



PINOLEVILLE POMO NATION
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TRIBAL GREEN BUILDING CODE
2011

PREAMBLE:

The PPN has worked with the U.S. Environmental Protection Agency (EPA) and the Development Center for Appropriate Technology (DCAT) to create this framework for tribal building codes. The interest in creating this framework grew out of experience with the PPN prototype house. PPN's citizens wished to design homes that were expressions of Pinoleville Pomo culture, and which furthered tribal goals of political sovereignty and environmental care. The Uniform Building Code¹ (UBC) represented a barrier to pursuing these goals, with its many prescriptions slow to respond to new research into building strategies. The state and county codes are evolving more quickly, but still do not facilitate the degree of design freedom that the tribe would like.

This approach is an effort for the tribe to create its own standards that permit the highest degree of design freedom, while also protecting health, safety and well-being of its multiple constituencies: current residents and neighbors, to be sure, but also future generations of people and non-humans that share local ecosystems with us. We realize that tensions may arise between the comfort and security of present residents and our commitment to leaving a healthy and sustaining world to future generations of people and non-humans. We embrace these tensions and seek ways to balance fairly the burdens and opportunities associated with design choices. We also believe there are many design elements – old and new – that reduce the tension to near zero. That is, we can have safe, healthy, environmentally-sustainable, culturally-appealing buildings now and preserve the same opportunity for future generations, if

¹ The Pinoleville Pomo Nation (PPN) Housing Director refers to the Universal Building Code as his reference for on-reservation construction. The California Building Code is a secondary reference for the PPN.

we design thoughtfully.

We can only reduce these tensions if we acknowledge they exist. Current codes cannot account for larger, longer-term or systemic risks, including environmental impacts, climate impacts, human health impacts and socio-cultural impacts nor can they consider substantially impacts in an integrated way. With no recognition for or ability to include systemic risks and risks to future generations or non-humans, it has been difficult to allow even the smallest increment of increased risk at the individual building site in exchange for large-scale risk reductions elsewhere or in longer timeframes. By acknowledging the larger spectrum of actual consequences and risks created by built projects, it becomes possible to reduce overall risk, and balance risk better among all those likely to be affected by a project.

The framework for the codes is meant to be as dynamic as possible. We are writing them in a time of rapid change and creativity in the building world. New materials are being tested, new systems for energy, water and air quality provision are being developed, new architectural forms are emerging, many mimicking traditional native forms and/or natural systems. At the same time, we are in a time of economic and social upheaval, and of tribal cultural renewal. How we define needs and access resources are both evolving quickly. As such, we are shifting away from the prescription of specific design elements and towards a review process that sets, and consistently re-evaluates, performance standards, then evaluates recent technologies to see how best to meet those standards.

A review process increases the chances that tribal citizens will influence design choices by giving them a seat at the table at the points of setting standards, helping to research and formulate design strategies, and evaluating building proposals. We would like to move beyond the customary model for tribal input – where tribes may be offered a couple of choices on a design to meet established standards – to one where tribes take on increasing responsibility for the building on tribal lands. We start with a limited capacity to assess the technical elements of building design, but this can only increase through review work. We can contribute meaningful information on social, cultural and local environmental immediately.

We recognize that the transition will require mutually beneficial learning relationships between the tribe and other entities such as model code organizations, universities, and non-profit and community-based organizations, as well as knowledgeable individuals. Many of these relationships will endure beyond a transition phase, particularly if the tribe intends to stay at the leading edge of building design. Developing these relationships early will quicken the pace

of tribal capacity building, as tribal citizens can learn by doing with experienced others. But it will also allow the tribe to play a large role in the design process immediately without expanding the potential for serious failures while tribal capacity grows.

Finally, we intend to take a landscape-level view in the framework, understanding how buildings affect and are affected by their settings. This fits well with PPN culture: we are taught to be mindful of our impact on each other, on non-human nature, and on the earth, water and air around us. We are taught to consider this impact now, but also deep into the future, so future generations will speak well of our decisions. The PPN's limited land base also requires us to think carefully about resource use, about integrating land uses in tight spaces, and about long-term impacts on the environment. When we consider the threats that climate change poses to our way of life, the landscape we account for extends very far. When we consider the cumulative, full life-cycle impacts of what we have done so far, we must act with creativity to restore what has been damaged. When we look at what we plan to do, over a long time horizon, we must act with caution and humility.

The PPN approach to codes is meant to be flexible and responsive to evolving tribal cultural and social values, current research and emerging technologies in the design and building fields, the potential for new partnerships, and changing economic opportunities. Our building partners recommended a review committee as an effective strategy for maintaining flexibility and responsiveness in the codes, while also protecting the health and safety of residents, neighbors and the non-human environment. We propose that compliance with these codes be based on a dialogue between a PPN Green Building Review Committee, the proposed users of the buildings, and those seeking contracts to design and build. Such a dialogue assures that multiple perspectives on building are considered, including those who must use and maintain the building. We believe multiple perspectives provide a stronger technical and regulatory check on plans. Many minds can also help set plans for a specific building within a larger, longer-term context. The structure and function of the Review Committee is outlined in a separate document available to all.

**TRIBAL GREEN BUILDING CODE
2011**

The Tribal Council of the Pinoleville Pomo Nation, empowered by the Tribal Constitution to enact codes and regulations, hereby ordains the following:

CHAPTER I. NAME, PURPOSE, AND SCOPE

SECTION 1 NAME

This code shall be known as the Green Building Code of the Pinoleville Pomo Nation.

SECTION 2 PURPOSE

Recognizing the tribal goals of environmental care, economic self-sufficiency and political sovereignty, as well as the desire of tribal citizens to design homes that express tribal social life and tribal culture, the Tribal Council ordains this Green Building Code to provide guidance for the development and construction of green tribal housing and buildings on the Pinoleville Pomo Reservation and tribal territory. The development of green buildings shall be in accordance with human safety and environmental standards, as well as the social and cultural values of the tribe. Evolving standards of green housing technology shall be taken into account., as will changing social, economic and political conditions.

SECTION 3 DEFINITIONS

The following definitions shall apply to this Code:

- Applicant: shall mean any person or group of persons who has applied to build tribal housing on the Pinoleville Pomo Reservation.
- Building: shall mean any structure designed for habitation or use for other human purposes.
- Code: shall mean this Green Building Code of the Pinoleville Pomo Nation.
- Committee: shall mean the Pinoleville Pomo Nation Green Building Review Committee.
- Exemption Form: A form that designers and builders may submit proposing alternatives to the Performance Standards and Requirements that better meet PPN goals. The Exemption Form lays out what evidence is required for an exemption to be approved.
- Performance Standards List: shall refer to the separate list of technical standards reviewed, adapted if necessary, and approved by the Pinoleville Pomo Nation and be referenced by

the Pinoleville Pomo Nation Green Building Review Committee. The Performance Standards List will be updated regularly to keep pace with changes in technology and social and cultural priorities, and will set the technical requirements builders and designers must meet. The PPN encourages designers and builders to propose standards for consideration by the PPN, and to engage in dialogue about appropriate local adaptations.

- PPN: shall mean Pinoleville Pomo Nation.
- Performance Requirements: shall mean the performance requirements that meet the goals and vision of PPN, that may be achieved through provisions in this code, in reference materials referenced by this code, or other methods that demonstrate compliance with the intent of this code. The Performance Requirements will be updated regularly to keep pace with changes in technology and social and cultural priorities, and will set the technical requirements builders and designers must meet. The PPN encourages designers and builders to propose requirements for consideration by the PPN, and to engage in dialogue about appropriate local adaptations.
- Performance Submittal: shall mean documentation that the submitted design demonstrates compliance with the intent of the code.
- Reservation: shall mean the boundaries of the Pinoleville Pomo Nation Reservation.
- Tribe: shall mean the Pinoleville Pomo Nation.
- Tribal Council: shall mean the Tribal Council of the Pinoleville Pomo Nation.
- Tribal Territory: shall mean the Pinoleville Pomo Nation’s federally-recognized reservation, as well as any lands owned by the tribe, either in fee or in trust, where the tribe may exert full or partial regulatory authority.
- Cultural Sovereignty: a political position that argues that the norms and values of tribal people should guide how decisions that affect those tribal people are made, including decisions about housing form and function.
- Compliance: shall mean adherence to both the letter and spirit of standards and requirements set out by the PPN. The PPN invites dialogue with designers and builders over how projects can comply with standards and requirements.

SECTION 4 SCOPE

The provisions of this Code shall apply to all new and renovated tribal housing and buildings on the Reservation or on other tribal territory.

SECTION 5 AUTHORITY

This code is enacted pursuant to the authority of the Tribal Council under the Pinoleville Pomo Constitution to promulgate laws and regulations for the general population of the Pinoleville Pomo Nation.

SECTION 6 JURISDICTION

The authority of this code shall extend to the boundaries of the Pinoleville Pomo Reservation and all tribal territory.

SECTION 7 RELATION TO OTHER LAWS

The Tribal Constitution and Tribal Code of Conduct shall apply in matters arising under this Code.

CHAPTER II. PINOLEVILLE POMO BUILDING REVIEW COMMITTEE

SECTION 1 SCOPE OF THE REVIEW COMMITTEE

There shall be a PPN Green Building Review Committee established by the Tribe that will consider permit applications for all tribal housing, government, and commercial buildings.

The Committee shall issue permits according to this code in a flexible and responsive way, taking into consideration evolving tribal cultural and social values; current research and emerging technologies in the design and building fields and; the health and safety of the residents, neighbors, and non-human environment.

SECTION 2 COMMITTEE SELECTION, APPOINTMENT, AND REMOVAL

Members of the Committee shall be nominated for two (2) year terms and may serve up to five (5) terms. Appointment shall be subject to the approval of the Tribal Council. Whenever possible, preference shall be given to qualified tribal members for committee positions.

Membership will be as follows:

- a. One person nominated by the PPN Housing Department to assist with compliance, planning, and cost issues.
- b. One person nominated by the PPN Tribal Historic Preservation Office to assist with cultural and social assessments of designs.

- c. One person nominated by the PPN Environmental Department to assist with land resource use and other environmental assessments.
- d. One person nominated by the Tribal Council to assist with legal and regulatory issues, particularly to assess project impacts on tribal sovereignty and self-sufficiency.
- e. Two persons from different organizations nominated by the Tribal Council who are qualified to review and interpret engineering and construction documents and to lead research into emerging building technologies and strategies. These persons shall also be able to evaluate regulatory and other barriers to construction.
- f. One person nominated by the Tribal Council who can review designs and projects for impacts on human health and safety.

Nominations shall be reviewed and the decided upon by the Tribal Council.

A Committee member shall follow the Tribal Code of Conduct for government officials. A committee member may be removed from his or her position by the Tribal Council. Regular attendance of the meetings is required of committee members and several absences may be considered an abdication of responsibility for which the committee member may be removed at the discretion of the Tribal Council.

A Committee member shall recuse himself or herself from review of an application if that committee member is the project applicant, if the project applicant is in the immediate family of the committee member, or if the committee member has any other conflict of interest, including monetary gain associated with the project.

A Committee member may resign by notifying the Committee and the Tribal Council and must give thirty (30) days notice so that a replacement may be found in a timely manner.

SECTION 3 FUNCTIONS OF THE COMMITTEE

The committee shall review and approve funding proposals and any requests for changes for all tribal housing and issue building permits for those proposals that meet the standards of this code.

- a. The committee shall:
 - i. Facilitate dialogue among users, contractors, and the tribal staff and leadership.

- ii. Research emerging technologies and strategies for buildings. The Committee may reference other green building codes, standards, and novel community, municipal, and state codes.
 - iii. Assure compliance with applicable federal, state, and local law.
 - iv. Assure compatibility of all buildings with long-term tribal land and resource use plans.
 - v. Review carefully all final building designs for cultural, social, and economic impacts. To the extent practicable, a lifecycle cost estimate shall be a part of this review.
 - vi. Assure that health and safety aspects of all buildings are in accordance with this Code.
 - vii. Assure that approved designs are respected by builders.
 - viii. Manage conflicts among interests in the building projects.
 - ix. Evaluate all building proposals in order to determine the potential impact of these proposals on tribal sovereignty and self-sufficiency.
 - x. Maintain records, including building information, project reports, financial assessments, and user feedback surveys. These documents may be compiled as a reference for the Committee and other communities that wish to implement similar programs. The records shall be stored at a tribal college library to be designated by the Tribal Council and when possible, compiled in an online repository.
- b. The Committee shall develop and maintain a list of performance measures to be published separately from the code as a reference for builders and contractors. The preferred performance measures shall reflect new technologies and developments in green building design, as well as tribal capacity to implement increasingly stringent standards. The list shall be promulgated twice yearly at the meetings of the Committee.
- c. The Committee may define further additional functions as it sees fit, subject to Tribal Council approval.

SECTION 4 COMMITTEE MEETINGS

The Committee shall meet as necessary in order to review each project application. In addition to the meetings to review active building projects, the Committee shall meet twice a year to carry out the following tasks:

- a. Evaluate recent building performance according to the standards found in this code.
- b. Research and assess the applicability of new building strategies and technologies, as well as new green building codes and standards put forth by other communities.

- c. Assess current and future financing options.
- d. Identify and evaluate potential building projects.
- e. Collect and assess information on changing social, economic and political conditions affecting building, and any new cultural norms emerging with the tribal community.

When there are active building projects, the PPN Housing representative will convene meetings as needed with a minimum of one meeting at each of the following stages:

- a. The funding proposal,
- b. The initial stages of the design process,
- c. The final design review and project oversight planning, and
- d. The project completion review.

The committee may identify a subcommittee to take on responsibility for review at any of these stages except (c), the final design review.

SECTION 5 COMMITTEE FUNDING

The PPN Housing Program shall pay for the stipends, travel, research expenses, communication expenses and other operating costs of the Committee. If additional funds are needed beyond the budget of the Housing Program, the PPN Historic Preservation Office and the Environmental Department shall contribute.

Committee members shall receive compensation for their services. The amount of compensation shall be negotiated with the Tribal Council. Compensation may vary depending on qualifications and area of expertise.

The Housing Department and the Self-Governance office shall approve all expenditures by the Committee.

Section 6 CONSULTATION WITH EXPERTS AND ORGANIZATIONS

In order to learn and implement the best available green housing technologies, the Committee may collaborate with experts, other tribes, model code organizations, universities, non-profit, and community-based organizations or any other source of expertise.

SECTION 7 AMENDMENTS AND ADDITIONS TO THE GREEN BUILDING CODE

The Committee may propose amendments and additions to the Green Building Code. These proposals shall be submitted to and reviewed by the Self-Governance Office and then presented to the Tribal Council for approval.

SECTION 8 PERMITTING PROCESS

Any person or group of persons that wishes to construct housing on PPN land must file an application with the Committee at least 12 weeks before the commencement of construction. The Committee shall provide an application form that delineates all requirements for compliance with this code, including compliance with the list of performance requirements. All applicants, builders, and contractors hired to construct the building shall abide by the stipulations of the application and the requirements of the issued building permit.

The Committee shall review the application and approve or deny a permit for construction of the proposed building within 4 weeks. The Committee may condition the receipt of a permit with certain requirements that must be met during construction. If the Committee denies a permit, the Committee shall give a written reason for such denial with specific comments and recommendations to bring the application into compliance. The applicant may appeal the decision of the Committee to the Tribal Council. Applicants can access a description of the appeals process through the PPN Self-Governance Office. The decision of the Tribal Council shall be final.

CHAPTER III. BUILDING REQUIREMENTS

SECTION 1 PRINCIPLES

In general, there will not be specific prescribed technological requirements for building design and materials in this Code. Performance criteria may be met through a variety of building approaches as defined in the Performance Standards List. The Committee shall develop and maintain the Performance Standards List including specific requirements that will be updated in light of new information, technological developments, or to meet new needs of the Tribe.

“Performance Standards” and “Performance Requirements” are building goals that reflect the PPN’s cultural sovereignty. Designers and/or builders shall meet all Performance Standards and Requirements established by the Committee unless an exemption is obtained. An Exemption Form sets out standards for obtaining an exemption, including the proposal of alternative means for achieving PPN goals. Designers and builders are encouraged to seek exemptions if

they can better meet PPN goals. The acceptance or rejection of these proposals and explanations shall be at the discretion of the Committee.

“Performance Submittals” are reports that designers and/or builders submit explaining how Performance Standards and Requirements are met. Submittals should include explanations of Exemptions if they have been approved.

SECTION 2 SOCIAL AND AESTHETIC SUITABILITY

To the extent practicable, building design shall involve input from the occupants of the building and the tribal community.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Large kitchens to support family gatherings for social and ceremonial events,
- b. East-facing windows in the kitchen or other common rooms to facilitate morning prayer,
- c. Storage areas appropriate for protecting dance regalia, baskets, and other sensitive cultural materials,
- d. Rounded forms consistent with PPN tradition,
- e. Abundant natural light,
- f. Privacy between buildings,
- g. Transition spaces between outdoor and indoor spaces to maintain interior cleanliness (such as mud rooms or vestibules),
- h. Outdoor gathering areas for social and ceremonial events,
- i. Agricultural potential inside and outside the building for growth of food, medicine and fibers, with appropriate access to light, water, and space. An allocation of ten (10) percent of the building and outdoor space is an appropriate amount of space for these needs
- j. Public buildings shall be designed to accommodate those with physical limitations, as provided by the Americans With Disabilities Act.
- k. Building operation costs should be within the budget of the least wealthy occupant. Each application shall identify the budget of the least wealthy adult occupant. The cost of operating and maintaining the building should not cause financial hardship to any occupant.

SECTION 3 SITE SUSTAINABILITY

Recognizing that the land base and resources of the Tribe are limited, a Tribal priority is to manage the land in a sustainable way that does not compromise use by future generations.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Limitation of impermeable surfaces, with a target of less than 50 percent of impermeability of the developed area (excluding surfaces used to collect rainwater and/or generate renewable energy)
- b. Limited negative impact on view sheds of neighboring properties
- c. Limited negative impact on existing walking and biking paths
- d. Preservation of existing landscape features of importance to the tribe, including plant and animal communities, water features, or cultural structures

SECTION 4 WATER USE

Recognizing that water is critically short in northern California, the development, protection, and conservation of water resources are a priority for the Tribe.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. An evaluation of the volume of water available over a twelve (12) month
- b. period from the sources that will be used by the proposed building. In particular, the report must include the method by which water will reach the building in light of the limited capacity of the municipal water supply system.
- c. A ten (10) year projection of water availability from these sources.
- d. A report of water quality levels and an outline of strategies for meeting federal drinking water standards.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Capacity to harvest and utilize rainwater.

- b. Capacity to recycle gray water.
- c. Water metering capabilities.
- d. Proposed allocation of water for food, medicine, and fiber production on-site, either inside or outside of the proposed building.
- e. All washing machines shall have gray-water plumbing.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Water quality achieved through non-chemical treatments.
- b. Water faucets and fixtures that meet the flow rates established in the Performance Standards List.
- c. Dual flush, waterless, or composting toilets.
- d. Appliances that meet at least minimal EPA Energy Star and EPA Water Sense guidelines.
- e. Rainwater harvesting to supply a percentage of the building's water requirements, as established in the Performance Standards List,
- f. Percentage of building water recycled as gray water, within the building or landscaping, as established in the Performance Standards List.
- g. Separate sub-system water metering devices with remote monitoring capability.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. A viable plan for meeting all of the building's water demands independent of any outside water agency through a combination of water conservation and water harvesting technologies.

SECTION 5 ENERGY USE

Energy conservation and on-site energy generation further tribal goals of sovereignty through self-sufficiency in energy supply.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Assessment of site renewable energy resources.
- b. Estimated Energy production from on-site renewable energy sources over a 12-month period.
- c. Maintenance and operations cost estimates over 10 year period for all
- d. renewable energy systems. (Recognizing that costs for maintaining renewable energy systems may vary compared to their standard counterparts).
- e. The use of mechanical system energy under routine and extreme conditions.
- f. Appliance energy use.
- g. Energy use measurement, monitoring and/or display of real-time energy use data in the building.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Energy conservation through peak load shifting, occupancy sensors, and use sensors.
- b. Appliances that meet minimal EPA Energy Star standards.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. A minimum percentage of annual energy needs met from on-site renewable energy sources, as defined in the Performance Standards List.
- b. Energy consumption reduction by the minimum percentage specified in the Performance Standards List or a higher level determined by the committee in cases where load management is not practiced.
- c. Combined heating and cooling systems, water pumping systems, ventilation systems and/or other mechanical systems that achieve a reduction in energy use compared to energy used by the current average PPN household under routine conditions, as defined in the Performance Standards List, and with a separate percentage for extreme weather conditions as defined in the Performance Standards List.

- d. Electrical outlets that measure energy use in real time, or a sub-metering system for plug loads that is located such that it can be easily read or monitored in the course of normal building use.
- e. Petroleum and natural gas shall not be used as a fuel source.
- f. Methods to maintain electrical demand in residential buildings below 0.25 kWh per person per month.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. A viable plan to obtain 100 percent of the building's energy need from local and/or renewable sources through a combination of conservation and generation.

SECTION 6 INDOOR AIR QUALITY

Recognizing high rates of asthma and other respiratory ailments within tribal communities, optimal indoor air quality in PPN buildings is a high priority.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Ventilation rates (amount of air exchanged between exterior and interior sources per hour) under conditions of both prolonged cold and prolonged heat as specified in the Performance Standards List.
- b. Emissions of any of chemicals listed in the EPA substance registry service from structural support materials, finishing materials, flooring, roofing and major building systems, including but not limited to: ventilation, heating/cooling, water circulation, electricity production, and waste management. Additional chemicals or criteria may be established in the Performance Standards List.
- c. Potential production of allergens from structural support materials, finishing materials, flooring, roofing and major building systems, including but not limited to: ventilation, heating/cooling, water circulation, and waste management. Additional criteria may be established in the Performance Standards List.

- d. The amount of direct and indirect sunlight entering the building at mid-morning, noon, and mid-afternoon at both the summer and winter solstices.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee.

Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Ability of the design to maintain an indoor temperature between temperatures defined in the Performance Standards List under extreme summer and winter conditions.
- b. Sound control from outdoors to indoors, and from one room to another within a building, within the allowable decibel rate defined in the Performance Standards List.
- c. Sensors or alarms for carbon monoxide, VOCs, and carbon dioxide to assess air quality in real time.
- d. Filtering capability of HVAC systems for particulate matter at a rate established in the Performance Standards List under routine summer conditions and extreme wildfire conditions.
- e. Ability to meet any defined standards for carbon monoxide, VOCs, and carbon dioxide concentrations as established in the Performance Standards.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee.

Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. The air exchange rate per hour as defined by the Performance Standards List.
- b. Specifications for operable windows for all inhabited spaces.
- c. Documentation that no product or material emissions of any EPA listed chemicals exceed safe limits, as defined in the Performance Standards List, including cumulative and synergistic impacts of emissions. **Projects designed and constructed without materials on the Living Building Challenge Red List will be deemed to meet this goal.**
- d. Documentation that production of allergens does not exceed the rate defined in the Performance Standards List including cumulative and synergistic impacts of allergens.

SECTION 7 BUILDING MATERIALS

In addition to low emissivity and preferences for local, natural materials, the Tribe encourages a number of other design elements with respect to building materials.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Recycling or reuse of non-hazardous construction waste at a rate by volume and/or weight defined by the Performance Standards List.
- b. Elimination of CFCs and ozone-depleting chemicals from building systems.

The following are Performance Requirements. Designers and/or builders may request an Exemption from these requirements using the Exemption Form:

- a. The use of locally sourced materials, other considerations being equal.
- b. The use of re-used or recycled materials, other considerations being equal.
- c. The use of commercially-produced sustainable or natural materials should include certification of sustainable production from a nationally recognized certifier if available.
- d. The use of materials that are produced without negative impacts on social equity, especially indigenous land rights, cultural expression, or livelihoods.

SECTION 8 HAZARD PREVENTION AND MITIGATION

To address the threat of natural and human-caused hazards and assure the safety and well being of those using tribal buildings, the Committee recognizes that builders and/or designers must take certain precautions.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. A building design that allows for safe egress of all occupants as determined by the Performance Standards List based on building use, size, site characteristics, hazard risks.

- b. Designated exits and safe spaces within each building. Safe space criteria will be set forth in the Performance Standards List.
- c. An unobstructed path from safe spaces to at least one exit from the building.
- d. Illumination and clear marking of pathways to exits for emergencies. Back-up power for these markings may be required in some circumstances as set forth in the Performance Standards List.
- e. External and internal shaftways between floors of multi-floor buildings must be clearly marked.
- f. All safe spaces must allow for communication to those outside the building.
- g. All exits must be usable by building occupants regardless of their biomechanical and mental capabilities. Compliance with the Americans with Disabilities Act standards will be considered compliance under this code.

To minimize the risk from wildfires, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. A fire-resistant vegetation or infrastructure zone around each building at a distance defined by the Performance Standards List.
- b. Smoke detectors that have a back-up power source placed in locations that facilitate easy egress of building users.
- c. Windows that open easily from the inside and are sized to facilitate egress in emergencies. Escape times may be defined in the Performance Standards List.
- d. On-site water storage. The required amount will be defined in the Performance Standards List depending on building size and type and level of fire hazard.
- e. On-site fire-fighting products and materials. The required types and amounts will be defined in the Performance Standards List depending on building size and type and level of fire hazard.
- f. Building design to allow for removal and replacement of fire-damaged areas with minimal disruption of social, aesthetic, air quality and structural integrity standards. Specific requirements may be defined in the Performance Standards List.
- g. Clearance from ignition sources associated with mechanical systems and appliances must meet standards established in the Performance Standards List.
- h. Clearance from ignition sources such as wood-burning stoves and fireplaces must meet standards established in the Performance Standards List.

- i. Clearance of building structures from any permanent outdoor fire containment space, such as gas grill, outdoor wood stove, or fire pit shall be a minimum distance established in the Performance Standards List.
- j. Installation of fuel-fired systems and appliances shall meet standards established in the Performance Standards List.
- k. All fuel-fired systems and appliances must be easily accessible for cleaning, inspection and maintenance
- l. No fuel-fired systems may be located in bedrooms, bathrooms or unventilated storage areas, without explicit, written Committee approval.
- m. All chimneys and vents associated with fuel-fired devices must be easily accessible for inspection and maintenance, and must not allow vented air to pass into the interior of a building.
- n. No fuel-fired or electrical system or appliance shall be installed in a manner that may cause uncontrolled combustion or explosion
- o. No fuel-fired or electrical system or appliance may be installed in a manner that would allow for arcing or sparks to escape safe containment.
- p. Buildings must be designed in a manner that will minimize the risk of the spread of fire, with **specific design features** defined in the Performance Standards List.

To minimize the risk of wildfires, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. An estimated fire collapse time achieved through a mix of material choices, draft management, building layout, and structural design, as defined by the Performance Standards List.
- b. An assessment of fire performance under various conditions and circumstances established in the Performance Standards List.

To minimize the risk of flooding, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Demonstration that the elevation of the lowest-occupied space is at or above the estimated 100-year flood elevation for any building by the minimum height defined in the Performance Standards List.
- b. Demonstration that building systems below flood-level can survive water-logging for a number of days determined by the Performance Standards List.
- c. Building design to allow for removal and replacement of water-damaged areas with minimal disruption of social, aesthetic, air quality, and structural integrity standards.
- d. Design and construction of all drainage systems to mitigate blockage. This shall apply to stormwater and rainwater systems, gray water systems, bioswales, and rain gardens.
- e. Easy access to drainage systems for maintenance.

To minimize the risk of flooding, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Strategies to mitigate the flow of hazardous materials to be transported to or from the building during a flood event

To minimize the risk of earthquakes, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Designated exits and safe spaces within each building during earthquakes.
- b. Outdoor gathering safe space within a distance established in the Performance Standards List of all buildings, including those clustered for space efficiency.
- c. Structural design to prevent injury or property damage due to the loading of a structural element or system.
- d. Structural design capable of standing without collapse through construction and alteration over a reasonable lifetime, as determined in the Performance Standards List.
- e. Structural design to maintain the integrity of the whole structure in the case of localized damage, with the types of localized damage considered defined in the Performance Standards List.

To minimize the risk of earthquakes, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Evaluation of building performance under different scales and types of earthquakes, as described in the Performance Standards, with measures to mitigate threat to life and property.

To minimize the risk of thunderstorms and windstorms, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Demonstration of ability to sustain, without significant structural damage to walls, roofing, windows and doors, winds and gusts at a speed defined by the Performance Standards List.
- b. Demonstration that building systems can sustain, without significant structural damage, winds and gusts at a speed defined by the Performance Standards List. Building systems considered should include energy, water and waste disposal systems, and may include other designated by the Review Committee.

To minimize the risk of landslides, contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Site evaluation of likely landslide magnitudes and directions.
- b. Demonstration of capacity to direct water saturated soil safely around occupied space in building.
- c. Discussion of the risk of exposed structures or systems to a slide and of the potential structural damage.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Evaluation of material performance, structural integrity, social and aesthetic functioning, and durability under conditions of increased temperature and reduced rainfall.
- b. Discussion of the capacity to provide sufficient water under conditions of prolonged drought.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Electrical service equipment such as panels, inverters and batteries, must permit easy access for inspection, maintenance and replacement.
- b. Installation of all electrical appliances must be according to manufacturer's instructions
- c. Testing of all electrical appliances after installation and before occupation of the building is required.
- d. The Committee must approve of all installed electrical appliances.
- e. Battery systems shall comply with installation and storage requirements defined in the Performance Standards List.
- f. Building users shall not be exposed to live parts
- g. Electrical insulation shall be appropriate for the load to be carried, and shall prevent harm to building users should loads exceed those anticipated, with standards set in the Performance Standards List.
- h. All appliances and systems must be protected against a surge in current.

The following are Performance Standards. Designers and/or builders may submit alternatives to these Standards or, if unable to comply, the basis for requesting an Exemption from these Requirements:

- a. Lithium-ion batteries used when batter power is required.

SECTION 9 Durability

The Tribe recognizes that there are existing buildings constructed before this Code was operational. Many of these buildings will require significant maintenance throughout their lifespan. Going forward, existing as well as new buildings must meet the durability requirements of this Section.

contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Building capacity to limit indoor moisture threats from appliances; plumbing fixtures, including gray water systems; ductwork; interstitial space condensation; wet rooms; accumulation in concealed spaces.
- b. Mechanism for dissipating moisture in all spaces where moisture tends to accumulate.
- c. Capacity to limit outdoor moisture threats from roofing and roofing seams; walls and structural joints; rain water capture infrastructure; windows and door seams; ground moisture; storm water management systems; high humidity and fog.
- d. Construction related moisture must dissipate without damage to the building.
- e. Pest populations must be under the acceptable limits established in the Performance Standards List.
- f. Material durability of any replaced flooring, roofing, walls and structural supports, windows, doors, paints, finishes, wiring, and piping, as defined and established in the Performance Standards List.

Contractors and/or designers must prepare Performance Submittals for the following Performance Requirements and submit them to the PPN Review Committee. Designers and/or builders may apply for an Exemption from these requirements using an Exemption Form.

- a. Strategies to address settling of the foundations and walls from seismic activity and changes in groundwater likely to occur after the building's construction.
- b. Predicted settling of the foundations and walls from seismic activity and changes in groundwater over the next 10 years.
- c. Estimated ultraviolet light degradation to paints, finishes, energy systems, water systems, and roofing materials.
- d. Estimated schedule of expected lifetimes of mechanical systems, energy systems, water systems, wastewater systems, lighting systems, ventilation and air quality systems, and heating and cooling systems.