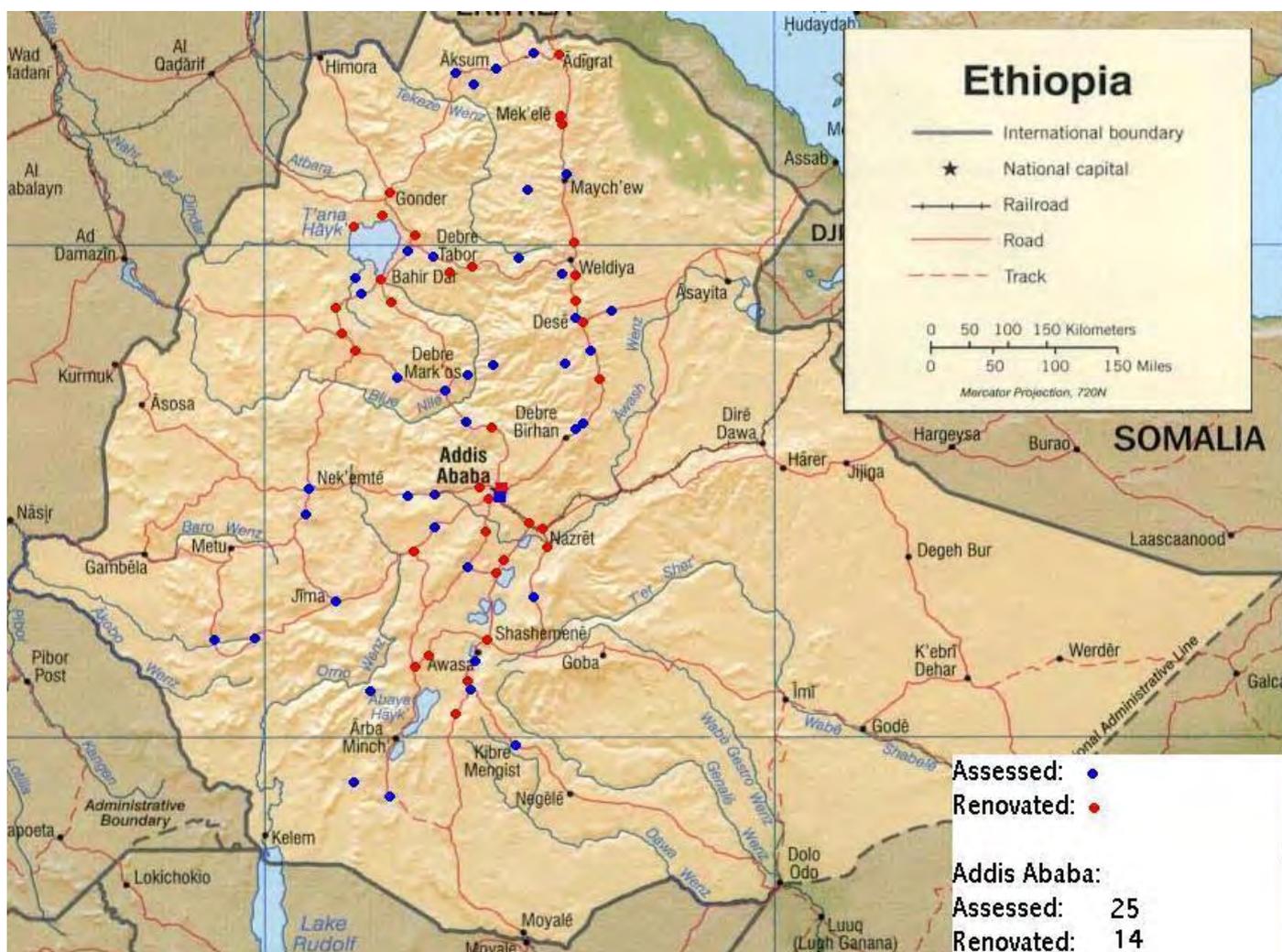


Health Center Assessment Handbook



.... a field guide for Architects and Engineers

Federal Ministry of Health
Planning and Programming Department

with assistance of the
Health Center Renovation Project

July 2008



Health Center Assessment Handbook

Introduction

This handbook is designed to provide architects and engineers responsible for conducting HC assessments with a set of instructions for performing this activity. It is based on the experiences of RHB engineers and the HCR project team in conducting 100 HC assessments throughout Ethiopia during the past two years (2006/2008). As such it has been extensively tested and revised to make it as useful as possible.

When correctly used,

- the required information and data will be collected,
- major problems and deficiencies will be identified, and
- a prioritized set of renovation (or expansion) works recommendations can be developed.¹

Purpose, Objectives and Tasks

The **purpose** of conducting a HC assessment, which consists of both engineering and health services components, is to identify problems and deficiencies that limit the provision of services. Then, based on an analysis of the findings a prioritized set of recommendations are made consistent with current FMOH standards and PEPFAR guidelines (COP06 and COP07) for the safe delivery of primary healthcare services, including HIV/AIDS and associated chronic diseases.

The main **objectives** of conducting HC assessments are to:

- assess the condition of the HC buildings and compound;
- estimate if the HC is over- or under-utilized;
- determine if the utilities and sanitation system are functioning and adequate for the needs of the HC;
- ensure the availability of adequate space and facilities for primary healthcare services as well as a full range of HIV/AIDS and co-infection services;
- assess if patient care is compromised by space limitations, inappropriate use of existing space and/or a combination of the two; and
- assess clinic (patient and staff) flow patterns, hygiene practices and environmental health control measures.

¹ It is assumed that prior to conducting HC assessments, technical staff will have successfully completed short-course training or mentoring as stipulated in the **Guidelines for Health Center Renovation Manual (SECTION 2, Subsection 2.4)**.

Specific tasks to be completed at the HC include:

1. Determine the physical (structural) condition of the buildings
2. Determine the condition of the water and waste water networks, water storage capacity and reservoirs, septic tank(s), dry pit latrines, toilets, sluices and any other sanitary systems
3. Check the space used for storage of drugs, consumable commodities and equipment²
4. Check the waste management system (e.g., the firebox – mistakenly called an incinerator)
5. Check the status and load of the electrical distribution system
6. Assess patient and staff flow patterns with respect to the “Patient First” principle
7. Assess how easy (or difficult) it is for patients to access health services, especially HIV/AIDS and TB, and the potential for cross contamination – mixing healthy clients seeking preventive services (e.g., immunization services or family planning) with infectious patients (e.g., untreated TB)
8. Determine the location and assess the condition of space used for treatment of chronic diseases, including HIV/AIDS and TB
9. Determine the location and assess the condition of space used for maternity care (labor, delivery and immediate postpartum) services in support of prevention of mother-to-child transmission (PMTCT) of HIV
9. Review hygiene practices (e.g., water taps and sinks for handwashing) in examination and treatment rooms (e.g., labor and delivery area) and environmental health control measures (e.g., is there adequate cross ventilation in examination and treatment rooms, especially those used by HIV/AIDS and TB patients)
10. Collect and prioritize the findings in order to link identified problems and deficiencies to potential solutions
11. Develop a set of preliminary recommendations consistent with resources available for renovation of the HC

Health Center Assessment Process

To ensure a consistent and complete collection of data during each HC assessment site visit, the set of instructions and procedures provided in the Handbook should be followed. Failure to collect all relevant data during the assessment visit can result in an incorrect analysis of the situation and inappropriate recommendations being made regarding essential HC renovation (or expansion) works needed.

To assist the team in conducting efficient assessments, at the least the following items and equipment should be taken on an HC assessment site visit:

² If out-dated drugs are stored in patient care rooms or areas, discuss the need to remove them and review the Drug Destruction Certificate with the HC in-charge or her/his designated representative (A.9).

- Layout drawings of HC designs from 1958 to the 1998 FMOH standard (**Annex 1**)
- Blank Health Center Assessment and Renovation Works Summary Report Form (**A.1**)
- Blank Health Center Data Collection Form (**A.2**)
- Blank Damages Assessment Checklist (**A.3**)
- Blank Damages Assessment Report Sheets (**A.4**)
- Blank Damages Take-Off Sheets (**A.5**)
- Environmental Health Control Guidelines for TB (**A.6**)
- Sample Health Center Memorandum of Understanding (**A.7**)
- Health Center Maintenance Management Checklist (**A.8**)
- Sample Drug Destruction Certificate (**A.9**)
- Sample Health Center Assessment Site Visit Report (**A.10**)
- Digital camera, wide-angle lens (18 mm) with high resolution (> 5megapixels)
- Measuring tapes, 5 m and 30 m
- Water quality and lead level test kits with instructions (**Annexes 2 and 3**)

The HC assessment process is divided into the following six stages:

1. Arrive at the health center
2. Do initial walkthrough with health center and/or woreda health office staff
3. Conduct detailed walkthrough and take measurements
4. Review data collected for completeness and prioritize the findings
5. Debrief health center and/or woreda health office staff prior to departure
6. Consolidate data and write reports

Depending on the size of the HC, it's age and physical condition, and the functional status of essential services (access to water, waste water disposal, sanitation and electricity) coupled with the experience of the assessment team, the site visit can take as little as a few hours (half day) to two days.

Stage One – Arrive at the Health Center

On arrival, introduce yourself (and the team members) to the HC in-charge and the woreda health officer.³ This should also include meeting available professional staff – nurses, midwife (and doctor if it is a large HC). As part of the introductions, explain the purpose of the visit, how the HC was selected and expected results of the assessment.

During the discussion, collect basic HC data (e.g., age of buildings, population served and range of healthcare services currently being provided and planned). Record this data on the **Health Center Assessment and Renovation Works Summary Report** form (**Attachment 1**).⁴ Also, ask about any problems or issues

³ If neither is available, identify the HC staff person assigned this responsibility.

⁴ This form should be completed on site and submitted to the RHB (or implementing agency office) within one week of the HC assessment being completed.

the HC staff consider important and note this on the **Health Center Data Collection** form (A.2). Once this task is completed, request the HC in-charge, or her/his designated representative, and the woreda health officer to accompany the assessment team on an initial (preliminary) walkthrough of the HC compound.

Stage Two – Do Initial Walkthrough

The objectives of this walkthrough are two fold:

1. To allow the HC in-charge (or designated representative) to show the assessment team the major problem areas and to discuss other issues
2. For the team to learn what each building is used for and the location of all departments or units at the HC (e.g., administration, registration and waiting areas, and outpatient department as well as other rooms/areas such as labor and delivery or antenatal care, the pharmacy[s] and special stores)

During this initial walkthrough, make a quick sketch detailing the layout of buildings and the activity/function of each room (e.g., labor room, sluice room or laundry area). It is important to gain access to each and every room, especially those identified as stores, which invariably are locked.

Specific tasks that should be undertaken during this initial walkthrough include:

- Take photographs of those rooms that have been unlocked during the tour (or may be locked immediately after the HC-in charge has left the room) because access may not be available later on. (Preferably use a digital camera with a wide-angle lens to document the findings.)
- Identify those areas/rooms/buildings that require attention/renovation or where there is significant deviation from the current FMOH HC standards
- Observe and record the relationship between HC staff and patients as well as the general treatment of patients (e.g., friendly and helpful) offered by the HC staff on the **Health Center Data Collection** form (A.2).

Stage Three – Conduct Detailed Walkthrough and Take Measurements

On completion of the initial walkthrough, a second more detailed walkthrough is required. Generally, only the assessment team members, accompanied by the RHB engineer, if available, are involved in this walkthrough. The objectives of this second walkthrough are to:

- Upgrade the initial sketch(es) of the HC compound noting the location of all buildings, walk ways, access road(s) and out buildings (e.g., dry pit latrine), water storage tank, septic tank and placenta pit;

- take relevant measurements (dimensions) of all buildings;⁵
- identify physical (structural) problems or damages, including those buildings damaged beyond repair (e.g., burned out or old, mud-walled buildings) that should be destroyed;
- locate water pipelines, the waste water disposal network and sanitary systems (toilets, dry-pit latrines, septic tank[s] and placenta pit) and fire box;
- determine potential areas within the HC compound for future expansion (e.g., site for dedicated general stores); and
- check patient, healthy client and staff flow patterns relative to various HC functional areas (i.e., registration, cashier, waiting area[s], preventive and clinical services, pharmacy, dispensary and administration).⁶

During this walkthrough:

- Take additional photographs of damages, problem areas and areas where alterations are needed. (Be sure to include general shots [15-20] of the HC compound, including access to the HC and any space available for future expansion.) At all HCs, take specific photographs of the labor room, delivery room(s), and sluice and clean rooms (if present).
- Using the **Damages Assessment Checklist (A.3)**, identify the appropriate repair method for the observed damages and record the damages on the **Damages Assessment Report** sheet (A.4) and **Damages Assessment Take-Off sheets (A.5)**. Cross-reference the room title on the floor plan layout sketch with the damage checklist according to the following sequence:
 - a) Ancillary facilities and external works, including manholes and pavement around the buildings
 - b) External walls, roof and overhanging parts, with particular attention to any structural damage to foundations, ground beams, columns, tie beams and load bearing walls
 - c) Windows, noting on the back of the checklist their size and type
 - d) Doors, noting on the back of the checklist their size and type
 - e) Fixtures and built-in cabinets or cupboards, noting on the back of the checklist their size and type
 - f) Location of central water supply to HC (e.g., ground and elevated water tank)
 - g) Location of sanitary fixtures (e.g., sinks and drains, toilets and utility drains, and septic tank[s])

⁵ If the HC design is based on an FMOH standard (e.g., 1998 HC standard), identify the standard plan type on the “as built” sketch (see **Annex 1** for additional standard designs). In this situation, it is only necessary to name the function of each building and rooms within it that conform to the standard design. For any additional buildings, however, take all measurements as above.

⁶ Healthy clients refer to those infants, children and adults in need of, or seeking, preventive health services such as immunization or family planning.

- h) Location and type of electrical fixtures
 - i) Walls, floors and ceilings finishings
- Take additional notes detailing such items as the condition of the access road, any access restrictions for construction deliveries or heavy trucks, and any space or site conditions that could limit potential expansion. (Attach another sheet if all the space is taken up by notes on doors, windows and other items.)
 - Take two water samples from an outlet closest to the point of entry to the HC or from the storage tank (reservoir); one sample will be used to identify possible bacterial contamination (48 hour test) and the second to measure lead levels (10 minute test).

Finally, throughout this walkthrough observe patient, healthy client and staff flow patterns to identify crowded and high traffic areas. As part of this process, note distances between registration and waiting areas, OPD, examination and treatment rooms, cashier and pharmacy. Where possible estimate the number of patients waiting at each area in order to identify actual/potential bottle-necks. Of particular importance, observe where HIV/AIDS and TB patients are examined and treated (e.g., near the entrance to HC or buried within HC compound).

Then, based on these observations and the data collected produce the following:

- A detailed set of sketches (“as built” drawings) of the entire the HC compound (external buildings and inter-building dimensions) based on the preliminary sketches made during the walkthroughs. This drawing should include the perimeter boundary, land levels and any natural factors that potentially could affect renovation recommendations. The sketch of each building should include the major dimensions and locate fixtures, such as sinks or built-in cabinets, desks or other fittings, and electrical outlets on the appropriate schematic sketch sections. Label the rooms (including verandas and corridors) and designate all windows and doors separately.
- A floor plan layout sketch with at least one elevation for each building. The drawn floor plans, sections and elevations should be sufficiently detailed to define the floor finishing, areas of damage and elevations.

Stage Four – Review Data Collected for Completeness

Prior to departing the HC, it is essential that the assessment team leader:

- spends time discussing the findings and observations with the other team members;
- conducts a through review of all data collected on the various forms, checklists and work sheets;
- goes over the sketches and reviews all measurements for completeness;
- scans the digital photographs to ensure that an accurate and complete representation of the HC “as built” has been obtained;

- is satisfied the major damages and problems have been identified;
- develops and/or reviews the preliminary set of recommendations with the team members; and
- has a clear picture of what is needed to improve the function of the HC based on revised clinical (patient, healthy client and staff) flow patterns as well as recommended hygiene practices and environmental health control measures.

NOTE: Time and care in conducting this review is especially important in order that as much information as possible has been collected for use in subsequently developing the computer-assisted drawings (CADs) and BOQ (see **Stage Six**, below).

Remember: Care doing this review is even more important for remote HCs that may take a full day's drive or more to reach!

Stage Five – Debrief and Depart the Health Center

Before exiting the HC, the assessment team should meet with the HC in-charge, or designated representative, and woreda health officer (if available). The purpose of the debriefing is to summarize the key findings (problems and deficiencies) and suggest any immediate actions that could be implemented to improve patient flow and patient/staff safety (e.g., open windows and doors and/or re-arrange furnishings to improve cross ventilation). (See **A.6, Environmental Health Control Guidelines for TB**, for details.) In addition, the team leader should briefly discuss those repairs or renovations that will most likely be in the final set of recommendations (e.g., leaking roof over OPD rooms or no water to examination or treatment rooms.) In addition, it should be explained to, and accepted by, the HC in-charge that re-allocation of space use (e.g., changing the location of services within the HC compound to improve patient and staff safety) will be a major consideration in the final set of recommendations.

As part of the exit debriefing, the team leader also should review the content of a sample memorandum of understanding (MOU) (**A.7**) with the HC in-charge and woreda health officer (if available) putting special emphasis on the potential availability of:

- matching funds from the RHB or woreda health office, and/or
- in-kind contributions by the HC (e.g., provide new benches, desks or shelving and/or labor for moving furniture).⁷

As a final discussion topic, the **Health Center Maintenance Management Checklist (A.8)** should be reviewed. Gaining acceptance of the need to implement the simple maintenance activities in this checklist is most important. Without benefit of routine maintenance, improvements to the water supply, waste water

⁷ Final agreement on any matching or in-kind contributions will be made during subsequent discussions or at the "site handover" meeting when the MOU is signed.

disposal, sanitation and electrical systems will be lost in a short time (sinks are again plugged and latrines overflowing).

Stage Six – Consolidate Data and Write Reports

The major outputs of the HC assessment visit are preparation of two reports:

1. Health Center Assessment Site Visit Report. This short report should be prepared as soon as possible after the HC assessment has been conducted (i.e., when the observations are fresh in the team members' minds). This report should be based, in part, on the interview with the HC in-charge, or designated representative. It should summarize the problems or issues the HC in-charge considers important, the main observations by the team, the preliminary set of recommendations and, most importantly, response to the feedback (debriefing) provided by the assessment team leader prior to departing the HC. In particular, it is important to note in this report:

- if the HC has access to other funds that may be combined with existing funds;
- what in-kind contributions the HC and/or woreda health office is prepared to make (e.g., help in moving furnishings and other items as part of improving space use, cleaning up the HC or removing/relocating damaged or non-repairable equipment); and
- does the HC accept the findings and preliminary recommendations, especially as regards changing the location of various HC activities and functions to improve patient and staff flow patterns and to make the HC environment safer for patients, staff and healthy clients?

To assist in preparing this report, a sample report is attached (**A.10**).

2. Health Center Assessment Report. This report should include the following:

- a. HC Compound Drawings. A detailed CAD of the entire facility “as built” should be developed that includes the name of each building and use of each room/area/space. In addition, a second set of CADs should be developed that identifies proposed clinical (patient and staff) flow changes, priority renovation activities and potential areas for expansion (new construction).
- b. Damage Take-Off sheets. A full set of take-off sheets should be provided that support the drawings and calculations for each room/building. This data is used in developing the HC renovation BOQ.
- c. HC Renovation BOQ. A full BOQ should be produced that quantifies all identified requirements, including any changes in space use, additional space (if required), upgrades/repairs to utility networks, maintenance works and other improvements. (The cost estimate should be based on construction prices for Addis Ababa with a regional factor applied depending on the HC location.)

ATTACHMENTS

The following reports, forms, checklists, and template formats have been developed to assist the HC assessment team collect and record data in a systematic way, simplify the data collection process and provide consistency in data collection.

- A.1 Health Center Assessment and Renovation Works Summary Report Form
- A.2 Health Center Data Collection Form
- A.3 Damages Assessment Checklist
- A.4 Damages Assessment Sheets
- A.5 Damages Take-Off Sheets
- A.6 Environmental Health Control Guidelines for TB
- A.7 Sample Health Center Memorandum of Understanding (MOU)
- A.8 Health Center Maintenance Management Checklist
- A.9 Drug Destruction Certificate
- A.10 Sample Health Center Assessment Site Visit Report

- Annex 1 Health Center Designs: 1958 to 1998 FMOH Standard
- Annex 2 Instructions for Testing Water Samples for Bacteria and Reporting the Results
- Annex 3 Instructions for Testing Water Samples for Lead Levels and Reporting the Results

Attachment 1

HEALTH CENTER ASSESSMENT AND RENOVATION WORKS SUMMARY REPORT FORM

NAME(S):

NAME OF HEALTH CENTER:

REGION:

CONTACT PERSON(S):

Phone:

Email:

DATES OF TRIP:

DATE SUBMITTED:

PURPOSE

The **purpose** of the site visit was to:

- _____ Conduct an engineering assessment
- _____ Conduct a HC renovation supervision visit
- _____ Conduct a HC renovation completed and approval visit
- _____ Other (specify):

PROGRESS IN ACHIEVING PROJECT RESULTS

Result 3. Contribute to the number of health centers renovated (20 in PY1 and 30 in PY2)

- _____ 3.1. Engineering and Health Services assessment conducted (Date:
 - _____ 3.1.a. Renovation required
 - _____ 3.1.b. No Renovation required
 - _____ 3.1.c. Renovation deferred (specify):
- _____ 3.2. HC construction on-going
- _____ 3.3. HC renovation completed and approved (Date:

At initial visit: Questions to be asked/answered

1. What is the estimated size of the population served by the HC? _____
The catchment area? _____(longest travel distance in kms)
2. Is the health center providing HIV/AIDS counseling and testing (BCT or PICT)?
 - _____ NO
 - _____ YES (name of agency providing training or equipment or supplies):
_____ FHI _____ IntraHealth _____ Pathfinder _____ Care and Support
_____ Other (name):
3. Is the health center providing antiretroviral treatment (ART)? _____ NO
_____ YES (name of agency providing training or equipment or supplies):
_____ FHI _____ IntraHealth _____ Pathfinder _____ Other (name):

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4. Is the HC providing prevention of maternal to child transmission (PMTCT) counseling and testing? NO
 YES (name of agency providing training or equipment or supplies):
 FHI IntraHealth Pathfinder Other (name):
5. Other services provided at HC:
 Emergency care and injections
 Family planning
 Immunization and under five children
 Labor, delivery and postpartum (If checked, estimated number of deliveries/month)
 OPD (general medical)
 Pediatric ART services
6. Is the HC providing mother-to-mother support group (MSG) services?
 No Yes (specify if space is sufficient) _____
7. Will additional room/space be needed if the health center starts pediatric ART services? No Yes
8. Does HC compound have space for general stores (new building or extension)?
 No
 YES 100 m² 200 m² (please identify potential site location[s] in sketches)

Results of water tests

1. Lead:

A. Time start:	Time end:	Result:
B. Time start:	Time end:	Result:

2. Bacteria

A. Date and time start:	Result:
Date and time end (48hours):	
B. Date and time start:	Result:
Date and time end (48hours):	

General Comments

Constraints or Limitations

Attachment 2. HC Data Collection Report

Assessor _____ Date _____

Facility Name _____ Woreda _____ Region/State _____

Name of Manager _____

Telephone _____

Population Served _____

Services Provided at Facility

OPD _____ Minor Surgery/Emergency: _____

Laboratory _____ Under 5s _____

Delivery/Labour _____ PMTCT _____

Budget Pharmacy _____ Family Planning: _____

Special Pharmacy _____ In-Patients: _____

Summary of Main Issues Identified by HC Management

Summary of Main Issues Identified by Assessment Team

Signature of Assessor

_____ Date _____

Attachment 3. Damage Assessment Checklist

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
Structural	Concrete works	Grade Beam	Failure, settlement, cracks, spalling, excessive deflection, cavities _____	Recasting Only, Reinforcement in place, Additional support stopping leakage, epoxy concrete injection, concrete jacketing, _____	
		Columns	Failure, settlement, cracks, spalling, Under laymen, _____	Recasting Only, Reinforcement in place, Additional support stopping leakage epoxy concrete injection concrete jacketing, _____	
		Foundation	Failure, settlement, cracks, Under laymen, cavities, spalling infestations _____	Test by Excavation and rectification, bulk excavation, rebuilding, termite treatment, apply water proofing coats _____	
	Masonry Works	Foundation Masonry	Failure, Cracks, Settlement, under laymen, infestations _____	dismantle and rebuild, replace, pointing, Demand Backing, termite treatment, apply water proofing coats _____	
		Paving	Under laymen, Lack slope, damaged, _____	Dismantle and rebuild, replace, correction, cleaning, mending, _____	

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		Load bearing walls	Failure, Cracks, Settlement, under laymen, plastering damaged, Painting damaged, cavities _____	dismantle and rebuild, replace, pointing, Demand Backing, plastering, painting, fill cavities, prevent moisture, apply crack arrester _____	
		Hollow Concrete Block	Failure, Cracks, Settlement, under laymen, plastering damaged, Painting damaged _____	dismantle and rebuild, replace, pointing, Demand Backing, fill cavities, prevent moisture, apply crack arrester _____	
		Solid Block	Failure, Cracks, Settlement, under laymen, plastering damaged, Painting damaged _____	dismantle and rebuild, replace, pointing, Demand Backing, fill cavities, prevent moisture, apply crack arrester _____	
		Brick work	Failure, Cracks, Settlement, under laymen, plastering damaged, Painting damaged _____	dismantle and rebuild, replace, pointing, Demand Backing, fill cavities, prevent moisture, apply crack arrester _____	
		Adobe Blocks	Failure, washed, Settlement, under laymen, _____	Complete replacement of the wall, dismantle and rebuild, fill cavities, prevent moisture _____	

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		Local Material	Failure, washed, under laymen, poor condition_____	Complete replacement of the wall, dismantle and rebuild, fill cavities, prevent moisture, apply crack arrester, _____	
		Infill Walls	Failure, Cracks, Settlement, under laymen, plastering damaged, Painting damaged _____	dismantle and rebuild, replace, pointing, Demand Backing, fill cavities, prevent moisture, apply crack arrester _____	
	Carpentry and Joinery	Truss	Members sag, under layman, termite problem, broken _____	Strengthen and Fixing only, complete dismantle rebuild, paint anti termite, strengthen, _____	Material to be reused
		Purlins	Members sag, under layman, termite problem, broken _____	Strengthen and Fixing only, complete dismantle rebuild, paint anti termite, strengthen, _____	Relaying on type of material used
		Rafters	Members sage, under layman, termite problem, broken _____	Strengthen and Fixing only, complete dismantle rebuild, paint anti termite, strengthen, _____	Material to be reused
		Posts	Disproportionate, spacing problem, termite, under layman, broken _____	Strengthen and Fixing only, complete dismantle rebuild, paint anti termite, strengthen, _____	Relaying on type of material used

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
Non - Structural Damages	Roof and wall cladding	Roof sheets	Leakage (sheets), under layman, poor material choice, wind and other problems, widened screw points, insufficient laps, crack _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, fix washer _____	
		Fixing devices	rusted, damaged, dismantled, under layman, _____	Re-fix, replacement, dismantle and reconstruct, strengthen with additional support, _____	
		Roof Gutters	Leakage (sheets), under layman, poor material choice, wind and other problems, _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, _____	
		Down Pipes	Leakage (sheets), under layman, poor material choice, wind and other problems, _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, _____	
		Copping and other flashings	Leakage (sheets), under layman, poor material choice, wind and other problems, widened screw points, insufficient laps, crack, _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, fix washer _____	

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		Brackets	under layman, poor material choice, wind and other problems, _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, _____	
		Stays	rusted, damaged, dismantled, under layman, _____	Re-fix, replacement, dismantle and reconstruct, strengthen with additional support, _____	
		Eve finishing	under layman, poor material choice, wind and other problems, _____	Re-fix, replacement, dismantle and reconstruct, strengthen with additional support, _____	
		External ceiling finishing (Ribbed sheet)	under layman, poor material choice, wind and other problems, _____	Re-fix, replacement, dismantle and reconstruct, _____	Material to be reused

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		Facia Board and corner list	under layman, poor material choice, wind and other problems, weathering, rots, splitting, checks, algae, discolouration, _____	Re-fix, replacement, strengthen with additional support, varnish, repaint _____	Material to be reused
		Valley gutters	Leakage (sheets), under layman, poor material choice, wind and other problems, widened screw points, insufficient laps, crack _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, fix washer _____	
		Soffits	Leakage (sheets), under layman, poor material choice, wind and other problems, _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, _____	
		Battens	Leakage (sheets), under layman, poor material choice, wind and other problems, _____	Sealant, replacement of sheets, dismantle and reconstruct, strengthen with additional support, _____	

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
	Openings and Fixtures	Doors	Frames damaged, trims corners, hinges damaged, lock set damaged, handles damaged, latches, bolts, paintings, immediate surroundings,	Replace or re- fix Frames, trims corners, hinges replace lock set handles, latches and bolts, replace entire opening, patch and paint, maintain immediate wall surfaces surroundings,	Material to be reused
		windows	Frames damaged, sag corners, hinges damaged, lock damaged, handles damaged, latches, bolts, paintings, immediate surroundings,	Replace or re- fix Frames, adjust corners, hinges replace, replace entire opening, patch and paint, maintain immediate wall surfaces surroundings, _____	Material to be reused

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		Shelf	Frames damaged, hinges damaged, lock set damaged, handles damaged, paintings, immediate surroundings, _____	Replace or re- fix Frames, hinges replace lock set handles, replace entire shelf _____	Material to be reused
		Cabinets	Frames damaged, hinges damaged, lock set damaged, handles damaged, paintings, immediate surroundings, _____	Replace or re- fix Frames, hinges replace lock set handles, replace entire shelf _____	Material to be reused
		Built in seats	Frames damaged, damaged, paintings, immediate surroundings, _____	Replace or re- fix Frames, replace entire built in seats _____	Material to be reused
		Fabricating elements	Frames damaged, damaged, paintings, immediate surroundings, _____	Replace or re- fix Frames, replace entire sit _____	Material to be reused

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
	Glazing	Clear Glass	Broken glass, lack beads, lack putty, lack paint, _____	Replace glass, put beads, putty, apply spray paint, _____	
		Frosted Glass	Broken glass, lack beads, lack putty, lack paint, _____	Replace glass, put beads, putty, apply spray paint, _____	
		Louvers	Broken glass, lack beads, lack putty, lack paint, _____	Replace glass, put beads, putty, apply spray paint, _____	
Other Damages	Finishing	Floor slab	Failure, settlement, cracks, Under laymen, _____	Recasting Only, Reinforcement in place, Additional support, screed, _____	Material to be reused
		Opening Seals	Broken seal, , lack beads, lack paint, _____	Replace seal, put beads for the damage, apply paint, _____	

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
	Finishing	Floor tile	Damaged, under layman, lack grouting, not appropriate, _____	Partial maintenance, rectification, need grouting, need complete replacement, _____	Tiles could be carefully removed and reused & Material to be reused
		wall	Cracks, Under laymen, damaged plastering and painting _____	Chiselling, crack filling, patching, Underlayment, relaying, Patching, plastering, painting _____	Material to be reused
		Skirting	Screed Failure, settlement, cracks, Under laymen, damaged plastering and painting _____	Chiselling, crack filling, patching, Underlayment, relaying, plastering, painting, _____	Material to be reused
		Screed	Screed Failure, settlement, cracks, Under laymen, damaged surface finishing _____	Chiselling, crack filling, patching, Underlayment, relaying, grouting, _____	

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
	Sanitary Installation	Fixtures	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		WC European	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		WC Turkish	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		Hand wash basin	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		Scrub up basin	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		Kitchen sink	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		Clinical sink	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		clinical sink	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		Laboratory sink	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
	Sanitary Installation	Pipes	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		Floor Drains	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		Sinks	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused
		Shower	partly damaged, not working, none existent, the system do not work, _____	Major maintenance, complete replacement, adjust and fixing, regulate and make functional, _____	Material to be reused

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
	Electrical Installation	Wiring	Damaged lines, proper distribution to circuit breakers, under layman, coverage and trouncing, danger, _____	Re fix, regulate and distribute to the breakers, replace the entire lining, put trucking, _____	
		Fixtures	Socket outlet not feting, design proper size and capacity, damaged, re-locate, _____	Re design Socket outlet, replace, re-locate, _____	
		Lamp holders	Dusty, require regulation, not proper, not fitting, not working, has disturbance, or danger, _____	clean and adjust, replace, align, make functional, _____	
		Circuit breakers	breakers not feting, design proper size and capacity, damaged, re-locate, _____	Re design Socket outlet, replace, re-locate, _____	
		Lamps	Dusty, require regulation, not proper, not fitting, not working, has disturbance, or danger, _____	clean and adjust, replace, align, make functional, _____	

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		switches	switches not feting, design proper size and capacity, damaged, re-locate, danger, _____	Re design Socket outlet, replace, re-locate, _____	switches
		Box covers	Does not exist, under layman, hazardously placed, _____	Re design cover, replace, re-locate, _____	Box covers
		switches	switches not feting, design proper size and capacity, damaged, re-locate, danger, _____	Re design Socket outlet, replace, re-locate, _____	switches
	External Works and Services	Culverts	Blockage, landscape problem, slide problems, drainage problem, lack of vehicle access _____	Access road landscaping, drainage solving, access provision _____	
		Surface water	landscape problem, slide problems, drainage problem, _____	Landscaping, provision of retaining walls, _____	
		Storage tanks	Not clean, rusted, not functioning, plumbing not properly done, structural problems _____	Needs cleaning, regulation of fittings required, support required, synthetic paint, _____	Material to be reused

Type	Bill Section	General Item	Findings	Remedial Actions	Remarks
		Paths	Not laid, walk way is damaged, not required, partly damaged, _____	Needs to be laid, walk way re-laid, part maintenance, pointing _____	Location and Material to be reused
		Fence	Does not exist, not land mark, design do not exist, fencing is mandatory, _____	Acquire title deed, land marking require, design should be adapted, , fencing is mandatory, _____	
		Gate	Does not exist, not land mark, design do not exist, gate is mandatory, _____	land marking require, design should be adapted, fencing is mandatory, _____	
		Septic tanks	Does not exist, not land properly designed, need maintenance,, _____	Require replacement, maintaining connections, needs additional sock away pit, _____	
		Soak away pits	Does not exist, not land mark, design do not exist, is not mandatory, _____	Require replacement, maintaining connections, needs additional sock away pit, _____	
		Drain Channels	Blockage, Broken, under laymen, required to be replaced, material finishing is poor, _____	Dismantle and rebuild, replace, correction, cleaning, mending, re-locating, re-design against landscape, _____	Drain Channels
		Storm water	not channels, not directed, not collected, system do not work, _____	provision of open channels, maintaining _____	Storm water

Attachment 4. Damages Assessment Checklist

Summary of assesement sheet & engineering estimates for XXX HC, Region YYY, Date

Sir No	Description	Unit	Qty	Remedy	Unit costs (birr)	Estimated total (birr)
1	Sink not functioning	No	2	Require to change the fittings and prefixing	250	500.00
2	Sink not fixed properly	No	5	Require re fixing and adjusting on the heights	100	500.00
3	Hand wash basin not functioning	No	3	require to change the fittings and prefixing	200	600.00
4	Require additional hand wash basin	No	2	Provide and fix a new hand wash basin under shaded walkways	350	700.00
5	sewage line for sinks and pipelines is not functioning	ml	200	Needs to identify the locations and alignments to the septic tank and check and make functional the drainage systems	40	8,000.00
6	Boiler in the laboratory not working	No	1	Require technical evaluation of the fitting and water head and connecting to the water line	100	100.00
7	Floor Drain	No	1	Needs new additional floor drain, dismantling the existing, check the drainage and reconstruct the alignment and place new floor drain	120	120.00
8	Floor finishing damaged	m2	48	dismantle carefully the existing cement tile and hand over to the client, pour emend screed with the thickness not exceeding 4cm depending on the existing elevations and provide and construct	80	3,840.00
9	Plaster damaged	m2	12	Patch the damaged and perforated plaster and apply three coats plaster	60	720.00
10	Ceiling Torne	m2	24	Replacing the existing abojedid ceiling	50	1,200.00
11	Ceiling require painting	m2	246	two coats of paint is required	25	6,150.00
12	Walls needs painting	m2	1823	three coats of paint	25	45,566.25
13	Roof damaged	m2	332	replacing of corrugated iron sheet is required to the entire OPD block	100	33,200.00
14	Electric is spread all-around the building	PCS	128	To fixed with appropriate fastening materials	60	7,680.00
15	Water tanker is short to the elevation of the fixtures	LS	1	Needs to be elongated by at least 200cm from the existing elevation (which include wall construction and	600	600.00
16	Gutter maintenance	ml	68		15	1,020.00
17	Construction of gutter for the entrances	ml	30		60	1,800.00
18	Maintaining roofs for Maternity block	m2	292	find and put covering seal for the holes		25.00
19	Shade for the patients dispensary is required	pcs	3	Construction of shade for the patients dispensary size not exceeding 200 x150cm with wooden posts and wooden rafter connected to the existing building wall and the roof to be corrugated iron sheet gage 30. Price include supplying, fixing, anchoring to the ground, placing in position and all accessories	1500	4,500.00
20	The stair under the shade lack proper landing	pcs	3	Construction of concrete landing all according to the existing but the landing to be 100 cm in depth and two times the size of the opening	1700	5,100.00
21	Gang way between admin(OPD) and injection room is damaged	LS	1	Dismantle carefully the existing gangway size 760 x 400cm rafter corrugated iron sheet with six wooden posts, and supply and re-fax the same all according to the existing. Price include 2 x 760 cm fascia board, gage 30 corrugated iron sheet and end coping, wooden stand, eucalyptus rafter and perlines and all accessories	3040	3,040.00
22	Storm water is over flowing over the gang way	less	3	Dismantle carefully the existing cement screed and mass concrete to do diameter 30 open concrete ditch, and to be covered with removable diameter 6 mm thick reinforced concrete the thickness not exceeding 8cm. Price include digging, supplying ditch, casting the cover, construction of inlet and outlet of storm water, and all accessories	100	300.00
23	The hatch window to the archive is very narrow not appropriate to the patients	PCS	1	Dismantle carefully the existing window size (40x50) opening size of (100 x100)cm for hatch window the space including the existing window, and supply and fix LTZ section with metal grill and 3mm thick clear glass hatch window. Price include dismantling, supplying and fixing and finishing the existing wall corners with plastering	650	650.00
						125,911.25

Attachment 5. Take Off Sheet

PROJECT _____

PAGE _____

BLOCK _____

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Attachment 6

Environmental Health Control Guidelines for TB¹

WHY TB IS A PROBLEM IN HIV/AIDS CARE SETTINGS

Persons with undiagnosed, untreated and potentially infectious (contagious) TB are often seen in HIV care settings, including VCT centers and clinics providing medical care to HIV-infected persons. TB is the most common opportunistic infection and a leading cause of death in persons with HIV-infection.

Persons with HIV-associated immunosuppression may become infected or re-infected with TB if they are exposed to someone with infectious TB disease. They can progress rapidly from TB infection to disease – over a period of months rather than the usual years for persons with a normal immune system.

Health care workers and other staff are also at particularly high risk of infection with TB because of frequent exposure to patients with infectious TB disease. Health care workers and staff may themselves be immunosuppressed due to HIV infection and thus be at high risk of developing TB disease once infected.

HOW TO REDUCE THE RISK OF SPREADING *M. TB* IN HIV CARE SETTINGS

There are measures that can be taken, even in resource-limited settings, to prevent unnecessary morbidity and mortality due to TB transmission in health care settings. Work practice and administrative control measures and environmental control measures are the focus of TB infection control strategies in HIV care settings. The goals of work practice and administrative controls are [1] to prevent TB exposure to staff and clients, and [2] to reduce the period of infectiousness by ensuring rapid and appropriate diagnostic evaluation and treatment for clients and staff suspected or known to have TB. These are accomplished through the prompt recognition, separation, evaluation, and referral of persons with potentially infectious TB disease.

Environmental controls are the second line of defense for preventing the spread of TB in HIV care settings. It is important to recognize that if work practice or administrative controls are inadequate, environmental controls will not eliminate the risk. Environmental controls include ventilation (natural and mechanical), filtration, and ultraviolet germicidal irradiation. Many environmental control measures are technologically complex and expensive, and thus more appropriate for referral hospitals. However, controlled natural ventilation can reduce the risk of spreading TB. Ventilation is the movement of air in a building and replacement of air in a building with air from outside. Natural ventilation relies on open doors and windows to bring in air from the outside; 'controlled' implies that checks are in place to make sure that doors and windows are maintained in the position that enhances ventilation. Fans may also assist in this process and distribute the air. When fresh air enters a room it dilutes the concentration of particles in room air, such as, droplet nuclei containing *M. tuberculosis*. Designing waiting areas and examination rooms so that they have maximum natural ventilation can help reduce the spread of TB. In warm climates, this means open-air shelters with a roof to protect patients from sun and rain are ideal waiting areas.

¹ Recommendations from the First Emergency Plan for AIDS Relief / USG and Partners ART Consultation in Ethiopia. August 1-10, 2005.

Information on Ventilation and Fans

Controlled natural ventilation

Natural ventilation refers to fresh dilution air that enters and leaves a room or other area through openings such as windows or doors. Natural ventilation is controlled when openings are deliberately secured open to maintain air flow. Unrestricted openings (those cannot be closed) on opposite sides of a room provide the most effective natural ventilation.

Propeller fans

Propeller fans may be an inexpensive way to increase the effectiveness of natural ventilation, by increasing the mixing of airborne TB as well as assisting in the direction of air movement by pushing or pulling of the air.

Types of propeller fans

Propeller fans include:

- Ceiling fans
- Small fans that sit on a desk or other surface
- Fans that stand on the floor
- Fans mounted in a window opening

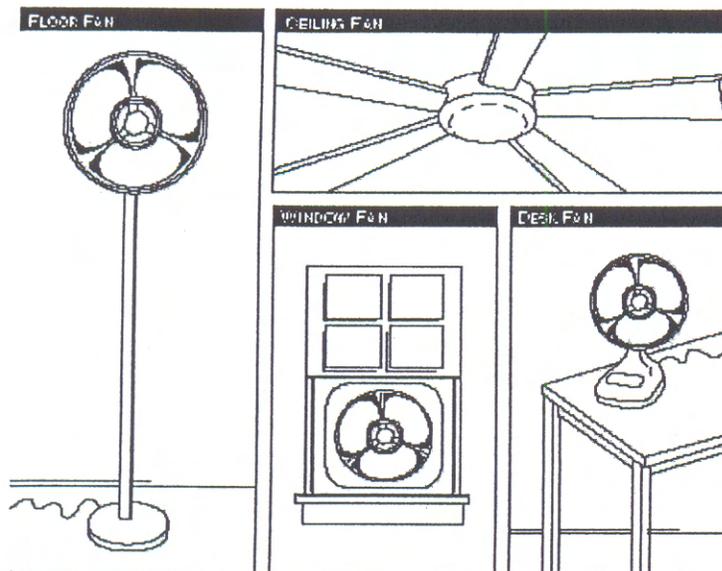


Figure 1. Propeller fans

Air mixing and removal

A propeller fan helps mix air in a room. Mixing of air will reduce pockets of high concentrations, such as in the corners of a room or in the vicinity of patients where natural ventilation alone may not suffice. The total number of particles in the room will not change with mixing; however, the concentration of particles near the source will be reduced, and the concentration in other parts of the room may increase.

If this dilution effect is combined with a way to replace room air with fresh air, such as an open windows and doors, the result will be fewer particles in the room.

A room with an open window, open door, and a fan will have less risk than an enclosed room with no fan, an enclosed room with a fan, or a room with an open window but no fan. In addition, mixing may increase the effectiveness of other environmental controls.

Directional airflow

If placed in or near a wall opening, propeller fans can also be used to enhance air movement into and out of a room.

Consider fans installed in the windows or through wall openings on the back wall of a building. The fans exhaust air outside, away from people or areas where air may come back into the building. If doors and windows in the front of the building are kept open, the overall effect should be to draw in fresh air through the front of the building and exhaust air through the rear. Health care staff should be mindful of the direction of airflow to ensure the potential source (i.e., patient) is closest to the exhaust fans and the staff are closest to the clean air source.

With this arrangement, the risk that TB will be spread is greater near the back of the building; however, once the contaminated air is exhausted, dilution into the environment will be fast.

Exhaust fans

There are a wide variety of exhaust fan systems. A system can be as simple as a propeller fan installed in the wall, or it could include a ceiling grille, a fan, and a duct leading to discharge on an outside wall or on the roof.

Over time, dust and lint accumulate on exhaust fan blades. The fans, motors, blades, and ducts become dirty and less air is exhausted. For this reason, these systems should be cleaned regularly.

Contacts

For further information please contact Dr. Lisa Nelson at 404-639-8456, email LBN9@cdc.gov or Dr. Naomi Bock at 404-639-8134, email NEB2@cdc.gov.

Attachment 7

MEMORANDUM OF UNDERSTANDING
BETWEEN
HEALTH CENTER RENOVATION PROJECT
AND
XXXX HEALTH CENTER
XXXX REGIONAL HEALTH BUREAU
FEDERAL GOVERNMENT OF ETHIOPIA

This Memorandum of Understanding (hereinafter “MOU”) reflects the understanding that the Health Center Renovation Project (hereinafter “HCR Project”), with an office located at the Sevita Building, Addis Ababa, Ethiopia, and the XXXX (hereinafter “XXXX HC”), located in XXXX Region, agree to establish a collaborative relationship.

TOGETHER the HCR Project and XXXX HC (hereinafter “the Parties”) have reached the following understanding:

ARTICLE ONE: UNDERSTANDING BETWEEN PARTIES

Goal of Collaboration

The goal of the collaboration between the Parties is to improve the physical condition and functioning at the XXXX HC in order make the prevention, treatment and care of patients with chronic diseases, including HIV/AIDS, safer and to provide a safer work environment for staff.

As the first step in this process, the HCR Project technical team in conjunction with the Health Officer In-Charge, or designated representative, conducted an engineering assessment of each health center.

Specific objectives of the engineering assessments were to gain an overview of each selected health center from both a physical and use perspective and:

- To assess the physical condition of the HC buildings
- To determine if the utilities (water supply and electrical system) and sanitation system (waste water disposal, toilets/latrines and septic tanks) are functioning and adequate for the needs of the HC
- To assess if patient care is compromised by space limitations, inappropriate use of existing space and/or a combination of the two
- To ensure the availability of adequate space and facilities for provision of the minimum package of HIV/AIDS (VCT, PMTCT and ART) and associated chronic disease services

Then based on the observations, a set of recommendations, including detailed engineering drawings and cost estimates were developed and will be reviewed by the HO In-Charge at the site handover meeting with the renovation works contractor. Of necessity, the recommendations focused on those essential renovations intended to improve basic functions (utilities, water supply, waste water disposal and sanitation), space utilization, and maintenance management of the health center.

Scope of Work

The HCR Project, and its contractual agents, will:

- Provide technical assistance, supervision and funding to renovate the XXXX HC based on the agreed upon and approved set of recommendations (see above, **Specific Objectives**)
- Ensure that the renovation works are completed in a timely manner barring natural disaster or other catastrophic events for which the HCR Project has no control (see **ARTICLE THREE: FORCE MAJEURE** for details)

Moreover, total expenditures to be provided by the HCR Project will not exceed XXXX Birr.

XXXX HC will:

- Provide in-kind contributions (e.g., benches, shelving and/or labor for moving furniture) as agreed on at the time the recommended health center renovations works are approved
- Implement routine health center maintenance activities as per time set in the **Attachment**

The latter is most important, because without benefit of routine maintenance improvements to the water supply, waste water disposal, sanitation and electrical systems will be lost in short time (sink drains are again plugged and latrines overflowing).

ARTICLE TWO: TERMS AND CONDITIONS

Subject to the prevailing laws and regulations in Ethiopia:

- The XXXX HC will facilitate access to the project sites of the HCR Project's Chief Engineer and Engineer and the contracted A&E Firm's professional staff in order to allow effective oversight and supervision of the works.
- The XXXX HC also will facilitate access to the project sites by the Contractor, who has been selected by the HCR Project, and its employees, in order to allow the effective performance of the renovations works.
- The XXXX HC will alter provision of services as required until the construction works are completed

Moreover, to the extent of its ability, the XXXX HC will expedite the clearance and processing of resources intended for use in conducting the renovation works.

ARTICLE THREE: FORCE MAJEURE

Any delays in or failure of performance by either of the Parties shall not constitute default or give rise to any claim for damages if, and to the extent, it is caused by or results from acts of God, earthquake, fire, explosion, flood, the elements, strikes, boycotts, labor disturbances or differences with workmen, acts of the public enemy, war, rebellion, riots, or any cause whatsoever beyond the control of the Party in default, but performance hereunder shall be resumed with all dispatch as soon as the cause preventing performance has been removed.

IN WITNESS THEREOF, the duly authorized representatives of the Parties sign this MOU in the English language in two (2) originals of equal content and validity on the dates and places indicated below, and agree to abide by the terms and conditions stated in this MOU.

**For the Health Center
Renovation Project**

For the XXXX HC

For the Woreda

Chief of Party

Health Officer In-Charge

Woreda Head

(date)

(date)

(date)

Cc: XXXX Regional Health Bureau

ATTACHMENT

Health Center Maintenance Checklist

DAILY (or after use)

- _____ Sweep walks and pick up litter on ground daily to prevent dirt being tracked into buildings
- _____ Dust and put benches and chairs in place in waiting areas
- _____ Sweep corridors and common areas
- _____ Clean delivery, treatment and examination tables daily and after use
- _____ Clean and change beds in labor room and female and male wards after use with soap and disinfectant
- _____ Wash floor in labor and delivery, emergency care and sluice rooms daily with soap and disinfectant
- _____ Clean toilets, showers and latrines
- _____ Check that sharps disposal containers (needles and syringes) are not full; replace when $\frac{3}{4}$ full

WEEKLY (or as needed)

- _____ Check water faucets for leaks and report if broken or damaged
- _____ Check sinks and drains and open if clogged (remove trap and clean)
- _____ Wash walls in labor and delivery room, emergency care and sluice rooms
- _____ Wash walls in toilets, showers and latrines

MONTHLY

- _____ Check water reservoir for leaks (tanks, pipes and connections)
- _____ If present, check water in holding tanks, that pump is working and cover is in place and locked
- _____ Check that cover on placenta pit is in place and locked
- _____ Check that pit latrine is not full (drop stone – time delay 1 second or longer)
- _____ Check incinerator and ash pit and clean debris around area
- _____ Check and replace dead/broken bulbs, electric socket outlets and switches
- _____ Wash floors and walls in male and female wards, corridors and public areas

SEMI-ANNUALLY

- _____ Check incinerator for damage and repair
- _____ Check manholes for functioning, especially for kitchen and sluice rooms
- _____ Check roof for leakage and put glue or putty on possible holes
- _____ Check doors, hinges and locks – repair or oil as needed
- _____ Check windows and replace broken glass as needed
- _____ Clean gutters and down pipes; tighten any loose connections
- _____ Check electrical system for shorts (whole HC)

YEARLY (or as needed)

- _____ Check storm water drainage and remove debris blocking system
- _____ Check that septic tanks not blocked
- _____ Check metal surfaces, especially in wet areas, and paint (every other year)
- _____ Check common areas and corridors and paint every other year

Attachment 8

Health Center Maintenance Checklist

DAILY (or after use)

- _____ Sweep walks and pick up litter on ground daily to prevent dirt being tracked into buildings
- _____ Dust and put benches and chairs in place in waiting areas
- _____ Sweep corridors and common areas
- _____ Clean delivery, treatment and examination tables daily and after use
- _____ Clean and change beds in labor room and female and male wards after use with soap and disinfectant
- _____ Wash floor in labor and delivery, emergency care and sluice rooms daily with soap and disinfectant
- _____ Clean toilets, showers and latrines
- _____ Check that sharps disposal containers (needles and syringes) are not full; replace when $\frac{3}{4}$ full

WEEKLY (or as needed)

- _____ Check water faucets for leaks and report if broken or damaged
- _____ Check sinks and drains and open if clogged (remove trap and clean)
- _____ Wash walls in labor and delivery room, emergency care and sluice rooms
- _____ Wash walls in toilets, showers and latrines

MONTHLY

- _____ Check water reservoir for leaks (tanks, pipes and connections)
- _____ If present, check water in holding tanks, that pump is working and cover is in place and locked
- _____ Check that cover on placenta pit is in place and locked
- _____ Check that pit latrine is not full (drop stone – time delay 1 second or longer)
- _____ Check incinerator and ash pit and clean debris around area
- _____ Check and replace dead/broken bulbs, electric socket outlets and switches
- _____ Wash floors and walls in male and female wards, corridors and public areas

SEMI-ANNUALLY

- _____ Check incinerator for damage and repair
- _____ Check manholes for functioning, especially for kitchen and sluice rooms
- _____ Check roof for leakage and put glue or putty on possible holes
- _____ Check doors, hinges and locks – repair or oil as needed
- _____ Check windows and replace broken glass as needed
- _____ Clean gutters and down pipes; tighten any loose connections
- _____ Check electrical system for shorts (whole HC)

YEARLY (or as needed)

- _____ Check storm water drainage and remove debris blocking system
- _____ Check that septic tanks not blocked
- _____ Check metal surfaces, especially in wet areas, and paint (every other year)
- _____ Check common areas and corridors and paint every other year

Attachment 10

Sample Health Center Assessment Site Visit Report

Summary of Visit

Met with Health Officer to conduct a Health Center Engineering and Health Services assessment at this facility .

Participants: CE and SCE.

Initial Observations:

- The facility was about 11 years old with a single building under construction for ART use. The design was of the previous standard of 5 buildings, of hollow concrete block construction.
- The buildings in general were in reasonable condition, with a fully functioning stormwater drainage system.
- The laundry room was being used as a store for equipment.
- Patients were waiting in the open, despite large verandas, due to a lack of benches/seating.
- Many door handles and locks were damaged.
- Many sinks were not working.
- There was no shade or waiting area outside the cashier and dispensaries (special and budget).
- A standby generator had been provided but was not used. Perkins diesel engine manufacturer in 1997, capacity 48 KW with 23 hours. The generator house was also used as a store for damaged equipment.

Clinical Observations:

- The shower and toilet facilities in the delivery area were being used as a store, as the water network was inoperative.
- Outside the sluice room was evidence of poor hygiene control through abandoned medical waste.
- Floors in general were not very clean.
- ART and VCT services were being provided by FHI (FHI staff member present).

Requests from the HC Staff:

- A new building for administration.
- Repair of waste system.
- Upgrading of Placenta Pit to be similar to that of Merawi HC.
- Repair of water network and make sinks function.
- Supply of beds of outpatients.
- Separation of male and female areas in the ward.
- Video for education including seating area.
- Repair to electrical network.
- Construct new dry toilet as current one is full.

Attachment 10

Comments from Assessment Team:

- Repair water and waste networks complete.
- Repair sinks and showers.
- Increase volume of water reservoir and upgrade stand.
- Construct new dry latrine.
- Provide shade for pharmacy windows.

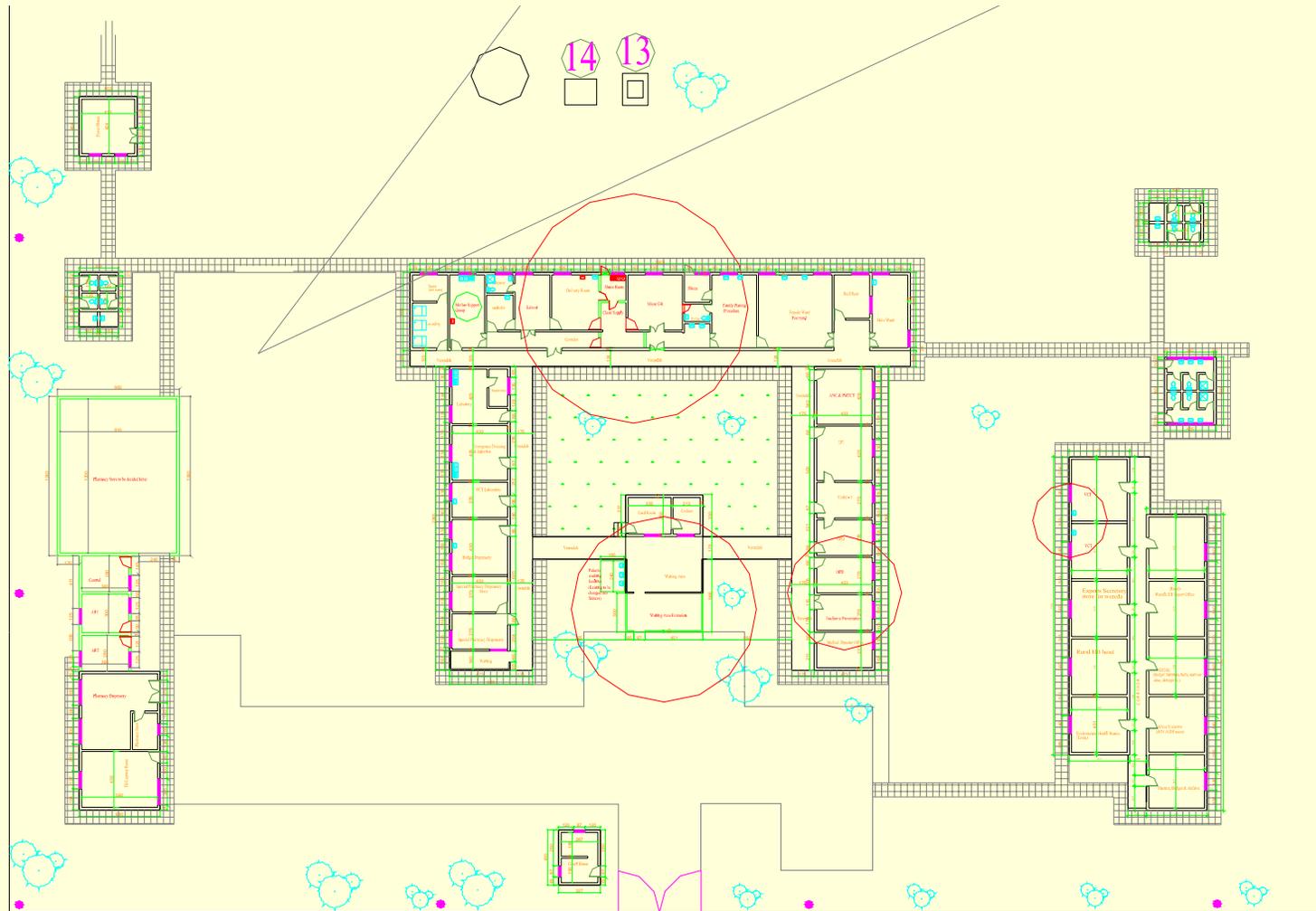
Annex 1

Specific Design Requirements for Health Centers in Ethiopia (1958 to 1998)

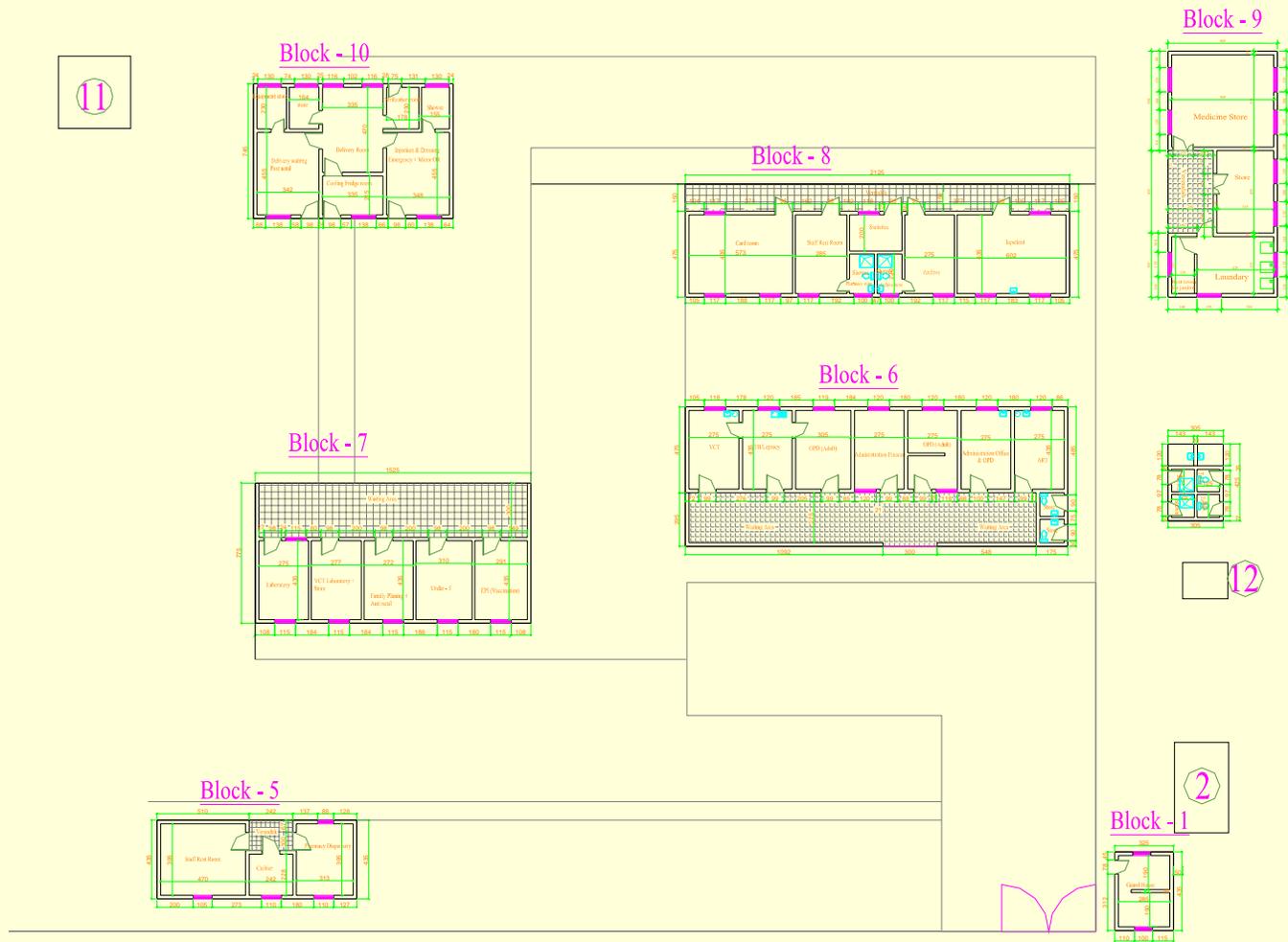
Listed below are the various types of health center designs.

1. FMOH HC Standard (HSDP I) 1998: Over 400 HCs of this type built in the past 10 years
2. World Bank (1998)
3. Red Barna (Variant II) 1980
4. Red Barna (Variant I) 1980
5. Red Barna (1980)
6. ESBU (1970)
7. Bahirdar and Zeway Health Centers (1960)
8. Mekele, Addis Zemen and Koladeba Health Centers (1958)

FMOH (HSDP I) Health Center (1998)

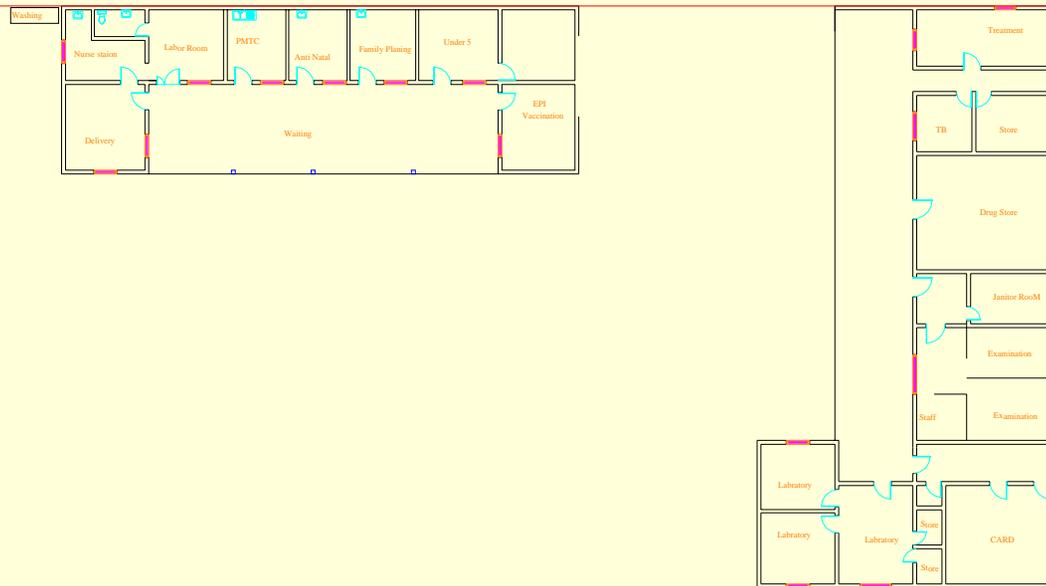


World Bank (1985)



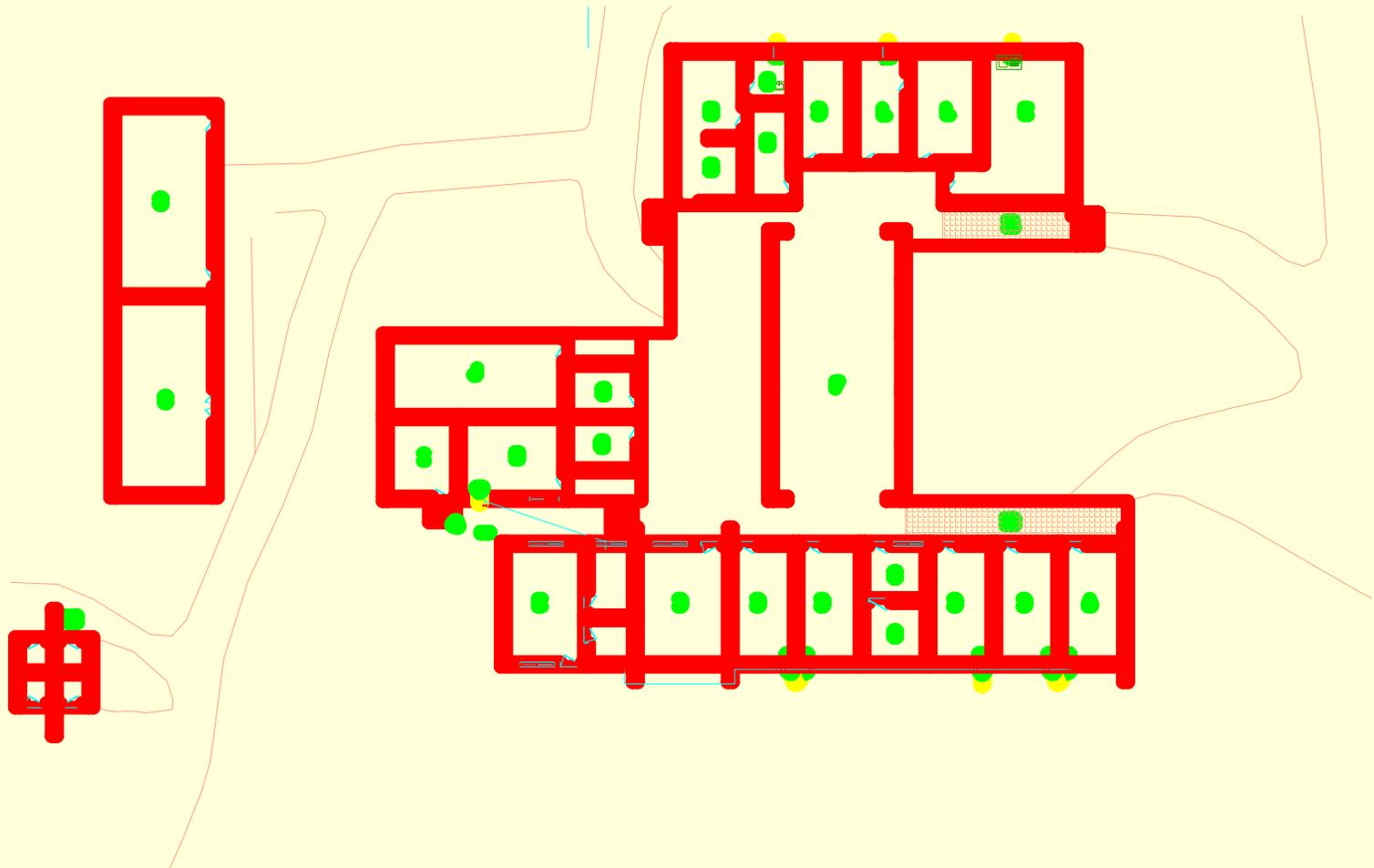
Redd Barna 1980 (Variant II)

Norwegian Save the Children



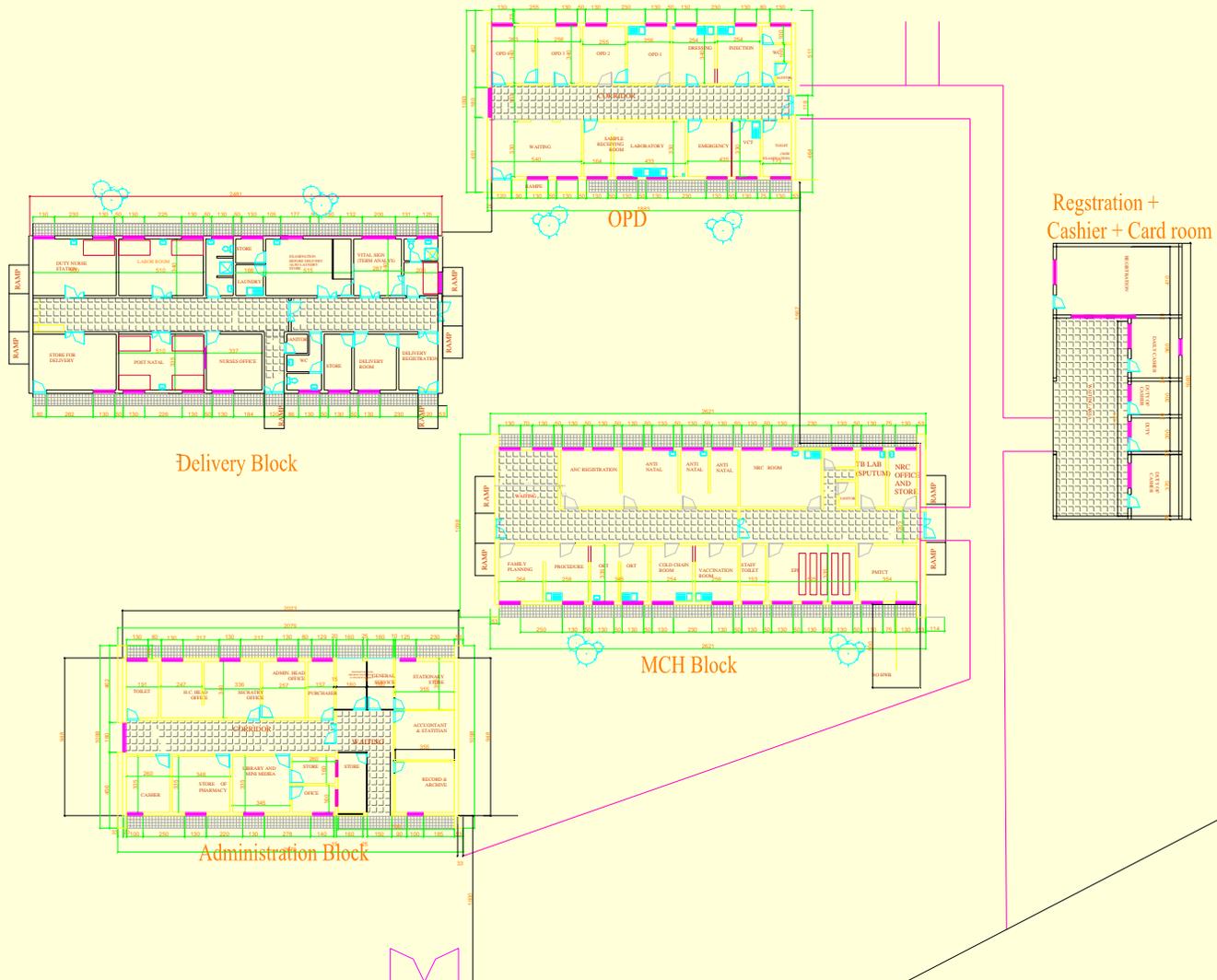
Redd Barna (Variant I) 1980

Norwegian Save the Children

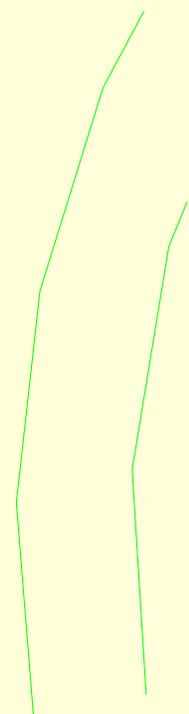
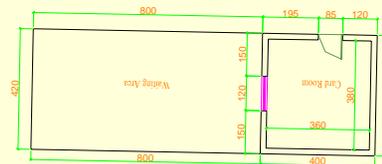
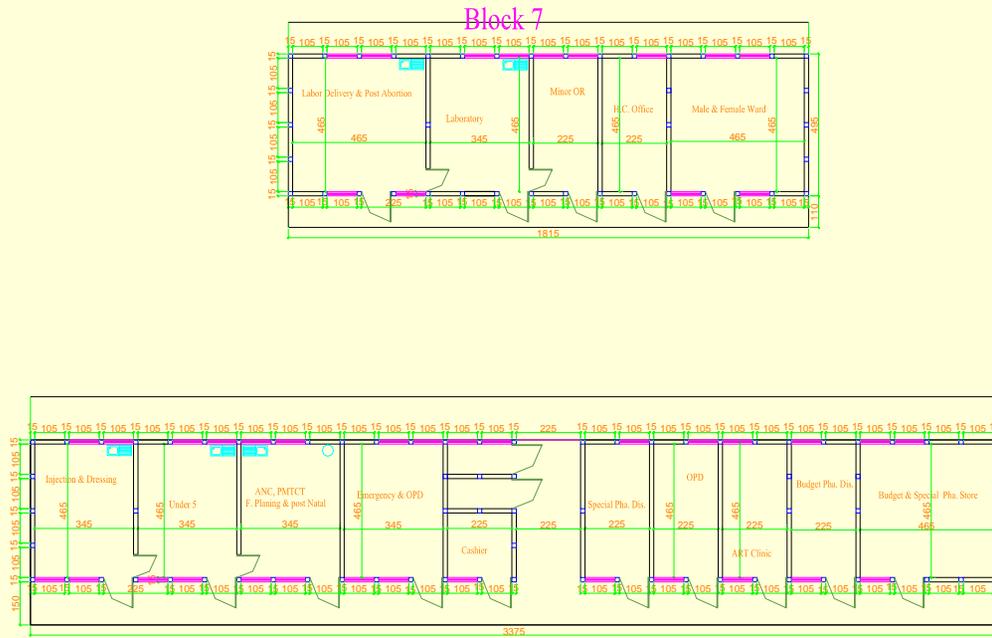
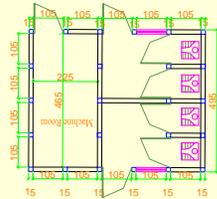


Redd Barna (1980)

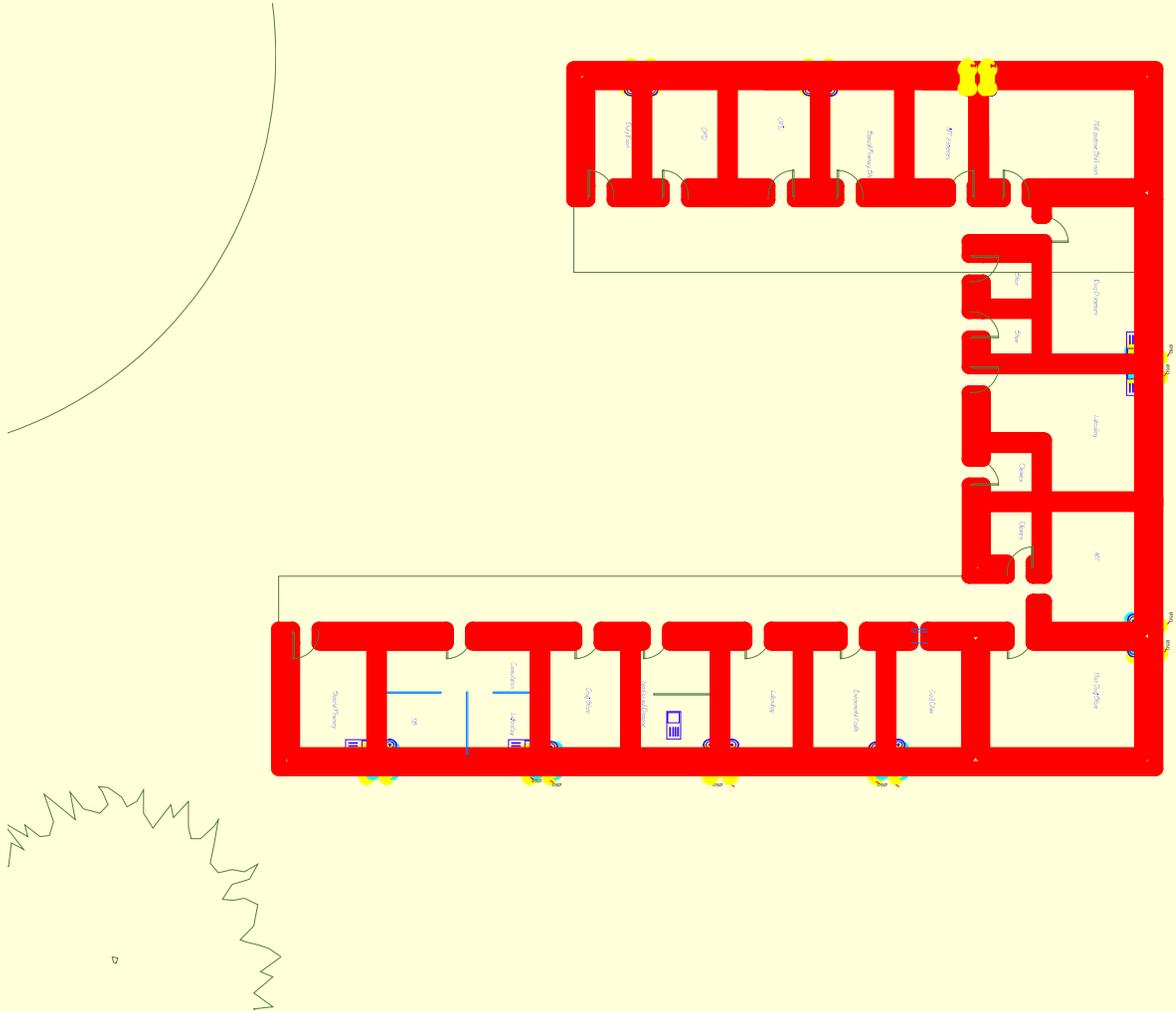
Norwegian Save the Children



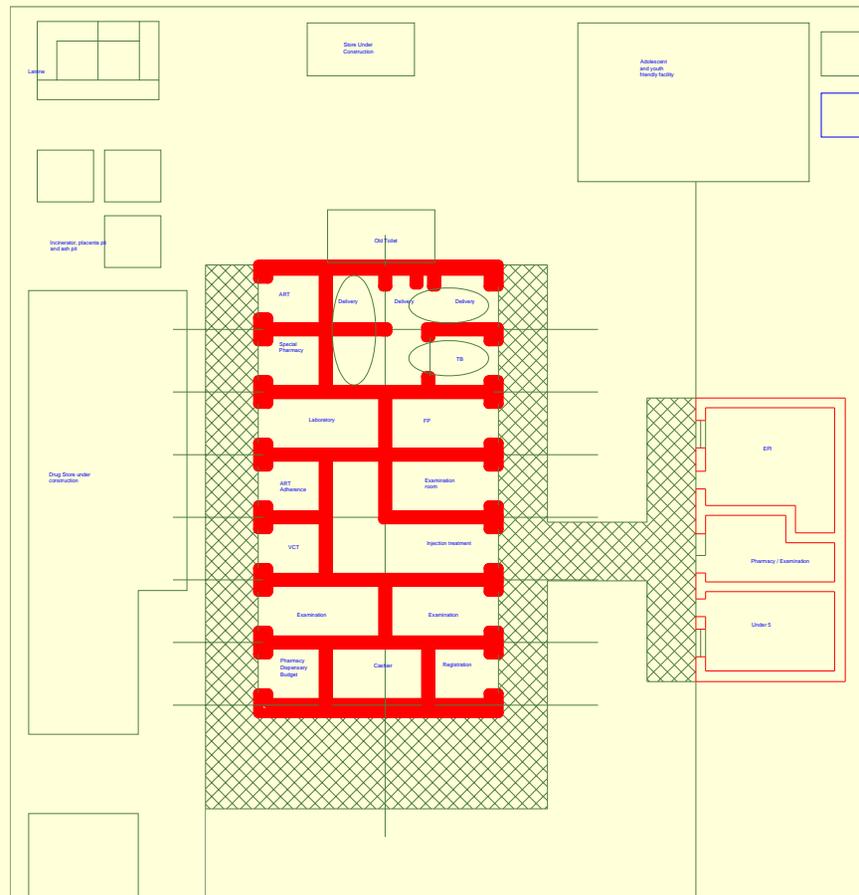
ESBU (1970)



Bahirdar and Zeway Health Centers (1960)



Mekele, Addis Zemen and Koladeba Health Centers (1958)



Annex 2

Bacterial Growth Check™ Test: Instructions for Performing and Reporting Results

Bacteria Growth Check™ Instructions

Part Number 481195-30

This test kit includes 30 packets of bacteria growth test strips, 30 clear plastic bags for incubating the strips, one color chart, and these instructions.

The Bacteria Growth Check™ strips have been specially formulated with Brain Heart Infusion media that allows maximum cultivation of fastidious aerobic bacteria found in water samples.

Test Procedure:

1. Dip one test strip into the sample for two (2) seconds.
2. Remove the strip from the sample and then place it into one of the clear small plastic bags.
3. Seal the zipper seal on the bag with a minimal amount of air in the bag.
4. Incubate at room temperature, in the dark where it will be undisturbed, for 48 hours. Incubation temperatures of 70 to 100°F (20-30°C) are okay. Ideally, the incubation takes place at 85°F (25°C).
5. After 48 hours, examine the test strip (do not remove from the plastic bag) for aerobic bacteria growth by comparing the strip to the color chart.
6. Record your results.
7. Dispose of the plastic bag with the strip in regular trash that is not accessible to children or pets.

Typical Bacteria Growth:

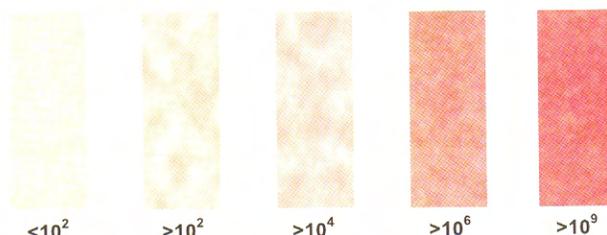
Color Chart Value	1	2	3	4
Growth Levels ^{bacteria} / _{ml}	<10 ²	>10 ²	>10 ⁴	>10 ⁶

< = Less > = Greater

Rev 10/00-BGC



Test Instructions Located on Reverse Side



ESTIMATED BACTERIA GROWTH LEVEL < = Less > = Greater

Annex 3

Watersafe® Lead Test: Instructions for Performing and Reporting Results

Watersafe® Lead Test

Part Number: 487997 Contains: 2 Tests

The Watersafe lead test is a rapid immunoassay test for lead in drinking water. This kit contains everything you need to find out simply and accurately if your water has unsafe levels of lead. The test can detect lead at very low levels, even below the Action Level established by the US EPA (15 parts per billion, or one drop in a large swimming pool). The Watersafe Lead Test can be used on water from faucets, wells, and home purification systems.

Store and use tests at 50-86°F (10-30°C). Do not use on hot water. Do not open the Watersafe package until immediately prior to use - exposure to air damages unused tests. Do not use tests after the expiration date printed on the package. Do not reuse any part of the test kit.

Lead: This heavy metal contaminant can be toxic even at very low levels. Lead enters water supplies through corrosion of plumbing fixtures (pipes that many houses and building still have) and leaching from natural ores.

Beware - lead contamination is silent: it does not change the color, taste, or smell of the water.

Hazard/Risk: Lead can cause developmental damage to the brain and nervous system, as well as other health problems. Families with young children should be especially concerned about lead.

Recommended water treatment: Reverse Osmosis and Active Carbon Filters (solid rock or pre-coat).

Learn more about your drinking water! Your state Department of Health is also a valuable source of information. Call the EPA's Safe Drinking Water Hotline: 1-800-426-4791.

Instructions on
Reverse Side of Card.

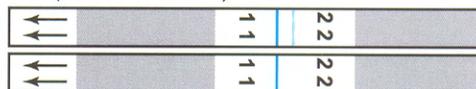


INSTRUCTIONS

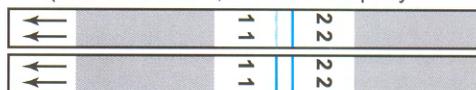
Read ALL instructions before starting test:

1. Open Watersafe foil pouch and take out all contents. The test kit contains one Lead Test Strip, one sample vial, and one dropper pipette, as well as a desiccant packet (to be discarded).
2. Using the dropper pipette, place water sample in the test vial. To pick up sample, tightly squeeze the bulb at the end of the pipette and place open end into water sample. Release the bulb to pick up sample, then squeeze again to expel sample into vial. Use only one pipette-full of water. Swirl vial gently for several seconds. Place vial on a flat surface.
3. Place the Watersafe test strip into test vial, with arrows pointing down.
4. Wait 10 minutes. Do not disturb strip or vial during this time. Blue lines will appear on strip.
5. Take the strip out of the vial and read the results:

NEGATIVE: Bottom line (next to number 1) is darker than top line (next to number 2).



POSITIVE: Top line (next to number 2) is darker than bottom line (next to number 1), or lines are equally dark.



6. Note: If no lines appear, or both lines are very light, the test did not run properly and the result is not valid.

If your test strip shows a positive result, your water sample may contain lead at a toxic level. Take appropriate action.

for more information, call
INDUSTRIAL TEST SYSTEMS, INC.
at 1-800-861-9712

R074-PbW

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