

Building Climate Vulnerability Assessment “Lite” Checklist

| Functional requirement | Ref. | Building component/ vulnerability | Questions to identify climate vulnerabilities | Possible response to identify and minimise vulnerability |
|------------------------|------------------------------|--|---|--|
| Thermal comfort | TC1, 3 | Cooling equipment exposed to high heat load | Where is cooling equipment located relative to direct sun during the peak demand periods for cooling i.e. summer months between 2.30-7.30PM? | Locate the cooling equipment in a well ventilated shady area during peak cooling demand periods |
| | TC1, 3 | | Where are cooling unit air intakes located? | Locate the cooling equipment air intakes in a well ventilated shady area during peak cooling demand periods |
| | TC1, 3, 8, 9, 10, 11, 12, 13 | | Does building envelope optimise thermal comfort? | Design, construct and manage the building to meet or exceed latest NCC requirements, especially: -insulation -draught sealing -ventilation -energy efficiency -windows and doors, their size, orientation, location, thermal efficiency and energy transfer |
| | TC2 | | Are significant thermal mass structures (heavy walls, floor, roof) and their heat absorption/ radiation capacity placing a high heating/cooling load on the building? | Review the design and construction of the building and improve it to a point that it can be efficiently and affordably managed to achieve indoor temperatures between 18-26°C, including investigating if the significant thermal mass structures exposed to external conditions can be removed and replaced/screened/ shaded/insulated? |
| | TC4, 6 | Extreme wind damaging the cooling and heating equipment either by blowing dislodged vegetation onto it or dislodging the cooling equipment condenser from its mounts | Are heating & cooling units vulnerable to wind-blown vegetation? | Manage vegetation according to arborist advice |
| | TC5, 7 | Extreme rain damaging cooling and heating equipment | Are heating & cooling equipment vulnerable to extreme rainfall? | Manage the risk posed to heating/cooling equipment by extreme rainfall, stormwater, flooding and roof drainage by either managing the water risk or relocating/protecting the equipment from the threat |

| | | | | |
|------------------------|--------------|-------------------------------|--|---|
| Indoor air quality | IAQ1 | Poor indoor air quality | Is airborne dust or smoke particles compromising indoor air quality? | Limit the source and/or pathways for dust or smoke to enter the building: <ul style="list-style-type: none"> • use larger gravel/seal surface in nearby landscape • draught seal the building • improve filtration on air conditioning and ventilation equipment |
| Power | P1, 2 | Electricity - grid & building | Does the building have back-up electricity supply during power failure? Is there a back-up generator onsite? Is there a plug-in point for an auxiliary generator? Does the building have a battery to power it entirely or partly i.e. only essential lighting, security systems and Information Technology system? | Determine the electrical needs at the building and if a suitable battery/generator/ plug-in point/neighbourhood battery is present, or, if none are present, determine what is required, and determine the needs, costs and feasibility |
| | P3, 4 | Electricity - building | Is the condition and location of the electrical system including switchboards, suitable to operate safely and effectively during extreme hot temperatures/rainfall events? | Determine the safe operating temperature for the electrical system, given that maximum temperatures are predicted to increase by 1-3 degrees C by 2070? >40°C? Ensure the system's condition and location of switchboards are suitable to operate in extreme weather conditions |
| Access (lifts) | L1 | Lifts | Is the lift system capable of operating reliably on very hot days? | All existing lifts to be comprehensively assessed by lift supplier/installer "Modernisation Team" to document existing condition of lift, risks and provide a fully costed modernisation and management plan for the future of lift |
| Structural Performance | SP4, 5, 6, 7 | Rainwater drainage system | Does the roof and related drainage (gutters, rainheads, downpipes, stormwater system, balconies, balustrades) meet the latest National Construction Code requirements? Can the building cope with 1 in 100 year events? | Assess the rainwater management system against the latest NCC, including its capacity to deal with extreme events, and upgrade it accordingly if required |

| | | | | |
|------------------|--------|---|---|---|
| | SP1-14 | Building structure | Is the building structurally sound to deal with extreme wind/hot temperature/rainfall/related soil moisture changes/events? | Assess the building's entire structure and capacity to deal with extreme events (including wind, rainfall, drought, temperature) versus the latest NCC requirements, and upgrade it accordingly if required |
| Weather proofing | WP1-4 | External walls, roofs, windows or doors - penetration by extreme rain | Is the building designed, constructed and managed to address water from extreme rainfall events, so it does not compromise the building, its functions and services | Assess the capacity of the building and its surroundings to manage water from extreme rainfall events versus the latest NCC, including walls, doors, windows, roof overhangs and landscape etc |
| Fire resistance | FR1 | Whole building | Is the building designed and built to the current bushfire construction standards AS3959? | Assess if the building meets the current bushfire construction standards. |