

The background features a large, stylized 'GO' in a light gray color. The 'G' and 'O' are thick and rounded. The background itself is a gradient of blue and teal with a fine, diagonal line pattern.

GO *Contaminated Land Solutions*

A brief over view of current practice entitled

Contaminated Land

&

Avoiding unpleasant surprises

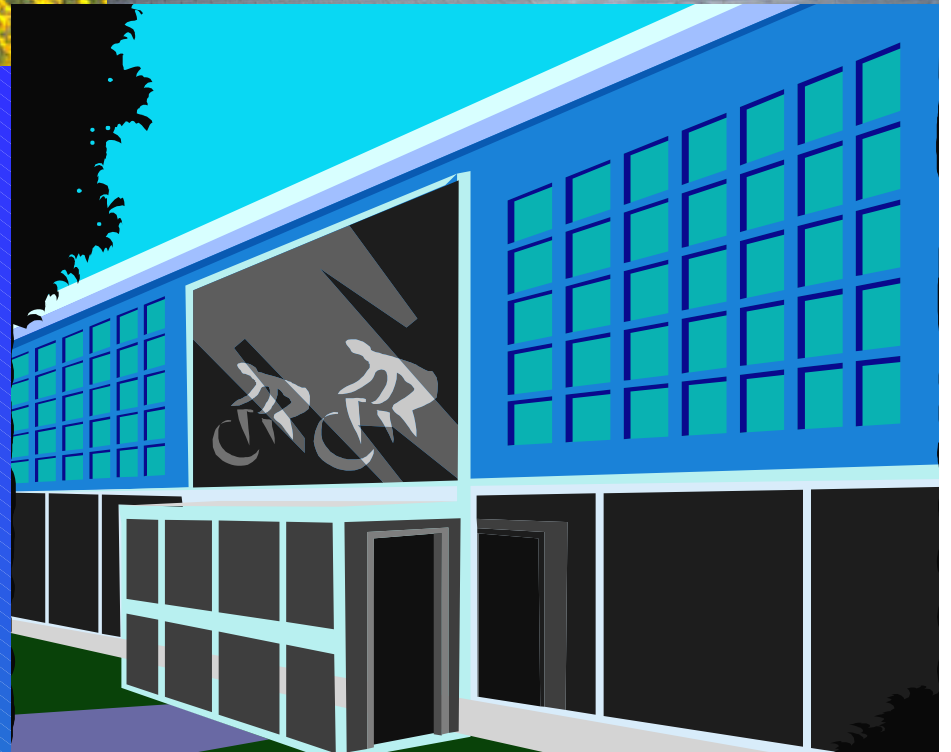
Environmental Protection Act 1990, part IIA

Underlying Philosophy

Has three main threads

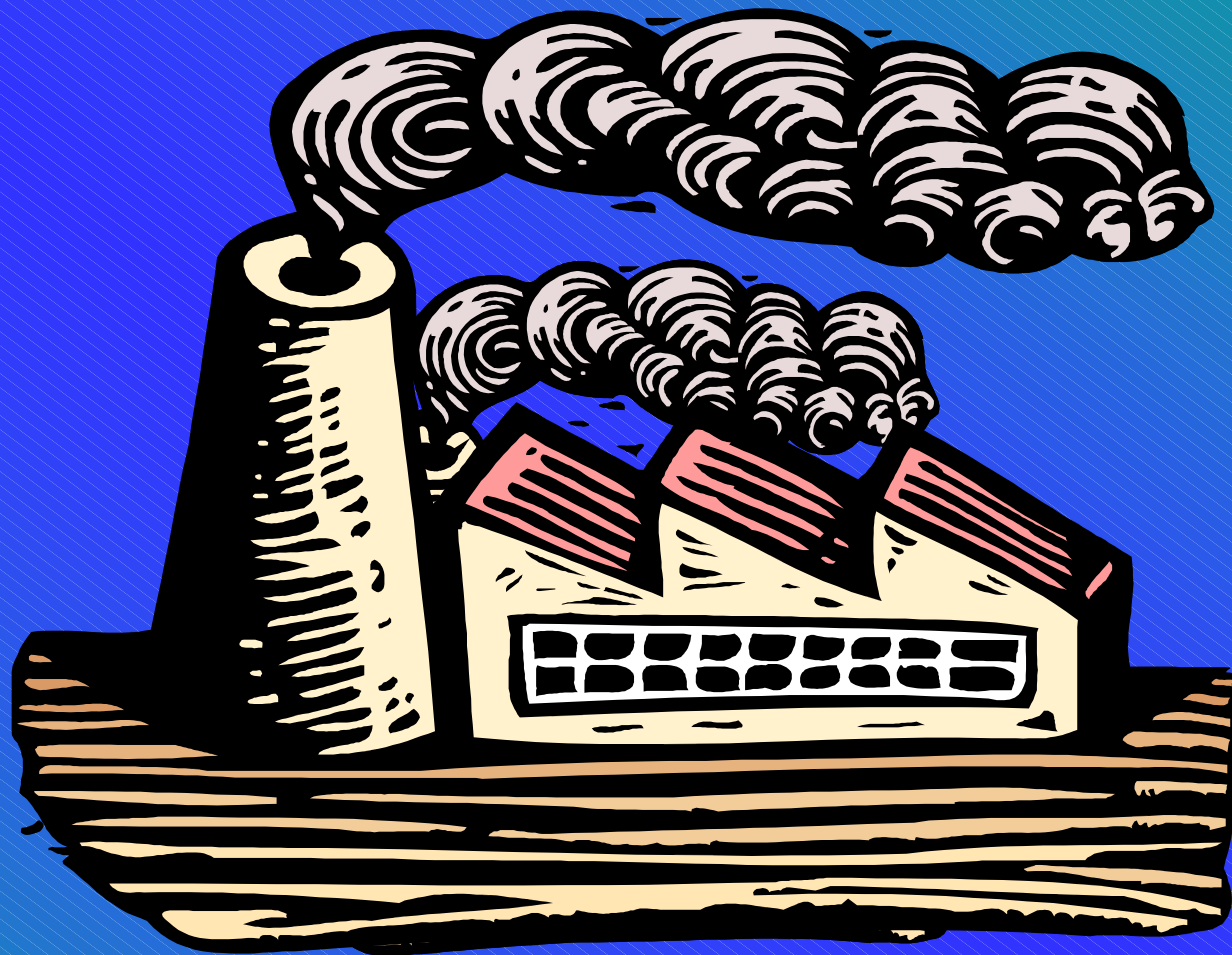


Suitability for use





**Risk based
assessment**



The polluter pays

Part IIA of the Act covers three main areas:

- Definitions of “contaminated land” and “significant harm”**
- Local Authority and Environment Agency roles and responsibilities**
- Liabilities in remediation and property transfer**

Definitions

“contaminated land”

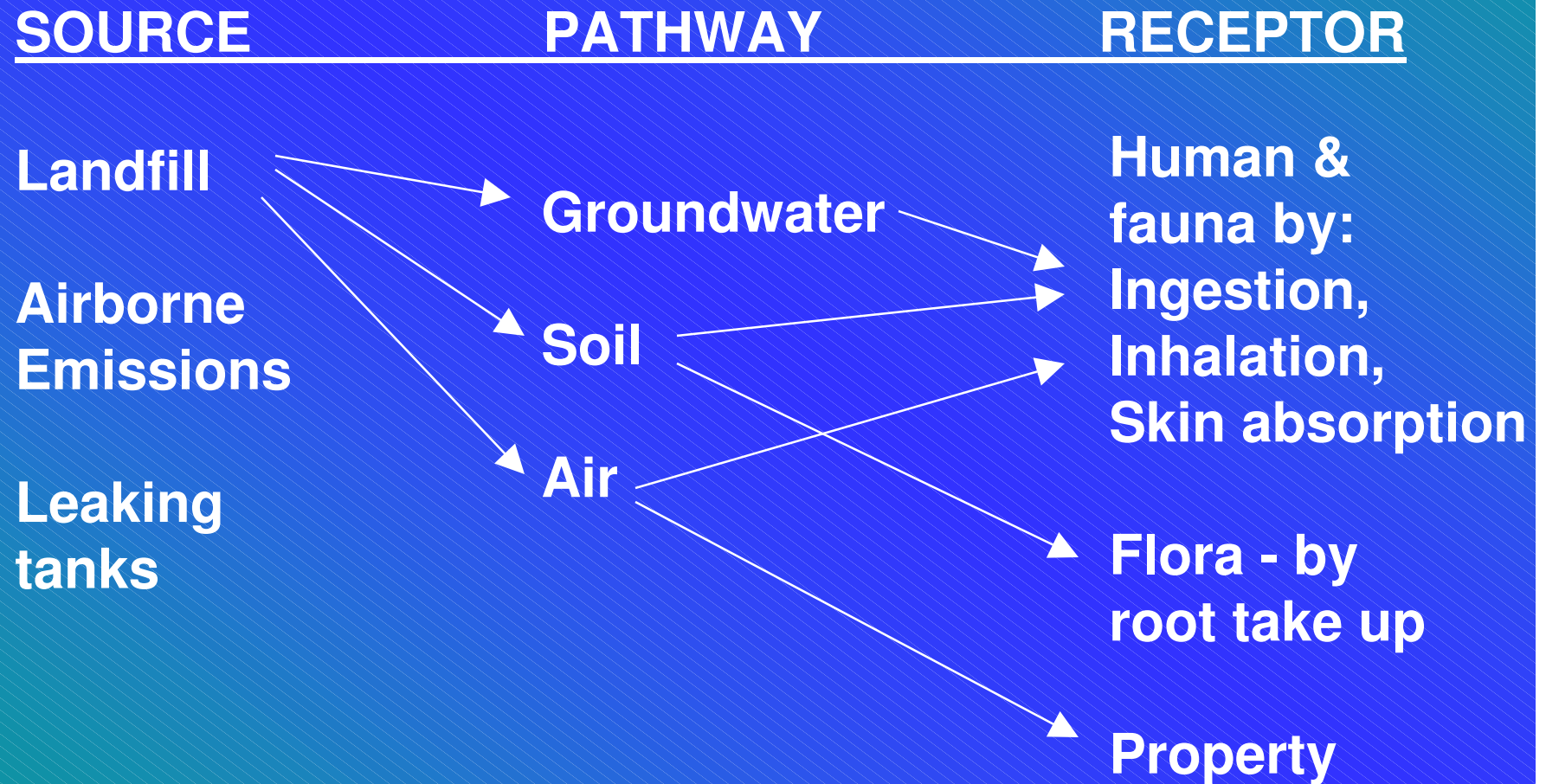
Either: “significant harm is being caused or there is a significant possibility of such harm being caused”

Or: “pollution of controlled waters is being or is likely to be caused”

“significant harm”

Significant harm can only occur where a link, or pathway exists between pollutant and receptor.

Pollution linkage



Harm may be to:

- Human health**
- Fauna**
- Flora**
- Environment**
- Property**

Local Authority and Environment Agency roles and responsibilities

- LA to identify contaminated sites**
- LA to serve remediation notice on the
“appropriate person”**
- LA to maintain a register of notices served**
- EA to be responsible for heavily
contaminated “special sites”**

The ‘appropriate person’ is the person responsible for the remediation of the site

Potentially it could be:

- The knowing permitter**
- Current owner**
- Long-term tenant**

Environmental liability can be transferred in several ways:

- 'Payments for remediation'**
- 'Sold with Information'**
- Introduction of pathways or receptors**

When is a clean site a dirty site?

Answer:

When there is a change of use.

Beware:

A “clean” site with retail units could well need remediation before use for dwellings or perhaps introduction of a nursery and grassed play area.

No environmental brief does not mean no responsibility:

Should you be advising that a Desk Top Study and Site Investigation be undertaken?

Does your design create significant harm by creating new linkages, eg:

- Migration along piles**
- Migration through drainage surrounds**
- Soakaways in contaminated ground**
- Exposing workers to contamination**
- Demolition, asbestos/chemical release**
- Silt run off to rivers during earthworks**
- Airbourne pollution**
- Change of use, gardens, play areas**

Desk Top Study

Why ?

Risk Management

**Focus the Site Investigation
thereby saving time and money**

Identify potential contamination linkages

Prepare risk appraisal

Site Investigation

Talk to the local authority and the Environment Agency.

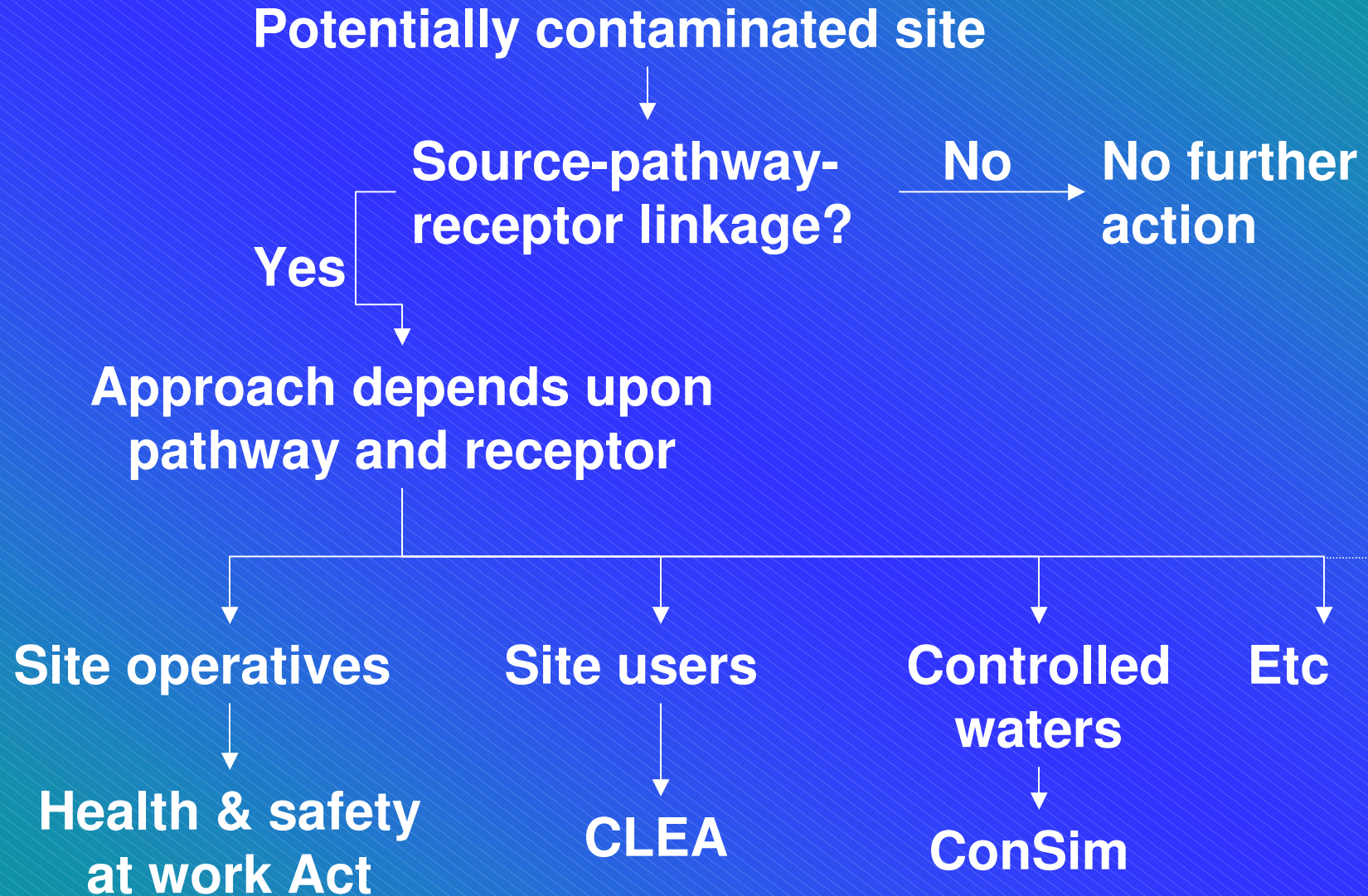
Design the site investigation and testing regime

Should the investigation be phased?

Considerations for testing regime

- Relevant EQS
- Detection limit
- Leachate tests
- Test method, eg TPHCWG
- When would you test for anthrax or ... ?
- How many samples on what pattern?

Flow diagram



CLEA

Contaminated

Land

Exposure

Assessment model

Scope

The impact of land contamination on human health over the lifetime of an individual, chronic exposure.

Soil Guideline Values

**These have been established for
a number of contaminants.**

Others will follow in due course!!!

Assessment of results

The results for each contaminant are analysed statistically to obtain:

- A picture of the whole site**
- 95% certainty of compliance with the SGV**

ConSim

Contamination Impact on Groundwater:
Simulation by Monty Carlo Method

Scope

**Potential to cause pollution of
Controlled waters**

Tiered approach

- 1 At source**
- 2 Entering ground water**
- 3 At receptor**



source

contaminated soil

leaching



unsaturated zone

ground water flow

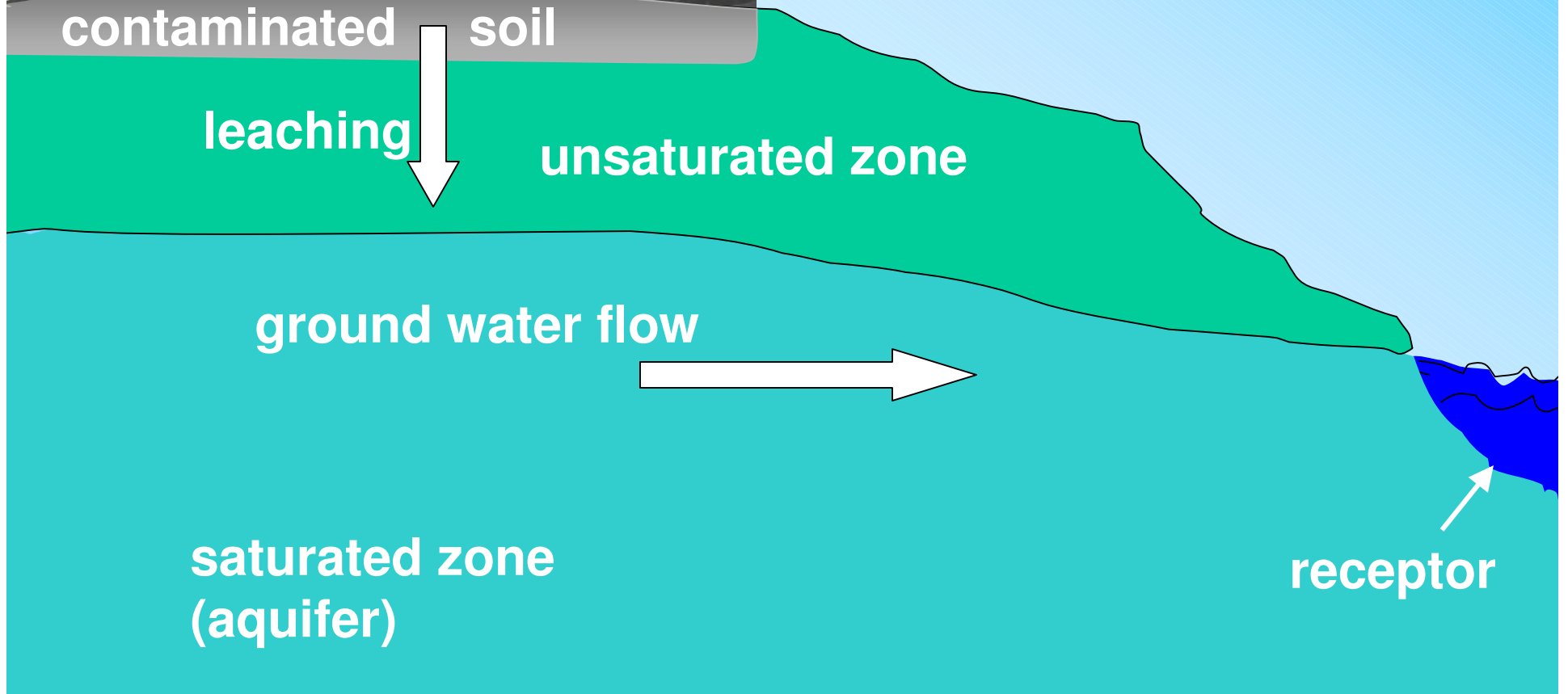


**saturated zone
(aquifer)**

receptor



**Three level
schematic**



Risk Management

- Choose clients with care**
- Ensure brief is unambiguous**
- Remediate to specified level**
- Liaise with EA and Local Authority**
- Advise own investigation by client**
- Beware change of use**
- Re-evaluate past remediation**

GO Contaminated Land Solutions

We have:

- Over 15 years experience on projects involving contaminated land**
- The directors have been working together on environmental projects for nearly 10 years**

We provide:

- a client focused environmental consultancy**
- giving an individually tailored cost effective service.**

Experience includes the following types of sites:

Gas works, Petrol filling stations, Sewage works, Hospitals, Scrap yards, Industrial sites, Atomic weapons establishment, Water treatment works, Potential unexploded ordnance

And a variety of end uses:

Retail, Industrial, Leisure, Residential, both with and without private gardens



This major electric sub station, depot and listed building was remediated and transformed into a Waitrose superstore

This ex scrap yard required removal of contaminated soil and ground water treatment.

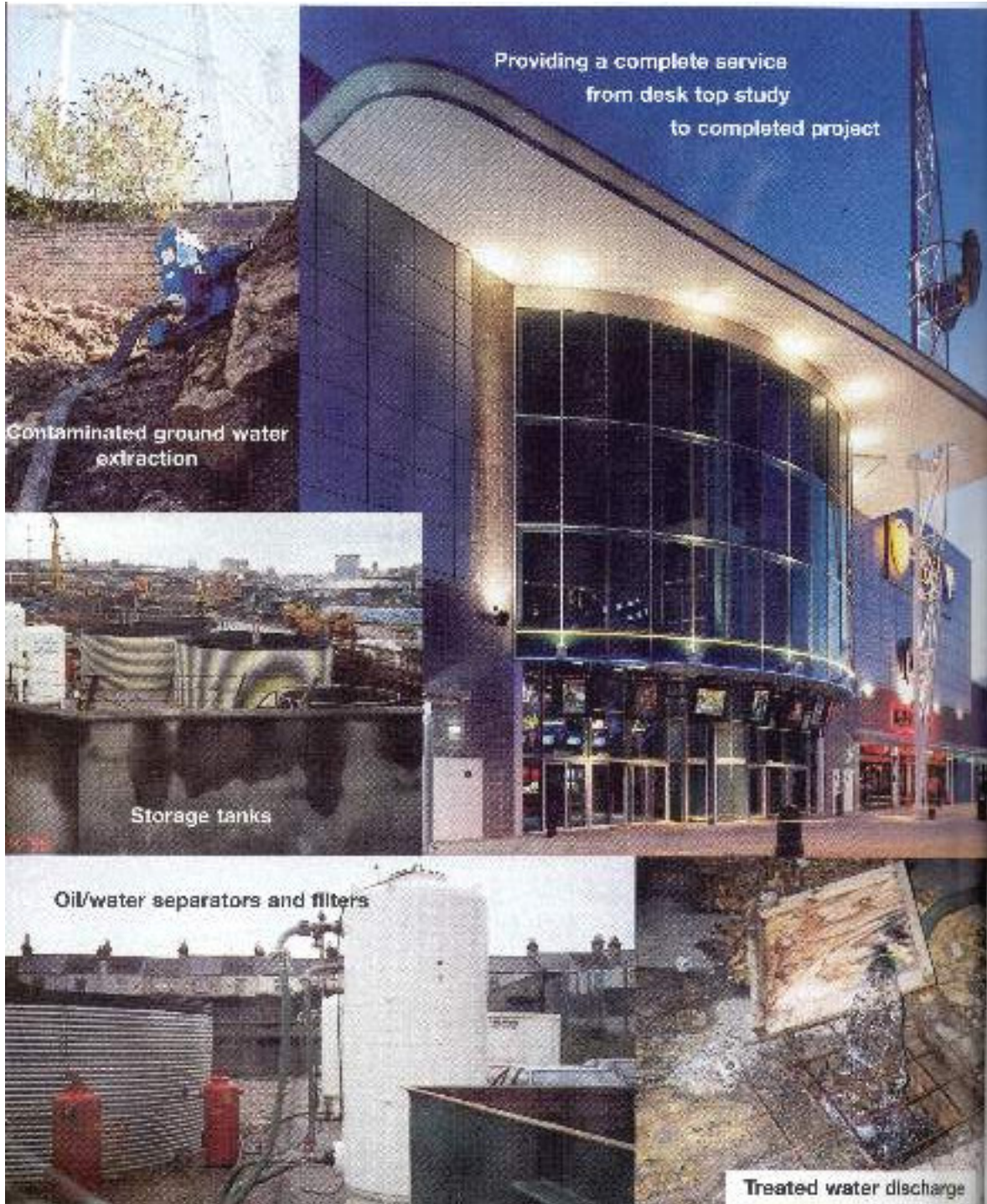




Hither Green hospital site required remediation to standards suitable for residential properties with individual gardens.

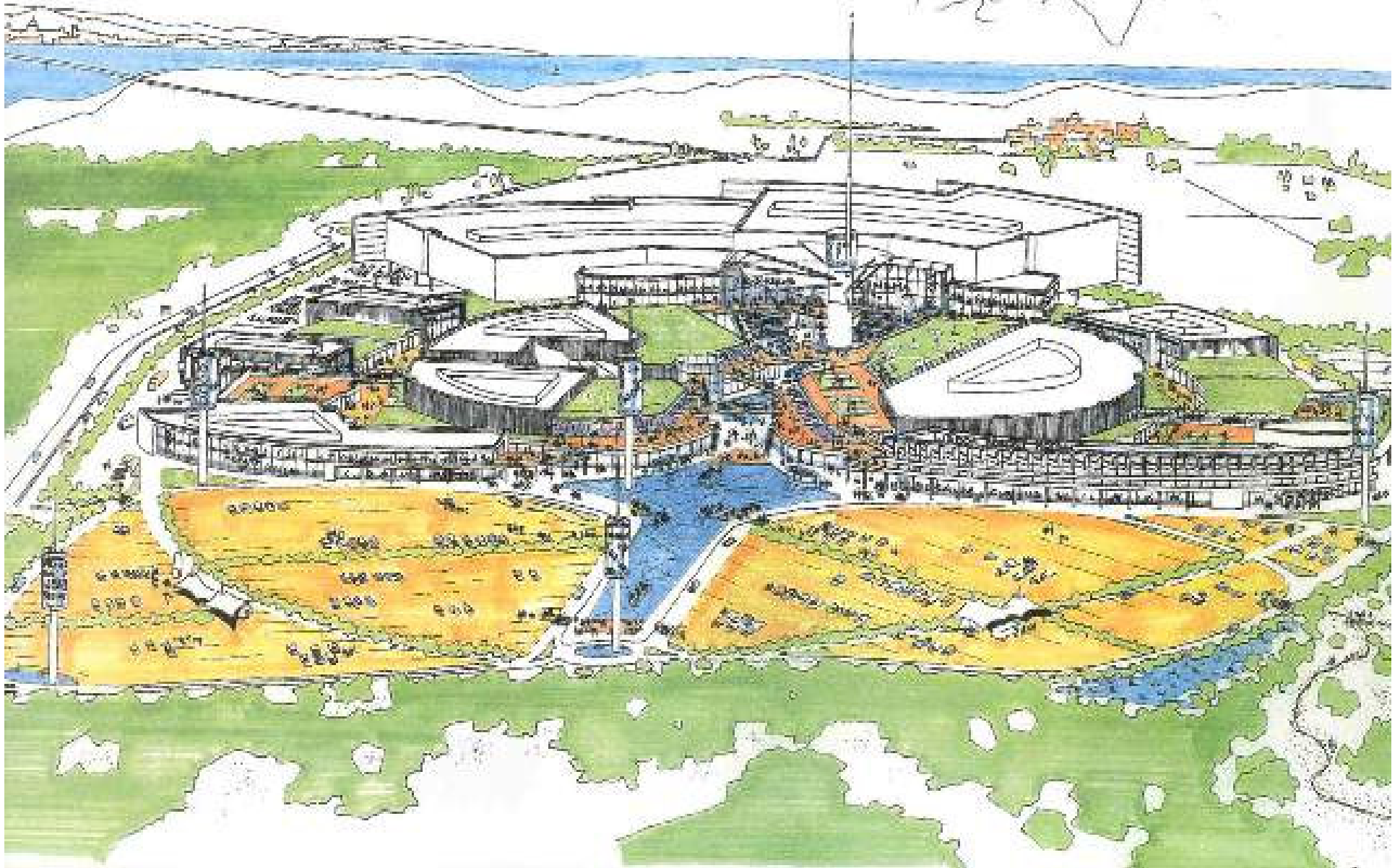


This old water works required surveys of flora and fauna as well as a contaminated land remediation strategy.



**This
Plymouth
gas works
required
extensive
soil and
water
treatment.**

The largest factory outlet in Europe with 100,000m² of retail and leisure...





...requiring remediation of an old tyre factory in Portugal was one of our more interesting projects.



The remediation had to meet UK standards to satisfy our client and potential funds and of course Portuguese requirements.