

INTEGER Westminster Towers



Nicholas C Thompson
Partner, Cole Thompson Associates
Chairman, INTEGER Intelligent & Green

The INTEGER Themes

- People - Adaptability, Lifetime use, Empowerment
- Construction - Partnering, Efficiency, Pre-fabrication
- Technology - Communications, Controls, Care
- Environment - Low energy, Low water, Materials, Waste

Integrating Sustainability

- Integrated design
- Integrated technology
- Integrated construction
- Involving stakeholders

INTEGRATED TECHNOLOGY

- High tech, low tech, best tech
- Access, maintenance, upgrade
- Controls, communication, care



INTEGER Millennium House
- Construction detail



INTEGER Maidenhead
- Renewables



INTEGER Millennium House
- Building services

INTEGRATED CONSTRUCTION

- Construction efficiency
- Off-site fabrication
- Dry construction
- Minimising waste



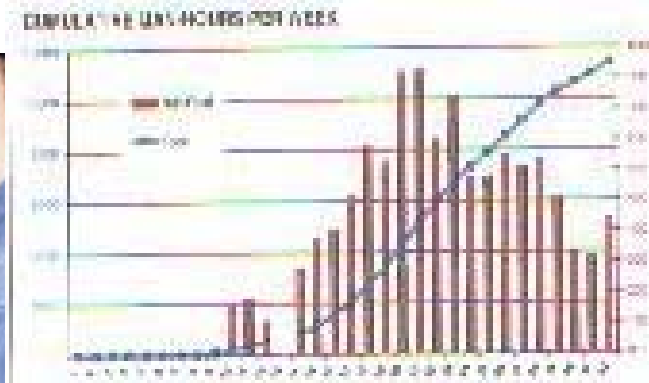
INTEGER Maidenhead – timber panels



Pre-cast foundations



INTEGER Millennium House
CALIBRE Construction Measurement



INVOLVING STAKEHOLDERS

- Participation
- Empowerment
- Feedback



INTEGER Cherhill Wiltshire



INTEGER Education



INTEGER Sandwell



INTEGER Classroom of the Future

INTEGER - Regeneration



INTEGER Newcastle



INTEGER
Westminster Tower



INTEGER Burnley Wood



INTEGER
Sustainable Communities

INTEGER - Housing



INTEGER Housing Sandwell



INTEGER Letchworth



INTEGER Millennium House



INTEGER Model



INTEGER escape competition



INTEGER Wolverhampton



INTEGER Maidenhead

INTEGER - Overseas

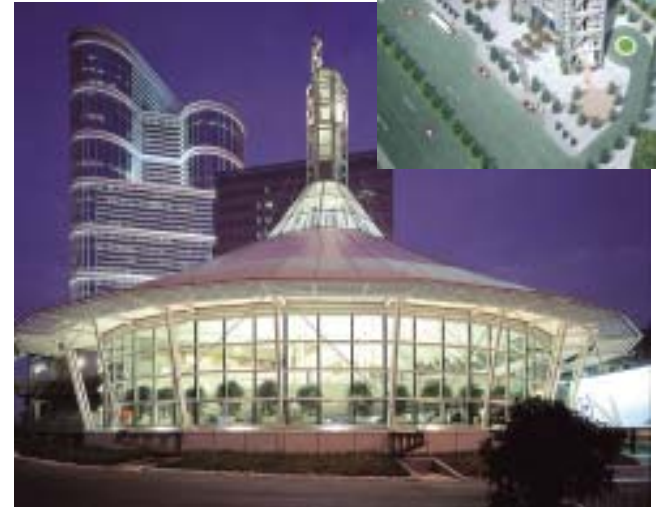


INTEGER
Kunming, China



INTEGER Dublin House

INTEGER
Hong Kong Tower



INTEGER Hong Kong Pavilion

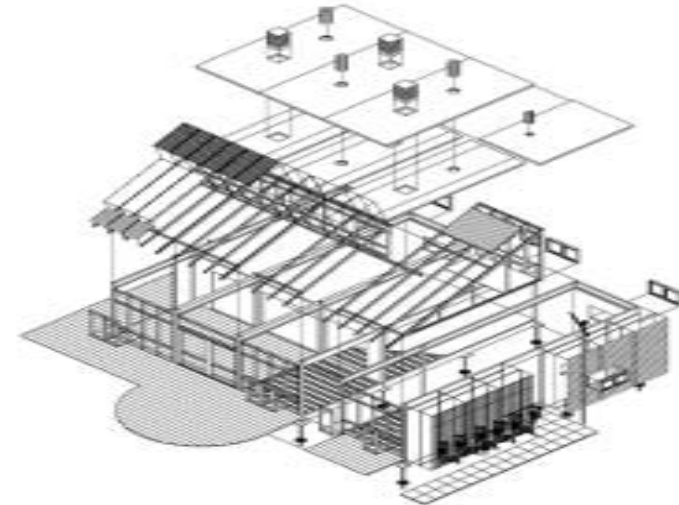
INTEGER - Education and Research



INTEGER
Research
Reports



INTEGER Education programme



INTEGER Classroom of the Future

INTEGER Westminster Tower



Key Problems

- Building Services
- Kitchens & Bathrooms out of date
- Tenant issues – lifts, security , pigeons
- GF underused, security
- Hostile microclimate
- Asbestos

Key Objectives

- Management – better service, better stock, better performance
- Social – empowering people
- Design – making a special place
- Construction – leaner, cleaner, faster, safer
- Technology – controls, communication & care
- Environment – sustainability, low energy, water & waste
- Financial – best value for life

INTEGER Westminster Tower



Intelligent

- Easy Access Cable Routes
- Intelligent Data Network Infrastructure
- TV – Digital & Sky
- Internet Access
- Telephony – PABX/ Least Cost Router
- Lighting
- Security – Alarms, Door Entry
- Monitoring – water usage etc
- Remote Metering

Green

- Balcony Enclosure
- PDHU Central Heating & CHP
- Better Controls
- 'A' rated White Goods
- Low Energy Fittings
- Efficient Extract Fans
- Renewables – wind turbine, PV's etc
- Water Saving
- Sustainable & Recycled Materials
- Waste Separation

Base Design – “Good”



Appendices

Appendix 1: Detailed Score Sheet at Present Specification

| | | | Score | Credits available | Score assessment | | | Weighting factor | Credits Score |
|----------------------|-------|------------------------------------|-------|-------------------|-----------------------------|------------|-----|------------------|---------------|
| | | | | | Sub-total Credits available | % achieved | | | |
| Energy | Ene 1 | Carbon Dioxide | 5 | 10 | 9 | | | | |
| | Ene 2 | Building fabric | 0 | 5 | | | | | |
| | Ene 3 | Drying space | 1 | 1 | | | | | |
| | Ene 4 | EcoLabelled goods | 1 | 2 | | | | | |
| | Ene 5 | External lighting | 2 | 2 | | | | | |
| Transport | Tra 1 | Public transport | 2 | 2 | 8 | 20 | 54 | 0.3 | 16 |
| | Tra 2 | Cycle storage | 0 | 2 | | | | | |
| | Tra 3 | Local amenities | 3 | 3 | | | | | |
| | Tra 4 | Home office | 1 | 1 | | | | | |
| Pollution | Pol 1 | HCFC Emissions | 2 | 2 | 7 | 7 | 100 | 0.15 | 15 |
| | Pol 2 | NO _x Emissions | 3 | 3 | | | | | |
| | Pol 3 | Reduction of Surface Runoff | 2 | 2 | | | | | |
| Materials | Mat 1 | Timber: Basic Building Elements | 4 | 8 | 24 | 31 | 77 | 0.15 | 12 |
| | Mat 2 | Timber: Finishing Elements | 2 | 3 | | | | | |
| | Mat 3 | Recycling Facilities | 8 | 8 | | | | | |
| | Mat 4 | Environmental Impact of Materials | 12 | 16 | | | | | |
| | | Roof | 3 | 3 | | | | | |
| | | External Walls | 3 | 3 | | | | | |
| | | Internal Walls | 3 | 3 | | | | | |
| | | Floors - upper and ground | 3 | 3 | | | | | |
| | | Windows | 0 | 2 | | | | | |
| | | Hard landscaping | 0 | 1 | | | | | |
| | | Fences | 0 | 1 | | | | | |
| Water | Wat 1 | Internal Water Use | 0 | 5 | 1 | 5 | 17 | 0.1 | 2 |
| | Wat 2 | External Water Use | 1 | 1 | | | | | |
| Land Use and Ecology | Eco 1 | Ecological Value of Site | 0 | 1 | 4 | 9 | 44 | 0.15 | 7 |
| | Eco 2 | Ecological Enhancement | 0 | 1 | | | | | |
| | Eco 3 | Protection of Ecological Features | 1 | 1 | | | | | |
| | Eco 4 | Change of Ecological Value of Site | 1 | 4 | | | | | |
| | Eco 5 | Building footprint | 2 | 2 | | | | | |
| Health and Wellbeing | Hea 1 | Daylighting | 3 | 3 | 4 | 8 | 50 | 0.15 | 8 |
| | Hea 2 | Sound Insulation | 0 | 4 | | | | | |
| | Hea 3 | Private space | 1 | 1 | | | | | |
| | | | | | | | | | Score: 88.52 |
| | | | | | | | | | Rating: Good |

Minor Modifications – “Very Good”

Appendices



Appendix 2: Summary Score Sheet with Low/Medium Cost Action Plan

| ISSUE CATEGORY | Credits available | Credits achieved | % achieved | Weighting factor | Credits score |
|---------------------|-------------------|------------------|--------------|------------------|---------------|
| ENERGY | 20 | 9 | | | |
| TRANSPORT | 8 | 8 | | | |
| SUB-TOTAL | 28 | 15 | 53.57 | 0.30 | 16.07 |
| POLLUTION | 7 | 7 | 100.00 | 0.15 | 15.00 |
| MATERIALS | 31 | 29 | 93.55 | 0.15 | 14.03 |
| WATER | 6 | 3 | 50.00 | 0.10 | 5.00 |
| LAND-USE & ECOLOGY | 9 | 7 | 77.78 | 0.15 | 11.67 |
| HEALTH & WELL-BEING | 8 | 4 | 50.00 | 0.15 | 7.50 |
| TOTAL | | | | 1.00 | 69.27 |

| RATING SCORES: | |
|----------------|----|
| PASS | 36 |
| GOOD | 48 |
| VERY GOOD | 60 |
| EXCELLENT | 70 |

| OVERALL RATING: |
|------------------|
| VERY GOOD |

- Timber Specification
- Landscape
- Baths/Showers

If a VERY GOOD rating is required, only a few of the actions below will be necessary to raise the rating, as the present score (58.57) is very close to VERY GOOD already.

- ⇒ Ensure 75% of all timber specified is FSC certified or 95% PEFC certified by volume.
- ⇒ Change hard landscaping and boundary fencing to A rated materials
- ⇒ Reduce flow rate of showers to around 9 litres/min
- ⇒ Reduce size of baths to 70 litres (preferably 50 litres)
- ⇒ Appoint wildlife consultant to deem site of insignificant ecological value and suggest recommendations to improve value.

"Excellent"



Appendix 3: Summary Score Sheet with High Cost Action Plan

| ISSUE CATEGORY | Credits available | Credits achieved | % achieved | Weighting factor | Credits score |
|---------------------|-------------------|------------------|------------|------------------|---------------|
| ENERGY | 20 | 12 | | | |
| TRANSPORT | 8 | 6 | | | |
| SUB-TOTAL | 28 | 18 | 64.29 | 0.30 | 18.29 |
| POLLUTION | 7 | 7 | 100.00 | 0.15 | 15.00 |
| MATERIALS | 31 | 29 | 93.55 | 0.15 | 14.03 |
| WATER | 6 | 3 | 50.00 | 0.10 | 5.00 |
| LAND-USE & ECOLOGY | 9 | 7 | 77.78 | 0.15 | 11.67 |
| HEALTH & WELL-BEING | 8 | 5 | 62.50 | 0.15 | 9.38 |
| TOTAL | | | | 1.00 | 74.37 |

| | |
|-----------------------|----|
| RATING SCORES: | |
| PASS | 36 |
| GOOD | 48 |
| VERY GOOD | 60 |
| EXCELLENT | 70 |

| |
|------------------------|
| OVERALL RATING: |
| EXCELLENT |

- Thermal Performance
- Acoustic Performance

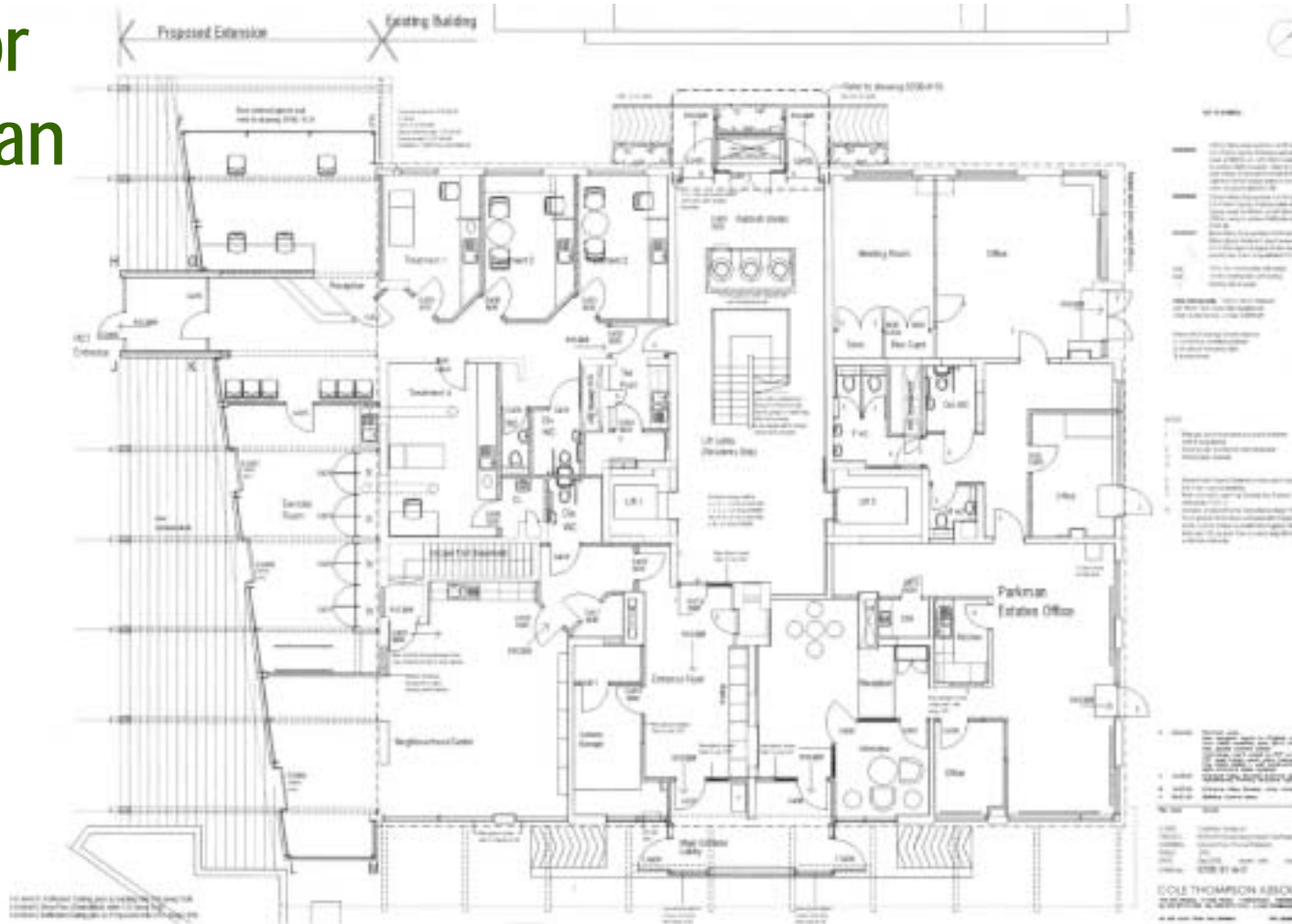
If an EXCELLENT rating is required, either (or both) of the actions below must be carried out in addition to those on the 'low/medium cost' Action Plan

- ⇒ Improve thermal performance of external envelope, e.g. drying external walls
- ⇒ Improve acoustic performance of existing party/internal walls and floors and commit to pre-completion testing

Appendix 4: Full List of Possible Actions

| | | |
|--|--------------|-------------------------|
| PRESENT SCORE | 58.52 | GOOD rating |
| Ensure 75% of all timber specified is FSC certified or 95% PEFC certified by volume | +1.44 | |
| Change hard landscaping and boundary fencing to A rated materials | +0.96 | |
| Reduce flow rate of showers to around 9 litres/min | +3.34 | |
| Reduce size of baths | | |
| Appoint wildlife consultant to deem site of insignificant ecological value and suggest recommendations to improve and quantify value | +5.01 | |
| POSSIBLE SCORE | 69.27 | VERY GOOD rating |
| Improve thermal performance of external envelope, e.g. drylining external walls | +3.21 | |
| Improve acoustic performance of existing party/internal walls and floors and commit to pre-completion testing | +1.88 | |
| POSSIBLE SCORE | 74.36 | EXCELLENT rating |

Ground Floor Proposed plan



Dear Old Stumpy – Before



... and after



View from Street – before.....



.....and after



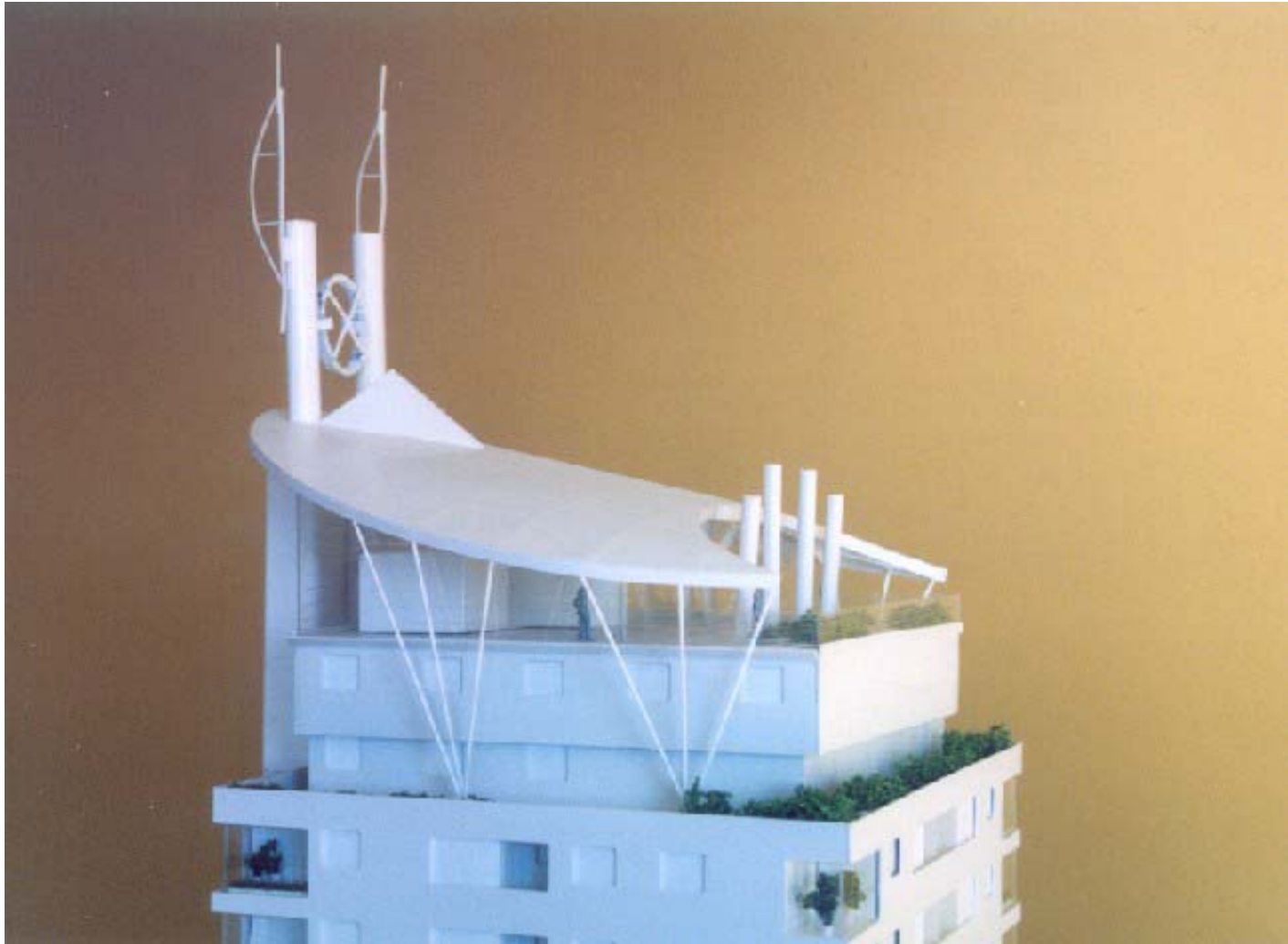
Proposed Tower



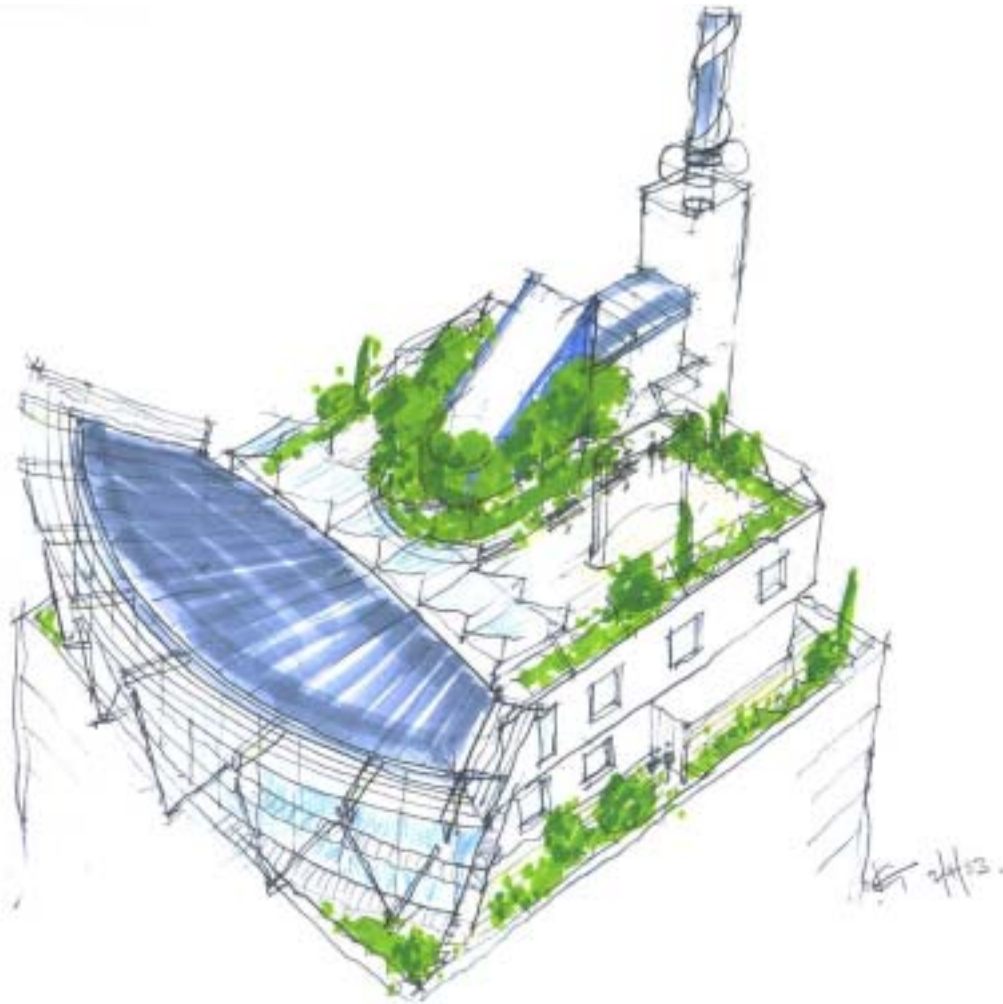
Sky Lounge – Concept



Top of Block



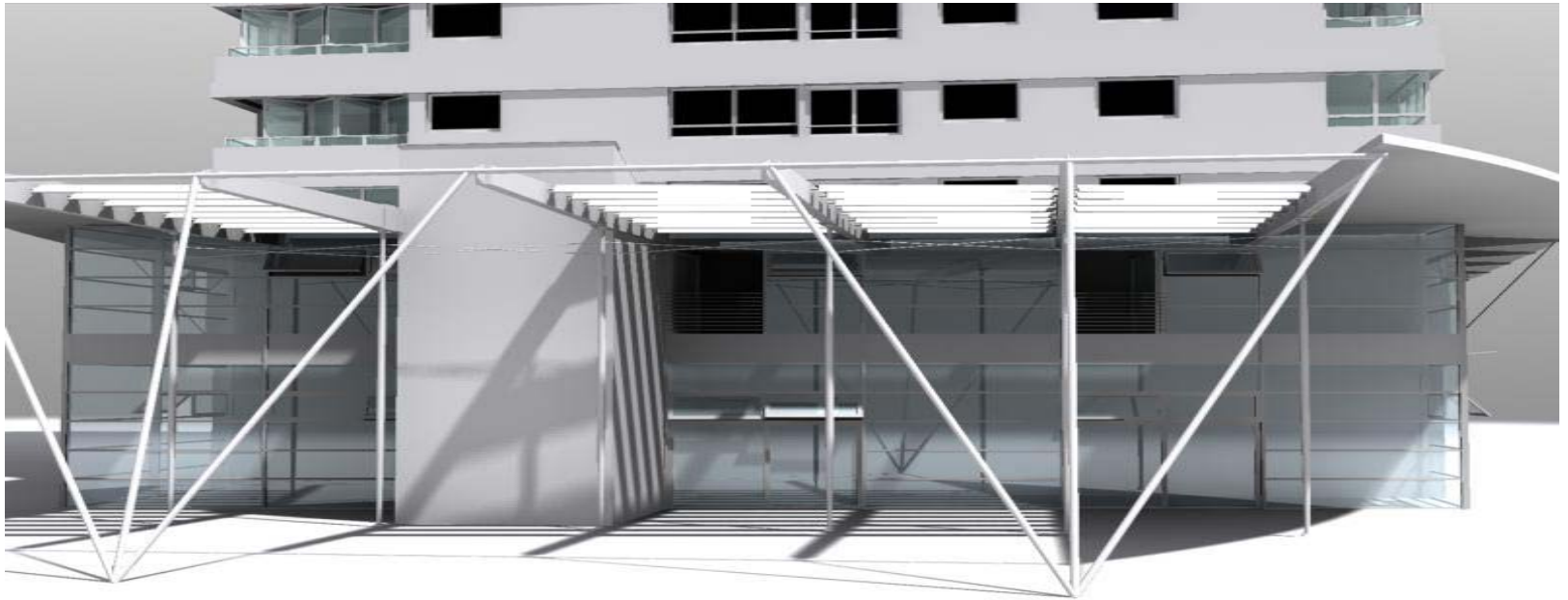
Sky Lounge – Development Sketch



Sky Lounge – 3D View



Ground Floor Extension



Typical Kitchen - Before



. . . and After



Typical Bathroom - Before



... and After



Balcony Glazing



Balcony Glazing



Design Issues



- New building services riser and lift
- Leave existing embedded services alone
- Run new services on the surface

Construction Issues



- Efficient construction programming
- Multi-skilled "A" teams
- Minimise dust, noise & disruption
- Community participation

Community Issues



- Consult carefully
- Offer resident's choice
- To de-cant or not to de-cant

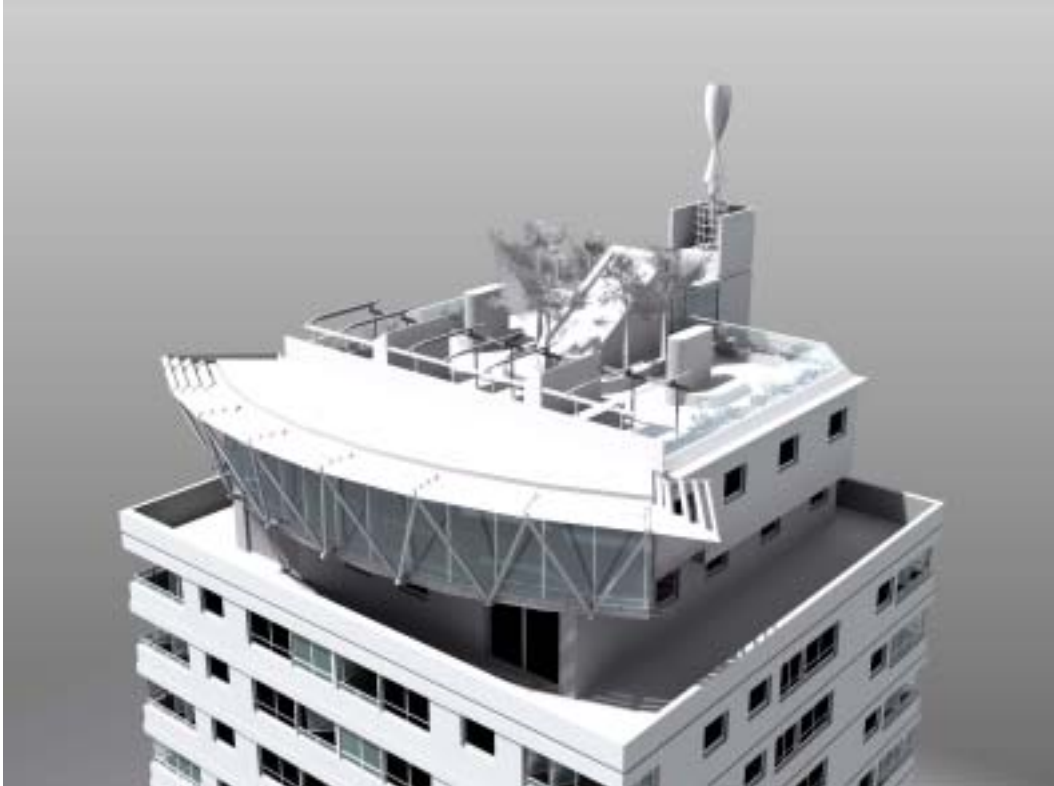
Process Issues

- Clear decisions & continuity
- Need for voids
- Exhibition & virtual reality
- Demonstration flats & feedback
- Residents meetings, steering group
- 1 on 1 visits – RLO, architect, builder
- Resident temporary transfer
- Handover & training

Summary - Transferable Ideas

- Improving microclimate
- Building fabric – overcladding
- Run new services alongside old – make them accessible
- District heating / heat meters/CHP
- Renewable energies
- Bathrooms - low water use / fittings
- Kitchens – standard but flexible layouts
- Sustainable materials eg linoleum
- Eco-homes 'Very Good'
- Process innovation
- Life-cycle value
- Customer care

Thank You for Listening!



www.colethompson.co.uk
www.integerproject.co.uk