

Date.....21/6/10.....

JOB #

Attention: Building Control Officer

nova
energy

Accredited SIA Solar Water Heating Installer

NOVA ENERGY SOLAR LTD

|a| PO Box 2310 | Tauranga 3140

|p| 07 578 5281 |f| 07 571 2074

Freephone 0800 668 276

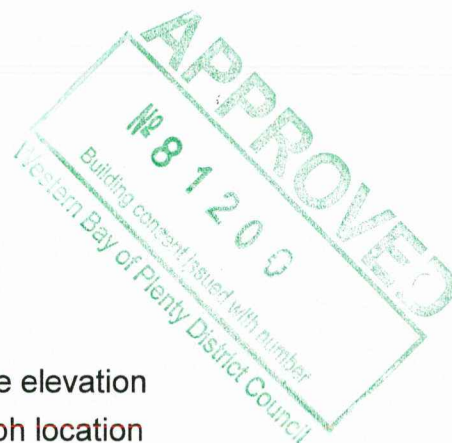
|e| solar@novaenergy.co.nz

Re: CONSENT APPLICATION FOR SOLAR WATER HEATING SYSTEM

Attachment References;

1. Agent application consent details.
2. Property rates demand
3. EECA check list solar hot water
4. Nova energy system specification
5. Nova energy system specification
6. Nova energy system testing certification
7. Solar controller specification
8. Solar controller schematic
9. Tempering valve specification
10. Day lighting requirements
11. Smoke detector location to bedrooms
12. Solar pipe work routing
13. Solar panel collector location indicated on house elevation
14. Solar panel collector location – actual photograph location

COUNCIL



Note:

Should you require information regarding this application, please contact;

Janice Chell
E-mail

0800 668 276 Extn 106
jchell@novaenergy.co.nz

Sales & Install

Checklist for solar water heating installations

The following checklist is general in nature. It is designed to help you in your application for a building consent for the installation of a solar water heating system.

- ☒ The more boxes you can tick under 'general', the better equipped you will be to experience a quick, straightforward building consent for your solar water heating installation.

General

- ☒ One of the following products recognised by AS/NZS 2712:
- Refer: Complying product list on
http://www.solarindustries.org.nz/supplier_install.asp#product
- ☒ Legionella protected
(by a heating element and controller)
- ☒ Frost protected
- ☒ Weather tight
- ☒ Compatible materials used
- ☒ Collector mounted and supported correctly (directly on roof or on frame)
- ☒ Operating and safety devices must comply with AS/NZS 2712:2007
- ☒ Tempering valve

Minor plumbing works

- ☒ Weight on roof less than 20 kg/m2

Significant consideration

- ☐ Weight on roof greater than 20 kg/m2 – subject to structural assessment
- ☐ Roof structure specifically designed to support tank
- ☐ Correct mounting of tank, collector or common frame (tank and collector)

Please ensure you have supporting documentation for each of the items listed above and for more information about what this may entail visit the Department of Building and Housing website and access the draft 'Acceptable Solution' www.dbh.govt.nz/energy-Efficiency



<u>Nova Energy Solar</u> SolarElite Technical and General Information	
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180 Panel

- Gross absorber area 1.97 m²
- Weight 39.04 kg
- Fluid Volume 1.32 liters
- Weight/m² 17.5 kg/ m²

250 Panel

- Gross absorber area 2.53 m²
- Weight 47.41 kg
- Fluid Volume 1.70 liters
- Weight/m² 16.8 kg/ m²



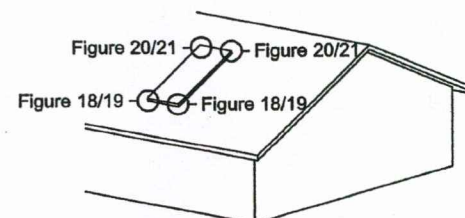
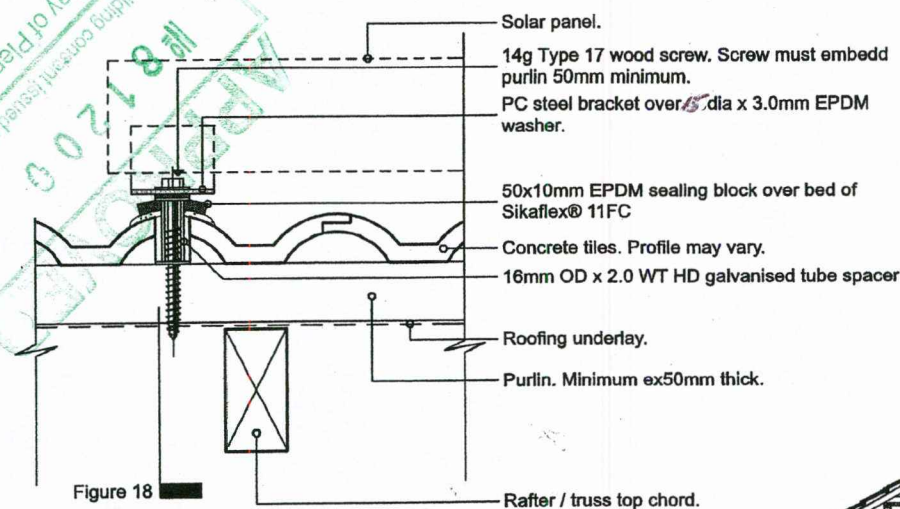
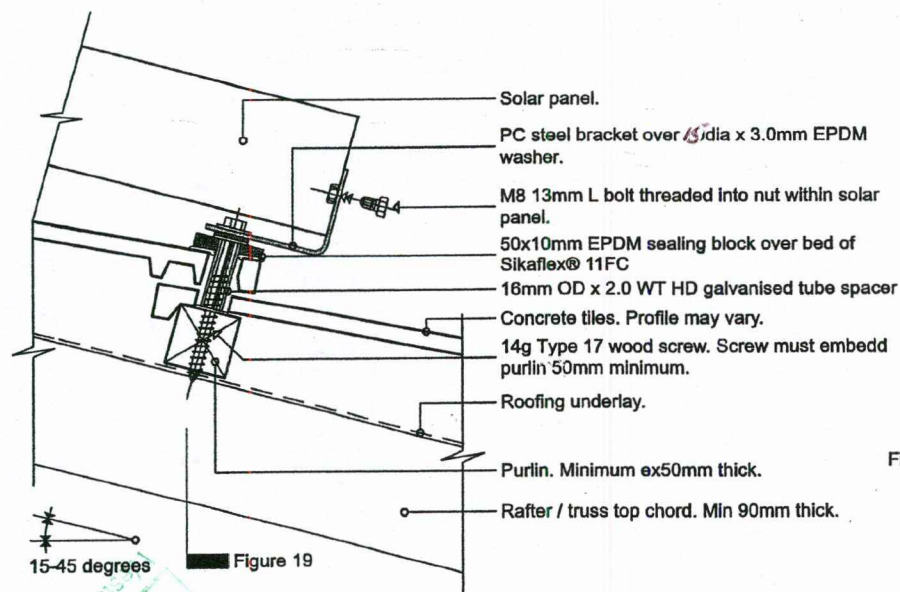
General Specifications

- Tested to and passed all AS/NZS2712:2007 tests for "Solar Water Heaters – Design and Construction." report number 30S-08-0002 TRP 412603.
- Tested to and passed all AS/NZS2535.1:2007 tests for "Thermal performance of glazed liquid heating solar collectors including pressure drop" report number 30S-08-0002 TRP 412572.
- Glazing – toughened low iron solar prismatic glass 3.2 mm – passed for Resistance to Hail according to AS/NZS2712:2007 at Vipac Engineers and Scientists – report number 30S-08-0002 TRP 412603.
- Full flat plate copper absorber ultrasonically welded to copper fluid channels – solar absorbance 95.3%, thermal emittance 4.7% as per ASTM E 891. Manufactured to DIN EN ISO 14001 and BS EN ISO 9001:2000 Cert.No. FM 81181.
- Performance
 - $\eta_0 = 0.7891$
 - $a_1 = 2.4895$
 - $a_2 = 0.0452$

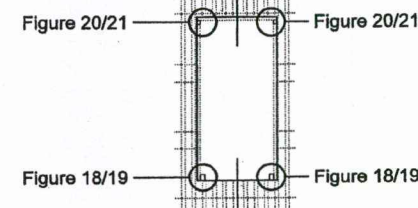
- Magnetron ceramic/metal selective absorbance coating.
- Absorber durability 25 years – tested and passed at Fraunhofer Institute for Solar Energy Systems Germany report A05/013. Moisture resistant.
- Fluid channels 99.9% copper – NZS3501 tested to 10 Mpa.
- Panel contents – absorber, high reflectance heat foil, 590 °C rated mineral insulation, glass and aluminum backing sheet and support channels.
- There are no flammable or noxious components.
- The panel has been tested to and passed level 2 (-15 °C) frost conditions according to AS/NZS2712:2007 at Vipac Engineers and Scientists – report number 30S-08-0002 TRP 412797. Suitable for all frost zones. Frost protection is through electronic activated circulation and in some instances a manual frost protection device.
- Panel support channels aluminum alloy 6060 and manufactured in accordance with ISO 9001:2002. Cert. No BVQI 129755.
- Bronze body circulation pumps.
- All electronic controls manufactured in New Zealand to ISO9001 and Ctick standards.
- All components are designed to meet or exceed the requirements under New Zealand Building Code Acceptable Solution G12/AS2.

Issued without changes.

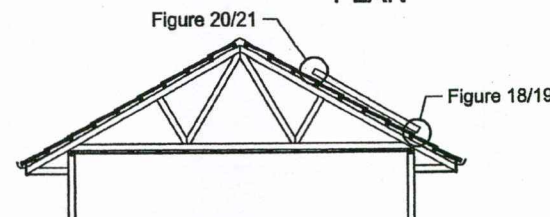
Date: 01 December 2008.



AXONOMETRIC
CROSS
SECTION



PLAN



This drawing remains property of Nova Energy Solar Limited.

NOTE: All details and specifications are indicative only and are subject to change without notice. All Nova Energy Solar system are to be installed by approved contractors only.

Systems designed within these documents are applicable up to and including Very High wind zones. For Specific Design wind zones, consult Nova Energy Solar.

Drawing Package:

Standard Installation Details

Drawing Title:

Panel Lower Fixing Roof Connection - Panel Flat With Roof - Low To High Wind Zones

Drawing Scale(s) @A4: 1:5, 1:100

Date: 21.04.09

Checked: MP

Revision: B - 25.05.09

Drawing Number:

C-01

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energy

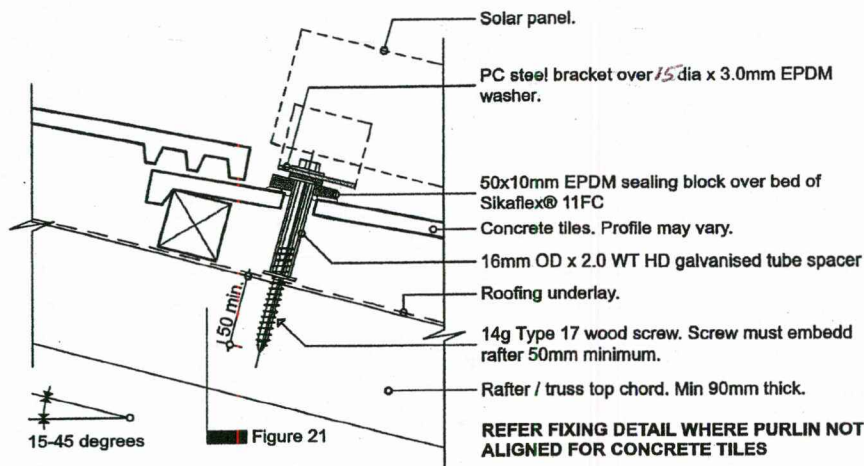


Figure 20

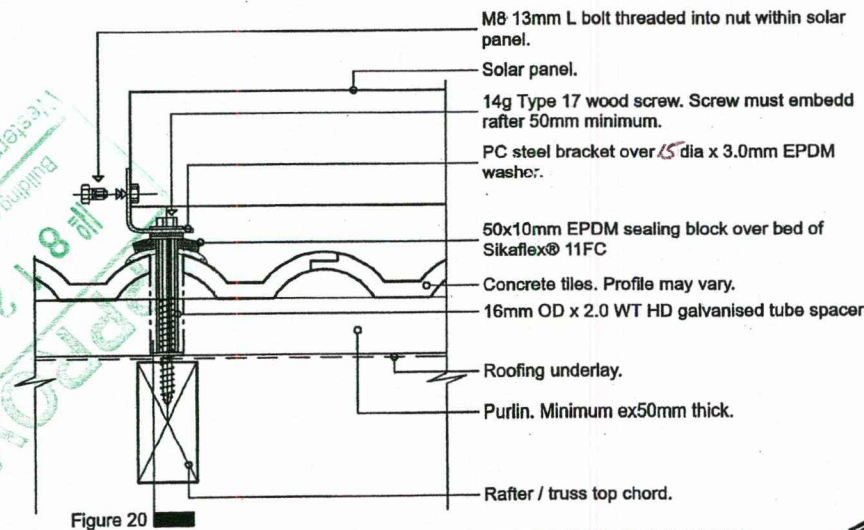
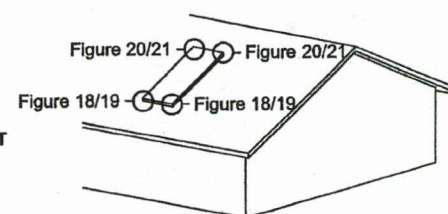


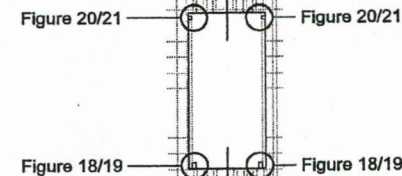
Figure 21

REFER FIXING DETAIL WHERE PURLIN NOT ALIGNED FOR CONCRETE TILES



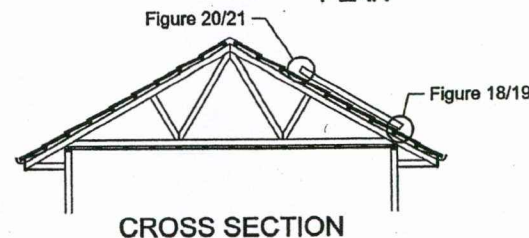
AXONOMETRIC

CROSS SECTION



CROSS SECTION

PLAN



CROSS SECTION

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Drawing Package:

Standard Installation Details

Drawing Title:

Panel Upper Fixing Roof Connection - Panel Flat With Roof - Low To High Wind Zones

Drawing Scale(s) @A4: 1:5, 1:100

Date: 21.04.09

Checked: MP

Revision: B - 25.05.09

Drawing Number:

C-02

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Drawing Package:

Standard Installation Details

Drawing Title:

Pipe Penetration - Concrete Tile

Drawing Scale(s) @A4:

NTS

Date:

21.04.09

Checked:

MP

Revision:

B - 25.05.09

Drawing Number:

F-02

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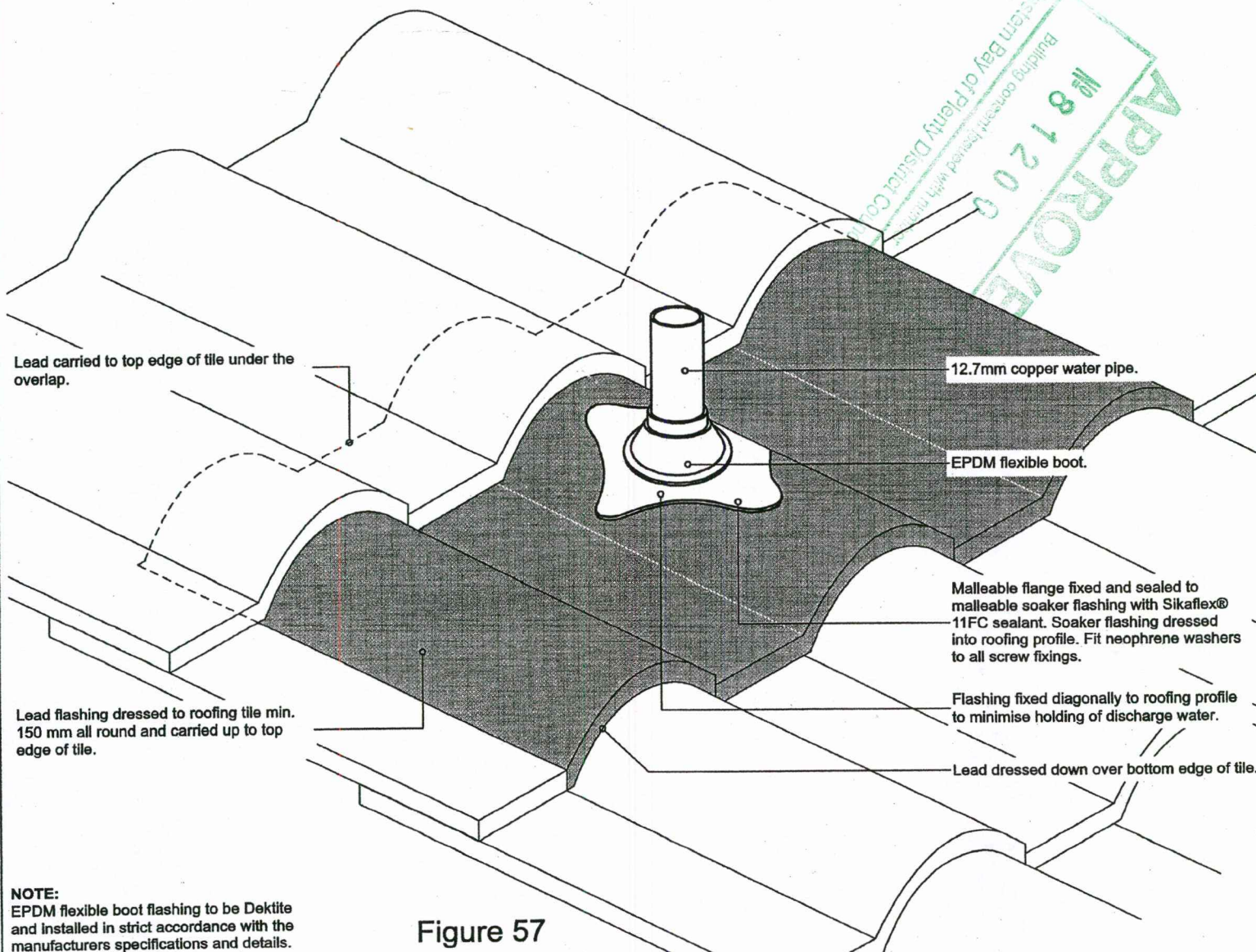


Figure 57

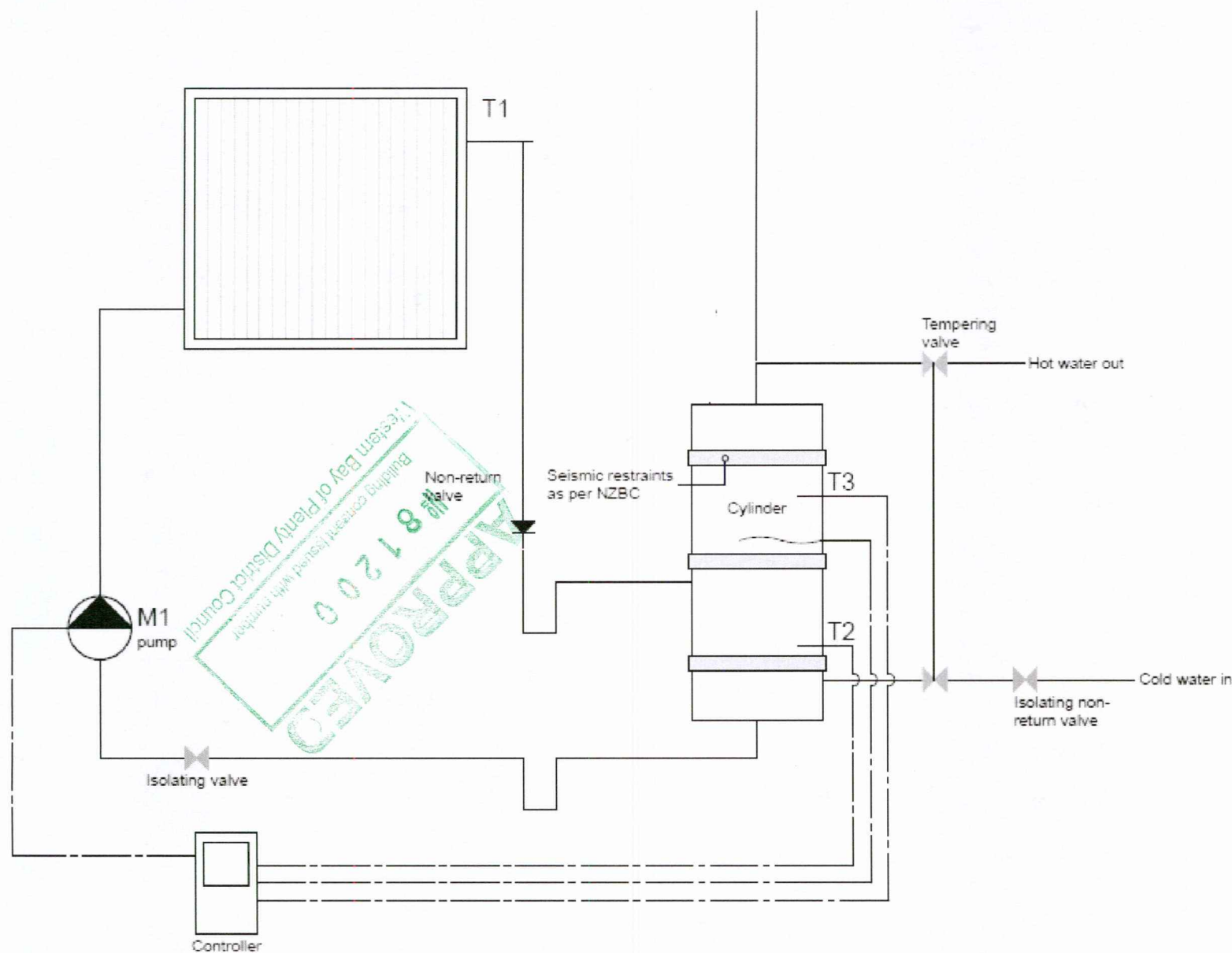


Figure 61

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Systems designed within these documents are applicable up to and including Very High wind zones. For Specific Design wind zones, consult Nova Energy Solar.

Drawing Package:

Standard Installation Details

Drawing Title:

Typical Solar Water Heater Schematic

Low Pressure Open Vented

Drawing Scale(s) @A4: NTS

Date: 21.04.09

Checked: MP

Revision: B - 25.05.09

Drawing Number:

F-06

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Doc: 412812-1

Ref: 30S-08-0002-SOW-412812-1

27th November 2008

Todd Energy
PO Box 3141
95 Customhouse Quay Wellington, New Zealand
Attention: Dudley Maritz

Todd Energy K-series collector testing to AS/NZS 2712:2007

Dear Dudley Maritz

I hereby inform you that we have completed all the required testing on your K250L hot water system and K-250L solar collector.

You can certify the collector K-series, L type to AS/NZS 2712:2007.

Please contact me if you have any further queries regarding the test results.

Yours sincerely

Kumar Lingam
Kumarl@Vipac.com.au



Melbourne • Sydney • Adelaide • Perth • Brisbane • Hunter Valley • Tasmania • Singapore • Dubai • Hong Kong

Commercial In Confidence

intelligent measurement technology

SENZTEK

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Waitakere 0643, New Zealand

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FAX +64 9 828 4217
EMAIL office@senztek.com

www.senztek.com

To whom it may concern;

Senztek New Zealand limited is the manufacturer of SolaStat products and owns the SolaStat brandname.

SolaStat products are designed and manufactured within an accredited AS/NZ ISO9001:1994 quality control system.

Solarstat Controllers conform to the appropriate requirements of:
EU Directive 89/336/EEC, amended by 92/31/EEC, Article 10, Paragraph 1, relating to Electromagnetic Compatibility, and to the appropriate requirements of Directive 73/23/EEC, Article 2, Paragraph 1, relating to Safety of Electrical Equipment.

SolarStat Controllers conform to Ctick regulations required under New Zealand law (Section 134(1)(g) Radiocommunications Act 1989 and in accordance with Regulation 101A of the Electricity Regulations 1997) and are labeled with either Z495 or Z985 supplier codes.

All declarations are on file and viewable at our company offices as per the regulations.

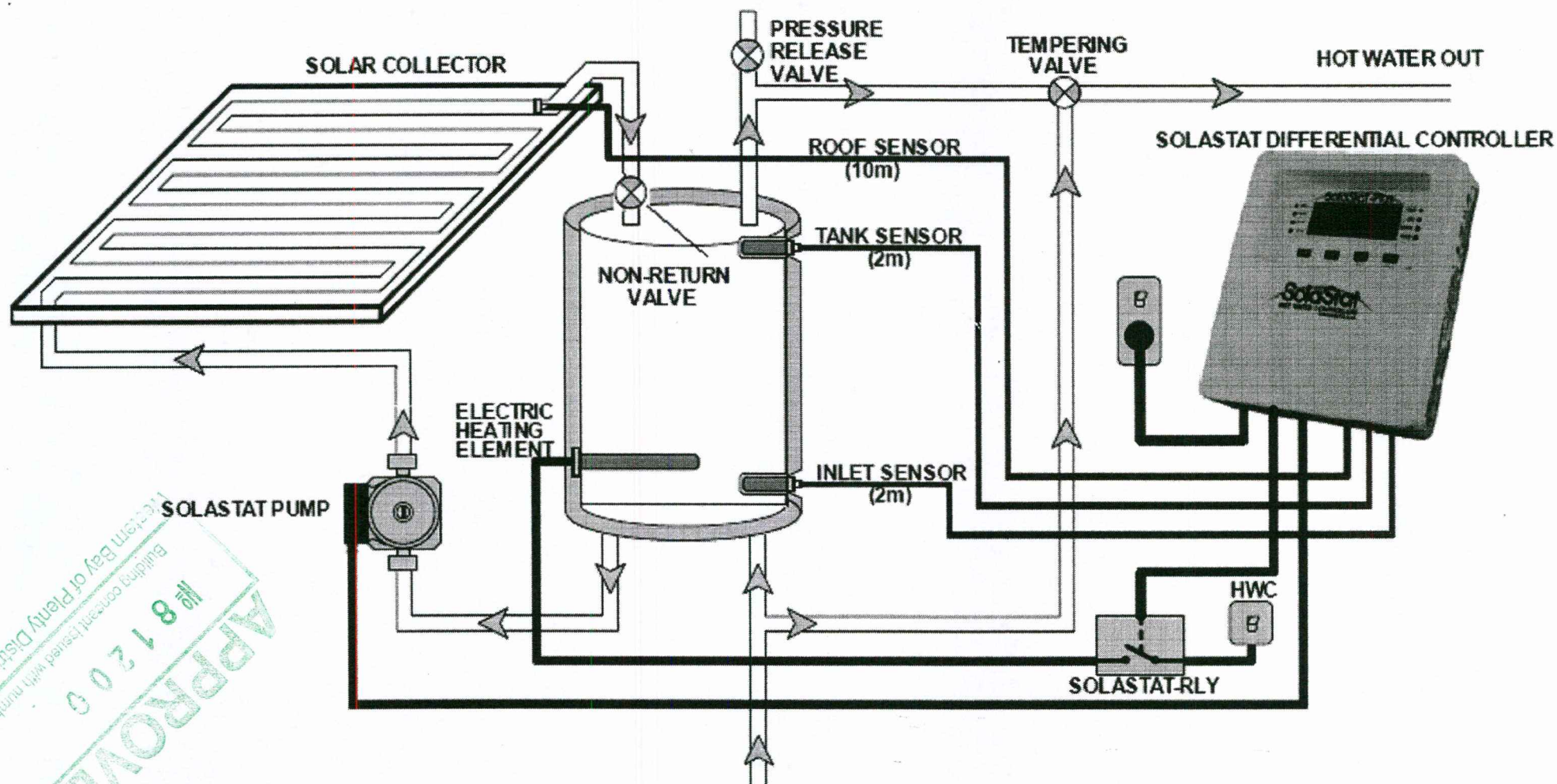
Lance Allen
Technical Manager
pp Senztek Limited



db

Basic SolaStat-Plus-2 Installation.

The SolaStat-2 controlling the Solar Collector circulating pump and the SolaStat-Rly Relay Module.



Note. This diagram is only to be used as a general guide and not all the required components are shown. Each installation needs to be customised to suit its situation. Always use best plumbing practices, and comply to any regulatory requirements.



TEMPERING VALVE

Application

- High and low pressure hot water systems

Standards

- Complies with NZ Building Code G12 (2001)
- Complies with NZS 4617:1989
- NZ Patent No. 517764, Aust. Patent No. 2003200856
- RSA. Patent No. 2003/1992

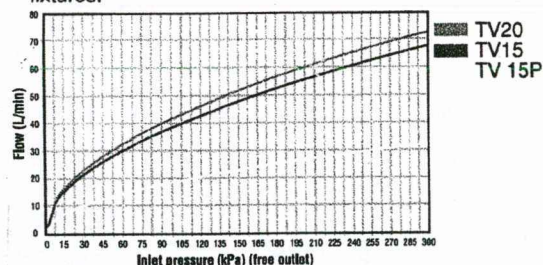
Specifications

- Length:

TV15	110mm
TV20	105mm
TV20D	130mm
TV12	110mm
- Thermostatically controlled safety valve to prevent scalding.
- Factory set to give 55°C outlet. Can be adjusted from 35°C to 60°C.
- Inlet hot water supply 65°C to 99°C.
- Inlet water pressures:

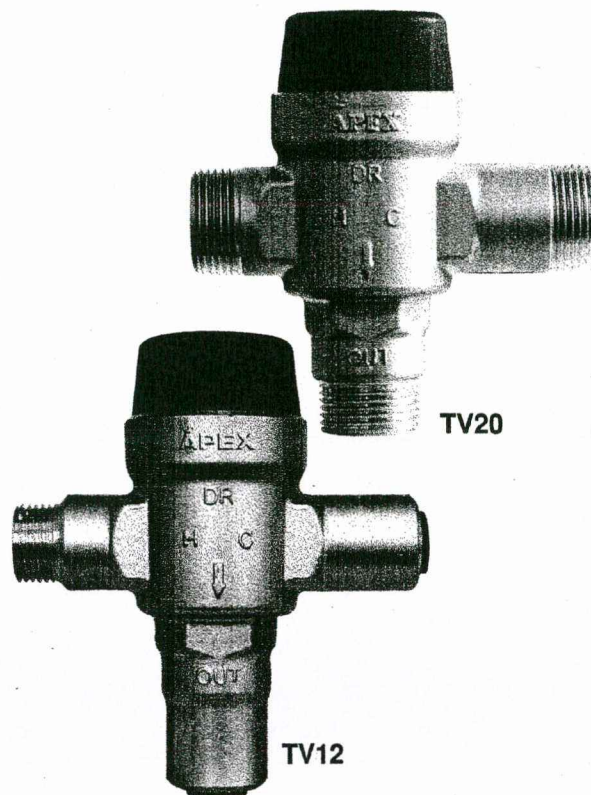
TV15.....	30 to 1000 kPa (3m head)
TV20.....	20 to 1000 kPa (2m head)
- Flow rates:

TV15.....	20 L/min at 20 kPa inlet pressure.
TV20.....	20 L/min at 20 kPa inlet pressure.
- Operating Pressure:
Balanced hot and cold pressure. For unequal water pressure of up to 5:1 (Cold to Hot), non-return must be fitted to hot inlet.
- Extremely high flow rate makes the TV20 suited to low pressure systems.
- TV15P, designed for installation within close proximity to bathroom fixtures.



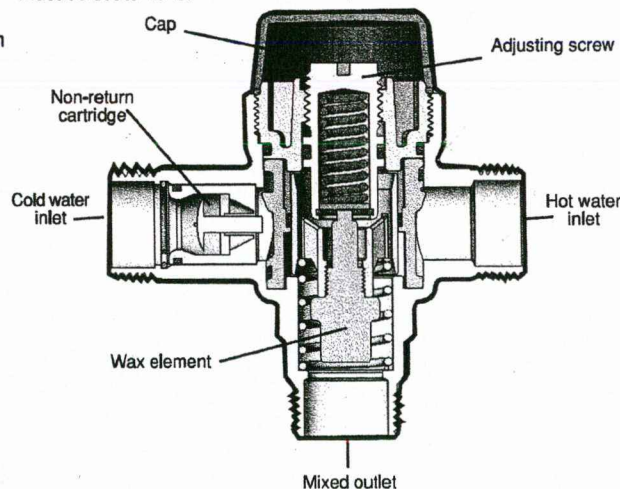
Installation

- Refer page 19 for installation guide
- Valve must be fitted by a qualified plumber.
- Installation must comply with local authority requirements.
- Valve may be installed in any orientation.
- Flush pipes prior to fitting.
- Valve must be protected by a line strainer.
- Non-return valves are required at hot and cold inlets in Ring Main Installations.
- Connections are H (hot inlet), C (cold inlet) and OUT (mixed temperature outlet).
- Do not apply heat near valve during installation - this may damage the mechanism.
- Do NOT install valve directly into outlet of cylinder.
- Use TV15P at point of use.



Temperature Adjustment

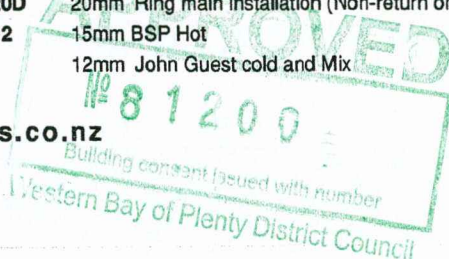
Remove cap. Use screwdriver to adjust to desired temperature. To increase, turn anti-clockwise (H). To decrease, turn clockwise (C). Replace cap. Maximum delivered hot water temperature at any sanitary fixture used for personal hygiene shall not exceed 55°C. For childhood centres, schools, old peoples homes and hospitals, outlet must be set to 45°C.



Product Codes

TV15	15mm
TV15P	15mm Point of use Tempering Valve
TV20	20mm
TV20D	20mm Ring main installation (Non-return on both inlets)
TV12	15mm BSP Hot 12mm John Guest cold and Mix

www.apexvalves.co.nz



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Drawing Package:

Standard Installation Details

Drawing Title:

Daylighting Restriction Diagram

Drawing Scale(s) @A4:

1:50

Date:

21.04.09

Checked:

MP

Revision:

B - 25.05.09

Drawing Number:

F-05

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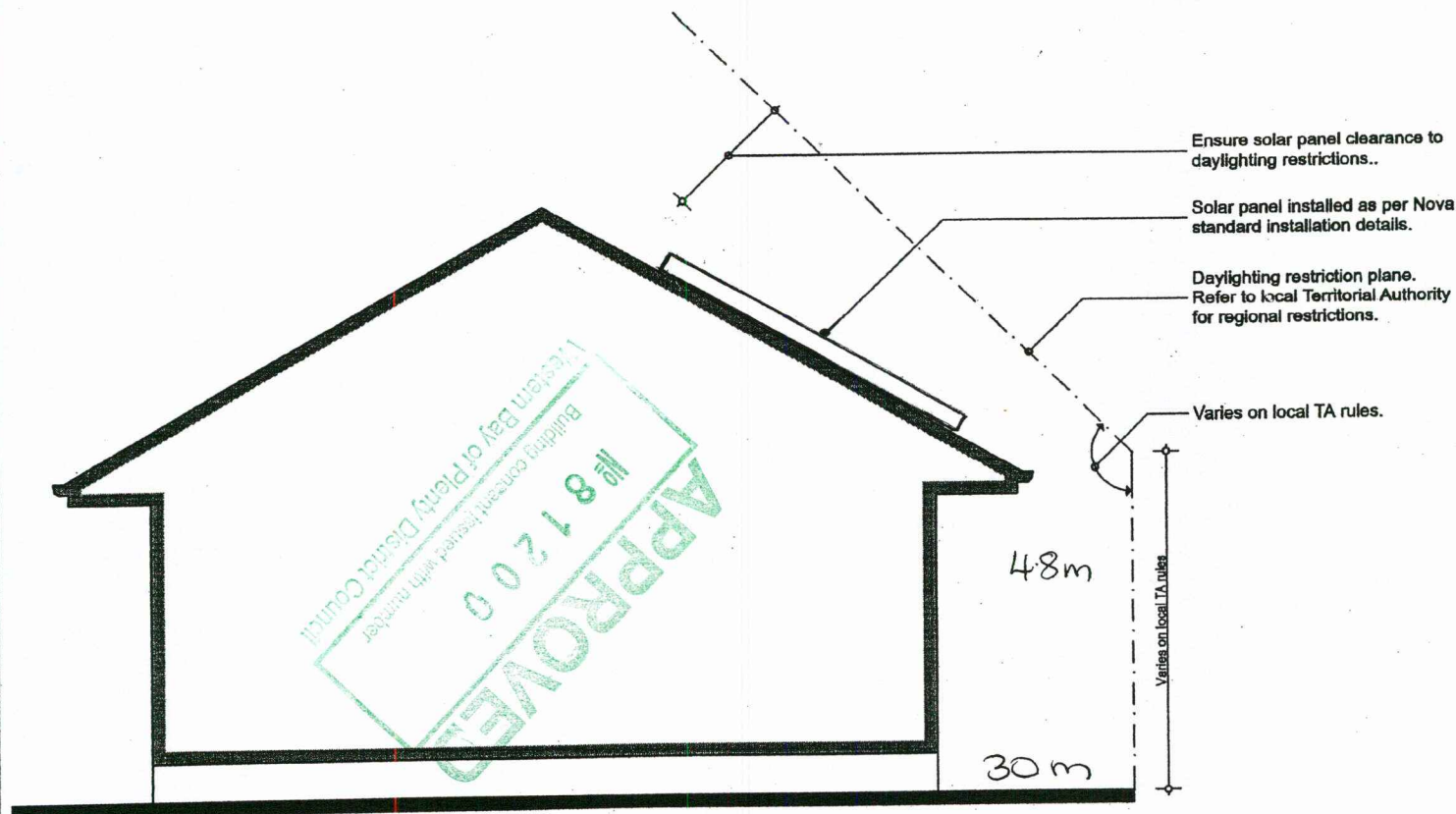
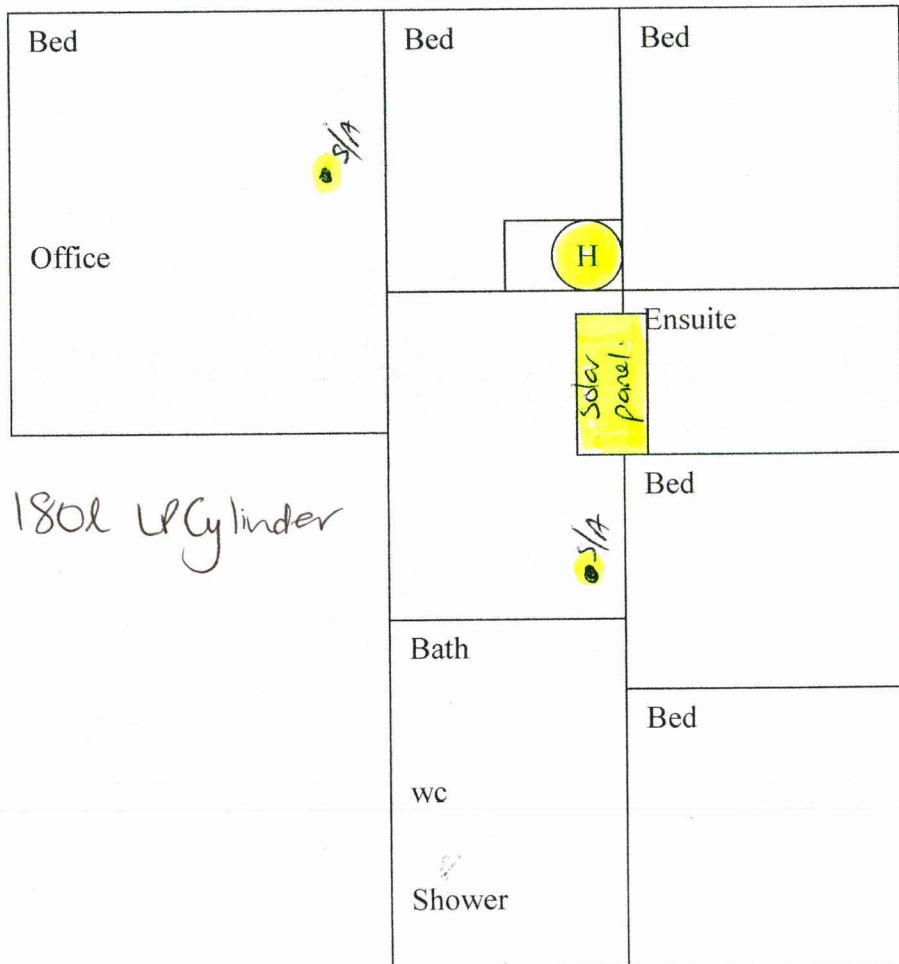


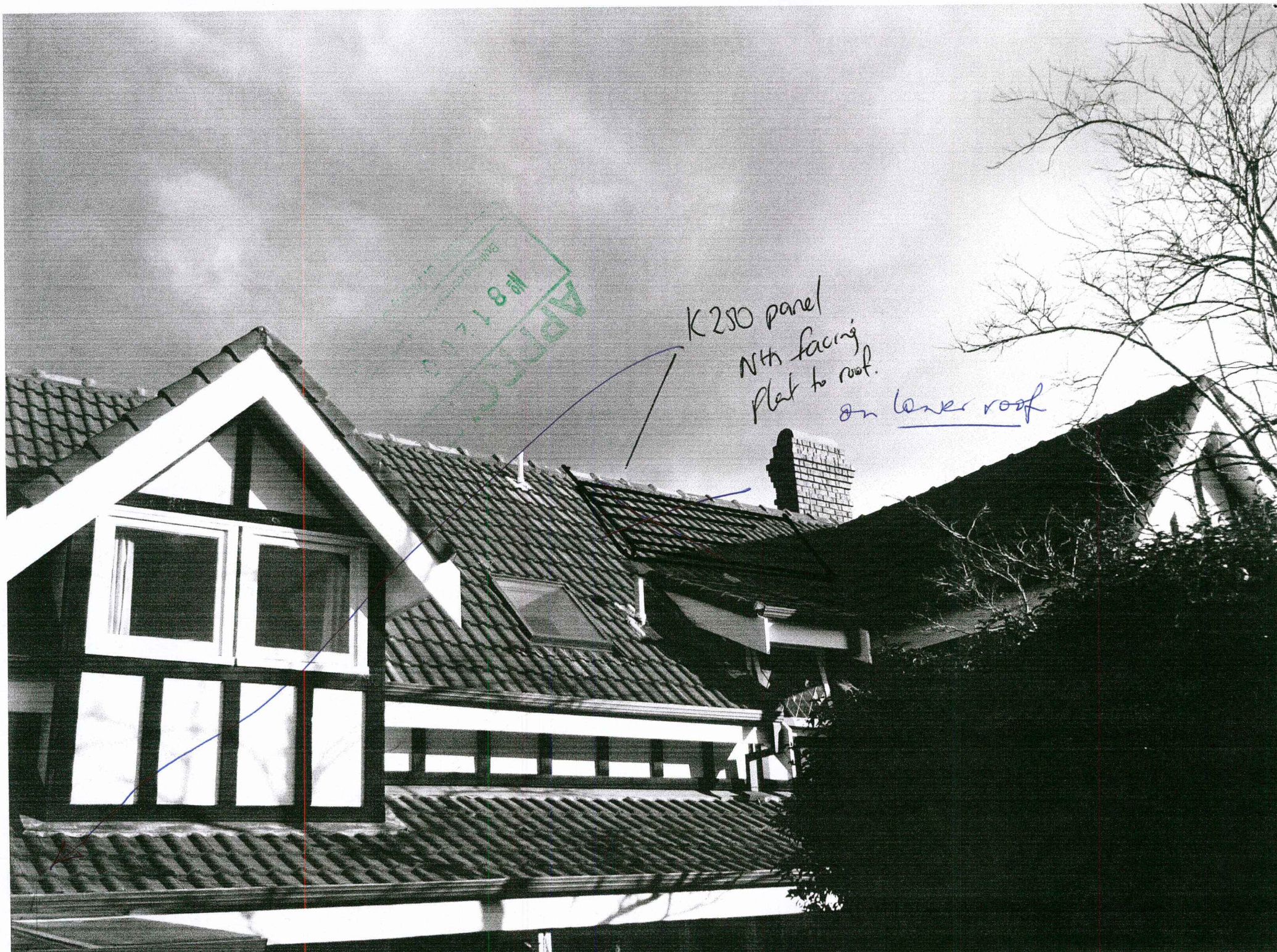
Figure 60
Indicative cross sectioning showing daylighting restrictions that may apply. Each project must be evaluated and checked by the architectural designer.

John Nicoll
195 Beach Rd
Katikati

North



APPROVED
No 81200
Building consent issued with number
Western Bay of Plenty District Council



K280 panel
Nth facing
flat to roof.
on lower roof

APPROX
18th 12/10