Topic 16: Residential, Commercial, & Industrial Use and Development

Development is the process of acquiring land (unoccupied or with improvements to be demolished) and converting it to a more valued use through improvements *to* the land (utilities, infrastructure) and improvements *on* the land (buildings), or converting existing improvements to a different use. Real estate development and construction are major factors in the U.S. economy. These activities provide, directly or indirectly, millions of jobs, and they constitute a significant portion of our country's GNP. (It is interesting to note that lobbyists for the real estate brokerage, development, and construction industries exert much influence on the executive and legislative branches of both the federal and state governments. In fact, the National Association of Home Builders, or NAHB, operates out of Washington, D.C. rather than larger New York; the Illinois Association of Realtors® is based in Springfield rather than larger Chicago; and the National Association of Realtors® has its administrative headquarters in Chicago but also maintains a research and lobbying headquarters in Washington, D.C.)

However, the development and construction industries are very cyclical. Income and employment can be highly uncertain, and much time is required in planning a project. Sometimes the economy changes considerably before a project is completed, and an investment that "looked good on paper" can turn out to be a failure. [The NAHB/ Wells Fargo Housing Market Index is a number, ranging from 0 to 100, based on a monthly survey of home builders' views of current home buying/shopping activity and expectations looking six months ahead, with values increasingly above (below) 50 indicating stronger (weaker) views regarding the "pulse of the single-family housing market."][1]

I. Issues in the Development Process

A. Forecasting and Planning

1. Market or Feasibility analysis – estimates whether a contemplated project's expected cash flows are sufficient to cover all costs and create value. What types of projects are needed in the market area? The analyst must consider general economic trends that affect demand (including employment and population); rent levels; vacancy rates and the supply of competing projects in the area (both those completed and those under construction), and absorption rates; financing availability; tax advantages and other subsidies to development; and the degree to which recent trends might or might not be expected to continue. (In late 2019 major private equity firm and real estate investor Blackstone Group created a logistics company and started buying warehouses near many large urban centers in anticipation of growth in on-line retailing. But spring 2024 reports showed that too much warehouse space then had been created, with vacancy rates increasing and rents down.[2] And senior living and health care facilities also may have been overbuilt, as improved "aging-in-place" technologies allow older people to remain in their own homes longer. In fact, as many "white collar" workers found that they liked working from home during the 2020 – 2021 Covid-19 economic shutdown, some analysts predicted a future with fewer downtown office buildings and larger suburban houses built with dedicated home office space. Markets are complex, and demand for various types of real estate services can be extremely difficult to predict.) It generally is the same process for:

- Residential: markets for single-family, multi-family, temporary lodging properties
- Commercial: markets for office, retail properties
- Industrial: markets for warehouse, manufacturing facilities (access to transportation linkages and electric power are especially important for these property types)

Late 2022 news accounts related that large city governments were encouraging developers to repurpose empty downtown office space to affordable apartments,[3] while the still-troubled retail sector was seeing some unexpected strength, with less need for repurposing properties like higher-end malls, as in-person shopping returned, and physical stores served as pick-up points for on-line purchases.[4] And the year's rapid run-up in interest rates scared home buyers away, turning a shortage of newly-built houses into a glut in some areas, and leading builders to sell large numbers of new houses at discounted prices to companies planning to rent them out – much the way that institutional investors got into the single-family rental business after the 2006-2008 mortgage lending meltdown.[5] (Interesting tidbit: as of early 2024 the National Association of Home Builders estimated that 10% of new homes were being built to rent out. Real estate investment trusts (REITS) or other large investor groups that create neighborhoods of new rental homes tend to build them with features that promote easier maintenance, including wider hallways and stairwells to reduce paint scratching when tenants move furniture in and out.)[6]

Also recall that new real estate services that are created for reasons other than growth in the area's economic base will succeed only by taking users away from existing housing or commercial/industrial facilities.

2. Location analysis – analyst must seek sites suitable to what was learned in the market analysis phase. The acquired parcel must be of appropriate size and have sufficient access to utilities and major roads.

3. Approval – analyst must predict whether local authorities will approve the proposal. Must prepare a formal plan, with a survey and plat map, to submit to the local planning commission. One big step might be gaining approval for the included land to be annexed into a nearby town so services like water and police/fire protection are provided for. In late fall of 2022 Arlington Heights approved a "pre-development" plan with the Chicago Bears, following the football organization's agreement to pay $197,200,000 for the old Arlington Park horse racing facility. This step did not commit the city trustees to approving a final plan, but showed a desire to work toward a formal agreement. While the Bears had said they were not seeking public funding for building the $5 billion domed stadium, an issue to resolve was the degree of tax abatement or other government assistance requested for the broader project.[7]

In formulating a plan, the analyst must take into account numerous tradeoffs:

- Price *vs*. quality or quantity measures (*e.g*., less land per resident and shorter lengths of road per resident are needed for multi-family residential units than for detached houses)
- Aesthetics (*e.g*., save mature trees) *vs*. ease of site planning
- Privacy (away from town) *vs*. access (nearer to a population and employment center)
- Ease of construction *vs*. scenic topography – rolling hills, woods, streams. Think of the famous *Fallingwater*, the Frank Lloyd Wright-designed house in Pennsylvania built of locally quarried stone atop a waterfall. Late Seattle Seahawks owner Ken Behring built a 27,000 square foot house, with a design based on *Fallingwater*, forty miles east of San Francisco in the late 1980s.[8] (A Wright house along the river in Kankakee was for sale in April of 2024 for $779,000, and the house next door is also Wright-designed – one story holds that after the first house was built the owner's sister was so impressed that she had Wright create one for her, as well.[9])
- Efficient use of land *vs*. preservation of open space – the narrow Flatiron Building was built in New York City in 1902 to fit a small, triangular piece of land where 22nd Street, 5th Avenue, and a diagonal Broadway meet. The National Historic Landmark structure sold at auction in May of 2023 for $161 million, after the highest bidder at an auction two months earlier could not come up with the $190 million he had offered.[10]

B. Problems and limitations
1. Soil – is it stable enough for the construction that is desired? Is drainage adequate? Are wells and septic systems possible? Many areas within Illinois and other states are subject to mine subsidence, in which the "pillars" left when substances were extracted were too small to permanently support the ground above. Subsidence is a "sinking of the ground because of underground material movement, most often caused by the removal of water, oil, natural gas, or mineral resources out of the ground by pumping, fracking, or mining activities."[11] Results can run from a slight tilting of a house (dangerous if natural gas lines break) to large sink holes. A huge 100-foot wide, 50-foot deep sink hole opened in Alton's Gordon Moore Park soccer field, constructed above a limestone mine that lies 170 feet below the ground surface. No one was at the field when the hole opened up, so there were no injuries, but the park was closed indefinitely so that engineers and geologists could study the problem and figure out the needed repairs.[12]

2. Utilities – what will it cost to run power, water, and sewer lines to the site? For a large development, this cost should be computed on a per-lot or per-user basis.

3. Access – will new roads have to be built? Are services (police, schools, medical care) available?

4. Government – are there any potential problems with zoning or environmental protection laws? Developer must normally post a guarantee of performance (surety bond) to assure that the completed project will be in compliance.

5. Financing – high up-front outlays must be met, and borrowing costs can rise unexpectedly with unforeseen delays. Does the developer have adequate resources, or should a syndicate be formed to share costs and risks? (*Syndicate* is a general term that can include partnerships along with corporations, trusts, or various other limited liability plans. In a limited partnership a general partner with unlimited liability might provide the land and manage a development, while limited partners, with limited liability, provide money and can lose no more than what they have contributed.) Will local government support using tax-increment financing (TIF), in which a local jurisdiction provides subsidies to developers that build projects in a designated TIF district, and in return that local governmental unit gets to collect the increased property taxes that the new projects generate for a number of years?

6. Degree of development – a developer may wish to begin with a small portion of a planned project, to generate some cash and assess its performance. One method is attempting to buy *options* on adjacent tracts instead of immediately purchasing all of the land that will be needed if the project goes well.

C. Covenants and restrictions

Because the developer (a person or business) is the owner of the land to be developed, he (or it) can place covenants or "deed restrictions" on future use. Examples: lot size, building size, architectural style, maintenance requirements, prohibition of certain kinds of animals (horses) or outbuildings (barns) or vehicles parked outdoors overnight, prohibitions on using residential property for business purposes, reservation of a conservation or scenic view easement (to assure buyers of lots that certain land will remain undeveloped and/or views will be unobstructed). A homeowners' or community association may be created, as part of the development process, to handle duties such as enforcing restrictions and collecting fees to pay for expenses affecting all lots. In a residential development, unpaid homeowner association fees or dues generally constitute a lien against the value of the home.

When a restriction is violated, the original seller (developer) or subsequent owners typically can enforce it, but they may need to prove that they actually have sustained damages. Restrictions may be enforceable even against a party that did not know of them if the banning of particular uses or practices should have seemed obvious. (Restrictions such as minimum lot size requirements are sometimes found to be discriminatory, and therefore illegal.)

Remedies – the violator is enjoined from engaging in the prohibited behavior, or is assessed damages. Someone trying to enforce a restriction of this type generally does not hold a lien through which they can force the offender's property to be sold (unlike the lien that exists when homeowner association dues are unpaid).

Termination of covenants – there are many ways for these restrictions to be terminated. Possibilities: eminent domain, change of circumstances (*e.g.*, Jesse Fell's prohibition of liquor sales in all of Normal was discontinued in the early 1970s), waiver (restriction has been openly ignored for so long that the courts will not continue to enforce it if someone brings suit).

Example mentioned in an earlier Topic: a developer prohibited horses in a subdivision just outside of a city's limits (where there were no legal restrictions against horses), in the belief that he would be able to sell lots more easily and for higher prices if buyers could be assured that their neighbors would not keep horses. But many people had horses there anyway, and other owners did not complain, so when a suit was finally brought after many years of horses being present on the land the court would not enforce the restriction.

[Does it seem fair or appropriate that a real estate developer, or even the owner of just one parcel of land, can put restrictions in place that will limit all future owners' freedom of action? (Restrictions are enforceable in court only if they do not violate fair housing or other laws.) The answer is yes, because any net economic cost the restrictions create is borne by the party that imposes the restrictions. Earlier we looked at fee simple determinable/fee simple on a condition subsequent estates, which might prevent future owners from selling alcohol on the premises, or from using the land for purposes other than farming. In limiting future uses, a land owner might limit interest on the part of potential buyers, and with less competition on the buying side of the market the price received in any transaction is likely to be lower – a buyer who knows she can never operate a restaurant that serves alcohol at that location, and can not realistically expect to sell to a party that wants to have that kind of business until many decades have passed, can not justify paying top dollar. We might think of the offering price being reduced by the present value of lost future cash flows the buyer would expect to suffer through the restriction. The land owner thereby pays the price for enforcing those preferences against others. And of course restrictions are voluntarily accepted by those who buy, since potential buyers can not be forced to buy no matter how low the offered price is; they can find other land. In fact, a developer seeing too little interest among buyers might have to rethink particular restrictions, and remove them in order to sell the land (the party that puts restrictions in place generally can remove them).

Real estate can not be moved to a new location, so what occurs on land can affect the desirability and value of the land around it. A commercial real estate developer who restricts the future sale of alcohol on all parcels in a development might be trying to generate a net increase in land values by assuring all potential buyers that they will not be disturbed by traffic, noise, or safety issues that might accompany a nearby bar. Or he could restrict alcohol sales on most parcels to give a restaurant/bar operator assurance that there will not be direct competition next door. In the residential development case discussed above, the developer was actually trying to use the prohibition of horses to maximize the value of all the land in the development. He thought the restriction would provide a net benefit, increasing purchasing interest among those who would not want horses around them by more than he would decrease desire to purchase among the horse-loving crowd. With 20/20 hindsight we might ask whether the horse restriction was a bad business decision, since it seems that most buyers who did not keep horses did not ultimately complain about those who did, so they may not have placed significant value on the restriction and thus may not have offered the expected higher prices accordingly.]

II. Engineering and Construction

A. Costs

1. Why are they so high?

a. Materials – they can be bulky (expensive to transport), breakable (windows), affected by the weather (concrete), or scarce. Lumber, often cited as the highest expense in building a house, was especially expensive for many years, but a late 2022 news article reported that costs had fallen by 60% over the previous year.[13] An early 2023 account related that some large investment firms, including J.P. Morgan Asset Management, had begun buying timber land not for harvesting lumber, but for leaving the trees standing to sell *carbon offset* credits. (Owners of living trees can get paid to leave trees standing, and absorbing carbon dioxide, by companies that emit carbon into the air – an activity that could lessen the availability of lumber for construction use, and keep wood prices higher than they would be if the trees could be harvested.[14]) But then a summer 2024 account related that lumber prices remained low, amid reduced new home building.[15] In the year ending November 2022 paint prices rose by more than 26%, glass by 12%, and roofing material by 13%, while the diesel fuel to haul materials was up by 60%.[16]

And attempts to be creative may not turn out as planned; when the Walt Disney Concert Hall was built in Los Angeles in 2003 the curved and angled exterior of highly polished stainless steel was designed to reflect sunlight – the outcome was such intense reflection that pedestrians suffered skin burns, drivers were blinded, and nearby buildings became overheated. In 2005 the city ordered the venue to take remedial action, which its managers did by hiring a contractor to sand 833 steel panels to a duller finish.[17]

b. Labor – skilled, often unionized (especially for commercial property construction), localized markets. Supply chain problems, caused by reduced factory output and transportation bottlenecks in late 2021 and early 2022, led to construction delays (and fewer design/amenity choices for buyers) as contractors could not effectively plan their workers' schedules or have confidence that specific materials would be available. One estimate showed building labor costs increasing by 21% in the year ending in November 2022.[18]

c. Land – available building sites in the most desirable locations have long been scarce; Hong Kong has such steep terrain that most land is unbuildable and most residents live in very tall buildings.[19] Academics and urban planners have come to believe that U.S. land availability is too often restricted by parking space requirements. It is not surprising that office buildings and retail facilities need less parking in a world of remote work, on-line shopping, and ride sharing – and now we are seeing cities ending longstanding minimum parking requirements for new construction, with parking lots and garages in turn abandoned or torn down to free up land for development. A UCLA professor estimates that there may be up to seven times as many parking spaces in the U.S. as there are cars. Because business operators must pass all of their costs along to customers, unneeded excess parking spaces add to the cost of buying or renting real estate. Some building owners now lease nearby parking spaces and allow tenants to use them for an added fee. One study found that Buffalo, NY's population increased for the first time since 1950 after a 2017 elimination of parking space requirements city-wide. Philadelphia has imposed a 22.5% gross receipts tax on parking facilities; a goal is to encourage the redevelopment of parking lots and garages.[20] Of course while there may be more total parking spots nationwide than needed, finding one when you need it can still be a challenge in some places – think of ISU, where there are enough spaces in total, but still congestion in the heart of campus.

d. Firms – face high risks, so they must expect high returns.

e. Compliance with building codes – local governments determine minimum standards that all builders must follow to better assure safe and consistent construction. Code items can include materials of acceptable quality, ceiling heights, sprinkler systems, number and placement of windows, and some degree of energy efficiency (an addition to the codes in more recent years). A builder can go beyond minimum code standards for energy efficiency and seek certification under the federal Environmental Protection Agency's Energy Star program that rates buildings and appliances, or a favorable energy efficiency and sustainability rating under the private U.S. Green Building Council's Leadership Energy & Environmental Design (LEED) program. Aside from building codes, builders of new houses are bound by implied warranties of habitability and competent "workmanlike" construction.

By late 2021 amid the Covid pandemic, buyers and lessees were actively looking for commercial buildings with state-of-the-art air filtration systems, while building sellers and lessors, including those of upgraded older buildings, were advertising their properties' superior heating/ventilation/air conditioning (HVAC) systems. Empire State Realty Trust, a publicly traded corporation (more specifically a real estate investment trust, or REIT; see Topic 18) that owns nine vintage New York City structures – including the Empire State Building, totally modernized for energy use and air quality – publicizes a commitment to energy efficiency, stating that the Empire State Building itself will be carbon neutral by 2030.[21] (Post-pandemic office lessees also sought space, albeit often smaller amounts of space than rented previously, in attractive properties with day care and fitness facilities, to entice employees to return to in-person work.)

Residential property owners also are alert to energy efficiency issues. Recent years have seen increased use of electric heat pumps for home heating (and cooling) in the U.S. and overseas, with an estimated 16% of homes in the U.S. and 40% in Scandinavian countries (where fuel generally costs more) served by heat pumps. These costlier alternatives to traditional furnaces are said by some to be more efficient, cleaner, and safer (though also much noisier) than traditional furnaces fueled by coal, oil, or natural gas – but may need backup gas/electric furnaces for the coldest days,[22] and the heat may not feel as warm as what traditional furnaces create. In fact, heat pumps do not create heat; they move heat (extract warmth from outside air even when the temperature is fairly cold, and take heat out of the home to provide cooling in summer).[23] And energy efficiency can be an elusive goal; the buyer of a historic Frank Lloyd Wright home in Oak Park (where Wright lived and designed many local houses) found the geothermal heat system she installed had unexpectedly high electricity costs to pump water 450 feet underground and back up.[24] The attractiveness of rooftop solar energy panels also has abated with higher financing costs as interest rates have risen, and as local electric utilities have cut back on buying excess power from home owners as daytime household solar energy production has increased.[25]

Building codes and the inspection process came under scrutiny after 98 people died in the June 2021 collapse of the 13-story Champlain Towers South condominium complex in Surfside, Florida (a little north of Miami). The direct cause was said to be that water had corroded the steel reinforcement in concrete structural supports for a pool deck, which fell into an underground garage below it and opened a crater that caused the building to collapse. Some engineers suspected that the use of insufficiently strong steel "rebar" was not caught by local construction inspectors.[26] The deaths of six employees when a December 2021 tornado destroyed the Amazon distribution center in Edwardsville led Illinois governor J.B. Pritzker also to ask whether building codes need to be revisited.[27] Then on May 28, 2023 part of a six-story apartment building in Davenport, Iowa collapsed, leaving three residents dead and many injured. Some experts say the 1907 structure's design, with a gap between the building itself and its brick façade, led to the failure (bricks that broke off and fell into the gap prevented proper expansion and contraction as temperatures changed). The building owner pled guilty to negligent maintenance, and paid a small fine, though lawsuits against the owner and the city and other parties continue.[28]

Yet there can be tradeoffs as well. Stricter minimum residential construction requirements adopted statewide in 2002 (and revised every three years) have strengthened the housing stock along Florida's coast, but also increased the cost of seaside residences to the point that many longtime coast dwellers no longer can afford to live there.

Code problems are not confined to the U.S. Eleven late 2022 deaths on the Italian island of Ischia were attributed to inadequate construction of buildings hit during a mudslide. A news account stated that local politicians too often have allowed builders or home owners to avoid meeting building codes by paying fines that generate money, rather than meeting the standards. And violators are willing to ignore code provisions and pay the fines because permit applications on the island can take many years to be approved.[29]

f. Potential liability? Major lawsuits were filed in the months following the June 2021 Florida tragedy. In late June of 2022 a settlement of $1.2 billion was reached: $96 million to surviving unit owners, $70 million to the attorneys, and the rest to families of the deceased. Among the 37 parties that paid were architects, engineers, and the city (largely covered by those parties' insurers), though the largest payment, at $517 million, was to be made by the firm that provided security to the building. The second-largest, at $400 million, was to come from the developer of an adjacent high-rise building, whose 2015 – 2019 demolition and excavation work (including driving piles within twelve feet of the pool deck that ultimately fell) were alleged to have led to water runoff and vibrations so intense that they noticeably shook Champlain Towers South, damaging its structural supports and contributing to the later collapse of the building.[30]

By spring of 2022 developers were offering to buy older condo buildings in south Florida (the Champlain Towers South site sold for $120 million; that money also went toward paying the victims), so they could tear them down and use the land to construct new upscale residential facilities. Many residents and owner associations were happy to sell because of high expected costs of bringing their aging buildings into compliance as legally mandated 40-year inspections were approaching.[31] In fact, the state enacted new laws in 2022 requiring condo complexes taller than three stories to be inspected after 30 years (25 if within three miles of the ocean), with reports forwarded to local governments. In late October 2022 the city of Miami Beach evacuated the 14-story Port Royale condominium building when an engineer's inspection disclosed shifting and an expanding crack in a main support beam.[32] But there also have been cases of owners not wanting to sell. A Florida appellate court ruled in March of 2024 that a developer can not purchase most individual units in a condo complex and then use its majority vote to change a bylaws provision that requires 100% of the owners to consent to terminating the condominium agreement.[33]

Reserve funds now are mandated, so that money will be available to pay for important structural repairs when needed; Florida International University real estate law professor Suzanne Hollander says owner associations in past years often waived yearly contributions to required reserve funds to prevent complaints. The need to now make up for those missed payments, more than $100,000 per unit in some cases, can be difficult for retiree owners.[34] The new laws have led many such properties to replace boards consisting of volunteers (who would fear being held personally liable in some future catastrophe) with professional commercial real estate management firms,[35] such as industry leader Colliers International.

Another unusual residential structure that made recent news is condominium building Habitat 67, built in Montreal in 1967 in connection with the Expo 67 World's Fair. Each dwelling unit consists of one to four 624-square foot concrete cubes; the unstable-looking mass of modules, designed to give every unit a hillside-like view, resembles the tower in a partially complete Jenga game (google Habitat 67 to see pictures). A three-module unit was reported to be for sale in April of 2024 for $1.33 million. The eight-member owners' association has increased monthly fees and levied some substantial special assessments on the owners to pay for necessary structural work on the aging improvements, and a local developer has generated controversy by buying modules to renovate and rent out – the architect who designed Habitat, and some other owners, feel that having non-owners living in units will harm the sense of community that the property's unique layout is supposed to promote.[36]

Some of the "supertall" or "slimline" structures built in New York City in recent years have had severe problems; a judge ordered mediation in summer 2023 among the developer, builder, and lender of the unfinished 57-story One Seaport building of multi-million dollar condo units, over issues including the unintended three-inch tilt from true vertical that could interfere with elevators, windows, and other amenities.[37] (Then again we might note that our own ISU Watterson Towers' northeast side is reported to be 3.5 inches taller than the rest of the building.[38]) By spring of 2024 there were more than 230 "supertalls" (height of at least 300 meters, or approximately 984 feet) in the world, the tallest of which is the half-mile high, 163-story Burj Khalifa in Dubai. And despite problems with the area's high rises, the Waldorf Astoria organization is developing a 100-story residential tower in Miami. The unusual design looks like a stack of toy blocks; features include high-tech soil treatment for the foundation, a pendulum-like "tuned mass damper" at the top to prevent swaying, and sufficient weight to withstand the most severe hurricane-force winds.[39] The tallest building in the U.S. ultimately may be the proposed 1,907-foot tall, 134-story Boardwalk at Bricktown tower in Oklahoma City.[40]

Steel gave support to the original skyscrapers, but today's supertall/superthin structures are supported by ultra-high performance reinforced concrete that can withstand amazing amounts of weight and wind pressure.[41] Builders have begun using concrete panels, produced on-site with 3-D printers, to construct houses that are affordable and durable, but also have begun using modules, prefabricated off-site, to build apartment buildings faster and at lower cost.[42] Infusing concrete with liquid carbon dioxide creates "green concrete" that uses less cement, emits less carbon, and stores carbon to keep it from entering the atmosphere.[43] And do not count out the world's original framing material. A 2022 news report described wood that acquires the strength of concrete or steel through advanced pressing and gluing processes. "Mass timber" has provided the structural support for the 25-story Ascent building in Milwaukee, and architects have proposed wood-framed buildings as tall as 80 stories. Mass timber can be cheaper than steel and concrete (and environmentally friendlier), but also poses fire hazards that must be addressed, and wooden framing should be used only at heights sufficiently above ground level in a location that could flood. Another new product that has become popular in northern Europe for house building, "cross-laminated timber," consists of strong, fire-resistant, and energy-conserving prefabricated wood panels that can allow for efficient construction.[44] New office buildings in Florida often are built with materials and techniques that make them hurricane-proof.[45]

At least modern builders have it easier than their counterparts did 3,800 years ago. Rules 229 and 230 under the Code of Hammurabi in ancient Babylon stipulated that if a builder constructs a house that later collapses and kills the owner then the builder is to be put to death, while if the collapsing house kills the owner's son then the builder's son is to be put to death. (Wives and daughters do not appear to have factored into either side of the equation.) Less severe Rule 233 merely requires a builder who constructs a defective wall to repair it for the owner at the builder's expense,[46] seemingly an early application of today's "implied warranty of habitability" for houses.

2. Ways for developers and buyers to reduce costs

a. Use new materials and methods, especially factory-built housing. More than 22 million U.S. households lived in "modular," or manufactured, homes as of early 2024, though this figure represented just 15% of urban housing and 3% of rural housing.[47] Colorado-based modular builder Fading West estimates that factory assembly can reduce construction cost by 20% and time to build by half, relative to "stick-building" at the home site; one reason is that there are no weather delays. But the production line slows down with the need to meet different communities' building codes, and transporting finished modules to home buyers' lots can be expensive. One writer feels that coordinating building code requirements across jurisdictions and consolidating the modular home industry into a smaller number of larger, more efficient firms could reduce the price Americans pay for houses substantially.[48]

And of course another way to control costs is to build smaller improvements; houses built in 2023 amid the recent rise in interest rates were 5% smaller, on average, than those built in 2021.[49]

b. Inspections – you should not buy a house that does not get a favorable report from a qualified home inspector, including a report on energy efficiency. A 2022 news account noted special problems with oceanfront properties that inspectors must address, including the fact that the corrosive effects of nearby salt water reduce the expected life of an air conditioner to six years (versus twelve for inland homes). It stated that a home buyer in California, facing both water and earthquake issues, might need to deal with as many as fifteen specialist inspectors at a cost of up to $20,000.[50]

Water issues important to the development process include shortages of water in growing communities in the U.S. west (Las Vegas is a prime example) and aging water infrastructure. A community's water needs can be staggering; planners expect the Chicago area to use almost 1.1 billion gallons of water per day in 2025.[51] Even the moderately sized town of Normal draws about four million gallons of water each day from the underground Mahomet Aquifer, with ISU's campus alone using approximately a million gallons daily.[52] The cities of Flint, MI and Jackson, MS made news in recent years over severely deteriorated piping that resulted in undrinkable water and substantial leakage (Jackson faced added problems in the last week of 2022 when cold weather caused line breaks that left no pressure in the pipes, necessitating bottled water distribution).[53] Many infrastructure projects were undertaken after passage of the Clean Water Act in 1972, but much of the country's water piping is even older, often well over 100 years, requiring frequent repairs. As one expert observed, repaired pipes are still old and could break again at any time. In late 2022 the American Water Works Association estimated that more than $1 trillion will need to be spent on water projects in the coming years. Water infrastructure often is owned by private companies, which must cover their costs through their customers' bill payments [54] On top of infrastructure costs will likely be billions of dollars more for treating polyfluoroalkyl substances or PFAs, "forever" chemicals that seemed desirable in consumer products for resisting grease, stains, and heat, but contaminate water supplies by taking extremely long periods to break down.[55] And lead water pipes, banned nationally since passage of the Safe Drinking Water Act in 1986, continue to pose dangers; the federal government reports that Illinois has the most lead pipe relative to population of any state.[56]

On a less somber note: In some areas with water shortages, particularly in Arizona and California, home owners have begun having their lawns painted with a green, pet-safe paint. A home owners' association estimated that it would save $70,000 in water bills by having the green hue come from the spraying of paint rather than water.[57]

c. Accept smaller physical facilities or less privacy (smaller houses, no basement, shared physical facilities through condominium or zero-lot-line properties).

d. Redevelop existing improved properties to new uses, or build on out-of-favor land such as old industrial "brownfield" sites to save on land costs/perhaps get government assistance (especially for cleaning up any environmental contamination).

B. Construction activities or functions (it is unusual, but possible, for one firm to handle all of these pursuits):

1. Architectural – creates floor plans and elevations (simulated views of a building's exterior), and specifications or "specs" (everything from beam sizes and concrete grades to types of drywall, electrical wire, and plumbing pipes). [For insights on how architects have long tried to blend form with function, see our FIL 260 reading on "Roofs." Roofs' functionality can go beyond shedding water; for example, hip roofs discussed in the reading have more lineal horizontal feet bolted to the building than do gable roofs, and thus are said to be more resistant to being blown off in windstorms. "Flat" roofs, with only slight slopes, are made to be water-tight to keep out water that may not run off. But an old real estate witticism holds there are two kinds of flat roofs: those that leak, and those that soon will.][58]

2. General contractor – organizes the construction process and oversees work of all providers. General contractors must be licensed in the states where they conduct business; passing an exam is part of the licensing process. Those that specialize in residential construction typically employ their own carpenters, but delegate such work as concrete (with its immense equipment costs), plumbing, and electrical to …

3. Subcontractors – firms that specialize in a limited number of construction activities.

Usually a general contractor is deemed to have finished its work and earned essentially full payment when it has "substantially performed." A missing garage would likely give a home buyer justification not to pay the contractor, whereas a counter top of the wrong color would merit holding back only enough to replace the incorrect item. A residential contractor may be required by state laws to correct any construction problem or error identified by the home owner within one year of completion.

C. Construction bidding and financing
1. A contractor's estimate may be on a *fixed-bid* or a *cost-plus* basis.
2. A residential construction lender typically makes three "payouts" – first when the house is framed, second when it is enclosed and drywalled, last when it is fully completed.

Home building firms range in size from small local companies to nationwide operations. Many of the biggest residential builders are publicly-held corporations: D.R. Horton and Lennar are by far the two largest, followed by Pulte Group, NVR, and Toll Brothers (interesting tidbit: according to Robert Toll's October 2022 obituary, the high-end home building firm's former CEO believed the features most important to buyers of upscale houses are the "kitchen and master bedroom suite, with a luxurious bathroom" – or is that surprising?).[59] There are even a Standard & Poor's Homebuilders Select Industry Index (SPHOME) and a Dow Jones U.S. Select Home Construction Index, along with a number of exchange-traded funds that hold shares of firms in the home building industry, including the I-Shares U.S. Home Construction ETF (ITB) and the Standard & Poor's SPDR Homebuilders ETF (XHB).

Gains in the SPHOME index were greater during the 2020-21 period than those seen in the broad S&P 500 index – builders of upscale houses did especially well amid the Covid lockdowns, as supply remained low and more families sought to buy houses with more space or amenities for working remotely. The lowest and highest levels of the S&P 500 over the year that ended on November 5, 2021 (an all-time stock market high at that point) were 3,511.91 and 4,718.50 (high was 34% higher than low), while the lowest and highest SPHOME levels over that period were 5,364.75 and 8,112.88 (high 51% higher than low). But then by late 2022, amid soaring interest rates, the situation had reversed; ITB and XHB shares had fallen in value by more than 35%, a far higher drop than the overall stock market at about 25% for the year (Pulte stock was selling at just 5.6 times the coming year's projected earnings). Yet then between December 30, 2022 and April 19, 2024 the price per share for the broad based Vanguard Total Market Index ETF rose by 28.3%, while that for ITB had risen by 68.8% and XHB was up by 66.0%, so 2023 and 2024 to date seem to have been a good period for the home builders.[60] Many less efficient residential construction firms were likely driven out of business in connection with the housing and mortgage lending crisis of the 2000s; NAHB reports that the number of U.S. home builders fell by approximately half in the 2007 to 2012 period.

III. Impact Fees

Impact fees (or "exactions") sometimes are required when developers propose new projects. These locally imposed fees have been especially controversial when developers were required to provide amenities like parks in other parts of their communities, perhaps in return for zoning change approvals. But an exaction can create controversy even when charged to pay for improvements that the project's occupants will use but that lie outside the development site itself, allegedly because the development's existence will necessitate them – as when a company proposing to build new housing is told it must pay for building a new school to serve the increased population. Impact fees have been found by courts to be legal, and not, for example, uncompensated takings of private property. Illinois law allows jurisdictions to impose impact fees for public roads, parks, libraries, and schools (both land and construction costs). The fees can be met through a combination of land donated and money paid. While the fees are to be "proportionate to the needs specifically and uniquely attributable to the developer's activities," there can be disagreements on what needs are uniquely created by new development, what land value should be used in applying formulas for computing the fees, and whether such fees can discourage development that would economically benefit the community.[61]

Supporters of impact fees note that local governments have struggled for resources in recent years, and that without having private developers pay for some public amenities like school construction local officials might not be able to justify approving the project in the face of increasing costs for providing government services, or would have to undertake the even less popular task of increasing property taxes. (Some argue that services like education have increasing *marginal* costs, meaning it is more expensive to educate each successive group of students as more students enter the system, but that claim seems hard to support.) Proponents also argue that impact fees are necessary to assure efficient use of land, since a project that can not cover all the costs it generates (like the need for a new school) is not economically defensible.

Opponents state that higher costs of providing public services reflect issues other than just population growth in the area; water and roads are used more intensively as incomes rise, and not just as a result of local population growth. And some costs that local governments must deal with result from environmental or other regulations imposed at the state or federal levels rather than from serving more local residents. Opponents also note that a developer is likely to pass its cost of paying the impact fees along to buyers of lots, and that these fees often are applied on a per-lot basis, costing buyers of less expensive housing just as much in fees as wealthier buyers pay, with accompanying "regressive tax" impacts. They further argue that impact fees are not necessary for promoting efficient land use by having new developments pay their "fair share," even noting that passing impact fee costs for a new residential development along to the new homes' buyers creates a transfer of wealth from the newcomers to the jurisdiction's existing home owners – the higher cost of new housing will cause existing houses without the fees to be relatively more attractive and increase in value, since new and existing houses are substitutes for each other.

Consider a town of 6,000 people with a public school that has been in place for several decades and is at enrollment capacity. A proposed new subdivision would enlarge the town, creating housing for 6,000 new residents, and they would need a new public school. So the original residents say all right, you can join our town but we already have a school that was built years ago, so you have to provide a school for your neighborhood to make it fair, and then future property taxes we all pay will provide for staffing and operating both schools. But do the existing residents really bring a "school" to the table, or are the real estate services they use in educating students provided by a fairly old building that will have to be replaced soon, such that construction will be paid for initially with bonds that, in turn, will be repaid through property taxes levied on the whole community, old and new residents alike? An argument can be made that fairness would involve issuing bonds to build the new school, and then also the new replacement school in a few years, with all residents paying local taxes to retire the bonds and provide the real estate services needed by both schools. (This argument might be even stronger if the existing school is fairly new, with years of payments remaining on its own bonds that will be met through local property taxes that new residents will have to pay along with existing residents. A counter-argument is that a jurisdiction might have limited ability to borrow, because of either its own financial situation or else bond market conditions when it wants to borrow.)

IV. Interesting Situations

A. In our home ownership discussion we noted that the owner of a historic house or some other types of real estate might be able to grant, to a government or non-profit organization, a preservation or conservation easement that restricts future development of the property, creating a charitable contribution that reduces the owner's federal income tax (if the land owner itemizes deductions from adjusted gross income in computing taxable income – though we also noted that the Internal Revenue Service looks unfavorably on this practice). In a similar manner, a land owner can create a conservation easement that prevents future development on agricultural or other open land, and a developer pays the owner (or a governmental "TDR bank" that the owner has sold the easement to) in return for the "transfer of development rights" (TDR) on that property. A transferring of development rights can promote a balancing of development and open space, in which local government allows more intensive development in some parts of the jurisdiction in return for the assurance of less intensive development in other areas.

TDRs sometimes involve two adjacent parcels owned by the same party, allowing for building taller on one lot than otherwise would be permitted, by building to a lower height on the other lot. But applicable laws might allow for TDRs between different parties. The U.S. Supreme Court held that Penn Central's ability to transfer air rights to nearby land owners was among reasons why the railroad should not be compensated when the city designated Penn-owned Grand Central Terminal as a historic landmark and prevented the railroad from leasing the air rights to a British company to build a skyscraper directly above the terminal.[62]

In a more recent case, Harcourt, Inc. wanted to develop a San Antonio tract as its corporate headquarters, but the city feared paving for the facility would create "impervious" surface that would interfere with rain replenishing an underground aquifer. In a process akin to TDR, the city water system approved a plan by which Harcourt would build the headquarters on one tract it owned, while donating conservation easements to prevent future development on two adjoining parcels it owned.[63]

B. Discussions of "urban sprawl" and the accompanying need for "smart growth" arose a few decades ago. Those with concerns point to the costs that have accompanied the steady movement of population from U.S. central cities to suburbs, including more roads needed, more gasoline used, and land taken out of farming. Opponents of "smart growth" controls say that without moving from central cities people will not have enough land for livable houses, and note that the movement often is one of people following jobs to the suburbs as businesses move from congested cities. (Economic activity stays more focused in crowded central cities in countries with less developed economies, primarily because of poor transportation linkages to outside areas. The 2020-21 Covid-19 situation led some smart growth proponents in the U.S. to reconsider the wisdom of concentrating more people in central cities, where the inability to maintain distance in so many essential activities increases the likelihood of exposure in a pandemic.) "Greenbelts" where development is not allowed, and other controls, reduce the amount of land that can be used, and economists feel that the resulting scarcity in buildable sites increases housing prices, while complying with regulations slows the ability of developers to adjust when more housing is needed in a particular area.

C. It frequently is the case that a new custom-built home (or other built structure) turns out not to be exactly what the buyer had expected to get. If there are no major defects or errors, the builder is likely to be seen as having substantially performed under the contract, and the buyer can not back out of the agreement or refuse to pay amounts owed to the builder (though any problems should be corrected; a court might award sufficient damages to remedy what would be needed to make the buyer whole).

D. If there are major problems, a home buyer can recover from the general contractor through the implied warranty of habitability, or through Home Owner's Warranty or a similar insurance plan that may be in force (sometimes arranged for by a real estate broker as part of the listing or purchase agreement).

E. A December 11, 2022 *Chicago Tribune* article noted that remodeling contractors often specify in their contracts with home owners that valuable items are to be stored away (presumably to prevent accusations that the contractor's work crew stole something), and that the home must be insured for a specified dollar amount (although the contractor's business insurance should cover for any damage the contractor accidentally does).

F. Dishonest developers – a buyer can face severe financial hardship if a developer sells a lot and then does not meet its obligation to bring utilities to the site. One 1970s central Illinois lot buyer faced costs of up to $90,000 to get water and electricity to his $15,000 lot in a new rural subdivision after the developer failed to do so and fled the area (imagine what those costs would be today).

G. Competition from developers – even if the developer is totally honest (as most are, of course), you can face problems competing with the developer if you "buy in" early and then have to sell your property before all other lots/units are sold. For example, people have bought houses in brand new subdivisions or condominium units in brand new complexes still under development. Then they were transferred by their employers, or chose for other reasons to leave the area. They faced difficulties in trying to sell their houses or units when the developer could offer identical physical layouts along with brand new appliances, and choice of paint/carpets/counter tops.

At the same time, recent research offers evidence that while home buyers still generally prefer to buy brand new houses rather than previously owned, the price premium they are willing to pay for new-over-used has fallen in recent years. Possible reasons are that buyers feel better informed relative to sellers than they did in the pre-internet era; that state laws now routinely require home sellers to disclose problems to buyers in writing; and that buyers more frequently hire professional home inspectors with the technological tools to more effectively inform buyers of problems (or, we might hope, lack of problems) in an older house, resulting in a reduced value for the assurance that comes from buying improvements that are new. •

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