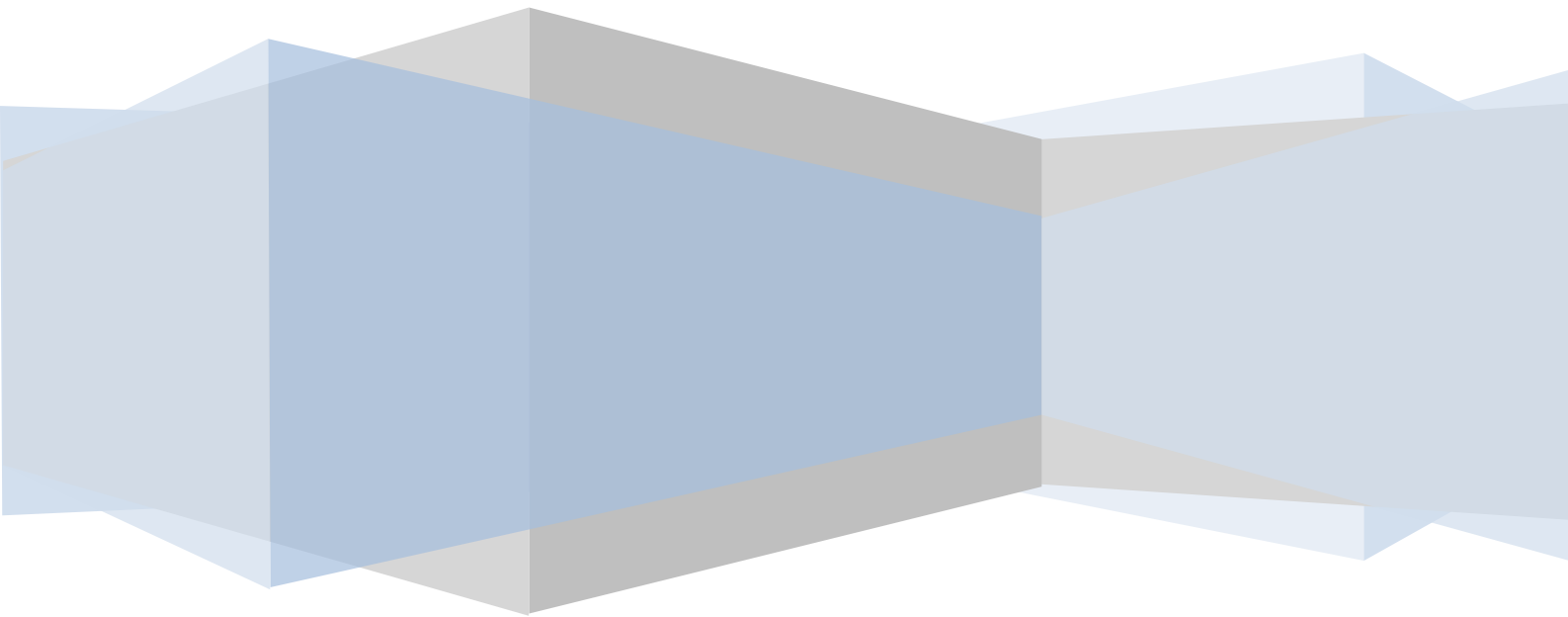




Prestoplan

**Where can we provide points under
The Code for Sustainable Homes?**

August 2009



Introduction

The Code for Sustainable Homes is a rating scheme which examines the “environmental impact” of dwellings. It does so by assessing the impact of energy usage, the upstream source of that energy and the treatment of downstream waste including waste from the construction process.

The scheme uses the existing building regulations as a base level and awards points for performance in excess of the minimum standards. The following table illustrates the various categories scored.

Table 1 Categories for the code

Mandatory	Waste Materials	→	Category credits scored	→	Environmental Weightings	Overall Score	Code Levels					
	Surface Water Run-off						Level	Required points				
Tradable credits	Energy & CO ₂ Water	→									1	36
	Energy & CO ₂										2	48
	Water										3	57
	Waste										4	68
	Materials										5	84
	Surface Water Run-off										6	90
	Pollution											
	Health & Wellbeing	→										
	Management											
	Ecology											

Each category is sub-divided into issues with maximum credits available against each issue; however, just to make life interesting not all credits are equal as each category is weighted to reflect environmental impact.

The table below replicates the available credits together with the weightings to be applied. Those in **BOLD** can be influenced by Prestoplan.

Table 2 Summary of Environmental Issues and Credits with Weightings

Category	Issues	Credit	% Weighting	Score / Credit
Energy and CO ₂ Emissions	Dwelling Emission Rate	15	29 points 36.4 % weighting	Each point = 1.255%
	Building fabric	2		
	Internal lighting	2		
	Drying space	1		
	Energy labelled white goods	2		
	External lighting	2		
	Low/zero carbon technology	2		
	Cycle storage	2		
	Home office	1		
Water	Internal Potable water use	5	6 points 9 % weighting	Each point = 1.5%
	External water use	1		
Materials	Environmental impact of materials	15	24 points 7.2 % weighting	Each point = 0.3%
	Sourcing of Materials Basic Fabric	6		
	Sourcing of Materials Finishes	3		
Surface Water Run off	Reduction Site Surface water run-off	2	4 points 2.2 % weighting	Each point = 0.55%
	Flood Risk	2		
Waste	Waste storage and recycling facilities	4	7 points 6.4 % weighting	Each point = 0.914%
	Construction site waste management	2		
	Composting	1		
Pollution	Global warming potential of Insulants	1	4 points 2.8 % weighting	Each point = 0.7%
	Nox Emissions	3		
Health & Wellbeing	Daylight	3	12 points 14 % weighting	Each point = 1.167%
	Sound Insulation	4		
	Private Space	1		
	Lifetime Homes	4		
Management	Home User Guide	3	9 points 10 % weighting	Each point = 1.111%
	Considerate Constructors Scheme	2		
	Construction site impacts	2		
	Security	2		
Ecology	Site Ecological Value	1	9 points 12 % weighting	Each point = 1.333%
	Ecological Enhancement	1		
	Protection of Ecology	1		
	Change to Ecology Value	4		
	Building Footprint	2		
Totals		104	100%	

Category 1 Energy and Carbon Dioxide Emissions

Issue: Ene 1: Dwelling Emission Rate

(Up to 7.5 credits)

Scores for this element are determined by SAP calculation which provides the basis for calculating the percentage improvement over minimum standards. It should be borne in mind that SAP calculations are combination of factors which includes heating, hot water and lighting energy use. As such fabric performance can only partially contribute towards a maximum score.

The table below outlines the minimum percentage improvements for various code levels.

Table 3 Minimum Code Level Percentage Improvements

$(1 - \text{DER} / \text{TER}) \times 100 \%$	Credits	Code Level
10%	1	1
18%	3	2
25%	5	3
44%	8	4
100%	14	5
True Zero Carbon	15	6

AD L1 has a maximum average wall U value $0.35 \text{ W/m}^2\text{K}$. Prestoplan's "PresWall Plus" system can achieve a U value of $0.21 \text{ W/m}^2\text{K}$.

In addition good values of air tightness contribute to the score. Timber frame can easily attain $5 \text{ m}^3 / (\text{Hr.m}^2)$. This is usually sufficient up to code level 4. For levels 5 & 6 an air leakage of $1 \text{ m}^3 / (\text{Hr.m}^2)$ is usually required which can still be attained using timber frame.

The Prestoplan Difference

The SAP calculation system uses a number of very conservative default values for junctions, even for accredited details. Prestoplan's system provides the SAP assessor with critical thermal transmittance values (ψ – value $\text{W}/(\text{mK})$) for the majority of junctions¹.

When these values are used in lieu of the system defaults the building fabric performance scores are significantly improved.

Whilst the actual gain is dependent on the building's geometry and the PresWall system adopted it is not unusual for gains to be the equivalent to using an external wall value of less than $0.14 \text{ W/m}^2\text{K}$

In addition Prestoplan include around all perimeter floors a Vapour Check Layer continuity strip which provides enhanced air leakage performance at floor level

¹ Values have been calculated by our Consultants C4ci

Prestoplan's "PresWall Plus" system provides a combination of good U values combined with ψ – values resulting in an excellent contribution to Ene1 scores without resorting to expensive and very thick wall configurations. In addition Prestoplan's detailing methodology promotes excellent air leakage performance thereby maximising the frame's sustainability score

Issue: Ene 2: Building Fabric

(Up to 2 credits)

This issue is directly linked to Ene1 insofar as it deals with heat performance as measured by a calculated "Heat Loss Parameter" (HLP). These scores are not usually economical up to code level 4 but will be needed for 5 & 6. Again the enhanced performance of the Prestoplan "PresWall Plus System" will assist in obtaining these points.

Category 3 Materials

Issue: Mat 1: Environmental Impact of materials

(Up to 12 credits)

Credits are awarded in accordance with the BRE "Green Guide" which allocates environmental ratings to commonly constructed elements. The table below shows the most common scores for the Prestoplan system².

Table 4 Prestoplan "Green Guide" Scores

Element	Specification	Score
External Wall	Masonry or Clad OSB sheathed timber framed wall	A+
Internal Wall	Stud walls including OSB sheathed racking walls	A+
Party Wall	Robust Detail E-WT-1 & E-WT-2	A+
House Floor	Chipboard deck on PresWeb joists	A+
Appart't Floor	Robust Detail E-FT-3 PresWeb Joist	A+
Pitched Roof	Timber trusses and rafters	A+
Flat Roof	Cold or warm deck single ply membrane on ply deck	A+

It can be seen that maximum scores under this issue are possible using the Prestoplan system.

² The scores given cover the most common details for our system however project specific scores must be checked against the current guide.

*Issue: Mat 2: Responsible Sourcing of Materials- Basic Building Elements
(Up to 4 credits)*

Prestoplan is Chain of Custody certified for PEFC materials. All materials are responsibly sourced. The box below outlines our environmental policy

Prestoplan Limited recognises the importance of our environment and is committed to the implementation and maintenance of a supply chain policy that includes a Chain of Custody System that will meet the requirements of Annex 4 "Chain of Custody of Forest Based Products" for PEFC registration.

Where PEFC products are not available we will endeavour to source from other recognised environmentally sound sources such as FSC and SFI certified suppliers.

Category 5 Waste

Issue: Was 2: Construction Site Waste Management (Up to 1 credit)

Prefabrication reduces site waste by assembling components before delivery. In addition Prestoplan helps reduce site waste by recycling transport bearers.

In the manufacturing process we recycle timber waste via a recycling company thereby reducing landfill waste to a minimum.

In addition our erectors use steel re-usable props eliminating all the wasted timber props usually seen in our industry.

In recognition of our environmental processes Prestoplan will be ISO14001 registered through BMTrada by the end of 2008.

Category 6 Pollution

Issue: Pol 1: Global Warming Potential of Insulants (Up to 1 credit)

All Insulants provided by Prestoplan have Zero GWP.

Category 7 Health & Wellbeing

Issue: Hea 2: Sound Insulation

(Up to 3 credits)

The table below outlines the credits available from Robust Details applicable to the Prestoplan System³.

Table 5 Robust Detail Ltd Credits

Detail	Credit
E-WT-1 and E-WT-2	3

Alternatively use Post completion testing to provide acoustic performance evidence.

Issue: Hea 4: Lifetime Homes

(Up to 4 credits)

Prestoplan's frames can easily be designed to comply with lifetime home standards. Joists and trusses can be designed to take future hoist loads and knock out panels can be incorporated for trackway routes.

Floors can also be designed to allow future wheelchair lift installation should this be required.

Conclusion

Whilst the building fabric can only deliver relatively modest overall scores these can be significant in delivering cost effective solutions to code levels 3 and 4 developments.

(Timber frame can contribute up to a maximum of 13 points for a code 3 house)

For code levels 5 and 6 they are vital as every credit counts for these higher level schemes.

(Timber frame can contribute up to a maximum of 19 points on a zero carbon house)

Prestoplan's system maximises the available points by providing ψ – values for the system junctions which easily out performs systems which rely on the SAP default values or massively over insulated wall thicknesses.

In addition Prestoplan's system supports the other code factors outlined above which maximises the points which are available.

³ Current September 2008. Refer to Robust Detail Ltd website for current values.