

Earth Building Conference EBAA 2009 Eltham, Victoria

Sustainability, Energy Efficiency
& Bushfires

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Eltham Community and Reception Centre
801 Main Road, Eltham 3095 Phone: (03) 9431 1034



Dirt

NEWSLETTER OF EARTH BUILDING ASSOCIATION OF AUSTRALIA Inc

33

Victorian Bushfires

Mudmap

Earth buildings stand out in Black Saturday bushfires

Rob Freeland & Peter Hickson report

Eulogies for Russell Andrews

By David Baetge, Rick Houghton & Dael Allison

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The contents do not necessarily reflect the opinions of the Executive.

Please feel free to contribute.

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Mudmap

BY PETER HICKSON
PRESIDENT



Recently we experienced some of the most devastating fires in Australian history. 173 lives were lost and more than 2,000 homes were destroyed in the 2009 Black Saturday Victorian bushfires. The fires were in the heartland of Australian earth building so a large number of earth homes were also destroyed and friends of our members were amongst the dead. I have spoken with several EBAA members who have lost friends and whose clients have lost their homes. Having lived through the Christmas 2001 bush fires in Shoalhaven, NSW I recall the fear, fatigue and hardship endured the week the fires raged around threatening to return and living with no electricity but also the great community spirit. I had a little firsthand experience of the trauma, emotion and loss felt during the event and in the aftermath. I remember sifting through the remains of a home clearing debris and then leading a small community effort rebuilding the friend's uninsured home that was destroyed. I still remember the lifeless looking burnt bush and how you could see through it and then in following weeks the alien beauty of the fluorescent green growth of axillary buds sprouting from branches and trunks and green grass shooting through the ashes. Today 8 years later and the scares in the bush are barely visible. The human loss in Victoria will take longer to resolve, though everything heals in time.

I met up with EBAA committee member Rob Freeland after the Victorian fires. Rob was lucky to be spared by the fires though they came very close to his property. Rob showed

me around part of the fire ground. This visit occurred just after forensic inspection was complete and as the roads were reopened but fortunately before any clearing of debris. We wanted to document the success and failure of earth buildings both those surviving and those destroyed. This information is useful in promotion of earth building and in preparation and validation of information contained in our EBAA Book and gives us lessons on how we can improve. Whilst in Victoria I wanted to do all we could on behalf of EBAA to make sure that if people wanted to rebuild in earth then it would be possible.

We met with Nillumbik Shire Council to discuss where earth materials could be processed and bricks made for the rebuilding process. We have written a letter to the Department of Planning supporting Nillumbik Shire Council in seeking a statewide planning policy that hopefully could be a model for the rest of Australia. Earth building practices fit somewhere between rural and industrial activities and this has presented problems in Victoria. I have experienced difficulties siting commercial mudbrick operations first hand in NSW as well. We believe the great potential for earth used for sustainable building means that our industry deserves support and special planning consideration to allow temporary and permanent sites. Certainty, legality and easy and sensible compliance are essential for growth, flexibility and viability of our industry.

We also attended the first of a series of seminars run by the Victorian Building Commission and Standards Australia introducing the new standard AS 3959-2009 *Construction of buildings in bushfire-prone areas*. We later had discussions with Nillumbik Council on how the latest improved energy

efficiency rating software is now dealing with earth building.

I am pleased to report that earth walls fared well and that has been recognised by councils and the Victorian Building Commission and supported by Standards Australia in AS 3959-2009 where it can be used in Flame Zone the highest building attack level (BAL). I recommend that all of our members get along to one of these seminars put on by the Victorian Building Commission and Standards Australia.

EBAA is prepared to do all it can to support rebuilding with earth but members and their clients will need to be aware that rebuilding will need to be to the new standards in regards to bushfire and energy efficiency and that this may cost a lot more than the existing building. Clients who have lost

homes should consider that accepting an early payment from an insurance company might not be the best idea if the policy is new for old replacement and not for a specified amount. Some building sites will need to be cleared a little and some sites may prove difficult or impractical to rebuild on.

We had an informal meeting and discussion with Greg Slingsby, President of the Nillumbik Mudbrick Association, to see how we can work together on these important issues. We discussed our next EBAA AGM/Conference to be held in Eltham later this year and how their association and members could be involved.

Whilst in Victoria I visited Russell and Val Andrews. Russell was alert and calm and attentive although using pain relief. Val was doing a wonderful job caring for

him. Russell was becoming weaker, pale and tired and less inclined to eat. The whole family was camped around their house to spend time together so my visit was short.

I had a sense it was time for family and that it would be our last meeting.

Sadly I inform you that Russell Andrews passed away Sunday, 29th March and was buried the following Wednesday. Our appreciation for his contribution to self- building, earthen architecture and EBAA have been recognised by life membership but his friendship, generosity of spirit, thoughtfulness, wit, wisdom and knowledge will live in our memories. Our condolences have been sent to the Andrew's family.

Inspection of Victorian bushfires

BY PETER HICKSON

The fireground in places was a scene of complete devastation with every building ruined and just blackened remains of trees and rubble and twisted roofing where houses once stood. Nothing green was visible, not a blade of grass, only the earth under foot was unaffected by the firestorm. In places the fire was obviously so extreme that nothing was left of eucalypts but for their trunks tapering to a point at the top and not a branch remaining. I could see where the rush of the firestorm overturned some very large trees. In other areas trunks were blackened but not reaching to the underside of the canopy. The trees were otherwise intact with dead leaves on their branches or recently fallen to ground indicating a less intense fire. Just one ridge over and an entire valley or town was spared from disaster by sheer good fortune. In Kinglake some exotic green trees were unaffected by the fire with ruined houses nearby. So some buildings were destroyed by ember attack not radiant heat and others survived incredible conditions with ember attack as well as incredible radiant heat.

Earth walls, stone and masonry chimneys were pretty much the only things left

standing in the worst affected places. Solidified pools and rivers of molten aluminium were evident near burnt out cars, molten window glass lay on top of earth walls that were unaffected apart from surface deep vitrification. Reinforced concrete, rock and extruded clay fired bricks showed signs of spalling. Concrete blocks and cement mortars crumbled. Steel frames and iron roofing were buckled and twisted by the heat. Oregon lintels and post and beam frames were burnt from within mud brick walls. Some hardwoods were charred and others burned through.

I think this burning of timbers occurred after the fire took hold rather than from ignition from the radiant heat of the fire front. I say this because some houses surviving in very hot fire conditions (determined from looking at condition and proximity of trees) had Oregon rafters and fascias that were unaffected, as were cedar window frames and doors. Interesting to note that only one window in a small surviving home failed. It was an aluminium kitchen window and the remainder were timber both recycled softwood and homemade hardwood. The glass in the aluminium window apparently blew in according to

the owner who was present.

It was difficult to ascertain whether some houses were destroyed being engulfed in the firestorm or as a consequence of a fire ignited by the tremendous radiant heat and ember attack. We know for sure that some homes we documented survived long enough to save the lives of occupants and even animals but the occupants couldn't save the house and it was subsequently destroyed by fire. People were not always able to save homes due to lack of water supply or failure of pumps or plumbing but buildings did save lives until the fire front passed and it was safe to venture outside. We also know of people who fought to save their homes and succeeded. If they were not present the houses may have been completely destroyed.

A close friend's mudbrick home was unaffected by an intense bushfire in 2001. His home was surrounded by tall eucalypt forest. The RFS fire-fighters had never experienced such a frightening and intense blaze. They all received trauma counselling after almost losing a fire fighter and fire tender. Their hoses were lost to the fire. Several minutes after

they left my friend put out a very small fire behind the house with a garden hose. If unattended the cedar bathroom addition would have been alight and his house would have been totally destroyed. Even a simple backpack spay or wet sack can save a house after the front has passed by.

Many lessons can be learned from bushfire events. Miraculously in the Shoalhaven fires of 2001 only 50 buildings were destroyed and not one life was lost. This was partially due to milder conditions with terrain isolated by lakes and estuaries, the path of the fire in relation to settlements, a reliable town water supply, more notice for evacuation or preparation, less panic and a high presence of Rural Fire Service appliances, local, regional and interstate and eventually international.

I believe houses should be built to be a fire refuge. Relying on a separate bunker is a second option because running between the house and bunker would cause confusion and bunkers are small with less air. We heard of a very severe burn suffered doing this.

Many houses were lost after the fire front had passed by and these may have been saved if water was available and pumps operable. Water to fight a small house fire after the fire front passes is vital to saving houses. NSW leads Australia in regulations aimed at bush fire safety. If not connected to mains supply the household needs to provide 10,000 Litres of water supply dedicated to fire fighting with petrol driven fire pumps not affected by power failure often associated with wild fires. A fitting that is compatible with fire fighting appliances is mandatory.

Newer building made to comply with new standards did seem to perform better than older buildings. Fire screens, safety glass, a little sensible clearing and maintenance of asset protection zones plus bushfire design principles to reduce ignition points low to the ground and exclusion of ember attack did seem to work. Earth walls have always performed well in scientifically controlled fire testing and in bushfire events going back decades. It is other areas of earth homes that need attention.

Leaving by car at the last minute was suicidal in many cases. The gravel roads within the fire ground were narrow and dangerous enough in good conditions but deadly in thick smoke and heat and ember attack with busy panicked traffic and with falling and burning debris. Being outside a building lead to disaster unless sheltered in the lee of an inflammable dense object like a water tank or house. Some people were fortunate to survive in a wombat burrow or concrete underground culvert.

The latest coronial inquest as with past inquests will surely support the conventional wisdom of staying with the home or leaving well in advance of a bush fire. People need the training and confidence to do so. An earth home would surely provide the best refuge and an earth bunker the second best.

The Victorian Government has pushed forward with a new Australian Standard AS 3959-2009 for Construction of buildings in bushfire prone areas. Mudbricks are one of the few materials approved for walls in the worst category, BAL Flame Zone, but as yet there is no roofing system that has been tested that complies. I would expect a traditional cathedral ceiling with exposed rafters and even timber eaves lining and insulated with foil and bulk insulation blanket with an iron roof would fare well in most zones if well detailed. I am not certain how it would do in flame zone applications. No roofing system has been approved for Flame Zone as yet and I would hope governments rather than individuals would fund the tests required to find suitable systems for the various zones otherwise costs associated with building will rise and standard systems used by large mainstream builders will be the only affordable and approved systems.

EBAA has requested Standards Australia consider revising the wording of the standard to include other techniques of unfired earth building not just mudbrick. I think there will be great confusion about how the Standards read especially in relation to clearing and what that means precisely. Does it mean thinning and separating canopies for example? Does it mean under scrubbing to reduce fuel load? Does it recognise the benefits of clearing of highly

flammable eucalypts and replacement with naturally fire suppressing evergreen natives like Lillypilly and deciduous fruit trees or exotic trees? There didn't seem to be any reference to asset protection zones in the new Standards.

The clearing recommended in the Standards has the potential to conflict with tree preservation orders and preservation of natural habitat and scenic protection as well as amenity. It will be more difficult to build anything in these areas in the aftermath of these fires. This was our experience in NSW after 2001.

I think at the end of the day survival came down to preparedness, design, and management of the situation as well as chance. There is one thing certain and that is that bushfires are part of our lives in rural Australia. We must learn to live with them and learn from past mistakes and successes.

It may be time state authorities implement the sort of basic training undertaken in earthquake prone countries so that everyone living in bushfire prone areas is best equipped to manage a disaster situation for themselves. Every house needs a bush fire plan and the skill and means to escape or extinguish a house fire. Training needs to start with school children and extend to adults living in these areas.

It is not just earth building that will be impacted. Some houses may never get permission to be built where they were built previously or they may look very different.

It is our intention to focus on Bushfires amongst other things at our up coming conference.



EBAA Inspection of fire affected buildings

BY ROB FREELAND

Peter Hickson (President of EBAA) and Rob Freeland spent 2 days inspecting several of the fire areas travelling through Strathewen, King Lake Flowerdale and the Skyline Road area near Yarra Glen.

They attended the presentation of the new building standards presentation organised by the Building Commission. The conference provided the opportunity to put questions to the panel and exchange ideas with other industry representatives that had attended.

Peter's availability facilitated several successful meetings with Nillumbik Council Planning and Building staff and with Greg Slingsby chairman of the Nillumbik Mud Brick Association.

Discussions included the need for the Victorian Planning Provision to be amended to allow for a special zoning to be implemented allowing for low scale earth building products to be manufactured without the need for extensive planning approval.

A submission was forwarded to the Minister Hon. Justin Madden MP, supporting Nillumbik's progressive effort to obtain changes to the VPP. Discussions with Greg from NMA who are also supporting the Council encouraged closer co-operation between our organizations.

Meetings with the council's building department's representative confirmed the ongoing problems with the existing 5 Star Energy Rating program used in Victoria and the possibility of being able

to use an alternative program such as BASIX.

Several properties were photographed, discussions with owners providing considerable information and the opportunity to enter their sites.

The earth walls of this split level post and beam building remain almost intact with minimum effect on the walls. The photograph shows the rear wall and the split level retainer wall that supports the top slab.

This wall of fired bricks has been effected by the heat with approximately 90% of the bricks losing their face to a depth of approximately 20mm.

Discussions with a fire expert confirmed this is a common problem in buildings where fires occur but the wall may still have adequate integrity.

In some instances the high temperature had changed the surface chemical structure of the soil used in earth bricks resulting in change of color and a semi glazed surface. Structural integrity in these instances may have been affected with the face being glazed and brittle with the balance width of the brick remaining stable.

It needs to be appreciated that the temperature in some areas was high enough to affect the surface of large rocks and fired bricks used for landscaping. A combination of moisture in the material and uneven temperature in the rock reproduced the method our ancestors used centuries ago to split large rocks for use in buildings.



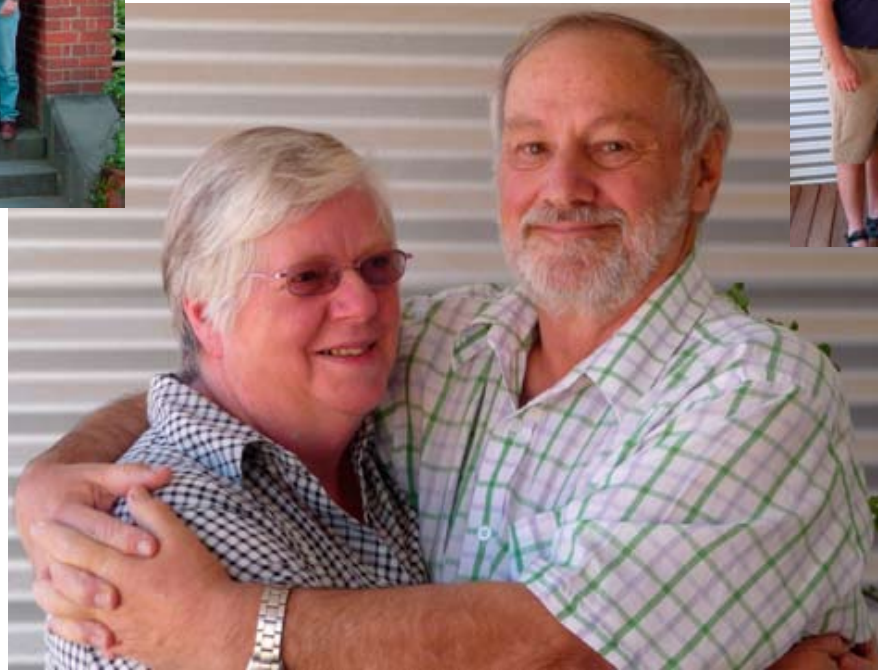
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Eulogies for Russell Andrews



photographs from Tracey Toohey



BY DAVID BAETGE
transcript of funeral eulogy

We are here today to celebrate the life of Russell Andrews. And it has truly been a life worth celebrating.

Russell had a huge sense of the ridiculous and the irony of his life's celebration being held on April Fool's day would not have been lost on him.

I want to share with you what Russell contributed to my life and similarly the lives of many others that I know personally. He was my most important mentor. He added substantially to my business confidence. He was someone I could always refer to for a balanced and grounded opinion.

Many years ago, like some of my peers here today, I was flummoxing my way through as a builder using earth as my primary building medium. Russell & Val decided that it would be a good idea to bring all the disparate individuals (Russell would probably have said desperate individuals) in this small industry together so that we might organise ourselves into a coherent group to deal with impending legislation that had the potential to decimate our livelihoods.

Russell & Val arranged the seminal meeting of Australian earthbuilding practitioners at Maldon. The consequences of that initial conference

certainly did not register on the Richter scale of the Australian building economy but it was of huge importance for the widely scattered practitioners in our industry.

Russell was the midwife to the birth of the Earth Building Association of Australia.

But, as Russell said when I last saw him a short time ago, he was more interested in the actual people than the concept of an organisation.

He was a mentor and true friend to the earth building practitioners of Australia. He supported our cause unflinchingly. In recognition of this he is the only person who has ever been given life membership of the Earth Building Association of Australia.

As I said, Russell was not into organisations. He believed very strongly in the concept of individuality. Most particularly for me this evidenced itself as his steadfast and tenacious support of the right of people everywhere to provide their own shelter.

He was absolutely right when he said that those who wanted to undertake this task should be supported and empowered. And with this support they generally created a structure with immense character and soul - a home instead of just a house. This seemed then and still seems to me

now to be such a simple truth. And that is an example of one of Russell's great abilities - to distill facts so concisely and put them in an easily understandable and transparent form. The innate skill to get to the nub of the issue.

I think that Russell's intrinsic understanding of the way essential things should be is probably more appropriate in today's economic climate than it has ever been.

And this is for me was the real essence of the man. He provided the stability, a farsighted view and the bond that is still the basis of our earthbuilding industry today.

In closing I'd like to share one of my fondest memories of Russell. It was at the Seymour Farming & Alternative Building Expo some years ago. The show was absolutely awash after a deluge of rain. A couple of alpacas were being led around between the stands to take visitors minds off the mud & slush. Russell leant over to me and said in his typically laconic style "These animals look like an owner-built dog". Russell, I and many, many others will miss you more than you could have ever imagined while you were with us.

Your demise is the passing of an era.

We loved you dearly.

BY RICK HAUGHTON & DAEL ALLISON

For Russell and Val, Lizzy and Matt, from the Mudlarks: Rick, Dael, Ned and Pippa.

From the moment Russell walked into the door of our mudbrick house on the NSW Central Coast, we loved him. That man had incredible warmth. He'd come up to meet us in his fairly new role as owner/editor/roving reporter for the Owner Builder Magazine, that inspiring journal which has encouraged thousands of Australians that sweat is a grand thing, self-building manageable, dreams achievable. Russell sat down, swept our two year old daughter into a cuddle, and rang Val to tell her he had a gorgeous blonde sitting in his lap - and straight away we knew we'd love her too.

The times we spent with Russell and Val have the glow of lasting memory. Talk of family - hearing what Liz and Matty were up to, passing on the exploits of Ned and Pippa, sharing stories of our respective communities, was as much the part of discourse as discussions of earth building and the world in general. Many of our owner builder friends have fond memories of visits from Russell and Val and the warm and relaxing way they could turn a casual visit into yet another fascinating article for the Magazine. Having friends in

the field of architecture and journalism was great role modelling for our kids, who have both gone on to write - one studying architecture and editing the uni magazine for a year, the other studying journalism.

Russell's encouragement to us as regular contributors for the magazine was invaluable. He convinced Rick that writing was as easy as building and it was simply a matter of putting your thoughts down on paper and putting them into order as if you were planning a building project. Then developing each thought into a full component of the project. "No point in putting up a roof without foundations to support it."

He was Rick's stepping stone to Overseas Aid work. After travelling in India he became involved with AusAID in the Durban Self Help Housing Project in South Africa and in 1997 when the project in South Africa needed another builder, invited Rick to join the team with Chris Howe, teaching earth building techniques to displaced township people from Kwa-Zulu Natal, Maputoland and Eastern Cape. Russell's empathy and compassion was infectious and the design work he did was simple and effective for South African self builders to work with. Dael and Rick have both gone on to do more work in the humanitarian field. Russell introduced Dael to another magazine

regular, Sharyn Monroe, and that lead to a lasting partnership and increasing successes in the writing world. Russel was always introducing people and then stepping back to let them develop new relationships.

Russell worked tirelessly to bring together earth builders from all over Australia and New Zealand to try to form a cohesive front to develop earth building standards. With other friends he organised a meeting in Maldon, Victoria, of as many earth building practitioners as could be mustered and from this memorable gathering sprang the determination to form an Earth Building Association.

The Owner Builder Magazine became the forum for all ideas on self building with a greater leaning towards technical and practical articles. This help for self builders with their projects was balanced nicely with real stories of real people's struggles and successes.

Russell Andrews was one of the world's great huggers. If you don't know that you've missed out on something very special. We'll miss those hugs. We'll miss his warmth, his humanity, his laid-back humour and his creativity and inspiration - but we are so enriched by all those years when he shared them with us.



Rob Frie House

Rob Frie's house was one of three that survived in Skyline Road, two were earth houses, the other home being saved by its occupants.

Rob designed and built his house to survive bushfires using a wide range of materials to construct his home.

Damage to the house was very limited, slight charring to the fascia and damage to a window frame, plastic pipes and windows.

Rob explained that most of the damage to the house was a result of items having been left close to the wall that had ignited prior to the actual fire front.

The damage to the rear corner post fascia and pipes resulted from a caravan close to the building being destroyed.

Pot plants located around the plastic pipes resulted in the localised damage. Door mats and a dog basket had caught fire and resulted in minimal damage to a low level window frame that had been repaired when the windows were replaced. 13 of the original windows were cracked by the heat with one actually failing and blowing in.

The windows have been replaced since the fire with toughened glass. Attention to detail and good workmanship prevented the ingress of the fire and or embers into the building.

The eave design enabled the roof areas to be sealed preventing the fire entering the roof system. The timber fascia only suffered minor damage despite the house being under attack on two occasions.

There have been many comments relating to the rebuilding and cleaning up of sites raised by several affected residents. Owners of conventional housing (non earth) generally indicated that they would like to see their site cleaned up as quickly as possible. There has been considerable interest by people who have lost their conventional clad and brick veneer homes to consider rebuilding with earth.

A hotel located on the Maroonda Highway at Glenburn was totally destroyed. The collapse of the walls could have been as a result of the failure of the roof system or even pushed over by the authorities as a safety measure. The fire had spotted to numerous buildings and tree plantations. Several reports of ember attack described pieces of bark over 1200mm long and 150 mm wide landing on properties several kilometers from the fire front.

We need to learn from the information that has been available from the many reports that have been commissioned over the past 50 years and not totally reinvent the wheel.

Double storey load bearing earth house report (also cover photo)

The extreme temperatures of the fire estimated to be in excess of 1000 to 1300 deg destroyed everything but the earth bricks. It should be noted that the white wash on the internal walls still remains intact with the external render having been damaged.

The fire damage to the building destroyed the fire retardant timber door and window frames that had been built in during construction.

As the walls are structurally sound the timber frames are being replaced with steel frames and bricked in to the earth walls. The internal walls will require minimum repair, while the internal concrete floor indicates considerable spalling requiring a new floor to be poured on top of the existing.

The floor beams had been cut at an angle and installed so that in the case of fire they could fall out without causing the walls to collapse.

The occupants of this residence left the property prior to the fire front but neighbours lost their life in a post and beam house that was destroyed. After the fires the earth walls were still standing almost intact in silent memory of the owners.

Sample bricks from many of the buildings provide consistent results showing that the heat has only entered the external face by 20 to 30mm and 5 to 12 mm on the internal face.



Inspection of a wall section clearly indicates the heat damage to the render coat and the depth of heat moving into the wall.

Two ferro concrete tanks showed the typical damage to this type of tank where the external layer of concrete spawled exposing the reinforcement and then the internal surface failing rendering the tank useless.

Owners of earth homes often indicated that they wish to retain some of the free standing or load bearing wall panels and to reuse existing slabs and floors. Most have salvaged earth bricks from damaged walls and cleaned up their floor areas with the unusable material put aside for removal.

The new regulations have indicated that buildings are to be built on concrete slabs. Inspections of buildings showed that in many cases while timber floors had been burnt out the walls were intact and the replacement of the floors could allow for the building's restoration.

Cement slabs showed considerable examples of extreme damage to the

surfaces that would require an additional slab or other surface material over the top to reinstate the floor.

Paved floors using fired bricks or pavers withstood the effect of the fires. After the buildings have been cleared, the floors show discoloration in some areas.

The brick paving can be pressure cleaned. Where the floors are on a sand bed contained by the foundations rebuilding on the existing site becomes a practical option.

If the foundations have maintained their integrity and there is no sign of any failure after the many years since being placed, councils could approve their use without any further requirements such as site soil testing revised footing design etc. Common sense and practical application needs to be considered instead of excessive bureaucracy and regulation.

Surface treatment of this earth wall has been damaged by the heat but with minimal impact to the bricks.

Where a thick cement based render had been applied to earth bricks the render generally suffered severe damage causing the render to break away.

Cement based renders applied to walls that had been constructed from cement stabilized earth bricks had lifted. It was observed that surface failure had occurred akin to concrete cancer where as similar bricks without render had maintained their integrity.

The fire damage to buildings provided an





opportunity to review the performance of the wide range of mortar mixes used over the years.

The following comments are based on the inspection of a large number of sites and a wide range of soil types used for bricks and mortar.

The best performing mortars were identical in composition to the material to that the bricks have been made from. The high bond strength resulted in structurally stable walls that had maintained their original form even though window and door lintels had been burnt out with minimum damage to the walls.

Earth mortars of similar material as that used in the bricks has maintained the bond to the bricks. On other sites dissimilar mortar in particular cement mortars have shown failure of bond to the bricks.

Silt mortars that were widely used in the Eltham area 10 to 20 years ago indicated an acceptable level of bond and in many instances could be removed from the brick surface and collected for reuse.

Where earth bricks were made from soils that were not as good and had dispersive type clays the bond strength of the mortar was weaker often failing to retain the walls integrity. Failure was noticeable after the roof had been lost and the walls exposed to the heavy rains and high winds since the fires.

Cement mortars and cement based renders indicated general poor performance for a number of reasons.

Earth walls without render were impacted by the high temperature depending on the types of soil used and if the bricks contained lumps of rocks larger than 20mm.



An interesting earth oven that had been formed by forming a frame of black wattle boughs bent and then tied with wire. The frame was covered with newspapers and then covered with a earth mortar mix.. When the oven had dried a fire was lit in the oven burning out the paper and wattle form. The oven survived the fires even though adjacent trees had burnt out the root system deep down into the ground. Fired bricks close by showed considerable deterioration.

There are examples of pre 1900 timber cottages where the fire has passed on both sides with no damage to the buildings. Buildings have been destroyed while others a few metre's away with overhanging trees survive. Well defended properties were often lost, others were saved when the fire front passed only to be destroyed when a



wind change sent the fire back over the properties for a second time.

It is difficult to write articles about the performance of building construction after the disastrous bushfires that swept through part of Victoria without recognizing some of the aspects that have had an influence on the impact on people, buildings and the environment. Topography, wind direction and velocity, building design and finish, window and door design, but most important the luck on the day, community support and individuals skill and ability to survive.

Observations are retrospective and on many sites it is difficult to determine the sequence of building failure. Many of the people interviewed who remained in their homes have provided detailed information indicating the level of protection earth homes provided.

A few days after the disastrous fires north of Melbourne on Black Saturday reports appeared on the news and other media, often indicating that in many areas the only parts of the building standing were chimneys and earth walls. In several communities the most prominent features of the landscape are the numerous earth walls still standing often interspersed with surviving houses.

New building regulations will impose additional costs for those rebuilding and may restrict many people from replacing their home because well meaning political rhetoric and regulations will override people's rights, choice and common sense.

Earth walls with a 4 hour fire rating combined with correctly designed and constructed free standing earth walled and roofed shelters could provide a level of protection against radiant heat and oxygen reduction levels.

Whether to rebuild on the same or a different site on the property or to relocate will be a difficult decision for many and it may be several months before any decisions are confirmed. It is most important that the authorities recognise that affected people need time and support while they re adjust to the circumstances they now face.

The Royal Commission will consider submissions, but it will depend on decisions being made and implemented that will reduce the future risk to people in fire areas, It must be remembered it is about people, their habitat and the beauty of the environment that many have chosen to live in .

It is also about the qualities of the people involved, their commitment to help others and the strength and resilience of residents to rebuild their communities and reclaim there lives.



Editorial

Thank you to those who contributed to this edition of DIRT

I appreciate the heart felt responses to; the death of our friend and mentor Russell Andrews, and the devastation from the Black Saturday Victorian bushfires.

As we look at ways to make a difference for the better, from where we are, and together as an association, may I encourage you to join us at our conference / AGM at Eltham in August - More details on the back cover.