



hillsbuilding
group

Hills Group of Companies

Framework for a Green Transport Plan
for
Hills Construction Ltd
and
Hills Residential Ltd



1. Introduction

Hills Building Group has produced a Green Transport Traffic Site Plan (GTTSP) for construction and residential projects to take into consideration during site set up and planning phases. It aims to provide a number of options for controlling the transport impacts of the project and provides recommendations for how these options might be developed. It also details the necessary measures that require to be put in place to ensure vehicle and pedestrian segregation for site personnel and members of the public to operate safely.

1.1 Objectives and Benefits of the GTTSP

The objectives of the GTTSP are to:-

- Increase the sustainability of transportation in relation to Construction and Residential projects.
- Develop an understanding of the transportation movements of the project, in order to facilitate reductions in transportation impacts.
- Develop an understanding of the local transportation situation in order to help develop a strategy for the implementation of a GTTSP for the operational phase of a Construction Site.
- To ensure that a safe working area is provided for both operatives and site traffic without endangering those who work or visit the site
- To ensure that pedestrians are protected from construction activities required on the site, which may include storage of materials, location of stores, location of welfare facilities, location of site offices, location of refueling points, location of site entrance and exit points
- To ensure that site pedestrians and site traffic have adequate warning of the hazards and can clearly identify a safe route through or away from the works.

Some of the benefits which are likely to arise from initiating the GTTSP are:-

- An improved relationship with the client, as the construction phase GTTSP should integrate with the clients own plans during the operational phase of the project
- Improved relationships with the local authority and planners.
- Improved corporate image for Hills Building Group as a 'caring' and sustainable company

- Improved relationship with local communities
- Reduced environmental impacts, and subsequent compliance with our policies on Health and Safety and Environment and the strive towards sustainable development
- Possible savings to staff and trade contractors in the costs of transport
- Reduction in staff and trade contractor stress caused by driving
- Reduced ‘down-time’ of staff during driving, i.e. staff driving to work cannot work whereas if they travel by train they can be working
- Improved staff motivation and morale
- Progress towards a zero accident target by mitigating the risk of traffic accidents

1.2 Structure of the Document

Section 1.0: Introduction

This section details the objectives of the GTTSP and outlines the general structure of the document. It also gives details of the management framework for a construction project, setting out the key personnel, their responsibilities and the reporting structure.

Section 2: The contextual background

This section details the context and background in developing a GTTSP. Analysis is made of the policy context, corporate context, the client context for a project and the sustainable construction context. It also makes reference to appropriate HSE guidance notes on traffic management on site.

Section 3: Options of impact reduction and mitigation of traffic accident risk

This section identifies a number of options which could be utilized to reduce the impacts from transportation during the construction project. It will also detail the measures that can be put in place to ensure the segregation of all construction traffic from pedestrians and site personnel.

Section 4: Implementation

This section details the implementation procedures recommended for the GTTSP.

Section 5: Assumptions

This section discusses some underlying assumptions which have been made in designing this GTTSP.

Section 6: Recommendations

This section makes recommendations for reducing the sustainability impacts and mitigating the safety risk of a project based on the options outlined earlier.

Section 7: Conclusions

This section makes general conclusions on the implementation of the GTTSP recommendations.

1.3 Management Framework

The key personnel are as follows:-

Role	Responsibilities in relation to this plan
Project/Site Manager	overall responsibility for issues on site Induction of drivers and communication and issuing of site traffic plans
Assistant Project/Site Manager	overall responsibility for plan. control of waste produced by the site and its trade contractors organise skip and other retention facilities ensure tickets for carriage are issued keep records monitor the system for disposal Induction of drivers and communication and issuing of site traffic plans.
MEP Coordinator	co ordination of all MEP Contractors Induction of drivers and communication and issuing of site traffic plans
Finishing Forman	Co-ordination of all finishing packages

2. Contextual background of Transport Plans and Traffic Plans

2.1 Policy context

In 1998 Transport White Paper the government made a commitment to encourage the implementation of Green Transport Plans (GTTSP) by industry and the public sector. By the very nature construction sites should be sending the right messages to their communities about acting responsibly on transport issues, as they are responsible for much of the traffic on the roads.

The new policies which the paper presents represent the most significant change in transport policy for a generation. Since 1985, the proportion of individuals travelling to work by car has increased from 57% to 70% and today, work related journeys account for about 35% of all travel in the UK. It is for these reasons that the government is looking to industry to voluntarily reduce this reliance on cars.

The following comment by the then Deputy Prime Minister John Prescott recognises the importance government is putting on reducing road transport, 'more cars on the road means more stress, more time wasted in traffic and less time spent at work and home. Yet we know that many people want to have more choices about how to travel to work.'

The new coalition government is strengthening this commitment and a new white paper is expected shortly.

The HSE places emphasis on the safe management of traffic within construction sites. Therefore it is important that we put in place mitigation measures to ensure the safe management of traffic on site. The HSE's expectations for the safe management of traffic detailed in the following pieces of legislation:

- Health and Safety at Work 1974#
- Management of Health and Safety at Work Act
- Construction (Design and Management) Regulations 1994 (CDM)
- Construction (Health Safety and Welfare) Regulations 1996
- Supply of Machinery (Safety) Regulations 1992
- Provision and Use of Work Equipment Regulations 1998

2.2 Corporate context

Recent research suggests that only 5% of FTSE 500 companies have prepared for these changes to environmental legislation and the CBI estimates the cost to UK industry from congestion to be £15 billion a year.

Accidents involving site traffic attribute for 17 deaths a year and is the second biggest killer in construction. Over 1000 reportable accidents can be attributed to poor traffic management this equates to hundreds of hours of down time and huge cost to progress

and the safety and well being of our work force.

Hills Building Group has made a commitment to continue to take the lead on sustainability performance improvement in the construction industry. This sends a clear signal that poor performance in relation to health and safety and environmental performance on site will not be tolerated.

2.3 Sustainable construction context to and from the site

The transportation of goods and people to and from the construction site can be seen to have a number of sustainability impacts. These can be divided into the three areas of sustainability:-

1. Environment:
The use of fossil fuels causing local pollution; and Emissions of CO₂ causing global climate change. Transport's share of CO₂ emissions, which cause climate change, is around 30%.
2. Social:
Increases in local traffic causing nuisance. For example, there is a risk of possible congestion on major roads caused by vehicles slowing to enter sites.
Increases in national traffic congestion, encouraging the 'car' society.
Large distances for workers to travel means work time is extended; and if a project is employing workers from out of the local area who are travelling long distances, then this will inevitably reduce employment of local workers (this does assume the availability of a skilled local workforce).
3. Economic:
Materials cost more as they have to travel further.
Purchasing from outside the local area reduces the positive economic effects from local production.
Staff travelling further means they pay more to get to work.

In general terms, the major opportunities for reducing sustainability impacts from construction are to be gained from the very earliest stages of the planning and design of the construction project. This also holds true for transportation issues. Many such opportunities are often missed by projects at the present time as the transportation impacts may not be taken into account as early as they could be. There are, however, still a number of options for reducing the transportation impacts from construction.

The intention of developing a Green Transport Traffic Plan (GTTSP) for a project is to reduce the impacts we have on the environment and provide confidence that we can manage vehicles on site safely and without conflict with other vehicles and site workers. In particular it is to be hoped that such a plan can be initiated early in the project planning process so that transportation issues become part of the overall strategy of project design and management.

3. Options for controlling and reducing impacts

Introduction

There are two distinct impacts that require to be managed, these are the transportation of people and goods to site and how we can reduce the impact to the environment and the management of vehicles on site and reducing their interaction with site workers and the local community.

3.1.1 Transportation of goods to and from site

An analysis of the CO₂ emissions from traffic during the construction phase highlights that by far the largest impact comes from the transportation of staff and trade contractors by private car to the site.

In the UK, more than 80% of commuter journeys are undertaken by car and most of these are by people travelling alone. This level of CO₂ is far higher than that which can be expected from the delivery of goods to the site. For this reason the most significant reductions in CO₂ emissions will be achieved by addressing the transport of people to work. Furthermore, public transport are far less likely to be involved in an accident than regular traffic. Therefore projects will require to consider methods of encouraging integrated transport (buses, rail).

There are a number of options for reducing the transportation impacts of people and goods to site:-

1. Utilisation of local public transport to be encouraged.
2. Regular shuttle from local Park and ride facilities.
3. Provision of group transportation via coach from areas where a large proportion of the workers may be located.
4. Developing a car sharing network co-ordinated by Hills.
5. Provision of pool vehicles for short journeys which are necessary to and from the site. This would avoid people bringing cars to the site for journeys during the working day.
6. Provision of free or subsidised servicing of vehicles.
7. Provision of information on fuel efficient driving styles.
8. Detailed planning and co-ordination of deliveries by site management.
9. Prefabrication off site to be encouraged.
10. Transportation on site could be by 'Green', possibly electric, vehicles and should be controlled to reduce impacts. (EG Vertical Transportation by tower crane)
11. Video conferencing facilities could be provided on-site to avoid unnecessary journeys. Although this is unlikely in this application
12. Provision for cycling and walking to work, where possible.
13. Provision of reasonable overnight accommodation close by the site, or even on the site, should the client allow this.

It is possible that workers may be reluctant to take up these alternative options as they may be viewed as less flexible and more expensive than traditional transport

modes. For this reason the GTTSP must include awareness raising, information provision and possible incentives where appropriate.

3.1.2 Management of vehicles on site safely

The measures required for effective and safe management of site traffic will differ dependent upon the location of the site. For example, a city centre project will implement different measures from a Greenfield site and a building site would require less measures than a large civil engineering project. Therefore the following measures aim to give practical guidance and should be implemented as far as reasonably practicable:-

- On planning and managing vehicle operations.
- Selecting and maintaining vehicles.
- Safe driving and working practices.
- Controlled timed delivery of materials.

The guidance for the safe management of site vehicles can be broken into 4 main sections:-

- Safe work places
- Safe vehicles
- Safe driving and work practices
- Managing construction transport

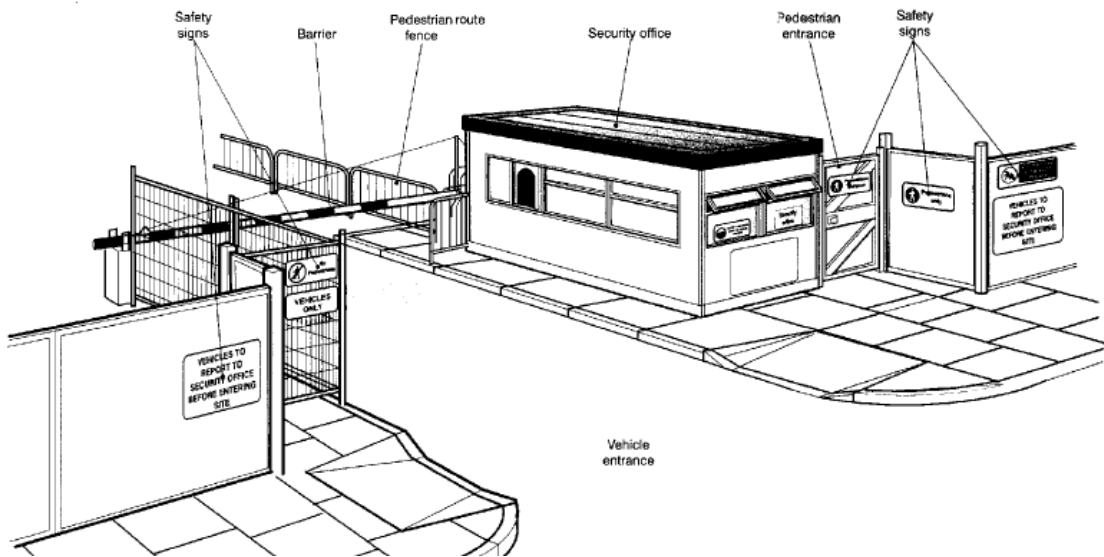
3.1.3 Safe Work Places

Pedestrians must be kept separate from vehicles as far as reasonably practicable this can be achieved through the following measures:

- Pedestrian only areas from which vehicles are completely excluded
- Safe designated pedestrian routes to work locations
- Vehicle only areas especially where space is limited or traffic is heavy
- Safe vehicles routes around site

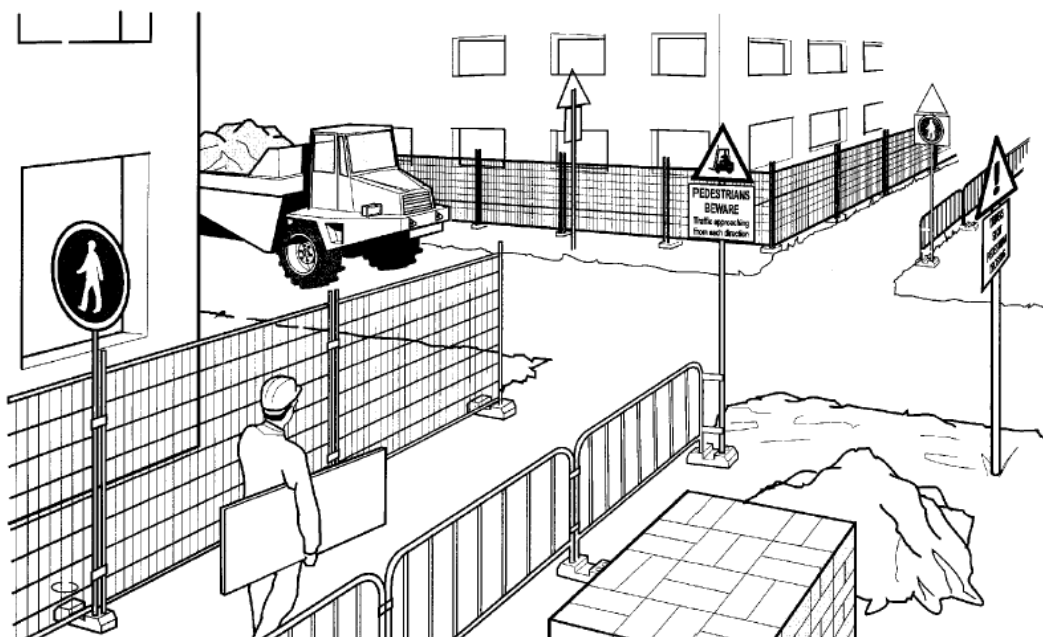
These routes should be:-

- Clearly demarked
- Located a safe distance away from areas of activity
- Have physical restriction to prevent vehicles from entering
- Low access to work areas to avoid conflict with vehicles
- Provide pedestrians with a clear view of traffic
- Clearly signed



Where site vehicles operate in the presence of a large proportion of site workers, for example close to welfare facilities, then traffic calming measures should be considered. Vehicle movements may be restricted to a specified time. Where it is not practical for physical segregation systems of work should ensure:-

- Drivers and signallers are in contact at all times
- Drivers and signallers understand the appropriate signals
- Signaller gives clear indication to pedestrians
- The signallers is in a safe place



Vehicle Routes should also have a number of features where it is practical to implement. The following measures should be considered:-

- Separate from pedestrian routes
- Minimise the need for reversing through provision of loading bays, two way systems and passing and turning points
- Hard standing surface and drainage where profiles do not add the risk of vehicles over turning
- Steep gradients and sharp bends should be avoided
- Excavations to have physical barrier
- All junctions are signposted and roads have speed limits
- Roads are colour coded for the appropriate traffic (Blue route, Red Route, Green route)

Where the above cannot be implemented the following table provides some other guidance in relation to typical hazards:

Table 1 Control measures for establishing safe site vehicle routes

<i>Common site vehicle route hazards</i>	<i>Control measures</i>
Contaminated land and muddy sites	Establish primary routes which avoid hazardous areas and prevent vehicles becoming bogged down. Provide vehicle washdown facilities and road sweeping machines to maintain site transport routes (and the public highway) in a safe condition
Areas of restricted visibility, width, or weight limits	Prevent unsuitable vehicles using routes. Provide warning signs, visibility aids such as mirrors and suitable traffic control measures, eg traffic lights, passing points, or one-way systems
Temporary structures, LPG storage areas, areas of limited headroom, electric cables, pipelines, etc	Provide physical protection and warning signs in all situations which have significant danger potential if struck by vehicles, eg safety barriers to protect LPG storage areas, and goalposts, bunting and barriers where there is a risk of overhead services and other hazards being struck by vehicles
Edges of roadways, excavations, pits, watercourses, spoil heaps, etc	Provide physical barriers such as safety banks or stop blocks to restrain vehicles. Timber baulks and wheel stops should be fixed in position to avoid displacement

3.1.4 Loading and Storage Areas

Traffic management systems on site should be planned to minimise vehicle movements, avoid unnecessary reversing and turning and the double handling of materials. In order to do this, a number of considerations will have to be made in relation to loading and delivery points:-

- Be located away from pedestrian-only areas and main pedestrian routes
- Exclude pedestrians so far as reasonably practicable
- Have one-way systems and safe exit points
- Have sufficient room for vehicle movements
- Have adequate fixed lighting signs and appropriate visibility aids for drivers convex mirrors positioned on corners if necessary

Additional measures and consideration will need to be made in relation to vehicles and their segregation from pedestrians. If the correct type of vehicle is not used then this may endanger the public, the vehicle user and those in the vicinity. If segregation from the public is not maintained the site is in breach of the Health and Safety Management Regulations.

3.1.5 Protection of the Public

There are a number of factors that require to be taken into consideration to ensure that members of the public are not exposed to risk. This will include the following factors:-

- Vehicles must be suitable for job type and purpose
- Appropriate pedestrian and vehicle traffic management systems to be operated
- Site fencing
- Signallers and Security Guards
- Effective vehicle immobilisation systems and key custody procedures

Where vehicles cross the public footway measures need to be implemented to protect members of the public. Barrier or Traffic light systems should be considered. Hi Vis clothing should supervise all loads entering or exiting the site.

Further precautions should be considered restricting movements too and from site to be out of the hours of congestion, this may be home time, lunch times, change of shift etc.

Where the site is partially occupied by members of the public, for example a phased building project, then areas of occupation should be phased to prevent the integration of pedestrians with site vehicles. This will involve careful planning and consideration of site entrances and exits. The following measures may also reduce risk on partially occupied sites and should be considered for implementation:

- Phase occupation so that site traffic can be excluded from occupied areas.
- Segregate public vehicle and pedestrian routes from site vehicle and site worker routes.
- Provide safe places for the public to park and safe access to public areas.
- Provide relevant information for visitors on public safety.
- Update information to take account of changes in Traffic routes, which may affect members of the public.

<i>Description</i>	<i>Vehicle routes</i>	<i>Pedestrian routes</i>
Site entrance and exit	Adequate sight lines, signs, maps, security and vehicle management procedures	Separate entrance point, signs, instructions
Parking areas	Separate site vehicle, delivery and worker parking areas. Provide temporary lorry parking/holding area by the site entrance to manage deliveries and allow vehicles to turn away from site if not allowed to enter site	Provide safe pedestrian routes from parking areas to offices, welfare facilities and workplaces Provide clear signs and instructions to workers
Offices and welfare facilities	Locate offices and welfare facilities and other areas of frequent pedestrian activity away from primary site traffic routes Provide signs and pedestrian and vehicle control measures where vehicle routes cross pedestrian routes	Provide safe pedestrian routes from parking areas to workplaces Provide clear signs and instructions to pedestrians
Primary traffic routes	Primary traffic routes should allow the safe passage of site and delivery vehicles away from pedestrian routes Establish one-way systems where possible	Establish primary pedestrian routes which provide safe access to work areas, away from main vehicle routes where reasonably practicable Provide physical protection where pedestrians are at risk of being struck by vehicles or their loads Establish crossing points and pedestrian control measures where necessary
Secondary traffic routes	Define safe routes for all vehicle operations on site	Provide protected pedestrian routes in areas where vehicles regularly pass
Storage areas and loading bays	Locate storage and loading areas away from areas of frequent pedestrian activity	Provide separate pedestrian access, clear signs and instructions to workers
Vehicle facilities	Locate vehicle washing areas, sheeting gantries and weigh bridges off primary vehicle routes	Provide safe pedestrian access across vehicle routes to all places of work

All drivers and pedestrians when entering a site may be required to be given an induction. Within the induction it is important that the following information is given:

- Verbal Instruction upon arrival at site.
- Site Induction.
- Issue of site maps to drivers.
- Giving site-specific delivery instruction when ordering and then again when the driver arrives.
- Displaying maps and site rules at the entrance to site.

Any changes will also require to be communicated and the plans must be updated to reflect changes in phasing and site progress.

3.1.6 Safe Vehicles

Safe vehicles are an important factor in ensuring the safety of site operatives. Where the traffic management system is well thought out and takes all reasonable measures, this can be undone by the incorrect use of vehicle or vehicles that are poorly maintained.

The vehicle selected needs to be capable of performing the task safely and in the manner that it was designed for. This also must be coupled with drivers who are trained, competent and experienced in the use of the machinery. The following are other important factors to consider:-

- Stability under all foreseeable operating conditions
- Safe Access to and from the cab and other working locations of the vehicle
- Adequate visibility for the driver all around the vehicle
- Headlights, horn , windscreen wipers, warning devices and visual aids such as mirrors or CCTV cameras must all be in working order
- Physical guards to protect dangerous parts such as power take off shafts, chain drives, trapping points and exposed exhaust pipes.
- Protection for the driver from the weather and other site hazards such as falling objects, over turning, dust, noise, and fumes.

A rigorous and frequent vehicle inspection maintenance regime must be in place. In law, plant hire companies are required to provide information with all plant detailing the necessary daily checks and the information with respect to the machines capabilities. This information will form part of the plant log, the log will detail the checks necessary for each vehicle, when the check was carried out, who carried it out and whether the vehicle is fit for use. A starter for ten-check list is contained below:-

- (a) braking systems;
- (b) seat belts;
- (c) tyres, including condition and pressures;
- (d) steering;
- (e) convex mirrors, cctv and other visibility aids;
- (f) lights and indicators;
- (g) safety devices such as interlocks;
- (h) warning signals;
- (i) windscreen washers and wipers;
- (j) fire-fighting equipment;
- (k) condition of cab protection devices, eg ROPS and FOPS;
- (l) functional checks on the vehicle, including controls and starting systems; and
- (m) correct location of guards and panels on the vehicle.

3.1.7 Safe Driving and Work Practices

The main duty for the management of transport risks on site rests with the principal contractor. This means that we have to ensure that sub contractors are aware that drivers must be selected on the basis of competence and not need.

Vehicle reversing operations cause a third of all fatal transport fatalities. Avoiding the need for reversing manoeuvres is the most efficient way of mitigating this risk. As previously mentioned this can be done through the provision of one-way systems, designated turning points, and drive through loading and unloading points.

The following table details the hierarchy of measures for reversing operations:-

1. Eliminate need to reverse	Implement one-way systems around site and in loading and unloading areas Provide designated turning areas
2. Reduce reversing operations	Reduce the number of vehicle movements as far as possible Instruct drivers not to reverse, unless absolutely necessary
3. Ensure adequate visibility for drivers	Fit cctv, convex mirrors, Fresnel lens, etc, to overcome restrictions to visibility from the driver's seat, particularly at the sides and rear of vehicles
4. Ensure safe systems of work are followed	Design vehicle reversing areas which: <ul style="list-style-type: none"> • allow adequate space for vehicles to manoeuvre safely; • exclude pedestrians; and • are clearly signed and have physical stops or buffers to warn drivers that they have reached the limit of the safe reversing area Fit radar proximity devices to vehicles to indicate to drivers when there are objects near the vehicle Ensure everyone on site understands site rules on vehicle safety Drivers and signallers need to be in constant communication during reversing operations Signallers should not be put at risk from vehicle movements, eg by standing directly behind reversing vehicles Ensure all vehicles on site are fitted with appropriate warning devices
5. Provide warnings when vehicles are reversing	Ensure reversing warning lights and alarms are in good working order and instruct workers to keep clear of moving vehicles

3.1.8 Loading and Unloading

The loading and unloading of vehicles presents risk, therefore vehicles should only be loaded or unloaded on flat hard standing designated areas. Loads need to be:-

- A suitable height and width for the vehicle and road conditions.
- Secured to prevent movement.
- Evenly loaded and distributed to keep the centre of gravity as low as possible and to prevent stresses in the vehicle structure.
- Checked to ensure they will not fall uncontrollably when restraints are removed during unloading.

A flag or sign must indicate loads, which protrude out from the body of the vehicle.

3.1.9 Drivers

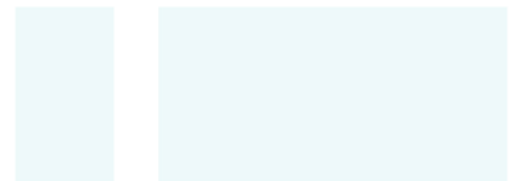
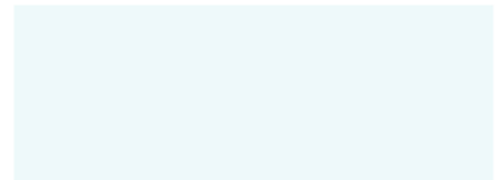
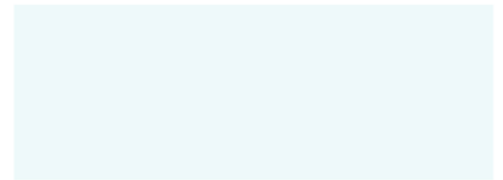
As previously mentioned drivers should be selected on the basis of competence and have the appropriate Certification. Driver competence may be judged on the basis of experience, recognised training and testing of knowledge and ability.

The following points need to be considered when selecting people to drive construction vehicles:-

- Drivers should be competent in the safe operation of the vehicles and their daily maintenance checks.
- Training Certificates should be checked for validity
- Caution should be exercised with drivers who may be unfamiliar with the hazards of construction sites including trainees and new staff
- No one under the influence of alcohol or drugs should be permitted to drive any vehicle

A summary of driver safe working practices is contained below:-

- Only operate vehicles if you are competent and authorised to drive them
- Do not drive when your abilities are impaired by ill health, poor vision, prescribed or illegal drugs, or alcohol
- Make sure you fully understand the operating procedures of the vehicles you control
- Know the site emergency procedures
- Understand the system of signals used on site
- Visiting drivers: seek appropriate authority to enter the site and operate vehicles
- Know the safe operating limitations of your vehicle, particularly relating to safe maximum loads and gradients
- Carry out daily checks on your vehicles and report all defects immediately to supervisors
- Follow site procedures and comply with all site rules
- Do not drive at excessive speeds
- Follow established site traffic routes
- Ensure that windows and mirrors are kept clean and clear
- Keep the vehicle tidy and free from items which may hinder the operation of vehicle controls
- Do not allow passengers to ride on vehicles unless safe seating is provided
- Park vehicles on flat ground wherever possible, with the engine switched off, the handbrake and trailer brake applied, and where necessary use wheel chocks
- Do not reverse without checking behind the vehicle for pedestrians, vehicles or obstructions
- Where visibility from the driving position is restricted, use visibility aids or a signaller. Stop if you lose sight of the signaller or the visibility aid becomes defective
- Do not remain on vehicles during loading operations, unless the driver's position is adequately protected
- Ensure loads are safe to transport
- Do not attempt to get on or off moving vehicles
- Do not make adjustments with the engine running and guards removed
- Do not smoke during refuelling operations



3.1.10 Managing Construction Transport

The earlier in life that a project begins to take into consideration potential hazards, then the more likely the mitigation of risk can be incorporated into planning. If we use the framework of CDM the responsibilities in relation to traffic management are as follows:-



Clients need to be able to ensure that those they appoint are competent to manage transport related risks. Clients should in particular consider:-

- Previous experience.
- Health and Safety Management systems
- Systems for assessing the competence of their appointees

CDM requires the client to provide the planning supervisor with the relevant health and safety information. Transport related information includes:-

- The extent of site occupation by those not involved in construction work
- Anticipated vehicle and pedestrian traffic movements
- Speed height width and parking restrictions
- Requirements for a safe public and emergency vehicle access
- Exclusion zones routes crossings traffic calming measures and designated car parks
- Restrictions on working times or temporary diversions during peak times
- Location of gas and electricity services adjacent railways etc
- Hazardous ground features contaminated landfill areas, burial grounds, underground streams surface water courses

3.1.10.1 Designers

Designers need to examine assess and reduce the risks associated with their designs. The following measures should be considered at the design stage to assist with construction:-

- Allowing space around structures and site boundaries
- Designing one way systems and drive through areas to reduce the need for reversing
- Removal of hazardous gradients or embankments
- Specifying suitable profiles surfaces and traffic managements systems for site roads and the early installation of permanent roads with safe site access to and from the public highway
- Consideration of how traffic routes can avoid overhead cables, railway lines and how routes have to develop as work progresses
- Indicate the maximum loading limits of floors
- Relocation of vulnerable services
- Passing information on any feature that is pertinent to the design of the traffic management plan

3.1.10.2 Planning supervisor

Planning supervisors should ensure project designs take account of the issues outlined above in the design section and that the pre-tender health and safety plan takes account of specific transport risks. The pre-tender plan may also wish to contain information on:-

- The need for crash decks
- Phasing works to minimise the risk to public
- Local statutory authority restrictions in relation to access to on and off public high ways

3.1.10.3 Principal Contractors

Principal contractors have the following responsibilities:-

- Planning work preparing method statements or reviewing method statements of their contractors.
- Implementing systems of work to ensure that pedestrians and vehicles are kept apart as far as possible
- Ensure sub contractors select drivers on the basis of competence
- Make specific reference to transport in the construction phase health and safety plan
- Ensuring contractors only allow authorised drivers to use vehicles and that a register of all authorised drivers is maintained at Hills Building

Group Head Office

- Ensuring that all workers receive site inductions and they are given information in relation to traffic management
- Ensuring all workers receive information in relation to transport measures at induction
- Establishing maintenance regimes for vehicles
- Reviewing the health and safety performance of everyone on site.
- Operate a Yellow Card, Red Card, system in order review performance.

Compliance with all of the above has to be monitored and where there is a breach then further action should be taken to ensure all are aware of their obligations and that further breaches will not be tolerated. The CARD system is the most effective way of dealing with this issue.

4. Implementation

In order to implement some or all of the GTTP options highlighted in this report, there are a number of key implementation criteria to be taken into account as follows:

4.1 Responsibility

A key recommendation is that a Project/Site Manager appoints a specific person to oversee the implementation of the GTTSP on the larger sites. The role would involve liaison with staff to ensure that the GTTSP is effective and did not disrupt the smooth running of the project.

4.2 Awareness raising

In order to gain buy-in and 'ownership' for the plan it is important that staff awareness is raised regarding the need for, and benefits of, the GTTSP and its implications. It is suggested that a presentation or toolbox talk is prepared which informs the workers of the sustainability intentions of the project, the details of the GTTSP and how to get involved. This is best done at induction.

4.3 Baseline data

The first step in implementing the GTTSP would be to identify details of the journeys which are expected to be made by staff, trade contractors and delivery personnel during the project's life-span in order to inform the choice of solutions.

The type of information which would be required from personnel travelling to the site would be:-

- Place of residence or origin of journey; company contracted to and contact details;
- Whether the journey is a one-off delivery or more regular and if so, frequency to be undertaken.

- How often the journey is undertaken, i.e. daily or weekly as some staff may stay in the local area during the week;
- Departure time from origin and arrival time at site.
- Mode of travel and details, i.e. car type, size and spare spaces for personnel and equipment.
- Willingness in principle to alternative travel such as car sharing, train or coach.
- Reason, if any, for not being willing to take alternative travel.

4.4 Contract specification

Where contracts have yet to be tendered, the specification should include criteria designed to reduce the amount of travel undertaken. For example, in tenders for specific jobs, local workers should be given due consideration and companies should be asked what provision they intend to make for mass transportation of workers. Hills Building Group could then make recommendations through its procurement process on control measures for traffic flows which include trade Contractors being encouraged to bus-in their teams to reduce the number of vehicles using the local road network.

4.5 Piloting and review

Once baseline data has been analysed and options have been reviewed, trialing of initiatives should be carried out to establish their applicability. The use of these initiatives by staff should be reviewed once monitoring data has been collated. Following this review it will be possible to establish which the most effective initiatives are and also identify any barriers to successful implementation of the GTTSP which may exist.

4.6 Monitoring

If all transport to the site has to pass through the security area, it should be relatively easy to monitor changes in transport movements. A standard pro-forma could be developed to obtain the necessary level of detail. All staff, trade contractors and delivery personnel should be made aware of the reasons for this monitoring and kept up to date with the results in order to gain buy-in from all concerned.

5. Recommendation

The following recommendations are the result of the analysis of best practice in GTTSP design and implementation and an understanding of the specific challenges facing the project.

5.1 Short term recommendations

The first step to be taken should be to allocate responsibility for the GTTSP to a member of the project team. This person, the Transportation Co-ordinator, should be given the responsibility to implement the GTTSP and ensure its successful uptake. A significant feature of the Co-ordinator's work would be to raise awareness amongst staff and trade contractors of the need for, and benefits of, the GTTSP.

5.2 Longer term options

Monitoring of the reductions in transportation should be carried out to enable lessons to be learnt and similar work to be done on future projects.

Monitoring the amount of accidents attributed to traffic arrangements could be made with local public transport providers to improve access to the site. This would be more relevant on Hills Residential sites where some sites can go on for many years.

A coach or van service could be provided to bring staff from specific areas to reduce the use of cars. A car sharing pool could be set up to reduce the numbers of cars coming to the site. Pool vehicles could be provided to reduce the need for staff to bring cars to the site for use during the day. A vehicle servicing facility could be provided to reduce pollutants from vehicles coming to the site. Training or awareness raising could be provided on driving style to reduce emissions from vehicles. Detailed planning and co-ordination of deliveries could be undertaken to reduce the impacts of transportation to site.

On-site transportation could be by reduced emission vehicles. Video conferencing facilities could be provided.

Provision should be made for cycling and walking to the site.

Prefabrication off site will be encouraged.

The feasibility of these various options would need to be established once more detailed data is developed. However, if it is established that these options are not suitable for significant numbers of journeys, then other options such as coaches and shuttles may need to be examined.

6. Conclusions

A number of options exist for reducing the sustainability impacts of construction projects. The feasibility of these various options will depend on a number of factors which will need to be balanced against factors such as costs, resource availability and the engagement of trade contractors.

Once the more detailed data on staff and trade contractor's transportation movements have been collated and analysed, the most applicable and realistic options can be implemented.