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NEWER HOMES  
Pillar To Post Continuing Education Program





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## CHAPTER 1

### Overview and Objectives



## Overview and Objectives

Questions about newer homes are common in the Real Estate industry. In this workbook we will explore what to expect from a home that is 10 to 20 years old. Homes of this age have some unique characteristic conditions none of which are particularly alarming except for the fact that the client should be prepared for them.

### This course will teach you:

- What the typical life cycles are for some common components
- What the characteristic conditions are for a home in the 10 to 20 year old range
- What to expect from an engineered floor system
- How to prepare your client for the inspection of a 10 to 20 year old home
- No home is perfect

### By the end of this session you should be able to:

- give the life cycle for some common components including
  1. Asphalt shingle roof surface
  2. Air conditioning system
  3. Heating system
  4. Hot water tank
  5. Paint on wood (exterior)
- prepare a buyer for the inspection of a 10 to 20 year old home
- explain what it means to have a roof surface that is at the end of its life cycle



- describe the critical component of an air conditioning system and a heating system
- explain why proper land grading is important to a home
- explain why some people think engineered floor systems 'feel cheap' as you walk on them
- explain what can be done about a foundation crack that is leaking
- explain why basement leakage is more of a critical problem for a newer home
- explain the significance of 'lost seals' on windows
- explain why loose tiles in a bathtub or shower are often a bigger concern than anticipated

**This knowledge will:**

- Help you serve your clients better
- Help you answer your client's questions
- Show your clients that you are a knowledgeable professional

# Chapter 2

## CHAPTER 2

### Creating Realistic Expectations - Lifecycles within a Home

Chapter  
**2**

## Creating Realistic Expectations - Lifecycles within a Home

**T**he truth is - and we don't like to hear it (nor do your clients) - **things wear out**. The question is then - what items wear out even in a relatively new home? The answer is that all mechanical components will eventually wear out and will have to be replaced or repaired as will all surfaces in a home. **In a nutshell, the 10 to 20 year range is the time that most of the mechanical systems in a home are nearing the end of their lifecycles**

Many home buyers are unrealistic about what they expect – nothing but perfection will do and with newer houses, the expectations are even higher. In an older home, when a home inspector finds that the furnace is at the end of its lifecycle, nobody is too concerned and the transaction proceeds without a problem. If we find the same problem in a 15 - 20 year old home, buyers often take a step back because it was entirely unexpected. And yet it should not be unexpected because furnaces typically last about 15 to 20 years. **The bottom line is we need to align the buyers' expectations with reality.**



Your role in discussing lifecycles of systems within a home is to set your client's expectations in a realistic manner so that you prepare them for the inevitable wear and tear even a "newer home"- say 10 to 20 years old - will have. In this sense you are establishing with your client what is "normal". The goal is to educate buyers not to expect perfection in the newer home and ultimately reduce the number of buyers that needlessly walk away from a deal



You must emphasize with your clients that:

- "There is no perfect house"
- "Even a brand new house has things that need repair or improvement"
- "It is normal to find something wrong in any house"

### What Causes Wear and Tear?

Things wear out in a home due to three main causes:

#### 1. Moving Mechanical Parts

One example of a moving mechanical part that experiences typical wear and tear is an **air conditioning compressor**. Standard central air conditioners consist of three main parts: a condenser, an evaporator, and a compressor. The compressor and condenser are often integrated into a single unit that is typically installed outside the home but occasionally in an attic or on the roof.

Within an air conditioning system, the compressor is the critical mechanical component. It is important to note that usually the entire condenser or the entire system is replaced when the compressor fails. Note - it is possible in some cases to replace the compressor only. However it is often a better idea for your client to replace the entire system.

Another example of a system that experiences wear and tear within its moving parts is the **furnace**. Newer technology furnaces don't last as long as conventional furnaces.

There are two reasons for this. One reason is that to get more efficient heat transfer, thinner metal is used in the heat exchanger. The other reason is modern furnaces have more parts that can fail such as an induced draft fan, circuit boards etc.

## 2. Corrosion

The **water heater** in the home is a good example of how corrosion creates wear and tear in the home. In fact, corrosion is the primary reason that hot water tanks fail. Most hot water tanks are made of steel, which is glass-lined on the inside to help prevent corrosion. Once rust produces a hole the tank should be replaced (some temporary fixes are possible but ultimately not recommended). All hot water tanks will have an anode rod to control corrosion. The magnesium anode rod protects the tank by corroding in place of the steel. Because the rod is designed to corrode, it will eventually wear away. After this happens, corrosion of the steel accelerates.

## 3. Weather

Weather is yet another culprit that causes wear and tear. **Asphalt shingles** are obvious victims of weather and will typically only last about 15 years. There is often some confusion about how long asphalt shingles last and the 'warranty on the shingle'. Often a shingle is called a 20-year shingle. This means the shingle has a warranty against manufacturer's defects for 20 years but does not mean the shingle will last 20 years. In fact 20-year shingles last reliably to 15 years rather than 20. Over the course of 15 years, most homes have several harsh weather events such as wind storms or hail that do minor damage to the shingles. This cumulative damage reduces the life of the shingle but it is not a manufacturer defect.

Clients often believe that a **paint job** will last "forever". This is however not the case. You should inform your clients that under most conditions wood needs to be repainted every 5 to 10 years.

The guide below provides you at a glance with some general guidelines about the lifespan of items that typically experience substantial wear and tear in the first 5 to 35 years.

Asphalt shingle roof surface	15 years
Air conditioning compressor	10 to 14 years
Conventional furnace	20 to 35 years
Mid or high efficiency furnace	15 to 20 years
Hot water tank	15 years
Paint on wood	5 to 10 years

## How to Talk to Your Clients about Wear and Tear



**Imagine how your client would react if you told them all of the above needed attention. That is a substantial list and could scare off a buyer or at least have them in a re-negotiating mood**

It is not uncommon for a house of a 10-15 year age range to have several of these issues all at once. You might feel a little unlucky to have all of these on one house but it is possible and not entirely uncommon

The next chapters in this workbook will focus on each of these in detail with a focus on how you can relate this information to your client in an honest, meaningful way without creating grounds for them to back out or renegotiate the deal.



If your client asks you about the cost to replace any of the systems discussed within this workbook, you should refer them to the Pillar To Post Cost Guide brochure or the Pillar To Post website [www.pillartopost.com](http://www.pillartopost.com).

Within these resources you will be able to provide your client with a range of costs associated with replacements and maintenance within the home. If you do not have a Pillar To Post Cost Guide brochure contact your local Pillar To Post home inspector and he/she can supply you with a copy of this useful resource. This Cost Guide is also included with every Pillar To Post inspection report.



Call your local Pillar To Post home inspector to get the Pillar To Post Cost Guide Brochure



Go to the Pillar To Post website – [www.pillartopost.com](http://www.pillartopost.com) – and access the Real Estate Professionals area. Here you can access the online version of the Cost Guide along with a wealth of other Realtor tools and resources.





### Check Your Knowledge

Answer the questions below in the spaces provided

1. Things wear out in a home due to three main causes - What are they?

(a) \_\_\_\_\_

(b) \_\_\_\_\_

(c) \_\_\_\_\_

2. Why do many clients have unrealistic expectations about newer homes vs. older homes?

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3. List steps below that you can take to set realistic expectations with you client when they are considering a newer home.

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# Chapter 3

## CHAPTER 3 Asphalt Roof Surfaces



Chapter  
**3**

## Asphalt Roof Surfaces

**N**orth America wide, the standard asphalt shingle roof is still the most common roof surface in most areas. If the roof surface is asphalt shingle and the house is 15 years old, it should be no surprise that the roof surface is at or near the end of its life cycle (unless of course the surface has been replaced already).

Clay tile, slate, and concrete tile all last much longer however these are much less common in homes in the 15-year range and have their own peculiarities.

### Signs of Newer Asphalt Shingles

Well-installed newer shingles will demonstrate the characteristics below:

- Shingles lie flat, no shadows visible from the ground
- Space between tabs is uniform and tight
- No evidence of a layer underneath (manufacturer warranty is voided if installed over the old shingles)
- Granular aggregate material is intact



This image shows shingles that are in near perfect condition. Note that there is; no wear of granular, no waves in the surface, no layer underneath and no curling etc



This is another view of the same rooftop. Note how, at this vantage, we can see that these shingles at the ridge are flat and there is no evidence of lifting or curling - this demonstrates almost no wear and tear.



### Signs of an Older Roof



Edges are Worn

Moss

Edges are Worn and Brittle (prone to breakage)

This image shows a roof that is quite old—probably in the 25+ years range. In reality it should have been replaced five or ten years ago but this is not uncommon. If you look close up and straight on, you can see the shingle wear. Signs of wear include:

- Missing granular material shows extensive wear
- Moss growth indicates the shingles are in a shaded area
- The edges of the shingle are worn
- The edges are brittle
- If you bend a corner of the shingle, it breaks right off (a home inspector may test bend a few shingles to help determine the relative age)



This image shows a home inspector lifting the edges of the roof to investigate the lifecycle of the roof. The inspector in this example finds that there are multiple layers. It looks like six or seven layers but it is actually two layers. The term 'layer' is a little confusing because it could mean:

- How many times the roof has been re-surfaced without stripping the previous surface
- The number of shingle thicknesses in a single installation.



In the image above we see that the new roof was laid on top of the old roof. The original surface was at the end of its life and should have been re-surfaced before a second layer was added over the first. This is an acceptable building practice, however most manufacturers will not honor the warranty on second layer installations.

It is important to understand the concept that a shingle installation has multiple thicknesses of shingles, usually two or three deep. If a home inspector determines that a roof surface is near the end of its life cycle (or even if its not) the client may want to know how many layers of shingles are on the roof because it will make a difference in the overall cost of resurfacing the roof. A home inspector will then be able to determine this by the layers –NOT the thicknesses.

### To Resurface ... or Not to Resurface?

Very new and very old shingles are easy to deal with. **Shingles however that are nearing the end of their lifecycle can be very difficult to deal with as they stop performing adequately as they become brittle and unreliable.**

The question is then – does your client have to resurface right away? The answer is - probably not. A home inspector will let the buyer know that the roof is near the end of its life cycle, meaning the need for replacement is imminent. In many cases, if the buyer is willing to live with a certain amount of risk, they could wait a few years before replacement. This will likely require some extra monitoring and quick attention to spot maintenance.



**Your Client May Ask:** (In the event the home inspector determines that the roof is at the end of its lifecycle) Should I replace the roof?

**Your Possible Answer:** Very new and very old shingles are easy to deal with. It's common however in a home of this age (15 years) that the shingles are nearing the end of their lifecycle and this means that they can stop performing adequately and be unreliable.

If you are willing to live with a certain amount of risk, they could wait a few years before replacing however you should be prepared to monitor and do spot repairs, and ultimately to replace the roof.



**Your Client May Ask:** How much will it cost to replace the roof?

**Your Possible Answer:** Refer your client to the Pillar To Post Cost Guide brochure or the Pillar To Post website [www.pillartopost.com](http://www.pillartopost.com). Within these resources you will be able to provide your client with a North American range of cost associated with fixing or replacing the roofing.



### Check Your Knowledge

Answer the questions below in the spaces provided

4. How can you recognize that the asphalt shingles on a roof are worn and at the end of their lifecycle? You may use the image below as a visual reference.



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5. What would you say to client who asks you about replacing the roof (were the home inspector to report that the roof is at the end of its lifecycle)?

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6. How would you respond to a client who inquires about the cost of replacing the roof?

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7. Why does a home inspector lift the edges of the roof? What can be determined by doing so?



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## CHAPTER 4

### Air Conditioners

### Air Conditioners

**H**ome air conditioning systems can be expected to last between 10 and 14 years. Good maintenance practices do, of course, provide an even longer service life. The critical component is the compressor. When the compressor goes it can be replaced but it is becoming less and less common. It is more common these days to replace the entire outdoor unit (condenser) - maybe even change the entire system to take advantage of improved energy efficiencies in new units.



This image shows the air conditioning condenser.



Inside this unit is the compressor. The compressor is the critical mechanical component.



The black thing in the middle is the compressor. This is what wears out. It may or may not be possible to replace this when it wears out. Either way, it is an expensive repair



**Your Client May Ask:** How much will it cost to replace the air conditioning unit? (the home inspector has indicated that the compressor is not operational)

**Your Possible Answer:** Refer your client to the Pillar To Post Cost Guide resources. These include the Pillar To Post Home - Cost Guide brochure and/or the Pillar To Post website [www.pillartopost.com](http://www.pillartopost.com) Within these resources you will be able to provide your client with a non-biased range of costs associated with fixing or replacing the air conditioning unit.



### Check Your Knowledge

Answer the questions below in the spaces provided

1. How long are air conditioning systems expected to last?  
\_\_\_\_\_
2. What is the critical component in an air conditioning system?  
\_\_\_\_\_
3. When this critical component goes what are the client's options?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. What would you tell a client who asks about the cost of replacing the air conditioning system?  
\_\_\_\_\_  
\_\_\_\_\_  
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## CHAPTER 5 Furnaces

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## Chapter

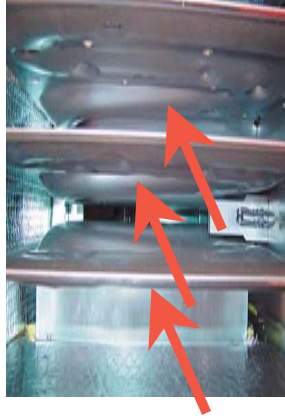
# 5

## Furnaces

While older conventional furnaces lasted about 20 to 25 years, newer furnaces usually last closer to 20 years (or less). Some models are even failing after 12 to 15 years. In the 10 to 15 year old home, home inspectors do sometimes find furnaces that have already failed.

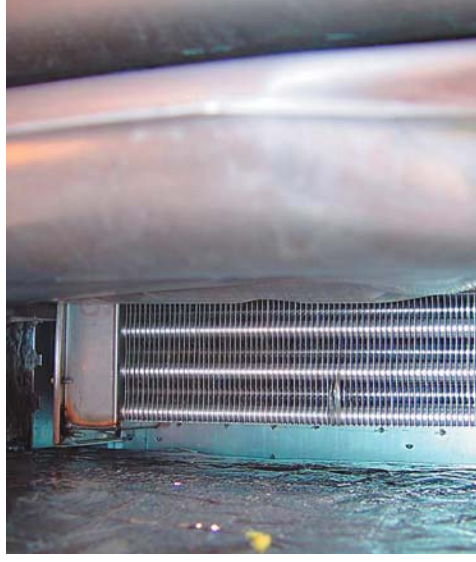


This image shows a heat exchanger from an older conventional furnace. The heat exchanger is made of heavy gauge steel. This is thought to be one of the reasons why older furnaces lasted longer.



In this image you see three heat exchanger cells in a modern mid efficiency the furnace. You can see that these cells are much more narrow than the conventional efficiency furnace. The metal is very light gauge. The light gauge metal and the long, convoluted path for combustion gasses leads to higher probability of failure.

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This image is looking down inside a high efficiency furnace. We see here the same light gauge heat exchanger. But we also have a second heat exchanger that looks a little like a car radiator. Unfortunately in more modern systems there are simply more components - more components means a higher probability of failure.



**Your Client May Ask:** How much will it cost to replace the furnace? (the home inspector has indicated that the furnace has reached the end of its lifecycle)

**Your Possible Answer:** Refer your client to the Pillar To Post Cost Guide brochure or the Pillar To Post website [www.pillartopost.com](http://www.pillartopost.com). Within these resources you will be able

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to provide your client with a range of costs associated with fixing or replacing the furnace.



If you would like to learn more about furnaces and how they impact your dealings with clients, you should contact your local Pillar To Post home inspector who can provide you with an in-depth presentation on this subject along with a corresponding student workbook



### Check Your Knowledge

Answer the questions below in the spaces provided

1. How long do older conventional furnaces typically last vs. newer furnaces? Insert your answers in the spaces below.



Older conventions furnaces: \_\_\_\_\_ years

Newer furnaces: \_\_\_\_\_ years

2. Generally, why is it that newer furnaces do not last as long as older furnaces?

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Chapter  
6

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## CHAPTER 6 Hot Water Tanks



Here is a typical natural gas hot water tank. The inner wall is the tank. The tank is surrounded with insulation and the whole thing is contained in a metal jacket.

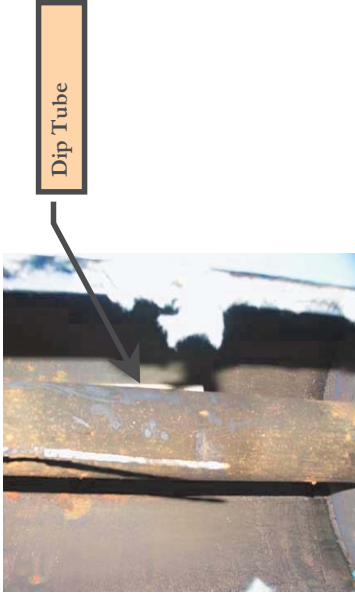
Chapter  
6

## Hot Water Tanks

It is not uncommon to replace a hot water tank after 15 years



Here is a typical natural gas hot water tank. The inner wall is the tank. The tank is surrounded with insulation and the whole thing is contained in a metal jacket.



This image shows a significant amount of rust that has occurred. Either the hot water tank starts to leak because it has rusted through because a hole has developed or, more commonly, the dip tube breaks off.

The dip tube is designed so the tank fills with cold water from the bottom and hot water is drawn from the top. If the dip tube breaks, we get cold water mixing with the hot water at the top of the tank and the result is, your client's hot shower goes cold very quickly. Once the dip tube is broken the hot water heater must be repaired or replaced.



**Your Client May Ask:** How much will it cost to replace the water heater? (the home inspector has indicated that the hot water heater has reached the end of its lifecycle)

**Your Possible Answer:** Refer your client to the Pillar To Post Cost Guide brochure or the Pillar To Post website [www.pillartopost.com](http://www.pillartopost.com). Within these resources you will be able to provide your client with a range of costs associated with fixing or replacing the hot water heater.



If you would like to learn more about boilers and hot water heaters and how they impact your dealings with clients, you should contact your local Pillar To Post home inspector who can provide you with an in-depth presentation on this subject along with a corresponding student workbook



### Check Your Knowledge

Answer the questions below in the spaces provided

1. Is it common to replace a hot water heater at the 15-year mark?  
\_\_\_\_\_
2. What are the general reasons why hot water heaters need to be replaced?  
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## CHAPTER 7 Engineered Floor Systems

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# Chapter 7

## Engineered Floor Systems

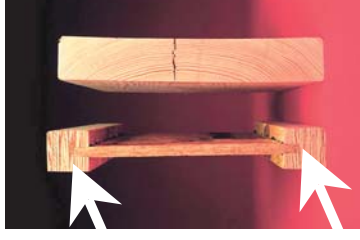
For years, builders have used dimensional wood (traditional lumber) to build homes; however, ever since engineered lumber came into the picture, builders increasingly been using engineered wood.

### Dimensional Wood

Dimensional wood is 2X4's, 2X10's etc., made from solid wood. Most home buyers and owners are used to seeing standard dimensional lumber. They are not used to seeing engineered lumber.

### Engineered Wood

Engineered wood is made from laminated wood and the assembly of solid pieces of wood. The idea is that the wood can be engineered so that there are more wood fibers where the maximum stresses are and fewer wood fibers where there is little or no stress. The main concept being that the process of engineering wood was created to take maximum advantage of the wood. Many home buyers think that engineered wood looks and feels cheap.



This image shows an engineered floor joist next to an equivalent piece of dimensional lumber. The engineered wood is on the left side and the dimensional lumber is on the right.

You can see the engineered joist is thick at the top and bottom as this is where the maximum tensile and compressive stresses are. The design philosophy is, put the wood where you need it

Engineered wood is used for:

- Floor joists
- Truss joist
- Silent floor
- 4" joist



This image shows another engineered floor system using open web trusses. The benefits of this system are: very large 'clear spans'; you can pass ducting and wiring through the openings.



The engineered wood at the foreground in this image is TJI. TJI stands for 'truss joist' I (as in I shaped) and is by far the most common. TJI is manufactured to the same stiffness as dimensional lumber.

The issue can be clients that think TJI feels cheap or bouncy. In fact they do have different vibration and deflection characteristics than dimensional lumber. For years the TJI manufacturers simply responded by assuring people their product is just as strong etc. More recently manufacturers are taking this more seriously and acknowledging there are some sensory differences between the TJI and dimensional lumber.



Today, TJI joists can be designed with the end user in mind but the TJI installed 10 to 15 years ago was not. There is no problem with these joists it's just that some people find the vibration characteristics less than ideal.



**Your Client May Ask:** (The client notices the floors are bouncy) What's wrong with these floors, they don't seem normal?

**Your Possible Answer:** It's possible that engineered wood has been used in this home. Engineered wood does have different vibration and characteristics than traditional lumber. The reality is that engineered wood is just as strong and just as stiff but it may have different performance characteristics. It's really a subjective thing.

1. What is dimensional wood?

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2. What is engineered wood?

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3. Why has engineered wood become popular in modern construction (i.e. what are its advantages)?

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4. What is the public's common perception of engineered wood?

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5. What does TJI stand for?

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6. Does TJI have the same stiffness as dimensional lumber?

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### Check Your Knowledge

Answer the questions below in the spaces provided





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## CHAPTER 8

### Common Conditions



## Common Conditions

Some of the most common other conditions are:

- **Foundation cracks**
- **Exterior paint**
- **Basement water**
- **Lost window seals**
- **Land grading**
- **Bath tub and shower tiles**

### Foundation Cracks

Newer homes often have a foundation shrinkage crack or two and typically these do not necessarily have any structural significance. These cracks however may still permit water to penetrate.

### Exterior Paint

While it is not universal, the coat of paint applied by the builder is often very quick and thin. The first layer applied by the builder is often quick and cursory hence a ten year old home often needs attention

A 15 year old home that has never been re-painted will need lots of work and may already have some wood rot. This is particularly true of houses built in the housing boom of late 1980s. In these homes often very thin paint (sometimes just primer) was used. Ten years later the result is a host of issues such as rotten window sills etc.

### Basement Water

Basement water is not just a problem with old homes as is commonly thought. In fact this is one of the most common problems with newer homes. Buyers have a higher expectation in the basement area in a newer home than they do in older homes. The buyer may not expect perfection from old stone foundations but they do with a new poured concrete foundation. This is especially true when in newer homes there are more expensive finishes etc. that can be damaged by water leakage.

To identify the source of the water, the home inspector will check the exterior for obvious problems with surface storm water such as:

- Gutters
- Downspouts
- Land grading
- Foundation cracks

The first step is to try to control the situation by controlling surface storm water. Re-grading and fixing downspouts however can't solve every damp basement problem. In the end your buyer may face damp-proofing and replacing weeping tiles if there is no other obvious cause.



**If you would like to know more about wet basements and crawlspaces please contact your local Pillar To Post home inspector to request a full presentation on this topic along with a corresponding, complimentary Pillar To Post student workbook.**

### Lost Window Seals

Double pane glass is supposed to be hermetically sealed. Hermetically sealed refers to an insulating glass unit that is sealed against moisture. The unit is made up of two layers of glass, separated by a roll-formed metal spacer tube (at the full perimeter) which contains a moisture and/or solvent absorbing material. The unit is then completely sealed, creating a moisture free air space.

Sometimes however the seal is lost and water vapor in the air gets between the panes. The vapor condenses on the cold side of the glass. This situation is fairly common for newer homes. When you find one window like this in the home you are likely to find several more.



**Cosmetically lost window seals are a real nuisance because it creates a distinctive cloudy effect that is very unattractive. The only options for your client are to leave it or replace it.**



**Your Client May Ask:** How much will it cost to replace the windows?

**Your Possible Answer:** Refer your client to the Pillar To Post Cost Guide brochure or the Pillar To Post website [www.pillartopost.com](http://www.pillartopost.com). Within these resources you will be able to provide your client with a range of costs associated with fixing or replacing the windows in the home.

### Land Grading

After 10 to 15 years walkways can become uneven and driveways can have ruts. Often the original landscaping needs work as the grading and drainage has changed through the natural forces of settling, erosion, and freeze-thaw (surface water flows towards the house).

Cosmetic landscaping issues will not appear on a home inspector's report as these do not impact the integrity of the home and are hence not within the scope of the



inspection. A home inspector will, however report upon conditions where drainage affects the house – damp basements – or safety – uneven walks and stairs. Why? - In the first 10 years the landscaping has a chance to settle into position and this is sometimes not an ideal position.



This image shows how the lot grade has settled and now has to be re-graded. This very common for a home in the 12 to 15 year old range as the soil settles after construction, leaving the landscaping uneven.

There is a high probability of getting some water into the basement here. Even the smallest shrinkage crack will leak if there is water pooled next to it.

## Bathtub and Shower Tiles

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A common problem for 15 year old homes is loose and leaking tiles around the bathtub and shower stall. Unfortunately the problem is usually bigger than anticipated.

When your client tries to fix a few loose tiles they may discover that water has been leaking into the wall for several years and the sub surface has deteriorated. In this case often a complete replacement of the tile and wall is required – fairly expensive.



**Your Client May Ask:** How much will it cost to re-tile?

**Your Possible Answer:** Refer your client to the Pillar To Post Cost Guide brochure or the Pillar To Post website [www.pillartopost.com](http://www.pillartopost.com). Within these resources you will be able to provide your client with a range of costs associated with fixing or replacing tiles.

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### Check Your Knowledge

Answer the questions below in the spaces provided

1. List 6 common conditions found in newer homes?

- (a) \_\_\_\_\_
- (b) \_\_\_\_\_
- (c) \_\_\_\_\_
- (d) \_\_\_\_\_
- (e) \_\_\_\_\_
- (f) \_\_\_\_\_

2. When basement water is found in a home, what are the components a home inspector will investigate to locate the source of the water?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Are cracks in the foundation always a structural problem?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. What causes lost seals in windows and what is the outcome?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## CHAPTER 9 CEP Quiz

Name: \_\_\_\_\_



### Quiz – Understanding Newer Homes

1. What is the typical life cycle of an asphalt shingle roof?
  - a. 10 years
  - b. 15 years
  - c. 25 years
  - d. 30 years
2. What is the critical component of an air conditioning system?
  - a. Evaporator
  - b. Compressor
  - c. Coolant
  - d. Refrigerant
3. How long does a conventional furnace typically last?
  - a. 10 years
  - b. 20 to 25 years
  - c. 30 to 35 years
  - d. 40 to 45 years
4. True or false. The paint on exterior wood surfaces of a new home is very high quality and should last for about 30 years before it needs to be re-painted.
5. True or false. For a newer home, exterior land grading is not critical because the foundations of newer homes are waterproof.
6. Which of the following are examples of engineered floor systems
  - a. 2X10 dimensional lumber
  - b. Truss joist – I joist
  - c. Open web floor trusses
  - d. b and c
7. True or false. Truss joists today are often designed to a higher stiffness than truss joists a few years ago.
8. True or false. All foundation cracks are a serious structural concern.
9. True or false. If you find a window with a lost seal, you will probably find more.
10. True or false. If you find a few loose tiles in a shower enclosure, the problem may be worse than it looks.

# Chapter 10

## CHAPTER 10 Presentation Evaluation

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**Presentation Evaluation – Understanding Newer Homes**

**TECHNICAL CONTENT**

	Excellent	Average	Poor	No Opinion
Presenter's knowledge of subject matter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to keep you interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discussion / overview / recap	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How well did this course meet your expectations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments: \_\_\_\_\_

**ORAL PRESENTATION**

	Excellent	Average	Poor	No Opinion
Explanation of objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Voice (volume, clarity, speed)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answers question clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments: \_\_\_\_\_

**VISUAL PRESENTATION**

	Excellent	Average	Poor	No Opinion
Voice (volume, clarity, speed)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answers question clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effectiveness of visual aids	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presenter's eye contact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments: \_\_\_\_\_

**MATERIAL HANDOUTS**

	Excellent	Average	Poor	No Opinion
Effectiveness of handouts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments: \_\_\_\_\_

**Please complete this portion:**

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