

A small graphic of a yellow pencil and a black compass is located to the left of the main title text.

4th National Secondary Schools' Competition 2014 - Design & Build on the theme 'Water Conservation'

COMPETITION GUIDELINES

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1 INTRODUCTION

1.1 BACKGROUND

To foster an appreciation for water and the environment among our young citizens, the Water and Sewerage Authority (WASA) initiated the “In the Know with H₂O” National Secondary Schools Competition. Commencing in 2011, the “In the Know with H₂O” quiz educated students on topics within the water sector such as wastewater, reuse, the human impact on water resources and integrated water resources management. This year, WASA is migrating from the quiz format to a project-based school competition, allowing students the opportunity to put to use the knowledge gained on the water sector and its challenges. WASA now aims to stimulate the imagination and creativity of the young population by providing an avenue for the design and construction of a system or physical mechanism that focuses on water conservation in the commercial, agriculture, domestic or tourism sector. This ‘system’ may also entail the design and execution of a school public education conservation programme.

1.2 DESIGN CHALLENGE

Water is a valuable natural resource that is vital to our everyday survival. The preservation of our water resources is critical to our health and the economic, social and physical development of Trinidad and Tobago. High water consumption patterns for domestic, industrial and agricultural activities have been a constant threat to the country’s natural water sources. The first National Secondary Schools Project Competition will therefore embrace the theme of Water Conservation to address this challenge. Water conservation can be defined as the reduction in the volume of water used for a particular activity; the term is often interchanged with water use efficiency. The students will embark on a project to conceptualise, design, build and implement a process or physical model which reduces the volume of water used in any one of the following sectors:

1. Domestic
2. Commercial
3. Agriculture
4. Tourism

The concept of the design/system should conform to the definition of water conservation stated above.

1.3 COMPETITION DETAILS

The competition will be advertised by WASA via traditional and through social media. Schools will be invited to submit proposals for a project under any **ONE** of the four categories below:

1. Domestic



2. Commercial
3. Agriculture
4. Tourism

The design must be capable of being implemented in the appropriate setting dependent on the sector. For example, a garden in the case of agriculture, a business place if the target is commercial, a hotel for the tourism sector and a household/school in the case of the domestic sector. Schools can collaborate with stakeholders throughout the competition.

Sixteen schools will be selected based on the highest scores attained during the qualification round of the competition or the proposal evaluation stage (refer to Chapter 3 of the Competition Guidelines). The Authority will attempt to select schools from each of the four categories. However, WASA reserves the right to evaluate all proposals irrespective of category; therefore the sixteen proposals may not necessarily be even across the four categories.

The top sixteen schools selected will be provided with seed money up to the sum of \$5000.00 to develop their project. This sum must be accounted for by way of receipts and unused funds must be returned to the Authority. Schools will be given approximately three and a half months to complete the design and construction of their project. At the end of which, a final report must be submitted, as well as a demonstration or presentation of the project. Two project evaluations will take place in April and May 2014 respectively, to determine the progress of the project based on the schedule submitted in the school's proposal. The final project report submission will be in June as outlined in Chapter 2 of the Competition Guidelines.

A winner will be selected for each category of the competition i.e. Domestic; Commercial; Agriculture; and Tourism. The overall winner of the competition will then be selected from amongst the four category winners. All sixteen schools qualifying for the second round of the competition will be rewarded for their participation.

Prizes will be awarded as follows:

- Overall Winner – \$100,000.00
- Category Winners – \$25,000.00
- People's Choice Award – presented to the school that receives the most votes for their project via WASA's Facebook and Twitter accounts.

2 COMPETITION SCHEDULE

REGISTRATION

Opening for registration:	October 7 th 2013
Deadline for registration:	November 15 th 2013

PROPOSAL SUBMISSION AND PROJECT SELECTION

Proposal development:	November 18 th 2013 - January 6 th 2014
Proposal submission:	January 6 th – 31 st 2014
Evaluation of project proposals:	February 3 rd - 28 th 2014
Announcement of qualifying projects:	March 7 th 2014

DESIGN AND CONSTRUCTION PERIOD

Design and build project:	March 7 th 2014 – June 28 th 2014
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PROJECT EVALUATION

Design and Build evaluation:	April and May 2014
Submission of final report:	June 28 th 2014
Project Demonstration/Presentation:	July 4 th 2014
Final assessment:	July 4 th – 31 st 2014

PROJECT SCORING

April 2014 Evaluation:	10%
May 2014 Evaluation:	10%
Final Assessment:	80%

AWARDS CEREMONY

Announcement of winners:

September 10th 2014

3 PROPOSAL GUIDELINES

The proposal must be prepared by the student team identified by the school to undertake the project on their behalf. This proposal will be evaluated by the judges to determine which schools will advance to the second round of the competition. The proposal should be submitted in report format and should not exceed 20 pages. Proposals should be typed in an appropriately sized font (e.g. Times New Roman, size 11-12, double line space) which is legible to the reviewers. Schools can incorporate pictures, maps, tables and graphs in their proposal.

The document should provide a rationale for the project and summarise the intended plans for implementation of the design or system. Schools can use the design process outlined in Figure 1 as a guide for creating a feasible project and effective planning system.



FIGURE 1: STAGES OF THE DESIGN PROCESS

The proposal should be concise and complete in every respect using the following suggested format:

- *Project Background* – identification of the problem and design challenge that would be addressed through the design, build and implementation of the proposed project.
- *Project Objectives* – state the primary goal and specific objectives to be achieved by implementation of the project. This section should explicitly indicate the sector/category to be focused on for the project.
- *Project Description* – outline the design/system proposed, the methodology and activities to be undertaken that would ensure the stated objectives are met and the project could be successfully implemented.
- *Implementation* – present the proposed schedule of activities, major deliverables and associated timelines. The schedule will be used to monitor the progress of the project throughout the competition. The schedule should correspond with the competition schedule outlined in Chapter 2 of the Competition Guidelines. The schools should attempt to plan their schedule to ensure that there are specific milestones to be achieved at the end of every month. This would aid in the evaluation process. The implementation strategy should also define the resources required for the project including the composition of the project team, age of students on the team and their form. The material and equipment required should also be detailed in the project proposal, in addition to a cost breakdown for all activities of the project. Planned collaboration with external parties should also be specifically described in the proposal.
- *Project Benefits* – explain the benefits of this project and the impact of this project within the thematic area targeted. The estimated percentage or volume of water that will be conserved by the design or system proposed should be stated in this section of the proposal. The benefits underlined in the proposal will be used as indicators of the project's impact.
- *Conclusion* – reiterate the major points of the proposal and emphasize the primary purpose and benefits of the project.

The proposal cover sheet attached in Appendix A should be submitted with the proposal.

4 JUDGING CRITERIA

4.1 PROPOSAL EVALUATION

Proposals will be evaluated by a judging panel comprising of qualified professionals employed at WASA. Each judge on the panel will review all the proposals and assign a maximum of five points to each of the criteria outlined below. The screening form may follow the style of Figure 1.

TABLE 1: PROPOSAL EVALUATION FORM

CRITERIA	1	2	3	4	5
Quality of the project proposal					
Relevance to the design challenge					
Feasibility of proposed project					
Originality of the proposed design					
Impact of the proposed project					

A score of one indicates that the project proposal inadequately addresses the listed criteria. A mark of three points denotes that the proposal generally meets the criteria but is lacking core components. A score of five points signifies that the proposal exceeds the expectation of the judge in the specific criteria.

The points awarded by the judging panel for the entire proposal will be tallied and the sixteen schools with the highest points will advance to the second round of the competition. The proposal screening criteria is as follows:

- Quality of the project proposal – the proposal must be concise, structured and written in a format that can be easily read by the reviewer. The document should contain all the required information outlined in the proposal guidelines to ensure the reviewer is able to thoroughly understand and visualise the project being proposed. Lengthy descriptions should be avoided to maintain the 20 page limit.
- Relevance to the design challenge – the proposed project must be relevant to the theme of the competition. Specifically, the goal of the project should be concurrent with the definition of water conservation outlined in the design challenge.
- Feasibility of proposed project – the proposed design/system, project objectives and activities should be practical and feasible. The schedule attached to the project proposal should correspond with the build and design phase of the competition schedule.

- Originality of the proposed design – the design/system proposed in its entirety should be the original work of the students. Schools may be allowed to use the concepts/ideas from existing designs; however the project should have its own unique elements that would bring something novel to the sector.
- Impact of the proposed project – the benefits that can be realised from the implementation of the proposed project should be substantial, resulting in a reduction in water usage for the groups/persons/organisations targeted in the proposed project.

4.2 PROJECT EVALUATION

4.2.1 MONTHLY EVALUATIONS

Judges will arrange two project evaluation visits to the schools one in April and the other in May 2014. The site visits will be used to assess the progress of the project according to the proposal submitted. Schools can earn a maximum of 10 overall percentage points from each of the two evaluation visits. This will account for 20% of the overall score toward determining the winners of the competition.

The Authority reserves the right to eliminate a school that may demonstrate little or no progress during the monthly evaluation phase and to request the return of all unused funds along with supporting receipts. In this instance, a school will be given a two week timeline to deliver the milestones as outlined in the proposal schedule. The judges will do a follow up visit after this period to assess the progress made.

4.2.2 FINAL ASSESSMENT

Final assessment of the sixteen projects will be carried out by a judging panel which will score the projects out of a maximum of 80 points. The scores from the final assessment and the two evaluations will be added to determine the category winners.

The judging panel will then assess the projects of the category winners separately to arrive at the overall winner of the competition. All previous scores will be set aside as the judging panel engages in a fresh round of judging.

The judge's decisions shall be final.

TABLE 2: JUDGING CRITERIA

Assessment Criteria	Description	Weighting	Sub-criteria	Score				
				1	2	3	4	5
Innovation and Originality	Originality of the concept, operation and application of the design/system. This can also refer to improving the performance of older designs/systems.	0.1	n/a					
Resourcefulness	Creative use of available resources in the project design.	0.15	Use of recycled and locally available material.					
			Energy consumption and use of other natural resources kept minimal. Use of renewable resources as an energy source.					
			The budget of the project was not exceeded. The total cost of the project is below the estimated cost of a similar type project.					
Feasibility and Sustainability	Viability of the design / system.	0.1	The practicality and usefulness of the project.					
			The continuity of the project after the project competition has ended.					
Relevance	Rationale for the development and application of the design/system to suit the specific needs of the sector.	0.2	n/a					

Assessment Criteria	Description	Weighting	Sub-criteria	Score				
				1	2	3	4	5
Impact	Benefit and impact of the project to the sector and reducing water use.	0.3	Environmental benefits and impacts of the design					
			Economic benefits and impacts of the design					
			Social benefits and impacts of the design					
			Effectiveness of the design through consultation with the relevant group/organisation throughout the design process					
			Volume or percentage reduction in water use.					
Teamwork	Motivation, solidarity and diversity of the group of students and school in general.	0.1	Interdisciplinary approach to the development and implementation of the project.					
			Involvement and support from each team member through assignment of specific responsibilities but working interdependently.					
			Consultation with the wider school population for feedback into the design.					
Communication	Effectively convey the objective and approach to the design in the final report and project demonstration.	0.05	n/a					

5 RULES AND GUIDELINES

5.1 ELIGIBILITY CRITERIA

- The competition is open to Forms 3 and 4 students of all secondary schools within Trinidad and Tobago. Schools should form a core interdisciplinary team comprising of 5 students and may submit only **one** project proposal per school.
- The submitted proposal must follow the guidelines provided by the Authority and effectively demonstrate how the proposed project will sufficiently address the design challenge.
- Project activities should not exceed the four month time frame of the competition schedule.
- Submissions should not consist of plagiarised material or copied work of any student or professional.

5.2 REGISTRATION

Schools will be required to complete the registration form by the date stipulated on page 3 of the Competition Guideline in order to participate in the competition. Submission of a project proposal will **NOT** be recognised as an official entry if the official registration form is not submitted by 15th November, 2013.

5.3 PROPOSAL SUBMISSION

Project proposals and the final project reports must be emailed to the special competition email address: schooldesignandbuild@wasa.gov.tt. All documents must be in portable document format (pdf). An official acknowledgement email receipt will follow each submission.

5.4 COLLABORATION

Students may engage external stakeholders based on the sector targeted in the proposal (i.e. domestic, commercial, agriculture or tourism) in order to ensure or demonstrate the practical benefits of the project. Any such collaboration should be fully described in the project proposal, as well as, the lines of communication and role of the stakeholders at each stage of the project.

Evidence of discussions, meetings and cooperation with stakeholders should be included in the final report. Stakeholders may be invited to participate in the final presentation to provide testimonials on the impact of a project on their operations, where applicable. However, the school project team must always be the sole designer and builder of the project.

Each team will also be assigned a Project Advisor, who can be consulted along various stages of the project.

5.5 ROLE OF TEACHERS

Whilst teachers may guide the process, the project must be the outcome of the students at every stage, which they would be required to demonstrate by way of their knowledge, during the different review/evaluation stages.

The teacher/s assigned to the student team will act as liaison between the school and WASA, in addition to coordinating all project activities which require consent by parents or third parties.

5.6 OWNERSHIP AND RIGHTS

Ownership of the design will be retained by the Water and Sewerage Authority of Trinidad and Tobago, which reserves the right to use the project designs submitted in any manner it sees fit (refer to Appendix B).

5.7 NOTIFICATION PROCESS

All schools that have registered to enter the competition and those selected to progress to the second round of the competition will be notified formally via official correspondence from WASA.

6 PROJECT PRESENTATION

Teams will be required to present their final project reports in a written format, as well as via demonstration or presentation. Both methods of presentation will be evaluated by the judging panel to rank the projects and decide the category and overall winners of the competition.

6.1 FINAL REPORT

The report should be succinct and clearly convey the objectives, approach and functionality of the project. The **Final Report** should not exceed 30 pages and should be in legible format. The following are report guidelines highlighting information that should be provided:

- Summary Statement

A comprehensive summary of the document's purpose, scope, methods, results, conclusions, findings and recommendations. The Executive Summary should be proportional to the length of your paper. This statement should not exceed 250 words.

- Introduction/Background

The introduction will provide background information on the research area. Its purpose is to establish a framework for the project in order for the reader to gain an overall understanding of the problem to be solved.

- Objectives

State specific objectives of the project which should correspond with the objectives listed in the project proposal.

- Methodology/Approach

Present the type of research design utilized in the project, such as the approach to data collection, analysis, development of the design and presentation. Describe the strategies used and activities carried out to reach the objectives. The resources (financial, material and manpower) used for the project should be highlighted in this section of the final report. Any challenges (timelines, support, resources) encountered by the project team can be included. This chapter should also detail any consultations, surveys or working groups sessions with the school, external organisations or professionals relevant to the project.

- Project Description

Explain the design/system developed by the project team from inception to implementation. Integration of the project into the targeted group/school/facility should be mentioned. This section can also include your design blueprint/model with any possible changes from the proposal stage. It may be useful to discuss the strengths and weaknesses of the chosen design.

- Impact and Sustainability

The main achievements of the project in relation to the objectives should be detailed. Compare the situation before the project started to the situation for the target group after implementation of the project. Discuss the relevance of the project to the design challenge and list the social, economic and environmental benefits of the project which should be consistent with the benefits documented in the project proposal.

Explain the continuation of the project, where applicable, after the competition has ended. The final report should detail how the project will be sustained after the competition has ended. The project team should also indicate how experiences and knowledge developed in the project was disseminated to other stakeholders. In addition, to an explanation of how the project contributed to increased awareness, empowerment and knowledge of water conservation to the target group.

- Conclusion and recommendations

This chapter should summarise the succinct point of the report and should relate to the objectives stated at the beginning of the report. Lessons learnt throughout the development of the project can be summarised in this section. Recommendations for enhancing the application of the project or further work on the topic can be briefly discussed.

- Appendices

Attach any additional material that would supplement the information provided in the report, i.e. pictures, maps, budget and other illustrations.

6.2 DEMONSTRATION

A project demonstration is the second component of the project **Final Report** that will be used to determine the winners of the competition. Schools will be required to determine the best method and approach for displaying their final project. Schools are encouraged to be creative in their demonstrations utilizing for example:

1. Video – film produced by the school to display the workings of the project from inception to implementation. This video length must not exceed 15 minutes and should be of a high quality.
2. Presentation – portrayal of the actual operation of the project in the targeted setting. This exhibition can include the project team explaining the features of the design/system and the entire presentation should not exceed 15 minutes.
3. PowerPoint® Presentation – digital presentation of the project with each member of the team taking part in the delivery of the presentation. This should not be longer than 15 minutes.

APPENDIX A

PROPOSAL COVER SHEET



"Water Security for Every Sector.
Deliver it. Sustain it."

NATIONAL SECONDARY SCHOOLS PROJECT COMPETITION

PROPOSAL COVER SHEET



PROJECT No.: _____ (OFFICIAL USE ONLY)

Section One: School

1.1 Name of School:

1.2 Address of School:

1.3 Telephone no.:

1.4 Fax no.:

1.5 School Principal:

Title

Surname

Given Name(s)

Mr.

Section Two: Responsible Teacher

2.1 Responsible Teacher:

Title

Surname

Given Name(s)

Mr.

2.2 Post/Designation:

2.3 Telephone no.:

2.4 Mobile no.:

2.5 Email address:



"Water Security for Every Sector.
Deliver it. Sustain it."

NATIONAL SECONDARY SCHOOLS PROJECT COMPETITION

PROPOSAL COVER SHEET



PROJECT NO.: _____ (OFFICIAL USE ONLY)

Section Three: Project Team

3.1 Team Member 1

Title Surname

Mr.

Given Name(s)

Age:

Form:

3.2 Team Member 2

Title Surname

Mr.

Given Name(s)

Age:

Form:

3.3 Team Member 3

Title Surname

Mr.

Given Name(s)

Age:

Form:

3.4 Team Member 4

Title Surname

Mr.

Given Name(s)

Age:

Form:



"Water Security for Every Sector.
Deliver it. Sustain it."

NATIONAL SECONDARY SCHOOLS PROJECT COMPETITION

PROPOSAL COVER SHEET



PROJECT NO.: _____ (OFFICIAL USE ONLY)

3.5 Team Member 5

Title

Surname

Given Name(s)

Mr.

Age:

Form:

Section Four: Project

4.1 Project Title:

4.2 Thematic Area:

Domestic	<input type="checkbox"/>
Commercial	<input type="checkbox"/>
Agriculture	<input type="checkbox"/>
Tourism	<input type="checkbox"/>

4.3 Proposed percentage reduction in water use:

APPENDIX B

MEDIA RELEASE FORM

MEDIA RELEASE FORM

I, _____ (*name of student*) authorise the Water and Sewerage Authority of Trinidad and Tobago (WASA), to, at no charge or liability:

- Release my name and photographs to the media for publications related to the Authority.
- Circulate my photograph on the Authority's website and associated web pages.
- Film my presentation for educational or promotional purposes.

I acknowledge that I will not be compensated for the use of my name and photographs associated with WASA's National Secondary Schools Competition 2014.

Student Name: _____

Date: _____

Address: _____

Phone Number: _____

Signature of Parent/Guardian: _____

