Banaba, Kiribati
Asbestos Assessment

1. Background

On the 29 of May 2022, the Environment and Conservation Division Team conducted an asbestos assessment at the three priority buildings in Banaba. This was part of the Pacwaste Plus project administered by SPREP. The inspection was focused on three public buildings namely; Banaba Hospital, Junior Secondary School and Primary School and Fatima Catholic Church. The three buildings were selected based on the criteria for EU funding of Pacwaste Plus project. This was agreed by the ECD and Banaba team made of Island Clerk, MP – Tibanga Taratai, and Rabi Council of Leaders Island Manager Mr. Mwaroti Tamueru at the meeting held on the 2nd meeting 11 May 2022.

The objectives of the assessment are to assess condition of Asbestos Containing Material (ACM) and to quantify ACM and Possible Asbestos Containing Material (PACM) use at the three priority buildings.

2. Finding

Banaba Hospital

As shown in the photos below, the hospital is made of 13 structures, each around 30m long and 13 m wide. During the inspection, the team was told that only 1 building is currently occupied by Agriculture Assistant staff of Agriculture and Livestock Division. The majority of the ACM are found in roofing (including ridge cap and guttering), drain pipes, and in internal and exterior wall panel. The area is covered with large and small ACM fragments as shown in figure 3. It is important to note that building or structure number 4,5,6,7,9,10, and 12 as shown in figure 1 are relatively similar in size and design. Based on the type of ACM and PACM used in the hospital buildings, the estimated quantity of ACM summed up to 3,255 m2.

Figure 1. Banaba Hospital

1 – Former Out patient

The outpatient building is connected to operation theatre by roof (Number 3). The outpatient in particular has asbestos roofing and the wall is concrete and ceiling does not appear to be ACM.

The building contains used asbestos containing material (ACM) and PACM in internal and exterior wall. The roofing is aluminum. The internal wall, particularly the lower part of the wall appeared to be PACM and they are badly damaged with holes in them. The exterior wall observed to be similar to that used at the Primary school that previously confirmed to contain asbestos in the 2014 asbestos survey.

Figure 2. Out Patient – Number 1 as indicated in figure 1.

Figure 3. Look ACM roof near the outpatient building which believed to have come off from main building

Based on the type of asbestos found in the building, the building structure estimated to have contained about 180.96 m2 exterior wall cladding and 14.82m2 from internal wall.

2 – Former Pharmacy and Waiting lounge

The building contains two structures, the Pharmacy and contains asbestos and PACM in roofing (including ridge cap and guttering) and side ceiling. The ACM roofing is significantly damaged. There are loose ACM materials that appear to be fragment of broken roofing scattered around the buildings.

Figure 4. Pharmacy and Waiting lounge (orange arrow shows the direction where the photos is taken from).

Figure 5. Side ceiling are ACM. The photo on the right show ACM ceiling.

Figure 5 above is the view from inside the waiting lounge showing two side ceilings. The photo on the right is an example of ACM side ceiling. The ceiling in the middle is not asbestos but **mesonite.** There are holes in the ACM ceiling. The ceiling frame is very old and there are signs of delaying.

3 – Former Operation Theatre and lab

The only ACM observed in the building is the roofing, ridge cap, guttering and drainage pipes. The side panel as shown in the top photo in figure 6 is ACM. The same ACM panel is also use in opposite of the building. The building is constructed using concrete blocks, not ACM use in internal walls. There some broken roofing observed especially from inside the building. The ceiling timber frame appeared to be very old and show signs of decaying.

Figure 6. Operation Theatre

6 – Tea room

The ACM found in this building is roofing, guttering, drainage pipe, and walk way roofing as shown in the top right photo in figure 7. As shown in the figure 7 below, buildings indicated as numbers 4,5,6,7,9,10, and 12 are similar in design and size with various conditions of ACM used in each structure. All the seven have ACM roofs which are observed to be in good condition except for building number 12, farmer maternity ward where some of the roof panels are badly damaged. Some of the roofs have been replaced with aluminum roof sheets as indicated in figure 8. Most of the building's external wall cladding have minimal to no damaged observed. The internal wall claddings as shown in figure 8 contains asbestos which the same used in other buildings. Figure 8 shows that building number 12 are badly damaged with holes in them. There are also loose ACM scattered around the building which appeared to come from broken roofing of the walkway.

Figure 7. Tea room and photo of the walkway with ACM roofing and guttering.

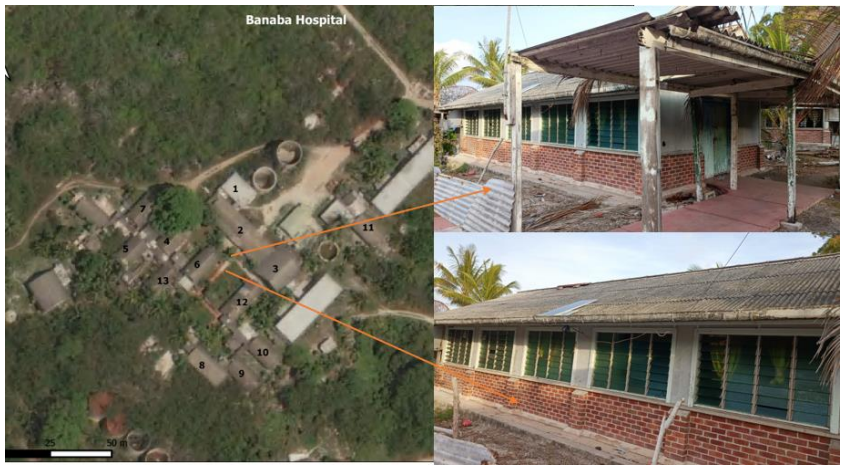


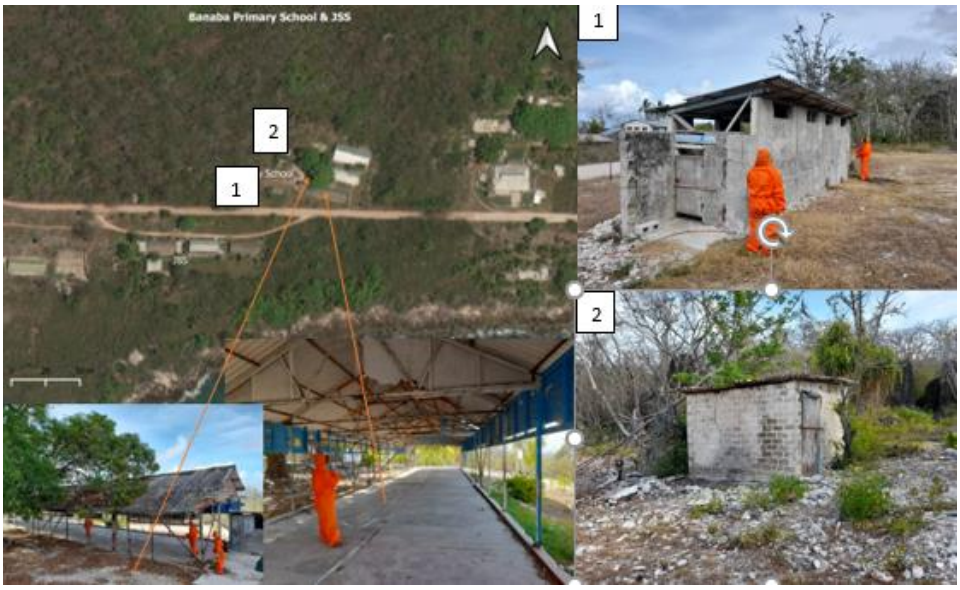
Figure 8. Former Maternity ward; photo on bottom right shows broken internal wall cladding and ACM drainage piping on bottom left

Primary School and Junior Secondary School

Primary School

The primary school is situated close to the main road as shown in figure 9. The former primary school class room or building is no longer used by the school but was used occasionally for school gatherings or functions. The results of the inspection confirmed that the ACM are used in old classroom roof, toilet roof and storage roof.

Figure 9. Primary school; and toilet marked at 1 and storage room marked as 2 in photo below



There is a pile of small fragments of ACM near the storage room which appeared to be a broken roof. Small debris of ACM are also observed near the storage room and toilet. The ACM roofs of the three structures are in condition except for classroom where broken edges are observed as indicated in figure 10. A preliminary estimate of quantity ACM used in school is more than 382m2.

Figure 10. Former Class from with broken roof at the end; replace with aluminum roof as circled in red

Junior Secondary School

The school consists of two buildings, double and a single storey building. The single storey has ACM in its roofing as shown bottom right photo in figure 9. The roof is in good condition. The double storey building is constructed with brick with ACM cladding. The cladding is in good condition with minimal damage observed indicated in figure 13. The building roof is made of aluminum roof, however, the varander has ACM roof as shown in figure 14. The top varander of the double storey has ACM roof and they are in good condition.

Figure 11. Junior Secondary School

Based on the type of ACM found in the JSS buildings, it is estimated that the ACM found at JSS is more than 195.96 m².

Figure 12. Large debris of ACM near the JSS believed to have come from double storey

Figure 13. Broken exterior wall cladding at double storey - JSS

Figure 14. Varander on top of concrete building with ACM roofing

Figure 15. JSS former class; view from inside the building showing ACM roof

Fatima Catholic Church

The church is located in high ground inland as shown in the photo figure 16.

The results of the assessment confirmed that the only ACM found at Fatima Church is in roof and PACM used in internal cladding. Figure 18, shows the type of cladding used in the upper ceiling which is observed to be similar in type and color to that used in the pharmacy internal wall cladding. Both the roof and cladding are in good condition with no damage observed during the assessment.

An estimate on quantity of ACM is 693.9 which is based on the ACM used in roof and cladding.

Figure 16. Aerial view of Banaba Catholic Church showing it access from main road

Figure 17. Banaba Catholic Church in Fatima village with ACM roof

Figure 18. PACM use in church internal wall (above the concrete wall)