Partners for Water and Sanitation

Note on project reports

The following report has been prepared by Partners for Water and Sanitation in response to a project Terms of Reference.

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Partners for Water and Sanitation

43Eth: Twinning Support to Water Works Design and Supervision Enterprise

Visit Report

28 Oct to 6 Nov 2008

Submitted by:

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PAWS Independent Consultant

November 2008

Contents amendment record

This report has been issued and amended as follows:			
Revision	Description	Date	Signed
A	First Draft issued to Melkamu Jaleta and Rebecca Scott for consultation and comment.	23/11/08	D Rathmell
B	Final version of complete report issued to • Nagesh Gemtessa Gen Man WWDSE, Rebecca Scott Proj Man PAWS • Melkamu Jaletta Country Manager. • Richard Patterson NEC Expert Mott MacD • Stuart Campbell PAWS Partner NMC	5/12/08	D Rathmell
Note	Guidelines for Setting up a Joint Review Board in Appendix 4 are issued under separate cover to • Ato Adunga Jabessa State Minister MoWR • Bekele Gadessa Gen Man WWCE	5/12/08	D Rathmell

Contents

1. Purpose of this Visit Report

This report is intended primarily for:

- the Ministry of Water Resources (MoWR)
- the Water Works Design and Supervision Enterprise (WWDSE) and
- the Water Works Construction Enterprise (WWCE)

to summarise the visit by David Rathmell PAWS Independent Consultant 28 October to 6 November and Richard Patterson, procurement specialist of Mott MacDonald to Addis Ababa, Ethiopia from 3 to 6 November 2008.

2. Background

The Water Works Design and Supervision Enterprise (WWDSE) was established under the Council of Ministers regulation No. 42/1998 in October 1998 to work as a public Enterprise. This proclamation was amended in August 2004 to accommodate the ever expanding duties and responsibilities of the Enterprise.

A high level Board of Management appointed by the government controls the overall activities of the Enterprise. A General Manager heads the Enterprise. The General Manager reports to the Board of Management that in turn reports to the supervising authority, which is the Ministry of Water Resources (MoWR)

The first visit to the Design and Supervision Enterprise by the author took place in July 2006. The original terms of reference reflect the Design Enterprises' goal to become a "Reputed International Consultant". In order to move towards this objective PAWS have been assisting WWDSE in its understanding of Quality Management Systems and good business practice drawing on experience gained from the UK construction industry. From the start it was agreed that WWDSE should seek ISO 9001:2000 certification. The Design Enterprise has completed an 18 month process of Business Process Re-engineering.

A follow up workshop was held in Addis in February 2007 to consider communication, planning and design issues. It was first suggested at this workshop that the NEC form of contract should be considered instead of FIDIC. NEC is user friendly and encourages team work to achieve a common objective of project delivery rather than the confrontational approach of more traditional forms of contract.

The third visit took place in April 2008 when the key objectives were:

a) To identify and recommend suitably qualified and capable local quality management consultants that can assist the Design Enterprise in achieving ISO 9001 certification.

b) To discuss and agree with the Design Enterprise a schedule for seeking ISO 9001 certification.

c) To obtain agreement in principle to the concept of setting up a tripartite review board in order to foster good communication and understanding between the MoWR, WWDSE and WWCE.

PAWS is also working with the Water Works Construction Enterprise (WWCE) to improve its contract management practices. A 6 week exchange visit of Ethiopian Engineers from the two Enterprises took place from 15 June – 26 July 2008. They were based at Minworth Wastewater Treatment plant hosted by Severn Trent Water. The exchange visit was organised and sponsored by North Midland Construction Ltd. Improved communication strategies are a major key to improved business practices in both Enterprises. The visit was designed to show construction management practice in a UK setting.

3. Objectives of the Recent Visit

Following on from previous visits and the Exchange Visit held in the UK during June/July the visit was intended to build on certain key issues.

2.1 Assess progress made to achieve certification to ISO 9001 and ensure adequate measures are in place to achieve this key objective in a realistic timeframe.

2.2 Establish the setting up of a Joint Review Board agreed in principle at the April Visit by the author.

2.3 Participate in a familiarisation site visit to Tendaho Dam and Irrigation Project

2.4 Promote the use of an effective software planning tool i.e. Asta Powerproject.

2.5 Assist Richard Patterson in setting up and holding an NEC workshop to raise awareness of this modern Form of Contract.

4. Quality Management System

4.1 Opening meeting with Ato Mekuria H/Yohannes - 28 October

Integrated Quality Solutions have been appointed as the local Quality Management Consultant to assist the Design Enterprise in Developing its Quality Management System and attaining ISO 9001 certification.,

One day training for top management has been held. This was presented by Ato Tadesse Solomon (TS) Partner from Integrated Quality Solutions.

In addition a five day training event has been held for the Quality Management Implementation Team titled “ISO 9001:2000 QMS Development and Implementation Course” There were 32 attendees at this course in September including most of the departmental heads.

The Implementation Team had been selected from different departments and approved by the management team. The team comprises:

Team Leader: Mekuria H/Yohannes (MY) – Service Delivery Improvement Dept Head

- Taye Duressa– Water Resources Study Dept Head
- Dawit Nirie – Laboratopry Service Head
- Ibrahim Dinku – Divisional Head for Dam and Irrigation Contract Administration
- Leulseged Abayneh Divisional Head Irrigation and Dam Design
- Kinfe Tekleab – Surveyor and CAD Technician
- Aynalem Birahanu – Procurement Officer
- Gelan Daba – Personnel Officer
- Dereje Ayalew – Senior Civil Engineer
- Mohammed Oumer – Senior Sanitary Engineer

A draft **Quality Policy** and **Business Objectives** have been developed and given to TS, the rep of Quality Consultant for comment before presenting to the management team.

A **Gap Analysis** was carried out by the consultant during 4th – 8th September. See scanned copy of report I – QUAS/GAP/007 in Appendix 2.

Terms of Reference (TOR) have been prepared by MY and TS for the Implementation Team. This was used to demonstrate the commitment required from the Implementation Team so that management would fully support the effort required.

4.2 Meeting with I – QUAS Consultants and MY - 29 October

The draft **Quality Policy** was reviewed and suggestions made for defining scope of services provided by the Design Enterprise to give much greater clarity.

Discussions were also held about the **core processes** and role of project management in the company. This subject was discussed more fully at a later meeting.

Initial discussions with Alemayehu and Tadesse agreed on the following issues:

- Need for a standard template for drafting procedures
- Importance of top management to support the implementation of QMS
- Selection of an appropriate certification body to ensure they add value to the organisation. This will be the start of an ongoing relationship for many years to come.
- Scope and purpose of the implementation plan.

It was also agreed that in order to draft procedures it is important to understand the core processes which deliver the services and products of an organisation. At the time of the authors visit the **organisational structure** was under review by the management team and until this is finalised and approved it is not possible to commence drafting procedures. Approval of the organisation structure was anticipated in the next four weeks.

DR presented an outline proposal for a **QMS Structure** that from his experience of working in the industry would meet the requirements of WWDSE. This structure is based upon all core and secondary processes required to deliver design and supervision services in the water sector. It also satisfies the requirements of the ISO 9001 Standard. A copy of the proposed structure is included in Appendix 3.

The **Implementation Plan** was amended with revised dates to allow for the approval process of the enterprise structure by the management team. A scanned copy of the Implementation Plan is included in Appendix 4.

4.3 Meeting the Implementation Team - 4 November

A meeting was held with all members of the Implementation Team to discuss their role in assisting MY in developing and implementing procedures. This was a very worthwhile meeting to enthuse and encourage the team members in playing an active part. Each member of the team is a specialist in their field and has been selected because they understand best what they do in their departments.

Drafting procedures must always be done by persons who understand the process so the written procedure is realistic and appropriate. It is also important to ensure that all persons in the department buy into the standard way of doing an activity described in the procedure.

Being a member of the Implementation Team will aid personal development and give each person a much better understanding of how their departmental activities fit into the overall service provided by the enterprise.

There was discussion on particular topics including eliminating design defects by proper checking procedures, standard systems for procuring equipment, proper processes for recruiting and training staff and calibration of surveying and laboratory equipment. Dawit Nirie raised some concerns about the proposed layout of the new laboratory and discussions took place about storing technical standards, filing test certificates and records and the storage of soil samples.

4.4 Follow up meeting with I-QUAS - 4 November

a) Project Management Issues

Tadesse Solomon gave a presentation from ISO 10006 on the important role of **Project Management** in a company such as the WWDSE. It was agreed that the need to review the Management of a Project from inception to completion should be integral to the overall delivery of all projects.

In principle this would be based upon a three stage review process:

- Project Reviews
- Management Review
- Joint Review Board

DR expressed the view that the Design Enterprise has a conflict of interest in its delivery of services. Its expertise is clearly technical in so far as most of its specialist engineers are technical experts in their respective fields. I.e. hydrologists, structural engineers, hydraulic engineers, mechanical engineers, electrical engineers etc. However in order to deliver projects different skills are required. **Project management** skills cut across all other disciplines. Project managers need to understand matters affecting time cost and quality issues. These involve project planning and reviewing, budgetary control, resource management; customer related issues as well as technical coordination. All these affect the successful outcome of a project.

This issue affects the way the QMS is compiled and how the different processes interrelate. It is important to have a very clear understanding of the role of Project Management. A good tool to assist is the **Business Process Map** which shows all processes required to deliver a project and their relationship to each other. This is a requirement of the Quality Manual.

b) Customers

DR also suggested that in his view and in the spirit of the ISO standard the Design Enterprise has Customers and not Clients. The latter has more legal connotations.

5. Joint Review Board

5.1 Meeting Tesfaye Kidane and Mekuria Yohannes - 28 October

Currently meetings are held with the Ministry on a daily basis. These are unplanned and it is impossible to present factually correct upto date information. Often the General Manager or a member of the management team is summoned to a meeting without being told what it is about.

MS Project is used to manage projects backed up by monthly reports.

It was agreed that for the **Joint Review Board** to succeed it must have new and unique features. These are:

- Joint Review Meetings are planned ahead.
- Meetings are based on regular fixed dates at quarterly intervals
- Meetings are attended by the same management team
- Meetings are supported by an effective planning tool backed up by adequate progress reports showing real time information.
- Meetings must be minuted to capture key decisions.

5.2 Meeting at MoWR on 30 October

Present:
Ato Adugna Jabessa (AJ) – State Minister for Water Resources
Ato Mogesie Ayele (MA) – Head of Contract Administration Department
Ato Nagesh Gemtessa (NG) – General Manager – WWDSE
Ato Yilikal Worku (YW) – Deputy General Manager - WWCE
Ato Melkamu Jaleta (MJ) – PAWS, Ethiopia Country Manager
Mr David Rathmell (DR) – PAWS Independent Consultant

Purpose of the meeting was to build on the key decision agreed at the PAWS visit in April to establish a Joint Review Board

MJ introduced the purpose of the meeting and reminded everyone present of the background leading up to this point. NG expressed his desire for the Joint Review Board to be established and described the benefits he believed would be achieved. YW also described the most unsatisfactory manner in which construction staffs are constantly engaged in argument and confrontation with consultants in Ethiopia. He described his experiences from the recent exchange visit to the UK and said that he hoped it would be possible to encourage more collaborative ways of working.

The **State Minister** said he was very supportive of this initiative and recognised the need to monitor the ambitious 15 – 20 year national water programme. He agreed that the **Joint Review Board** concept would work with the Public Enterprises but did not believe it could work with privately run projects.

Key Decisions:

- First meeting of the Joint Review Board is to be held at the end of the European Calendar Year i.e. end of December 2008
- PAWS is to provide "Working Guidelines" and facilitate the use of good planning tools Ref. Appendix 5 "Guidelines for setting up a Joint Review Board"
- The second meeting of the Joint Review Board scheduled for the end of March 2009 will be attended by David Rathmell..

5.3 Meeting with Nagesh Gemtessa on 4 November

DR presented a draft Project Status Report to NG. Amendments were made to the content and the final version was subsequently incorporated into the Guidelines for setting up a Joint Review Board. Ref Appendix 5.

6 Visit to Tendaho Dam and Irrigation Works

6.1 Schedule

31st October travelling from Addis Ababa via Debre Zeyit, Nazret, Metehara, Awash, Gewane, Mille and Logiya to Tendaho. A total distance of 560km (350 miles) taking 8 hours driving time from Addis. The party comprised Mekuria H/Yohannes, Tadesse Solomon, David Rathmell and driver.

4.0 pm Briefing in site office by Yaschilal Wolde, Assistant Civil Engineer, Design Enterprise. A leaflet had been prepared setting out key design data and general description of the works. Ref Appendix 6.

7.0 pm Dinner on Construction site with His Excellency Ato Asfaw Dingamo Minister for Water Resources, Ato Nagesh Gemtessa and staff from both Enterprises.

1stNovember Site tour to the dam and irrigation works conducted by Yaschilal Wolde. Demonstrate Asta Power Project software to YW, MY and TS.

2nd November – Travelling back from Tendaho to Addis Ababa.

6.2 Impressions from the site visit.

Tendaho dam construction site is 12 km from the Logiya main road to Semera. This is the main trucking route to Djibouti Port. The dam site is 400metres above sea level and has a much hotter climate than Addis which is more temperate. The dam site is only about 150-200 kms from the Danakil depression which is 100 metres below sea level, one of the most inhospitable places on Earth.

Dam construction is complete. It was reported that water is impounding at the rate of 10 cm per day and will soon reach its top water level of 410.4 m above sea level. The spillway is 50% complete having placed 27000 cum of concrete out of 45000 total. The 6.0m diameter diversion tunnel is in use. The Intake tower is also complete. The Head regulator and Cross Regulator are both complete. 20 km of the main canal have been built out of a total of 72 km.

Original completion of the dam, spillway and headworks was scheduled for June 2008. Forecast completion is now Jan 2009. Delays have been due primarily to a shortage of cement production as there is a high demand in the country from the road and building sectors.

A Work Breakdown Structure WBS is produced for each structure to itemise work activities. All working drawings are approved. Detailed design is done on site by engineers from the Design Enterprise. Major design queries are referred back to head Office via email, fax or telephone. AutoCAD facilities are available on site.

The Engineering department do weekly and monthly detailed reports of activities and quantities using MS Project. Every activity is remeasured based upon a detailed B of Q for payment purposes.

The monthly report goes to Department Managers and the Project Co-ordinator at the Design Enterprise. It was not clear what review output goes to the MoWR i.e. the customer.

Every Friday pm a weekly site progress meeting is held between the Resident Engineer and the Site Project Manager. Look ahead programmes or construction schedules are produced on Excel spreadsheets.

The labour force numbers 1500 locally recruited workmen. The construction Enterprise has 500 staff including plant operatives on site. The Design Enterprise employs 40 staff of which 50% are surveyors, drivers, lab technicians and secretaries.

6.3 Opportunities for improvement

6.3.1 Construction Planning

The use of MS Excel spreadsheets for planning work activities is very time consuming and not able to react dynamically to changes in construction sequences. Spreadsheets are not intended for planning activities and so cannot predict the outcome of changes to scheduling or resource loading. For this purpose an effective planning tool should be used. DR took the opportunity to demonstrate the Asta Powerproject software using a Demo CD to Yaschilal Wolde, Mekuria Yohannes and Tadesse Solomon.

The benefits of using this software are fully described in section 7.

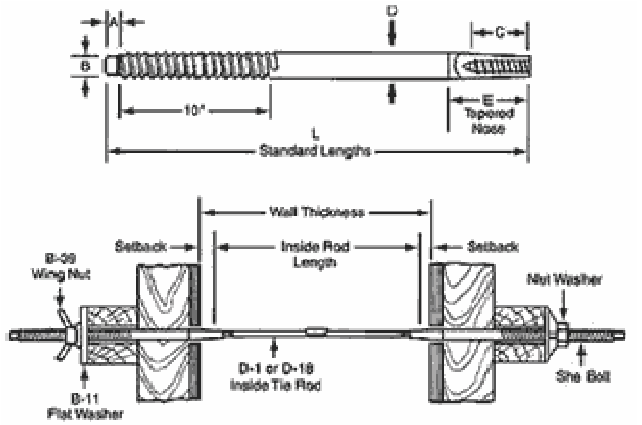
6.3.2 Concrete Quality Finishes.

Before making any specific observations let me first say that the scale and standard of the works was most impressive and a credit to the Construction Enterprise staff working in such difficult circumstances. The site visit was not intended as an exhaustive inspection of standards of workmanship and quality of finished product. However I noted the following whilst inspecting the concreting activities on the Spillway and in my opinion they are worth mentioning.

There did not appear to be any concrete spacer blocks in use to ensure consistent external cover to reinforcement. Typically 40mm cover is required for reinforcement on water retaining structures.

Excessive lipping on horizontal joints between successive lifts on vertical faces suggests that there was some leaching of cement during concrete placing between the formwork. When asked what was used for holding formwork together and preventing movement during concreting I was advised it was normal practice to use tie wire. This would seem to be unsatisfactory. Good practice is to use threaded tie bars with turnbuckles on the outside of the formwork. In the UK a further refinement is the use of a special cone on the end of the tie bar so that when shutters are stripped the cone is easily removed and the end of the tie bar grouted to ensure there is no corrosion path. A propriety type of formwork tie bar is the She-Bolt.

There are two types in common usage. The RMD system which uses a sleeve for the Tie Rod so that the entire fitting can be withdrawn after concreting leaving the sleeve and tapered ends to be grouted up. The Williams system which is illustrated below and leaves the tie rod embedded. Only the tapered ends require grouting. The Williams system is easier to place inside the formwork initially before concreting but has the disadvantage of having to replace tie rods.



She-Bolts

HD Reusable tie-end that is removed from the concrete, leaving behind the inner-tie rod.

She-Bolts accommodate all wall thicknesses and various form thicknesses.

Another minor point to ensure a good horizontal joint is achieved is to attach a length of timber to the top inside edge of the formwork on successive pours. This creates a grout check for the next lift. The vertical formwork would then be fixed below the grout check and firmly secured using the She Bolt connecting system through the previous concrete lift. I am not sure if this practice was being carried out.

6.3.3 Welding Practice

Reinforcement mats were being spot welded on the ground by untrained local labour. Safety equipment was in use and is to be commended. The concern was about the standard of spot welding. Would not better welding standards and probably increased output be achieved if there was a supervisor welder on site to provide basic instruction in welding practice and techniques? This person would have to be a member of staff like the plant operators.

These comments are made in good faith and bearing in mind the remote nature of the site and the availability of local unskilled labour. However in the authors experience a good job can always be made better by attention to detail.

7. Asta Powerproject

7.1 Introduction

A free Demonstration CD was shown to Yaschilal Wolde, Assistant Civil Engineer, Design Enterprise at Tendaho site. The CD and supporting leaflets were left with Mohammed Ibrahim at the Design Enterprise.

- Asta Powerproject Brochure
- 13 Reasons to use APP over MS Project

Launched in 1988, the software development programme has been driven by construction customers via independent user group feedback ever since.

It is the easiest, most intuitive project management software tool for construction. There are over 40,000 users worldwide. 45 of the top 50 UK contractors use Asta Powerproject as well as many smaller companies.

Asta Powerproject is proven amongst all types of organisations in construction from clients and professional advisors to civil engineers, main contractors, trade contractors and house builders. It is ideal for managing both large and small projects.

Quotation from a large Hospital Project under construction in the UK

"A major benefit of using a project management software planning and management tool that is as user friendly as Asta Powerproject Enterprise is that we can ensure every element of the project is programmed, monitored and reported. Where unforeseen events such as bad weather may defer planned activities, the software can be used for recovery planning to maintain progress."

Steve Adams,
Planning Manager for Balfour Beatty at Birmingham Hospital.

7.2 Benefits of using Asta Powerproject.

The following are some of the benefits of using Asta Power project

- Developed by engineers for use by engineers
- User friendly
- Has a classic Microsoft Office look and feel with the same high level menu structure
- You can customize Asta Powerproject toolbars to suit your needs
- Outstanding visual display of project plans improves communication
- Choose which features are displayed such as float, non driving links etc.
- Develop a fully itemized work Breakdown structure
- Add links to maintain the logic of related activities even during a reschedule
- Programmed to calculate the Critical path
- Record what happened in every progress reporting period throughout the life of an activity including actual cost, actual effort, Actual % Actual work etc
- Resource load all activities with labour and plant requirements
- Resource loading shown visually by histograms identify demand peaks
- Add activity costs to show actual spend and forecast spend profiles
- Project and activity data can be imported and exported from MS Project.

7.3 Availability

Asta Powerproject software is available from:

Asta Development plc
Kingston House
Goodsons Mews
Wellington Street
Thame
Oxfordshire
OX9 3BX
United Kingdom
Tel: +44 (0)1844 261700
Fax: +44 (0)1844 261314
www.astadev.com/enterprise
enquiry@astadev.com

Asta Powerproject has offered to set up a live link web based demonstration for the Enterprises to fully demonstrate their software.

7.4 Licensing costs

Asta Powerproject single user licence @ £895.00 each
Annual support for the above @ £179.00 per licence

Alternatively concurrent user licences are available. (I.e. holding the licence on a central network so it can be shared)

Asta Powerproject single network user licence @ £1,390.00 each
Annual Support for the above @ £278.00 per licence

7.4 Recommendation

The lack of use of an effective planning tool was first identified by Stuart Campbell when he visited the Construction Enterprise in August 2006. The workshop in Addis in February 2007 considered the merits of MS Project and Primavera planning tools. The Construction Enterprise did initiate some training in Primavera but concluded that the software is too complicated and requires a high level of training for their use.

More recently I have become aware of the widespread use of Asta Powerproject. Severn Trent Water use MS project for their high level summary programmes but once a contract is awarded then Asta Powerproject is used to develop the detailed construction programme. This would seem to afford the ideal solution for both customer and contactor.

MS Project could be used for the Joint Review Board high level summary programme. Asta Powerproject would then be used for project specific construction programmes.

8. NEC Workshop

Full details of the NEC workshop are set out in the visit report prepared by Richard Patterson and included in Appendix 8 of this report.

9. Next Steps and Objectives for Next Visit

9.1 Joint Review Board

MJ to obtain comments and approval to draft "**Guidelines for setting up a Joint Review Board"** before issue to MoWR, WWDSE and WWCE. Refer Appendix 5.

The first meeting of the Joint Review Board is to be held at the end of December 2008. NG and YW or Bekele Gadissa are to issue Project Status Reports for projects to all Board Members and present a high level summary programme at meeting. MJ is to attend.

9.2 ISO 9001 Certification

MY and Implementation Team assisted by I-QUAS to carry out all activities on Implementation Plan.

DR to provide example procedures for design and construction activities to enable template to be produced.

DR to support QMS development by email as required.

DR to explore Construction Best Practice Working Group and provide an email link to MY if possible.

9.3 Asta Powerproject

DR to facilitate setting up a live link web based demonstration.

9.4 Actions for Next Visit

The next visit should be timed to coincide with the second meeting of the **Joint Review Board**. It is anticipated this would be end of March/early April.

This would also be a good fit with planned output from the **QMS Implementation Team** i.e.

- Drafting procedures should be nearing completion
- Compilation of Quality Manual should also be almost complete
- Audit Process should be established
- Certification Process should be set out with key dates.

Check progress with implementing **Asta Powerproject** or an alternative effective planning tool.

Appendix 1 – Activities during the Visit

Day/Date (Oct/Nov 2008)	Time	Activity	Met with	Key results
Mon 27	overnight	Travel Leeds to Addis		
Tues 28	am	Meeting	• Tesfaye Kidane (TK) Deputy General Manager for Study and Design (WWDSE) • Mekuria H/Yohannes (MY) Head of Systems Delivery Improvement Department (WWDSE) • Melkamu Jaleta (MJ) (PAWS country manager) • David Rathmell (DR) (PAWS consultant)	• Discussed objectives of PAWS visit • Benefits of pre planned Joint Review Board Meetings • NEC Workshop
	am	Meeting	• MY + DR	• Review of progress made since last visit in setting up QMS
	pm	Meeting	• Mogesie Ayele Head of Contract Administration Department at Ministry of Water Resources (MoWR) • MJ + DR	• Purpose of visit • Government procurement practice • Benefits of NEC Contracts • NEC Workshop
Weds 29	am	Meeting	• Alemayehu Belete Gebretsadik Manager DQS Management Services PLC • Tadesse Solomon (TS) IRCA Lead Auditor Integrated Quality Solutions • MY + DR	Reviewed key issues affecting implementation of QMS Selection of certification Body Quality Policy
	pm	Meeting	• MY, TS + DR	• Continued review of QMS issues • Role of Project management in WWDSE
Thurs 30	am	Meeting	• Adugna Jabessa State Minister for MoWR • Mogesie Ayele Head of Contract Administration	• Reviewed need for Joint Review Board to meet on a regular basis.

			MoWR • Nagesh Gemtessa (NG) General manager WWDSE • Yilikal Worku (YW) Deputy General Manager WWCE • MJ + DR	• First meeting end of December agreed • PAWS to provide working guidelines • Follow up meeting end on March to be attended by DR
Fri 31	am	Travel Addis to Tendaho	• MY, TS + DR plus driver	•
	pm	Arrive Tendaho	• Yaschilal Wolde Assistant Civil Engineer WWDSE • MY, TS + DR	• Briefing of Dam Construction and Irrigation project
	pm	Dinner	• Asfaw Dingamo Minister for Water MoWR • Nagesh Gemtessa • Yilikal Worku • MY, TS + DR	
Sat 1	am	Dam Tour	• Yaschilal Wolde Assistant Civil Engineer WWDSE • MY, TS + DR	Inspection of the dam and irrigation site works.
	pm		• Yaschilal Wolde Assistant Civil Engineer WWDSE • MY, TS + DR	Viewed Asta Powerproject planning software
Sun 2	All Day	Travel Tendaho to Addis	• MY, TS + DR plus driver	
Sun 2	pm/overnight	Travel Cambridge to Addis	Richard Patterson (RP) NEC expert Mott MacDonald	
Mon 3	am	Meeting at Water Aid Offices	• David Rathmell (DR) (PAWS consultant) and • Melkamu Jaleta (MJ) (PAWS country manager) • RP	• Better understanding on constraints on procurement in Ethiopia • Definition of scope of presentation for 5 November workshop
	pm	Meeting	• Daniel Gebretensay, team leader, contract admin, WWDSE • Mohammed Ibrahim, head of contract administration, (WWDSE) • Zewdu Getachew (WWCE) • DR + MJ + RP	• Better understanding on constraints on procurement in Ethiopia • Finalised scope of presentation for workshop.
Tues 4	am	Meeting	Ethiopian Association of Civil	• EACE interested in

			Engineers (EACE) • Abebe Belete (executive committee member) and • Wubishet Jekale (Dr Eng) and university associate lecturer • MJ + RP	NEC • Generally supportive • Wubishet Jekace has good clear understanding of partnering, modern delivery techniques and NEC following recent MSc at Strathclyde Uni. He runs the 'Jacala Construction Management Company'
	am	Meeting	MY + DR + QMS Implementation Team	• Role of Team Members in developing QMS System
	am	Meeting	MY + TS + DR	• Role of Project Management Within WWDSE • Requirements for a three stage review of Projects
	am	Meeting	NG + DR	• Agreed format for Project Status Report to be main input to Joint Review Board
	pm	Prepare draft article	MJ + RP	Draft newsletter article
	pm	Workshop	MJ + RP	Finalised details
	pm	Short session on NEC at Water Aid Offices	13 members of the Ethiopian Contractor's Association (see Appendix)	
Wed 5	All day	NEC Workshop	Total 55 participants (See Appendix)	See Section 8
Thu 6	am		DR + MJ + RP visit review and actions	
	All day	Travel Addis to London/ Cambridge (RP) + Leeds (DR)		

Appendix 2 - Gap Analysis

This is a separate attachment as the original when scanned becomes a PDF document and cannot be pasted into the MS Word format.

Appendix 3 - Water Works Design and Supervision Enterprise - Proposed QMS Structure
Prepared by David Rathmell PAWS Consultant Oct 08

Procedure No	Procedure Title	Procedure Owner	ISO 9001 Ref.	Rev date
Quality Management				
PR-QM-010	General Description of QMS	Quality Manager	4.1 / 4.2.2	Oct-08
PR-QM-020	Procedure Change Process and Control of QMS Documents	Quality Manager	4.2.3 / 4.1.c) / 5.4.2.b)	Oct-08
PR-QM-030	Management Review and Quality Policy	General Manager	5.6.1 / 5.6.2 / 5.6.3 / 5.3	Oct-08
PR-QM-040	Technical Standards	Head of Quality Control Dept	7.2.1.b) c)	Oct-08
Document Control				
PR-DC-010	Setting up a Project Correspondence and Document Filing System	Quality Manager	4.2.4	Oct-08
PR-DC-020	Control of Design Enterprise produced Documents	Quality Manager	4.2.4	Oct-08
PR-DC-030	Control of External Documents	Quality Manager	4.2.4	Oct-08
PR-DC-040	Control of Project Correspondence	Quality Manager	4.2.4	Oct-08
PR-DC-050	Archive Process	Quality Manager	4.2.4	Oct-08
Feasibility and Field Studies				
PR-FS-010	Receipt of Customer Enquiry	Deputy General Manager	7.2.1	Oct-08
PR-FS-020	Data Collection and Analysis	Deputy General Manager	7.1.c)	Oct-08
PR-FS-030	Feasibility Reports	Deputy General Manager		Oct-08
PR-FS-040	Feasibility Reviews	Deputy General Manager	7.2.2	Oct-08
PR-FS-050	Monitoring and Measurement Equipment Acquisition and Schedules	Deputy General Manager		Oct-08
PR-FS-060	Monitoring and Measurement Equipment Maintenance Checks Note:The TO - BE Processes developed during BPR could either be included or referenced here to add clarity and help understanding of what is required.	Deputy General Manager	7.6	Oct-08
Project Management				
PR-PM-010	Project Plan	Head of Project Management	7.1	Oct-08
PR-PM-020	Project Programming	Head of Project Management	7.1	Oct-08
PR-PM-030	Project Cost Control	Head of Project Management	7.1 / 7.5.1	Oct-08
PR-PM-040	Project Launch	Head of Project Management	7.1 / 7.5.1	Oct-08
PR-PM-050	Project Reviews	Head of Project Management	7.2.2 / 7.5.1	Oct-08
PR-PM-060	Project Reports	Head of Project Management		Oct-08
PR-PM-070	Risk Management during Project Delivery	Head of Project Management	8.5.3	Oct-08
PR-PM-080	Project Close Out	Head of Project Management	8.2.4	Oct-08
Design				
PR-DE-010	Detailed Design	Head of Design	7.3.1 / 7.3.2 / 7.3.3	Oct-08
PR-DE-020	Design Reviews	Head of Design	7.3.4	Oct-08
PR-DE-030	Design Checking and Approvals	Head of Design	7.3.5	Oct-08
PR-DE-040	Design Change Control during Construction and Commissioning	Head of Design	7.3.7	Oct-08
PR-DE-050	Final Design Documentation	Head of Design	4.2.4	Oct-08

Contract Administration

PR-CA-010	Construction Work	Head of Construction	7.5.1.	Oct-08
PR-CA-020	Goods Receipt	Head of Construction	7.5.1.	Oct-08
PR-CA-030	Subcontractors	Head of Construction	7.5.1.	Oct-08
PR-CA-040	Temporary Works	Head of Construction	7.5.1.	Oct-08
PR-CA-050	Setting Out	Head of Construction	7.5.1.	Oct-08
PR-CA-060	Concrete	Head of Construction	7.5.1.	Oct-08
PR-CA-070	Structural Concrete	Head of Construction	7.5.1.	Oct-08
PR-CA-080	Method Statements and Risk Assessments	Head of Construction	7.5.1.	Oct-08

Human Resources

PR-HR-010	Recruitment Selection, Interview and Appointment	Head of Human Resources	6.1	Oct-08
PR-HR-020	Training	Head of Human Resources	6.2.2 a) b) c)	Oct-08
PR-HR-030	Annual Performance Reviews	Head of Human Resources	6.2.2 c)	Oct-08
PR-HR-040	Internal Communication	Head of Human Resources	6.2.2 d)	Oct-08

Supply Chain

PR-SC-010	Supplier Evaluation and Approved List	Head of Procurement	7.4.1	Oct-08

Computer Services

PR-CS-010	Acquisition of Hardware and Software	Head of Computer Services	6.3.b)	Oct-08
PR-CS-020	Security and Virus Protection	Head of Computer Services	6.3.b)	Oct-08
PR-CS-030	Backup and Archival of Data	Head of Computer Services	6.3.b)	Oct-08
PR-CS-040	Software Validation	Head of Computer Services	6.3.b) / 7.5.2	Oct-08
PR-CS-050	Authorisation of Access to Company Systems	Head of Computer Services	6.3.b)	Oct-08

Laboratory Services

PR-LS-010	This list is to be complied by the Head of Laboratory Services	Head of Laboratory Services	7.3.2 / 7.4.3	Oct-08

Service Delivery Improvement

PR-SD-010	Business Performance	Head of Service Delivery Improvement	5.4.1 / 8.1 / 8.5.1	Oct-08
PR-SD-020	Internal Auditor Selection and Training	Head of Service Delivery Improvement	8.2.2	Oct-08
PR-SD-030	Internal Audit Programme	Head of Service Delivery Improvement	8.2.2	Oct-08
PR-SD-040	Internal Audit Procedure	Head of Service Delivery Improvement	8.2.2	Oct-08
PR-SD-050	Corrective Action procedure	Head of Service Delivery Improvement	8.5.2	Oct-08
PR-SD-060	Control of Non Compliant Goods	Head of Service Delivery Improvement	8.3	Oct-08
PR-SD-070	Customer Satisfaction	Head of Service Delivery Improvement	8.2.1	Oct-08
PR-SD-080	Customer Complaints	Head of Service Delivery Improvement	8.5.2.a)	Oct-08

Health and Safety

PR-HS-010	This list is to be compiled by Construction Management	Head of Construction Management		Oct-08

Appendix 4 – Implementation Plan
Work Schedule
CONSULTANCY SERVICE FOR THE ESTABLISHMENT OF QUALITY MANAGEMENT SYSTEM

WATER WORKS DESIGN AND SUPERVISION ENTERPRISE

S/N	ACTIVITIES	DATE OF REALIZATION 2008 - 2009									
		1st Oct	2nd Nov	3rd Dec	4th Jan	5th Feb	6th Mar	7th Apr	8th May	9th Jun	10th July
1	Conduct top management briefing on ISO 9001:2000 QMS concepts & principles, the industry scenario, QMS requirements, roles & responsibilities of the management;										
2	Conduct gap analysis/company wide on site pre-assessment, to determine the degree of compliance of the existing management system of WWDSE to the standard requirements;										
3	Prepare detailed implementation plan, based the output of the pre assessment, including the necessary resources needed for the project										
4	Consult establishment of implementation team and working groups & Prepare TOR										
5	Conduct training for the implementation team & working groups on ISO 9001:2000 QMS concepts & principles, requirements, work process mapping, documents writing, documents & records control as well as QMS implementation steps;										
6	Guide the top management, implementation team & working groups on: • Formulating the quality policy; • Establishing quality objectives and;										

	• Developing action plan & resource requirements for the realization of the quality objectives										
S/N	ACTIVITIES	DATE OF REALIZATION 2008 - 2009									
		1st Oct	2nd Nov	3rd Dec	4th Jan	5th Feb	6th Mar	7th Apr	8th May	9th Jun	10th July
7	Develop the standard system level procedures • Document control procedure • Records control procedure • Internal quality audit procedure • Non conforming products control procedure, and • Corrective & preventive actions procedures										
8	Identify and Describe QMS Processes • Streamline organizational structure of the company and align it with the QMS process approach; • Identify and describe company processes (supplier – customer interfaces, sequence & interaction) including business, support & outsourced processes (management processes, product realization, resource provision, monitoring & measurement processes) within the scope of implementation; • BPR & IPMS outputs will be integrated in the QMS implementation processes; • Map and rationalize the identified processes, set/review process controls & product acceptance criteria; • Update the exiting job descriptions/assignments with quality responsibilities and authorities for all process owners • Ensure that appropriate internal communication processes are established regarding the QMS;										
9	Develop QMS Documentation Plan • Identify the documents needed for effective planning, operation and control QMS processes; • Develop detail action plan for documents creation and/or change; • Communicate the plan and follow up the implementation										

S/N	ACTIVITIES	DATE OF REALIZATION 2008 - 2009									
		1st Oct	2nd Nov	3rd Dec	4th Jan	5th Feb	6th Mar	7th Apr	8th May	9th Jun	10th July
10	Consult documents Writing and Approval • Developing standard formats (templates) for QMS documents;										
11	Develop the Quality Manual • Identify the elements & the structure of the quality manual including exclusions if any; • Review the draft quality manual against ISO 9001QMS requirements for continuing suitability, adequacy and effectiveness										
12	Organize DCC • Established Centralized documentation center for QMS										
13	Identify the necessary resources needed to implement & maintain the QMS and enhance customer satisfaction by meeting requirements; • Human: Competency requirements & skill matrix (education, training, skill and experience) for personnel performing work affecting product quality; • Infrastructure: Evaluate buildings, workspace & associated utilities, process equipment (hardware and software), transport & communication services needed to achieve conformity to product requirements; • Work environment: Evaluate the standard conditions of work for their ability to meet customer and organizational requirements;										
14	Conduct training on Internal Quality Auditing for selected employees of WWDSE;										

S/N	ACTIVITIES	DATE OF REALIZATION									
		2008 - 2009									
		1st Oct	2nd Nov	3rd Dec	4th Jan	5th Feb	6th Mar	7th Apr	8th May	9th Jun	10th July
15	Provide QMS implementation support and follow-up; • Verify all the necessary documents are available at points of use and distribution controlled; • Verify the establishment and integration of system level procedures, work instructions and forms; • Verify system requirements are translated into operations and records controlled; • Verify the implementation of quality objectives & plans; • Verify that production & service provision is being carried out under controlled conditions; • Verify the monitoring of customer satisfaction; • Verify that internal audit is conducted at planned intervals to determine whether the QMS conforms to planned arrangements & is effectively implemented; • Verify that analysis of data, management review, corrective & preventive actions are being effectively implemented;										
16	Conduct on site consultancy audit; • Preparing audit plan and communicating to the process owners; • Preparing quality audit documentation; • Conducting the audit; • Preparing the audit report										
17	Implement corrective actions; • Conducting follow-up audits and submit clearance report;										
18	Provide assistance on application for Certification										
19	Submit terminal project report; • Preparing final QMS implementation report;										

Appendix 5 - Guidelines for setting up a Joint Review Board

ETHIOPIAN NATIONAL INVESTMENT WATER PROGRAMME

Guidelines for setting up a Joint Review Board.

Purpose:

A tripartite meeting held between the Ministry of Water Resources (MoWR), the Water Works Design and Supervision Enterprise (WWDSE) and the Water Works Construction Enterprise (WWCE).

Reviews meetings are held at pre-planned dates to monitor review and evaluate progress of all current and future national water investment projects undertaken by the Enterprises.

Mission:

To work together in a mutual spirit of trust and cooperation to deliver the national water investment programme.

Benefits:

- Pre-planned meetings allow reliable and comprehensive progress reporting
- Regular fixed dates ensure all Board members are able to make themselves available
- Core membership of the Joint Review Board ensures all Board Members are kept informed and aware of progress and developments
- Information is supported by an effective planning tool backing up progress reports to show real time information
- Key actions are recorded in minutes to allow decisive follow up

Briefing Note No 2 – Proposals for a Joint Review Board are attached to these Guidelines for clarity. Please note that the proposed composition of the Review Board has been reviewed since the first draft of this Briefing Note and now reflects the consensus view of all parties concerned.

JOINT REVIEW BOARD MEMBERSHIP

Chairman:
His Excellency Ato Adugna Jabessa State Minister for Water Resources

Board Members: (Two core board members are appointed from each stakeholder)

MoWR
Ato Mogesie Ayele Contract Administration Dept Head
Ato Abera Mekonnen Chief Engineer

WWDSE
Ato Nagesh Gemtessa General Manager
Ato Tesfaye Kidane Deputy General Manager for Study and Design

WWCE
Ato Bekele Gadissa General Manager
Ato Yilikal Worku Deputy General Manager

PAWS
Ato Melkamu Jaleta Country Manager
Mr David Rathmell PAWS Consultant (attendance 6 monthly)

A Recorder is also required to attend to take minutes of meetings. It is anticipated this individual would be provided by the MoWR.

Optional Board Attendance: The following individuals may be invited to attend Board Meetings if required. This may be necessary if items of special interest or projects of a specific technical nature from the water programme would benefit from their presence.

MoWR
Ato Ashenafi Getachew Planning and Project Dept Head
W/ro Tadiss Teferi Finance Dept Head
Ato Teshome Atinafe Irrigation Dep't Head
Ato Yohannes G/Medihin Water Resources Administration, Urban Water Supply & Sanitation Dep't Head
Ato Teferi Menkir Rural Water Supply and Sanitation Dep't A/Head
Ato Michael Abebe Hydropower
.

WWDSE
Ato Mohammed Ibrahim Head of Contract Supervision.

WWCE
AtoZewudu Getachew Head of Contract Administration

Dates for 2008/09:
It is suggested that a full working day is set aside for each Joint Review Board Meeting to allow adequate time to review all projects.

End of Dec 08
End of Mar 09
End of June 09
End of Sept 09

Venue:
MoWR Offices

Inputs:

a) A Project Status Report is to be prepared for each project using the standard template attached to these guidelines. These Status Reports show relevant data and only deal with key strategic issues requiring intervention at ministry level. As a guide each Status Report should not exceed two sides of A4 paper. They are not meant to be a detailed progress report on all aspects of the project. It is understood that currently there are over 30 projects and so issues must be kept to a high level.

Status Reports are prepared by the WWDSE Project Manager with input from the WWCE Project Manager as appropriate. This information could be provided via the normal monthly site reports. Status Reports are approved by the General Managers of both the Design and Construction Enterprises. They are to be bound into a booklet and issued to all Board Members for information at least one week before the Joint Review Board Meeting.

b) A summary programme is to be prepared by the WWDSE General Manager on MS Project software and approved by the General Manager WWCE before presenting to the Joint Review Board. This should show all projects with an activity bar indicating planned study, design and construction phases.

c) Future projects should also be added to complete the overall picture. This advance information will be provided by the MoWR.

Outputs:

a) After the first meeting the Summary Programme is to be adopted as the baseline programme. At subsequent Review Meetings the Baseline Programme is updated to show actual and forecast completion against the original planned dates.

b) Minutes of each meeting are written by the Recorder to capture key strategic actions requiring intervention with agreed action and a date for completion. Minutes are distributed to all Board Members.

JOINT REVIEW BOARD
MEETING DATE

PROJECT STATUS REPORT

PROJECT TITLE:
LOCATION:
PROJECT COST:
COST ON COMPLETION:
DATE CONTRACT AWARDED:
CONTRACT COMPLETION DATE:
PROJECT MANAGEMENT STAFF:

a) MoWR
b) WWDSE
c) WWCE

CURRENT PROJECT PHASE: STUDY/DESIGN/CONSTRUCTION
CONSTRUCTION PROGRESS (% completion)
Example: TENDAHO DAM

a) MAIN DAM
b) SPILLWAY
c) DIVERSION TUNNEL
d) INTAKE
e) MAIN CANAL
f) IRRIGATION

OVERALL CONSTRUCTION COMPLETION (%)
FORECAST COMPLETION DATE:
KEY ISSUES REQUIRING INTERVENTION:

PREPARED BY PROJECT MANAGER (WWDSE) ……
APPROVED BY GENERAL MANAGER (WWDSE) ……
APPROVED BY GENERAL MANAGER (WWCE) ……

DATE…….

PAWS project support 43/44 Eth: Twinning with WWDSE and WWCE

Briefing Note 2 – Proposals for a Joint Review Board

Introduction

This briefing note sets out the purpose, and main benefits which would arise from establishing a Joint Review Board. These are the views of the author gained from working for a number of years in the UK Water Sector with a large Engineering Design and Build Contractor. They do not represent the official view of any Chartered Institution or Trade Organisation. They are offered as a guide to the Ministry of Water Resources, the Water Works Design and Supervision Enterprise (WWDSE) and the Construction Enterprise (WWCE) Addis Ababa, Ethiopia in the hope that this proposal will be helpful in promoting a greater understanding of the needs of all parties and in the delivery of the federal water resources development programme.

Mission Statement

The establishment of a Joint Review Board is a strategic initiative to assist in the management of the federal water resources 3 year development programme.

Purpose of the Joint Review Board

The purpose of the Joint Review Board is to review all current and planned projects for progress against target dates for completion and forecast outturn costs. It should be understood that this is a high level programme review and not intended to delve into minutiae detail.

Parties involved in the Review Process

It is proposed that the main parties to the Joint Review Board should comprise senior management from the following organisations:

- Weizero Martha Solomon - Ministry of Water Resources (MoWR)
- Ato Nagesh Gemtessa - Water Works Design and Supervision Enterprise
- Ato Bekele Gadissa - Water Works Construction Enterprise
- Ato Melkamu Jaleta - Partners in Water and Sanitation (PAWS) advisory role

Frequency of the Joint Review Board

A quarterly Review Meeting should be held. Any greater frequency would be burdensome and would probably not reflect any significant changes from the last review.

How the Review Process would work

The MoWR would present an advance programme of all planned projects showing timescale with a brief description of the project. This would indicate size, scale of the works and location.

WWDSE would schedule out all ongoing live projects with a baseline showing the feasibility, design and construction phases. This Baseline Programme would then be used to monitor actual progress against the original planned timescale. Future planned projects would be added to the programme of ongoing live projects to produce a Master Programme

Either MS Projects or Primavera P3 could be used for this purpose. However it should be noted that adoption of the same programming software by both Enterprises would be crucial to achieving the best results with minimal effort.

In advance of each Joint Review Board the Master Programme would be updated to show the current situation for each project. This would be prepared by the Design and Supervision Enterprise with input from the Construction Enterprise. Actual progress to date would then be compared to the Baseline Programme to forecast realistic completion dates.

Benefits of the Review Process.

All parties involved in delivering the federal water resources development programme would have a better understanding of the overall big picture and a realistic assessment of progress. The process would be twofold.

1. Assessment of future planned projects
2. Assessment of live current projects

This high level programme planning would feed down into project planning as it would demand accurate three monthly updates on progress. This is a key area identified in previous PAWS recommendations. It would also improve communications at Ministerial and managerial levels so that a mutual sense of commitment to the development programme and trust in each others desire to succeed would result.

Benefits for Future Planned Projects
The review process would alert the enterprises to potential new schemes. This would offer an opportunity to smooth out peaks and troughs so that the workload is more evenly matched to available resources. In so doing the expectations of all parties to the development programme would be managed so that a realistic and achievable forward looking programme would result.

Benefits for current live projects

Provide a realistic assessment of actual progress to date
Highlight resourcing issues
Alert the Construction Enterprise to imminent new starts reaching the end of the design phase

PAWS Advisory Role

The role of Paws would be advisory to all parties and would seek to be impartial at all times. PAWS consultants and the in country manager would not seek to influence any of the organisations involved in the decision making process. They would be an interested third party only available to assist in the use and awareness of the programming software. In its application and how to obtain the best results. They would also offer advice as appropriate based upon their wider knowledge gained from working within the UK Water Sector.

David Rathmell

PAWS Consultant
BEng C Eng MICE FCIWEM

Key terms

Joint Review Board

Master Programme

Baseline Programme

Appendix 6 - Tendaho Leaflet

This is a separate attachment as the original when scanned becomes a PDF document and cannot be pasted into the MS Word format.

Appendix 7 Asta Powerproject Brochure

This is a separate attachment as the original when scanned becomes a PDF document and cannot be pasted into the MS Word format.

Appendix 8 - NEC Visit Report

NEC Contracts: visit and workshop
Addis Ababa, Ethiopia, 2-6 November 2008

Submitted by:

Richard Patterson, Mott MacDonald

November 2008

Contents amendment record

This report has been issued and amended as follows:			
Revision	**Description**	**Date**	**Signed**
A	Draft issue – for comment and data required from Melkamu Jaleta (highlighted yellow)	7 Nov 2008	*Richard Patterson*
B	Comments from Rebecca Scott	10 Nov 08	
C	Input from Melkamu Jaleta added with other changes by Richard Patterson	13 Nov 08	*Richard Patterson*
D (Final Draft)	Amended on conference call (RS/RP/DR/RP)	14 Nov 08	*Richard Patterson*

NEC Contracts: visit and workshop
Addis Ababa, Ethiopia, 2-6 November 2008

Purpose of this note

This note is intended mainly for:

- the Ministry of Water Resources
- the Water Works Design and Supervision Enterprise (WWDSE) and
- the Water Works Construction Enterprise (WWCE)

to summarise the visit by Richard Patterson, procurement specialist of Mott MacDonald to Addis Ababa, Ethiopia from 2-6 November 2008.

Background

As part of PAWS' programme in Ethiopia, it is providing institutional support to the Water Works Design and Supervision Enterprise (WWDSE) and Water Works Construction Enterprise (WWCE). As part of that support, 4 engineers and managers (2 each from WWDSE and WWCE) visited the UK for a 6 week exchange visit in the summer of 2008. During that time the visitors saw at first hand the on-site construction management techniques being used on a major upgrade to a wastewater treatment work. During the visit, Richard Patterson of Mott MacDonald was asked to give a 1 day presentation on 25 June 2008 on:

- encouraging collaboration in construction - evolution of contractual arrangements - and
- NEC (New Engineering Contracts).

As a follow up to this session the general managers of WWDSE and WWCE visited Mott MacDonald for one day on 22 July 2008. The day included a short presentation on the NEC. As a result a workshop focused on NEC contracts was requested in Addis. Formal sponsorship of the event was confirmed to PAWS by the Ministry of Water Resources.

Objectives

The objectives of the visit and of the workshop were to:

- introduce the idea of collaborative NEC contracts to the parties involved in delivering water assets in Ethiopia – principally Ministry of Water Resources (MoWR), WWDSE and WWCE and
- consider the practicability, if considered appropriate, of establishing a trial project using NEC.

Activities during the visit

The activities during the visit (in addition to general preparation for the workshop) included meetings with:

- MOWR,WWDSE and WWCE
- the Ethiopian Association of Civil Engineers (EACE)
- the Ethiopian Contractor's Association.

Details are set out in Appendix A.

Summary of NEC Workshop: 5 Nov 2008

1.1 Introduction

The workshop was sponsored by the MoWR and held at the MoWR building in Addis. The agenda), attendees and slides used during the workshop are included as appendices to this note.

1.2 Attendees

The workshop on 5 November 2008 was:

- attended by a total of 55 participants

- including representatives of:
    - Ministry of Water Resources (MoWR)
    - Water Works Design and Supervision Enterprise (WWDSE)
    - Water Works Construction Enterprise (WWCE)
    - Public Procurement Agency (PPA)
    - African Development Bank (AfDB)
    - Ethiopian Road Authority
    - Addis Ababa University/Faculty of Technology
    - Addis Ababa Road Authority
    - Addis Ababa Administration's Works and Urban Development
    - Oromiya Water Works Design & Supervision Enterprise
    - Oromiya Water Works Construction Enterprise
    - Ethiopian Civil Engineers Association
    - Ethiopian Consulting Engineers & Architects
    - Ethiopian Contractors Association
    - Addis Ababa Chamber of Commerce
    - Ethiopian Arbitration and Conciliation Centre.

1.3 Contents

The main contents of the workshop are set out below:

The workshop opened by the State Minister of Water Resources, Ato Adugna Jabessa.

The objectives of the event were stated as 'Participants should be able to:

- explain the key potential benefits of using the NEC
- find their way around the contract
- explain the key practicalities of using the NEC and the impacts of NEC on the people and organisations involved
- recognise the probable constraints on using the NEC in Ethiopia
- determine if the contracts might be of use in Ethiopia

Ato Mohammed Ibrahim, Head of Contract Administration at WWDSE gave a short presentation on procurement and contracts in Ethiopia.

A 'stand up' piece of group work had four groups summarising:

- what were the main problems with construction contract in Ethiopia and

- what would be the features they would look for in an ideal contract.

The full flipcharts produced are transcribed and included as an Appendix. Key points relating to **perceived problems with existing contracts** were:

- perceived impartiality of the engineer (usually employed by the employer)
- a lack of trust and cooperation and team spirit between parties to a project
- the time and cost effects of delays – often by delayed issue of information to the contractor
- lack of clarity in the provisions of the contract
- inappropriateness of price escalation clauses (and indices used)
- a lack of understanding of the contact
- delays in the communications and decision making required by the contract
- a failure to achieve amicable settlement of disputes

Features highlighted by the groups as **essential in any new contract** included:

- clarity in its provisions and clear roles and responsibilities for all involved
- a focus on building relationships – partnering and teamwork - between parties
- proper incentivisation of the contractor to deliver required quality to time and within budget
- a focus on facilitating proper planning
- proper provisions relating to quality and safety
- properly provisions relating to subcontracting
- fair price escalation provisions
- enabling transparent procurement decisions.

Richard Patterson of PAWS then presented on:

- NEC3 – Why are they so different?
- NEC Engineering and Construction Contract (ECC) - Up to award (including the contract strategy options of lump sum, bill of quantities and target contracts
- ECC - After award (focusing on communication requirements, early warning and compensation events.

Participants were engaged with some questions and plenty of open discussion during each of the presentations.

At the end after some small group work, participants:

- showed their understanding of the likely impacts of using NEC on their projects via group work summarising thoughts on the implications of using NEC, and
- discussed how some of the principles of NEC might be introduced in to Ethiopia.

Ato Beyene Wolde-Gabriel, an experienced advisor and arbitrator and active participant gave a vote of thanks for the workshop.

Immediately after the workshop, Ato Beyene Wolde-Gabriel, an experienced advisor and arbitrator noted that he was advising a school regarding procurement of works and would consider trialling the NEC. Ato Melaku Tadesse (Ethiopian Contractor's Association) was also interested in this prospect.

1.4 Feedback

Written feedback from the event was collected from participants on the day. Nearly all participants were positive overall about the day and its benefits. Many would have liked more examples and case studies of NEC use. Nearly all considered the duration of the workshop was too short. This may have been exaggerated by the fact that – intentionally and as explained – not all the slides included in the delegate packs were used during the presentation.

The detailed feed back of the workshop was given by 27 participants (about 50%) of the attendees. Most of the respondents felt that one day was too short. In line with this, a respondent said that *"The Course was generally good, but it is very intensive and requires a good arrangement with the sponsors of the Workshop to have more 1 or 2 days session".*

There were further indications of concern regarding the course design, particularly, in addressing course objectives and in actively and effectively engaging the participants.

Most of the respondents strongly agreed that the course content was relevant except some disagreed on the statement "materials and issues were current & worthwhile". This is most likely because of the fact that, at present, the government requires a contract other than the NEC to be used. (see below).

One respondent noted *"It would be better to avail more NEC document to relevant institutions like Universities, Public Procurement Agency and Other Key Engineering Professional Associations"*

Most of the respondents have strongly agreed on the quality of the presenter/Instructor and on the workshop environment. NEC as a delivery system was also highly appreciated, but the importance of engaging most of the decisive stakeholders and the importance of including **case studies** on the challenges and success of implementing NEC in other similar countries was underlined. For example an evaluator said *"… There should have been discussions on the case studies to see the encountered challenges or problems while practicing NEC".*

Issues relating to the potential use of NEC in Ethiopia

1.5 General

The meetings and the workshop generated **significant interest in the modern form of collaborative contract that is NEC**.

The vast majority of contracts follow the **'traditional' procurement route of design (on behalf of the employer), bid, construct**. Payment is almost always on the basis of a **bill of quantities**.

The session with some members of (and the representative of) the Ethiopian Contractor's association confirmed

- private clients often use their own **bespoke forms** of construction contract
- the **use of the PPA contract (see below) is not yet widespread** in the public sector: it is (theoretically) mandatory
- the (not unusual) **culture in the industry to not actively use the contract** – it only 'comes out' when there is a problem.

1.6 Public Procurement Agency (PPA) Contract

The **Public Procurement Agency (PPA)** was established in 2005 and (according to one correspondent) only really started operating in 2007. In 2007 it issued standard bidding documents for the procurement of works by government agencies. According to the EACE (in particular Dr Eng Wubishet Jekace (also as associate lecturer in construction management at Addis university):

- this standard is **required** to be used for all government contracts for non-complex, employer-designed public works up to USD 10 million
- **use is currently not well enforced** and there is still little experience of the use of this standard contract in practice
- procuring organisations can demonstrate the case to use other standard forms for contracts above this value
- the **international funding agencies** often require the use of **FIDIC** contracts.

The **Ethiopian government standard contract (the 'PPA contract')** (and the accompanying bidding documents) **is clearly very close to the World Bank's Smaller Works Contract**. That contract is written in relatively plain English and interesting contains some provisions that were taken from early drafts of the NEC Engineering and Construction Short Contract (the NEC Short Contract) – eg '**early warning'** and '**compensation events'**. It also allows payment based on:

- a bill of quantities (remeasurement contract) or
- an activity schedule (lump sum).

(The NEC Short Contract has a 'Price List' – effectively allowing a combination of activities and/or bill items for payment purposes.)

A brief review of the Ethiopian government standard contract identified several issues and clauses that may lead disputes. One attendee noted that he had prepared and submitted to the PPA a review/critique of the PPA contract. Another (representing the Ethiopian Contractors' Association noted that the PPA had not consulted (widely) on the PPA contract before its launch.

A representative from the PPA attended the workshop, as did a representative of the African Development Ban. The PPA representative noted it is planning to run **a single** training course each year on the PPA contract.

Any government (eg MOWR) use of the NEC for a contract less that the threshold value would require of a waiver of the requirement to use the Ethiopian government standard contract. It is assumed that such waiver would need to be authorised by the PPA.

Next steps

The following are considered appropriate. (Lead person in brackets):

- **Immediate follow up:**
  - email to attendees and letter to MoWR (RP to draft; MJ to distribute)
- **Contacts:**
  - Establish and maintain excel 'database' of contracts re NEC in Ethiopia (MJ)
- **Publicity**:
  - Try to get maximum exposure for PAWS and the NEC workshop from appropriate articles in appropriate journals. (various)
- **MoWR/WWDSE**
  - Investigate interest of MOWR/WWDSE/WWCE in a trial project using NEC (MJ)

- **Public Procurement Agency (PPA)**
  - If MoWR is interested in a trial project PAWS to suggest that MoWR investigates whether PPA would support this
  - maintain informal contact with PPA (MJ)
- **Ethiopian PPA Contract**
  - Suggest that MOWR/WWDSE/WWCE investigates MoWR proposed training programme (if any) re the new contract and MoWR/WWDSE/WWCE systems for effective management of works under this contract (MJ)
  - Suggest that any training emphasises collaborative aspects of NEC (some of which are in any case supported by the PPA contract (early warning, compensation events) (MJ)
- **Ethiopian Civil Engineering Association (EACE):**
  - RP (outside PAWS) to try to build on contacts with Ethiopian Civil Engineering Association (possibly asking UK Institution of Engineers (ICE) to offer support) (Note that an engineer from the WWSDE is on the organising committee (Ibrahim Dinku). (RP)
- **Availability of NEC Contracts**
  - RP to investigate (outside PAWS) how contracts could be made more easily available to potential customers in Ethiopia. (RP)
- **Integration with other PAWS actions**
  - Ensure that actions here are integrated with PAWS overall action plan developed during exchange programme (RS)

After action review

The following is a short review of the visit.

The outcomes may have been 'better if':

- we had identified the state procurement agency as a key stakeholder and made contact with them separately in advance of the workshop
- we had managed to communicate with eg African Development Bank, DfID and other professional associations prior to the workshop – these are potential key stakeholders
- we had got more direct commitment to a trial NEC project from the water sector organisations.

The visit was 'good because'

- excellent efforts at preparation and contact making by country manager, Melkamu Jaleta
- excellent level of attendance at workshop
- excellent level of interaction and discussions during workshop.

d) Appendix A – Activities during the visit

Day/Date (Nov 2008)	Time	Activity	Met with	Key results
Sun 2	overnight	Travel Cambridge to Addis		
Mon 3	am	Met by	• David Rathmell (DR) (PAWS consultant) and • Melkamu Jaleta (MJ) (PAWS country manager)	• Better understanding on constraints on procurement in Ethiopia • Definition of scope of presentation for 5 November workshop
	pm	Meeting	• David Gedtensay, team leader, contract admin, MOWR • Mohammed Ibrahim, head of contract administration, (WWDSE) • Zewdu Getachew (WWCE) • DR + MJ	• Better understanding on constraints on procurement in Ethiopia • Finalised scope of presentation for workshop.
Tues 4	am	Meeting	Ethiopian Association of Civil Engineers (EACE) • Abebe Belete (executive committee member) and • Wubishet Jekace (Dr Eng) and university associate lecturer	• EACE interested in NEC • Generally supportive • Wubishet Jekace has good clear understanding of partnering, modern delivery techniques and NEC following recent MSc at Strahclyde Uni. He runs the 'Jacala Construction Management Company'
	pm	Prepare draft article		Draft newsletter article
		Workshop		Finalised details
	pm	Short session on NEC	13 members of the Ethiopian Contractor's Association (see Appendix)	
Wed 5	All day	NEC Workshop	Total 55 participants (See Appendix)	See below
Thu 6	am		DR + MJ + RP visit review and actions	
	All day	Travel Addis to Cambridge		

e) Appendix B - Attendees at session 4 Nov 2008 for Ethiopian Contractor's Association

Second name	Organisation	Role	email
Kidane	Y W K General Contractor	General Manager	yeshash@yahoo.com
Admasu	M G K T A D Construction	General Manager	-
Yasew	Yesew Yimanu General Construction	S Engineer	netitoo@yahoo.com
Challa	Kasma Engineering PLC	S Engineer	kasma.eng@ethionet.et
Tadesse	Ethiopian Contractor's Association	General Manager	melakuta@yahoo.com
Assefa	Eyespnss Construction	Owner	-
Seyoum	Tefferi Seyoum Building Contractor	General Manager	tfrseyoum@yahoo.com
Wubshet	E C A	General Manager	erminashi@yahoo.com
Haile	Radar Construction	Chief Engineer	AB.AT@ethionet.et
Legissa	Fufa Legissa Building Contractor	Manager	FUBUC@ethionet.et
Aberra	Tabco Construction	General Manager	tabco+ck@ethionet.et
Abebe	Yehizbalem General Contractors	Administrator	
Haileslsse			helaab@yahoo.com

f) Appendix C – Structure of 5 November NEC Workshop

(Modified to approximately reflect changes made on the day)

Time	Activities	Presenter/responsible person	Facilitator(s)
8:30 – 8:45	Registration	Organisers	
8:45 – 9:00	Welcome	Ato Melkamu Jaleta (PAWS)	
9:00 – 9:15	Key Note Address	HH.E Ato Adunga Jabessa	
9:15 – 9:20	Introduction and plan for the day	Richard Patterson	
9:20 - 9.40	Information: How do we normally procure works in the water sector in Ethiopia now? And why?	Ato Mohammed Ibrahim	
9.40	Group discussion addressing the question • *"what sorts of problems are typically encountered with construction contracts in Ethiopia?"* and • *"if there was an ideal new contract for Ethiopia, what would be its objectives and key features?"*	Participants in four groups	various
10:30 – 11:00	**Coffee / Tea Break**		
11:00 – 11.30	Presentation and discussion on the findings	Group Reporters	Ato Luelseged A./ Ato Taye Segni
11.30-12.00	NEC Quick Introduction – why is it so different?	Richard Patterson	David Rathmell
12:00 – 13:00	ECC – Basics/contents of the contract document	Richard Patterson	David Rathmell
13:00 – 14:00	***LUNCH BREAK***		
14:00 -15:30	Roles of the key players in an Engineering and Construction Contract.	Richard Patterson	David Rathmell
15:30 -16:00	***COFFEE / TEA BREAK***		
16:00 – 16:30	Small group discussion and feedback - NEC: So what for the participants in a project? - NEC: So what for my organisation?	Richard Patterson	
16:30 -17:00	Group discussion on the way forward	Richard Patterson	

Time	Activities	Presenter/responsible person	Facilitator(s)
17:00 – 17:15	Closing Remarks	Ato Beyene Wolde-Gabriel	

g) Appendix D – Attendees at 5 November NEC Workshop

No	Name	Organisation	Responsibility	Contact
1	Abera Mekonen	MoWR	Chief Engineer	
2	Daniel G/Tensay	"	Engineer	Jejeno2@gmai.com
3	Manaye Yimenu	"	Team Leader	M_yimenu@yahoo.com
4	Tesfaye Abebe	"	Senior Hydrologist	tesfayeatt@yahoo.com
5	Belay Zeleke	"	Senior Engineer	belayzel@gmail.com
6	Daniel Assefa	"	Engineer	assefa_daniel@yahoo.com
7	Solomon Nigatu	"	Engineer	solnigatu@yahoo.com
8	Berehanu Yazie	"	Contract Engineer	
9	Negash Gamtessa	WWDSE	General Manager	w.w.d.s.e@ethionet.et
10	Mohammed Ibrahim	"	D/General Manager	Mohad03@yahoo.com
11	Tesfaye kidane	"	D/General Manager	tsfykidane@yahoo.com
12	Leulseged Abayneh	"	Dep't Head	Leulseged@yahoo.com
13	Girma Abebe	"	Project Manager	girmaabe@yahoo.com
14	Lemma Zala	"	" "	lemmaza@yahoo.com
15	Melisew Belay	"	Senior Engineer	Melisew2007@yahoo.com
16	Kassaye Asfaw	"	S. Irrigation Eng.	kassayeasfaw@yahoo.com
17	Dereje Ayalew	"	S. Civil Engineer	derejesoul@hotmail.com
18	Mafi Sharif	"	Dep't manager	mafisherif@yahoo.com
19	Abebe Eshetu	"	Legal Advisor	eshetabebe@yahoo.com
20	Bezuneh Sima	"	Project Coordinator	sebetabezuneh@yahoo.com
21	Ayele Tsegaye	"	Head	Mobile: 0911 – 82 02 75
22	Abebaw Zeleke	"	…….Service	Mobile: 0911 – 25 32 97
23	Dawit Nirie	"	Lab. Head	Medaw2003@yahoo.com
24	Amare Mamo	"	Res. Mgm't	Mobile: 0911 - 22 58 20
25	Abera Abebo	"	Gestec. Division	Mobile: 0911 - 11 06 71
26	Mekuria H/Yohannes	"	Dep't Manager	Mobile: 0911 - 25 32 93
27	Taye Duressa	"	" "	Mobile: 0911 - 31 82 28
28	Seid Shimeles	"	Zeway Project	Mobile: 0911 – 99 13 95
29	Habtamu Hail (Dr.)	"	Raya Project	Mobile: 0912 – 08 16 63
30	Neme Sorie	"	Planning Manager	Mobile: 0911- 25 32 91
31	Abiy Tsegaye	"	Office Engineer	Mobile: 0911 – 86 84 90
32	Engda Zemedagengeh	"	Dep't Head	Mobile: 0911 – 25 32 92
33	Kassa Seboka	"	Plan Expert	Mobile: 0911 – 60 72 05
34	Zewdu Getachew	WWCE	Contract D. Manager	
35	Worku Sendel	"	Project Manager	
36	Negash Tefera	"	Office Engineer	
37	Martha Bekele	"	Office Engineer	
38	Mulugeta Alico	"	W.S.C.D.M	
39	Tessema Demissie	Tessema Demissie Consulting Architects & Engineers	General Manager	tessemademissie@yahoo.com
40	Beyene Wolde-Gabriel	Independent Consultant		beyenewg@ethionet.et
41	Melaku Mulugeta	Ethiopian	Member	tropicslmt@ethionet.et

No	Name	Organisation	Responsibility	Contact
		Consulting Engineers & Archhtects Association		
42	Wubishet Jekale (Dr.)	Ethiopian Association of Civil Engineers	Editorial Board Member	jcmc@ethionet.et
43	Abubeker Mohamed	Oromiya WWDSE	D/General Manager	abubekermhmmd@yahoo.com
44	Nigusie Tefera	Oromiya WWCE	Contract Administration	
45	Woldeab Demisse	Public Procurement Agency (PPA)	Senior Procurement Specialist	woldeabdem@yahoo.com
46	Yohannes Wolde-Gabriel	Addis Ababa Chamber of Commerce	Director Arbitration Institute	johnwaa@hotmail.comaw
47		Ethiopian Arbitration	Legal Advisor	eacc@ethionet.et
48	Sisay Woldetensay	AfDB	Procurement Assistant	s.woldetensay@afdb.org
49	Fasil Asaye	AfDB	Procurement Officer	f.asaye@afdb.org
50	Melaku Tadesse	Construction Contractors' Association of Eth.	General Manager	melakuta@yahoo.com
51	Assefa Ayele	Addis Ababa Works and Urban Development	P. R	
52	Binyam Bedelu	Addis Ababa Roads Authority	D/General manager	binyambedelu@gamil.com
53	Tadesse Solomon	Integrated Quality Solution plc.	QA Auditor	iquas@ethionet.et or tadsolom@yahoo.com
54	David Rathmell	PAWS	Independent Consultant	drathmell716@btinternet.com
55	Melkamu Jaleta	PAWS	Country Manager	Melkamuj@wateraidet.org

h) Appendix E – Slides used for 5 November NEC Workshop

The slides are available from the PAWS country manager
Melkamu Jaleta, melkamuj@wateraidet.org

- 01 PAWS Ethiopia - Intro to NEC session - Nov 08.ppt
- 02 PAWS Ethiopia - NEC3 – Why are they so different 30 minute intro - Nov 08.ppt
- 03 PAWS Ethiopia - ECC - Up to award - Nov 08.ppt
- 04 PAWS Ethiopia - ECC - After award - Nov 08.ppt
  [Most attention given to compensation events]
- 05 PAWS Ethiopia - NEC3 – So what for me and my organisation.ppt
  [Not used on the day]

i) Appendix F – Flipcharts from Groups re 'problems with existing contract' and 'features of an ideal contract'

The following were transcribed directly from the flipcharts generated by the groups.

OBJECTIVES AND FEATURES OF AN IDEAL CONTRACT

Group I

1) Should be fair and cooperative to build trust, and this can in turn bring attitude change.
2) Quality and Safety
3) Minimum Variation
4) Cost Effective and Timely Completion
5) Satisfaction of Stakeholders
6) Transparent Procurements
7) Minimum Risk to Partners
8) Capacity Building in all aspects
9) Dispute and Claim settlement

Group II

1) Proper Planning
2) Work breakdown STROEWRE???
3) A Form of Contract which incentives Contractors to deliver to Time + Cost + Quality
4) Encourage Partnering and Teamwork
5) Appropriate Resources

Group III

1) Clarity with regard to Responsibility and Roles that based on the principles of partnership
2) Involvement of DRE/Adjudicator Board
3) Adjudicator (?)
4) CLEAR – Understandable user friendly provision about "Price escalation"
5) Ditto other Provisions
6) Time Frame for both Contractually and TRI - party Communication
7) SUB-CONTRACT in particular to Certification/Payment

Group IV

1) Simple Language for Clarity of the Contract
2) Make Equally liable of all parties (Engineer, Client and Contractor)
3) Collateral Agreement shall be arranged between the Sub-Contractor and the Client

PROBLEMS WITH CONSTRUCTION CONTRACTS

Group I

1) Impartiality or Fairness of the Engineer
2) Risk Allocation to Contractor and Employer during Implementation
3) Delay
4) Variations – Significance

5) Quality of Work
6) Bid Evaluation Transparency
7) Capacity Limitations – Personnel, Equipment and Financial Liquidity
8) Safety
9) Trust – Lack of Co-operation
10) Dispute Settlement process failure to amicable settlement or management

Group II

1) DELAY both in TIME and COST, which in turn causes Suspension/Termination and Leading to Disputes that end in Frustration and Conflicts of Interest
2) Lack of Trust between Contractors and Consultants
3) No Team Work Sprit
4) Low Understanding of Specification and Contracts
5) Poor Quality of Workmanship

Group III

1) Not Clear Provisions in the Contract
2) Impartiality – (of the Engineer)
3) Poor Relation Between the Contractor, the Consultant and the Client
4) Sub-Contractors issues not well addressed
5) Time factor in Communication
6) Slow Decision Making Process
7) Low Know how of Contract Conditions
8) Inadequate Organisation of Contractors: Both from Manpower and Equipment point of view
9) Price Escalation

Group IV

1) Problems is not with the Contract, but with the individuals
2) Terminologies in the Existing Contracts
3) Engineer's Liability is not Clear
4) Excessive Power to Engineers
5) Clear Liability of Sub-Contractors to the Clients
6) The Contract Documents are not used fully.