City of Crystal Lake
Engineering and Building Department

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www.crystallake.org

RESIDENTIAL ADDITIONS AND REMODELING

Please provide the following information when applying for a permit:

- Building permit application.
  Applications are available at City Hall or online at the City's website, **www.crystallake.org**.
- Contractors List and Bond - If work is to be completed by someone other than the homeowner, a Contractors List with the business name of the general contractor and subcontractors working on the project shall be submitted. All general contractors must have an original $10,000 City License Permit Bond prior to issuance of the permit. Other contractors that must be bonded include concrete, excavating, carpentry, masons, roofers and paving contractors.
- Four (4) copies of current Plat of Survey, showing the location of the proposed dwelling or addition. All recorded easements, as well as existing improvements located on the property must be shown on the plat.
- Four (4) sets of building plans. Plan set should include the following information: foundation plan, floor plans (include electrical, mechanical, plumbing, etc.), wall sections, exterior elevations, light/vent schedules, details, top of foundation, basement floor slab elevation, and additional information as required for code compliance review. If prefabricated trusses are proposed, a truss certificate, signed and sealed by a State of Illinois Licensed Structural Engineer must be submitted. Construction documents should be drawn to scale.
- Four (4) copies of site plan. This can be drawn on the Plat of Survey. Plans should include: existing and proposed building locations, setbacks, easements, existing and proposed grades, driveway, sidewalks, utility locations, soil erosion/sedimentation control and all site improvements. City engineering details are available at City Hall and on the City's website, www.crystallake.org.
- Copy of plumber's license and State of Illinois Plumbing Registration (if applicable). An original notarized letter of intent shall be submitted from the plumber for the proposed project.
- Copy of Res Check Energy Certificate-if completing the "Total UA Alternative" compliance method of the Energy Code.

Inspections

Please schedule all inspections by 4:00 P.M. the day before the inspection.

The following inspections are needed:

- Footing
- Foundation
- Backfill (Damp-proofing and Drain tile)
- Slab Pre-Pour (if applicable)
- Electric service
- Rough Plumbing, Electrical, Framing, and HVAC
- Insulation
- Final Inspection
- Other

Please provide the following when requesting an inspection:

- Inspection type
- Address
- Date and time frame
- Permit number
- Name and telephone number of homeowner/contractor requesting inspection

General Requirements

Foundations:

- All exterior walls must be supported on continuous concrete walls, minimum 42" below grade.
- A soils report may be required upon inspection of the footing.
- Damp proofing and drain tile required for all basement and crawlspace foundations.

Crawlspaces:

- Under-floor access opening to crawlspace shall a minimum of 18" x 24" opening.
- Access to a crawl space through the wall shall be a minimum of 16"x24"
- Crawlspaces must have cross ventilation unless open to the basement.
- A 6 mil. polyethylene or approved vapor retarder is required on all crawl space floors.
- Crawl spaces are required to be insulated. See 2009 IECC comments.
- A switched light source is required in all crawl spaces at the point of entry.

Floors:

- All floors must be designed to a minimum of 40 psf live load.
- Sleeping rooms shall be designed to a minimum 30 psf live load.
- The ends of joists must not have less than 1.5" bearing on wood or steel.
- All wood joists within 18" of the exposed ground shall be of pressure preservative type.
- All loads must be designed to transfer to the foundation.

Walls:

- Braced wall panels are required at corners and every 25' on-center.
- Fire stopping is required in all concealed spaces including cove ceilings, soffits, drop ceilings and chases.
- See 2009 IECC comments for insulation requirements.

Roof:

- All rafter-to-plate connection must have roof tie downs installed at every connection.
- Wood trusses require a registered design professional seal.
- Ice/water protection is required from the eave to 24" past the interior side of the wall.
- All roofs with a pitch between 2:12-4:12 shall have double underlayment.

Attics

- All attics over 30" in height shall have an access opening of at least 22" x 30"
- All attic access areas shall have a switched light source at the opening.

Light/Ventilation:

- All habitable rooms require window area equaling 8% of total floor area of the room, and window area openable to the outdoors equaling 4% of the room. Bathrooms, closets, halls, and storage rooms are not habitable.
- All exterior window glazing shall have a maximum U-factor of .35.

Emergency Escape:

- All first floor bedrooms must have at least one window with a minimum net clear opening of 5.0 Square feet for egress. Second floor bedrooms are required to have a minimum of 5.7 square feet net clear opening. The minimum width of the net clear opening of these egress windows is 20-inches and the height is 24-inches.

Exits:

- Two exits are required off the main floor of each dwelling unit (an exit through the garage does not comply).

Stairs:

- Risers – 7 ¾" maximum
- Treads – 10" minimum
- Open risers in stairs shall not permit the passage of a 4-inch sphere.

Handrails/Guardrails:

- Provide a graspable handrail between 34"-38" in height on all stairs with more than two risers. Handrails must return to walls or newel posts.
- Guardrails must be at least 36" in height with intermediate balusters spaced a maximum of 4" on-center.

Landings:

- Landings are required to be 36-inches in the direction of travel and at least as wide as the stairway or door served. Landings are required on the top and bottom of each stairway and must be illuminated.

Insulation:
2009 International Energy Conservation Code

U-factor	Skylight U-factor	Ceiling (R-value)	Wood framed walls (R-Value)	Mass Walls (R-Value)	Floors (R-Value)	Basement walls (R-Value)	Slabs (R-Value)	Crawl space (R-Value)
.35 or less	.60 or less	38	20 or 13+5*	13/17	30*[1]	10/13	10, 2ft.	10/13

***** 13+5 means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, insulated sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of the exterior, structural sheathing must be supplemented with insulated sheathing of at least R-2.

***[1]** Or insulation sufficient to fill the entire cavity, R-19 minimum.

/ # - The first number is the R-value for cavity insulation. The second number indicates continuous insulation.

- All new additions shall meet the 2009 International Energy Conservation Code.
- All thermostats shall be programmable on a daily schedule.
- All supply duct work outside of the thermal envelope shall be insulated to an R-8 in the attic and R-6 in the crawl space.

Electrical Requirements

- When interior alterations, repairs or additions occur, the smoke alarm system must be updated to the current code: A minimum of one smoke detector is required to be located in each new bedroom, outside each bedroom, and one on each level of a home. All smoke detectors must be hardwired with battery backup.
- Carbon monoxide detectors are required within 15’ of bedrooms.
- Arc fault current protection is required on all 15 and 20 amp branch circuits supplying receptacle outlets in bedrooms.
- All rooms shall have a switched light source or switched outlets.
- All junction boxes for ceiling fixtures shall be fan-rated when installed in the center of rooms.
- All garages are required to have receptacles for door openers.
- The use of non-metallic sheathed wiring is prohibited in Crystal Lake.
- Receptacles in finished areas shall be installed per the 6/12 rule (maximum six (6) feet from each side of door openings and twelve (12) lineal feet to next receptacle.
- A GFCI receptacle must be installed adjacent to each bathroom lavatory within 36”.
- Receptacles within six (6) feet of a wet bar are required to be GFI protected.
- Notching and boring in floor joists and bearing walls shall comply with the 2006 IRC.
- Carbon monoxide detectors are required in every dwelling within 15 feet of every bedroom.

Plumbing Requirements

- All plumbing work shall comply with the current Illinois Plumbing Code and City of Crystal Lake Amendments.
- All plumbing not completed by the homeowner must be done by a licensed plumber who is registered in the State of Illinois. If the plumbing will be completed by the homeowner, a signed letter of intent must be submitted by the homeowner stating they will be completing the plumbing and will reside in the residence for a period of 6-months after the approved final inspection of the project. This letter must be an original and notarized.
- If any plumbing will be completed in conjunction with the remodeling, verify all vents will be properly connected or terminate through the roof.
- All shower compartments and shower-bath combinations must have an automatic safety water-mixing device with a maximum setting of 115 degrees Fahrenheit.

Please note that the information provided in this handout is general in nature. If you have questions or need additional information, please contact an Engineering and Building Departments representative at (815) 356-3605 or building@crystallake.org.