interior Alley Lot)

In addition, special consideration should be paid to whether the lot is on the interior or corner of a block. Building placement should be schematically laid out on sheet A1.01 of each set - a civil engineer or architect can place the building on the actual site plan submitted to the city for land use approval and final building permit.





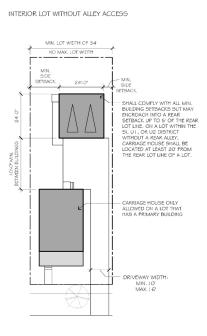


Diagram of Carriage House Lot Layouts (A1.01 of the Carriage House Construction Set)

The Carriage House was created to add additional functionality and housing units in the rear yard of an existing house or new construction type. Due to the function and layout of two garage stalls on the ground floor, plus an internal staircase going to the second floor, a 24' x 24' square provides the most efficient dimensional layout. If you happen to have a lot that is less than 34' wide and you would like to have a carriage house, it is possible to fit such a building on a smaller width lot, but a designer will have to modify or create a special plan for those lots. In many cases, Carriage Houses will be more likely to be built in areas of the city with higher land values and/or as an enhancement to properties with existing buildings on wider lots.

#### The Value of Alleys

First, a great majority of blocks in the City of South Bend with significant infill potential have access to a rear alley. This public right of way doubles the accessibility to a given lot and allows for cars to access rear garages and parking areas without having to come directly from the street. This is advantageous for several reasons, including:

Alleys allow people to walk on sidewalks, bicyclists to ride on the side of a street, and kids to play in front yards without the interruption of driveways and vehicles. This creates safer streets and sidewalks for all users and results in more space for on-street parking.

Alleys allow for independent access to a site. Carriage Houses are easier to reach, and larger buildings and sites can have parking spaces directly adjacent to the alley which effectively becomes the drive aisle. This creates better proportioned, more functional backyard spaces between the parking area/garage and the residential structure.

Due to the many financial and planning related advantages, the city zoning code requires that all lots that have access to an alley to use it for vehicle access. Per the zoning code, properties with alley access will not be issued a curb cut permit by the city for off street delivery.







After choosing a lot and building type, it is important to understand all the attributes of the site itself in order to devise the remaining elements required to obtain final site specific approvals from the city. While there are a number of things that should be examined for environmental or legal risks prior to construction, this section focuses on describing steps and resources to obtaining a building permit.

A resource that will be useful to all subjects in this section is Indiana 811. Consisting of companies that operate underground utilities in Indiana, this free service helps prevent damage to buried utilities and can provide aggregated locational data of public utility lines servicing a site.By requesting a Design Ticket, you will receive location information and drawings from utility companies with service lines in the vicinity of the project's address. A link to this resource and more information can be found at <a href="https://indiana811.org/pros/">https://indiana811.org/pros/</a>



# BECOME A PRO AT SUBMITTING REQUESTS ONLINE

#### **EXACTIX HOME**

Whether you dig every day or every so often, submitting locate requests online, 24 hours a day, 7 days a week, is the easiest and most efficient way to notify Indiana 811's member utilities. If the planned excavation will only span a single street address, submit a ticket with Exactix Home to request that the approximate location of our members' buried utilities be marked at least two full working days prior to breaking ground.

All users of Exactix must create an account in order to submit a locate request.

#### **SUBMIT A TICKET**

Screengrab of 811 site, must create an account to submit a ticket (explainer/sources)

#### **Getting a Survey**

At minimum, a boundary survey must be completed of the site. This ensures the corners of the site create accurate boundaries and have a precise legal description. This should result in two things from a land surveyor: a drawing of the site depicting basic elements and an installation of permanent boundary markers at the site that can be referenced before or during construction.

While not required for all types of projects, it is highly recommended to consider getting an ALTA survey, which is a more comprehensive (and likewise costly) survey which provides additional critical information about easements, right of ways, infrastructure connections, and more. When requesting an ALTA survey you can opt into specific attributes, besides the minimum industry requirements essential for an ALTA survey. Topography lines are not included in the minimum ALTA requirements and may be the most useful addition to opt for. An ALTA survey is likely to be required by banks for projects of two units or more and definitely required for projects of 5 units or more which are financed by commercial grade mortgages.

Detailed information about ALTA surveys can be found in this comprehensive resource: <a href="https://www.partneresi.com/sites/default/files/alta-survey-handbook.pdf">https://www.partneresi.com/sites/default/files/alta-survey-handbook.pdf</a>

Once the appropriate survey is completed, a licensed civil engineer or architect can then locate the building's outline accurately on a scaled site plan showing the property line and note its compliance with other zoning requirements. This site plan will be a required element in obtaining zoning approval and building permits for the structure.

#### **System Development Charges**

As of 2021, the city charges fees to attach new building service to the municipal water and sewer systems. The complete ordinance directing these fees can be found here: <a href="https://library.municode.com/in/south\_bend/codes/code\_of\_ordinances?nodeId=SUHITA\_CH17SEWA\_ART10WASEINCOFE">https://library.municode.com/in/south\_bend/codes/code\_of\_ordinances?nodeId=SUHITA\_CH17SEWA\_ART10WASEINCOFE</a>

In short, each residential unit constructed is required to pay \$1,145 for a sewer connection and \$500 for a water connection.

Additional information can be found by calling the the Permit Office at 574.235.9251 or at <a href="https://southbendin.gov/department/public-works/engineering/">https://southbendin.gov/department/public-works/engineering/</a>

For buildings with 5 residential units or less, system development charges will be waived; additionally non-profit development corporations are also exempted.

#### **Electrical/Gas Connections**

For information on connecting buildings to electrical and natural gas services, please contact NIPSCO at nipsco.com or 1-800-464-7726. Natural gas service will come from the street and most blocks with alley right of ways will have electrical service down the alley. It's important to note the location of electrical poles in the alley as two story buildings like Carriage Houses typically need to be 10' away from the power lines.

#### **Water and Sewer Lines**

In South Bend, water and sewer lines come from the street. Sewer lines are most often found near the center of the right of way and water lines are located on one side of the street (meaning the closest water line to your property could be across the street).

To verify the availability of utility service, the following form must be submitted to the Department of Public Works. <a href="https://southbendin.gov/wp-content/uploads/2018/05/Form\_Utility-Verification\_Master.pdf">https://southbendin.gov/wp-content/uploads/2018/05/Form\_Utility-Verification\_Master.pdf</a>

Because the construction of such utility lines will cause disturbance to the street and sidewalks, the city charges nominal fees for closing the right of way either by the day or week as specified by the following fee chart: <a href="https://southbendin.gov/wp-content/uploads/2018/05/Fees\_EngAndPermits.pdf">https://southbendin.gov/wp-content/uploads/2018/05/Fees\_EngAndPermits.pdf</a>

Many times the cost of these permits, the associated street closures, and the required rented signage that indicates these closures will be included in a bid by a utility installation contractor. However, it is good to know what these charges are like to ensure proper order of magnitude.

In addition to the permit fees, a developer needs to plan for the costs of construction for this work. The line depth accounts for the largest variable in price between the same work done in different locations, and is largely dependent on the depth of the sewer main line. A typical connection depth is 10'-12' below the surface. Depths deeper than this can cause special safety equipment and shoring devices. A typical installation of water and sewer lines can run \$15,000-\$25,000 based on the above assumptions. While a private contractor will dig the hole and connect the sewer line, they will coordinate with the Public Works department to complete the water line connection.

The City of South Bend has created a Sewer Lateral Reimbursement Program to assist in offsetting the costs associated with connecting lines to city mains. The purpose of the program is to help encourage new construction housing infill in older neighborhoods where infrastructure may be more expensive to construct. The application link below outlines full eligibility and procedures for applying to the program. It is critical to note that in order to qualify for the funds, the project must be approved by the city before any construction is completed.

https://southbendin.gov/wp-content/uploads/2022/08/Sewer\_Lateral\_Program\_Application.pdf

#### **Rain Gardens**

In short, raingardens have a bowl shape to hold water away from structures and surfaces. They can take on a number of shapes and sizes, but the most important part about determining their attributes is to match the inflows with capacity. It is ideal to keep a rain garden about 10 feet from a building, both yours and any neighboring structure. There are many, many how-to guides available online to provide direction on how to plan and build a rain garden.

A very detailed guide by the Wisconsin DNR meant for northern climates, including sample plant layouts for different soil conditions and sun exposure is located at:

https://dnr.wi.gov/topic/Stormwater/documents/RainGardenManual.pdf

The City of Owatonna has also created 6 rain garden designs for different conditions:

https://www.ci.owatonna.mn.us/499/Rain-Garden-Design









Rain Garden Examples
(All images © Mississippi Watershed Management Organization)

#### **Swale**

A swale is essentially a linear rain garden and is often tasked with filtering and disbursing water between buildings or alongside parking lots and streets. Swales are typically shallow, but can be very wide and thus low sloped.





Swale Examples (All images © Mississippi Watershed Management Organization)

#### **Pervious Pavers**

Pervious pavers are paving bricks that have intentionally spaced gaps. When rain falls, it is able to quickly find a path in between the brick seams and absorb into rock and sand base underneath.



Pervious Paver Examples (explainer/sources)



#### **Above Ground Cisterns**

Above ground cisterns can come in a variety of sizes and proportions. This guide identified three sizes that are commonly available, progressively larger in capacity and easily fit in areas conducive to rainwater capture. When choosing tanks, be sure to look for those which are for water as there are various grades of tank and those with ratings for harsh chemicals can be more expensive for the same size container. It is also important to have a gutter diverter or filter to keep leaves, dirt and other materials from entering the tanks. The rain catcher barrel also has a mesh cover that will filter large debris. Rainharvest.com has a wide variety of tanks and parts to browse.







Image 1:50 Gallon Barrel - Rain Catcher
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(explainer/sources)

Image 2: 300 Gallon Barrel - Chemtainer
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(explainer/sources)

Image 3: 1000 Gallon Barrel - Norwesco Placeholder caption for images (explainer/sources)

#### **Stormwater Management**

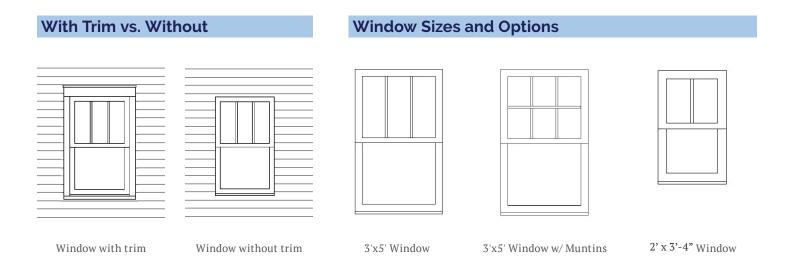
There are no requirements for construction phase or post-construction stormwater management plans or controls for sites under 1 acre in size. However, managing rainwater onsite is an important aspect to assist in preventing surface flow runoff from properties onto public right of ways, saving the city tens of millions of dollars annually in its attempt to reduce the environmental impact from its legacy combined stormwater and sewer pipe system. This system can overflow in high rainfall events, causing sewer effluent to be dumped in an emergency manner into local waterways. The city is currently spending over 200 hundred millions dollars to decouple and or fix the legacy system over a decade period of time. Each new development or redevelopment can do its part to keep its rainwater onsite for the first 24-48 hours after a storm to lessen potential flooding impacts to the public systems.

Information excerpted with permission from the Small Lot Rainwater Management Guide - By Electric Housing, with support from the Mississippi Watershed Management Organization.

Designed with cost effective construction methodologies in mind, the sets of pre-approved plans prioritize details and assemblies with high exterior quality standards without making these requirements cost prohibitive. By working with general contractors and special trade subcontractors during the design process, realistic cost estimates ensure a balanced approach between aesthetics, energy performance considerations, and project specific flexibility appropriate in neighborhoods across the city. Choices about elements in the interior of the buildings largely are left to the project team's discretion. The following sections address major issues or decision points that the owner, developer, and/or builder will have to resolve for any given project proposed.

#### **Window Options and Trim**

The window schedules can be found in the A3 section of each drawing set. The windows are sized to be completely consistent across all the buildings, with a 3'-0" x 5'-0" window that is used for all living and bedroom areas and a 2'-0" x 3'-4" window for bathroom and kitchen areas where countertops and other items restrict size. When ordering windows, builders should double check floor plan locations of each window to determine where tempered glass may be required by code. Window trim is required on the front and rear elevations as shown, but can be reduced or eliminated on the sides, unless located on a corner lot. On corner lots, the side facing the street must have trim around the perimeter of the window. It is encouraged that any windows which face a street have the drawn muntins (the implied dividers between sections of glass)



One of the first decisions is to choose an elevation and roof path as depicted in the drawings on G0.01 and A4.01. The distinguishing features between each in the 1 and 2 unit structures are outlined below. In conversations with contractors, Elevations A and C were seen as least expensive and as a matter of preference or habits of the contractor. There was a toss up between which was more expensive between those two, but Elevation B was estimated to be the most expensive. The more complex roof configuration and additional aesthetic rafter tail detailing drive the costs upwards. As a rough estimate, Elevation B might cost \$3,000-5,000 more depending on the building type. While there is no requirement for all items to be matching, it is possible to pair a Carriage House with a single or double unit structure and have an aesthetically pleasing partnership by choosing the same option letter.



#### **Elevation A**

Elevation A has thin columns and a balustrade (railing), single pitch porch roof and an 8/12 main roof pitch (more steep).



#### **Elevation B**

Elevation B has thick columns and open railing, a hipped (multi-pitch) pitch porch roof and a hipped 6/12 main roof pitch.



#### **Elevation C**

Elevation C has thick partial columns and solid half wall enclosure, single pitch porch roof with rafter tail details and a 6/12 main roof pitch (less steep). With minor modifications, this option could easily become screened in.

#### **Sixplex**

The Sixplex has more unique elements separating the Elevation options. From a cost perspective, there may be slight efficiencies within Option C, with tradeoffs using a roof structure that has less wood, but also low slope roofs have a tendency to have more costly, commercial grade roofing materials



#### **Elevation A**

Elevation A has a traditional look with a pitched front stoop roof supported by columns, single plane front elevation and a 4/12 main roof pitch (less steep). This would be the best option for for fitting into a surrounding neighborhood with smaller or shorter buildings.



#### **Elevation B**

Elevation B has a traditional look with a pitched front stoop roof supported by columns, triple plane front elevElevationation and a hipped 6/12 main roof pitch (more steep).



#### **Elevation C**

Elevation C has a more modern look with a flat parapet line, suspended flat awning over the entry and multi material front massing that wraps around the corners of the building.

Allowed deviations from plans include:

 Windows on side and rear elevation that are not required for egress or ventilation maybe removed.

For the most part, the windows shown on the sides of the buildings will not affect any crucial function as the bedrooms and key egress functions are on the front and rear elevations. At least one window must be maintained in the living room areas on the side of the structure.

 Windows may not be removed from any front facade or corner facade facing a street.

Most of these windows are essential for indoor egress reasons anyway, but the windows have been designed to provide a balanced front elevation thatmatches the character of similar styled houses in South Bend. Corner buildings have an elevated expectation to be a good neighbor along the street and frequent windows breaking down the facade helps to make a more pleasant visual experience. It also provides an eyes on the streesecurity function along the side street.

• Simulated divided lights (SDL) muntins may be removed or changed as desired.

The simulated divided lights are a fantastic feature to help provide unique character to the building. If there are cost limitations, consider keeping SDLs on the front elevation and removing them from all other elevations. The exact pattern can also vary such as colonial 6 square instead of a prairie three pane.

 Double-hung windows may be replaced with single-hung and in certain instances, casement.

The look of traditional buildings tends toward hung windows. Similar to SDLs, if you have a preference for another window type (like casement) consider those on the sides or the rear of the building. These buildings have been designed with cross ventilation in mind, so it is highly encouraged to maintain the operability of windows in all cases. For the modern looking Elevation C of the Sixplex, casement windows could be put on the front of the building. Combining the windows into one giant pane window is not allowed as it removes the vertical orientation of the building.

• A transom or square type window may be used in any bathroom location.

Use of a transom window is allowed as long it is the same width as the window shown. A square shape window is a more ideal swap and with a casement window style to maintain the ability to ventilate the bathroom.

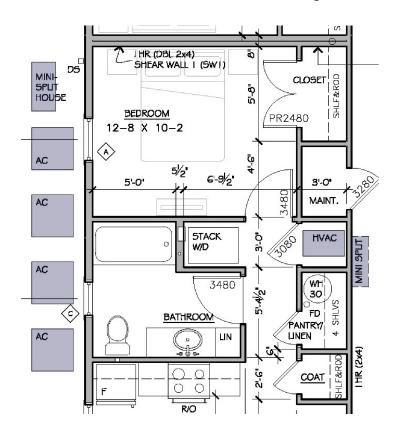
Images in the appendix of this guide show the particular windows that can be removed from the facades of each building. In order to qualify as the pre-approved design, no changes can be made to the front elevations other than what is outlined here or in previous drawings.

#### Allotments for Mechanical, Heating, Cooling, and Ventilation

Each of the floor plans have noted areas for the location of mechanical equipment. This includes heating and cooling, water heaters and sump basins. For options with a basement, these elements are located on that level and for buildings with a slab on grade, they are on the first level underneath the stairs.

The Sixplex has a more complicated layout and distributed mechanical system. Water heaters and mechanical closets are located in the floor plans along walls in the center of the building. In order to have proper chases for the mechanical exhaust decks, there are locations in units where the ceiling level has been dropped to create room for such ducts, which are shown on A6.01. These areas will also show up in building sections on A3.01. The general assumption of equipment for these smaller units is mini-split units for both heating and cooling.

Special to the Sixplex is the need for a fire sprinkler system. The major centralized equipment is located in a riser room off the front of the building and is where the water connection will come into the building from the street.

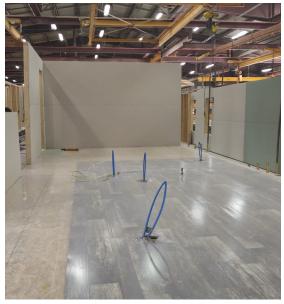


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### Small Scale Developer Handbook | Alt. Construction Methods

Each of the five building designs were evaluated by vendors and suppliers who are involved in construction methodologies besides onsite, wood stick framing. Several of these methods could be incorporated without any modifications whatsoever to the plans, while others may require minor modifications. Information about these systems and impacts to the designs are as follows:









#### Image 1: Panelized Construction

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#### Images 3 & 4: Post and Beam Construction

Placeholder caption for images (explainer/sources)

#### Image 2: Modular Construction

Placeholder caption for images (explainer/sources)

### Small Scale Developer Handbook | Alt. Construction Methods

#### **Panelized Construction**

This methodology uses standard construction materials, either wood or steel stud frames, to make wall panels most often 8-24' in length. These panels most often include the framing members, exterior sheathing and windows, and can include insulation (especially if the insulation is attached to the outside of the wall or sprayed as a thin layer on the inside). A crane is then used on side to remove the panels from a truck and lifted into place. The most advantageous parts to this type of construction is it allows for this somewhat lengthy process to start while foundations are being built, shortening the time to get to interior finishes, and building the panels in a controlled indoor environment can lead to better craftsmanship and less waste. Panels use standard construction spacing and methodologies and so can be customized to the dimensions needed, therefore can be made to fit the preapproved dimensions exactly.

Separately, a concrete panel company explained that their standard dimensions based on the typical sizes of the pans used to shape the concrete panel forms are slightly different dimensions than standard construction. This resulted in an optimized layout that was 12-18" different in each direction of the floor plan to not incur extra costs of special pours and formwork. These factories will produce detailed shop drawings in plan and elevation that can be used as submissions to the city to show the exact overall dimensions of the building that can be included as an alternative submission to be reviewed in a normal plan check procedure (and therefore not automatically pre-approved).

#### **Modular Construction**

This methodology also uses standard construction materials, but builds out a section of a building in its entirety - floors, walls, and ceiling. Combined together at seams often called 'marriage walls', modules can be positioned side by side or stacked on top of each other. While under construction in a plant, modules will often look like entire rooms of a building disassembled and will have nearly all the wall structure, electrical, plumbing, wall finishes, flooring, ceilings and interior walls completed before leaving the plant. These elements are carried together on a structural chassis where the longitudinal seams are bolted together and secured to a foundation stem wall or footing. The foundation type is either a crawlspace or basement.

### Small Scale Developer Handbook | Alt. Construction Methods

As the modules must be transported over roads, they are limited in the width per module, typically 10'-15' and can be anywhere from 24'-60' long. Different modular manufacturers have different standards for their module widths, which usually operate in a tight 2-3' range. The most optimal dimension for width is 12' because it takes advantage of the standard lengths of materials and also has cheaper transportation costs because it is not considered an extra wide load on highways (which require additional supervision and follow along cars for safety, as well as more costly permits). For some of the shorter buildings in the set (those 24-28' long), multiple modules can be loaded on one truck bed, saving costs in transportation.

Ultimately, these designs have to be approved and inspected by state agencies because they will show up to the site largely complete and the interior wall cavities already enclosed. Special coordination should be taken with city building officials to ensure good coordination, particularly with the on-site construction that still has to take place to build a foundation and do some exterior finish out and patching together the seams between the modules. Porches, stoops, awning and similar elements will also need to be site built.

#### **Post and Beam Construction**

The name of the method says it all. Vertical posts are set into piers set ideally at 4' or 8' distances apart, which are then connected by beams on the top of each post. Because the structural load of the building is carried by these large elements, the walls are largely frameworks to hold insulation and finish materials on each side. Standard roof trusses can then be placed spanning the building and set on the beams. Most often, post and beam construction is coupled with a slab on grade concrete floor, but can be done with a basement. Because all of the building plans were designed in 4' increments in mind, layout with post and beam will be very easy and efficient, such that it can be used to create the exact dimensional layout for pre-approval. There are local lumber yards which are able to provide layouts for the buildings with this material type and can connect you with framing contractors who specialize in this work.

### Small Scale Developer Handbook | Codes & Regulatory Issues

The pre-approved plans fall into two different categories of building code, the International Residential Code (IRC) and the International Building Code (IBC). All of the single unit buildings, Narrow College, Standard House, and Carriage House all fall under the IRC, as does the duplex. The Sixplex falls under the IBC and as a result requires a fire sprinkler system.

The Fair Housing Act applies to new construction buildings with 4 or more units. The Sixplex qualifies and as such, there are specific features of ground floor units that comply with accessibility requirements. Additionally, there is a side ramp that meets low pitch requirements. Unless topography or other site specific conditions necessitate an adjustment, these are required elements that should not be modified. Changes to the ramps would require further project specific review to ensure compliance.

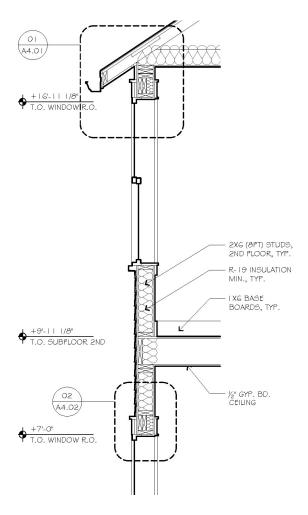
### Small Scale Developer Handbook | Codes & Regulatory Issues

## **Envelope Energy Code Compliance:** Performance vs Prescriptive Path

The state of Indiana has recently upgraded their code to make significant revisions to the state energy code. There are two different approaches to meeting this code. The Prescriptive Path states specific assembly thresholds that by using materials which meet the specifications, can allow the entire building to be passed. The Performance Path allows a wide range of materials and assemblies to be used, as long as performance based tests achieve the required thresholds.

In practice, most new residential buildings in South Bend have been constructed with 2x4 dimensional lumber. This set of plans has drawn 2x6 lumber in anticipation that this will become more widespread in adoption with the onset of the new building code requirements. The reasoning behind this is that the state of Michigan has had code requirements like the ones recently adopted in Indiana for many years and the standard practice for builders in Michigan is 2x6 construction. The City of South Bend encourages all construction to strive to meet and exceed these new standards to both save energy for the long term owners as well as create a valuable, long lasting housing stock for the city.

In addition to the 2x6 external wall construction, the wall sections and roof details show a raised square end to each roof truss, often referred to as the 'energy heel'. This squared end allows for a full layer of insulation depth to be applied across the entire roof line. The end of the roof trusses (the part sitting over the walls) are a critical location to have continuous and uniform insulation. If insulation at this juncture is insufficient or badly installed, it will create what is called a thermal break, which means air, water vapor and heat energy can travel unabated, potentially causing water to condense inside walls, causing mold and other costly damage to materials. Given the critical nature of this to the long term health and durability, this is a required element to include to achieve a pre-approved plan. Because such a truss is now an industry standard building element, there should be little to no cost ramifications to this detail as most trusses are built to order anyway.



Energy Efficient Wall Section (Sheet A-3.01 of Narrow House Construction Set)

### Small Scale Developer Handbook | Financial Considerations

#### **Explaining the Appraisal Gap**

South Bend has a considerable number of vacant lots, which are largely concentrated in the western half of the city. Due to various economic factors of the last 50 years, the value of existing buildings in areas with a high number of vacant lots is under the threshold by which it would cost in today's dollars to replace that very same structure which is 60-120 years old. This is one of a number of factors which has led to what is otherwise called the 'appraisal gap', which is when a building cannot be appraised at value equal to or more than its cost.

When a 1-4 unit building is attempted to be financed through a conventional mortgage tool, it is most often appraised in comparison to the value of similar buildings nearby. When there has not been new development in a neighborhood for a significant period of time or such comparison existing buildings have not been well maintained, those structures may not have values which match the cost of what it would be to replace them today. When this occurs, the new construction building will cost significantly more than the 'market value' of the property, whose value is being deflated by the low actual values of nearby properties.

This is the risk the bank takes into consideration when offering a loan, such that if the current borrower cannot make payments in the future, the bank will have to take possession and resell the property. If comparison properties are largely being bought and sold for much less than the value of the loan (the cost of the construction), the bank would take a loss upon resell. The difference between the cost of the structure and the value in the market is often referred to as the 'appraisal gap.' It is important to understand that if a structure is built with the intention for immediate sale, that it does not become so expensive in initial cost that its appraisal at completion is less than the cost.

The pre-approved plans are offered as one way to reduce design and related soft costs to small scale developments. By not incurring extra initial costs, the resulting building has the best chance to meet its appraised value.

It's important to note that structures with more than 4 units, like the Sixplex, are appraised differently under the guidelines of a 'commercial' appraisal process, which relies more heavily on the income of the building (its rental rates) than comparable sales values. While these buildings may have appraisal challenges of their own, at the current time, rental rates are quite robust and as such may be appraised more favorably. However, projected rental rates on a new construction project will also have to be approved by a lending institution, who uses information from the appraisal to determine whether rental rates are inline reasonable norms for comparable rental units nearby.

### Small Scale Developer Handbook | References

#### 1. Build South Bend

https://southbendin.gov/bsb/

#### 2. Indiana 811

https://indiana811.org/pros/

#### 3. 2016 Guide to Alta Surveys

https://www.partneresi.com/sites/default/files/alta-survey-handbook.pdf

#### 4. Utility Verification Form

https://southbendin.gov/wp-content/uploads/2018/05/Form\_Utility-Verification\_Master.pdf

#### 5. Right of Way Permit Fees Form

https://southbendin.gov/wp-content/uploads/2018/05/Fees\_ EngAndPermits.pdf

#### 6. Water and Sewer Installation Construction Fees

https://library.municode.com/in/south\_bend/codes/code\_of\_ordinances?nodeId=SUHITA\_CH17SEWA\_ART10WASEINCOFE

#### 7. South Bend Engineering Resources Page

https://southbendin.gov/department/public-works/engineering/