

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



# CITY OF PORTLAND

# BUILDING PERMIT

This is to certify that BARTLETT ISLAND LLC

Located At 43 WASHINGTON AVE

Job ID: 2012-03-3586-ALTCOMM

CBL: 013-1-020-001

has permission to Add 44 Solar electric (PV) panels to south side of roof at Coffee By Design provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

\_\_\_\_\_  
Fire Prevention Officer

 4/10/12  
\_\_\_\_\_  
Code Enforcement Officer / Plan Reviewer

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY  
PENALTY FOR REMOVING THIS CARD**

**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: <b>2012-03-3586-ALTCOMM</b>	Date Applied: <b>3/23/2012</b>	CBL: <b>013- 1-020-001</b>	
Location of Construction: <b>43 WASHINGTON AVE</b>	Owner Name: <b>BARTLETT ISLAND LLC</b>	Owner Address: <b>67 INDIA ST PORTLAND, ME 04101</b>	Phone:
Business Name: <b>Coffee By Design</b>	Contractor Name: <b>Revision Energy - Jen Hatch</b>	Contractor Address: <b>142 Presumpscot St., Portland, ME 04103</b>	Phone: <b>(207) 221-6342</b>
Lessee/Buyer's Name:	Phone:	Permit Type: <b>BLDG - Building</b>	Zone: <b>B-4</b>
Past Use: <b>Coffee By Design</b>	Proposed Use: <b>Same -- Coffee By Design -- install 40 solar electric panels, flush mounted against roof</b>	Cost of Work: <b>50000.00</b>	CEO District:
		Fire Dept: <input checked="" type="checkbox"/> Approved <i>w/ conditions</i> <input type="checkbox"/> Denied <input type="checkbox"/> N/A	Inspection: Use Group: <i>m/F2</i> Type: <i>N/A</i> <i>Solar Panels</i> <i>IBC 2009</i> Signature: <i>[Signature]</i>
Proposed Project Description: <b>Adding solar panels to roof; ELECT PERM 201241146</b>		Pedestrian Activities District (P.A.D.)  <i>4/10/12</i>	
Permit Taken By:	<b>Zoning Approval</b>		

<p>1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</p> <p>2. Building Permits do not include plumbing, septic or electrical work.</p> <p>3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.</p>	<p><b>Special Zone or Reviews</b></p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Wetlands</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan</p> <p><input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM</p> <p>Date: <i>3/26/12 OK ABM</i></p>	<p><b>Zoning Appeal</b></p> <p><input type="checkbox"/> Variance</p> <p><input type="checkbox"/> Miscellaneous</p> <p><input type="checkbox"/> Conditional Use</p> <p><input type="checkbox"/> Interpretation</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Denied</p> <p>Date:</p>	<p><b>Historic Preservation</b></p> <p><input type="checkbox"/> Not in Dist or Landmark</p> <p><input type="checkbox"/> Does not Require Review</p> <p><input type="checkbox"/> Requires Review</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Approved w/Conditions</p> <p><input type="checkbox"/> Denied</p> <p>Date:</p>
	<b>CERTIFICATION</b>		

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

## BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: [buildinginspections@portlandmaine.gov](mailto:buildinginspections@portlandmaine.gov)

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

Close In Electric/Framing prior to covering if needed

Final Inspection

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



# PORTLAND MAINE

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Acting Director of Planning and Urban Development  
Gregory Mitchell

Job ID: 2012-03-3586-ALTCOMM

Located At: 43 WASHINGTON  
AVE

CBL: 013- I-020-001

## Conditions of Approval:

### **Fire**

1. Installation shall comply with City Code Chapter 10.
2. Installation shall comply with NFPA 70, *National Electrical Code*; and the manufacturer's published instructions.

### **Building**

1. Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.
2. Equipment shall be installed in compliance with the manufacturer's specifications and the UL listing.
3. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.





# Electric Permit: 2012 41146 already paid/entered General Building Permit Application

Entered 3/23/12

15

# 2012-03-3586 - Altosmm

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>43 Washington Ave</u>		
Total Square Footage of Proposed Structure/Area	Square Footage of Lot	Number of Stories
Tax Assessor's Chart, Block & Lot Chart#      Block#      Lot#  <u>013      1020</u>	Applicant * <b>must be owner, Lessee or Buyer</b> * Name <u>Coffee by Design</u> Address <u>43 Washington Ave</u> City, State & Zip <u>Portland, ME 04101</u>	Telephone: <u>879-2233</u> <u>Mary Allen or</u> <u>Alan Spear</u>
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name <u>Bottle Island LLC</u> Address <u>67 India St.</u> City, State & Zip <u>04101</u>	Cost Of <u>30,000</u> Work: \$ <u>49,605.00</u>  C of O Fee: \$ _____  Total Fee: \$ <u>520.00</u>
Current legal use (i.e. single family) <u>coffee roasters</u> Number of Residential Units _____ If vacant, what was the previous use? _____ Proposed Specific use: _____ Is property part of a subdivision? _____ If yes, please name _____ Project description: <u>Adding 44 solar electric panels flush mounted</u> <u>against roof</u>		
Contractor's name: <u>Revision Energy</u> Address: <u>142 Presumpscot St</u> City, State & Zip <u>Portland, ME 04103</u> Telephone: _____ Who should we contact when the permit is ready: <u>Jon Hatch</u> Telephone: <u>221-6342</u> Mailing address: <u>above</u>		

RECEIVED  
MAR 23 2012  
Dept. of Building Inspections  
City of Portland

**Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.**

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at [www.portlandmaine.gov](http://www.portlandmaine.gov), or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: [Signature]      Date: 3/20/2012

**This is not a permit; you may not commence ANY work until the permit is issued**



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Receipts Details:

**Tender Information:** Check , Check Number: 25098

**Tender Amount:** 520.00

Receipt Header:

**Cashier Id:** bsaucier

**Receipt Date:** 3/23/2012

**Receipt Number:** 42163

Receipt Details:

Reference ID:	5797	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	520.00	Charge Amount:	520.00
Job ID: Job ID: 2012-03-3586-ALTCOMM - Adding solar panels to roof; ELECT PERM 201241146			
<b>Additional Comments:</b> 43 Washington; 3 of 3 same cc			

Thank You for your Payment!



Professional design, installation and service of renewable energy systems

March 23, 2012

City of Portland  
389 Congress Street  
Portland, ME 04101

RE: ReVision Energy Solar Installation at Coffee by Design  
Address: 43 Washington Ave

Dear Code Enforcement,

ReVision Energy has been contracted to design and install a solar electric (PV) system at Coffee by Design, at the above address in Portland. This letter is to confirm that all work will be performed by licensed and qualified installers, expert in the field and in compliance with both manufacturer's recommendations and all applicable local and state codes and standards. This also confirms that the roof structure can handle the weight of the panel load, in addition to snow load. The weight of the panels does not change the structural integrity of the building.

ReVision Energy employs licensed engineers, plumbers, and electricians and carries the solar industries highest certifications (NABCEP) in both solar thermal and photovoltaic installation. We're committed to high quality, code compliant work and look forward to working together with the city and the CEO to ensure that all your requirements and needs are met and that our customer ends up with a system that is beautiful, functional and safe.

Electrical and grounding:

All electrical work to be performed by a licensed ME electrician and will conform to NEC 2011 revision as well as NABCEP standards. Specifically, wiring and grounding of the photovoltaic system will be governed by manufacturer's recommendations and article 690. All installed metal components are grounded via the grounding electrode conductor.

If you have any questions or concerns, we'd like to address them as quickly and completely as possible. Please don't hesitate to call or e mail anytime.

Respectfully,

  
Fortunat Mueller, P.E.

Co-owner  
ReVision Energy  
(207) 752-6358  
fortunat@revisionenergy.com

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*Bangor*  
207-570-4222

*Liberty*  
207-589-4171

*Portland*  
207-221-6342

*Portsmouth*  
603-486-7170

[www.revisionenergy.com](http://www.revisionenergy.com)





Professional design, installation and service of renewable energy systems.

## 10 Kilowatt Grid-Tied Photovoltaic System Proposal

Client: Coffee By Design  
 Location: 45 Washington Avenue Portland, ME 04101  
 Date: January 21, 2010



**Array Location**

Roof Orientation: 174 degrees

Roof Pitch: 6:12

Roof Material: Asphalt Shingles

Array: 44 panels

Array Area: 775 square feet

### Project Summary

System	Performance	Cost
10 kilowatt grid-tied PV array coupled with (2) SMA 5000US grid-tied inverters.	<ul style="list-style-type: none"> <li>Produce roughly 12,650 kilowatt hours of clean, renewable electricity annually.</li> <li>Offset roughly 16,445 lbs. of CO2 emissions annually.</li> </ul>	\$49,605 Installed

### System Overview

Based on an evaluation of your electric infrastructure and ideal rooftop solar gain, ReVision Energy proposes a roof-mounted photovoltaic array of 10 kilowatts, utilizing two inverters to feed power to the utility grid. The system utilizes Canadian Solar 230-watt photovoltaic panels. The proposed array will consist of 44 panels arranged in two rows of 22 panels each.

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The panels will be mounted on an anodized aluminum rail flush mounting system that will be fastened to south facing roof of the building as shown in the image above. The total array area will be roughly 775 sq. ft.

### Major Components

- (44) 230-watt Canadian Solar photovoltaic panels ([www.canadian-solar.com](http://www.canadian-solar.com))
- (2) SMA 5000US grid-tied inverters ([www.sma-america.com](http://www.sma-america.com))
- (1) Sunny Webbox data monitoring package (<http://www.sma-america.com/de/produkte/monitoring-systems/sunny-webbox.html>)
- Unirac flush roof mounting system
- All hardware, disconnects, cable, and labor to provide a code-compliant, NABCEP-certified installation



At left is grid-tied photovoltaic array installed by ReVision Energy on a commercial building.

The Unirac roof mounting system enables air to flow under the panels, which helps optimize system performance by allowing heat to dissipate.

This is the type of installation we are proposing for your project.

### System Operation

Whenever sun shines on the solar electric modules, direct current electricity will be generated. The DC electricity will be cabled in conduit to the inverter in the mechanical room. The inverters will be hung in the mechanical space adjacent to the utility meter. The inverters, which convert direct current to alternating current, will then feed directly into the building's load center. Any loads operating while the sun is shining will be fed directly by the solar electricity. The local utility company will install a second electric meter, near the existing meter recording your usage, to record electricity you feed into the grid. If there is more electricity being generated by the sun than being used at any given time, the second meter will spin, creating a credit on your next bill. You can bank your surplus from month to month for up to a year.

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Revision

per JB @

outside of Re-Roof by others

2 rows of 18 panels on main roof

2 rows of  
3 panels here

! being removed

relocated





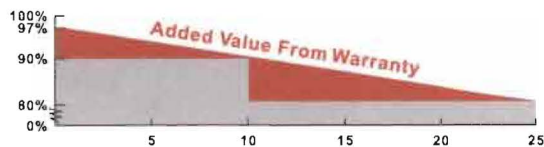


**CS6P**

**230/235/240/245/250M**

### Key Features

- Industry first comprehensive warranty insurance by AM Best rated leading insurance companies in the world
- Industry leading plus only power tolerance: 0 ~ +5W
- Strong framed module, passing mechanical load test of 5400Pa to withstand heavier snow load
- The 1st manufacturer in the PV industry certified for ISO:TS16949 (The automotive quality management system) in module production since 2003
- ISO17025 qualified manufacturer owned testing lab, fully complying to IEC, TUV, UL testing standards
- **Backed By Our New 10/25 Linear Power Warranty Plus our added 25 year insurance coverage**



- 10 year product warranty on materials and workmanship
- 25 year linear power output warranty

### On-grid Module

CS6P is a robust solar module with 60 solar cells. These modules can be used for on-grid solar applications. Our meticulous design and production techniques ensure a high-yield, long-term performance for every module produced. Our rigorous quality control and in-house testing facilities guarantee Canadian Solar's modules meet the highest quality standards possible.

### Applications

- On-grid residential roof-tops
- On-grid commercial/industrial roof-tops
- Solar power stations
- Other on-grid applications

### Quality Certificates

- IEC 61215, IEC 61730, UL 1703, CEC Listed, MCS, CE
- ISO9001:2008: Standards for quality management systems
- ISO/TS16949:2009: The automotive quality management system

### Environmental Certificates

- ISO14001:2004: Standards for Environmental management systems
- QC080000 HSPM: The Certification for Hazardous Substances Regulations
- Reach Compliance



## IRONRIDGE XR ROOF MOUNT PLATFORM

### KEY FEATURES

- ◆ Extruded aluminum components are lightweight for easy handling yet strong enough for most roof mount applications
- ◆ Choice of XRL (lightweight) and XRS (standard) rails
- ◆ Both XRL and XRS rails come with slots for attaching L-feet and top slots for attaching panel clamps
- ◆ XRS rails has slot for bottom mounting clamps
- ◆ Hidden internal splice bars are aesthetically pleasing
- ◆ Internal splices provide superior strength and flexibility with L-feet placement
- ◆ Adjustable L-feet have vertical extension slots for easy adjustability of up to 1-3/8"
- ◆ Standoffs provide increased airflow and ventilation and enable precise placement of flashings
- ◆ Standoffs come in four standard heights: 3", 4", 6", and 7"
- ◆ XR platform compatible with popular flashings including QuickMount and Catey
- ◆ Panel clamps for both top and bottom mounting
- ◆ Panel clamps for most popular photovoltaic modules
- ◆ Mid-clamp design maximizes panel density
- ◆ Ground clips eliminate the need for copper wire between modules
- ◆ The XR Roof Mount components are covered with an industry-leading 10 year limited product warranty and a 5 year limited finish warranty
- ◆ All XR Roof Mount components are PE certified



The IronRidge XR platform is a reliable, comprehensive, and feature rich photovoltaic mounting solution. Anchored by the XRS (Standard) and XRL (Light) rails, the XR platform includes all of the components necessary for supporting virtually any commercial or residential roof mount installation, regardless of surface material or roof grade.

The XRS and XRL rails are manufactured from extruded aluminum to maximize spans while minimizing weight for improved handling. The graceful curves of the XRS rail will please even the most aesthetically demanding customers. Rails can be extended with the IronRidge patent-pending internal splice bars, providing a strong support connection and ultimate flexibility in footing attachment locations. Installers have a variety of options in attaching IronRidge rails to the roof, including adjustable L-feet, aluminum standoffs, and tilt legs for optimizing power. In addition, IronRidge accommodates modules from most major manufacturers. Top-down panel clamps securely grip the outside frame of the module, freeing the installer from the constraints of panel mounting holes. The XRS rail has an additional side slot to enable the option of bottom mounting. Lastly, grounding clips pierce the anodized rails, creating a ground path through the equipment and eliminating the need to run copper wire between every module.

IronRidge provides a complete technical support system that includes step-by-step installation guides, engineering certification documentation, easy-to-read span charts, and on-line configurator software.

See reverse for product specifications and ordering information. Please contact your local distributor for configuration assistance.



**SPECIFICATIONS**

- ◆ XRL/XRS Rail – 6105-T5 extruded anodized aluminum
- ◆ XRL/XRS Splice Bars – 6105-T5 extruded aluminum
- ◆ Standoffs – 6105-T5 extruded aluminum
- ◆ L-feet: 6105-T5 extruded aluminum
- ◆ Clamps: 5052+H32 aluminum
- ◆ Hardware: 18-8 Stainless Steel

**XRS PROPERTIES**

- ◆ Area = .807136 inches<sup>2</sup>
- ◆ Centroid relative to output coordinate system origin
  - ◆ X = 0.5556
  - ◆ Y = 1.4097
  - ◆ Z = 120.000
- ◆ Moments of Inertia of the area (at the centroid)
  - ◆ Lxx = 0.8430
  - ◆ Lxy = 0.1117
  - ◆ Lxz = 0.0000
  - ◆ Lyx = 0.1117
  - ◆ Lyy = 0.1822
  - ◆ Lyz = 0.0000
  - ◆ Lzx = 0.0000
  - ◆ Lzy = 0.0000
  - ◆ Lzz = 1.0252
- ◆ Polar Moment of Inertia
  - ◆ At Centroid = 1.0252<sup>4</sup>
- ◆ Principal Moments of Inertia
  - ◆ Ix = 0.1638
  - ◆ Iy = 0.8614
- ◆ Principal-Axis Angles
  - ◆ Angle = 99.343 degrees
- ◆ Moments of Inertia (output)
  - ◆ LXX = 11625.205
  - ◆ LXY = 0.5204
  - ◆ LXZ = 53.8153
  - ◆ LYX = 0.5204
  - ◆ LYY = 11623.1909
  - ◆ LYZ = 136.5369
  - ◆ LZX = 53.8153
  - ◆ LZY = 136.5369
  - ◆ LZZ = 2.8784

**ORDERING INFORMATION**

XR Rails		
Part Number	Description	Weight
51-7000-144a	XRS Standard Rail (1) – 12 feet	11.364 lbs
51-7000-168a	XRS Standard Rail (1) – 14 feet	13.258 lbs
51-7000-192a	XRS Standard Rail (1) – 16 feet	15.152 lbs
51-7000-216a	XRS Standard Rail (1) – 18 feet	17.046 lbs
51-6000-144a	XRL Light Rail (1) – 12 feet	6.288 lbs
51-6000-168a	XRL Light Rail (1) – 14 feet	7.336 lbs
51-6000-192a	XRL Light Rail (1) – 16 feet	8.384 lbs
51-6000-216a	XRL Light Rail (1) – 18 feet	9.432 lbs
29-7000-010	XRS Splice Kit (1)	0.442 lbs
29-7000-000	XRL Splice Kit (1)	0.151 lbs
Panel Clamps		
Part Number	Description	Weight
29-7000-xxx	End Clamps (4) – depends on panel	.251-.290 lbs
29-7000-10x	Mid Clamps (4) – depends on panel	.213-.251 lbs
29-7000-117	Under Clamps (4)	0.324 lbs
Footing Attachments & Flashings		
Part Number	Description	Weight
29-7000-017	L-foot Kit (4)	0.872 lbs
51-600x-500	3"-7" Standoffs – Specify L-foot or Tilt leg	.533-.710 lbs
31-1000-001	Catey Galvanized Flashing 11830 (12)	8.750 lbs
31-1000-000	QuickMount QMSCA12 (12)	13.390 lbs
51-7200-0XX	Tilt Legs (7" – 40")	.0658 lbs/inch
51-7210-000	Tilt Leg Bracket	1.576 lbs
Grounding		
Part Number	Description	Weight
29-4000-001	WEEB DMC-Clip (100)	0.258 lbs
29-4000-002	WEEB Grounding Lug (100)	12.356 lbs
29-4000-003	WEEB Bonding Jumper (100)	17.614 lbs
29-4000-006	WEEB ACC-PV Wire Clip (100)	0.625 lbs

**L-FOOT DIMENSIONS**

