NEW HOME MAINTENANCE MANUAL

Courtesy of:

Tien Sher Investment Group Inc.

and St. Paul Guarantee Warranty Company

NEW HOME MAINTENANCE MANUAL

TABLE OF CONTENTS

A. INTRODUCTION

B. SERVICE PROCEDURES

C. OWNER'S DUTY TO MITIGATE AND MAINTAIN

D. EMERGENCY SITUATIONS

D.1. Plumbing
D.2. Electrical
D.3. Heating
D.4. Gas
D.5. Roof Leaks

E. MAINTENANCE ITEMS

E.1. Exterior - General
E.1.1. Driveways, Sidewalks and Patios
E.1.2. Site Drainage and Grading
E.1.3. Drain Tile and Sump
E.1.4. Landscaping

E.2. Exterior - Componants
E.2.1. Vinyl, Metal or Composite Siding
E.2.2. Wood Siding
E.2.3. Masonry
E.2.4. Caulking
E.2.5. Windows
E.2.6. Doors
E.2.7. Weather-Stripping
E.2.8. Storm Doors
E.2.9. Finish Hardware
E.2.10. Decking and Handrails

(continued…)

E.3. Exterior - Roofs and Gutters
E.3.1. Roof
E.3.2. Ice Dams
E.3.3. Gutters and Downspouts

E.4. Exterior - Structure
E.4.1. Foundation
E.4.2. Wood Frame
E.4.3. Beams and Teleposts

E.5. Interior - Floor Finishes
E.5.1. Hardwood
E.5.2. Resilient Flooring
E.5.3. Carpet
E.5.4. Ceramic Tile

E.6. Interior - Counter Tops and Cabinets
E.6.1. Plastic Laminates
E.6.2. Granite
E.6.3. Cabinets

E.7. Interior - Paint

E.8. Plumbing
E.8.1. General
E.8.2. Fixtures
E.8.3. Hot Water Tank
E.8.4. Hose Bibs
E.8.5. Toilets
E.8.6. Faucet Repair
E.8.7. Plugged Toilets and Drains
E.8.8. Tub and Shower Enclosures
E.8.9. Floor Drains

(continued…)

E.9. Electrical
E.9.1. General
E.9.2. GFCI Circuits
E.9.3. AFCI Circuits
E.9.4. Smoke and Fire Detectors

E.10. Heating and Ventilation
E.10.1. Heating
E.10.2. Ventilation, Condensation and Relative Humidity
E.10.3. Range Hoods and Exhaust Fans

E.11. Appliances

F. MAINTENANCE MANUAL SIGNOFF

G. YOUR NEIGHBORHOOD

H. NEW HOME MAINTENANCE SCHEDULE

APPENDICES

Appendix 1. **Warranty Coverage**

Appendix 2. **Warranty Exclusions**

A. INTRODUCTION

Welcome to your new home. ***Tien Sher Investment Group Inc.*** (*"Tien Sher"*) is pleased to provide this new home maintenance manual for your reference. This manual will serve as a summary of the more important maintenance issues you can expect to encounter in caring for your new home.

No home is maintenance free. Proper and timely maintenance can extend the life of many of the components and systems incorporated in your new home and help you to protect your investment. These maintenance recommendations are intended to provide you with a basic understanding of the maintenance requirements of your home.

Undertaking maintenance is not for everyone. If you are uncomfortable undertaking any specific maintenance task hire a professional.

Summarized at the back of this manual for your use is the:

- Maintenance Manual Sign-off;
- Deficiency List; and
- New Home Maintenance Schedule.

This manual is *not* intended to deal with all common property maintenance issues related to a strata titled residential project. Common property maintenance is the responsibility of the Strata Corporation and additional training and information is required.

B. SERVICE PROCEDURES

Further to a review of your warranty documentation (provided by your warranty provider and Appendix B), **if you feel that a defect exists which is covered under during the warranty please contact Tien Sher:**

BY FAX – **in writing using the *Customer Service Request* form** (found at the end of this manual)

BY EMAIL – **online at www.tiensher.com**

Upon receipt, *Tien Sher* will contact you directly to arrange a time to inspect the defect. Please remember to submit your request in writing *or* online so that they may be dealt with efficiently.

Throughout the first year your house will generally experience some settlement/shrinkage of the building components - particularly the wood framing materials. Settlement/shrinkage may result in some minor cracking of drywall/tiles, floor squeeks or other cosmetic flaws. It is a good idea to deal with these items towards the end of your first year of occupancy. This will allow for the majority of any settlement to occur. **Please ensure that you review all of your warranty documentation closely so that you are aware of all deadlines and complaint procedures**.

C. OWNER'S DUTY TO MITIGATE AND MAINTAIN

As per Section G of your *St. Paul Guarantee 2-5-10* home warranty certificate, you are required to maintain your new home and mitigate any damage to your new home, including damage caused by defects or water penetration.

You must take all reasonable steps to restrict damage to your new home if the defect requires immediate attention.

For defects covered by *St. Paul Guarantee's* warranty, the duty to mitigate is met through **timely notice in writing** to *Tien Sher* and *St. Paul Guarantee*.

An owner's duty to mitigate survives even if:

a) the new home is unoccupied;
b) the new home is occupied by someone else other than the homeowner;
c) water penetration does not appear to be causing damage; and/or
d) the owner advises the strata corporation about the defect.

Unfortunately, if a defect occurs or is made worse due to an owner's failure to follow the maintenance procedures provided, or to mitigate any damage, it will be excluded from warranty coverage.

D. EMERGENCY SITUATIONS

In emergency situations, please contact *Tien Sher* directly. If *Tien Sher* cannot be reached, contact your warranty provider, *St. Paul Guarantee*, for information on the appropriate actions to be taken.

The following is a synopsis of a few emergency situations and what actions should be taken prior to contacting Tien Sher or your warranty provider.

D.1. PLUMBING

D.1.1 Water Line Burst

A water line can burst due to a number of reasons, such as a loose joint, freezing, etc. and should be dealt with immediately. If the burst occurs between a fixture and a shut-off valve, close the shut-off immediately. If no shut-off exists, locate the main water shut-off (usually located where the water line enters your new home in the basement or crawl space), and turn it off until the problem can be repaired. It is also advisable to turn off your hot water tank to prevent overheating while the water supply is shut off.

D.1.2 Plugged Fixture or Sewer Line

This generally occurs because of inappropriate materials being flushed down a toilet or drain by users of the facility. Do not continue use of toilets or sinks once a major blockage has occurred. Attempt to unclog the line using a plunger. If a larger blockage occurs, the services of a plumber may be required. If the blockage is due to a proven builder defect then *Tien Sher* will take full responsibility for the problem.

D.1.3 Minor Plumbing Leak in the Line or Hot Water Tank

Put a container under the leak and contact *Tien Sher*. If major leakage occurs at the hot water tank, immediately shut off the water supply as well as the gas valve or electrical breaker.

D.1.4 Frozen Water Line

If garden hoses are left attached to hose bibs during the winter, freezing of the water line can occur. This is problematic once the pipes thaw as they may leak. If a major leak occurs, follow the steps described above regarding "Water Line Burst". If accessible, heating the pipe with a hair dryer may thaw it out. If the frozen pipe is due to a proven builder defect, *Tien Sher* will take full responsibility for the repair.

D.2. ELECTRICAL

D.2.1 Circuit Overload (Breaker Tripping)

If this occurs, ensure that the circuit is not overloaded with too many appliances, or that the appliance itself is not faulty. Appliances such as hair dryers, toasters and kettles that generate heat tend to draw a lot of electrical current. More than one of these types of appliances in use at the same time on the same circuit can cause circuit overload. Should circuit overload occur, unplug one or more of the appliances and reset the breaker. If tripping reoccurs, contact *Tien Sher*.

Ground fault circuit interrupters (G.F.C.I.s) protect your exterior plugs and those in your bathrooms. This device will either be located in the actual plug itself or be a dedicated breaker in your electrical panel. It is sensitive and designed to trip when grounding occurs due to damp conditions, or when extension cords are excessively long and/or in poor condition, or if appliances are faulty/old. Ensure that no unsafe situations exist, and that appliances and extension cords are unplugged, then reset the G.F.C.I.

An A.F.C.I. looks similar to a G.F.C.I. breaker and serves a dual purpose – not only will it shut off electricity in the event of an "arcing fault", but it will also trip when a short circuit or an overload occurs. These breakers will be found in the panel box in place of the conventional circuit breaker to add arc protection to a branch circuit. They are reset in the same manner as a G.F.C.I..

D.2.2 Plugs and Outlets

If a plug or outlet sparks excessively, immediately turn off the breaker and contact *Tien Sher*. A small spark when an appliance is unplugged is not uncommon.

D.2.3 All Power to your New Home is Out

If, for any reason, all the power in your home goes out, check to see if there is a power blackout in your neighborhood. If not, check your main breaker (in the electrical panel) and reset it after checking for a current overload.

D.3. HEATING

If your boiler does not appear to be operating, ensure that the breaker has not tripped and refer to your boiler manual to check lighting procedures. Also, check the thermostat setting to ensure it has not been turned down.

D.4. GAS

If, at any time, you smell gas contact your gas utility supplier immediately. They will check your system and advise you of any problems.

D.5. ROOF LEAKS

If a roof leak occurs, check for the following:

a) plugged gutters or downspouts;
b) debris on the roof;
c) ice damage; or
d) missing roof shingles.

Until the leak is repaired, place a bucket under the leak to protect your new home and contact *Tien Sher* if a defect appears to be the cause.

E. MAINTENANCE ITEMS

E.1 EXTERIOR - GENERAL

E.1.1. DRIVEWAYS, SIDEWALKS AND PATIOS

Concrete

Driveways and sidewalks are generally made of concrete. Concrete is a strong material that wears well and will perform for many years.

Following installation, concrete will shrink as it cures. This shrinkage causes stress in the concrete, which often results in surface cracks as this stress is released. This cracking can be controlled by the installation of control joints in the concrete. These deliberate joints in the concrete are more susceptible to cracking than the remainder of the slab, thereby preventing cracks from occurring in the slab surface itself. Unfortunately, these control measures are not always effective and surface cracks can appear despite *Tien Sher's* best efforts. These cracks are generally cosmetic and do not require repair unless they constitute a tripping hazard that exceeds acceptable standards as set out by your warranty provider.

Seasonal variations in temperature may also cause cracks in concrete slabs. Soil movement beneath the concrete due to frost penetration can crack and/or raise sections of the concrete. This change in height may change the direction of surface drainage causing water to pool against the foundation wall of your new home. Should this occur, repairs should be undertaken to prevent water from pooling as it may then seep through the foundation wall and into the home.

Both of the instances above are natural occurrences that are beyond *Tien Sher's* control.

Another potential cause of damage to concrete surfaces is road salt and other chemical contaminants. Road salt or other de-icing products used for ice control in the winter may adversely affect the surface of the concrete. As a result, road slush, which contains road salt, should not be allowed to melt on the concrete. A good alternative to de-icers, is sand or cat litter for increased traction on icy sections of the driveway or sidewalk.

Common lawn fertilizer, contaminated surface water and run-off from stored materials can cause staining of the concrete surface that cannot be removed. Concrete sealers that are commercially available may reduce damage due to chemical contaminants. Care should be taken in the handling and storage of potential contaminants on or near any concrete surface.

Concrete Pavers

Manufactured concrete products such as paving stones, are also susceptible to surface damage and staining. The precautions pertaining to concrete surfaces listed above also apply to these products.

Concrete pavers are installed on a bed of course sand or fine gravel. Some localized settlement may occur due to compaction of these materials. Should some areas settle excessively, lift out the pavers in the low area and add sand to level the area out. Suitable material for this repair can be purchased in bag form from most home supply centers.

Asphalt

Asphalt surfaces are seldom smooth and often have indentations. Tire impressions and checking or cracking at the edges due to expansion and contraction are other common characteristics. Damage to the surface may also occur in hot weather as the surface softens due to the heat. Sharp or pointed objects such as motorcycle kickstands or trailer hitches can penetrate the surface under such conditions.

Gasoline and solvents will dissolve asphalt quickly. Any spills or fluid leakage from automobiles should be removed immediately. Periodic sealing of the asphalt surface (every two to five years) with an acrylic-based sealant is recommended. These products are readily available at most home supply centers.

Gravel

Gravel driveways require raking periodically to fill in depressions to maintain an even surface. Crowning the driveway to the center or sloping it to one side is a good method of controlling surface water.

E.1.2. SITE DRAINAGE AND GRADING

The intent of site drainage patterns is to prevent surface water from pooling near or against the perimeter foundation wall of your new home. This is accomplished adjacent to the house by sloping the soil away from the residence on all sides.

Window wells are a means of providing a window for a basement below grade. Window wells must be kept free of ice, snow, leaves and other debris which may block the drainage system provided and flood your new home.

Depressions due to soil compaction following construction may occur adjacent to the foundation walls. These depressions should be filled and graded to direct surface water away from the walls for a distance of at least two meters (6'). At no time should water be allowed to pool against the foundation walls.

In addition to the drainage considerations adjacent to your new home, overall property drainage systems may include surface depressions (swales), drain tile curtain drains and catch basins. Ice, snow, leaves and other debris can block the flow of drainage and must be seasonally maintained by the owner. Care must be taken not to permanently alter the drainage flow so as to cause an ongoing drainage problem.

During periods of excessive rainfall, standing water may occur due to soil saturation. Such conditions are beyond the control of the owner or builder.

E.1.3. DRAIN TILE AND SUMP

In most jurisdictions, there is a requirement for a perimeter drain tile system to be located below the level of the basement or crawlspace floor. This system is generally comprised of perforated pipes that are covered with gravel to allow water to seep into them. This drain tile carries the water away from the perimeter of the house to prevent it from accumulating against the foundation wall or footing. The drain tile then carries the water to a sump or catch basin. The sump allows any sediment in the water to settle to the bottom of the sump. The clear water is then drained off by another pipe to the municipal storm sewer, ditch or a rock pit located in the yard. Access pipes or cleanouts are installed to allow the perimeter drain tile to be inspected and cleaned. The location of these cleanouts should be identified for future reference.

Sumps and catch basins should be cleaned every two years, as a minimum, to remove any excessive sediment, leaves or other debris. Exterior stairwells are often equipped with a drain and sump at the bottom of the stairwell to prevent flooding of the basement. These drains must be kept clear of debris.

Deep-rooted plants or trees should be avoided next to the foundation walls as deep roots can clog a drain tile system.

The requirement for a perimeter drain tile system may be waived by the authority having jurisdiction in arid regions, regions with free draining soils, or some rocky lots. In areas of blasted rock, it is virtually impossible to stop the movement of water through the rock. Exposed areas of rock in a crawlspace may seep water in wet conditions. Care must be taken to ensure that any visible water is drained away and that the area is adequately ventilated.

E.1.4. LANDSCAPING

Frequent watering of the grass is essential during the first few weeks after an area has been seeded or laid with new sod. Once the grass is established, weekly watering is adequate. This will promote a deep root system that will result in a healthier, more drought resistant lawn. Frequent light watering results in a shallow root system that causes the lawn to dry out and die in drought conditions. For the same reason, grass should not be cut shorter than two inches in height.

Fertilizing twice a year and controlling weeds will promote a healthy lawn. Consult your local home garden centre for suitable products.

During the spring thaw, do not allow snow or ice to accumulate in shaded areas as this will damage the grass. Any accumulations of snow should be distributed evenly over a large area so that it melts evenly.

Some minor settlement will occur over some areas of new lawns or landscaping. These areas should be filled and re-seeded to maintain a level surface.

When installing flowerbeds, be careful not to interfere with the drainage system. Ensure that flowerbeds are graded away from the foundation wall and that a minimum clearance of eight inches is maintained between the ground level and the bottom of the exterior wall cladding. Never allow soil or gravel to come in contact with untreated wood materials or your exterior finish.

Trees and shrubs should be kept clear of the house. Deep rooted plants or trees could interfere with the performance of the perimeter drainage system of the house.

Newly planted trees or shrubs require a shallow depression around their base. The depression should be worked periodically to loosen the soil to allow air and water to penetrate to the root system. Once the plant is established (approximately two years), the depression can be filled in; however, never raise the soil above the level of the base of the trunk as this will kill the tree.

In some arid locations, the installation of lawns, planters, trees or shrubs directly adjacent to your new home is not recommended. The water required to sustain the health of the lawn or plants causes the soil to expand or collapse depending on the composition of the soil. This will adversely affect the load-bearing ability of the soil and may cause structural damage to the residence.

E.2. EXTERIOR - COMPONENTS

E.2.1 VINYL, METAL OR COMPOSITE SIDING

Generally, vinyl, metal or composite siding materials will not require refinishing. Metal and composite siding materials can be re-painted, vinyl siding cannot. Due to their smooth surface, these materials can be kept clean by washing with a garden hose and mild detergent and some light scrubbing. Never use a pressure washer to clean the exterior cladding. Excessive water pressure can cause damage to the surface of the cladding and/or force water into the wall cavity.

Vinyl and metal siding materials are installed loosely to allow for expansion and contraction due to the variations in the outside temperature. Damaged or very loose siding should be replaced or refastened to prevent further damage to the siding and to prevent the entry of water into the wall cavity.

E.2.2 WOOD SIDING

Wood siding and shingles can be cleaned with a mild detergent and a garden hose. Do not use a pressure washer to clean wood siding as this will damage the surface and force water into the pores of the wood.

Painted wood siding or shingles will generally require re-painting or staining within five years. This will vary depending on the type and quality of the product used, the initial coverage, and the exposure to the elements. The siding will require re-painting or staining whenever the surface begins to fade, discolour or peel.

Moisture in wood siding causes most exterior paint failures. This moisture may be from garden sprinklers, damp shrubbery close to the wall, small cracks in the siding or around door and window details. Spot repair of affected areas can sometimes extend the life of the remaining surfaces. Please note that if spot touch ups of the painted/stained surfaces are undertaken, the new paint/stain colour will likely not match that of the existing surface due to fading and weathering. This cannot be avoided.

Siding installed on the south and west elevations, especially dark and bright colours which fade more rapidly, may require more frequent repainting or staining to maintain their original appearance and also to provide adequate protection for the siding. For best results, follow the manufacturer's recommendations for surface preparation.

Decks, handrails and windowsills may require cleaning and "touching up" more frequently than other components of the house due to their horizontal orientation.

E.2.3 MASONRY

Neither the mortar joints in the brickwork nor the bricks themselves are entirely waterproof. Periodically, the mortar joints should be checked for cracks. Hairline cracks are not problematic; however, if these cracks are excessive, they should be repointed to reduce the potential for moisture related problems. Repointing involves cleaning out loose mortar to a depth of at least ½" and filling the space with new mortar which is available at your local building supply store.

The bottom course of brick contains intentional openings (weep holes) which allow for the drainage of moisture from the cavity located behind the brick. These openings must remain unobstructed and must be a consideration when landscaping.

White dust or staining on the masonry surface is referred to as efflorescence. It is the result of salts within the masonry or mortar that migrate to the surface of the brick with time. It can usually be controlled with water and a light scrubbing. More persistent occurrences can be washed off with muriatic acid or baking soda. Should efflorescence continually reoccur in a localized area, it may be due to a specific water source such as a leaking gutter. If so, the problem should be identified and corrected.

E.2.4 CAULKING

Flexible sealing compounds are generally referred to as caulking. Numerous varieties exist and have many specialized uses. Caulking is generally used to seal gaps between dissimilar materials on the exterior of the building and to seal gaps or joints in exterior finishes. As the building moves due to the shrinkage of the building framing members and/or the finishing materials themselves, considerable stress is placed on the caulking materials. While a caulking joint should never be the only means of preventing water from entering a building, it is one of the initial means of keeping water out. Therefore, caulking requires examination annually before the wet weather arrives. Any cracked or damaged caulking should be removed and replaced.

When caulking, use a high quality material formulated for your specific purpose. Some types of caulking are for interior use or cannot be painted. Consult with your local home supply centre for an appropriate product.

E.2.5 WINDOWS

Window glazing is typically made of glass with the exception of some skylights that may use an acrylic glazing. Current building standards require the use of double glazed sealed units mounted in thermally broken frames. There is a wide assortment of frame types and the material used can vary widely. Windows may open in different fashions: they may slide horizontally or vertically, open outwards like a door or tilt open in the fashion of an awning. Typical windows require minimal maintenance. Window hardware should be cleaned and lubricated annually. Any accumulated grime or debris should be removed from between the window and the frame.

Most window designs incorporate a drainage track at the bottom of the window to collect any condensation that runs off of the glazing. These tracks will have weep holes to the outside to drain this moisture. These holes must be kept clean and can be maintained with a short piece of wire or a cotton swab.

If high relative humidity levels occur inside your new home during periods of very cold weather, condensation and frost on the inside face of the windows will occur. This is a ventilation issue and is not a fault with the window. Condensation can result in the growth of mold on the window frame that can be controlled with a mild solution of bleach and water.

Condensation between the layers of glass within the window frame indicates that the sealed unit has failed. The glazing unit will require replacement as there is no method of repairing sealed units. If failure of the sealed unit occurs after the expiry of the first year of warranty coverage, contact your window supplier as the cost of this repair may be partially borne by the manufacturer.

Acrylic skylight glazing does allow the migration of moisture through it, therefore, condensation between the double-glazing can be expected. This form of skylight usually has a vent that can be opened to allow for additional airflow between the acrylic glazing units. Check with your skylight manufacturer for further information in this regard.

E.2.6 DOORS

Exterior swing doors are generally made of solid wood, metal, wood over a foam core or fiberglass. Sliding patio doors are usually constructed with metal or vinyl frames and are supplied by the window manufacturer. Interior doors are usually a wood veneer over a hollow core. The main door between the garage and the house will be provided with an automatic door closer and seal (weather-stripping) to ensure that the door automatically closes to prevent the entry of exhaust gases from the garage into your new home.

Exterior doors are exposed to detrimental weather conditions and extreme temperature variations from the inside to the outside which can harm the surface of the door. Variations in the relative humidity from the interior to the exterior can also affect the door. Collectively or separately, these conditions can cause doors to warp or change in dimension. Seasonal variations can occur up to ¼" in any direction. It is prudent to refrain from trimming a binding exterior door as the problem may rectify itself with a change in climatic conditions.

Some exterior doors have restrictions imposed by the manufacturer as to the colour the door may be painted. The heat absorbed by darker colours can cause failure of the sealing compounds in the glazing and/or cause excessive warping of the door. The wrong paint colour may void the manufacturer's warranty; therefore, any such restrictions should be reviewed prior to the door being painted.

Interior doors are generally sized to allow a gap up to 18mm (¾") at the bottom of the door between the door and the floor covering. This gap is provided to allow for the circulation of air beneath the door.

E.2.7 WEATHER-STRIPPING

Weather-stripping is installed around doors and windows to reduce air infiltration. Check the weather-stripping annually to ensure that the seal is adequate. Some weather-stripping is adjustable and the door should be slightly difficult to latch or lock. Petroleum jelly can be used to lubricate rubber or vinyl products to maintain their flexibility.

E.2.8 STORM DOORS

It is recommended that storm doors be installed where conventional swing doors are unsuitable for the weather conditions. Unfortunately, this may not often be determined until the first winter season. The need for a storm door is not a builder responsibility.

E.2.9 FINISH HARDWARE

The factory finish on exterior locks and door handles will wear with normal use. This is especially evident with brass finishes in marine environments. To restore this finish, remove the factory lacquer finish with a scouring powder, then polish the hardware. Once a uniform appearance is obtained, the surface can be sealed with a coat of clear lacquer.

Interior door hardware can be wiped clean with a damp cloth and polished with a soft dry cloth. It should be noted that natural body oils and many hand lotions are detrimental to brass finishes and will cause tarnishing.

Door hardware and locks can be lubricated with powdered graphite or light oil.

E.3 EXTERIOR - ROOFS AND GUTTERS

E.3.1 Roof

If the roof of your new home is sloped, it will typically be surfaced with asphalt or fiberglass shingles, cedar shingles or shakes (which may or may not be treated with a preservative), clay or concrete tile, metal or a composite manufactured product. Flat or slightly sloped roofs may be surfaced in both built-up tar and gravel or torched on rolled sheet goods. The typical life expectancy of these various roof materials ranges from 10 - 25 years.

The life expectancy of the roof will depend on the product used and the care and maintenance provided. Loose, broken or missing shingles following heavy windstorms should be repaired or replaced. It should be noted that most manufacturer's warranties for shingles do not cover wind damage in conditions exceeding 80 kph (50 mph) unless otherwise specified. Storm related damage is not the builder's responsibility; therefore, maintenance repairs should be made as soon as possible after such occurrences to prevent leakage. Leakage can cause serious damage to the interior of your new home or further damage to the remainder of the roof.

Asphalt shingles and some roll roofing have granules on the surface to protect the product from damage due to ultra-violet radiation from sunlight. If bare areas of the underlying roof material are present, they should be protected with additional granules. This material is available at most roofing material supply stores. In addition, these types of roofs will become soft in hot weather and the top surface can become damaged from people walking over it.

Deflection of the roof sheathing or the lifting of the shingles due to expansion can cause variations in the roof surface.

Cedar roofing should be washed annually with a garden hose and any accumulated debris such as needles or moss should be removed from between the shingles or shakes. The shingles should not be pressure washed as the high-pressure water causes irreparable damage to the composition of the shingle. Wood roofs become very slippery when wet and extreme caution must be undertaken when working on a wet roof.

Wood shingles will crack and split with time. This weathering is generally not a concern unless it causes a roof leak. If such a leak occurs, it should be repaired immediately by installing a piece of sheet metal beneath the cracked shingle. Older wooden roofs are very brittle and traffic on the roof can cause extensive damage to the shingles.

Flat roofs should be inspected by a professional every two years and all recommended maintenance should be carried out.

All forms of roofing are intended to shed water and prevent its entry into the residence. Obstructions that prevent the free flow of water off of the roof surface or to a drain can cause leakage and/or premature failure of the roofing material. The roof and ancillary flashings must be kept free of debris and build-up of ice or snow. While cleaning the roof is recommended annually, the roof surface should also be checked for excess debris after every heavy windstorm. This is especially true if trees surround the home. Please note that coniferous trees will also deposit debris in sufficient quantities to impede the free flow of water.

Regardless of the type of roof material used, the area beneath the roof surface will be vented to the outdoors. Sloped roofs generally have an attic which is vented at the perimeter (eaves), gables or at the ridge of the roof. Flat roofs are also vented. This unobstructed ventilation is crucial to the longevity of the roof and roofing material. At no time should you allow this venting to become blocked.

All penetrations through the roof, such as skylights, pluming stacks, vents etc., need to be checked annually and re-sealed as necessary.

E.3.2 Ice Dams

Snow melting on the roof and freezing as it runs off at the un-insulated overhang or eave of the roof can cause ice damming. Ice dams can cause water to back up under the shingles which will result in a leak inside. This is a natural occurrence and generally is not due to a builder defect. When ice dams occur, the snow and ice should be removed off of the roof at the eaves and valleys.

E.3.3 Gutters and Downspouts

Although gutters are not required by building regulations, they are often installed at the perimeter of the roof to control the runoff of rainwater from the roof. They also serve to prevent the rainwater from being deposited alongside the foundation wall where it could eventually seep into the basement or splash water and mud up onto the surface of the wall. If the gutters or the down pipes become clogged with debris or ice, water damage can occur.

Keep gutters, roof drains and downspouts free of obstructions such as leaves, tree needles and moss. Washed down by rain, particles from asphalt shingles can settle in the gutters and reduce their efficiency. As with the roof, the gutters should be checked for obstructions at least twice a year, and after every heavy windstorm or after prolonged periods of freezing and thawing. When cleaning out the gutters, do not allow the leaves and debris to clog the down pipes of your new home.

E.4. EXTERIOR - STRUCTURE

E.4.1 FOUNDATION

The most common material used in foundation construction is poured in place concrete. Alternative methods of construction include masonry block walls and wood walls constructed of pressure treated preserved wood.

If constructed of concrete, it is important to understand that concrete shrinks as it cures. As with concrete flat work, such as driveways, the concrete of the vertical wall may crack as the stresses caused in the concrete due to shrinkage are released. Minor shrinkage cracking cannot be avoided in conventional concrete foundations and floors. These cracks have little effect on the structural integrity of the building.

The exterior of foundation walls are generally coated with a bituminous damp-proofing material below grade. This material is often exposed for several inches above grade as well. Damp-proofing is installed to prevent moisture from seeping into the concrete. It is not waterproof, therefore, excessive amounts of ground water must be controlled by other means such as site grading or drainage.

As previously referenced, hairline cracks in the foundation wall may allow the entry of water. These can be repaired from the outside with an asphalt-based sealant. If exterior access is not possible, numerous concrete patching compounds are available commercially, which can be installed to the inside surface of the concrete wall.

E.4.2 WOOD FRAME

The most common means of building the structure of a new home is a method called western platform framing. This method incorporates a vertical frame of 2"x4" or 2"x6" studs with continuous plates of the same width at the top and bottom of the wall. The wall studs are generally on a 16" or 24" spacing. Plywood, lumber or oriented strand board (OSB) sheathing is used on the exterior of the frame.

The floor "platforms" are constructed using 2"x8", 2"x10", 2"x12" floor joists of solid lumber or manufactured floor joists with plywood or OSB sheathing screwed or nailed to the top surface. To help eliminate squeaks and to provide additional structural rigidity, glue is often applied to the top of the floor joist prior to the installation of the floor sheathing. The interior and exterior walls of the structure and/or the perimeter foundation wall generally support the floor joists.

For space considerations, beams constructed of several joists nailed together, or engineered wood products, may be used to support the joists in lieu of a wall. For larger loads or longer spans, a specialized manufactured beam may be used for added strength. Posts at intermediate locations may support these beams.

Most roofs are constructed using prefabricated wood roof trusses spaced 600mm (24") apart. Detailed roof structures may be framed by hand using roof rafters and ceiling joists. Trusses are capable of spanning large distances while carrying considerable weight; therefore, it is likely that the interior walls on the top floor of your home carry no roof loads and the load is supported by the exterior walls only. As the design and installation of the truss is engineered, this can be confirmed by your builder or by the supplier of the trusses.

Following installation, the wood used to construct your new home will shrink as it dries out. This shrinkage will cause minor changes in the size and the shape of the wood members. These changes do not affect the structural integrity of the wood frame, but may cause changes in the finishes used throughout your new home. The most common changes are cracks or nail pops in the finished surfaces of the drywall on the walls and ceilings. The movement that results from the shrinkage of the structure may also affect other finishes such as flooring and wood trims. Minor floor squeaks may appear and doors may begin to bind. Any necessary repairs in this regard should be postponed until towards the end of the first year to allow the majority of the wood shrinkage to occur.

E.4.3 BEAMS AND TELEPOSTS

As previously referenced, the main floor of the residence may be constructed with one or more beams installed beneath the floor structure to support the floor joists above. In turn, posts may support these beams at specific intervals. Clay or other soils subject to shrinking or swelling may be common in some geographical regions. In these regions, adjustable posts may be used. These posts are threaded and commonly referred to as teleposts. The beam should be checked for straightness at least twice a year and the posts adjusted as needed. A hairline crack between the wall and the ceiling over a main beam may be an indication that adjustments are required.

If the basement is renovated, or if further development is undertaken, the new walls must not come in contact with the underside of the beam as this will not allow adjustments to be made to the posts.

E.5 INTERIOR – FLOOR FINISHES

E.5.1 HARDWOOD

Kiln dried material is used for the construction of hardwood floors. However, these materials are susceptible to movement caused by variations in humidity levels in the living space. Low humidity levels will cause the wood to separate slightly at the seams of the flooring. High humidity levels will cause the wood to expand. If excessive, this expansion may lead to cupping or swelling in the center of the board. These movements vary seasonally and can be somewhat controlled by monitoring the indoor moisture levels. The movement of the flooring may also create noises as it expands and contracts.

The appearance of hardwood flooring is easy to maintain and a damp mop is all that is required for cleaning. The need for wax on hardwood floors is rare and many types of flooring are now factory finished and have specific maintenance requirements. Refer to your builder or flooring supplier for specific instructions.

E.5.2 RESILIENT FLOORING

Whether it is a tile or sheet product, resilient flooring is susceptible to damage from indentations or scratches, particularly those caused by furniture. The floor should be protected from such damage by using furniture pads beneath heavy furniture legs. The ability of a given flooring product to withstand abuse varies greatly from product to product and related damage is not a warranty issue.

Resilient flooring should be cleaned with products recommended from the major manufacturers, or your local hardware store. Harsh cleaners can cause fading or affect the composition of the flooring material making it hard and brittle. Consult with the supplier of the specific flooring product for their recommendations, as specialty products are available for different floorings to both clean and restore the sheen. Detergents often cause adjoining carpeted areas to mat down as the soaps are carried onto the carpet from the resilient floor areas.

Once construction is complete, movement of the floor structure due to shrinkage can also affect the floor. While flooring installers apply filler at the seams of the wood underlay materials, it is not always possible to achieve and retain a perfectly level sub-floor. This can result in minor ridges becoming visible beneath the flooring under certain light. Generally, these are only cosmetic and do not require any action.

E.5.3 CARPET

Carpeting care basically consists of avoiding spills, cleaning high traffic areas regularly to remove surface dirt and vacuuming the entire carpeted area weekly to remove dirt. Consult your flooring supplier for the specific cleaning and maintenance requirements of the flooring products used in your home.

Carpets and rugs should be professionally cleaned every year or two depending on the use and appearance.

Less expensive carpeting is more susceptible to matting. This is primarily noticeable in high traffic areas and cannot be prevented other than by the use of carpet runners. Warranties from the carpet manufacturer generally pertain to fiber loss only and do not cover "appearance retention".

E.5.4 CERAMIC TILE

Ceramic tile is very durable. For routine cleaning use a mild detergent; do not use waxes or sealers. As the grout is porous and will absorb water which will lead to staining, annual sealing of the grout joints with a clear liquid silicone sealer should be carried out.

E.6 INTERIOR - COUNTERTOPS AND CABINETS

E.6.1 PLASTIC LAMINATES

Laminated countertops will burn or de-laminate if hot pots or pans are placed directly on the surface. Protective potholders should be used if the hot items are to be placed on the countertop. Electrical appliances may also require protection when in use. The damage caused by hot items is generally not repairable so it is best to err on the side of caution.

Abrasive cleaners or steel wool should not be used, as the surface of the laminate will scratch. The ability to withstand scratching does vary with the laminate material used. If allowed to remain on the surface, household bleach or solvents can stain or discolour the laminate.

Water must not be allowed to remain on joints in the countertop as this will result in the substrate of the countertop swelling due to the excess moisture. This damage is irreversible.

Clean the surface of plastic laminates with a damp, soapy cloth or sponge. For stubborn stains, use a mild household cleaner and rinse thoroughly with clear water. Be aware that some liquid cleaners contain abrasives and/or solidify at the mouth of the container. These hard solid pieces can scratch the surface if they inadvertently get on the cleaning cloth or sponge used to clean the laminate surface.

E.6.2 GRANITE

Granite may be washed with a mild solution of warm water and non-abrasive soap or mild detergent. Do not use abrasive cleaners, as such cleaners will dull the finish. Protect the counter from heat and hot items. Use a cutting board to protect the countertop finish.

E.6.3 CABINETS

Wood cabinets are very susceptible to heat damage. If the kitchen is equipped with a self-cleaning oven, the cabinet drawers and cabinet doors adjoining the range should be kept open when the range is in self-clean mode to allow excess heat to dissipate. If heat is allowed to build up, the surface finish may fade or deteriorate. This precaution should also be taken when the oven is used for a prolonged period at a high temperature.

Most cabinet surfaces can be cleaned using a damp cloth and a mild detergent. Abrasive cleaners should not be used. Grease splattered on the surfaces should be removed immediately as it becomes more difficult to remove as it solidifies.

E.7. INTERIOR - PAINT

The majority of the interior drywall surfaces of your new home will be finished with either a latex (water-based) or alkyd (oil-based) paint. Maintenance can quite easily be carried out by gently washing the painted surfaces with a mild soap or detergent solution. Abrasive solutions or over scrubbing should be avoided as this will remove the paint.

E.8. PLUMBING

E.8.1 GENERAL

The plumbing in your new home will likely consist of plastic or copper piping for the supply of potable water throughout the home and PVC plastic piping for the waste disposal. Other products are available but are less common.

A main water supply shut off has been provided to shut off the water supply to your new home. This can be used in the event of an emergency and should be located upon occupancy for future reference. Additional shutoffs may also have been provided to the sink supply lines and toilets to allow for routine maintenance.

The waste lines have been provided with clean outs throughout the residence. These may be located within cabinets, inside closets or clearly visible on a wall surface. These clean outs must remain accessible as they are the means of access to the piping should a blockage occur.

P-traps are present at the outflow of all waste piping. These traps are designed to provide a barrier of water which prevents the entry of sewer gases into the home. Sinks or drains which are used infrequently may lose this water barrier due to evaporation. If sewer gases are detected, running water down the waste pipe will re-prime the trap and likely stop the odour.

Any waste materials, including grease, fat and petroleum products, should not be disposed of down the plumbing system. These materials will accumulate in the piping, especially in the P-traps, and can significantly reduce the flow of water through the waste system. These substances are also very detrimental to the municipal sewage treatment systems and private septic systems.

E.8.2 FIXTURES

The surfaces of the plumbing fixtures are susceptible to damage from abrasive cleaners. Use of abrasive products and steel wool pads should be avoided, as these products will cause the finish of the fixture to become dull and porous. Refer to the manufacturer's recommended maintenance procedures for specific information relating to your products.

Plumbing fixtures are intended for normal household use only. Caustic products should not be disposed of in the household fixtures.

E.8.3 HOT WATER TANK

The water temperature of the hot water tank can be adjusted on the thermostat located on the tank. This may require the use of a screwdriver. An average setting for the water temperature is 140°F which is adequate for dishwashers. This temperature is hot enough for most uses but will not cause scalding or burns. If hotter water is needed for a special purpose, the thermostat on the tank can be set to a higher temperature; however, the thermostat must be reset to a normal setting when finished. If the house is to remain unoccupied for a substantial period of time, the water temperature should be turned down or switched off at the tank or breaker panel. Some hot water tanks have a "vacation" setting on the thermostat for this purpose.

Hot water tanks are equipped with a pressure relief valve at the top of the tank. This is a safety feature that will open and relieve water pressure if the tank exceeds its rated working pressure. If water or water stains are evident at the discharge pipe leading from the relief valve, contact a plumber as this is an indication that the normal operating pressure of the tank has been exceeded.

A typical hot water tank has a life expectancy of 8 to 12 years. Periodic draining of the tank will remove sediment from the base of the tank and prolong its life. The sediment has an insulating effect, especially with immersion type elements, which causes the heating elements to operate longer than necessary with a consequent increase in cost and energy consumption.

Prior to draining water from the tank, the power supply or fuel source must be turned off. Do not restore power to the tank until it has been refilled as it may explode due to excessive pressure caused by the heating of air instead of water.

The tank can be drained by attaching a garden hose to the outflow drain at the base of the tank and routing the hose to a nearby floor drain. Draining can only be accomplished by gravity feed; therefore, the outflow of the drain used must be lower than the base of the tank. Alternatively, the hose can be run outside as long as the outflow is lower than the tank.

E.8.4. HOSE BIBS

Hose bibs (garden hose connections) often have a valve inside the house that can be shut off to allow the hose connection to be drained from the inside before winter to prevent freezing and possible bursting of the exterior section of the piping. These shut-off valves should be identified and shut-off in the winter months. Once the water supply has been shut off, the exterior valve should be opened to allow the exterior portion of the piping to drain. This process is reversed in the spring once the threat of freezing is gone.

Some hose bibs are "frost free" which means that the valve is connected to a long stem that allows the water to be shut off inside the wall in the warm environment. The outer portion of the piping then drains freely.

Garden hoses should not be left connected to the hose bib during freezing weather as neither can drain. Ice forming in the hose due to undrained water can break the hose, or the hose bib and cause the supply pipe to freeze.

E.8.5. TOILETS

Toilets generally refill as follows: a flush causes water in the tank to rise, which in turn lifts a ball float to a preset water level. Once the ball float reaches this level, the water flow valve is shut off. If set too high, the water level will rise in the tank and run down the overflow pipe into the toilet bowl without shutting off the water. To rectify this,

simply adjust the height of the ball float so that the water is shut off before it reaches the height of the overflow outlet.

If water continuously runs into the toilet bowl from the tank, there may be a poor seal at the flapper valve at the base of the tank. This seal can be cleaned with a stiff brush or steel wool. A worn flapper valve would require replacement.

Water dripping from the base of the toilet tank is likely due to condensation on the tank versus a leak of any connections. High interior humidity levels will result in condensation on the cold surface of the toilet tank as the tank is refilled with cold water.

Some toilets and some basins are made of glazed and kiln-fired vitreous china, while some basins and bathtubs are made of enameled steel. Both are very durable and attractive. To clean these fixtures, use mild powdered or liquid cleaners. Avoid abrasive cleansers or pads as they will damage the finish.

E.8.6 FAUCET REPAIR

Noisy or leaking faucets are frequently due to loose or damaged washers. Turning the fixture off with too much force can damage washers. Faucet handles should be turned no further than the point at which they stop the flow of water.

Faucets can generally be easily repaired by either replacing the damaged washer or the faucet cartridge itself. Basic home repair books describe how to repair typical faucets; however, due to variations in the methods of manufacture, specific instructions may be required. Prior to beginning the repair, the water supply must be shut off at the shut off valves provided. If such valves are not present, the entire water supply system will need to be shut off at the main shut off valve.

Contact a plumber if you are uncomfortable attempting this repair.

Green staining of fixtures is usually a water related issue due to the chemical compositions in the water, and is not a builder defect.

E.8.7 PLUGGED TOILETS AND DRAINS

Toilets are very susceptible to blockage. New toilet designs use very little water per flush. This results in a lower volume of water carrying away the waste. Repeated flushing may be required in some instances to remove solid waste. Dense tissue paper and some thick toilet papers are unsuitable for these toilets. Never dispose of hair, grease, lint, diapers, sanitary products, "Q-tips" or plastic in the toilet.

Hair, grease, large food particles or other solid forms of waste can plug drains. Should they become plugged, try removing the debris from the trap beneath the fixture. Alternatively, a plunger can be used. Once partially cleared, very hot water may complete the job. A more severe blockage may require a plumber. As commercial drain cleaners are very corrosive they are not recommended.

E.8.8 TUB AND SHOWER ENCLOSURES

A shower curtain will prevent water from running onto the bathroom floor while the shower is in use. To prevent damage to the flooring or walls, any spills or puddles of water should be cleaned up immediately.

Caulking is used to seal seams and prevent water from entering behind the enclosure. If a separation occurs around your bathtub between the tub and the wall tiles or between the wall and the enclosure itself, it should be filled immediately with a tub sealer or caulking compound available at any home supply centre. Leaving the gap unsealed may cause serious water damage to adjacent materials.

You should apply a clear liquid silicone sealer to the grout joints of tub or shower enclosures that are finished with ceramic tile. This should be done every six months. This sealer is used to prevent the porous grout from allowing water to seep through to the substrate material behind the tile. This sealing cannot be done until the grout has cured for approximately six to eight weeks. Please note, this is a liquid product and should not be confused with silicon based caulking. Follow the manufacturer's recommendations for application.

Some tub enclosures have specific cleaning requirements. Generally, abrasive cleaners are not recommended and harsh chemical cleaners should be avoided entirely. Follow the manufacturer's recommendations for maintenance. Also, you should never step into a bathtub with shoes on as trapped grit and dirt can damage the tub surface.

E.8.9 FLOOR DRAINS

Many municipalities require a floor drain primer which automatically provides water for the P-trap located below the floor surface. This P-trap is similar to those used under sinks and when full of water, it will form a seal against gases entering from the sewer system. As this water will evaporate with time, the seal must be maintained by pouring a litre of water down the drain every two to three months if an automatic primer is not present.

E.9. ELECTRICAL

E.9.1 GENERAL

The electrical system in your home has been installed in accordance with the requirements of the provincial electrical code. The power supply is fed to the home via underground or overhead cable. With underground service cables, piping, gas lines, etc., care should be taken when digging on your property. For information on these underground services, contact your hydro or gas provider, Telus, your cable supplier or your local building department.

The small glass enclosed meter mounted on the side of your new home is your hydrometer. This is the property of your utility provider and it measures your household electrical consumption. The voltage at the point of entry is generally 120/240 volts and 60 cycles per second. This may vary in multi-family developments.

Circuit protection will be via circuit breakers located in the electrical panel(s). The main power shut-off will be located inside the electrical panel or immediately adjacent to it. This panel and the location of the main breaker should be located upon moving in, before an emergency occurs. Should the circuit breaker "trip", it is likely due to overloading of a specific circuit or a short circuit in an appliance cord. The start-up load of electric motors can also temporarily overload a circuit. To correct tripped breakers, isolate the cause of the overload or short and disconnect it. The circuit breaker can then be reset by turning it to the "off" position and then to the "on" position. If the breaker continually trips, contact an electrician.

For your safety only use light bulbs as specified by each lighting fixture.

E.9.2 G.F.C.I. CIRCUITS

A ground fault circuit interrupter (G.F.C.I.) is an additional electrical safety device installed in the electrical system. This device is a breaker that can be located in the main electrical panel or within specialty outlet receptacles and is designed to provide protection from ground faults. The G.F.C.I. is extremely sensitive and will trip if grounding of the electrical current is detected. Ground faults usually occur in older appliances and electrical equipment or inexpensive extension cords. A poorly insulated extension cord lying on wet ground will often cause a ground fault. Because water and electricity are a poor combination, protection is installed to the outlets in the bathroom and outdoors. If this breaker trips, unplug the source of the ground fault and reset the breaker either at the panel or at the outlet itself.

G.F.C.I. outlets should be tested monthly to ensure their proper operation.

E.9.3. A.F.C.I. CIRCUITS

An arc fault circuit interrupter (A.F.C.I.) is a newly developed electrical device designed to protect against fires caused by arcing faults in the home electrical wiring. Conventional circuit breakers only respond to overloads and short circuits; they do not protect against arcing conditions that produce erratic current flow. The A.F.C.I. circuitry continuously monitors current flow through the A.F.C.I. and once an unwanted arcing condition is detected, the control circuitry in the A.F.C.I. trips the internal contacts, thus de-energizing the circuit and reducing the potential for a fire to occur. Arcing faults often occur in damaged or deteriorated wires and cords and lead to high temperatures that can ignite nearby combustibles such as wood, paper, and carpets. It is important to note that A.F.C.I.'s are designed to mitigate the effects of arcing faults but cannot eliminate them completely. In some cases, the initial arc may cause ignition prior to detection and circuit interruption by the A.F.C.I..

A.F.C.I.'s should be tested monthly to ensure their proper operation.

E.9.4. SMOKE AND FIRE DETECTORS

Smoke detectors have been installed in accordance with the requirements of the Building Code. They should be tested monthly to ensure their proper operation, and should be cleaned twice a year with a vacuum.

Please note that these devices are connected directly to the electrical system of the home and do not require batteries. However, they will not operate in a power outage unless the unit has a backup battery.

E.10. HEATING AND VENTILATION

E.10.1 HEATING

Regardless of type, the heating system is designed to maintain a minimum temperature of 21°C at the outside design temperature. The indoor temperature is measured in the center of the room. This calculation is a health and safety issue defined by the Building Code/Bylaw and is not directly related to comfort. Temperature variations from room to room can be expected. The heating system may temporarily not be able to meet comfortable temperatures in specific regions where the temperature falls below the outdoor design temperature.

There are numerous types of thermostatic controls for any given heating system. The accuracy of these controls can vary due to internal heat gains caused by a continued demand for heat. At times, it may be necessary to ignore the numerical temperature settings and set the thermostat for a temperature that is comfortable. Adjusting a thermostat to a setting higher than the temperature desired will not speed the rise in temperature.

The various heating systems available all have specific requirements for maintenance in order to operate at maximum efficiency. The operation of your specific system is best determined by reviewing the instructions provided by Tien Sher or the manufacturer.

Heating systems can be noisy at times due to the expansion and contraction of the pipes and other metal components of the distribution system. These noises are particularly noticeable when starting up or cooling down, or at night (when it is quieter) and do not affect the performance of the system.

Systems that rely on burning fuel to generate heat require makeup air for combustion. This air supply must not be blocked as dangerous back drafting conditions can occur.

Heating systems will not operate unless the thermostat setting is higher than the room temperature. Solar heat gains can warm a room or area to the extent that the thermostat is warm enough not to be calling for more heat. The heating system will then remain turned off and other rooms not positively affected by the heat of the sun can become cool.

E.10.2 VENTILATION, CONDENSATION AND RELATIVE HUMIDITY

The optimum year round humidity level to be maintained within the residence is approximately 50%. Due to seasonal variations of the relative humidity outdoors, this level of humidity can be impossible to maintain without the use of specialized mechanical equipment. Mechanical means of maintaining a constant humidity within the home are available.

Furnace humidifiers that add moisture to the indoor environment are available, but they must be checked frequently when in use to ensure that the proper water level is maintained within the unit.

Due to Building Code/Bylaw requirements pertaining to energy conservation, current standards for house construction require that the exterior envelope of the building be sealed against incidental air leakage. This sealing of the exterior walls prohibits the leakage of warm air to the outdoors from within the residence.

Warm air has the ability to hold more moisture than cold air; therefore, daily activities within your new home such as showering, boiling water, and even respiration create moisture in the form of water vapour. Surprisingly, this can total 7 - 9 litres (1½ to 2 gallons) of moisture per day with four occupants. The warm air holds this water in suspension and as this moisture-laden air comes in contact with cold surfaces it will condense and water will form. Condensation will fuel the creation of mold and mildew.

The failure of an owner to properly ventilate and maintain proper heating levels can seriously affect a new home and the health of the occupants. Any resultant damage due to an owner's actions would not be covered under the warranty.

The key to controlling humidity levels within the home and avoiding condensation is adequate ventilation. Ventilation allows the warm moist air to be exhausted from the home and replaced with dry cool air from the outdoors. This will marginally increase the cost of heating as this cold air is brought up to room temperature; however, this added cost is necessary to offset the harm the high humidity levels will cause.

As the outdoor temperature drops, the surface temperature of the exterior walls will also drop. The air inside the house will not be able to sustain as high a level of relative humidity. This will cause condensation to occur on cold surfaces.

The chart below provides a rough guideline as to the relative humidity levels that can be sustained within the house as the temperature drops.

Celsius	Outside air temperature Fahrenheit	Desirable maximum inside relative humidity (%)at an indoor temperature of 21°C (70°F)
-29	-20	20%
-24	-10	25%
-18	0	30%
-12	10	35%
- 7	20	40%

Windows or the toilet tank of the toilet used most frequently can be used as a guide to determine whether or not the proper relative humidity is being maintained. As soon as condensation occurs on inside window surfaces or on the

tank of the toilet, steps should be taken to reduce the relative humidity by controlling the moisture sources and/or by increasing ventilation.

As previously stated, ventilation is often the only effective means for removing moisture. Dehumidifiers are only practical in limited areas. If vented outdoors, exhaust fans in the kitchen and bathroom will remove moisture created from cooking and bathing before the vapour can circulate through the house. These fans should not exhaust into the attic space as this will only exhaust the moisture into the attic potentially causing problems. These fans need to be run often enough to remove the air borne moisture. The length of time required will depend on the number of occupants, the activities undertaken and outdoor climatic conditions. Many new homes are now provided with intermittent timer controls that regulate the operation of these fans which should never be tampered with or turned off.

Windows are an effective means of ventilation and depending on weather conditions, thoroughly airing out the home for 15 minutes a day may suffice. In addition, opening a window near the source of moisture while the exhaust fan is in operation will allow for cross ventilation and more effective moisture and odour removal.

E.10.3. RANGE HOODS AND EXHAUST FANS

Range hoods and exhaust fans are provided to reduce or eliminate cooking odours and excess moisture. Not all range hoods vent directly outdoors. For efficient operation and to reduce potential fire hazards created by grease accumulation, filters should be washed in mild detergent. They can also be run through a dishwasher.

E.11. APPLIANCES

Any appliances included with the purchase of your new home, which have been installed by Tien Sher or their agents, will have been checked to ensure their proper operation. Appliances generally come with instructions, which detail the operating procedures for the specific appliance. These instructions must be followed in order to maintain the manufacturer's warranty. Any warranty cards provided with the equipment should be completed and immediately sent to the manufacturer to ensure your warranty obligations are met.

With dryers, check and clean the exterior vents on a monthly basis as they commonly become plugged with lint which reduces the efficiency of the dryer and can be a fire hazard.

F. MAINTENANCE MANUAL SIGN-OFF

As a requirement of the Homeowner Protection Act, *Tien Sher* is required to provide you with maintenance requirements for your home and its components. Checked off below are the specific component manuals that have been provided to you for your new home in addition to this **maintenance manual**.

PRODUCT SPECIFIC MAINTENANCE/OPERATING MANUALS

1. Owner's Manual
2. Garage Doors
3. Garage Door Opener(s)
4. In-sink Disposal
5. Hot Water Tank
6. Boiler
7. Alarm System (if installed)
8. Smoke Detector
9. Microwave Hood Fan
10. Electric Fireplace (if installed)
11. Built-in Vacuum System (if installed)
12. Dishwasher
13. Stove / Range
14. Refrigerator
15. Washer / Dryer (if installed)
16. Bathroom Fans
17. _____
18. _____
19. _____

I/We, _____, on this _____ day of _____ , 20___ confirm that I/we have received the above-noted manuals for my/our new home located at:

_____ from my/our Builder, *Tien Sher Investment Group Inc.*. I/We also acknowledge it is my/our responsibility to familiarize myself/ourselves with the contents of these manuals and undertake any maintenance requirements explained therein.

_____ _____

Owner(s) (signature) **Tien Sher (signature)**

A COPY OF THIS PAGE IS TO BE RETAINED BY YOUR BUILDER. TIEN SHER MUST FORWARD A COMPLETED COPY TO ST. PAUL GUARANTEE ALONG WITH THE COMPLETED "WARRANTY COMMENCEMENT DATE CERTIFICATE", SCHEDULE "D".

G. YOUR NEIGHBORHOOD

Welcome to your new home in Richmond's McLennan neighborhood!
There are many amenities located in your new neighborhood such as shops, schools, bus service plus the new neighborhood park. Following is a sampling of the many community services, attractions and amenities.

City of Richmond, Municipal Hall - 6911 No. 3 Road - www.richmond.ca
Information or general enquiries 604-276-4000

Fire Department - 6960 Gilbert Road
Emergency calls 911
Administration or non-emergency calls 604-278-5131

Police RCMP - 6900 Minoru Boulevard
Emergency calls 911
Non-emergency calls 604-278-1212

Richmond General Hospital – southeast corner of Gilbert Road and Westminster Highway
Admitting 604-278-9711

Richmond, School District 38 - 7811 Granville Avenue
General Inquiries 604.668.6000

Terasen Gas
Emergency calls 1-800-663-9911

B.C. Hydro
Emergency calls 1-888-769-3766

Richmond Public Libraries
Brighouse (Main) Branch – located #100-7700 Minoru Gate..... 604-231-6401
Ironwood Branch – located #8200-11688 Steveston Highway 604-231-6468

City Parks & Recreation
McLennan South Neighborhood Park – located in the 7000 block of Ash Street
South Arm Community Centre – located 8880 Williams Road 604-718-8060
WaterMania – located 14300 Entertainment Boulevard 604-448-5353

Shopping
Garden City Shopping Centre – located 9100 Blundell Road (at Garden City) (administration line)..... 604-273-7505
Richmond Centre – located 6551 No. 3 Road (administration line)..... 604-713-7467
Lansdowne Centre – located 5300 No. 3 Road (administration line) 604-270-1344
Aberdeen Centre – located 4400 Hazelbridge Way (administration line) 604-273-1234
Parker Place – located 4311 Hazelbridge Way (administration line)..... 604-273-0276

Arts & Entertainment
Gateway Theatre – located 6500 Gilbert Road 604-270-1812
Art Centre Gallery – located #100-7700 Minoru Gate 604-231-6457

For other municipal services please refer to the blue pages located at the back of the telephone directory.

H. NEW HOME MAINTENANCE SCHEDULE

ITEM	ONCE A MONTH	SPRING	SUMMER	FALL	WINTER
EXTERIOR					
Check and clean sump.		✔			
Check grades around house and fill in low areas.		✔			
Check exterior caulking and recaulk if necessary.		✔		✔	
Check weather-stripping and adjust if necessary.				✔	
Clean exterior cladding.			✔		
Clean gutters and down spouts.		✔		✔	
Check roof for defects.		✔		✔	
Check foundation and concrete slabs for signs of leakage or damage.			✔		✔
INTERIOR FINISHES					
Recaulk showers and countertops if necessary.		✔			
Seal grout.			✔		
Lubricate door hinges.		✔			
Wash range hood filter.			✔		
PLUMBING					
Disconnect hoses and drain hose bibs.				✔	
Blow out sprinkler lines.				✔	
Drain and refill hot water tank.			✔		
ELECTRICAL					
Check GFI circuits	✔				
Check smoke/carbon monoxide detectors	✔				

HEATING

Service heating system.			✔		

Owner(s) (signature) **Date**

Print Name

APPENDIX "A"

WARRANTY COVERAGES

1) MATERIALS & LABOUR WARRANTY

(a) in the first **12 months** of the Warranty, for **detached dwelling units** or **dwelling units** in a **multi-family building**, coverage for any Defect in Materials and Labour.
(b) in the first **15 months** of the Warranty, for the **Common Property**, common facilities and other assets of a Strata Corporation, coverage for any defect in Materials and Labour.
(c) in the first **24 months** of the Warranty,
   i. coverage for any Defect in Materials and Labour supplied for the gas, electrical, plumbing, heating, ventilation, and air conditioning Delivery and Distribution Systems,
   ii. coverage for any Defect in Materials and Labour supplied for the exterior cladding, caulking, windows, and doors that may lead to detachment or material damage to the new home or Common Property,
   iii. coverage for any Defect in Materials and Labour which renders the new home unfit to live in, and;
   iv. non-compliance with, or a violation of the Building Code if the non-compliance or violation:
      1) constitutes an unreasonable health or safety risk, or
      2) has resulted in, or is likely to result in, Material Damage to the new home.

2) BUILDING ENVELOPE WARRANTY - FIVE (5) YEARS

Coverage for the Building Envelope for up to five years for Defects in the Building Envelope of a new home, including a Defect which permits unintended water penetration such that it causes, or is likely to cause, Material Damage to the new home.

3) STRUCTURAL DEFECTS WARRANTY - TEN (10) YEARS

Coverage for Structural Defects for up to ten years for:
(a) any Defect in Materials and Labour that results in the failure of a Load Bearing part of the new home, and;
(b) any Defect which causes Structural Damage that materially and adversely affects the use of the new home for residential occupancy.

- ***For complete Warranty Coverage information, refer to your St. Paul Guarantee Home Warranty Certificate.***

APPENDIX "B"

WARRANTY EXCLUSIONS

The Warranty does not cover the following:

a) weathering, normal wear and tear, deterioration or deflection consistent with normal industry standards;
b) normal shrinkage of materials caused by drying after construction;
c) any loss or damage which arises while the new home is being used primarily or substantially for non-residential purposes;
d) materials, labour, or design supplied by an owner;
e) any damage to the extent that it is caused or made worse by an owner or Third Party, including:
   (i) negligent or improper maintenance or improper operation by anyone other than the builder or its employees, agents, or sub-contractors,
   (ii) failure of anyone, other than the builder or its employees, agents, or sub-contractors, to comply with the Warranty requirements of the manufacturers of appliances, equipment, or fixtures,
   (iii) alterations to the new home, including the conversion of the non-living space into living space or the conversion of the new home into two (2) or more units, by anyone other than the builder or its employees, agents, or sub-contractors while undertaking their obligations under the sales contract, and,
   (iv) changes to the grading of the ground by anyone other than the builder or its employees, agents, or sub-contractors;
f) failure of an owner to take timely action to prevent or minimize loss or damage, including the failure to give prompt notice to St. Paul Guarantee of a Defect or discovered loss or a potential Defect or loss;
g) any damage caused by insects or rodents and other animals, unless the damage results from non-compliance with the Building Code by the builder or its employees, agents, or sub-contractors;
h) accidental loss or damage from acts of nature including, but not limited to, fire, explosion, smoke, water escape, glass breakage, windstorm, hail, lightning, falling trees, aircraft, vehicles, flood, earthquake, avalanche, landslide, and changes in the level in the underground water table which are not reasonably foreseeable by the builder;
i) bodily injury or damage to personal property or real property which is not part of the new home;
j) any Defect in, or caused by, materials or work supplied by anyone other than the builder or its employees, agents, or sub-contractors;
k) changes, alterations, or additions made to the new home by anyone after initial occupancy, except those performed by the builder or its employees, agents, or sub-contractors under the construction contract or sales agreement, or as required by *St. Paul Guarantee* ;
l) contaminated soil;
m) subsidence of the land around the new home or along utility lines, other than subsidence beneath footings of the new home or under Driveways or Walkways;
n) diminution in the value of the new home;
o) landscaping, both hard and soft, including plants, fencing, detached patios, gazebos and similar structures;
p) non-residential detached structures including sheds, garages, carports or outbuildings, or any structure or construction not attached to or forming an integral part of a multi-unit building or the new home;
q) any commercial use area and any construction associated with a commercial use area;
r) roads, curbs, and lanes;
s) site grading and surface drainage, except as required by the Building Code;

t) the operation of municipal services, including sanitary and storm sewer;
u) septic tanks or septic fields;
v) the quality or quantity of water, either from a piped municipal water supply or from a well;
w) a water well, but excluding equipment installed for the operation of a water well used exclusively for the new home, which equipment is considered to be part of the plumbing system for the new home;
x) damage caused or made worse by the failure of an owner to take reasonable steps to mitigate any damage.