



Construction & Project Management Guidelines for Community Fire Refuge

October 2015

PLACES OF LAST RESORT DURING A BUSHFIRE

**Working in conjunction
with Communities,
Government, Agencies
and Business**

DOCUMENT CONTROL

Document History

Version	Date	Author	Comments
1.0	August 2014	J. Mealia	First draft
2.0	October 2014	J. Mealia	Peer reviewed by Building Construction Advisory Panel members, feedback incorporated.
3.0	November 2014	J. Mealia	Amendment to prescriptive inputs and maintenance.
4.0	March 2015	J. Mealia	Updated to reflect recent changes
5.0	June 2015	J. Mealia	Updated to reflect accepted recommended changes from CFA, MAV and VBA
6.0	September 2015	D.Baker	Minor administrative amendments

Introduction

Community Fire Refuges (CFR) are non-residential buildings prescribed for use as a **place of last resort** by community members during the passage of a significant bushfire, and are intended to be used by persons whose primary bushfire plans have failed. CFRs are places of relative safety only. They do not guarantee the survival of those who assemble there or that emergency services will be in attendance. Furthermore, there may be serious risks to safety encountered in travelling and seeking access to CFRs during bushfire events.

An expert understanding of how buildings are ignited and destroyed during bushfires is required when designing new buildings or modifying existing buildings (and their surrounds) in order to increase their capacity to provide protection to people sheltering inside during such an emergency. This requires a mix of bushfire experts with different expertise and from different disciplines, e.g. structural engineer, fire safety engineer, bushfire scientist, operational firefighters, land use planners etc.

A building constructed or modified for use as a CFR must comply with the performance requirements and required prescriptive inputs for the public construction of CFRs contained in these guidelines in accordance with *Ministerial Direction No. 4: Construction requirements for a community fire refuge* (Ministerial Direction No. 4) issued under the *Project Development and Construction Management Act 1994*.

These guidelines outline what matters government departments and public bodies must consider in deciding if a CFR is an appropriate solution to the threat of bushfires within the landscape for a given community and provide guidance on building construction and project management within the State of Victoria.

These Guidelines are set out in three sections:

- Section 1 Governance
- Section 2 Performance Requirements
- Section 3 Protocols

In addition to Ministerial Direction No. 4, all buildings used as a CFR must fully comply with the Building Code of Australia requirements for the classification of the principal use of the building. Examples of buildings that may be used as a CFR include a school, fire station, SES facility, public hall, sports stadium or community centre.

These guidelines should be read in conjunction with Australian Building Codes Board 2014 *Handbook – Design and Construction for a Community Bushfire Refuge*, the Community Fire Refuges Policy published by Emergency Management Victoria and relevant endorsed Joint Use Agreements or Memorandum of Understandings between EMV and other Government agencies and/or building owner.

Guidelines Purpose

The purpose of these guidelines is to detail the construction and project management steps, including the end-to-end process, using the learnings from the pilot program to assist with project managing new CFRs within the state of Victoria. The guidelines also provide guidance on achieving legislative and policy requirements and compliance with Ministerial Direction No 4 (MD4) to obtain EMC endorsement and prescription in CFA regulations as a CFR.¹

¹ Section 110(1)(uc) of the *Country Fire Authority Act 1958* provides for CFRs to be prescribed in regulations for the purposes of Part IIIA of the Act. The *Country Fire Authority (Community Fire Refuges) Regulations 2014* lists the prescribed CFRs.

Guidelines Objective

The objective of these guidelines is to '*build community resilience, not community dependency on a community fire refuge*'. To achieve this, the following guiding principles must be considered:

- Protecting the life and safety of individuals during a bushfire is paramount when planning for a CFR
- Identification, establishment and operation of CFRs are a shared responsibility between community, State and local governments and the emergency services.
- The provision of a CFR must be risk and evidence based and only considered when all other suitable survival options / strategies are not feasible or likely to fail.
- CFRs must provide a greater level of protection from the immediate life threatening effects of a bushfire than other available community safety or shelter options.
- CFRs may have a role in specific evacuations recommended by an Incident Controller.
- Operational planning and management of a CFR is a shared responsibility between State Government agencies, emergency services and the community.
- Planning and coordination for the activation, operation and deactivation of CFRs must be achieved at the local level involving the community in partnership with local government agencies led by the emergency services.
- Community education and engagement of all aspects of operational planning including its purpose, opening, and closure is an integral part of the operation of a CFR.
- Active defence of a CFR must be considered during the upgrade or construction design stage and operational planning and is included in community, brigade, and district operation plans.
- Roadside and surrounding site fuel management and dangerous tree assessments and mitigation works are necessary to reduce the hazards and risks near the CFR and along key local access roads to a CFR as determined jointly by Council, Vic Roads, Victoria Police and CFA.
- Appropriate use of a CFR must be exercised regularly with the community .
- CFRs must be maintained to an acceptable standard determined by EMV to ensure they remain fit for purpose during the declared fire danger period.

SECTION 1 – Governance

1.1 Agency roles and obligations

This section specifies the appointment, roles and obligations of the Project Director, Building Construction Advisory Panel (Advisory Panel), and Joint Agency Project Team (Project Team).

1.1.1 Overall Project Director

EMV will appoint a Project Director for individual or multiple CFR projects, who will become EMV's delegate for the purpose of these guidelines. The Project Director will have overall responsibility for the successful planning, execution, monitoring, control and closure of the project once land and building owners consent has been obtained. His/her responsibilities will include, but not be limited to:

- Managing identification of a suitable site for the construction of a CFR to ensure compliance within these guidelines can be achieved,
- Leading development of the overall project plan,
- Managing and monitoring the overall project plan to ensure successful completion of the plan activities and delivery of the project schedule,
- Managing implementation of process and procedures from these guidelines including change control, risk and issue management, documentation management and quality assurance,
- Managing and monitoring the CFR budget component to ensure the project is delivered within budget or seek additional funding if required,
- Providing regular briefings, updates and reports as required,
- Keeping EMV and land / building owner informed of progress,
- Facilitating the appointment of the Chairs of the Building Construction Advisory Panel and Joint Agency Project Team.
- Facilitate the CFR endorsement and prescription process.
- Ensuring development and implementation of a maintenance schedule of CFR infrastructure, systems and protection measures.

1.1.2 Building Construction Advisory Panel (Advisory Panel)

The Advisory Panel is established under these guidelines to verify compliance with the performance requirements and required prescriptive inputs detailed in Table 1 of these guidelines, which include the following activities:

1. Assist with the identification assessment of potential CFR site/s to determine if vacant land or a new or existing building can meet the performance requirements and required prescriptive inputs; and
2. Assess a fire engineering brief (FEB) and later fire engineering report (FER) for a proposed CFR for compliance with the performance requirement and required prescriptive inputs; and
3. Seek any further information from the agency/person submitting the FEB as required, to make that assessment and verify compliance; and
4. Advise EMV or delegate whether the FER has or has not been verified as complying with the performance requirements and required prescriptive inputs; and
5. Provide ongoing advice and direction to the fire safety and other participating engineers/practitioners and building owner during construction stages including the approval of CFR infrastructure, systems and protection measures, such as design criteria of air conditioning system/s, backup power generator, fire pump, water tank location and capacity for firefighting purposes, firefighting systems and equipment, etc; and

6. Conduct regular inspections as determined by EMV (or delegate) of the CFR during construction to ensure compliance with the performance requirements, required prescriptive inputs and approved FER; and
7. Conduct final inspection once all works are completed for the purpose of verifying compliance with MD4 performance requirements and required prescriptive inputs and provide a written report to EMV verifying compliance and recommending or not recommending prescription in the CFA Regulations for use as a CFR.

Membership of the Advisory Panel

Membership of the Advisory Panel will be determined by EMV (or delegate) and must provide for a mix of government and private sector practitioners with a range of expertise including, but not limited to, fire safety engineer/s, bushfire behaviour expert/s, operational firefighting, building and planning legislation expert/s, policy and administrative processes.

Advisory Panel Administration and Governance

Due to the level of risk and complexity with designing and constructing a CFR to meet MD4 performance requirements and required prescriptive inputs, the Advisory Panel must adhere to the following administrative and approval process:

- a) The Advisory Panel operates on consensus basis for the approval of the fire engineering report and verification of compliance with the performance requirements and required prescriptive inputs,
- b) The Chair will be chosen by EMV (or delegate) or if approved by EMV or delegate, by the Advisory Panel at their first meeting. The Chair will only have casting vote rights.
- c) The Chair will arrange for administrative support and all meetings to be minuted.

The Advisory Panel will determine which agency or combination of agencies will undertake the landscape assessment and site bushfire attack assessment to determine the bushfire radiation value based on the level of complexity and expertise required. Agencies will include, but not be limited to: the Advisory Panel, CFA, DELWP, CSIRO or private consultants who have expertise in bushfire behavior and risk management.

1.1.3 Agencies and Building Owners Role and Responsibilities In support of the Advisory Panel

Country Fire Authority (CFA)

Assist the Advisory Panel to assess whether potential sites meet the performance requirements and other specified requirements under these guidelines upon request. This may include one or all of the following as determined by the Advisory Panel:

- Assist in consideration of the siting and location of a CFR including access and egress,
- Undertake a bushfire attack assessment as specified in these guidelines or by the Advisory Panel,
- Where there are multiple potential CFR sites, assist with determining the most suitable site with consideration given to bushfire radiation value at the site, local landscape and consideration of key access roads leading to a CFR.
- Undertake a risk and evidence based assessment, prepare a CFR risk assessment report for the Advisory Panel containing the following:
 - Advice on vegetation fuel loads and type,
 - Advice on landscape bushfire threat and risks,
 - Advice on bushfire radiation value,
 - Advice on other fire sources and hazards in the vicinity of the CFR including other structures, vehicle, buildings, power lines, LPG cylinders etc and recommend mitigation solutions.

- Advice on water supply and firefighting systems and equipment,
- Advice on access to the CFR, landscaping and vehicle parking, and
- Advice on any other matters determined by the Advisory Panel.

Municipal Council

Assist the Advisory Panel to assess whether potential sites meet the performance requirements and other specified requirements under these guidelines upon request. This may include:

- Assist in the consideration of the siting and location of a CFR including access and egress, and
- Where there are multiple potential CFR sites, assist with determining the most suitable site with consideration given to, local demographic, social and economic issues, and
- Assist with assessing access routes to a CFR regarding traffic flow, potential traffic management issues, car parking, roadside fuel management and dangerous trees, and
- Assist with planning and environment permit/s and provide expert advice on council administrative requirements and the most efficient way to proceed.

Building Owner

- For an existing building, verify full compliance with the Building Code of Australia for building classification and construction type including design importance level.
- Project manage design and construction of new or existing building to meet the performance requirements and required prescriptive inputs, unless otherwise determined by EMV.
- Determine if planning permits are required and make appropriate applications to obtain all required permits.
- Engage a fire safety engineer to develop a fire engineering report (FER) including acceptance criteria to ensure the building meets the performance requirements and required prescriptive inputs.
- Present the FER to the Advisory Panel for its consideration and approval. (Note: building works must not commence until after the Advisory Panel have approved the FER.)
- Prepare and contract out building works and approvals to complete required works to the performance requirement, required prescriptive inputs and FER and subsequent reports, advice and direction from the Advisory Panel.
- Provide required building occupancy certificates and relevant commissioning documentation and reports to the Advisory Panel.

1.1.4 Joint Agency Project Team (Project Team)

Each new CFR project must have a Project Team unless there are multiple CFRs being established within a municipal district, when the Project Team may be responsible for multiple CFRs. The Project Team will support the Project Director to achieve community liaison and engagement and to develop, test and implement the operational procedures manual and signage for a CFR using the operational procedures manual concept and CFR signage manual, both of which can be found on EMV website. They will also assist with roadside and surrounding site vegetation management and dangerous tree assessment. Due to the time and resource commitments required by each agency for each CFR project, no more than 3 CFRs should be constructed simultaneously within a single Municipal District.

The Project Director must liaise with the Advisory Panel when required and seek its assistance and technical advice whenever operational matters are likely to overlap or affect building design and construction. This will assist to ensure compliance with the performance requirements and required prescriptive inputs. It will be important for both the Advisory Panel and Project Team to collectively meet at the start of each project to achieve a common understanding of their respective roles and responsibilities and to determine how best to maintain effective liaison.

Membership of the Joint Agency Project Team

EMV (or its delegate) will lead the establishment of the Project Team and membership must include suitable representatives from the following core agencies, CFA, DELWP, Municipal Council, Victoria Police and the building owner. Any additional members will be determined based on the following factors:

- Road Managers, i.e. Municipal Council and/or Vic Roads
- Planning and environmental challenges
- Social and/or economic challenges
- Community vulnerability and special needs
- Existing community volunteer organisations, e.g. VICSES, Surf Life Saving etc

The Project Director will appoint the Chair of the Project Team, who will be responsible for providing executive and administrative support to the Project Team. The Project Director may perform the role of Chair if determined appropriate by the Project Team or when directed by EMV.

Project Plan

The Project Team may assist the Project Director to develop a project plan. The plan must clearly define roles and responsibilities of each participating agency, using these guidelines to assist, and identify timelines and milestones. Roles and responsibilities of the core agencies are presented below.

Core Agency Roles and Responsibilities:

Project Team Chair

- Oversee development of CFR communication plan, which includes but is not limited to:
 - Ministerial and Council briefings,
 - Media releases,
 - Key messages,
 - Questions and answers,
 - Flyers, brochures, community letters, fridge magnets, etc
- Oversee development of community/stakeholder engagement strategy to facilitate local community involvement and to ensure they understand all aspects of their CFR including, but not limited to:
 - CFR purpose,
 - Expected local fire behaviour,
 - Activation and deactivation process,
 - Transition process to return to home or to relief/recovery centre,
 - Capacity and duration,
 - Limitations,
 - Defendability – equipment provided at CFR and fire service intervention,
 - Incorporation of above and other relevant information into CFG Groups and FRV sessions.
- In consultation with the Project Team, determine who will take the lead on key project tasks such as development of communication plan, community engagement and education strategy, installation of roadside signage, etc.
- Assist the Project Director with efficient project management and governance. This should include vegetation management and dangerous tree assessment, development of a CFR operation/management plan, identification of signage locations, community engagement, CFR testing or exercising, etc.
- Ensure testing of all aspects of the CFR and operations procedures manual occurs (in consultation with the Community Working Group) through exercising and/or open days, to identify any issues or gaps that need to be addressed and to ensure efficient operation.
- Facilitate installation of an Emergency Marker with ESTA.

CFA

- Either lead or support Council to develop the communications plan and/or community engagement and education strategy on the purpose, limitations, operation of a CFR and arrange community exercise and/or open day. This must become part of CFA's normal annual bushfire safety programs delivered to relevant communities.
- Using local knowledge and existing local community groups, either lead or support Council to establish a local community working group/s to ensure local planning, education and operation of the CFR is achieved. The working group may include representation from the MEMPC, community, CFA (District & Local Brigades), DELWP, Parks Victoria, Victoria Police and other agencies which may be involved including; local service clubs, (e.g. Lions, Rotary etc). Note: the Municipal Council must be part of the local community group.
- Amend local brigade and district response and operational management plans to ensure consideration for the protection of CFR/s during a bushfire event. This must include traffic management and evacuation planning considerations. It must also form part of the local command and control arrangement.
- In partnership with Council, lead vegetation assessment and management around the CFR site to achieve required bushfire radiation values in Table 1 or bushfire radiation values determined through an assessment. Vegetation management and works must be detailed in a vegetation management plan.
- Incorporate the purpose, limitation, activation, de-activation, operation, and other aspects determined by the Project Team into CFR local community engagement and summer education programs.
- Incorporate CFR into local community information guide and local response plan.
- Publish CFR location on the CFA website and notify relevant stakeholders, including those specified in accordance with section 50L of the *Country Fire Authority Act 1958*.
- Develop Incident Control Centre (ICC) protocols and procedures for the activation, deactivation, opening, closing and communication with the CFR and ensure training and exercising occurs prior to each fire season.
- Conduct regular checks of the CFR communications and operation system (POD) at the ICC to ensure they are operating correctly. This must occur prior to the fire danger period and form part of the normal ICC checks and testing.

Municipal Council

- Either lead or support CFA to develop a communications plan and/or community engagement and education strategy on the purpose, limitations, operation of a CFR and arrange community exercise. This must become part of Councils normal annual bushfire safety programs delivered to communities. (Note: Only applies to Councils who have the capacity, resources, expertise and by agreement)
- Using local knowledge and existing local community groups, either lead or support CFA to establish a local community working group/s to ensure local planning, education and operation of the CFR is achieved. The working group may include representation from the MEMPC, Municipal Council, community, CFA, (District & local brigade), DELWP / Parks Victoria, Vic Police and other agencies which may be involved including local service clubs, (e.g. Lions, Rotary). (Note: Only applies to Councils who have the capacity, resources, expertise and by agreement)
- Determine the number of local community members and tourists, visitors etc, likely to use the CFR to assist with identifying the design capacity and provide the numbers to the Advisory Panel to assist with determining maximum duration of occupancy.
- In partnership with CFA, develop vegetation and dangerous tree assessment and management process to reduce fuel loads around the site and along council managed key access routes to the CFR managed by Council and neighbouring private sites. These fire

prevention works must become part of Council's annual works plan and program in accordance with section 43 of the *Country Fire Authority Act 1958* and be included in the Municipal Fire Management Plan.

- Fire management annual work plan and program should include:
 - Site vegetation management – around the CFR site and neighbouring private properties.
 - Vegetation and 3 year dangerous tree assessment of associated key access routes to CFR managed by Council to reduce the risk from severe bushfire behaviour and falling trees.
- Brief Council and all relevant committees on the proposed CFR.
- Once the CFR has been endorsed by the EMC and prescribed in the Regulations, facilitate inclusion of the CFR into the Municipal Fire and/or Emergency Management Plan. Provide an annual update and/or briefing to Council and all relevant Municipal committees on the status of each CFR prior to the commencement of the declared fire danger period.

Vic Roads

- Develop vegetation and dangerous tree assessment and management process to reduce fuel loads along key access routes to the CFR managed by VicRoads. These fire prevention works must become part of VicRoads annual fire management works plan and program in accordance with section 43 of the *Country Fire Authority Act 1958* and be included in the Municipal Fire Management Plan.
- Annual work plan and program should include:
 - Vegetation and 3 year dangerous tree assessment of associated key access routes to CFR managed by Vic Roads to reduce the risk from severe bushfire behaviour and falling trees / limbs.

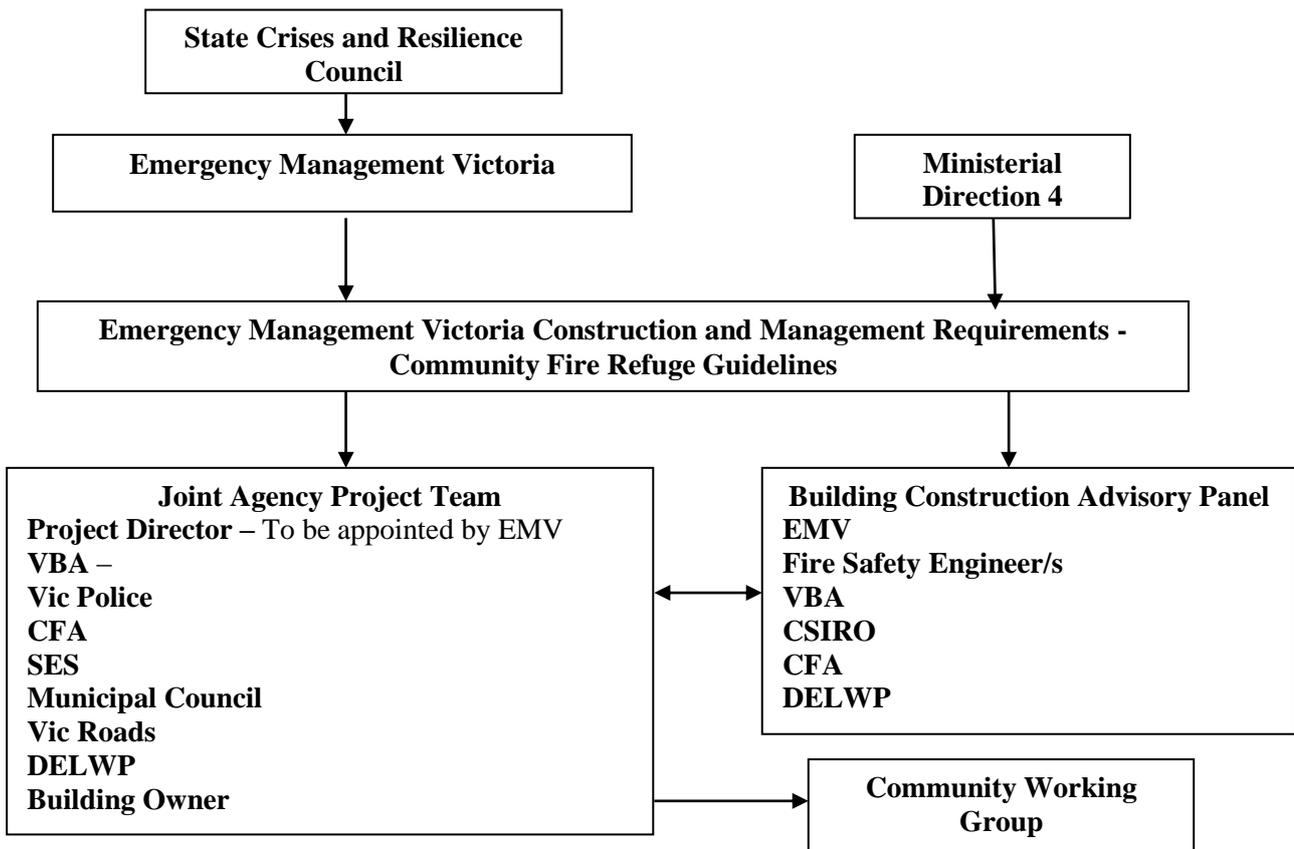
Victoria Police

- Develop or update traffic management and evacuation plans to reflect a CFR within a township.
- Develop local transition process to facilitate closure of CFR to return occupants to their homes or recovery/relief centre.
- Support Council or CFA with community engagement, education and exercising of a CFR.

DELWP

- Provide expert advice on local bushfire risks from public land which may impact on the CFR.
- Support Council or CFA with community engagement and education in relation to a CFR.
- Provide expert advice on, and assist with, vegetation management including dangerous trees along key access roads and in close proximity of the CFR site.
- Manage vegetation and dangerous trees on public land, State forest, national parks abutting or in close proximity of a CFR if they are likely to have a serious adverse impact from bushfire.

1.1.6 CONSTRUCTION AND MANAGEMENT REQUIRMENTS COMMUNITY FIRE REFUGE GOVERNANCE STRUCTURE



1.1.7 Verification of compliance with MD4 for prescription of a community Fire refuge

The Advisory Panel, Project Team and Project Director must provide advice confirming the CFR building, as constructed, meets the performance requirement prior to EMV endorsing the CFR and it being prescribed in CFA regulations. For EMV to endorse a site and building, the Emergency Management Commissioner must be satisfied that:

Advisory Panel

- A FER was completed by a qualified and competent fire safety engineer and confirmed by the Advisory Panel as meeting the performance requirements and required prescriptive inputs,
- Vegetation in close proximity of the site, where required, is removed or modified to achieve acceptable bushfire radiation value (BRV) determined within these guidelines against the building envelope.
- The building upgrade or construction is fully completed, commissioned and verified by the Advisory Panel as meeting the performance requirements and required prescriptive inputs determined under these guidelines and MD4.

Project Team

- Dangerous trees along key access routes have been assessed, trimmed or removed.
- Roadside vegetation management along key access roads have been assessed and managed as reasonably practical to reduce the level of radiant heat and these works are included within Council and Vic Roads fire prevention / management plans pursuant to Section 43 of the *Country Fire Authority Act 1958*.
- Site vegetation in close proximity of the site is managed to achieve the required bushfire radiation values determined in Table 1 or through a bushfire radiation value assessment.
- Operational, entry and communication technology and arrangements are in place and commissioned as working to allow CFR to be activated and monitored by the local ICC and SCC or through trusted local community arrangements.
- Relevant ICC and SCC team members have been trained on the operation of the installed technology and arrangements.
- Operational Procedures Manual has been developed and tested to ensure it is accurate, effective, and is endorsed by EMC or his delegate,
- Signage along key access routes, outside and within the CFR has been installed and tested to ensure they are located appropriately and in accordance with the approved signage manual.
- Process and consultation with the relevant Municipal Emergency Management Planning Committee has occurred to ensure the CFR will be recorded in the Municipal Emergency Management Plan immediately after the CFR is prescribed in CFA regulations.

Project Director

- A Memorandum of Understanding or similar agreement between the Building Owner and EMV is in place or will be developed within an acceptable period after the CFR has been prescribed in CFA regulations regarding testing and maintenance scheduling and readiness checks.
- Processes are in place to ensure once a CFR has been prescribed in CFA regulations, the following will be implemented immediately:
 - Communications plan that ensures effective advice to the local community and agencies that the CFR is now prescribed, its purpose, limitations, entry and operation.
 - Location of the CFR is listed on the CFA Web site and advised to relevant stakeholders, including those specified under section 50L of the *Country Fire Authority Act 1958*.
 - The Community Information Guide is updated and includes the location of the CFR, its purpose, limitation, entry and operation.
 - CFA include location of CFR in State mapping.
 - ESTA records the CFR location and emergency marker number on its system.

SECTION 2 – Performance Requirements

Community Fire Refuge Performance Requirements

1. A *community fire refuge* must be designed and constructed to provide a tenable environment for occupants during periods of *untenable conditions* arising from a *bushfire event* appropriate to:
 - (a) the location of the refuge relative to fire hazards including-
 - I. predominant vegetation; and
 - II. adjacent buildings, structures and movable objects; and
 - III. car parking area/s and allotment boundaries; and
 - IV. other combustible materials;
 - (b) the number of occupants to be accommodated within the refuge, and
 - (c) duration of occupancy, and
 - (d) bushfire intensity having regard to the *bushfire attack* level; and
 - (e) intensity of potential *consequential fires*, and
 - (f) safe access within the site to the refuge, (including carpark areas), as well as occupant egress after the *bushfire event*; and
 - (g) occupant *tenability* within the refuge for the duration of occupancy before, during and after the *bushfire event*; and
 - (h) generation of smoke, heat and toxic gases from materials used to construct the refuge; and
 - (i) combined effects of structural and fire loads and actions to which the refuge may reasonably be subjected; and
 - (j) necessary degree of occupant awareness of external conditions; and
 - (k) provision of fire-fighting equipment and water supply to facilitate protection of the refuge; and
 - (l) necessary degree of communications and signage; and
 - (m) necessary degree of sanitary and other facilities required for occupants; and
 - (n) necessary degree of essential maintenance.
2. Before proceeding to construct a new building, or modify an existing building, to be used as a community fire refuge, the design of the proposed building work:
 - 2.1 must be prepared by a fire safety engineer through the process of a fire engineering brief (FEB) and/or fire engineering report (FER); and
 - 2.2 must be verified as compliant with clause 1 of this section in accordance with clause 4.
3. Bushfire attack risk assessment methods, design and construction requirements and related matters are undertaken as specified in these Guidelines.
4. EMV or a person authorised by EMV, is responsible for the ongoing implementation of MD4, and for approving and publishing from time to time, these Guidelines which must include:
 - 4.1 the mechanism and administrative arrangement for verifying compliance with the performance requirements in accordance with clause 2.2; and
 - 4.2 any other relevant matters.

Definitions

Bushfire event:

The period of a *bushfire attack*, plus the period of consequential fire events, during which a refuge is required to provide shelter to the public.

Bushfire attack:

Includes burning embers, radiant heat, convective heat, flame, wind and smoke generated by a *bushfire event*, which might result in ignition and loss of tenability and subsequent damage or destruction of a building.

Bushfire Expert:

A person having a high degree of skills, knowledge and experience in bushfire behaviour at the landscape and site levels and/or its impact and effect on building design and construction and how best to mitigate the hazards, threats and risks to an acceptable level within their specific field of expertise. It is desirable a bushfire expert has credible credentials through training, education, profession and publication or experience in their specific field of expertise.

Bushfire Radiation Value (BRV)

BRV is measured in kW/m² and helps determine the appropriate level of protection to occupants of a CFR by predicting the expected intensity and impact from a bushfire.

Note: It is critical that a bushfire landscape assessment is completed to assist with identifying suitable sites. While a local site might meet the BRV required for a CFR, the landscape, due to surrounding vegetation fuel loads and type, combined with topography and local winds could make the site unsuitable and/or unsafe for use as a CFR.

Consequential fire event:

A fire in an adjacent building or structures, or fire from any significant combustible element consequential to *bushfire attack*.

Tenable environment:

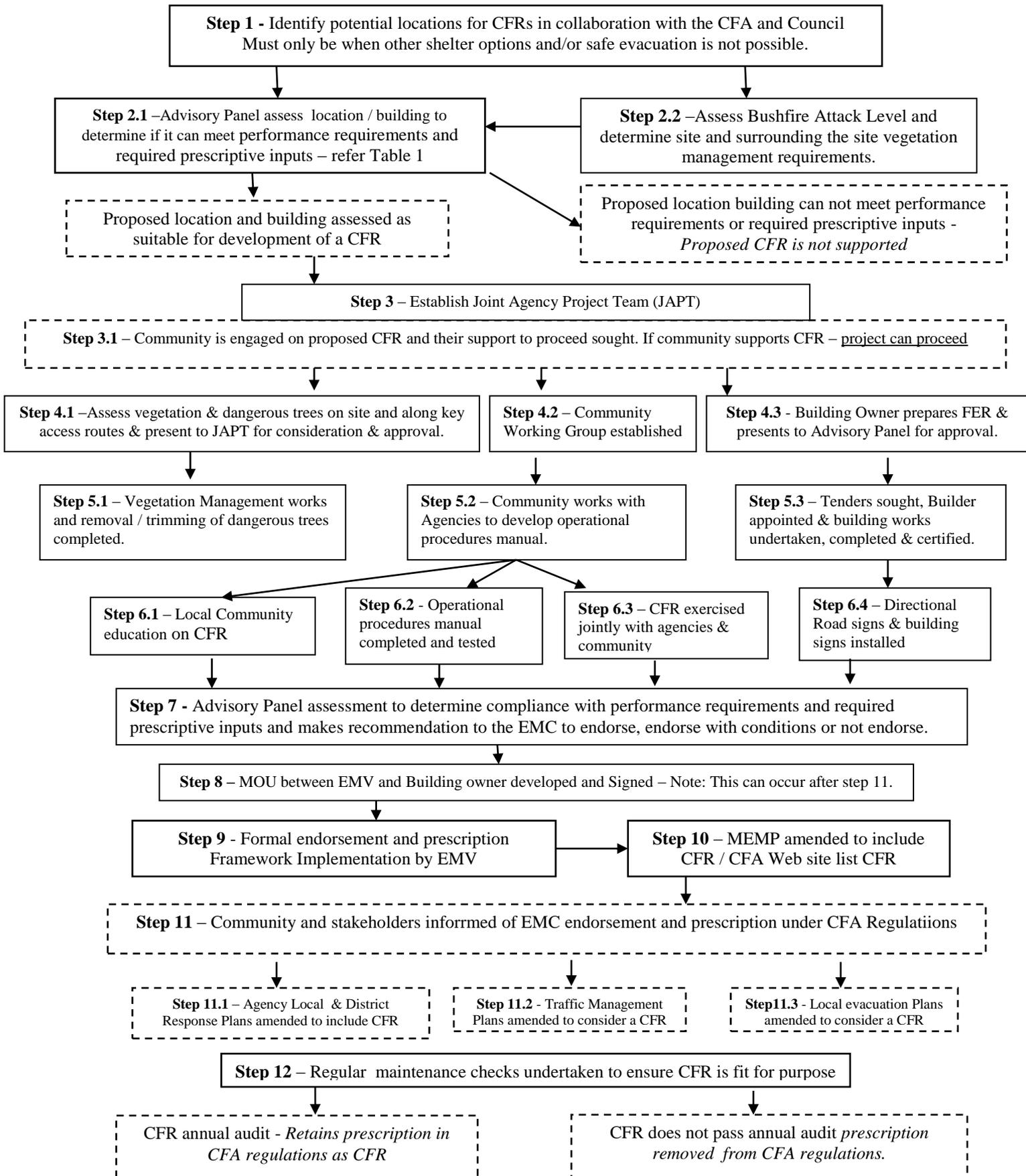
During the passage of a bushfire event, provides breathable air and appropriate thermal conditions to survive when untenable conditions exist outside the CFR.

Untenable conditions:

External conditions associated with a *bushfire event* in which human life is not sustainable.

Section 3 - Protocols

3.1 – Step by step project management process and suggested and governance structure



3.2 Required Prescriptive Inputs

This section contains the required prescriptive inputs that must be implemented to comply with the performance requirements for a CFR in the State of Victoria and to ensure a CFR is self-dependent without fire or emergency services intervention. It must be read in conjunction with the Australian Building Codes Board (ABCB) Design and Construction of Community Bushfire Refuges Handbook during development of the fire engineering brief/report (FEB/FER) by the building owner project manager and their fire safety and mechanical engineers.

Table 1 - Required Prescriptive Inputs:

Siting Requirements (BRV) ²	Design requirements for structure	Design Inputs
Bushfire Radiation value (BRV) ≤ 10 kW/m ² for the external façade, BRV ≤ 4 kW/m ² for entry/exit points that form part of the CFR operational procedures manual (for protection of emergency services personnel).	Compliance with the Performance Requirements for a CFR and be fully ember proof.	Flame temperature determined by the Advisory Panel, must be either 1200K or 1090K dependent on vegetation fuel load.
Site and surrounding site vegetation removal and management, where possible should seek to achieve BRV ≤ 2 kW/m ² for as much of defensible space around the CFR that is possible and to provide safe access / egress.		Forest Fire Danger Index is to be based on return period interval of not less than 200 years
		The building must be Importance Level 3 (from Table B1.3a of the Building Code of Australia).

¹ The 'bushfire radiation value' (BRV) which is an input, is the maximum radiant heat flux (rhf) value, in kW/m², for which that structure is likely to receive, or the limiting rhf which should not be exceeded for that building. It is derived from a range of factors including the predicted flame temperature, and predicted fire behaviour in the vicinity of the CFR. For all applications in this Table the assumed flame temperature will be either 1090K or 1200K dependent on fire weather severity which will be derived from a site (or area) specific Return Period Interval of not less than 200 years and consider the potential increases in fire weather severity due to climate change projections. Broader landscape factors that may support fire convection, ember storms and fire induced winds should also be considered when predicting local fire severity. A flame temperature greater than 1200K may be used if deemed necessary by the Building Construction Advisory Panel.

3.3 Guidance to achieving Performance Requirements and Other Relevant Matters

Site Identification Considerations Include:

Most vacant land sites or existing buildings identified for potential use as a CFR will likely be located in an extreme bushfire prone area and, therefore, will have a number of consistent challenges which will need to be carefully considered and solutions found. They include, but are not limited to:

- Identifying suitable sites will require undertaking a detailed bushfire landscape risk assessment. This will involve assessing the surrounding landscape vegetation fuel loads and type, topography and local wind influences, access roadside vegetation and networks, nearby buildings and structures and other hazards such as power lines, LPG cylinders, etc.
- Many sites in their initial state may not meet the criteria of not being exposed to a Bushfire Radiation Value greater than 10kW/m². In this situation, vegetation management and/or removal will be required, radiant heat shield/s or fire wall/s installed or an alternative site identified.
- Any large trees within striking distance of a CFR must be assessed to determine if it needs to be removed or trimmed by a competent arborist.
- Site may be located on a main road which could also be used as a planned evacuation route from the township or neighbouring townships. It must be acknowledged that one of the greatest threats to life is travelling when there is significant fire/s in the local landscape. This is one of the main reasons CFRs are a place of last resort.
- Providing car parking for a CFR may be problematic and although not required under these guidelines, good community risk management dictates it should be provided where possible. However, some sites and surrounding areas will not be suitable / safe and therefore parking along roadsides maybe the only option.
- Safe accessibility to a CFR is a key consideration. It must include site access for people seeking to travel to a CFR by vehicle and by foot to ensure roads are trafficable and allows for easy access without undue difficulty, i.e. not too steep, sufficient width, allows fire trucks access to the CFR, i.e. able to withstand 15 tonnes, and provide 4 metre clearance above and around.

Other Considerations

- The key message to the community is to leave before the fire weather severity reaches a hazardous level for their specific circumstances. This may occur at or around a FDR of severe. The objective is to encourage people to leave early under such weather conditions or when there is fire in the landscape that could threaten a township or individual properties.
- Recommendations to leave/evacuate are designed to allow people to escape the township/area to a safe location when it is still safe to do so. This could be associated with an 'Advice' or 'Watch and Act' community warnings.
- The objective of both is to reduce the number of people who could come under threat from a bushfire and reduce the likelihood and, therefore, the number of people travelling when there is fire in the local landscape.
- The purpose of a CFR is for when people have not left the area, recognise that they may not be adequately prepared to survive the bushfire event and still have sufficient time to reach a local CFR given the proximity and conditions of the travel route.
- Such circumstances can arise where people's fire plans have either failed, or they have lost confidence in protecting or remaining at their home. This could be associated with a 'Watch and Act' or 'Emergency Warning' community warning.
- Some roadsides will have high environmental and cultural significance which must be carefully assessed to determine how to manage roadside fuel loads and remove dangerous trees to reduce roadside fire behaviour and intensity whilst minimising environmental disturbance and impact. It will be important that Government agencies and departments acknowledge and support the approach that when planning for a CFR, protection of human life must take precedence over vegetation, environmental and cultural significance.
- Roadside fuel and dangerous tree management must consider local topography, fuel types and loads, environmental overlays, and the practicalities of reducing fuels loads and dangerous trees to an acceptable level. This must be determined by the responsible road manager using their agency guidelines, local knowledge and expertise. These roads may also have a dual purpose by also providing a planned evacuation route from the township or area.

Fire Hazards.

The proximity of the building to all potential fire related hazards, particularly the combined effect from fire loads and the way radiation from multiple sources can collectively impact on the CFR must be considered if there is a reasonable chance they can co-exist. In response, the following points must be considered to minimise and mitigate the risk from fire related hazards:

- Apply a conservative approach by using all factors listed in Table 1 of this section and consider any other factors specific to the site or region that may provide an additional risk.
- The CFR is separated from vehicles by minimum 10m or exposed construction of a CFR to be non combustible and have a Fire Resistant Level (FRL) 60/60/60 or suitably protected or drencher system installed,
- Building is separated from other buildings with FRL of 60/60/60 with any openings suitably protected.
- Any building within 20m of the refuge needs to be considered and no adjacent building allowed within 6m. When adjacent buildings are between 6 – 20m, exposed construction of a CFR must be non-combustible and have an FRL of 60/60/60 or suitably protected or drencher system installed.
- Apron around the building must be of
 - Grass < 100mm or
 - Concrete or non-combustible apron around the building of 1.5m
- Hose-reels located around the CFR to extinguish embers and any consequential fires.
- Steel water tank (independent water supply) connected to a fire pump to feed hose reels.
- Back-up diesel powered standby generator installed to maintain lighting, ventilation and firefighting pump (if electric). The generator must be adequately protected from bushfire attack.
- Treated pine must not be used for retaining walls or garden landscaping within 10m of the CFR envelope or access and egress pathways.
- No plastic must be externally installed or stored within 10m of the CFR building envelope. It is important to note that melting plastic will pool and therefore has the potential to generate significant radiant heat.

Number of Occupants

It is important to determine the safe occupancy of a CFR and acknowledge it has a finite capacity and therefore may not be big enough to hold all occupants from the surrounding districts, as well as visitors to the district, tourists, etc.

By using the required prescriptive inputs combined with removing or managing vegetation to achieve an effective defendable space, the CFR must not be exposed to a radiant heat flux greater than 10kW/m². However, where ever possible, vegetation management or radiant heat shields should be used to achieve a bushfire radiation value no greater than 2kW/m² heat flux. This is considered the acceptable criteria for an open space NSP and, therefore, may allow fit and confident people to safely stand outside prior to, during and after the passage of fire and allow for additional persons to take refuge at the site and, therefore, beyond the building design capacity.

Safe Access and Egress

Consideration must be given to safe access around and along key access pathways and routes to a CFR, to ensure safe local access to and egress from the CFR when visibility is poor, i.e. at night or when the CFR is exposed to smoke. To achieve this, the following mitigating actions must be considered:

- Municipal Council and/or VicRoads undertake an assessment of roadside vegetation and dangerous trees along key roads leading to the CFR and appropriate works undertaken. These works should consider local topography, fuel types and loads, environmental overlays, and the practicalities of reducing fuels loads and dangerous trees to an acceptable level as determined

by the responsible road manager using their agency guidelines, local knowledge and expertise. These works must be ongoing and therefore be included in the responsible road manager fire prevention / management plans required under the *Country Fire Authority Act 1958*.

- Vegetation management at car parking areas for a CFR should be done to achieve low levels of radiant heat below 2kW/m² heat flux and be located no closer than 10 metres.
- Limit combustible elements along final access pathways into the CFR, e.g. treated pine retaining walls.
- Adequate lighting should be considered for the pathway between the vehicle parking area and CFR and within the vehicle parking area for people to avoid trips and falls, taking into account possible power failure
- If installed, external lighting should be connected to the back-up diesel generator.
- Two safe access and egress routes on opposite sides of the building both leading directly to separate pathways away from the CFR. Internal locks to these doors should allow for persons within the CFR to manage potential heat, smoke and ember ingress on the dominant side of the building (i.e. to prevent other occupants from opening these doors as doing so might have adverse effects on the internal conditions from smoke or embers).
- Spot fires prior to arrival of the bushfire front should not adversely affect the path of travel into the CFR and the pathway should be able to remain trafficable where practical.
- Hose reels are provided to extinguish spot fires around the CFR.
- Apron around the building must be of
 - Grass < 100mm or
 - Concrete or non-combustible apron around the building of 1.5m
- Consideration should be given to installing hose reels within a building to extinguish any embers that may enter the CFR, to cool internal walls or doors, i.e. fire station engine bay doors or to cool persons standing in the fire station engine bay.
- No treated pine within 10m of the CFR

Tenability

This requires minimising smoke and takes into account the building's initial thermal state when it is closed, the thermal load from the occupants and the thermal load provided by external conditions. To ensure safe tenability within the building, the following mitigation actions must be considered:

- Occupant load within the CFR based on between 0.75m² and 1.5m² per person,
- Existing materials used to construct a CFR will not produce levels of smoke, heat and toxic gases that will significantly adversely affect the occupants within the CFR,
- Maintain tenability and air quality within the CFR using existing building design for building retrofits,
- The internal air temperature is maintained at a safe level by air conditioning system/s which are connected to a back-up diesel generator,
- Occupants are able to remain in the CFR for a period of at least 1 hour without undue discomfort,
- Lighting is available for a minimum of 1 hour without mains power,
- The building is designed to minimise smoke entering the CFR for the period of occupation,
- Doors have smoke seals,
- Glass and metal dampers close with a residual gap of no greater than 1mm,
- All openings below floor level screened to 2mm.
- Toilet facilities are provided at the rate of 1 per 100 people. This can include sealable portable camping toilets.
- CFR is sufficiently air tight to limit the rate of air exchange with the external environment during the bushfire event.

Smoke, Heat and Toxic Gases.

The type of material used in the CFR construction must not give off dangerous quantities of smoke, toxic or noxious gases. Existing materials used to construct the CFR must not produce levels of smoke, heat and toxic gases that will significantly adversely affect the occupants within the CFR. Consideration of smoke, toxic or noxious gases from immediately adjacent objects, sites or buildings must be considered and minimised to the point of not presenting a significant risk to occupants of the CFR.

Structural and Fire Loads and Actions and Effects of Bushfire attack on Structural Elements.

The CFR's ability to effectively deal with gravity and wind loads relevant to the site and location as well as live and dead loads which could impact the CFR. To address these issues, the following points must be considered:

- Building is built to Importance Level 3 as per Table B1.2a of the Building Code of Australia. A lower importance level may be considered, but will need the agreement of the Building Construction Advisory Panel.
- Glazing is Grade A safety glass for existing buildings and 5mm safety glass for new buildings, where windows are likely to be exposed to flying debris such as sheets of iron or branches, crimsafe should also be installed on high risk exposed windows.
- A 1.5m apron consisting of concrete or non-combustible material around the building is present or grass is maintained to a height of 100mm or maintained in a green state.
- Shrubs, trees (e.g. small trees/ bushes) are removed if closer than 10m
- Any possible melting or expansion of materials (each roof sheeting and aluminium frames) does not result in openings developing that can allow smoke into the CFR.
- The structure can withstand impacts from possible flying debris such as sheets of iron or branches.
- The result of superficial wind damage should not compromise the CFR resistance to other fire actions.
- All trees present to a distance of 1.5x the height of the tree from the CFR must be assessed by a competent Arborist. The CFR does not rely on other structure for lateral support and if so these are able to withstand the fire impacts.
- Impact of wind borne debris or objects will not present a risk to the integrity of the CFR.
- CFR is constructed to ensure ember protection in accordance with Australian Standard 3959 *Construction of Buildings in Bushfire Prone Areas*.

Occupants Awareness of Outside Conditions

This provides the means for allowing those occupying the CFR to determine the external conditions without compromising the CFR integrity. To achieve this, the following points must be considered:

- There are adequate windows with Grade A safety glass or Crim-Safe fitted which allows occupants to look outside. For new buildings, 5mm thick safety glass should be installed.
- Landline phone facilities capable of calling 000 or incoming calls from the Incident Control Centre (ICC) or State Control Centre (SCC).
- AM/FM portable radio provided to listen to updates from Emergency Services Broadcasters and local radio stations.
- ADSL provided to allow occupants to use their own mediums to get fire information and updates, i.e. iPad, mobile phone, etc.

Psychological considerations

An occupant's ability to act and make optimal choices during a bushfire event will be influenced by their mental preparation, the availability of information for decision making, their perception of a real threat and their considered response.

In this context, an occupant may experience heightened anxiety due to their involvement in a bush or grass fire event and their potential confinement within a CFR which may influence body temperature and oxygen consumption. Therefore, it is essential that occupants become familiar with the operation of a CFR and the likely duration of confinement, particularly occupants with claustrophobic or associated tendencies.

To assist with dealing with these issues and concerns, the following actions must be considered:

- Community members are engaged as early as possible, ideally before construction has commenced, and a community working group established to assist with determining and understanding local community bushfire risk, vulnerabilities and expectations,
- Community working group be involved in development of the operational procedures manual and its testing and exercising.
- Community working group in partnership with the key agencies, lead and facilitate community open days, training and exercising of the CFR leading up to each summer and during if possible.

Internal Signage

Appropriate internal signage advising the occupants of the design capacity with regard to the number of occupants and the maximum period of occupancy is installed in the most suitable location with consideration given to the building floor plan, location of main entry point and communication station. Internal signage should be provided for all critical equipment operation including air conditioning system/s, back-up generator, and communication station.

To ensure adequate internal signage, the following must be considered:

- Internal signage that complies with international and Australian standards are used and appropriately located in accordance with the CFR signage manual developed by EMV.
- The operational procedures manual shows where each sign and the critical equipment are located, i.e. air conditioner/s on switch, standby backup diesel generator on switch, hose reels etc.
- Table top exercises and practice exercise involving the community be undertaken to test signage and any identified issues are addressed.

Internal Communications

The building size used for a CFR is unlikely to require internal communications systems such as PA's or intercoms. However, internal communication capabilities, particularly between the ICC and CFR, ability to access websites, and AM/FM radio will be very important. To achieve this, the following communication systems must be considered:

- AM/FM portable radio provided to listen to updates from Emergency Services Broadcasters and local radio stations.
- Landline phone facilities capable of calling 000 or for incoming calls from the ICC or SCC.
- ADSL provide to allow person to use their own mediums to get fire information and updates,

Sanitary and Other Facilities

The following sanitary and other facilities should be considered:

- Toilets provided at the rate of 1 per 100 occupants based on design occupancy. This could include sealable portable camping toilets,
- Provision of potable water for drinking.
- First aid kit for treating people with minor burns, smoke inhalation, heat stress and other foreseeable health issues associated with taking refuge from a bushfire.

- Firefighting clothing including pants and jackets, safety goggles, gloves, P2 masks and helmet are provided for extinguishing spot fires from embers and small consequent fires.

External fire hose reels (FHR)

External FHR provides the ability for community members to suppress any fires caused by burning embers or small consequential fires. They are relatively easy to operate and control without significant training. All FHR should be installed in accordance with the BCA and AS2441-2005. The FHR must be able to reach all parts of the CFR including the roof, be not more than 36m in length to prevent persons going too far from the CFR and where possible, be located within 4 metres of an access door to ensure ability to quickly find access into the CFR.

Water supply

Independent water supply to a FHR must be supplied from a non-combustible tank and be sufficient to enable the hose reel to deliver the minimum demand required from the Australian standard 2441.1. Use of a water tank for both fire and domestic is appropriate on the condition the domestic supply tapping is above the required amount for fire fighting purposes. Currently the minimum supply to a FHR is 0.33L/s and must be achieved by the two most hydraulically disadvantaged FHR operating simultaneously. The water supply must be able to provide all FHR operating simultaneously for a period of no less than 1 hour.

Note: No plastic tank must be allowed within 10m of the CFR building envelope.

Fire pump

Where an electric pump is provided there must be sufficient back-up power in the form of a back-up diesel generator to supply the electric pump. The fire pump must comply with Australian standards, be protected from direct sun light, wind, embers and any potential consequential fires.

Essential Safety Measures, Systems and Protection Measures Maintenance Schedule

Essentials safety measures, systems and protection measures maintenance schedule must be set out in a memorandum of understanding or similar document between the building owner and EMV. It must apply for the life of the CFR and require annual audit and inspection prior to each fire season to ensure it is fit for purpose. Other matters to be considered include:

- The maintenance standards and schedule of essential safety measures and protection measures specific to the CFR must be in accordance with the BCA, relevant Australian Standard and/or manufacturer's specifications and be inspected and tested by a qualified practitioner. They must also meet manufacturers warranty requirements.

Readiness Checks

During the fire danger period, it will be important to conduct regular readiness checks to ensure the CFR remains in a fit for purpose state. Readiness checks must not be used to meet essential safety measures, systems and protection measures maintenance requirements. These are basic checks to identify if something is not working, has been vandalized or stolen, or the integrity of the CFR has been compromised such as a broken window, damaged door, etc. Details of readiness checks and administrative requirements are located in the operational procedures manual.

Determination of who or which agency will be responsible for conducting readiness checks will be based on agreement between EMV and the building owner entered into before a CFR is prescribed in the CFA Regulations and formalised through a memorandum of understanding or similar document.

Maintenance audits and inspections

Once a CFR building works are completed, there will be a 12 month defect liability period during which the installed infrastructure must be maintained to the relevant Australian Standard (AS) and/or manufacturer's specifications. It is the building owner's responsibility to ensure all CFR infrastructure and essential safety measures are tested and maintained during that period.

Prior to the end of the defect liability period, an essential safety measures testing and maintenance schedule must be developed to ensure they are maintained to the relevant AS and/or manufacturers specifications. Where no AS exists or there are certain infrastructure matters which are not considered as an essential safety measure, they must be maintained or managed by other measures, e.g. access and communications system or car park etc. This will be determined by either EMV or building owner and be inspected and re-verified at least annually. The testing and maintenance schedule must also ensure it is consistent with the infrastructure warranty requirements. An essential safety measures report must be completed and provided to the EMV audit team each year prior to the fire danger period (FDP).

Conducting an audit prior to the FDP will be critical to ensure each CFR is fit for purpose and continues to meet the performance requirements and required prescriptive inputs. To allow flexibility with the varying introduction of FDP across Victoria, CFRs located north of the Great Divide should be inspected and audited no later than mid-September and south of the Great Divide, by mid October. This allows sufficient time to undertake any vegetation management, building or system repairs well before commencement of the declared fire danger period.

The inspection and audit report must be completed by a suitably qualified person/s authorised by EMV (or delegate) and could include person/s from CFA, EMV, VBA, private sector or a combination of persons from two or more agencies depending on the level of complexity.

The report must be completed and presented to EMV (or delegate) no later than the end of September or October depending on its location to the Great Dividing Range. The report must identify all work and repairs required to ensure the CFR is fit for purpose, what has been put in place to complete all works/repairs and repairs and completion dates. Once all works and/or repairs have been completed, the authorised person/s may inspect the CFR to satisfy themselves all works have been completed. Alternatively they may accept essential safety measures report and documents advising all repairs / rectification works are completed by a credible source.

The authorised person/s must then formally notify EMV (or delegate) in writing that the CFR is fit for purpose and ready for the pending fire danger period.

3.4 Community Engagement and Operation of a CFR

This section provides a summary of key considerations when establishing the community consultation process and to achieve local agency and community support for a CFR and its operation. The Project Team is responsible for development and implementation of a community engagement and education strategy and development of the operational procedures manual using the approved format located on EMV website.

Council or CFA (depending on capacity, resources and expertise) must take the lead role in community engagement, education and exercising. This decision must be made very early in the project by the Project Team.

Community Consultation

One of the key findings from the pilot program was that effective community consultation and engagement must be open, comprehensive and genuinely consultative. This is deemed critical early in the project and needs to be carefully planned with the core agencies' (i.e. CFA, DELWP, Council, and Victoria Police) support. To ensure effective community consultation, a detailed communications plan and community engagement and education strategy must be developed and implemented. This should involve meeting with the broader community to brief them on the CFR project and to seek their support for a CFR in their town and involvement.

To facilitate this, a community working group should be formed early in the project so they can work in partnership with the core agencies involved to develop an operational procedures manual, determine the most effective way to test the operational procedures to ensure it is practical and achievable. It will also be important for the community to test all aspects of the CFR safety features and equipment installed to ensure they have a full understanding of its activation and operation; this could be achieved through a community exercise or open day.

The pilot program identified several key factors that will be important to ensure success. These include:

- Use a qualified and highly experienced and competent facilitator for community engagement. A local person who has a credible relationship with the community is preferred.
- Different communities require different, flexible engagement strategies.
- Early in the community consultation process, provide a briefing to the community on the local bush / grass fire risk so everyone has a basic understanding of issues such as radiant heat, bushfire behaviour, why travel on roads is dangerous, etc. It should be provided in simple to understand written format to enable the community member to take it away to study and discuss with their family and neighbours.
- Ensure all aspects of and information about the project (including expectation of the community and agencies) are presented, open and transparent at the very beginning. This will start the process of gaining community trust and respect for the Project Team.
- Project Team members must be prepared to present their views and arguments from a risk and evidence base against the parochial views of some community members (and potentially some agency members). This is because not everyone will agree with the overall direction of the project and all aspects of the CFR operation.
- Communities should be offered the opportunity to sign community/agency agreements to help all parties to understand how shared responsibility between communities and government can be formalised.

- Establishing and maintaining trust between communities and agencies is difficult, fragile and can be tenuous, but ultimately essential for a positive outcome. Much of its success depends on the constant input and engagement from local agencies.
- Providing regular community briefings and updates will greatly assist with maintaining trust and ensuring the community is kept up to date and engaged between meetings. This can be achieved through news letters, mail box drops, emails, posters, local media releases, etc.

Communications Plan

A communications plan is essential to ensure the community and all agencies are continually informed during the progress of the project and when the CFR is prescribed in CFA regulations. This plan should complement the community engagement and education strategy designed to ensure that the local community understand the role, purpose and limitation of a CFR. The communications plan should include, but not be limited to:

- Media releases
- Local CFR flyer
- Household letter drop/mail out
- Local Bushfire Planning Guide

Community Engagement Strategy

Developing a community engagement strategy should consider the following objectives:

1. Brief the community at the earliest opportunity on the proposed CFR and seek their support and involvement. This includes knowing its location, purpose (when and how they can use it), limitations and how it fits with their personal/street/town/municipal fire plan
2. The local community, in partnership with the local council and emergency services, plan and manage the operation of a CFR without fire and emergency services attendance during a bushfire.
3. Identify community leaders and advocates for a CFR and seek their involvement and support in all aspects of community engagement and education during the project and beyond.

Operation Procedures Manual

The operation procedures manual must be developed jointly with the community and the participating agencies and be tested and exercised and the learning's documented and acted upon.

The manual must include:

- Location and operation of all fire fighting equipment and installed safety systems and other key operational requirements,
- Procedures for standby, activation and deactivation of the CFR. A key principle incorporated in the operating procedures must be that a CFR can operate effectively without intervention by or assistance from fire or emergency services personnel.

To assist with achieving this, EMV has developed an operation procedures manual which is available on the EMV website and provides the basis to work with the community in development of a manual that is specific to its CFR.

Systems approach to opening a refuge

It is important to ensure a CFR can be easily and quickly opened at any time by persons seeking to take refuge without the building owner being there. A systems approach developed during the pilot program, which is connected into the emergency services community warnings and advice platform, allows for a CFR to be automatically opened when there is a fire in the landscape and a 'Watch and Act' or 'Emergency Warning' is issued by the Incident Controller for the township and surrounding immediate area. This system also allows for remote opening by pushing a button at the front door of the CFR and asking the emergency services operator to open the CFR. Details of the entry system are contained within the operational procedures manual.

Key Safe or Code System

Other suitable opening systems could include having a key safe or key pad located at the front door of the CFR or other similar devices; this however has limitations as it will rely on a trusted person who knows the location of the key or code attending the CFR or being contactable and available on very short notice. Considerations for using a key safe or code system include:

- Security requirements for the building,
- Guarantee a trusted person will always be available to attend and open the CFR immediately it is activated or required.

Signage for a designated CFR

A CFR signage manual has been developed to ensure that the appropriate signs are provided to direct and help people to locate and identify the CFR and to clearly show where key functions and systems for the operation of a CFR are located within the building. One of the required signs gives CFR design capacity and occupation expected duration.

VicRoads and Municipal Council must be consulted regarding the size and location of road signage and approval obtained. The operational procedures manual should identify the locations of both external and internal signage.