These new houses in Nashville feature contemporary lines, but match the size, scale and materials to the surrounding neighborhood. Horizontal siding, small metal-roofed porches, and steep gables help these houses blend in.

Infill Insights

by Karen Lang Kummer

A successful infill project looks like it was always there

Most new construction takes place on raw, suburban tracts of land. But a growing alternative in many areas is "infill development." Infill projects build on vacant lots in built-up areas. Usually found in larger cities, the infill trend is reaching small towns and older suburbs.

What makes infill construction different from suburban building is that infill tries to relate the design of the new building to the older surroundings, and needs to preserve the scale and character of the area (see Figure1). It doesn't stick a ranch-style home in the middle of a 1920s bungalow neighborhood. Project designers try to blend new buildings with their older neighbors. As architect/developer Ronald Gobbell of Nashville, Tenn. puts it, "Infill is like a great smile with a few missing teeth. We put the new teeth in, making sure that they don't stick out."

In fact, since infill is often done in areas designated "neighborhood" or "preservation" districts, many communities require that the design be approved by a special commission before allowing construction to begin.

While the actual building of an infill project follows standard construction practices, few infill projects are routine. The planning of such a project may involve some new or different steps.

Choosing the Lot

Finding a suitable lot for infill housing requires research. Local government officials may keep a list of available vacant lots, especially in areas where they're trying to encourage development. If you're lucky, these may be listed according to condition, ownership, available utilities, and other important features. Many cities own vacant lots, hold-overs from urban renewal days. These lots may be priced more reasonably than those in private ownership.

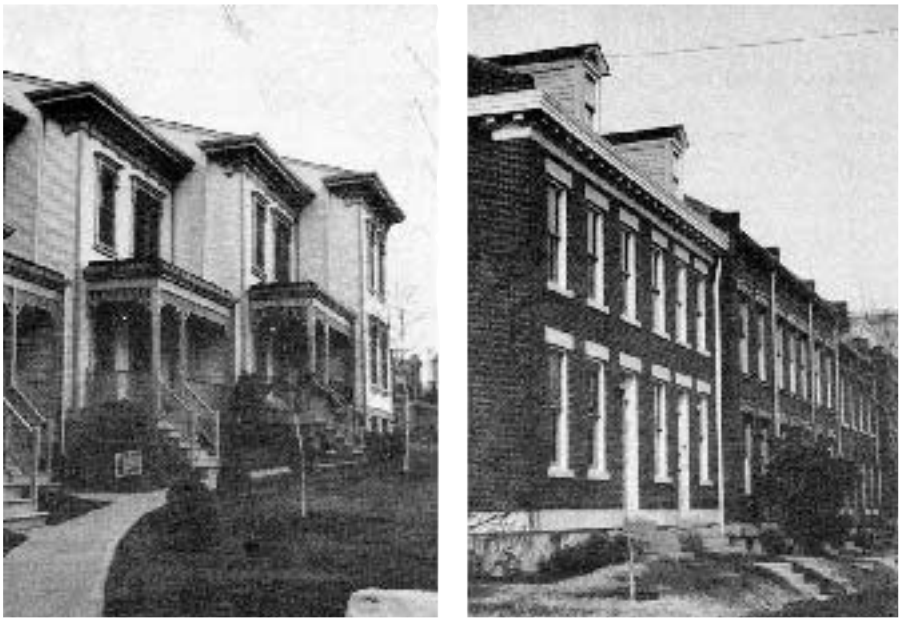

Figure 1. *Built around a circular landscaped court, these townhouses (left) in St. Louis use stock parts to simulate a Victorian motif. Also in St. Louis, replica housing (right) looks like blocks of row housing. Cornices use fiberglass or brick dentils.*

For each lot you're considering, you'll need to find out about ownership, size, cost, availability, and condition. An accurate legal description is also important. This information should be available from your city hall or community development department, your local or regional planning department, the local housing authorities, or the area tax assessor.

Once you've made a list of suitable lots, check for any legal, tax, or other encumbrances. Be sure that there are no back taxes due, liens on the property, or foreclosure proceedings in process.

While you're talking with city officials, ask about any new or different zoning regulations, or building or design requirements. If the vacant lot is in a neighborhood conservation or preservation district, you might find design requirements or an additional review process.

If you're willing to gamble a little, choose a vacant lot in a "transition" zone. To encourage development in marginal areas your local government probably offers incentives to builders. These could include enterprise zones, tax-increment financing districts, community development grants, or sales tax refunds. The city may also offer incentives such as lower priced or subsidized lots. They might waive some fees or freeze property taxes. In Maryland, for example, local governments can five builders a 5-percent credit against real property tax on construction expenses for architecturally compatible new buildings built in historic districts. You can spread this credit over five years.

Be sure to ask if there are any "strings attached" to these incentives, however. You may have to agree to a construction time frame or be responsible for infrastructure improvements. In St. Louis, the city requires you to replace sidewalks, and the sewer district often requires sewer upgrades.

Finally, be a little cautious. The lot may be vacant for a very good reason—especially if it is in a healthy market area. Look for site problems such as strange lot shapes, poor drainage, flood-prone sections, ravines, hidden building rubble, and other "profit-eaters." Conditions such as these don't rule out development, but require careful site planning and preparation.

Working with the City

It's always a good idea to learn local zoning and building regulations early in the game. It's even more important with infill projects, since these have additional requirements. Design guidelines are an example of one type of additional requirement; design-review-board approval is another. Don't assume approval by one agency is all you need. Find out early who has veto power over the design. A Nashville developer recently had a costly redesign imposed because the "house rules" were unclear. A neighborhood group with design veto power objected to the proposed sideyard setbacks and forced a major overhaul of the design.

Design guidelines explain what can and should be built to be compatible with the neighborhood. Usually these are published in booklet form and use schematic drawings to illustrate basic principles. If design-review-board approval is necessary, look over the application process and requirements. Be sure to allow enough lead time to schedule a public meeting if necessary.

The need for a variance could also lead to a project delay. Check with the city early to see if your project fits the vacant lot's requirements or if you need a variance. If it does, decide how much time to allow. You might as well check the normal building inspection process too; this can save you time later on.

Last, talk with the local utility companies such as gas, telephone, electric, sewer, water, and cable-TV, to see what infrastructure is already in place. Utilities on or near the site may be a significant cost saver.

Working with the Neighborhood

To have a successful infill project, you will first have to do some neighborhood and market research. Identify the potential tenants or buyers, and find out what size and type of building they are looking for. Michael Chappell, who designed and helped develop three infill projects in Nashville, says that the market study is the biggest hurdle that the developer needs to face "up front." first, look at the intrinsic value of the neighborhood; then think about the type of buyer willing to live there. Chappell suggests three basic questions. Who is buying? What are they buying? And, what are they paying? Overpricing the units dooms the project, but underpricing can doom the neighborhood to decay.

In St. Louis, much of the current infill construction is occurring near the historic Soulard produce market, a historic area appealing to young professionals. Projects within walking distance of financial districts, parks, rivers, or restaurant districts appeal to today's buyers. But finding the right target price for the location and the amenities offered is key. For example, in St. Louis, a recent project advertised eight townhouses and six loft condos priced from $67,500 to the mid $70s with 20 year 8.4-percent financing. They're selling like hotcakes.

As you do your research you need to find out the current and projected property values. Check recent sales prices at the assessor's office. Talk to real estate agents to get a better feel for real estate activity. Check out the age and profession of the residents, and see if there are any zoning restrictions for the site under consideration. All of this should give you a better feel for the neighborhood and may help you decide whether your project is feasible.

To avoid future conflicts with area residents, meet with them early in the project. This is important if you have to present your plans at public meetings or obtain government approval. Find a neighborhood representative who can give you tips on neighborhood sentiment. A city staff person in charge of the area, a member of the design-review board, an officer of the neighborhood association, or even a local minister can give you inside information about the goals of neighborhood residents. Establish a working relationship with them early, and ask them for input into the design and type of structure. This is especially important if you're contemplating a large project or if the project would have a significant impact on the neighborhood.

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Checking with the neighborhood may get you a lead on available lots. Often a neighborhood association buys vacant lots so that they can "control" development. If you are willing to work with the group on the size and design of your project, you may be able to purchase lots at a very reasonable cost.

For example, in the Edgefield district of Nashville, the neighborhood association bought seven vacant lots in self-defense after some incompatible structure were built nearby. Property values in the area rose, but they were willing to sell the lots at cost in exchange for some control over what was built.

Design of the Project

Stock plans for new suburban developments don't fit in older neighborhoods—leave them at the city gates. Instead, look at what is already around the site. Is it single-family or multi-family; frame or brick; one-story or multi-story; close to the street or

Infill Pros and Cons

Before you jump into an infill project, consider the pros and cons carefully. Not all succeed: In fact, when we *tried* to interview contractors who had completed infill projects, we found several who had left no forwarding address, one contractor "somewhere in Georgia," another with a disconnected phone, and another with a dragon at the switchboard and a pile of lawsuits. So be cautious.

Advantages of Infill
- Utilities in place with ease of hookups
- Infrastructure in place—street, sidewalks, lights
- Mature landscaping
- Close to city amenities—church, school, shopping
- Close to jobs
- Accessible to public transportation
- Less expensive lots
- Availability of government funding
- Strengthen city neighborhoods
- Ready market of childless professional couples.

Disadvantages
- Questionable neighborhoods
- Uncertain marketability
- Hard to finance
- Need for innovative design; no stock plans
- More governmental approvals needed, design review
- Questionable school systems.

Making Infill Fit In

What makes an infill project work? Keeping the design consistent with the surrounding neighborhood is the key. Some cities have design guidelines. Even where no specific guidelines exist, a good design can improve marketability.

Here are some thumbnail sketches to help you develop good infill designs.

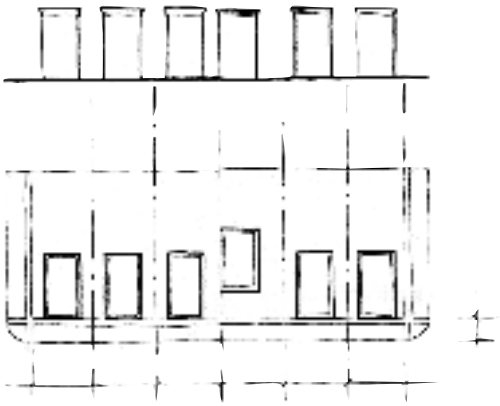

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Figure A. *Site considerations include the size, shape, and location of setbacks, side yards, and back yards.*

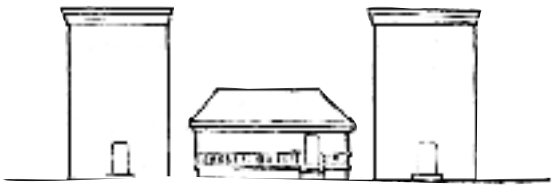

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Figure B. *Consider the building shape, height and width; for instance, tall and narrow or short and wide.*

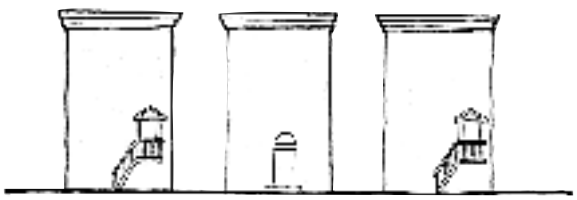

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Figure C. *Locate the entrance correctly: including shape, size, and location of any porches.*

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Figure D. *Facade details can improve compatibility: Consider cornices, lintels, railings, trim, and so on.*

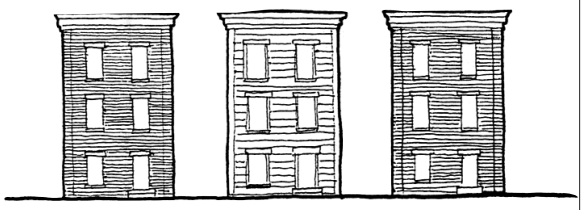

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Figure E. *Building materials also play a role in neighborhood blend: Look at size, color, and texture.*

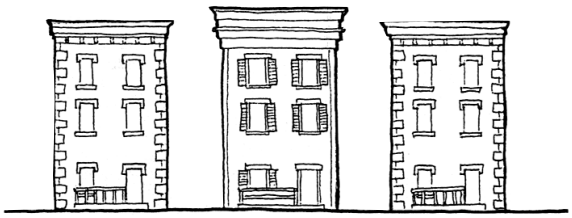

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Figure F. *Windows and doors can be one of the most important design criteria: The issues are size, shape, quantity, and location.*

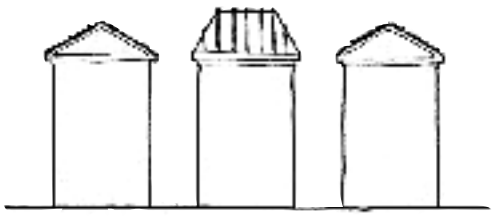

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Figure G. *Get the roof wrong, and you've lost the design: Try to match size, shape, slope, and material.*

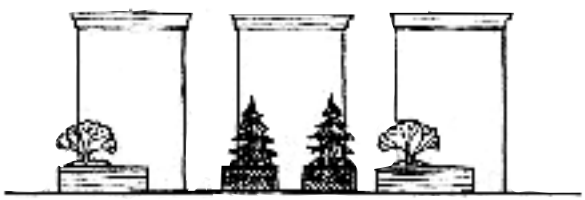

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Figure H. *Landscaping and fences tie a project together: The size, shape and location, type, and material tie the infill project to its neighbors.*

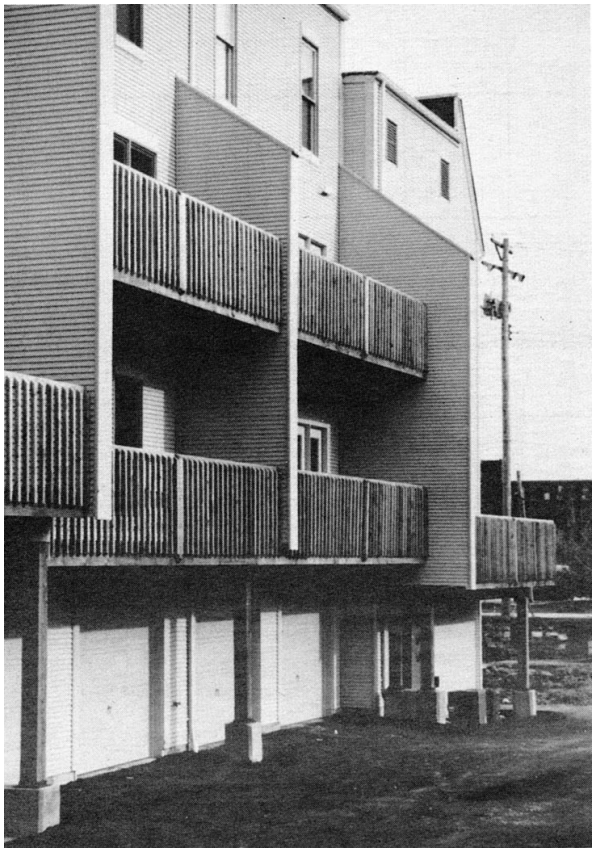

Figure 2. *While most infill tries hard to blend with the streetscape, the rear elevation can be thoroughly modern. A two-car garage under the units, private balconies for barbeques, and lots of vertical space make these mid-$70,000 units attractive to single professionals.*

Figure 4. *Stock parts from millwork companies create an instant vintage feel, but this new rowhouse is actually high density—four units packed beneath the unifying porch.*

Figure 3. *Brick fronts and sidewalls disguise this new construction. But the back of the building tells that it's infill—by the extended porch, balconies, integrated landscaping, greenhouse windows, and detached garages.*

with a large setback; row house or detached? Study the project in terms of the site and the surrounding buildings. Look at mass, scale, placement, and zoning constraints. What are the density, setback, and parking requirements? All of these factors are important in deciding the design of the infill structure. Arvid Elness, a Minneapolis architect, feels that "builders should be able to improve older areas without destroying the character of the street. Keep the porch. Keep the side yards. But make the function of the house match the functions buyers need today" (see Figure 2).

With careful planning of exterior features, a multi-family building can look like single-family housing from the street. Higher densities can make a questionable project fly. And if you're careful about design, you can win over the neighborhood by making your multi-family housing compatible with the surrounding single-family neighborhood (see Figure 3).

If the city has design guidelines for the area, study them to find out what you'll need for design-review-board approval. The guildelines are used to maintain the special visual and spatial qualities that an area is trying to protect. Guidelines usually require the new project to be similar to, or at least consistent with, the other buildings in the neighborhood (see "Making Infill Fit In," previous page).

Good infill design doesn't have to be expensive. The keys are to pay attention to scale and proportion and to use stock parts in creative ways. In Nashville's Edgefield neighborhood, the city and neighborhood wanted the new building to be compatible with the material, shape, form, color, and texture of the old. The contemporary designs blend into the neighborhood because they have the same basic shape and feel as the rest of the buildings.

Some developers go farther, however, and build historical replicas. Their market studies show that people want a very traditional exterior, but a modern interior. These replicas are usually simplified versions of their neighbors. One St. Louis firm uses contemporary technology to recreate "heritage." They use precast concrete that looks like stone or cast iron; a brick veneer, complete with dentiled cornice detail; and modern trusses hidden behind a parapet facade. Truss construction allows the interiors to have light, open designs, lots of windows and skylights, and usually a deck or balcony in the rear. Two-car garages are standard, as are microwaves and utility rooms.

For finish work you'll find a new class of construction suppliers making components for old and "new-old" housing. These companies offer stock house parts you can adapt to infill buildings. You can order millwork, columns, or fiberglass moldings that look like wood or stone. Or with a little imagination you can do your own detailing from common lumber stock. Look at the surrounding neighborhood and try to visualize what parts make up the whole. For example, if you remove the brick mold, you can match today's stock windows to old. The look of yesterday's porches or cornices can be recreated from stock millwork (see Figure 4).

Site Preparation

Having streets, sidewalks, and utilities in place is one great advantage of infill housing. However, the trade-off is that site preparation costs can escalate. Debris from old buildings, unusable foundations, or defunct utilities may lurk underground. Even doing your homework beforehand can't prepare you for the unexpected. One infill project in New York uncovered automobiles buried on the site and rubble fill deeper than the proposed foundations. Ronald Gobbell of Nashville found a previously unknown cistern on the site; of course "it was in the worst possible place."

Richard Bruno, a St. Louis developer, found that the demolition contractor hadn't bothered to terminate the water lines at one site. Instead he merely crimped them. Excavation uncovered a small "swamp."

Lot size is an important consideration too. Small sites offer few chances to reduce costs through economies of scale, but might be just right for a small contractor wanting to get some first-hand experience before moving on to bigger projects. Large sites attract large developers and often offer the same opportunities as suburban developments. It's the "middle-of-the-road" project, one that's odd in size or square footage, that you should watch our for. Medium-sized projects can be too large for single-family builders but too small for apartment-complex developers. Maintaining quality and consistency in construction for that size of project may prove challenging

As fringe development becomes more expensive many builders may find that infill lots are a suitable and affordable alternative. With careful planning, builders can "put the smile back in the neighborhood." ■

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