APPENDIX TO RESPONSE TO PLANNING APPLICATION WSCC/052/20

LANDSCAPE STRATEGY

WSCC project management advice to villagers has been to look at the FLY THROUGH video to appreciate the mitigation impacts of the landscape scheme. However, compared to the video, the Landscape Strategy drawings indicate significantly less mitigation planting.

1. **Fontwell Ave Roundabout**.
The Fly Through shows significant planting around the roundabout by Folly fruit Farm, in several places, including over the long division island in front of SPR entrance, beside and behind the new sub-station and hedging across the corner by Folly fruit farm. None of this planting is included within the landscape drawings, it only shows a grassed area.

Also, from video it is noticeable off-site existing vegetation, as present on 2020 aerial photo (google), is shown to have gained impact by growing substantially. Particularly, this applies around the SPR property. Unless these trees are TPO'd there will be no certain control over longevity of planting outside of the application site, so the 'greenness' of impact shown on the video A29 approach is questionably enhanced.

2. Fly Through images throughout the video include planting which is not indicated on the landscape drawings, such as on the centre roundabout. Planting within the Specimen tree area looks nothing like the planting drawing, with a woodland belt of trees along its northern and western sides and shrubberies including trees throughout.

A substantial line of trees is shown along fences to Ewens Garden but they are not on the planting drawing, which has a more minimalistic grassland landscape approach. So many trees are shown on the video that are not on the drawing.

Over the balancing pond areas, the Fly Through shows a summer view of idyllically attractive balancing ponds surrounded by mature trees and hedging. However, if the calculations for the excavated balancing pond volume capacities are anywhere near correct, in summer, these ponds should be totally empty and most likely appearing as boggy craters. Within EIA Scoping documents, WSCC acknowledges 'a high risk of groundwater flooding' in the BEW Phase 1 area, so calculating for long term effective balancing pond capacities must be extremely difficult. If the ponds appear full of water in Summer, as they do in the Fly Through, and the road is raised for most of its length interrupting natural ground water drainage patterns, then in winter, the ponds and their surroundings will be flooded, impacting adjacent field and householder land and putting at risk the survival of surrounding mitigation planting.

3. During the online Noise consultation, WSCC consultants advised that the road would be raised by 1 metre and the noise barrier would be 3m high above that. However, in some Fly Through views, the noise barrier appears to be not so high, with second storey windows from Ewens Gardens/Murrells Gardens significantly visible above the barrier. The cross section drawings within the application pack show the road to vary between 1.5m below to 1.2 above existing ground level, along its length. The minimum eye height of the fly-through appears much higher than pedestrian eye height and car passenger eye levels, so the Fly Through significantly underplays the dominant adverse visual impact of the 3m high noise barrier.

4. Barnham Proposed Roundabout and 3rd balancing pond.
There is an impressive amount of planting around and on the roundabout, both on it, along Halo frontage and down to and around the third balancing pond. None of this is shown on the planting drawings.

5. Rear Boundaries to Fontwell Ave and Barnham Road Housing.

Strips of mature trees and shrubs have been 'grown' as screening belts inside the boundaries of the Barratt's Housing area, presumably to reassure adjacent residents that their screening needs are assured. However, as Barratt's area is outside the application site, nothing to visually protect these properties is assured within this application. The Council feel it is important to address Cumulative Landscape Visual Effects for both the Phase 1 inter-related road and Barratt's housing projects.

6. The landscape drawings show 3No raised planters within roadside verges. This type of landscape character should not be included in a scheme in a Sussex Village Landscape and should be removed from the scheme.

Detailed comments on the Planting Schedule and Drawings

The Drawings show a key of landscape treatment zones of distinctive patterns and colours for:
Temporary Land Use, Existing (retained) vegetation,
Specimen tree, Shrub, Woodland Edge, Woodland Core,
Amenity Grass Mix, Wildflower Meadow Grass Mix, Wetland Grass Mix,
Areas for maximum retention of existing vegetation, (if possible).

The ***Plant Schedule*** lists:
EM3 Special General Purpose Meadow Mix … it is assumed this is the drawings Wildflower Meadow Grass Mix
A18 Road Verges and Embankments … it is assumed this must be the Amenity Grass Mix
EM8 Meadow Mix for Wetlands

Hedge Mix … is clearly given but it contains 13% Field Maple. This is a much more vigorous species than the other smaller growing hedging species listed in the mix. It will be hard to keep this species at 1.8m height without good maintenance and there appears to be no maintenance detailed for after year 5 in the maintenance section.

Woodland Edge Mix … is clearly given, listing native shrubs, birch and wild cherry trees but does not include any larger growing native woodland tree species.

Woodland Core? … whilst this planting type is indicated in Drg Key on some drawings, it is not covered within the plant schedule and its colour/pattern type does not appear within the planting layout. So the assumption is that no woodland copse is included?

Scrub Mix… Listed but not indicated on drawings so should this be Shrub mix although it is the same mix as 'woodland edge mix' without birch and wild cherry, but it does include several small growing tree species

Specimen Trees … the schedule includes for just 16No trees; natives Beech and Aspen and non-natives Horse Chestnut, Sweet Chestnut, Walnut, pear, cherry plum, two eating apple varieties, and in addition, there is an ornamental purple leaved beech.

This list is not consistent with the advice given in the Landscape Maintenance and Management Plan, which states: ***7.1.8. Individual native trees are proposed in areas of orchard planting and along pathways, where they will provide a more immediate visual impact.***

As already mentioned the Fly Through shows far more planting provision than the Planting Scheme shows and some of the detailed comments are given below:

Specimen Trees:
- Just 16 No trees are indicated for planting as Specimen Trees in the area, east and west of the second balancing pond. An assumption has been made that this area doubles as the orchard area but with just 16 trees in all and 10 species/varieties listed, mostly most not fruit trees, its appearance will not be reminiscent of an orchard. These 16No trees are shown at planting distances of mostly 30 metres apart and planting size in schedule is standards with clear stem 2.5m. Such a description does not comply with National Plant Specification standards so there is no certainty of what girth and overall heights these trees will have at planting and the fruit trees are unlikely to be available in anything other than relatively small 8-10 or 10-12 cm girth size. Even if the non-fruit trees are supplied in Semi-Mature size, the 16 No quantity is a ludicrously inadequate provision for this area, especially since

half of these tree species could never grow to be substantial landscape trees. The specimen area planting of 16No widely spaced trees will not provide a woodland copse as shown in the Fly Through.

- Emphasis is given in various parts of the application to mitigation grass land for browsing animals. However the need to replace lost browsing grassland is unproven since browsing wildlife, particularly the deer, will be driven out by the cumulative impact of road and Barratt's housing. Even without considering the whole Phase 1 development area cumulative effects, the Fly Through video clearly evidences the importance of visual mitigation. It is felt that the balance between providing grass for an uncertain amount of remaining wildlife and providing significant tree planting to replace the substantial tree loss over the whole Phase 1 area, should be revisited.

Woodland Edge Mix: This is the same mix as for Scrub mix with the addition of birch and Hazel. At 9240m2 this forms the majority of the indicated planting but, despite this planting type running along most of both sides of the road, it does not include any trees other than 7% Birch and 7% Wild cherry, neither of which are long lived landscape trees. No substantial native trees to develop into those clearly visualised in the Fly Through are present.

Woodland Core: No Core woodland is shown on drawings or listed in the plant schedule. Oaks are the native climax species for our area, as demonstrated by presence of Veteran Oaks and many TPO Oaks in the Phase 1 area

Shrub: The schedule confirms 4734m2 Scrub planting … which it is assumed should read shrub. This is the second most extensive planting type within the scheme and occupies many areas where large trees would be a visual asset, such as on east and west sides of the first balancing pond.

Hedge: A length of 828ms is itemised in the schedule however clarity is sought on this as elsewhere in the application a figure of an extra 50m provision is mentioned as providing total mitigation for lost hedgerow.

Existing Vegetation: No status indicated on drawing for these areas so what is proposed -will they be returned into existing land owners use?

Existing Vegetation possibly retainable: No details given on treatment if retention of existing vegetation is not possible.

Temporary Land Use: Will it be returned 'made good' to existing land owners or kept within the development maintained landscape?

Temporary Land Use together with retained Existing Vegetation: This is the rectangular area leading up to the Badger underpass. 'Best practice' for a badger tunnel approach is to plant trees and shrubbery to give security cover for badgers accessing the underpass.

TRAFFIC FORECASTS AND ROAD SAFETY

Summary Issues:

- Traffic forecasts seem far below expected demand from new development.
- Key roundabout saturation and consequent congestion risk underestimated.
- Consequent dangerous traffic growth in local lanes without foot paths.
- Evidence which might explain shortcomings is not presented.
- No details given for Planning Statement signalised pedestrian crossings.
- No Non-Motorised User (NMU) (pedestrians, cyclists, etc) survey.

- RSA overlooked access and safety needs of the existing 9000 community.

Traffic Levels. Planning Application Traffic Forecasts are a fraction of levels expected from projected household growth (see Table 1 attached).

Traffic flow growth 2017 to 2038 out of/into the Aldingbourne, Barnham and Eastergate area, based on Appendix 8.1 Figures 5.2 and 5.3, is underestimated by 400% compared to projections based on household growth. Pro-rata traffic growth to 2031 is 250% greater than in the Planning Application. (see Table 2 attached)

The WSCC Highways Authority consultation response to BN/50/20 also indicates 350% Traffic growth to 2038, from household projections. (see Note 1)

The Fontwell roundabout is close to saturation at Planning Application peak traffic levels; even a small underestimate threatens most of the scheme's claimed benefits.

No traffic forecasts for Eastergate, Wandleys and Level Mare Lanes, vulnerable to becoming 'rat runs' from main roads congestion, during construction and operation.
The NTI increases traffic on Fontwell Avenue (Appendix 8.1 Table 5.18)

Traffic flow diagrams and Tables show differences between total vehicles entering and leaving junctions and inconsistencies in NTI vehicle numbers. (See Note 2)

Road Safety.

Non-Motorised User (NMU). No survey, to gauge the increased hazards to pedestrians, cyclists and riders and required to support crossing-type decisions, has been conducted despite strong representation at the 2019 NTI consultation.

Road Safety Audit (RSA). A very limited 90-minute on-site RSA survey was conducted in unrepresentative traffic conditions. Important NMU vulnerabilities have been overlooked and some serious issues raised have been dismissed without supporting evidence. (see Note 3).

Pedestrian Crossings: The Planning Statement (1.1.1) announces "signalised pedestrian crossings" but these are not mentioned in any of the relevant details (paras 4.4.2, 4.4.3,4.4.4) or shown on Drawing Plans in Appendix 3.1. Only an uncontrolled crossing is provided for the PROW (despite this being an important NMU link.)

SUPPORTING TABLES AND NOTES

HOUSEHOLD GROWTH - ALDINGBOURNE, BARNHAM AND EASTERGATE				
Year	2017	2023	2031	2038
Number	3438	4524	6919	8969
% Increase		32%	101%	161%

Table 1: Aldingbourne, Barnham and Eastergate Projected Growth from Barnham and Eastergate neighbourhood Plan

TRAFFIC FLOW PROJECTIONS OUT OF AND INTO ALDINGBOURNE, BARMHAM AND EASTERGATE								
	B2233	Fontwell Ave	Yapton Road	A29 South	Total	Growth		Total
AM Journeys						Out	In	Growth
Baseline (2017) Out AM Fig 5.2 App 8.1	665	248	250	457	1620			
Baseline (2017) In AM Fig 5.3 App 8.1	233	369	420	633	1655			
2038 Out AM Fig 5.2 App 8.1	804	667	220	779	2470	850		
2038 In AM Fig 5.3 App 8.1	290	527	531	690	2038		383	1233
2023 Out AM Household growth 30%	865	322	325	594	2106	486		
2023 In Household Growth 30%	303	480	546	823	2152		497	983
2031 Out AM Household Growth 100%	1397	521	525	960	3402	1782		
2031 In AM Household growth 100%	489	775	882	1329	3476		1821	3603
2038 Out AM Household Growth 160%	1729	645	650	1188	4212	2592		
2038 In AM Household Growth 160%	606	959	1092	1646	4303		2648	5240
PM Journeys								
Baseline (2017) Out PM Fig 5.2 App 8.1	344	294	407	656	1701			
Baseline (2017) In PM Fig 5.3 App 8.1	465	612	263	487	1827			
2038 Out PM Fig 5.2 App 8.1	369	614	441	733	2157	456		
2038 In PM Fig 5.3 App 8.1	428	879	397	715	2419		592	1048
2023 Out PM Household growth 30%	447	382	529	853	2211	510		
2023 In PM Household Growth 30%	605	796	342	633	2375		548	1058
2031 Out PM Household Growth 100%	688	588	814	1312	3402	1701		
2031 In PM Household growth 100%	930	1224	526	974	3654		1827	3528
2038 Out PM Household Growth 160%	894	764	1058	1706	4423	2722		
2038 In PM Household Growth 160%	1209	1591	684	1266	4750		2923	5645

Table 2: Traffic Flow Comparison between Planning Application and Pro-rata Household Growth-based Projections

Note 1. WSCC LHA BN/50/20 Consultation Response statement:
"The anticipated number of vehicle trips that will be generated by the development (42 households) was predicted using TRICs (Trip Rate Information Computer Systems database). Sites with low car ownership have been excluded and suitable parameters applied. The resulting figures indicate that the development is anticipated to result in 23 trips in the AM and 21 trips in the PM peak hours with 200 two-way trips over the 12-hour period."

Based on an average of 22 per hour one-way peak trips and 356 (400-44) non-peak one way trips for 42 households (overlooking the curious fact that non-peak trips of 36.5 per hour exceed peak trips!) and household growth in the area to 8969 (2017-2038):

- Household pro-rata projected peak travel (trips) for the area to 2038 is 4698 (22*8969÷42) per hour (over 3500% greater than the 1140 (1233+1048÷2) Table 2 WSCC/52/20 forecast).
- Average non-peak travel (trips) would increase to 7794 per hour!!

The figures are only for household growth in Aldingbourne, Barnham and Eastergate and do not include any other local growth (eg. Bognor Regis, Yapton and Ford, or Chichester and Littlehampton. Traffic growth in the Aldingbourne, Barnham and Eastergate area is therefore likely to be significantly higher.

Note 2. For the 2038 AM Peak Traffic in Figure 5.2, 915 vehicles travel East on the A29 Nyton Road, 715 turn left up Fontwell Avenue and 326 continue along Barnham Road. Where the additional 126 (715+326-915) vehicles come from is not clear.

Note 3. RSA and Planning Application Shortcomings

The Planning Proposal fails to comply with the National Planning Policy Framework (NPPF), Paragraph 110 requirement, specifically: "Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas.

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport.

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles … and respond to local character and design standards."

RSA Survey 6th July 2020: An RSA survey was conducted between 11.30 and 13.00 on the day the first Covid-19 lock down ended when traffic levels were entirely unrepresentative. This probably explains why the 90-minute survey findings and recommendations failed to address many important safety hazards.

Of particular concern is:

- Traffic levels on Fontwell Avenue are forecast to increase by 250% by 2031 in the peak hour to approximately 600 vehicles in each direction (10 vehicles a minute or a vehicle every 6 seconds in each direction). Uncontrolled pedestrian crossings are entirely unsafe for such traffic levels.
- Numbers of pedestrians and cyclists requiring access to shops, medical facilities, horse racing, pub and recreational areas will increase significantly with the growth of housing developments along Fontwell Avenue and elsewhere. Safe NMU crossing of the NTI using the Fontwell Avenue footway will only be possible with controlled crossings.
- Eastergate, Wandleys and Level Mare Lanes have no pavements. There is significant NMU traffic including schoolchildren, the vulnerable (there is an Hft village for those with learning disabilities in Eastergate Lane), dog walkers and horse riders from the various stables. Increases in traffic, along those lanes, avoiding congestion on the main roads, presents a serious hazard which must be minimised both during construction and afterwards.

Comments on the Review of RSA & Designers Response (remove)

Problem B

Designer's Response: At crossings connecting parts of the cycling facilities the width of the crossings will be 3.0m; at the splitter islands, the minimum depth between kerbs will be 2.4m.

Comment (Using the drawings within the application pack)

In addition to cyclists there are other mobility devices to consider such as wheelchairs, prams, push chairs and mobility scooters. The crossing serving the eastern-side footpath on Fontwell Avenue, at the realignment roundabout, is not 3m wide.

The crossing serving the shared use path at the housing access roundabout has no centre refuge and is not 3m wide.

The crossing serving the shared use path and PROW, east of the housing access roundabout, is not 3m wide.

All of the crossings at the Barnham Road roundabout, serving the shared use pathways are not 3m wide.

Problem 7 PROW Crossing Location & Type

Designer's Response: Agreed. The proposed crossing serves a PRoW which is suitable for all NMU modes but the level of demand is currently unknown. The crossing type will be decided when demand is known but the PRoW is unlikely to be diverted by 100m. The central island is an integral part of the proposed traffic calming, intended to maintain a 30mph speed limit, and halves the amount of headway required for pedestrians to cross.

Comment

How can we have reached the detail design and planning application stage without full surveys of both vehicular and NMU demand at all proposed crossing points. The DMRB requires such surveys to support the detailed design.

Problem 8

2.2.8 Problem 8 Location: Uncontrolled crossing in the middle of the scheme Summary: Fencing associated with corrals could cause serious injuries to errant drivers or be an obstruction to cyclists.

Designer's Response: Disagree, this is a low speed setting. If retained, the corales will be detailed so as not to impede passage of NMUs.

Comment

No corals appear on the drawings

2.2.9 Problem 9

Location: Barnham Road roundabout

Summary: Lack of crossing facilities in the desire line resulting in pedestrian and cycle collisions. Uncontrolled pedestrian crossings are provided at all arms of the Barnham Road roundabout apart from the eastern approach. There is an alternative location suggested on the plans (although it is not clear what this is an alternative to).

Overseeing Organisation's Response: Revised comment 19.8.20; Simon Strevens Lead Professional Safety Audit As discussed, it is unusual not to provide pedestrian crossing facilities on each arm of a roundabout. Initially, southbound pedestrians approaching the roundabout may cross towards the east at the first crossing point they come across. If their destination is to the south and east of this junction they are unlikely to walk 40m further east, cross to the south and then back. Agreed RSA Action: Additional pedestrian destination signs are required to mitigate this problem.

Comment

The latest drawings still show no crossing for the eastern arm of the roundabout. The drawings show a shared use pathway on the southern side of the Barnham Road, east of the roundabout. As of November 2020 there is not even a footway on the southern side of the Barnham Road at this point.

Additional Issues

a) It is completely unacceptable that no assessments have been made regarding NMU crossing demand and likely traffic interval at the crossing points to enable proper judgement as to appropriate crossing type – for all crossing locations. This does not comply with the requirements of the Traffic Signs Manual 6 as part of the DMRB.

b) Only 1 of the pedestrian crossings has any dedicated lighting shown on the drawings. The notes on the drawings indicate that all crossings are lit.

c) Of the 10 roundabout approach lanes within the scheme (3 at Fontwell Avenue, 3 at the housing access and 4 at Barnham Road – only 3 are divided into 2 lanes; the Fontwell Avenue north-bound approach and the Barnham Road east- and west-bound approaches. Why is this?

d) On earlier drawings the Barnham Road roundabout was indicated to be 50m ICD. The latest drawings show it to be 46m. Why is this?

e) The Barnham Road roundabout is shown to have a carriageway width of 7m but is not divided into 2 lanes. Why not? Separating traffic on approach can increase the capacity of the roundabout.

f) With a slightly smaller centre circle the Fontwell Avenue roundabout could have 2 lanes and divided approaches increasing its capacity.

ENVIRONMENTAL IMPACT ASSESSMENT

Additional detailed comments on the EIA

TREES:
Veteran Oak in way of road is now saved by curve in road and TPO trees in the road zone only are mostly accommodated.
Badgers:
Mitigation strategy is not in public domain or its approval by Nat England but work (whatever it was) was done several weeks before submission of Planning permission.

FROM NON TECH SUMMARY
5.2 APPROACH TO THE ASSESSMENT
5.2.1 ..... In the absence of relevant standards, professional judgement by technical specialists has been used. But there are many relevant standards to be used … they quote DMRB which is very clear on assessing adjacent and programmed associated developments together.

6.5.4 BIODIVERSITY NET LOSS

….. A further 50m of native species rich hedgerows would need to be included in the landscape designs to achieve an overall Biodiversity Net Gain of 10%. If cumulative effects were meaningfully addressed this evaluation cannot be accurate.

6.5.5. There will be minimal impacts on ecology and nature conservation. So may species live on this site but only bats and badgers seem of interest. We are aware of many other animals including deer, breeding weasels, stoats, hedgehogs … so many amphibians and reptiles too.

ADC's policy ENV DM5 states that "development schemes, in the first instance, seek to achieve a net gain of biodiversity and protect existing habitats on site, this will not happen here.

ADC' policies are ENV SP1 and ENV DM5, BEPC policies are ES10, ES5 for existing residents

Minor beneficial effects are expected with regard to hedgerow and orchard habitats. All other operational effects are expected to be negligible. It is difficult to believe this statement.

How robust is Prelim Eco Report?

- Relies on ecological data from an Arun 2016 study which was 'only covering a portion of the area north of Barnham road … then acknowledges that it is out of date … being more than 3 years old.
- Claims habitat survey is 250ms wider than road site (buffer zone?) but states some parts not surveyed for reason of owner refusal to access.

- Too much reliance on desk studies. 2018 habitat survey was carried out by an ecologist over 2 days in July … so just a snapshot at a less than optimal timing?
- No mention of wealth of species occupying site and richness of ecosystem… which are valued by locals, just concern for statutorily protected species.

A29 NTI Flood Risk Assessment - Additional Material

Ciria C753 SUDS Manual Extract

Paragraph 13.2 General Design Considerations

A minimum distance of 1 m between the base of the infiltration system and the maximum likely groundwater level should always be adopted. This is to minimise the risk of groundwater rising into the infiltration component and reducing the available storage volume, to protect the functionality of the infiltration process by ensuring a sufficient depth of unsaturated material and to protect the groundwater from any contamination in the runoff.

Extract from Application Documents Appendix 11.1 Flood Risk Assessment - Appendix E2

Table 1

1. Infiltration and attenuation ponds

Pond Ref No.	No.1	No. 2	No. 3	No. 4
Type	Infiltration (cellular storage)	Infiltration	Attenuation (Off-line)	Attenuation (Off-Line)
Chainage	Ch 0	Ch 470	Ch 780	Ch 1420
Chainage distance	Roundabout tie-in areas and Ch 0 – Ch 160	Ch 160 – Ch 470	Ch 470 – Ch800 and Ch 800 – Ch 1000	Ch 1015 – Ch 1290
Catchment Area (ha)	0.535	0.717	1.135	0.590
Invert level of the Storage volume (m AOD)	1A - 13.000 1B - 13.000	12.700	10.900	8.500
Base Level (m AOD)	1A - 13.000 1B - 13.000	12.700	10.730	8.325
Infiltration rate (m/hr)	0.144	0.064	N/A	N/A
Discharge Rate (l/s)	N/A	N/A	1.8l/s (See section 2.0)	5l/s (See section 2.0)
Volume of storage (m3)	345	495	1151	408
Plan area (m2)	345	683	1588 (top of water)	807 (top of water)
Ground water level (m AOD) (See section 2.0)	12.700 BH 2 (Recorded GWL)	12.531 BH 104A (Recorded GWL)	11.454 DS102 (Winter Monitored GWL)	9.449 DS103 (Winter Monitored GWL)
Existing ground level (m AOD)	15.500	13.760	11.620	10.050
Proposed Road CL level	14.880	14.650	12.540	10.470

Note: As agreed with WSCC/ Arun DC the 1m clearance between peak GWL and IL of infiltration units is not required.

As can be seen from Table 1;

Infiltration Pond 1 has a base level of 13.0m AOD (Above Ordnance Datum) but the ground water level is recorded as 12.7m AOD giving only 0.3m of unsaturated ground. (Ciria C753 min = 1m)

Infiltration Pond 2 base level = 12.7m AOD with a ground water level of 12.5m AOD giving only 0.2m of unsaturated ground. (Ciria C753 min = 1m)

NB1 The absence of the note “winter monitored” when referring to the ponds 1 & 2 ground water levels – implying that in a wet winter the levels would be even higher.

NB2 Section 2 of Appendix 11.1 includes this;

“Due to uncertainly of the GWL in the area of the infiltration units, additional soakaway testing will be undertaken in winter 2021, prior to finalising the design.”

NB 3 Attenuation Ponds 3 & 4 in Table 2 both have ground water levels higher than the base of the pond, requiring the pond to be lined to prevent ground water seeping directly into the pond. This situation also reduces the ability of the pond to drain into adjacent ditches, which are likely to have similar ground water levels.

NB 4 The note below the table confirms that ADC/WSCC have given permission for the project NOT TO COMPLY with the requirements of the national SUDS manual Ciria C753 paragraph 13.2.

NB 5 An e-mail from ADC Principal Drainage Engineer to WSCC (Electronic p27 of 50 in Appendix 11.1 Appendix E2) requests that ponds 3 and 4 should utilise both infiltration and direct discharge to local ditches to minimise the risk of downstream flooding in Barnham BUT this has not been possible because ponds 3 and 4 need to be lined as ground water levels are higher than the base level of the ponds!