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Potential Gypsy & Traveller Site
Station Road, Newbridge, Bath

Preliminary Land Quality Risk Assessment

SLR Ref: 402-00934-00021-001

July 2012

**Bath & North East
Somerset Council**

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1.0 INTRODUCTION

1.1 Background

SLR Consulting Ltd (SLR) was commissioned by Bath and North East Somerset Council (B&NES) in July 2012 to undertake a Preliminary Land Quality Risk Assessment (PLQRA) of Land at Station Road, Newbridge, Somerset BA1 3DX (the Site) (Drawing 1).

SLR understands that the PLQRA is required in connection with the potential future redevelopment of the Site by Bath and North East Somerset Council as a gypsy and traveller site.

The information obtained from this assessment has been used to develop a preliminary conceptual model of potential risks to human and environmental receptors. This conceptual model examines the potential *contaminant-pathway-receptor* linkages in relation to identified or potential contamination issues at the Site.

1.2 Proposed Development

The future layout of the Site is currently unknown. That said, the proposals include the demolition of all buildings on Site and the construction of a permanent travellers site, which according to publications by the Showmen's Guild of Great Britain¹ and the Department of Communities & Local Government², should comprise hard surfaced pitches, a surfaced roadway, a children's play area / recreational area, limited landscaping, an amenity building, a site office and a storage and maintenance area.

1.3 Objectives

The objective of this PLQRA is to establish if there is any evidence (from a site inspection and review of existing data) of significant subsurface contamination from past or present activities on and adjacent to the Site which could give rise to unacceptable risks given the proposed redevelopment. The report will also act as one form of initial environmental due diligence, should Bath and North East Somerset Council decide to purchase the Site or enter into a long-lease prior to redevelopment.

1.4 Scope of Work

The scope of work for the PLQRA was devised by SLR, it included:

- a site walk over inspection to identify and record on and off site land uses, potential areas of concern with respect to soil and groundwater contamination and potential contaminants of concern;
- a review of geological and hydrogeological data for the property;
- analysis of historical maps to establish the history of the property as well as past on and off site potentially contaminative activities;
- collection and analysis of environmental data from a proprietary database; and
- reporting.

¹ Travelling Showpeople's Sites – A Planning Focus; Model Standard Package; The Showmen's Guild of Great Britain; Revised September 2007

² Designing Gypsy and Traveller Sites – A Good Practice Guide; Department of Communities and Local Government; May 2008

1.5 Data Sources

This report has been produced following consultation with the sources of information summarised in Table 1-1.

**Table 1-1:
 Information Sources**

Information Type	Source
General topography and Site setting	Google Earth
	www.streetmap.com
Site and background information	GroundSure Historical Ordnance Survey Map Extracts EMS_173161_255434, purchased 19 th July 2012 (Appendix A).
	GroundSure GeolInsight Report, EMS_173161_255435, purchased 19 th July 2012 (Appendix B).
	GroundSure EnviroInsight Report, EMS_173161_255436, purchased 19 th July 2012 (Appendix C).
Hydrogeology and Geology	Environment Agency (EA) website.
	British Geological Survey (BGS) Sheet 265, Bath, Solid & Drift Edition, 1:50,000 scale.
Proposed Layout	Travelling Showpeople’s Sites – A Planning Focus; Model Standard Package; The Showmen’s Guild of Great Britain; Revised September 2007 Designing Gypsy and Traveller Sites – A Good Practice Guide; Department of Communities and Local Government; May 2008 Example Site layout plans are presented in Appendix E.

2.0 SITE DETAILS, SETTING AND HISTORY

2.1 Site Vicinity Description

Table 2-1 summarises the property details. Information has been derived from Ordnance Survey (OS) mapping and a Site walkover inspection undertaken on 26th July 2012. Photographs of the Site are provided in Appendix D.

**Table 2-1:
 Site Details**

Address	Land at Station Road, Newbridge, Bath, Somerset, BA1 3DX		
Site Location	The Site is located on to the east of Station Road, approximately 2km to the west of Bath city centre, and is situated in a mixed residential and commercial/industrial setting. At the time of the inspection the Site access gate was blocked by parked cars.		
Site Description	<p>The Site is broadly rectangular in shape and occupies an area of c.0.3ha. The northern half of the Site and the southern site boundary (c.50% of the Site area) comprise wooded areas, while the southern half of the Site (c.50% of the Site) comprises a former yard area.</p> <p><i>Former Yard Area:</i> The former yard area is tarmac surfaced, which is generally in a poor condition with vegetation growing present in cracks. The north, southeast and southwest of the yard area is demarked by a c.1.5m high fence constructed of steel uprights and railway sleepers. The south of the yard area is demarked with a c.1.5m high chain link fence. At the eastern end of the yard area a large (c.1.5m high) pile of rubble and waste material is present. The pile was vegetation covered and comprised concrete, bricks, stone, metal, plastic and soil. It is possible that the majority of this material originates from the demolition of on Site structures, but some material appears to have been fly-tipped (e.g. sofa, garden waste, bathroom suite, gas bottles, road works signage, doors, windows, etc.).</p> <p><i>Wooded Areas:</i> The wooded area is c.1m higher than the yard area and the properties to the north. The 'bank' is likely to comprise Made Ground. Furthermore, potential asbestos containing material (i.e. fragments of cement bound sheeting) was identified on the surface. The northern boundary of the northern wooded area is generally demarked with a combination of wooden and chain link fences and garages. Some areas of the northern site boundary and the whole of the western boundary of the wooded area are open to public access. A path was present from the western boundary to the eastern boundary of the wooded area. Limited evidence of fly-tipping was present (e.g. garden waste, timber, tyres, etc.).</p>		
Recent Activities	Site	Anecdotal evidence suggests that the Site has been disused for over 12 years, before which it was a transport yard (c.1980s-1990s) and a coal yard (1970s).	
Building Construction	At the time of the inspection there were no temporary or permanent structures on Site.		
Above Ground and Underground Fuel Storage Tanks	There was no evidence of historic or current underground or above ground fuel storage tanks on Site.		
Drainage	Two surface water gullies were identified during the Site inspection; their location is shown on Drawing 2.		
Vegetation	Vegetation is generally limited to the northern half of the Site and the southern Site boundary, and comprises mixed species of mature and semi-mature trees with ivy ground cover.		
Surrounding Land Use	North	A residential property and garages, beyond which is Ashley Avenue and further residential properties.	
	West	Station Road, beyond which are residential properties and a cycle	

track.

- South Mixed commercial and industrial properties (including a veterinary practice, a gym, a welding shop, and a Plumb Centre), beyond which is Locksbrook Road and further commercial / Industrial properties (Herman Miller).
- East Wooded open land (northeast) and a B&NES Transport Depot (southeast), beyond which are further commercial / industrial properties.

2.2 Physical Site Setting

A summary of the main physical features of the Site are given in Table 2-2.

**Table 2-2:
 Summary of Physical Site Features**

Geography and Geology	Gradient	The yard area is generally flat, while the northern wooded area slopes gently down to the west. The wooded southernmost section of the Site comprises a steep (>65°) slope down to commercial / industrial properties.
	Elevation	The Site has an elevation of approximately 20m AOD
	Made Ground	The Site and the immediate surrounds are not recorded as infilled ground. However, evidence of Made Ground was present in the northern wooded area, during the Site inspection.
	Superficial Drift Geology	River Terrace Deposits, comprising sand and gravel of high to very high permeability, are recorded beneath the Site. These are likely to be underlain by Alluvium, comprising clay, silt sand and gravel.
	Solid Geology	The superficial geology is underlain by the Langport Member and Blue Lias Formation, comprising interbedded mudstone and limestone.
	Radon Gas	The Site is in a Radon Affected Area, as between 10-30% of properties are above the Action Level. Therefore, full radon protective measures are required for new standard-build residential properties or extensions to existing ones (Standard towable caravans would not need protection).
	Mining, and Ground Stability Hazards	The Site is not in a recognised area affected by underground coal mining activity. There are negligible/very low ground stability hazards from shrinking / swelling clay, landslides, compressible or collapsible deposits and running sands. There is low potential for ground dissolution soluble rocks.
Hydrology	Surface Water and River Network	The nearest Surface water feature is The River Avon, which is located 200m south and classified as a Primary River. The River Avon flows towards the west.
	Flood Risk	The Site lies outside areas indicated to be Zone 2 & 3 Floodplains. However, the land adjacent to the southern Site boundary (at the base of the slope) is classified a Zone 2 Floodplain (i.e. annual probability of flooding from rivers is greater than 0.1% but less than 1%).
	Surface Water Abstractions	There are five surface water abstractions within 1km of the Site. The records indicate that four relate to hydraulic testing and one relates to laundry use. The closest down-gradient abstraction point is c.380m southwest along the River Avon.

Hydrogeology	Aquifer	The River Terrace Deposits and the underlying solid geology are classified as Secondary A Aquifers. Groundwater is likely to be shallow (<5m below ground level) and is inferred to flow towards the south / southwest towards the River Avon
	Groundwater Abstractions	There are no groundwater abstraction licences or potable groundwater abstractions within 1km of the Site.
	Source Protection Zones	There are no groundwater source protection zones within 500m of the Site.

2.3 Environmental Search Data

The Environment Agency web site has been consulted with regard to groundwater abstractions, Source Protection Zones and former landfill sites. The GroundSure EnviroInsight data was also reviewed to gain publicly available environmental data for the Site and its immediate vicinity. The MAGIC website (Multi-Agency Geographic Information for the Countryside) was also consulted regarding any ecologically designated sites within 2km of the subject property.

A copy of the GroundSure information obtained by SLR is contained in Appendix C and a summary of the search information is provided below:

- Sites Determined as Contaminated Land – the Site is not determined as Contaminated Land, however, there is one site determined as Contaminated Land under Part IIA EPA 1990 located c.480m northwest. The determination relates to the presence of a small hotspot of benzo(a)pyrene within a former quarry site (this is too distant to be of significance);
- Discharge consents – there are thirty-one consents within 500m of the Site. The majority of the consents relate to the discharge of sewer storm overflow in to the River Avon. The closest consent is located c.160m south of the Site;
- Radioactive Substances Licences – there are two licences within 500m of the Site. The closest relates to Bath Panel Beating Co. Ltd, located c.360m east of the Site;
- EA recorded pollution incidents – there are 5 records on the National Incidents Recording System within 250m of the Site. The majority relate to minor impacts (Category 3) to water from sewage materials, however, the closest is located c.120m east of the Site and relates to a minor impact (Category 3) to land from oils and fuels;
- Landfill sites – There are no current landfill sites within 1.5km of the Site, but there are seven historical landfills site within 1.5km of the Site. The closest site is located c.545m south of the Site (on the far side if the River Avon), at the playing field off Victoria Crescent, Twerton and accepted household;
- Licensed waste management / treatment facilities – there is one record of a non-operational waste transfer Site within 500m of the Site. The record relates to a putrescible transfer station located c.445m east. There are five current facilities recorded within 1.5km of the Site. The closest relates to a household, commercial and industrial waste transfer station located c.680m;
- Ecological Designations – There are five ecologically designated sites within 2km of the Site. With the exception of an on Site designation for a Nitrate Sensitive Area, the closet designation relates to Carrs Woodland, a Local Nature Reserve, located c.700m west (down-gradient).

Groundwater and surface water abstraction data was discussed in Section 2.2.

2.4 Site History

The following section presents a summary of the Site's history from a review of OS map extracts. The age and general type of activity and land use can often be determined from the type and layout of structures depicted on OS maps. However, specific elements of site operations cannot normally be determined from such extracts. Large scale (1:2,500 and 1:10,560) historical map extracts were reviewed for selected years between 1883 and 2012. A summary of the findings is given in Table 2-3 and the OS maps provided by GroundSure are included in Appendix A.

**Table 2-3:
 Site History Summary**

Map Dates	Description
1883-8	<p>On-site: A steep slope is present in the South of the Site. There are two small rectangular structures and a weighing machine at the top of the slope. The area around the structures and weighing machine appears flat and undeveloped (possibly a yard area). The Mangotsfield and Bath Branch railway crosses the northern half of the Site east-west.</p> <p>Off-site: The south and north of the Site are bound by large residential properties set in orchard gardens. Station road is present to the west of the Site, beyond which to the southwest are residential properties. Weston Station is present 55m northeast of the Site. Bath Gasometer and Bath Gas Works are present c.500m east and c.400m northeast respectively. Both are served by the Mangotsfield and Bath Branch Line. Quarries are present c.300m west and c.450m northwest. A cement works is present c.350m east and a tannery and woollen Mills are present c.200m south and southwest, on the southern bank of the River Avon. The Great Western Railway runs east-west c.350m south of the Site.</p>
1902-4	<p>On-site: With the exception of a third small structure in the southwest corner of the Site, there are no significant changes on Site.</p> <p>Off-site: Significant residential development has occurred in the orchard garden to the north of the Site. Bath Gas Works has expanded to the east. The quarries are marked as 'old'.</p>
1930-9	<p>On-site: No significant changes to the Site.</p> <p>Off-site: A telephone exchange, saw mill and further small industrial / commercial buildings are present adjacent to the southern Site boundary. Further gasometers are present at Bath Gas Works.</p>
1950-1951	<p>On-site: No significant change on Site.</p> <p>Off-site: With the exception of a large coal yard c.70m south of the Site, there are no significant changes to the immediate surrounds.</p>
1960-66	<p>On-site: The weighing machine is no longer marked and the south of the Site is labelled coal yard.</p> <p>Off-site: Weston Station is marked 'disused'. A large warehouse is present adjacent to the southern Site boundary and a box factory is present adjacent to the southeast of the Site and an engineering works is present c.60m southeast, in the east of the former coal yard. Bath Gas Works has expanded further east.</p>
1971-3	<p>On-site: The Mangotsfield and Bath Branch line in the north of the Site is marked 'dismantled railway'.</p> <p>Off-site: With the exception of a car breaker's yard c.175m southwest of the Site, there are no significant changes to the immediate surrounds.</p>
1982	<p>On-site: No significant changes on Site.</p> <p>Off-site: A commercial / industrial building is present in the west of the coal yard.</p>
1991-5	<p>On-site: The site is longer marked as 'coal yard, but by 1995 the Site is marked as 'depot', no other significant changes on Site.</p> <p>Off-site: Blocks of garages are present adjacent to the northern Site boundary. The box factory has been demolished and redeveloped for further commercial / industrial</p>

	buildings. The surroundings generally appear in their current configuration.
2002-2012	On-site: No significant changes. Although not present during the Site inspection, the three structures are still marked on Site. Off-site: No significant change.

In summary, the Site was developed prior to 1883, at which time the Mangotsfield and Bath Branch railway (a potential contaminative land use) was present in the north of the Site and the south of the Site appears to be used as a yard area with only small structures present. The Site generally remained unchanged until the early 1960s, when a coal yard (a potential contaminative land use) was present in the south of the Site. By the early 1970s the branch railway is no longer present and by the mid-1990s the Site is labelled a depot (a potential contaminative land use). The Site has remained disused for approximately the last 12 years.

A gas works, a cement works, a tannery, an engineering works, and box factory and further industrial / commercial land uses have been present in the vicinity of the Site. Although these are all considered as potentially contaminative land uses, they are too distant (greater than 300m away) or down-gradient of the Site and not considered to be of direct significant concern. However, the presence of the railway line on Site links the site to a number of potentially contaminative land uses (i.e. gas works waste may have passed through the Site).

3.0 OUTLINE CONCEPTUAL MODEL AND PRELIMINARY RISK ASSESSMENT

3.1 Land Quality Risk Assessment

The normal procedure for assessing land dictates that potential contaminants, pathways and receptors should be considered within the context of pollutant linkages. An evaluation of the risks associated with each linkage should drive decisions regarding the status of the land as contaminated, uncontaminated or requiring further investigation.

The information summarised in the previous sections has been used to identify the likely contaminant sources, receptors and pathways present at the Site. The elements of the conceptual model built in the table that follows, are used in Sections 3.3, 3.4 and 3.5 to consider the potential pollutant linkages, their significance and acceptability.

The 2012³ statutory guidance for Part 2A of the Environmental Protection Act 1990 (EPA 1990), defines a contaminant, a pathway and a receptor as follows:

- **Contaminant:** “a substance which is in, on or under the land and which has the potential to cause harm to a relevant receptor, or to cause significant pollution of controlled waters”;
- **Pathway:** “one or more routes or means by, or through, which a receptor: (a) is being exposed to, or affected by, a contaminant; or (b) could be exposed or affected”, and
- **Receptor:** “something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters”.

When considering the contaminants, receptors and pathways relevant to this Site, SLR has been mindful of the proposed use of the Site as a traveller site with limited soft landscaped areas – production of vegetables and fruit is not anticipated.

3.2 Preliminary Conceptual Site Model

The information summarised in the previous sections has been used to identify the likely contaminant sources, receptors and pathways present at the Site. The elements of the conceptual model built into Outline Conceptual Site Model Table 3-1, overleaf, have been used to consider the potential pollutant linkages (PPL), their significance and acceptability. Given the proposed use the most significant PPL appear to be:

- PPL 1:** *Ingestion, Inhalation and dermal contact with soil and / or soil dust by future site occupants and visitors.*
- PPL 2:** *Leaching of contaminants (if present), from the Made Ground on Site, to underlying groundwater.*
- PPL 3:** *Lateral migration of contaminated groundwater (if present) impacting surface waters (likely to be in hydraulic connectivity).*
- PPL 4:** *Accumulation of radon gas within building voids and inhalation of radon gas by future site occupants inside proposed structures on Site.*

³ April 2012 - publication of the latest Contaminated Land Statutory Guidance by Defra.

Table 3-1 Conceptual Site Model

Source / AOC⁴	Conceptualisation	
Historic Mangotsfield and Bath Branch Line (pre-1883 – early 1970s)	The branch line was present from pre-1883 until the early 1970s and linked the site to Bath Gas Works and other potentially contaminative land uses. As such, there is a medium to high likelihood of the branch line representing a significant potential source of on Site contamination.	
Made Ground in the North of the Site	Made Ground of unknown composition is likely to be present in the north of the Site as a result of backfilling the branch line. During the Site inspection potential asbestos containing material (ACM) was identified on the surface. As such, there is a medium to high likelihood of the Made Ground representing a significant potential source of on Site contamination.	
Use of the south of the Site as a coal yard and depot	Anecdotal information suggests that following the use of the Site as a coal yard it was used as a transport depot. There is a medium likelihood of these activities representing a significant potential source of on Site contamination. This likelihood could be increased, given that the Site is unlikely to have been hard surfaced when used as a coal yard.	
Waste stored / fly-tipped on Site	Given the presence of hard surfacing beneath the rubble pile and the likely relatively inert nature of the material tipped (i.e. possibly Site derived demolition waste), there is a low likelihood of it representing a significant potential source of on Site contamination.	
Radon Gas	The Site lies within an area which requires full radon protective measures to be installed in all new traditionally-built dwellings, or extensions to existing dwellings. As the proposed Site layout may include a Site managers building, there is a medium to high likelihood of radon gas representing a significant potential source of contamination.	
Other potentially contaminative off-site land-uses.	Historic potentially contaminative off Site land uses include a print works, sewage works, two bleach works, train lines and gravel pits. Given that these are greater than 300m from the Site or down gradient of the Site, they are unlikely to represent a significant potential source of direct on-site contamination. However, gas works waste may have been brought onto Site via the railway (see above).	
Receptor	Description	Sensitivity
Future site users	Site construction workers and future occupants and visitors to the Site.	High
Neighbours	Adjacent sites comprise residential (up gradient) and commercial / industrial (down gradient).	Medium
Buildings / Services	Future new buildings onsite, new service corridors at shallow depth	Low / Medium
Groundwater	Site underlain by Secondary A Aquifer at shallow depth but outside groundwater SPZ. There are no potable or private groundwater abstractions within 1km of the Site.	Medium
Surface waters	The River Avon is present c.200m south of the Site, with a surface water abstraction located c.380m down gradient used for hydraulic testing.	Medium / High
Ecosystems	Five ecologically designated sites within 2km of the Site; the closest, a Local Nature Reserve, is located c.700m down gradient of the Site.	Low / Medium
Property (Flora / Fauna)	Crops will not be grown on Site or on adjacent down gradient properties.	Low
Pathway	Linkage	Probability
Dermal contact with soil and/or building dust	Possible pathway following redevelopment. However, probability reduced in the south of the Site given the importation of soil likely required to provide a suitable growing medium.	Low

⁴ AOC – Area of Concern

Ingestion		Ingestion of contaminated vegetables and soil attached to vegetable is an unlikely pathway from on site source given that vegetables are not proposed to be grown on Site.	Low
		Ingestion of soil and ingestion of building dust is a possible pathway following redevelopment. However, probability reduced in the south of the Site given the importation of soil likely required to provide a suitable growing medium.	Low
Inhalation (not including vapours or gases)		Inhalation of fugitive soil and/or building dust is possible pathway following redevelopment. However, probability reduced in the south of the Site given the importation of soil likely required to provide a suitable growing medium.	Low
Vapour / gas migration into buildings / outdoors	Onsite	Possible pathway following redevelopment – Potential for hazardous ground gases to migrate reduced by requirement for full radon protection in all new dwellings.	Low to Medium
	Offsite	Unlikely pathway from on site source.	Low
Ground to controlled waters	GW	Possible pathway – migration of potential contaminants from the Made Ground in the north of the Site.	Medium
	SW	Possible pathway – Groundwater likely to be in hydraulic connectivity with surface water. Contaminants could move via lateral migration of contaminated groundwater.	Medium
Pollutant Linkages by Exposure Pathway	Assessment		
Onsite human health	Possibly Present: Although there is a potential for direct contact / ingestion of soils by site users in the north of the Site, the presence of hard surfacing and/or imported soils (i.e. to provide a suitable growing medium) in the south of the Site will reduce the probability of the pathway occurring. Possibly Present: Inhalation pathways by future Site users within new buildings (i.e. radon gas)		
Offsite human health	Unlikely to be Present: Health risks may be present off-site, but contamination source not likely to originate on Site.		
Buildings / services	Possibly Present: Limited to service runs and accumulation of radon gas.		
Groundwater	Possibly Present: Medium sensitivity setting, but potential source limited to the Made Ground in the north of the Site.		
Surface water	Possibly Present: Lateral migration of contaminated groundwater (if present) could impact surface water, which is likely to be in hydraulic connectivity.		
Ecosystems	Unlikely to be Present: Medium sensitivity setting, but no significant potential pathways have been identified.		
Property (flora / fauna)	Unlikely to be Present: Low to medium sensitivity setting, but no significant potential pathways have been identified.		
Risk to Human Health	LOW to MEDIUM		
Risk to the Environment	MEDIUM		

3.4 Preliminary Risk Assessment

In the context of Part 2A inspection, a preliminary risk assessment must focus on whether the land meets the definition of Contaminated Land as laid out in the Environmental Protection Act 1990 (EPA 1990) and its statutory guidance. Within Part 2A of the EPA 1990, Contaminated Land is defined as:

“any land which appears to the local authority in whose area it is situated to be in such condition by reason of substances in, on or under the land, that:

-significant harm is being caused or there is a significant possibility of significant harm being caused; or

-pollution of Controlled Waters is being, or is likely to be, caused”.

When assessing the significance of the identified pollutant linkages against the definition of contaminated land one must also consider the information needed to complete the assessment to the required level of confidence. In this case, the types of uncertainties that affect the evaluation of the Site include, but may not be limited to:

- Lack of evidence to support suspected cases of harm;
- Lack of evidence to support suspected cases of pollution;
- Insufficient knowledge of any contaminant location and distribution;
- Insufficient characterisation of ground conditions;
- Insufficient knowledge of land use and exposure characteristics; and
- Insufficient information to validate pathways.

3.5 Potentially Unacceptable Risks

Having considered the above criteria including the uncertainties and gaps in the conceptual model, it is apparent that the Preliminary Land Quality Risk Assessment (using desk study information and a site inspection alone) has provided a reasonable level of confidence that the subject Site and immediate surrounds have got a history which includes significant potentially contaminative activities including a railway line, a coal yard, a transport depot and potentially infilled ground.

Until the detailed redevelopment proposal is known, including information relating to the presence or absence of landscaped areas, the significance of the PPLs relating to risk to human health cannot be fully assessed.

However, the potential exists for Made Ground to be present in the north of the Site, as a result of backfilling the branch line, and in the vicinity of the coal yard. The composition (chemical and physical) of the Made Ground is unknown and until proven otherwise is considered a potential source of contamination.

Overall, based upon the available information and the assumption of the inclusion of limited landscaped areas containing imported soils in the Site layout, it is considered that there is a low to medium risk of significant impact upon the Site and its users (i.e. occupants and visitors) and a medium risk of significant impact upon the environment (predominantly groundwater) from potential contamination beneath the Site.

4.0 SUMMARY AND CONCLUSIONS

The Site comprises c.50% hard surfacing (former yard area) and c.50% permeable features (vegetation areas). There are no permanent or temporary structures on Site.

B&NES are considering the Site as a potential future gypsy and traveller site. The exact layout of the Site is currently unknown, but for the purpose of this assessment will comprise hard surfaced pitches, a surfaced roadway, a children's play area / recreational area, limited landscaping, an amenity building, a site office and a storage and maintenance area.

Potentially contaminative on Site activities are limited to the Mangotsfield and Bath Branch line and associated backfilling (present in the north of the Site between pre-1883 and the mid-1970s), a coal yard (present in the south of the Site between 1960s and 1990s) and a transport depot (present in the south of the Site during the 1990s). Therefore, the potential for localised soil and groundwater contamination cannot be discounted. Furthermore the composition (chemical and physical) of the backfilled material is unknown and until proven otherwise is considered a potential source of contamination.

Potentially contaminative off-site land-uses have included a gas works, a cement works, a tannery, an engineering works, and box factory, along with further industrial / commercial land uses. Given that these are all greater than 300m from the Site and/or down gradient of the Site, they are unlikely to represent a significant potential source of direct on-site contamination. However, the presence of the branch line on Site links the Site to a number of potentially contaminative land uses (i.e. gas works waste may have passed through the Site).

Given the above, the following four potential pollutant linkages are considered to be present on Site:

- PPL 1:** *Ingestion, Inhalation and dermal contact with soil and/or soil dust by future site occupants and visitors.*
- PPL 2:** *Leaching of contaminants (if present), from the Made Ground on Site, to underlying groundwater.*
- PPL 3:** *Lateral migration of contaminated groundwater (if present) impacting surface waters (likely to be in hydraulic connectivity).*
- PPL 4:** *Accumulation of radon gas within building voids and inhalation of radon gas by future site occupants inside future structures on Site.*

Overall, based upon the available information and the assumption of the inclusion of limited landscaped areas containing imported soils in the Site layout, it is considered that there is a low to medium risk of significant impact upon the Site and its users (i.e. occupants and visitors) and a medium risk of significant impact upon the environment (predominantly groundwater) from potential contamination beneath the Site.

Confirmatory testing is recommended to: a) refine the conceptual model; and b) establish if significant soil and groundwater contamination exists (especially in the north of the Site and within any proposed landscaped areas in the south of the Site).

Testing would likely comprise the combination of investigating near-surface soils (<0.5m bgl) using hand-pits and investigating deeper soils (<6m bgl) and groundwater using window sampling.

5.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client.

Information reported herein is based on the interpretation of data collected from various sources which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Bath and North East Somerset Council; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

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Bath & North East Somerset Council



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 ROWDEN LANE
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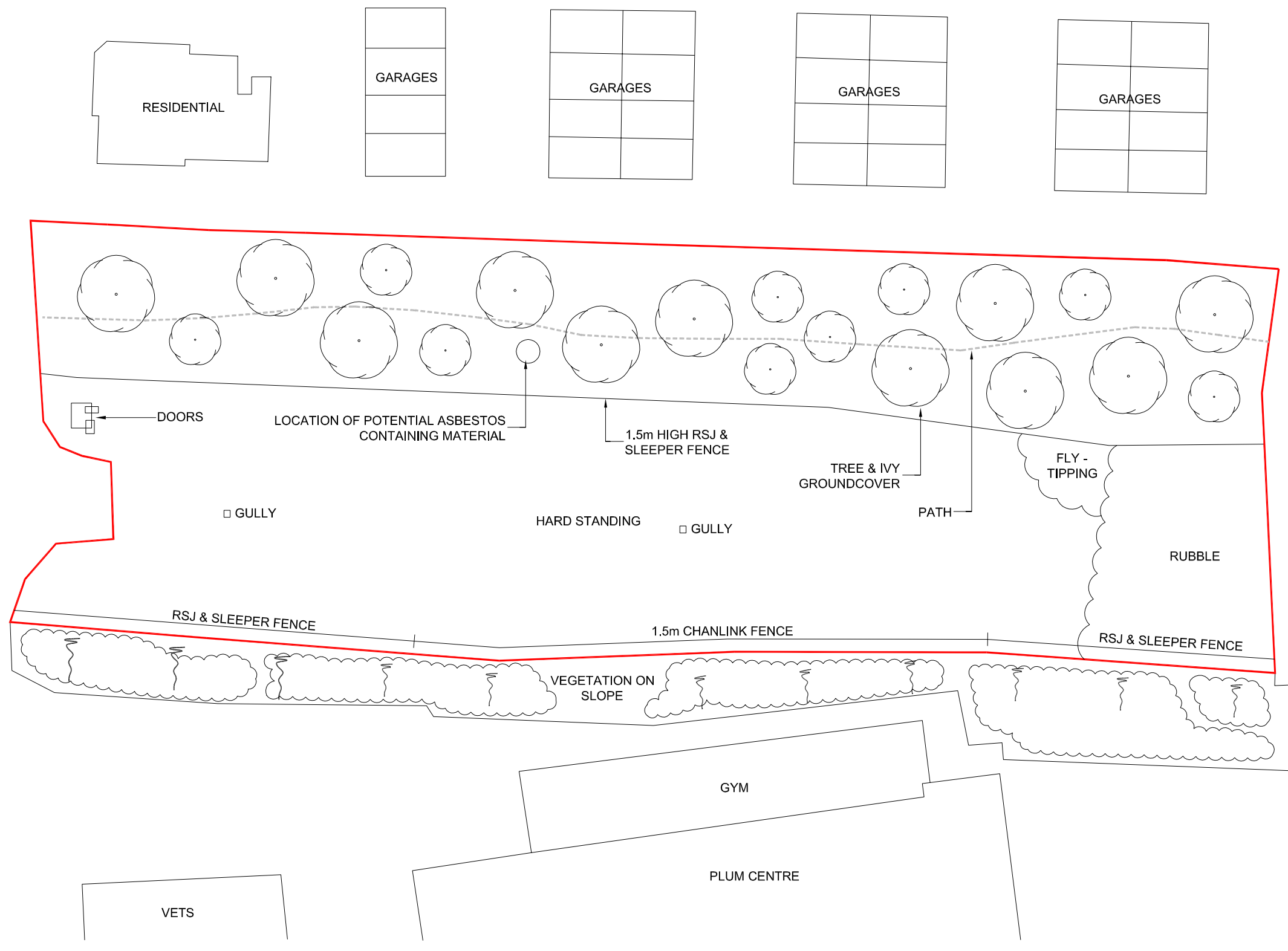
NEWBRIDGE
 PLQRA
SITE LOCATION PLAN

001

Scale 1:10000 @ A4

Date AUGUST 2012

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NOTES

LEGEND

 SITE BOUNDARY

**Bath & North East
Somerset Council**



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NEWBRIDGE

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SITE LAYOUT

002

Scale N.T.S @ A3

Date AUGUST 2012

00934.00001.04.002.0 Site Layout.dwg

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Site Photographs



Photo 1 – View over yard area west to east



Photo 2 – RSJ and railway sleeper fence



Photo 3 – Fly-tipping in northwest of yard area



Photo 4 – Fly-tipping in northeast of yard area



Photo 5 – Surface water gully by access gate.



Photo 6 – Fly-tipping in southeast of yard area, adjacent to rubble pile.

Site Photographs



Photo 7 – vegetated slope in south of Site.



Photo 8 – Residential property to north of the Site (Ashley Road)



Photo 9 – Garages to north of Site



Photo 10 – Fly-tipping in northern wooded area

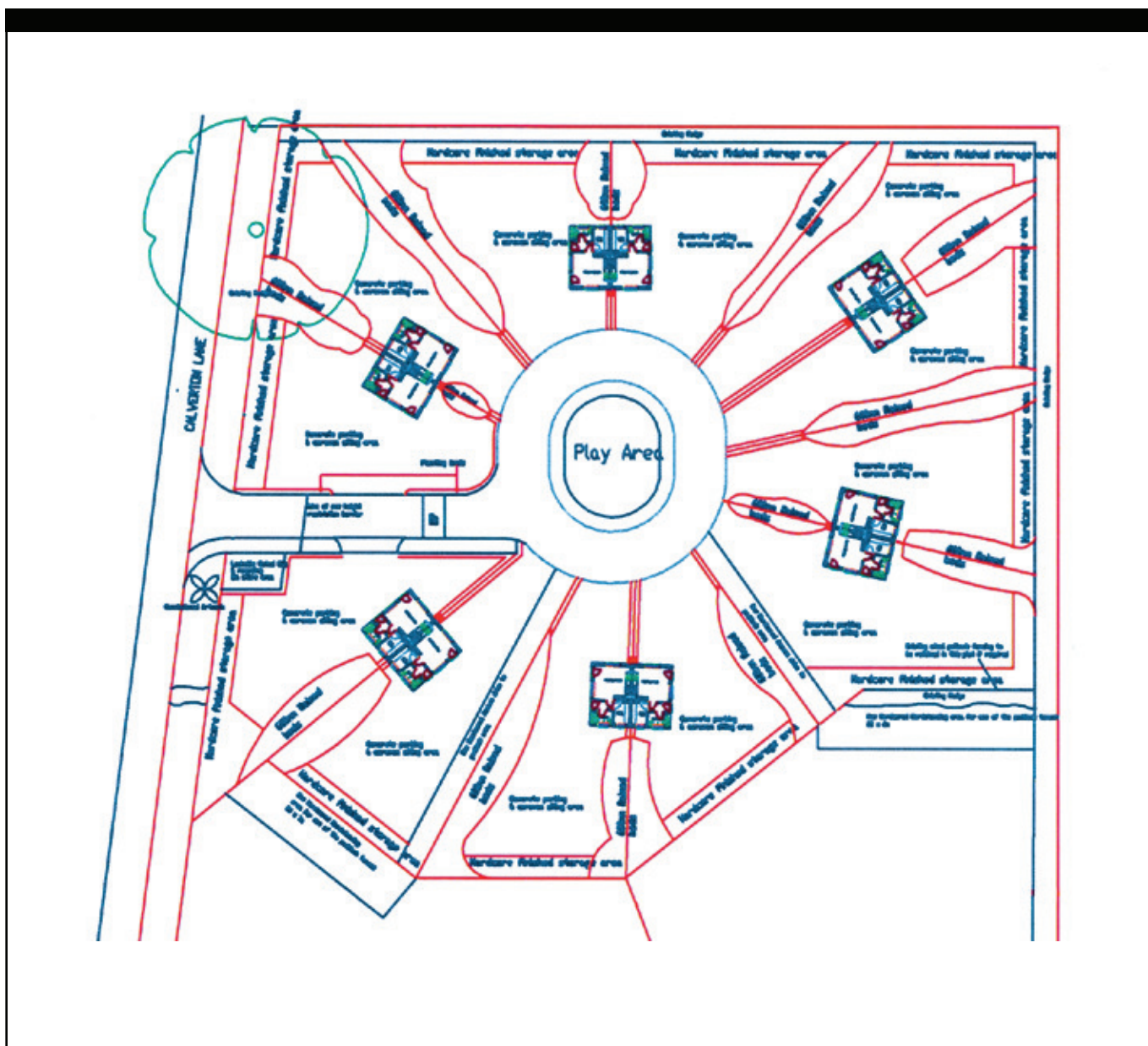


Photo 11 – Potential asbestos containing material in northern wooded area



Photo 12 – Northern wooded area looking southeast from Station Road.

Designing Gypsy and Traveller Sites Good Practice Guide



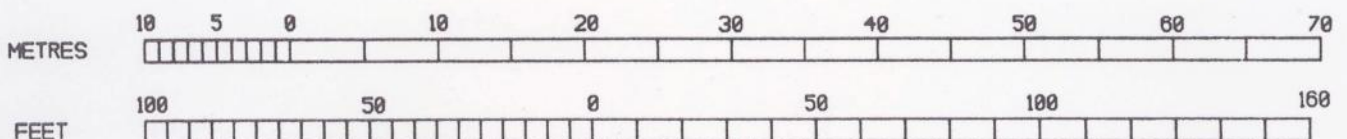
MODEL SITE LAYOUT For Small Site



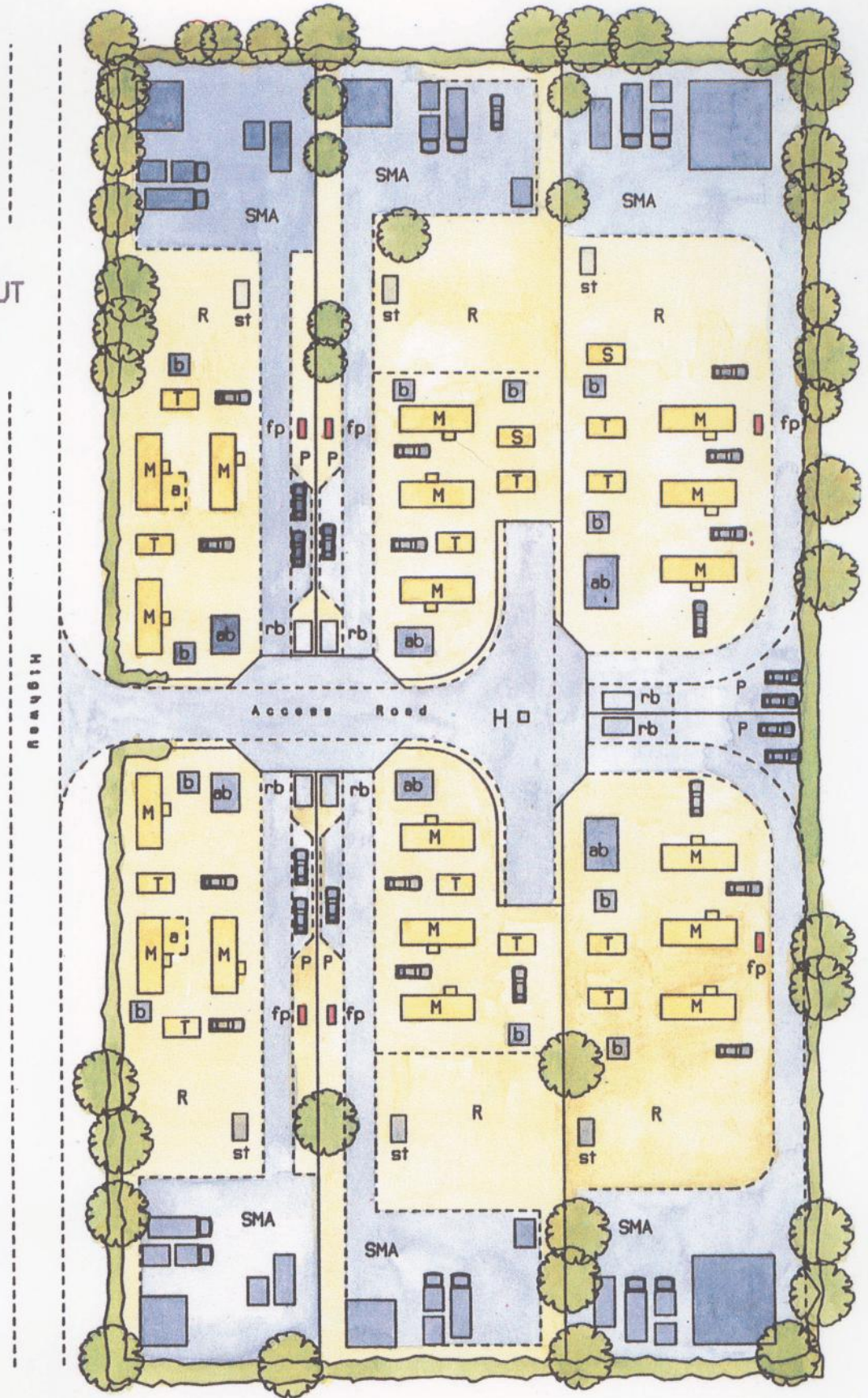
KEY

- M Mobile Home
- T Touring Caravan
- S Specialist Caravan
- SMA Storage and Maintenance Area
- R Recreational Area
- P Additional Parking Area
- st Septic Tank/Cesspool (or mains drainage)
- fp Fire Point
- rb Rubbish Bins
- ab Chemical Toilet Disposal Point (Toilet-Laundry Optional)
- b Non Combustible Building
- a Awning / Pull out section

SCALES



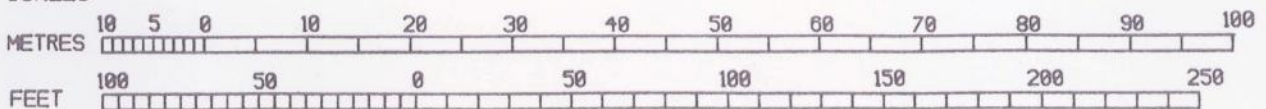
MODEL SITE LAYOUT
For Large Site



KEY

- | | | | |
|-----|------------------------------|----|--|
| M | Mobile Home | fp | Fire Point |
| T | Touring Caravan | rb | Rubbish Bins |
| S | Specialist Caravan | ab | Chemical Toilet Disposal Point (Toilet-Laundry Optional) |
| SMA | Storage and Maintenance Area | b | Non Combustible Building |
| H | Hydrant | a | Awning / Pull Out Section |
| R | Recreational Area | st | Septic Tank/Cesspool (or Mains Drainage) |
| P | Additional Parking Area | | |

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