Upper Spey Hut - Dusky Track

Reroof & Maintenance Report– May/June 2020

History

The hut was built around 40 years ago and is located on a small rise above a swamp. The Dusky track is quoted as "a difficult tramping track between Lake Hauroko and Lake Manapouri offers huge lakes, gushing rivers, vast forested valleys and lots of mud for experienced and well equipped trampers." (DOC website)

The section of track where the hut is located has board walks to and from the hut to give you an idea on how wet the area is. It is located at Grid/NZTM2000 coordinates: E1144666, N4935993

Upper Spey Hut is a DOC 12 bunk hut with Maori style beds – 2 platforms at the end of the hut with two stainless steel tables, a kitchen shelf and a multi-fuel fire burner at the other end nearest the door. There is a cupboard in the corner behind the fireplace.

It is a simple hut with no luxuries.

Maintenance

Being a DOC Hut and on the Dusky Track, it is used regularly especially during the summer months. Referencing to the DOC inspections, the regular inspections by the department has noted several items needing repair or replacement, with a general theme the roof and bunks are requiring urgent attention from as far back as 2015. Smaller minor elements are noted and are still to be rectified.

Our involvement

The New Zealand Deerstalkers branch in Queenstown (known as the Southern Lakes branch) is quite an active branch and already manages two DOC concessions for huts in the Greenstone and the Caples valleys. With Several major working bees to maintain these huts conducted over the last 10 years, in 2009 the club assisted with the Steele Creek Bivvy rebuild (now the Steele Creek Hut), this was a full exterior lining installation, new bunks and new rammed earth concrete floor installation as well as new kitchen bench and fireplace modifications. The club of around 130 members regularly run working bees at these huts for maintenance and upkeep.

Their members have also actively been involved in other projects on conservation land including a kill trap line up from the greenstone valley to the confluence of the steel creek river and up to its head waters. The club has been actively managing this trap line since 2005.

At a recent club meeting and assessing what the members appreciate the most it was mentioned that members really enjoyed these working bees, as they not only used skills our members have, but that they were a great way to get to know other members. The members also enjoyed being able to give back to the community and appreciate the hut network we have.

As a result of this, the club approached Rob Brown of the Backcountry Huts Trust and he mentioned several hut maintenance programs available, and the decision was made for the Upper Spey Hut to be selected as it needed to be done in the Winter when the hut was not used as much (and the sandflies were not so hungry).

So in the space of 2.5 weeks with the help of Rob Brown and the Department of conservation, we were able to coordinate the consents and materials and achieve a full reroof and roof restructure with new facia boards as well as restructuring and strengthening the bunks, two new ladders and fixing the original ladder. Remove and fit new seismic restraints on the water tank. Clean the tank of debris, clean the hut exterior and existing deck clearlight roof as well as install two new stainless-steel clothes lines.

Scoping

David Rider (SLBNZDA), Rob Brown (BCHT) and Grant (DOC) flew into the hut with Te Anau Helicopters on Wednesday 20th May to assess what was needed for the works and measure up the required quantities and literally 1.5 weeks later we were in there going hell for leather to complete the works over the Queens Birthday long weekend of May/June.

The following was the agreed scope of works

- Coordinate, procure and manage the activities below in conjunction with DOC and the BCHT.
- Comply with the appropriate safety and wellbeing protocols in effect as part of the works
- Set up safety systems and protocols prior to commencing any activities on site
- Replace the existing roof – comprising the Corrugated Iron, Netting, and perished roofing membrane with new materials in a like for like fashion. Including 4 Clear light sheets of Iron and Translucent Roofing Membrane.
- Install additional Structural Timber as required to ensure the activity above can be carried out safely and install 53mm Multi bracing across the roofing in accordance with the residential building code for a building of this type.
- Fixings for the roof are to be profiled storm washers with EPDM Membranes at every second rib for edge sheets and every third rib for internals
- Replace the end barge boards and install new side Barge boards on the eaves.
- Install new Roof Flashings for the ridge and barge boards, Remove and replace the Chimney flashing and kea Proofing
- Install pile fixing kits to the 4 corner piles to increase to 12 KN
- Paint the New barge boards Karaka Green
- Remove clean and replace the existing gutters
- Replace the existing bracing straps on the tank with stainless wire and empty and clean the tank, install new outlet hardware and install 20mm alkathene overflow extension to new hardware to ground level
- Install new stainless wire clothes line under deck and inside, around fireplace
- Clean existing clearlight roofing of deck
- Spray building with cleaner and clean and brush exterior cladding of hut ready for painting at a later time

- Repair corner of hut cladding were nails have pulled out with Tek screws
- Replace joists on top bunk with stronger timber and install joist hangers
- Strengthen lower bunk with jack stud piles and joist hangers on existing joists
- Trim ferns and small regrowth in cleared area around hut
- Collect all rubbish and materials left over from the activities, safely pack and transport out
- Any other activity to facilitate the above

The Team

All members were from the Southern Lakes Branch of the New Zealand Deerstalkers Association consisting of David Rider(Geotechnical Engineer), Andy Pearson (LPD Builder), Colm Hennessy (LPB Carpenter), Jakub Leder (LDP Builder), Sharon Salmons (Club Secretary and Game Animal Council Member) and Melissa Jager (Ecologist).

Logistics and pre trip work

Safety plans were prepared and logistical programming with Department approvals, budget approvals from BCHT were all expedited with final approvals confirmed the day before departure.

The new roofing iron, clearlight, timber, fixings and other materials were ordered all at relatively short notice. At the time of ordering, NZ had just come out of level 3 Covid -19 so the builders merchants were not 100% up to speed yet, however all were extremely accommodating and did their upmost to procure the materials required at short notice. This complicated matters as we had to source materials from both Queenstown and Invercargill due to supply limitations across the country.

The work needed to be done in the winter as this hut is a popular hut during the better weather months but that meant we had very limited daylight hours too, so ensuring adequate lighting for those dark evenings ahead was incorporated into the logistical set up.

There was a time pressure to get the work down before winter really hit and before the walking season started again, hence the short window of opportunity. Due to the very remote location of the hut (on the other side of Lake Manapouri and down the valley) everything would need to be flown in and materials had to be able to be packed for sling loads under the helicopter.

Te Anau Helicopters based in Manapouri were used with three underslung loads and one team passenger load scheduled to get in and two underslung and one passenger load for the trip out.

Sharon spent the week preparing meals and shopping for the team so we could just reheat and eat as we knew it was going to be a tough weekend with little time to spare.

The site work begins

Day 1 Late Friday evening the 28th May

The team collected the remaining materials throughout the day that had not already been delivered and packed and loaded the trailers and vehicles for the two hour drives from Queenstown and Invercargill to arrive at Fiordland lodge in Te Anau for a full repack ready for flights early in the morning. A moderately late night was had ensuring all was in order and the required tools and backs ups were taken as there was no chance of getting broken tools fixed or just heading down to the hardware store if needed.

Day 2 Saturday 29th May

We arrived early at the hanger and proceeded to pack all the materials into the sling loads required with the roofing and timber strapped together to form a long pallet with a large aerial fin attached to prevent load spinning in flight.

Our helicopter flights were booked for 8.30am at first light but as the day dawned, a thick fog covered the airfield. And so began our Waiting… and we waited and waited and waited.
Finally just after lunchtime there was a small gap in the fog and we got a thumbs up from the pilot and he commenced flying the loads to the hut with a 30 to 35 minute round trip across the lake and up the valley to the Hut. This is where the team work shone through and the daisy chain and speedy unloading and unpacking commenced to get stuck into the tasks at hand. So by the time all the loads had been flown in and unpacked it was late in the afternoon at which point the safety briefing and tool box meeting was had . We had lost most of our productive daylight due to the fog so the pressure to complete was elevated further.

The chopper dropped the first load and then took us in second load so we could commence unloading as he dropped the remaining loads in for us. We all ferried the boxes from the helipad to the hut, in between the helicopters sling loads with one lighting the fire to dry out the damp hut and organised the food, tools and dinner. Although a relatively largish hut, with so much gear to try and keep dry, it was quite cramped.

The original plan was for the sling loads to be dropped at the staging area and then lifted up to hut location some 100m away to save load carrying once all were onsite however due to the 30minute trip time we all pitched in and carried all of the tools and materials (yes all the timber and roofing materials and supplies) up to the hut to save some chopper time and get us unloading quicker given the time lost. So it was just the scaffolding sling load that was finally precision placed at the front door step to assist in the final unload of materials.

The original schedule to commence deconstruction was amended to setup and minor prep work on the roof and the focus was on the internal bunks and their structural integrity which on closer inspection was pretty dire and considering our use of them that night we focussed on them.

We ate and then set about the work. two teams were split with one sorting the bunk bed platform restructure and support and stabilisation. And the other outside prepping for reroofing the next day.

The bottom platform which has a centre post had partially punctured the floor as it was not installed over a supporting structural member.

So the bunks were jacked up and a foundation support spreader was installed to distribute the weight over the ply floor and nearby structural support elements. There was also no safe ladder for the top bunks, so we built a ladder at each end of the platform in the same style as the central ladder for in keeping of construction methods as well as added extra foot holds for the central ladder to make it safer.

The other team started on getting prepared for the next day. This involved unwrapping and constructing the scaffolding and setting it up for the roofing work. No mean feat when it's dark, around minus 3 degrees, damp and the setting for the scaffolding is just moss, mud and uneven very soft ground with a small stream running around the hut.

Utilising surplus timber, ground levelling platforms for the two scaffolding towers were built to ensure a stable safe platform with every second roofing screw removed to assist with deconstruction in the morning.

It was nearly 11.30pm by the time everyone had finished and after a hot drink and snack, everyone headed for their sleeping bags.

Day 3 Sunday 30th May

It was a really frosty dawn, so we had breakfast early and cleared the gear out of the hut to a makeshift tarp storage area outside to ensure we made the most of the daylight hours and knowing the roof was coming off and with old rats nests and dirt and dust that would be generated by the deconstruction also set up a camp kitchen outside to cook lunch and then dinner in the dark as we knew it would be a long day and night ahead.

While 4 volunteers started to demolish and remove the old roof, 2 volunteers headed to the clearing and helicopter pad (and the emerging sunshine) to paint the facia boards. But at 10.25am the sun had already dipped behind the mountains for the day and never returned.

About 11am, the dew and frost settled in for the day. The paint therefore had no chance at drying – in fact on checking later that day, it had literally slipped off the boards and in the end we had to wipe the remaining paint off with paper towels. A painting job for the summer (and sandflies).

It took a while to remove the roofing iron, the old chicken wire and what was left of the building paper off the roof and equally as long for those not on the roof to tidy up the rubbish and condense it in a fit enough and safe way in the net to fly it out under the helicopter.

Once the roof was deconstructed, we started on the reconstruction and essentially doubling the purlin elements of the roof. It was amazing at how flimsy the hut became without the roof and even the smallest shake of the rafters would send the hut into a strong sway reminiscent of a mild earthquake that even shook the pile foundations. This became a running joke that by shaking the bunk platform you get the hut "rocking."

While the roofing work went on, with new structure, bracing, netting, membrane and iron and clearlight a team started on the cleaning of the hut and walls with scrubbing brushes and brooms. With one member of the cleaning team also acting as the roustabout being dragged from one side to the other passing timber, screws, tools etc as the roofing team screamed their demands as they went about their jovial work.

The damp during the day meant that the tarps had to cover everything to keep it dry so as soon as the demolition of the roof was complete, we were able to sweep the hut clean, dust away the many cobwebs in the rafters and move some items back into the hut.

As darkness approached, there was only a few sheets of iron installed. Although the walls prevented the cold breeze, no roof meant the hut was still cold and damp long into the dark hours.

Around 8pm two hikers turned up, wet tired and cold and were surprised to see us still working.

"Oh you're still working, don't mind us, we just want to get in the warm and sit by the fire"

You should have seen their faces when we replied the roof was off and the fire was out of action until we had replaced the chimney. They took it in their stride and huddled in their sleeping bags in the lower of the bunks in an attempt to dry out and hopefully warm up that way. They must have been exhausted as we supplied them with ear plugs they slept through all the banging, and noise while we worked to complete the roof iron and clear light installation over the main hut area.

At 11.45pm the last bit of iron went on with some temporary stropping of the chimney and final sheets to tide us through the night and finally the fire was alight to dry out the trampers soaking clothes for them.

Day 4 Monday 1st June

Sunday had been a huge day getting the roof on, but today we needed to finish it, install new flashings, and make some custom adjustments to the chimney cowl for water and Kea proofing. We had to get the guttering back on and put up new painted facias with a custom "frost effect" from the paint freezing. Plus all the other elements on the list.

We resealed the existing chimney flashings – not exactly that easy when the sealant is so cold it won't budge out the tube until it had been sufficiently warmed up. But we eventually sorted that too. (we are lucky Sharon is well endowed and utilised her extensive heat sink of a chest to warm the tube up for us !)

The water tank was drained and deconstructed so we could clean it inside and out, put back in position with new, new stainless seismic restraints. The tank platform was also cleaned and scrubbed back to timber to remove the moss and lichen growth.

Missing signage went up and two stainless steel washing lines were installed by Jakub both inside and out and everyone felt like we were on one of those TV programs with the clock ticking down to Helicopter time at 4pm. Due to daylight, we couldn't risk making the pick up any later.

The iron, rubbish, tools and personal gear all needed to be down at the helipad and secured for flying. So there was a considerable amount of time cleaning up and getting gear to the helipad and secured for a safe flight in the net. While a couple of members frantically finished the essential items such as flashings and gutter installation.

The porch clearlight was cleaned of moss and lichen and the hut cleaned inside thoroughly.

It was a tight deadline but we made it literally just as the helicopter landed although loading took longer than expected so the pilot radioed for another chopper to assist otherwise we would be left stranded due to limitation of daylight flight restrictions.

We ran out of time to fix a number of other items as we prioritised the essentials for a functional hut.

So while we accomplished a lot in the short time there, there is still a number of items to address in the summer (sandfly season). See the sections below.

Statistics

Hours

264 volunteer hours spent including travel, planning, obtaining quotes, preparing funding, application, transportation and onsite works by 6 volunteers.
With a follow-up of 8 hours for claims and reporting and returning equipment and rubbish runs etc after the fact.

So a total of 272 hours of volunteer time expended.

Rubbish and project waste

We flew out all the old roofing iron and as much rubbish as possible however there was still a nominal amount of materials left under the hut due to flight loadings. A total of 385kgs of rubbish was taken to the local waste transfer station.

Donations and assistance

Thanks to the volunteers who provided their tools and expertise for the weekend.
Thanks to DOC for loaning us the aluminium heli bin and allowing us to do these great projects

Thanks to Te Anau helicopters for pushing the envelope and flying so close to dark to let us have more time

Thanks to the NZDA Southland branch that gave us a huge discount on the accommodation in Te Anau on the Friday night. There are not many places that allow for 3 trucks and trailers and noise late in the evening sorting loads.

And finally a massive thanks to the Back Country Huts Trust for the funding and support at short notice to allow this to be achieved and for looking after these special places.

Project learnings

The main learning is that organisation and planning and drive can achieve significant amounts in a short time. We now have the relevant templates and structures set up for future works programs that will assist other parties in achieve their work goals.

DO NOT rely on material suppliers to actually get the ordered material correct. We were significantly inhibited by the supplier of the building materials (not roofing etc) missing off items from the order and forgetting to add the items that were allocated into the packages for pick up, ie the roofing silicon and chimney seals were not included in the boxed supplies despite being on the order and packing slip. This was discovered AFTER the flight in, we were able to reuse the existing chimney cowl elements luckily and had one tube of sealant available that was luckily enough able to be used as an external sealant.

For similar chimneys as this one the reason the chimney leaked was because the condensation breath hole on the downslope side of the flashing had been siliconed over, trapping moisture inside the flashing that pooled and then flowed down the chimney give the false impression the chimney was leaking. RECOMMENDATIONS for all other huts with a similar flashing detail drill new weep holes on the downslope side of the flashing or remove the silicon sealing these weep holes.

A happy team of motivated people can all band together and despite the hard work, not a cursed word or disagreement was had, and the bonded friendships formed, will be for life.

Having ability to adapt a schedule or work program effectively is key to these style of works programs and utilising what you have available for problems that arise to make what you need if you find yourself short of something is also a key skill for these working environments.

Despite the hours and the work and the lack of recreational time, all personnel thoroughly enjoyed the project and would happily do it again.

Of course, while adaption to changes is admirable an extra day and not losing most of the first day would have been advantageous.

Soffit boards should be installed under the eaves to protect the membranes from vermin and ensure the collected moisture on the membranes drains to the facia eaves away from any wall top plates. This will also ensure a more visually appealing under eave.

Completed Scope elements

From the original scope the following elements were completed.

- Coordinate, procure and manage the activities below in conjunction with DOC and the BCHT.
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- Install additional Structural Timber as required to ensure the activity above can be carried out safely and install 53mm Multi bracing across the roofing in accordance with the residential building code for a building of this type.
- Fixings for the roof are to be profiled storm washers with EPDM Membranes at every second rib for edge sheets and every third rib for internals
- Replace the end barge boards and install new side Barge boards on the eaves.
- Install new Roof Flashings for the ridge and barge boards, Remove and replace the Chimney flashing and kea Proofing

- Remove clean and replace the existing gutters HOWEVER the existing gutter is brittle and damaged and needs replacing!
- Replace the existing bracing straps on the tank with stainless wire and empty and clean the tank,
- Install new stainless wire clothes line under deck and inside, around fireplace
- Clean existing clearlight roofing of deck
- Spray building with cleaner and clean and brush exterior cladding of hut ready for painting at a later time
- Replace joists on top bunk with stronger timber and install joist hangers
- Strengthen lower bunk with jack stud piles and joist hangers on existing joists
- Trim ferns and small regrowth in cleared area around hut
- Collect all rubbish and materials left over from the activities, safely pack and transport out

Items not completed or identified during works as requiring attention not on the original scope.

- Install pile fixing kits to the 4 corner piles to increase to 12 KN REASON the hardware supplier did not include these in the ordered package, we also ran out of time.
- Install subfloor bracing of the piles as the hut piles are all out of plumb and susceptible to seismic shaking. Installation of the above corner anchor kits and then diagonal bracing from these corner piles to two piles along each direction would be sufficient to provide seismic resilience to the hut. However please confirm with structural engineer.
- install new tank outlet hardware and install 20mm Alkathene overflow extension to new hardware to ground level REASON the hardware for the overflow was not included in the hardware suppliers packaging despite ordering. The 20mm alkathene (3m) has been left under the hut for future installation.
- The existing gutter is brittle and broke during removal there was also no gutter end or joins for the broken gutter so a temporary block and taped joint was installed to ensure the gutter flowed into the tank – the Guttering needs a full replacement with new materials, so a nominal 5 to 6m of guttering, two end caps and one downhole, plus new mounts to facia to ensure the new guttering can be installed. (the existing downpipe can be repurposed.)
- Repair corner of hut cladding were nails have pulled out with Tek screws REASON this was not possible as the nogs for this had been removed by people and burnt as firewood as there are in the firewood store area. so there is no structure to screw the cladding into. RECOMMEND install new timber nogs 75 x 50 is adequate to create these we left a few lengths under the hut for this
- Install new shelves in the firewood store (in conjunction with the above nogs for greater firewood storage. Reason we did not get time to install these.
- There is still some materials left under the hut. Mostly reusable materials with most rubbish removed RECOMMEND these remain for odd jobs or repairs as required.
- Cover existing white chimney sealant with Green or grey roof and gutter sealant

Epilogue

The sandflies were non existent (probably because they were frozen and it was dark most of the time), we had 15 minutes of sun on the hut each day but that was it. It was cold, damp and dark much of the time.
A great bunch of hard working volunteers and although we scared off any animal life in the area with the noise and lights, we know there is a small number of deer in the area in apparent balanced numbers. It was wonderful to be in that kind of country.

One member was running late on the Friday as in their haste had to return home to pick up forgotten supplies including their recreational item of choice and also picked up the wrong box of ammo, so while graciously accepting their speeding ticket from the local constabulary for being slightly too fast towing a trailer and after explaining what he was doing, and if any stores would be open that late in the evening to procure the required parts for the recreation device, the local constable not only issued him a warning and reduced the ticket fine but then turned up at the accommodation with some ammunition for the recreation device of choice that fitted! Gotta love Southland!

Next time we take more days, get to sleep more and maybe, maybe, have a quick hunting trip while in there as part of our recreational enjoyment of the areas and huts.

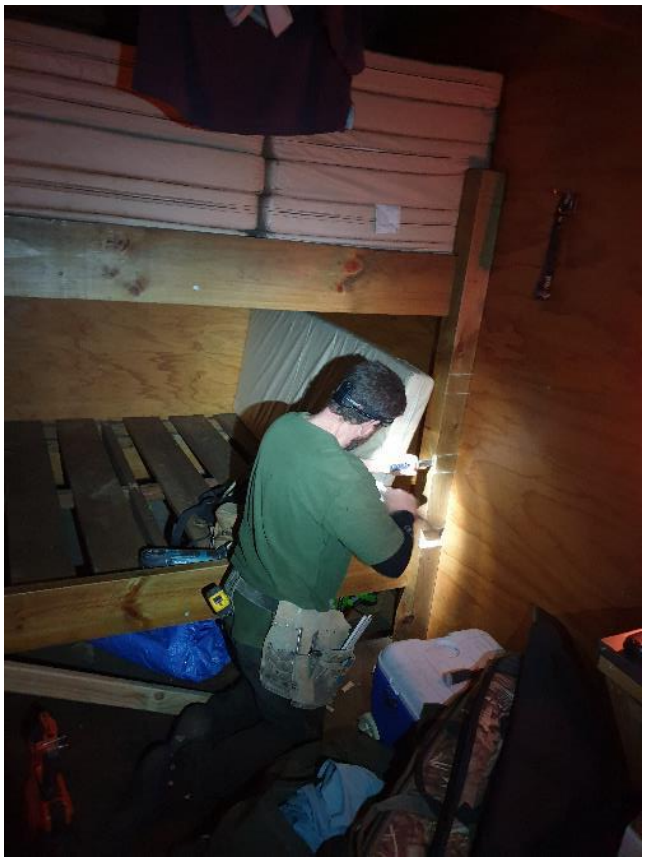
Photos

Pre reroofing internal of the Hut

Post reroofing internal of hut and new bunk access

Preflight Fog bound, sling load preperation

Precision front door placement of Sling load



New step construction for bunks

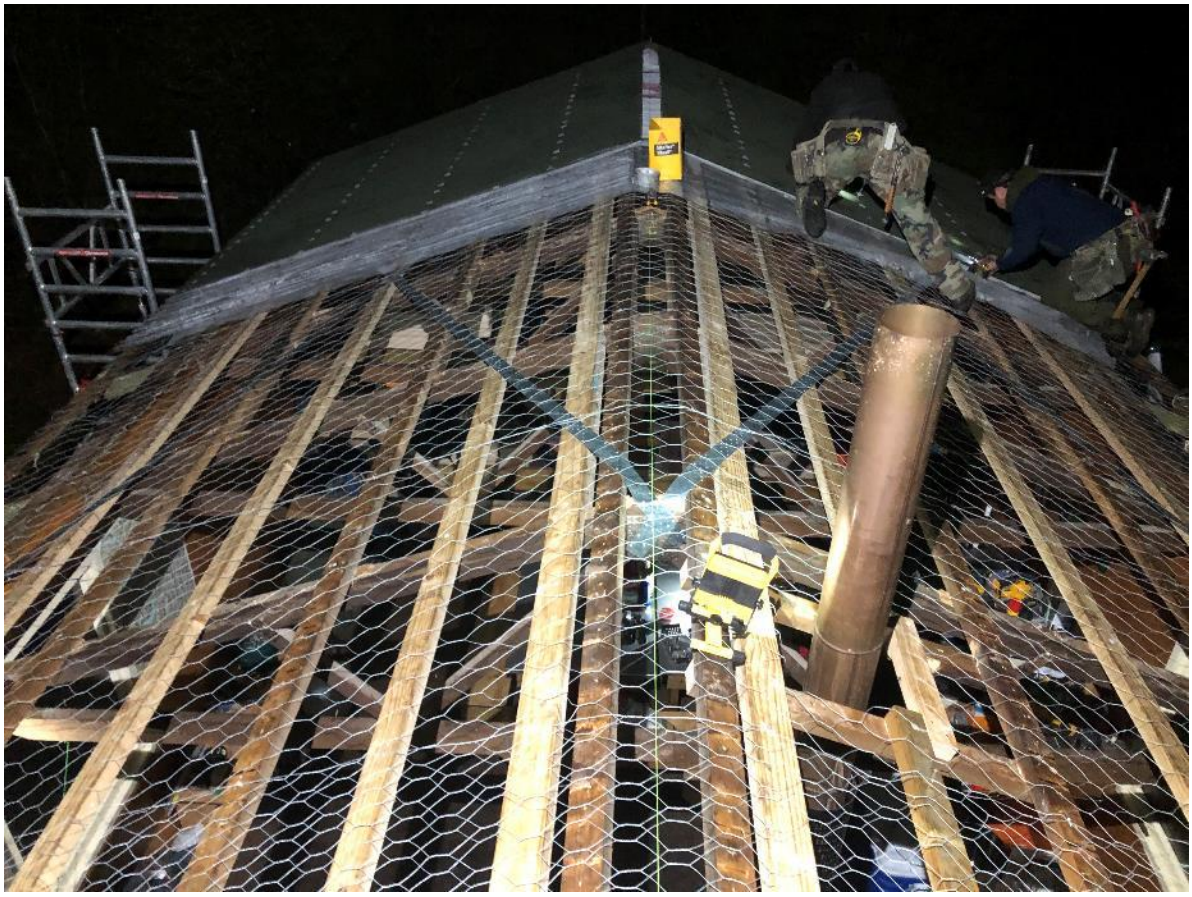
Exterior cleaning

Tank removal

Roof deconstruction

Restructure and bracing of roof underway

The Happy team



Night works reroofing

Cleaned and new seismic restraints on tank

Cleaned deck cover and new clothes line

New Fireplace clothes line

Completed reroof

Acknowledging those involved