

## Supplementary Information S3

Details of the vulnerability of each condition within each scenario have been deduced, based upon the relevant scenario characteristics [in brackets]. Where a cell is shaded green, the condition is considered to be broadly supported within the scenario. Yellow shading indicates that it may be supported in some circumstances but not others, whilst red indicates that this condition is unlikely to be supported. A full set of scenario characteristics can be found at [www.designingresilientcities.co.uk/downloads/Indicators-2.xls.zip](http://www.designingresilientcities.co.uk/downloads/Indicators-2.xls.zip).

**Table S3.** A scenario-based analysis of the vulnerability of the conditions required for an urban street tree to deliver its intended benefits.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Species is native	Policy is likely to require the use of native replacement trees on publicly owned land, but the legacy from decades of mixed planting may mean that non-native street trees are still abundant within this scenario. Tensions may occur where non-native species are better able to deliver certain social benefits [ <i>tree species; urban tree/hedge cover and arrangement, degree of policy protection for ecological features</i> ].	Street tree species may be changed depending on cultural and architectural fashion. In any case, but the legacy from decades of mixed planting means that non-native street trees are still abundant. [ <i>tree species, attitudes to consumerism</i> ].	Species suitable for coppicing are likely to be prioritised in urban woodlands and other treed areas with restricted public access. Practical concerns trump native species selection in poor areas, and aesthetic concerns predominate in rich areas [ <i>tree species, attitudes to consumerism</i> ].	Native trees are particularly valued, yet historic planting is likely to be retained and supplemented, rather than replaced [ <i>tree species</i> ].
Species is low VOC emitter	Policy is likely to require the use of low VOC replacement species on public land, but has limited influence on the nature of tree cover on private land [ <i>tree species; urban tree/hedge cover and arrangement</i> ].	Urban street tree species may be changed depending on cultural and architectural fashions. Risk of high VOC emitters being selected [ <i>tree species</i> ].	Species suitable for coppicing are encouraged in urban woodlands and other treed areas. Low VOC emission species are a not a priority in rich areas and not a consideration in poor ones [ <i>tree species</i> ].	Low VOC species are valued, but historic street tree planting is likely to be retained and supplemented, rather than replaced [ <i>tree species</i> ].

Table S3. *Cont.*

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Species is evergreen	<p>Policy is likely to require the use of best practice (appropriate replacement species and planting methods) for street trees on public land, but replacements on private land may be less optimal. A mix of tree species is encouraged, with social benefits a high priority. Conifers are valued for year round aesthetics and their shelter effect when planted on the windward side of buildings. However, winter shade may be a problem in high density areas and evergreens may therefore not be used <i>[tree species; planning policy; planning adherence]</i>.</p>	<p>Urban tree species may be changed depending on cultural and architectural fashion. Street trees may therefore be periodically replaced. No particular priority given to evergreen trees <i>[tree species]</i>.</p>	<p>Evergreen conifers are fast growing and may be preferred as a secure timber supply, but no clear preference for street tree type <i>[tree species]</i>.</p>	<p>Native tree species and mixed planting are valued, with evergreen species retained and planted in specific locations for winter shelter. Planting evergreen species is avoided in street canyons with high levels of particulates. However, much historic planting is retained rather than replaced <i>[tree species]</i>.</p>

Table S3. *Cont.*

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
A tree is still present	<p>The multiple potential benefits of trees are recognized by policy. However, tensions arise with conventional social values and development practice, where space is needed for other sustainability solutions such as built density gradients surrounding transport hubs, new public transport infrastructure or affordable housing. Lost trees are generally replaced and attempts are made to mitigate climate change related stresses. However, policy reach regarding trees on private land is minimal and ability to restrict tree imports (and associated pests) is limited [<i>total amount of green space; degree of policy protection for ecological features, attitudes to consumerism, civic activism</i>].</p>	<p>Although tree cover at the city scale is likely to be broadly retained, street trees are particularly vulnerable to removal where this reduces the risk of: damage to surface and buried infrastructure, nuisance, maintenance costs, or litigation risk and where development pressures are high (e.g. from road widening). The replacement of lost trees is unlikely [<i>quality of strategic planning for biodiversity conservation; urban tree/hedge cover and arrangement; urban tree/hedge cover and arrangement; km of road networks, attitudes to consumerism</i>].</p>	<p>Trees are vulnerable in the majority of the urban area, felled for fuel and timber in areas of extreme poverty and not replaced. Climate change related impacts would be broadly evident, as the high density urban form increases the risk of water and heat stress. However, some trees are valued, retained and protected in areas controlled by the rich, and risks from pests and diseases are moderate due to a reduction in international trade and focus on resource security [<i>urban tree/hedge cover and arrangement, attitudes to consumerism</i>].</p>	<p>Retention or replacement is likely in most locations as there is a greater awareness and value placed on urban trees and a willingness to accept some negative impacts that are difficult to avoid. A focus on locally grown planting stock and on design solutions to minimise heat and water stress result in limited impacts from climate change and pests/diseases [<i>total amount of green space; degree of policy protection for ecological features, attitudes to consumerism</i>].</p>

Table S3. Cont.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Lateral root spread is not excessive	<p>Policy mandates the use of best practice (appropriate replacement species, planting methods and mitigation) for street trees on public land, but replacements and retrofit on private land may be less optimal. However, there is a strong legacy of street trees with roots that damage built infrastructure [<i>tree species; planning policy; planning adherence</i>].</p>	<p>Most planting makes no provision to limit root growth, with trees simply removed if impacts occur or are deemed to be high risk. As most species exhibit lateral shallow root growth, impacts are likely [<i>planning policy; planning adherence</i>].</p>	<p>Root growth type is not a consideration, unless trees are adjacent to critical infrastructure. Water stress in poor areas is likely to encourage lateral root spread [<i>tree species; planning policy; planning adherence</i>].</p>	<p>Trees are valued, and historic planting is likely to be retained and supplemented, rather than replaced. Soil cells and root barriers are used for new planting in high risk areas or are retrofitted [<i>tree species; planning policy</i>].</p>
Tree is connected to a broader tree network	<p>Some strategic planting for social and ecological benefits takes place – improving functional connectivity, shading etc. However, the arrangement of trees may change locally, to accommodate shifts in the density of the built form. Coordination between planting on public and private land is poor [<i>urban tree/hedge cover and arrangement; urban dwelling density</i>].</p>	<p>No particular spatial arrangement for tree planting is pursued, although there is a reduction in trees adjacent to built or buried infrastructure to reduce potential for conflict [<i>total amount of green space; urban tree/hedge cover and arrangement</i>].</p>	<p>No particular spatial arrangement is pursued. Losses of tree in poor areas are widespread, as trees are felled for timber or fuel [<i>total amount of green space; urban tree/hedge cover and arrangement</i>].</p>	<p>Spatial arrangements for delivering strategic social and ecological benefits - (connectivity, shading etc.) are protected and implemented. However, local arrangements of trees may be changed to accommodate significant shifts in the density of the built form [<i>urban tree/hedge cover and arrangement; urban dwelling density</i>].</p>

Table S3. Cont.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Trees are maintained for wildlife	Pesticide treatment of trees on public land is generally restricted, with active intervention to support the delivery of ecological goals. However, few controls are imposed on tree maintenance within private land [ <i>urban tree/hedge cover and arrangement; degree of maintenance for ecological features; attitudes to consumerism</i> ].	Street trees are heavily managed for amenity, reducing the abundance of insects, fruits and microhabitats. Little management takes place to support wildlife [ <i>management of public realm/open spaces; cultural and historical associations; attitudes to consumerism; degree of maintenance for ecological features</i> ].	Maintenance for biodiversity only occurs if the tree is located in areas controlled by the rich, although it is unlikely to be a priority [ <i>management of public realm/open spaces; cultural and historical associations; attitudes to consumerism; degree of maintenance for ecological features</i> ].	Planning policies prohibit aggressive management practices that limit flowering, fruiting or insect productivity. High levels of public volunteering takes place [ <i>degree of maintenance for ecological features; degree of policy protection for ecological features</i> ].
Tree is not in a street canyon with a busy road	Street canyons are common, due to a strong policy push for higher built densities. However, road traffic and pollution in urban centres are much reduced [ <i>urban dwelling density; settlement pattern; passenger road travel</i> ].	Street canyons are not ubiquitous but still common, and increases are seen in vehicle numbers [ <i>passenger road travel</i> ].	An overall increase in busy road canyons due to high built densities in poor areas. Traffic in poor areas remains significant, although less abundant than the present [ <i>passenger road travel; settlement pattern</i> ].	Reduced vehicle usage compared to present and vehicular usage kept at the border of neighbourhoods where possible [ <i>passenger road travel; road and parking characteristics</i> ].

Table S3. *Cont.*

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Trees are maintained for amenity	<p>The removal of fruits and branches to improve public safety and amenity is permitted. Fallen leaves are generally cleared from pavements. However maintenance is balanced with the need to meet ecological goals and limited to areas where negative social impacts are clear [<i>degree of maintenance for ecological features; attitudes to consumerism</i>].</p>	<p>Although maintenance budgets are down overall, remaining trees are likely to be heavily managed for amenity, reducing the abundance of insects, fruits and microhabitats. Strong canopy and root control is undertaken for visual amenity and to reduce pavement damage. Management is less intensive in some poorer areas [<i>management of public realm/open spaces; cultural and historical associations; attitudes to consumerism; degree of maintenance for ecological features</i>].</p>	<p>Maintenance for amenity only occurs if the tree is located in areas controlled by the rich, where the situation is as for market forces [<i>management of public realm/open spaces; cultural and historical associations; attitudes to consumerism; degree of maintenance for ecological features</i>].</p>	<p>Unlikely. The public are willing to accept urban trees in a more natural state - untidy/dense canopy, fallen fruit and leaves [<i>degree of maintenance for ecological features; degree of policy protection for ecological features</i>].</p>

Table S3. Cont.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Consistent water supply for healthy growth	Variable. Policies to support trees for their environmental/social benefits generally succeed in protecting the infiltration of surface waters surrounding trees, with some supplementary watering undertaken for young or highly stressed trees. However, low soil moisture is still an issue in areas where built density has been increased and in locations where mains leakage has been reduced [ <i>water efficiency and recycling measures</i> ].	Varies with land-use and social context. Permeable paving, the protection of soil cells and supplementary watering is not considered a priority, yet likely in some wealthier areas. However, this may be balanced by a relatively low built density within this scenario and by losses from poorly maintained drainage and water distribution infrastructure [ <i>asset condition; water distribution system pattern at the city scale; impervious/pervious surfaces</i> ].	No maintenance budgets for trees in poor areas, combined with high levels of impervious surfaces and high built densities result in broad water stress. However, ageing infrastructure in poor areas may result in some gain in groundwater recharge and soil moisture from leaking mains water supplies and drainage systems. In the rich areas, some water will still be allocated for irrigation due to the aesthetic value of urban trees [ <i>asset condition; impervious/pervious surfaces; degree of policy protection for ecological features</i> ].	Retaining access to water for existing street trees is included successfully as a design criteria for redevelopment. Soil cells are protected and incorporated into SUDS whenever built density is increased locally [ <i>quality of strategic planning for biodiversity conservation; degree of policy protection for ecological features</i> ].
Root growth not substantially impeded	Often this is the case. However, high-density development and strong market forces occasionally result in a lack of space for roots, limiting tree growth. There is also a legacy of urban tree planting in insufficient soil volumes [ <i>planning policy; urban dwelling density; land recycling</i> ].	Not a planning priority, and root space may not be intentionally preserved. But this risk is limited as cities tend to expand outwards rather than infilling. Problems arise where land values encourage high density development. High levels of soil compaction may be a significant issue. [ <i>land use; land recycling</i> ].	Not a planning priority, and root space may not be intentionally preserved. But risk is limited as cities tend to expand outwards rather than infilling. Informal developments unlikely to significantly modify available sub-surface space [ <i>land use</i> ].	The potential impact of increased built density in some areas is mitigated through careful design and retrofit [ <i>quality of strategic planning for biodiversity conservation; degree of policy protection for ecological features</i> ].

Table S3. Cont.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Tree's access to light maintained	Generally this is the case. However, high-density development and strong market forces occasionally result in vegetation losing optimal solar access [ <i>planning policy; urban dwelling density; land recycling</i> ].	Not a planning priority, but generally a low risk due to a tendency for urban sprawl. Problems arise where land values encourage high density development [ <i>land use; land recycling</i> ].	Not a planning priority. A low risk in areas controlled by the rich due to lower population densities, but vulnerable in poor areas [ <i>land use</i> ].	Retaining access to light for trees is included successfully as a design criterion for redevelopment, particularly in high density areas [ <i>degree of policy protection for ecological features; planning policy</i> ].
Tree is large or mature	A policy of protection and maintenance increases the likelihood of tree survival to maturity, although some losses would be expected due to conventional development pressures and the pursuit of high-density development. Tree canopy may still be heavily pruned to reduce trapping of particulates within street canyons. [ <i>degree of policy protection for ecological features, urban dwelling density; settlement pattern</i> ].	The low development density of urban form gives a good chance for some trees to grow to maturity. But this is offset by a lack of policy protection and increased pollution stresses. Positive management varies spatially (reflecting income). [ <i>urban dwelling density; urban water pollution levels; degree of policy protection for ecological features; degree of maintenance for ecological features</i> ].	Large, mature trees are valued in rich enclaves, where they have the space and resources to grow. But trees are unlikely to reach maturity in the majority of the city where environmental stresses are compounded by felling and coppicing [ <i>degree of maintenance for ecological features, urban tree/hedge cover and arrangement</i> ].	Tree health and survival is good in this scenario. Trees are strongly protected in policy and valued by the general population [ <i>degree of maintenance for ecological features; degree of policy protection for ecological features</i> ].

Table S3. Cont.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
High canopy	<p>A policy of high protection and maintenance increases the likelihood of tree survival to maturity, yet removal and pollarding are common to reduce conflicts with infrastructure and to cope with the impacts of increased built density [degree of policy protection for ecological features].</p>	<p>Low density of urban form gives a good chance for tree to grow to maturity. But this is offset by lack of policy on protection and increased pollution stresses. Compaction of soils may stunt tree growth and positive management varies spatially (reflecting income). [urban dwelling density; urban water pollution levels; degree of policy protection for ecological features; degree of maintenance for ecological features]</p>	<p>Large, mature trees are valued in rich enclaves, where they have the space and resources to grow. But trees unlikely to reach maturity in poor areas where environmental stresses are compounded by felling and coppicing [degree of maintenance for ecological features, urban tree/hedge cover and arrangement].</p>	<p>Likely, as tree health is good in this scenario, therefore early death is unlikely. Historic planting is likely to be retained and supplemented, rather than replaced [degree of maintenance for ecological features; degree of policy protection for ecological features].</p>
Tree forms part of densely-vegetated barrier	<p>Environmental policy and enforcement is strong, but contiguity may be counteracted by pressure for high-density development and concerns over heavy shading [degree of policy protection for ecological features; dwelling density].</p>	<p>Vegetated areas highly vulnerable to redevelopment if the market conditions are right, yet sprawl is the dominant development pattern [degree of policy protection for ecological features].</p>	<p>Likely to be retained in rich areas where neighbourhood quality is considered important, but vulnerable to cutting for fuel or informal development in poor areas [degree of policy protection for ecological features].</p>	<p>Wooded areas valued by the community and likely to be retained, especially if mature [degree of policy protection for ecological features].</p>

Table S3. *Cont.*

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
No persistent noise	Spatially variable, but reduced compared to present due to reduced private vehicle usage [ <i>passenger road travel</i> ].	Spatially variable. Noisy in city centres and near major highways, but generally quiet in sprawling residential areas [ <i>road and parking characteristics; passenger road travel; settlement pattern</i> ].	Spatially variable, with an increase around busy roads in poor areas. But overall decrease in poor areas due to reduced traffic, and the speed at which that traffic can travel. Ssimilar to present day in rich areas (more use, but spread over larger area) [ <i>settlement pattern; passenger road travel</i> ].	Much less noise due to reduced private vehicle usage [ <i>passenger road travel</i> ].
No artificial lighting	Spatially variable - no major changes compared to present. Focus is on lighting to improve safety and perception of safety - pavements, roads, road crossings, residential areas [ <i>artificial external lighting quality; area of city that is artificially lit</i> ].	Spatially variable. Public street lighting provision is reduced in less affluent areas. The intensity and extent of lighting in private/more affluent areas is significantly higher for aesthetic and security reasons [ <i>artificial external lighting quality; area of city that is artificially lit</i> ].	Spatially variable, with an overall reduction in lighting intensity and extent. Public street lighting provision for the poor is virtually non-existent. The intensity and extent of lighting of areas controlled by the rich is significantly higher for security and to increase the perception of safety [ <i>artificial external lighting quality; area of city that is artificially lit</i> ].	Lighting extent and intensity is much less than present, as shifts in social values make it easier to remove street lamps to reduce carbon and ecological impacts to [ <i>artificial external lighting quality; area of city that is artificially lit</i> ].

Table S3. *Cont.*

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Tree blocks solar access to building	High energy efficiency is widespread and mandated in policy, including recommendations for passive heating methods. In practice passive solar principles are not always used due to the constraints placed on design, and trees may be allowed to block solar access [ <i>energy efficiency of building and urban morphology</i> ].	Solar gain not widely utilised for heating, with conventional methods used instead. Therefore no pressure or policy from an energy perspective to avoid trees blocking solar access. However, loss of natural daylight is generally not tolerated and trees are often removed. [ <i>energy efficiency of building and urban morphology</i> ].	Solar gain not widely utilised for heating, with conventional methods used instead. Therefore no social pressure or policy to avoid trees blocking solar access in rich areas. The poor have little influence in policy but localised social pressures may force removal of trees blocking desired solar access as heating is expensive [ <i>energy efficiency of building and urban morphology</i> ].	High energy efficiency is widespread, including passive heating methods. Trees used to block solar access in summer, but solar access will not be impeded at those times of year when it is most needed, e.g. by using deciduous trees to allow solar access in winter [ <i>energy efficiency of building and urban morphology</i> ].
Surrounding area built to high density	Increased density of the built form is pursued, with some negative implications for existing tree cover and its accessibility [ <i>urban dwelling density; settlement pattern</i> ].	Spatially variable, depending on land values [ <i>urban dwelling density; settlement pattern</i> ].	Spatially variable, with low densities in areas controlled by the elite and a high built density for the poor majority [ <i>urban dwelling density; settlement pattern</i> ].	Spatially variable, increased density in some areas permits a reduction in total built surface [ <i>urban dwelling density; settlement pattern</i> ].

Table S3. *Cont.*

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Tree does not overhang a road or pavement	Some strategic planting for social and ecological benefits takes place - connectivity, shading <i>etc.</i> However, arrangements of trees may change locally, to accommodate changes in the density of the built form. Trees may be removed where conflicts with social goals are inevitable (e.g. slipping hazard on pavement) [ <i>urban tree/hedge cover and arrangement</i> ].	A general reduction in trees adjacent to paved areas and roads to remove risks from litigation and also to reduce damage to adjacent built or buried infrastructure [ <i>urban tree/hedge cover and arrangement</i> ].	No particular spatial arrangement is pursued, although an overall reduction in tree cover inevitably reduces tree associated with roads and pavements [ <i>urban tree/hedge cover and arrangement</i> ].	Spatial arrangements for delivering strategic social and ecological benefits - (shading, connectivity, etc) are generally protected. An increase in tree cover for wildlife and recreation leads to greater lining of roads with trees (although overall numbers of roads are reduced). Social attitudes are more tolerant. [ <i>urban tree/hedge cover and arrangement; road and parking characteristics</i> ].
Low stress from air pollution	Air pollution is generally low [ <i>Particulate matter, NO<sub>2</sub>, ozone</i> ].	Spatially variable - generally higher than present and may be excessive in poor areas. May result in chronic stress, reducing tree growth, vitality and lifespan in most polluted areas, but acute stress leading to rapid deterioration of tree function unlikely [ <i>Particulate matter, NO<sub>2</sub>, ozone</i> ].	Spatially variable - generally higher than present and may be very high in poor areas where vehicles are poorly maintained. Chronic stresses reduce tree growth, vitality and lifespan in most polluted areas and periods of very high pollution resulting in acute stress leading to rapid deterioration of tree function may occur periodically [ <i>Particulate matter, NO<sub>2</sub>, ozone</i> ].	Air pollution is generally low [ <i>Particulate matter, NO<sub>2</sub>, ozone</i> ].

Table S3. Cont.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Low stress from soil pollution	Soil pollution is generally low [urban water pollution levels].	Spatially variable, depending mainly on land values [urban water pollution levels; planning policy].	Soil pollution may be moderate in parts of poor areas, where regulation and enforcement is lacking. Low soil pollution in rich areas [planning adherence; urban water pollution levels].	Soil pollution is generally low [urban water pollution levels].
Tree is physically accessible to public	Street trees are generally accessible to the public, but not always. Policy prioritises protection of existing tree cover over protecting public access. Private land remains largely inaccessible [urban dwelling density; settlement pattern; accessibility of public realm/open space].	Spatially variable, as access to private streets, parks and developments is increasingly restricted. Passive restriction occurs in public parks where path maintenance is much reduced [management of public realm/open spaces; provision of public realm/open spaces; public land ownership].	Spatially variable, but poor overall. If trees are located in areas managed by the rich, the rich will have access (although the poor majority will be excluded). The few remaining street trees in poor areas are likely to be accessible. [accessibility of public realm/open spaces; quality of public realm/open spaces].	Retaining public access to street trees is included successfully as a planning condition for redevelopment, particularly in high density areas [accessibility of public realm/open spaces; total amount of greenspace].
Tree is growing in a pervious surface	No major changes to present day. Trees in green spaces have good access to soil and natural watering. Paving below street trees is removed where possible, as long as trip hazard to pedestrians is unlikely. Policy recognises the value of street trees as a means of mitigating surface water [degree of maintenance for ecological features; degree of policy protection for ecological features].	Variable. In areas of high land value, gentrification results in the paving of surfaces below trees. Watering systems and root barriers are installed if required, with surface water being used for tree watering in areas of high flooding risk. Such retrofit technologies are not applied in less affluent areas [degree of maintenance for ecological features; provision of public realm/open spaces].	Spatially variable. Rich areas as for market forces. In poor areas, the area of pervious surface will increase as informal developments are likely on compacted soil and therefore pervious, whilst a poor maintenance of existing infrastructure will increase the perviousness of the surface. In these areas, the surface will be vegetated where it is not in heavy use [asset condition].	Street trees are generally located within unpaved areas. Trees are valued, given space to grow and recognised as a means of mitigating excess surface water [degree of policy protection for ecological features; road and parking characteristics].

Table S3. Cont.

Necessary Conditions	Vulnerability of Necessary Conditions within Each Scenario			
	Policy Reform	Market Forces	Fortress World	New Sustainability Paradigm
Tree is visually accessible to public	Visual access is generally good. Policy supports redevelopment that retains/enhances local identity. However, the form of high-density development may still reduce visual access, as other social goals are prioritised [ <i>urban dwelling density; settlement pattern; accessibility of public realm/open spaces</i> ].	Spatially variable. The business case for visual access to urban trees is rarely made. However, as urban expansion rather than densification is preferred, views of street trees are rarely obscured [ <i>urban dwelling density; settlement pattern</i> ].	Spatially variable. If trees are located in areas managed by the rich, the majority of the public (poor) will have limited visual access (although the rich will have excellent access) [ <i>accessibility of public realm/open spaces; quality of public realm/open spaces</i> ].	Retaining public visual access to street trees is included successfully as a design criteria for redevelopment, particularly in high density areas [ <i>accessibility of public realm/open spaces; total amount of greenspace</i> ].
People are present nearby	A higher built density increases the probability of people being in close proximity to trees [ <i>settlement pattern; urban dwelling density; land recycling</i> ].	Population density decreases. In some cases the market might result in a depopulation of an area or major change in land use [ <i>urban population density; land recycling; planning policy</i> ].	Population density increases in most (poor) parts of the city. [ <i>urban dwelling density</i> ].	Spatially variable, as some areas increase significantly in built density whilst others are converted to semi-natural open space [ <i>urban dwelling density; settlement pattern; road and parking characteristics</i> ].
Large-scale tree-cover across urban area	No major changes in tree cover at the city scale, but numbers of trees may change locally, to accommodate significant changes in the density of the built form [ <i>total amount of green space</i> ].	Little change in overall tree cover at the city scale, however this masks a reduction in planned tree coverage in streets/parks/gardens, and an increase in scrub woodland on abandoned brownfield sites [ <i>total amount of green space; urban tree/hedge cover and arrangement</i> ].	Decrease at a city scale, as trees outside the enclaves are quickly cut for fuel as soon as they are large enough. Tree cover in areas controlled by the rich is similar to present [ <i>total amount of green space; urban tree/hedge cover and arrangement</i> ].	Increase in total tree cover at the city scale. However, it is possible that numbers of trees may change locally, to accommodate significant changes in the density of the built form [ <i>total amount of green space</i> ].