PDH Academy

Speaking of Older Buildings Reuse, Repair, Restore, Repurpose or Replace

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SPEAKING OF OLDER BUILDINGS FINAL EXAM

1. **Decisions about what to preserve and what to demolish get much more complicated when _____ was a previous choice for another owner.**
   a. Demolishing the entire structure
   b. Historic preservation
   c. Using the building for hospitality
   d. Obtaining a rezoning

2. **When determining costs to appease regulatory agencies, _____ can be realized just by crossing lines between regulatory jurisdictions.**
   a. Better material pricing
   b. Significant savings
   c. Lower costs for comparable square footage
   d. More potential lessees

3. **_____ is of primary concern when assessing flooring in existing buildings.**
   a. Infestation of finish materials
   b. The presence of antiquated patterns
   c. Solid wood parquet flooring
   d. Flooring on the lowest level

4. **Which of the following is NOT a predicator of the potential success of urban revitalization efforts?**
   a. An extensive police presence
   b. Heavy pedestrian activity
   c. Benches
   d. Nearby parks

5. **Unforeseen conditions that can be uncovered during demolition include _____.**
   a. Insect infestations
   b. Water leaks
   c. Damages to wiring
   d. All of the above

6. **Another possibility before demolishing an older structure, simply because it does not fit the new use we have in mind for the site, is to _____ .**
   a. Donate the building for use to be burned as training for firemen
   b. Move the existing structure to another site
   c. Demolish it and use the materials to raise the level of a lower property nearby
   d. Sell the building for a slight profit and move on

7. **The _____ is the national agency that determines whether a building is worthy to be considered 'historic.'**
   a. North American Buildings Survey
   b. Bureau of Restorations and Renovations
   c. National Register of Historic Places
   d. Heritage Foundation

8. **One older structure that has become a symbol of national pride is the _____ .**
   a. Public Shipyards of Great Britain
   b. Great Barrier Reef of Australia
   c. Great Wall of China
   d. Archipelagos of Paris

9. **Adaptive reuse was prevalent in earlier times because new building materials were difficult to acquire and _____ was prohibitively expensive.**
   a. Finding Old World artisans
   b. Transporting them for any distance
   c. Obtaining building permits from newly formed governments
   d. Arranging guards for caravans

10. Many historic structures, because they occupied central positions in their cities, are in what are now _____ .

a. Redevelopment districts
b. Inner city traffic loops
c. Centers of urban decay
d. Downtowns

11. The most sustainable buildings are _____ buildings.

a. Those built with green roofs
b. Low rise residential flats
c. Those with reflective curtain walls
d. Existing

12. Which of the following is NOT an advantage realized by the shorter time involved in a project involving adaptive reuse, instead of demolishing and rebuilding?

a. Less carrying costs on construction loans
b. Misreading the market by eliminating adequate market research
c. Quicker cash flow from income on the property
d. A quicker turn around for cities seeking revitalization

13. The first difficult decision to be faced in adaptive reuse projects will be _____ .

a. Finding a patient, but innovative lender
b. Successfully choosing the new purpose for the structure
c. Finding renters before the first work is done
d. Deciding how to placate angry neighborhood protestors

14. Which of the following may be difficult to meet in current codes, zoning requirements and development regulations?

a. Energy codes
b. Handicap codes
c. Fire suppression requirements
d. All of the above

15. When a building is purchased as an investment, then decisions regarding adaptive reuse are driven by a desire for _____ .

a. Community esteem
b. Short-term profits
c. Life-cycle benefits
d. Security for lessees

16. A _____ is one agreement between building owners and architects that can ease the initial costs of exploring proposed renovations.

a. Two Part Contract
b. Predesign No-Lien Waiver
c. Cost-plus Fee Contract
d. Delayed Payment Waiver

17. Which of the following resources is NOT conserved by adaptive reuse projects?

a. Water
b. Energy
c. Raw materials
d. Labor

18. In one means of recycling, companies exist that salvage and store _____ for reuse.

a. Recyclable metal structural members.
b. Historic components such as detailing, trim and ornamentation
c. Landscaping that would have been lost during demolition
d. Components of existing utilities existing on site

INTRODUCTION

When the question of what to do with older buildings arises, it usually resolves itself to choices of reusing them as is, repairing them, restoring them, repurposing them or replacing them. This presentation will examine criteria that may prove valuable in determining which of these options represents the best value for the owner, the buyer or the community in which the structure is located. It will also briefly examine a potential business opportunity in a collaboration between architects and commercial real estate agents.

There is an old saying regarding existing buildings that goes like this. “It has good bones.” Any facility, free of structural defects and doing a reasonably good job of keeping water out, represents a tangible asset. The trick to maximizing the value of existing structures, especially in areas where changing economic factors have also resulted in changing market demands, is to approach their reuse from a different point of view. The judicious employment of renovation funds should not be based on restoring them to a previous use but making them suitable for other markets in which the existing bones might enable a whole new purpose.

Public sentiment often regards older buildings as historic treasures for the community. In many ways they are, but in many other ways, preserving them can become a nightmare for owners and designers. There are types of research, decisions and considerations that will make it easier to decide what to preserve and what to demolish. Those decisions can be much more complicated when historic preservation was a previous choice for another owner, or if restoring the building to a previous condition becomes added to the list of project goals.

Empty buildings became abandoned for a variety of reasons. Their previous purpose became no longer viable as conditions changed around them. One example of this would be a very old central neighborhood church that is now bordered on one side by a shopping center and on the other three sides by highways. No one is walking to that church anymore. Buildings also become unsuitable because their spatial configuration no longer fits the way original tenants lived or worked. It’s unusual to find old buildings that accommodate open office designs. Some older structures simply can’t be retrofitted for new technology like routers, manifold plumbing or fire suppression systems. Some buildings, like grist mills, cease to be useful because there is no more need for their original uses. With so many potential reasons for their earlier abandonment, adaptive reuse is a very viable option for preserving these community resources.

Unless it has been contaminated by hazardous waste, land in a community will always have an intrinsic value, regardless of what structure sits

upon it. Therefore, reusing older buildings, in all fairness to both clients and communities, should be approached by considering each of the possibilities. Should they be reused as is, repaired, restored to former glory, repurposed for another use or just demolished and replaced?

In the discussions that follow, emphasis is placed on what options are the most attractive, or can be made desirable, to investors and developers. The reasoning behind this is simple; the private business sector has historically been far more successful at moving projects forward than government entities. Moreover, given the cost involved in these projects, there is only so much tax money available to accomplish them. Actual businessmen need to become involved as investors.

ASSESSING OPTIONS

AN OVERVIEW

Choosing the highest and best use for an existing building requires research into the physical condition of what exists, and the market conditions for what it could become.

Before any decision can be made regarding an existing building's final disposition, a thorough inspection of the facility must be made. This inspection should be dispassionate, carried out by someone with no financial or vested interest in the disposition of the building or any repairs that might need to be made.

A proper inspection should include all building systems and components. It should include research into the age of such components, as well as any records of maintenance done in the past. The report should indicate where repairs or replacements will need to be made now, or in the near future. Costs for needed repairs and replacements should be competently estimated and those costs then added to the cost to acquire the building.

At the end of this presentation, it is recommended that a matrix be developed to identify the optimum future uses for the building. If the use or occupancy classification of the building will change, bringing the building into compliance with current code regulations for that new occupancy will almost certainly be required. The cost to make such changes should be estimated and those costs then added to the cost to acquire the building.

Not all potential costs will be mandated. Some changes may be desired, just to give the building a newer, more updated or fresher look. Those estimated costs should also be added to the cost to acquire the building. If permits must be acquired to accomplish required repairs, replacements or code changes, the costs of such permits should be added to the purchase price of the facility. This may include the costs of multiple fees or of meeting requirements or restrictions placed on the project, just because regulatory agencies have the power to do so.

Some investigation should be made into of all the stipulations that will need to be jumped through before the property under consideration can be used for its intended purpose. If requirements in a regulatory environment are too onerous, some investigation should be done into surrounding areas with less governmental oversight, or more interest in aiding development or business endeavors. Significant savings can be realized just by crossing lines between regulatory jurisdictions.

Having a good idea of all costs involved in reuse or adaptation of an existing structure will go a long way toward determining the feasibility of intended reuse.

In addition to estimating costs, all parameters affecting the feasibility of a project should be considered in a holistic fashion, before determining how to proceed with the repair, restoration, repurposing or removal of an older building.

REGULATORY ISSUES HAVING AN IMPACT ON PROCEEDING

Projects are no longer done in a vacuum and without oversight by regulatory agencies. Enforceable regulations will matter to the success of the project and should be ascertained beforehand.

Some agencies have control over historic restorations or districts created for urban revitalization. Historic overlay or development districts may in place in the zoning for the site. Are any Main Street or other redevelopment funds in place that might be applicable to the project? If so, what restrictions accompany such funding? There are typically restrictions that accompany grant dollars given to building owners for restoration to buildings with historic significance. These restrictions, which constrain future allowable building changes, are often in place for the remaining life of the structure

Building codes often contain sections or clauses with less stringent requirements for both reuse and renovation to existing buildings, or for renovations to buildings of historic significance. These exemptions tend to be in the subject areas of handicap accessibility and required fire protection. The existence of such exemptions or special codes is certainly worth investigating, before deciding that code mandates will make the reuse or adaptation of an exiting structure unaffordable.

Some rules rise from past use of the structure. Verify with local agencies that there was never any condemnation of all or part of the structure, and no deficiencies were noted during past inspections that must be addressed prior to reuse. Interviewing long time neighbors to the structure can yield surprising information regarding past occupants, including information on potential soil contamination, use of hazardous materials or destructive insect infestation needing to be addressed. Expensive special hazardous cleanup or removal of hazardous finishes (asbestos pipe insulation, lead paint, asbestos flooring, etc.) may become necessary. Proper disposal of such materials is also costly.

If changes will be needed to reuse a building for the same occupancy, it is advisable to place a call to regulatory agencies from whom approval for reuse plans will be needed. They will likely be willing to discuss the degree and type of changes they would like to see, prior to issuing approval. Involve these agencies early to determine how they will view reuse of the building, especially for a different occupancy. What inspections will permitting agencies require? For that matter, what inspections or building changes will the agency providing project funding require?

It will also be useful in determining optional uses for an existing building and site, to obtain an estimate for complete removal of the existing structure and foundations, and restoration of the site back to its original (sort of) condition for reuse of the land. Knowing the value of an empty site, available for reuse in that location and zoning district, will be useful in making decisions regarding reuse. Understanding the real potential for reuse of the existing site will require some research into restrictions created by the existing zoning, in areas like setbacks, landscaping buffers, parking, traffic control, etc.

A BUILDING'S VALUE TO A COMMUNITY

There is some intrinsic value in acquiring a building with either cultural, community, personal or historic significance. It is difficult though, to place a value on such things that can be plugged into an equation to determine whether repair, reuse or replacement is the best option.

A place may represent a fond memory in the hearts of many members of the community. If the proposed building use is similar to what was in place in the structure in the past, others may utilize the services or goods provided in the building simply from nostalgia. If there is no similarity between past and proposed use, there still may be some loyalty and gratitude engendered by the decision to reuse the familiar structure, rather than demolishing it.

There may also be some personal value attached to an existing building. It may be where parents first met one another, or where one or both worked to provide a living for the family.

On a societal level, buildings may be significant in the history of a city. If such is the case, local regulatory agencies may be more inclined to help

than hinder in its restoration and reuse, in lieu of seeing the structure demolished.

Deciding to restore older buildings may involve input and/or cooperation from the rest of society. Sometimes communities make the decision as a whole, whether to rebuild or remove. If a structure is deemed unsafe for use, it is condemned and slated for destruction. If an area is being revitalized with common elements creating a theme, a building's architectural style simply may not fit the final scheme being implemented. A fresh look and a new beginning may be planned for the area. The existing building may also just be in the way of the final plan for redevelopment. The estimated costs to historically restore, and afterwards maintain, the structure may simply be out of the budget.

A BUILDING'S VALUE TO THE INVESTOR

Understanding that the value of real estate depends as much on market conditions as it does upon the tangible asset, the investor or developer should be asking, prior to considering renovations to and restoration of an existing building. If I were to spend enough money to completely restore this, what would it actually be worth afterwards? Why was deterioration allowed to occur in the first place? Are the utilities to the area sufficient? Are there enough amenities or attractions nearby to make this location desirable? Are there flood plain issues? Is the neighborhood in general, improving or deteriorating? Are there problems with rising crime rates? What type of competition is out there in the market?

This assessment of the potential return must be done because investors whose initial investment and repair costs total more than the building's resulting worth, are probably not investors who will be around for the next project.

ASSESSMENT OF THE BUILDING CONDITION

It would be difficult to make an objective determination of the feasibility of building reuse, without first making an objective assessment of the condition of the existing facility. What systems and components will need to be modified, repaired or replaced to allow further use of the structure for more current purposes? Such inspections are not cheap, but they are less expensive than obtaining an aged structure for reuse, only to find the expense in the purchase and needed renovations cannot be recouped by market rental income. Inspections are also far cheaper than life or property lost, should an existing or deteriorating structural system collapse under the load of a new occupancy use.

Thorough building assessments need to be conducted by professionals. Some of the critical parts of a building needing evaluated are its structural integrity, roofing, masonry, plaster, wood-work, tiling, mechanical, electrical and plumbing systems. A building that was well built, but subjected to abandonment and subsequent decay, can continue to deteriorate in the foreseeable future, creating issues for new users. An inspection can pinpoint areas in which proper or ongoing maintenance might forestall more extensive repairs in the future. A detailed report is typically the product resulting from a thorough building assessment.

Assessment of Foundations

Two primary concerns are addressed in an assessment of existing foundations, crawlspaces and basements. An obvious safety issue is whether deterioration or settlement of these bearing components is occurring and if so, what must be done to repair and stabilize them? The second question is one of engineering. Will the existing systems be capable of supporting expected loads that would be imposed upon them in the intended use of the renovated building? Will additional fireproofing be required by new codes to protect the floor above from the basement or crawl

space? In making such assessments, appropriate surveying equipment should be used to determine characteristics like square and level, rather than relying on the naked eye.

Assessment of Structural Systems

Simply put, as critical as it will be to the future safety of the occupants, this assessment should be made by a structural engineer. Future live and dead loads must be considered. If building plans exist, they should be made available to the engineer to use in conjunction with an on-site inspection. In the reverse of what occurs when inspections are made during construction, finishes made need to be removed to properly check structural systems behind them. Wood should be inspected for rot or infestation by insects. Metal should be inspected for any sign of extensive corrosion. All connections should be inspected to ensure they are not loose or have not, of themselves, caused failure at joints.

Assessment of the Floor System

Usually the floor systems of older buildings are strong enough to support current loading requirements. If not, it may become necessary to install new support beams to shorten spans. If so, understand that columns to support those beams must be extended down to points or pads where adequate load bearing can be obtained. Small areas of floors may also need to be opened and reframed, to create openings for new system, stairway or elevator chases.

Assessment of Exterior Walls

The outside walls should be carefully inspected, especially in the face of any evidence that water infiltration has occurred. Points of leakage should be found and sealed, along with an assessment made of why that infiltration occurred. Also identified should be points where additional openings can easily be made for more doors, windows and additional duct penetrations, if needed.

Assessment of MEP Systems

Needed improvements to these systems will likely constitute a large part of an adaptive reuse budget. Older structures tend to lack modern and energy efficient system components and appliances.

The existing HVAC system (assuming air conditioning is in place) will need to be assessed for its expected remaining life, as well as its capacity for occupants in the proposed reuse. More often than not, systems of significant age will need replaced. Sometimes the old units and their piping can be salvaged and sold for scrap. A primary concern will be spaces through which to run new ductwork or hydronic piping as needed. Ceiling space must be high enough to accommodate new ducts, when installing new air conditioning. Through-wall units can also be installed in lieu of central systems.

Existing ways to move air should be assessed. At the very least, ducts should be examined for any blockages, deterioration or leakages. Existing bathrooms and kitchens may or may not be vented, a desirable thing to accomplish for future use and often also required by code officials. In that case, ceilings must be high enough to accommodate fans and ducts to the exterior or to a common exhaust stack.

Old galvanized piping commonly used in the past for plumbing, tends to deteriorate over the years. It may need to be uncovered and replaced. Sewer connections going out of the building should be checked to ensure they are still watertight.

Electrical systems are a very common concern. In the unlikely event that wiring is up to current standards, the panels, junction boxes and feeders may still not meet present code requirements. It is likely that incoming services will need upsized and new transformer vaults and feeder lines may additionally need installed.

Assessing Stairs and Exits

Necessary locations and numbers of stairways needed for legal egress will be determined by current life safety codes. A designer will need to determine the best way to integrate existing stairways into a plan that meets those obligations. Additional loading imposed on the existing structure, by constructing new stairways, must be thought out carefully.

Assessing Energy Use

Utility costs will be of prime concern to potential lessees. Determining existing efficiency is best done by hiring a professional to conduct an extensive energy audit, but few are willing to purchase that. Simple ideas that could improve efficiency include; replacing appliances with those rated by Energy Star, adding insulation to the exterior building shell, replacing existing doors and windows with efficient units with insulated and efficient glazing as well as thermally broken frames, maximizing natural ventilation by utilizing chimney effects, using daylighting where possible and replacing light fixtures and lamps with energy efficient choices. Doing this last item will also free up some capacity on existing circuits.

Assessing the Building Envelope

The best way to minimize energy use by a building's HVAC systems is to ensure that the exterior building envelope is as efficient as it can be, without spending extraordinary amounts of money in renovations to accomplish that. As mentioned earlier, efficient doors and windows are an excellent beginning point. Also on the list are energy recovery ventilators, caulking or weatherstripping every gap that can be found, adding insulation and / or vapor barriers in the correct position on exterior walls and ceiling to roof assemblies, adding exterior façade materials to reflect or absorb solar heat gain as needed, and even exterior plantings to shade nearby paving, windows with large areas of glazing or selectively shade the building from western and southern solar exposure. Storm windows are an easy way to increase the efficiency of windows at a fraction of the cost of replacement.

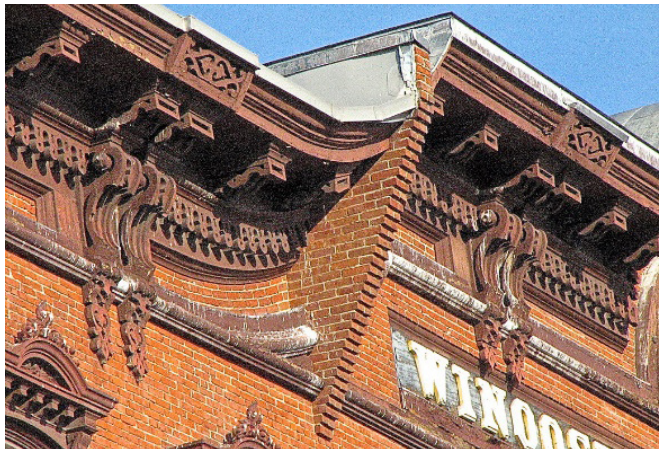
Assessing the Roof

Roofing systems generally include all the components of the building 'cap.' This incudes roof, curbs, parapets, cornices and copings. Joints, caulking, cant strips, etc. must all be inspected. If masonry was used for parapets, as is often the case in older structures, repointing of the brick, stone or block may be needed. If coping allowed water intrusion behind a face wythe of masonry, and ice accumulation has been pushing the veneer outward, more significant reconstruction may be needed before repairing the coping. The roof inspection should also include looking for signs of leakage on ceilings below the roof, then ascertaining where and how water is infiltrating through the roof.

A poorly performing roof is a huge source of energy loss in both heating and cooling seasons. Insulation can be added to improve this. Dead air space, created in attics or between ceilings and the roof structure, can help. If the roof must be replaced for purposes of weathertightness, investigate the use of 'cool' roofing materials appropriate for the slope of the roof.

Assessing the Flooring

Flooring on the lowest level is the primary area of concern in this type of assessment. If the floor is over a basement or a crawl space, insulation added below it will improve energy use by the building. If the floor is over a slab built on grade, not much can be done. The hope would be that insulation was originally installed around the perimeter of the slab, but that would be unusual to find in older buildings.



Assessing any Reusable Parts

In some cases, it may be possible to restore more historic parts of a structure by carefully sequencing demolition in other areas. In this approach, ornamentation and significant components are

removed from more private areas of the building, including from inside of storage areas and from parts of the building that will be demolished before restoring the bulk of the building. These removed components are restored, refinished and then set aside. They are reused as needed in parts of the building that will be more visible with tenant and public use.

ASSESSMENT OF THE NEIGHBORHOOD CONDITION

A thorough assessment of the neighborhood in which a potential asset sits, can help determine whether money spent on acquisition and renovations represents a good investment. This would include a visual inspection of a neighborhood and studying zoning maps of the site in question, and those near the target property. Buildings can be purchased relatively inexpensively in decaying neighborhoods where there are incidents of vandalism. If an adaptive reuse project could stabilize that locale by creating community pride, creating such an upward trend might result in lucrative rental opportunities for nearby owners and occupants. In which case, purchasing multiple contiguous buildings might be a better strategy.

Other predicators of the potential success of urban revitalization efforts include; the presence of sidewalks, heavy pedestrian activity, benches, nearby parks, street lights and other businesses nearby that are busy and open for extended hours. A final step in neighborhood assessment is research to identify nearby amenities. Are there good roads, places to shop and eat, schools, libraries, medical facilities or stops for public transportation?

ASSESSMENT OF FINANCES

The building and neighborhood assessments help determine the up-front costs of investing in an adaptive reuse project. The back side of those considerations is a reasonable estimate of how much income can be expected from leasing out space in the completed structure. With upfront costs determined and potential rental in mind, a return on investment can be calculated. If the work can be done in parts, with portions of the structure rented out early while work continues in other portions, so much the better for the project cash flow. Such numbers can then be presented to sources of financing, like banks, foundations and even Real Estate Investment Trusts (REITs).

REVIEW QUESTIONS

1. **Unless it has been _____, land in a community will always have an intrinsic value.**
   a. Contaminated by hazardous waste
   b. Obtained under fraudulent means
   c. Used previously for illegal activities
   d. Ceded as part of a previous lawsuit

2. **Thorough inspections of existing buildings should be made by someone _____, before a decision is made regarding the building's final disposition.**
   a. Who has not participated in projects nearby
   b. Who has participated in the renovation of a nearby building
   c. Currently serving on the zoning commission controlling use of the property
   d. With no financial or vested interest in the building or repairs

3. **Knowing the value of _____, available for reuse in that location and zoning district, will be useful in making decisions.**
   a. A gutted building shell
   b. Already permitted signage
   c. An empty site
   d. Neighboring complimentary businesses

4. **When assessing floor systems, those of older buildings _____ strong enough to support current loading requirements.**
   a. Are almost never
   b. Are usually
   c. Are assumed to be
   d. Are accepted by most codes as

5. **Ornamentation and significant components can sometimes be removed from _____ areas of a building and reused in more _____ areas.**
   a. Private, visible
   b. Service, commercial
   c. Exterior, interior
   d. Public, rentable

REUSE

Such thorough research into the possible return on investment for a property of interest might yield a simple truth. The cleanest way to invest in an existing structure is to acquire it before additional or any significant deterioration occurs. Then reuse the building for the same business occupancy and purpose as it was used by the most recent tenant(s). Direct reuse for the same purpose is distinguished here from that further described as adaptive reuse, which involves changing the occupancy of the structure. How easy just continuing the previous use of the building will be, will depend on how long a building has been vacant. If some time has elapsed, cleanup of the grounds and exterior might be a practical investment to make the structure more attractive to potential tenants. In a similar fashion, freshening some of the interior finishes might also increase marketability. But the core idea of direct reuse is to avoid all issues with regulatory and special interest groups by simply continuing the old use of the building, purchasing it, cleaning it up a bit and leasing it back out to another tenant.

REPAIR

Historical significance aside, when is it better to renovate an existing structure than just demolish it and build another in its place?

Whether a building can be repaired is not the only question. It should also be asked whether the structure should be repaired, or would it be cheaper to demolish it and rebuild similar space on the site. Other factors include whether upgrades should be made during the rebuild process and whether the previous building had historical significance. At the end of the entire process, insurance companies will also have major input on whether they wish to finance a restoration, or a removal followed by a rebuild.

If a building under consideration was made unusable because of damage from flooding, from wind or from fire, a decision as to whether to rebuild or to demolish must be made with consideration for the safety of occupants in the renovated facility. This requires evaluation of the damaged building by a registered professional to determine the extent of repairs needed to ensure that safety. Local regulatory agencies also have input into whether a building can be reutilized. They may require an inspection from a licensed professional before making their decision.

The cost to refurbish an existing building depends on the scale of its prior deterioration and should be estimated before any more decisions are made. Perhaps the walls are sound and the primary problem with usability is a deterioration of existing timber trusses and the roof over them. Replacing those structural pieces would not be an easy task and would require investigative engineering beforehand regarding support for the new members. Nonetheless, an entire new roof structure and covering would surely cost much less than replacing an entire building. When considering costs of repair or demolition, keep in mind there are also expenses involved in taking down a structure, protecting the public during that process and properly disposing of the generated waste materials. Some of those may be considered hazardous waste.

In many cases, there are ways to support existing structural systems without removing and replacing them. In the aforementioned example, new roof framing members could always be placed alongside existing members, so long as there was a way to get them up and into place and on adequate bearing. Deteriorating foundations can have forms placed alongside and new concrete foundations poured against them. There is an old saying, “Where there is a will, there is a way.” Many easier solutions to building repair are conceivable, but there must first be a desire to find a good solution.

In every case, when considering repair versus replacement, it’s a very good idea to ascertain the building was never designated as a historic structure and never received grant money for restoration.

Otherwise, structural or even cosmetic changes, made without prior approval, can lead to time in court and the paying of penalties. In most cases, with older structures that are not obvious period pieces, this is not a problem.

In a case study of a deteriorating masonry building, a survey is made of what is existing. The report states the following problems exist; there is excessive moisture inside, but the structure itself is safe. Finishes need replaced and a moderate amount of substrate for wall finishes must be replaced to make rooms and corridors again usable. The outside masonry needs to be repointed and for purposes of energy efficiency, new windows should be installed. Should you be the building owner and intend to reuse the structure as an office building, it would be safe to say the cost of refurbishing the facility would be far less than the cost of demolition and rebuilding the same square footage from scratch.

CONSIDERATIONS PRIOR TO REPAIR / RENOVATION

The following considerations should be made before acquiring and deciding the best use for an older target property.

It is hard to accurately estimate expenses involved in this option. Costs to repair and renovate are just about guaranteed to escalate once work has begun and unforeseen conditions are uncovered during demolition. That is when leaks, insect infestations, damage to wiring and other ravages of time are uncovered. Deterioration due to water damage can cause mold and rot, destroy the integrity of framing, undermine foundations and so forth. Given its extensive and pervasive influence, water intrusion is a primary culprit of unexpected and costly repairs. An inspection beforehand can help identify some of these issues, but is not likely to catch them all.

Updating older buildings tends to involve overcoming some typical challenges. If an open plan with lots of natural light and flexible space is an end goal, that is often not terribly feasible in older buildings with many columns, bearing walls space carving up space into small rooms and having small windows. Since most were erected under less restrictive building codes than those currently enforced, restoring buildings may require meeting current life safety, energy and systems codes. Especially if the occupancy use of the building is expected to change.

It may be necessary to resubmit proposed changes and repairs to damaged buildings for zoning and planning approvals. The need for this is often predicated on the extent of the repairs as compared to the value of the structure. Again, this is especially true if the occupancy use of the building is expected to change.

Help for owners may be available for renovation projects. If renovations are substantial and the building is either considered historic or in a historic district, tax credits might apply. Some communities deliberately encourage renovation over demolition, by making it easier and cheaper to obtain the necessary permits for the work. Leaving part of the structure or foundation in place and adding to it, may also facilitate bypassing some regulatory hurdles. Building materials can be carefully removed prior to final demolition and donated for sale elsewhere (for tax deductions) or recycled for environmental benefits. Such phased demolition does add to the time needed to complete the work. Existing buildings being renovated can be LEED certified after three months of occupancy following renovations. If renovations can be properly phased, it may be possible to occupy already renovated parts of the structure during later phases, bringing income into the monetary stream to offset costs.

Consider another possibility before demolishing an older structure, simply because it does not fit the

new use we have in mind for the site. Let's assume that the existing building is structurally sound and would have value elsewhere. Assume as well, that another empty site can be acquired nearby and a nearly open path lies between the existing building and the potential new site. It may well be possible to have a new foundation built on the new site and have the existing building moved to a new location. It can then be sold in that new location or donated to a not-for-profit, who would then pay for the new site and foundation, as well as making a handsome tax write-off possible for the donation of the building. Using this option would have also saved most of the costs of demolition and debris disposal.

Finally, remember to factor into the budget, possible increases in material costs. During certain seasons, like those in which lumber producing areas are prone to fires or coastal areas are subject to hurricanes, there is always a chance that natural disasters will create shortages and drive prices up further.

REVIEW QUESTIONS

6. _____ will also have major input on whether they wish to finance a restoration, or a removal followed by a rebuild.

a. Neighborhood associations
b. Institutions holding funds in trust
c. Potential heirs of the developer
d. Insurance companies

7. It may be necessary to submit proposed changes and repairs to damaged buildings for zoning and planning approvals, if the _____ is expected to change.

a. Business name
b. Occupancy use
c. Exterior color scheme
d. Perimeter drainage

8. Material prices can be driven up by _____ .

a. The rising costs of mortgage loans
b. Increasing scarcity of building sites
c. Onerous legislation by regulatory agencies
d. Natural disasters creating shortages

RESTORE

WHAT DETERMINES 'HISTORIC?'

There is a difference between buildings that are historic and buildings that are simply old. Old buildings are just ones which have been around for a while. Speaking in general terms, a building considered 'historic' is one that is at least fifty years old and somehow significant to the community, state or country. The National Register of Historic Places (NRHP) is a national entity that determines whether a building is worthy to be considered 'historic.' This designation is usually made on behalf of private individuals/organizations, local governments or tribal entities, requesting that designation. NHRP then conducts research to determine qualification as such, which if granted, will offer the building some level of protection from future demolition.

Historic preservation seeks to "sustain the existing form, integrity and materials of an historic property. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required

work to make properties functional is appropriate within a preservation project." (Source: Technical Preservation Services of the American Park Service).

CULTURAL SIGNIFICANCE

Should old buildings, considered to be of historic value, continue to be protected or be demolished and replaced by structures of more economic benefit to society? Should history stand in the way of progress? This entire discussion leads to interesting questions about the value to society of reminders of our past.

These questions are of course predicted on the historical buildings actually being an impediment to progress. In a simpler phrasing, for progress to continue, must another building be built on exactly that site or can a new structure be located nearby and still serve the same purpose? An honest answer to that question might eliminate the most common answer to the reason behind a wish to demolish. It may also be driven by a need to eliminate expensive yearly maintenance costs, wanting to create a better income producer for land in a prime location or a lack of interest in continuing to deal with historic foundations, committees, tourism bureaus and so forth.

In deciding the value of preservation over progress, two questions rise to the top. How important to society (assuming they will contribute to their upkeep) is maintaining old buildings and should we really value history over progress, if they are truly in conflict.

I want to play devil's advocate for just a moment. I have seen many movements and organized efforts in my lifetime, where well-meaning community members bring people together to "save" a building of importance to a community, rather than having it demolished. They literally take the position that since a building holds memories for so many others, the owners have some obligation to maintain it as it used to be, paying out-of-pocket to do so, for the good of the community. Here is an idea. If the building is that important to the community, let the public or at least that organized committee, purchase the building from the owner, pay to restore and maintain it and open it as a nostalgia museum. A lot of people have really good ideas they wish to see implemented, so long as someone else pays for their vision.

If we are to keep historic structures, then maintaining them becomes important as well. At the point where maintenance ceases, expensive and extensive deterioration begins. We wish to keep older buildings, because as usable structures, they have an intrinsic economic value. We wish to keep them because have cultural and historic significance. They may have had an important function or played a pivotal role in an event of national significance.

Older structures may even be symbols of national pride. Take the Great Wall of China as an example. It is undoubtably expensive and difficult to maintain. But it was built by slaves under severe weather conditions during the rule of an Emperor. It stands as a monument to human perseverance and the desire for protection during a period of historic trouble. Given the desire of pretty much every tourist coming to China to visit The Great Wall, it is also of huge economic value to China. The wall also instills a sense of pride in the people of China, as a tangible example of their long-lasting history. It is doubtful whether many citizens of China would agree, that the Great Wall of China should be demolished to make room for modern buildings. Maintaining that old, historic structure is important to them.

People who consider themselves historic preservationists are typically opposed to demolishing historic buildings. They are willing to form groups to 'save' such structures when they learn their demolition is under consideration. Many historians argue for the preservation of these properties, regardless of how long it has been since their last use, or the state of their current condition.

Others argue differently. Newer buildings may not have historic significance, but since they are designed for modern uses and purposes, they contribute more economically to a given locale. Overcrowding can be alleviated through the removal of older, less useful structures and replacing them with new buildings designed to accommodate modern standards of living and work. Education can advance by housing students in schools designed to current standards. The land and space for beneficial

changes must come from somewhere. Moreover, we should not seek to live in the past, but should embrace and move toward the future.

But does the preservation of history really hinder progress? To some extent, as with the preservation of the concentration camp in Auschwitz, such preserved monuments to past wrongs keep them fresh in our memories, so they are not so easily repeated. It serves as a visual reminder of the dangers of discrimination. And it is only in very rare instances, it could successfully be argued that a building of historic value is standing in the way of progress.

Note that, while on the face of it, it is the right of the buyer to do with purchased property as they wish, community opinion can carry weight. Demolishing buildings of historic or cultural significance can create tremendous societal opposition. While those in opposition may not be willing to help pay for restoration, they are sometimes willing to fund lawsuits against owners seeking to demolish the same. Even when such court cases are won, developers and business owners tend to find their reputations tarnished and additional business difficult to conduct in that community.

Restoration is sometimes a viable solution, dependent of course on the availability of funds. And if it were not for the efforts of preservationists, we would not be able to enjoy such wonderful places to visit as Mt. Vernon and Williamsburg. But since decisions to keep or lose buildings should be the prerogative of property owners in a free society, how can the pot be sweetened to encourage preservation?

POSSIBLE SOURCES OF ASSISTANCE

If a building has historic value, it might be possible to acquire grant money to alleviate restoration costs, if such can be acquired without the attachment of strings hindering future use or changes. If the building even seems in any way to have historic or cultural significance, it should be investigated whether any grant money was used in the past to make improvements. If such was sought and used, that money could have come from multiple sources. It's a good idea to determine whether such monies came with restrictions or limitations prohibiting future changes to the building.

For example, grant monies given by historic societies that are governmental in nature, often required recipients to give up future control of the façade to such societies. As a condition of receiving funds for desired repairs, recipients agreed that no future changes would be made unless they were approved beforehand by the historic society. If that granting organization or society no longer exists, or if it refuses to allow desired changes, that may become a huge factor in the decision to acquire a building. Private grant organizations may have also placed restrictions on the use of recipient structures in return for the funds.

In my personal experience with three such projects, such groups have no interest at all in negotiation or granting any leeway. In one case, they preferred the gutted and collapsed building finish falling inward after a fire, than allowing changes to be made to what no longer even existed. If a structure seems as though it might have historic value, a quick bit of preventative research is certainly worth the investment of the time to investigate.

REVIEW QUESTIONS

9. In general terms, in order for a building to be considered 'historic,' it needs to be at least _____ old.

a. Two hundred years
b. Over forty years
c. One century
d. Fifty years

10. If we are to keep historic structures, then _____ them becomes important as well.

a. Maintaining
b. Publicizing
c. Designating
d. Subsidizing users of

11. Demolishing buildings of historic or cultural significance can create _____ .

a. A void in a historic district

b. An unprecedented amount of hazardous waste

c. Tremendous societal opposition

d. Displaced older businesses

REPURPOSE

When discussing this option, we are referring to reusing an existing building for a different purpose than it was utilized for by the previous occupant. It is altering or adapting the structure, to make it suitable for that new use, hence the term, 'adaptive reuse.'

ADAPTIVE REUSE THROUGHOUT HISTORY

In earlier periods of our national history, adaptive reuse was a normal way of business. New building materials were difficult to acquire and transporting them for any distance was prohibitively expensive. In some cases, it wasn't even possible. If a building was structurally sound and reasonably appealing aesthetically, it simply made more sense to adapt the existing structure than build a new one. As shipping methods improved, new structures became more feasible. Now, with materials and labor costs rising, costs increasing to place construction debris in landfills, land becoming more expensive and more value being placed upon heritage, reuse is once again an attractive option.

PRINCIPLES INHERENT IN ADAPTIVE REUSE

Retrofit is a key word to use in this approach to aging structures. It is the art of finding value in what others may see as liabilities. With very little effort, other uses can be imagined for structures, beyond the purpose for which they were initially built. The best way to preserve historic resources is to make sure they can house modern uses and contain functional space. Otherwise, private investment will not occur. Usually this means preserving or restoring the exterior character while renovating and repurposing the interior space. The potential reuse of the exterior shell, utility connections and other site improvements carries a huge financial benefit to private investors.

Considerations for possible reuse include; assessment of existing conditions, identifying potential risks for future occupants, identifying regulations that will impact reuse of the structure, possible markets and going rates, nearby land uses and how they will impact building use, architectural features that can be reutilized and historical or heritage considerations. Market niches should be considered that will provide a mix of uses, respond to the building's character and defining features and maximize the use of the building's space. Conceptual plans and a scope of work will need prepared for each viable option. Cost estimates to accomplish each option will be needed. With those plans and a market analysis in place, feasibility studies can be completed to help an investor set a course for moving forward.

What might such extensive research uncover? Despite the desirability of doing so, some heritage buildings, those useful to keep memories of the past alive, simply cannot continue to be used for their original purpose. Nor can owners afford the expense of maintaining them as museum pieces, with no return on investment. At that point, a decision will need to be made regarding their future. With limited space, or only very expensive space available for new business ventures, more affordable space made available through adaptive reuse projects is increasing in frequency.

One of the biggest advantages to reuse might be the locations of some of these potential investments. Many once occupied central positions in the cities in which they were constructed, prior to subsequent community growth. Often built in areas that are now in downtowns, they have been, and are seen and visited by many. Moreover, many were built in an era when they were a visible symbol of the success and pride of their prominent owners. They incorporated exquisite detailing, unique to the time period of their construction, that still remains and often can be preserved at a fraction of the cost of recreating it.

When it comes to complying with building codes for a new use, safety and accessibility are the two biggest hurdles to overcome in retrofits. Repurposing still requires all precautions be taken to ensure the safety of new users. Some renovations are easier than anticipated, because new building materials tend to be of higher quality than past choices. In many cases though, electrical, plumbing and HVAC systems may need to be removed and replaced to meet new codes. Given the potential expense of these upgrades, a financial analysis of probable return should be made before investing such money in that location. Even if a little expense is incurred up front, meeting for discussion before beginning such projects, with building officials, contractors, architects and engineers can go a long way toward establishing the practicality of such endeavors. It may also be advisable to garner input from potential users, should the project be completed.

Adaptive reuse is a very viable way to preserve properties of historic or societal significance, while creating financial feasibility to recoup costs of restoration and maintenance. Hopefully, historic or significant features will be preserved in the process. There are various positives and negatives involved in attempting such reuse.

BENEFITS TO ADAPTIVE REUSE

In areas of urban decline, there are often buildings offering prime opportunities for adaptive reuse, in lieu of demolition. A few projects where buildings are restored and reutilized can spark revitalization efforts in areas otherwise abandoned to disuse and abandonment.

The most sustainable buildings are existing buildings kept intact, renovated and maintained. Reuse reduces the need for the production of building materials to replace them, the cost of energy and effort to recycle their components and saves space that would otherwise be used in landfills for the remains of buildings that were ultimately salvageable. Land available for other uses is also preserved in cities, when buildings need not be built to replace the functions of those left abandoned and then demolished. Urban sprawl costs more than just the land being used. The more compact the area where people come to work and play, the less fuel used to transport them from place to place.

There are cost benefits to be realized by not undergoing demolition, followed by reusing the existing site for another building. These costs include legal issues, costs of demolition, the potential need to dispose of contaminated materials or equipment, battles with community factions opposed to development, obtaining variances, design fees, construction permits and construction costs. Note that demolition costs alone can add five to ten percent to a project budget. All these expenses can be avoided by just reusing and restoring the existing building, for less cost than that of building new space. Since unused buildings are often found in areas of significant population and development, if space can be made available in renovated buildings, for less rental cost than in new facilities, start-up businesses will find occupying rehabilitated structures attractive. Their presence will also infuse new life into a previously decaying neighborhood. The work already done can encourage other investors to make similar investments, building a synergy where complimentary users bring common customers to an area.

Older buildings tend to be clustered in a higher urban density than new buildings, which are built to better accommodate automobile traffic and parking. The existing neighborhood density can be preserved by simply reusing the buildings as they sit in place. Historically, the more compact it is, the more vibrant the feel of the neighborhood. Young professionals are especially interested in living and working in areas offering a unique sense of place. Adaptive reuse projects which attract such residents have been key to the success of many urban revitalization projects.

Costs of materials and labor to build new structures just keep rising, but the cost of labor has risen far less drastically. This makes renovation using primarily labor more economical than building new and paying for both workers and materials. .

One rarely acknowledged savings found in adaptive reuse is the fact that where older buildings are found, infrastructure and utilities already exist. Sewer and water taps are already in place. Gas lines have already been tapped. Curb cuts already exist for drives in and out. On the one hand, this means existing underground improvements must be worked around with any site work. On the other hand, it's cheaper to reuse existing infrastructure than bring it to a new site.

As a general rule, there is less time involved in a project involving adaptive reuse, than one involving demolition and rebuilding. While this doesn't directly translate to money saved, it does mean less time is spent, paying carrying costs on construction loans. It also means income from the property can be realized more quickly, to offset loan payments. That same shorter time frame also equates to a shorter turn around for cities, in their efforts to revitalize decaying areas. In existing buildings, rentable space can be made available while work is being completed in other areas, enhancing a project's cash flow during construction.

Funds are sometimes made available for adaptive reuse projects by governmental entities. In numerous municipalities and locations, there are tax incentives available to developers to rehabilitate historic structures. The United States' National Historic Preservation Act of 1966 established matching grants-in-aid, which can be applied for through state offices. Community block grants are also available through HUD, to fund neighborhood preservation efforts.

Blending modern technology with historic detailing creates a sense of place that is impossible to imitate. Older buildings provide a direct link back to a community's heritage and history. Preserving these structures helps preserve a sense of place that pervades any location and sets it apart from others across the nation and often even the city. In many ways, the older structures in neighborhoods establish their local identity. Once lost, these heritage buildings are lost forever.

Besides their historic value, heritage buildings often showcase crafts, artisan skills and detailing no longer used or even available in modern construction. Preserving them provides a link to the past, cultural assets holding stories to the past and those who inhabited and touched them before we arrived. When well done, heritage buildings tend to become destination locations, key to urban revitalization. Large retailers across the nation are beginning to realize such beloved spaces can be used without changing their intrinsic character, and without facing the kind of opposition faced when attempting to develop new big box locations.

Revitalized residential buildings, due to the density they afforded when created, generally still result in higher population ratios than new projects. Historically, the more residents present and active, the more vibrant the neighborhood and the lower the crime rate. Such projects tend to be near and more oriented to commuting via transit hubs, so there is more of a pedestrian feel. With more pedestrians active in the area, more destination spots for dining and entertainment become viable for developer investment. The entire area becomes more vibrant and more intimate.

Well aware of such benefits, some municipalities are open and ease the way for adaptive reuse projects. In the past, urban sprawl directly contributed to inner city decay. Lack of maintenance of existing buildings led to displacement of residents, economic decline in areas, a decline in tax bases and loss of entire neighborhoods that became obsolete and abandoned. Projects to reverse these trends are welcomed and encouraged by real societal leaders, especially if investors are willing to take on the projects. Conservation, even at the level of adaptive reuse, is only possible when someone is willing to fund it. It is highly likely taxes alone won't get the job done.

Even when iconic exteriors can be preserved, there will always be a need to incorporate modern services, like internet, power systems, water systems and so forth into adaptive reuse projects. The effort to do so results in the integration of modern living into a context of heritage, benefitting us all socially, environmentally and economically. In some projects, this may involve basically gutting and rebuilding the interior of the building, replacing just about everything inside while preserving only the structure and the exterior facades. Hopefully, some interior detailing can also be preserved and reutilized.

If preserving the exterior while retrofitting the interior is cost effective for the business investing in the facility, then so be it. At the end, the project must be profitable or private money will abstain from involvement. If a 'big business' will profit from doing so, the end result is still far better than demolishing the structure and leaving the site as a parking lot. Urban regeneration works, regardless of the purity or motives of the preservation effort involved.

DIFFICULTIES ENCOUNTERED IN ADAPTIVE REUSE

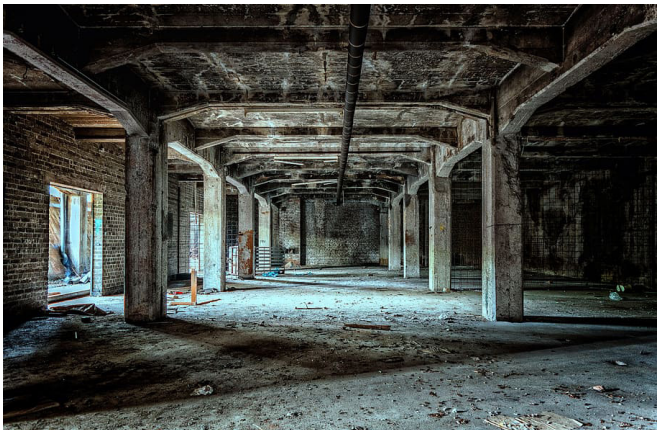
Make no mistake about it. Adaptive reuse projects present their own unique difficulties. In any renovation project, surprise are found during demolition that require flexibility and adaptability to resolve. Needed materials will be a bit more challenging and unpredictable to obtain than those used in new construction. With community interest high in such projects, and historic societies and foundations sometimes involved, there are generally more stakeholders to please than with projects being built from scratch.

Reusing buildings requires difficult decisions be made. The first will be in successfully choosing the new purpose for which the structure will be used. One in which the architecture and historic heritage might successfully be preserved. There are numerous parameters involved in choosing an occupancy that is both possible given the existing building and practical from a standpoint of marketing the space, once the renovations are complete. The section of this course discussing potential collaboration between realtors and architects, details a service that could provide valuable input into a decision regarding future use.

Older buildings also come with unique and marvelous features that we may or may not embrace, containing both desirable and undesirable components. Ornate detailing, high ceilings and tall windows are just a few of these. Some come with finishes, especially in flooring and ceiling treatments we could not afford to duplicate now elsewhere in the building. It may also be impossible to even find artisans who can still repair or create such treatments. Older buildings may come with materials that have since been deemed harmful to human occupants. Not only must such materials be either encapsulated or removed, but workers must be protected from them during their removal. Those discarded materials must be removed and discarded under special conditions, due to their designation as hazardous.

There are some instances where the layout of an existing building may create significant problems with reuse for any intended purpose. It those cases, the highest and best use for the property may really dictate tearing the existing down and building a usable facility. Otherwise, every little compromise made to reuse the existing, adds additional time and costs into the end product or space being sold, simply because preserving something old seemed important.

Structural conditions in an existing building, like large columns supporting short spans, can present challenges in converting the space for more modern uses. Moreover, existing floor systems may need reinforced before placing more modern loads, like rolling stack files, on top of them.



For example, let's assume an old industrial building is purchased for reuse by another manufacturer. Built before longer spans were available through the use of lightweight steel joists, it has many interior columns of significant size. The primary product to be produced, uses four machines, set up in a sequence to obtain the final result. But, the column spacing makes it impossible to place four machines in direct proximity. So two machines each are located in two adjacent building bays. Now the output from the second machine must be packed and carted across the floor to the third machine. In addition, it may need to be stored in a third bay until the operator of the third machine is ready for it, effectively turning space needed for production into storage space. What was a continuous process has now become an interrupted, and more space intensive process, adding cost to each final product. This is just a column spacing issue and doesn't factor in additional floor structure needed to support machinery, window upgrades to keep thermal expansion of materials from complicating the machine process, roof repair to keep water off the machines and so on. The up-front and ongoing costs of preserving the original building just keep adding up.

In another case study, lets assume an old warehouse building is being purchased for use as an upscale condominium project. The goal is to keep the original 'historic' structure, rather than removing it and building a more high-density project on the site. The first hidden cost becomes lost income from the number of units that won't be built, due to the decision to forfeit the potential for high density. The size of the available housing units will now be dictated by the space between existing columns, rather than sizing them according to current market demand for what buyers are seeking. Since egress needs to be made through the exterior walls, and the existing building is too deep for each unit to stretch from front to back, entry to each unit must be from a central corridor / atrium, with egress provided to the outside of the structure on each side. That central corridor eliminates a lot of viable square footage from consideration that can no longer be sold or rented. Moreover, the high ceilings of the original structure may require the installation of a complete system of lower ceilings, to make utility costs for the purchasers more affordable and attractive. Condenser units for each unit's HVAC will need to be placed in well landscaped exterior courtyards, since the existing roof has no structural capacity to bear their weight. The up-front and ongoing costs of preserving the original building just keep adding up.

Some buildings are not really good candidates for adaptive reuse projects. Buildings originally used for prisons have thick walls, not easily modified and containing a lot of reinforcement. Space is heavily carved up and rooms are small. They are difficult to reimagine and retrofit as profitable structures for other uses. Structures previously used as low rise apartments have a low ratio of rentable space compared to the lot size. If left unused, buildings that are difficult to retrofit can become structurally unsound, havens for criminal activity and in general, dangerous to the surrounding area. In these cases, it would be a better use of the land to demolish them and erect in their place, more modern structures containing far more usable space.

Older buildings predate current codes, zoning requirements and development regulations. Fire suppression, handicap codes, life safety codes, energy codes, parking and landscape buffer requirements may be especially tough to meet. Cooperation from regulatory agencies, and possibly waivers from them, may be a prerequisite for a successful project. Simply put, successful adaptive reuse often requires some level of cooperation between developers and municipalities.

Multiple communities recognize the significance of both historic and older buildings by placing provisions within district plans for their preservation and reuse. When possible, they encourage preservation of architectural and heritage character. Adaptive reuse is encouraged by sometimes providing incentives for reuse of older structures by private developers. The use of private funds is always preferable to spending tax monies and restoration of neighborhoods occurs more quickly when driven by capitalism instead of bureaucracy. Incentive programs allowing adaptive reuse help preserve character and neighborhood identity in efforts toward urban revitalization. They understand that a well done project that may be less than perfect, but is still safe for occupants, is more desirable than buildings left to further deteriorate. Allowing some leeway on zoning ordinances, subdivision and land development ordinances, historic area requirements and design guides can make them far more desirable to investors. They understand that a little flexibility

in enforcing regulations will result in increased taxes generated by reuse of the structure. No one wins if the property is left vacant or torn down.

That being said, it is interesting that developers and designers alike, feel far more can be done by municipalities to encourage adaptive reuse, besides just claiming it is desired. Developers feel there is not enough support or incentive from local governments to make adaptive reuse projects more attractive than building new. Even building codes, supposedly specifically created to make renovation projects easier, are somewhat inflexible. Moreover, as there are only limited waivers on allowable densities that would make projects more attractive, in general, reuse is not truly encouraged, especially when innovative solutions are proposed. Designers in general feel too much emphasis is given to use of 'sustainable materials' and not enough credit is given to the overall resulting improvement of the surrounding environment. Fire safety codes and handicap codes are difficult to work around, when very little leeway is made regarding their implementation, even under tough conditions.

More progressive communities actively participate in moving adaptive reuse projects forward. Staff supports the efforts of investors with information and data, offering tax abatements, setting up meetings with community groups and allowing increases in densities. They may also assist in obtaining funding through grants, upgrading infrastructure going into the site and working together on mitigating environmental concerns. Though some municipalities do not yet recognize or prioritize it, it is truly in the best interest of communities to encourage and facilitate adaptive reuse projects.

ECONOMIC FACTORS FOR REUSE OR REMOVAL

The decision of what to do with older tangible assets is generally driven by economic factors of development costs, project costs, investment returns and market. These factors must be considered when considering the future of any older and empty building, because the cost of converting the building to another use may simply be too great. General statements regarding the attractiveness of one option over another may not be relied upon, because opinions vary wildly, depending on whose opinion is sought. Some claim adaptive reuse is far cheaper than new construction. Others swear that new construction represents a far more certain return on investment. If they have endured a difficult project in the past, some just begin swearing when asked to consider purchasing older assets.

When a building is purchased as an investment, then decisions regarding adaptive reuse are driven by a desire for short-term profits. Older buildings are acquired with a short return on investment in mind, based on the building's physical condition and the expected expense to make it reusable. With older structures acquired as capital investments, developer decisions are almost never driven by concerns of sustainability and environment. What developers and investors are somewhat concerned about, is the positive impact that building reuse and sustainability can have on their image.

For the most part, the amount of rent to be realized by leasing out space, will be determined by local market conditions. Lessees will not be so concerned about the status or the historic value of building components, so long as they function. So a delicate balance must be found when deciding how extensive upgrades should be, in an adaptive reuse project purchased for investment. If poorly performing systems, windows, etc. are left in place, owners can expect a shorter life expectancy for their asset, higher costs for monthly utilities for their tenants and higher maintenance costs in the future. It is a fact that higher quality finishes and appliances yield slightly higher rents. It is true that the better the condition of the renovated building, the higher the potential resale price. It is also true that character and ambience will result in space being leased much more quickly than that of competitors. But every bit of money spent still represents an investment, and the more spent up front, the longer the return on investment. Pride is a luxury investors can't afford. In every case, a cost versus benefits analysis will be needed.

TWO PART CONTRACTS

One expected cost that can be somewhat eased in the planning stages, is the expense of hiring a design professional. Many architectural firms are willing to explore changes needed to adapt

a building to another use, in a two part contract. In such an arrangement, a partial fee is proposed to document the existing facility and develop preliminary drawings showing changes needed to make the facility meet the proposed use. These drawings can be used to establish project feasibility.

Such preliminary design drawings are usually sufficient to establish the scope of work involved in proposed renovations to the building. They can be used to obtain a preliminary estimate that will be fairly close to the final cost. They can also be used in discussions with regulatory agencies regarding the feasibility of the project. When combined with a preliminary cost estimate, such drawings can be used in presentations and discussions with lending agencies that might become involved. Only if a decision is then made to move the project forward, would the remaining engineering and construction documents be completed, needed to obtain final permits and bids. Those would be provided in the second portion of the contract for architectural services.

SUSTAINABILITY BENEFITS TO ADAPTIVE REUSE

One area of conservation involved in building reuse is the saving of water. This resource is used in the extraction of raw materials, the manufacture of building components, as part of many construction processes, by occupants during use of the building, to sustain and preserve landscaping and in the demolition and material reuse phases. Not having to repeat that cycle by replacing existing structures with new buildings, conserves the use of water.

Energy is also conserved when buildings are reused, certainly benefitting the environment. Electricity not used is power that need not be generated by burning fossil fuels. Power is also consumed in the extraction of raw materials, the manufacture of building components, during construction processes, by occupants during use of the building, by pumps used to irrigate landscaping and in the demolition and material reuse phases. Retrofitting a building uses but a fraction of the energy used in building a new one. And when the thermal performance of an existing structure's exterior is enhanced during renovations, additional energy is conserved moving forward.

Choosing to retrofit instead of demolishing and rebuilding, also conserves the supply of raw materials in the earth, that must be extracted prior to their conversion into building materials. For those concerned with our ecology, that is an important consideration. Environments are usually harmed by processes used to extract such materials. Moreover, the extraction of such raw materials depletes the existing, and for the most part, nonrenewable supply of these natural resources from the earth.

Despite the irritation factor in dealing with contaminants or hazardous materials found in the existing structure, the community, the neighborhood and the building occupants will all benefit once remediation has been completed.

Reusing rather than recreating materials to construct a new building shell carries sustainability benefits for the environment. According to the United States Environmental Protection Agency, it takes about sixty-five years for a new energy-efficient building to save the amount of energy used in demolishing an existing structure.

The greenest buildings are those which are already in existence.

REVIEW QUESTIONS

12. Retrofitting in adaptive reuse is the art of finding value in what others may _____.

a. See as liabilities
b. Simply transport to a landfill
c. Publicly disparage
d. Demand be removed

13. The two biggest hurdles to overcome in complying with building codes during retrofits are _____ .

a. Reattachment of veneers and new copings
b. Safety and accessibility
c. Vehicular access and parking
d. Material staging and pedestrian safety

14. Older buildings provide a direct link back to a community's _____ .

a. Founding fathers
b. Scandals about old money
c. Original intentions when founded
d. Heritage and history

15. At the end, the project must be _____ or private money will abstain from involvement.

a. A source of pride
b. At least break-even
c. Profitable
d. Free from regulatory hassles

16. Which of the following is NOT a building component now deemed to be hazardous.

a. Plasticized paints
b. Asbestos insulation
c. Lead paint
d. Flooring containing asbestos

17. Simply put, successful adaptive reuse often requires some level of cooperation between _____ .

a. Artisans and developers
b. Community leaders and investors
c. Developers and municipalities
d. Lenders and builders

18. According to the United States Environmental Protection Agency, it takes _____ for a new energy-efficient building to save the amount of energy used in demolishing an existing structure.

a. Only eleven months
b. Eleven and one half years
c. About sixty-five years
d. A millennium

REPLACE

If consideration is being made to demolish an older structure and replace it with a more modern building, the advantages and disadvantages of doing that should first be considered. When is it a better idea to demolish a building, rather than attempting to restore it? If it is not a historic structure or one having cultural significance, you want to demolish any building costing more to restore than to rebuild from the ground up.

CONSIDERATIONS PRIOR TO DEMOLISHING

If the project is historic or located in a historic district, there may be ordinances and laws in place to protect such resources and their character. Many municipalities have commissions in place to govern such projects and processes which must be followed when considering either demolition, renovations or restoration. Oversight may be required by local building officials or even a local Fire Marshall. Costs of demolition are also highly variable, depending on locale and local requirements for permits.

Investigate what will be allowed on the site, before demolishing what is there, even if the existing structure was damaged. It may not be possible to obtain a permit to replace it after demolition, or even to use the site for a different purpose. New structures may be required to meet community or neighborhood standards for size and architectural character.

Demolition permits often require testing for the presence of hazardous contaminants. If lead or asbestos is found in the existing ducts, paint, flooring, roofing or siding, disposal of those contaminated materials can become quite costly. Various gases used for coolants require special handling. Underground tanks must be carefully disposed of, or opened and filled under strict guidelines. Brief research into past uses of the structure might save a lot of grief before moving forward with a tear-down.

Other site conditions, more specific to the building location, may come into play. Investigate and determine whether utilities will be able to be disconnected at the service entry or whether they will need to be disconnected back at the property right-of-way. If the site is in an area designated as environmentally sensitive, like wetlands or slopes subject to erosion, other precautions may need to be put into place.

If a mortgage is still in place on the property in question, the institution holding the note must give their permission for the removal of the building. Otherwise, the only way to legally demolish the building is to first pay off the remaining balance on the building loan. The lending institution paid for it and they own it until the money is repaid. Insurance proceeds or construction loans may be used to make such payoffs.

ADVANTAGES OF DEMOLITION

Sometimes, demolition of properties with historic value is still the right choice. The building may present a danger to those around it, due to hazardous materials used in its construction or because it is a fire hazard. Permission to remove it can be easy to obtain, since doing so will improve the value of the surrounding properties. It may actually be an eyesore, thereby pulling down the value of surrounding property. It may not be possible to obtain the pieces needed to restore the building accurately. If the vacated land will be used for another building that would be beneficial to the community for any reason, that will be considered in obtaining a demolition permit. If the reason the building is deemed significant is due to its association with tragedy, removing it may help bring healing to that society.

In some cases, demolition becomes more probable if resources are not available to restore the elements that give the building its historic value. Finding craftsmen capable of repairing sculptured plaster, terrazzo, cast iron elements, etc. may make actual restoration fairly impossible.

If a decision is made to demolish only part of a heritage building, historic detailing and elements inside the old facility may be able to be removed, stored and reused in portions that will remain and be renovated.

DISADVANTAGES OF DEMOLITION

There are some who deeply feel that leveling properties with historic significance is a moral deficiency. For whatever it is worth, taking such buildings down will earn the enmity of these objectors. Intentions of demolition will become known, since it will require acquisition of permits, giving public notice of intentions to do so. Opposition will be encountered from preservationists seeking to create societal disfavor for you and your enterprises. If the building truly does have historic value, its removal will hasten the day that history is forgotten. Out of sight equals out

of mind. Once the structure is gone, so too is the opportunity to convert it to a museum or attraction to bring visitors to that area. Restored buildings need not be museum pieces, but can house other uses that provide income. Sometimes, restored buildings can draw users to other businesses and enterprises in their area, acting as a hub for neighborhood regeneration. On the other hand, if the building is torn down, it most likely will not be replaced with anything comparable, especially if the previous building had elaborate ornamentation.

If a historic property can be restored cost effectively or with financial assistance, doing so is often preferable to demolition. Especially if a modified approach is taken through adaptive reuse.

REPLACING THE BUILDING MAY NOT BE EASY

It is very difficult to build new square footage as economically as just renovating existing square footage. This is due to at least four major factors.

The cost of building materials can become extremely high. This can be attributed to difficulties in supply chains, especially those that cross national borders. These can be tensions created by political posturing, perceived or real trade imbalances, embargos put in place to protect domestic suppliers and restrictions on trade due to epidemics on one or both sides of borders. There may have been difficulty in finding workers to produce the needed materials. Prices may reflect a need to recoup the rising cost of fuel used in transportation of materials. Natural disasters create material shortages in two ways. The raw sources of the materials are destroyed by the natural disasters or existing supplies of materials are quickly depleted, in repairing or securing structures damaged by the disaster. The now global nature of commerce also puts our once primarily national supplies on the international market for use by any other country facing a sudden need or shortages of particular materials.

The labor pool for construction work is dwindling. Relatively few younger people have much interest in the physically challenging nature of construction, when societal heroes and millionaires are tech geniuses and gifted athletes. The older generation of artisans is retiring or passing away in large numbers and they are not being replaced by younger skilled tradesmen. It has become nearly impossible to find tradesmen still skilled in areas like terrazzo work, wrought iron creation and installation, the use of copper, the repair of plaster ornamentation and so forth. Wages are rising for entry level jobs, diluting much of the allure of traditionally higher paying construction jobs.

The rising cost of raw land, combined with high costs of new infrastructure, makes new sites for buildings sometimes cost prohibitive. At the risk of being the bearer of bad news, in some cases an existing site and location may be of more value with the existing building removed. It will matter what utilities and other infrastructure are near, or come into the site. A price will need to be determined for the costs of demolition and disposal of the existing structure. The value of the property may also be contingent on whether other nearby sites are available, that can be packaged together for a larger offering.

There is a very real cost to meeting the proliferation of community regulations that has occurred in the past several decades. Many of these, like fire safety regulations, stormwater drainage requirements and sewage treatment guidelines were justified as necessary to provide for the increased well-being of the community. From a pretty cynical viewpoint, many seem to also result in a great number of fees to be born by those desiring to develop new projects or renovate old ones. Some "fees" have nothing to do with protecting the public from new projects, like requiring parks to be built elsewhere or roadways to be upgraded at a cost to the developer. Those are basically just overt blackmail. But those costs of doing business must then added to the cost of new development and recouped through higher rental rates.

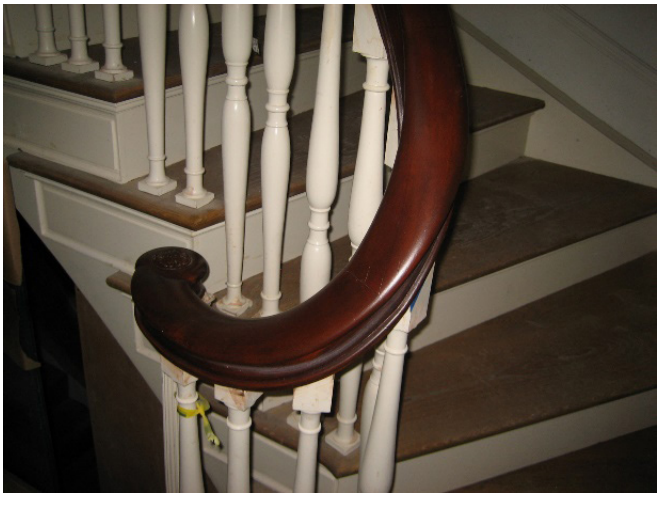
In some bureaucracies, it may be easier to demolish and replace a building, than to restore it. While less restrictive rehabilitation codes exist in many locations, inspectors may not be familiar with them and may still insist on sprinkler systems being installed, walls and ceilings being upgraded to fire-resistive barriers, flammable items like 100-year-old trim being removed from corridors, asbestos being removed instead of encapsulated, etc. Fighting with bureaucracy has caused many a well-meaning preservation effort to end on a sour note.

SELECTIVE DEMOLITION

Everything on a site need not be demolished. With larger scale projects, it may be necessary to remove one building from a group of many, that simply doesn't fit the desired goal of the redevelopment. In earlier times, it was not uncommon to find housing coupled with small factories or with shops, especially in an era when store owners lived above their places of business. If an old and dilapidated industrial building sits in the middle of brownstone homes that could be restored into a trendy neighborhood, restoring the old factory becomes somewhat of a moot point. If the space upon which it sits can be used for additional period homes, a neighborhood center or a small shopping area to provide services to the new neighborhood, that old building is likely in the way of progress.

MARKETS FOR EXISTING COMPONENTS

One side effect of the decision to demolish an older structure is the potential to create a resource for other projects. Stripping the building of elements that can be used in other projects is labor intensive, but usually yields enough salvageable parts to offset the cost of doing so. These components have been referred to as a 'treasure trove' and in keeping with this concept, older buildings slated for demolition have been referred to as 'mines of raw materials for new projects.' It is surely easier to reuse salvaged materials than to harvest and create them new from nature.



Such salvaged components, especially in the area of interior and exterior detailing, were often popular and used in the same localities during specific time periods. As such, pieces from another nearby building, not deemed to be salvageable, might be exactly what is needed to complete the historic restoration of one is in better condition. In a crude example of this, I was once tasked with restoring an original, one-room log schoolhouse, built in the mid 1800s. Approximately a fourth of the logs had deteriorated past the point of reuse. I was; however, able to find an old barn elsewhere in the county, made of logs the same size and of the same species of wood, erected about the same time and using the same joint detailing. The farmer donated those logs to be used as replacements for the schoolhouse, in return for the group paying to demolish his barn and level the land for a new use.

Companies exist that salvage and store historic components, such as detailing, trim and ornamentation for reuse in other projects. Some of these enterprises may bid for the right to strip an older structure of usable items before it is leveled.

In the event that items desired for restoration are not available in local existing buildings or through salvage companies, there are also businesses that recreate such items. These period pieces are often made by scanning existing pieces to create a 3-D model of what is desired for replication, then using CNC technology to duplicate what was scanned. Such period components are available in a wide variety of materials, ranging from cast bronze and brass to molded plastic and composite wood. An Internet search can turn up a surprising variety of resources for historic restoration needs.

Besides resell, another consideration in the demolition of existing buildings, is how many of the materials within them can be recycled. Besides the historic elements, how many components can be placed back into use in what has been described as a circular economy? A distinction must be made when considering such recycling, whether it would of a primary, secondary or tertiary nature. All building materials are not equally environmentally friendly or sustainable. But any reuse makes sense when considering that the most environmentally friendly building materials are those which need not be currently harvested or pulled from the environment, in order to come into existence for our use.

With that in mind, the terms used above in describing building recycling are best defined as follows. Maintaining, refurbishing and reusing existing buildings is primary recycling. This makes the best use of those materials already in existence inside the structure. Secondary recycling occurs when such buildings are demolished, but the building materials inside are gleaned beforehand or during construction, cleaned up and reused for other projects. Tertiary recycling occurs when a building is demolished and materials which are suitable, are crushed or shredded for use as other products or as fill in other projects, particularly in paving or under foundations.

Note that tear down and reuse of building materials is not nearly as kind to the environment as it may appear upon initial consideration. A lot of manpower, machinery, water and energy will be used in removing those materials from a structure prior to demolition. Money, fuel, energy, water and effort will also be expended in cleaning the materials, then fuel and labour will be needed to transport them to a location where they can be resold. Once resold, fuel and labour will be used to get them to their new location and manpower, machinery, water and energy will be used to reinstall them in a new building. Between the generation of the electricity used and the trucking needed, fossil fuels will be expended in large quantities. Obviously, it is more sustainable to the environment to leave materials in place by not engaging in demolition.

Sometimes, just choosing the right materials to use in preservation makes recycling old structures more feasible. For example, recoating an exterior with linseed oil-based paints will produce a finish lasting far longer than using paints made from plastic. It may be a bit more expensive up front, but life-cycle cost analysis yields the economic power behind many such choices. This is especially true in the replacement of existing with new and energy-efficient doors and windows. These are often available to match the appearance of those found in historic settings.

REALTOR / ARCHITECT COLLABORATION

Whenever an older existing building is purchased, an interesting opportunity presents itself for collaboration between professional architects and professional realtors, specializing in commercial real estate. In such a partnership, the realtor would propose and sell their combined services to a building owner seeking to sell an existing commercial building. The architect would then document the existing building and create a plan and at least a front elevation of the existing structure.

One valuable tool is the development of a grid showing the sweet spots, where intersections occur between potential uses allowed under current zoning and potential uses allowed by state building departments for that building's previous occupancy. Together, based on the locale and community composition where the building is located, the realtor and architect would determine the three or four best and most marketable uses for the facility.

In an ideal marketing collaboration, the architect would then design a quick prototype plan and elevation for each potential use. These plans, each paired with the layout of the existing plan, would be used by the realtor to market to potential users in those specific market segments. This section will conclude with additional thoughts regarding such a collaboration.

FINDING THE SWEET SPOTS

There is a sweet spot in the intersections of what is permitted in the zoning district where a building was constructed, and what is permitted by the use occupancy in the building code, under which the last building use fell. In these intersections of possible uses for the structure lies the least potential expense (mandated anyway) and the least hassle (no need to obtain zoning exemptions or changes) for building reuse.

Step 1 – Assessment of the building to determine which building components should be, or need to be replaced.

Step 2 – Determine what changes would be mandated by current building codes, prior to the building being reused as it is currently zoned and occupied.

Step 3 – Get estimates on the cost of making changes discovered to be necessary in the first two steps.

Step 4 – Establish a matrix to determine the sweet spots of potential reuse that represent intersections between allowable existing occupancy uses and allowable existing zoning uses

Step 5 – Develop an existing plan, then basic plans for reuse of the building for the three most viable building uses, discovered in the sweet spots of the matrix.

Step 6 – Use the existing and basic plans to market the building and its potential reuse to other businesses in those markets, currently working in smaller facilities and potentially needing more space to grow.

Pictured here is an example of how such a grid might be used to find intersections of uses allowed in community zoning districts and state building occupancy categories. This was developed for a hypothetical property in Valparaiso, IN.

Exist building was an R-2 occupancy in a CP zoning	**Central Place Zoning (CP) – Permitted Uses**	Single Family	Traditional Neighbor-hood Develop-ment	Live Work Units	Public Service
Permitted Uses in Last Occupancy Group (R-2)					
Apartment houses			X		
Boarding houses (not transient)			X		
Convents			X		X
Dormitories					
Fraternities and sororities					X
Hotels (nontransient)					
Monasteries					X
Motels (nontransient)					
Vacation timeshare properties					
Congregate living facilities					X

Given additional information (like there being no colleges anywhere close) the best potential customers for this property would likely be apartment developers, developers of congregate living facilities or religious entities seeking to erect housing for members.

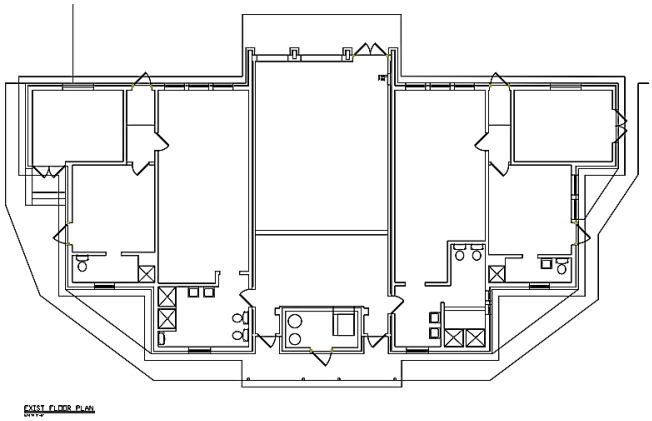
DOCUMENTING EXISTING PLANS AND CREATING ALTERNATE LAYOUTS

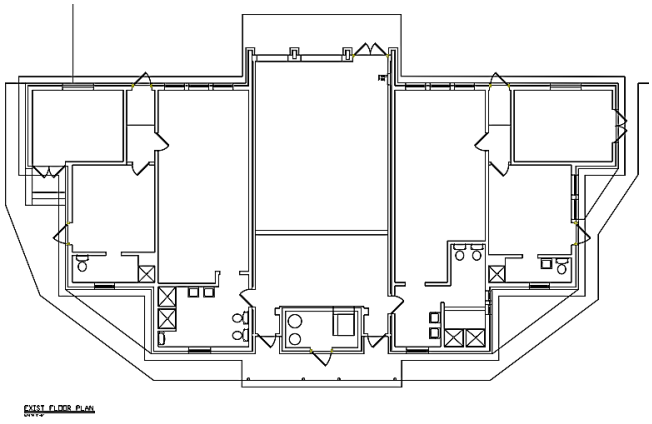
As mentioned, it would also be important to document the existing facility, so as to determine the extent of changes needed to make it suitable for alternate uses. The case study shown below was a real life, and very recent, example of exploring such alternate uses for an abandoned and deteriorating building.

The existing structure in this study, sits in a residential zoned district next to a golf course. The building was originally used as a pool house for a large swimming pool behind it, that had been collapsed and filled in years before. The pool house sat empty for many years and was beginning

to deteriorate, primarily from water infiltration. Choices being considered were to either tear it down and sell the land, or minimally restore the building to again make it weathertight, then market it for several types of reuse.

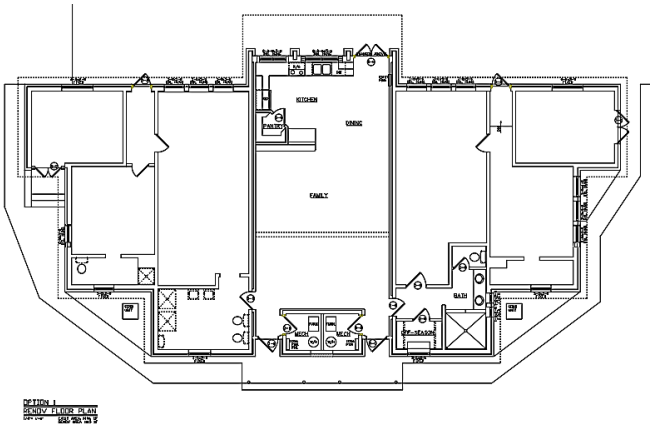
Prior to tearing it down, a decision was made to spend the money and effort, exploring whether the building could be used for alternate purposes. That work began by documenting the existing plan and elevations.

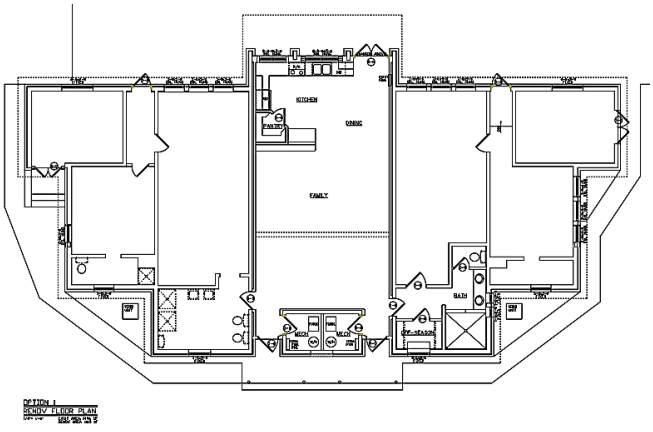




With the existing structure laid out, alternate options for the reuse of the building were explored. All options included a scope of work and common to them all, was the initial need to clean up the exterior and make the building weathertight.

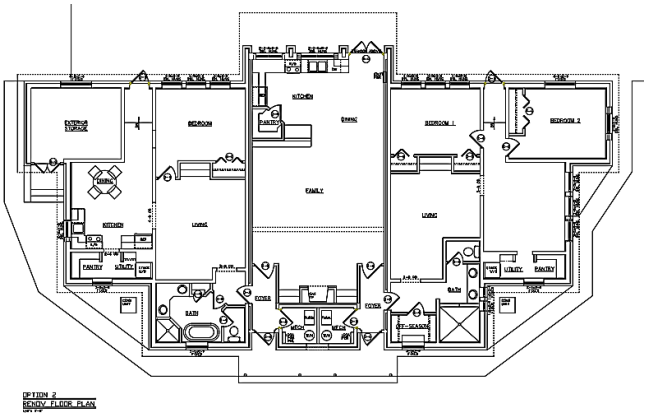
OPTION 1 –
This first option showcased the creation of a useful kitchen and one renovated bathroom, as well as creating separate power panels for each area and two HVAC split systems to allow zoning. These changes made the structure reusable as an office structure with two tenants and a common break area.

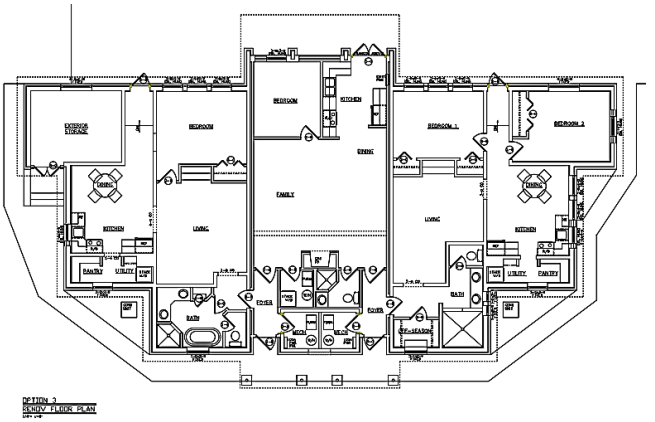


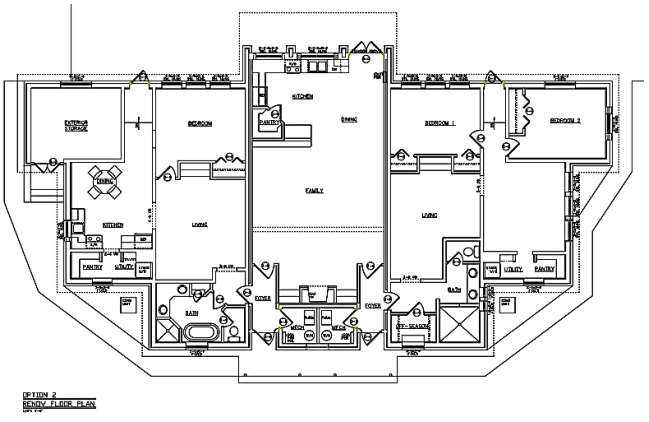


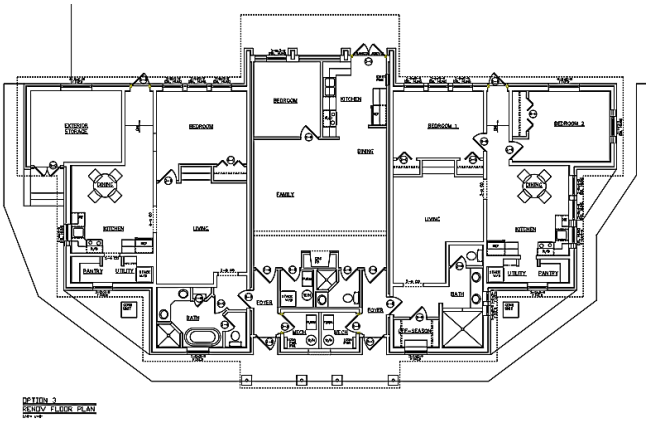
OPTION 2 –
This second option incorporated changes needed to create two separate living units with a central common area. This configuration allowed one unit to be isolated with the central area accessible from just one side, creating two sizes of rental units.

OPTION 3 –
This third option was similar to the previous option, but the central area was turned into a studio living unit, for additional rental. Fire walls would need to be created, but with masonry walls already in place, that would be quite easily accomplished.

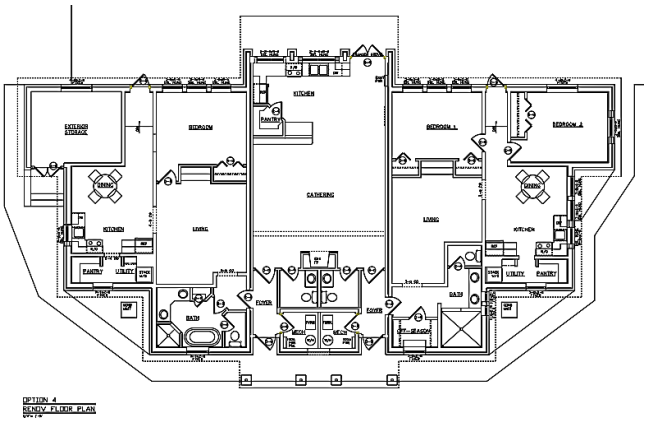


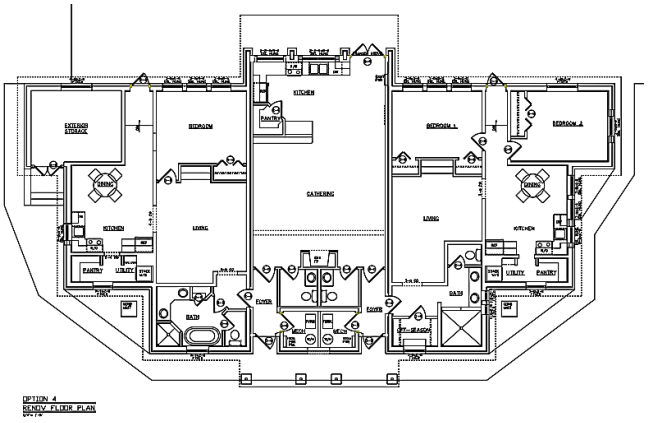




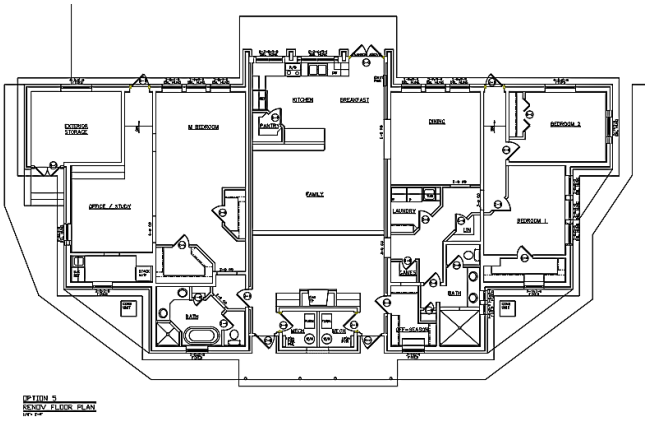


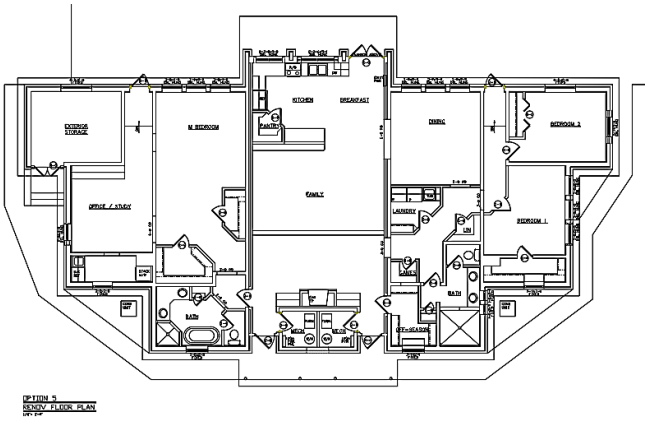
OPTION 4 –
This fourth option created rental units on each side, with the center area remaining usable for receptions, weddings, conference retreats, etc,, with its own bathrooms.





OPTION 5 –
This fifth and last option explored changes needed to convert the pool house into a single residence, one utilizing a split bedroom plan.





I am happy to report that the plans created for the various options were used in marketing and the existing building was successfully sold, just prior to the creation of this course.

STRUCTURING A REALTOR / ARCHITECT COLLABORATION

Before including this section in this course, I spoke about my idea regarding such a collaboration between these professions, with a realtor friend in Fort Wayne, IN. He specializes in rehabilitating and marketing commercial properties. The following are ideas generated from our discussion.

Compensation for work done on the front end by the architectural half could be handled in three ways, two of them problematic. In the first approach, the realtor would pay the architect directly for services to create what would essentially be marketing tools for their use. Since compensation for a realtor doesn't occur unless a sale is made, this approach seems a bit risky for the realtor. The building owner could also pay the architect directly for services to create what would essentially be marketing tools for their business use, then and later. But proposing that an owner incur that cost up front, might separate the realtor in a pretty negative way from other realtors offering to list the building with no initial cost to the owner. In a third scenario, just as the realtor fronts the costs to market it, the architect would also provide their initial services at no cost, chalking it up to marketing for the firm. Then, upon sale of the building, the sales fee would be split between the realtor and the architect, using a percentage agreed upon earlier, possibly up to one half the commission going to each.

What would the advantages of such an arrangement be to the realtor? The availability of such services and an inclusive sales team to building owners, would set that realtor far apart from other commercial realtors competing for the listing. Moreover, having an existing plan and proposed plans available to market to viable market segments, would likely result in a much quicker turn around of the building.

What would the advantages of such an arrangement be to the architect? Upon the sale of the building, as is appropriate with any kind of assumed risk, the fee realized would be a significantly higher return on investment than with the simple provision of building documentation. Moreover, already being familiar with the building and having drawings completed at some level, the architect would be in a strong position to market remaining design services regarding the reuse of the building, to the new owner of the property.

My friend felt such a business arrangement between a realtor and an architect would certainly be of mutual benefit. I do as well.

SUMMARY

Whenever a change of ownership is proposed for a property containing an older building, a decision will need to be made. The existing structure will need to be either reused as is, repaired before reuse, restored to a previous historic condition, repurposed through adaptive reuse or removed and replaced with a newer building or different use. These options are ordered in terms of their probable cost to investors and to society. There are guidelines that help shape such a decision.

The easiest decision to make will be the one with the least cost invested to realize a decent return. If an existing building can be reused, exactly as it sits, for the same purpose for which it was utilized beforehand, the only significant cost would be the purchase price of the building. No extra effort or expense need be expended to restore some level of cash flow.

Market research will determine whether repair and some level of upgrades would be a viable option. If decay or failure of some building component led to its abandonment of use, that will need to be repaired before reuse can happen. In the process, if renovating would yield more return in rental than the cost of the upgrades, it would be a good investment to improve finishes, lighting, appliances, etc. before reopening for business.

Restoring the building to a previous level of historic accuracy is an investment that must be very carefully researched. Doing so is obviously not the least costly option. A truly historic structure will limit a number of potential occupancies. Seeking grants and other forms of financial assistance from historic restoration groups may result in strings attached for future use. But even with non-historic use of the structure, the resulting building will be a source of community and personal pride.

Adaptive reuse is a solid compromise between reuse with upgrades and historic restoration. Restoring the exterior and repurposing the interior touches on the best of both worlds. The pride and identity of the neighborhood can be restored, while maximizing the potential return on investment by making the space inside as modern and rentable as possible.

The last option is to remove or demolish the structure and replace it with another use. This is the most expensive option, facing the most hurdles from regulatory agencies, taking the longest and doing the most damage to the environment. Rebuilding is still preferable to leaving the site empty or reusing it as a parking lot. Unless of course, parking is desperately needed in the area and rental of the spaces can be an equally lucrative return on investment.

The least advantageous use of an existing building is a choice made, not by investors but by municipalities. That is the decision, by placing enough onerous regulations and bureaucratic obstacles in place, that investors and developers would rather pass on an opportunity, letting a building just sit empty and continue to decay. While doing so, it becomes a danger to surrounding properties by becoming structurally unsound or a fire hazard, by attracting criminal activities and by lowering the value of surrounding properties.

Any reuse of older buildings is better than none. Some thought just needs to be put into the options of how to do so, before any decision is made on to the best way to proceed.

REVIEW QUESTION ANSWERS

1. Unless it has been _____, land in a community will always have an intrinsic value.

a. Contaminated by hazardous waste

(This is the correct answer, taken from the course material. None of the other answers provided change the actual value of the land.)

b. Obtained under fraudulent means

(This condition results in no change to the resale value)

c. Used previously for illegal activities

(what is done on the land has no association with its worth)

d. Ceded as part of a previous lawsuit

(This only affects value if an outstanding judgement or encumbrance remains against the property.)

2. Thorough inspections of existing buildings should be made by someone _____ , before a decision is made regarding the building's final disposition.

a. Who has not participated in projects nearby

(The condition of property nearby has little bearing on the physical condition of a subject property.)

b. Who has participated in the renovation of a nearby building

(This again has no bearing on the physical condition of any individual building)

c. Currently serving on the zoning commission controlling use of the property

(A conflict of interest)

d. With no financial or vested interest in the building or repairs

(There should be no potential conflict of interest)

3. Knowing the value of _____, available for reuse in that location and zoning district, will be useful in making decisions.

a. A gutted building shell

(Few would care to purchase a building and pay to just have it gutted, before attempting to resell it.)

b. Already permitted signage

(This does have value, but generally not enough to drive a decision on building disposition)

c. An empty site

(This is especially important when demolition is one of the options being considered)

d. Neighboring complimentary businesses

(While the value of nearby buildings can impact the value of a subject property, it will not be the primary driver of a decision regarding final building disposition)

4. When assessing floor systems, those of older buildings _____ strong enough to support current loading requirements.

a. Are almost never

(This is not often the case.)

b. Are usually

(Before the advent of precise engineering programs, the structure of older buildings tended to be oversized, so as to err on the side of caution.)

c. Are assumed to be

(Assumptions are dangerous things, especially when life and safety are involved, and should never be made in such instances.)

d. Are accepted by most codes as

(Codes make no recognition of the age of a building.)

5. Ornamentation and significant components can sometimes be removed from _____ areas of a building and reused in more _____ areas.

a. Private, visible

(This is a very viable way to preserve the architectural character on the inside of a building, when matching pieces are difficult or impossible to obtain.)

b. Service, commercial

(Possibly, but this isn't what is described in the course material)

c. Exterior, interior

(These outside probably aren't going to be very appropriate inside.)

d. Public, rentable

(Whether a space is rentable or not has no bearing on where ornamentation should be reused.)

6. _____ will also have major input on whether they wish to finance a restoration, or a removal followed by a rebuild.

a. Neighborhood associations

(Typically not funded by the neighborhood association)

b. Institutions holding funds in trust

(Unless the trust has qualifications in place for how funds can be used, these institutions would have no say in how disbursements are used.)

c. Potential heirs of the developer

(Until the developer is dead, potential heirs usually have no control over funds.)

d. Insurance companies

(Without them signing off on a project, funds won't likely be forthcoming.)

7. It may be necessary to submit proposed changes and repairs to damaged buildings for zoning and planning approvals, if the _____ is expected to change.

a. Business name

(No one really cares, so long as standards of decency are maintained and no trademarks are violated.)

b. Occupancy use

(This is absolutely true, as life safety requirements are different for each occupancy classification)

c. Exterior color scheme

(This would only come into play if there is already a recommended or required color palette for a redevelopment district in which the building sits.)

d. Perimeter drainage

(Drainage issues typically come into play only when the area of impervious surfaces on the site will be changed.)

8. Material prices can be driven up by _____ .

a. The rising costs of mortgage loans

(These affect overall lifetime costs, but have no effect on material prices)

b. Increasing scarcity of building sites

(This has no effect on material prices, just land costs.)

c. Onerous legislation by regulatory agencies

(This has no effect on material prices, just quality of life.)

d. Natural disasters creating shortages

(This problem will definitely affect material prices, as supply suddenly drops below demand.)

9. In general terms, in order for a building to be considered 'historic,' it needs to be at least _____ old.

a. Two hundred years

(The older I get, the younger this seems, but this is still too many years to match course material.)

b. Over forty years

(This is closer, but still doesn't match actual criteria.)

c. One century

(The older I get, the younger this seems, but this is still too many years to match course material.)

d. Fifty years

(Well, I'm at least considered 'historic' now. Sounds better than decrepit.)

10. If we are to keep historic structures, then _____ them becomes important as well.

a. Maintaining

(It does little good to go through the effort of restoration, just to let a building deteriorate again.)

b. Publicizing

(Publicity will have little effect on a building's continued existence.)

c. Designating

(In a sense this is actually true, though it is not the answer given in the material. Having a building officially designated as 'historic' does put some protections in place and opesn the door to funding opportunities. But it is not a prerequisite to keeping an older structure.)

d. Subsidizing users of

(Although many users wish this were true, very few historic building owners or users are subsidized.)

11. Demolishing buildings of historic or cultural significance can create _____.

a. A void in a historic district

(Definitely, but this is not the answer given in the material.)

b. An unprecedented amount of hazardous waste

(Not unless the building was previously used for hazardous purposes or contained hazardous materials.)

c. Tremendous societal opposition

(This can be expected and perhaps rightly so, since buildings with a lot of age also generated a lot of memories.)

d. Displaced older businesses

(The age of any displaced businesses has nothing to do with the building age.)

12. Retrofitting in adaptive reuse is the art of finding value in what others may _____.

a. See as liabilities

(This is straight from the course material and an excellent investment strategy.)

b. Simply transport to a landfill

(And what a waste that might be.)

c. Publicly disparage

(Opinions are usually worth about exactly what was paid for them.)

d. Demand be removed

(Those demanding such are not likely to be the ones suffering financial loss by tearing it down.)

13. The two biggest hurdles to overcome in complying with building codes during retrofits are _____ .

a. Reattachment of veneers and new copings

(These are neither specified in the code, nor problems with many retrofit projects.)

b. Safety and accessibility

(This is the answer given in the course, the two code areas with which it is most difficult to comply during retrofits.)

c. Vehicular access and parking

(These are zoning issues, not building code requirements.)

d. Material staging and pedestrian safety

(These are not building code concerns, though OSHA requirements may come into play for the second.)

14. Older buildings provide a direct link back to a community's _____.

a. Founding fathers

(Not necessarily true in most cases, unless the building is about as old as the community.)

b. Scandals about old money

(How fun, but usually not true.)

c. Original intentions when founded

(It would be very difficult to ascertain these with any certainty.)

d. Heritage and history

(This is definitely the case. Back to older buildings being sources of old memories.)

15. At the end, the project must be _____ or private money will abstain from involvement.

a. A source of pride

(Most investors are far more concerned with a return on investment, than with pride.)

b. At least break-even

(Break-even is a terrible investment.)

c. Profitable

(And this would be exactly why investors, invest)

d. Free from regulatory hassles

(It is probably safe to say that no projects in America are free from regulatory controls any longer)

16. Which of the following is NOT a building component now deemed to be hazardous.

a. Plasticized paints

(These are the paints, including latexes, most commonly used today.)

b. Asbestos insulation

(This is definitely a known health hazard.)

c. Lead paint

(This is definitely a known health hazard.)

d. Flooring containing asbestos

(This is definitely a known health hazard, especially during removal.)

17. Simply put, successful adaptive reuse often requires some level of cooperation between _____.

a. Artisans and developers

(Such a partnership is nice, but not a prerequisite for project success.)

b. Community leaders and investors

(Such a partnership is nice, but also not a prerequisite for project success. Often, there is no community participation.)

c. Developers and municipalities

(Unless a municipality is willing to work with developers in terms of compliance with regulations, there are so many rules, adhering to all could make a project untenable.)

d. Lenders and builders

(Such a partnership is nice, but not a prerequisite for project success, since private money may be used.)

18. According to the United States Environmental Protection Agency, it takes _____ for a new energy-efficient building to save the amount of energy used in demolishing an existing structure.

a. Only eleven months

(If this were true, more existing buildings would be disappearing.)

b. Eleven and one half years

(A little closer to reality, but still way off.)

c. About sixty-five years

(This is the actual number, determined by research by the agency.)

d. A millennium

(Seems that way sometimes, with some investments.)