ENVIRONMENTAL ASSESSMENT

MUSHROOM FARM

Proposed Section 75W Modification to (MP 08-0225)
Elf Mushroom Farm

108 Mulgrave Road, Mulgrave and 521 The Northern Road Londonderry
Lots 14 DP1138749, part Lot 13 DP1138749
and Lot 138 DP752037

Amended February 2019
Job No.140565

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Document Control

Document: **521 The Northern Road Londonderry**

Environmental Assessment

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Revision History

VERSION	DATE	DETAILS	AUTHOR	AUTHORISATION
1	March 2018	Final	Greg Hall	Greg Hall
2	August 2018	Amended	Greg Hall	Greg Hall
3	February 2019	Amended	Greg Hall	Greg Hall

General Disclaimer

This report is based on one site inspection and a desktop assessment only. Details contained in this report only address issues of significance relevant to the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulations 2000 as well as the Environmental Planning Instruments applicable at the date of the assessment. The information contained in this document produced by Urban City Planning Pty Ltd is intended only for the use of the client for the purpose which it has been prepared.

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Revised plans and reports:

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- Site plan Proposed/ Copy of Site Plan Approved
- Floor plans and Elevations (amended March 2018)
- Engineering and Stormwater Plans (amended March 2018)
- Flora and Fauna Report (amended March 2018)
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Copy of existing Referenced reports (Approval MP 08_0225)

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) assesses the proposed modifications to a proposed Mushroom Farm at 521 The Northern Road Londonderry.

The Minister for Planning and Infrastructure granted approval for a Mushroom Substrate Plant (108 Mulgrave Road, Mulgrave) and Mushroom Farm (521 The Northern Road, Londonderry) in 2012 (MP 08_0225) under Part 3A of the Environmental Planning and Assessment Act 1979 (the EP&A Act). The proposed modification relates to the Mushroom Farm component of the approval (521 The Northern Road, Londonderry) (the '**Elf Mushroom Farm'**). No modifications are proposed to the Mushroom Substrate plant within this application.

The modification relates to the **Elf Mushroom Farm** and involves a change in building design related to a change in the method of processing mushrooms due to improved technologies which requires an increased building floor area.

Modifications to the proposed Mushroom Farm include building re-configuration; changes to the building layout and building footprint, road design and staging works. No increase in the production size or capacity of the Mushroom Farm is proposed.

Several reports were undertaken as part of the approved Mushroom Farm, and a number of these have been updated and amended to reflect the proposed change in building configuration and layout as amended.

The project application for the Elf Mushroom Farm and Substrate Plant was originally lodged under Part 3A of the EP&A Act. Although Part 3A was repealed on 11 October 2011, the project

remains a 'transitional Part 3A project' under Schedule 6A of the EP&A Act. Elf Mushrooms and Elf Farm Supplies is therefore requesting a modification to the Minister’s approval under the former Section 75W of the Act.

1. INTRODUCTION

This section provides background to the proposed modification to the Mushroom Farm at 521 The Northern Road, Londonderry.

1.1. Purpose of this Environmental Assessment

This Environmental Assessment (EA) assesses the significance and impacts of the proposed modifications to the Mushroom Farm at 521 The Northern Road, Londonderry.

The Minister for Planning and Infrastructure granted approval for a Mushroom Substrate Plant (108 Mulgrave Road, Mulgrave) and Mushroom Farm (521 The Northern Road, Londonderry) in 2012 (MP 08_0225) under Part 3A of the Environmental Planning and Assessment Act 1979 (the EP&A Act).

The proposal involved a substrate plant at Mulgrave and a Mushroom Farm at Londonderry. The modification relates only to the Mushroom Farm component of the development located at 521 The Northern Road, Londonderry (Elf Mushroom Farm). There are no works proposed to the approved substrate plant at Mulgrave.

The concept approval (MP 08_0225) allows for the following development (521 The Northern Road Londonderry):

Mushroom Farm Site

- Produce no more than 220 tonnes mushrooms per week;
- Buildings including main building 32,865m^2; Compost storage stage 3: 5,821m^2; Compost storage stage 3: 7,355m^2; Workshop: 996m^2; Peat storage: 672m^2
- Construction of access roads, parking, landscaping, dams.

This Section 75W application seeks the following modifications to the Concept Approval:

- Increase in the building floor area to 91,000 m^2.
- Modifications to ancillary works including access road, parking, landscaping, stormwater and dam design to suit revised building footprint.

The operational aspects of the proposal in relation to production capacity are not proposed to be modified and remain unchanged from the approved production capacity.

Staging of Mushroom Farm

The development will be undertaken in 5 stages

Stage 1 Part of the front building containing 6 growing rooms including the staff amenities, packing area,
The filling for the total building platform will also be completed in stage 1

Stage 2 Reminder of the front building containing 7 growing rooms

Stage 3 Front portion of the rear section of growing building containing 6 growing rooms and the spent compost shed at the rear of the main building.

Stage 4 Addition to stage 3 building containing an additional 6 growing rooms.

Stage 5 Addition to stage 4 building containing an additional 3 growing rooms

The plan that accompanies the submission shows the proposed stages.

Stage 1
The earthworks (building platform) for stages 1 and 2 are likely to take between 6-12 months depending on the availability of suitable material that will be used for the building platform.
Most of the fill that is needed for stage 1 building containing 6 growing rooms will be obtained from the construction of the proposed dam associated with the mushroom farm development.
Stage 1 buildings construction period once earthworks are complete will be approximately 12 months.

Stages 2-5
Stage 2-5 buildings and growing rooms will be constructed 2-3 years after the previous stage is completed and operational depending on the market and finances is likely to be 2-12 years after stage 1 is operational.

1.2. Background

The Department of Planning and Environment has advised requirements for this environmental assessment as follows:

- Provide amended documentation and detail which addresses the details of the existing approval against the details of the proposed modification, including:
  - Physical
  - Environmental impacts
  - Acoustic impacts
  - Waste water
  - Traffic
  - Stormwater
- Visual impact of the modified development compared to the approved development;
- An explanation of why the increase in growing area does not increase the growing capacity approved as being 220 tonnes/week;
- Adjusted technical reports to reflect the amended/modified development;
- Liaison with the adjoining and surrounding property owners and occupants to be undertaken before formally lodging the application. Matters raised in the consultation to be considered in the submission;

The matters listed by the Department of Planning and Environment have been addressed throughout this report and in accompanying documentation (specialist reports).

Table 1 - Department of Planning and Environment Matters for Consideration

Matter	Comment
Provide amended documentation and detail which addresses the details of the existing approval against the details of the proposed modification:	
○ Physical	Refer **Section 4.**
○ Environmental impacts	Refer **Section 4.** **Air quality – Pacific Environmental** **Noise - Atkins Acoustics and additional acoustic review of the amended plans and layout prepared by Acoustic Consulting Engineers** **Water management - Barker Ryan Stewart** **Flora and fauna (amended) - Fraser Ecological** **Bushfire (amended) – Control Line** **Traffic - (Existing assessment)** **Heritage - (Existing assessment)** **On-site effluent (Additional assessment report) prepared by Harris Environmental** **Contamination (Existing assessment)**
○ Acoustic impacts	Refer **Section 4.2.**
○ Waste water	Refer **Section 4.5.**
○ Traffic	Refer **Section 4.7.**
○ Stormwater	Refer **Section 4.4**
○ Flora and Fauna	Refer **Section 4.6.**
○ Visual impact	Refer **Section 4.1.**
○ Production capacity	Refer **Section 3.**

1.3. The site

The proposed modification relates to Elf Mushroom Farm, located at 521 The Northern Road Londonderry (refer **Figures 1** and **2**).

Figure 1 – Site Location
(Source: whereis)

The site is a roughly rectangular shaped allotment, relatively flat and has been cleared for grazing apart from an area at the rear of the site that retains scattered vegetation. The site area is 22.06hectares.

Figure 2– Site Location (Aerial photograph)
(Source: Dept. of Lands Sixmaps)

The Elf Mushroom Farm site adjoins a rural-residential property to the north, south and west. Castlereagh Nature Reserve is located opposite the Northern Road to the east.

There are several dams on the site, however the site does not contain any identified watercourses. The sites' topography allows for drainage towards the south west (towards a tributary of Rickabys Creek).

2. BACKGROUND TO ORIGINAL APPROVAL

2.1. Approved Project

The approved project involved the establishment of a Mushroom Farm at 521 The Northern Road Londonderry and an associated expansion of the existing Mulgrave Substrate Plant at Mulgrave by Elf Mushrooms and Elf Farm Supplies (refer **Figure 3**)[1].

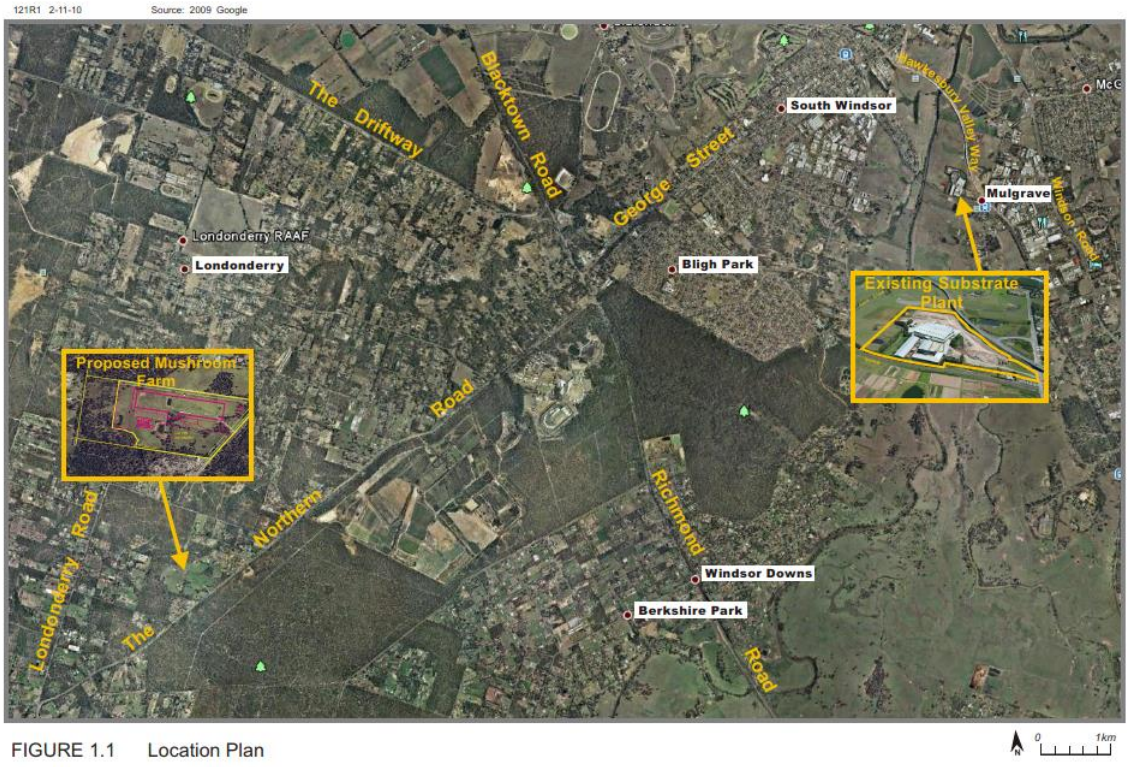


Figure 3– Site Location – approved project
(Source: Environmental Assessment submitted as part of the approved project)

The project approved the production of up to 220 tonnes of mushrooms per week at the Mushroom Farm (Londonderry). The project footprint was limited to the area immediately fronting The Northern Road and excluded the area at the rear of the site (western area of site) that contains areas of vegetation (refer **Figure 4** and **Figure 5**).

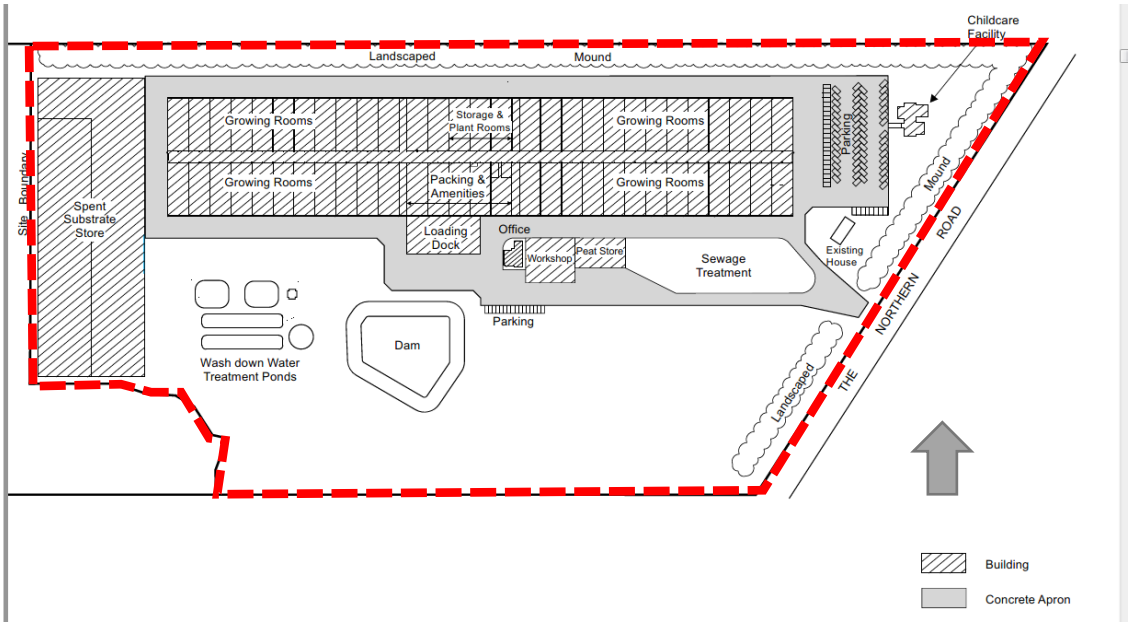


Figure 4 – Site Plan (approved development area)

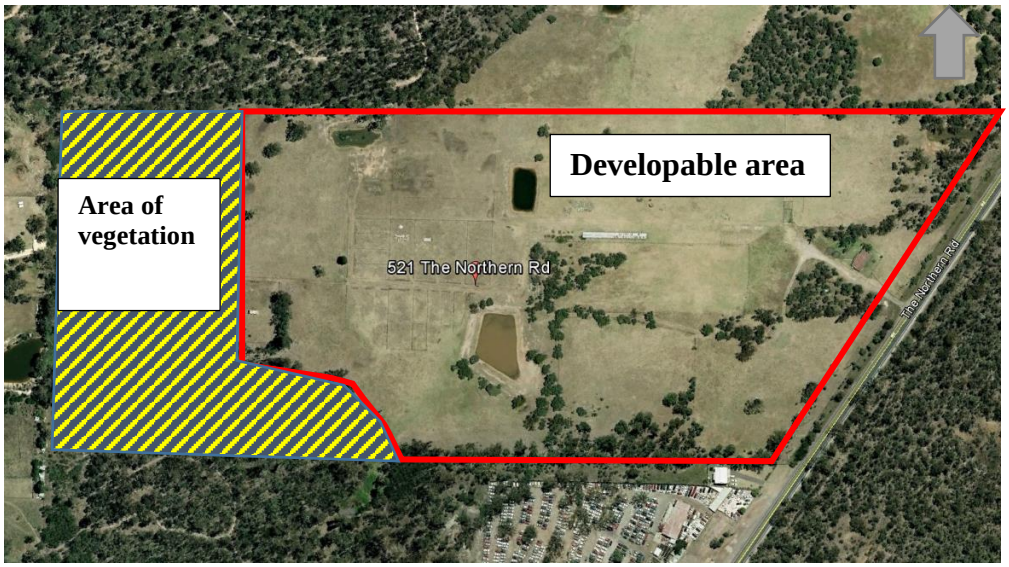


Figure 5 – Site Plan (approved development area – aerial photograph)
(Source: Google Maps)

2.2. Concept plan modification

The modification relates to the Mushroom Farm component of the project located at 521 The Northern Road Londonderry.

The modification involves a larger building and development footprint and associated redesign of truck access routes, water storage management (dam design and water treatment system), effluent treatment and disposal system, and associated landscaping and parking areas.

2.3. Purpose of Modifications to the Approval

The proposed modifications involve the reconfiguration of the building layout (external and internal) and building footprint to allow for the installation of new state-of-the-art machines for the growing mushrooms on a flat bed system. Traditionally mushrooms are grown on shelves which are stacked vertically on top of each other. The mushrooms are picked by hand from each box once they reach the required size (refer **Plate 1**).

Plate 1:

Traditional growing rooms showing stacked shelving and picking.

The new machinery automatically identifies the mushrooms ready for picking and allows for mushroom picking over a single level (refer **Plate 2**).

Plate 2:

New machinery allows for single level mushroom growing layout.

The revised amended plans have been further altered from the initial plans submitted with the application to modify the approval in the following manner.

- Internal layout changed to accommodate the filling of the growing rooms to be done internally in the building & to limit activities on the northern boundary where most of the residences are located thereby reducing the visual impact as well as the potential for noise.
  The layout includes a small multi-level pinsetting/preharvesting growing room along the northern wall of the building then to large single level harvesting rooms where the 1st/2nd flush will be harvested and then the crop will be winched to the southern side single level for the third flush room to be harvested. These 3 multiple zone growing rooms shall assist in pathogen control & energy consumption which will lead to improved sustainability.(Initial layout proposed single zone growing rooms

with rooms both on the north & south side of the central corridor with filling being done externally on both the northern & southern aprons)

The actual size of the building has not altered just the internal layout.
Internal change to create another access corridor between the small and larger growing room which will allow filling of the growing rooms to be totally indoors.
(Initial layout proposed external filling).

The proposed modification involves extending the building footprint as approved to the south and west to allow for the installation of new technologies used for the growing of mushrooms.

3. PROPOSED MODIFICATIONS TO THE APPROVAL

A review of the proposal has been undertaken in relation to the project as approved (Mushroom Farm) (refer **Table 2**).

Table 2 – Proposed Modifications Comparison Table

ELEMENT	DESCRIPTION (APPROVED)[2]	DESCRIPTION (PROPOSED MODIFICATION)
Project Summary	**Construction and operation of a mushroom farm with the capacity to produce up to 220 tonnes of mushrooms per week.**	Capacity to produce up to 220 tonnes of mushrooms per week. No change in approved capacity.
Construction — key components	• main building (400m by 79m by 9.8m) containing 50 growing rooms arranged to the north and south of a central corridor extending the full length of the building and ancillary services; and • peat store, workshop, covered loading dock, spent substrate store, office/reception building.	Main building – approximately 460m by 200m containing several growing rooms arranged to the north and south of a central corridors extending the full length of the building including a central processing area, workshop, administration, loading area. A spent compost drying store is located at the rear.
Building description	• Area: Main building: 32,865m2 Compost Store stage 1: 5,821m2 Compost store stage 4: 7,355m2 Workshop: 996m2 Peat Store: 672m2 **Total: 47,709m2** • Finished Floor Level: FFL – 38.5m • Building height: Wall height of 9.8 metres. Ridge height of 11.9 metres.	• Area: Main buildings: 78,501 m2 Admin., workshop, loading dock: 8,778m2 Spent compost store: 899m2 **Total: 91,000m2** • Finished Floor Level: FFL – 38.30m • Building height: Wall height of 4.5 metres. Ridge height of 9.485 metres.
Construction - ancillary components	• water storage dam; wash down water recycling system; sewage treatment plant; • parking for 55 cars; • internal roadways; • vegetated noise attenuation mound 2.5 m high extending the length of the eastern and northern boundaries; • access via a new Channelised Type Intersection (conditioned); and • importation of 100,000m^3 of fill.	• water storage dam; wash down water recycling system; sewage treatment plant; • parking for approximately 123 cars; • internal roadways; • noise attenuation mound 2.5 m high extending the length of the eastern and northern boundaries; Mound also used for effluent disposal. • access via a new Channelised Type Intersection (conditioned); and importation of 113,000m^3 of fill

[2] As summarised in Environmental Assessment Report December 2011 (NSW Planning & Infrastructure)

ELEMENT	DESCRIPTION (APPROVED)[2]	DESCRIPTION (PROPOSED MODIFICATION)
Approximate vehicle movements	**Construction —** up to 12 truck movements an hour or 70 per day. **Operation —** at full capacity 128 light vehicle movements, and 34 truck movements per day.	**Construction —** up to 10 truck movements an hour or 100 per day. **Operation —** at full capacity 128 light vehicle movements, and 34 truck movements per day.
Production capacity *Hours of operation*	220 tonnes per week Construction hours • Monday to Friday, 7am — 6pm; • Saturday, 7am — 1pm; and • Sundays and public holidays, construction prohibited, Operating hours - 24 hours per day.	220 tonnes per week • Monday to Friday, 7am — 6pm; • Saturday, 7am — 1pm; and • Sundays and public holidays, construction prohibited, Operating hours - 24 hours per day.
Staging of Works	**Stage I** would have capacity to produce some 85 tonnes of mushrooms per week, is expected to take 78 weeks to construct, and consists of: • erosion and sediment controls, • clearing and demolition, • earthworks, • construction of the main building including 18 growing rooms and common ancillary areas including packing, loading and storage areas, plant room, workshop and staff amenities; • landscaped noise mound; • additional landscaping; • sewage treatment plant; and • access construction.	**Stage I** would have capacity to produce 50 tonnes of mushrooms per week and consists of: • erosion and sediment controls, • clearing and demolition, • earthworks, • construction of the main building including 12 growing rooms and common ancillary areas including packing, loading and storage areas, plant room, workshop and staff amenities; • landscaped noise mound; • additional landscaping; • sewage treatment plant; and • access construction.
Water management	**Water use** • Growing rooms would be washed down with heated water and steam after each mushroom growing cycle, using mains water. • Corridors would be washed down daily, also using mains water. • The building apron external to the growing rooms is washed down after each filling operation and when spent substrate is removed from a growing room using dam	**Water use** • Growing rooms would be washed down with heated water and steam after each mushroom growing cycle, using mains water. • Corridors would be washed down daily, also using mains water. • The building apron external to the growing rooms is washed down after each filling operation and when spent substrate is removed from a growing room to the water treatment area and then reused for the washing down of the growing rooms.

ELEMENT	DESCRIPTION (APPROVED)[2]	DESCRIPTION (PROPOSED MODIFICATION)
	Water treatment • Stormwater runoff would be transferred to the existing dam which would be enlarged to have a storage volume of 14.7 mega litres. This water would be used primarily for washing down surfaces external to the growing rooms and supplying the cooling towers. Wash down water from growing rooms and the apron would flow to the wash-down water recycling system which would comprise a series of ponds and wetlands to remove organic compounds and nutrients making it suitable for use in the cooling tower and steam generator and for toilet	**Water treatment** • Stormwater runoff from the internal driveways and roof area will be diverted to the proposed dam with a storage volume of 14.7 **mega litres** • This water would be used primarily for washing down surfaces external to the growing rooms and supplying the cooling towers. Wash down water from growing rooms and the apron would flow to the wash-down water recycling system.
Bushfire management	The proposed mushroom farm is located on bushfire prone land, the project includes: • a 10m wide defendable space) to the west, north and south of each building; • a 24 metre asset protection zone (APZ) to the north, east and western aspects of the buildings; and ember protection to the spent substrate store in the form of drencher sprays.	The proposed mushroom farm is located on bushfire prone land, the project includes: • a 10m wide defendable space to the west, north and south of each building; • a 25 metre asset protection zone (APZ) to the north, east and western aspects of the buildings; and ember protection to the spent substrate store in the form of drencher sprays.
Number of employees	165 operational workforce at full capacity (35 additional employees)	113 workers at full capacity: Expected reduction in workforce achieved through introduction of computer harvesting technologies.
Installation of Solar Panels	Not proposed in initial approved DA	The northern roof of the growing building will have the installation of solar panel that will be used to provide some of the electricity needed by the farm.

3.1. Staging

The approved development involved undertaking the works in 5 stages

Stage 1 Part of the front building containing 6 growing rooms including the staff amenities, packing area,
The filling for the total building platform will also be completed in stage 1

Stage 2 Reminder of the front building containing 7 growing rooms

Stage 3 Front portion of the rear section of growing building containing 6 growing rooms and the spent compost shed at the rear of the main building.

Stage 4 Addition to stage 3 building containing an additional 6 growing rooms.

Stage 5 Addition to stage 4 building containing an additional 3 growing rooms

The plan that accompanies the submission shows the proposed stages.

Stage 1
The earthworks (building platform) for stages 1 and 2 are likely to take between 6-12 months depending on the availability of suitable material that will be used for the building platform.
Most of the fill that is needed for stage 1 building containing 6 growing rooms will be obtained from the construction of the proposed dam associated with the mushroom farm development.
Stage 1 buildings construction period once earthworks are complete will be approximately 12 months.

Stages 2-5
Stage 2-5 buildings and growing rooms will be constructed 2-3 years after the previous stage is completed and operational depending on the market and finances is likely to be 2-12 years after stage 1 is operational.

3.2. Proposed Modification to the Approval

The (proposed amendments to Conditions are shown ***~~strikethrough bold italics~~*** and proposed modifications highlighted in yellow ***bold italics***.

PROJECT APPROVAL –

SCHEDULE 1

No changes proposed:

Application No:	*08_0255*
Proponent:	*Elf Farm Supplies Pty Ltd and Elf Mushrooms*
Approval Authority	*Minister for Planning and Infrastructure*
Substrate Plant site Land:	*Lot 14 DP 1138749 and part Lot 13 DP 1138749*

Mushroom Farm Site Land:	*108 Mulgrave Road, Mulgrave* *Lot 138 DP 752037,* *521 The Northern Road Londonderry*
Project:	*Elf Substrate Plant and Elf Mushroom Farm Project*

SCHEDULE 2 – ADMINISTRATIVE CONDITIONS

No changes proposed.

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS — SUBSTRATE PLANT SITE

No changes proposed.

SCHEDULE 4 – SPECIFIC ENVIRONMENTAL CONDITIONS — MUSHROOM FARM SITE

The following modifications are proposed:

SITE OPERATION

Hazard and Risk

6. The Proponent shall:

(a) provide and manage a 24 metre wide APZ between the buildings on the Mushroom Farm site and any bushfire hazard;
(b) implement suitable measures to minimise the risk of fire on the Mushroom Farm site;
(c) extinguish any fires on the Mushroom Farm site promptly;
(d) maintain adequate fire-fighting capacity on the Mushroom Farm site; and
(e) construct the proposed office building in compliance with section 7 ~~***(BAL 29)***~~ ***(BAL 40)*** Australian Standard AS 3959-2009 *Construction of buildings in bush fire-prone areas* and section A3.7 Addendum Appendix 3 of *Planning for Bushfire Protection 2006.*

NOISE

Construction Noise Criteria **No changes proposed.**

15. The Proponent shall ensure that the construction noise generated at the Mushroom Farm site does not exceed the criteria in (Atkins Report)

Table 4: construction noise criteria dB(A)

Receiver/Location	***Day*** LAeq(15 minute)
Receiver 1 — 493 The Northern Road, Londonderry	*49*
Receiver 2 — 509 The Northern Road, Londonderry	*54*
Receiver 3 — 1 Thomas Road, Londonderry	*54*
Receiver 4— 6-16 Timothy Road, Londonderry	*45*

Notes:

- *Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.*
- *The construction noise criteria do not apply to any works associated with the installation of the northern environmental bund (Condition 14 above).*

Operational Noise Criteria

The Proponent shall ensure that the operational noise generated by the Mushroom Farm site does not exceed the criteria in Tables 7,8,9 &10.(Acoustic Review 28th August 2018 prepared by Acoustic Consulting Engineers)

SCHEDULE 5 - ENVIRONMENTAL MANAGEMENT and REPORTING

No changes proposed.

4. ENVIRONMENTAL ASSESSMENT

The following environmental considerations[3] are relevant to the proposed development:

- Visual impact
- Noise impacts
- Air quality
- Water management (stormwater)
- Wastewater
- Flora and Fauna
- Traffic
- Contamination
- Heritage
- Bushfire
- Waste management
- Zone objectives

4.1. Visual Impact

Existing Development and Proposed Modification

The potential visual impacts of the proposal have been considered in the context of the existing approval on the site.

The table below compares the approved buildings to the proposed amended buildings

Comparison Assessment between approved and proposed (amended)

DEVELOPMENT (Approved)	**DEVELOPMENT (Proposed)**
Building: 420 metres long x 79 metres wide (growing rooms) plus 1 peat storage building (70m x 180m) Total building length (main building 420 + peat storage 70m) 490m	Building: 455m long by 200m wide (varies).

[3] Extracts and descriptions of Development (approved) including Project Approval Statement of Committments.

DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Wall height of 9.8 metres. Ridge height of 11.9 metres.	Wall height of 4.5 metres. Ridge height of 9.485 metres .

The amended building design due to the new method of growing the mushrooms on a single level has increased the floor area needed for the growing of mushrooms and the floor area of the building has increased from as approved 46,356sqm to proposed floor area 91,000sqm (increase of 44,644sqm).

The overall length of the approved building including the peat store building which had a 12m separation with the growing building of 490m has been reduced to 455sqm.

The height of the walls and ridge height has been reduced from the approved growing building as outlined below

Wall height reduced from 9.8m to 4.5m (reduction of 5.3m)

Ridge Height reduced from 11.9m to 9.485m (reduction of 2.415m)

Summary of changes between approved and amended development

Component	Change
Floor area	Increase of 44,644sqm
Building length	Reduction of 35m
Wall height	Reduction of 5.3m
Ridge height	Reduction of 2.415m

Visual Impact Assessment

The Elf Mushroom Farm is located on the Northern Road, Londonderry and is visible from The Northern Road and neighbouring properties. A 2.5m high earth mound with associated landscape plantings near the mound was required to be installed as part of the approved project to reduce potential visual impacts of the proposal when viewed from The Northern Road and along the northern boundary and the adjacent properties to the north of the site.

The earth mound along the northern property boundary also acts as the disposal area for the effluent generated by the proposed development.

This earth mound has been retained and reconfigured to address a response to matters raised in the initial consultation process.

The revised proposal provides for a building with a larger building footprint, however the overall wall height and roof height of the building is proposed for reduction – 2.415 metres roof height reduction (proposed building height 9.485 metres) and 5.3 metre wall height reduction respectively (proposed 4.5metre wall height). Site photos are included from along the Northern Road Boundary (refer Plates 3 - 5) and surrounding development.

Plate 3:

View looking from Northern Road towards the existing dwelling on the site (view looking from Northern Road to the south-west).

Plate 4:

View looking from the site along the Northern Road to the north-east.

Plate 5:

View looking along the Northern Road boundary towards the south-west (towards 1 Thomas Road).

Landscape mounds and planting is proposed along The Northern Road boundary and the northern boundary to also provide for acoustic mitigation measures.

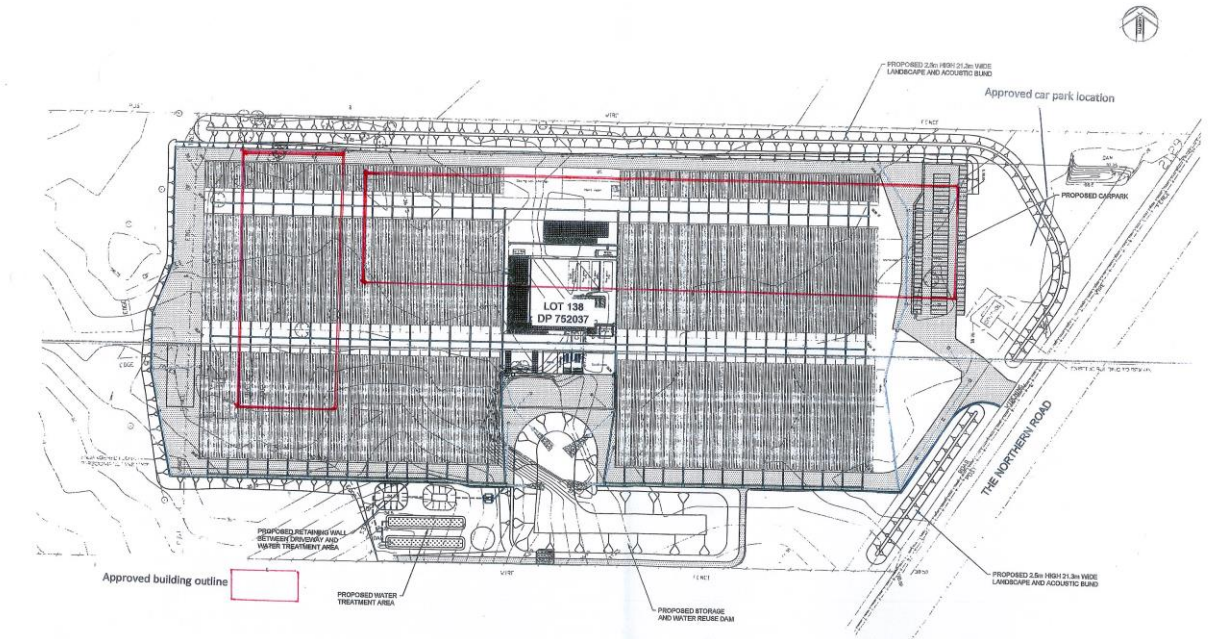
The front setback area of The northern Road will retain the existing mature native trees and vegetation where possible.

The extent of the mound has been reduced and the vegetation located in the south eastern corner of the site along The Northern Road boundary and setback area will not be removed.

This vegetation currently provides an established visual screen to the site from The Northern Road. (Refer to photo below)

The landscaped earth mounds will also provide screening of the development when viewed from The Northern Road and northern property boundary.

The setback of the building in the north eastern corner of the site from The Northern Road has been increased from the approved location (80m and 130m) and (110m and 180m)
The additional building area located to the south of the approved building aligns with the setback of the building along the northern boundary and because of the angle of the front property boundary the setback of the proposed building from The Northern Road is between 60 to 180m.
The plan and table below shows the comparison of the approved and amended building and the setback distances from The Northern Road and adjoining property boundaries. (northern and southern)



Plan showing the outline of the approved building and amended building

Comparison of approved and proposed setbacks to the building.

Property boundary	Approved	proposed
The Northern Road	80m-130m	60m-180m
Northern	32m (Growing building) 22m (Peat storage building)	32m (Growing building)
Southern	178m (Growing building) 154m (Loading dock)	68m (Growing building)

The plan table above shows that the setback from the approved building has been increased in that portion of the site and the extension of the building to the south still provides a minimum setback of 60m to The Northern Road which provides adequate opportunity for additional plantings as well as retaining some of the existing mature trees along the front property boundary.

The setback for the northern property boundary has not altered from the approved setback except the peat store building at the rear is not proposed with the amended plans and is replaced the new growing building that has an increase side setback from 22m to 32m in this location.

The southern property boundary with 1 Thomas Road has a reduced setback from the growing building and now provides a setback of 68m which is an adequate distance from the dwelling.
This setback distance will contain the proposed dam and water treatment system for the operation.

The dam wall is setback 8.5m from the property boundary and a 4m wide maintenance access to the water treatment area is provided.

The owner of the property has indicated to the client that they do not have any objection to the proposed amended location of the growing building.
(Refer to letter attached from the owner of 1 Thomas Road)

The proposed setbacks and 2m and 2.5m noise barrier mound that will be provided along The Northern Road and northern property boundary provides suitable opportunity for landscaping to be implemented that will screen the proposed development and ensure the impact on the streetscape and the properties to the north is minimised.
While the size (footprint) of the building has increased the height of the building has been reduced especially the wall height.

The amended building location still provides setbacks provided will allow many of the significant trees located along The Northern Road front portion of the site to be retained and incorporated into the development and the overall landscape design.

The building setback to the northern property boundary has not altered from the approved plans and the length of the approved buildings including the peat storage building has been reduced with the amended proposal as well as the wall and ridge heights being reduced.

Based on the above comment and changes to the building height and overall length the potential visual impact of the proposed building when compared to the approved building along the northern boundary has been reduced and not increased.

The setbacks provided from The Northern Road has increased in the areas where the approved building was located and in the other portion of the site where there is a new building proposed a setback of a minimum of 60m is provided which will allow the proposed 2.0m high landscape mound to be implemented as well as retaining some of the existing mature trees along the front section of the site.

The 2.0m high mound suitably landscaped with the reduction in the overall building height will assist in reducing the overall visual impact of the development as amended.

The nature of the use of the building with the introduction of the new technology to be used for the growing of mushrooms dictates the form and design of the building.

While the approved building used a traditional horizontal form of growing mushrooms in trays stacked on top of each other the new and more efficient and effective technology grows the mushrooms on a single vertical table and allows more machinery to be used in the picking and packing process to increase efficiency in the growing process and maximum the harvest for each growing period.

The other facilities and infrastructure associated with the mushroom farm can be provided on site while still retaining the significant vegetation area at the rear of the site.

Mitigation and Safeguard Measures to reduce potential visual impact
The following mitigation and safeguard measures are proposed to reduce the potential visual impact:

- Reduced overall building wall height and roof height to original proposal;
- Reduce the overall building length of the building along the northern property boundary;
- Maintain the approved building setback along the northern property boundary.
- Increase the building setback of the approved building along The Northern Road
- Maintain the approved 2.5m high landscaped earthern mound along the northern property boundary and the 2m earthern mound along The Northern Road including planting of suitable plants and shrubs and retaining the existing trees where possible;
- External colours and finishes selection of building materials to reduce glare, consistent with the palette of the rural landscape;

The overall additional visual impact on the locality of the amended development is not significant.

While the overall floor area of the building has increased due to the change in the technology that will now be used to grow the mushrooms the setbacks of the building when compared to the approved plans has remained the same for the northern property boundary and The Northern Road.

The southern property setback to the approved building and dam has decreased but the proposed setback is still adequate to reduce any significant visual impact from the adjoining property given the use as a dam which is close to the property boundary and is consistent with other dam locations in rural areas.
The opportunity for screen planting along this boundary will assist in reducing any potential visual impact.

4.2. Noise impacts

Existing Development and Proposed Modification

A Noise Assessment review has been undertaken by Atkins Acoustics and an Acoustic Review assessment undertaken by Acoustic Consulting Engineers for the amended layout and plans.

The potential noise impacts of the proposal have been considered in the context of the existing approval on the site.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Noise Impact	Construction of acoustic mound along northern and eastern boundaries – not less than 2.5metres above existing ground levels. Noise control recommendations during construction and operational phases including mechanical plant to acoustic performance measures, walls and roof of plantroom to minimum acoustic performance, roof cladding acoustic requirements.	Construction of acoustic mound along northern and eastern boundaries –2 and 2.5metres height and acoustic wall 3m and 3.5m on the southern edge of the apron southern edge of the loading dock. Noise control recommendations during construction and operational phases including mechanical plant to acoustic performance measures, walls and roof of plantroom to minimum acoustic performance, roof cladding acoustic requirements.

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
	Limit vehicle speeds to maximum 20kph. Additional noise control measures during construction and operational phases.	Limit vehicle speeds to maximum 20kph. Additional noise control measures during construction and operational phases. Potential acoustic enclosure to sections of the development area Refer Acoustic Assessment Report dated 20th August 2018 which provides alternate solution to reduce the potential impact on the property known as 1 Thomas Road which adjoins the property to the south.

Background

The acoustic has reviewed the report prepared by Atkins Acoustic dated the 5th April 2016 that was submitted with the initial modified application.

In January 2018 Elf Mushrooms sought to amend the building design and operational procedures to align the development with best management practices .

The main changes involved

- Addition of small growing rooms on the northern side of the building.
- All filling of growing rooms with substrate occur internally within the northern and central corridors
- Revaluate the use of air cooled reciprocating engines for moving floor trailers now filling activity to occur internally
- Winching/tip out of spent substrate to occur externally on southern hardstand apron.
- Increased off set of southern hard stand area to site boundary.

The findings and recommendations of the review is based on the background information and data from the previous findings and recommendations of the other reports prepared for the proposed development and lodged with the initial application in 2010 and the modified application in 2016.

Receiver Locations

The assessment of the potential noise impact was undertaken for the nearest residential dwelling located at

- 507 The Northern Road (North)
- 509 The Northern Road (North)
- 1 Thomas Road (South)
- 8-16 Timothy Road (West)

Impact Assessment

Condition 16 of the Development Consent issued for the Mushroom Growing farm set specific operational noise limits.

Table 5 Operational Noise Impact Assessment Criteria, dB(A)

Receiver / Location	*Shoulder period (5-7am) $L_{Aeq,15min}$*	*Day $L_{Aeq,15min}$*	*Evening/ Night $L_{Aeq,15min}$*	*Sleep disturbance $L_{A1,1min}$*	
				Night	*Shoulder period (5-7am)*
Receiver 1 – 493 The Northern Road, Londonderry	*44*	*35*	*35*	*45*	*48*
Receiver 2 – 509 The Northern Road, Londonderry	*40*	*35*	*35*	*45*	*46*
Receiver 3 – 1 Thomas Road, Londonderry	*44*	*45*	*37*	*49*	*51*
Receiver 4 – 6-16 Timothy Road, Londonderry	*38*	*39*	*35*	*45*	*41*

Notes: Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

The above criteria imposed as a condition of the consent has used the predicated levels from the Atkins Acoustics noise report that was submitted with the initial DA rather than the projected specific noise goals determined in accordance with the EPA Industrial Noise Policy.

The EPA Noise Policy has now been replaced by the Noise Policy for Industry (October 2017).

The new replaced noise policy was not intended to be used as a mandatory requirement but rather designed to establish a noise trigger level as a benchmark for assessing and managing noise from larger Industrial and agricultural activities.

The trigger level is not limit on noise levels but a level above which reasonable and feasible noise mitigation measures should be identified.

The table 2 below taken from the Acoustic Consulting Engineers Acoustic Revie dated report 5th February 2019 presents a summary projected trigger levels for each of the nearest dwellings

Table 2 Project Noise Trigger Levels (NSW Noise Policy for Industry)

Receiver/ Location	*Shoulder period* (5-7am)* $L_{Aeq,15min}$	*Day* $L_{Aeq,15min}$	*Evening* $L_{Ae,,15min}$	*Night* $L_{Aeq,15min}$	*Sleep disturbance* $L_{AF,max}$	
					Night	*Shoulder period (5-7am)*
Receiver 1 – 503 The Northern Road.	44	44	44	38	52	54
Receiver 2 – 509 The Northern Road	47	48	45	38	52	57
Receiver 3 – 1 Thomas Road	47	48	45	38	52	57
Receiver 4 – 8-16 Timothy Road,	40	40	40	38	52	52

Notes: Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry.

** 'shoulder period' noise trigger level should not exceed Day, Evening noise trigger level should not exceed should not exceed Day*

The review has predicated and modelled the noise and project noise trigger levels at the adjoining dwellings for a range of times including 5am-7am/day/evening/night, operational scenarios and meteorological conditions.

The modeling has assumed plant and equipment operating simultaneously and typical operations consistent for all the times identified above.

While it is acknowledged that these situations would not occur all the time the noise modeling represents the likely worst-case operating situation.

The results of the modeling has indicated:

- All the dwellings except for 1 Thomas Road achieve Project Trigger Noise Levels for all the metrological conditions.
- 1 Thomas Road (dwelling adjoining to the south) exceeds to assessment objectives by up to 5dBA because of cumulative noise from the winching/tip out activities and truck movements for growing rooms in the south eastern portion of the building without additional noise controls.
  The noise prediction has adopted a 3.5m high acoustic mound or wall on the western side of the spent compost and front-end loader working area.

  The noise level associated with truck pass-by and airbrake release in the loading dock will exceed the assessment objectives by up to 11dBA.

The review has outlined several possible options to mitigate the potential noise disturbance at 1 Thomas Road which include:

- Restricting operations on southern side of the building.
- Re-routing of site vehicles during night-time hours.
- Additional noise controls to site vehicles.
- Acoustic wall construction
- Partially enclosing of southern apron
- Acquisition of 1 Thomas Road
- Provide acoustic treatments to the dwelling at 1 Thomas Road.
- Negotiate with the property owner for a restriction on the title in respect to the noise levels generated by the mushroom farm.

The Department has previously indicated that an option involving excessive restrictions on the operating hours and use of trucks not to be a practical and sustainable solution to the noise issue for 1 Thomas Road.

The client has approached the owner of 1 Thomas Road about the potential to purchase the property.

The property owner also operates the adjoining car wrecking yard and the property at 1 Thomas Road is used by the manager of the yard.

The property owner is not interested in selling the property and has indicated that they have no objection to the proposed mushroom growing operation.

A letter from the owner of 1 Thomas Road accompanies the submission.

The owner was also not interested in have any legal title restriction on the property.

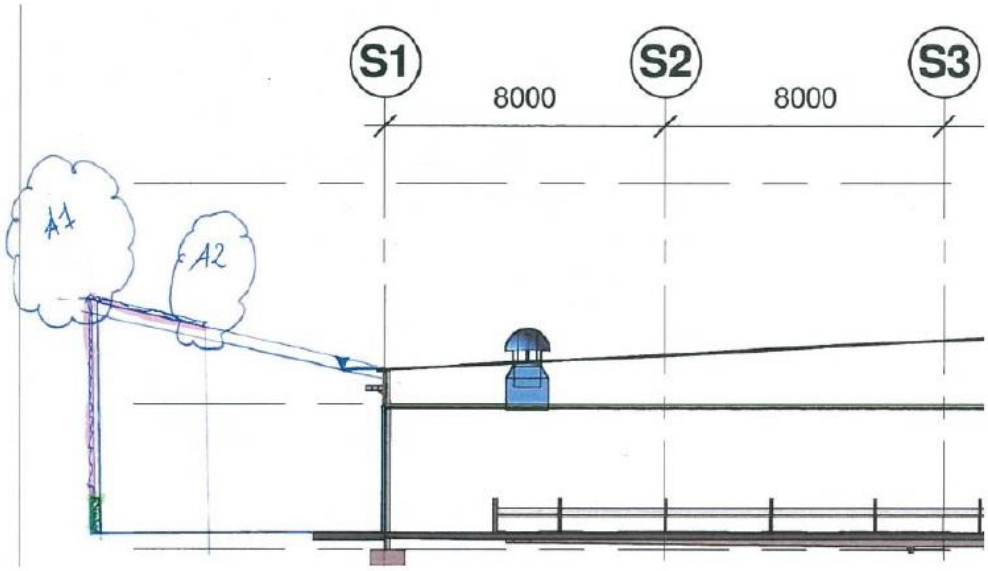
The current construction standard of the dwelling at 1 Thomas Road would make any the implementation of any proposed mitigation measures to reduce the noise impact from the mushroom farm cost prohibited and would require an almost rebuilding of the dwelling.

The mitigation measures that are practical and sustainable involve the construction of the acoustic walls along the southern apron as well as partial enclosing of the southern apron later in the event the owner of 1 Thomas Road is impacted by noise generated by the mushroom farm and the level is above the Project Noise Trigger Level.

The exceedance of the trigger level is between 5am to 7am and 10pm to 5am from the dock and intermittent noise along the southern side of the building.

The proposed partial enclosure is shown on the plan below.

Figure 2 Cross Section of Partial Enclosure along the Southern Apron



The plans that are attached to the Acoustic Review report shows the location of the proposed acoustic walls and partial enclosure of the southern apron.

The Review in section 7 makes several recommendations to be implemented relating to:

- the construction of acoustic mounds and walls, partial enclosing along the southern apron
- Machinery used to meet the acoustic performance outlined in the review document.
- Acoustic treatment requirements for the walls and roof of the building.
- Certain operating activities and procedures.

The report has predicted the likely noise levels generated by the mushroom farm with the implementation of the recommended mitigation measures and at all the receivers the noise levels comply with the assessment objectives.

The amended mushroom farm will have no additional noise impact on the surrounding dwellings especially 1 Thomas Road once the recommended noise mitigation measures are implemented.

4.3. Air quality

Existing Development and Proposed Modification

A revised Odour Assessment and Greenhouse Gas Assessment has been undertaken by Pacific Environmental and lodged with the initial application for modification.

The potential air quality impacts of the proposal have been considered in the context of the existing approval on the site.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Air Quality Impacts	**Dust**: Construction: Dust generation control measures including vehicle defined routes; speed limited vehicles; damp state for filled trucks, Temporary stabilisation for exposed surface; Rehabilitation of finished surfaces; Operational: Storage on sealed surfaces; Washed down vehicle apron areas; Mushroom substrate moisture laden; Cleaned roadways.	Construction: Dust management plans; Mitigation measures: -Maintaining active road surfaces; -Limit vehicle speeds; -Rehabilitate completed sections of the site.
	Odour: Spent substrate storage under cover. Record and respond to any complaints that may be received	The predicted odour concentrations are anticipated to be below the adopted odour performance goal for the assessment of 2 OU.

The Modified odour assessment report has identified and predicted the potential odour impacts that has the potential to affect the surrounding and nearby sensitive receptors (dwellings).

A level 3 odour assessment has been undertaken consistent with the Approved Methods (EPA 2005), Technical framework: assessment and management of odour from stationary sources in NSW.

The results of the odour assessment indicate that under conservative assumptions which have been used in the modelling and assessment the predicted odour concentrations are to be below the adopted odour performance goal for the assessment of 2OU.

The modified development will have no additional odour impact on the locality and the near by dwellings and will meet the performance goal used for the assessment.

4.4. Water management

Existing Environment

A Stormwater Quality Report has been undertaken by Barker Ryan Stewart.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Stormwater	Stormwater runoff collection transferred to a storage dam within the site. Incorporate on-site detention. An orifice plate at the outlet will enable stormwater accumulated in the	Stormwater runoff collection transferred to a storage dam within the site. Incorporate on-site detention.

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
	detention region of the dam following storms to slowly escape to natural drainage. The storage dam will be designed with a spillway to permit safe overflow during major storms. When available, dam water will also be used for irrigating the landscaped and grazing areas of the property.	The storage dam will be designed with a spillway to permit safe overflow during major storms. An orifice plate at the outlet will enable stormwater accumulated in the detention region of the dam following storms to slowly escape to natural drainage.
Wash Down Water	Growing rooms are washed down with heated water and steam after each mushroom growing cycle, using mains water to maintain hygiene standards. Corridors are washed down daily. The building apron external to the growing rooms is washed down after each filling operation and when spent substrate is removed from a growing room. Dam water is used for external wash down. Wash down water from growing rooms and the apron will flow to the stormwater pits located in the apron area.	Wash down water separated to the water recycling treatment system. Resultant water stored in storage tank and re-used on site.
Wash Down Water Recycling System	The recycling system for wash down water is be capable of treating up to 30,000 litres per day when the farm is fully operational. Incoming wash down water will pass through a series of ponds and wetlands with a retention time of up to 10 days. The recycling system is designed for nutrient removal by wetland vegetation.	Washdown water treatment system design retained. Resultant water stored in storage tank, and re-used on site.

The approved water management system involved the stormwater runoff from the buildings, and driveways to be collected by a series of pipes and pits and disposed of to a proposed dam.

The water captured in the dam will be reused on site for washing down and for the cooling towers.

The system was designed to ensure the stormwater discharge from the site after the development is completed does not exceed the pre-development discharges.

The size of the approved dam was 14.7 megalitres which included a capacity for storm detention and have a depth of 4m.

The dam was located approximately 45m from the southern property boundary at the closet point of the dam to this boundary.

The recycling system for the water treatment can handle up to 30,000 litres a day.

The modified design has not altered the approved water treatment system as outlined in the report by Sainty and Associates P/L which will be implemented adjacent to the proposed new dam.

The modified development will still collect stormwater from the roof area of the proposed building and hardstand areas is to be collected through a conventional pit and pipe systems and discharged into the proposed dam located to the south of the building.

The dam is proposed to have a basic storage volume of 14,700 cubic metres with an on site detention storage component of 12,500 cubic metres.(Total capacity 27,200 cubic metres).

The increase in dam size is due to the increase in roof areas and hardstand areas associated with the modified development.

A separate drainage system will also be installed on the site which will cater for the wash down waters from the cleaning processes across the site. This drainage system will direct this water that will be rich in organic material to a wetland system designed to remove the organics in a suitable manner to be reuse within the facility to reduce the need for town water.

The on-site detention basin has been located as part of the proposed dam and is above the permanent storage level of the dam associated with the water from the roof of the building and hardstand areas on site.

A storage volume of 12,500 cubic metres of storage volume is required during the 100 year ARI critical storm event to reduce the outflows from the site from its post development flow rate to that of at least the pre developed rate.

The report and plans have demonstrated that:
1. The proposed development can be drained to the OSD system
2. The maximum water level of the osd system is at least 0.5m below and proposed infrastructure, so the freeboard requirements of council are met.
3. All roof water and hardstand areas are to be diverted to the dam/OSD system for reuse or detention purposes.
It is expected that if the recommended systems are implemented and operated and maintained satisfactorily, then the stormwater management system will meet water quality and quantity requirements and have no impact on the property to the south.

The modified system for stormwater system is designed to ensure the stormwater discharge from the site after the development is completed does not exceed the pre-development discharges.

The only changes to the stormwater system form the approved system is

- Reduction in the setback from the southern property boundary from 45m to 8m
- The depth of the dam excluding the 1% AEP event remains the same at 4m.
-

Water License

The need for a water license has been previously raised with the Office of Water in relation to another mushroom growing facility that proposed an identical development including a large dam that was used to collect the water runoff from the development area which includes the roof and internal driveway areas.

The response back from the NSW Office of Water was if the dam only collected water from the development site and other water runoff not associated with the building and internal driveways was diverted around the dam a licence was not necessary.

The proposed dam which acts as a detention system will only collect the water from the roof of the building and the internal driveways all other surface water will be diverted around this dam.

As a result, a water license is not required for the proposed development.

4.5. Wastewater

Existing Environment

Approved system

A proprietary sewage treatment plant creating secondary treated effluent was approved to be installed in the open area of the site to the south of the proposed building. Effluent from the plant will be disposed of by subsurface irrigation within the landscape/noise mounds along the northern and eastern site boundaries.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Sewage Treatment	Wastewater from the staff amenities, workshop, and existing dwelling on the site will be treated in the sewage treatment plant Secondary treated effluent from the plant will be disposed of on site by subsurface irrigation within the landscaped mounds.	A reduction in staff numbers is proposed (from 165 workers to 113 workers). No change in the effluent design system is proposed. Secondary treated effluent from the plant will be disposed of on site by subsurface irrigation within the landscaped mounds. Child care centre not proposed.

The modified development is accompanied by a new Soil and Site Assessment for On-site Wastewater Management prepared by Harris Environmental Consulting.

The report has recommended that a commercial waste water system with a capacity to treat 4,097 L/day is required.

The system is to have a range of suitable management and monitoring procedures for the treated effluent.

Periodic testing of the treated effluent will be required to ensure that waste water treatment system is operating properly and achieving the appropriate level of treatment.

The waste water treatment system is to be located down slope of the building to achieve the required fall.

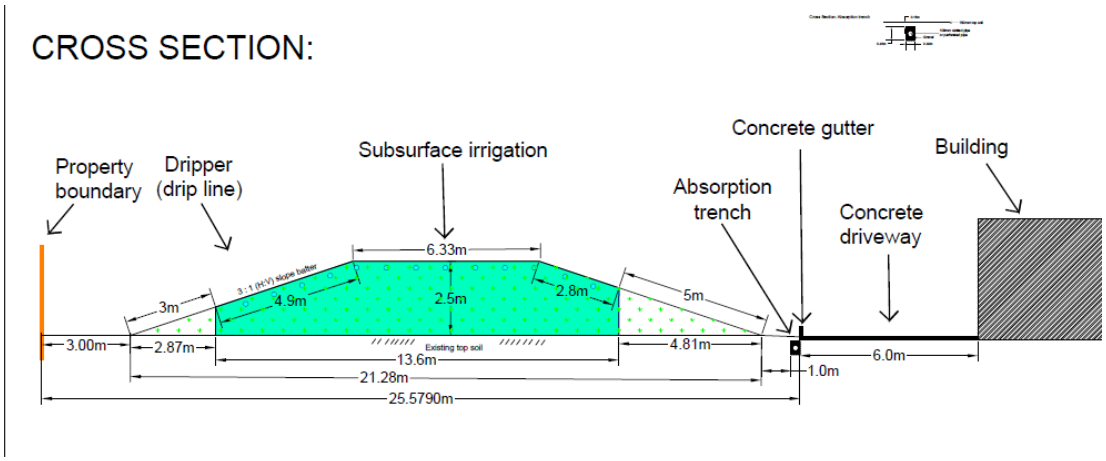
The required irrigation area is 3120sqm.

Council requested an alternate waste water disposal area.

The proposed northern earth mound that will be used for subsurface disposal has a total area of 6,240sqm which provides a 100% reserve area if the initial area for subsurface is at capacity or fails.

The mound will also act as a noise and landscape area.

The cross section below shows the layout of the mound along the northern boundary and the adjoining access driveway and setback from the property boundary.



4.6. Flora and Fauna

A Flora and Fauna report and addendum report (March 2018) has been undertaken by Fraser Ecological.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Flora and Fauna	The larger area of woodland remnant to the rear of the property is not included in the project site. At the front of the property the proposed child care centre and earth mound will make a minor incursion into the small remnant of Castlereagh Swamp Woodland community. Mitigating measures: • avoid removing remnant trees wherever possible	Increased building footprint to the west. Retention of woodland remnant and identification of protected flora within vicinity of western building façade to ensure protection during construction. Mitigating measures: • avoid removing remnant trees wherever possible

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
	• install temporary fencing to protect woodland remnants when undertaking construction work in the immediate vicinity • collect stormwater from the development in dams • plant local native species from the Castlereagh Woodlands along The Northern Road frontage and elsewhere for landscaping to enhance the remnant of this community. • maintain pasture and suppress weeds. • Separately fence groupings of threatened species and avoid disturbance to fenced areas.	• install temporary fencing to protect woodland remnants when undertaking construction work in the immediate vicinity • collect stormwater from the development in dams • plant local native species from the Castlereagh Woodlands along The Northern Road frontage and elsewhere for landscaping to enhance the remnant of this community. • maintain pasture and suppress weeds.

This addendum Flora and Fauna Assessment specifically addresses concerns raised by the NSW Office of Environment and Heritage (OEH) letter dated 16th May 2016. OEH's concerns related to the Flora and Fauna Assessment (dated June 2015) not adequately addressing the potential impacts of the 25m asset protection zone, acoustic wall and general construction impacts.

A majority of the subject site comprises cleared land with remnant Castlereagh Scribbly Gum Woodland and Castlereagh Swamp Woodland trees which are listed as an Endangered Ecological Community under the NSW Biodiversity Conservation Act 2016. The areas of native vegetation proposed for removal are considered to be in poor condition. Intact and better quality Castlereagh Woodland will be retained and conserved within the property but outside the development footprint.

Targeted flora and fauna surveys were undertaken to ensure a more informed assessment of the potential impacts of the 25m asset protection zone, acoustic wall and general construction impacts. Threatened plant species recorded in this area included Dillwynia tenuifolia and Persoonia nutans which are both listed under the NSW Biodiversity Conservation 2016 (refer to Section 4.4).

Recommendations for APZ establishment have been made in this report that will ensure that the APZ could be established without requiring the removal of any of these plants and the retention of a hollow-bearing tree (refer to Section 6). The low-lying threatened plants occur within the drip zone of smooth-barked 'Hard-leaved Scribbly Gum' (Eucalyptus sclerophylla) trees that are considered ideal to retain within an APZ compared to rough-barked species when retained with a discontinuous canopy.

It was recommended that as part of the development consent, an 'Integrated Bushfire and Vegetation Management Plan' could be prepared to ensure that the threatened plants and their potential habitat are protected in perpetuity whilst ensuring the APZ complies with Inner Protection Area requirements of Planning for Bushfire Protection 2006. The plan would be prepared by an ecological restoration consultant in conjunction with a bushfire consultant to ensure compliance with the Rural Fire Service's GTAs.

Therefore, the major conclusion arising from this Flora and Fauna Impact Assessment is that the proposed works are unlikely to result in a significant impact on any listed species or communities. Therefore, in accordance with the assessment guidelines of the BC Act (2016),

EPA Act (1979), TSC Act (1995) and FM Act (1994), a Species Impact Statement is not required.

4.7. Traffic

Vehicle movements at the proposed mushroom farm were estimated in the original proposal based on actual movements recorded at the existing Elf Mushrooms' farm at Vineyard. No increase to production capacity is proposed by the modified application and therefore no increase in vehicles associated with production is proposed.

At full production: 160 vehicle movements per day or 54 vehicle movements per hour.

It was concluded that the increase in hourly traffic contributed by the mushroom farm will not alter the existing level of service during peak periods on The Northern Road, although that level of service will decline over the life of the development due to the growth in background traffic. A reduction in staff numbers is proposed at full capacity, due to the installation of improved mushroom picking technologies. This will decrease the required car parking and traffic movements associated with staff.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Traffic	The intersection of the site access road and The Northern Road will be constructed as a Type AU intersection in accordance with the RTA's Road Design Guide prior to commencement of operations – at commencement of Stage 1. Design internal dock layouts at both of the sites to AS2890.2. Londonderry Mushroom Farm: 55 spaces (1 per 2 employees);	No change proposed to this aspect of the development. The intersection of the site access road and the Northern Road is retained and will be designed in accordance with requirements. A reduction in staff number is proposed (from 165 staff to 113 staff at full production), reducing the required car parking on the site for staff with adequate car parking proposed.

4.8. Contamination

Compaction and Soil Testing Services undertook two contamination assessments of the site to determine its suitability for the proposed development as part of the approved development.

The initial approved report tested the total site including the area of the site that is now proposed to be developed with the new building and dam.

The report has concluded based on the investigations undertaken

- The site has not been contaminated by previous activities on the site or surrounding sites.

- The site is suitable for the proposed development as an industrial style mushroom farm and no further investigations or remediation action is required on the site to allow the development to proceed.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Contamination	Compaction and Soil Testing Services undertook two contamination assessments of the site to determine its suitability for the proposed development. One assessment considered the land to be occupied by the mushroom farm while the other assessment focussed on the land to be occupied by the proposed child care centre, where more stringent residential standards apply. The report concludes that no further investigation or remedial action is required.	No change proposed. The testing and investigation undertaken with the initial application also included the portion of the site now proposed for the new buildings and dam.

4.9. Heritage

A Cultural heritage assessment was undertaken by Biosis Research as part of the approved development.

This report assessed the total site including the areas where the new buildings and dam is now proposed.

It is considered that the recommendations within the report and the conditions identified in the approval can be implemented as required and do not need to be amended with the modified application.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Heritage	No items of non-indigenous heritage were listed for the site Should any Aboriginal object be identified during construction, work should cease and notification given to DECC and other parties Should skeletal remains be discovered, the protocol outlined in the Heritage report to be followed.	No change proposed. The report assessed the site and included the areas of the new buildings and dam.

4.10. Bushfire

An updated bushfire compliance report for the proposed mushroom farm has been prepared by Control Line Consulting.

The report aimed to

▪ To determine the vegetation type, the expected fire behaviour and the threat to the proposal; and

▪ To assess the proposal with reference to Planning for Bush Fire Protection 2006; and

▪ To assess the proposed construction with reference to the National Construction Code of Australia; and

▪ To determine the level of construction with reference to AS 3959-2009 Construction of buildings in bushfire prone areas; and

▪ To identify any other such measures as to improve the chances of building survival during a bushfire event; and

▪ To assist the consent authority in the determination of the modification from the original application subject to this proposal.

The report has made a several of recommendations including

- setting the required Asset Protection Zones for the Mushroom Growing building
- Setting the minimum construction standard for the building and internal access roads
- Setting the required bushfire fighting water supply on site
- Preparing an emergency /evacuation plan in the event of a bushfire.

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Bushfire	Establish and maintain a defendable space of 10 metres to the west, north and south of each building. The defendable space is to be a clear area with unimpeded access for fire fighting; Provide a static water supply (water tank, not dependent upon electricity for pumping) to supplement the reticulated supply Maintain an asset protection zone for 24 metres to the north, east and western aspects of the buildings with shrub layer managed so as not to exceed five tonnes per hectare.	A 25metre APZ to be retained for all elevations. Landscaping in a manner not to compromise the integrity of the APZ. Construction level of BAL 40 to be provided for the building. Driveway, turning circles, suitable surface material, suitable width to be constructed. Static water supply 20,000Litres (water tank, not dependent upon electricity for pumping) to supplement the reticulated supply including suitable water delivery line.

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
	provide a rubber fire hose of minimum diameter 18 millimetres capable of reaching all elevations of all buildings; maintain vehicle access to the site in compliance with the standard and fire brigade access to the northern and western asset protection zones; develop and adopt an emergency bushfire plan.	Provide suitable hoses capable of reaching all elevations of the building. Suitable signage. Underground provision of services where possible. If gas to be installed to be undertaken and maintained to Australian Standards. Preparation of a Bushfire Emergency Evacuation Plan.

4.11. Waste management

Impact Assessment

ISSUE	DEVELOPMENT (Approved)	DEVELOPMENT (Proposed)
Waste	Waste materials generated at the mushroom farm will be largely limited to miscellaneous items such as packaging, office waste, workshop waste, food waste from the staff lunchroom, child care centre waste and contractors' waste. Any spilt solids, collected after filling or emptying growing rooms, will be added to material in the spent substrate store. Occasionally the wash down water recycling ponds and sewage treatment plant will need desludging. Sludge obtained from the ponds and STP will be removed by a contractor for disposal. Spent substrate is not considered a waste material as it will be removed from the site for beneficial use.	No change proposed and the same waste management measures approved will be implemented.

4.12. Zone Objectives

Below is an assessment of the modified debelopment against the zone objectives of the RU4 Primary Production -Small Lots zone

- *To enable sustainable primary industry and other compatible land uses.*

Assessment:

The modified application if for an intensive plant agriculture (Horticulture) and the use is compatible with the other rural land uses in the locality and the commercial wrecking yard to the south of the site.

- *To encourage and promote diversity and employment opportunities in relation to primary industry enterprises, particularly those that require smaller lots or that are more intensive in nature.*

Assessment:

The modified development while reducing the employment opportunity when compared to the approved development will still provide employment opportunity at full capacity of 113 workers.

- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*

Assessment:

The site is surrounded by a several land uses.

The land use to the south of the site is a car wrecking business and the single dwelling at 1

Thomas Road is associated with the car wrecking business (Refer to aerial photo below).

The properties to the north of the site contain dwellings and the use of these properties are for residential purposes with no other agricultural activities.

The design of the modified development has faced the noise generating activities (loading dock and spent compost store) towards the south and the car wrecking yard to reduce the potential impact.

The setbacks distances from the building along the northern boundary has not altered from the approved plans and the height of the proposed building with the new technology has reduced from 9.8m to 4.005m wall height (reduction of 5.795m) and ridge height from 11.9m to 9.485m (reduction of 2.415m)

The overall length of the modified building when compared to the overall length of the approved growing building and peat storage building along the northern property boundary has decreased.

The modified development when compared to the approved development from the northern boundary has reduced the impact in terms of building height and overall building length.

The nature of the modified layout will ensure that there will be no additional conflict to the land uses to the north of the site when compared to the approved development.

Most of the change proposed by the modified development is towards the south the industrial land use (car wrecking yard) land use to the east across The Northern Road is the Castlereagh Nature Reserve and the proposed modified application will have no conflict or impact on the reserve.

The technical assessment reports prepared in respect to

- Noise impact
- Traffic Impact
- Stormwater Management
- Odour Impact
- Flora and Fauna

have all concluded that the modified development will have no adverse impact on the locality especially the properties to the north.

These reports and impacts have been discussed in more detail above in this report.

The main impact of the modified development relates to a noise issue for 1 Thomas Road and this can be resolved with the construction of the acoustic measures recommended in the report.

- *To ensure land uses are of a scale and nature that is compatible with the environmental capabilities of the land.*

Assessment:

The modified application is accompanied by a several technical assessment reports in respect to

- Noise impact
- Traffic Impact
- Stormwater Management
- Odour Impact
- Flora and Fauna

The reports have assessed the impact of the modified development on the locality and the site and the natural features on the site.

All the reports and assessments have all concluded that the modified development will have no adverse impact on the locality or the current environmental capabilities of the site.

These reports and impacts on the locality and the site have been discussed in more detail above in this report.

- *To preserve and improve natural resources through appropriate land management practices.*

Assessment:

The site has a natural resource which is the native vegetation at the rear of the site.

The modified development has been sited in the portion of the site that is generally cleared.

The flora and fauna assessment undertaken for the modified development has also assessed the proposed APZ recommended in the bushfire report.

The report has concluded

> *that the proposed works are unlikely to result in a significant impact on any listed species or communities. Therefore, in accordance with the assessment guidelines of the BC Act (2016), EPA Act (1979), TSC Act (1995) and FM Act (1994), a Species Impact Statement is not required.*

- *To maintain the rural landscape character of the land.*

Assessment:

The modified development is agriculture in nature involving the growing of mushrooms in buildings.

The new technology involved with mushroom growing has changed the way that they are grown from vertical growing beds on top of each other to a larger horizontal growing bed that uses more floor space.

This has resulted in a larger building in terms of floor area when compared to the approved building which was designed on vertical growing.

The development has still used the cleared area on the site to avoid significant removal of the existing mature trees on the site that has the potential to alter the character of the locality.

The larger front setbacks to The Northern Road will allow the trees within the setback to be retained and incorporated into the landscape proposal for the site.

The surrounding character to the north and east is rural while to the south the area is more industrial with the existing car wrecking yard.

While the modification has increased the building area the building height has been reduced when compared to the approved building.

The setback provided along the eastern and western property boundaries is generally in accordance with the approved setbacks and the setback to the west will retained all the existing native vegetation on site.

The retaining of the native vegetation on the western portion of the site and along The Northern Road property boundary assists in retaining the current rural landscape and current character of the locality.

- *To ensure that development does not unreasonably increase the demand for public services or facilities.*

Assessment:

The modified development will not increase the demand for any increase in public services and facilities.
Most of the services needed to operate the farm area provided on site and can operate with no environmental impact.

4.13. Impacts summary

The proposed modification has been considered in terms of potential impacts of the proposal on the environment and neighbouring properties. It is considered that the proposal as modified can provide management and mitigation measures to minimise potential impacts on the environment.

The total production capacity of the mushroom growing farm has not increased from what was approved.

The main potential impact based on the technical reports is noise from the southern side of the building and the impact on 1 Thomas Road which adjoins the site on the southern boundary.

The report has recommended the implementation of works and measures to ensure the operation will not exceed the maximum noise level.

The other impact of the modified development is the potential visual impact on the locality in terms of the scale and size.

This matters has been discussed in detail above the report.

The assessment has concluded that with the proposed setbacks to the property boundaries and the 2 and 2.5m high landscape earth mound along the northern property boundary and The Northern Road frontage the potential visual impact will be reduced.

It was also discussed that the proposed reduction in the height of the building as previously approved will also assist in reducing any potential visual impact.

The traffic volumes will not alter from what was previously approved.

5. CONSULTATION

The Department of Planning has advised that liaison with the adjoining and surrounding property owners and occupants is to be undertaken prior to submission of the application.

Accordingly, the modified proposal was notified to neighbours for a period of 14 days from the 4 August 2015. No written submissions were received however a neighbor (509-519 The Northern Road) who adjoins the site to the north contacted the office via telephone and subsequently a meeting was held on site to discuss the proposal.

The issues raised concerned:

- Retaining the small dam in the north-eastern corner of the site;
- Landscaping along the northern boundary of the site

Following the neighbour's concerns, the proposal design was revised to allow for retention of the small dam in the north-eastern corner of the site including associated trees, with the footprint of the landscape mound design amended. A letter was sent to the neighbor advising of suitable plant species that could be provided to the property for planting along the site boundary.

The Department of Planning notified the modified application and received a number of submissions from external agencies and adjoining and surrounding property owners.

The matters raised and a comment on each of the matters is below.

Office of Environment and Heritage

Biodiversity
The flora and fauna report has not addressed the impacts as the report has not considered the overall site plan and the APZ of the bushfire report as the acoustic wall.
Report to be updated to reflect the overall site plan submitted with the application.
Some changes to the report wording and statements made.

Comment:

The addendum Flora and Fauna Assessment prepared by Fraser Ecological Consulting dated 15th March 2018.

The addendum has considered the overall site and the clearing proposed with the RFS inner APZ.

The report has concluded

- No threatened fauna species were observed during the site survey
- The threatened plant species that were observed on site during the recent surveys will not be removed to comply and meet the APZ
- Recommends that an integrated Bushfire and Vegetation Management Plan be prepared to ensure the threatened plants and their potential habitat are protected in perpetuity whilst ensuring the inner APZ can comply with the RFS requirements.
- Species Impact Statement is not required for the proposed development.

Roads and Maritime Services

Consider separating passenger traffic from trucks accessing the site.
Layout to comply with AS2890.1, As2890.6, 2890.2

Comments:

The proposed separation of passenger traffic & trucks is considered unnecessary in this case as the ingress and egress of the delivery and staff vehicles occurs at different times during the operation hours of the farm and it is highly unlikely that the delivery and staff vehicles will enter and leave the site during the same period.

The delivery vehicles for packaging operate from the site while the staff are working within the building. The delivery vehicles are finished prior to the staff finishing work for the day. The driveway from The Northern Rd will have an entrance & exit lane to ensure vehicles can enter & exit autonomously.

The layout as amended complies with AS2890.1, As2890.6, 2890.2

Department of Primary Industries

- *Stormwater runoff system in the environmental assessment is different to stormwater management report*
- *Stormwater Management Report implies clean water stormwater runoff will be stored in stormwater dam.*
  Suggest this water be directed away from the dam.
- *Licence needed for the use of clean surface water runoff as harvestable right dam capacity is 1.78 ML*
- *Environmental Assessment to address the licence if needed for the use of clean water*

Comment:

The environmental assessment has been amended to reflect the amended stormwater management plans and report.

The need for a water licence has been previously raised with the Office of Water in relation to another mushroom growing facility that proposed an identical development including a large dam that was used to collect the water runoff from the development area which includes the roof and internal driveway areas.

The response back from the NSW Office of Water was if the dam only collected water from the development site and other water runoff not associated with the building and internal driveways was diverted around the dam a licence was not necessary.

The proposed dam which acts as a stormwater collection facility for the water runoff from the roof of the building and the internal driveways and parking areas.

The dam also has incorporated a detention system for larger storm events.

All other surface water not from the roof and hardstand areas associated with the mushroom farm will be diverted around this dam.

Penrith Council

- *Water Quality*
  Ensure the requirements are included in any approval and conditions
  Comment:
  Noted no further details needed.

- *Effluent Management*
  Additional information needed to be addressed.
  Existing system for the dwelling located in the proposed building area.
  Appropriateness of the setback of the proposed mushroom shed to the earth mound.
  Ability of the site to accommodate an alternate disposal area in the event the mounds fail.
  Future child care centre to be accommodated on site.
  Suggested conditions to be imposed on any approval once additional information provided.

  Comment:
  The proposed development as modified does not propose a future child care centre as part of the development.

  A new Soil and Site Assessment for Onsite Wastewater Management report prepared by Harris Environmental Consulting dated 15th March 2018 has been prepared and accompanies the application.
  The report has addressed the matters raised by Penrith City Council and has made recommendations and a design for the proposed treatment system which includes a 100% reserve area.
  A detailed assessment of the proposed system has been discussed in section 4.5 of this report

- *Acoustic Management*

  Needs more information and clarification.
  Refers to proposed child care centre on site

  Comment:
  The child care centre is no longer part of this application and has been removed.

  A further acoustic review assessment has been undertaken by Acoustic Consulting Engineers for the modified application dated 28th August 2018 and the 5th February 2019.
  Detailed discussions of the review assessment including the recommendations are outlined in section 4.2 of this report.
  The report has indicated that with the implementation of the proposed recommendations in the review assessment the development will meet the required EPA requirements for noise levels.

- Air Quality Management
  Matters for consideration and conditions post commissioning testing.

  Comment:
  Noted and matter for the Department to consider.

- *Built form and streetscape*
  concern in the increase in building footprint and ability of the site to support ancillary structures to support the mushroom farm.

  Reduced front setback not in keeping with the rural character of the area and does not provide adequate setbacks to the adjoining properties.

  Buildings has no architectural merit with expanse of long blank walls.

  Removal of additional trees in the front setback eroding the landscape to screen the proposed development.

  Comment:
  The approved building located in the north eastern corner of the site setback distance from The Northern Road has been increased from (80m and 130m) and (110m and 180m)
  The additional building area located to the south of the approved building aligns with the setback of the building along the northern boundary and because of the angle of the front property boundary the setback of the proposed building from The Northern Road is between 60 to 180m.
  The plan below shows the comparison of the approved and amended building and the setback distances from The Northern Road.
  The proposed setback and 2m and 2.5m noise barrier mound that will be suitable landscaped will screen the proposed development and ensure the impact on the streetscape is minimal.
  The proposed generous setbacks will permit the majority of the significant trees located along The Northern Road front portion of the site to be retained and incorporated into the development.

  The building has been amended to be able to incorporate new technology used for the growing of mushrooms to improve the efficiency of the growing operation and reduce the operating costs.

  The new technology used in growing mushrooms moving from vertical to horizontal growing has resulted in the form of the building
  The growing beds now need to be constructed a straight line with no articulations possible.

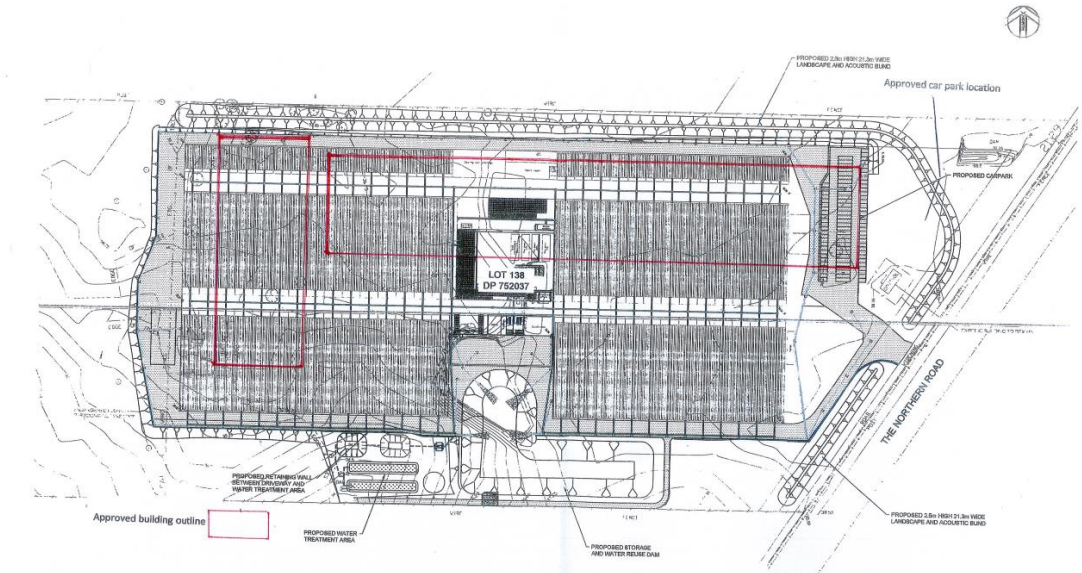
  The proposed building will be well screened by the proposed 2.5m high noise and effluent mound together with the supplementary boundary plantings of suitable trees and other native vegetation.

The layout has been amended to use part of the noise mound for a waste water disposal area with a 100% reserve area as a backup if needed.

The other facilities and infrastructure associated with the mushroom farm can be provided on site while still retaining the significant vegetation area at the rear of the site.

The site layout provides adequate setback distances and areas for additional landscape plantings.

The site can support the proposed amended building and still provide the required infrastructure as demonstrated in the range of technical reports that accompany this modified application.



Plan showing the outline of the approved building and amended building

- *Setback and DCP compliance*
  Limited information on the design of the amended dam and the appropriateness of the setback of the dam to the modified building.
  Adequate assessment against section C3 Water Management of Penrith DCP 2014.

Comment:

Below is the assessment against the relevant part of the DCP chapter
Proposed Rural Land Uses

a) Any application for a new rural land use that requires the consent of Council and will increase the water needs of a particular rural area must submit a water management plan which:

i) Estimates future water needs of the proposed development;

ii) Indicates the proposed water source to meet those needs; and

iii) Outlines water conservation measures to be implemented

The modification does not alter the current approved use as a Mushroom Growing Facility or alter the approved capacity of the mushroom growing operation.
The amended development provides a more efficient method of harvesting mushrooms that is at the cutting edge of technology to reduce the operating costs associated with the current industry methods of growing mushrooms.

Requirements for Extraction of Water

Rural landholders have rights to access water for some basic purposes, such as domestic and stock water, harvestable rights from farm dams and native title rights (see other provisions in this section). Whether or not you need a licence (or other approval) from the Office of Water to access surface water (water from rivers, lakes etc.) depends on how and why you want to use the water. Please consult with the Office of Water regarding any proposed water extraction. Access to groundwater for any purpose requires a licence or approval from the Office of Water (see other provisions in this section). If you want to extract water from rivers or aquifers and use it for commercial purposes, you must hold a water access licence and an approval from the Office of Water.

As discussed previously in the report the proposed use of the dam water captured by the stormwater system for the development area (roof and various hardstand areas associated with the mushroom farm) does not require any licence to be obtained if the other water runoff from the site not associated with the mushroom farm is not captured by the dam.
The water captured in the dam and the water treatment area will be reused in the mushroom growing facility.
The runoff from the areas where the water is reused will be diverted back to the waste water treatment area for further reuse on the farm.

Catchment Management and Water Quality

Objectives

<u>Catchment Management</u>

a) To adopt a total catchment management approach to water quality and protection of water systems;

b) To prevent direct pollution of existing groundwater or surface water systems;

c) To ensure appropriate management of land uses and activities to minimise the risk of indirect water pollution;

d) To improve the water quality of the Hawkesbury-Nepean River system and tributaries;
e) To ensure the high quality of discharge to sewer and drainage systems; and

f) To protect the aquatic environment through the use of ecologically sustainable development principles.

Comment:
The proposed stormwater and water management system for the mushroom farm proposes to capture all the runoff from within the development site and divert and collect it in the large dam and water treatment area.
This system will prevent the potential for polluted water generated by the farm entering any natural watercourse or ground water system.
This will assist in improving the quality of the Hawkesbury-Nepean River system.
The system will still permit runoff from areas outside the development area to be diverted around the dam and follow the current overland flow of surface water.

Water Sensitive Urban Design

g) To protect and enhance natural land and water systems such as creeks and rivers, particularly water quality.

h) To maintain and restore the natural water balance;

i) To make more efficient use of water resources by conserving water, particularly potable (drinking) water;

j) To reduce flood risk in urban areas;

k) To reduce erosion of waterways, slopes and banks;

l) To control stormwater pollution and improve water quality in waterways and groundwater;

m)To integrate stormwater management with water supply and waste water treatment; and

n) To integrate stormwater treatment into the landscape so as to maximise the visual and recreational amenity of urban development.

Comment:

The proposed stormwater system makes efficient use of the runoff captured from the development area but reusing on the farm and then capturing this water again in the form of runoff for further reuse on the farm.
This make the efficient use of runoff water and reduces the quantity of water needed to be sourced from the water main.

As discussed above the system protects the natural watercourse and the Hawkesbury Nepean system.

Water Retention Basins/Dams

Objectives

a) To provide controls for water harvesting to limit the impacts on the natural water cycle and ensure water flows to natural waterways and river systems;

b) To allow water harvesting to support essential rural land uses, especially agricultural uses;

c) To ensure that water retention basins and dams are designed and constructed in accordance with the relevant State policies and guidelines for safety.

Comment:
The proposed dam which also acts as a detention system for the runoff generated by the proposed farm development area for major storm events

The water in the dam will be harvested for use by the mushroom farm which can be reused by the farm continually as any runoff for the water than is used is diverted back into the dam for future reuse.

The dam size is adequate to cater for all storm events and likely runoff from the roof and internal driveway areas.
The amended stormwater management report has demonstrated that the proposed dam capacity is adequate.

- *Consultation with Office of Water not detailed in the application*.

  Comment:
  The need for a water licence has been previously raised with the Office of Water in relation to another mushroom growing facility that proposed an identical development including a large dam that was used to collect the water runoff from the development area which includes the roof and internal driveway areas.

  The response back from the NSW Office of Water was if the dam only collected water from the development site and other water runoff not associated with the building and internal driveways was diverted around the dam a licence was not necessary.

  The proposed dam will only collect the water from the roof of the building and the internal driveways and hardstand areas associated with the mushroom farm.

Traffic Management.
The report has not addressed the number of truck movements with the importing of fill onto the property.
196,650 tonnes of fill equates to 8,900 truck movements and based on 1 truck movement every 2 minutes equates to 30 movements per hour.
Construction of the Type AU intersection will be required before the commencement of the fill operation.
Construction management plan to be prepared prior to commencement of works.

Comment:
The traffic associated with the construction of the farm is only for a temporary period of time.

The approved development involved undertaking the works in 5 stages

Stage 1 Part of the front building containing 6 growing rooms including the staff amenities, packing area,
The filling for the total building platform will also be completed in stage 1

Stage 2 Reminder of the front building containing 7 growing rooms

Stage 3 Front portion of the rear section of growing building containing 6 growing rooms and the spent compost shed at the rear of the main building.

Stage 4 Addition to stage 3 building containing an additional 6 growing rooms.

Stage 5 Addition to stage 4 building containing an additional 3 growing rooms

The plan that accompanies the submission shows the proposed stages.

Stage 1
The earthworks (building platform) for stages 1 and 2 are likely to take between 6-12 months depending on the availability of suitable material that will be used for the building platform.
Most of the fill that is needed for stage 1 building containing 6 growing rooms will be obtained from the construction of the proposed dam associated with the mushroom farm development.
Stage 1 buildings construction period once earthworks are complete will be approximately 12 months.

Stages 2-5
Stages 2-5 buildings and growing rooms will be constructed 2-3 years after the previous stage is completed and operational depending on the market and finances is likely to be 2-12 years after stage 1 is operational.

This is a matter for the Department to consider in the assessment of the modification.
The likely frequency of truck movements associated with the filling operation is less than was predicated by Council based on the following: (Note these figures are based on the worst case situation).

- 30 tonne/truck used for each delivery of fill to the site.
- 100 loads/day average
- 10 hour day

This would result in 1 truck movement every 6 minutes.
This is also based on the availability of suitable fill material and there will be times and days where the frequency of truck movements would be less.

Environmental Protection Authority (EPA)

Concern about the noise assessment for the proposal.

The noise assessment report has identified that at 1 location on Thomas Road (R3) the noise exceedances up to 9db(a) will occur in certain conditions.

Report recommends 2 options to resolve issue.

EPA suggests that a complete solution be proposed and either

- *Rework the operations at the proposed facility to reduce the volume of noise generated and /or*
- *Propose and model effective noise controls to reduce noise below the compliance criteria and/or*
- *Purchase the affected property.*

EPA recommends the noise issue be dealt with by the EPA suggestions prior to any approval being granted.

Also the rear of the premises will be used to store large volumes of spent compost which has potential to be highly odorous and further information submitted to confirm that no significant odours will be generated by the storage of the proposed volumes.

Comment:

A further acoustic review assessment has been undertaken by Acoustic Consulting Engineers dated 28th August 2018 for the amended application.

The assessment of the noise impact has been discussed in section 4.2 of the report.

The review has outlined several possible options to mitigate the potential noise disturbance at 1 Thomas Road which include:

- Restricting operations on southern side of the building.
- Re-routing of site vehicles during night-time hours.
- Additional noise controls to site vehicles.
- Acoustic wall construction
- Partially enclosing of southern apron
- Acquisition of 1 Thomas Road
- Provide acoustic treatments to the dwelling at 1 Thomas Road.
- Negotiate with the property owner for a restriction on the title in respect to the noise levels generated by the mushroom farm.

The Department has previously indicated that an option involving excessive restrictions on the operating hours and use of trucks not to be a practical and sustainable solution to the noise issue for 1 Thomas Road.

The client has approached the owner of 1 Thomas Road about the potential to purchase the property.

The property owner also operates the adjoining car wrecking yard and the property at 1 Thomas Road is used by the manager of the yard.

The property owner is not interested in selling the property and has indicated that they have no objection to the proposed mushroom growing operation.

A letter from the owner of 1 Thomas Road accompanies the submission.

The owner was also not interested in have any legal title restriction on the property.

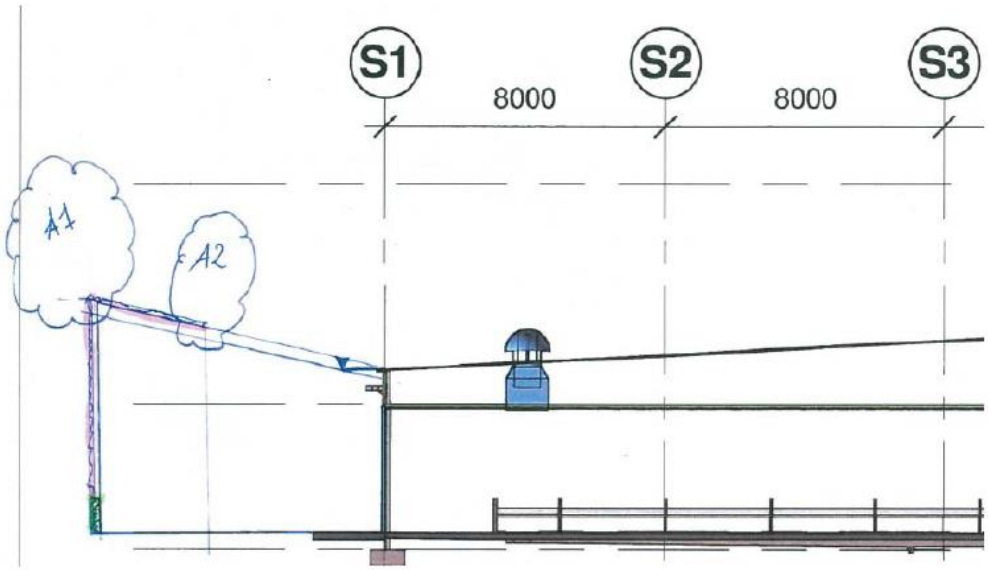
The current construction standard of the dwelling at 1 Thomas Road would make any the implementation of any proposed mitigation measures to reduce the noise impact from the mushroom farm cost prohibited and would require an almost rebuilding of the dwelling.

The mitigation measures that are practical and sustainable involve the construction of the acoustic walls along the southern apron as well as partial enclosing of the southern apron later in the event the owner of 1 Thomas Road is impacted by noise generated by the mushroom farm and the level is above the Project Noise Trigger Level.

The exceedance of the trigger level is between 5am to 7am and 10pm to 5am from the dock and intermittent noise along the southern side of the building.

The proposed partial enclosure is shown on the plan below.

Figure 2 Cross Section of Partial Enclosure along the Southern Apron



The plans that are attached to the Acoustic Review report shows the location of the proposed acoustic walls and partial enclosure of the southern apron.

The Review in section 7 makes several recommendations to be implemented relating to:

- the construction of acoustic mounds and walls, partial enclosing along the southern apron
- Machinery used to meet the acoustic performance outlined in the review document.
- Acoustic treatment requirements for the walls and roof of the building.

- Certain operating activities and procedures.

The report has predicted the likely noise levels generated by the mushroom farm with the implementation of the recommended mitigation measures and at all the receivers the noise levels comply with the assessment objectives.

The amended mushroom farm will have no additional noise impact on the surrounding dwellings especially 1 Thomas Road once the recommended noise mitigation measures are implemented.

The spent compost storage tunnels will be fully enclosed and only open at the southern end to allow access.

The fans will circulate air under the compost to reduce any potential for odour.

The spent compost will generally during Spring to Autumn be removed from the site immediately.

The storage tunnels will only be used on occasions where the weather does not allow the compost to be used directly on the ground and must be stored for a period until the land where the compost is to be applied is dry to allow machinery to apply the compost.

The compost will not be applied to the subject site but at other horticultural and agricultural enterprises as well as soil and landscape supplies to amend and soils in various locations.

The spent compost will not be stored on site for a long-time period to have the potential to cause an odour issue to the surrounding area.

Public Submissions

Denise Giddings (House A) 503 The Northern Road

- *Significant increase in the main building (47,709sqm to 88,178sqm)*
- *Building footprint is 75% of the site.*
- *Visual impact proposed 2.5m earth mound along the northern boundary with vegetation.*
- *Loss of views of grass lands to the south.*
- *Proposed 24 hour operation and impact on the noise amenity of the area including traffic from vehicles.*
- *Impact of the lighting on their property*

Comment:

The increase in the size of the building has been a result of the operator looking at implementation of new cutting-edge technology to improve the efficiency and sustainability of the mushroom growing farm and help reduce the costs associated with the operation of the farm.

The increase in building footprint has been discussed in detail previously in the report.
The earth mound is required as part of the acoustic treatment for the mushroom growing facility.

The mound also now will act as a subsurface waste disposal area for the effluent generated by the farm.

The approved length of the growing building including the peat building along the northern property boundary has been reduced.

The mound with the vegetation proposed will not pose a visual impact.
The proposed development meets the Council requirements in terms of side and front building setbacks and is an agricultural activity that is encouraged in the rural zones and as a result the development is a reasonable development.

The modified building has significantly reduced the scale and height of the building as approved along the northern boundary with the wall heights being reduced by around 5.7m and the roof height by around 2.4m.

Also, the overall length of the building has been reduced when compared to the approved building (growing and peat store building) along the northern boundary.

Based on the above comments and changes proposed by the modified development there has been a reduction in the potential visual impact from the adjoining and surrounding properties to the north of the site when compared to the current approved plans for the mushroom farm.

The potential noise Impact has been addressed with the amended Acoustic review report and the conclusion of the report has demonstrated that the only property that will be impacted by noise generated by the mushroom farm operation is at 1 Thomas Road and with the implementation of the management and other measures the noise generated from the activity will meet the EPA requirements.

As discussed above the location of this property is 150m from the subject site and is separated by another property and it is unlikely that any external lighting will caused a problem or impact.
The external lighting used will be directed down and not out and will not have any light spill beyond the property boundary.

Tammy Heferen 503 (House B) The Northern Road

- Scale and size of the buildings
- *Considers the size more akin to industrial area rather than a rural area.*
- *Question the ability of the mound to screen the development and reduce noise.*
- *Loss of view visual impact*
- *External lighting impact at night.*
- *Noise for the 24 hours operation*
- *Traffic movements and impact on the surrounding dwellings.*
- *Odour concerns*
- *Loss of value of the property*

Comment:

As discussed above this property does not adjoin the subject site but is approximately 150m from the northern property boundary of the subject site.

The matters raised in the submission have been addressed above in the other submission made by *Denise Giddings.*

The Penrith LEP 2010 allows for intensive agriculture within in rural zoned land.

The odour assessment report has assessed the potential impact of the odour and concluded the development would have no impact as the growing activities as well as the loading occurring within the building and the unloading on the southern side of the building and no operations face or are directed towards the north other than vehicles access driveway along the northern boundary.

There has been no evidence provided to demonstrate that the proposed development will impact on the property value

Bob and Mary Lahood 493 The Northern Road.

Same matters raised as in above submissions

This property does not directly adjoin the subject site but is separated by 3 properties and is approximately 170m from the northern property boundary of the subject site.

6. PLANNING CONTEXT

6.1. Strategic Direction

NSW 2021

NSW 2021 is the New South Wales Government's 10 year plan for developing NSW. It contains economic goals such as improving the performance of the NSW economy and driving economic growth.

The Mushroom Farm will provide employment opportunities within Western Sydney within an agricultural sector that contributes to the NSW food economy. Agricultural production including mushroom production in Western Sydney is an important contributor to the Australian economy, with approximately 60,000 tonnes of mushrooms produced in Australia annually[4] with the Penrith/Hawkesbury region providing 25% of national mushroom production[5].

A Plan for Growing Sydney

A Plan for Growing Sydney was released in December 2014 and provides a plan for developing Sydney over the next 20 years.

The Mushroom Farm will produce 220 tonnes of mushrooms per week at full capacity and will provide for employment and rural land uses within Western Sydney. The goals of the Plan

[4] Australian Bureau of Statistics. Agricultural Commodities Australia 2013-14.
[5] The Australian Mushroom Growers Association June 2010.

include a competitive economy and providing a balanced approach to use of land and resources.

6.2. Legislative Requirements

The project application for the Elf Mushroom Farm and Substrate Plant was originally lodged under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act). Although Part 3A was repealed on 11 October 2011, the project remains a 'transitional Part 3A project' under Schedule 6A of the EP&A Act.

Schedule 6A

2 Transitional Part 3A projects

(1) The following are, subject to this Schedule, ***"transitional Part 3A projects"***

(a) an approved project (whether approved before or after the repeal of Part 3A), …..

(5) A transitional Part 3A project extends to the project as varied by changes to the Part 3A project or concept plan application, to the concept plan approval or to the project approval, whether made before or after the repeal of Part 3A.

3 Continuation of Part 3A-transitional Part 3A projects

(1) Part 3A of this Act (as in force immediately before the repeal of that Part and as modified under this Schedule after that repeal) continues to apply to and in respect of a transitional Part 3A project.

(2) For that purpose:

(a) any State environmental planning policy or other instrument made under or for the purposes of Part 3A, as in force on the repeal of that Part and as amended after that repeal, continues to apply to and in respect of a transitional Part 3A project,

Based on the provisions of the EP&A Act the project is a Part 3A-transitional project and Section 75W continues to apply for the purpose of the modification of approved development consent.

This application is therefore requesting a modification to the Minister's approval under the former Section 75W of the Act.

The EP&A Act defines a number of objectives. The objectives include:

(a) to encourage:
(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities, and

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development, and

(viii) the provision and maintenance of affordable housing, and

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

The proposal provides for economic and environmental considerations and proposes environmental protection measures to avoid any potentially serious damage to the environment. The proposal provides for economic use of the land through provision of jobs in Western Sydney. It is considered the proposal adopts a balance between economic use of the land and preservation of environment to minimise potential impacts on the environment.

6.3. Environmental Planning Policies

The project application for the Elf Mushroom Farm Londonderry and Substrate Plant Mulgrave was originally lodged under Part 3A of the EP&A Act. The Elf Mushroom Farm was subject to the following key Environmental Planning Instruments:

- State Environmental Planning Policy (Major Development) 2005;
- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy No. 55 – Remediation of Land
- State Environmental Planning Policy no. 30 – Intensive Agriculture
- State Environmental Planning Policy no. 33 – Hazardous and Offensive Development
- Sydney Regional Environmental Plan No. 20 – Hawkesbury Nepean River (No. 2 1997)[6]; and
- Penrith Local Environmental Plan 2010.

The development as it is proposed to be modified will not affect the Approved Project's consistency with any relevant Environmental Planning Policies.

The proposed development is permissible with development consent under the provisions of *Penrith Local Environmental Plan 2010* (PLEP 2010) within the zoned RU4 Rural Small Holdings zone.

The Mushroom Farm as modified would continue the use of agricultural zoned land for agricultural purposes. The Elf Mushroom Farm proposal has considered the potential impacts of the proposal and has considered the environmental constraints in the design of the proposal. The rear (western) area of the site is retained and provides for retention of

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significant vegetation. Additional water management measures have been incorporated in to the design to minimise any potential impacts on the wider catchment.

The proposal provides for employment opportunities in Western Sydney meeting the objective to provide for employment opportunities in relation to primary industry enterprises.

7. CONCLUSION

The proposal has been assessed having regard to the objects of the EP&A Act 1979 and relevant environmental planning policies including the principles of ecologically sustainable development.

Several specialist reports have undertaken and amended to consider the proposal as modified and address the issues raised during the notification period.

The reports have provided several mitigation and management measures to ensure the proposal can be undertaken to an acceptable level of environmental performance. It is considered the modified proposal is consistent with the conditions of approval in relation to environmental measurement.

The main issues relating to

- Acoustic impact
- Visual impact
- Bulk and scale of building
- Conflict with the adjoining landuses

have been assessed in the report as well as the submission received from both public authorities and adjoining and surrounding land owners.

The proposal provides for economic and social benefits to the Western Sydney region during the construction and operational phases of the development.

The amended proposal is considered satisfactory and is worthy of support.