

URBAN
SILENCE

THE MASTER PLANNER'S
GUIDE TO THE **FUTURE**
OF INDUSTRIAL LAND

A PRAGMATIC APPROACH TO INTENSIFICATION,
DIVERSIFICATION AND MIXED-USE

JULY 2018

IN COLLABORATION WITH:
LICHFIELDS





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01 WHY LOOK AT INDUSTRIAL LAND?

This Guide proposes ideas to transform urban industrial areas into active employment and mixed-use hubs for the future.

Industrial areas are exciting and valuable places that are essential to the functioning of urban economies. However, they are often poorly planned and under pressure for redevelopment to higher-value uses. This publication offers practical approaches on how to maximise the potential of existing industrial sites, both in terms of strategic planning and site structure. Our analysis indicates that there is a lot more to be gained by adopting a strategic master planning approach rather than relying on piecemeal development on a plot-by-plot basis.

Typically, much employment land in towns and cities is historic and successive changes have taken place with no overall master plan and little attention to quality or efficiency. This unplanned approach has produced low density, unattractive places and inefficient development at a time when urban land is in high demand. Releasing industrial land for other uses or doing nothing has often been the default approach but this fails to recognise that industry is essential to the future city and one of the drivers of employment and innovation.

The draft London Plan published in December 2017 has clearly identified the necessity of a new policy direction, starting from the principle that there will be no net loss of industrial capacity in London or actual positive-sum outcome across different authorities. A new role is given to policy planning to guide the future of industrial capacity through intensification, co-location of mixed-use and cooperation across wider market areas. By defining capacity in terms of floorspace, rather than hectares, it is hoped to introduce a new drive for making better use of the land and increase density.

In this context, this Guide suggests tools to assess and identify where opportunities may exist and proposes practical master planning solutions that will not only help to deliver intensification but also create better and more resilient places of employment and urban activity.

It has been prepared by URBAN Silence in collaboration with Lichfields, planning and development consultancy.

WHAT DOES THE GUIDE PROVIDE?

- ▶ A methodology for identifying and quantifying opportunities for change across a wider area, and preparing the evidence needed to support strategic choices and planning policies.
- ▶ Identification of the range of possible options to make better use of the land while safeguarding industrial operational needs through site-wide, plot and building level organisation.
- ▶ Worked examples of how a master planning approach can make use of these options to illustrate the resulting potential outcomes.

“We need to retain sufficient industrial, logistics and related capacity by seeking no overall net loss of industrial floorspace across London.”

Draft New London Plan, 2017

02

EXISTING ASSETS: NEEDS AND CHALLENGES

4%

Current vacancy rate in designated industrial land in London

1,310ha

Industrial land lost 2001-2015

36%

Industrial land in London with no formal planning policy protection

In the past two decades, release of urban industrial land has provided a valuable source of brownfield land to meet growth needs and opportunities for housing development in London and elsewhere. With falling industrial stock and rising rents, this had led to concerns about the efficient functioning of the economy and a change in policy drive.

Typically, Local Plan policies in London and elsewhere have been underpinned by a general presumption in favour of industrial land release to other uses, but with consequent industrial land losses significantly in excess of predictions and benchmarks. In London, the supply of industrial land has decreased by 1,310ha between 2001 and 2015¹ (of which about 40% occurred between 2010-2015). At the same time, changing patterns of business demand and technological trends are disrupting traditional approaches to planning for industrial land. There is a rapidly changing logistics sector, serving either other businesses or the consumer market. This requires highly flexible and efficient premises and is essential to support many other urban activities from retail to healthcare and manufacturing. New sectors are in continual evolution from specialist food processing to digital and media manufacturing. Co-working premises, innovation centres, maker spaces are emerging and providing energy in previously declining traditional manufacturing areas. These trends have not only created additional demand for premises: they have generated new patterns of use and new needs, which require a fresh approach to efficiency of operation and facilities.

While the industrial jobs base has declined over recent years, London's industrial property market has boomed. Average rents for industrial units have increased strongly whilst the current industrial vacancy rate of 4²% is amongst the lowest in the country.

Many London boroughs – including those the draft London Plan requires to 'retain' or 'provide' additional industrial capacity – are set to see significant swathes of their industrial land released to other uses, as a result of continuous pressure for housing development. More than a third (36%) of London's industrial land currently has no formal planning policy protection (i.e. 'Non-Designated') and remains particularly susceptible to release in future. At the same time, most of the remaining industrial land is inefficient and poorly planned (Figure 1).

The draft London Plan recognises that in a growing city all land uses need to expand to keep pace with demand and is determined to make better use of London's remaining designated industrial land. This is a major shift from previous policy directions and one that is now being observed by other cities and authorities across the country. With a focus on a plan-led approach to intensification and co-location through masterplanning to be led by boroughs in collaboration with the Greater London Authority, the draft Plan proposes the principle of overarching 'no net loss' of industrial floorspace capacity for all designated sites, based on existing site floorspace or a 65% plot ratio (whichever is greater).

The policy response is to encourage better use of existing sites through intensification and diversification, as well as exploring options for mixing activities and uses, including residential. This shift in approach will require local authorities to re-visit and re-consider their industrial provision over-all, and what potential it has to serve current and future needs. Proactive planning is explored in this Guide in two stages:

- ▶ Area wide strategies – to screen and identify opportunities for more efficient use and change of industrial land across the whole borough.
- ▶ Site master plans – to identify and guide coherent change and intensification over time.

The stages are illustrated in the next sections of the Guide. These can be undertaken either in sequence or independently of one another and are designed as a flexible and pragmatic approach to managing and planning for change.

¹ GLA, *London Industrial Land Supply & Economy Study 2015* (March 2016) / *Lichfields analysis*

² GLA, *London Industrial Land Demand* (October 2017)

FIG. 1 - PLENTY OF OPPORTUNITIES TO MAKE BETTER USE OF INDUSTRIAL LAND



Activities which could be stacked



Wasteful roadspace



Under utilised land



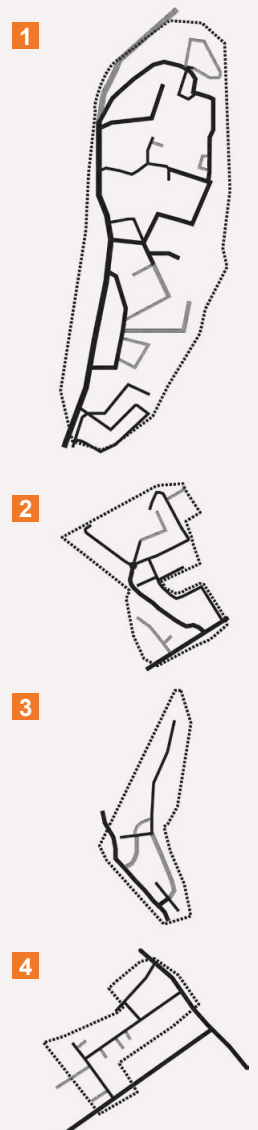
Unnecessary low rise



Low value utilisation

LIMITED CHANGE
OVER TIME

While activities and needs have changed dramatically over the past 10-20 years, the main structure of industrial areas remains unchanged since the Post War period.



- Built before 1945
- - - Built in the Post War period

- 1 - Brimsdown SIL, Enfield
- 2 - Lea Bridge SIL, Waltham Forest
- 3 - North Wimbledon SIL, Merton
- 4 - Hainault SIL, Redbridge

03

A VIBRANT FUTURE FOR INDUSTRIAL LAND

9-14%

Typical range of non-industrial uses located on Strategic Industrial Land in London¹

16-21%

Typical range of non-industrial uses located on Designated Industrial Land in London¹

30-37%

Gross floorspace density on Designated Industrial Land in Outer London¹

84%

Gross floorspace density in the Central London Sub-Region¹

¹ GLA, *London Industrial Land Supply & Economy Study 2015 (March 2016)* / URBAN Silence analysis

² GLA, *London Employment Sites Database, GLA Economics, 2017: 65 per cent is the default plot ratio assumption for industrial and warehousing sites*

Industrial land in our towns and cities provides employment, supports services and is often a place of innovation. To maximise its economic potential and contribution to urban life, industrial land needs to be flexible, diverse and more intensively used: it needs strategic planning and selective and transformative investment.

Urban industrial areas accommodate a broad array of activities. While a lot of recent attention as been placed on logistics warehouses and distribution, these are only one of many types of businesses found on commercial and manufacturing land. Site activities could include anything from pharmaceutical, aerospace, food processing and specialist food products, clothing and uniforms, and other trade-only activities, as well as customer-orientated businesses like printing, cabinet making, office and building supplies, car dealerships, repairs and so on. Typically, around 10-15% of land¹ is also used for useful non-industrial purposes such as training centres, entertainment boxes (trampolining, go-karting, bowling, etc.), cafes and community halls. Smaller areas may have a collection of creative industries (fashion, graphics, digital, furniture etc.) intermixed with artist studios and standard industrial activities. At the fringes, older brick warehouses are sometimes converted to homes, offices and studios.

This diversity, and the interplay between different needs and employment profiles, is a real strength for our towns and cities: it provides employment for a wide range of skills and abilities, it ensures flexibility and adaptability to changing economic conditions and ultimately supports a fertile environment for innovation.

Emerging planning policy in London requires overall retention of industrial floorspace, therefore allowing release or change of use only where floorspace can be increased elsewhere. It also indicates 65% as an appropriate plot density for urban industry² - roughly equivalent to 50% gross density. This is rarely the case in practice: only in Central London¹ does average floorspace density approach 100%. More often, industrial land has a gross floorspace density of 30-35% and around 20% where distribution warehousing is prevalent. This is a wasteful level of utilisation for expensive urban land – and clearly one of the reasons why there is sustained pressure for more intensive patterns of development.

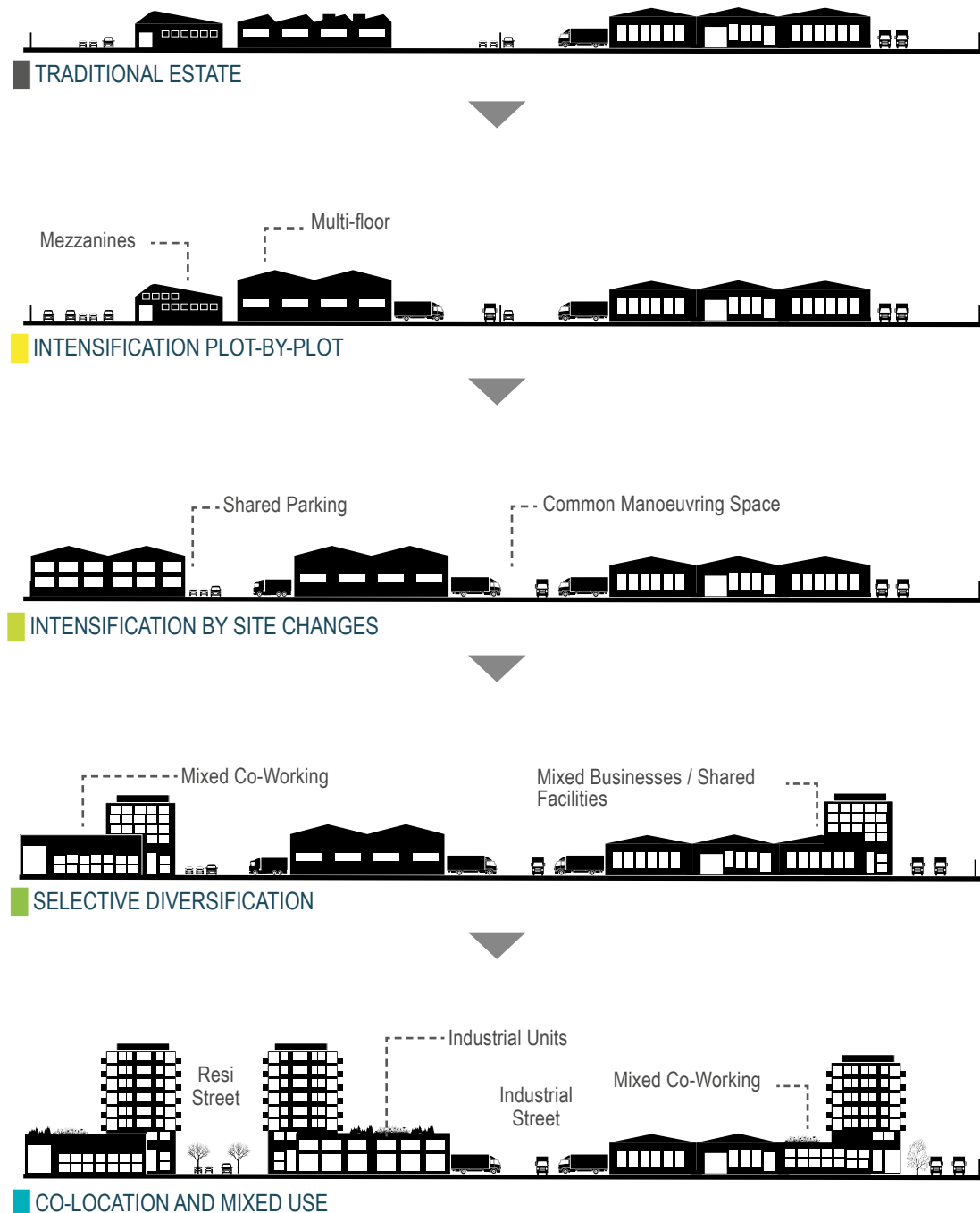
In an evaluation of sample sites, it was found that plot-by-plot intensification (such as encouraging mezzanines and additional floors) can typically add only 10-15% to the overall density of a site. These measures in themselves will therefore not be sufficient to deliver the degree of intensification needed across urban industrial land and more comprehensive approaches are required such as those outlined in Figure 2 and further explored in the following sections.

By overlaying multiple interventions, significant gains in floorspace can be made, while adding diversity and retaining flexibility and operability. This can only be done through strategic planning and a comprehensive approach, which retains valuable premises and progressively rationalise operations, while adding and intensifying activity.



A place to relax during a work-break

FIG. 2 - INTENSIFICATION STRATEGIES AND THEIR IMPACT



TRADITIONAL ESTATE
Average plot ratio across site:
30-35%

INTENSIFICATION PLOT-BY-PLOT
Likely increase across site:
+10-15%

INTENSIFICATION BY SITE CHANGES
Likely increase across site:
+20-25%

SELECTIVE DIVERSIFICATION
Likely average increase across site:
+20-25%

CO-LOCATION AND MIXED USE
Likely average increase across site:
+40-70%

04 STAGE 1: STRATEGY

IDENTIFYING OPPORTUNITIES IN THE WIDER AREA

Different locations offer varied potential for transformation and efficiency improvements. To understand opportunities and inform planning policy, it is necessary to carry out a pragmatic assessment of potential floorspace intensification and priority actions by reviewing market, planning, socio-economic and physical conditions.

A new methodology is required to assess future capacity of industrial land and inform new policies and guidance. Overall supply and demand of premises is only a part of the story: pressure from higher value uses, local needs for housing and jobs, flexibility of the area to accommodate new and maybe more diverse workspaces all combine to indicate what course of action may be better suited to each industrial location.

Within the wider area, different strategies should apply to different sites and it will be important to have the strategic overview to decide where and how to promote intensification, diversification or even mixed-use.

Some areas will benefit from a detailed master plan and for some this will not be necessary. Figure 3 illustrates a decision-tree for screening and identifying opportunities.

This strategic stage should consider a broad range of criteria and offer a clear framework for future policy. It should:

- ▶ **ASSESS EACH SITE AND DEFINE POTENTIAL**
Figure 4 shows an indicative dashboard for the structured assessment of sites, where each colour identifies the most appropriate potential response. This approach provides a consistent multi-layered set of considerations for screening and visualising potential.
- ▶ **QUANTIFY THE RANGE OF CHANGE**
Existing floorspace and the range of potential intensification will be estimated to provide an overview of the total industrial floorspace capacity of the local authority and inform policies to achieve the objectives of the local plan.
- ▶ **BRIEF FOR THE FUTURE**
Not all sites will have good potential for intensification: this stage will identify the areas with good potential for change and increase of activity and value to progress into a more detailed master plan (see Section 5).

FIG. 3 - SCREENING AND IDENTIFYING OPPORTUNITIES



FIG. 4 - MULTIPLE ASSESSMENT CRITERIA TO DEFINE THE POTENTIAL OF INDIVIDUAL SITES



INTENSIFICATION STRATEGIES

- Intensification Plot-by-Plot
- Intensification by Site Changes
- Selective Diversification
- Co-location and Mixed Use

04 CONT... A WORKED EXAMPLE

This hypothetical case study is based on a mix of real industrial sites in North London. It has been prepared to pilot the methodology and illustrate the results, to show how the strategic assessment of sites leads to quantification and policy recommendations.

In this worked example, the study area has a range of 12 industrial sites:

- ▶ Three of strategic importance, where operational efficiency is very important and co-location of mixed-use plays a marginal role
- ▶ Three locally significant sites, where typically job creation and diversity of use (including mixed-use) is important, and
- ▶ Six smaller or undesignated sites, which often play an important role in serving the local area or providing specialist workspace but could also be more integrated in the life of the community and support a variety of other uses.

Each site (or portion of site) has been scored using the assessment criteria illustrated in Figure 4, and to the side the results for one site are shown. Within this sample site, the dashboard colour coding system helps to visualise the main strategy emerging from the analysis and provides the link between assessment and intervention.

- ▶ The score and colour coding in Figure 5 point to selective diversification in the mix of employment units as the preferred strategy for this theoretical location, complemented by a small amount of mixed use as a secondary approach.
- ▶ For each site, a pie chart indicates the preferred strategies as a proportion of the site area and this is used to estimate the range of potential floorspace capacity gains available for that site (Figure 6).
- ▶ This is summarised in the comprehensive framework chart for the whole study area (Figure 7), where the yellow band to the left indicates gains on a plot by plot basis, and the least need for intervention and investment. The blue band indicates co-location of different uses and highest gain in overall site intensity. The central green bands indicate change and diversification within the site layout and spectrum of employment uses.



FIG. 5 - MULTI-CRITERIA ASSESSMENT FOR A SAMPLE SITE



Once all sites are analysed and a summary of the most appropriate approach for each site is produced, opportunities can be quantified to inform the area-wide strategy and to respond to policy objectives. For the purpose of this example and study area, options and recommendations could include:

- ▶ Retention and promotion of plot by plot intensification (mezzanines, additional floors, etc.) through planning policy alone for two of the sites (Site B and Site D) - with estimated 5% floorspace gain.
- ▶ Priority master plans prepared for the four designated industrial sites - with estimated gain of 30-35% floorspace.
- ▶ Release for mixed use / employment led comprehensive redevelopment of one site (Site H) - with expectation of no industrial floorspace loss and 300% additional density gain in other uses.
- ▶ Opportunistic master plan-led change in the remaining five non-designated sites - targeting a 40% minimum increase in employment floorspace and a range of flexible units.

FIG. 6 - SITE BY SITE ASSESSMENT OF POTENTIAL

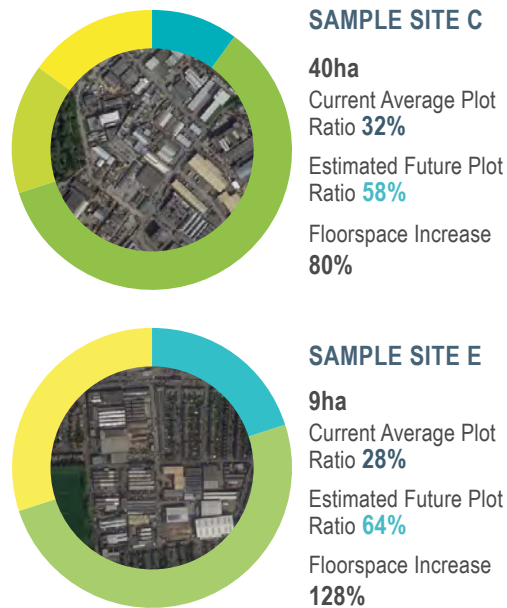
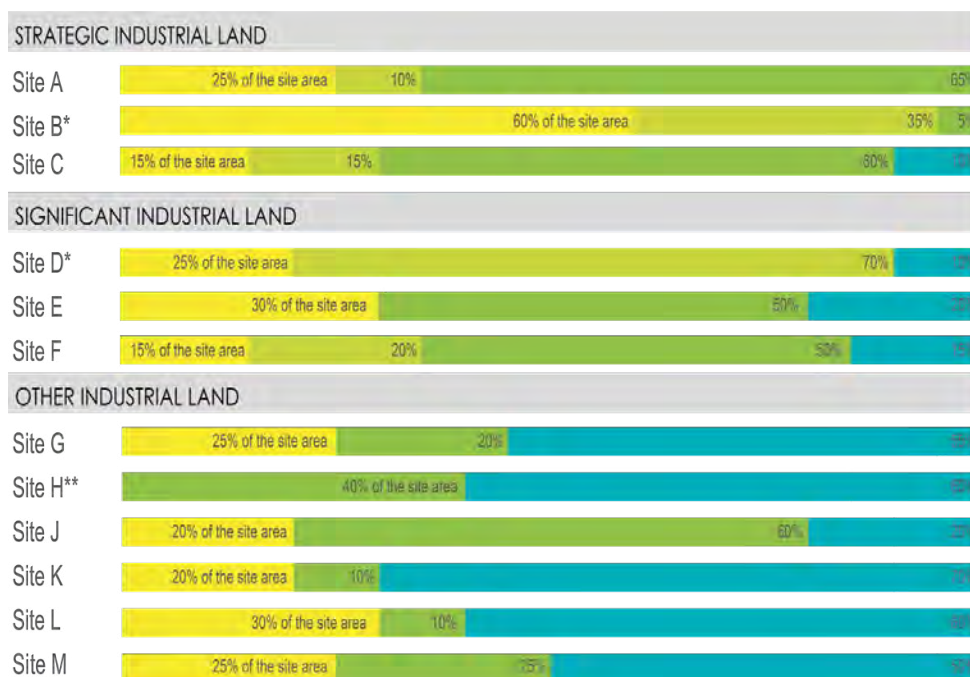


FIG. 7 - SAMPLE SUMMARY FRAMEWORK OF OPPORTUNITIES FOR A HYPOTHETICAL LOCAL AUTHORITY STUDY AREA



* Limited potential for diversification and mixed use: master plan a low priority
 ** Major change possible: consider site release and comprehensive redevelopment

INTENSIFICATION STRATEGIES

- Intensification Plot-by-Plot
- Intensification by Site Changes
- Selective Diversification
- Co-location and Mixed Use

Source: The example in this section is a pilot study of a hypothetical Borough based on analysis of a collection of sites across London

05 STAGE 2: MASTER PLAN GUIDING COHERENT CHANGE OVER TIME

WHAT DOES A MASTER PLAN PROVIDE?

- ▶ Definition of opportunities for change and safeguard existing activities
- ▶ Placemaking and lifestyle improvements for all users and residents
- ▶ Optimisation of how land is used

Where sites have potential for change, a master plan is the best way to explore how the site can evolve in time: by rationalising land, introducing diversity of format and use, while safeguarding the operational efficiency of existing and future businesses.

Master planning is the process that defines what kind of change is desirable and the steps required to achieve it. It also helps visualise future outcomes and quantify development, employment and the balance of land uses. It includes vision and development objectives on the one hand, and a practical programme of policy and intervention on the other.

The master plan should include the following:

A. IDENTIFICATION OF SOFT TARGETS

- ▶ These could be vacant properties, units with short leases and buildings in need of renovation. A map will show which parts of the site have the potential to change first, and which businesses are likely to remain in the longer term and which should be safeguarded.
- ▶ Within each site, options will illustrate how to facilitate the relocation or consolidation in situ of smaller businesses in denser or mixed-use buildings, especially plots that are part of a wider managed portfolio. A timeline and strategy will provide an action programme for change.

B. SITE RATIONALISATION

- ▶ Placemaking and the expectation of safe and attractive working or living urban environment are central to the success of any location. Any plan for transformation needs to consider how to weave in: improved image and public realm, outdoor gathering spaces and communal hubs.

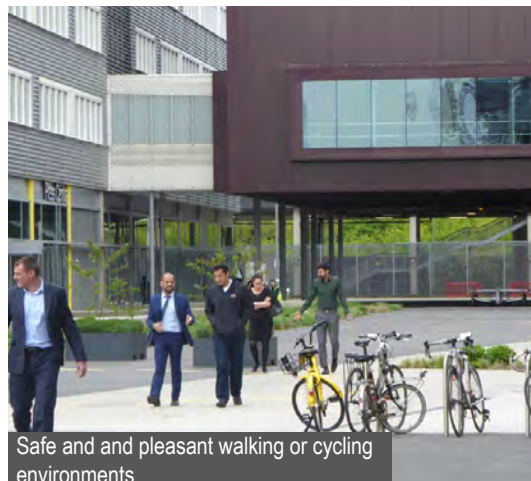
- ▶ Communal hubs should be the 'seed projects' that start the transformation of the area and its image. They could offer: café and shops, shared and communal facilities, flexible or spill over accommodation, etc.
- ▶ The future of urban workplaces, industry and mixed-use areas is dependent on safe and pleasant walks or cycle rides to work or home. Active mobility routes should be separated from heavy vehicular traffic and linked to active frontages and public transport stops.

C. SAFEGUARDING OF INDUSTRIAL EFFICIENCY

- ▶ The operational efficiency of any activity remaining in the long term should be identified and unequivocally safeguarded: access, business traffic, yard needs, etc.
- ▶ Plot sizes and yard space should make optimal use of available land, sharing space for manoeuvring, avoiding the need for turning heads and ensuring viable industrial use formats.
- ▶ Plot and access parameters should enable efficiency and coexistence of diverse activities.

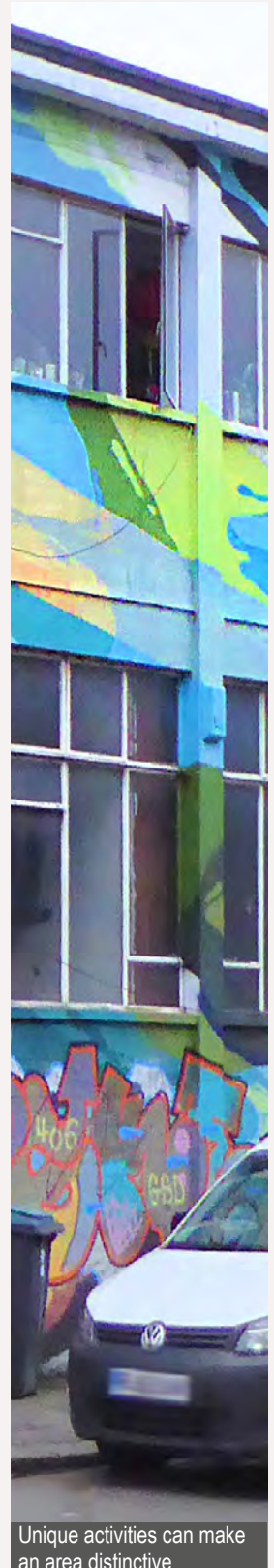
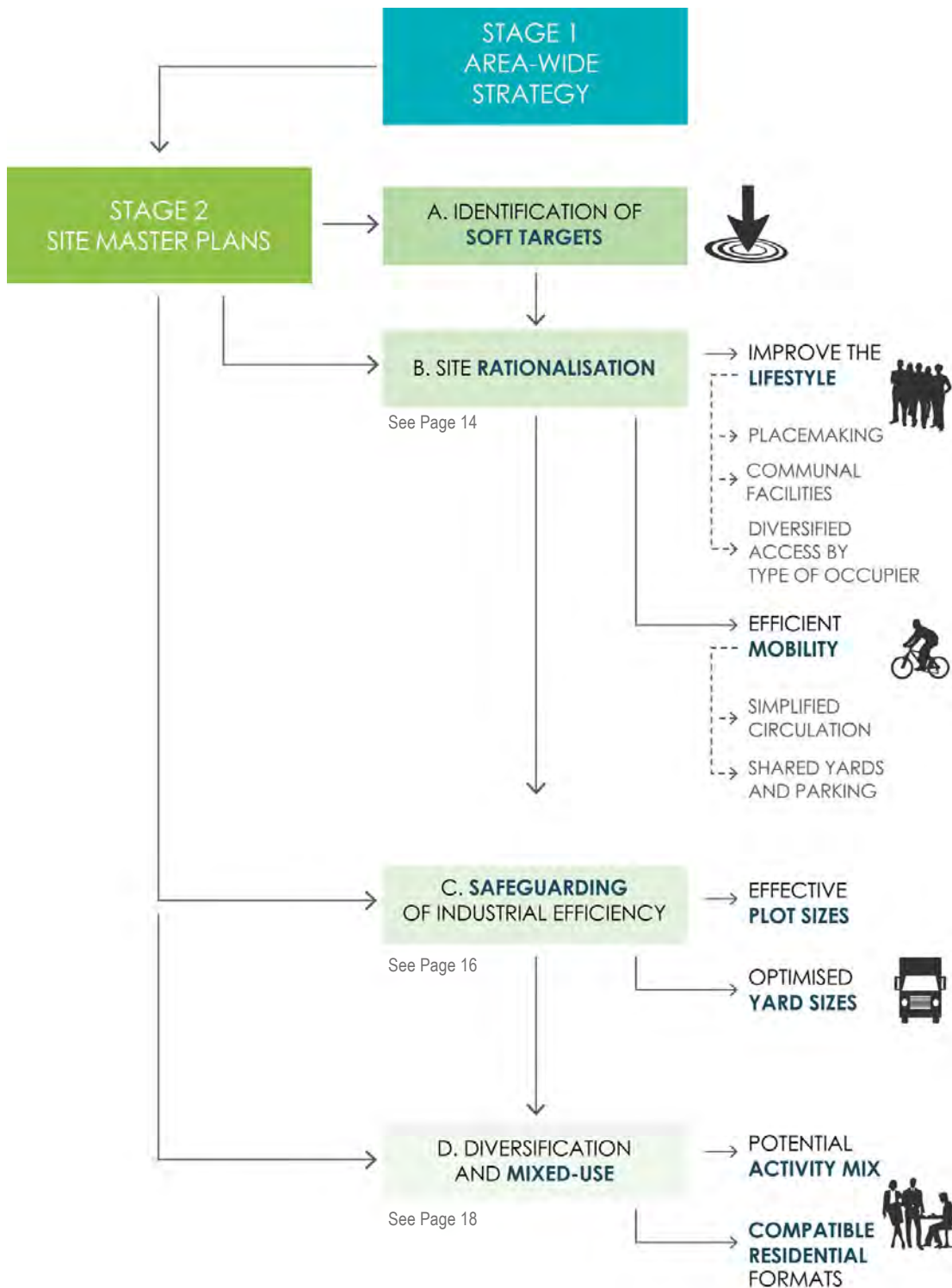
D. DIVERSIFICATION AND MIXED USE

- ▶ The appropriateness and location of diversified employment units and, in some cases, residential, need to consider the creation of coherent frontages and districts, and access routes.
- ▶ Compatible activities and building typologies and formats that allow the co-location and integration of different uses are to be identified.



Safe and pleasant walking or cycling environments

FIG. 8 - OBJECTIVES AND OPTIONS OF THE MASTERPLANNING PROCESS



Unique activities can make an area distinctive

06 DESIGN OPTIONS 1 SITE RATIONALISATION

Rationalisation helps to improve the image and sense of place of industrial sites, whilst creating communal facilities and sharing circulation space.

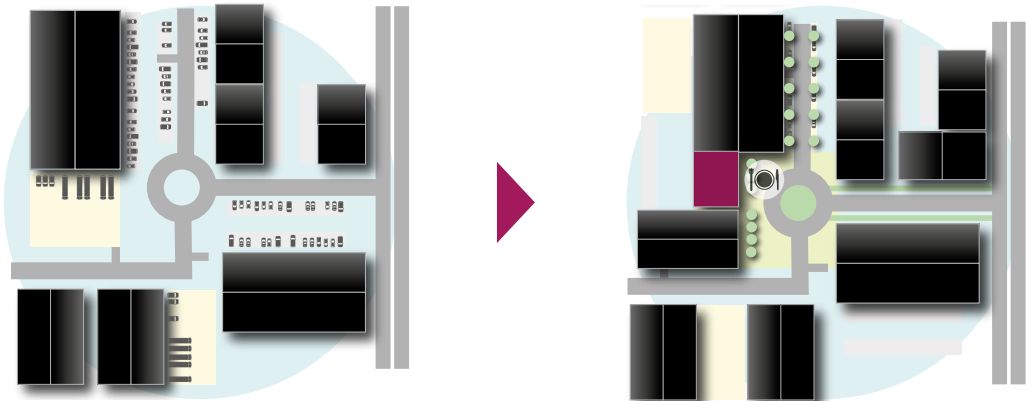
WHY IS THIS WORTH LOOKING AT?

- ▶ Better image for higher value use
- ▶ More efficient and legible sites
- ▶ Additional floorspace possible

1. PLACEMAKING

1. PLACEMAKING

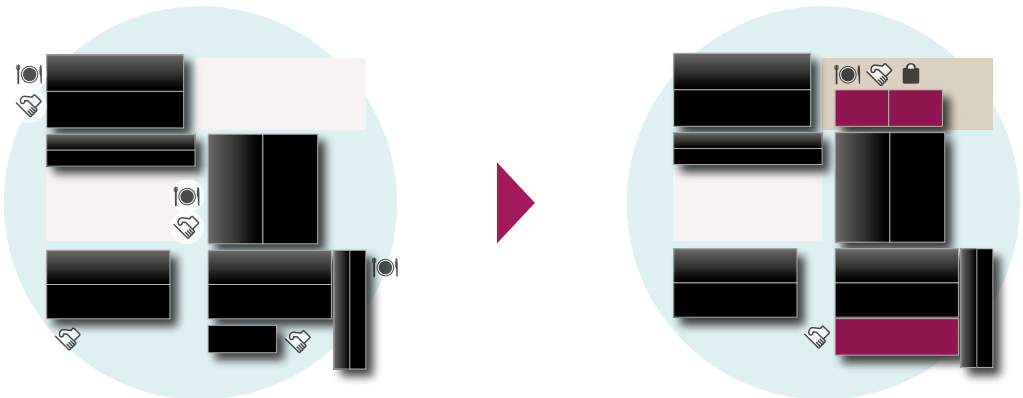
- ▶ Improving site presentation attracts higher value businesses and enables mixed use
- ▶ Focus for improvement on entrance roads and hubs with communal facilities, cafes, and meeting places



2. CREATING COMMUNAL FACILITIES

2. COMMUNAL FACILITIES

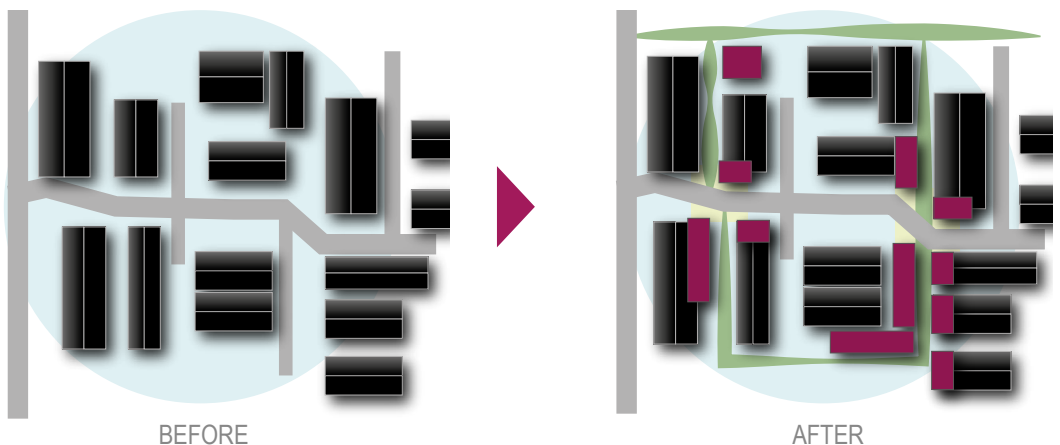
- ▶ Shared facilities between businesses can provide a better service and release production floorspace
- ▶ They offer the opportunity to create activity hubs within the site
- ▶ Range of intensification potentially achieved: 10-15%



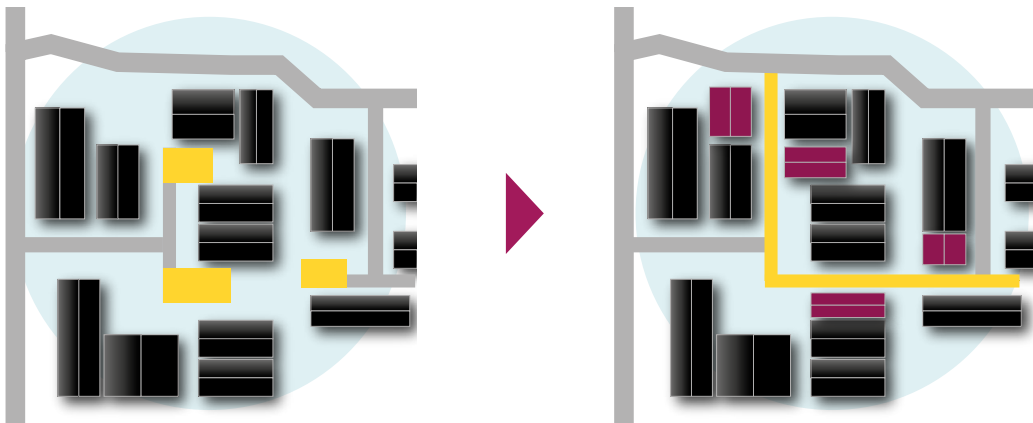
3. DIVERSIFYING ACCESS BY TYPE OF OCCUPIER

3. DIVERSIFYING ACCESS

- ▶ A secondary network of streets provides appropriate frontages and independent safe access for non industrial use
- ▶ It enables safe pedestrian and cycle use



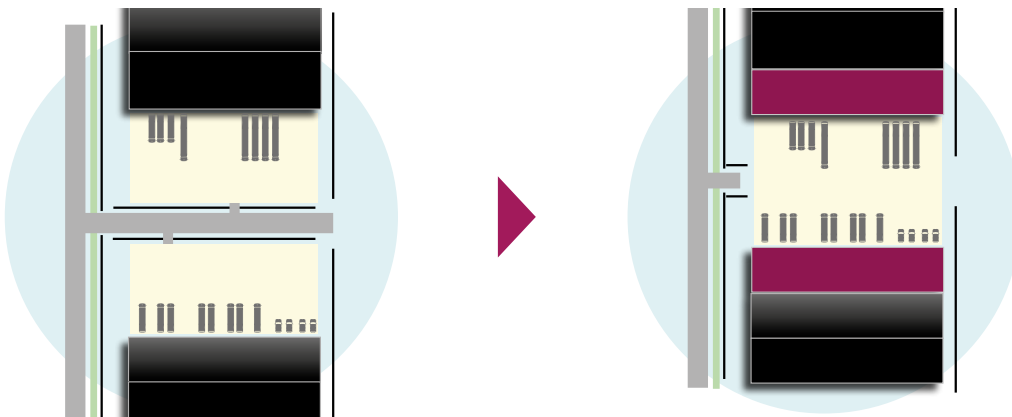
4. SIMPLIFIED CIRCULATION



4. SIMPLIFIED CIRCULATION

- ▶ By connecting dead-end roads wasteful turning space can be eliminated, releasing land for smaller units
- ▶ Range of intensification potentially achieved: 10-15%

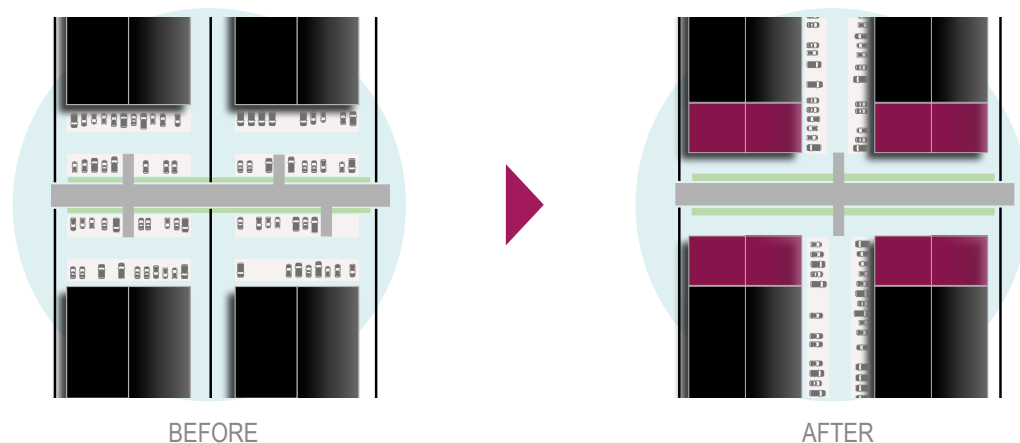
5. SHARED YARDS AND MANOEUVRING SPACE



5. SHARED YARDS

- ▶ Manoeuvring space can be shared between facing warehouses within a single secured space
- ▶ Range of intensification potentially achieved: 20-25%

6. POOLED CAR PARKING



6. POOLED CAR PARKING

- ▶ A single service road can serve pooled car parking for different units for more efficient space
- ▶ Car parking away from the frontage improves the quality of the area
- ▶ Range of intensification potentially achieved: 10-15%

06 DESIGN OPTIONS 2

SAFEGUARDING INDUSTRIAL EFFICIENCY

WHY IS THIS WORTH LOOKING AT?

- ▶ Industrial operational activity should take priority over other uses
- ▶ Efficiency of plots must be ensured
- ▶ There is a range of needs and flexibility

There is significant scope for optimising unit formats and yard efficiency without operational restrictions as part of a comprehensive plan for progressive and targeted change

Urban land is expensive and should be efficiently used. This is rarely the case on urban industrial sites which are the result of piecemeal change over time. More recent industrial development is frequently developed at very low density, as it has adopted 'out of town' models with large areas given over to car parking and road space even in central urban areas.

There is a need to adopt efficiencies that make the most of urban land and do not compromise operations, by considering:

- ▶ Typical industrial building formats, in their range and variety of sizes (Table 1)
- ▶ Arrangements for a variety of optimised yard formats for common urban industrial units.

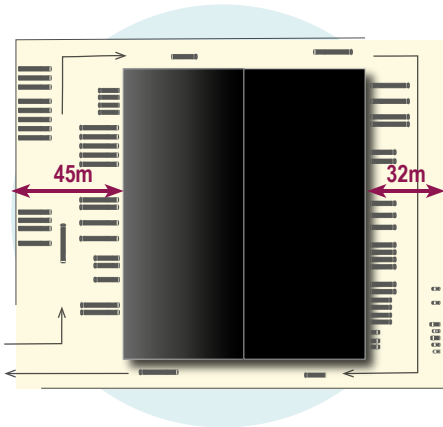
The diagrams opposite illustrate the functioning and sizes of a range of efficient yards that can be found in urban industrial sites: from the largest type of distribution centre where goods are delivered from one side and dispatched from the other to compact yard formats for large heavy vehicles, where the turning space for trucks is shared between facing companies: this is a flexible urban model in which the yard can be fenced and shared or open.

The other examples are applicable to businesses that only need access for vans or smaller lorries: the majority of units in non-strategic industrial land. The last diagram gives an indication of the format and dimensions of 'socialising space' provided outside flagship developments like Here East (Queen Elizabeth Park in London): sufficient for outdoor seating, green space and formal cycle parking.

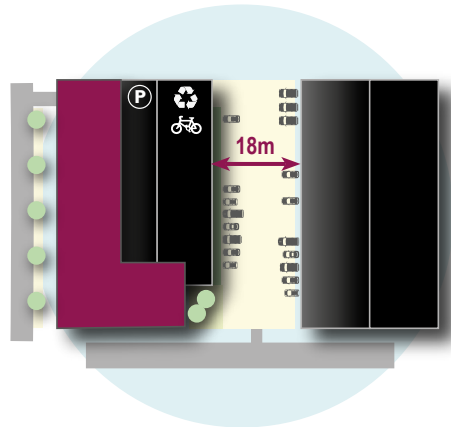
TABLE 1 - TYPICAL DIMENSIONS TO SAFEGUARD OPERATIONAL EFFICIENCY

	Use Class	Width (m)	Length (m)	Height (Floor Equiv)	Yard Format	Yard Width (m)
Major Distribution	B8	60-200	140-220	4	Double Loading	32-45m
Other Distribution	B8	35-50	60-100	3-4	Single Loading	32
Production and Distribution	B2	50-70	60-100	3	Partial Loading	18
Construction and Metal	B2	30-35	50-70	3	Single Loading	32
Warehouse/ Manufacture	B2	24-40	50-70	2-3	Partial Loading	18-32
Hi-Tech Industry	B1b	24-40	50-70	2-8	Small Loading	12-18
Mechanical Workshops	B1c	12-16	50-70	1-2	Single Aspect	10-12
General Workshops	B1c	12-16	50-70	1-2	Single Aspect	8-12
Start Up Workshops	B1c	12-16	50-70	1-6	Small Loading	8-12
Maker Spaces	B1c	12-30	50-70	1-6	Small Loading	12-18
Studios	B1a	12-30	50-70	1-6	Parking / Front Service	12-18
Co-Working / Shared Office	B1a	18-30	50-70	1-6	Small Loading	12-40
Gym / Leisure Box	D2	35-50	60-100	3-4	Front Parking	12-40
Retail Box	A1	24-70	60-160	3	Front Parking	12-41
Café / Restaurant	A3	10-20	10-30	2	Side Parking	9
Hotel	C1	15	50-60	4-8	Front Parking	8-12
Co-Housing / Young People	C2/C3	12-36	40-100	4-12	Side or courtyard	8-13
Apartment Rent	C3	12-18	20-100	8-40+	Side or courtyard	8-18
Apartment Ownership	C3	12-19	20-101	8-40+	Side or courtyard	8-19
Townhouses	C3	12-14	30-70	2-4	Parking / Front Service	n/a

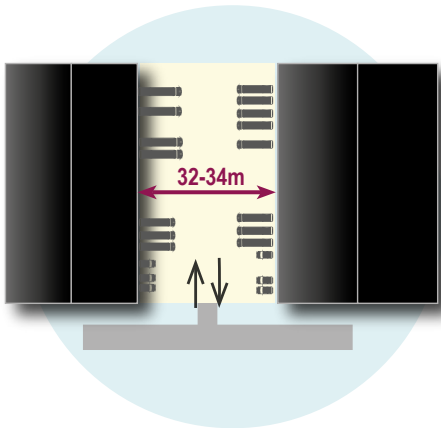
1. MAIN DISTRIBUTION CENTRE



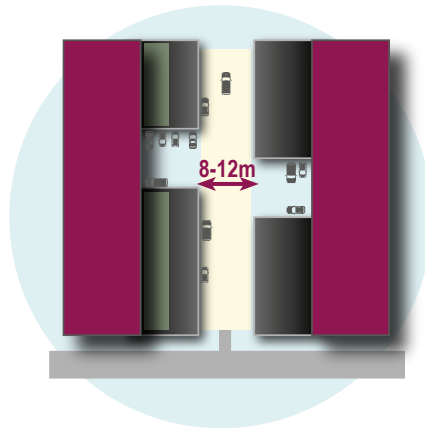
4. MAKER SPACE/ RESIDENTIAL YARD



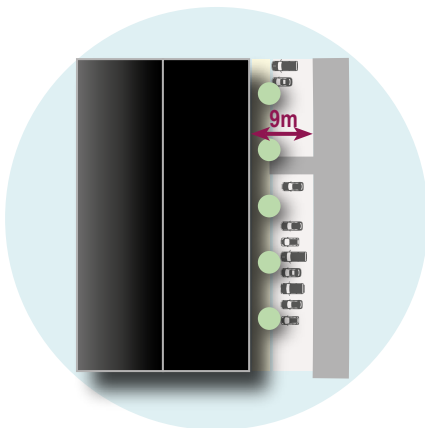
2. PRODUCTION SHARED YARD



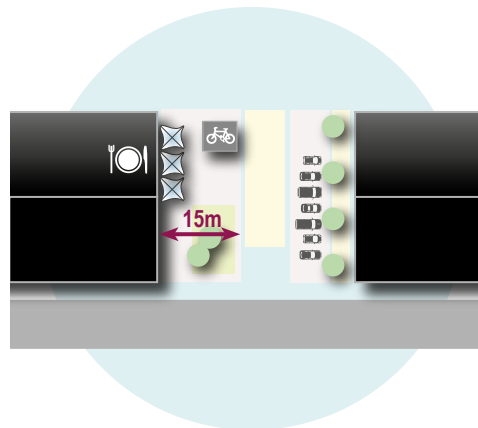
5. MEWS



3. SIDE YARD



6. SHARED SPACE



06 DESIGN OPTIONS 3 DIVERSIFICATION AND MIXED-USE

WHY IS THIS WORTH LOOKING AT?

- ▶ Residential use can be adapted to safeguard industrial activity
- ▶ Several building formats are possible
- ▶ Locations of cores and entrances is key

To co-locate industrial mixed-use and residential, it is necessary to consider specific typologies of plot layout and structural configuration, and have regard for compatible activities

- ▶ Many, but not all types of industrial activities are compatible with each other and potentially with residential. Table 2 illustrates the range of compatibility in a variety of common activities found in urban industrial and employment sites.

- ▶ There is quite a lot of flexibility and, in broad terms, using the Use Class system, most B1 uses are compatible with B8 and B2 types and residential uses; many of the housing typologies are compatible with most activities and smaller-medium sized warehousing.
- ▶ Large format retail boxes, often found at the edges of industrial areas, are the least flexible.
- ▶ The diagrams opposite illustrate how to diversify units and mix activities to provide functioning and unconstrained workspaces and general industrial units. This may impose some restrictions on the residential units (for example on cores and parking): these are typically acceptable in an urban situation.
- ▶ Co-working and co-living formats (in which the private unit is small but balanced by generous shared facilities) are the most flexible and adaptable to intense mix.

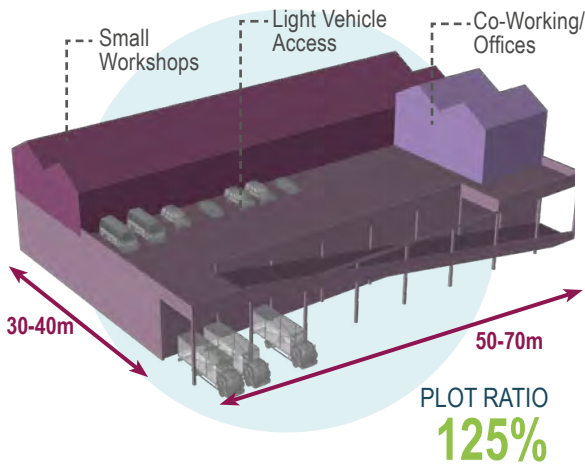
TABLE 2 - MATRIX OF TYPICAL COMPATIBLE USES FOR AN INDUSTRIAL AREA

	Use Class	Major Distribution	Other Distribution	Production and Distribution	Construction and Metal	Warehouse/ Manufacture	Hi-Tech Industry	Mechanical Workshops	General Workshops	Start Up Workshops	Maker Spaces	Studios	Co-Working / Shared Office	Gym / Leisure Box	Retail Box	Café / Restaurant	Hotel	Co-Housing / Young People	Apartment Rent	Apartment Ownership	Townhouses	
Major Distribution	B8	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Other Distribution	B8	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Production and Distribution	B2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Construction and Metal	B2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Warehouse/ Manufacture	B2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Hi-Tech Industry	B1b	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Mechanical Workshops	B1c	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
General Workshops	B1c	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Start Up Workshops	B1c	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Maker Spaces	B1c	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Studios	B1a	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Co-Working / Shared Office	B1a	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Gym / Leisure Box	D2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Retail Box	A1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Café / Restaurant	A3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Hotel	C1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Co-Housing / Young People	C2/C3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Apartment Rent	C3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Apartment Ownership	C3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Townhouses	C3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

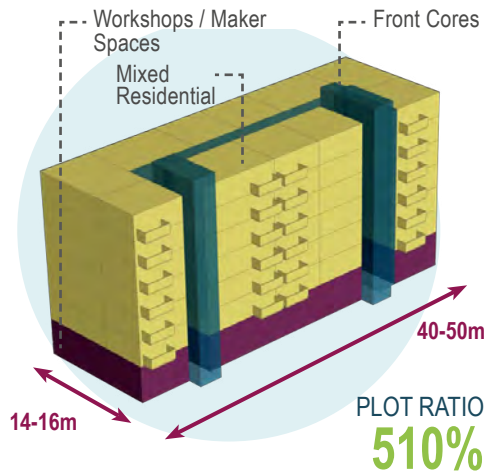
VERTICAL AND HORIZONTAL MIX COMPATIBILITY

- Typically compatible
- Compatible subject to scale and format

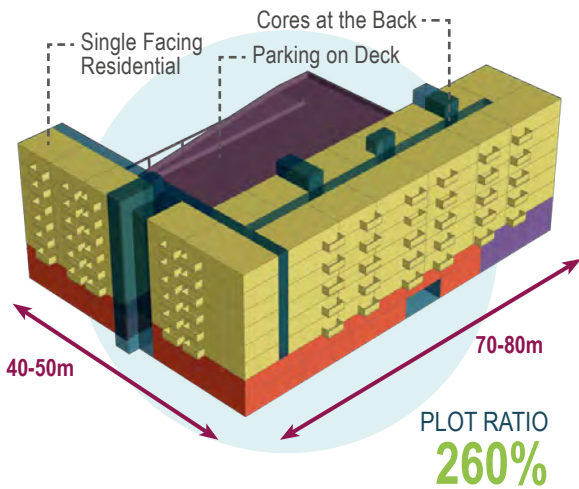
1. STACKED MIXED EMPLOYMENT



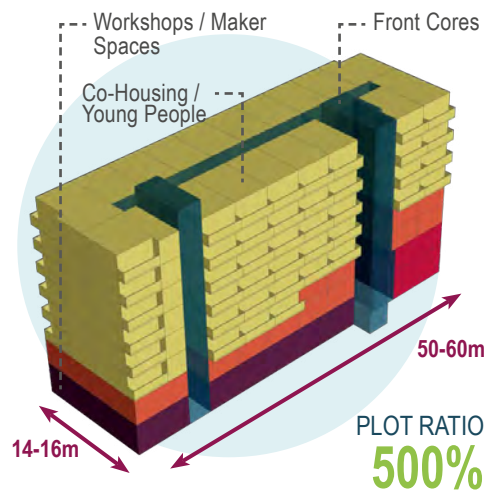
4. WORKSHOPS AND RESIDENTIAL



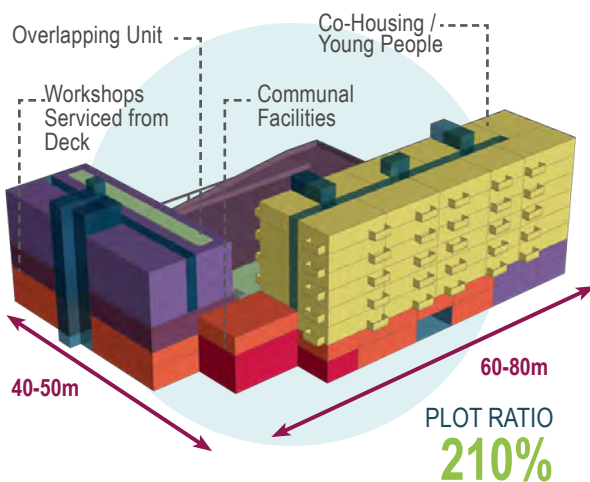
2. WRAP-AROUND RESIDENTIAL



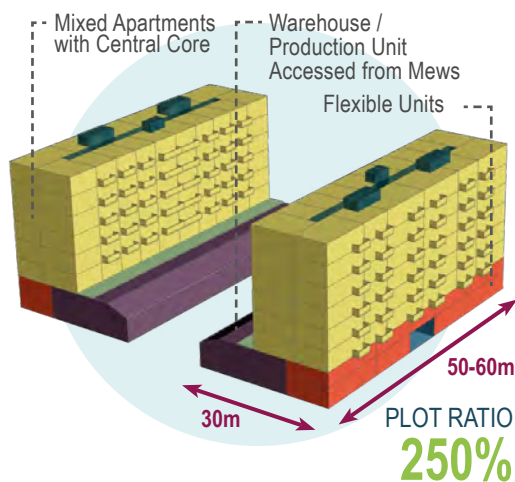
5. VERTICAL MIXED USE



3. WRAP-AROUND AND OVERLAP MIX



6. MEWS



LAND USE MIX

- Residential / Co-Housing
- Flexible Units
- Communal Facilities
- Office / Co-Working
- Workshops / Maker Space
- Production / Warehousing

07 WORKED EXAMPLE 1

This is an example of a strategic industrial site, similar in scale and range of uses to others in London and the South East. There is considerable scope for improvement of the offer, intensification of industrial use and small scale introduction of residential mixed use in a way that adds value with minimal constraints on the site.

The site is nearly fully occupied, well connected by road and served by buses. As many similar places, it faces pressures from 'big box' retailers which now occupy nearly all the main road frontage, while valuable businesses (pharmaceutical, aerospace, specialist food) struggle to expand on the site. Staff facilities and lunch-break activities are very limited and the frontage towards the residential area is poor.

This master plan example indicates that it is possible to increase the floorspace by over 50%, equivalent to approximately 75,000sqm of mixed employment uses, as well as provide over 300 residential units, while at the same time:

- ▶ Safeguard and retain all higher value and large-scale businesses operating on the site.

- ▶ Introduce flexible hubs for communal business facilities and supporting shared uses at four key locations across the site, to serve most businesses and provide destination places for staff. Two of these hubs are linked to public transport.
- ▶ Accommodate large scale distributor centres / manufacturing units with efficient yard space and a range of sized units, all with minimal need for land acquisition or consolidation.
- ▶ Introduce office space and targeted residential as part of a programme of diversification and mixed-use which creates good frontages and activity where needed.

INTENSIFICATION STRATEGIES AND DISTRIBUTION ON SITE

- Intensification Plot by Plot
- Intensification by Site Changes
- Selective Diversification
- Co-location and Mixed Use



FIG. 7 - MULTI-CRITERIA ASSESSMENT FOR THE SITE

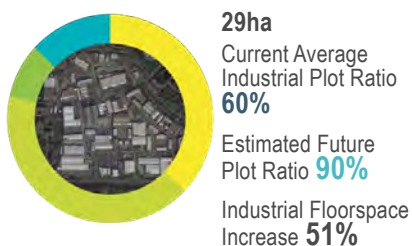


FIG. 8 - POTENTIAL MASTER PLAN STRATEGY FOR THE SITE





51%

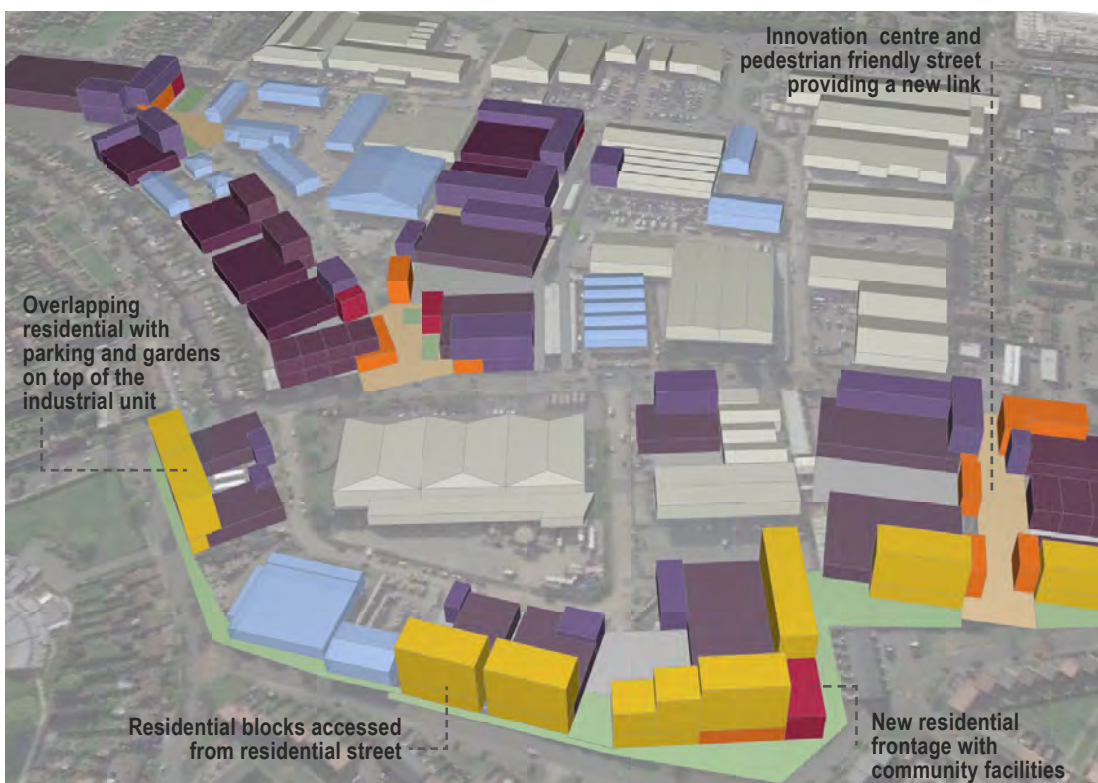
Potential industrial intensification

75,000sqm

Estimated additional industrial, offices and supporting uses

300-400

Potential new residential units (100% independent of industrial access)



LAND USE MIX

- Residential / Co-Housing
- Flexible Units
- Communal Facilities
- Office / Co-Working
- Workshops / Maker Space
- Production / Warehousing
- Future Potential Change
- Long-term Retained Uses

07 CONT... WORKED EXAMPLE 2

The appearance and range of uses of this sample industrial site is poor and does not contribute to the quality of its neighbourhood. The master plan shows that it is possible to create a new interface with the residential area and significantly improve the industrial offer, while retaining the largest operations and the cluster of mixed local businesses already on the site.

This master plan example indicates that it is possible to increase the floorspace by over 50% and provide an additional 86,000sqm of mixed employment uses in an improved industrial environment, and also provide over 1,000 residential units, while at the same time retaining the extensive material handling operations (indoors waste recycling and cement manufacturing).

The master plan proposes:

- ▶ Creation / upgrading of three streets to serve the new residential units, which will provide a new frontage to the community and the existing open space.

- ▶ Establishing of an industrial service road providing access to all industrial units separately from residential.
- ▶ A mix of unit sizes: from distribution centres with shared yards, to mid-sized manufacturing units to a street of smaller workshops / maker-spaces with share staff and customer parking. A cluster of repair businesses is retained in the short term.
- ▶ A new service hub for staff and business communal facilities is created at the key crossroads within the site.
- ▶ Halls for hire and community centres are relocated as part of mixed use buildings.

INTENSIFICATION STRATEGIES AND DISTRIBUTION ON SITE

- Intensification Plot by Plot
- Intensification by Site Changes
- Selective Diversification
- Co-location and Mixed Use

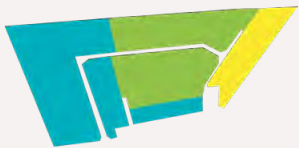


FIG. 9 - MULTI-CRITERIA ASSESSMENT FOR THE SITE

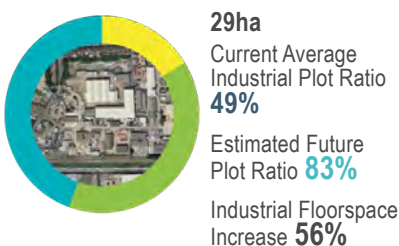
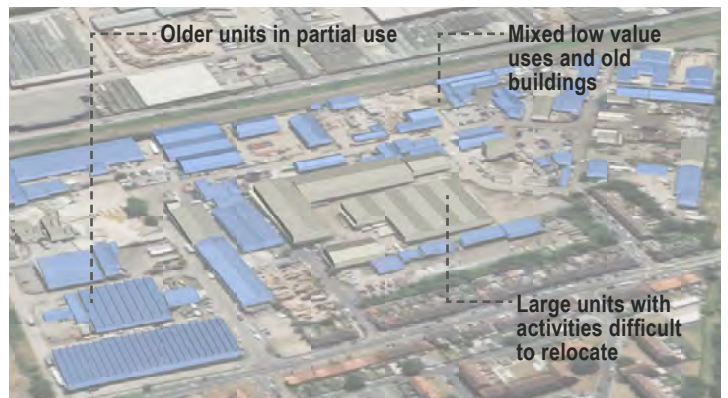
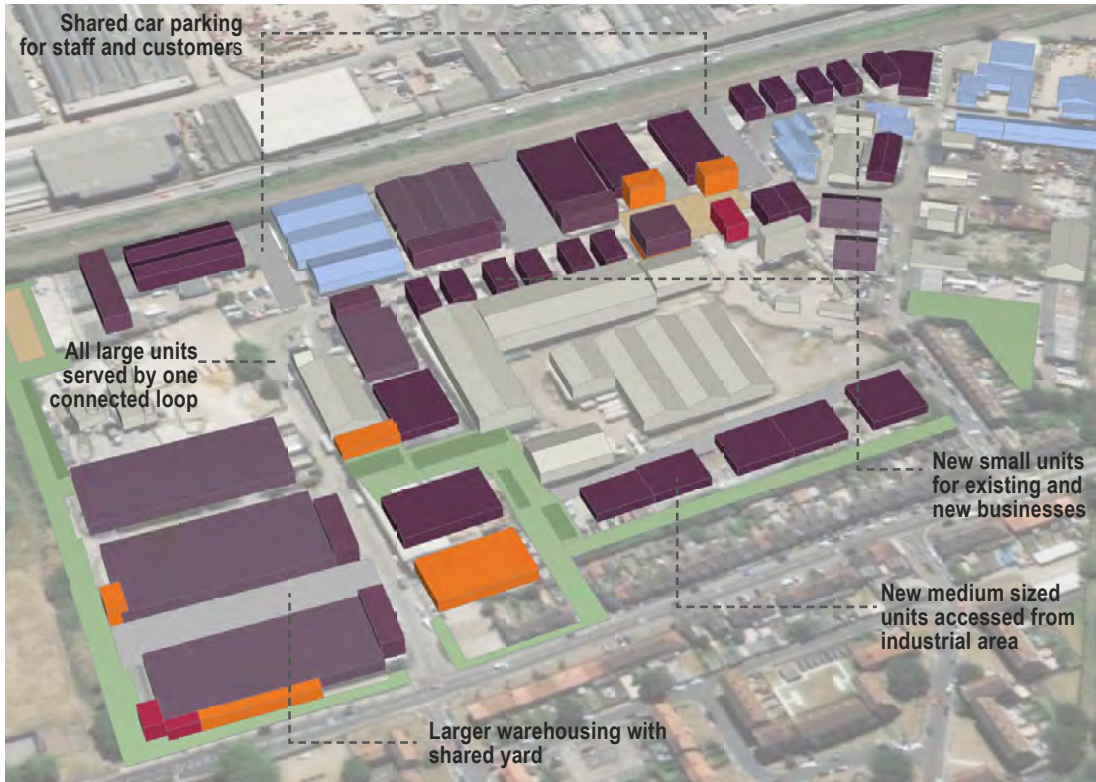


FIG. 10 - POTENTIAL MASTER PLAN STRATEGY FOR THE SITE





56%

Potential industrial intensification

86,000sqm

Estimated additional industrial, offices and supporting uses

1000-1200

Potential new residential units (80% independent of industrial access)



LAND USE MIX

- Residential / Co-Housing
- Flexible Units
- Communal Facilities
- Office / Co-Working
- Workshops / Maker Space
- Production / Warehousing
- Future Potential Change
- Long-term Retained Uses

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