

Enabling  
**ZERO WASTE**  
Galluogi  
**DYFODOL**  
**DIWASTRAFF**



# **EZW Torfaen Schools**

**Friday 18<sup>th</sup> November**

**Ysgol Panteg Site**





**Emma Thomas**

**Director**

**Constructing Excellence in Wales**



# SEWSCAP Overview

- £24 Million total work under framework
- Four projects
- 24 months



Ysgolion yr 21ain Ganrif  
21st Century Schools



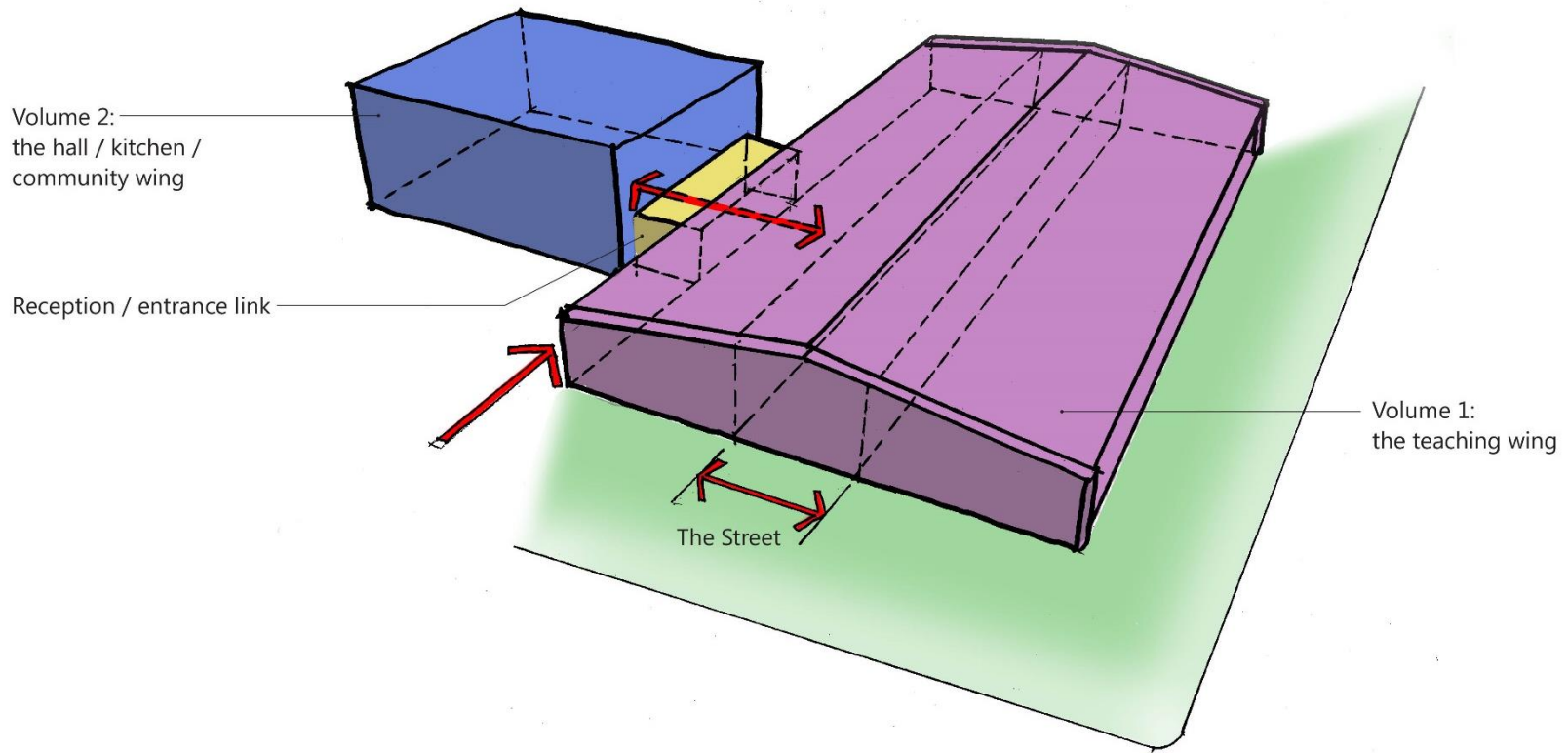
# Torfaen Primaries





**Llantarnam Primary**







**Enabling Zero Waste: Torfaen Primary Schools**

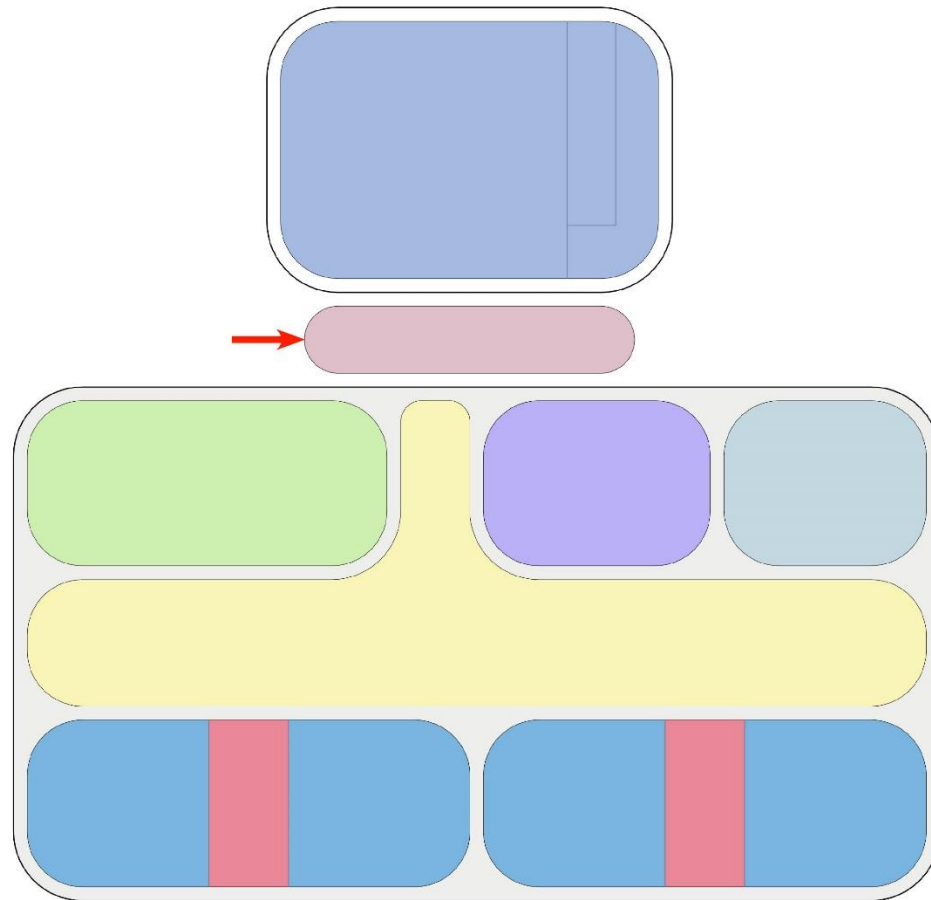


## Llantarnam Primary

# Enabling Zero Waste: Torfaen Primary Schools

The 'Kit of Parts' : Core components

-  Paired classroom unit with shared cloaks & WCs
-  Early years
-  Hall & support spaces
-  Admin. & staff facilities
-  The occupied street
-  Entrance foyer
-  WCs, plant and services



## Llantarnam Primary

# Enabling Zero Waste: Torfaen Primary Schools





By Department Legend

- Administration
- Halls, Kitchen & Plant
- Multi Functional Rooms
- Nursery
- Reception Classrooms
- School
- Year 1 - 6 Classrooms

AS BUILT GIA: 2,373m<sup>2</sup>



# Panteg Primary

# Enabling Zero Waste: Torfaen Primary Schools

**The Street** : Multi-functional space



*Section through the teaching wing with The Street highlighted*



*CGI showing the scale and multi-purpose nature of The Street*

## Llantarnam Primary

# Enabling Zero Waste: Torfaen Primary Schools



**Llantarnam Primary**

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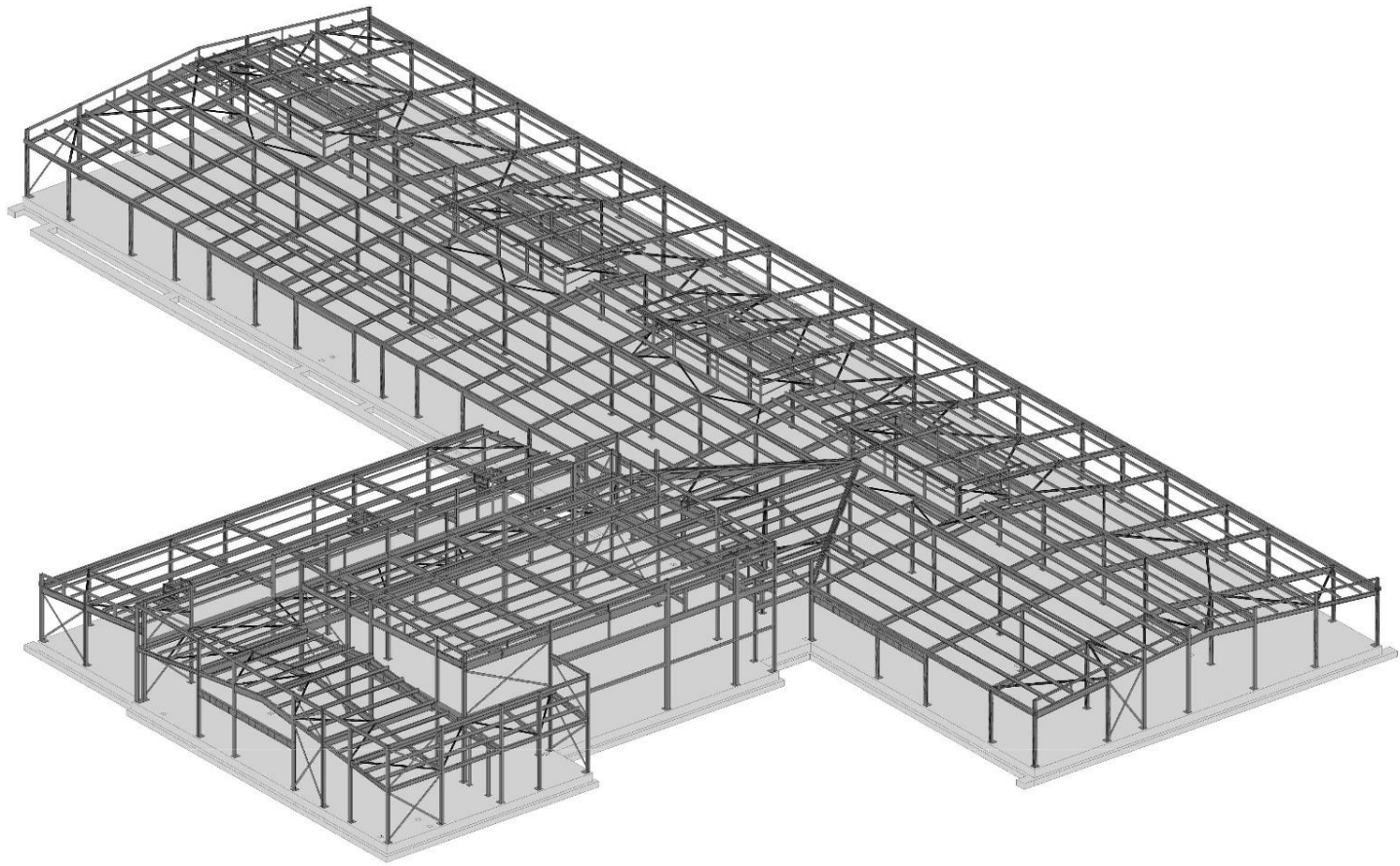
## Panteg Primary

# Enabling Zero Waste: Torfaen Primary Schools



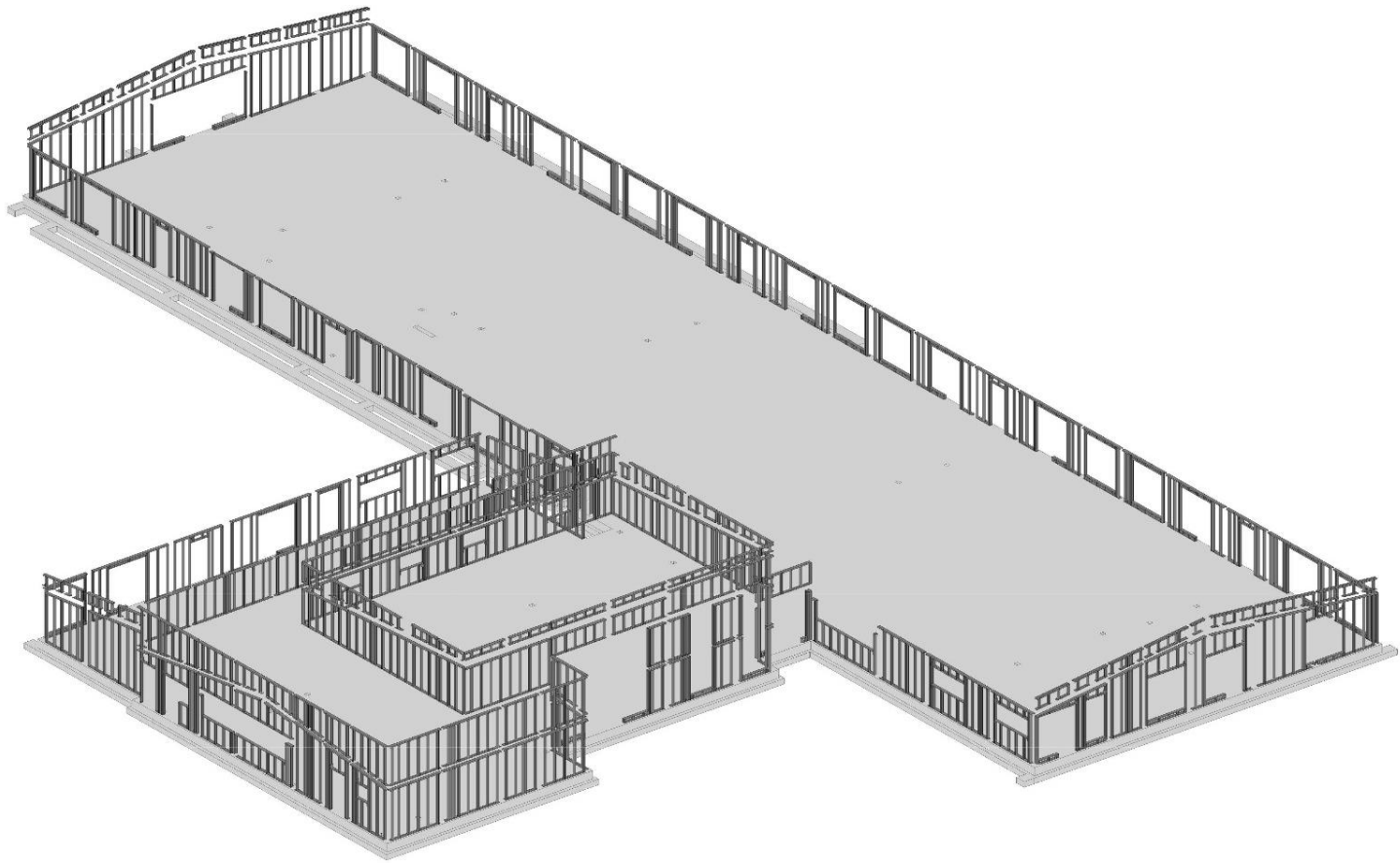
## Panteg Primary

# Enabling Zero Waste: Torfaen Primary Schools



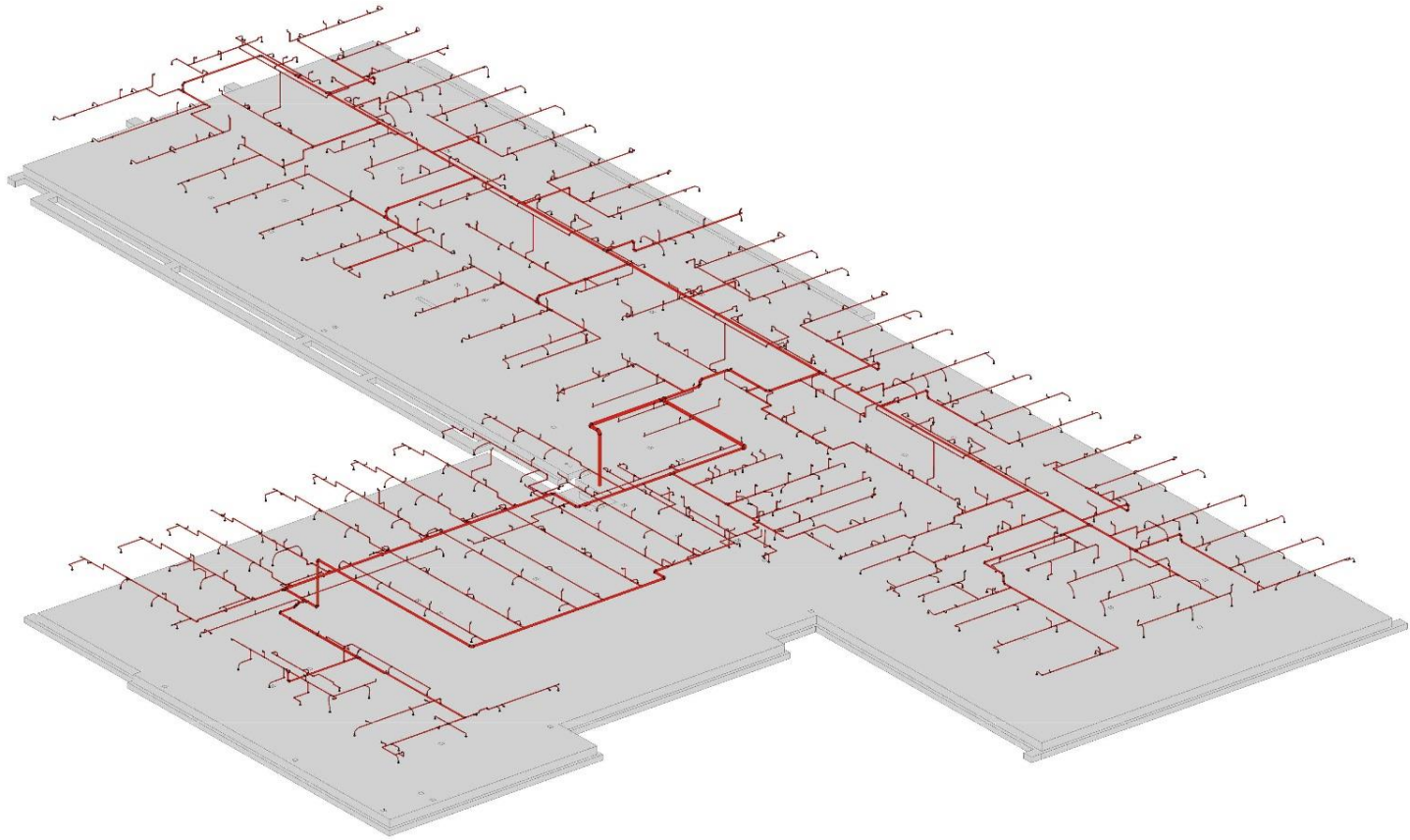
**Panteg Primary**

**Enabling Zero Waste: Torfaen Primary Schools**



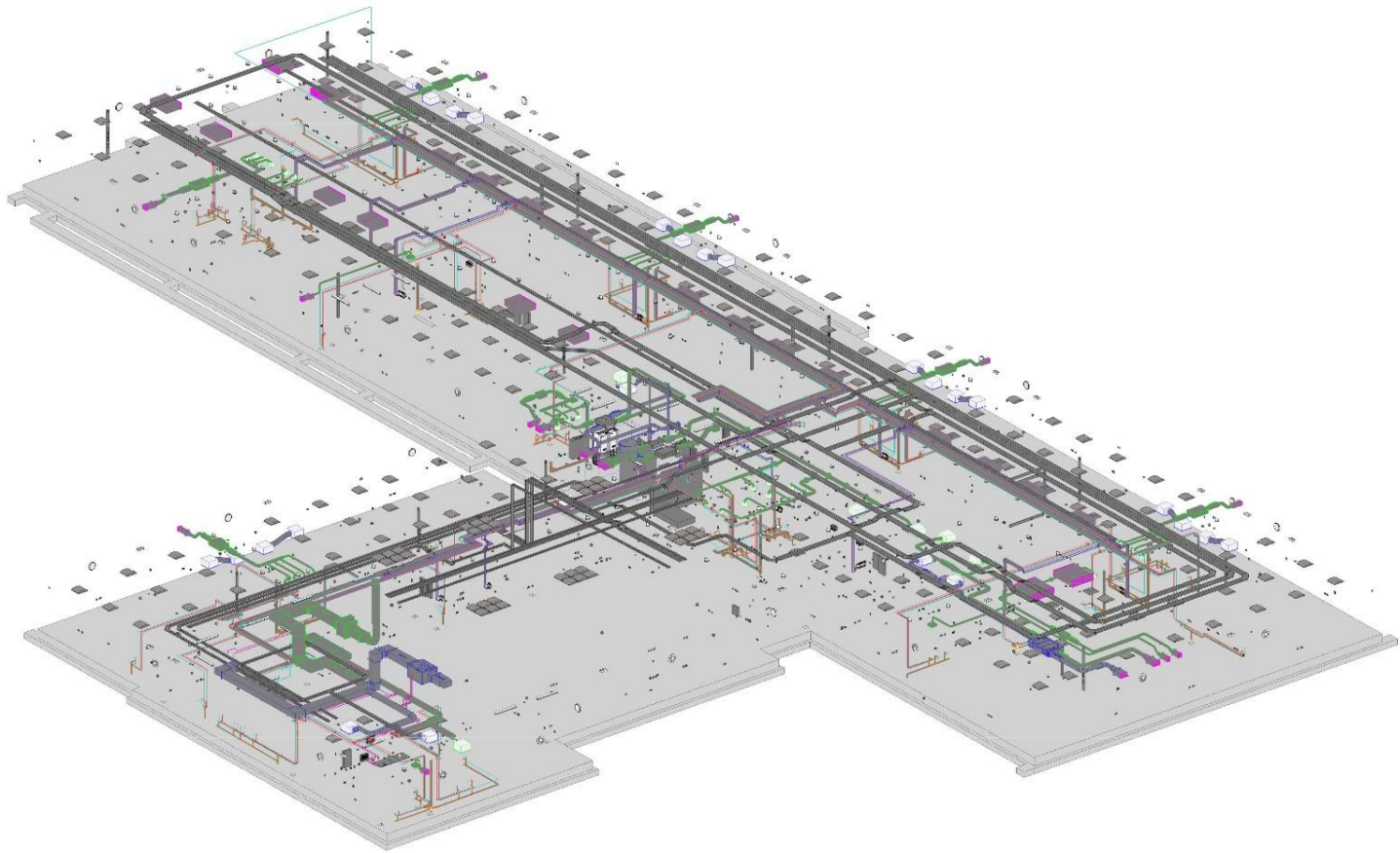
**Panteg Primary**

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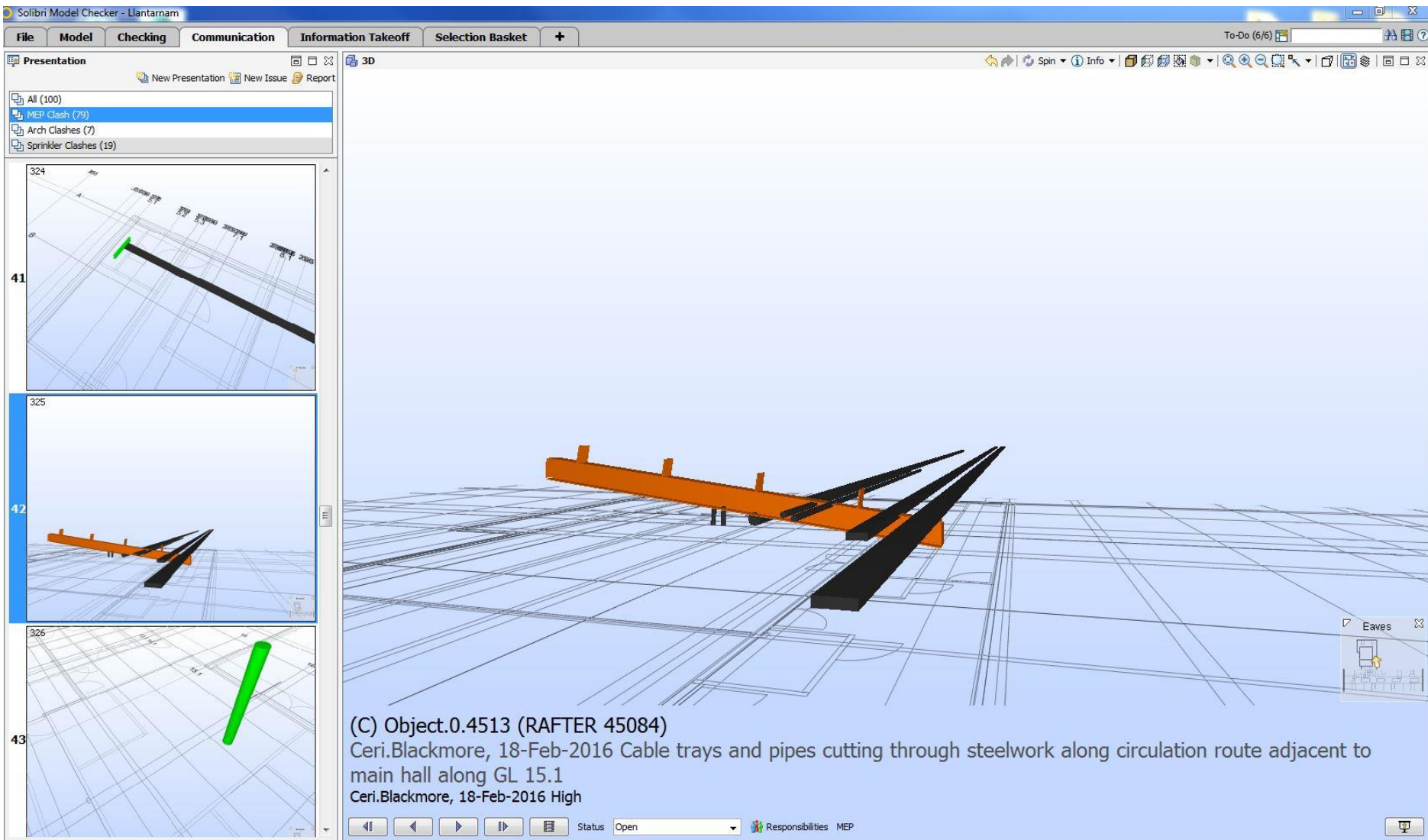
**Panteg Primary**

**Enabling Zero Waste: Torfaen Primary Schools**



**Panteg Primary**

**Enabling Zero Waste: Torfaen Primary Schools**



**Panteg Primary**

**Enabling Zero Waste: Torfaen Primary Schools**

 @PDArchitects

# Project Overview

- Project contract value £6.2 Million
- Project duration 49 Weeks
- Start 11/01/16
- Completion 09/12/16
- Contract JCT 2011 D&B
- Framework SEWSCAP



**WILLMOTT DIXON**

**SINCE 1852**



# Challenges



# Successes



# Sharing Knowledge and Project Model

- Joint procurement of sub-contractors across three projects
- Subcontractors improved quality, buildability and speed
- Visiting other sites - sharing what works/doesn't
- Early procurement has led to front end design being completed before works packages start on site at Panteg
- Sub-contract labor moved around the sites to allow deadlines to be met

# Waste Strategy

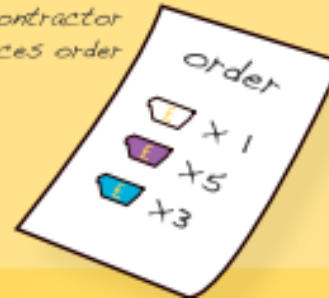
## THE PROCESS

TENDER

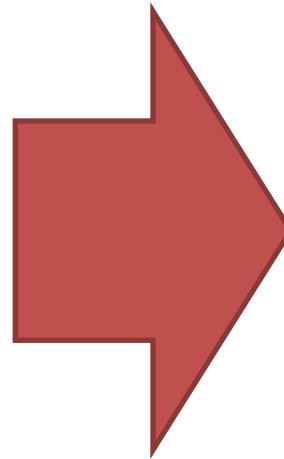
Precon  
determine  
cost



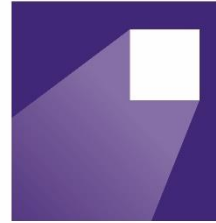
Subcontractor  
places order



= Waste allowance



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ZERO WASTE  
Galluogi  
DYFODOL  
DIWASTRAFF



# **EZW Torfaen Schools Ysgol Panteg Site**

**Keith Watts**

**Delivery Officer**

**Constructing Excellence in Wales**

**ADEILADU  
ARBENIGRWYDD  
YNG NGHMYRDU**



**CONSTRUCTING  
EXCELLENCE  
IN WALES**





# What is Enabling Zero Waste?

- Constructing Excellence in Wales (CEW) initiative
- Provides practical positive and proactive assistance to construction, demolition and civil engineering projects in Wales
- Aim to establish if, and how, the construction industry can achieve the zero waste targets established in the Welsh Government's waste strategy, Towards Zero Waste





# Involvement with the Torfaen Schools

- Torfaen County Borough Council responded to a call for expressions of interest
- Opportunity to compare the construction of three similar schools. Allowing for a unique insight into the impact of site behaviours on waste arisings
- EZW team first met with the Willmott Dixon team in November 2015
- Involvement has involved
  - Regular site visits
  - Aerial photography
  - Waste data analysis
  - Research into disposal options
  - BIM comparison of pre and post value engineering models





# Canteen / Office Waste

- In the first 6 months of work on one site, 18% of all site waste (by volume) was being reported as canteen/office waste.
  - Disposed of in mixed waste skips
- EZW organised collection within Torfaen County Borough Council's municipal waste collections for food waste and recyclates
- Started in April 2016
- Benefits
  - Diverts waste from landfill
  - Maintains recyclate value by reducing contamination
  - Separate food collections mean fewer collections of mixed waste; less traffic
  - Reduced weight of mixed waste skips; lower costs
  - TCBC charged a nominal fee





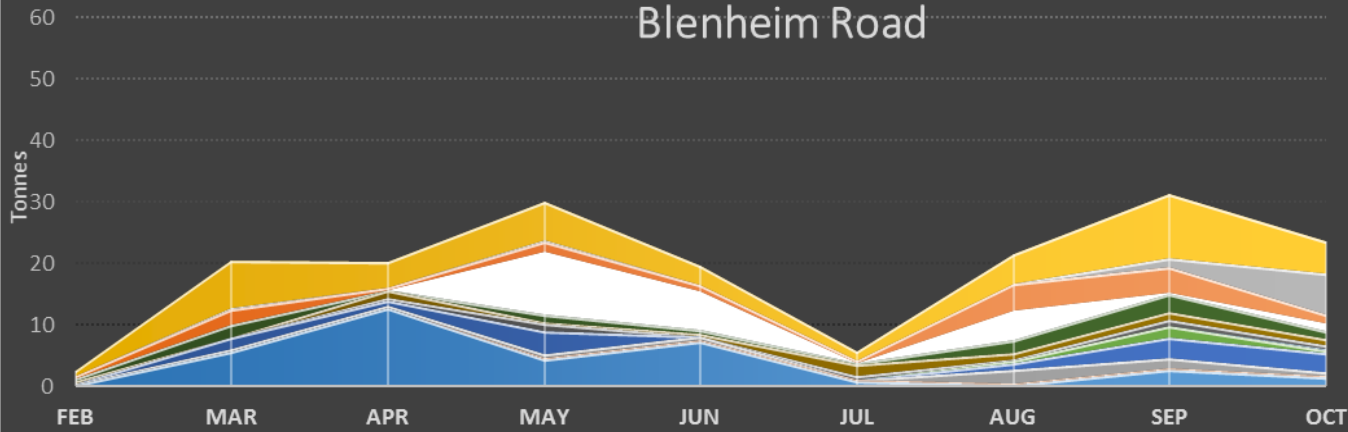


# Canteen / Office Waste

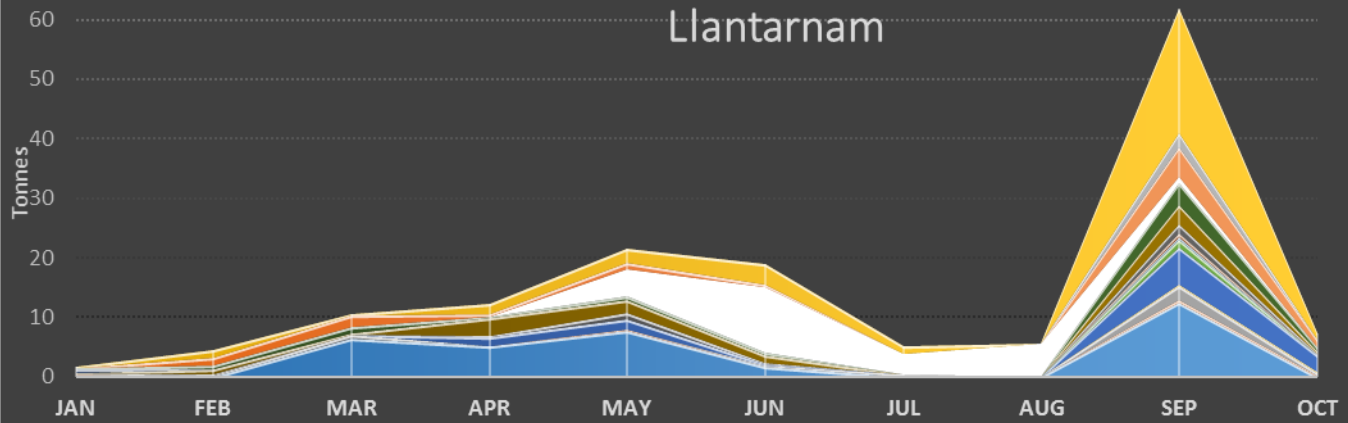
- Missed collections a frequent problem
  - At the beginning of the trial
  - During school holidays
- Blenheim 1.1 tonnes  
Small amounts throughout
- Llantarnam 1.2 tonnes  
In May, September & October
- Panteg 0.09 tonnes  
Brilliant performance



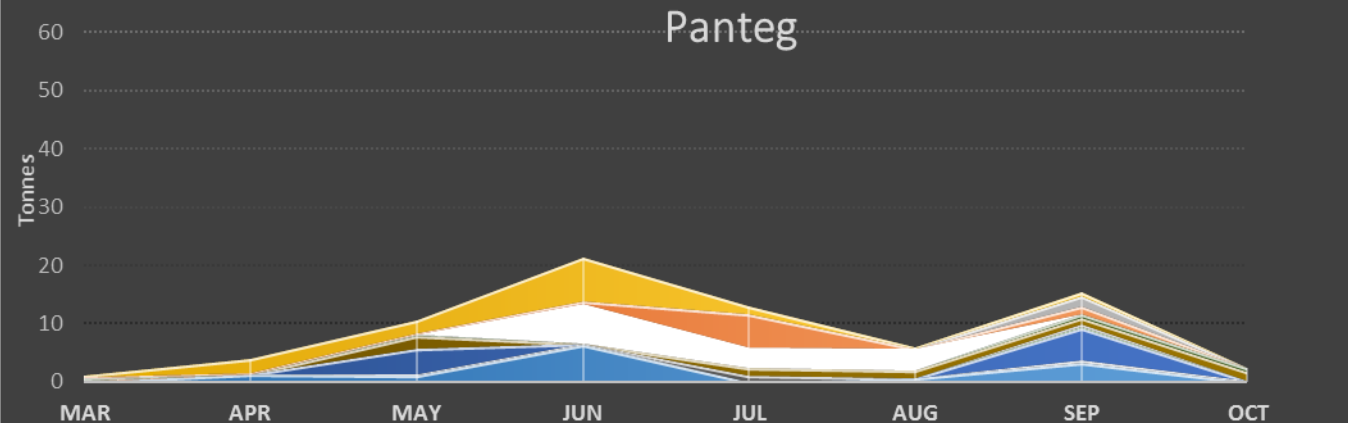
## Blenheim Road



## Llantarnam

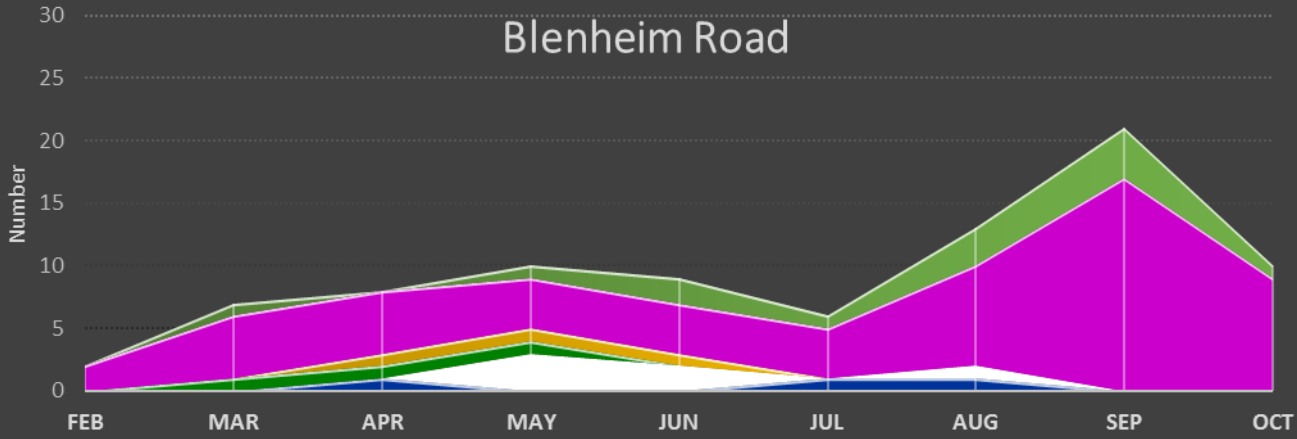


## Panteg

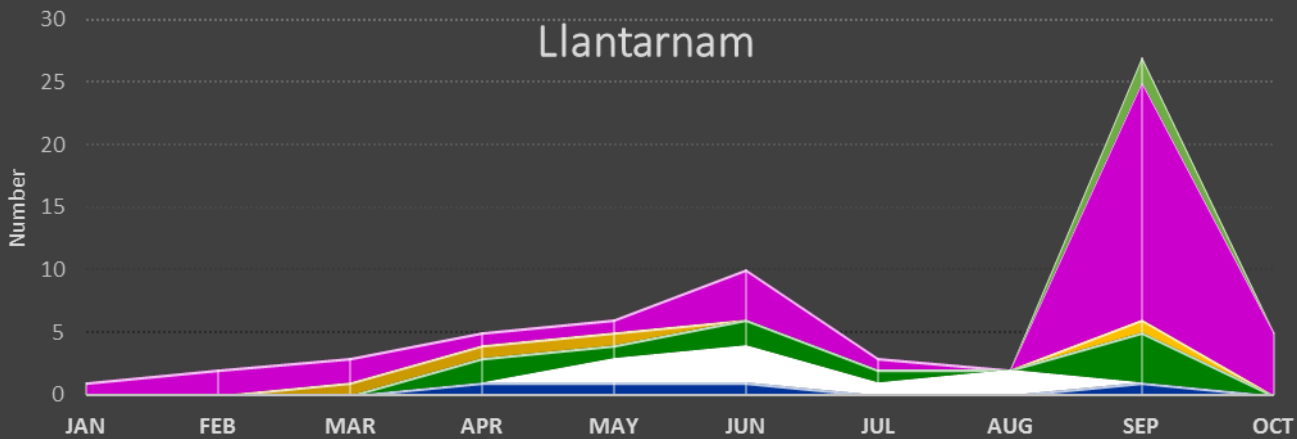


- Timber
- Soil
- Plastic
- Plasterboard
- Packaging
- Non-Hazardous
- Metals
- Insulation
- Glass
- Furniture
- Flooring
- Concrete
- Ceramics
- Cardboard
- Canteen
- Brick/Block

### Blenheim Road

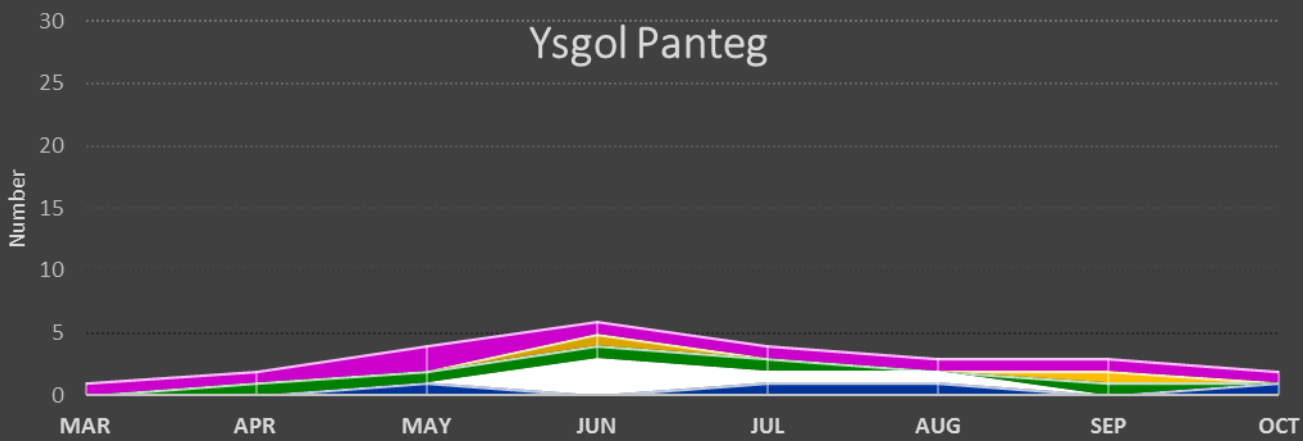


### Llantarnam



- Clean Wood Waste
- General Waste
- Inert Waste
- Mixed Wood Waste
- Plasterboard
- Scrap Metal

### Ysgol Panteg





# Site Waste Management

- Site waste compounds have been examples of best practice.
- The measures they have put in place encourage consideration of waste
- Waste compounds were;
  - Fenced; preventing unregulated use, and fly tipping
  - Controlled; access is controlled and monitored by a site operative
  - Segregated; separate skips for timber, brick, metal, insulation and packaging waste





# Site Waste Management

- Use of wheelie bins around site
- Quota of wheelie bins per sub-contractor; keeps waste management in focus
- Good signage on skips
- Locked mixed waste skip





# Consideration of the Waste Hierarchy

- Prevention of waste is key
- Consideration of waste at the design stage is important to waste prevention
- Most sites have existing resources on them. There may be existing infrastructure, such as roads or sewerage, which could be utilised
- Use of CL;AIRE definition of waste code of practice allowed the movement of a soil surplus;
  - 1500 tonnes of soil was transported from Blenheim Road to Ysgol Panteg
  - Used to complete the remediation strategy for the site
  - Avoided classification of waste





# Consideration of the Waste Hierarchy

- Highlighted at every site visit reuse before recycling
  - 600 tonnes of 6F2 reused at Ysgol Panteg
  - 120 door jambs and protectors from Blenheim Road and Llantarnam have been reused at Ysgol Panteg
  - Lots of examples of timber reuse



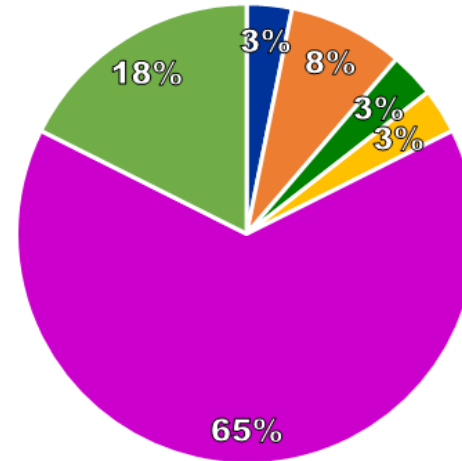
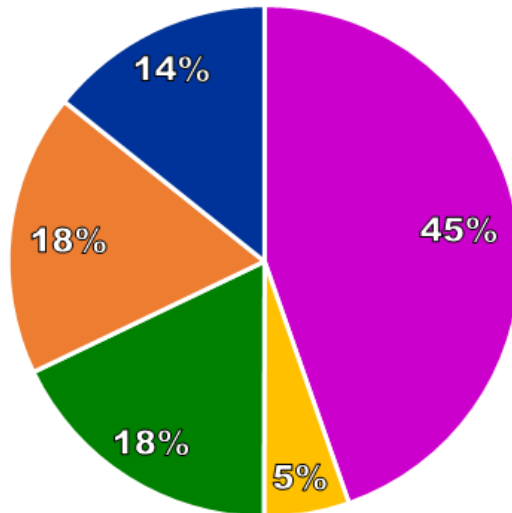


# Consideration of the Waste Hierarchy

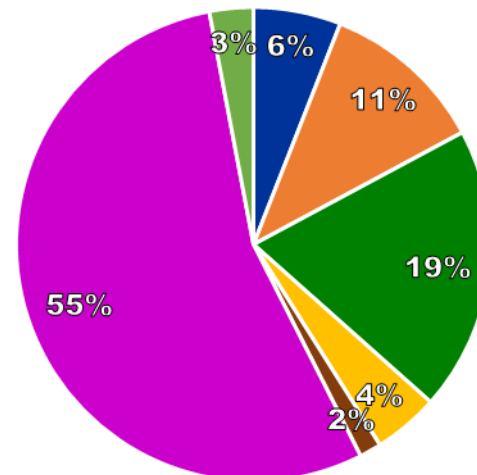
Blenheim Rd: Skip Volumes m<sup>3</sup>

- Recycling rates have been good

Panteg: Skip Voulme m<sup>3</sup>



Llantarnam: Skip Volume m<sup>3</sup>



- Scrap Metal
- Plasterboard
- Mixed Wood Waste
- Inert Waste
- Green Waste
- General Waste
- Clean Wood Waste





# Consideration of the Waste Hierarchy

- Surplus materials have been donated to community groups and charities including;
  - Wood going to Community Wood Recycling
  - Bricks & blocks to Too Good To Waste; approx. 5 skips worth





# BIM Exercise

- Comparison of pre and post value engineering models
- Planning to have a workshop on BIM with all involved





# Questions

