

El Salvador Student Participation Projects



Guidelines for Leaders and Participants

Main Document

ESAG 100

Preface

This document is a set of suggestions and guidelines for the El Salvador Project Team (“Team”) from the El Salvador Alumni Group (“Group”), based on the Group’s experience; both in El Salvador and within the working environment. It is not a comprehensive list of rules and does not represent the Group taking responsibility for the Team.

The most important thing for the Team is that the individuals all have an awareness of the risks that exist, and they all realise they are responsible for their own health, safety, and security, no-one else. During the preparations effort should be put in to educating the less experienced members of the team as much as possible, as well as ensuring they appreciate they are responsible for themselves. It is also important to emphasise that individuals who go on to take risks not only risk themselves but also the success of the project as a whole, as such participants are requested to bear this in mind when making decisions.

Use of this document

This document is free to use by all those interested in the El Salvador project. In addition anyone who wishes to use this document in similar projects is free to do so, with the provision that they understand as stated above that this document does not form any official recommendations and as such the authors take no responsibility to damage to property or person as a result of using this document.

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Contents

1.	BEFORE YOU GO.....	1
1.1.	The Project	1
1.1.1.	The aim of the project	1
1.1.2.	El Salvador Project History	1
1.1.3.	General Information.....	1
1.1.4.	Suggested Timeline.....	2
1.2.	The Team	4
1.2.1.	Who should go?	4
1.2.2.	How many people?.....	4
1.2.3.	Suggested key roles.....	4
1.3.	Funding.....	6
1.3.1.	How much?	6
1.3.2.	Sources	7
1.3.3.	How to get it	7
1.3.4.	What to do with it.....	8
1.4.	Travel.....	8
1.4.1.	Flights and Routing	8
1.4.2.	Visas & Immigration	9
1.4.3.	Insurance.....	9
1.5.	What to take.....	9
2.	WHILST YOU'RE THERE	12
2.1.	HSES.....	12
2.1.1.	Emergency Plans, Communications, and Documentation.....	12
2.1.2.	REDES Contacts.....	12
2.1.3.	Health.....	12
2.1.4.	Safety whilst travelling in El Salvador	13
2.1.5.	Safety on site.....	13
2.1.6.	Environment	16
2.1.7.	Security	16
2.2.	El Salvador and San Salvador.....	17
2.3.	Project Management	17
2.3.1.	Planning	17
2.3.2.	Progress	17
2.3.3.	Materials.....	18
2.3.4.	Manning.....	18
2.4.	Culture	18
2.5.	What's It like?	18
2.5.1.	Project Work Schedule.....	18
2.5.2.	Typical Working Day	20
3.	WHEN YOU GET BACK.....	21
3.1.	The Report.....	21
3.2.	Finances	22
3.3.	Posters and Presentations	23
3.4.	Recruiting next year's team	23
3.5.	Join the Alumnus Group.....	23

ATTACHMENT A – EXAMPLE PROPSAL LETTER

ATTACHMENT B – INFORMATION ABOUT EL SALVADOR

1. Before you go

This section is aimed to give a background to the project, and a guide to the preparations that need to be carried out

1.1. The Project

1.1.1. The aim of the project

So what is the reason for this enormous undertaking? The main reasons are as follows:

- Tangibly improve the lives of some of the poorest and most underprivileged people in the world.
- Develop an awareness of how a staggering number of people in the world live, and what you can do to help.
- Form new friendships with incredible characters both in the community and within your own group.
- Learn a lot about yourself and your capabilities.
- Visit Central America and learn about a different culture and language.

1.1.2. El Salvador Project History

The El Salvador project was initiated in 2002 when two 2nd year Civil Engineering students from Imperial College were inspired by their lectures on the damage, destruction and ensuing human suffering that resulted from the 2001 earthquakes that struck El Salvador. As a result, working in conjunction with Dominic Dowling (a PhD student from the University of Sydney), and with assistance from Prof Bommer of Imperial College, they arranged for a group of Civil Engineering students to travel to El Salvador to take part in an educational reconstruction project.

Following on from that project, one of the team members, Paul Astle, made a variety of contacts in El Salvador and led a team of students the following year to work in El Salvador, this time with the Salvadoran NGO REDES. Over the following years, groups have continued to visit El Salvador still working with REDES and assisting them on their projects. Each year the Team and the project has changed and developed, to suit the needs of the Team and of REDES. Teams have included participants from other universities and other disciplines than engineering, as well as graduate engineers; some work has also included sociological studies of the communities involved in the project.

1.1.3. General Information

Over the years an optimal team size of around 10-12 participants has been settled on, and the project is typically run for 6 weeks during the summer vacation. This allows a decent amount of working time in country, along with giving participating students the opportunity to travel or gain work experience if they so wish. However this is not set in stone, and dates should be agreed with the Team and REDES each year to suit everyone's needs. As more contacts are gained in El Salvador it may also be

possible to work with a wider variety of NGOs, and this should be kept in mind to ensure a suitable project is found.

The details of the project itself should be discussed and agreed with REDES (or any other NGO you are working with) and these discussions should start as soon as possible. Ideally one of the Team Leaders should have some knowledge of Spanish, however it may be possible to communicate in English, or by using a translator (a team member who is fluent in Spanish) here in the UK. Communications via email are usually most convenient.

The way the project usually works is that you act on behalf of the NGO on the site of one or more of their projects. This work may involve some or all of the following:

- Finding technical design solutions to problems encountered on site.
- Designing and refining construction processes.
- Organising community work groups and leading the work.
- Planning the work and managing the work to this plan.
- Ordering supplies and materials as and when they are required.
- Manual labour – working alongside the community members and skilled labourers.

Once the NGO know approximately what dates you are likely to be in-country they can start to assess their potential projects and decide where you would be of most use. Some Teams have looked into working across two sites, and working on one project for a few weeks then another project for a few weeks. These details will vary from year to year and it is for you to discuss cost and logistics implications with the NGO and agree a suitable solution. You will have to maintain some flexibility on this, and it is possible that you will not know the exact nature or extent of the work until you are in El Salvador and go to see the NGO, or in fact start work on the site. The ability to adapt to the situation and plan on the spot is essential. Communicate this fact to the team so that their expectations are managed and they do not arrive on site to find the nature of the work totally different to what they had planned for or expected.

When splitting the team always bear in mind relative engineering experience levels, Spanish ability, and first aid knowledge, and ensure you are absolutely happy with the safety and security of both groups before agreeing to split up. It is sensible to ensure both groups have individuals responsible for the essentials such as leadership decisions, first aid and finances.

1.1.4. Suggested Timeline

Overleaf is a timeline to indicate approximate times when you should expect your team to be undertaking or have completed certain tasks and milestones, and it also maps out suggested contact with the Alumni Group. The guidelines, particularly around producing post-project documentation, recruiting a team and booking flights should be stuck to.

Month	El Salvador Project TEAM	El Salvador Alumnus GROUP
October		Group to organise annual meeting/dinner
	Team to give presentation at dinner	Annual Meeting/Dinner. GROUP to present any info on old projects.
November	Handover to new leader(s)	
	Start to build the team: Identify potential participants. Contact REDES and any other NGOs	Informal GROUP/TEAM meeting - exchange knowledge
December	Get initial project scope information.	
	Report from previous project issued. Identify skill requirements e.g. linguistics, technical etc.	End of Year Newsletter
January	Finalise Team - Get Deposits Visa Application if necessary Finalise Proposal	Informal GROUP/TEAM meeting - exchange knowledge
	Start sponsorship letters/emails/calls	
February	Follow up on all sponsorship leads.	
	Lectures on earthquakes, construction and Spanish. Finalise Project, Timings, People, Scope, Cost Book flights	Informal GROUP/TEAM meeting - exchange knowledge
April	Procure PPE and any other necessary items.	
	Team Building Event	
May		
June	Exams	Mid-Year Newsletter & Pre-Project GROUP/TEAM meeting.
July	Project Window	
August	Project Window	Get feedback from REDES on project progress
	Project Window	
September	Project Window	

1.2. The Team

1.2.1. Who should go?

There is no specific 'type' of person who should be a participant, although the most important thing is that the person understands the kind of thing they will be doing, and has plenty of enthusiasm. A good sense of humour is advisable to deal with the low points. The physical and mental challenge that this project presents should not be overlooked, in previous years it has had a profound effect on the participants, as well as testing your physical ability to the limit. That said, one of the benefits of the project is to give people new experiences and challenges, so again as long as you are prepared to 'have a go' then you will manage. Having a well rounded team will certainly benefit the project, so a good distribution of year groups should be sought. Individuals with past experience in development projects or in Spanish would be helpful although having no experience is not a problem.

Having a physical disability would not immediately preclude a participant, but the implications of the physical limitations for the participant need to be discussed with the leader and REDES and a decision reached on a case by case basis.

1.2.2. How many people?

The teams for previous projects have been from 6-15 participants. It is recommended to try and get a team of 10-12 people together for future projects. This means that if a few people need to take a break, then the overall team does not suffer too much. There is an upper limit in terms of the team because of logistics whilst in El Salvador, and the additional funding needed per participant.

1.2.3. Suggested key roles

From previous years the following key roles are suggested, although you can add to them if you wish.

- **Leader(s):** There absolutely has to be at least one person who is the leader in the team. Making the project happen will require unstoppable drive and enthusiasm and the leader needs continually driving the project forward. They also need to be prepared to take on the responsibility of running the project. It will take a lot of your free time and you need to decide if you are in a position to commit. The commitment extends after the project in ensuring the reports are sent in a timely fashion as well as recruiting the following year's leader. As a result of this time commitment, it is unwise for the leader to be a final year student. Whilst leading the project is tough, it will be one of the most rewarding experiences in your life, and you will also gain numerous skills that are highly sought by graduate employers.
- **Treasurer:** The total project costs will run into thousands of dollars, and this money needs to be controlled and accounted for. As the leader is typically extremely busy it is wise to delegate the financial side of the project to another participant. They will be responsible for the monies once received and getting them to El Salvador. They then need to manage the money whilst there, keeping a note of all the money spent.

- HSE Officer: It is recommended that one person take on the role of HSE officer, with the responsibility of checking HSE requirements before leaving, and whilst in El Salvador. Ideally this person would also have some First Aid experience.
- Translator: It really is necessary to have at least one competent Spanish speaker on the team. Whilst day to day most people can get by with a bit of 'Spanglish' there are occasions when clarity is essential, and that is when you really need someone.
- Secretary: There is a surprising amount of administration involved in this kind of project and it extends to all stages. Before you leave there will be a lot of letters and applications to get out and chasing and monitoring of potential sponsors. Whilst in El Salvador progress needs to be recorded and there will be a lot of information floating around that ought to be collected. Delegating someone to manage all the information and take ownership of it will really take some burden off the leader and having well organised records will really help when you come to write the report.

1.3. Funding

The biggest task and headache before you go is getting the cash to pay for it all. At first this may seem like a daunting task, but remember this project has been running for 5 years, and every year has managed to find the cash, it can be done. However, to help you in your quest here are some tips.

1.3.1. How much?

The first thing to do is to work out how much money you need to get everyone there and back again. In addition to this, in some projects, the team has raised enough cash to pay for everyone and also pay towards the construction costs of the project. We will consider a broad example below:

10 Participants

6 week project

£3000 donation to project costs.

Costs	Description	Total
Flight	As already mentioned, flights are approximately £600 per person.	£6000
Living	Living costs vary hugely depending on the location, San Salvador or the community. As basic starting point £8/person/day is a decent guesstimate.	£3360
Miscellaneous	There are always costs you haven't thought of, banking charges, first aid kits, etc. We will take £500 as a good starting point here.	£500
Construction	As mentioned, we will work on the basis of donating £3000 to this project.	£3000
Sub-total		£12860
Contingency	It is always wise to have a 10% contingency, especially given that most of the costs will be in USD, and whilst the GBP is very strong right now this could change.	£1286
Total		£14146

NOTE: This is just an example to give you an idea of the magnitude of the costs and the process to get a high level budget.

In previous years each participant has donated about £300 towards the total. So in this case that would be £3000. So in this case, you would need to raise about £11000 for the project.

There is more information about specific costs in El Salvador in Attachment B.

1.3.2. Sources

There are basically 4 sources of funding:

- **Participant Contributions:** These will principally be the contributions made by the participants, this has been of the order of £300 – 400 in previous years. Bear in mind that it costs around £1300 per participant to fund, so for every extra participant you are looking at raising another ~£1000.
- **Non-Corporate Donations:** This rather grand title means donations from individuals or other sources that aren't a company, e.g. Lecturers, Schools, or Individuals.
- **Corporate Donations:** Most medium/large companies have an annual budget for 'good causes', they also have a budget for 'Graduate Attraction and Recruitment'. You are aiming at both of these sources in a given company. The types of companies you are likely to get money from are large engineering contractors/consultancies, looking to gain familiarity with top engineering graduates coming from Imperial. Your selling point is this, by donating money, their company will firstly be helping to improve the lives of some of the poorest communities in the world, and secondly they are getting access to a pool of highly talented and pro-active individuals. In the past we have offered to give presentations to the top donor companies, and this has proven to be very helpful in ensuring repeat donations. However, note that a company's previous willingness to donate does not mean that they will in the future, and hence should not be counted on. In addition to engineering companies, other large graduate employers (i.e. City institutions) may also be prepared to donate money as a publicity exercise and because they also draw many graduates from Imperial. In previous projects corporate donations have ranged from £250 - £6000.
- **Trust Funds:** The final source is trust funds. These funds are typically an enormous annuity, the interest of which is paid out to various good courses decided upon by the Trust Committee and pre-conditions of the founder. Trust payments tend to be larger payments, of the order of £1000s, but trusts tend to only meet quarterly, hence applications need be sent in as early as possible. Trust funds that have helped in the past include: The Imperial College Trust, The Old Centralians Trust, The John Lyon's Charitable Trust and the Hapold Trust.

1.3.3. How to get it

So by this point, you will hopefully be able to work out an initial estimate of the costs involved, minus the contributions. You have seen who can supply the rest, so how do you get it?

The first thing to do is to put together a generic proposal letter. An example from the 2003 project is included in Attachment A.

You might not be able to provide as much information as that but you should get together as much as you can. This letter will form the basis for all your funding applications. Each participant should get an e-version of the letter so they can send out personalised versions to any contacts they have, whether that be in the industry or other sources e.g., charities, churches. The leader, or other delegated person, needs to coordinate these activities to ensure that more than one request is not sent to the same organisation.

You also should make a list of all suitable companies, especially those that donated in previous years. The previous year's project leader(s) should be able to assist you with the names of suitable companies and the contact details. If you are approaching a company that has never been contacted before then you should first call them and find a contact in the graduate recruitment or marketing departments, this will mean that you can send your letter directly to that contact, and chase it up to make sure they are acting on it.

You should apply a similar process for Trust Funds, identify them, get a contact, and send out your proposal. However, trust funds often have a specific application form, you need to check this with your contact before you send out a proposal/application. As mentioned before, the Trust committee will probably only meet once a quarter, so you need to get your application in as early as possible to ensure that you get funds before the project starts.

To summarise, the general process is this:

- **Identify:** Get a list of companies/trusts/organisations to apply to.
- **Find a Contact:** If you don't already have a name and number, then you need to get one.
- **Chase your Contacts:** Once you have sent out your letters, you need to be pushing your contacts (politely) on a regular basis, once a week perhaps, until you get an answer, positive or negative.

It's extremely important that on return you write to your donors and provide some kind of report (explained in 3.1).

1.3.4. What to do with it

Where the money should go is a difficult question. The El Salvador Alumnus Group are in the process of setting up an El Salvador Project Account which can be used to pay all monies into. The Team Treasurer should contact the Group Treasurer for further details.

1.4. Travel

How you get to El Salvador is up to you. In past years most people have flown directly to El Salvador. However people have also travelled both before and after the project around the region. If you plan to travel then it is advised to do so after the project. This makes the logistics for REDES easier and there is less risk of delays. Once the project is finished you can travel at your leisure with no deadlines. Also, you will probably need a well-deserved holiday after the project!

1.4.1. Flights and Routing

There are a number of routes to get to El Salvador. They pass through a variety of international hubs and have slightly different prices. The simplest route is to fly from London Heathrow to Miami and from there to San Salvador. If the flights are booked early enough this flight should cost approximately £600 (clearly this is subject to significant variation and must be checked by the team). It may be possible that there are cheaper routes going through multiple hubs, such as London-Paris-Houston-

San Salvador. However, it is recommended that the team select the route that provides that minimal travel time and allows the majority of the team to arrive together in San Salvador. This will minimize logistics for REDES and the associated risks of arriving there after a very long journey.

Visitors travelling by plane arrive at Comalapa International Airport (El Salvador International Airport) in San Salvador, located forty-five minutes outside of the city limits (roughly \$25 by taxi). The airport code is SAL.

A US\$32.00 departure tax must be paid upon departure. Depending on the airline, the full amount or part of the tax may already be included in the price of your ticket and the amount you must pay will vary from US\$0 - US\$32.00.

1.4.2. Visas & Immigration

Once the team is confirmed all individuals need to check their immigration status with both El Salvador AND any other countries that you pass through, this is especially true for the USA. This cannot be something that is left to the last few weeks as some visa procedures can take several months.

Currently UK and Irish citizens do not need a visa to enter El Salvador. Americans and Canadians can enter the country without a visa, but they must purchase a Tourist Card for US\$30 that last for 90 days, which they can obtain from Immigration at the El Salvador International Airport (SAL). Australians, New Zealanders and South Africans need a visa for entry.

Visa regulations can be found at the following website:

<http://www.elsalvador.org/home.nsf/home>

On arrival in San Salvador you will be asked if you are there on business or pleasure. In previous years everyone has always stated pleasure.

1.4.3. Insurance

In previous years Imperial College have been generous enough to allow participants to be included on their blanket policy. Whilst this is a very welcome help, it is not clear how difficult it would be to claim back any costs should there be a problem, especially for personal items. As such it has always been strongly recommended for each individual to take out comprehensive personal travel insurance. This is especially the case if any individuals are planning on travelling after the project as the Imperial College policy will only cover them for the duration of the project. The costs of worldwide year long policies are relatively cheap at less than £90, for the individual trip the price is approximately £30.

1.5. What to take

In the table below you can find a guide as to what items to pack, per participant. Once again this is only a guide, and the items you need will vary depending on what you plan to do before and after the

project. As a general point, don't take anything you don't want to get damaged/lost. You should always try to keep your luggage to a minimum.

Equipment	<p>Good sized main rucksack/bag. 60-90lt (Suitcases are not advised)</p> <p>Smaller day sack, for every day/weekend use. 15-30lt. Make sure you can carry it comfortably for a prolonged period, 1-2 hours.</p> <p>Sleeping bag, 2/3 season with mat. This will depend on the sleeping arrangements for your project, but bear in mind that at the higher altitudes the temperature can drop significantly at night.</p> <p>Mosquito net. This is essential as the place where you sleep may not be totally closed off. Make sure the net is pre-treated, or do it yourself before you leave.</p> <p>Personal first aid kit. Should contain any prescribed medicines, with clearly written prescription and general items, plasters, pain killers, re-hydration sachets, anti-histamine cream.</p> <p>Insect repellent. It is highly recommended to take some kind of insect repellent, it is suggested that you investigate what you want to use. DEET is a common and powerful insect repellent although it is known to be bad for your skin, so you should investigate the options for you.</p> <p>Sun Block. It is absolutely essential that you have sun block, you should know how you react to sunlight, but it is recommended that you do not wear less than SPF 30 whilst working. Note also that you will be constantly sweating and wiping away the cream so you need to reapply it regularly.</p> <p>Torch. A good torch is vital; you will probably be located in a remote community that has no lighting. In addition to this, if you need to make any late night toilet trips you will be in serious need of a torch. Take extra batteries/bulbs, one with a strap is also handy.</p> <p>Hat and Sunglasses. It's really important to stay out of the sun and avoid sunstroke so wear a hat and protect your eyes with sunglasses.</p> <p>Waterproof Jacket/Poncho. When it rains in El Salvador, it rains!</p>
PPE (See 2.1.5)	<p>Boots. You will need strong hard wearing leather boots. If possible they should also be steel toe capped boots.</p> <p>Gloves. You need a pair of decent leather gloves for manual work.</p> <p>Hard Hat. Bring a Hard Hat, it might be possible to get one from one of the sponsors.</p>
Clothes	<p>Light natural fibre clothes are best for hot, humid conditions.</p> <p>You should bring a good selection of cotton clothes, including long sleeved and full length trousers. It is also worth bringing some slightly more presentable clothes for when you will be out in San Salvador, or other urban locations.</p> <p>There will probably be opportunity for swimming so remember appropriate swim wear.</p> <p>Also remember that the washing will probably be done by hand, and so the clothes</p>

	<p>should be hard wearing.</p> <p>Don't forget your toiletries.</p>
Extras	<p>Pen knife/Multi-tool. This is really handy for all sorts of reasons that will become apparent when you get there. Make sure you pack it in your hold luggage.</p> <p>Camera. It seems unnecessary to remind you of taking a camera on what will probably one of the most visually stimulating experiences of your life. Remember it's also important to take pictures of construction activities as it will help later on when you write the report. As with everything else, keep in mind, that it could get damaged or stolen on your travels, so if it's a good one check it is covered in your insurance.</p> <p>Books. Remember you are still on vacation, and it's really nice sometimes to lay back in a hammock on the beach and read a bit of fiction. If everyone brings one or two books then there will be more than enough reading material for everyone.</p> <p>Photos/Postcards. You will build up relationships with some of the members of the community you work in. It can be really nice to show them pictures of your friends/family back home, or just some postcards of London go down well too.</p> <p>Notebook/Journal and Pens. This is going to be an important experience in your life, so you might want to jot down a few things, or indeed write a journal. In addition to this, sometimes the best way to communicate with the workers is by drawing a quick sketch.</p> <p>Water bottle. You will need a water bottle on site, you can either bring your own, although you need to make sure you keep it clean. Or you can use an old plastic water bottle.</p> <p>Duck Tape. Duck tape can be surprisingly useful, don't take a whole roll, maybe just a metre or two wrapped around a piece of cardboard.</p> <p>Para Cord/Straps. Bringing some para cord is useful for hanging mosquito nets, or hanging your clothes out. Equally straps can be useful to hold things together.</p> <p>Mobile Phone. If your phone is dual band, and roaming equipped, it may be worth bringing as a back up for communications.</p>

2. Whilst you're there

Once you arrive in El Salvador, you may have the stresses of getting there out of your mind, but there are a whole host of new issues to deal with. It is hoped the notes below will help.

2.1. HSES

2.1.1. Emergency Plans, Communications, and Documentation.

Before any incidents take place on the project it is essential to have a plan in place of how you will respond. You need to decide between yourselves and REDES how you will respond to any incidents depending on their severity. This will include discussing with REDES exactly how people will be evacuated from the site to San Salvador, and how you will contact them. In previous years it has been possible to keep in touch with REDES in San Salvador through both radio and mobile phones. You need to think how you will do this for your project. For example, you may wish to leave a phone/radio along with the team first aid kit in a central location that you can all access.

In addition to these plans, it is essential to keep information about the team together and safe. We suggest the following. Get 3 copies of everyone's passport, visa (if required), insurance documents, plane tickets, contact details, and any other important information e.g. medical conditions. One set should be kept with someone in the team, the leader or delegated safety person (if there is one). One set should be left with REDES in San Salvador. The last set should be left in the UK with someone who has agreed to be an emergency contact, everyone in the team should also have this person's contact details. After the project is finished all copies of information should be collected and destroyed.

2.1.2. REDES Contacts

Below is a list of current contact details. However, it is strongly advised to contact the previous year's leader to confirm best contacts.

REDES	2260 - 1472
	1474
	1384
Raphael Garay	7729 0562
Rolando Gonzalez	77291029
Betty Galvez	2289 9698

Note: The international country code for El Salvador is 503.

2.1.3. Health

A Team Health officer should be chosen, preferably someone with some health or first aid knowledge. If no-one on the Team has any sort of First Aid training, consider spending some money on putting one or more members on a course (the union run some for example) so you are confident you have

people who could provide competent first aid on site. It is essential that someone in the team has some first aid training and is prepared to use it if required. This person should check, well in advance of the trip, what vaccinations and anti-malarials are required and recommended, this information should then be passed onto the rest of the team.

Ensure that all of the Team all have their own first aid kit with basics and any personal medicines, and that the Team leader or Health officer are told (in confidence) of any medicines people are taking. Dehydration is a common ailment so re-hydration sachets are strongly recommended to be included in all individual first aid kits.

Take a large comprehensive Team first aid kit and ensure everyone knows where it is kept. It is advisable to include a sterile needle set in this kit.

The most common ailments among the team in previous years have included: Travellers Diarrhoea, Dehydration, Exhaustion, Blisters and Sunburn.

Sharing water with community members is a good way to make friends, but carries risks. It is better to take a separate water bottle for them each day, to avoid the risk of spreading disease. Equally Team members should not share water bottles with one another

2.1.4. Safety whilst travelling in El Salvador

The roads in El Salvador are extremely dangerous. The Team is likely to have to travel in pick-ups on a regular basis. On these occasions, if the vehicle is going to be travelling on major roads, wherever practically possible all members the Team should travel within the cab of the vehicle and not in the tray. Travelling in the tray leaves the passenger with very little hope of survival in any sort of accident. If REDES (or an alternative NGO) or unable to provide enough vehicles, spending some of the team money to rent another vehicle should be considered. Be aware also of bags and equipment carried in the tray, especially through towns. Make sure they are tied down.

If you are thinking of doing any independent travelling in El Salvador see Attachment B.

2.1.5. Safety on site

The section is simply a guidelines for Safety on Site. It must be remembered that Construction is a dangerous industry, accounting for over 300 fatalities in the UK per year, in what is a very highly regulated environment. Standards of Site Safety are not as high in the developing world; hence the Team should be ever more aware of the risks and put in place mitigating measures

The risks on site will vary each year depending on the projects undertaken. At each site where Team members are working it is advisable to carry out a risk assessment and see what can be done to minimise risks (stabilising earth walls, protecting pits, wearing hard hats when working below others for

example) and make sure these are implemented. If there are non-engineering members of the Team make a particular effort to ensure they understand the risks on the site they are working, as they may not spot them so readily as an engineering student.

Where possible measures should be taken to protect and educate the community members and skilled labourers you work alongside. Explaining why things have to be done in a certain way for safety or quality reasons may be arduous, but it is one of the ways the Team can add a lot of value.

If members of the Team are working across different sites, ensure there is some way of communicating, or where this is impossible ensure there are agreed times for lunch/finishing work, and that each site has a first aid kit.

Key points to remember:

- You should never allow anybody under the influence of drugs or alcohol to work or be in the vicinity of construction work. Beware of alcohol abuse within the community.
- Method Statements are the Construction Industry's way of ensuring construction processes are planned and done in a safe way, ensuring the quality of the finished product. It is suggested that the team writes method statements for any repetitive tasks and also for any tasks which are safety critical, e.g: excavating unstable ground. The idea is that the team agrees a way of doing a task, writes it down and then briefs the work force on the method, maybe even taking a signature from the workforce to ensure it is understood. A method statement should always list the required tools, plant, materials and any other unusual PPE. Often these points and a few numbered brief points will suffice
- Slips, Trips and Falls.....the construction industry cliché of 'a tidy site is a safe site' is very true. If you see things are trip hazards stop what you are doing and sort it out.
- It has also been shown in numerous studies that tidy sites have lower waste levels, which is vital in development work. Remember that El Salvador is prone to extreme weather, so ensure all materials etc are secured when away from the work area, as items may be lethal if carried by the wind.
- A significant percentage of accidents in construction are in the falling from height category. This includes falling from higher floors of buildings but also, if working by a steep slope, such as a road embankment / cutting you are at risk from a fall from height, as you are when working near excavations. Simple precautions include:
 - Ensuring Excavations are securely protected to prevent people falling down them, similarly at the top of steep banks.
 - Ensuring any scaffold has been erected by a competent person, inspect thoroughly its condition every day.
 - Ladders should only be used as access and only for light work such as painting. Always ensure you have at least three points of contact with a ladder. A rule of thumb for the angle of a ladder is 1 horizontal, to 4 vertical ratio. Wherever possible foot ladders when people are on them and even more importantly tie the top of the ladder securely.

- Whenever digging in the ground, especially in urban areas there is a risk that you may come across buried services such as electricity, water and sewers. Some rules of thumb are as follows:
 - Never assume services are dead. This sounds very simple but please always keep this in mind when dealing with cables
 - Check existing drawings / plans if they are available to see if you can find services. Use a Cable Avoidance tool if one is available to locate services, then hand dig trial holes to locate them. Remember **HAND DIG ONLY WITHIN 500MM OF KNOWN SERVICES AT ALL TIMES.**

Personal Protective Equipment (PPE) and recommended attire

- Personal Protective Equipment (PPE) should always be fit for purpose:
- An essential item are steel toe capped boots, of the walking boot type, providing ankle support, ideally with a steel midsole to protect the foot from sharp objects.
- Eye Protection is important. For example in dusty environments, a simple pair of safety spectacles is suitable. Tinted ones are especially handy in El Salvador as they also protect from the sun, so might also be useful on the beach!!! In other circumstances such as cutting steel with a circular saw, or breaking out concrete with a pneumatic drill, some impact goggles, of the type held on with an elastic strap may be appropriate
- Gloves of differing types e.g: Thin ones to protect the hands from blisters / sharp edges when doing manual handling or using hand tools. When handling concrete / cement and other hazardous substances, ensure appropriate impermeable gloves are worn
- In noisy environments ear defenders or plugs may be necessary to prevent damage to hearing. If you have to raise your voice to be heard, consider wearing them. Remember your hearing can be damaged very easily and is not reversible!! Also handy if any team members snore
- In an environment with plant / vehicular movement a high visibility waist coat is appropriate.
- When working in Excavations or other situations where there is a risk of something falling on your head, or you banging your head, you should wear a hard hat.
- If you have long hair, keep it tied up out of the way, save getting it caught in machinery / chemicals.
- You should take your own PPE out to El Salvador and investigate if the people you will be working with will be provided with is also.
- When working with Concrete / Cement, long sleeves and trousers are appropriate to protect the skin from cement burns, which are potentially very serious. (+gloves and specs to protect from splashes obviously)
- El Salvador is often very hot and humid. Ensure when doing manual labour you keep yourself hydrated, wear a hat, sunglasses and sun cream of a high protection factor. Also Gentlemen, keep your shirt on, to keep the sun off you shoulders. A sun burnt back equals a bad nights sleep which equals a very uncomfortable few days!

2.1.6. Environment

Disposal of municipal waste is a huge problem in El Salvador, and, like many other developing countries, illegal dumping of rubbish is a common occurrence. There is however at least some apparent collection and disposal in the main cities and towns. In the small communities where you will probably be working there will likely be no form of organized collection and disposal of waste. Clearly this poses a problem to the team as you will produce significant quantities of non-biodegradable waste. The only current solution to this problem is to collect the waste in the community and to take it back to the city where it can be disposed of in the city waste collection system.

Disposal of any construction waste also poses major problems in a remote community. Waste should be kept to an absolute minimum, and it should also be noted that members of the community will be able to reuse almost anything, especially spare construction materials. However, you should check what the planned end use is for any spare materials to make sure it is not planned to use them in a dangerous way.

Another waste challenge is that of used toilet paper. The toilet paper cannot be disposed of in the pit latrines as this leads to other problems due to the fact that it is not readily broken down. In previous years the used paper has been collected and periodically burnt.

You should discuss with REDES and/or the community the best approach to dealing with all forms of waste on your project.

2.1.7. Security

One of the major concerns during the project is the safety and security of the team whilst in San Salvador.

The more experienced members of the Team will be reasonably aware of the risks and dangers of San Salvador. Holding a session during which the experienced Team members (or members of the Group if necessary) explain these risks and dangers to the less experienced Team members would be a valuable exercise. Minor risks and irritations such as robbery, pickpockets and begging should be explained, as well as the more serious threats such as theft at gun-point on public transport for example.

Whilst in San Salvador it is advisable to insist the team take precautions such as not going out in groups of less than 3, not using public transport, not showing off expensive possessions, not going to areas or bars unless accompanied or suggested by the NGO/other local groups. Not walking home after going out is also crucial, and taxis are both cheap and in great abundance.

Whilst all travelling together, especially with bags, the Team are a large and obvious target for robbers. Ensure all travel is planned in advance and time hanging around together with bags (waiting for tickets

for example) is minimised. One person buying the Team's tickets in advance is a good way to solve this.

El Salvador is still a politically turbulent place and the team is strongly advised to check the current situation in the country before they arrive. A good source of information is the UK Foreign Office Website: <http://www.fco.gov.uk>

For more information about security see Attachment B.

2.2. El Salvador and San Salvador

For general information about El Salvador see Attachment B.

2.3. Project Management

The project that you are going to be working on is very similar to any construction project, there will be issues like logistics, materials and labour management to deal with. Most of these issues will largely be dealt with by REDES, however depending on the project you may feel that you can take more on in this respect. The biggest issues are managing people, this includes the participants, local unskilled labour, and any skilled labour you have. You need to optimise the deployment of labour so that it is most effective. So for example, if a team heads out to a house and when they get there they find they are missing materials or tools they will have wasted a whole morning, clearly not optimal. The next few sections offer a guide as to some of the things you can do to try and improve the efficacy of the project. This is not what you have to do, and there is nothing stopping you doing more.

Another reason to take the initiative in this area is because any involvement you get in the management of this project will be valuable, and well regarded, experience as an engineer.

2.3.1. Planning

You are probably aware of a Gantt chart, and it is a good idea to try and make a high-level version for the project. Whilst you may get something in the way of a plan from REDES prior to getting there, it is highly likely that this will change significantly once you are in the country.

Be realistic with the planning, and make sure you build in milestones that you can use as intermediate targets. Once you have your initial plan in place, try and see ways of optimising labour so you don't have any dead time in the schedule.

2.3.2. Progress

Try and make some kind of check list for the individual construction activities so that you can record progress. This is essential for you to coordinate the teams, and it will also help REDES if you can explain the progress perhaps on a weekly basis.

2.3.3. Materials

There will be a significant quantity of valuable materials for the project. Keeping a control of all materials and making sure they are in the right place at the right time will be a difficult task. REDES will most likely appoint someone in the community as the controller for the materials, but if you feel that you can help implement or improve the situation then take the initiative.

2.3.4. Manning

Depending on the nature of the project you will be working in teams of perhaps only a few people, up to potentially 10-20 people. Coordinating and managing these teams so that they work optimally can also be a challenge. Indeed minor problems such as two community members not wanting to work together can cause a number of problems with a workgroup. You need to try and get on top of who is in the workgroup and if it is working effectively, and if not, try and address the problem.

2.4. Culture

There are major cultural differences between El Salvador and the UK; El Salvador is a very vibrant and colourful country with a recent and turbulent past. There is still a lot of political tension in the country, which can be very visible. However, the people of El Salvador make it such an amazing place to go, they are always very friendly and will gladly talk to visitors and share cultural differences.

All the students who wish to travel to El Salvador should make effort to learn as much as possible about the country from books and the internet and by speaking to people who have been to the region. The students who went last year will be able to share their experiences with the people who want to go this year. Learning some Spanish will greatly improve the cultural exchange between the two parties.

Attachment B₁ gives a great deal of information about El Salvador, both its history and up to date information about food and culture. This is an excellent first point of information and the team leader should ensure all members of the team have read this to prepare them for the trip.

2.5. What's It like?

Living and working in a rural community in El Salvador is physically and mentally tough. There is the delight when you get to see or experience something new, complemented with a realisation of how lucky you are in the developed world. It's important to be clear that there will be times when you will probably want to just return home, after a tough day in the burning heat, and washing with a bucket of cold water you can feel quite low. However, be assured, without the low points you can not get the high points, and they are absolutely worth it. Participating in this project has changed the perspectives of many of the ex-participants and they will always have that experience to reflect upon. To summarise, participating in this project will challenge you in many ways, but it is incredibly rewarding, and absolutely worth the effort.

2.5.1. Project Work Schedule

In past projects we have broadly followed the following activity schedule for the participants:

- Week 1. Arrive in San Salvador, meet with REDES, acclimatisation, more detailed information about project and briefing.
- Weeks 2-6. Working and living in community, except weekends. Leave on Friday and return on Sunday.
- Final 3 days. The last few days normally involve in a big closeout with the community, always fun. You will also have de-briefing with REDES before finally heading home, or wherever else you plan to go.

You might feel a bit bad about leaving on the weekends but it is important for a number of reasons. First, you will need a break, both from the work and the food. Exhaustion can catch up with even the most enthusiastic individuals. Secondly, it is important to REDES, and a great opportunity, for you to learn about El Salvador's past, the current situation and what the future holds. Thirdly, you are on vacation, and there are beautiful beaches, volcanoes and bars to discover.

2.5.2. Typical Working Day

The following is not a hard-and-fast description of how you should work, it is merely an anecdotal indication of what you can expect from a typical day on site in El Salvador, to help the reader gain an understanding what the work often can be like.

5.00	Awoken by cockerels!
6.00-7.00	Get up, prepare for day.
7.00-8.00	Walk to site. Assess site for any changes overnight (e.g. any rain damage?).
8.30-11.30	Work on site. Likely to involve manual labour tasks (digging, carrying, mixing concrete, bending re-bar, laying brickwork and compacting soil are common activities) as well as general supervision of the site, supervision and guidance of community members, discussion of progress with skilled labourers (potentially via sign-language, drawing on sand, "pigeon-Spanish").
11.30-13.30	Walk through near-unbearable heat back to base, eat lunch (tortillas), discuss progress with the rest of the group and plan for the afternoon as necessary. Return to site.
13.30-16.00	Continue with work, discuss how many tortillas you ate with the community members, visit another site to check on progress (closest sites may be 30mins arduous walk apart).
16.00-17.00	Begin to pack up site for the end of the day, completing any crucial activities (such as finishing a concrete pour), clean and lock away equipment, protect the site as necessary in case of rain overnight.
17.00	Return to base before nightfall, wash in cold buckets of water, eat dinner, discuss progress for the day and any problems encountered with the rest of the team, plan for the following day, read.
21.00	Fall asleep to the sound of cricket and toads.

3. When you get back

After you get back and you have slept for a day and eaten everything you missed, there are still some things to be done.

3.1. The Report

All of the reports for previous El Salvador projects are available to download from the website in pdf format, and word documents should be available from previous team leaders.

Whilst on the project it is worth keeping an individual, or at least a team diary of construction activities (and any other activities) to help jog memories when it comes to writing up the report. This comes in very useful, and can also be very enjoyable to look back on.

The report has for several years been produced in A3 landscape format, with half the page dedicated to text and the other half dedicated to appropriate diagrams and photos. This format has worked well. For cost reasons some years the report has not been printed for all recipients, but has been burnt onto CD instead, as this delivers a reasonable printing and binding saving, dependant upon the size of the document. In deciding how to layout and distribute your report as well as the content that should be included, it is worth considering who the document will be used by and what it will be used for. Some suggestions are below:

User	Usage	Requirement
Sponsors	To understand what their money has been spent on. To use as publicity and "show off" their link with the project. To inform their staff about the project.	Clear budget. Relatively easy to read (some sponsors may not be engineering companies/staff). Shortened "mini-report".
Student Team Member	To record activities, for memory sake and also to potentially use as evidence for chartership purposes once graduated.	Some history and context of the project and country. Nicely formatted document. Photos and clear story of what the project involved. Technical details.
REDES/NGO partner	Record of activities. Document to show other potential partners examples of their work. Record of technical details and learnings, especially if new construction methods or building types	Photos and clear story of what the project involved. Technical details. Spanish translation. Shortened "mini-report".

	were involved.	
Future Teams	Record of activities to help plan their trip. Estimating financial requirements. Record of technical details and learnings, especially if similar construction project is to be carried out in subsequent year.	Photos and clear story of what the project involved. Clear budget. Technical details.
Other parties	Some information on El Salvador, REDES, Imperial College, voluntary projects/construction projects in developing countries. Estimating financial requirements. Record of activities to help plan their trip. Technical information. Information to publish on the project.	Photos and clear story of what the project involved. Clear budget. Technical details. Shortened "mini-report". Some history and context of the project and country.

It is important to get this report completed swiftly after the project, and to distribute it to sponsors (as well as offering them presentations) before the following year's team re-approaches them for further sponsorship. This gives the following year's team the best chance of securing further sponsorship, and thus is vital to the sustainability of the project.

The most successful approach to producing the report is to agree within the team the structure the report should take. Then review the previous year's report and re-use appropriate material, ensuring it is relevant and up to date. Split out the remaining sections amongst the team, ensuring everyone understands what is expected of them in terms of length, content and style. Set deadlines for this writing. Collate all the pieces and compile into one document, editing language and style where necessary. Note – this is a long and difficult task, and can only really be carried out by one or two individuals. This should be the responsibility of the team leader, or another allocated individual. Once this has been done the report should be circulated for review and approval to the team (set a tight deadline on this task also) and then produced and distributed (to coincide with presentations). Ensure enough money has been budgeted for this, including posting a copy to REDES.

As noted in the table above, it may be worth producing a shortened version of the report (perhaps just a 2 page summary or a poster – see later section – to send out). A Spanish copy of this could be very useful to REDES or any other partners in El Salvador.

3.2. Finances

Records of all of the expenditure of the project should be kept and a summary of this should be included into the report. In previous years this has been some what haphazard. For the project to

grow and become more established we need to get very clear and accurate financial records. There will always be a number of transactions with no receipts, so it is even more important for the Treasurer to accurately record expenditure.

3.3. Posters and Presentations

One of the best ways to communicate the experience of the project with the sponsors is to give a presentation. This both helps you to understand what you did and sets a strong foundation for future years.

In addition to giving presentations and sending out the reports, producing an A2 poster is another great and simple way to raise awareness of the project and satisfy the sponsors. This may be the best way to feed back to some sponsors, and may even replace a report. It can also be used around campus to raise awareness of the project for future students.

3.4. Recruiting next year's team

One of the key responsibilities for the team leader is to recruit the leader for the following year, and to assist them and give them as much knowledge and information as possible. This makes the project considerably more sustainable and means the project can grow, develop and improve year on year. If for any reason (year abroad, graduation) this is not going to be possible, a team member should be elected to fulfil this role. It is worth discussing the following year's trip as a team whilst still in El Salvador, as often people wish to return. If a leader can be found whilst still in El Salvador, this makes the process significantly easier. In either case it is necessary to recruit one and have them selecting a team and in contact with REDES before the end of the Christmas term, in order for the project to have a good chance of being a success. The returning team should offer assistance in the recruitment process by way of a presentation in the department, and being available for lunchtime meetings to help answer the questions of prospective team members and show photos to give them a good understanding of what the project involves.

3.5. Join the Alumnus Group

The El Salvador Alumni Group has been set up to support the El Salvador team each year in their activities and make the project more sustainable. It is made up of graduates who were involved in the El Salvador project whilst at university. It aims to ensure that their experience and knowledge is not lost when they graduate and move on, as well as trying to make some benefit from the networks, contacts, skills and knowledge they develop as they move into their professional careers.

There are three levels of involvement:

Members - who are part of the group and are kept informed of the activities of the team each year and invited to socials;

Reps – who offer the team some assistance by introducing the team to their companies and thus where possible assisting the team in gaining sponsorship as well as technical advice where required;

Committee Members – who take a more proactive role in the group and act as the contact points for the group, as well as driving forward initiatives to develop the group and the project further.

Please join this group and offer assistance so that students in future years can continue to benefit from the opportunity you have had to be involved in the superb and worthy project, and El Salvador can continue to benefit and develop as a result of it.