PLANNING SCHOOLS
IN DEVELOPING COUNTRIES

Introduction
There are many issues that you will need to consider when planning to set up a school or other institutional building project in a developing country. This brief describes some of processes and stages that should be considered before starting on the building work, from the initial community consultation through to its implementation.

Community participation
Building partnerships at an early stage will help communities take ownership of the processes and improve the project outcomes. Your role may be to facilitate partnerships that empower communities and identify their needs. This will ultimately lead to more sustainable community development.

It is important to ensure gender equality throughout this process. Depending on the status of women within the community they might not always be well represented on boards, discussion groups and committees.

Communication
Clear communication and transfer of information is paramount. Through forming a relationship with the community you will develop trust. There are many questions to be asked and to be communicated to the community:
- How do you establish effective lines of communication between yourself, the school management committee (if applicable), parents and the wider community?
- Establish early on your role within the project and make this clear to the community. Are you a donor, facilitator, architect, engineer, consultant, partnering organisation?
- Make clear what you are going to contribute to the project and what your limits are in terms of time and commitment.
- Establish who does what within the community and who you can work with. Where possible do not rely on one person as your point of contact for the dissemination of information as you risk giving domination to those with this role.

Participatory planning and methodology
When designing a school the students and the wider community are the clients and should determine the brief. This will give you a clear understanding of what is most needed.

There are many methods of engaging students to identify the main issues that concern them about their school environment. It would be ideal to conduct design workshops with children of the local community asking questions such as "What is your school like now? How would you like to see it?"

To make sure you are reaching a broad cross section of the community it is advisable to conduct a baseline survey to gain local information. It is wise to develop a mixture of appropriate methods to gather the required information as not everyone will respond well to a questionnaire. For example a series of group meetings or workshops might be more effective. Make sure to treat survey information with respect and confidentiality, being careful with how you present your findings to the wider public.

Below are some questions to ask your self when preparing a survey:
- How do you reach a widespread sector of the community and engage with students of the catchment area, parents and the wider community?
- Who is undertaking the survey, are they local? Do they speak the local language? Is there gender equality within your survey team?
- What groups already exist in the community? For example parent teacher groups and especially women groups.

For more detailed guidelines on baseline surveys see the *Technical Brief* Baseline Surveys. The survey can be used to establish the most pressing issue that the community face. It can also identify the local skills of the community. This will be crucial information when looking at training.

It is important to promote training within the community, whether it is training to build the capacity of the community in local economic development, enterprise development, sustainable livelihood improvement, strategic and business planning and construction. Information on the skills of the local community can be found out from the baseline survey.

It is also advisable to allow plenty of time to conduct on the ground research into local building materials and climatic conditions, local schools and existing community facilities. If working with local partners take note of their previous projects and if necessary ask to see registration papers if they are a functioning non-government organisation (NGO) or community based organisation (CBO).

School governance
Good governance is crucial to the success of any community project in a developing country. When planning a school it is necessary, from the beginning to establish who will run the school. School buildings can be organised as government or donor-supported programs, or by NGO and communities, and sometimes by parents themselves. If it is community run they may need a school management committee with a board of governors.

If it is a community run school then a CBO should ideally be set up well in advance by the community. If it has been running for a period of time you will be able to monitor the effectiveness of this group to organise meetings, get ideas off the ground and if possible see evidence of some initial fundraising by members of the community.

It is necessary to acknowledge that conflicts will occur throughout the process. You may need to identify ways to unearth conflicts so that they are dealt with at an early stage.

Financial issues
To ensure that the school will be self sustainable a business plan should be prepared. This would preferably be written by the team who will ultimately manage the school as they will be responsible for the implementation. Transparency of not only funds but information within all levels of the organisational structure should be present.

The following may be questions that need to be answered:
- Who will run the school? What is the organisational structure? Will there be a school management committee and a board of governors?
- How is the school to be sustainable?
- Who will enrol teachers and administration staff?
- Will there be a site manager who is responsible for day to day management and ongoing maintenance?
- Is it a Government run school? Is it a community run school? Would it be feasible for the community to establish the school and the Government to take up management when school is up and running?

- Is the project set out clearly with manageable stages of construction and expansion? Take in to consideration funding, the cycle of enrolment and capacity of students and their requirements.

Incorporating income generating activities (IGAs) into the management structure and therefore the business plan could allow for ultimate sustainability of the school. This may include activities such as:
- agro-processing and food production
- water kiosk
- tailoring
- community hall, renting of school facilities
- charge points
- woodworking
- beekeeping
- tree nursery

For more information see Practical Action's Technical Briefs on manufacture and production.

Risk management
A risk management strategy would ensure that you know what risks are involved in the project so that the school objectives can be successfully achieved. Through outlining the risks you will be able to identify, evaluate and decide how these risks might be mitigated.

The site
When selecting a site for a school you should take in to consideration that the school may expand. An initial site analysis should be taken determining the opportunities and constraints of the site. This should be followed by a thorough site survey once the land has been secured.

Land tenure
There are a few key issues to look at when purchasing land which will vary from country to country depending on the rules and regulations in place:
- Who will own the land? It is important to consider who owns the land, is it the government, community groups or NGO?
- Who is responsible for the transfer of title deeds? Is it a local chief or official?
- Find out the local terms of ownership and look over the contractual papers.
- Be aware of cultural and tribal differences. For community projects it would be advisable to find a neutral territory to set up community facilities.
- Find out the local rate per acreage and agree to the recommended rate. Attempts at unreasonable negotiations may occur if you aren't initially clear with rates.
- How will you settle the payment? What is the procedure in the local area? It is best not to handle cash as this will be a risk not only to you but to those that are being compensated. Bank cheques may be preferable with a small stipend to cash the cheque if travel to a bank is necessary.

Site analysis
Firstly study the site and analyze the basic features. Look at the environmental factors that may affect the final design mainly:
- sun angle making sure to take in to consideration the best aspect. This will vary depending on country and localized climatic conditions.
- slope
- prevailing winds
- pleasant and unpleasant views
- existing trees and geological features
- existing water courses and run off

Access to and from the site is also an important issue to take into consideration. If the school is to be built in a rural area then issues of access will arise such as the delivering of equipment to and from the site.

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It is highly recommended that you assess the risk of natural disaster hazards such as earthquakes, flooding, landslides etc. For example, it is wise to ask the local farmers about issues such as localised flooding as this will determine if flood lining or any other disaster risk reduction intervention will be necessary. For more information see Practical Action's Technical Briefs on disaster mitigation. Some low cost but effective actions that can be taken in preparation of a potential disaster.

Site survey

After the purchase of the land it may be necessary to undertake a site survey. You may contract a local surveyor to complete the work or if no professional services are available then follow the techniques outlined in the Simple surveying Technical Brief to give you a guideline on how to conduct a basic survey. A survey will be necessary to determine the following:

- accurate boundary dimensions
- location of existing trees and geological features
- location of existing water courses
- location and height of neighbouring buildings (if applicable)
- location of existing roads.

Masterplanning

Masterplanning is a process of setting a clear framework for the later detailed design of a development area. This framework will form the basis for how the area might be developed and where buildings may sit within the site. The process should be a collaborative one involving members of the community; parents, teachers and children.

For the school design to be a success thorough research should be undertaken. Identifying case studies of exemplar school buildings, the conditions which are best for learning and how students interact in a space, not only in the classroom but also in social spaces will ensure that the school will be effective.

Facilities

Primary and secondary schools will vary in terms of the facilities required. This is often largely dependent on the desires of the community and based largely on the funding available. It is important to establish what the *basic* and *additional* planning requirements are.

With the community you should also determine what will be shared facilities. Look at issues surrounding private and public areas within the school. What facilities can the community use and what is limited only for students use? This will raise concerns over safety and security and how to maintain control over access.

It is important to look at how you attract teachers to the school, especially in rural settings. This may be achieved with providing good staff accommodation and flexibility in working hours etc. It is also necessary to think of facilities and ways in which you can attract girls to attend for example it may be through providing boarding facilities so they don't have to travel long distances and be distracted at home with cooking duties etc.

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Masterplan for school infrastructure

Facilities	Basic	Additional	Requirements
Site			
Entrance	basic	additional	Entrance should determine the level of security and access to the school. You may need to consider a gatehouse located at the entry to control access.
Fence	basic		A boundary fence is required. Establish what is required in terms of security. A more secure fence may be necessary where boarding facilities are concerned.
Driveway	basic		Delivery/drop-off area will be required for school supplies, kitchen supplies. Consider placement in terms of safety of students and pedestrian walkways.
Landscaping	basic		Planting of trees during the initial stages is important so that they have time to develop. However, thought needs to go in to their location in relation to the overall masterplan.
Playing field	basic	additional	A level football pitch of standard dimensions 120m x 90m could be a used as a shared facility with the community.
Multipurpose court and viewing area		additional	If the need is there and if funding allows then this may be included for added recreational facilities and for wider community use.
Waste disposal and recycling	basic		Consideration should be taken as to how much waste is generated and what is the most appropriate way to dispose that is environmentally responsible.
Agriculture shed/store		additional	
Water supply	basic		Depending on the environmental conditions a borehole or hand pump will need to be established. This can be a shared facility and can be a source of income for the school.
Water storage	basic		Rainwater harvesting should occur and adequate storage tanks provided.
Energy supply	basic		This will vary greatly on the energy demand – lighting, computers, radio, TV, boarding etc
Additional Equipment		additional	If funding allows then outdoor furniture, shade structures, play equipment should be provided.
Administration block			
Reception		additional	This should be the first point of contact for all visitors. It should orientate people around the site.
Library		additional	This may double as a public resource centre for the extended community.
Administrative offices	basic		Offices are required for the principal, deputy principal and secretary.
Staffroom		additional	This may include a small kitchen for staff and sitting area.
Meeting room		additional	This space can be used for interviews, staff meetings. If funds allow then additional interview rooms may be provided.

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Sickbay	basic		A minimum of a first aid kit should be supplied. If need and funding allows then a sickbay/clinic and nurse should be provided.
Toilets		additional	Depending on staff numbers and funding 1 female and 1 male toilet should be provided.
Storage			Adequate storage should be provided for all resources.
Learning spaces			
Classrooms	basic		Classrooms should include the following; furniture, resources. A linear shape will maximize cross ventilation, solar access and natural light. 1.3 m^2 is required per pupil. It is not recommended to have a classroom of less than 40m^2 unless there are 20 pupils or less.
Storage	basic		Required to store resources, books and supplies.
Outdoor learning spaces		additional	A central courtyard can be used as an outdoor learning. Having an additional outdoor space can improve the learning capabilities of the students.
Computer labs		additional	Issues surrounding energy supply will need to be considered.
Science labs		additional	Issues surrounding energy supply will need to be considered.
Toilets	basic		Cubicles and wash space required.
Library		additional	This may double as a public resource centre for the extended community.
Dining facilities		basic	
Multipurpose Dining Hall			A dining hall will work best if it is a flexible space, it may work well if it is a covered open space. It can be used for meals, sport/games, performances, large community gatherings.
Kitchen			The kitchen should be located near the dining hall. The kitchen needs direct access to the driveway for deliveries.
Store			Food storage will be an issue. Adequate s Hygiene?
Boarding facilities		additional	Providing boarding facilities is likely to increase the attendance rate of students, especially girls in rural areas.
Dorm room			
Bathroom			Toilets, basins and showers required.
Study space			
Common room			This may be a shared space for recreation and study.
Laundry/drying area			
Staff accommodation		additional	Recruiting teachers is hard in rural areas. Provide facilities that will attract teachers and allow for flexible hours.
Bedroom			1-2 bedrooms may be required depending on needs of staff.
Living space			
Kitchen			A small kitchen should be provided.
Bathroom			Toilet, basin and shower required.

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Architectural principles

When designing a school it is recommended to consider the following:

- Flexibility: allow for adaptability as multi-functional spaces increase usability
- Expandability: allow for future growth of school
- Sustainability: Integrate this into every aspect of the project. For example environmental education for sustainable development, including access to water for drinking and washing, clean energy, food security and green building techniques.

Below is a list of issues to include when designing the buildings:

- Natural ventilation
- Orientation
- Insulation - Heating/cooling
- Day Lighting
- Reflection
- Spatial requirements
- Access
- Acoustics

For more information see Technical Brief School Buildings in Developing Countries for information on the following:

- ground preparation
- foundations and floors
- building materials
- walls and roofs
- maintenance

Construction

Once the masterplan has been finalised a building schedule can be prepared. This will estimate the time required from beginning to completion and will allow the project manager to monitor whether the project is on schedule.

Based on plans drawn up by a draughtsman or architect a bill of quantities (BOQ) can be prepared listing materials, parts and amount of labour required. This will then provide an itemised list of the costs and will be a source of reference for the project manager to note if the project is within budget.

Services

See Technical Briefs for information on the following

- Water and Sanitation: Water storage and rainwater harvesting
- Food: Food sourcing, Food storage, Cooking – institutional stoves
- Waste management:
- Energy: This will be based on energy demand, and requirements of the school. Computers, lights, radio/TV - Mains, solar, wind, hydro, hybrid

Additional community infrastructure

If funding allows the provision of additional infrastructure such as health clinics or a nursery it can provide much needed support for the wider community. It would allow for the education of health and hygiene and provide much needed supplies to the community.

References, further reading and links

- *School Buildings in Developing Countries* Practical Action Technical Brief
- *Community Participation Methods in Design and Planning* New York: John Wiley & Sons, Inc. Sanoff, H. (2000).
- *Participatory Design Theory & Technique* Raleigh, NC: Author. Sanoff, H. (1990).
- *Design Games* Los Altos, CA: William Kaufmann, Inc. Sanoff, H. (1979).
- *Learning Environments for Children* Atlanta, GA: Humanics Publishing Group. Sanoff, H. & Sanoff, J. (1981).

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- *Participatory Workshop Sourcebook: A Sourcebook of 21 Sets of Ideas and Activities*, Robert Chambers, 2002.
- *Methods for Community Participation: A Complete Guide for Practitioners,* Samesh Kumar.
- *Working with Conflict, Skills and Strategies for Action,* Simon Fisher, Z. Brooks.
- WEDC, 2008.
- *Child Friendly Schools* UNICEF
- Bricks + Cartwheels An Australian based charitable organisation established in 2006 that works to provide an opportunity for people and communities to directly influence their own built environment.
- SKAT Publications

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