



Study Results

Assessment of City of Toronto's Environmental Initiatives

An Economic Impact Perspective

Presentation to the Green Jobs Action Team— March 2011

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Home Energy Retrofit

Solar PV

Eco-Roofing

Evaluation Framework

	Current Programs			Future Programs	
	Eco-Energy	HEAT only (a component of Eco-Energy)	Home Energy Help	Live Green Energy Efficiency Program (City Wide)	Live Green Energy Efficiency Program (Pilot)
Person-Years of Direct Employment	651	114	12	3,169	110
Person-years of Indirect and Induced Employment	892	156	16	4,341	151
Direct Jobs per \$1 million investment	7	4	5	N/A	N/A



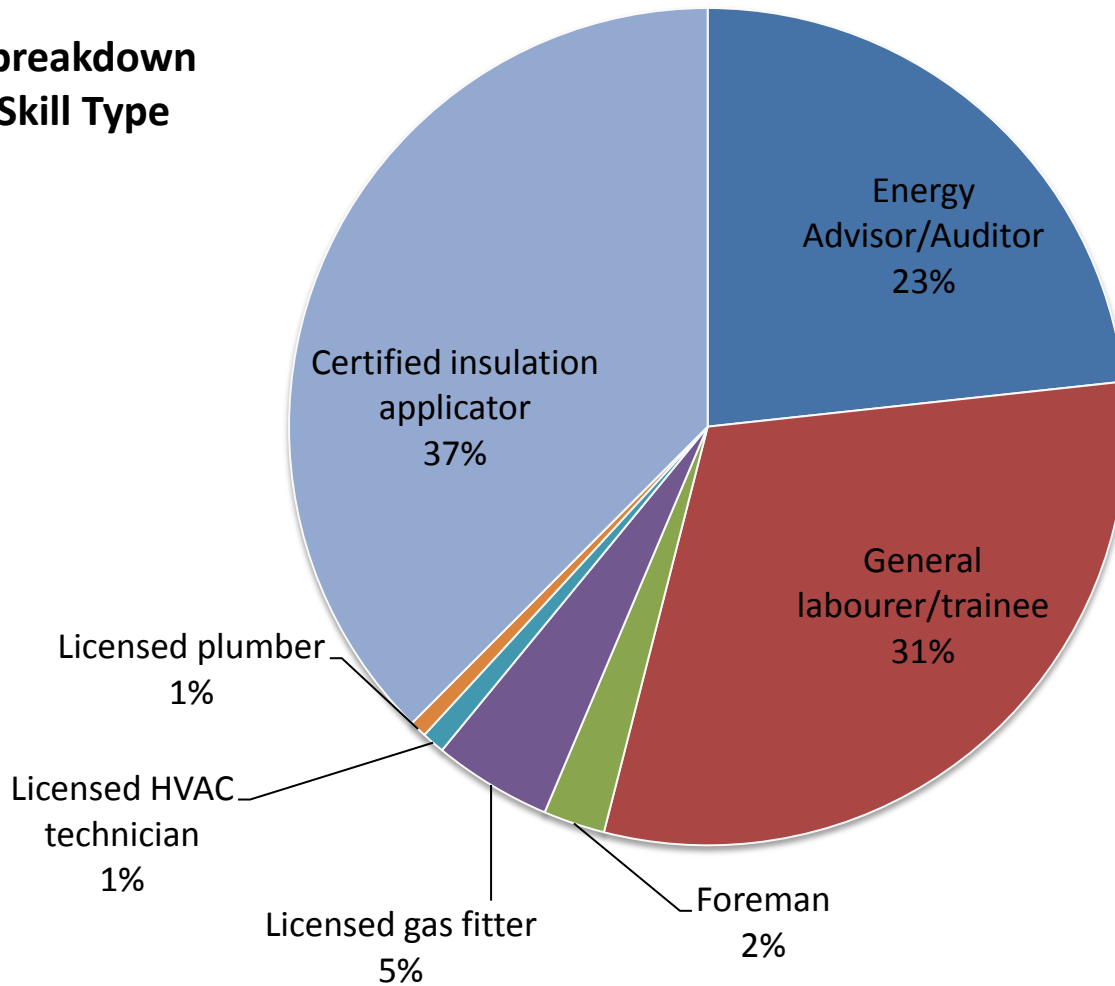
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Evaluation Framework

Job breakdown by Skill Type





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Evaluation Framework

- Impact of ecoEnergy



ecoENERGY
an ecoACTION initiative





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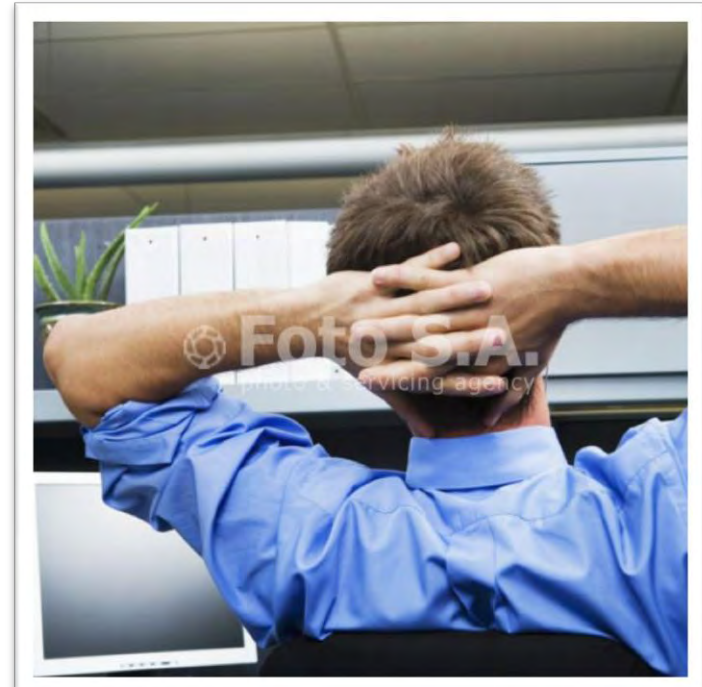
Eco-Roofing

Evaluation Framework

- Impact of ecoEnergy
- Aging workforce



versus





- Impact of ecoEnergy
- Aging workforce
- High degree of skill transferability





- Impact of ecoEnergy
- Aging workforce
- High degree of skill transferability
- Shortage of demand for training programs
- Reluctance to re-training
- Lack of formal trades training
- Value of college level programs
- Other recruitment challenges



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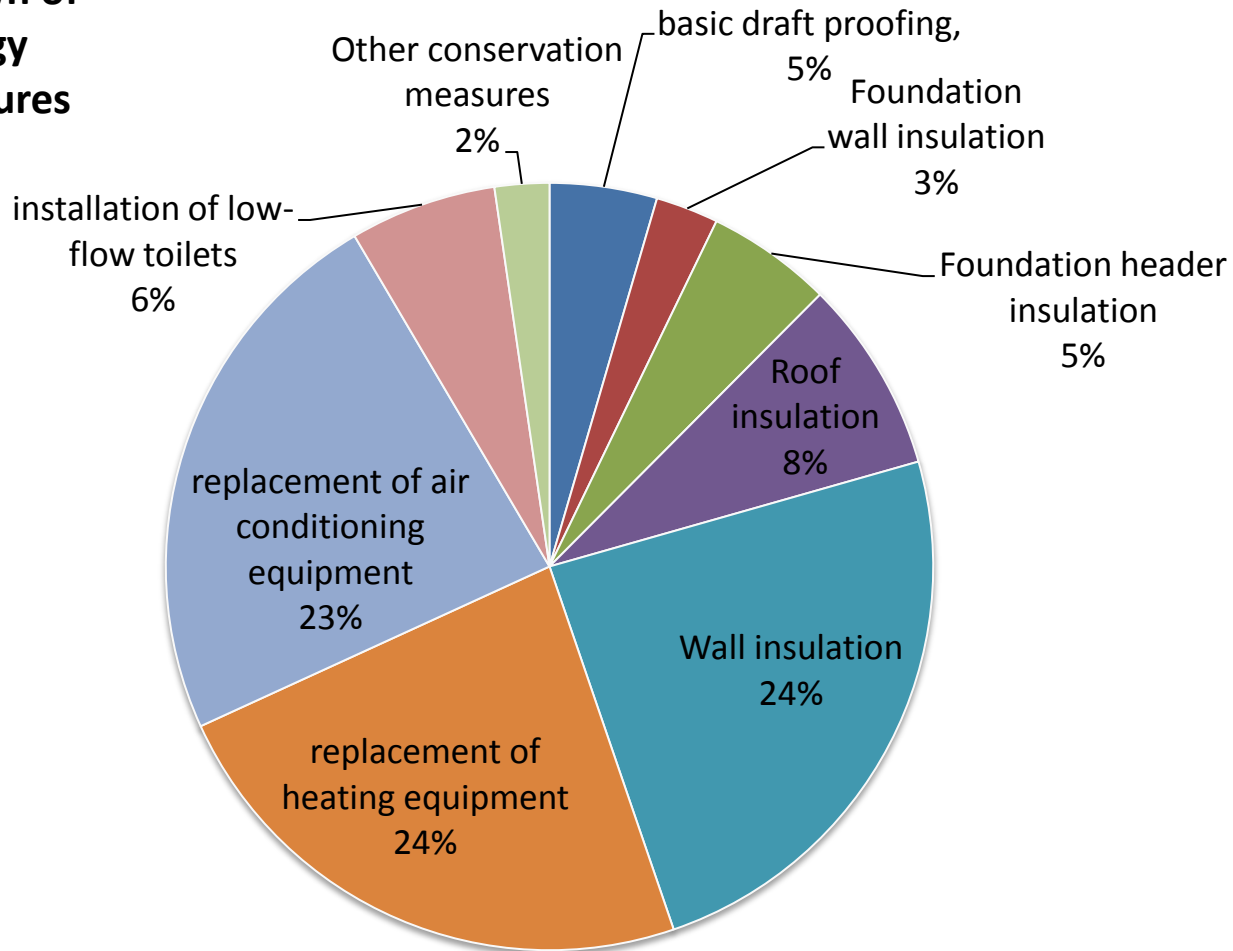
Evaluation Framework

Material/Equipment	Percentage of total cost
Insulating material <ul style="list-style-type: none"> ○ Spray foam ○ extruded polyurethane ○ Loose-Fill ○ Batt-Type 	25%
HVAC equipment <ul style="list-style-type: none"> ○ Furnace ○ Boiler ○ Water heater ○ Central Air conditioner 	50%
In-window air conditioning unit	75%
Low flow toilets	75%
Low flow shower heads	75%
Energy efficient lighting	75%
Energy efficient windows	75%





Cost Breakdown of Home Energy Retrofit Measures





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	2 MW Solar PV on City Facilities	Expansion of Solar PV on all suitable roof space in Toronto
Total Person-Years of Employment	71	127,629
Local Person-Years of Employment	53	98,783
Total Jobs per \$1 million spending	4.65	3.63



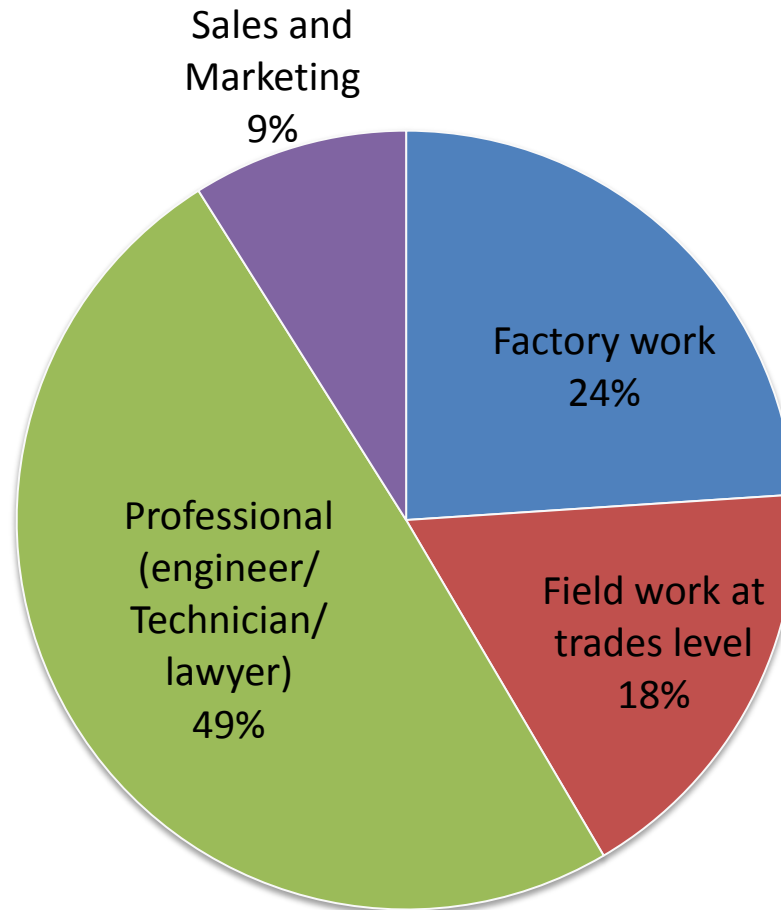
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Job Breakdown by Skill Type





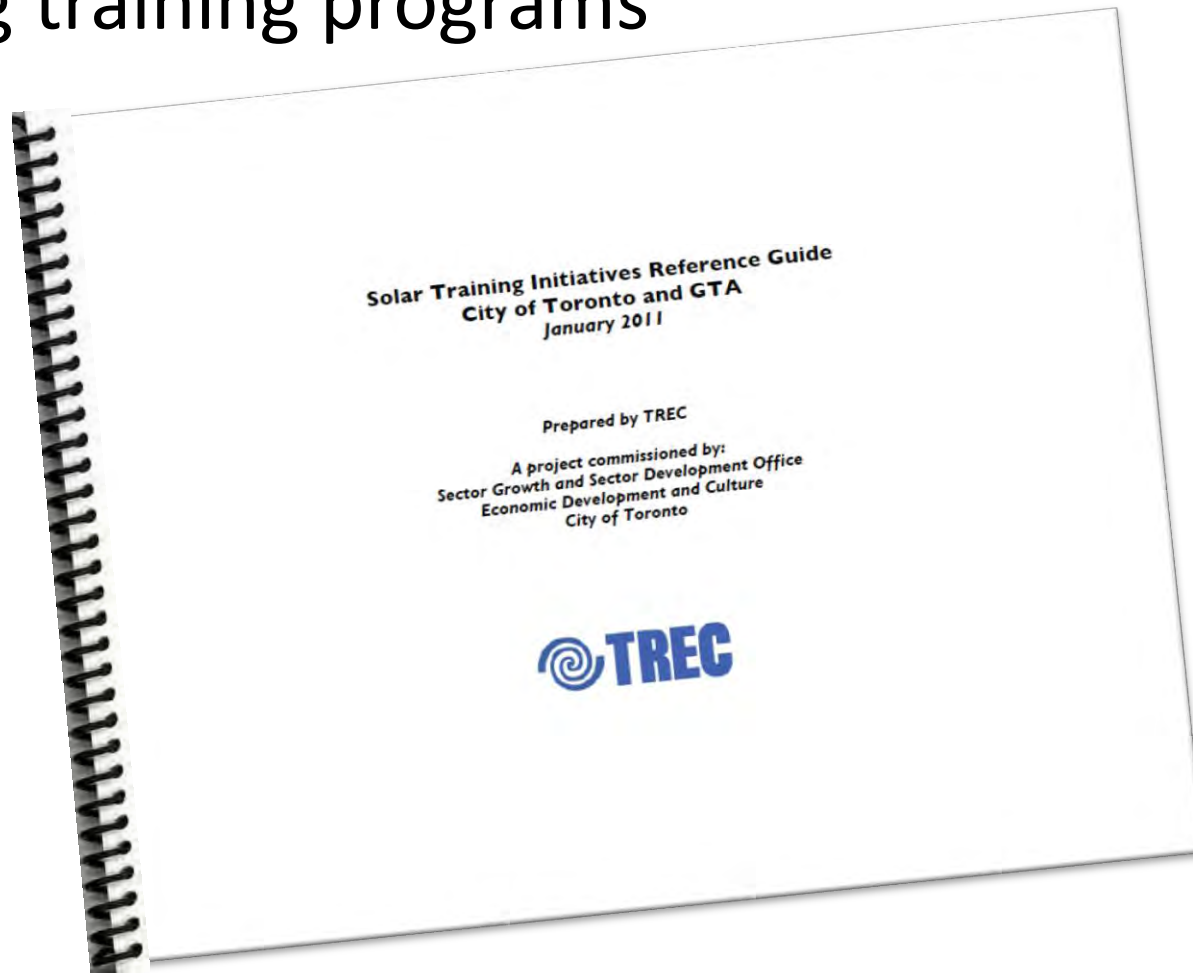
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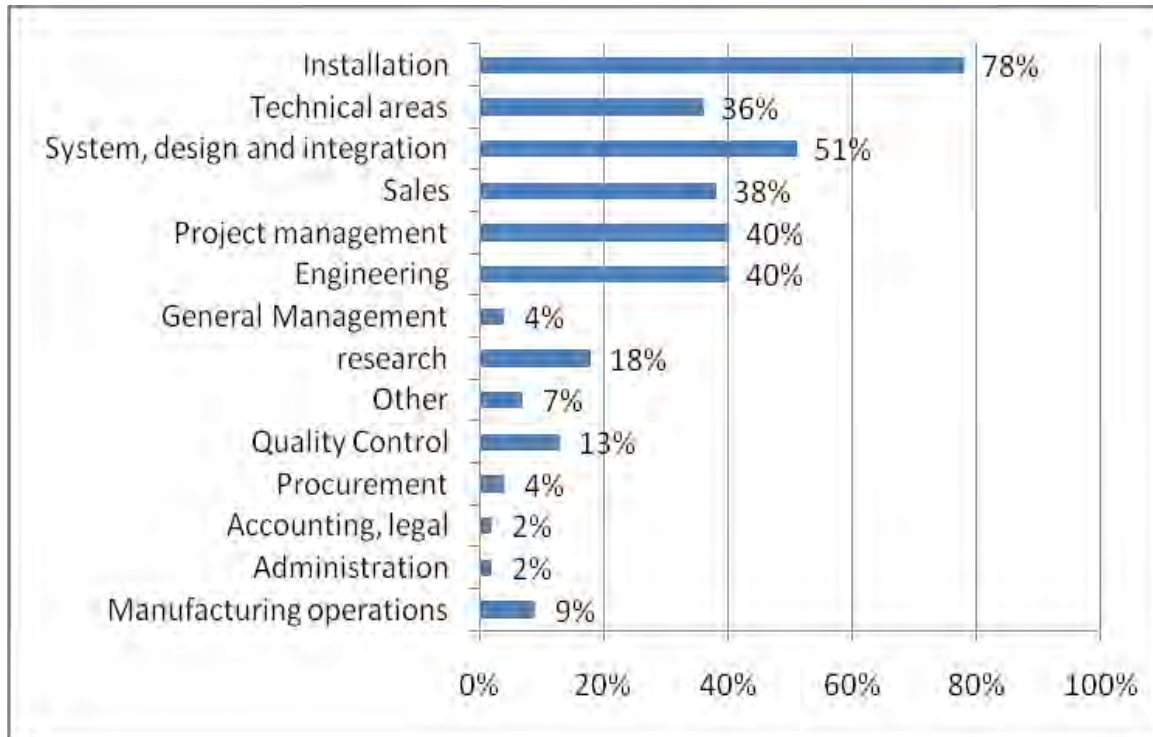
Evaluation Framework

- Existing training programs





- Existing training programs
- Rapid growth





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Evaluation Framework

- Existing training programs
- Rapid growth
- Lack of qualified and experienced professionals





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Evaluation Framework

- Existing training programs
- Rapid growth
- Lack of qualified and experienced professionals
- Need for a provincial or national certificate programs in solar installations
- Need for transition programs



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Evaluation Framework

Seneca



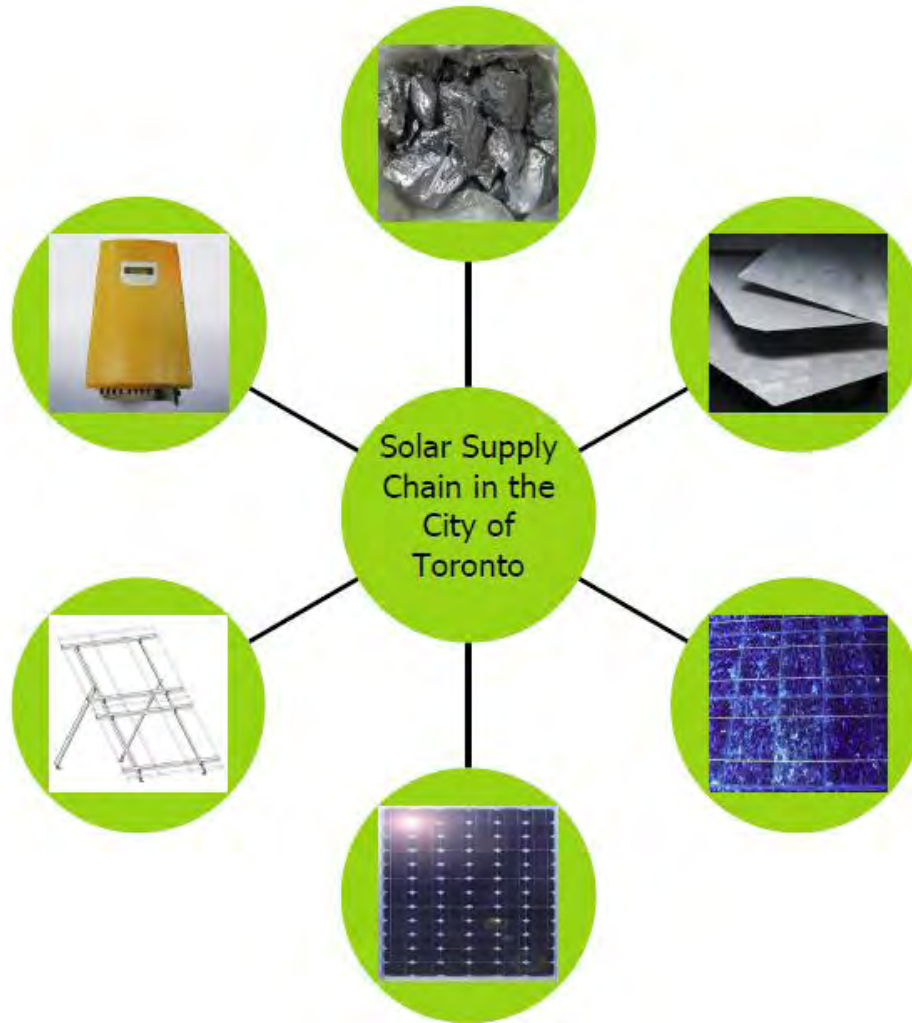


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Manufactured Component	Number of manufacturing plants in vicinity of Toronto	Number of manufacturing plants in Toronto	Total
Inverters	18	5	23
Laboratory Testing	1	0	1
Modules	17	2	19
Monitoring Software	5	0	5
Racking	11	2	13
Silicon, Ingots & Wafers, Cells	1	0	1
Wiring & Electrical	5	2	7



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- Eco-Roof Incentive Program

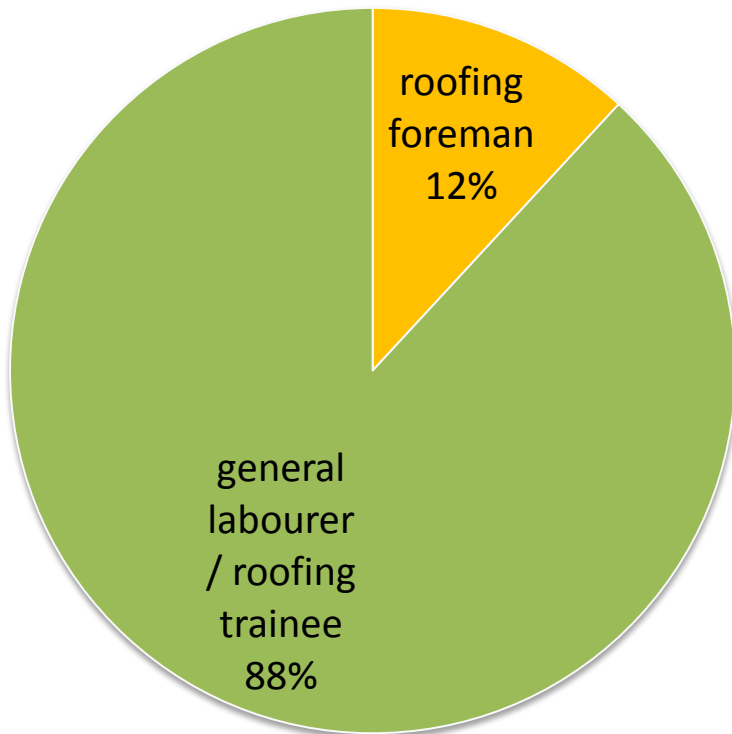
	Program to date		Future Projections		Jobs/\$1 million incentives
	person-years of new green employment	person-years of greened existing employment	person-years of new green employment	person-years of greened existing employment	
Green Roofs	12	3	346	73	23
Cool Roofs	8	16	225	469	48
Total	20	19	572	542	34

- Green Roof By-Law

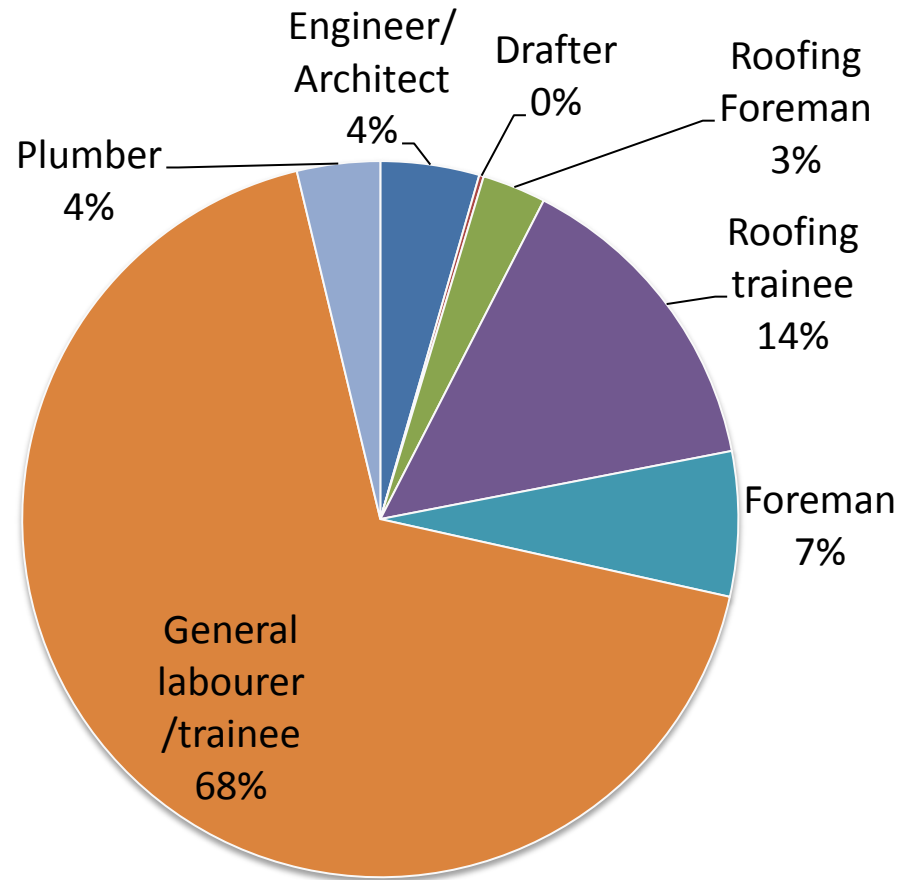
	New green employment	Greened existing employment
person-years of employment	67	15



Cool Roofs



Green Roofs





- Existing training programs
- Aging workforce and value of college level programs





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- Existing training programs
- Aging workforce and value of college level programs
- Lack of unified green roof installation training
- Other recruitment challenges

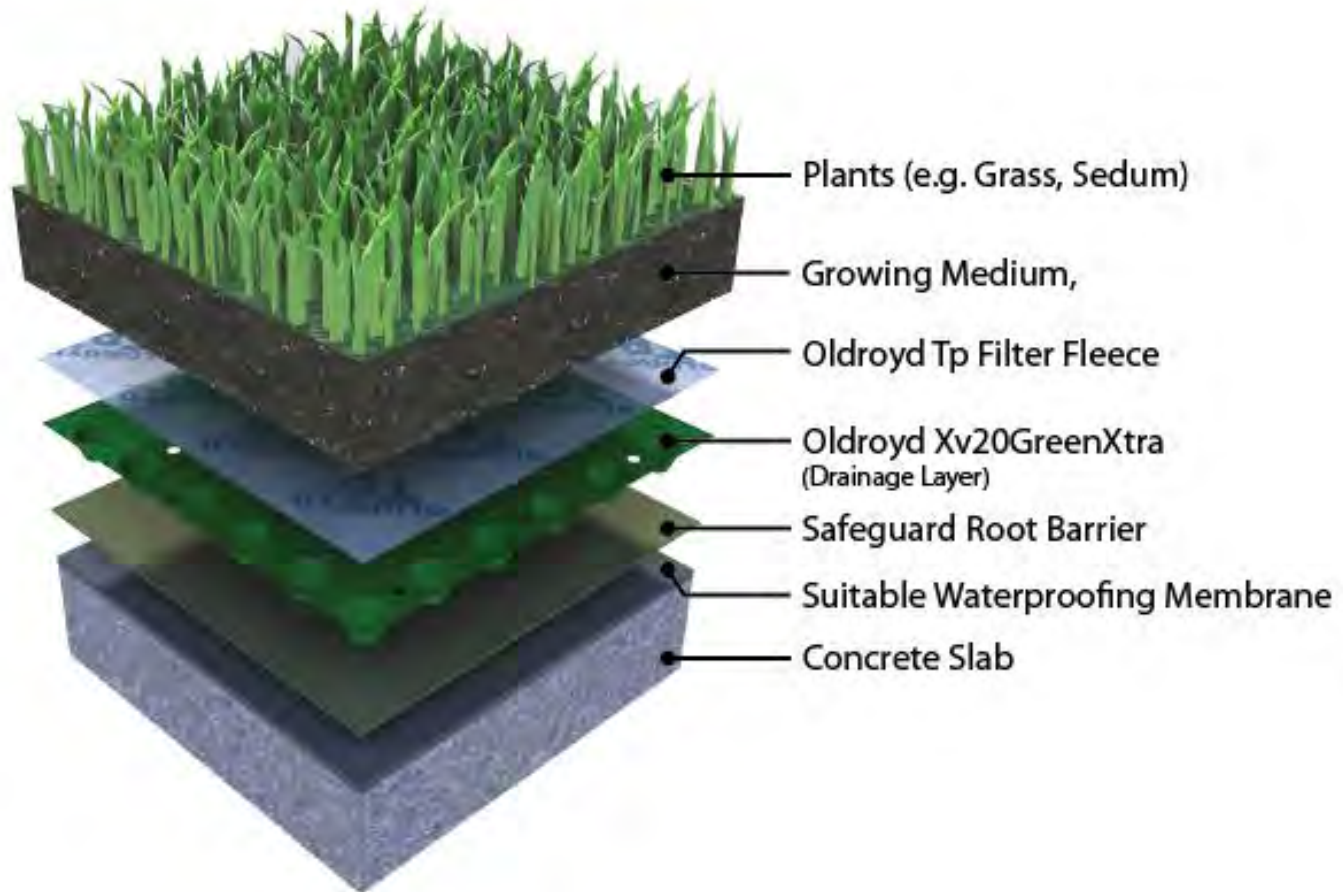


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ZeroFlor[®]
Pioneer in Green Roof Technology



LiveRoof[®]



**Sedum
Master**



bioRoof
SYSTEMS



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Evaluation Framework



Evaluation Framework for City of Toronto Environmental Initiatives

Green Jobs, Skills Training and Local Procurement Opportunities

Sheyda Saneinejad - Strategic Growth & Sector Development
City of Toronto
March, 2011



- Defining Study Objectives and Scope
- Identifying Variables
- Employment Data Collection Process

	Hours of work / dwelling unit							
	Energy Advisor/ Auditor	engineer/ architect	General labourer/ trainee	Foreman	Licensed gas fitter	Licensed HVAC technician	Licensed plumber	Certified insulation applicator
Construction/Installation								
basic draft proofing,	0	0	8	0	0	0	0	0
Foundation wall insulation	0	0	0	0.5	0	0	0	16
Foundation header insulation	0	0	0	0.5	0	0	0	8
Roof insulation	0	0	10	2	0	0	0	0
Wall insulation	0	0	0	1	0	0	0	36
replacement of heating equipment	0	0	8	0	8	0	0	0
replacement of air conditioning equipment	0	0	3	0	0	3	0	0
installation of low-flow toilets	0	0	0	0	0	0	2	0
Other basic conservation measures	0	0	0.75	0	0	0	0	0
Energy Audit (Pre and Post audit)	5.5	0	0	0	0	0	0	0
Energy Audit (Pre audit only)	3	0	0	0	0	0	0	0
Contract Administration	0	0	4	0	0	0	0	0



- Defining Study Objectives and Scope
- Identifying Variables
- Employment Data Collection Process
- Development of the Job Estimation Model
- Matrix of Training Programs
- Workforce Development Survey





- Defining Study Objectives and Scope
- Identifying Variables
- Employment Data Collection Process
- Development of the Job Estimation Model
- Matrix of Training Programs
- Workforce Development Survey
- Identification of Local Procurement Opportunities



Questions and Comments?

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