2005

planning designing & rating a sustainable built environment

CRC for Construction Innovation Forum
10 February 2005
Brisbane City Hall

peter poulet
design director, GAO

GOVERNMENT ARCHITECT'S OFFICE
NSW Department of Commerce

global:

- Climate change
- Biodiversity
- Water scarcity

city:

- **Infrastructure**
- **Resource conservation**

neighbourhood:

- **Major gains**
- **Local amenity**
- **Quality of life**

making sustainability simple for developers, councils and government agencies

BASIX is:

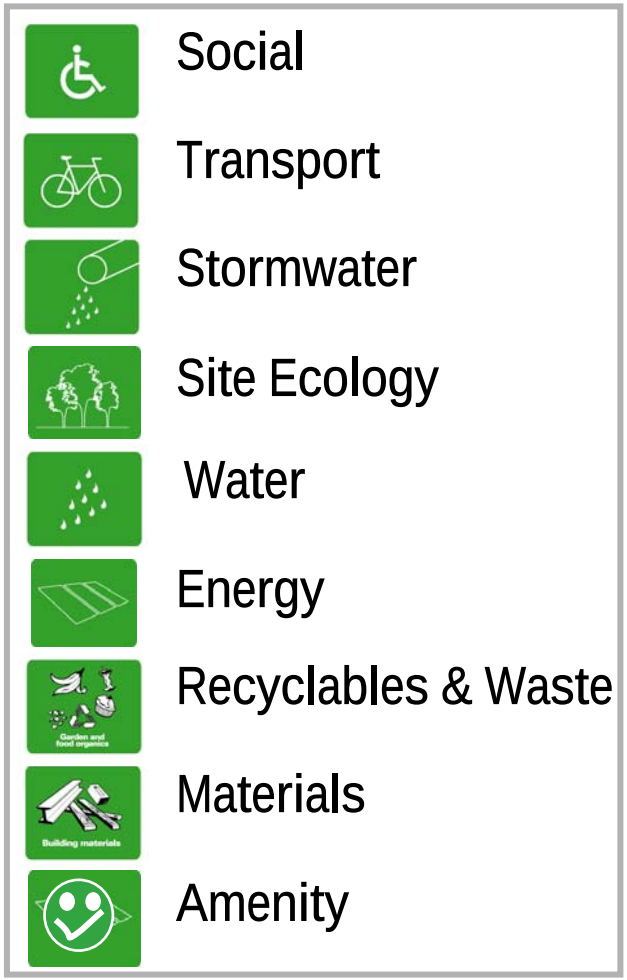
- **A tool for developers and councils**
- **Web-based**
- **Measures potential performance for sustainability**
- **Applicable to all residential dwellings**

a way forward

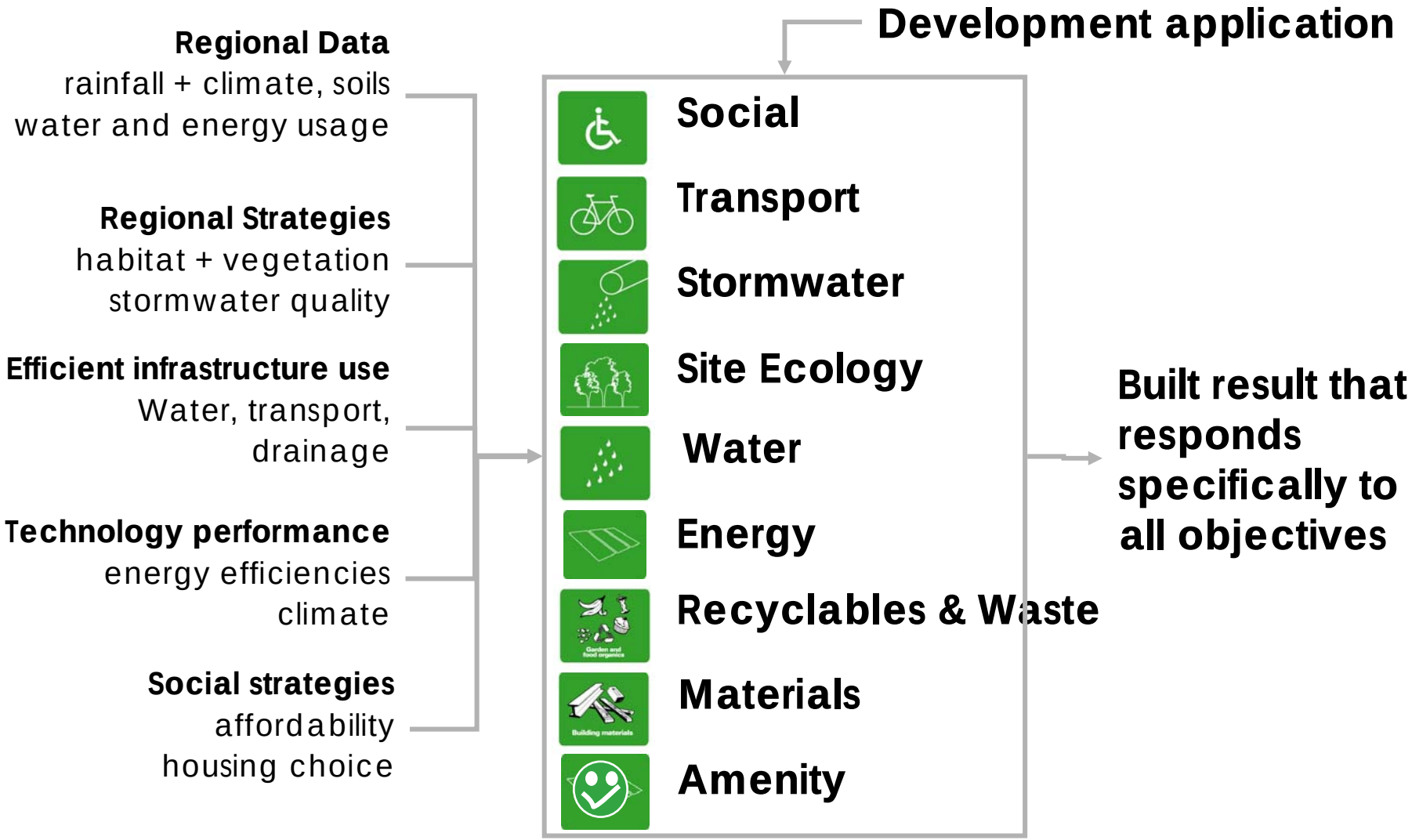
1. Inconsistency
2. Complexity

- Simple web based interface
- Powerful
- Responsive
- Quantifiable & measurable

9 internationally recognised indices



a single integrated assessment + design tool



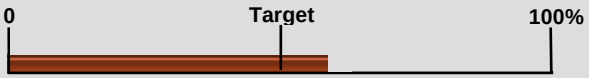
the BASIX framework

Environmental objectives

Contained in local and regional planning controls, ie

- car parking rates
- water conservation
- stormwater objectives

Bar



Data - Average Usage

Actual usage data from ABS, Sydney Water, Energy Australia, etc..

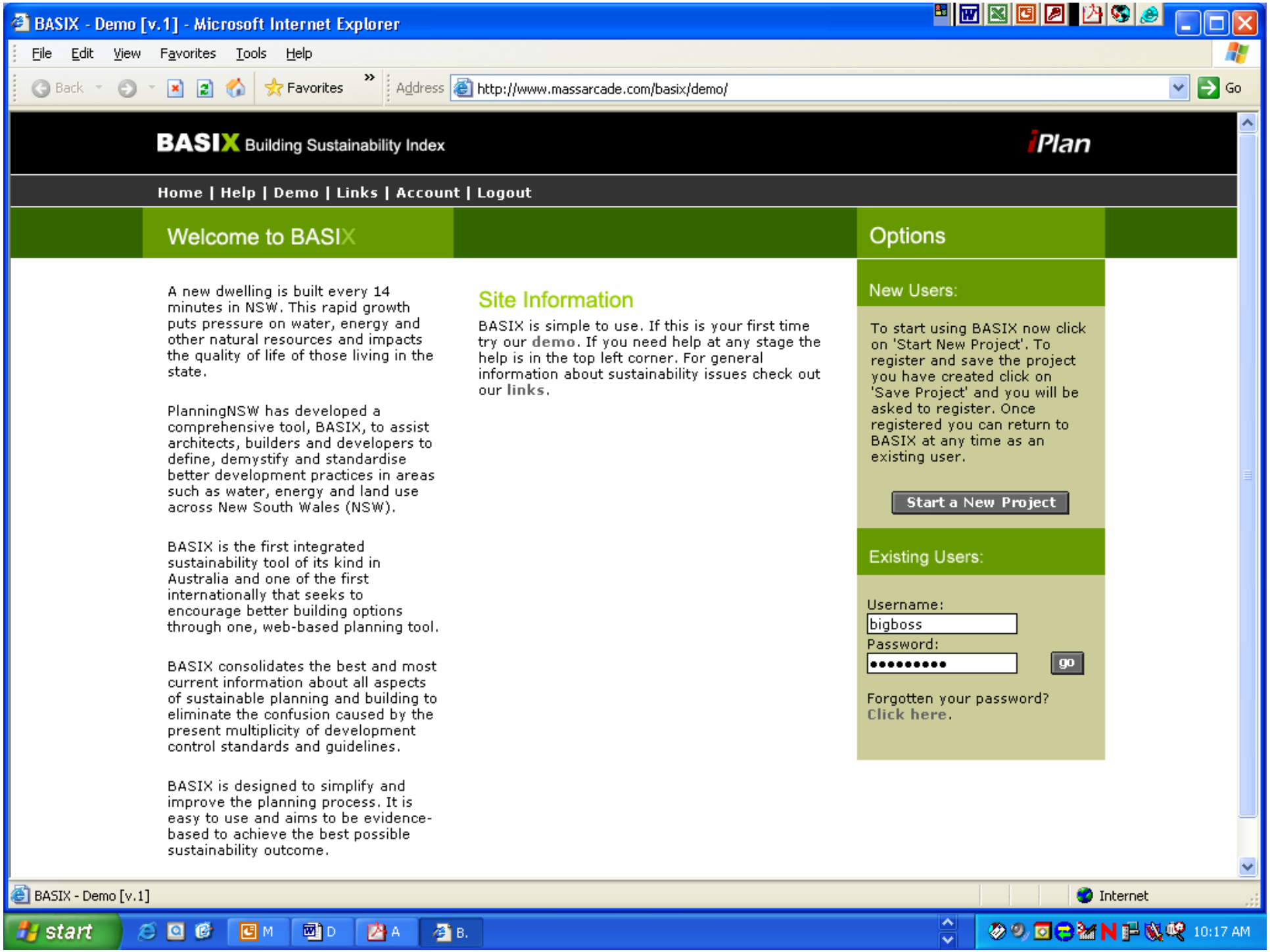
Technologies

eg star rating of appliances

BASIX
Building Sustainability Index

benefits of BASIX

- Establishes best practice
- Reduces cost of compliance
- Responsive & regionally sensitive
- Provides consistency across the State
- Provides a framework for better quality housing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Welcome to BASIX
A new dwelling is built every 14 minutes in NSW. This rapid growth puts pressure on water, energy and other natural resources and impacts the quality of life of those living in the state.
PlanningNSW has developed a comprehensive tool, BASIX, to assist architects, builders and developers to define, demystify and standardise better development practices in areas such as water, energy and land use across New South Wales (NSW).
BASIX is the first integrated sustainability tool of its kind in Australia and one of the first internationally that seeks to encourage better building options through one, web-based planning tool.
BASIX consolidates the best and most current information about all aspects of sustainable planning and building to eliminate the confusion caused by the present multiplicity of development control standards and guidelines.
BASIX is designed to simplify and improve the planning process. It is easy to use and aims to be evidence-based to achieve the best possible sustainability outcome.
Site Information
BASIX is simple to use. If this is your first time try our demo. If you need help at any stage the help is in the top left corner. For general information about sustainability issues check out our links.
Options
New Users:
To start using BASIX now click on 'Start New Project'. To register and save the project you have created click on 'Save Project' and you will be asked to register. Once registered you can return to BASIX at any time as an existing user.
Start a New Project
Existing Users:
Username:
bigboss
Password:
go
Forgotten your password?
Click here.
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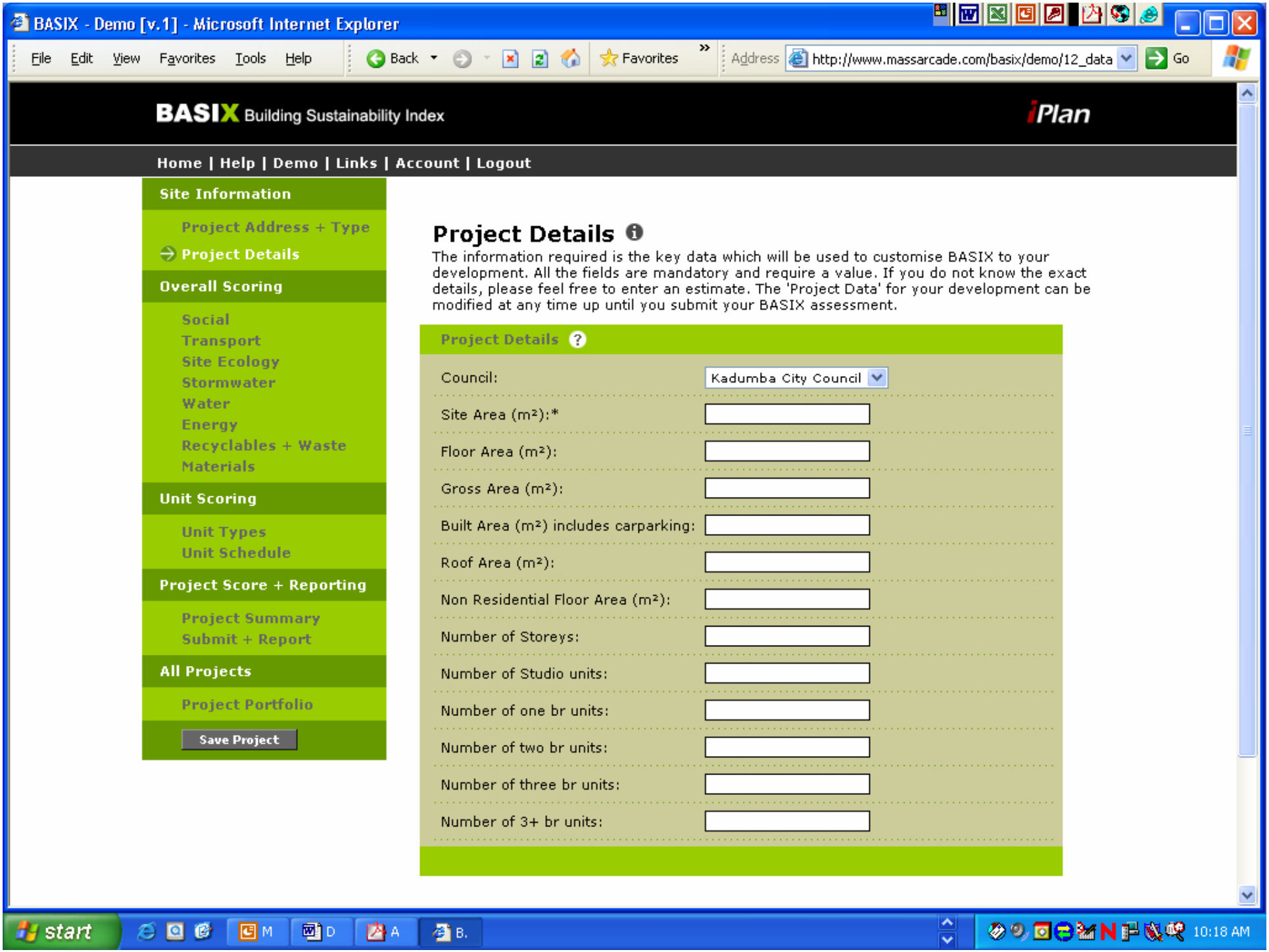
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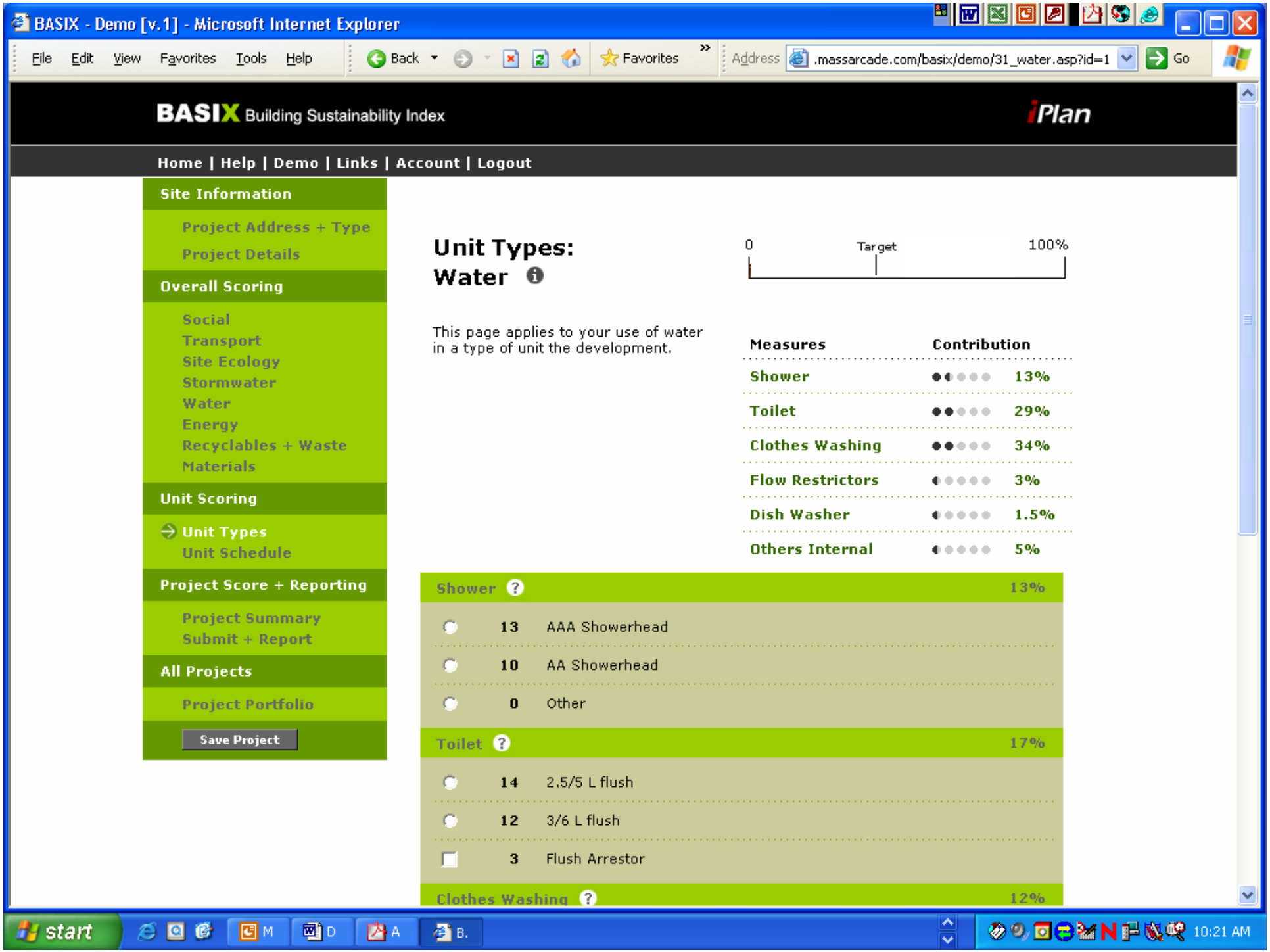
Project Portfolio
Save Project
Project Details
The information required is the key data which will be used to customise BASIX to your development. All the fields are mandatory and require a value. If you do not know the exact details, please feel free to enter an estimate. The 'Project Data' for your development can be modified at any time up until you submit your BASIX assessment.
Project Details
Council: Kadumba City Council
Site Area (m²):*
Floor Area (m²):
Gross Area (m²):
Built Area (m²) includes carparking:
Roof Area (m²):
Non Residential Floor Area (m²):
Number of Storeys:
Number of Studio units:
Number of one br units:
Number of two br units:
Number of three br units:
Number of 3+ br units:
start
10:18 AM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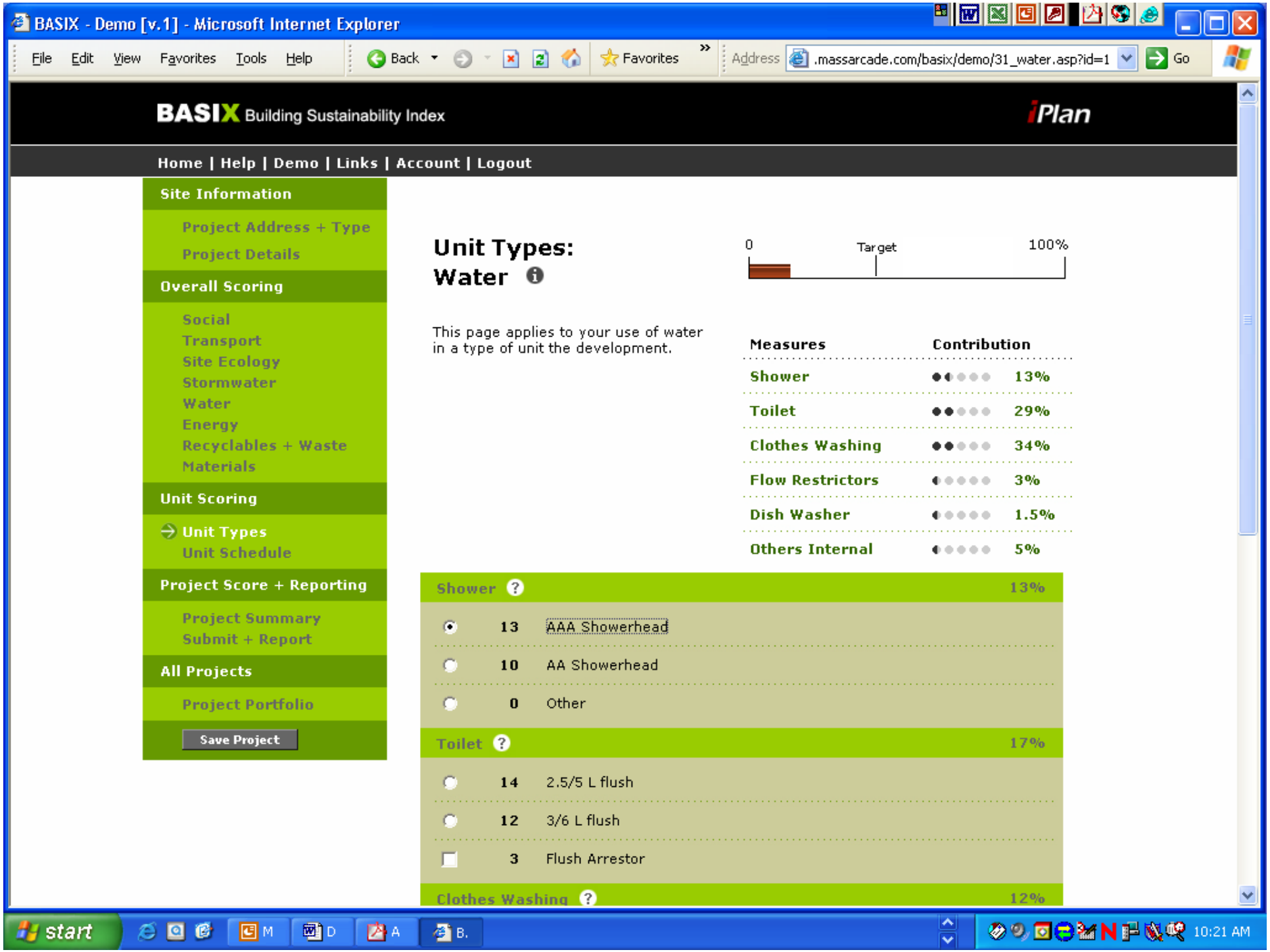
Unit Types:
Water
This page applies to your use of water in a type of unit the development.
0
Target
100%
Measures
Contribution
Shower 13%
Toilet 29%
Clothes Washing 34%
Flow Restrictors 3%
Dish Washer 1.5%
Others Internal 5%
Shower 13%
13 AAA Showerhead
10 AA Showerhead
0 Other
Toilet 17%
14 2.5/5 L flush
12 3/6 L flush
3 Flush Arrestor
Clothes Washing 12%
start
10:21 AM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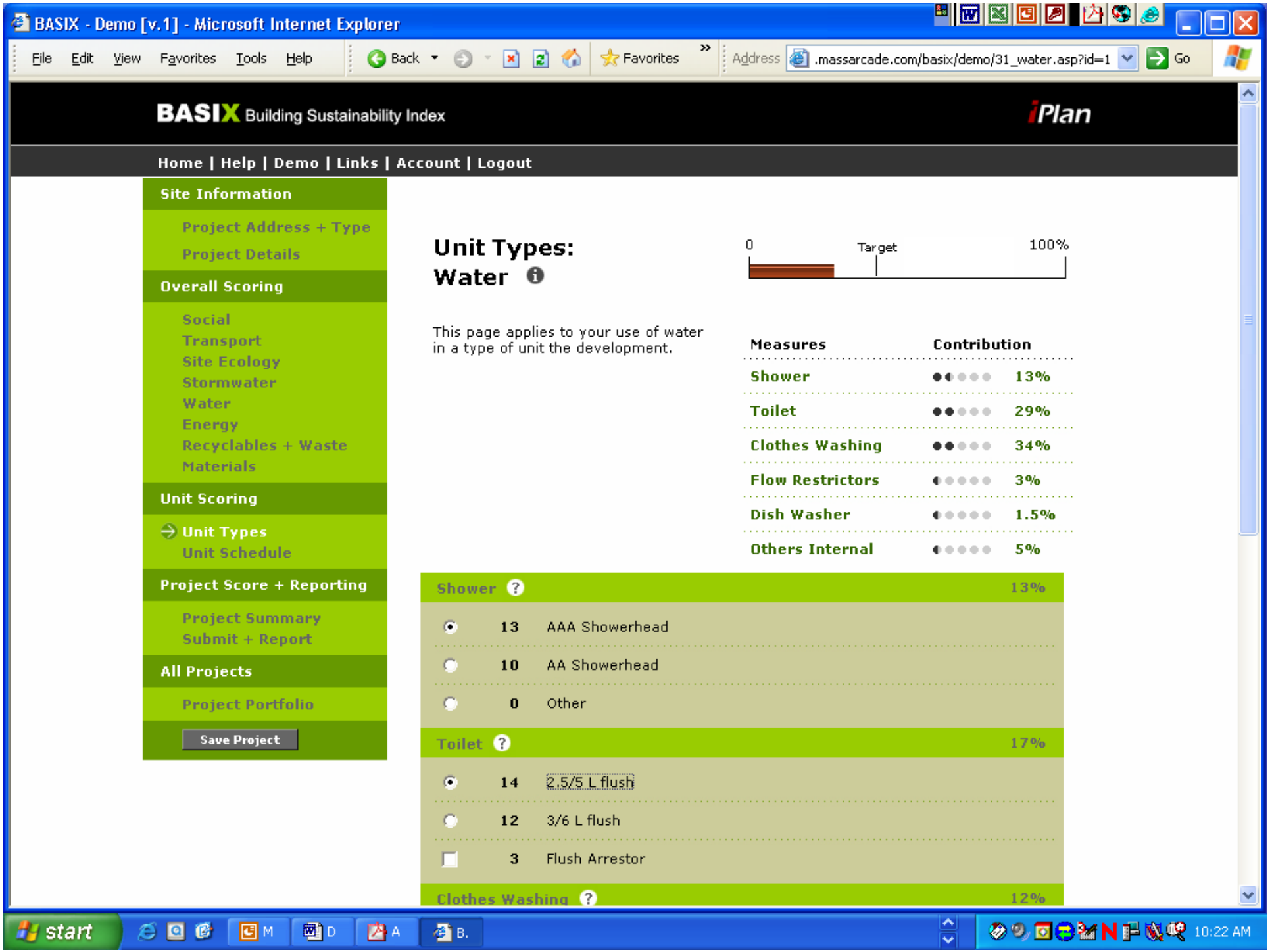
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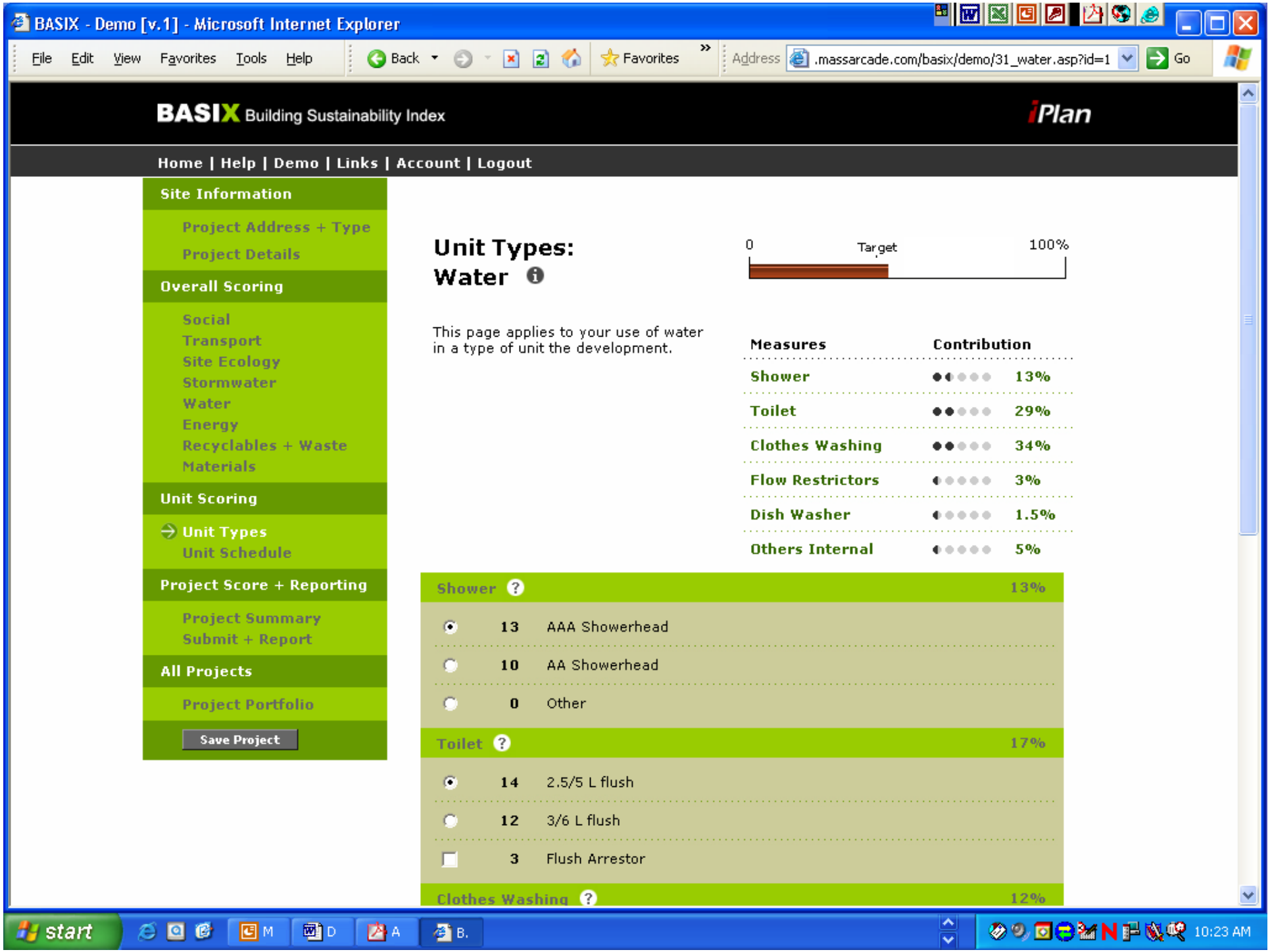
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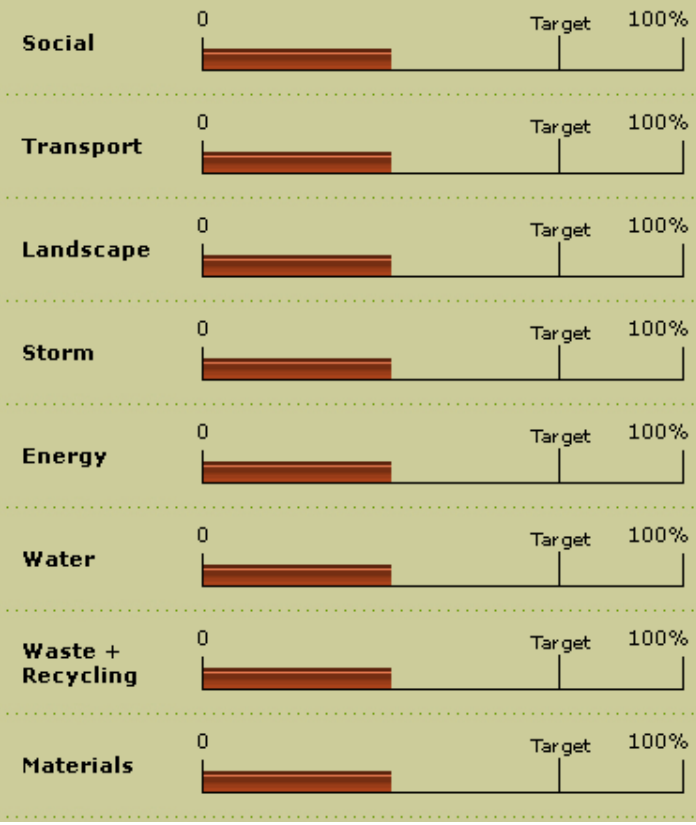
  - Project Portfolio

Save Project

Project Summary

This page enables you to view your progress through BASIX on one page. Your scores are displayed alongside the benchmark for each category.

Project Summary



start 10:46 AM

The diminishing back garden

	Lot size m2	House size m2	Car No.	Av No. people	Useable landscape m2
1900	1200	150	1	5.3	1000
1950	900	200	1	3.0	600
1990	600	250	1.5	2.5	250
2003	450	350	2.2	2.3	50

Approximate figures

external changes to the aussie house

1. **Scarcity of Land**
2. **Demographic changes**
3. **Environmental Necessities**

improving australia's housing

- **SEPP 65** — Residential Flats; Pattern Book; Design Guidelines; Design Review Panels
- **YBE Launch** — Project Homes; Homes dot Com; Houses of the Future

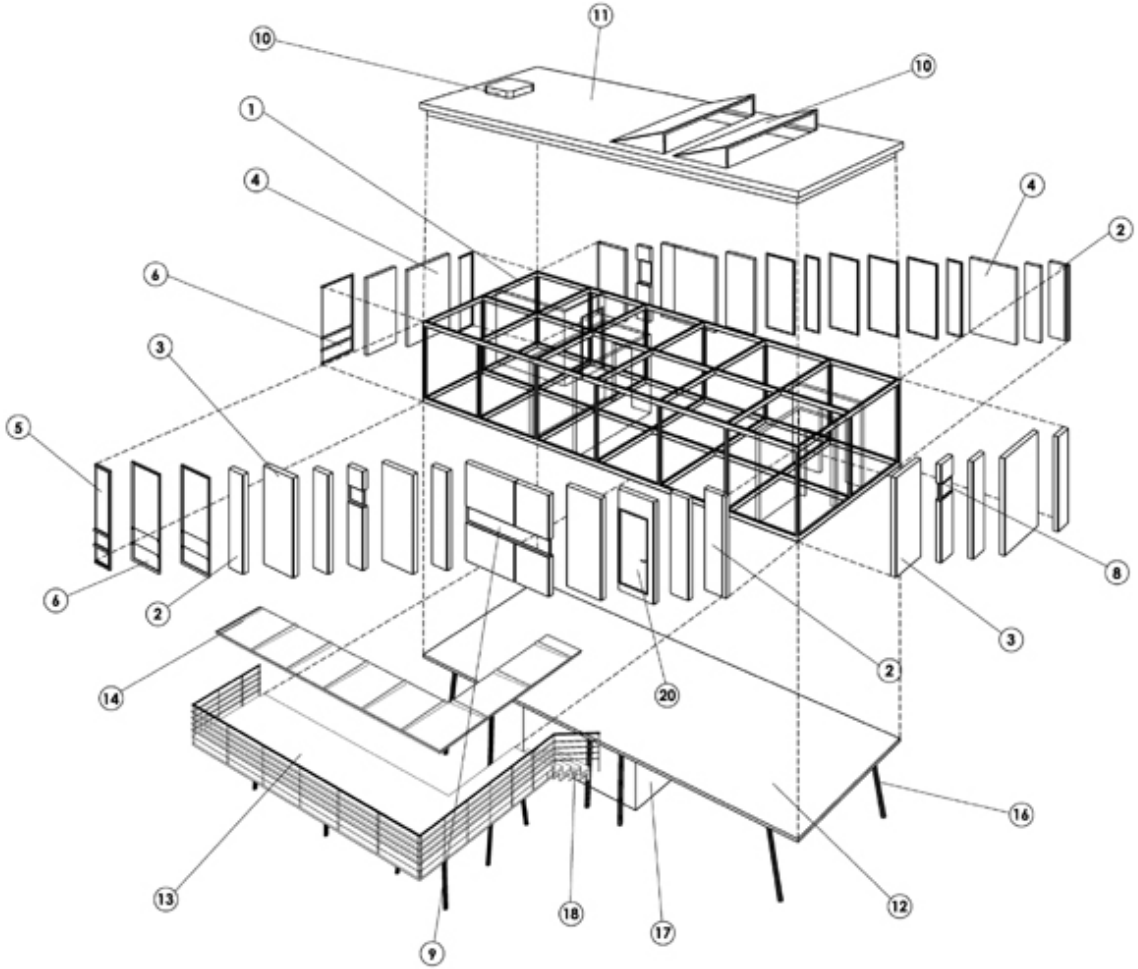
Process

1- Conception
Choice of Components

3- Fabrication
Cost Reduction through Mass Production

3- Delivery
Speed and Flexibility

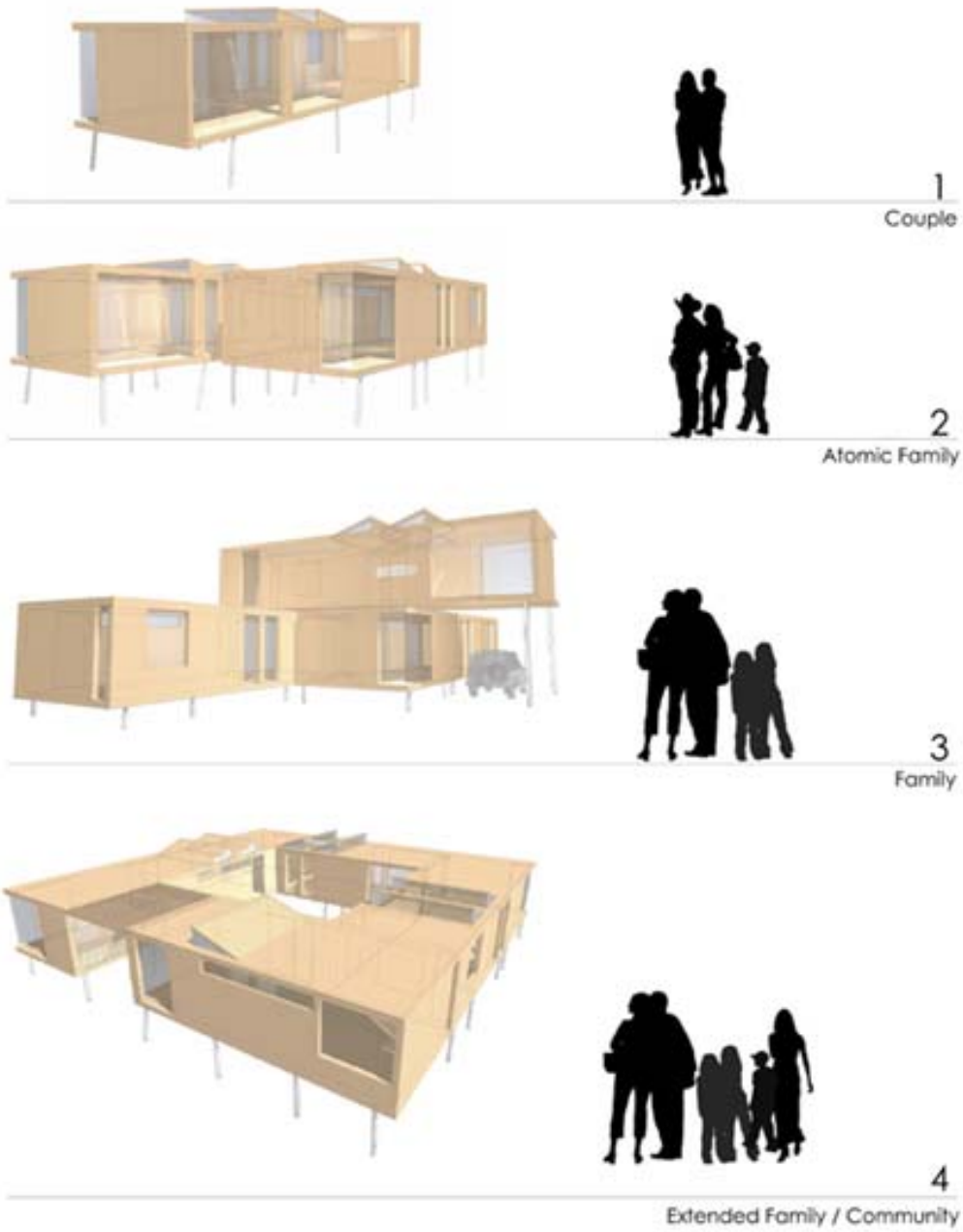
4- Assembly
Ease and Speed of Construction



Basic Construction Concept - Explosion Drawing indicating all major building parts and their relationship to each other. All Building parts are modular in nature and based on a 2'-0" building grid.

Building Components

1. Steel Frame 16'-0" w x 48'-0" l x 10'-0" h Pre-Assembled and Pre-Finished w/ Pre-Drilled Holes @ 6" o.c. for easy attachment of Panels and other Building Elements.
2. 2'-0" Panel w/ Integrated Insulation
3. 4'-0" Panel w/ Integrated Insulation
4. Panel w/ Insulated Insulation
5. 2'-0" Window Element w/ Aluminum Frame
6. 4'-0" Window Element w/ Aluminum Frame
7. 6'-0" Window Element w/ Aluminium Frame
8. "Punched Hole" Window Element
9. "Panoramic" Window Element
10. Operable Skylight / Ventilation Louver
11. Roof Assembly
12. Floor Assembly
13. Wood Deck w/ Steel Structure and Guardrails
14. Sunshading / Weather Protection
15. Cast in Place Foundations - According to Site and Local Code Requirements
16. Tube Steel Columns w/ Attachment Plate for Building Chassis
17. Utility Block
18. Exterior Stairs to Deck

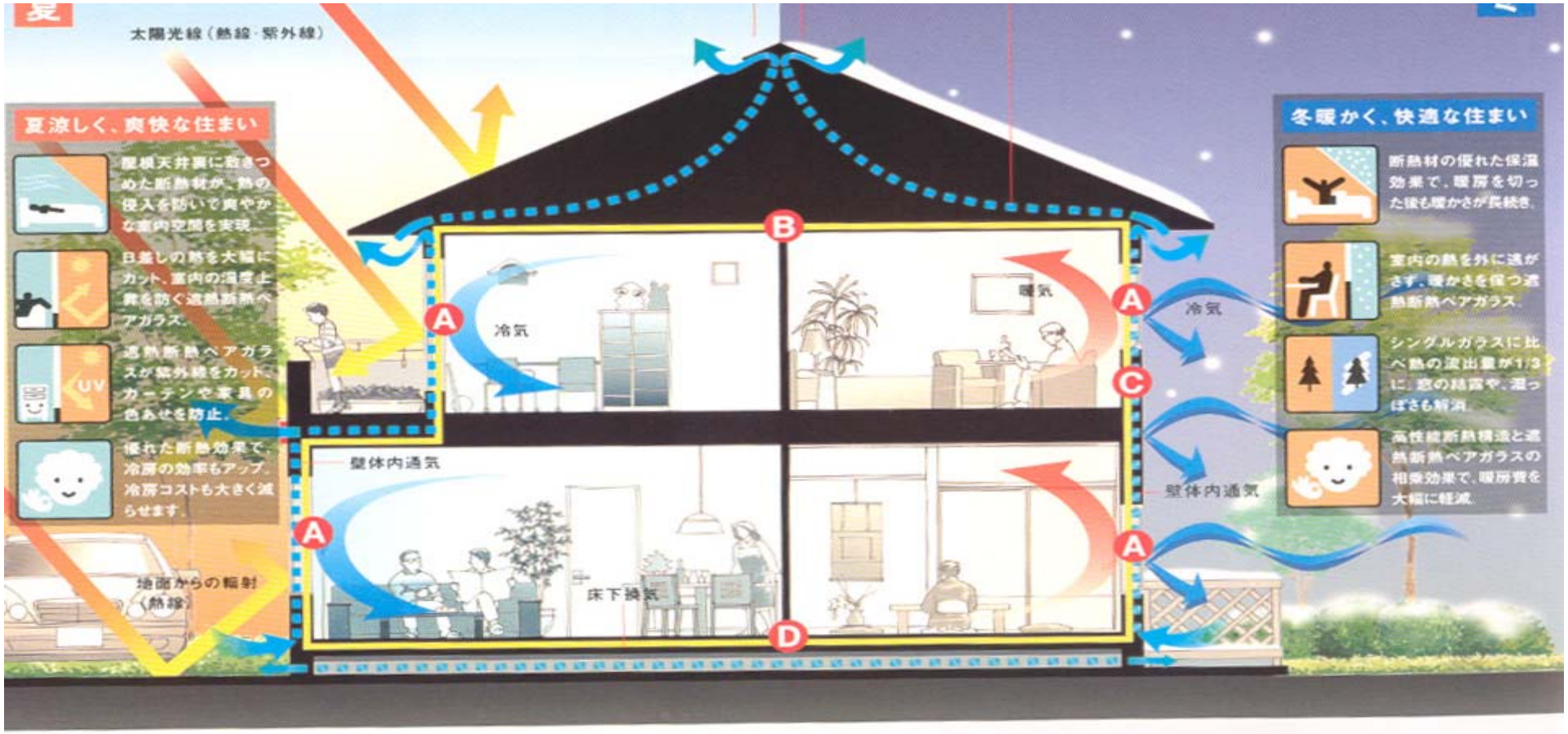


9:00
据付開始

10:00
1階完成

11:30
2階完成

15:00
ルーフィング完成



積水ハウスの各部位の断熱性能値

一般地仕様（Ⅲ地域以南）

一年を通して
快適な住み心地を
実現しています。

一般地仕様では、夏涼しく、冬暖かい住まいのための室内環境を実現。新省エネ基準Ⅲ地域の基準値を余裕を持ってクリアしています。

Ⓐ窓※2

エアタイト断熱アルミサッシ＋遮熱断熱ペアガラス

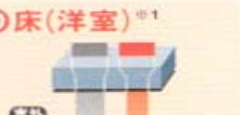
Ⓑ天井※1

高性能グラスウール（16K）100mm
又は高性能ロックウール100mm

積水ハウスのK値（熱貫流率）と、新省エネ基準（Ⅲ地域）のK値との比較

Ⓒ外壁※1

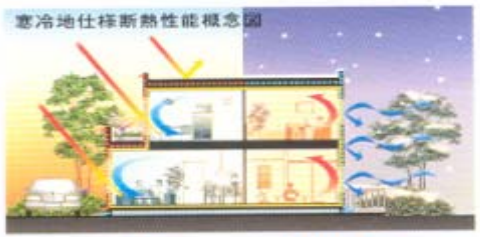
Ⓓ床（洋室）※1

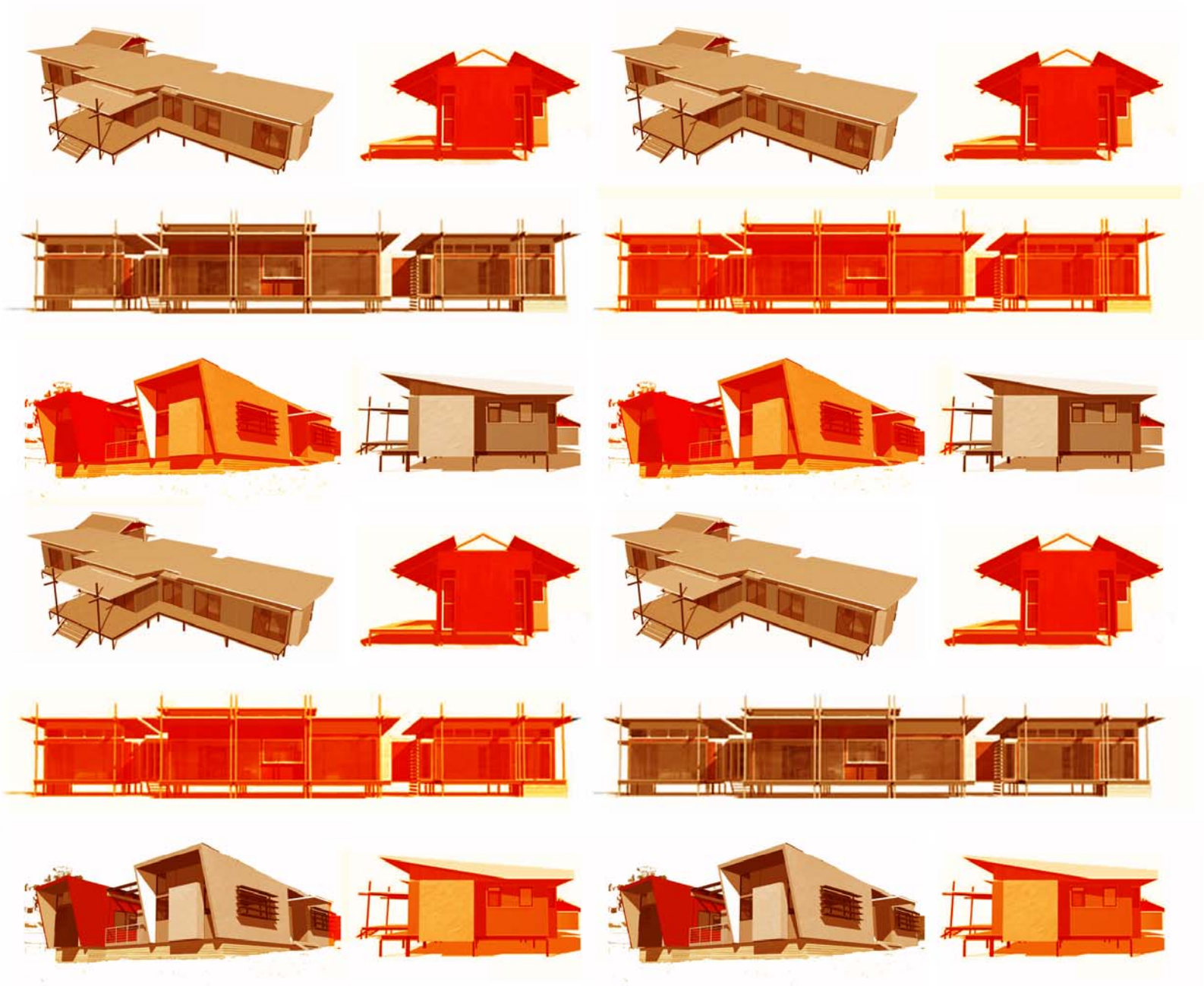


寒冷地仕様（Ⅰ・Ⅱ地域）

北の厳しい寒さに対応するため、
断熱・気密性能を
さらに高めました。

寒冷地仕様では、冬の暮らしを重視した住まいとしました。天井、壁など各部位の断熱・気密性能をさらに高めることで、北国の厳しい寒さのもとでも暖かく快適な暮らしを実現。新省エネ基準Ⅱ地域、次世代省エネ基準Ⅰ地域それぞれの基準値をクリアする断熱・気密性能を備えました。





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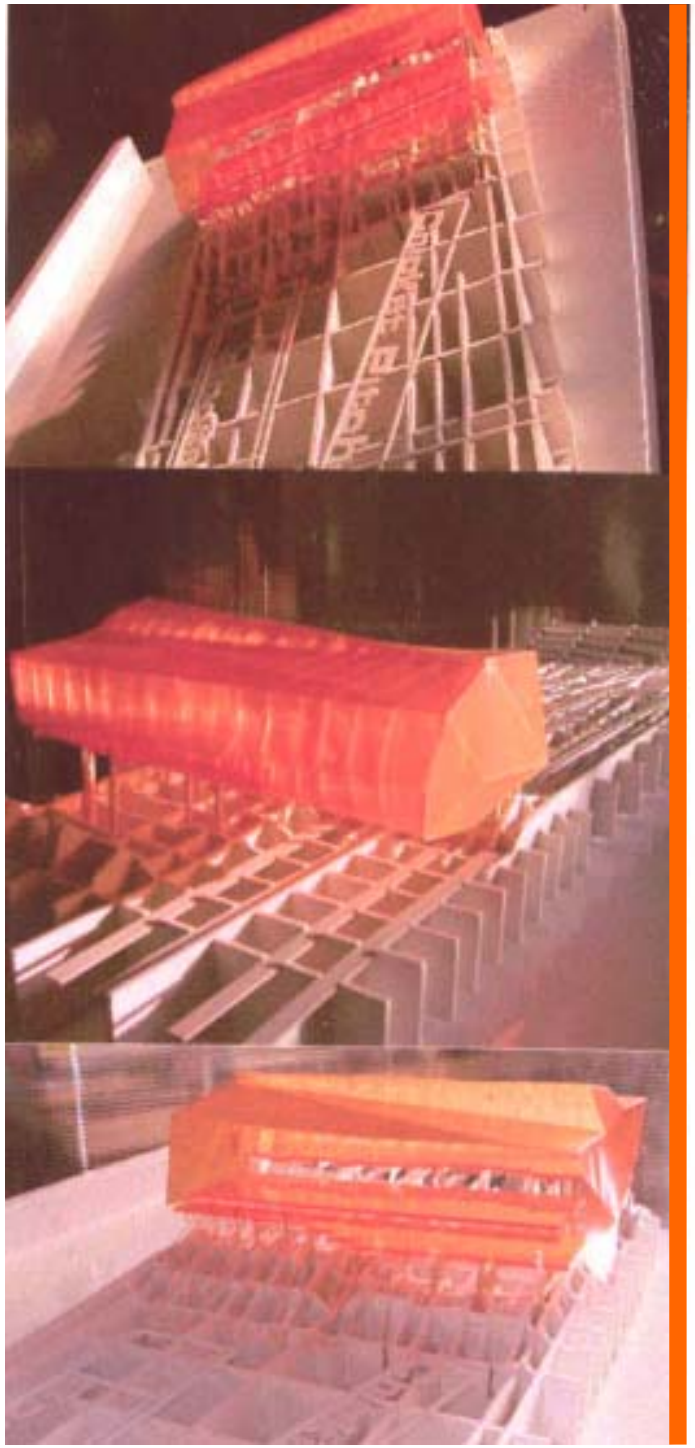
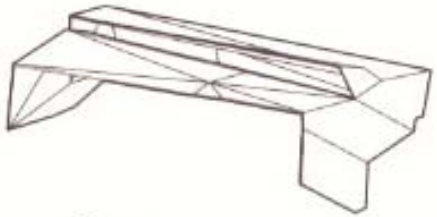
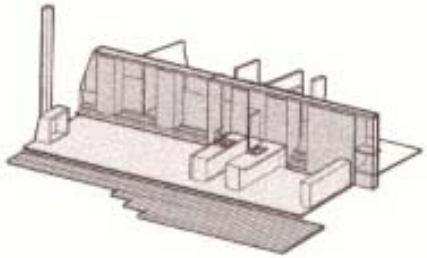
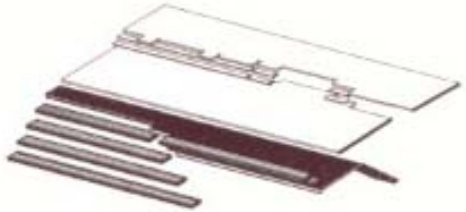
www.fabprefab.com









www.systemarchitects.net

1. new housing types

Design a variety of types of homes – not one-size-fits-all.

2. new neighbourhoods

Neighbourhoods must be planned with a variety of housing types.

3. new procurement processes

New customer-friendly procurement processes for homes are needed.

4. new production systems

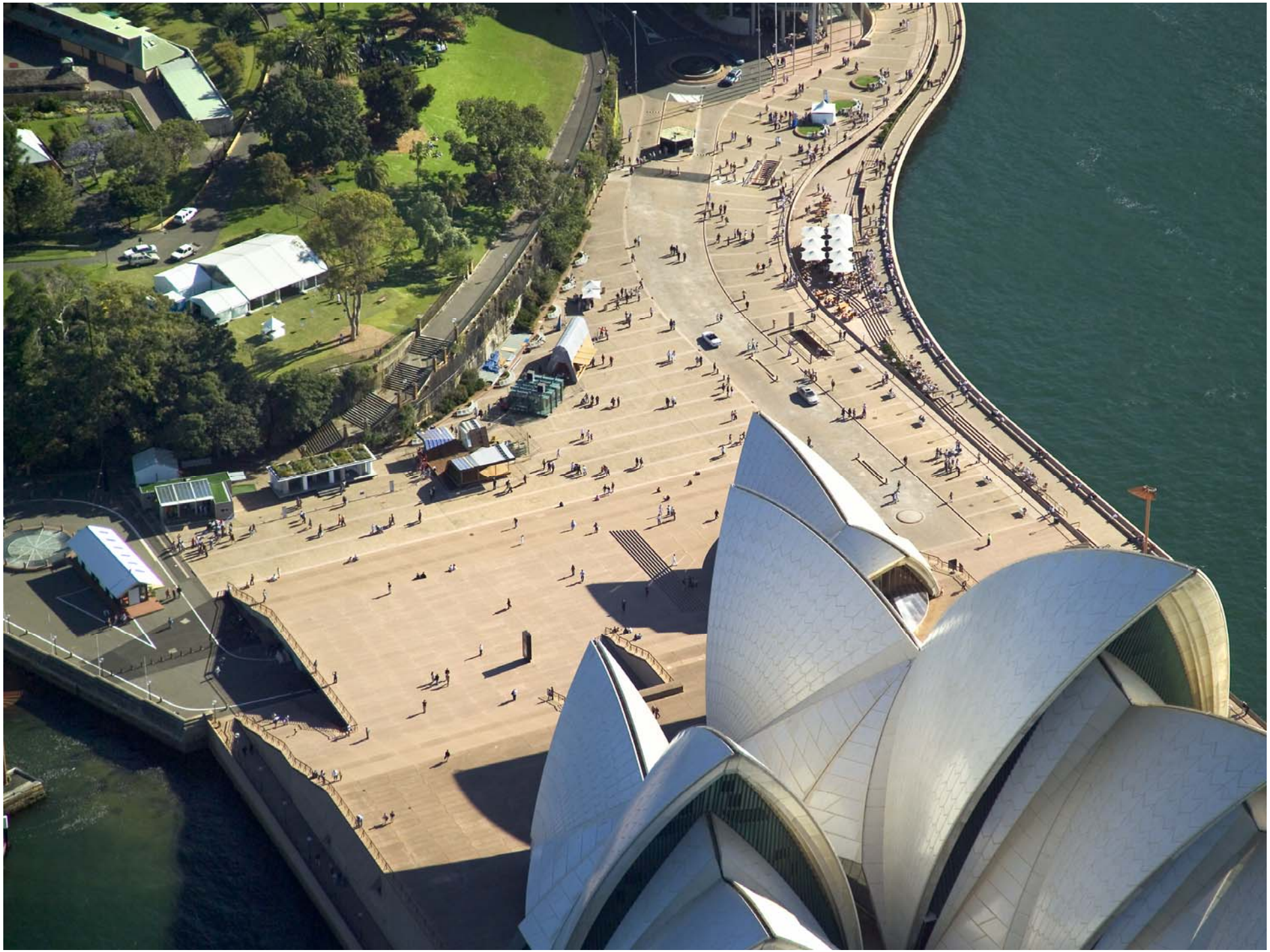
New production systems that use prefabrication should be encouraged.

5. new prototypes

We should develop prototypes of new home designs.

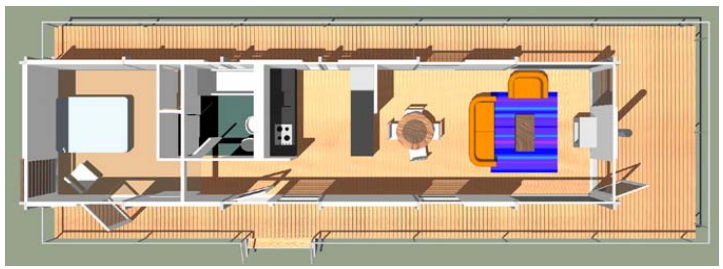
6. market the new

New approaches must be marketed to the Australian public and to the industry.



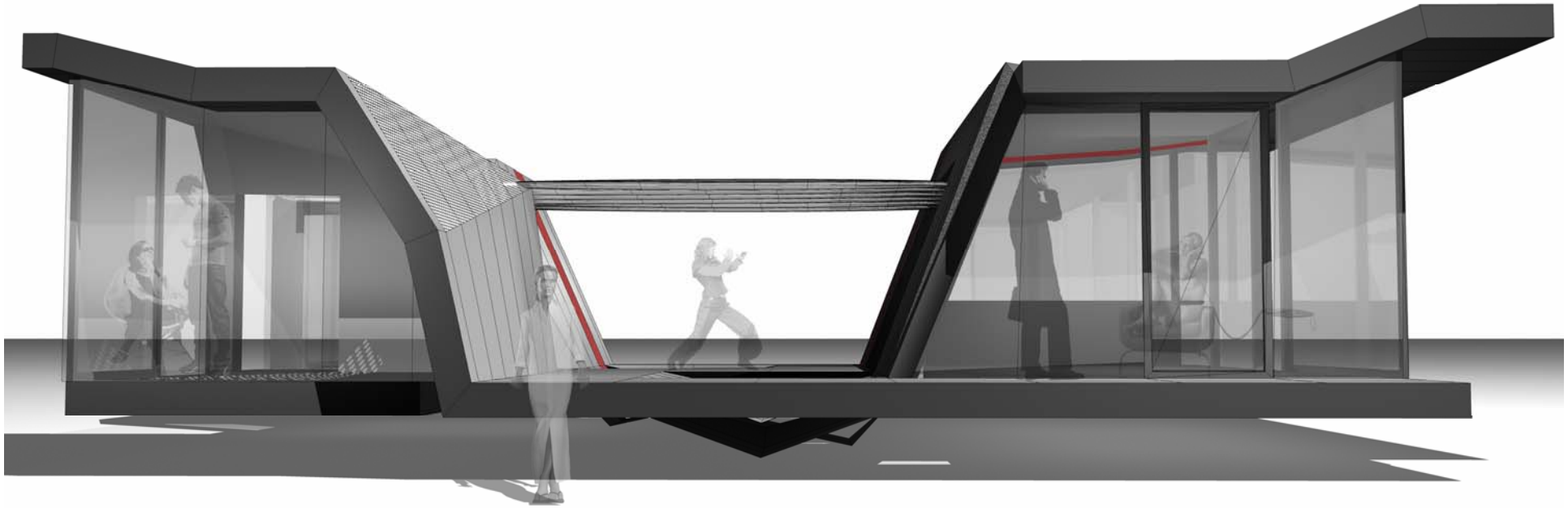
Houses of the Future –

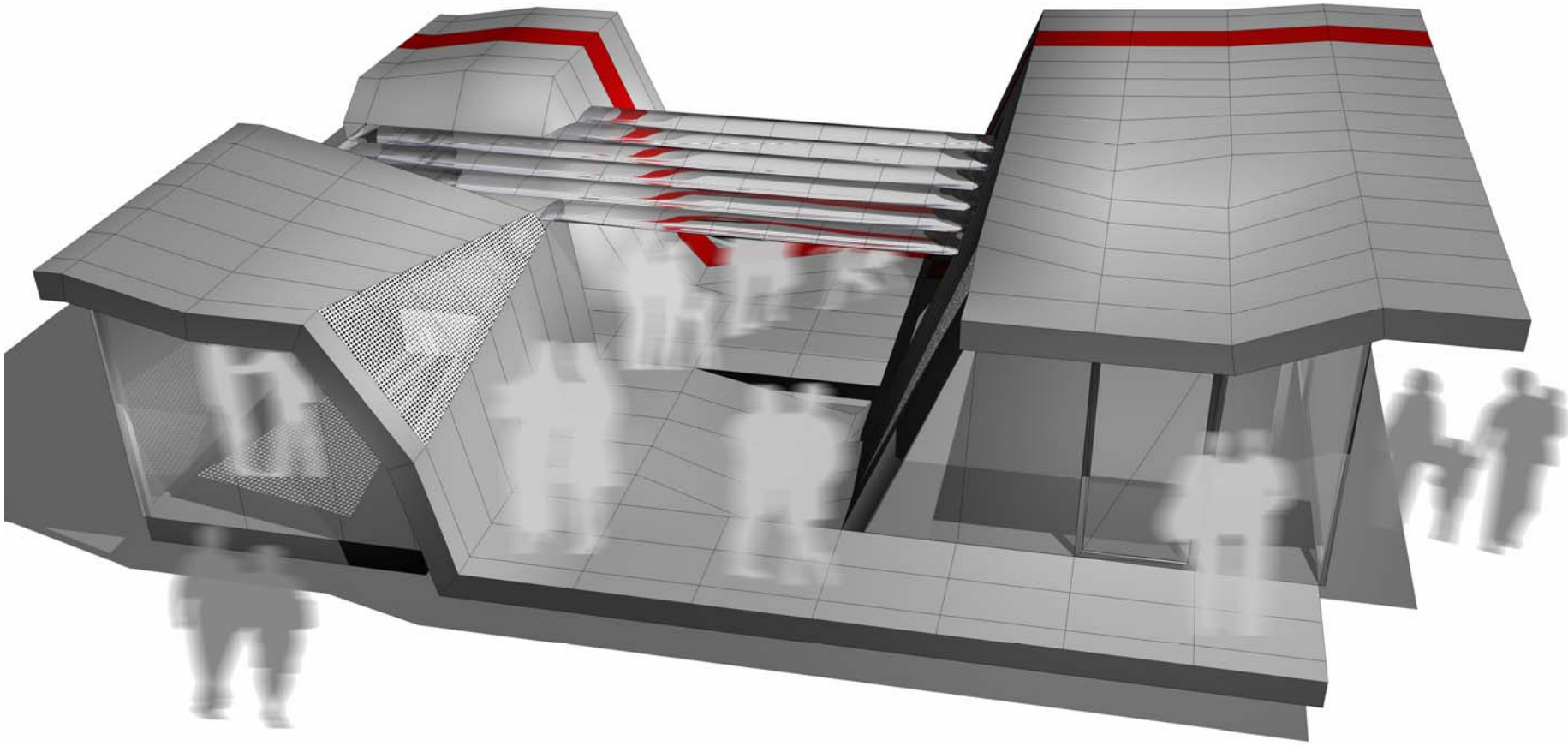
The Steel House



Houses of the Future –

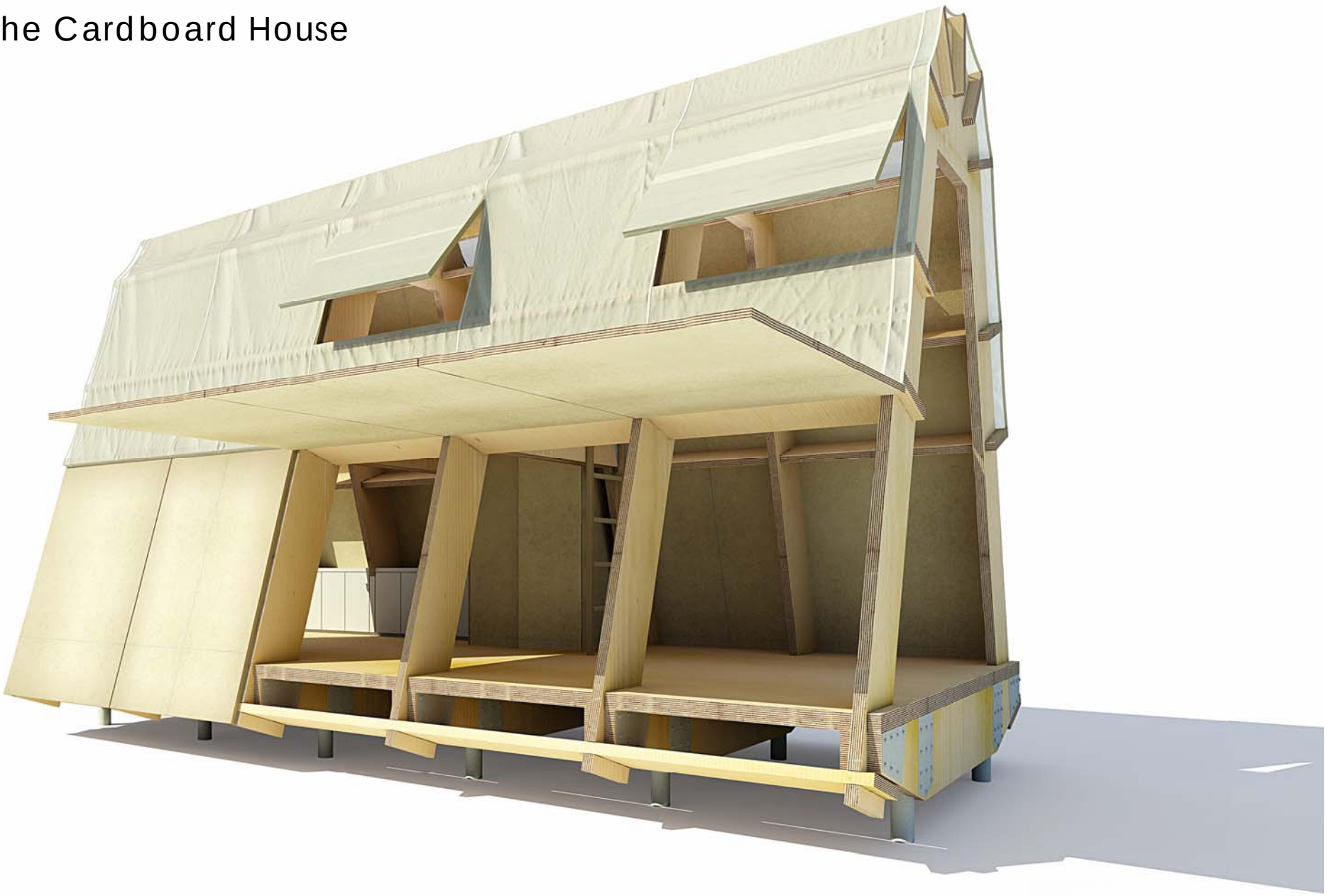
The Timber House





Houses of the Future –

The Cardboard House



Houses of the Future –

The Clay House

Houses of the Future –

The Nano House

Houses of the Future –

The Concrete House

www.basix.nsw.gov.au

www.govarch.com.au

www.ybe2004.nsw.gov.au

www.housesofthefuture.com.au