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**SOUTH AFRICA**

GENERAL MANAGEMENT ASSISTANCE CONTRACT (GMAC)

**Contract No: 674-C-00-01-00051-00**

“Green Professional Scheme”

Contract or Grantee number: 0160-0905-G-GA52



This report was produced for review by the USAID. It was prepared as a performance milestone under Mega-Tech, Inc.'s prime contract.

The contents of this report address activities performed under USAID/South Africa's Strategic Objective No. 6: Increased Access to Shelter and Environmentally Sound Municipal Services

Please direct all queries regarding this report to:

Mega-Tech/South Africa  
Bank Forum Building  
Lobby 1, Second Floor  
337 Veale Street  
New Muckleneuk  
0181 Pretoria RSA  
Tel. 012 452 0060  
Fax 012 452 0070  
Email [megatech@intekom.co.za](mailto:megatech@intekom.co.za)

Or

Mega-Tech, Inc.  
180 South Washington Street, Suite 200  
Falls Church, VA 22046  
Tel. (703) 534-1629  
Fax (703) 534-7208  
Email [info@mgtech-world.com](mailto:info@mgtech-world.com)

## **Activity Summary and achievements:**

The GPS focuses on promoting sustainable housing in the South African context. The objective of GPS is to increase the actual amount of environmentally sound housing (ESH)<sup>1</sup>; as well as raising awareness of ESH by providing free professional services to communities and projects wishing to build energy efficient houses. GPS will also result in climate change benefits through the uptake of no-cost and low-cost energy efficiency principles in the housing sector.

Through the Green Professionals Scheme, IIEC-Africa has been providing free, direct technical assistance to communities, developers and larger entities (such as municipalities) who wish to incorporate environmentally sound building principles in new housing developments. GPS makes recommendations on cost-effective options that lead to improvements in thermal performance (natural comfort) of houses, whilst in the long term seeking to reduce greenhouse gas emissions related to household energy use. The programme also focuses on the larger settlement in that it specifically targets town planning and greening issues related to environmentally sound housing. GPS also places priority on promoting empowerment and gender principles.

## **Contents of this report:**

- 1) Grant Activity Completion Report; (September 2006)



International Institute for Energy Conservation

**IIEC**

67 Fourth, Melville  
Johannesburg, South Africa  
Tel: + 27 (0) 11 482-5990  
Fax: + 27 (0) 11 482-4723

## **INSTITUTIONALISATION OF THE GREEN PROFESSIONALS SCHEME**

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### *Achievement of Common Indicator Targets*

Prepared for:  
**USAID**

Prepared by:  
**Ian Househam**  
**IIEC - Africa**

Date:  
**August 2006**

## INTRODUCTION

This report represents completion of Milestone 8 under Grant No. 0160-0905-G-GA52. It describes the achievement of targets against USAID PMP and common indicators, as set out under Milestone 2 of this grant agreement.

## CEI INDICATORS

The activities that constitute this project are reportable under all three of the components of the Clean Energy Initiative (CEI). The following tables detail the targets for this project under each CEI theme.

### GVEP Targets

Indicator	Target	Achieved
Local Capacity Developed	2	1
People with increased access to energy services	3,800	2,280 (based on 600 homes with average occupancy of 3.8)

### Comments

Previous experience with earlier phases of the Green Professionals Scheme indicated that it was not uncommon for there to be a lead time of one year between initial contact being made with a housing developer and the final placing of the appointed Green Professional. Under this current grant agreement, a total of six months was available, making this task very challenging.

Given the short time available, the emphasis had to be on selecting housing projects where a reasonably rapid success could be assured. One particular housing project – Scenery Park in East London – emerged as having all the attributes to make it ideal for a Green Professionals intervention. Rather than continuing to search for further projects in an attempt to initiate the greening process in as many places as possible, it was decided to focus on ensuring good results for this one project.

The project in question will be positioned by Buffalo City Municipality as a showcase, and will guide their provision of low-cost housing for some time to come. Already, there are plans by the municipality to initiate a further housing development at St Luke's in the Newlands area, which will incorporate the environmentally sustainable features demonstrated at Scenery Park. Hence the eventual impact of the Green Professionals intervention will be very much greater than that quantified here.

### EESD Targets

Indicator	Target	Achieved
Energy Savings	-	-
Cost savings	-	-
People Benefiting	3,800	2,280 (Note that the people in this target are NOT additional to those mentioned under 'GVEP Targets' above).

### **Comments**

As stated when these targets were originally set, it is impossible to quantify accurately the level of energy and cost savings that will result until the Green Professional's recommendations are implemented and a post-implementation survey has been conducted. However, it is possible to make some estimates of the likely savings. As outlined in the report on Milestone 3, the use of simple insulation in the roof and walls would save approximately 4,900 kWh per house annually, worth in the region of R2,500. Over the full development of 600 houses, this represents an annual energy saving of 2.94 GWh, valued at approximately R1.5 million.

However, this must be viewed as an absolute lower limit to the expected saving, since the range of interventions likely to be recommended by the appointed Green Professional will be more sophisticated than simple insulation. For example, passive solar design principles will reduce heating bills still further, while solar water heaters will reduce water heating bills by up to 60%. Perhaps more significantly, in addition to the direct savings achieved per household, there will also be savings in embodied energy through the use of lower environmental impact materials. Finally, maximizing the use of local resources in construction and facilitating the creation of local small enterprises will bring financial benefits to the community as a whole.

### **HHC Targets**

<b>Indicator</b>	<b>Target</b>	<b>Achieved</b>
Homes adopting improved cooking / heating / lighting techniques	1,000	600 (Note that the homes in this target are NOT additional to those mentioned under 'GVEP Targets' above).
Number of people with reduced exposure to combustion pollutants indoors	-	2,280

### **Comments**

Natural lighting and passive solar heating both represent improved techniques. Although the full recommendations from the Green professional are not yet available, it is certain that they will include measures to optimise both of these techniques. Given that virtually all of the households in the community currently use highly polluting paraffin or wood for most of their thermal energy needs, every unit of energy saved represents a reduced exposure to indoor pollutants.

### **COMMON INDICATORS**

Targets and comments as originally indicated at the beginning of the project are presented below, along with additional comments arising from the implementation of the project.

Common Indicator	Original Target / Comments	Additional Post-project Comments
<b>Strengthen Public Sector Executive Function</b>		
Does your program help the government with service delivery goals or other policy objectives? State goal / objective and impact.	The Constitution specifies that 'Everyone has the right to adequate housing' and 'The State must take reasonable...measures...to achieve the progressive realisation of this right'. 'Green Professionals' interventions will help to ensure that the housing units being delivered can be considered adequate.	The housing development where the Green Professionals intervention has been made represents a partnership between the municipality and the Department of Science and Technology. In facilitating a partnership between the municipality and the Green Professional, the project can therefore be seen as assisting the DST with their strategic objective of "Managing the establishment of new institutional infrastructure where such ventures demonstrate potential for impacting positively on development at a sectoral or macro level"
<b>Support Democratic Local Government and Decentralization</b>		
Do you have a program to assist local governments to improve service delivery and make those services financially viable?	Evidence suggests that the types of interventions promoted by Green Professionals reduce considerably the lifetime cost of heating homes to a comfortable level, with relatively little additional capital expenditure. The housing service delivered is therefore considerably more affordable from the perspective of the occupant households.	The original comments still apply – no additional comments.
<b>Expand and Improve Access to Economic and Social Infrastructure</b>		
In what area(s) of physical infrastructure is your program active?	Housing	Although the Green Professional's work is not yet complete, recommendations are likely to extend to the areas of pedestrian-friendly

		planning and waterless sanitation. The project therefore impinges secondarily on the areas of transport and water / sanitation.
People with increased access to modern energy services (as a result of USAID)	The target for this project is the 'greening' of two housing projects including 1,000 housing units. On the basis of 3.8 individuals per household, this equates to 3,800 people.	The project has achieved the greening of one housing project including 600 housing units representing 2,280 people.
Cumulative number of USAID-assisted energy institutions with improved capacity to reform and manage their sector?	During the project period, two housing developers (most likely municipalities) will have their capacity improved to deliver high quality housing to their more vulnerable citizens. The training material developed under the project, along with the database of Green Professionals, will improve the capacity of many more housing developers after the project has finished. The exact number is impossible to project.	One municipality will have been capacitated under the project.
Does your mission provide training related to physical infrastructure? If yes, state the number of people trained.	The project will involve the production of training material that will be available for housing developers and prospective Green Professionals long after the project has finished. The number of people who will benefit from this training is impossible to project.	No additional comments
<b>Reduce, Prevent and Mitigate Pollution</b>		
Does your program work to reduce emissions from the energy sector, industry, and urban areas? If yes, how many tons of greenhouse gas emissions are avoided annually?	It is very unlikely that greenhouse gas emissions reductions will manifest themselves during the lifetime of this project. Once the 'greened' housing units have been constructed and occupied, greenhouse gas emissions will	Now that the location and characteristics of the greened housing development are known, it is possible to set a lower limit on the likely reduced greenhouse gas emissions. The minimum annual energy saving will be

	<p>be avoided. The amounts are impossible to quantify because they depend on so many factors that are not yet known (e.g. location and size of 'greened' housing units, heating fuel used, exact design parameters adopted).</p>	<p>2.94 GWh, equal to 10.6 TJ. Assuming that virtually all of this energy is currently in the form of paraffin, which emits 76.7 kg CO<sub>2</sub> per GJ, this equates to an annual reduction in CO<sub>2</sub> emissions of 812 tonnes.</p>
<p>Does your program generate monetary savings through prevention, mitigation, and reduction of pollution (including water and energy conservation)? If yes, how much is saved in USD or equivalent? Specify how the savings is calculated.</p>	<p>See comments in the row above.</p>	<p>The monetary value of the direct energy savings by households will be at least R1.5 million. Additional monetary savings will result, but these cannot be quantified until the details of the Green Professional's recommendations are available.</p>

## Grant Activity Completion Report

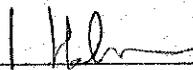
<b>1. Name of Organisation</b>	IIEC Africa
<b>2. Grant Activity</b>	Institutionalisation of the 'Green Professionals' scheme
<p><b>3. Briefly describe the grant objectives achievements and impact as a result of the grant activities implemented during the grant period.</b></p> <p><b>Objectives:</b> (i) initiate the 'greening' of housing projects, using the already proven approach of attaching suitably qualified experts to projects, to provide direct technical assistance in the area of environmentally sustainable construction and planning; (ii) develop a plan for converting the Green Professionals Scheme from being a purely grant-funded activity into being an institutionalised programme that forms an integral part of the process of housing provision.</p> <p><b>Achievements:</b> (i) attachment of a Green Professional to the 'Scenery Park' low-cost housing project, in Buffalo City (Eastern Cape). As a result, this high profile development of 600 homes will receive direct technical assistance enabling the developers to implement a full range of measures aimed at improving the energy efficiency of the dwellings themselves, and at creating a more sustainable and harmonious living environment; (ii) development of a plan for the institutionalisation of the Green Professionals Scheme, which has formed the basis of a large-scale proposal submitted to the UK Global Opportunities Fund for implementation; (iii) development of materials aimed at raising awareness among housing developers of the opportunities for improving the environmental sustainability of housing developments; (iv) updating of the database of qualified Green Professionals available to provide technical assistance to housing developers.</p> <p><b>Impact:</b> the most immediate and direct impact is the improved environmental performance of the Scenery Park housing development as a result of the technical assistance provided by the appointed Green Professional. Longer-term impacts will be increased awareness of the opportunities for sustainable housing among developers, and easier access by developers to those positioned to provide technical assistance. If the institutionalisation plan is able to be implemented, a further long-term impact will be the mainstreaming of direct technical assistance on sustainability within the housing process.</p>	
<p><b>4. Briefly discuss the implementation process, including lessons learned and recommendations</b></p> <p>The effectiveness of using direct technical assistance to improve the environmental performance of housing developments is well-established. However, the process of identifying a suitable housing project on which to place a Green Professional, and the process of identifying and recruiting a suitably qualified Green Professional, were both somewhat ad hoc, relying on meetings, telephone conversations, internet searches and IIEC's already extensive network of contacts in the housing sector. While this ad hoc approach may be adequate for small numbers of projects, it cannot form the basis of a larger-scale, comprehensive intervention. It is for this very reason that the institutionalisation of the Green Professionals Scheme is necessary, so that the matching of housing projects with suitably qualified professionals can be streamlined.</p> <p>While developing a plan for the institutionalisation of the Green Professionals Scheme, an attempt was made to conduct a telephone survey of key officials within the housing departments of provincial governments. It became apparent that the level of awareness and concern for environmental sustainability among provincial housing department officials was relatively limited. As a result, the officials contacted were generally unable to provide useful inputs into the development of a plan for institutionalising Green Professionals. However, the fact that this survey was of limited use itself provided valuable lessons: (i) there continues to be a strong requirement for general capacity-building on sustainability issues among those involved in housing provision; (ii) under an institutionalised Green Professionals Scheme, effort should be devoted to identifying particular individuals within provincial housing departments who are willing and able to champion the cause of sustainability.</p>	
<p><b>5. Public Dissemination: GMAC requires that all grant activity deliverable(s) of the grant activity (e.g., a report or survey) must be made available to the general public. Briefly discuss how the grants activities and results were made accessible to interested parties.</b></p>	

## Grant Activity Completion Report

IIEC is in the process of regaining control of the internet domain 'www.sustainablehomes.org'. Once this domain is re-established, it will be used as the main means of disseminating all of the materials generated as a result of this project. This will include presenting the manual 'Building Sustainable Homes' as a hyperlinked document for use by housing developers, as well as making public the Green Professionals database in a form that developers can use to search for suitably qualified providers of technical assistance and environmentally sustainable equipment, materials and services.

The project has been, and will continue to be, featured in IIEC's e-mail publication 'E-Notes' as well as on our Website, [www.iiec.org](http://www.iiec.org).

Signature of Grantee



Date

14/9/06