

inter-seasonal co-generation as a carbon-neutral solution for heritage-led regeneration



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citylab

how do we create a sustainable city from here?

can the forces of heritage and sustainability be reconciled ?

can highly regulated space be effectively reconfigured to make a sustainable neighbourhood?

can existing housing stock be effectively carbon neutral?



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nelson, lancashire,uk



proximity

40 km from Manchester

30 minutes by car

1 hour 35mins by bus

1 hour 52mins by train



nelson, lancashire

a victorian boomtown
jacquard weaving



population

1860	2,000
1890	25,000
1930	35,000
1971	42,000
1999	28,000



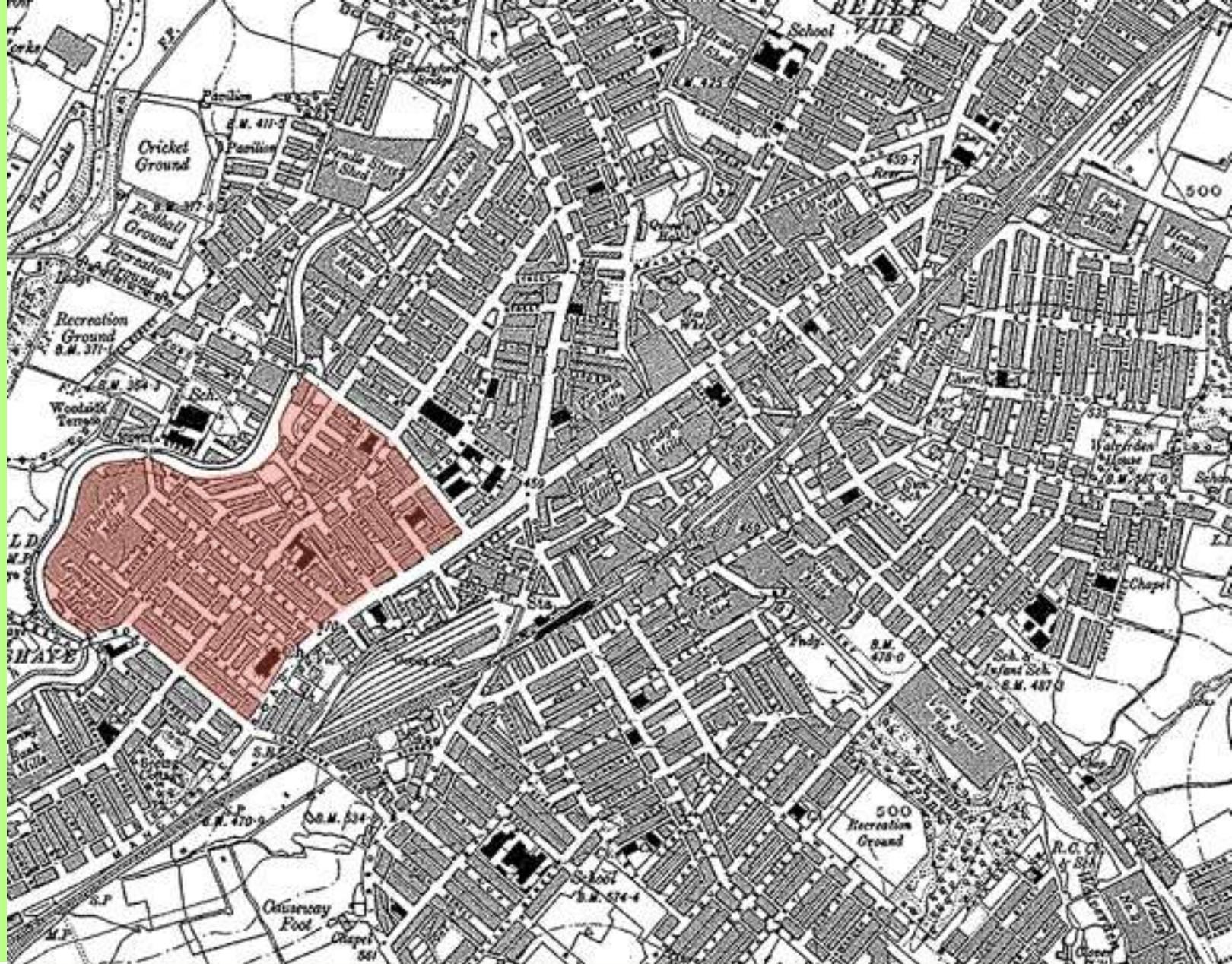
nelson - housing market renewal

house prices in England have doubled every 7 years, since 1970
in Nelson and surrounding areas have hardly changed.

25% are unfit for human habitation

elevate east lancashire - set up to manipulate the housing market





nelson - conservative forces

entrenched working classes

65 % of population Muslim

3 Fascist British National Party Councillors

the princes foundation

english heritage

society for the protection of ancient buildings

her majesty's police

NEWS

Ex-BNP man faces explosives charge

7:00pm Wednesday 4th October 2008

By Andrew Hewitt »

A FORMER British National Party member has been accused of possessing the largest amount of chemical explosives of its type ever found in the country.

Robert Cottage, 49, of Talbot Street, Colne, appeared before Burnley magistrates charged with possession of an explosive substance.

Cottage was charged under the Explosives Substances Act 1883 on Monday night after forensic experts searched his home, allegedly discovering chemical components which could be used to make explosives.

Police sealed off Cottage's home last Thursday and finished



NEWS

REGISTER NOW TO POST YOUR COMMENTS ON THESE STORIES

It's free and only takes a few seconds. Click here to go to the registration page.

Marchers carry banner for prophet's day

10:48am Monday 17th March 2008

Comments (34) | Have your say »

THOUSANDS of Muslims marched through the streets of East Lancashire yesterday to mark the birthday of the prophet Muhammad.

Marches set off from Ghosia Mosque on Clayton Street, Nelson, and from Oak Street in Whalley Range, Blackburn.

Residents marked the occasion by throwing flowers into the street and displaying banners specially made for the day.

The bouquets had flowers of all varieties to mark different religions and cultures found in the area.



DEVOTION: Worshippers set off from the Ghosia Mosque, Clayton Street, Nelson, on a march to mark the birth of the prophet Muhammad

prince charles and the prince's foundation



'All liminal space is removed, the city is neat and tidy. There is no contested space, everyone knows their place and there is a place for everyone'...

the prince's foundation website



the princes foundation
enquiry by design whitefield nelson 2005



demolished 58 houses

nelson - english heritage?



Burnley



colne



nelson

68,000 identical properties

ubiquitous heritage ?

nelson - fit for a king



Which is
more
valuable?



whitefield, nelson - riba competition 2006

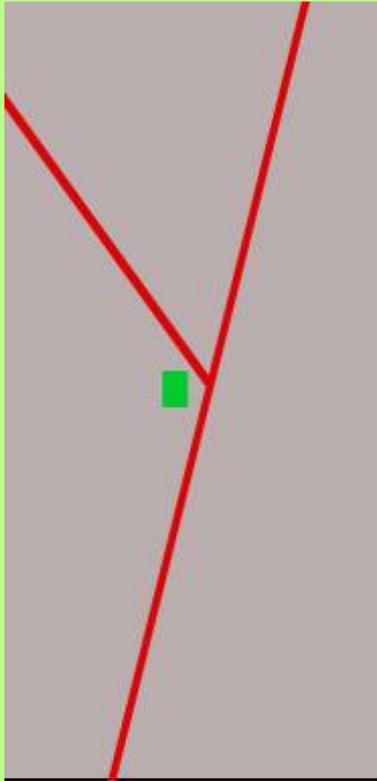
citylab, maccreanor lavington, landscape projects



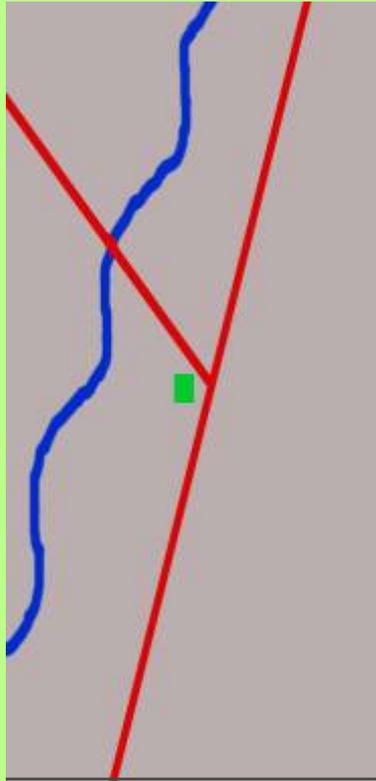
nelson development...



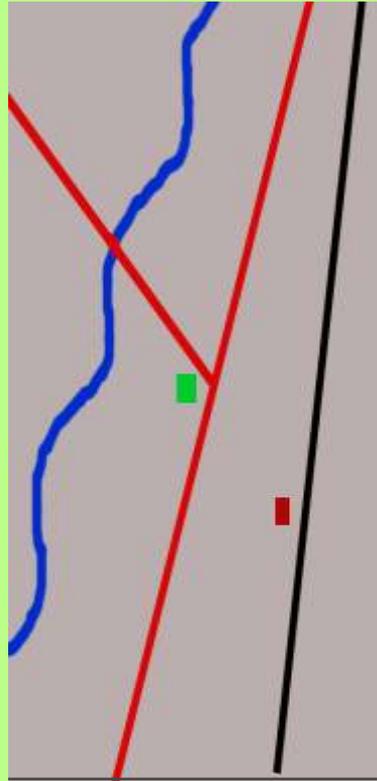
road junction



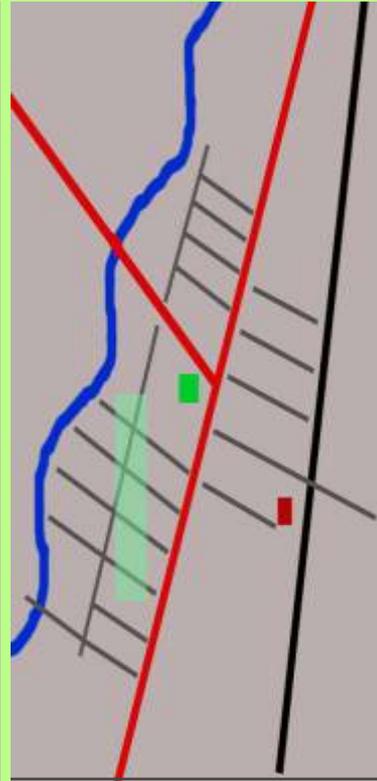
nelson inn



canal



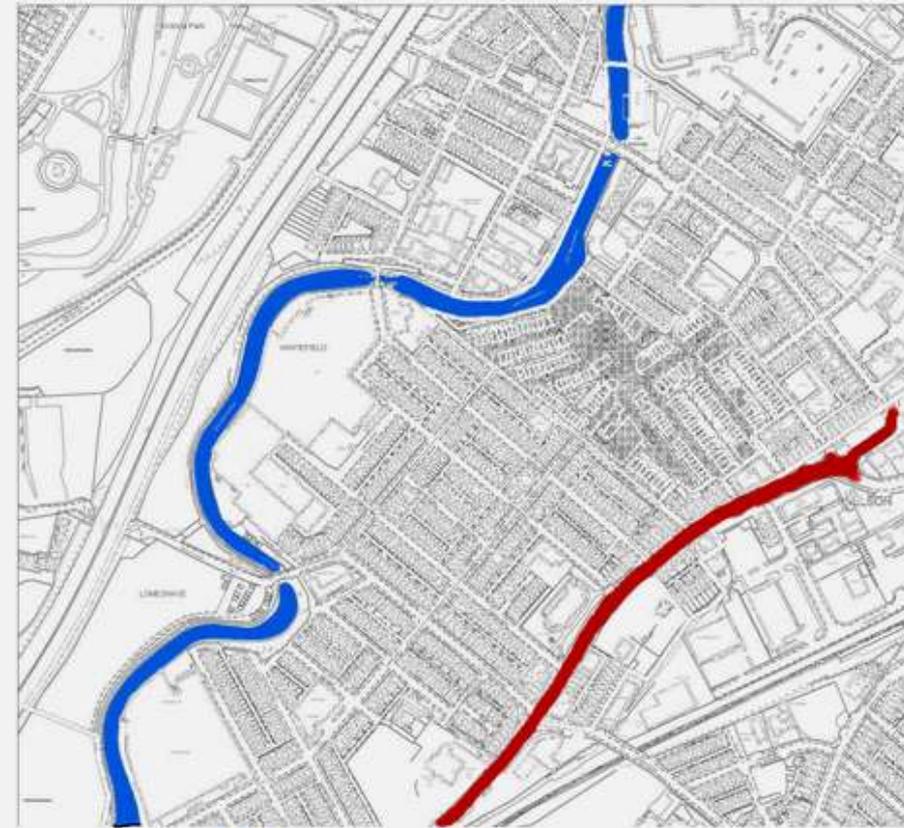
railway supercedes canal



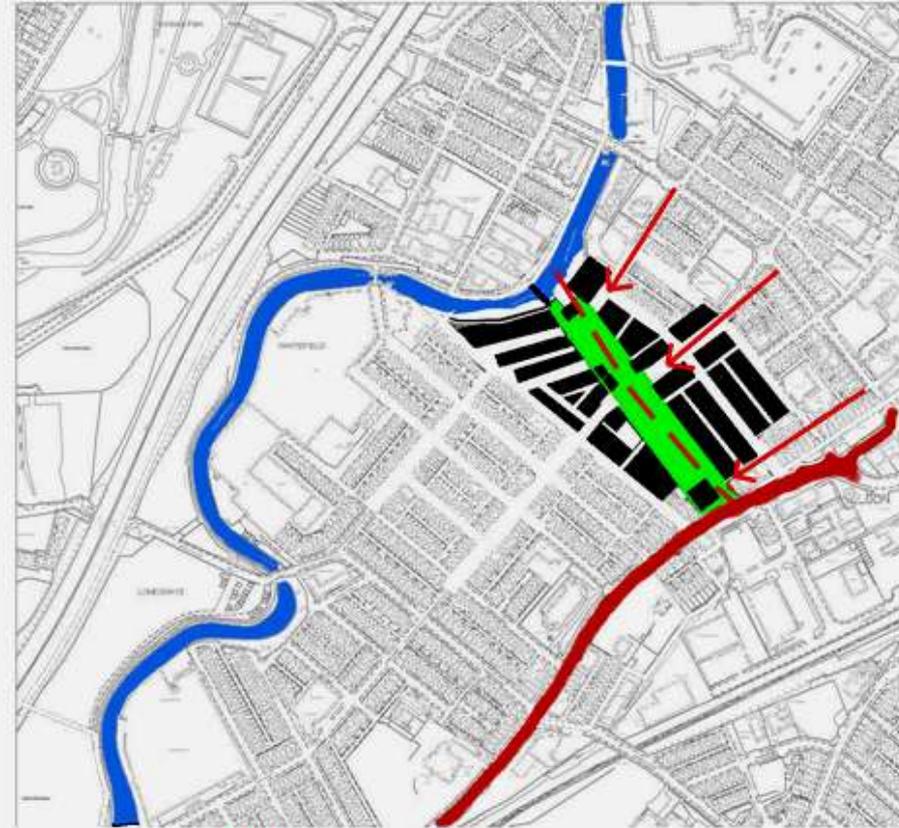
town grows...

whitefield nelson - city green edge

Green defined edge to Town centre



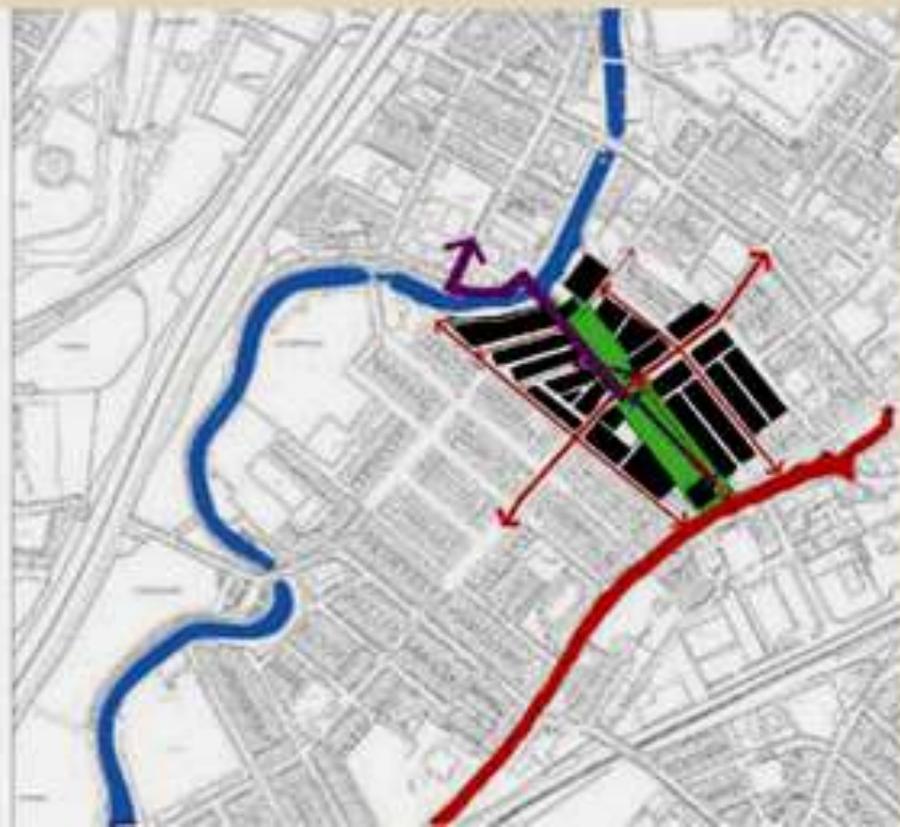
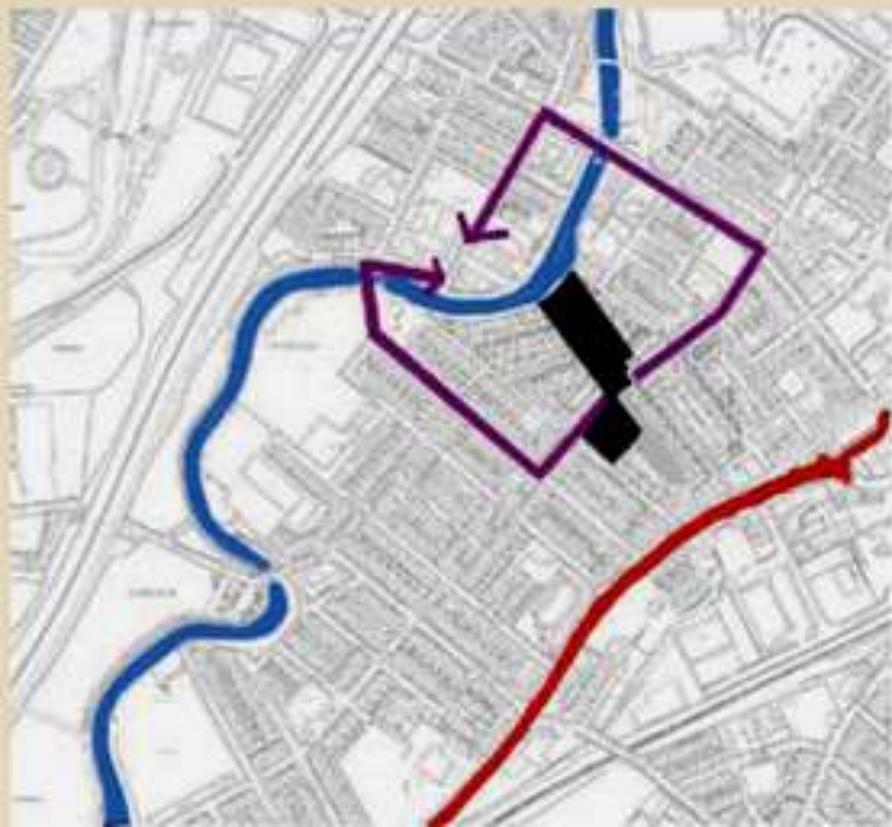
Before



After

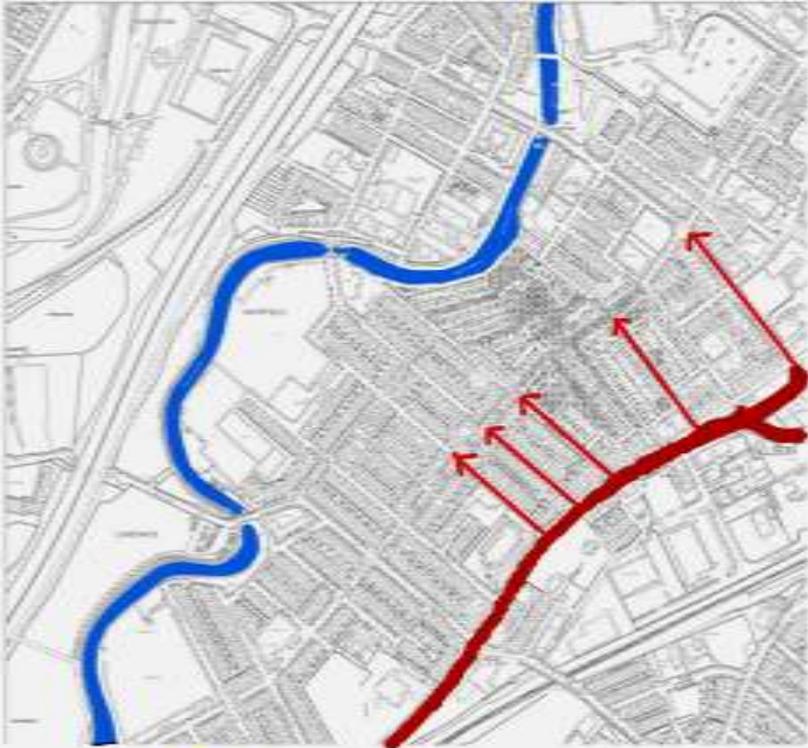
whitefield nelson - reconnection

Connections

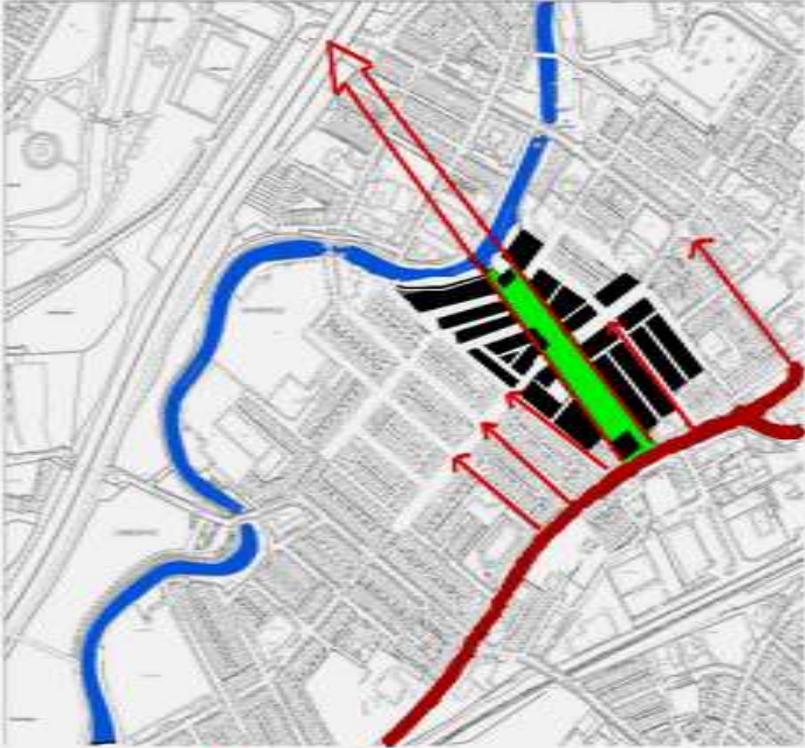


whitefield, nelson vistas

Vistas



Before



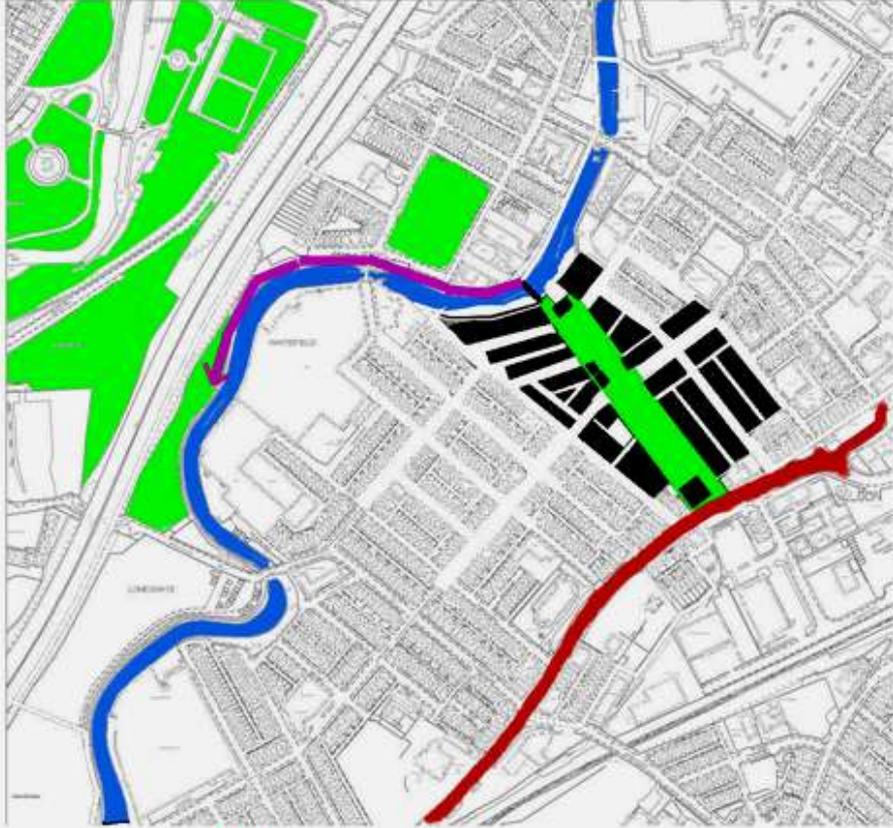
After

whitefield, nelson - contiguous green space

Contiguous Green Space



Before



After

whitefield, nelson - final masterplan



whitefield, nelson - views



whitefield, nelson - riba competition 2006

citylab, maccreanor lavington, landscape projects

demolished
16 houses



sustainability with constraint

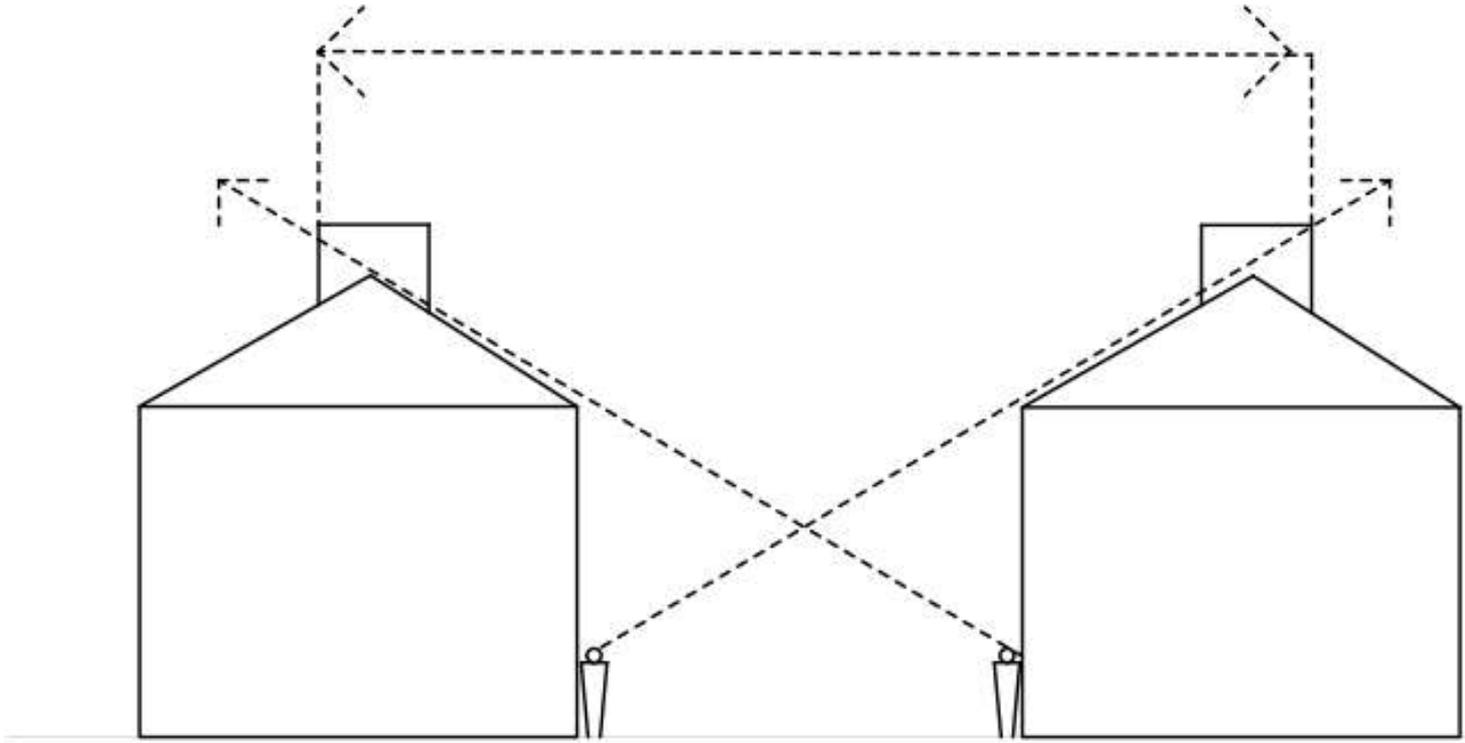
how can things be changed without changing anything?

english heritage constraints

- the streetscape
- ‘the houses’
- materials
- detail



whitefield, nelson - the heritage envelope



Heritage Envelope

cogeneration using wood as a biofuel (CHP)

Advantages

Simple technology

Disadvantages

Wood as a biofuel

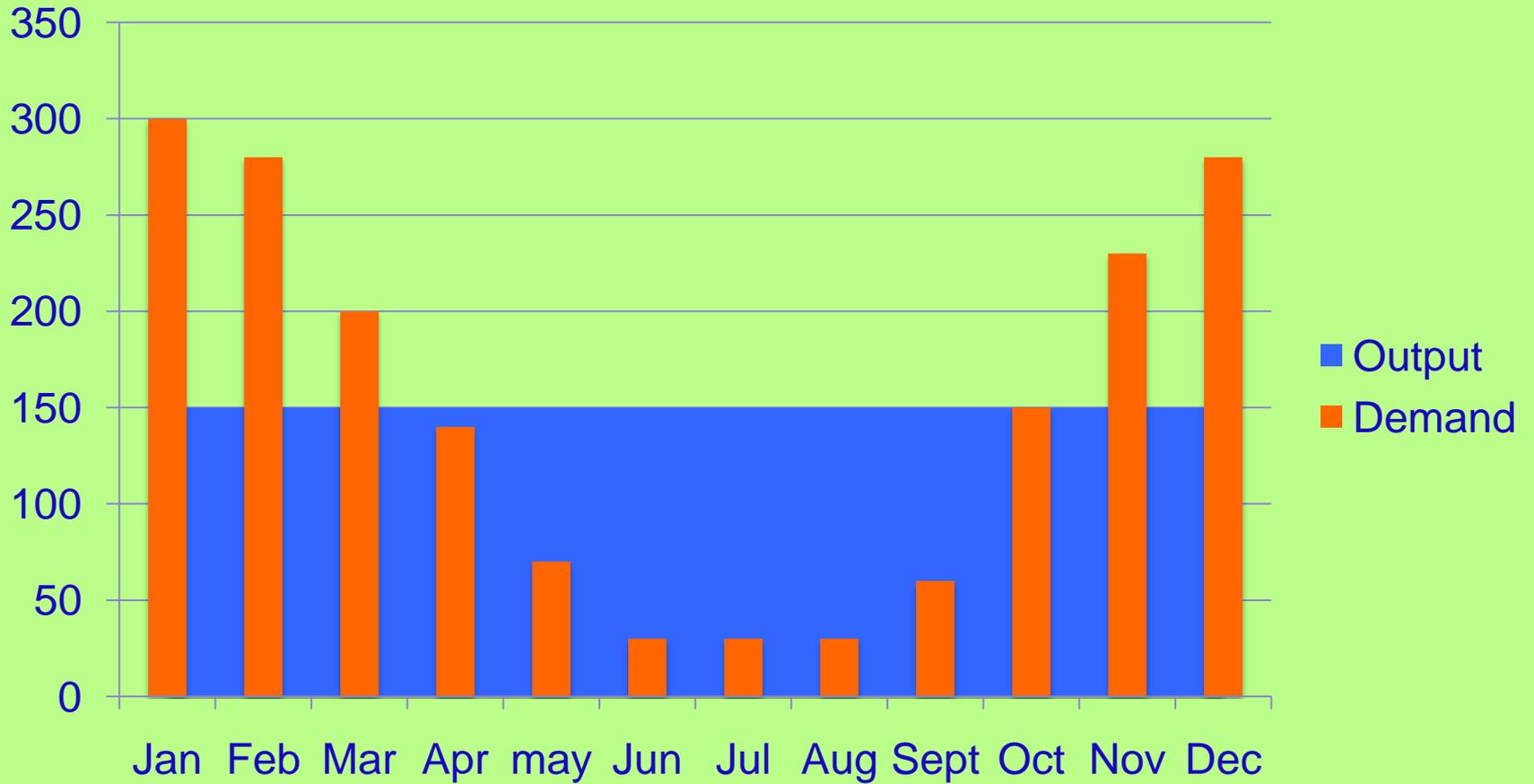
Demand profile

Backup system

Availability of fuel

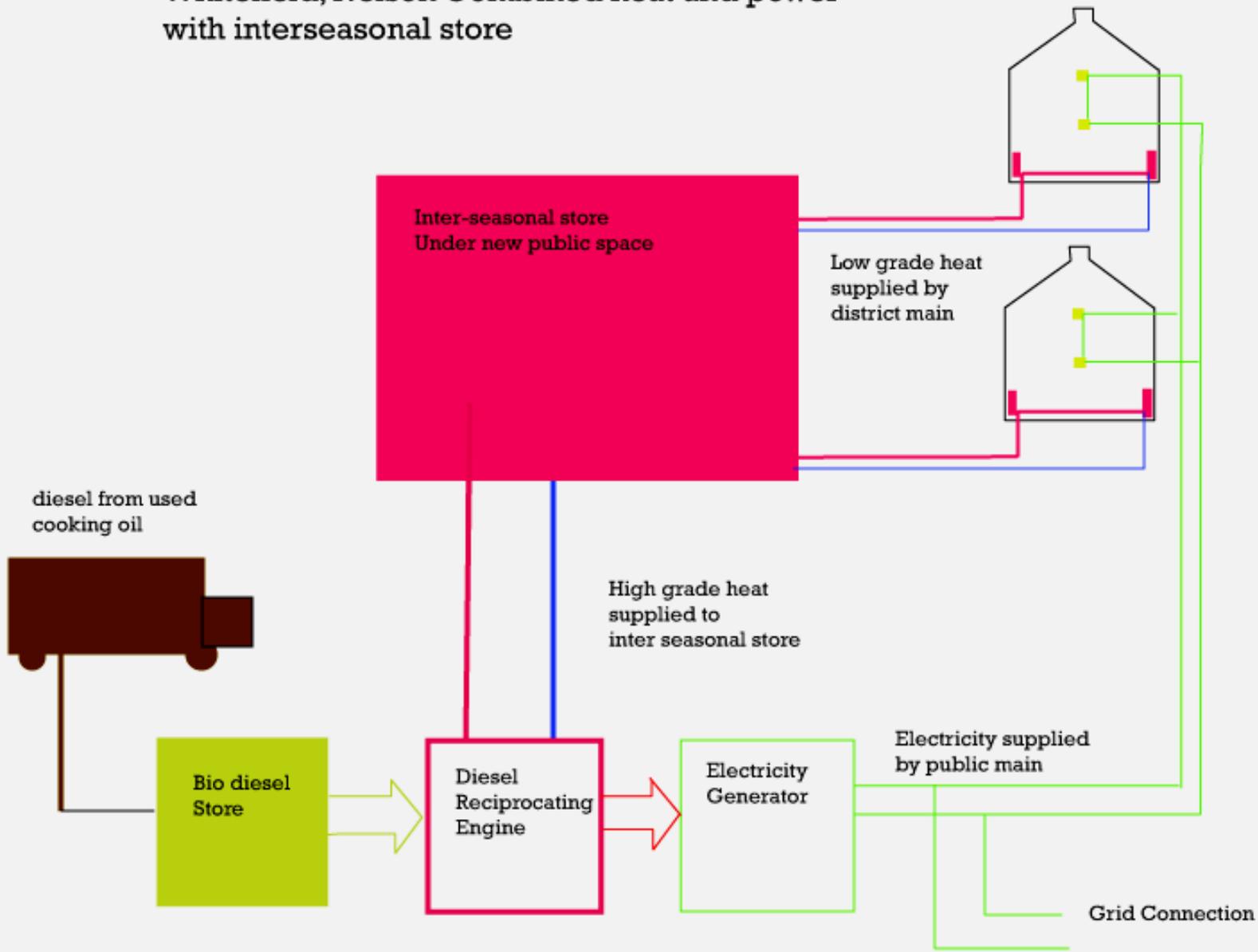


heat demand profile versus output



whitefield, nelson - cogeneration using biodiesel, utilising inter-seasonal thermal store under public space

Whitefield, Nelson Combined heat and power with interseasonal store



biodiesel chp with inter-seasonal store

cogeneration

- high efficiency

biodiesel

- Ready local supply – utilises waste
- Easily transported
- Low visible pollution
- No need for alternate fuel backup
- Neighbourhood becomes a business

interseasonalstore

- Creates a duty balance re summer/winter
- reduced cut/fill demand
- No need for expensive duplicate backup



some details

250 houses – [could be extended to 440]

Electricity generated by CHP

750,000 kWh p.a. (10% over-supply)

Hot water produced

1,930,000 kWh p.a. (30/70 split)

Heating/Hot water demand

1,800,000 kWh p.a.

Interseasonal store size

13,300 tonnes water in 6 tanks

Max proportion of heat stored

40%

Max storage temp

80 degC.



whitefield, nelson: total synergistic insertion



postscript

planning permission has now been received....

...in spite of the Prince's Foundation recommending refusal and a return to the Enquiry by design masterplan.

police still have issues with the introduction of public space

Thanks

prof tom jefferies of citylab

Gerry maccreanor and kevin logan of maccreanor lavington

Neil swanson of landscape projects

frank mills of environmental design consultants

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